The U.S. Department of Energy (DOE) Office of Legacy Management's (LM) 14th annual community meeting on the Fernald Preserve was held October 17, 2017, at the Fernald Preserve Visitors Center. The 17 guests in attendance received a summary of the *2016 Site Environmental Report* and an update on site activities.

Community meeting agenda.

Fernald Preserve

U.S. Department of Energy
Office of Legacy Management Mission

To fulfill the Department's post-closure responsibilities and ensure the future protection of human health and the environment.

9034.03 10/17

U.S. Department of Energy Office of Legacy Management's mission at the Fernald Preserve.

Worker Safety and Health

Occupational Safety and Health Administration
Recordable Rates

Industry (Remediation Services)	DOE Complex	LM
1.4	0.9	0.51

Fernald Preserve

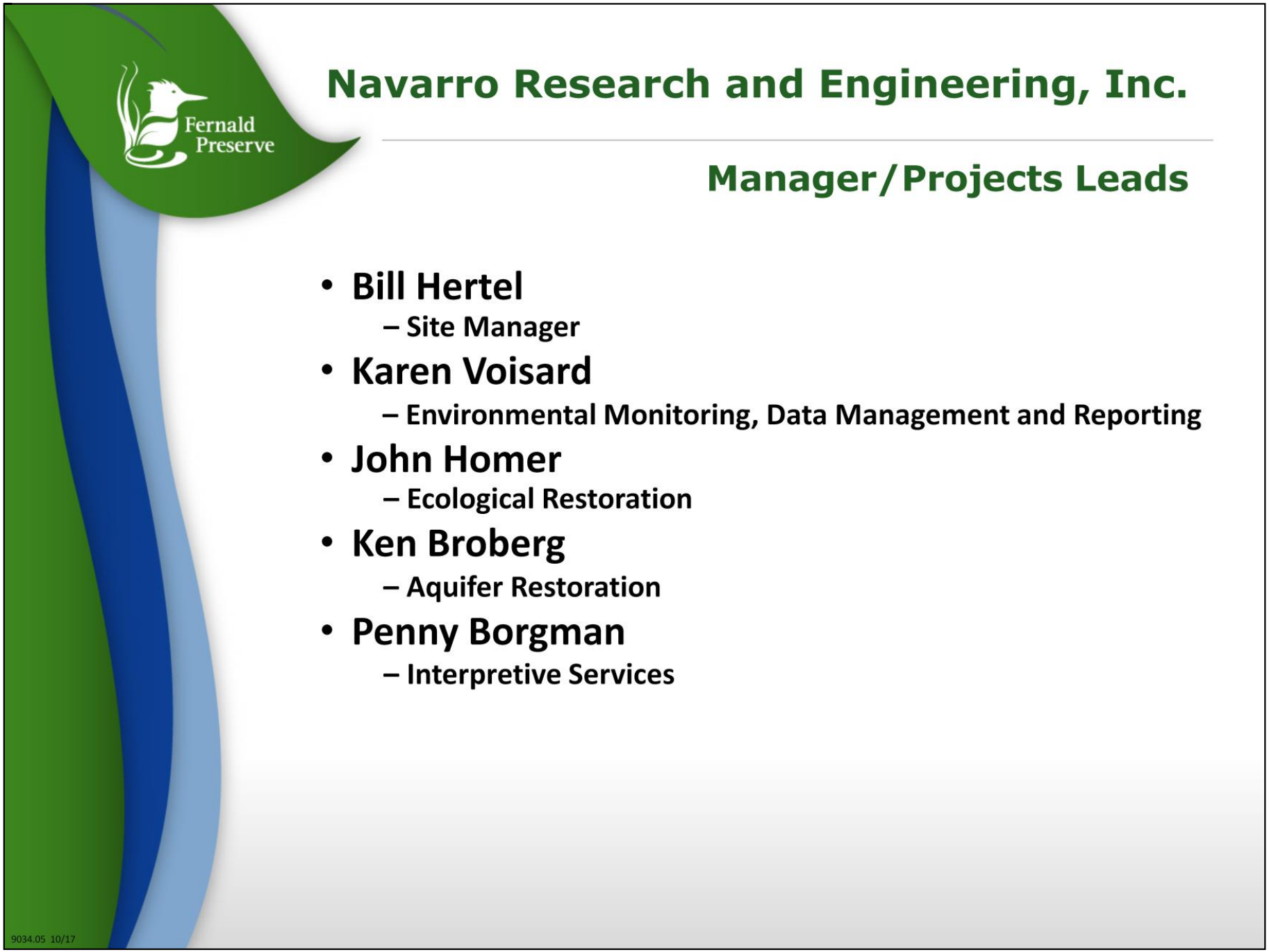
Restricted Days	First Aid
0	0

Safe Work Hours: 1,509,628

Department of Energy VPP

9034.04 10/17

Safety records at the Fernald Preserve and in the nationwide LM program continue to surpass industry standards.



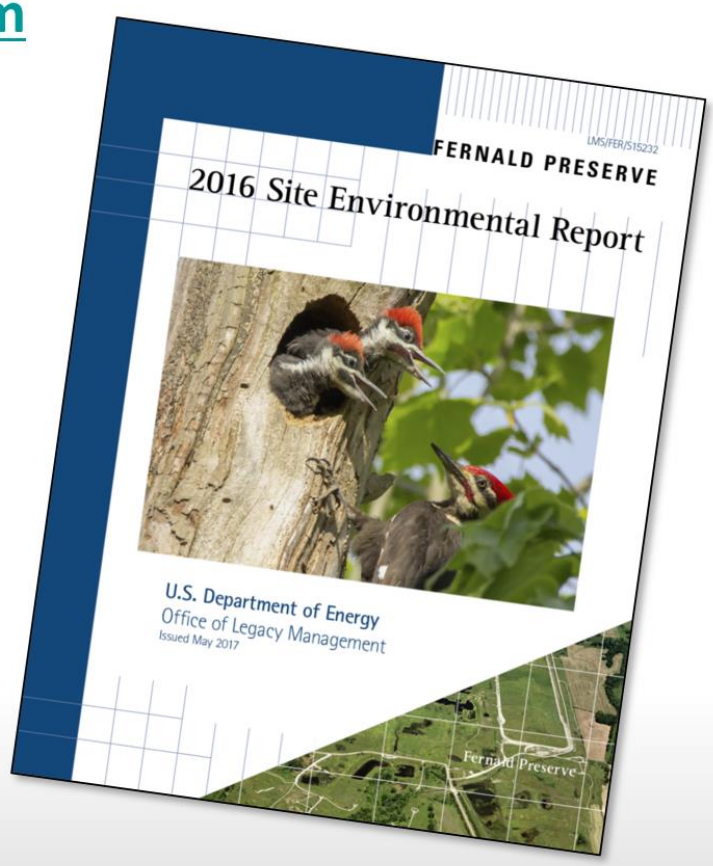
Fernald Preserve LM contractor, Navarro Research and Engineering Inc., site management and project leads.

The *Comprehensive Legacy Management and Institutional Controls Plan* documents the requirements for Fernald Preserve's long-term care and is reviewed and updated yearly. The latest version is available on the LM website.

2016 Site Environmental Report

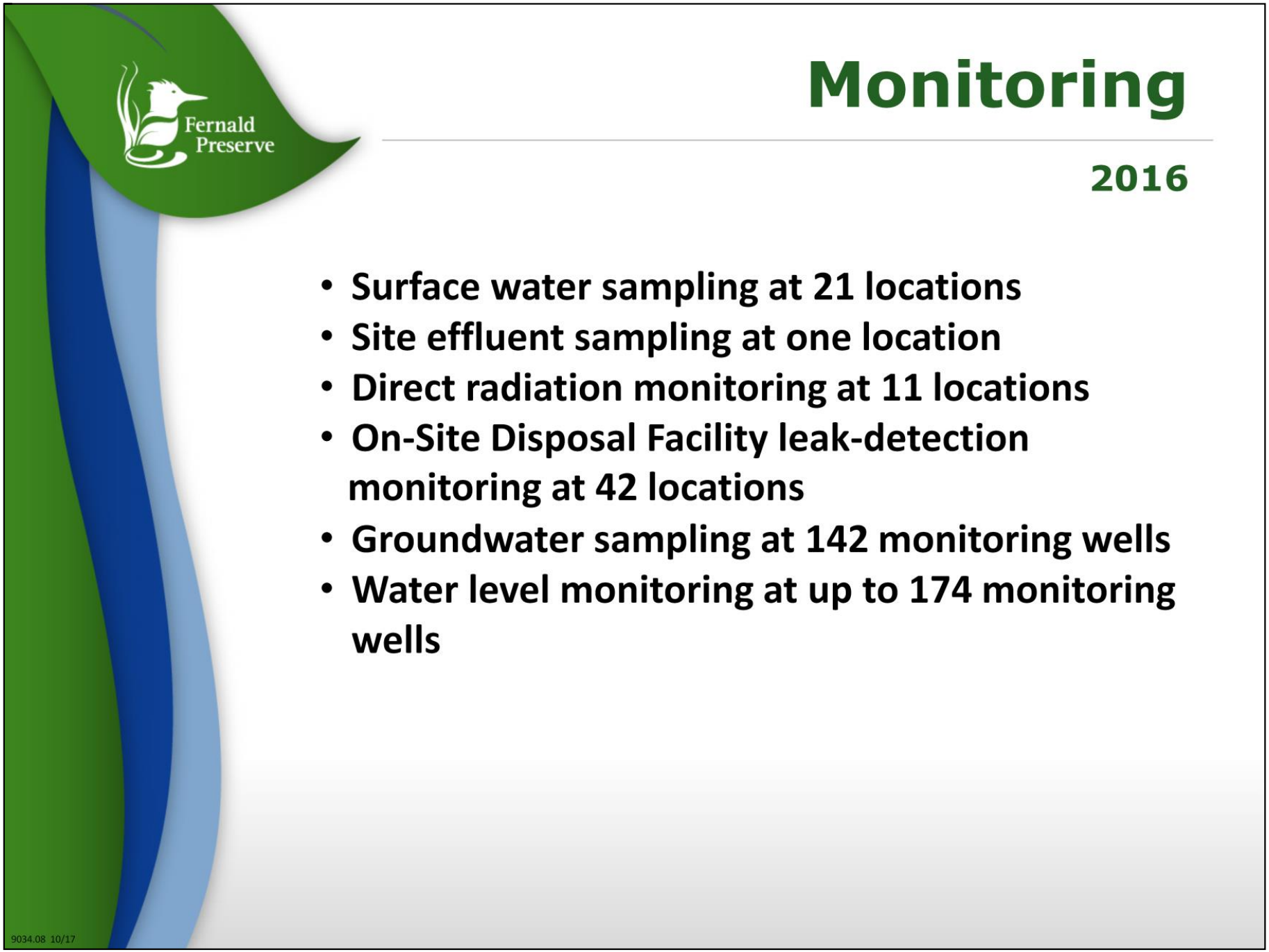
SER

- https://energy.gov/lm

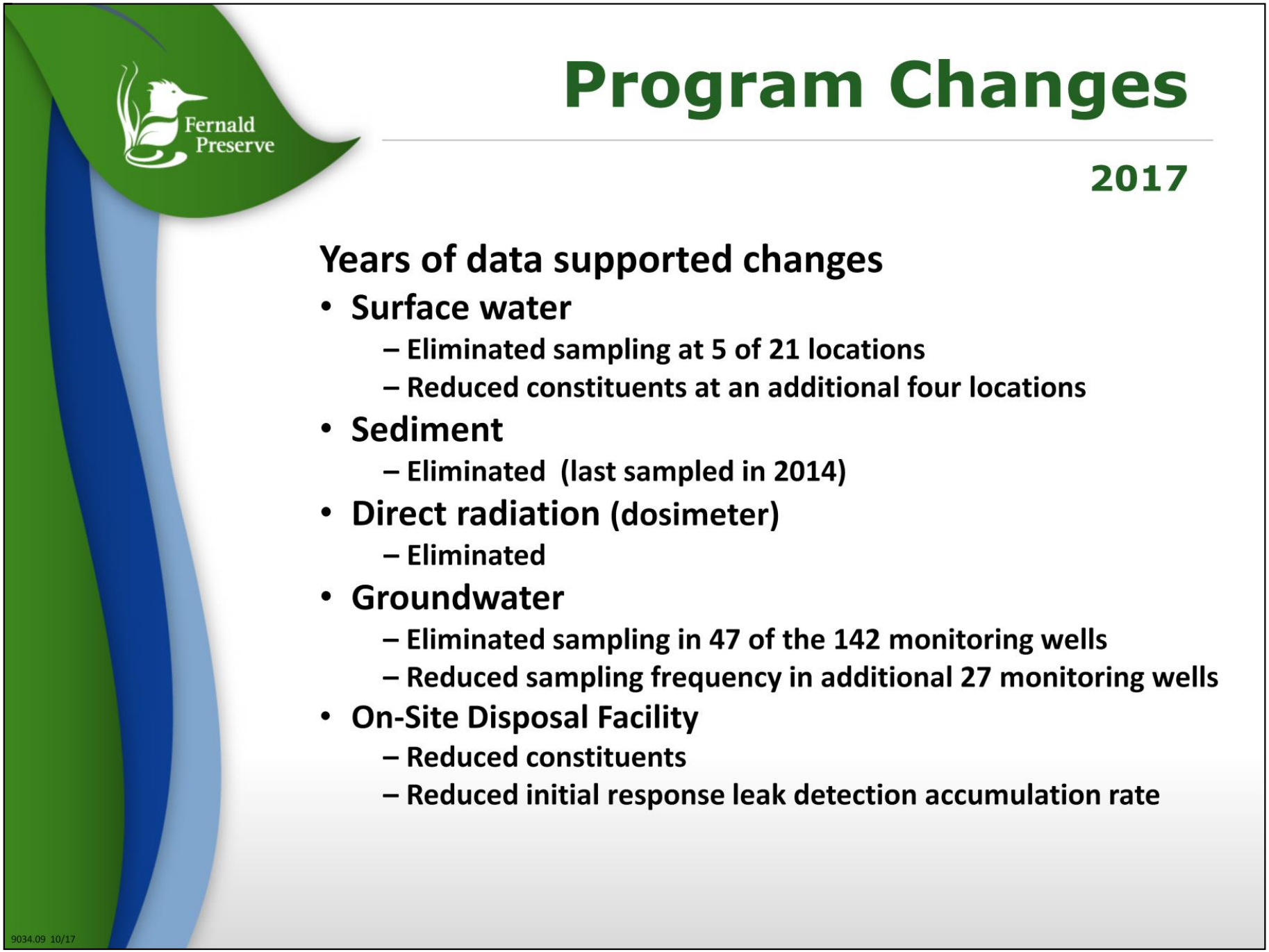


9034.07 10/17

The *2016 Site Environmental Report* contains annual monitoring requirement results and is available on the LM website.



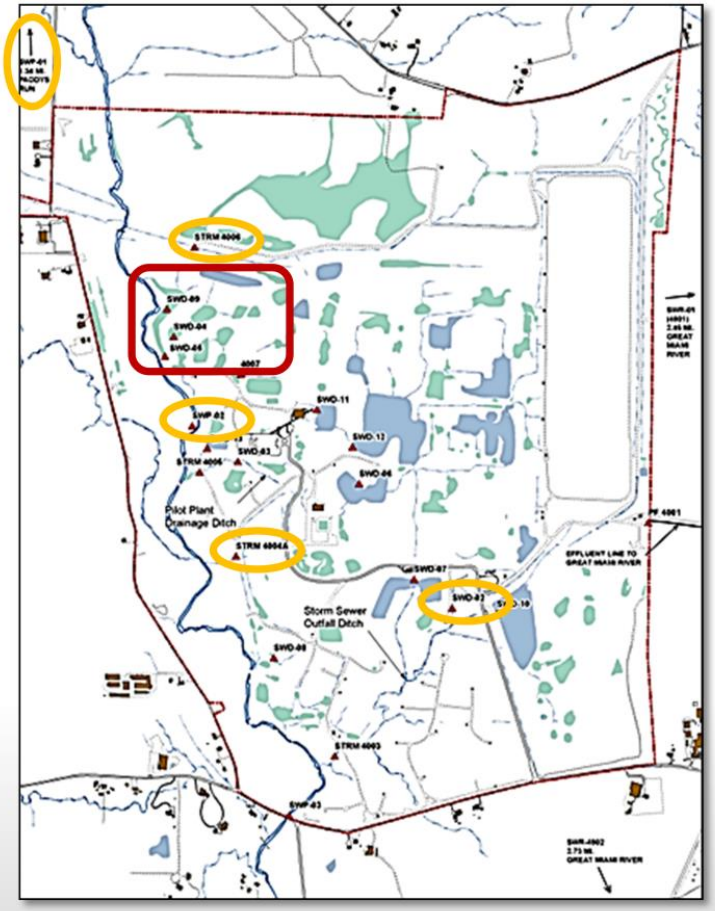
Routine environmental monitoring is conducted to ensure continued effectiveness of the site's cleanup. The 2016 monitoring regimen includes sampling groundwater, surface water, treated effluent, and direct radiation.



Years of data were evaluated and support changes to the environmental monitoring program. The revised program is described in the 2017 *Comprehensive Legacy Management and Institutional Controls Plan*.

Monitoring

Surface Water and Site Effluent



Stopped monitoring
SWD-05, SWD-09

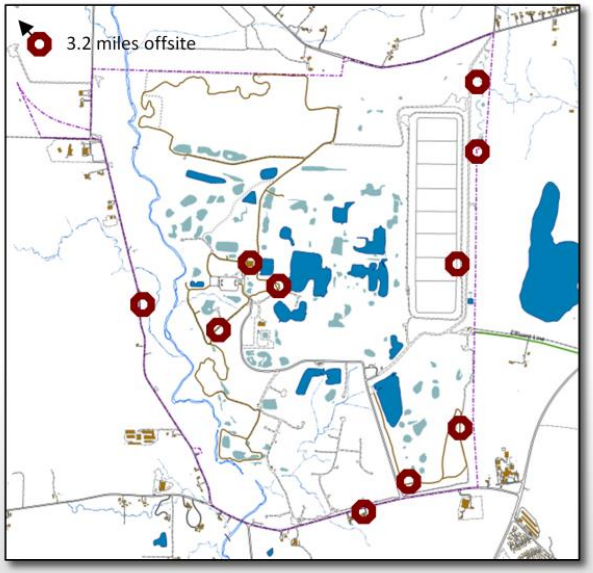
9034.10 10/17

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

Monitoring

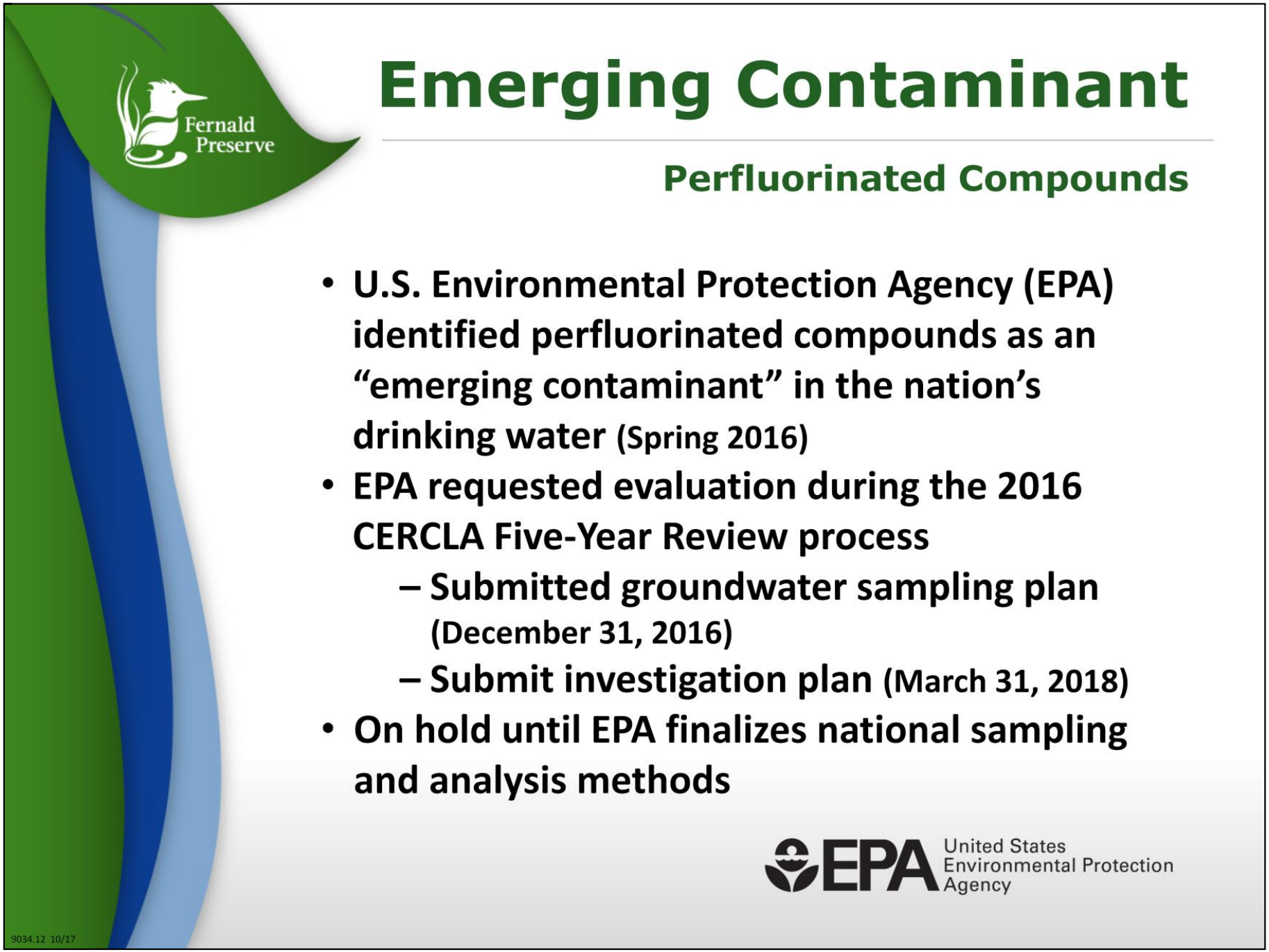
Dosimetry

- **On-property results were indistinguishable from off-property results**
- **Monitoring discontinued and dosimeters removed at the end of 2016**



9034.11 10/17

Dosimeter (direct radiation) monitoring results for 2016 are similar to historical results.



Perfluorinated compounds are emerging contaminants for the nation's drinking water, per the U.S. Environmental Protection Agency, and will be evaluated to confirm their presence or absence. The compounds are associated with foam firefighting agents that were once used in small quantities onsite at the Fire Training Facility.

Ecological Restoration

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

9034.13 10/17

Ecological restoration work includes maintenance, monitoring, and inspections.

Ecological Restoration

Restored-Area Maintenance

- Vegetation management
- Inspection follow-up

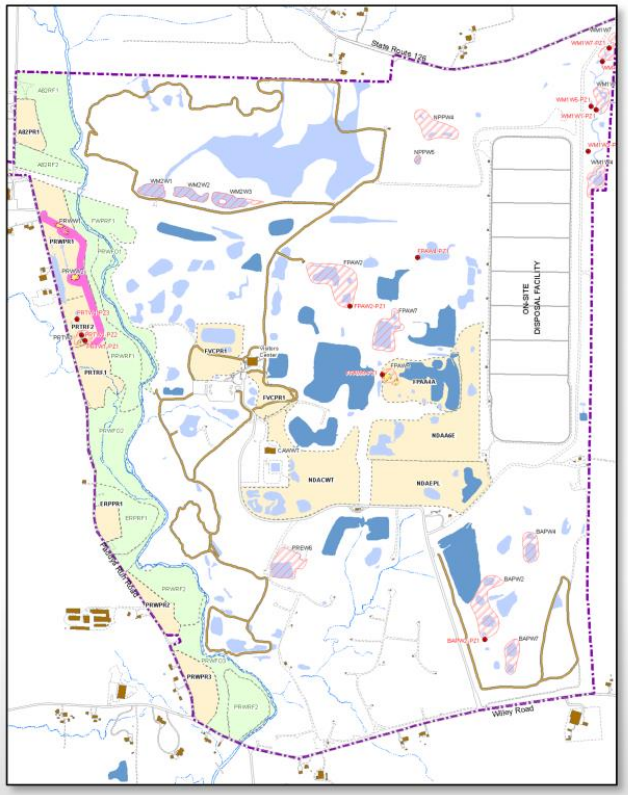
9034.14 10/17

Restored area maintenance includes vegetation management and follow up from site inspections.

Ecological Restoration

Monitoring

- Wetland mitigation
- Functional
- Implementation
- OSDF vegetation cover



9034.15 10/17

Monitoring programs help site personnel evaluate the status of ecologically restored areas at the site.

Ecological Restoration

Inspections

- Site
- On-Site Disposal Facility
- Trails

9034.16 10/17

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

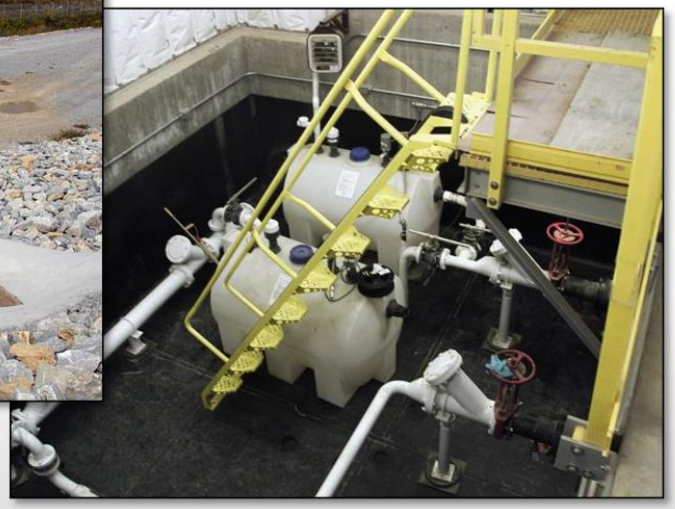
Ecological Restoration

Endangered Species and Cultural-Resources Surveys

9034.17 10/17

Endangered species and cultural resource surveys are conducted prior to field activities.

On-Site Disposal Facility

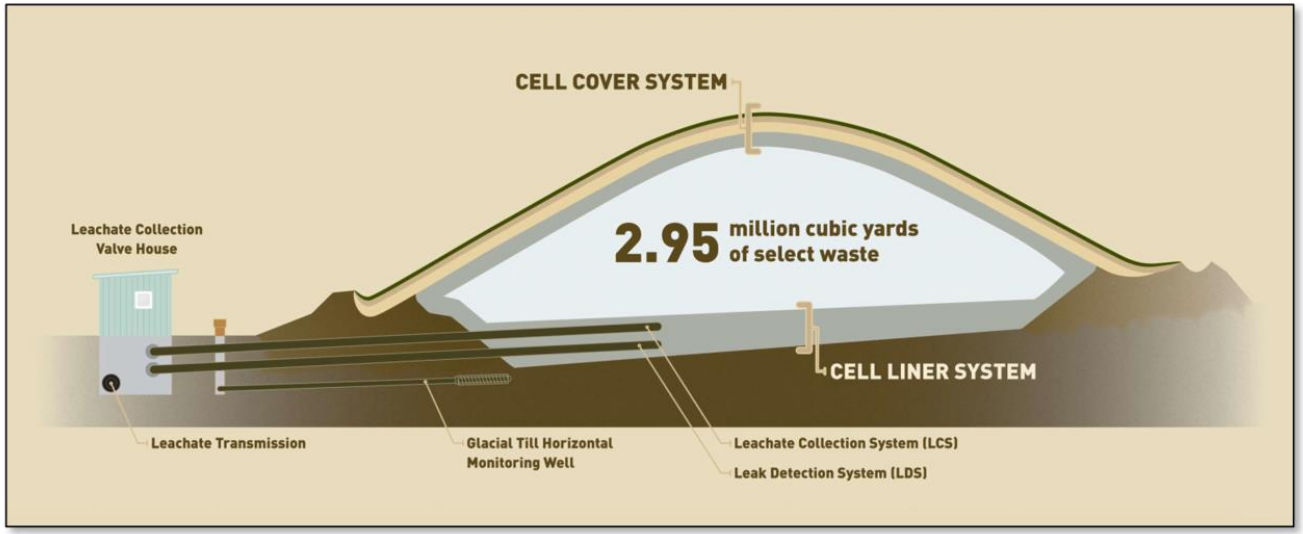


9034.18 10/17

The On-Site Disposal Facility is an engineered waste-storage area that holds 2.95 million cubic yards of waste that was generated as part of the site cleanup.

On-Site Disposal Facility

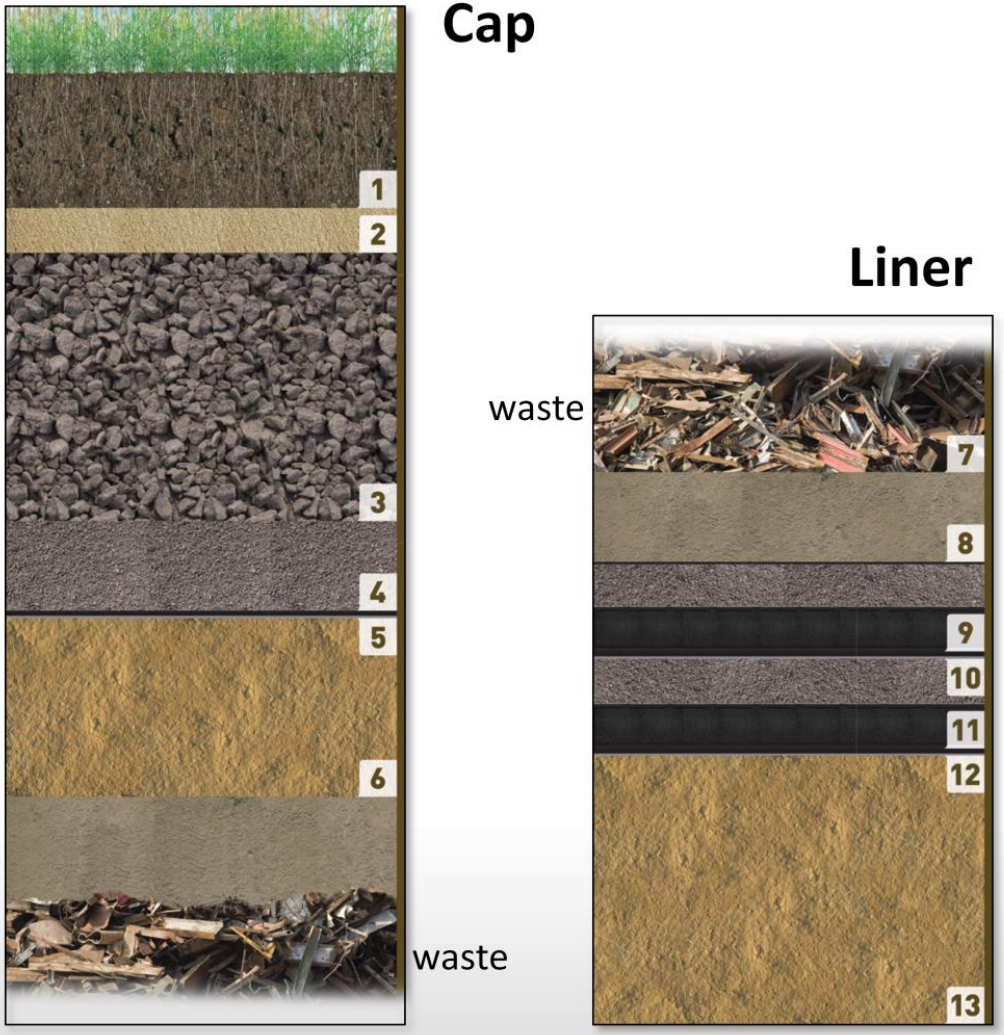
Leachate Collection System



9034.19 10/17

The On-Site Disposal Facility was constructed with an engineered liner and cover system that serves to isolate the entombed waste from the environment.

On-Site Disposal Facility

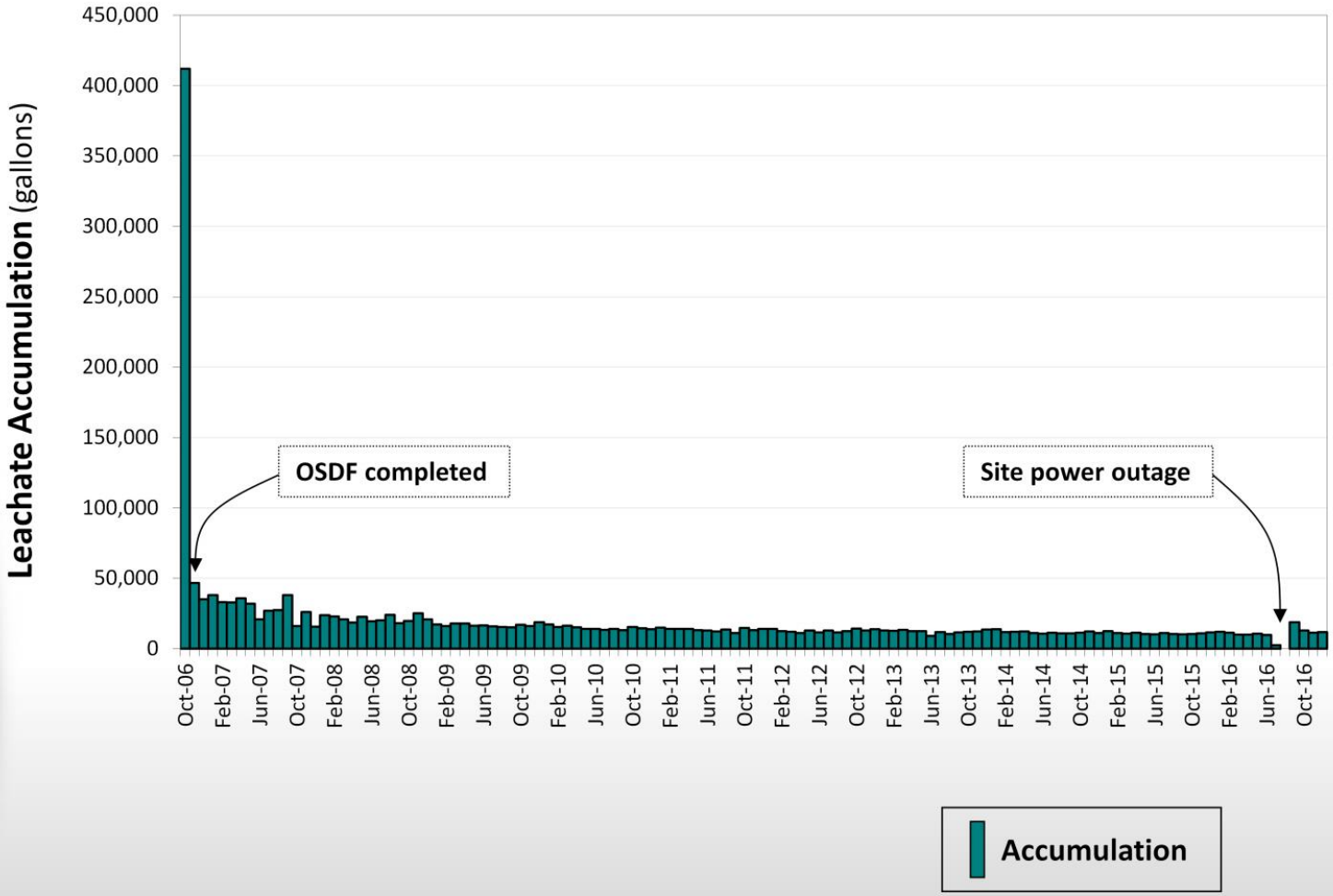


9034.20 10/17

Waste is safely encapsulated between a 9-foot cap and a 6-foot liner within the On-Site Disposal Facility.

On-Site Disposal Facility

Leachate Collection System – Monthly Flow

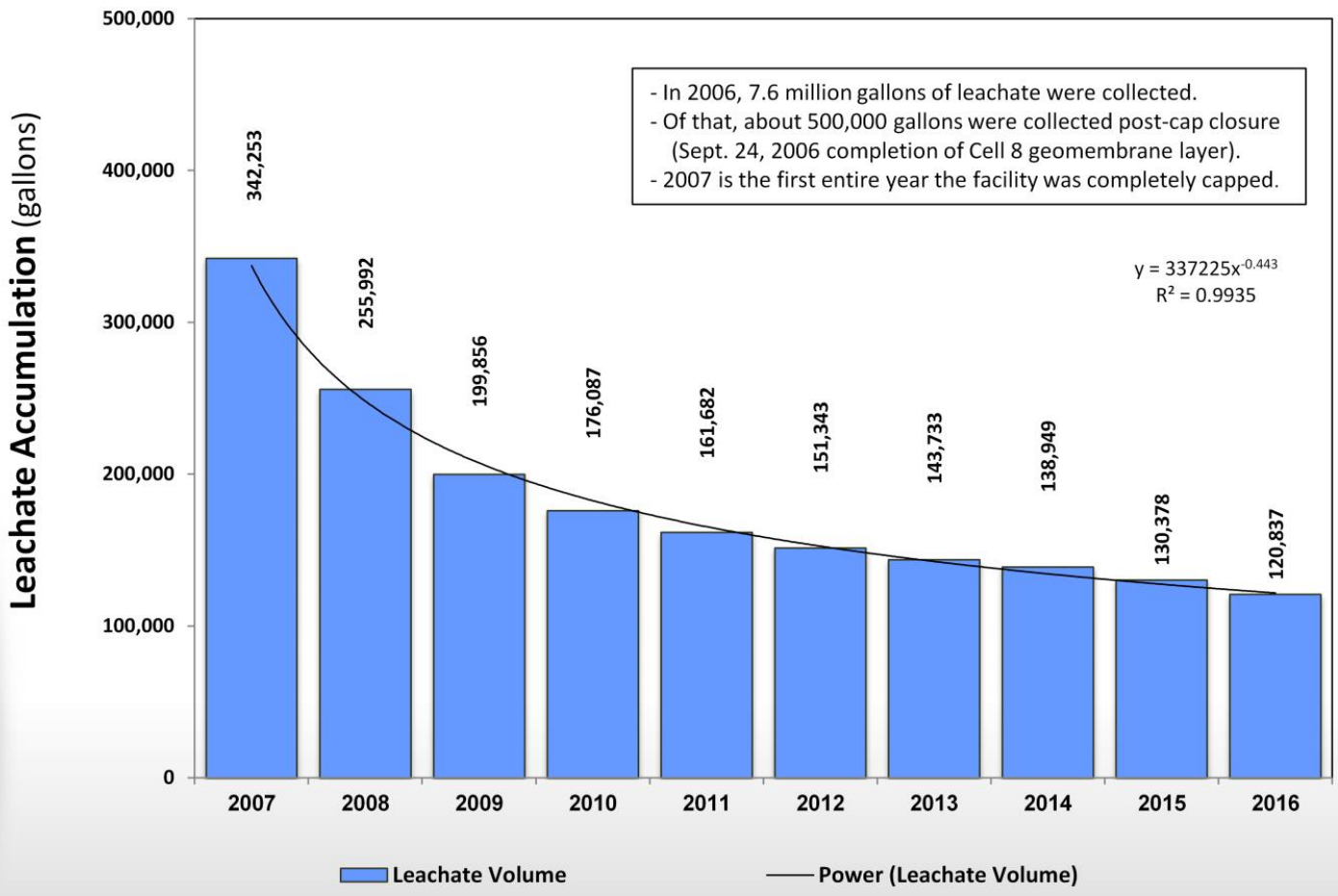


9034.21 10/17

Leachate is the moisture in the waste within the On-Site Disposal Facility and includes water sprayed on the waste to control dust and rainfall events prior to cell capping. 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.

On-Site Disposal Facility

Leachate Collection System – Annual Flow

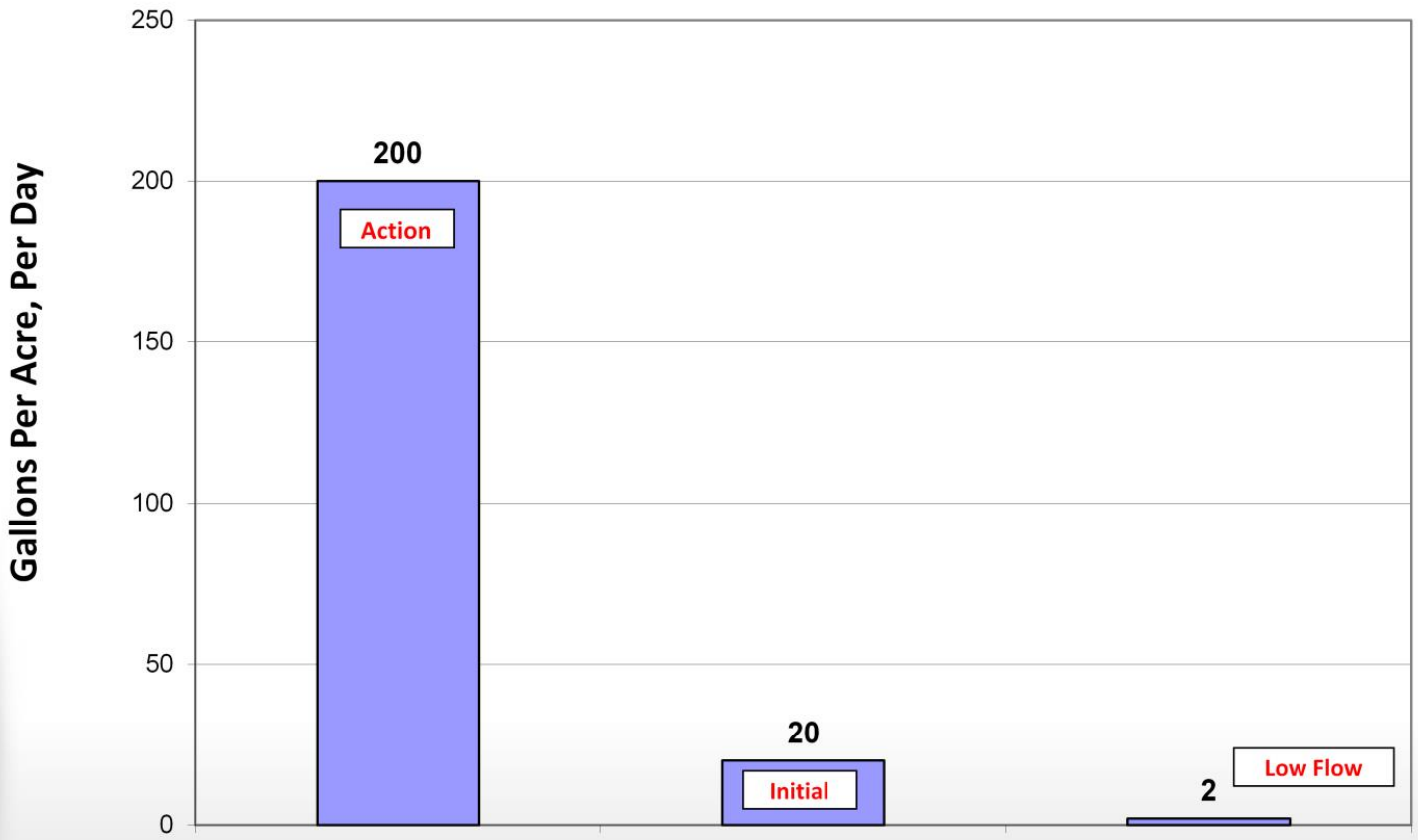


9034.22 10/17

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

Leakage Detection System – Flow Rates



9034.23 10/17

By design, monitoring flow from the Leak Detection System is one of the main indicators of whether or not the facility is operating as designed.

On-Site Disposal Facility

Low Flow Response Leakage Rate Basis

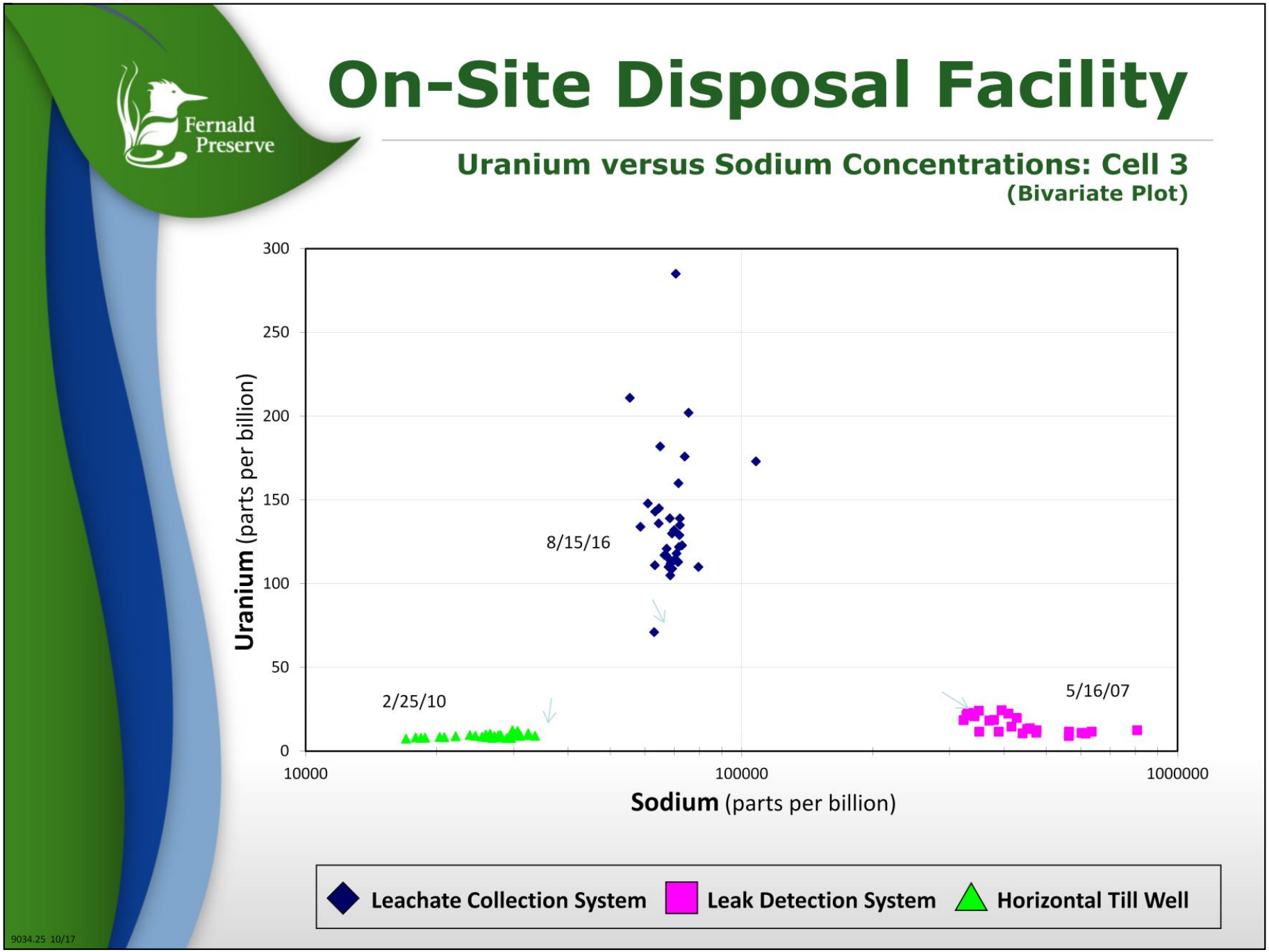
Year	Cell	Maximum Accumulation Rate (gpad)	Maximum Flow Rate (gpd)
2008	5	1.36	8.70
2009	5	0.48	3.10
2010	6	0.21	1.30
2011	8	0.38	3.50
2012	6	0.10	0.64
2013	6	0.07	0.40
2014	6	0.06	0.40
2015	6	0.23	1.50
2016	6	0.18	1.20

Action leakage rate	200 gpad	1,300–1,900 gpd
Initial response leakage rate	20 gpad	130–190 gpd
Low response leakage rate	2 gpad	13–19 gpd

gpad: gallons per acre per day
gpd: gallons per day

9034.24 10/17

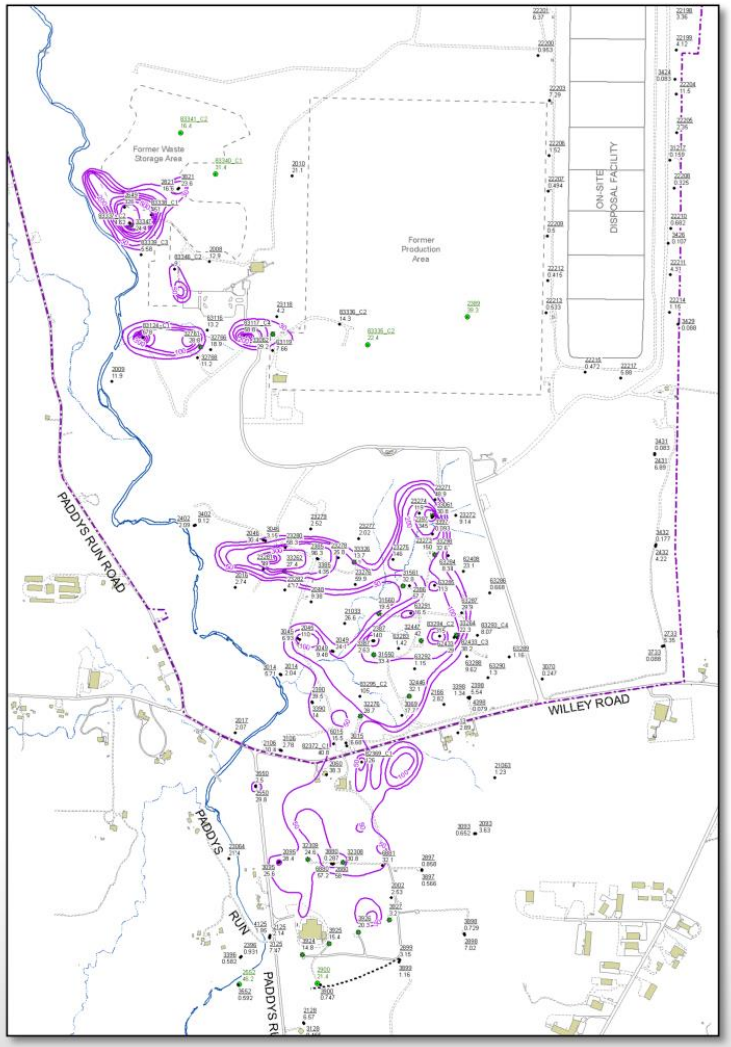
Leak Detection System accumulation rates in the disposal cells are so low that a new Low-Flow Response Leakage Rate of 2 gallons per acre per day has been defined. By comparison the Response Leakage Rate is 20 gallons per acre per day, and the Action Leakage Rate is 200 gallons per acre per day.



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.

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

Aquifer Restoration

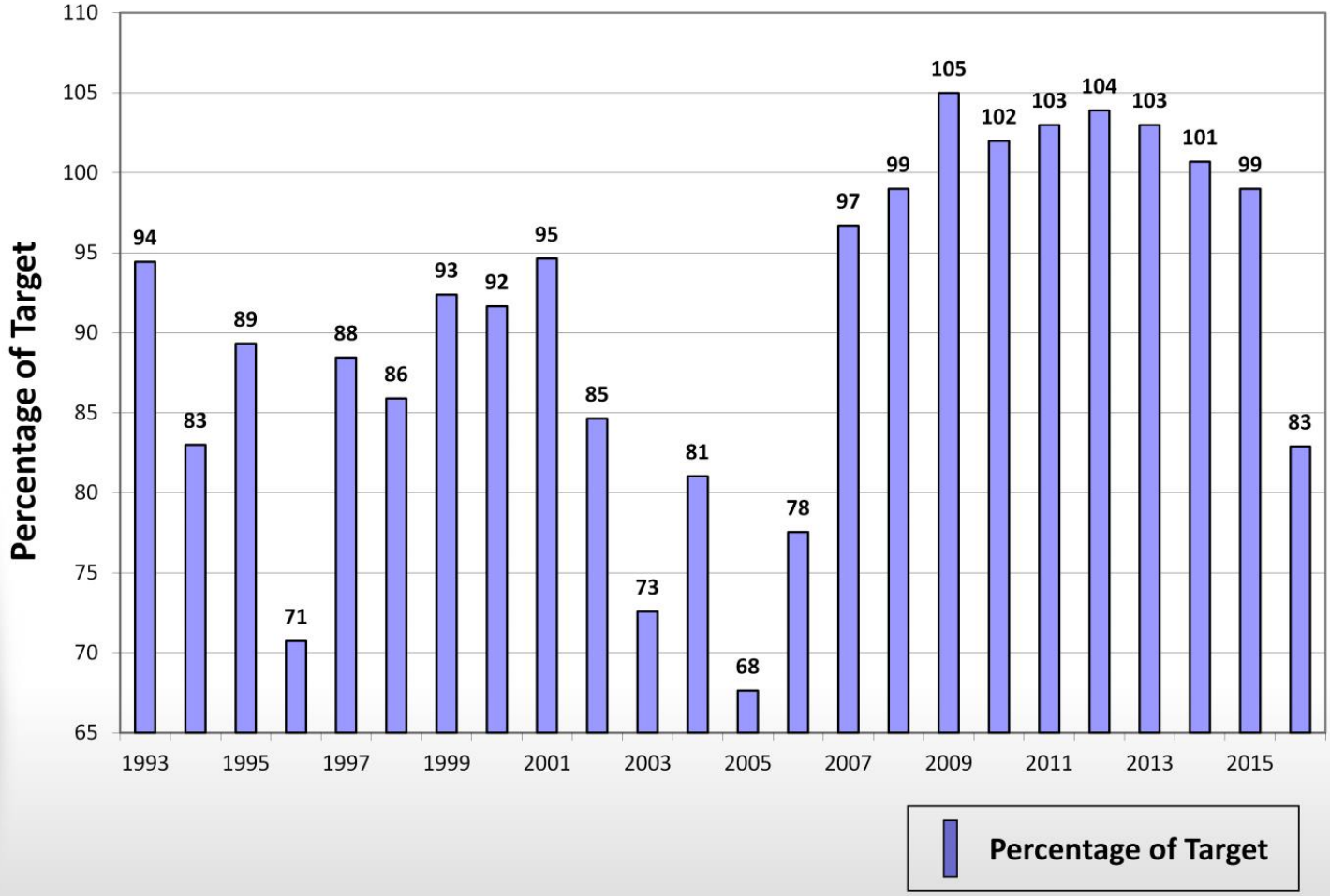


9034.27 10/17

Groundwater cleanup continues at the site.

Aquifer Restoration

Pumping: Percentage of Target Achieved

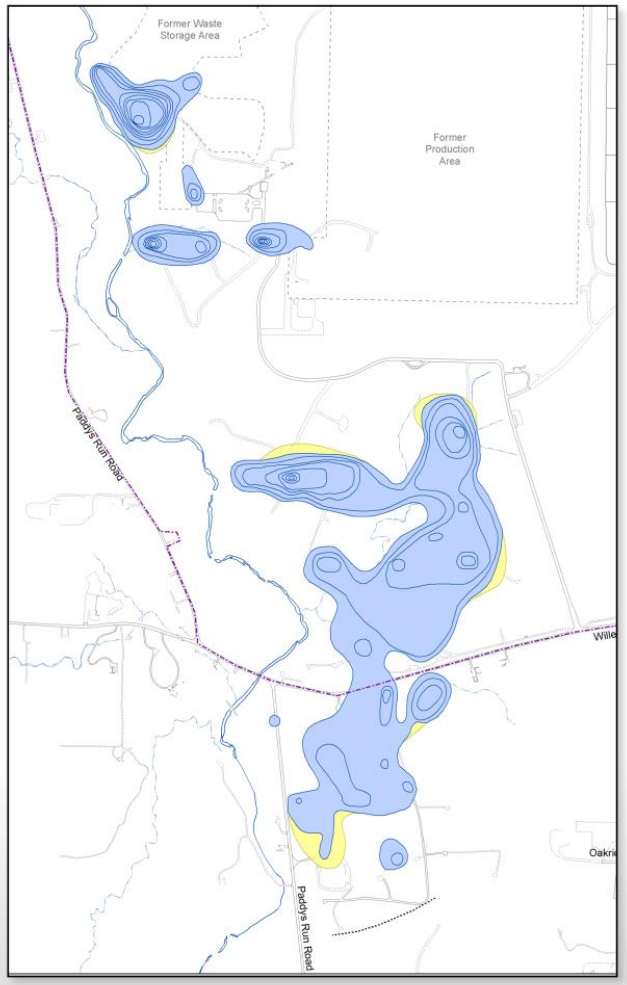


9034.28 10/17

Since site closure in 2006, operations have achieved at least 97 percent of the planned annual target pumping rates, with the exception of 2016 when the site experienced an unplanned well field shutdown in the summer due to site electrical problems.

Aquifer Restoration

Maximum Plume Acreage: 2015 and 2016



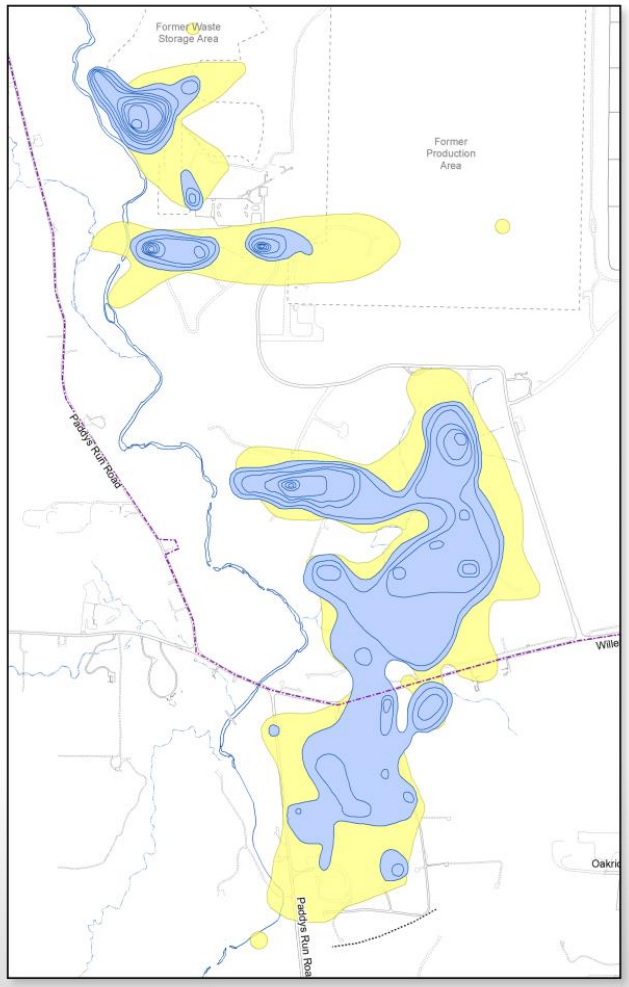
2015
2016

9034.29 10/17

The maximum uranium plume footprint interpretation decreased by 4.5 acres from 2015 to 2016.

Aquifer Restoration

Maximum Plume Acreage: 2006 and 2016



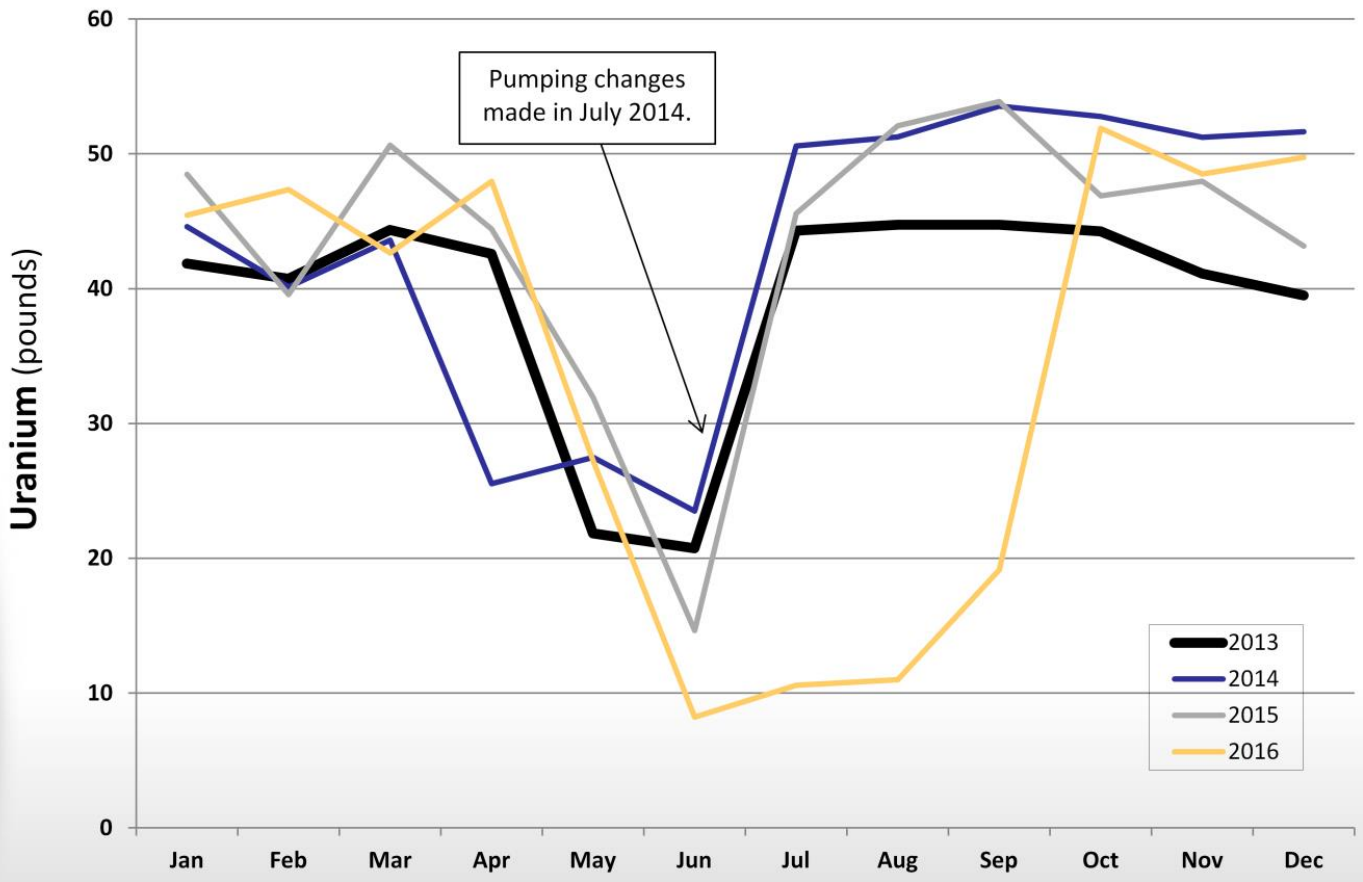
2006
2016

9034.30 10/17

Maximum size of uranium plume footprint interpretation was 189.3 acres in 2006.
Maximum size of uranium plume footprint interpretation was 105 acres in 2016.

Aquifer Restoration

Uranium Removed: 2014 Operational Change



9034.31 10/17

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

Aquifer Restoration

9034.32 10/17

Four wells were rehabilitated in 2016 to address iron plugging. Iron plugging decreases the pumping efficiency of the well.

Public Activities

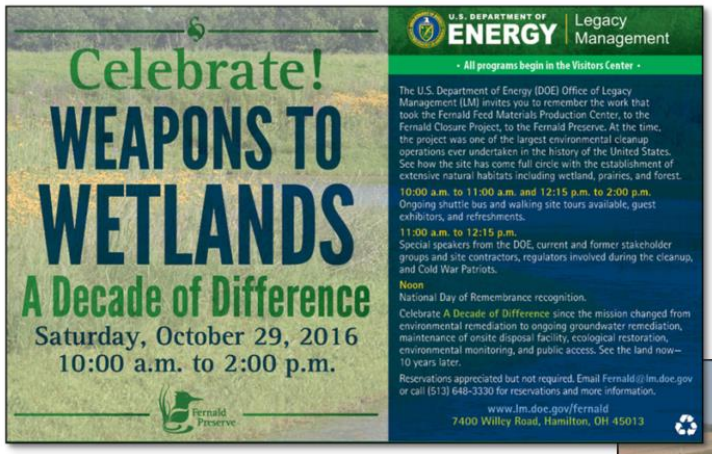
- Site use
- Events

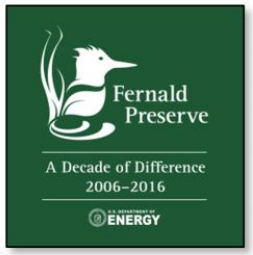
9034.33 10/17

Since the site opened to the public in 2008, schools, conservation organizations, former workers, hikers, and many others have used the site, the Visitors Center, and the reservable spaces.

Public Activities

A Decade of Difference





9034.34 10/17

Weapons to Wetlands: A Decade of Difference was celebrated on October 29, 2016. Ten years have passed since the land transitioned from environmental remediation to maintenance, restoration, and monitoring under the U.S. Department of Energy Office of Legacy Management.

Nature-at-Night captures community interest. A variety of public night hikes and other activities were offered throughout the year.

Public Activities

Bird Watching

- **Birders and photographers are frequent guests**






9034.36 10/17

Extensive grassland and wetland habitats at the site are recognized as regionally important birding areas that attract bird watchers and photographers.

Public Activities

Bobcats

Fernald Preserve

9034.37 10/17

Bobcats have raised kittens onsite for four consecutive years.

2017 Site Projects

Wastewater Treatment Optimization Project

- **Components/sub-projects**
  - **Design new system**
  - **Remove old system components**
  - **Fabricate and install new system components**

9034.38 10/17

The wastewater treatment optimization project is underway and anticipated to be completed in 2018.

2017 Site Projects

Wetland Mitigation Erosion Repairs

9034.39 10/17

Erosion repair was conducted in the Wetland Mitigation Project area.

2017 Site Projects

Trail Improvements

- **Paving**
  - **– Weapons-to-Wetlands/Visitors Center trails**
- **Weapons-to-Wetlands Grove**

9034.40 10/17

Paving of the Weapons-to-Wetlands and Visitors Centers trails will provide better public access to the trails.

2017 Site Projects

Extraction-Well Maintenance

9034.41 10/17

Extraction well maintenance is a substantial ongoing effort.

Collaboration Success

2017

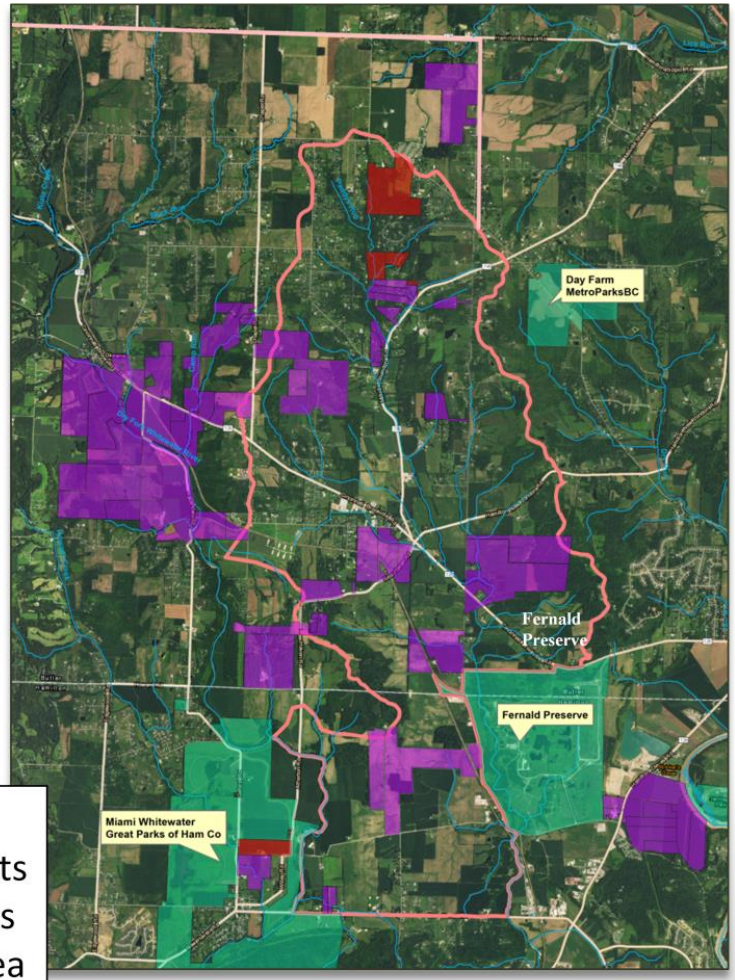
- **Envirothon sponsored by southwest Ohio Soil & Water Conservation Districts**
- **Unmanned aircraft system (drone)**
  - **U.S. Army Corps of Engineers research**
  - **Portsmouth Site OSDF video project**
- **Pike County visitors**

9034.42 10/17

DOE collaboration includes local organizations, other DOE sites, and government agencies.

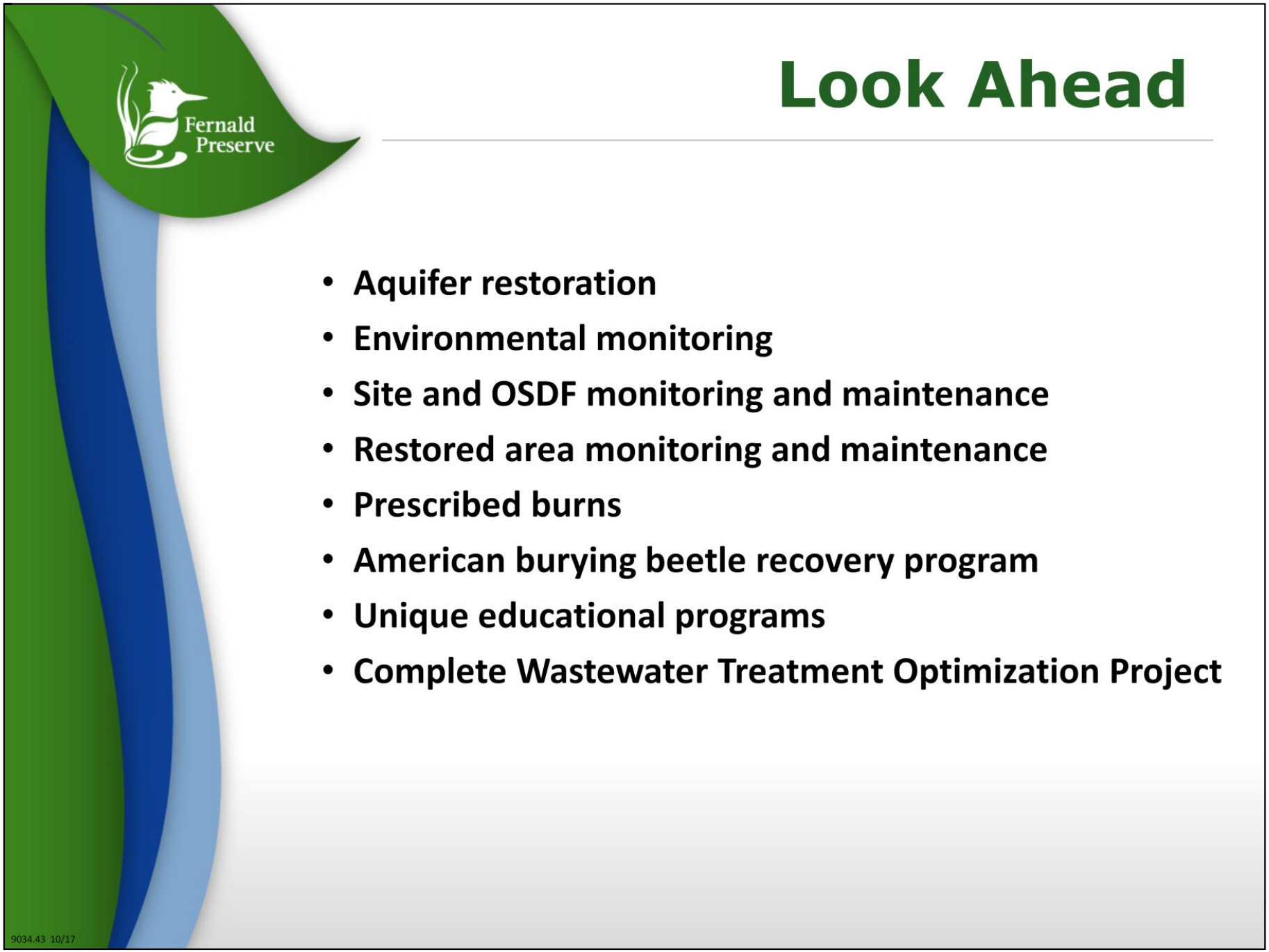
Natural Resource Trusteeship

September 2017



9034.43 10/17

The Natural Resource Trustees have partnered with the Three Valley Conservation Trust to purchase conservation and agriculture easements in the Paddys Run watershed and above the associated Buried Valley Aquifer.



Numerous work activities are planned for the coming year.

Questions and Contacts

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9034.45 10/17

The next annual Fernald Preserve community meeting will take place in fall 2018.