



Managed and Operated by
Consolidated Nuclear Security, LLC

Long Term Environmental Stewardship Public Meeting

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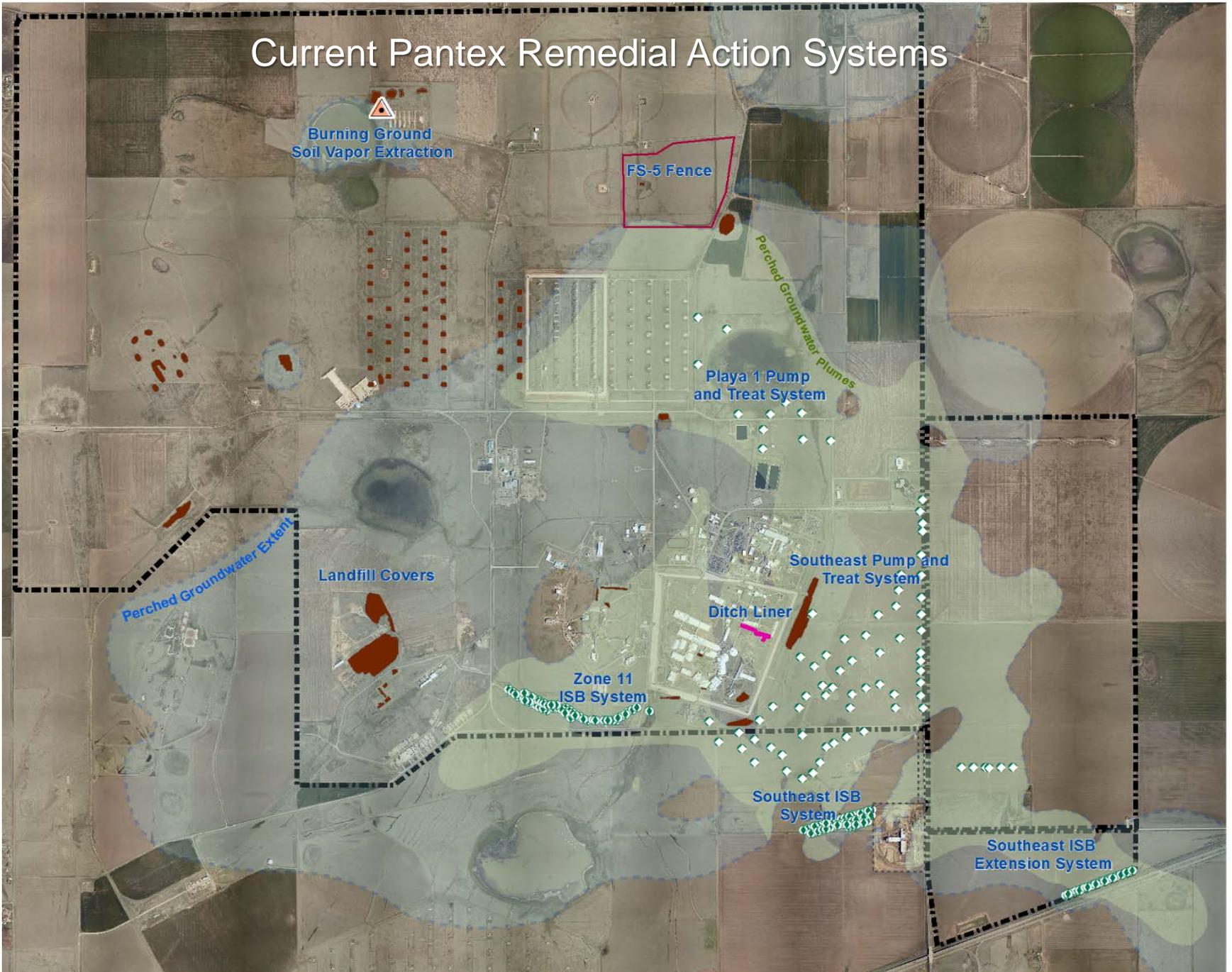
November 12, 2019

Meeting Focus

Remedial Action Status at Pantex

- **Cleanup Actions**
- **Accomplishments from July 2018 – June 2019**
- **Five-Year Review (FYR) Milestones Accomplishments**
- **Offsite Plume Actions**
- **Future O&M and Actions**

Current Pantex Remedial Action Systems



Environmental Cleanup Action Focus

- Groundwater Remedies
 - Pump and Treat
 - In Situ Bioremediation
- Soil Vapor Extraction
- Future Offsite Remediation System

Goals:

- Remove water from perched aquifer
- Remove/reduce contamination to cleanup levels
- Prevent contaminant movement to Ogallala Aquifer

Pump and Treat Systems

Accomplishments: (July 2018 - June 2019)

- 150.5 Mgal treated
- 557 lbs of contaminants removed
- Initiated extraction from pump and treat expansion wells east of FM 2373

Challenges:

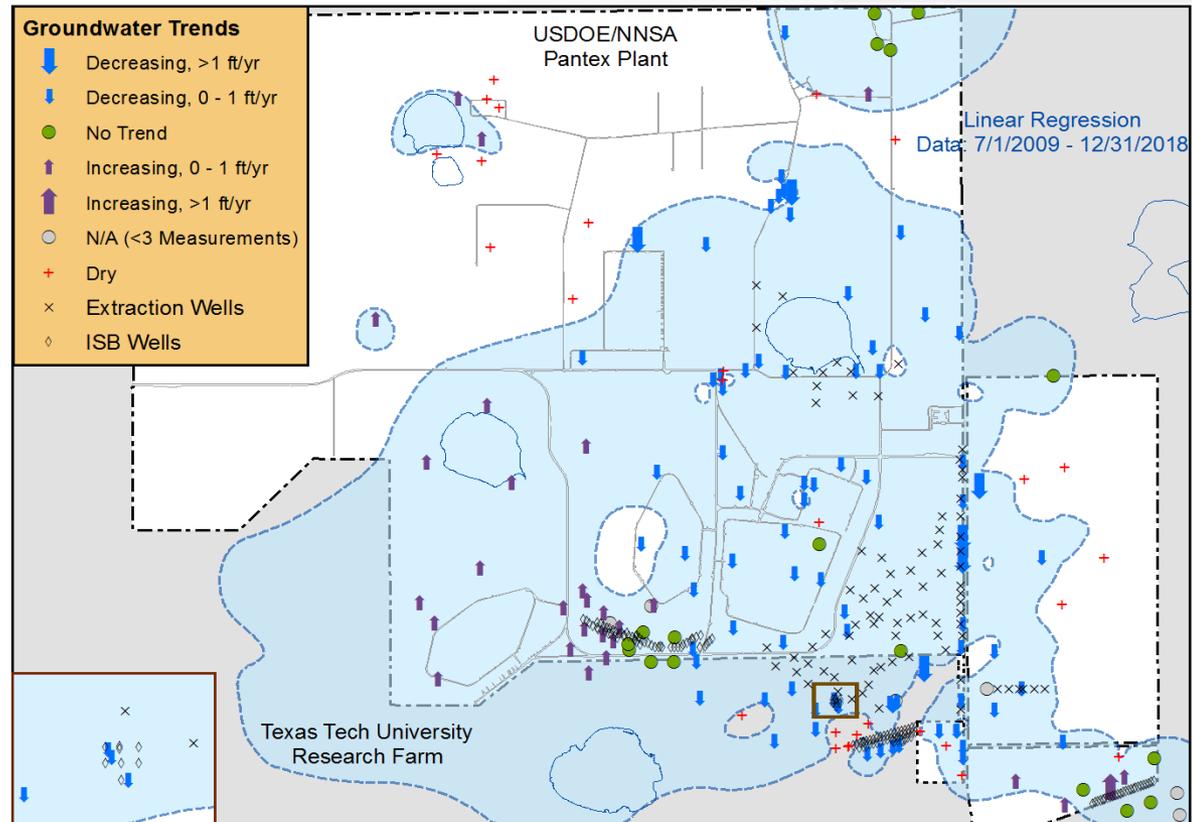
- Irrigation system is under repair.
- Other options for use of treated water

Current Path Forward:

- Repair on current irrigation system complete by 2020
- Irrigation east of FM 2373 – permit application has been submitted
- Inject in perched groundwater near Playa 2 (design phase initiated)

(Since startup)

- 2.8 billion gallons treated
- 1.7 billion gallons beneficially used
- Declining water levels in areas under the influence of the systems



SEPTS Expansion: Playa 2 Injection



Milestones:

- Complete design Dec 2019
- Begin construction in Jan 2020
- Complete construction Jul 2020

System Components:

- 3 injection wells, 150 gpm, subsurface conveyance line and booster pump (potential)
- SCADA system

In Situ Bioremediation (ISB) Systems

Accomplishments: (July 2018 - June 2019)

(1) Zone 11 ISB:

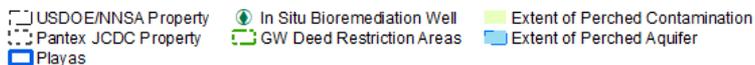
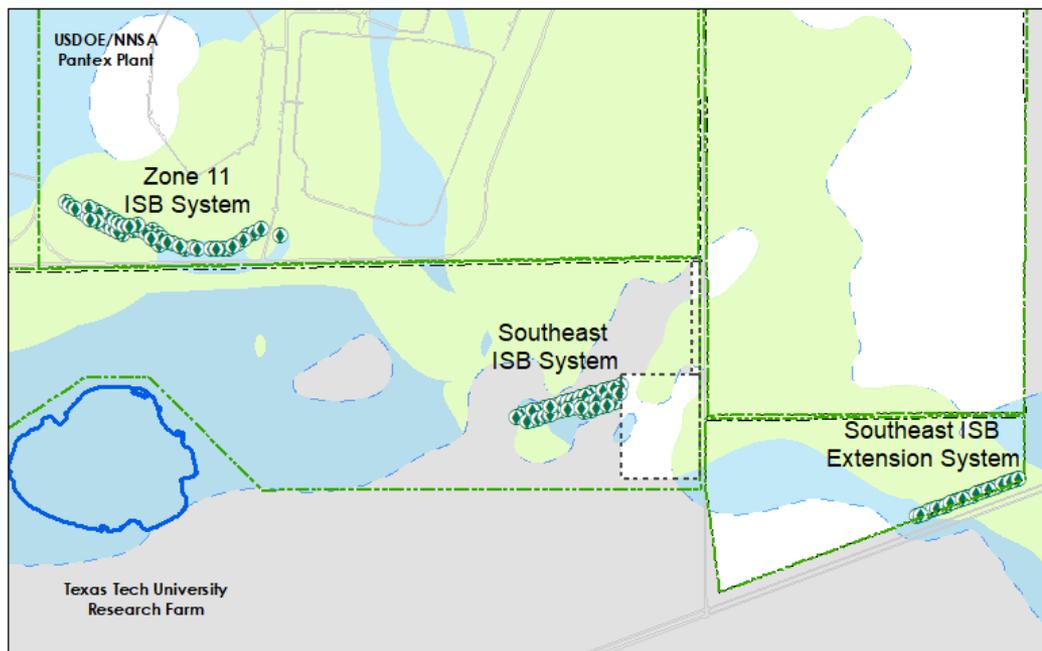
- Perchlorate and TCE reduced near or below groundwater protection standards (GWPS) at most wells

(2) Southeast ISB:

- High explosives reduced below groundwater protection standards (GWPS)*
- Hexavalent chromium reduced in all wells.

(3) Southeast Extension ISB:

- Injections completed in expansion area in Feb 2019 and Sept 2019



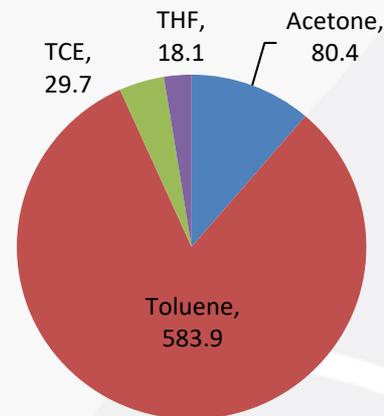
Corrective Actions:

- Dose response study
- Recent change in amendment has seen improvement in reduction of contaminants

Soil Vapor Extraction System

Accomplishments: (July 2018 – June 2019)

- Removed 712 lbs of volatile organic compounds



Total VOCs removed since startup:
20,820 lbs

Future Operation:

- Continue to evaluate declining source
- Plan to pulse system in 2020 to evaluate potential for future closure

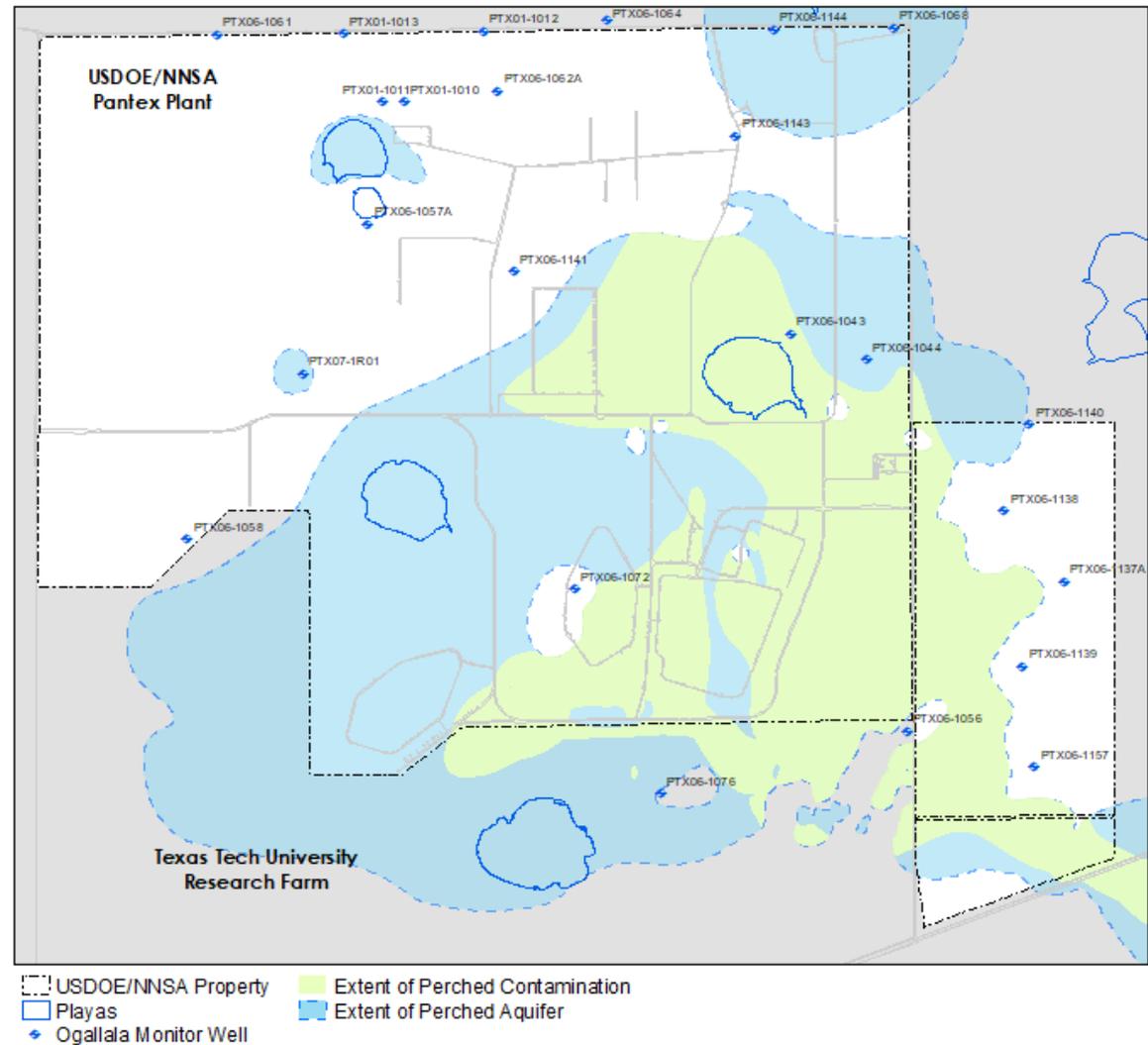
Ogallala Detection Monitoring

Accomplishments:

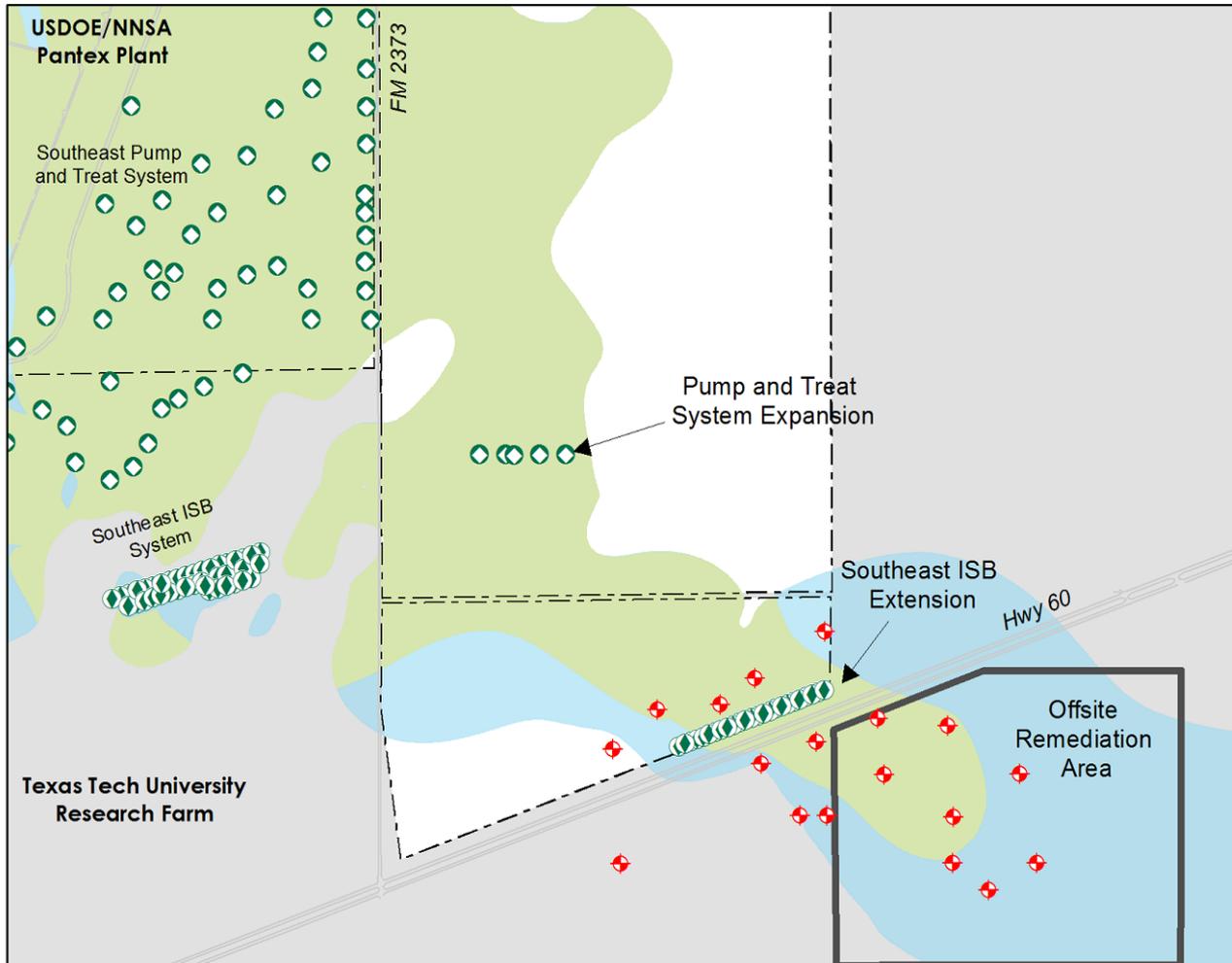
- 24 wells monitored
- All detected analytes below the Groundwater Protection Standard

Challenges:

- DNT4A, a high explosive, and 1,2-DCA, a volatile organic compound, continue to be detected below GWPS at PTX06-1056

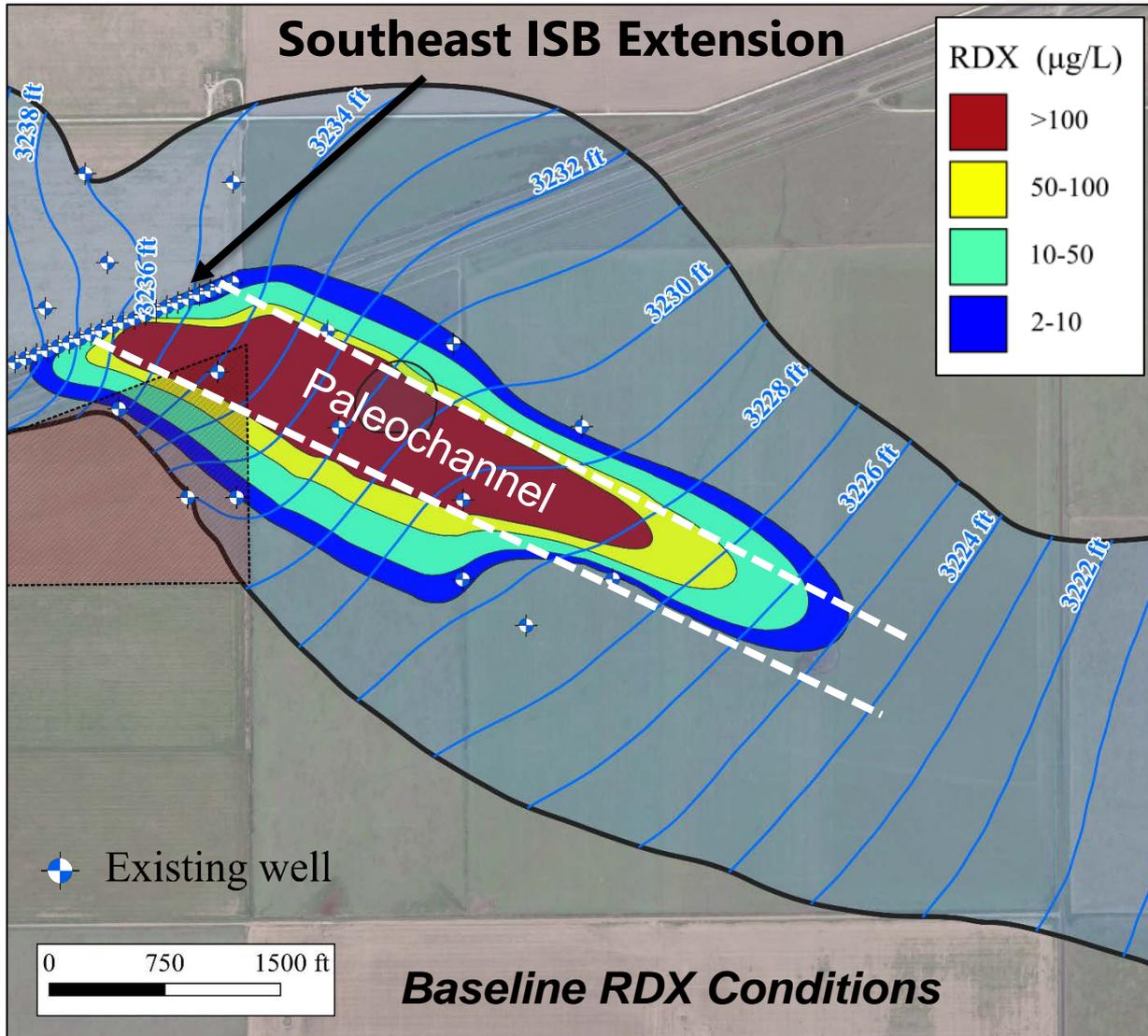


Offsite Remediation System



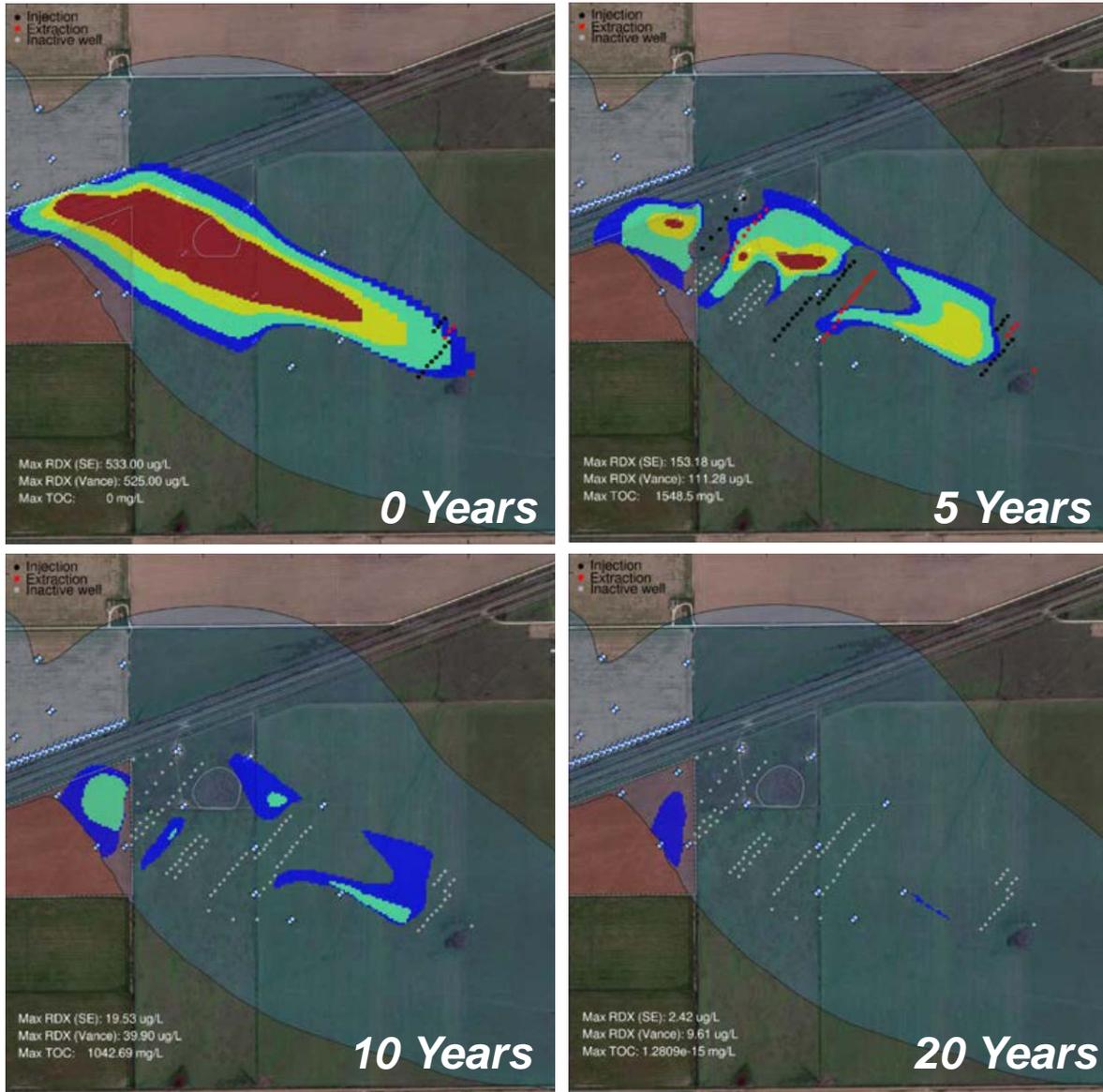
- Completed six monitoring wells to define extent of offsite contamination in Feb 2019
- Updated fate and transport models for system
 - Identified potential paleochannel
 - Performed assessment to determine options for cleanup of offsite contamination

Site Conditions



- Data from wells indicates the presence of a paleochannel
- Modeling used to determine the best approach for clean up
- Modeling results were optimized to right-size the remedy

Offsite Contamination Timeline



- **Phased installation approach**

- Beginning in 2020
- Expected completion in 2023

- **Key components**

- ISB injection wells
- Recirculation wells
- Mobile pump and treat unit

Future: Offsite Remediation System



- Installation of Phase 1
 - Injection/Extraction wells at toe of plume
 - Roads and pad
- Completion by Sept 2020

FYR Follow-Up Actions – 2019-2020

- **Address the perchlorate plume that is moving into the SEPTS well field**
 - Continue monitoring the plume expansion and the influent to the SEPTS
 - Existing resin can treat low levels of perchlorate
 - Evaluate the option for perchlorate treatment unit at the SEPTS, if needed
- **Address incomplete treatment of contaminants downgradient of the west end of the Southeast ISB, at well PTX06-1153**
 - Continue monitoring to evaluate water levels and contaminant trends
 - Will treat upgradient wells, by implementing dose response findings
 - Injecting molasses and increasing injection volume
- **Address minor deficiencies in landfill protective soil covers**
 - Completed repairs and O&M to Landfills 1 and 3
 - A long-term contract has been established to address minor deficiencies in the soil covers. Annual tasks are set up to address new findings
- **Address the TCE plume that extends west, outside of the Zone 11 ISB system**
 - Evaluated treatment options and will expand ISB treatment to the northwest

Questions

Reports and slides can be found at:

<http://pantex.energy.gov/mission/environment/environmental-cleanup-documents>

Remediation Summary Booklet – available here and on our website

Fact Sheets – available here and on our website