Update on the Taylor Creek ATS™ Facility and STA1W ATS™ Pilot Test and Design

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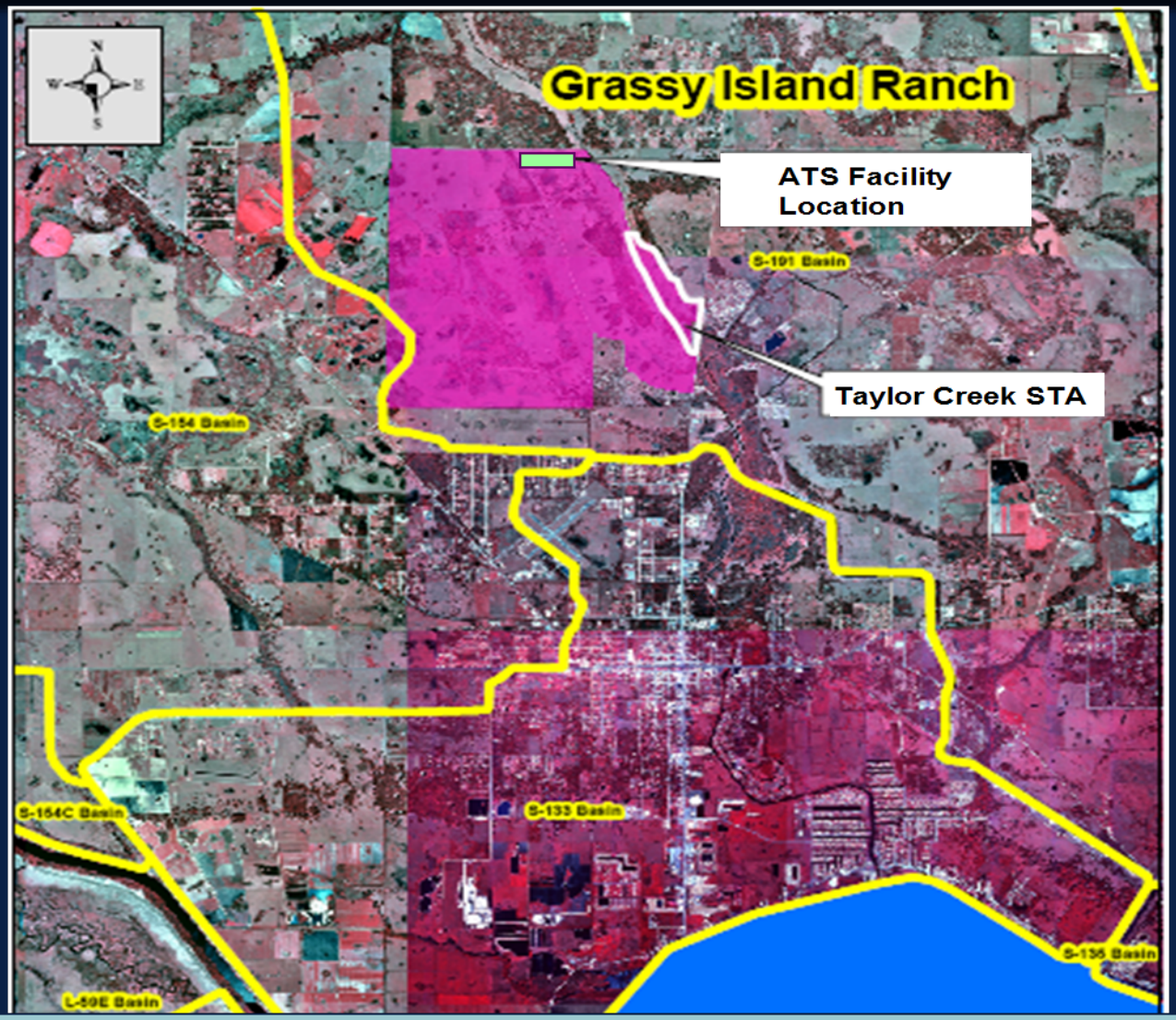
TC-ATS Project Location



Project Background

- Scaled-up demonstration of the ATS™ technology as a standalone treatment system
- Cost analysis using Supplemental Technologies Standard of Comparison (STSOC) provided basis for the project
- Facility designed to treat 15 million gallons of Taylor Creek water per day
- Projected TP load removal: 4,000 lbs/yr
- Operations commenced in January 2007

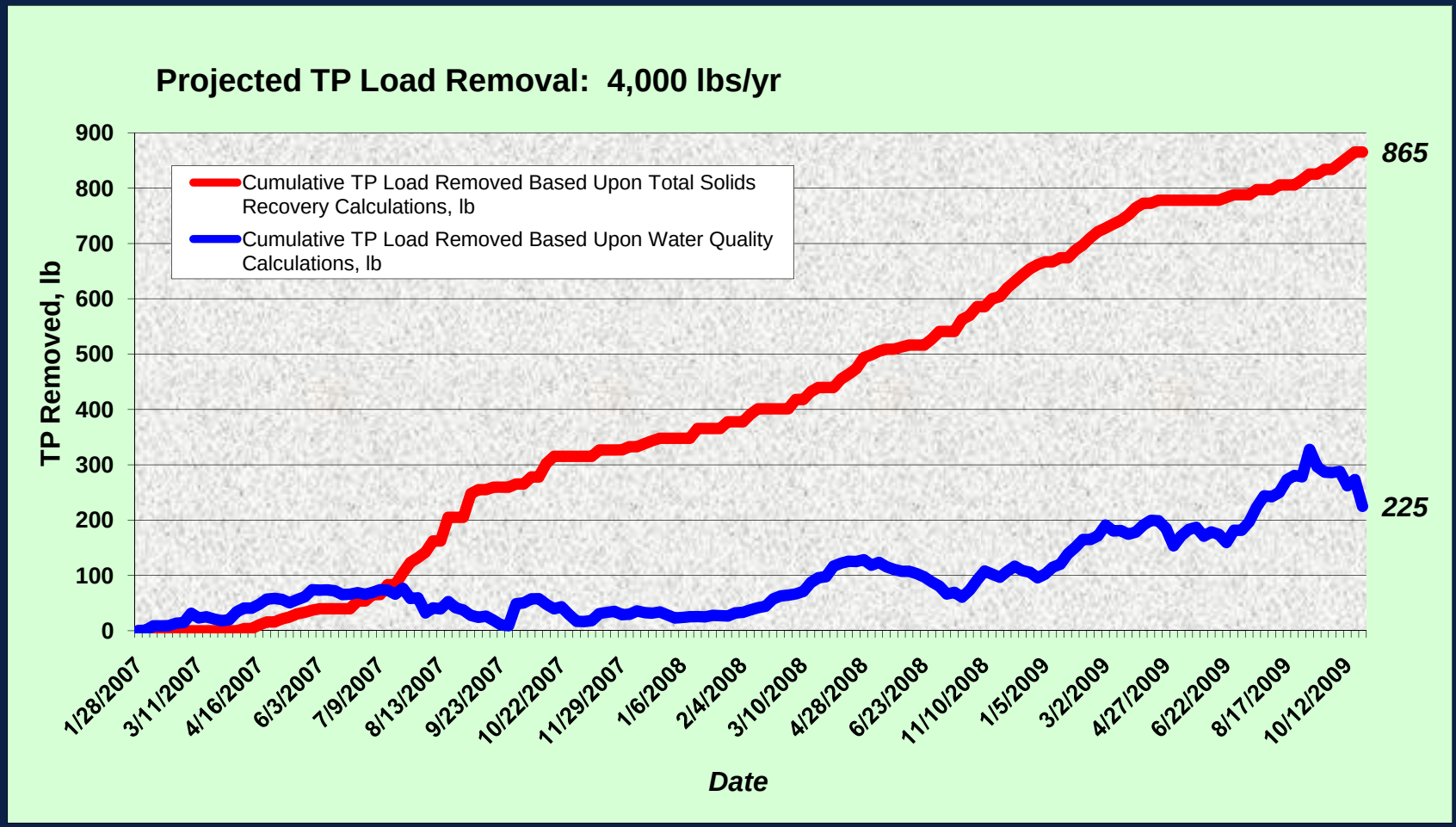
Project Funding

- **Design & Construction - $3.05 M**
- **Operations and Maintenance - $0.88 M**
  - **Year 1: $281 K**
  - **Year 2: $300 K**
  - **Year 3: $300 K**
- **Total Funding: $3.93 M**

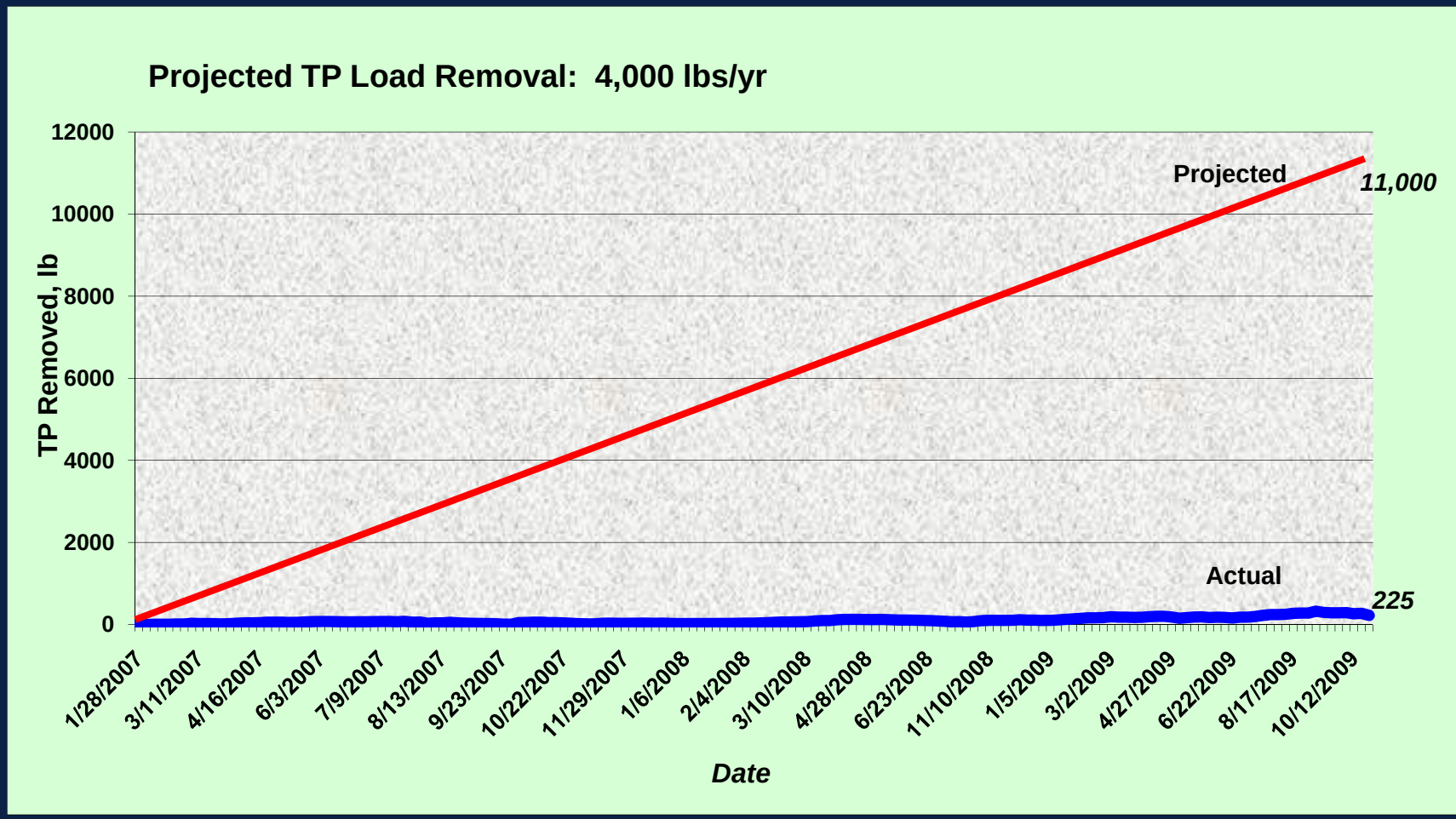
TC-ATS™ Operational Summary

- Began operation in January 2007
- Severe drought which ended in early July 2007 impacted startup operation and performance
- Algal die-offs in September 2007 and May 2008
- Investigations of operational parameters in July 2008 yielded no conclusive results
- O&M for the last two years focused on identification of algal toxicity in Taylor Creek water
- Unidentified organic compound as causative agent

TP Load Removal Summary
January '07 - October '09



TC-ATS™ System Performance (Actual vs. Projected)



Proposed for Yr 4 O&M (did not get GB approval)

- Proper identification of the compound negatively impacting system performance
- Comprehensive investigation of the source of toxicity within the watershed
- Evaluation of TC-ATS™ pre-treatment systems to eliminate or alleviate toxic effects of the compound
- A summary report of overall system performance for 4 years of operation and findings of all toxicity studies and investigations

Final Decision

- Governing Board elected not to amend EAA STA project
- Governing Board did not provide additional funding for Taylor Creek

STA1W ATS™ PILOT TEST AND DESIGN OF A FULL-SCALE FACILITY

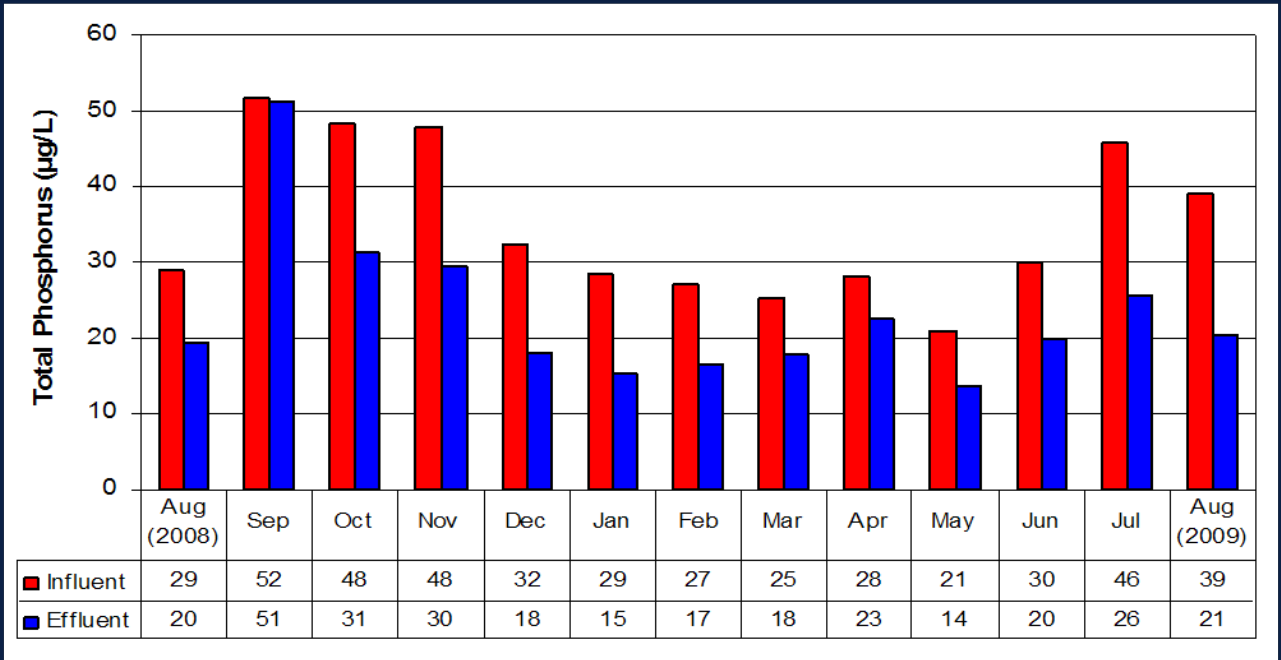
Project Goal and Scope

- **Demonstrate the technical potential of the ATS™ as a post-STA treatment system**
- **Project scope**
  - **12-month ATS™ pilot test**
  - **Design of a full-scale facility**

ATS™ Pilot Investigation

- Conducted along the effluent canal of STA1W
- Floway was 1200 ft long, 1 ft wide, sloped at 0.5%
- Operated at 20 gpm with and without microfiltration (Aug 2008-Aug 2009)

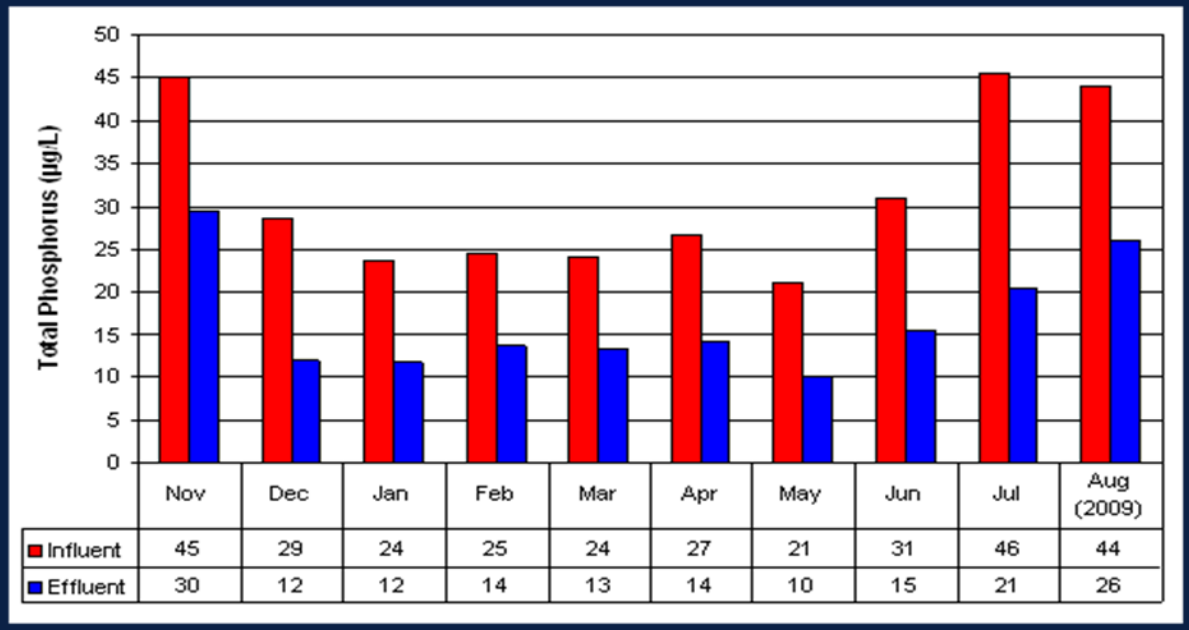
Pilot Test Results (without microfiltration)



	Aug (2008)	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug (2009)
Influent	29	52	48	48	32	29	27	25	28	21	30	46	39
Effluent	20	51	31	30	18	15	17	18	23	14	20	26	21

- **Mean influent and effluent TP concentrations for the study period were 35 and 24 µg/L, respectively**
- **TP concentration reduction was 33.3%**

Pilot Test Results (with microfiltration)



	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug (2009)
Influent	45	29	24	25	24	27	21	31	46	44
Effluent	30	12	12	14	13	14	10	15	21	26

- **Mean influent and effluent TP concentrations were 31 and 15 µg/L, respectively**
- **TP concentration reduction was 49.9%**
- **Microfiltration achieved an outflow TP concentration of 10 µg/L or less in 8% of the weekly samples**

Project Status

- Not moving forward with the design of a full-scale facility
- Contract ended on February 28, 2010

Thank You