

Colstrip Administrative Order on Consent Status Update and Annual Meeting

August 22nd, 2018



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Hydrogeologist

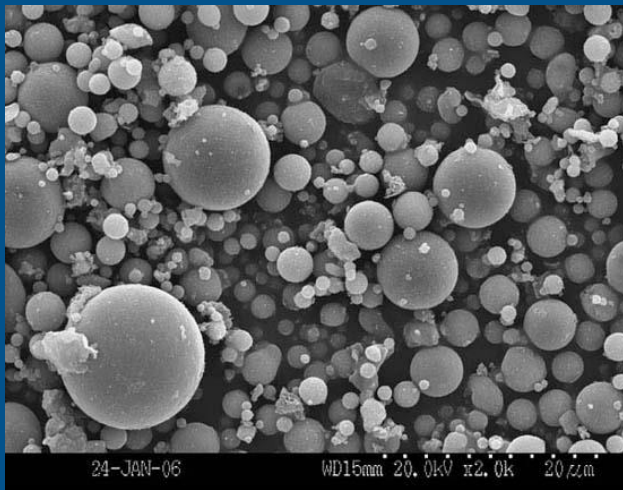
Waste Management & Remediation Division

Agenda

- Background/AOC Overview
- AOC Status Update:
 - Completed Reports
 - Under Revision
- Plant Site Remedy Evaluation Overview
- Cleanup Criteria & Risk Assessment Overview
- Closure Plans Update
- Financial Assurance Update
- What's Next?

What is coal ash?

- Coal Combustion Residual (CCR); byproduct of burned coal
- May contains traces of metals naturally present in the coal
- Regulated by Federal CCR Rule



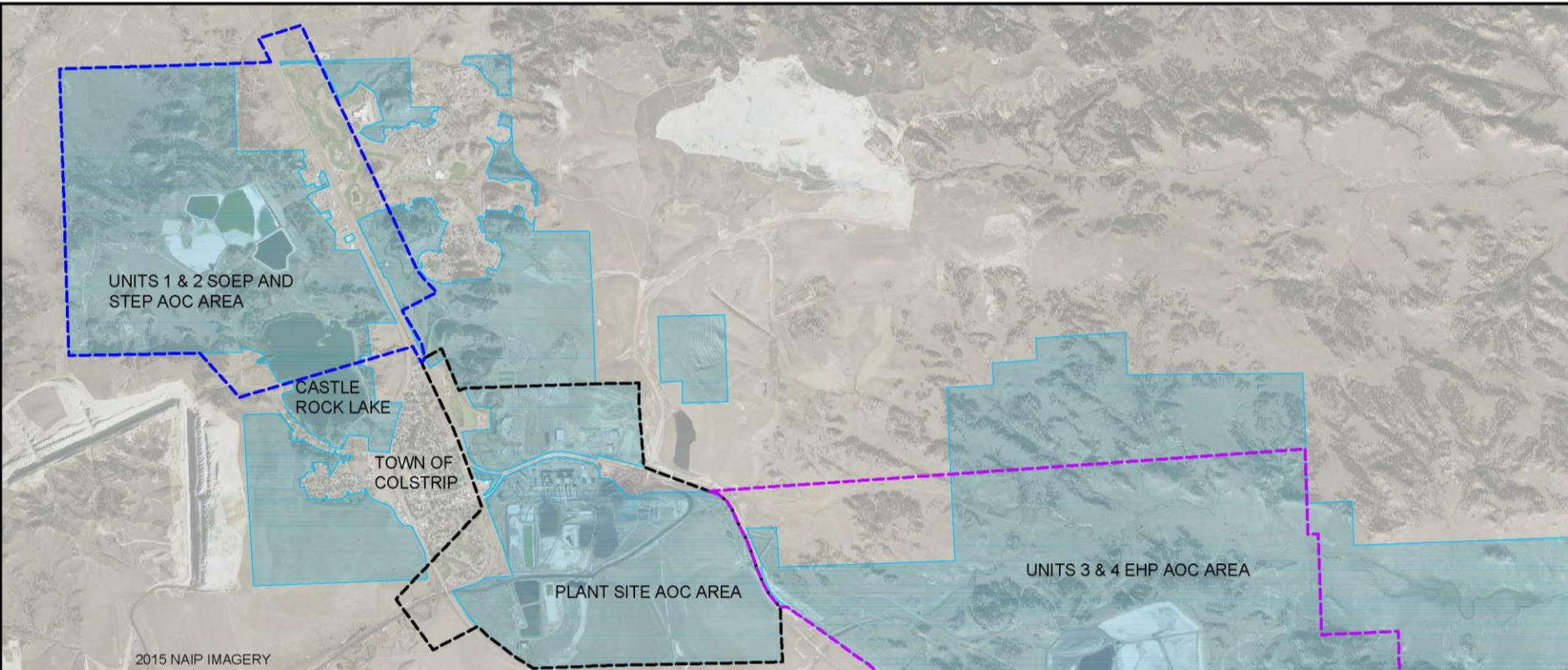
Fly ash (magnified 2000x)



Bottom ash (magnified 6000x)

Administrative Order on Consent (AOC)

- Addresses groundwater contamination from coal ash disposal ponds
- Divides site into 3 areas:
 - Plant Site
 - Units 1&2 Evaporation Ponds
 - Units 3&4 Effluent Holding Ponds



SCALE
(In Feet) 0 3,000

LEGEND

- PROPERTY BOUNDARY
- - - UNITS 1 & 2 SOEP AND STEP AOC AREA
- - - PLANT SITE AOC AREA
- - - UNITS 3 & 4 EHP AOC AREA

Revised May 8, 2017

COLSTRIP WASTEWATER AOC AREAS	FIGURE
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UPDATE TIME: 8:50 AM
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AOC Process

Site Characterization Report (describes the current condition of each area)



Cleanup Criteria & Risk Assessment Report (identifies constituents of interest, risk for exposure to contaminants, and cleanup criteria for contaminants)



Remedy Evaluation Report (evaluates remediation alternatives)



DEQ selects remedy

AOC Process (continued)

DEQ selects remedy



Remedial Design/Remedial Action Work Plan (implementing selected remedy)



Final Remedial Action Report (describes completed remedy)



Facility Closure Plan (long-term maintenance and monitoring)

Administrative Order On Consent (AOC) Status

DEQ-Approved Completed Reports

- All Site Characterization Reports
- Background Screening Level Report
- Revised Plant Site Remedy Evaluation Report has preliminary conditional approval
 - Public comment period from August 13th – September 12th

Administrative Order On Consent (AOC) Status

Drafts Currently Being Revised

- Plant Site Cleanup Criteria & Risk Assessment Report
- Units 1&2 Cleanup Criteria & Risk Assessment Report
- Units 1&2 Remedy Evaluation Report
- Closure Plans (all areas)



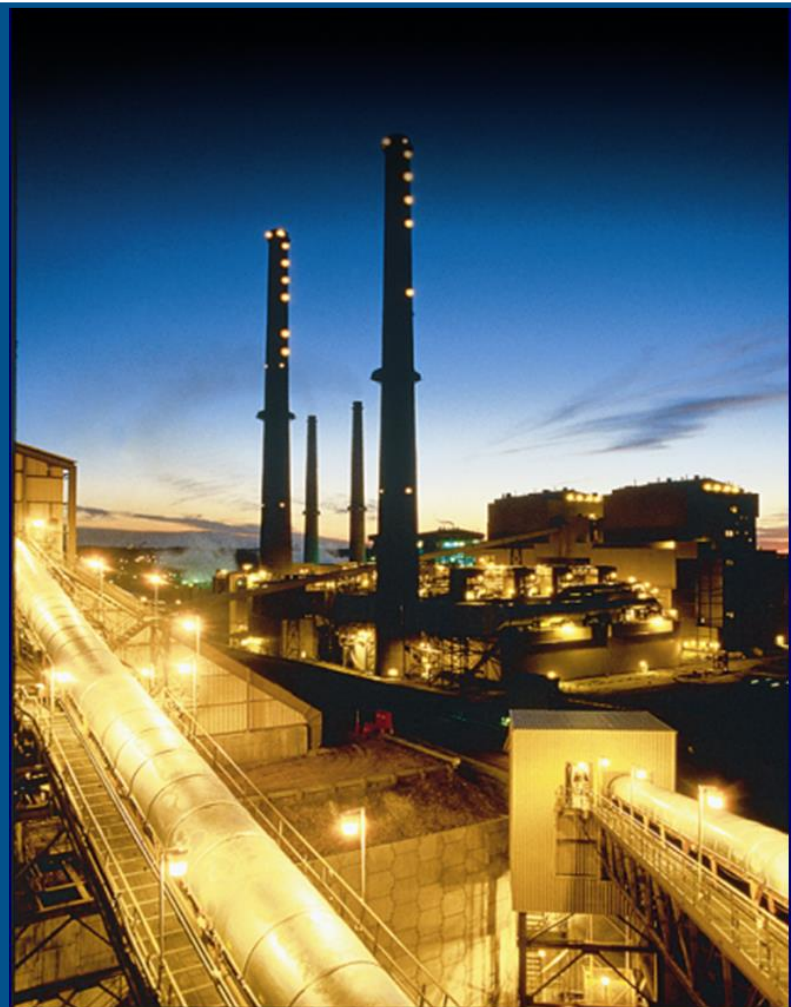
Cleanup Criteria & Risk Assessment Report Overview

- Plant Site and Units 1&2 Areas Reports nearing completion
- Data gap for radium
- Determine source
- Cleanup criteria for other constituents are approved



Constituents of Interest

- Boron
- Sulfate
- Cobalt
- Lithium
- Molybdenum
- Selenium
- Manganese
- Radium (more studies needed)

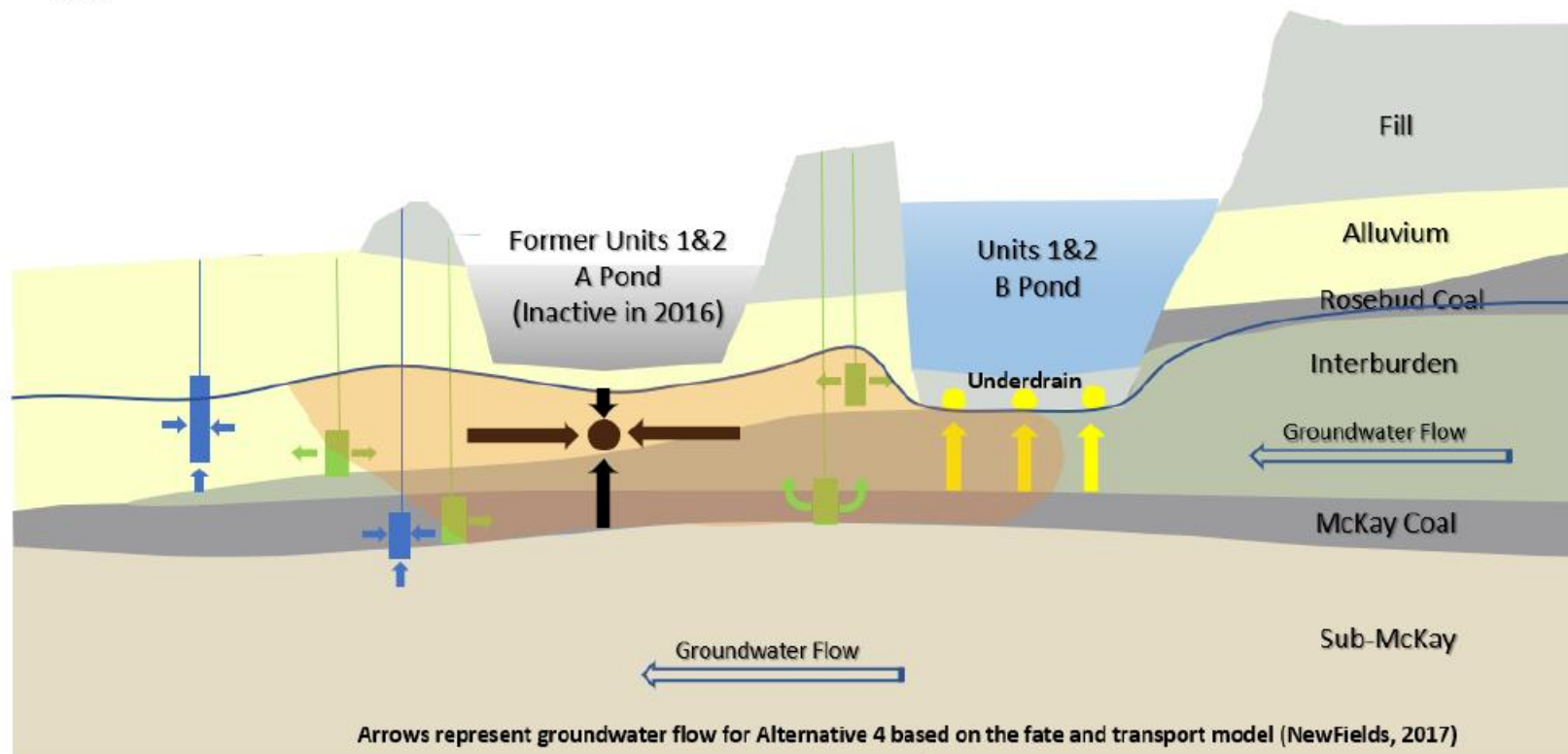


Plant Site Remedy Evaluation Report Overview

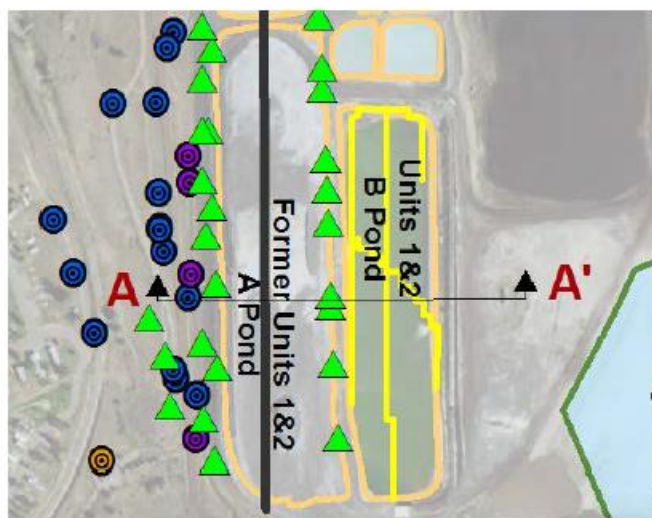
- Preliminary conditional approval
- Alternative consists of:
 - Additional groundwater capture
 - Clean water injection wells
 - Ash dewatering
 - Contingency plans
- Addresses groundwater impacts by 2049
- Mass of boron and sulfate decrease by 97% and 100% respectively

A
West

A'
East



Arrows represent groundwater flow for Alternative 4 based on the fate and transport model (NewFields, 2017)



- Vertical Capture Well
- Vertical Injection Well
- Horizontal Capture Well
- Groundwater with Boron above the Proposed Cleanup Criteria

- ▲ Vertical Injection Well
- Vertical Capture Well Conversion to Injection Well
- Vertical Capture Well with Increased Pumping Rates
- Vertical Capture Well with No Changes in Pumping Rates
- Horizontal Extraction Well

Not Scaled

Cross Section Showing Conceptual Injection and Capture Systems Beneath Former Units 1 & 2 A Pond
Talen Montana
Colstrip, Montana

Geosyntec
consultants

Figure

ES-1

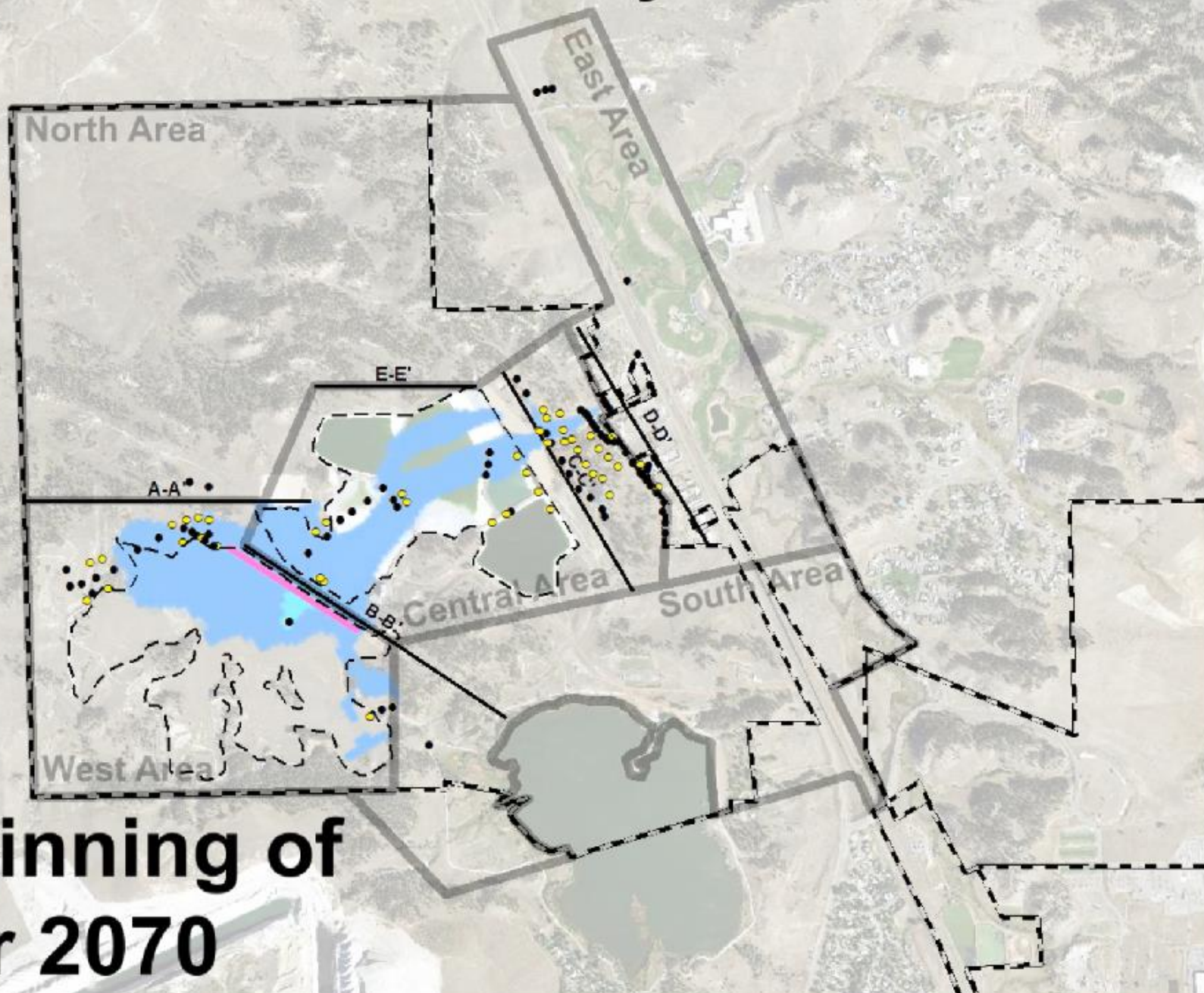
Columbia, Maryland

June 2018

Units 1&2 Remedy Evaluation Report Overview

- First draft submitted May 4, 2018
- Alternative consists of:
 - Additional groundwater capture
 - Clean water injection wells
 - Contingency plans
- DEQ did not approve the report
- Selected alternative did not achieve cleanup criteria by target date (2049)

Boron Alternative 4 - Layer 4



**Beginning of
Year 2070**

Closure Plans Overview



- Plans required additional details
- Talen responded to comments on August 13th
- Draft final plans will be submitted by August 31st

Financial Assurance Status

- Three phases of financial assurance
- Talen has submitted Phase I
- Phase II is required upon DEQ approval of Remedy Evaluation Reports
- Phase III is required upon DEQ approval of Closure Plans

What's Next?

- Revised Closure Plans will be submitted by August 31, 2018
- Units 3&4 Cleanup Criteria & Risk Assessment will be submitted by September 21, 2018
- Units 3&4 Remedy Evaluation Report will be submitted in November 2018



Questions?

Public comments can be submitted to:

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