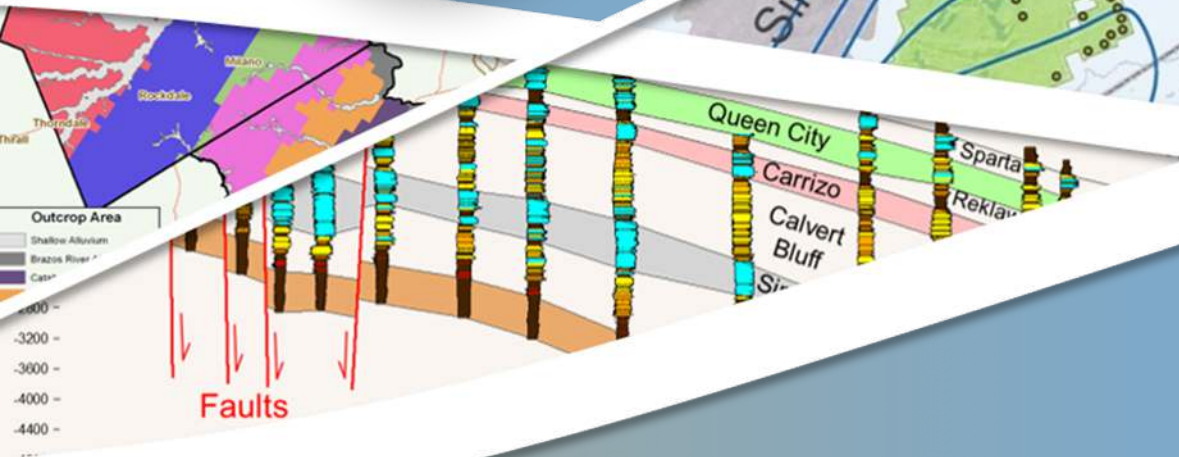


Excerpts from Presentation to DFC Committee by Intera March 5, 2019

Presented To:



Presented By:

Steve Young
Jevon Harding
Tingting Yan



March 5, 2019

Outline

- Potential for land subsidence (Item 5)
- Possible contamination of groundwater resources due to deposits of coal ash (Item 7)
- Progress report on hydrologic studies (Item 6)
 - Predictive Simulations using Updated GAM
 - Aquifer Storage and Recovery
 - Surface Water - Groundwater Interaction
 - Update of Stratigraphy/Structure/Water Quality

AX Coal Ash Landfill

- AX Landfill is in Milam County discussed in recent EIP report
- EIP report covers 16 Texas Coal-fired Power Plants
- Drinking Water Standards exceeded at Sandow Facility

Groundwater Contamination from Texas Coal Ash Dumps

New Data Reveal Pollution Leaking from 100 Percent of Coal Power Plants With Available Records

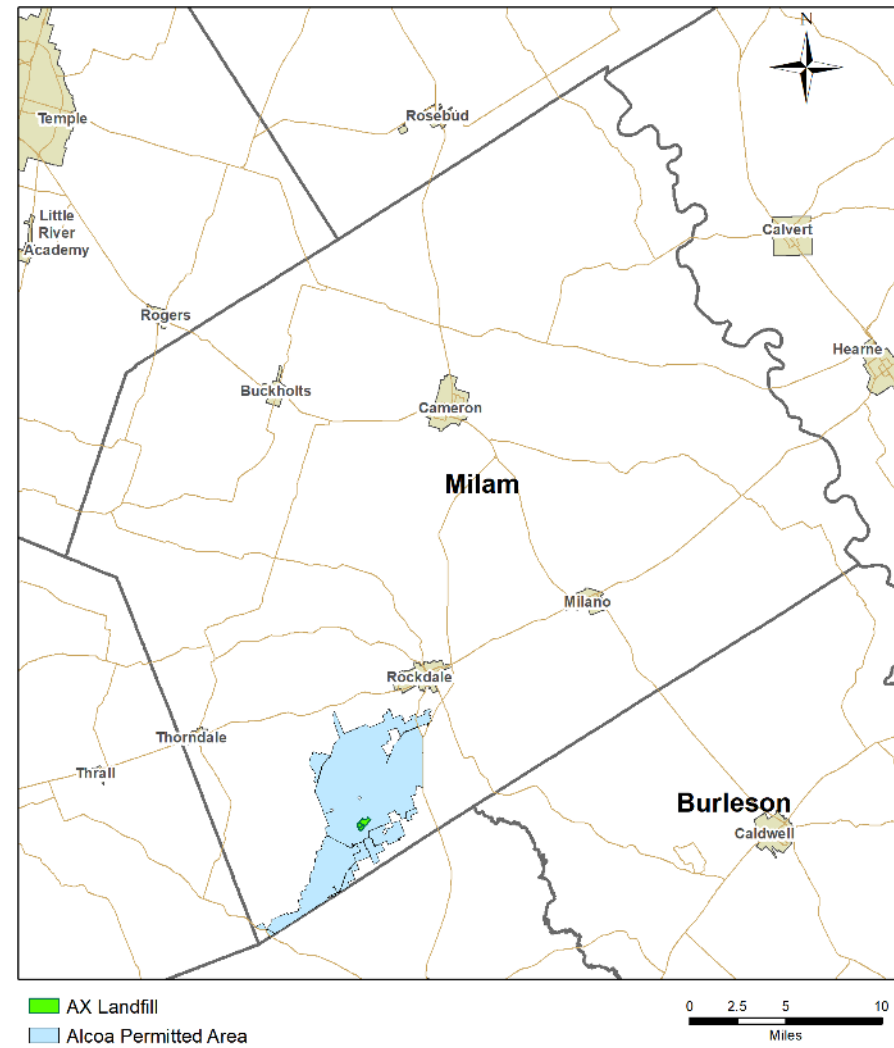


JANUARY 17, 2019



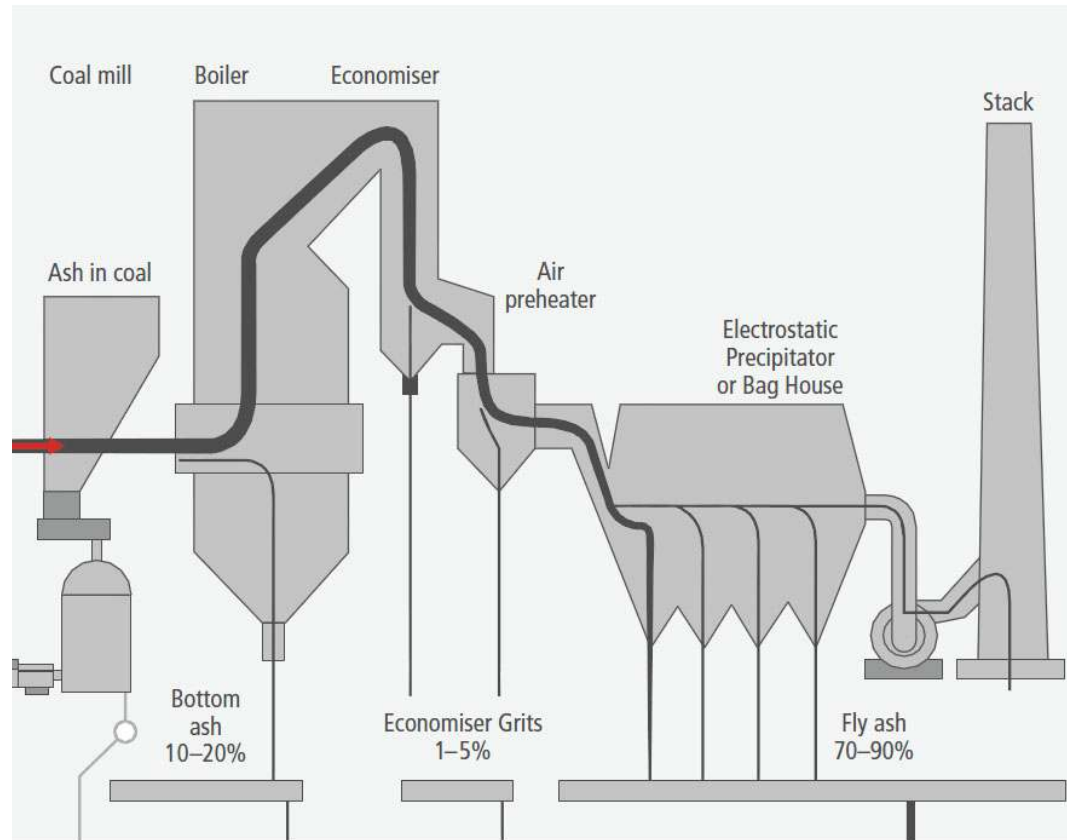
AX Landfill: History and Location

- Landfill created to handle fly ash from Sandow 5 Generating Plant, which came online in 2009
- Covers approximately 160 acres
- Located approximately 8 miles southwest of Rockdale
- Landfill registered with TCEQ as Class 2 non-hazardous waste landfill in 2008 and updated in 2015
- Fly ash and bottom ash are transported to landfill via trucks
- Ash is disposed as dry material
- Information available at <https://www.luminant.com/ccr/#>



Fly Ash and Bottom Ash

- Ash is non-flammable minerals or residue remaining after coal is incinerated
- Ash
- Bottom Ash
 - About 20% of ash
 - Coarse residual at bottom of combustion chamber
- Fly Ash
 - About 80% of ash
 - Finer residual at caught in gas in combustion chamber
- Disposal of Ash
 - Historically through mid 80's, mainly sluiced to ponds
 - Since 80's dry stacking has become increasingly prevalent



<http://report.hazelwoodinquiry.vic.gov.au/part-four-health-wellbeing/health-wellbeing-background/ash-2.html>

Coal Combustion Rule (CCR) and Reporting

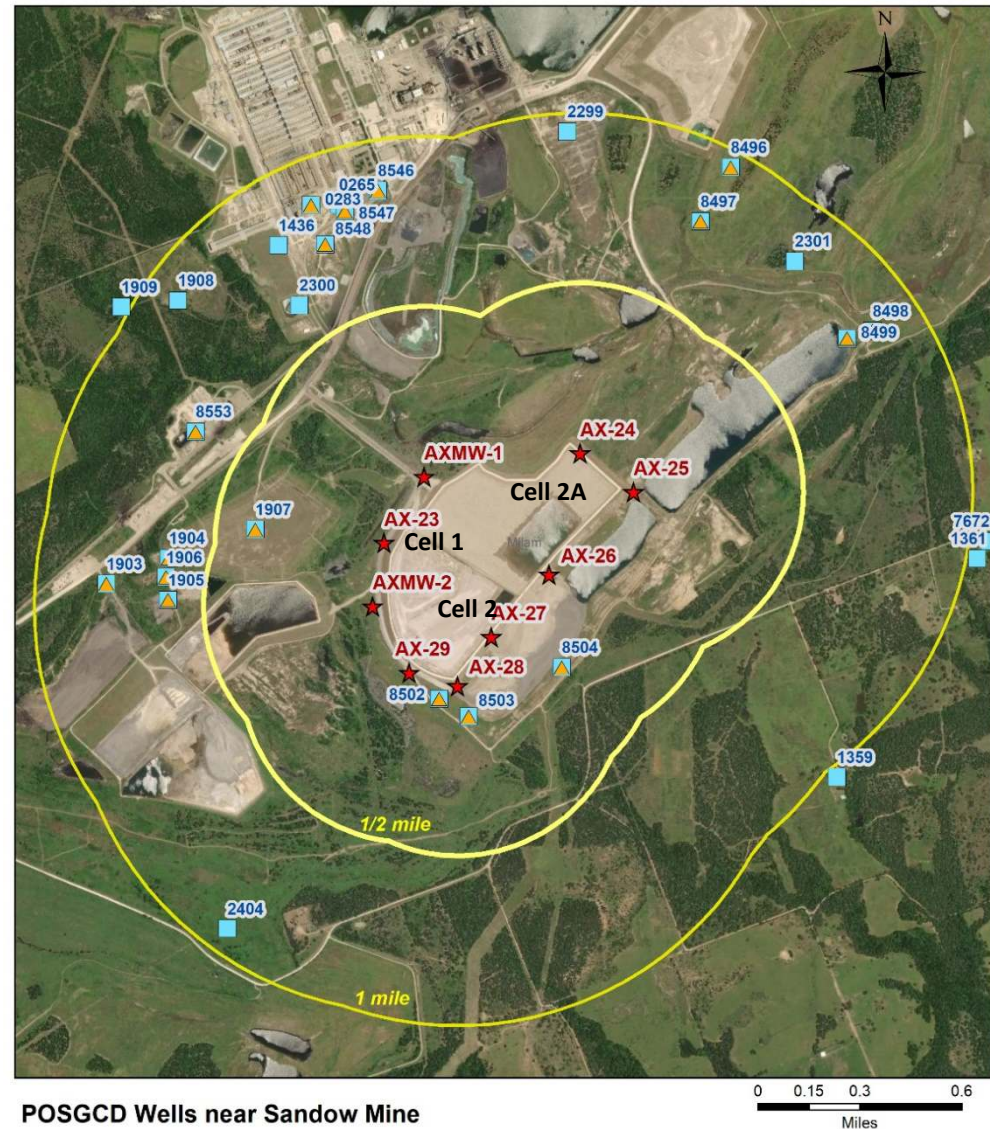
- CCR(40 CFF 257 Subpart D) effected on Oct 19, 2015
 - Operation standards for active landfills for bottom ash and fly ash
 - In 2012, 470 coal plants and over 1,000 landfills and surface impoundments
- CCR Action Items
 - Record keeping
 - Install groundwater wells and groundwater monitoring by October 2017
 - Construction standards
 - Landfill closure plans
 - Internet site that posts documentation
- Rule is self-implementing meaning facilities must comply with requirements without regulatory oversight
- States not required to adopt the program
- Citizens have ability to enforce under RCRA citizen suit authoring

Parameters That Must be Monitored

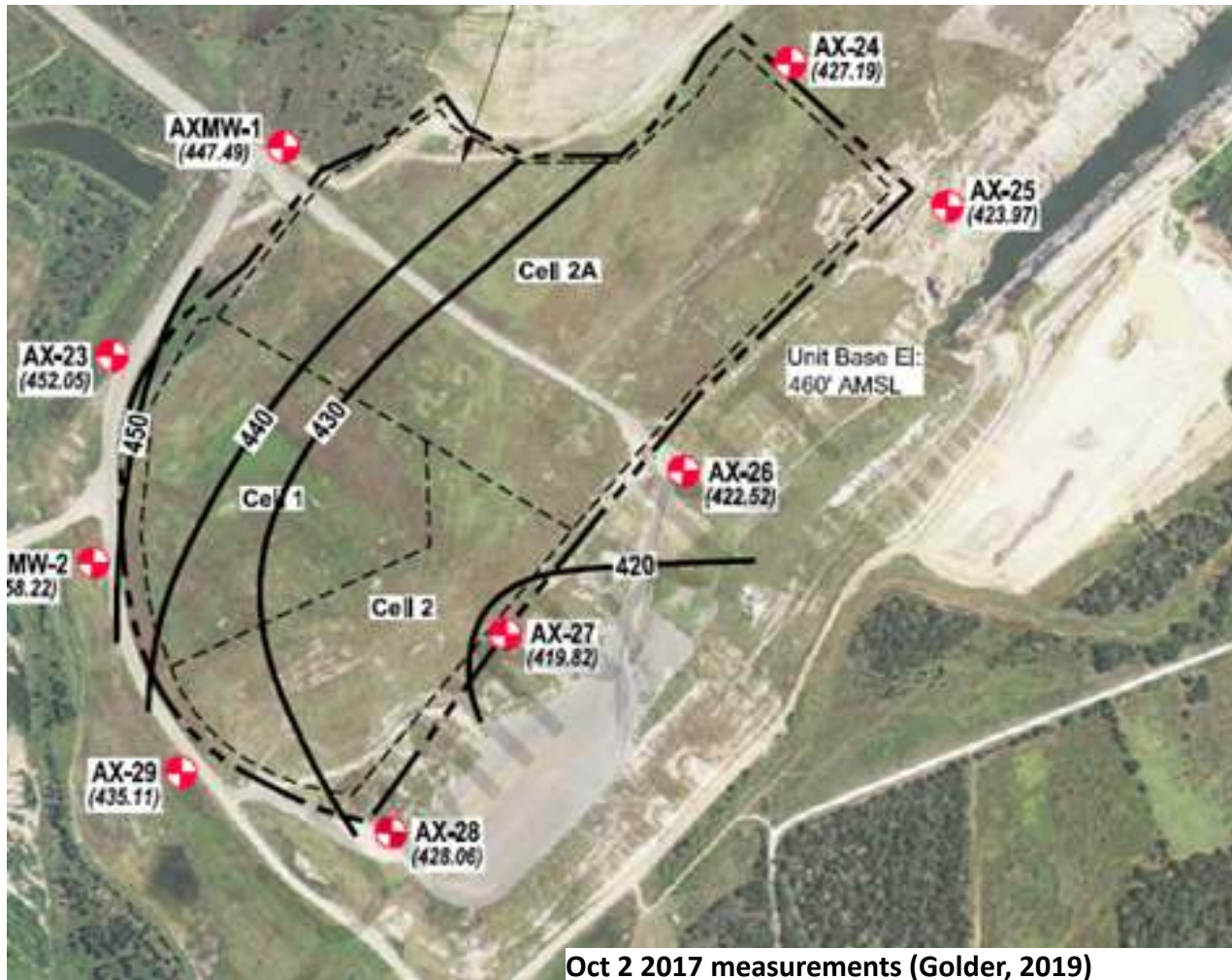
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Fluoride
- Lead
- Lithium
- Mercury
- Molybdenum
- Selenium
- Thallium
- Radium 226 and 228 combined

Monitoring Well Locations

- AX Landfill Construction
 - Cell 1 constructed in 2013
 - Cell 2 constructed in 2015
 - Cell 2a has not received CCR wastes (PBW, 2018)
 - Cells 1 and 2 have low-permeability geotextile liner
 - Under liner is clay with a low permeability
 - Constructed using excavated material from mining lignite coal
- AX Well Construction
 - All have 10 ft or 20 ft well s
 - MW-1 and MW-1 installed in 2012 and have max depth of 63 feet
 - Other wells installed in 2015 had have max depth of 98 feet
- Monitoring
 - Sampled bimonthly from 2015 to 2016
 - Identify which constituents are above background concentrations in 2019 report
 - 2019 identified another source other than landfill as source of several elevated concentrations



Measured Water Levels



On-going Activity

- CCR Rule

- Continued monitoring and reporting for active facilities
- In August 2018, DC Circuit Court ruled that CCR Rule should apply also to inactive sites
- July 2019 -- Ruling on Appeal to DC Circuit Court expected

- TCEQ

- Notifying Coal Ash Facilities that if analyte concentrations exceeds TRRP Tier 1 PCLs, then they need to be reported to TCEQ Remediation Division (Corrective Action Group)
- Exceedances of PCL triggers
 - Drinking Water Survey Report
 - Affected Property Assessment Report



TCEQ REGULATORY GUIDANCE

Remediation Division

RG-366/TRRP-12 • Revised May 2010

Affected Property Assessment Requirements under TRRP

- Identifying source areas and types of Chemicals of Concern (CoCs)
- Characterizing the geologic and hydrogeologic properties of the area that influence COC fate and transport
- Determining COC migration pathways, and
- Evaluating exposure pathways

POSGCD Efforts of Verification

- GCDs have no regulatory authority, but can monitor
 - POSGCD staff efforts to verify appropriate actions according to law
 - Meeting with 8 TCEQ staff and 8 other GCDs May 10, 2019
 - Meeting with 2 Luminant management and 4 other GCDs May 15, 2019
- TCEQ notified all 17 CCR sites March 2019
- TCEQ is engaged with all sites
 - Coal Ash Facilities- if analyte concentrations exceeds Texas Risk Reduction Process (TRRP) Tier 1 PCLs, then they need to be reported to TCEQ Remediation Division (Corrective Action Group)
 - Exceedances of PCL triggers
 - Drinking Water Survey Report
 - Affected Property Assessment Report
- TCEQ is working through new EPA Rules
- TCEQ is responsive to GCD requests



TCEQ REGULATORY GUIDANCE

Remediation Division

RG-366/TRRP-12 • Revised May 2010

Affected Property Assessment Requirements under TRRP

- Identifying source areas and types of Chemicals of Concern (CoCs)
- Characterizing the geologic and hydrogeologic properties of the area that influence COC fate and transport
- Determining COC migration pathways, and
- Evaluating exposure pathways
- Legacy sites are currently exempt, but may be brought in later



Questions ?