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**Subject:** Information for 9/19/18 public meeting on the Mine Unit 1 ACL application  
**Date:** Friday, September 14, 2018 2:03:00 PM  
**Attachments:** [Comments on MU1 ACL.pdf](#)

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Larry –

Attached is a slide presentation that the NRC staff will use during our public meeting scheduled for 9/19/18 to discuss our comments on the Mine Unit 1 ACL application.

Doug

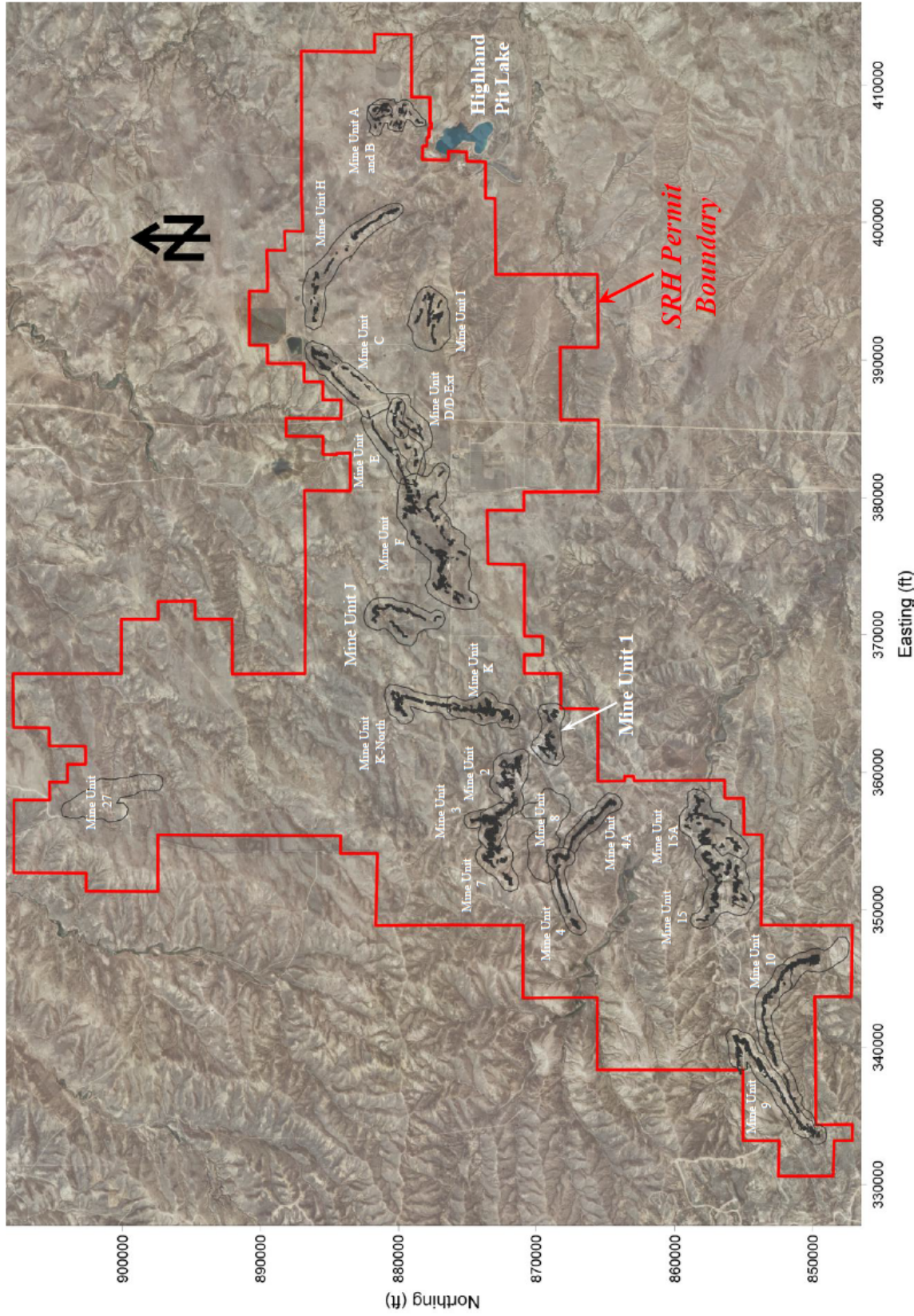
# Comments on PRI's Mine Unit 1 ACL Application

NRC public meeting  
September 19, 2018

# Introduction

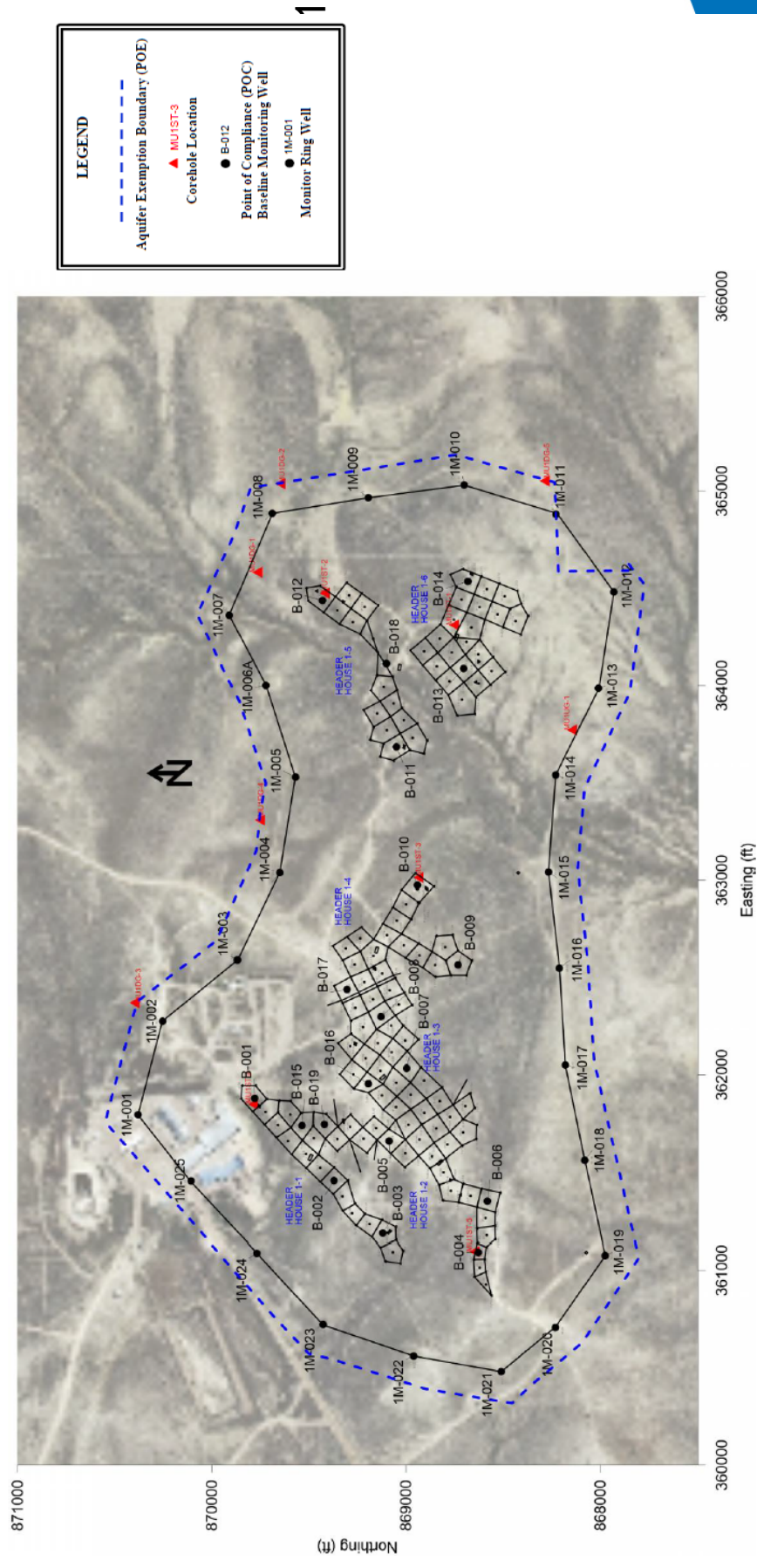
- PRI submitted an Alternate Concentration Limit (ACL) Application for its Smith Ranch Mine Unit 1 (MU1)
- NRC agreed to provide preliminary comments
- NRC staff has not performed a detailed review; no licensing decision has been made

# Smith Ranch





# Mine Unit 1



B wells, M Wells, Bill Smith Mine Workings

# Mine Unit 1 History

- Operations from 1997 to 9/06
- Restoration **9/06** to 9/14
  - Groundwater Sweep 9/06 to 5/07
  - RO 5/07 to **??**
  - Sodium Sulfate added 7/11 to **4/13**
  - 14.3 Pore volumes
- No Excursions
- Stability Monitoring 9/14 to 3/17

# Proposed ACLs

- Proposed ACLs:
  - Uranium - 51 mg/L MCL-0.03
  - Arsenic - 0.18 mg/L MCL-0.01
  - Selenium - 0.2 mg/L MCL-0.05
- No ACLs proposed for iron and manganese (low toxicity) and radium (wellfield average level below background)
- Proposed monitoring for 3 years

# Level of Work

- Cameco performed a significant amount of work in preparation of this ACL application
- Core sampling and analysis within Mine Unit 1
- Stability analyses and modeling
- Investigations in other mine units that have been published in professional journals.
- NRC staff does not envision the need for additional rigorous field work to support this ACL application.



# Format of Application

- Format is consistent with Appendix K of NUREG-1620 (recommended guidance for ACL applications for conventional uranium mills)
- Supporting data is present in application, but scattered in appendices and attachments
- Varied location of data is workable, but may be more time consuming for NRC staff

# Content of Application

- Lack of historical information on restoration
- Incorporation of non NRC documents by reference
  - referenced restoration history in a report submitted to WDEQ but was not to NRC or included in ACL application
- Difficulty viewing some files electronically (appear to be missing information – core notes)
- May be problematic from an acceptance review standpoint

# Data Files

- ACL application provides raw data (e.g., laboratory results) electronically in native application files (e.g., Microsoft Excel)
- Electronic data files are very helpful to the NRC staff
- ACL application could provide a better analysis of the existing ground water data

# Proposed ACL - Uranium

- Proposed ACL value is 51 mg/L
- Initial reaction – appears very high compared to current concentrations measured during stability monitoring, not ALARA
- Difficult for NRC staff to understand how modeling approach in application supports selection of 51 mg/L ACL



# Proposed ACL - Selenium

- Proposed ACL value is 0.2 mg/L
- Not clear to the NRC staff why this value was selected
- NRC Table 5c value is 0.01 mg/L, was EPA's MCL at time of promulgation
- Current EPA MCL is 0.05 mg/L
- A proposed ACL that equals the MCL would result in a straight forward hazard assessment

# Proposed ACL - Arsenic

- Proposed ACL value is 0.18 mg/L
- NRC Table 5c value is 0.05 mg/L, was EPA's MCL at time of promulgation
- Current EPA MCL is 0.01 mg/L
- Arsenic values are below the NRC Table 5c value, but above the current EPA MCL

# Assumptions and Modeling

- Several assumptions and model results need additional discussion
- Approach to sequential extraction is one example
- Given level of uncertainty in models, did Cameco consider providing a discussion on qualitative aspects of the site conceptual model and how the site conceptual model is consistent with the reported data

# Monitoring Program

- Cameco proposed a 3 year monitoring program
- Details of the program need to be defined
- When does monitoring start?
- What constituents are included?
- What is the proposed monitoring frequency?