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## AGENDA

THE CITY OF SANTA FE  
And  
SANTA FE COUNTY



### BUCKMAN DIRECT DIVERSION BOARD MEETING

THURSDAY, APRIL 5, 2012  
4:00 PM  
CITY HALL  
CITY COUNCIL CHAMBERS  
200 Lincoln Avenue

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF MINUTES FOR THE MARCH 1, 2012 BUCKMAN DIRECT DIVERSION BOARD MEETING
5. MATTERS FROM STAFF

#### CONSENT AGENDA

None

#### DISCUSSION AND ACTION ITEMS

6. Election of BDD Chairperson and Vice Chairperson. (Nancy Long)

#### INFORMATION ITEMS

7. Briefing on Buckman Well Monitoring Conducted by LANL and Recent Test Results. (Bob Mulvey & Danny Katzman, LANL Environmental Manager)



8. Update on Recent City Activities and Participation in Meetings with "The Regional Coalition of Los Alamos Communities," LANL and NMED Regarding Environmental Cleanup Activities at Los Alamos National Laboratory. (Alex Puglisi and Rick Carpenter)

**MATTERS FROM THE PUBLIC**

**MATTERS FROM THE BOARD**

**NEXT MEETING: THURSDAY, MAY 5, 2012 @ 4:00 P.M.**

**ADJOURN**

**PERSONS WITH DISABILITIES IN NEED OF ACCOMODATIONS, CONTACT THE CITY CLERK'S OFFICE AT 505-955-6520, FIVE (5) WORKING DAYS PRIOR TO THE MEETING DATE.**

# **LANL's Monitoring of Low-Level Tritium in the Buckman Well Field**

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**Buckman Direct Diversion**

**Board Meeting**

**April 5, 2012**

**Danny Katzman**



LA-UR-12-20257

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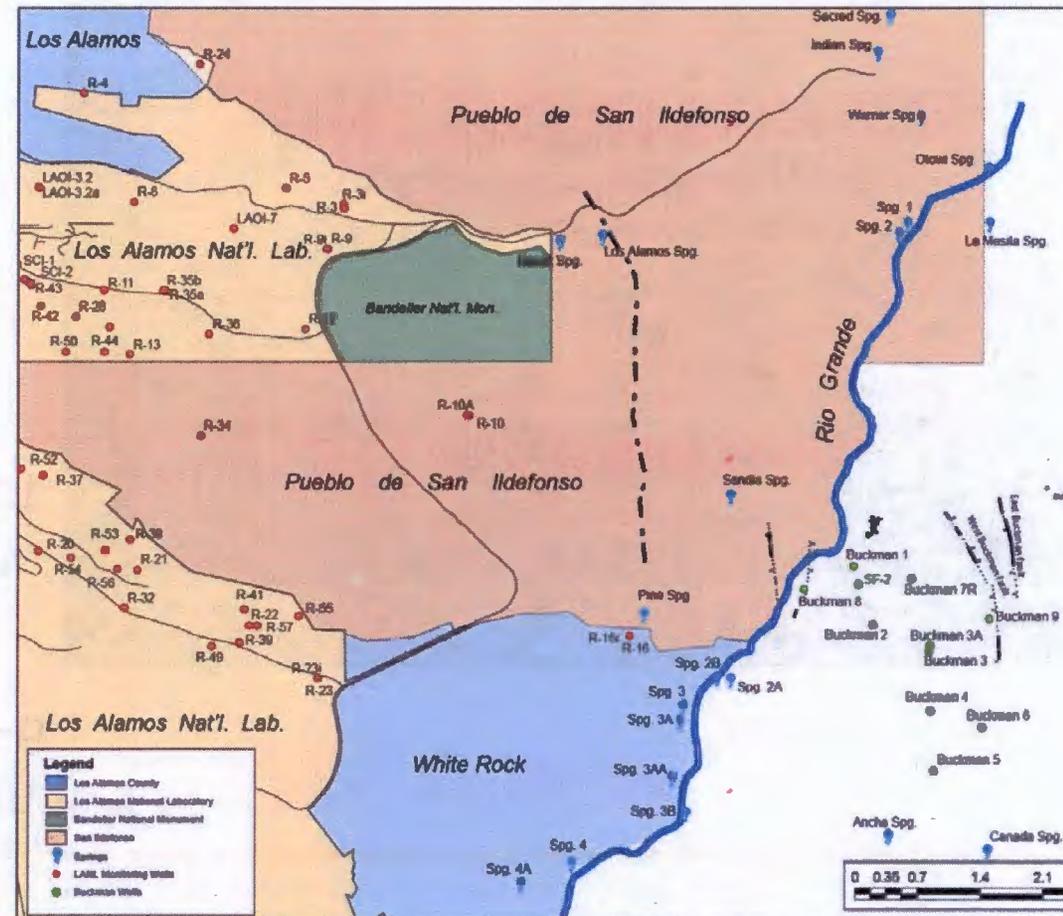
# Presentation Outline

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- **LANL's History of Monitoring in the BWF**
- **Tritium Monitoring**
- **Resolution of Recent Tritium Analyses**
  - Buckman Well Field continues to show absence of tritium in water-supply wells

# LANL's History of Monitoring in the BWF

- Supplementary monitoring by LANL in the BWF since 2001
- Conducted voluntarily to supplement Safe Drinking Water Act monitoring suite



# Monitoring in the BWF (cont.)

- Monitoring conducted quarterly in three water-supply wells, B-1, B-6, B-8
- Samples are analyzed for variety of constituents including the most mobile constituents potentially associated with LANL, e.g.,
  - Chromium
  - Nitrate
  - Perchlorate
  - Tritium
- These constituents are also naturally occurring



# Purpose of Low-Level Tritium Monitoring

- **Tritium is present everywhere in the environment**
  - Precipitation and Rio Grande water in northern NM is 15-25 pCi/L
  - Groundwater standard is 20,000 pCi/L
- **Used to determine if groundwater is connected to sources of tritium in the environment**
  - Residual tritium from above-ground nuclear testing
  - Tritium from past or current LANL sources



# Tritium Monitoring

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## ■ Two types of analytical methods for tritium

- One method has detection limit (minimal detectable activity, MDA) of 200-300 pCi/L
- Low-Level tritium (LLH3) method has an MDA of ~3–5 pCi/L
- Not an EPA-approved method

## ■ 2000-2008 - University of Miami

- Research laboratory
  - Internally consistent data quality
  - Slow and inconsistent turnaround on results
  - Insufficient QA/QC paperwork

## ■ 2008 to present – American Radiation Services Laboratory

- Commercial Laboratory
  - Non-routine analysis
  - Improved turnaround on results (still requires addtl 30-day hold for BWF data, 75-day for BDD data)
  - Appropriate QA/QC paperwork
  - Initial problems with tritium results

# Resolution of ARS Tritium Data Quality Issues

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- **LANL identified several examples of tritium results from ARSL that were inconsistent with prior observed concentrations**
- **LANL brought tritium data-quality concerns to attention of ARSL and Analytical Quality Associates (AQA)**
- **AQA contacted ARSL triggering an internal assessment by ARSL**
  - Identified two sources of errors
    - Rounding errors
    - Incorrect calculation of results from analytical instrument

# Resolution (cont.)

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- **ARSL issued a nonconformance report**
  - Root-cause analysis
  - Corrective Actions to eliminate the errors
- **ARSL reissued complete analytical packages to LANL**
  - Corrected values
- **LANL provided information to City of Santa Fe for independent review**
- **Upon approval from City of SF, LANL issued corrected tritium values**
- **Available on public database – Intellus (formerly RACER)**

# Summary

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- **In mid 2008, LANL changed analytical laboratory used for low-level tritium analysis**
  - better and more complete QA/QC packages
  - substantially improved turnaround on results
- **Based on data for the period of record, tritium is not present in the samples from the Buckman Well Field**
- **LANL continues to monitor within the BWF**

# Questions?

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