



# Rio Algom Mining LLC Ambrosia Lake Facility

May 23, 2005 Public Meeting  
Denver, Colorado

# Agenda

- Lined Pond Relocation Plan
- ACL Application
- Soil Plan RAI
- Future Submittals

# Lined Pond Relocation Plan

- NRC Submits Draft EA to New Mexico – March 25, 2005
  - NRC Requested Comments
  - 30 Day Comment Period
- Status of Plan ?

# ACL Application

- NRC Requests RAM to Address Non-Hazardous Constituents
- RAM Responds to NRC Request
  - RAM Proposed State Approved Groundwater Standards
- RAM Reassessing Non-Hazardous Constituents to Minimize Duplication With NMED
- Revised RAM Proposal to be Submitted to NRC by June 30, 2005.
- NRC Review Process

# Soil Plan RAI

- *Pond 3 (RAI – 1)*
  - *Reclamation Plan*
  - *Surety*
  - *Adequacy of Cover*
- RAM Response
  - L/C 37.E Addresses Pond 3 Reclamation
  - Amendment #54 Revised Surety for Site
    - Pond 3 Included - \$0.9M
  - Need for Engineered Cover Contingent on Placed Materials
    - Ra-226 Concentrations < 10 pCi/g
    - Th-230 Concentrations Minimal

# Soil Plan RAI (continued)

- *Source Characterization Data (RAI – 2)*
  - *Lined Ponds*
  - *Mill Area*
  - *Windblown Area*
  
- **RAM Response**
  - Collection of Lined Pond Characterization Data Not Practicable Until Ponds Removed
  - Mill Area Accessible Following Demolition
  - Map Depicts Generalized Presentation of Zones

# Soil Plan RAI (continued)

- *Cultural Properties (RAI – 3)*
  - *Approvals*
  - *Locations / Size*
  
- **RAM Response**
  - Coordinating With Archaeological Consultant
    - Confirm Site Importance Prior to Disturbance
    - Field Excavation
  - Proposed Plan Appropriate

## Soil Plan RAI (continued)

- *Use Mean for Site Background Values (RAI – 4)*
- RAM Response
  - Effect of lowering background Ra-226 from 2.3 pCi/g to 2.0 pCi/g is relatively small
  - RAM Will Use Mean Concentrations as Background
  - Revised Soil Clean-up Level of 7.0 pCi/g Reduces the Gamma Guideline Value From 30,300 cpm to 29,000 cpm



## Soil Plan RAI (continued)

- *Justify Proposed Th-230 Clean-up Limit of 30 pCi/g (RAI – 5)*
- RAM Response
  - RAM Will Establish a 14.3 pCi/g Clean-up Level for Th-230 in Top 15 cm of Soil
  - RAM Will Establish a 42.9 pCi/g Clean-up Level for Th-230 in Successive 15 cm of Soil Below Top Layer

## Soil Plan RAI (continued)

- *Justify Proposed ARC Approach in Halos (RAI –6)*
- RAM Response
  - Additional Clarification Requested
  - Plan Included All Unlined Ponds in Justification for ARC

## Soil Plan RAI (continued)

- *ARC Justification (RAI – 7)*
- RAM Response
  - RAM Agrees With NRC Request – RAMs Original Intent
  - RAM Assumes That This Will Not Delay Approval of Other Areas

## Soil Plan RAI (continued)

- *Disposition of Section 4 Pond Area Upon Transfer (RAI – 8)*
- RAM Response
  - Section 4 Proposed to be Released for Unrestricted Use

# Soil Plan RAI (continued)

- *Closure of Pond 7 and Pond 8 (RAI – 9)*
  
- RAM Response
  - Work Performed in 2001 – 2002:
    - Ponds Excavated or Contoured to Final Grade
    - Minimum of One Foot of Cover Placed (avg. 1.5 feet)
    - SM/SC/CL Material Used
    - Revegetated Cover

# Soil Plan RAI (continued)

- *Pond 8 Reclamation (RAI-10)*
- RAM Response
  - Based on NRC Inspection & Independent Sampling
    - RAM and NRC Data Supported Acceptable Clean-up
    - NRC Approved Reclamation – 1988
    - Cover Placed and Revegetated
  - Wind Effects and 1997 Storm Event Eroded Cover in Areas
  - Response Actions
    - Additional Excavation, Contour and Placement of Cover (RAI-9)
    - Propose ARC Due to Deep Contamination

# Soil Plan RAI (continued)

- *Windblown Milestone Date (RAI-10)*
- RAM Response
  - License Condition 40.A
    - Requires **Retrieval and Placement** on the Pile by Dec. 1998
  - Retrieval and Placement on the Pile Completed by Nov. 1998
  - RAM Requests Milestone Extension to Resolve Verification Issues
  - Revision to Criterion 6
  - NRC Performs Verification Survey – Nov. 1999
  - Revision to Plan Required to Address Findings

# Soil Plan RAI (continued)

- *Soil Mixing (RAI – 11)*
- RAM Response
  - Soil Mixing Will Not be Utilized



# Soil Plan RAI (continued)

- *Instrumentation (RAI-12)*
- RAM Response
  - Identical Instrumentation Used for Verification of Compliance and Gamma Correlation (Soil Plan pp. 55 & 63)

# Soil Plan RAI (continued)

- Soil Sampling of Other Areas (RAI – 12)
  
- RAM Response
  - Excavations/Trenches
    - 1 Sample Every 100 m<sup>2</sup>
    - Suspect Areas (Damp Soil, etc..)
  
  - Section 4 Pond Area
    - Same as Windblown Areas

# Soil Plan RAI (continued)

- *Quality Assurance Project Procedure (RAI – 14)*
- RAM Response
  - Refers to procedure following the QAPP approach
  - Soil DP survey plan contains conditions that must be known in order to develop this procedure (e.g. gamma guideline, Th-230 and U clean-up levels)
  - Premature to develop a description of QA/QC activities for planning, design, and implementation of the final status survey until the final survey plan is approved
  - All previous soil verification data will be evaluated to determine if it meets the standards provided by the QAPP for final verification

# Soil Plan RAI (continued)

- *Mill Area Organic Contamination (RAI – 15)*
- RAM Response
  - Mill Demolition Provided Access to Soils
  - Characterization Study to Begin June 6, 2005
    - Volume Assessment
    - Laboratory Analysis
  - Bioremediation & Land Farming of Soils in Excess of Limits
  - On Site Disposal if 11(e).2 Material

## Soil Plan RAI (continued)

- *January 3, 2001 Comment #7 (RAI – 16)*
  - *Indirect Method of Compliance*
- RAM Response
  - Parameter assumptions of Benchmark Dose Modeling described in Appendix B of Soil DP, and address previous NRC concerns
  - Benchmark Dose revised downward from 68.4 mrem/yr to 18mrem/yr

## Soil Plan RAI (continued)

- *January 3, 2001 Comment #12 (RAI – 16)*
  - *DOE Willingness to Accept Site*
- RAM Response
  - DOE has Accepted Proposed LTSM Boundary
    - Application of ACLs
    - Long Term Stability of Tailings Disposal Area

## Soil Plan RAI (continued)

- *January 3, 2001 Comment #18 (RAI – 16)*
  - *Use of ATV For Correlation*
- RAM Response
  - Soil Plan - p. 34 & Figure 3-1
    - Negligible Differences Between Walking vs ATV
  - Influence From ATV Eliminated
    - Detector Mounted 3 Feet From ATV
    - Detector Located 18 Inches Off Ground

## Soil Plan RAI (continued)

- *January 3, 2001 Comment #26 (RAI – 16)*
  - *Extent of Buffer Zone*
- RAM Responses
  - Conform to NUREG-1620, Section 5.2.2.(7)
  - 30 Meter Buffer Zone



# Lined Ponds Closure Plan RAI

- *Responses to NRC Comments, Section 5, 7-16 and 19-23, Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*
- RAM Response
  - **Comment 7 – Unity Rule**
    - RAM Will Apply Unity Rule to Surface Soils
  - **Comment 8 – Deep impacts**
    - Justification and Methodology of the ARC in Soil Plan (Sec. 5.2)
    - Section 4 to be Released for Unrestricted Use
  - **Comment 9 – Soil Mixing**
    - Soil Mixing Will Not Be Used

# Lined Ponds Closure Plan RAI

- *Responses to NRC Comments, Section 5, 7-16 and 19-23, Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*
- RAM Response
  - **Comment 10 – Deep Impacts**
    - See Response to Comment 8
  - **Comment 11 – Areas to be Addressed**
    - Impacts due to Licensed Activities Will be Addressed

## Lined Ponds Closure Plan RAI (Cont'd)

*Responses to NRC Comments, Section 5, 7-16 and 19-23,  
Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*

- **Comment 12 - Analytical methods**

- Los Alamos National Laboratory, Health and Environmental Chemistry: Analytical Techniques, Data Management, and Quality Assurance, vol 2, 1993, “ER 130 Gamma-ray Emitting Radionuclides in Environmental Matrices – Instrumentation Method”, LA-10300-M
- Department of Energy, EML Procedures Manual, HASL-300, 1991, “Ga-01-R Gamma Radioassay”, DE91-010178

- **Comment 13 - Survey Procedures**

- Summarized in the Soils Plan at Section 8.1.2.2.

## Lined Ponds Closure Plan RAI (Cont'd)

*Responses to NRC Comments, Section 5, 7-16 and 19-23,  
Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*

- **Comment 14 - Quality Assurance**

- All survey and soil sampling has been done by approved procedures.
- Quality Assurance program description, including management oversight, is provided in Attachment 1.

- **Comment 15 - Sample Preparation (Drying)**

- SOP To Include QA Section on Soil Drying

- **Comment 16 - Sample Storage**

- Verification soil samples will be stored until NRC approval of the FSS Report is provided to RAM.

## Lined Ponds Closure Plan RAI (Cont'd)

*Responses to NRC Comments, Section 5, 7-16 and 19-23,  
Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*

- **Comment 19 - ARC**

- RAM Agrees That Deep Contamination Cannot Be Characterized By Surface Scans
- RAM Concur That ARC is Subject to Approval of NRC

- **Comment 20 - Sampling Requirements**

- The reference for 80% is EPA SW-846 Section 9.1.1.1

- **Comment 21 - Pipelines**

- 1 Sample Every 100 m<sup>2</sup>
- Suspect Areas (Damp Soil, etc..)

## Lined Ponds Closure Plan RAI (Cont'd)

*Responses to NRC Comments, Section 5, 7-16 and 19-23,  
Dated December 22, 2004 (Lined Ponds Closure Plan RAI -1)*

- **Comment 22 - QA Procedure**

- The QA Procedures Summarized in the Soil Plan, Section 8.1.6 and Attachment 1

- **Comment 23 - Non-Radiological Parameters**

- Remediation of Radiological Components in Soil Likely to Result in Concurrent Non-Radiological Remediation
- RAM Will Collect 4 Composite Samples per Pond
- RAM Will Sample Suspect Areas (Deep Moisture)

# Future Submittals

- Pond 2 Cell Design Plan
- Intercept Trench
  - French Drain
- Lateral Migration of Arroyo del Puerto
- Pond 3 Erosion Protection