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ADEC Mine Dust Update
May 9, 2006

Introduction

Review of Reports




- Last meeting October 2005
- Report #3 – 4th Quarter 05 (Dec 31)
- Report #4 – 1st Quarter 06 (Mar 31)

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General discussion on the last two quarterly reports

Particle Fate Analysis




- Three Samples
  - Gyratory Crusher Dust (reference)
    - 4.7% Pb - 20.1% Zn
    - Pb / Zn = 0.2
    - Angular grains
    - 30.4% leachable Pb - 0.9% leachable Zn
  - Triangle Site Dust (proximal)
    - Surface
      - 1.9% Pb - 0.6% Zn
      - Pb / Zn = 3.2
      - Angular grains some oxidation products
      - 43.2% leachable Pb - 10.5% leachable Zn
    - 1 foot depth
      - 0.09% Pb - 0.08% Zn
      - Pb / Zn = 1.1
      - Rounded grains
      - 60.0% leachable Pb - 32.5% leachable Zn
  - TT3 Site (distal)
    - Surface <0.01% Pb and Zn
    - 1 foot depth <0.01% Pb and Zn

Very preliminary information on the particle fate analysis

Particle Fate Analysis

- Preliminary (5 cycle) humidity cell results
  - Triangle Surface Sample
    - 2.99 - pH of leachate
    - 2.86 mg/L - Pb leachate concentration
    - 209 mg/L - Zn leachate concentration
  - TT3 Surface Sample
    - pH not reported
    - 0.0088 mg/L - Pb leachate concentration
    - 0.085 mg/L - Zn leachate concentration

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Very preliminary information on the particle fate analysis

Particle Fate Analysis




- What does this tell us?
  - Weathering of the dust is occurring.
  - Zn is weathering faster than Pb and weathering rate may be proportional to initial concentrations in the dust.
  - Rounded mineral grains at depth in Triangle area may suggest some reduction of Pb and Zn leached from surface?
  - Weathering of dust at surface creates low ph. Confirmed by field paste ph measurements.
  - 1 ft. Triangle sample the Pb/Zn ratio ~ 1 in this study but it was <1 when measured in the field. Why is there a difference?
  - Further chemical studies should use an environmental or geochemical lab with lower detection levels.

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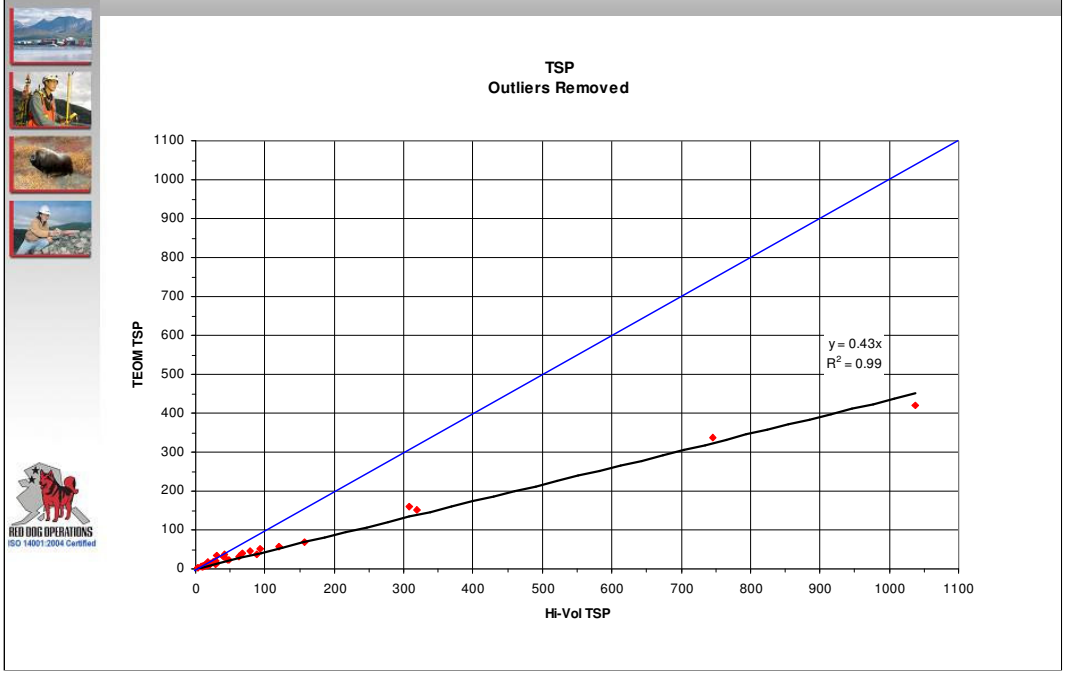
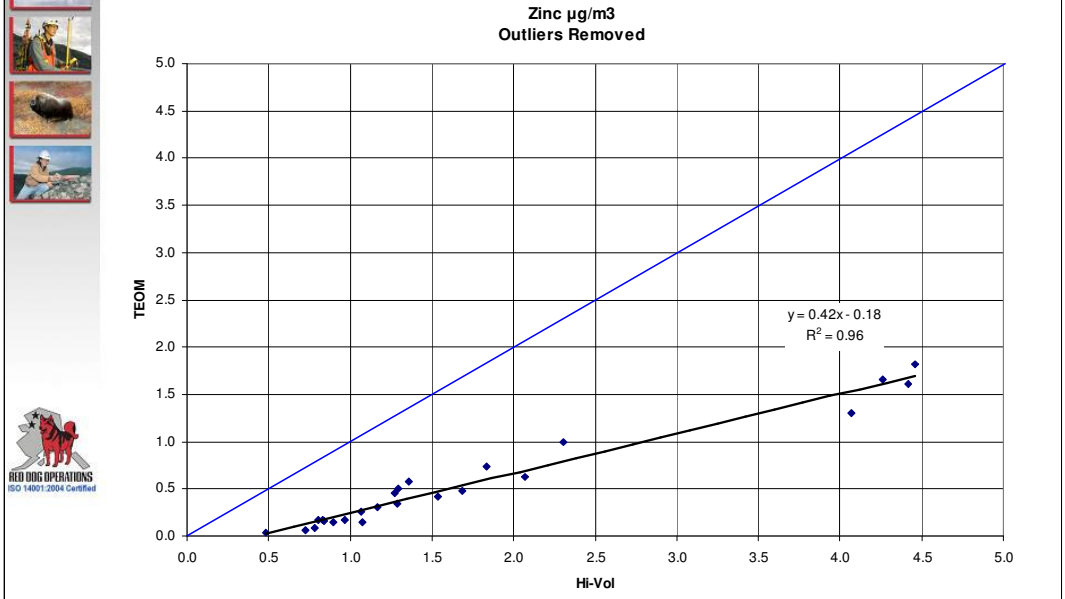
Speculation and discussion on the preliminary information on the particle fate analysis. Generally recognized there is more work to be done.

Hi-Vol / TEOM Comparison



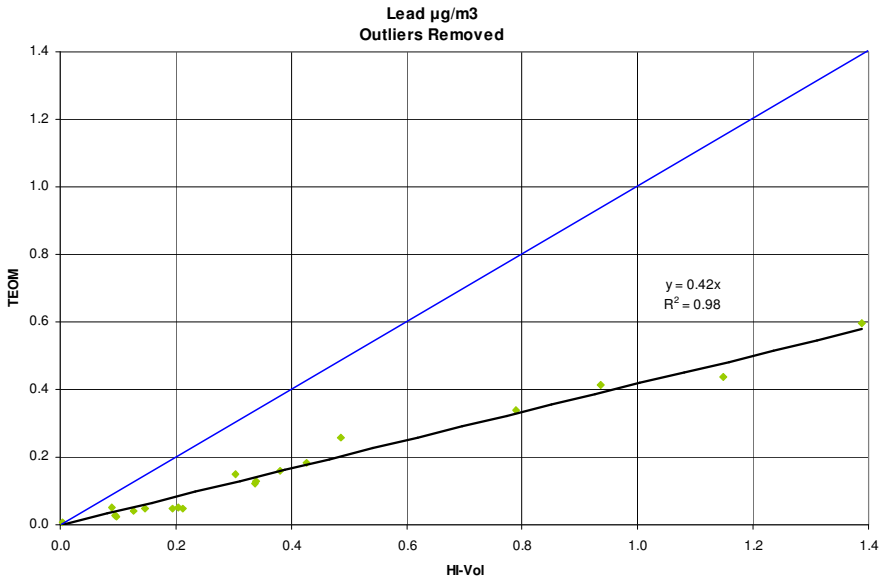
TCAK continues to monitor Total Suspended Particulates (TSP), airborne lead, and airborne zinc using Rupprecht & Patashnick 1400 AB TEOM ambient particulate monitors (TEOM) equipped with TSP Inlets and Automatic Cartridge Collection Units (ACCU). TCAK conducted a study comparing the collection efficiency of a Wedding Hi-Vol and an R&P 1400AB TEOM samplers. The primary findings of the comparison study indicate that the TEOM collection efficiency is approximately 43% that of the Hi-Vol system. The graphs above depict the correlation between Total Suspended Particulates (TSP) collected using a Hi-Vol sampler and an R&P TEOM utilizing a TSP inlet. The samplers were co-located within the mining and milling area (within the facility).

Hi-Vol / TEOM Comparison



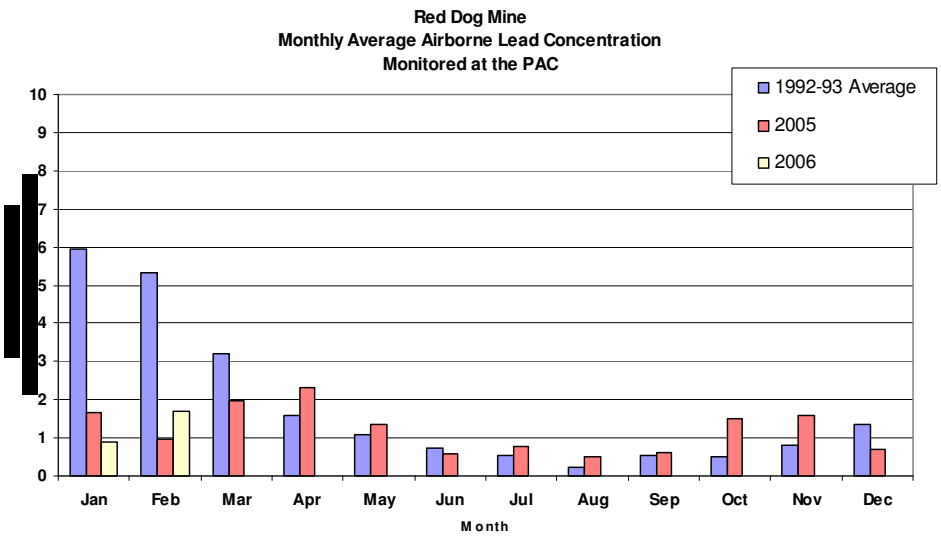
Graphs depicting the correlation between Zinc in TSP collected using a Hi-Vol sampler and an R&P TEOM utilizing a TSP inlet. The samplers were co-located within the mining and milling area (within the facility).

Hi-Vol / TEOM Comparison



Graphs depicting the correlation between Lead in TSP collected using a Hi-Vol sampler and an R&P TEOM utilizing a TSP inlet. The samplers were co-located within the mining and milling area (within the facility).

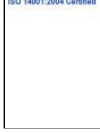
Adjusted Airborne Lead Concentrations

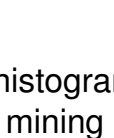


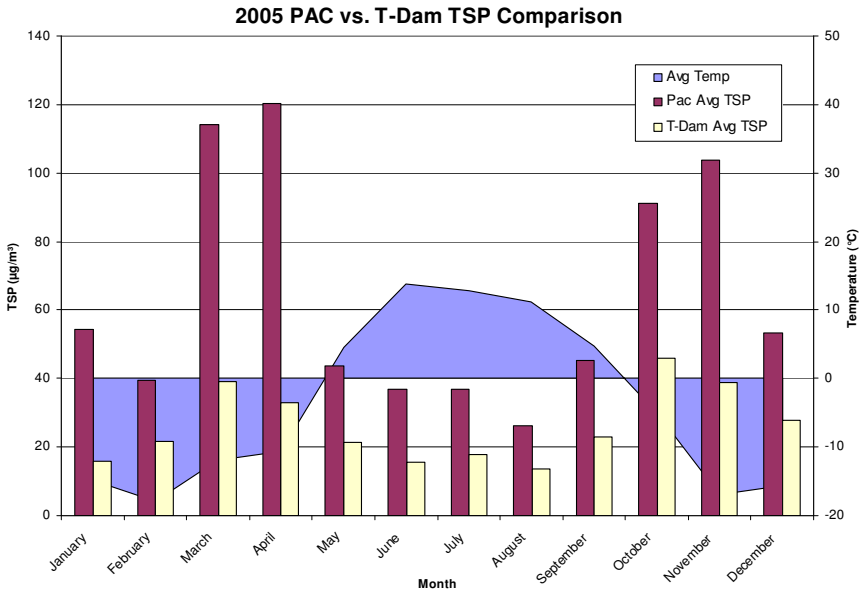
- Graphed data adjusted using Hi-vol / TEOM correlation factor

Graphs indicating the historic Lead in TSP concentrations. Sample location is within the mining and milling area (within the facility). A comparison of the historic Hi-Vol results to the adjusted annual TEOM results, using the correlation factors, indicates a continued downward trend in TSP lead concentrations. Additionally, a significant increase in production has occurred from 1994 to 2006, which should be taken in to consideration when reviewing the data.

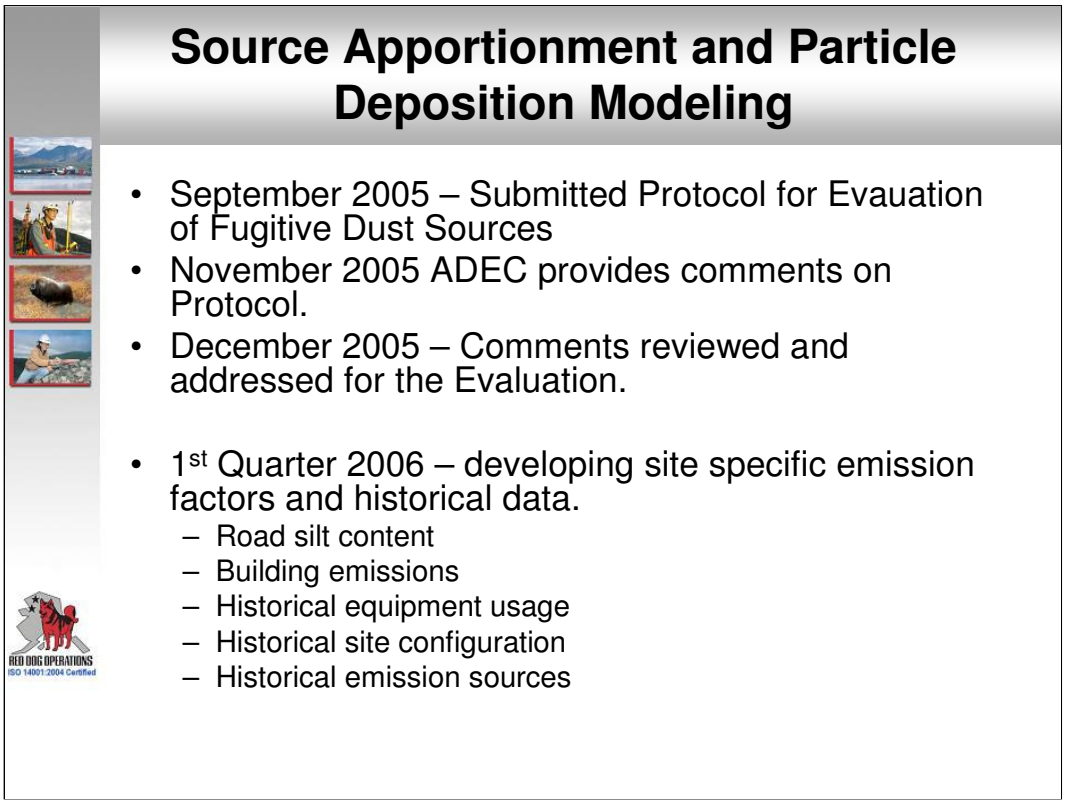
PAC and T-Dam TSP Concentrations



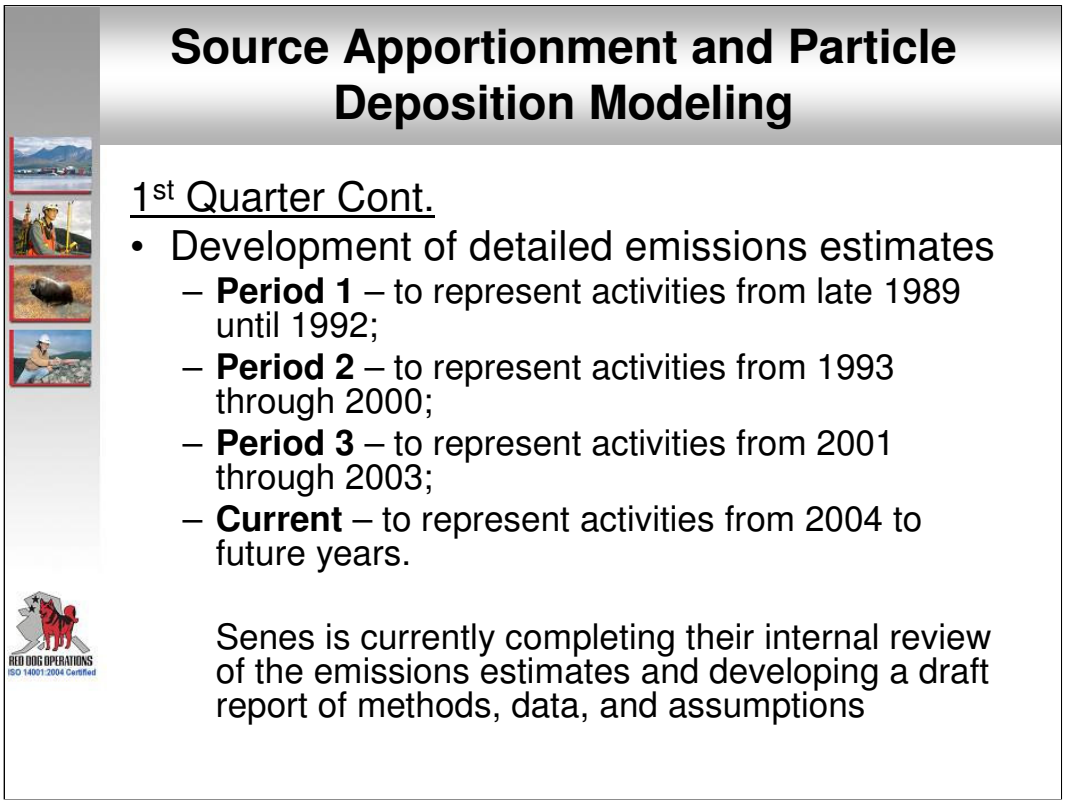




2005 histogram depicting the historic TSP concentrations at the PAC (within the active mining and milling area) verses the T-Dam (near the western air boundary). Sample location are within the mining and milling area (within the facility). Image also shows average air temperature during the time period.



Overview of the Source Apportionment and Particle Deposition Modeling



Overview of the Source Apportionment and Particle Deposition Modeling

2006 Vegetation Monitoring

- ABR Inc. is scheduled onsite in June, July, and August
- Summer program consist of:
  - Visual site assessments
  - Delineation of affected areas
  - Selection of reference areas
  - Plant tissue and soil sampling
  - Establish treatment plots
  - Sample and apply treatments to plots

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Overview of the 2006 Vegetation Monitoring program.

Site Assessment Tundra "Soil" Program

- What are we trying to determine?
  - What to sample (depth, media, constituent)?
  - What is the decision unit?
- What action will we take based on the findings?
- Develop a program based on inputs from:
  - Vegetation monitoring
  - DMTS risk assessment and subsequent risk management plan
  - Mine site risk evaluation
  - Closure and reclamation plan

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Discussion on site assessment and tundra soil sampling program.

Crusher Baghouses

- Permitting complete
- Items delivered 2005 sealift
- Construction underway
- Total cost $3.3M
- Gyratory Crusher (1st) – 37,000 cfm
  - Finishing the installation
- Jaw Crusher (2nd) – 34,000 cfm
  - Starting the installation

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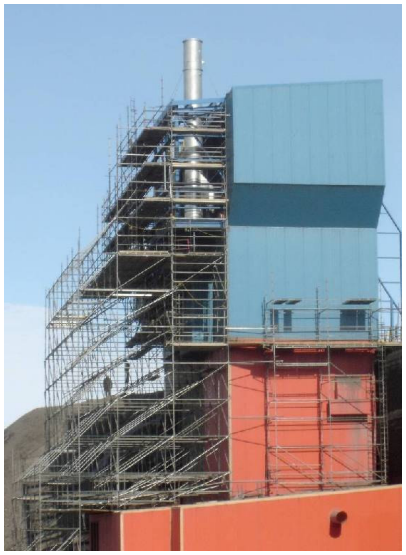
Gyratory and Jaw Crusher Dump Pocket Baghouses

Construction is currently underway but has experienced several delays related to poor crane mechanical availability and extreme winter weather conditions. Current focus is on structural, mechanical and component installation. The present estimate for completion of the project is late May

Gyratory Crusher

The Gyratory Crusher Dump Pocket Baghouse construction

Gyratory Baghouse



The Gyratory Crusher Dump Pocket Baghouse construction

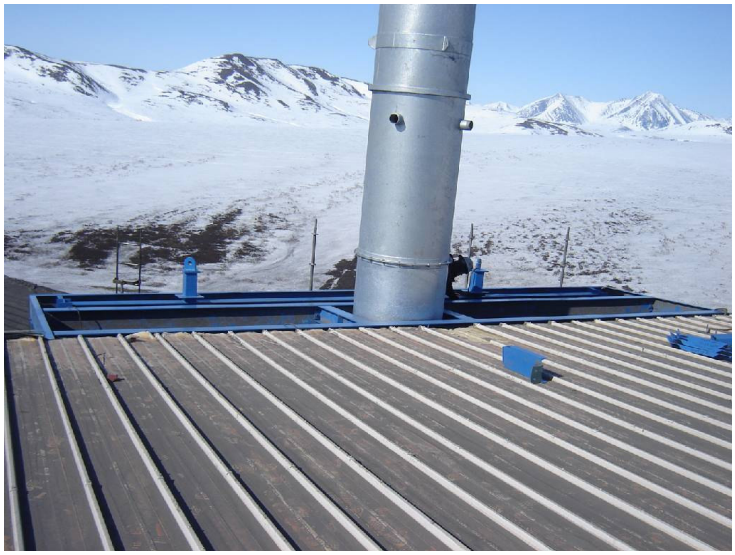
Plenum within Gyratory

Air plenum for the Gyratory Crusher Dump Pocket Baghouse

Fan and Ducting

Fan for the Gyratory Crusher Dump Pocket Baghouse

Baghouse Exhaust



Wind Wing Walls

Construction of Wing-Walls associated with the Gyratory Crusher Dump Pocket

Jaw Crusher

Beginning the Jaw Crusher Dump Pocket Baghouse construction

Coarse Ore Stockpile Building

A new roof will be installed on the Coarse Ore Stockpile Building during the summer of 2006

CSB Prototype Baghouse

Prototype baghouse within the Mine Concentrate Storage Building. The unit is being operated to evaluate the performance of filter media within the CSB which can have very high moisture and extremely cold temperatures.

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Prototype baghouse within the Mine Concentrate Storage Building. The unit is being operated to evaluate the performance of filter media within the CSB which can have very high moisture and extremely cold temperatures.

In Pit Stockpiling

Improvements in Mining operations dust control activities. In Pit stockpile.

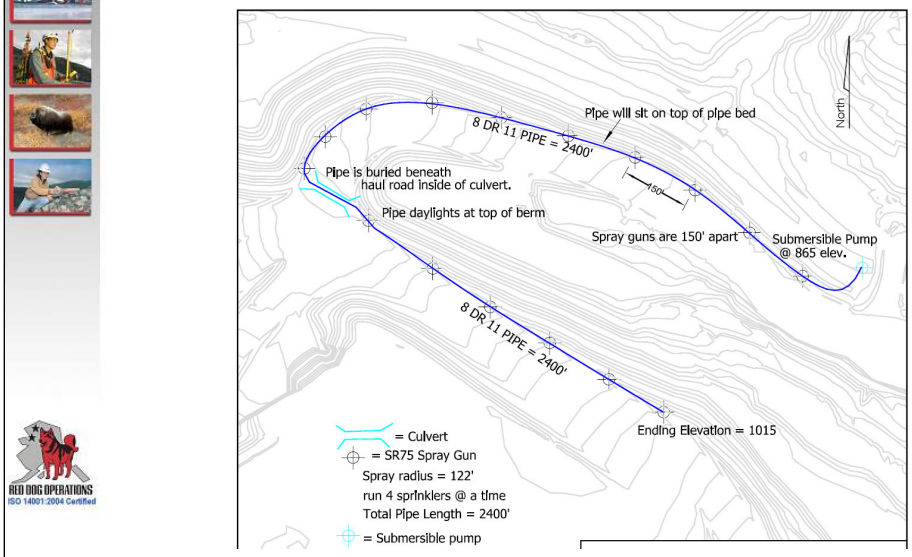
Water Truck Fill Station

Improvements in Mining operation dust control activities. The new water fill station decreases water truck fill times and subsequently increases water truck cycle rates.

Water Truck Fill Station

Improvements in Mining operation dust control activities. The new water fill station decreases water truck fill times and subsequently increases water truck cycle rates.

Pit Road Sprinkler System



Conceptual proposal for a mine haul road sprinkler system for dust control.

Pit Road Sprinkler System

Proposed sprinkler location

Segregated Traffic

The segregation of traffic of concentrate haulage did not significantly reduce the metal concentrations on the road surface.

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Risk Assessment Presentations

Introduction

Review of DMTS Risk Assessment Timeline

- January 2003 - conceptual site model approved by DEC
- January 2003 - draft RA work plan submitted to DEC
- February 2003 - public review and comment period completed
- February/March 2003 - preliminary comments obtained on RA work plan
- Summer 2003 – Phase I of RA data collection program completed

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Review of DMTS Risk Assessment

Review of DMTS Risk Assessment Timeline *(continued)*

- November 2003 – final comments on RA work plan provided by DEC
- February 3, 2004
  - Revised RA work plan submitted to DEC
  - Response to comments submitted to DEC
- February 2004 – DEC distributed a comment responsiveness summary
- April 16, 2004 - Draft Phase II sampling plan submitted to DEC. Revised and approved June 2, 2004.

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Review of DMTS Risk Assessment

Review of DMTS Risk Assessment Timeline *(continued)*

- June through September 2004 – Phase II of RA data collection program conducted
  - Primarily biota data collection
  - Additional subsistence foods
  - Supplemental marine sediment sampling
- Feb 15, 2005 – draft RA delivered to Teck Cominco for review

Review of DMTS Risk Assessment

Risk Assessment Timeline *(continued)*




- April 2005 – Draft RA delivered to DEC
- April 12 to May 27 – DEC held a 45-day public comment period
- April – stakeholder meetings held to provide summary of draft RA results
  - Red Dog subsistence committee
  - Kivalina and Noatak villages
  - Kotzebue - Maniilaq and Northwest Arctic Borough
  - Anchorage - Ikayuqtit team, incl. NGO's, etc
- May 27 to July 11 – DEC extended the public comment period another 45 days

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Review of DMTS Risk Assessment

Risk Assessment Update

- Sept 9, 2005 – DEC delivered formal comments on RA to Teck Cominco and Exponent
- Nov 10, 2005 – response to DEC comments on HHRA submitted
- Nov, Dec 2005 and Jan 2006 – comment resolution discussions with DEC regarding HHRA comment responses
- Dec 16, 2005 – response to EPA comments submitted

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Review of DMTS Risk Assessment

Risk Assessment Update *(continued)*

- Jan 27, 2006 – response to DEC comments on the ERA submitted
- Mar/Apr 2006 – support to DEC on questions related to comment responsiveness summary
- April 25, 2006 – Draft response to NPS comments to Teck Cominco for review; should be submitted to DEC in May

Review of DMTS Risk Assessment

Risk Assessment Update *(continued)*

- May 2006 – response to USGS comments in progress, anticipating submittal by June
- Remaining comments requiring responses include the following:
  - Travis/Peterson (for NANA)
  - CSP2 (combined NGO comment document)
  - ACAT
  - Peplow (for combined NGO review)
  - April 2005 public meeting comments (outstanding followup questions on the initial response)

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Review of DMTS Risk Assessment

Planned 2006 Schedule




- May/June/July 2006
  - Submit draft comment responses as completed
- July/August/September 2006
  - Complete comment resolution discussions (including any revisions to comment responses)
  - Submit revised RA
  - Submit final comment responses
- Fall 2006
  - Begin discussion of risk management plan approach and priorities with DEC and stakeholders
  - Prepare draft risk management plan

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Review of DMTS Risk Assessment

Solid Waste/Closure Considerations




- Manage long term dust aspect under this program.
- Incorporate findings into closure plan.
  - 5 year renewal benefit