

Homestake Mining Company Superfund Site Update

November 8, 2010





Presentation Outline

- n Sampling Activities
- n Human Health Risk Assessment
- n Third Five-Year Review Start
- n Remedy System Evaluation – Update



Sampling Team

- n Center for Environmental Restoration,
Monitoring & Emergency Response
(CERMER) U.S. EPA/ORIA/R&IE National
Laboratory, Las Vegas
- n United States Army Corps of Engineers,
Kansas District
- n Weston Solutions, Inc.

Sampling Activities

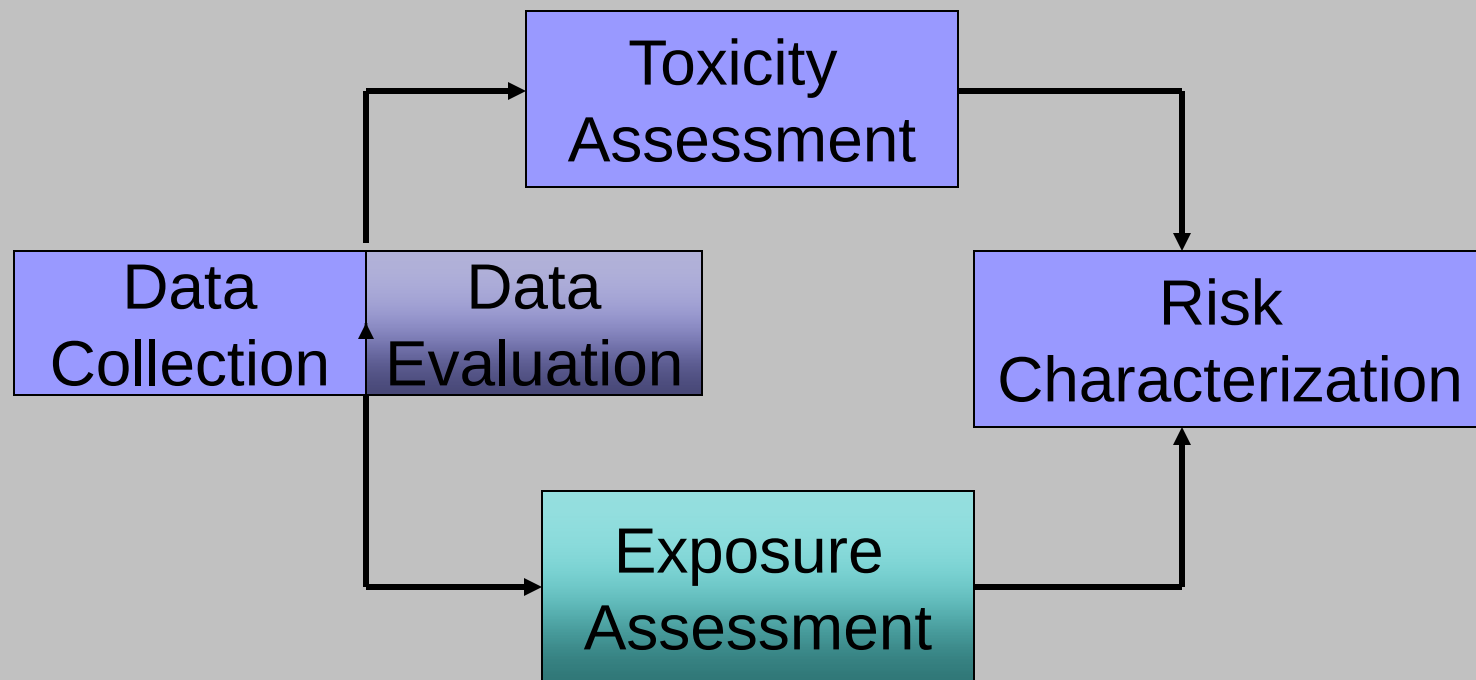
What is the purpose of sampling?

- n EPA is responding to the community's concerns
- n Evaluate exposure pathway during ongoing remediation
- n Develop data for risk assessment



Nearly 1,500 radon, soil, water and vegetation samples will be collected

Risk Assessment Process at EPA



What kind of samples are collected?

- n Radon – Indoor and outdoor
 - .. Track Etch – long-term sampling
 - .. Canister – short-term sampling
- n Soil sampling
 - .. On private property
 - .. On Homestake site
- n Water sampling from private wells
- n Vegetation Sampling
- n Gamma survey
- n White film



What are the sampling techniques used?

- n Gamma Radiation Survey
 - .. Site scan-
Environmental
Radiation Ground
Scanning (ERGS)
 - .. Residential outdoor
scan

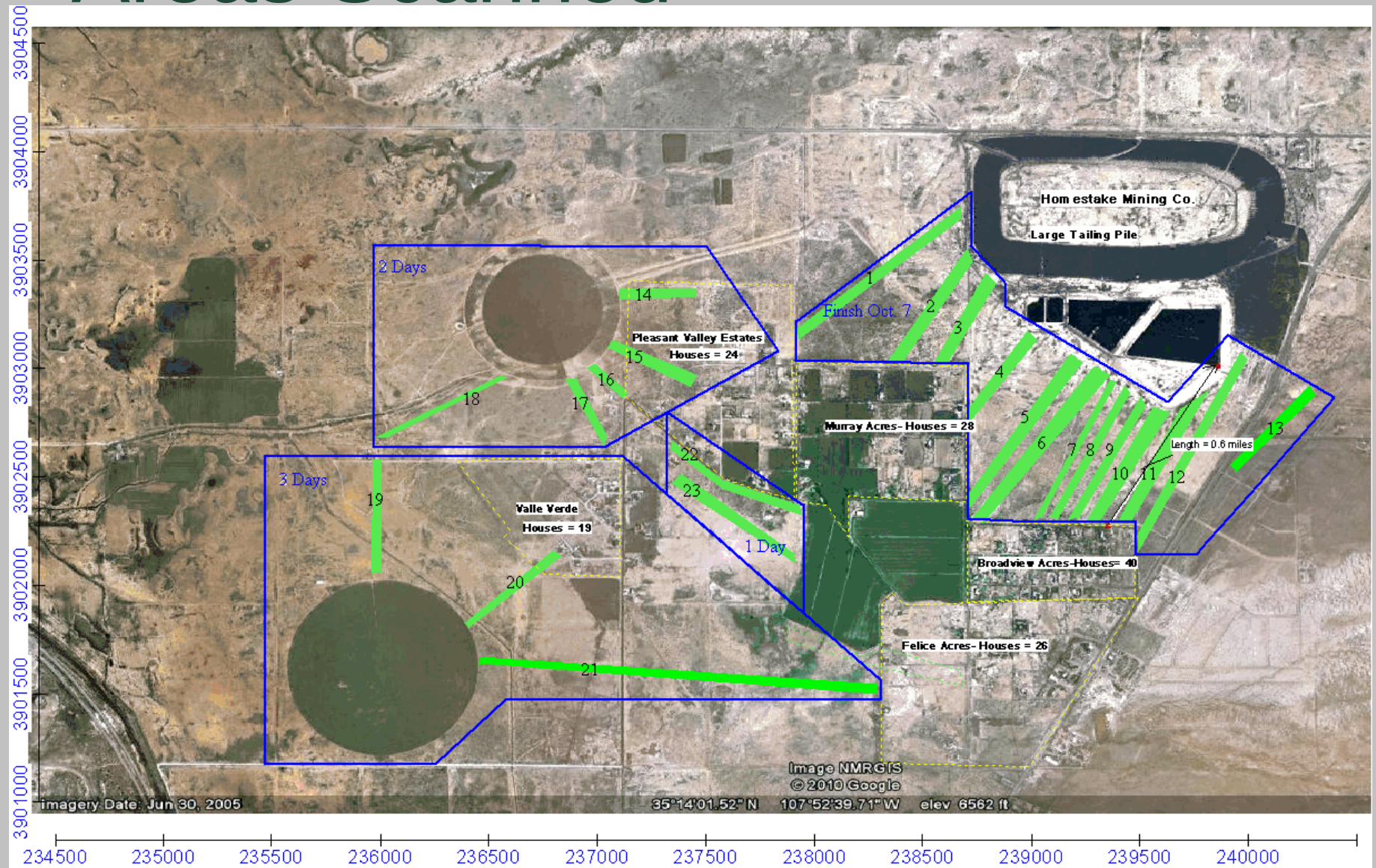


ERGS

- n Gamma Radiation Survey
- n Detects gamma radiation using 8 sodium iodide detectors
- n Detects surface and subsurface sources
- n Provides qualitative results for further investigation



Areas Scanned





Residential Assessment

- n Gamma radiation survey of surface soils of residential properties (1-acre maximum)
- n Ludlum Model 2221 detects Gamma radiation using a 2"x2" sodium iodide scintillator probe
- n Provides quantitative results, leading to possible surface soil sample collection for laboratory analysis



Residential Assessment



File: \\hrc\Operations\field-staff\HOMESTEAD\FIGURE_1_PROPERTY_ASSESSMENT_RESULTS_MAP.mxd, 20-08-10 10:05, START/GO

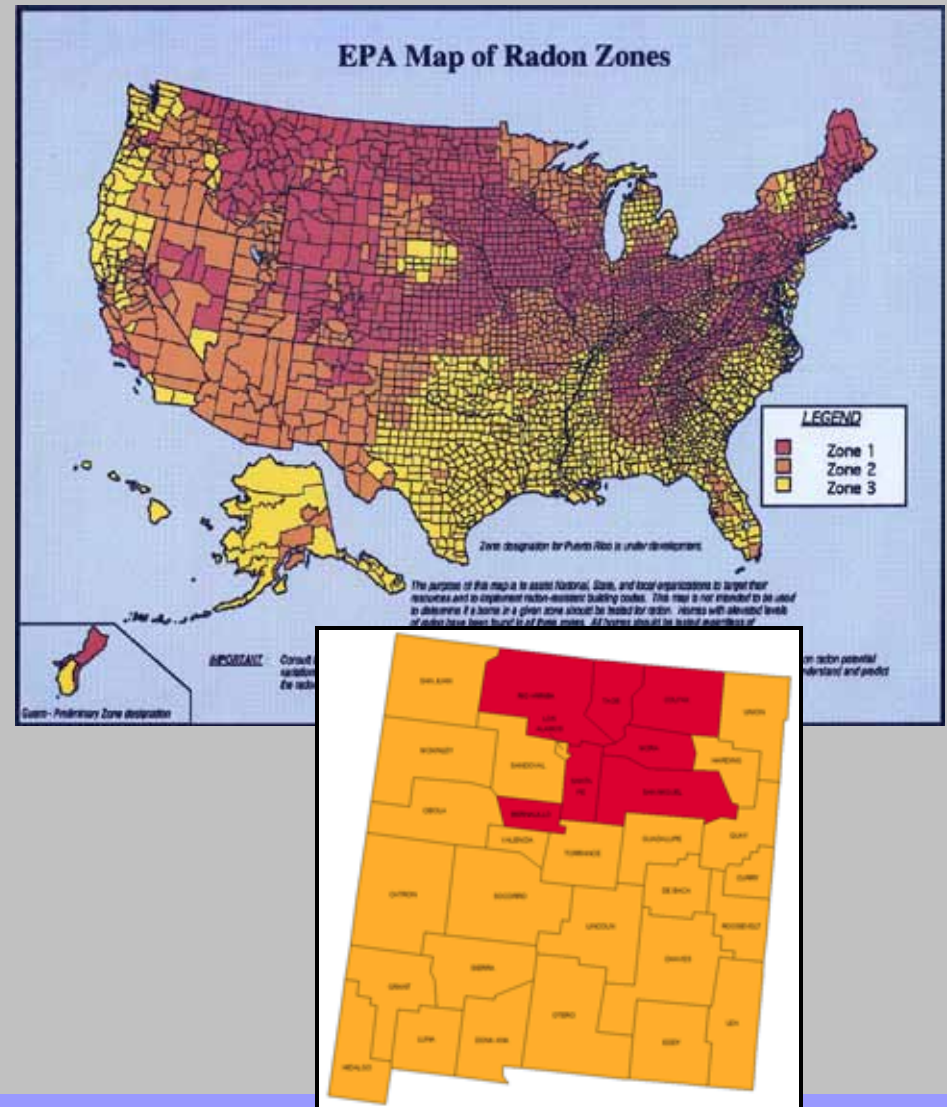
Residential Radon Sampling

- n 2 -3 track etch detectors placed indoors
- n 1 track etch detector placed outdoors near home
- n Sampled every quarter for at least one year
- n Nearly 75 homes sampled



Radon Gas

- n Rn-222 decay product from Uranium 238
- n Present everywhere in rocks and soil
- n Varies by geographical region
- n Highly variable from home to home



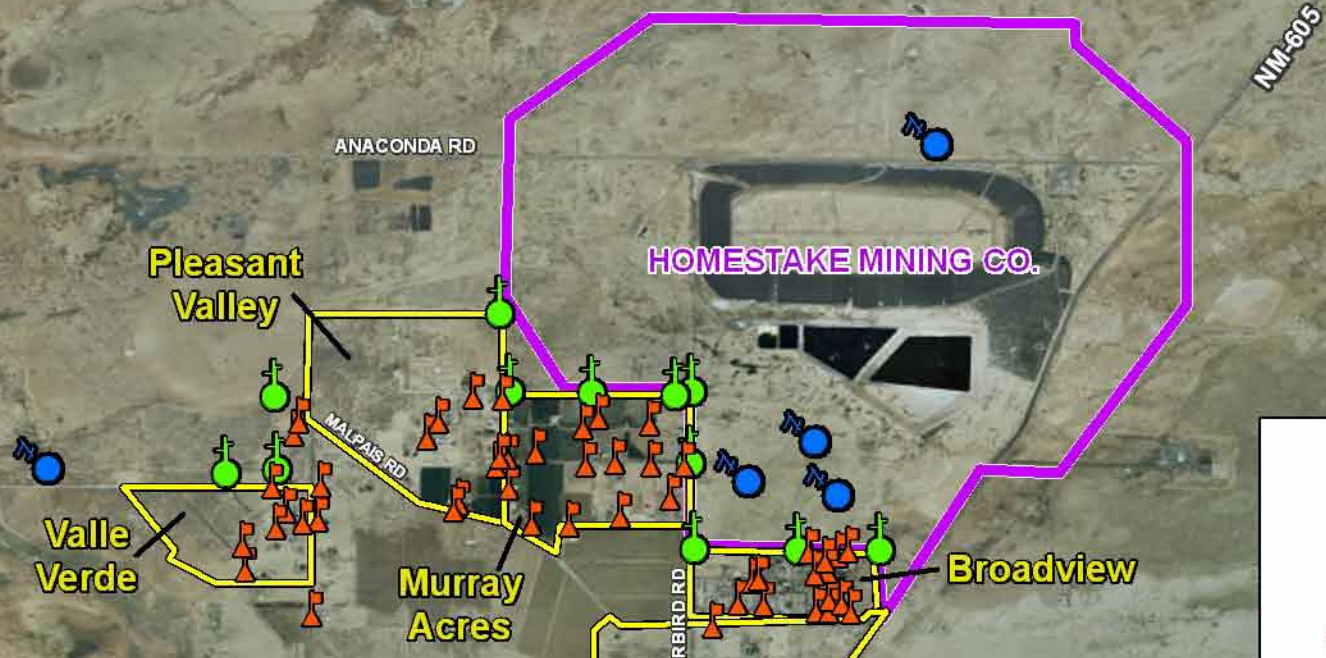
New Mexico is in Zone 2 (moderate) and some parts in Zone 1 (highest)

Radon Sampling on Homestake Site and Up-gradient Area

- n 9 locations with track etch detectors
- n Sampled every quarter for at least one year



CIBOLA COUNTY



What will samples be analyzed for?

- n Radon
- n Uranium
- n Thorium
- n Selenium
- n Vanadium
- n Other Metals
- n Gross alpha and beta



Sampling in Background Area – Bluewater Village

- n Why Bluewater Village?
- n Least impacted by mines and mills
- n Similar soil
- n Similar subdivisions
- n Similarity of home construction
- n Radon, soil and water samples
- n About 30 homes sampled



Risk Assessment

What questions will the risk assessment try to address?

- n Who is potentially exposed?
- n How could people be exposed?
- n What radioactive substances and chemicals?
- n What areas?
- n How much?





What the risk assessment will not answer:

- n Past exposure
- n The risk assessment will not correlate current health issues with environmental media.
- n Cannot identify individuals with problems.
- n Clear health impacts cannot be demonstrated within studied communities

How will the risk be computed?

- n Baseline exposure in background area
- n Exposure from Homestake Site
- n Exposure from upgradient area



Baseline exposure due to background +
Total Risk = Exposure from HMC + Exposure from
upgradient area

When will the risk assessment be complete?

- n Sample collection – one year
- n Risk Assessment Report – at least six months after all data analysis is complete
- n Based on current schedule report is expected in March 2012





Five-Year Review

Purpose

The purpose of a five-year review is to evaluate the implementation and performance of a remedy in order to determine if the remedy is or will be protective of human health and the environment. Protectiveness is generally defined in the National Contingency Plan (NCP) by the risk range and the hazard index (HI). Evaluation of the remedy and the determination of protectiveness should be based on and sufficiently supported by data and observations.



Five-Year Review Schedule

- n Notification – October 2010
- n Review Start – November 2010
- n Site Visit – December 2010/January 2011
- n Draft to EPA – May 2011
- n Final Report – September 2011



Remedy System Evaluation (RSE)

- n Report is still in draft
- n Conference call with stakeholders on November 30, 2010 to discuss comments
- n Final Report January 2011
- n EPA will deliberate and make recommendations to NRC



Q&A