



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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FEB 24 2005

Ref: EPR-B

Mr. Frank Bruno, City Manager
City of Boulder
PO Box 791
Boulder, CO 80306-0791

Re: Recommended Next Steps at the
Valmont Butte/Allied Piles Site, Boulder
County, Colorado, EPA ID: COD078348737

Dear Mr. Bruno:

On January 6, 2005, the U.S. Environmental Protection Agency (EPA) completed the Analytical Results Report (ARR) for the Valmont Butte/Allied Piles (also known as Hendricks Mining and Milling) site reassessment, which was performed under authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). EPA conducted this site reassessment in response to citizens' concerns, as well as an historic file review, which indicated the need to evaluate present day conditions, fill in data gaps, and determine what, if any, contamination exists. The reassessment evaluated sources, migration and exposure pathways, and target populations that had not been fully characterized.

The findings from the ARR indicate that at this time, the site is not impacting off-site targets, i.e., residents, nearby surface water bodies, and nearby shallow groundwater wells. The ARR also documents several on-site issues and risks that EPA believes warrant additional action in order to be protective of human health and the environment.

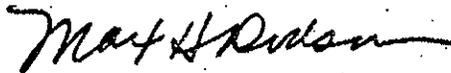
Attached please find a document listing the high and low priority issues, and EPA's recommendations for managing them. The issues are listed from high to low priority based on hazard categorization results, radiological survey screening results, and constituent concentrations that indicate materials are present onsite that meet the definition of hazardous substance and may provide a risk to potential on-site receptors. Appendices D, E, and H (Hazard Categorization Report, EPA Radiological Survey, and Screening Level Risk Evaluation, respectively), within the ARR provide additional information regarding on-site characterization and possible mitigation measures.

Sabrina Forrest, EPA Site Assessment Manager, is available to assist the City in developing a plan to address these on-site issues. You may reach Ms. Forrest at (303) 312-6484

with questions and for assistance with the City's plan. EPA requests that the City submit a draft plan to EPA for review and approval within 90 days of receipt of this letter.

EPA thanks all City and County offices for their cooperation during the Site Reassessment.

Sincerely,



Max H. Dodson, Assistant Regional Administrator
Office of Ecosystems Protection and Remediation

Attachment

cc: Robbie Roberts, EPA Regional Administrator
Carol Affleck, Rural Historic Valmont
Ariel Calonne, Boulder City Attorney
Jeff Deckler, Colorado Department of Public Health and Environment
Larry Donner, Boulder Fire Chief
Claire Green, Tribal Consultation Coordinator
Ernest House, Colorado Commission of Indian Affairs
Mike Patton, Director of Open Space and Mountain Parks
Peter Pollock, Boulder Planning Director
Ned Williams, City of Boulder, Department of Public Works

A. HIGH-PRIORITY ISSUES

Tailings Ponds

- The tailings ponds and prairie dog holes have not been managed per the City/State Agreement and Declaration of Covenants. As a result, there are tailings situated above the surface of the cap. The primary tailings pond soils contain the highest levels of milling-related contaminants with levels of lead as much as four times greater than the industrial use, risk-based screening level value of 800 parts per million (ppm). Subsurface soils in the primary tailings pond contained from 28 ppm to 14,000 ppm lead, with an average concentration of about 2,300 ppm. Radiation readings in the primary tailings pond were as high as 4 times background readings.

Surrounding Surface Soil Areas

- The reassessment findings confirmed there are five areas outside the tailings ponds, in and around existing buildings that could be contributing to identified risks. These areas are described in Sections 4.6, 4.7, and Appendix E of the ARR; they are also shown on Figure 2 of the ARR. Portions of soil in Areas 1, 3, and 5 should be considered for discrete soil removal or addition of cover material due to radiation readings exceeding three times background. In addition, samples from Area 1 indicated lead concentrations ranging from about 2 to 6.5 times the 800 ppm industrial use risk-based screening level value and potentially elevated arsenic concentrations as well. Soil samples from Area 3 showed elevated concentrations of lead, chromium, mercury, and barium.
- Additional soil samples collected from locations around the mill operation buildings and areas around the tailings ponds are described in Section 4.6 and indicate other areas that could be contributing to identified risks. These areas are west and in front of the three-bay garage; south and west of the mill; east of the railroad bed; on the west side of the mill building; and north of the western dike dam in the secondary tailings pond. Lead concentrations in samples collected from these areas ranged from 1.5 to 5.5 times the 800 ppm industrial use risk-based screening level value and arsenic concentrations were also greater than the 1.9 ppm industrial risk-based screening level value.

Transformers

- Samples were collected from nine transformers located on or inside buildings near the mill area. Six of the transformers contained greater than 50 parts per million (ppm) chlorine in field test kits, which indicates the presence of regulated polychlorinated biphenyls (PCBs).

Mill Area - Outside

- The corroded drum west of mill, which contains partially soluble sandy solids, generated a pH of 3; x-ray fluorescence (XRF) results for lead of 11,000 ppm, and arsenic of 430 ppm.
- Corroded drum west of mill contains black, fine-grained material that is combustible.

Used Parts Area

- A steel 55-gallon drum with no top containing brown solids; perhaps soil or tailings. XRF results showed 13,000 ppm lead and 330 ppm arsenic.
- A green 55-gallon drum containing 14-inches of cherry red liquid that generated a pH of 14 (corrosive base).

Inside Mill Building

- A partial fiberboard drum near south end of main entrance, with "Phosphorus pentasulfide," on the side, had a strong sulfur odor; and was likely used in the manufacture of thiophosphates and used in mining for ore flotation. Phosphorus pentasulfide is reactive with water, forming hydrogen sulfide.
- One sample of a pale yellow crystalline material with a strong ammonia-like odor was soluble in water and generated a pH of 9.

Three Bay Garage

- Drums to west of the garage contain brown solids, perhaps ore. XRF results showed arsenic at 610 ppm and lead at 5,900 ppm.

B. LOW PRIORITY ISSUES

General Housekeeping Needs Based on Hazard Categorization and Materials Inventory

Several areas contained materials that appeared to be in their original containers, were assumed in good condition, were assumed to contain their original product, and, therefore were not sampled. Many of these materials were substances such as paints, lubrication oils, or wood finishing materials. These items were often found in groups of similar containers in the same storage shed or workplace. In these instances START2 compiled an inventory of these items. EPA feels these materials are of a lower priority; however, removing them along with the higher-priority materials would further decrease the potential risk to on-site workers, occasional trespassers, and sweat lodge participants.

Mill Area - Outside

- 3,500 gallons of combustible oil in eastern aboveground storage tank to the west of the mill appears to be rancid vegetable oil.

Used Parts Area

- Various other drums and containers, electrical parts, switches and motors may contain combustible materials or otherwise need housekeeping attention.

Oil Storage Shed

- Only one sample collected appears to be non-hazardous. Other containers need housekeeping attention.

Three Bay Garage

- Miscellaneous drums and containers contain some used motor oil that is combustible.

Drums Near the Paint Locker

- Corroded drums containing solids; may be ore samples. Drums lying under a nearby tree were empty - soil samples did not indicate elevated lead or arsenic.

Inside Mill Building

- One sample of a pale yellow crystalline material with a strong ammonia-like odor was soluble in water and generated a pH of 9.
- Paper bag labeled as "guar-gum" located on top of the burlap bags on the south side of the mixing platform inside the mill building: field hazardous classification testing indicated that the pale yellow granular solid material dissolved in water and changed the pH to 3; however, it was not an oxidizer and was non-flammable.
- Miscellaneous bags and drummed materials that appear non-hazardous, non-flammable.

C. RECOMMENDATIONS

Radiological contamination, arsenic, and lead from historic milling operations were identified as the primary contaminants of concern at the site. With regard to the radiological contamination, EPA requests contaminated areas be treated as if they were part of the Agreement and Declaration of Covenants between the City and the Colorado Department of Public Health and Environment (CDPHE). In addition to abiding by the Agreements and Declaration of Covenants, EPA recommends that the City also follow the requirements of the CDPHE "Model Covenant Language" contained in SB 01-145. This requires site owners to submit an annual compliance certification to CDPHE.

Tailings ponds caps should be designed to meet the 1000/200 year criteria outlined by EPA Region 8 Air and Radiation Experts (see Appendix E, EPA Radiological Survey Report and Conclusions). The City and State should take action to ensure any remedy(ies) are consistent with federal radiation standards, or equivalent state standards. Federal standards for the tailings ponds may be found in 40 Code of Federal Regulation (CFR) 192.02. The design criteria and action(s) should be included in the Agreement and Declaration of Covenants between the City and the CDPHE.

The City should take action to remove and properly dispose of small areas with elevated radiological contaminants outside the tailings ponds. This work should be completed in a manner consistent with federal radiation standards, or equivalent state standards. The federal

standards that will apply to lands other than the tailings ponds are at 40 CFR 192.12. The removal and disposal criteria should be included in the Agreement and Declaration of Covenants between the City and the CDPHE.

During any construction or removal activities within the tailings ponds, or the primary pond dike dam, the City should follow the Agreements and Declaration of Covenants. EPA also requests the City follow the CDPHE Uranium Mill Tailings Management Plan, which specifies requirements municipalities must follow when disturbing radioactive tailings. An appropriate health and safety plan and engineering controls should be in place and risks to future on-site workers should be minimized by preventing worker exposure to contaminated surface and subsurface soils. Air monitoring should also be included during construction activities. Working structures (buildings) should also meet the 4pCi/l radon limit and the 20 μ R/hr above background gamma limit specified in 40 CFR 192.12. The City should periodically monitor all working structures since the buildings' conditions may change over time. Neighbors and concerned citizens should be made aware of all remediation, excavation, and development schedules, and mitigation and monitoring measures that will be implemented by the City. These management controls should be included in the Agreement and Declaration of Covenants between the City and the CDPHE.

With regard to items listed above that have non-radiological issues, EPA requests the City provide a plan for EPA approval that addresses the short-term or long-term actions that will be taken to eliminate access to, or risk from, these contaminated areas. For example, small areas of soil with elevated lead, arsenic, and other metals contamination may warrant discrete soil removal, addition of clean cover material, proper management, and implementation of institutional controls. With regard to drums, tanks, and transformers, there are both "contained" and "uncontained" materials that should be removed and properly disposed of in a timely manner. Transformers containing PCBs are subject to disposal requirements specified in 40 Code of Federal Regulations 761. These transformers should be drained and if unusable, should be moved offsite.