

Mound Site IHSS Briefing Summary

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Briefing Summary Revision Number

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IHSS/PAC Number

IHSS 113, Mound Site

Approximate Location

Northing: 749,500

Easting: 2,086,500

Location Relationship to other Site areas: The Mound Site was located between the former 903 Pad and Building 991, slightly north (about 100 feet) of Central Avenue.

Historical Information

(For a detailed history of IHSS 113 see References 1 through 4)

As the site began production operations in the early 1950's it was discovered that waste production dramatically exceeded waste disposal. Initial planning for the site had not adequately forecast the amount of wastes produced. As a result many waste forms began to be stored in drums located outside of production buildings. Beginning in 1954 drums of contaminated wastes containing radionuclides (U isotopes and some Pu), volatile organic compounds (VOCs; solvents like carbon tetrachloride and perchloroethylene), and semi-volatile organic compounds (SVOCs; machining oils and lathe coolants) were transferred from production buildings for burial at the Mound Site. The Mound site was a shallow trench about 175 feet by 150 feet. Drums were placed in rows and then were covered with soil with the resulting burial site extending above initial ground level (hence the name "Mound").

Burial of drums at the Mound Site continued until 1958 (about 1,400 drums total). At that point waste drums were no longer buried at the Mound site but instead were transferred for above-ground, open-air storage at the new 903 drum storage area (see 903 Area IHSS briefing). Soil and groundwater characterization data from the 1950's and 1960's indicated the presence of the contaminants previously mentioned. After the site recognized that its waste disposal practices in the 1950's and 1960's caused environmental difficulties, cleanup of certain waste areas commenced. After the initial cleanup of the 903 drum storage area in 1968, the Mound site was excavated in 1970. All drums were removed from the area as was contaminated soil. Groundwater monitoring wells were drilled in the 4 corners of the Mound site to determine the nature and extent of groundwater contamination.

Pre-remediation Characterization Data

Groundwater monitoring data from the Mound site collected in the 1990's indicated a contaminated groundwater plume was migrating downgradient towards the South Walnut Creek drainage (B-series ponds). The data indicated the major contaminants were VOCs and uranium isotopes.

Remedial Actions Taken

Based on the threat to surface water in the South Walnut Creek drainage by emerging contaminated groundwater from the Mound site, a passive groundwater treatment system was installed in the 1990s. Additional groundwater wells were installed around the treatment system to monitor its treatment efficiency and also determine the extent of the contaminated groundwater plume. Figure 1, page 4, is a photo from August 2005 showing the slope where the treatment system was installed and corresponding groundwater monitoring wells. The passive treatment system will need to function well into the post-closure future of the site. The treatment cell media in the system have to be inspected and replenished on a periodic basis. In addition, the solar-powered sump pump in the collection area needs to be maintained for the treatment system to function.

Post-remediation Remaining Contamination

Although the passive groundwater treatment system has shown to be effective at lowering contamination levels in groundwater, the Mound plume located upgradient of the treatment system still exists and will continue to do so for an extended period of time. Eventually the contaminants in the plume will decrease to levels where treatment can be discontinued. However, until this decrease occurs it will be necessary to maintain the treatment system.

Potential Exposure Pathways to Remaining Contamination

The only exposure pathway to remaining contamination from the Mound site is through surface water contamination in the South Walnut Creek drainage by the Mound groundwater plume.

Long-term Stewardship Controls

In order to protect surface water in the South Walnut Creek drainage from the Mound groundwater plume it will be necessary for the site to adopt long-term stewardship controls for the Mound passive groundwater treatment system and monitoring network. These controls include the following:

- treatment system maintenance and inspection activities specified in the site's Long-term Surveillance & Maintenance Plan;
- access controls to help minimize vandalism damage to the treatment system;
- continued groundwater and surface water monitoring to determine effectiveness of the treatment system; and,
- institutional controls spelled out in the post-closure regulatory agreement restricting activities surrounding the treatment system and monitoring network.

Notes

None at this time.

Document references

1. 1992 Historical Release Report (document path, CERCLA AR# SW-A-000378)
2. A Summary of On Site Radioactive Waste Disposal, Ed Putzier, 1970 (heavily referenced document in Reference 1, not available in CERCLA AR database, hard copy at Front Range Reading Room)

3. A Historical Summation of Environmental Incidents Affecting Soils at or Near the USAEC Rocky Flats Plant, Owen and Steward, 1974 (heavily referenced document in Reference 1, not available in CERCLA AR database, hard copy at Front Range Reading Room)
4. The Past 30 Years at Rocky Flats Plant, Ed Putzier, 1982 (heavily referenced document in Reference 1, not available in CERCLA AR database, hard copy at Front Range Reading Room)
5. Draft Trenches and Mound Site Characterization Report, 1996 (document path, CERCLA AR#)

Figure 1. View looking southwest towards slope with Mound Site Passive Groundwater Treatment System and ground water monitoring wells (August 2005)

