

Ash Pits and Incinerator IHSS Briefing Summary

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Briefing Summary Revision Number

Rev 0 (5/05)

IHSS Group Number

SW-1

IHSS/PAC Number

IHSS 133.1, Ash Pit 1

IHSS 133.2, Ash Pit 2

IHSS 133.3, Ash Pit 3

IHSS 133.4, Ash Pit 4

PAC SW-1701, recently identified ash pit (aka TDEM-1)

PAC SW-1702, recently identified ash pit (aka TDEM-2)

IHSS 133.5, Incinerator Facility

IHSS 133.6, Concrete Wash Pad

Approximate Location

Northing: 748,000

Easting: 2,080,000

Approximate acreage: 20 acres

Location Relationship to other Site areas: IHSS Group SW-1 is south of the former west access road and T130/B130 complex where the flat plateau changes to a slope towards Woman Creek.

Historical Information

(For a detailed history on IHSS Group SW-1 see Reference 1)

The incinerator (Facility 219 or Building 219) was used to burn general Site combustible waste from approximately 1952 until 1968. The incinerator deteriorated over time and in 1968 ceased operations. At that time the site's combustible waste was sent to the new Present Landfill located on the north side of the Industrial Area.

Until 1959, the ash from the incinerator and noncombustible material was placed around the incinerator and to the south near the concrete wash pad area. After 1959, the ash was placed in the 6 ashpits (IHSS/PAC designations above). The ash pit trenches are located to the south, southeast, and east of the incinerator area. Noncombustible trash, such as counting discs, broken glassware, and metal was collected in a nearby dumpster and later disposed of in the trenches. In addition to the general combustible waste, small quantities of depleted uranium-contaminated (U-238) combustibles were also burned. Estimates of the amount of U-238 vary widely from less than 100 grams of total U-238 to between 1 and 8 kilograms of U-238 per ton of ash.

The ash pit trenches are approximately 150 to 200 feet long, 12 feet wide, and 10 feet deep with approximately 3 foot soil covers on top. Two additional trenches were discovered in 1994 (PACs SW-1701 and 1702) based on anomalies found during a time-domain electromagnetic (TDEM) conductivity survey. These two additional areas were confirmed through review of aerial photographs and samples collected from boreholes in the immediate area.

Excess concrete from construction activities at the site was routinely washed from concrete trucks at the concrete wash pad. The pad was located southwest of the incinerator and adjacent

to ash pit SW-1701. Although the concrete washing operation did not generate hazardous material, its close proximity to the contaminated incinerator ash areas resulted in washing operations being transferred to the Present Landfill in 1979.

Pre-remediation Characterization Data

Pre-remediation characterization data for the incinerator and ash pits indicated that the major contaminants of concern (COC) were uranium isotopes, especially depleted U-238. Other COCs detected were lead, arsenic, beryllium, and other metals which were present in low concentrations.

The only contamination concern with the concrete wash pad IHSS area was the possibility that some uranium contamination migrated into this area from the incinerator and ash pits. Additional sampling results indicated this area did not exceed site background uranium levels.

Remedial Actions Taken

(Note: Figure 1, page 4, September 2005, is a photo showing the ash pits/incinerator area located just to the west of the remediated original landfill)

Originally, the RFCA parties (DOE, CDPHE, and EPA) planned on completely removing the contents of the 6 ash pits, an action RFCLOG supported (Reference 3). However, when the draft RFCA modifications were proposed, RFCLOG changed its position and did not advocate for removal of the ash pit wastes. As a result of the changes to the RFCA, the 6 ash pit trenches were approved as No Further Accelerated Action (NFAA) sites by the regulatory agencies. Therefore no remedial actions were performed and the buried wastes remained in the ash pits.

The incinerator removal was performed in 2 phases. In spring 2003, while residual concrete surrounding the incinerator area was being removed, the southern face of the incinerator was exposed and identified. At this point in time, it was assumed that the incinerator had been removed at some point in the past. After more buried structure had been exposed, radiological surveys were performed to better characterize the remaining structure. Removal activities were postponed until fall 2003 to evaluate the acquired data and develop a plan to dispose of the incinerator. During the removal activities soot-covered concrete rubble was found and disposed of as low-level waste (LLW, <100 nCi/g). Soils within the excavation were sampled and COCs were below RFCA wildlife refuge worker action levels (WRW ALs). Therefore no soil was removed from the excavation. The excavated area was back-filled with clean fill, graded, and re-seeded.

The concrete wash pad was not considered to be a contaminated location, so no accelerated action was planned. However, as a best management practice, the site decided to remove the clean concrete from the pad and recycle it for use as rubble backfill for other activities.

Small amounts of contaminated laboratory debris with elevated beta radiation were found in SW-1 during characterization and remediation. This debris was removed and managed as LLW.

Post-remediation Remaining Contamination

The major remaining areas of contamination within SW-1 are the 6 ash pits since no remediation was performed at their locations. The major COCs remaining in the ash pits are U isotopes and metals previously mentioned which are below WRW ALs. Remaining COCs at the incinerator include U isotopes and metals, all of which are below WRW ALs. However there are some surface soil locations in SW-1 where lead, beryllium, and total uranium concentrations exceed

the ecological receptor action levels. The impacts to ecological receptors at these locations will be evaluated as part of the comprehensive risk assessment (CRA). These particular locations are within the boundary of the Upper Woman Drainage Exposure Unit.

Potential Exposure Pathways to Remaining Contamination

The major exposure pathway to remaining contamination is through exposure of the buried waste due to landslides. The area of SW-1 is susceptible to landslides. If a landslide were to occur, some buried waste could potentially be exposed. The exposed waste could then be subject to erosion leading to potential transportation in surface water. However, SW-1 is outside the 100 year floodplain of Woman Creek which minimizes the potential for future waste exposure due to flood erosion.

Long-term Stewardship Controls

Long-term stewardship controls are important to the successful closure of SW-1, especially the ash pits. Although impacts to surface water and ground water from SW-1 have been minimal in the past, future periodic inspections of SW-1 are important to verify that buried waste does not become exposed due to a natural event.

Notes

Project photographs of the incinerator and concrete wash pad excavations can be found in Appendix A of Reference 2.

Document references

1. 2003 Annual Update for the Historical Release Report (document path, CERCLA AR #SW-A-004837)
2. 2004 Close-out Report for IHSS Group SW-1 (document path, CERCLA AR #BZ-A-000650)
3. Coalition End-State Position Letter to RFCA Principals, September 9, 2002 (document path, RFCLOG website, www.rfclog.org, Board Policies)

Figure 1. View looking north across Woman Creek Drainage September 2005. The Ash Pits and Incinerator were located just to the west (left in photo) of the remediated Original Landfill site.

