

ENVIRONMENTAL INVENTORY
UPDATED INFORMATION ON BURIAL SITES AT
ROCKY FLATS

EA-321-83-240

C T Illsley
Environmental Analysis

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Distribution

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KWIC Index
Burial Sites
Inventories
Trenches
Jessley, CT
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INTRODUCTION

A report entitled **Environmental Inventory - A Historical Summation of Environmental Incidents Affecting Soils at or Near the U S AEC Rocky Flats Plant** was written by J B Owen and L M Steward in 1973. The report contained an infiltrated-soil inventory around and under Plant buildings and facilities as well as details on Plant burial sites. These burial sites are locations where radioactive materials or chemicals were deliberately buried or contained. Detailed descriptions of each burial site were presented. Information in this report was a result of searching records, reviewing literature and numerous discussions with a large number of employees.

Since 1973, additional investigations have produced more information on previously described burial sites and discovered other locations. The latter discoveries were the result of further employee interviews, exploratory drilling and construction excavation activities. This report is an attempt to update and document the total knowledge on burial sites at Rocky Flats.

Figure 1 is a map showing the location of newly discovered burial sites or trenches and other locations for informational purposes. It is not a complete duplication of Map 11 in the Owens/Steward report, but includes recent site changes such as the Perimeter Security Zone (PSZ) and locations of trenches and pits that have been removed.

BURIAL SITES

Oil Burning Pit No. 2 (1957 and 1961-1965)

A total of 1082 drums of oil containing uranium were burned. The residues and some flattened drums were covered with backfill. In 1978 the area was

Sew Pl 11 (Q 40 970)

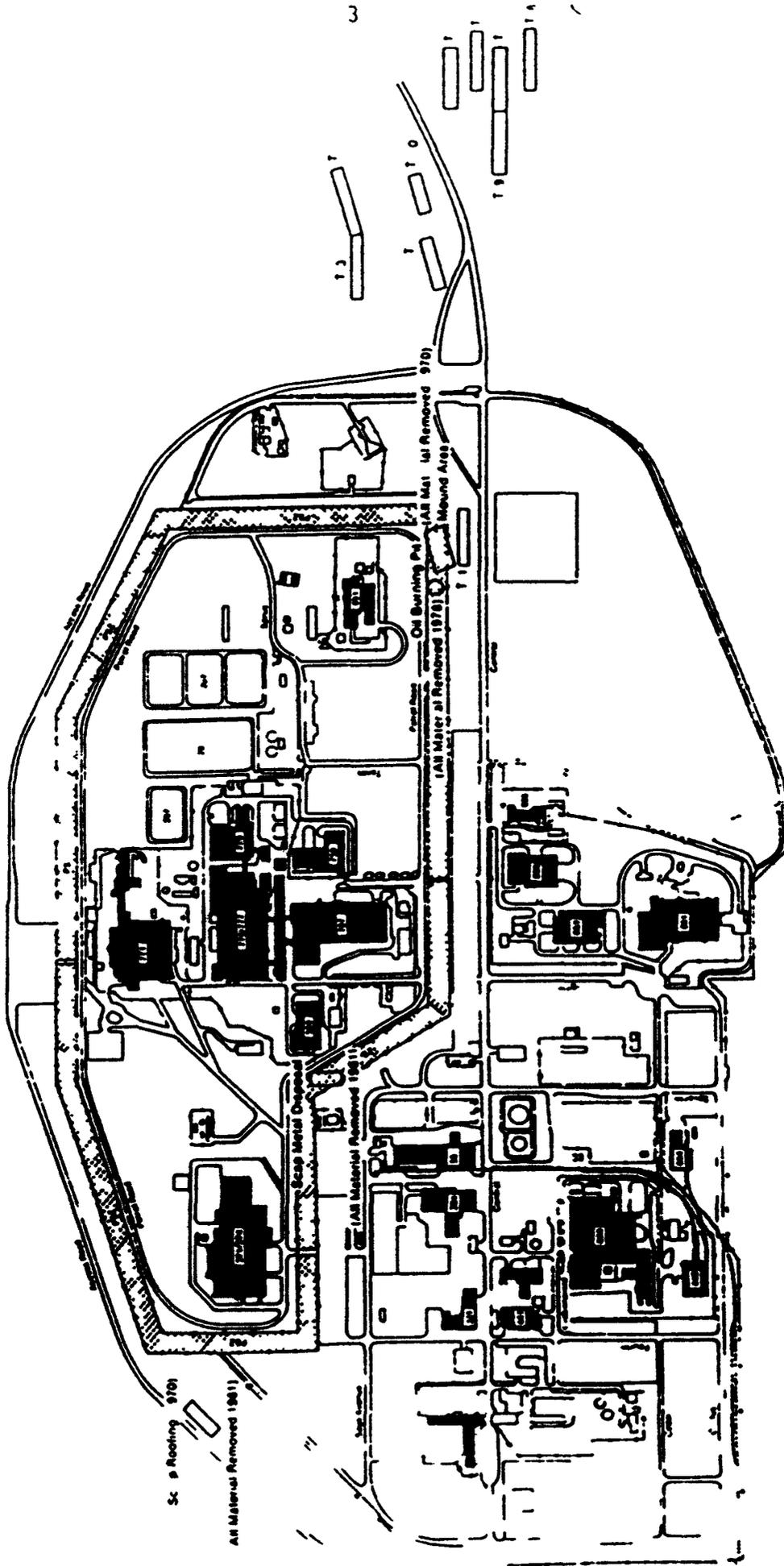


Figure 1 Map of Rocky Flats Plant Site Showing Locations of Some Burial Sites

excavated and 239 boxes (2 ft X 4 ft X 7 ft) of soil were filled and shipped offsite to a DOE authorized disposal site

Trench T-1 (1954-1962)

Approximately 25 000 kilograms of depleted uranium chips in 125 drums were deposited in this trench and covered with about 2 feet of fill dirt. Weed cutting activities in October and November 1982 unearthed two drums not adequately covered with fill material. Both drums were sampled and successfully removed for offsite disposal. One drum contained an oil/water mixture which yielded plutonium analyses of 55 pCi/l and uranium analyses of 2.3×10^5 pCi/l. The other drum was found to contain an oily sludge which yielded results of 4.3 pCi/g plutonium and 1.2×10^6 pCi/g uranium.

Trenches T-2 Through T-11 (1954-1968)

These trenches were disposal sites for approximately 125,000 kilograms of sanitary sewage sludge and about 300 flattened empty drums contaminated with uranium. The oldest trenches contain mostly uranium and the newer trenches contain small amounts of plutonium in addition to uranium. Alpha activity is in the range from 400 to 4000 pCi/g. Trenches T-4 and T-11 also contain some uranium/plutonium infiltrated asphalt planking from the 207 area solar evaporation ponds. Estimated total alpha radioactivity is between 150 and 200 mCi.

Trenches T-9, T-10, and T-11 were added to the inventory in 1977. Samples from T-11 contained plutonium in the range from 4.5 to 50 pCi/g and uranium-238 in the range between 0.9 and 158 pCi/g. Trench T-10 was found to contain uranium in the range between 40 and 126 pCi/g and ^{239}Pu in the

range from 0.18 to 1.4 pCi/g. Trench T-9 was discovered as an extension of Trench T-7. Plutonium concentrations in collected samples varied from 0.40 to 68 pCi/g and uranium was found in the range between 2.4 and 450 pCi/g. Trench T-9 also contained considerable scrap metal and junk.

Scrap Metal Disposal

Scrap metal components, mostly from the original plant construction program, were buried in trenches west of Building 559. These trenches were completely excavated and the material removed to the sanitary landfill in 1981. No radioactivity was detected.

Sewer Plant Liquids

A small burial site south of the sanitary landfill was discovered in 1981. It was determined from older employees that several hundred gallons of liquid from the sanitary sewer plant were buried here in 1970. Analysis of soil samples collected during exploratory drilling did not indicate any radioactivity.

Scrap Roofing Burial

During construction activities for the PSZ, a new burial site was unearthed west of Building 371. Further investigation revealed that several hundred cubic yards of styrofoam insulation and miscellaneous roofing materials had been buried here in 1970. The trench was excavated and all scrap materials were removed to the sanitary landfill. No radioactivity was detected on the materials or in the trench.

Other Potential Sites

Exploratory drilling was performed at two other suspected burial sites. One of these south of Building 707 between Sage and Central Avenues and Eighth and Ninth Streets was rumored to contain nonradioactive metal scrap. Neither a metal detector survey nor exploratory drilling revealed any buried materials.

Water in test wells 9-74 and 1-74 located west of Building 881 has from time to time contained anomalous concentrations of uranium and nitrate. Since the immediate area was once used as a scrap metal storage yard, it was suspected that some metal might have been buried in the area. A metal detector survey indicated some possible locations but exploratory drilling did not unearth any buried material. The instrumental anomalies were attributed to water saturated clay seams.

CONCLUSION

This report presents the results of additional investigations on the locations and contents of burial sites at the Rocky Flats Plant. Updates will be prepared as information is obtained.