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**Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
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WASTE BURIAL GROUND DATA PACIFIC
NORTHWEST LABORATORY SITES

E. E. Voiland

Febrary 1970

PNE-8156

INTERNAL DISTRIBUTION

FOR APPROVAL OF	
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w/o drawings----

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February 2, 1970

Mr. Frank S. Zvonar
 Supervisory Auditor
 U. S. General Accounting Office
 Federal Building
 Richmond, Washington 99352

Dear Mr. Zvonar:

Waste Burial Ground Data
Pacific Northwest Laboratory Sites

The following enclosures are provided in response to your informal request of January 20, 1970, for information pertinent to solid waste burial sites under the control of Battelle-Northwest. If further information is required, please contact Mr. Robert R. Hall or myself.

- (1) Table - Waste Burial Ground Data, Pacific Northwest Laboratory Sites
- (2) Drawing E-3-9982 - 300 North Burial Ground
- (3) Drawing E-3-9951 - 300 Wye Burial Ground

Sincerely yours,

ORIGINAL SIGNED BY
 E. E. VOILAND

E. E. Voiland
 BNW Representative
 WASTE MANAGEMENT ADVISORY BOARD
 REC-RL

W:cc
 Enclosures

cc: J. J. Cadwell, Safety and Standards, BNW - w/o drawings
 R. B. Hall, " " " - w/o drawings

Waste Burial Ground DataPacific Northwest Laboratory Sites

Site Designation	300 North	300-Wye	100-F
Area (acres)	6.1	8.6	1.7
Status:			
Activation date	1953	1963	1955
Deactivation date	1963(1)	1967(1)	Active
Waste volume:			
Buried	200,000 ⁽²⁾	120,000 ⁽³⁾	75,000-100,000 ⁽⁴⁾
Waste type	α, β, γ Emitters	α, β, γ Emitters	β, γ Emitters, only
Beta-Gamma Activity Buried (grams)	<1,000 ⁽⁵⁾	<1,000 ⁽⁵⁾	<10 ⁽⁶⁾
Plutonium Buried (grams)	<100	<100	None
Plutonium Disposal Containment	Cardboard Cartons	Cardboard Cartons	Not Applicable
Storage Term ⁽⁷⁾	Long	Long	Long

(For Footnotes see next page)

PNL Waste Burial Ground Data

Footnotes:

- (1) Deactivation according to Hanford Standards.
- (2) Data on the quantity of waste buried were not available from records readily available since the burial site was operated when General Electric Company was prime contractor. A knowledge of laboratory programs and burial site utilization suggests that 200,000 cubic feet is a reasonable estimate.
- (3) Based on "load-lugger" count.
- (4) Estimated on a basis of 5,000 to 6,000 cubic feet per year.
- (5) In volume, the largest part of the buried wastes consists of slightly contaminated (or possibly contaminated) rubber gloves, wipes, apparatus, etc., from bench scale experimentation with uranium or tracer level radionuclides. The bulk of the buried radioactivity, however, is concentrated in a relatively small volume. It arises from process demonstrations with extensive quantities of radionuclides and is buried in "caissons" located in specific areas of the burial sites. Very little -- if any -- plutonium was buried in cartons in the trenches. Recognized plutonium wastes were either contained in concrete, confined to the "caissons", or shipped to 200-West burial sites. It should be noted that these burial grounds have also been used for disposal of beryllium.
- (6) Primarily tracer level radionuclides from biological research.
- (7) These sites are intended for indefinite long-term storage (under periodic surveillance) until such time as a procedure for ultimate disposal has been established. Such long-term planning is currently being undertaken for Hanford wastes by the Waste Management Advisory Board, AEC-RL.

**HANFORD
AREA MAP**

0 1 2 3 4 5

SCALE OF MILES

11-19-68

300-North Burial Ground

Status: Inactive; operations terminated 1964.

Reference Drawing: H-3-9982

Location: Approximately four miles northwest of 300 Area, about 1250 feet southwest of the Richland-Hanford Highway (Route 4, South, Drawing No. M-6000). The site is in Sec. 21, T11N, R28E Willamette Meridian.

Description: The site consists of a 485' x 570' rectangle (oriented NW-SE) less a triangular parcel on the south corner whose legs extend 89.5' on the southwest side and 245' on the southeast side. Total area is 6.1 acres.

Burial facilities include 12 backfilled trenches ranging in size from 40' x 50' to 75' x 300'; and 94 35" diameter x 15' long vertical pipes made by welding together five 55-gallon drum bodies. The drum storage units are located in four rows parallel and adjacent to the southernmost boundary and two NW-SE oriented rows immediately south of the site's center. After backfilling, the pipes were capped with concrete and covered with dirt.

The burial ground perimeter is marked with Identification Markers 3-64-1 through 3-64-68 starting from the southernmost corner.

Burial Site Contents: The site is the repository of a broad spectrum of low-to-high-level dry radioactive wastes, primarily fission products and plutonium. Cartoned low level wastes were buried in the trenches and medium-to-high-level beta-gamma wastes in the pipe facilities. Quantities probably amount to thousands of curies of beta-gamma activity and 10's to 100's of grams of plutonium.

Non-radioactive beryllium wastes are also buried at this site.

Remarks: This site was retired in 1964 in favor of the 300 WYE site.

11-19-68

100-F Area Contaminated Leaching Trench

Status: Active. Inaugurated 1966.

Reference Drawing:

Location: Located 100 feet northeast of the 107-F Retention Basin, the leaching trench is in Section 33, T14N, R27E Willamette Meridian (Drawing No. M-6000).

Description: The leaching trench is approximately 10' deep and extends 400' in a NW-SE direction. It is connected by a sewer line to the 141-N animal waste collection facility, 100-F Area, which is 300' due west.

Site Contents: The trench receives separated liquid from leached animal wastes and sawdust used in animal housing. The liquid is very slightly contaminated with beta-gamma emitters, primarily strontium from animal feeding studies.

Solids -- which are technically "non-radioactive" -- are trucked to a disposal pit east of the 100-F Area perimeter road.) Total radioactivity in the trench probably does not exceed hundreds of millicuries.

11-19-68

300-WYE Burial Ground

Status: Inactive; operations terminated December 1967.

Reference Drawing: H-3-9951

Location: About $1\frac{1}{2}$ miles northeast of the Richland-Hanford Highway (Route 4 South, Drawing No. M-6000) from a point $7\frac{1}{3}$ miles northwest of 300 Area. The site is in Sec. 5, T11N, R28E Willamette Meridian.

Description: The site consists of a 375' x 1000' rectangle oriented east-west. Total area is 8.6 acres.

Burial facilities include three backfilled trenches 900' x 50' occupying all of the site except a 100' x 1000' strip on the north side. In the eastern half of this northern portion are located 50 vertical pipe storage units made by welding five 55-gallon drum sections together. Just west of the pipe installations are four caisson storage facilities consisting of 8' diameter x 10' high 8-gauge corrugated metal pipe, buried 15' below grade and connected to the surface by offset 36" pipe. All pipe and caisson disposal facilities have been backfilled, capped off with concrete and covered with dirt.

The burial ground perimeter is marked with Identification Markers 2-68-1 through 2-68-28.

Burial Site Contents: The site is a repository for a broad spectrum of low-to-high-level dry radioactive wastes, primarily fission products and plutonium. Cartoned low level wastes were buried in the trenches and medium-to-high-level beta-gamma wastes in the pipe facilities and caissons.

Quantities probably amount to thousands of curies of beta-gamma wastes and 10's to 100's of grams of plutonium.

Remarks: This site was retired in December 1967 in favor of burying all wastes in the 200 Area burial grounds. At closure of the burial ground, one trench had not been completely used.

11-19-68

100-F Area Solid Waste Burial Ground

Status: Active. - Inaugurated 19 .

Reference Drawing: (None known)

Location: Located 1/3 of a mile southwest of the 105-F Bldg., the BNW-controlled dry waste burial ground in 100-F Area is in Section 32, T14N, R27E Willamette Meridian (Drawing No. M-6000).

Description: (None available - will be obtained.)

Burial Site Contents: The site is the repository for low level beta-gamma dry waste resulting from biology R and D programs. In general, radioactivity disposed to the site is reckoned in micro- or milli-curies per container and does not include plutonium which is buried in 200-W Area.

11-19-68

100-F Area Solid Waste Burial Ground

Status: Active. Inaugurated 19 .

Reference Drawing: (None known)

Location: Located 1/3 of a mile southwest of the 105-F Bldg., the BNW-controlled dry waste burial ground in 100-F Area is in Section 32, T14N, R27E Willamette Meridian (Drawing No. M-6000).

Description: (None available - will be obtained.)

Burial Site Contents: The site is the repository for low level beta-gamma dry waste resulting from biology R and D programs. In general, radioactivity disposed to the site is reckoned in micro- or milli-curies per container and does not include plutonium which is buried in 200-W Area.

11-19-68

100-F Area Contaminated Leaching Trench

Status: Active. Inaugurated 1966.

Reference Drawing:

Location: Located 100 feet northeast of the 107-F Retention Basin, the leaching trench is in Section 33, T14N, R27E Willamette Meridian (Drawing No. M-6000).

Description: The leaching trench is approximately 10' deep and extends 400' in a NW-SE direction. It is connected by a sewer line to the 141-N animal waste collection facility, 100-F Area, which is 300' due west.

Site Contents: The trench receives separated liquid from leached animal wastes and sawdust used in animal housing. The liquid is very slightly contaminated with beta-gamma emitters, primarily strontium from animal feeding studies. Solids -- which are technically "non-radioactive" -- are trucked to a disposal pit east of the 100-F Area perimeter road.) Total radioactivity in the trench probably does not exceed hundreds of millicuries.