



Environmental Sampling —An Art As Well As A Science

Appendix A

1991 Environmental Monitoring Program

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The following schedule represents the West Valley Demonstration Project's routine environmental monitoring program for 1991. This schedule meets or exceeds the minimum program needed to satisfy the requirements of DOE ORDER 5400.1. It also meets requirements of DOE ORDER 5400.5 and DOE/EH-0173T. Specific methods and recommended monitoring program elements are found in DOE/EP-0096, *EFFLUENT MONITORING*, and DOE/EP-0023, *ENVIRONMENTAL SURVEILLANCE*, which are the bases for selecting most of the schedule specifics. Additional monitoring is mandated by operational safety requirements (OSRs) and air and water discharge permits (40 CFR 61 and SPDES), which also require a formal report. These specific cases are identified in the schedule under "Monitoring/Reporting Requirements."

Schedule Of Environmental Sampling

The following table is a schedule of environmental sampling at the West Valley Demonstration Project. Locations of the sampling points are shown in Figures A-1 through A-9. The index below is a list of the codes for various sample locations. Table headings in the schedule are as follows:

Sample Location Code. The physical location where the sample is collected is described. The code consists of seven characters: The first character identifies the sample medium as Air, Water, Soil/Sediment, Biological, or Direct Measurement. The second character specifies on-site or off-site. The remaining characters describe the specific location (e.g., AFGRVAL is Air off-site at Great VALley).

Monitoring/Reporting Requirements. The basis for monitoring that location, any additional references to permits or OSRs, and the reports generated from the sample data are noted here.

Sampling Type/Medium. Describes the collection method and the physical characteristics of the medium.

Collection Frequency. Indicates how often the samples are collected or retrieved.

Total Annual Sample Collections. Describes the number of discrete physical samples collected annually for each analyte.

Analyses Performed/Composite Frequency. Describes the kind of analyses, the frequency of sample compositing, and the analytes measured in the composited samples.

Summary Of Monitoring Program Changes In 1991

<i>Location Code</i>	<i>Description of Changes</i>
WNSP006 WNSWAMP WNSW74A WFBCBKG	Added semiannual grab samples for analysis of TOC, TOX, Ca, Mg, Na, K, Ba, Mn, Fe, Cl, SO ₄ , NO ₃ , F, HCO ₃ , and CO ₃ .
WNSP007	Added Sr-90 and gamma scan to analyses of 24-hour composites collected three times a month.
*WNDCELD	Reduced grab-sample frequency from weekly to monthly.
*WNSTAW Series	Deleted WNSTAW1, WNSTAW2, WNSTAW3, WNSTAW7, and WNSTAW8 from sampling program.
WNW Series	Added ninety-six groundwater monitoring wells to routine program.
WFBCBKG	Analyses added to quarterly composites: C-14, I-129, Pu/U isotopic, Am-241.
WFBIGBR	Added monthly liquid grab-sampling site. Analyzed for gross alpha, gross beta, H-3, Sr-90, and gamma isotopic at background site on Cattaraugus Creek.
AFRSPRD AFGRVAL	Added analysis of U isotopic, Pu isotopic, and Am-241 to air filter samples from closest and farthest site.
On-site Soils	On-site samples at locations SNSW74A, SNSWAMP, and SNSP006 were collected near locations WNSW74A, WNSWAMP, and WNSP006.
*SF Soil Series	Deleted Little Valley background site.

* Require DOE approval before implementation

Index of Environmental Monitoring Program Sampling Points

ON-SITE AIR EFFLUENT SAMPLING POINTS (FIG. A-1)

ANSTACK.	Main Plant	A-1
ANSTSTK.	Supernatant Treatment	A-1
ANCSSTK.	Cement Solidification	A-3
ANCSRFK.	Size-reduction Facility	A-3
ANSUPCV.	Supercompactor	A-5

LIQUID EFFLUENT AND ON-SITE WATER SAMPLING POINTS (FIG. A-2)

WNSP001.	Lagoon 3 Weir Point	A-7
WNSP006.	Facility Main Drainage	A-9
WNSP007.	Sanitary Waste Discharge	A-9
WNSTPBS.	Sanitary Waste Sludge	A-9
WNSWAMP.	Swamp Drainage Point	A-11
WNSW74A.	Swamp Drainage Point	A-11
WN8D1DR.	Waste Farm Underdrain	A-11
WNSP008.	French Drain LLWTF Area	A-11
WNSP005.	South Facility Drainage	A-13
WNCoolW.	Cooling Tower*	A-13
WNFR67.	Frank's Creek East	A-15
WNERB53.	Erdman Brook	A-15
WNNDADR.	Disposal Area Drainage	A-15
WNDCELD.	Drum Cell Drainage	A-15
WNDNK Series.	Potable Water*	A-17
WNSTAW Series.	Standing Water*	A-19

ON-SITE GROUNDWATER SAMPLING POINTS AND SEEPS (FIG. A-3)

SSWMU #1.	Low-level Waste Treatment Facility Wells and WNSP008	A-21
SSWMU #2.	Miscellaneous Small Unit Wells	A-21
SSWMU #3.	Liquid Waste Treatment System Wells	A-23
SSWMU #4.	HLW Storage and Processing Tank Wells	A-23
SSWMU #5.	Maintenance Shop Leach Field Wells	A-25
SSWMU #6.	Low-level Waste Storage Area Wells	A-25
SSWMU #7.	CPC Waste Storage Area Wells	A-25
SSWMU #8.	CDDL Wells, WNGSEEP, and WNDMPNE	A-27
SSWMU #9.	NDA Unit Wells	A-27
SSWMU #10.	IRTS Drum Cell Wells	A-27
SSWMU #11.	SDA Unit Wells	A-29
Fuel Storage Area		A-29

*Not detailed on map

Index of Environmental Monitoring Program Sampling Points

OFF-SITE SURFACE WATER SAMPLING POINTS (FIG.A-4)

		A-31
WFBCTCB.	Buttermilk Creek at Thomas Corners	A-31
WFFELBR.	Cattaraugus Creek at Felton Bridge	A-31
WFBCBKG.	Buttermilk Creek Background	A-31
WFBIGBR.	Cattaraugus Creek at Bigelow Bridge	A-31

OFF-SITE DRINKING WATER SAMPLING POINTS (FIGS. A-5 and A-9)

WFWEL Series.	Private Local Wells	A-33
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OFF-SITE AMBIENT AIR SAMPLING POINTS (FIG. A-6)

AFFXVRD.	Fox Valley Sampler	A-35
AFTCORD.	Thomas Corners Sampler	A-35
AFSPRVL.	Springville Sampler	A-35
AFWEVAL.	West Valley Sampler	A-35
AFDNKRK.	Dunkirk (background)	A-35
AFBOEHN.	Dutch Hill Road Sampler	A-35
AFRT240.	Route 240 Sampler	A-35
AFRSPRD.	Rock Springs Road Sampler	A-35
AFGRVAL.	Great Valley (background)	A-35

FALLOUT, SEDIMENT, AND SOIL SAMPLING POINTS

AFDHFOP.	Dutch Hill Fallout*	A-37
AFFXFOP.	Fox Valley Fallout*	A-37
AFTCFOP.	Thomas Corners Fallout*	A-37
AF24FOP.	Route 240 Fallout*	A-37
ANRGFOP.	Rain Gage Fallout*	A-37
SF Soil Series.	Air Sampler Area Soil*	A-37
SFCCSED.	Cattaraugus Creek at Felton Bridge	A-37
SFSDSED.	Cattaraugus Creek at Springville Dam	A-37
SFBISED.	Cattaraugus Creek Background Sediment	A-37
SFTCED.	Thomas Corners Sediment	A-37
SFBCESED.	Buttermilk Creek Background Sediment	A-37
SN On-site Soil Series.*		A-37
SNSW74A.		A-37
SNSWAMP.		A-37
SNSP006.		A-37

*Not detailed on map

Index of Environmental Monitoring Program Sampling Points

OFF-SITE BIOLOGICAL SAMPLING POINTS (FIGS. A-5 AND A-9)

BFFCATC.	Cattaraugus Creek Fish, Downstream	A-39
BFFCTRL.	Cattaraugus Creek Fish, Background	A-39
BFFCATD.	Cattaraugus Creek Fish, Downstream of Dam	A-39
BFMREED.	NNW Milk	A-39
BFMCOBO.	WNW Milk	A-39
BFMCTLS.	Milk, South, Background	A-39
BFMCTLN.	Milk, North, Background	A-39
BFMWIDR.	SE Milk	A-39
BFMHOUR.	SSW Milk	A-39
BFVNEAR.	Produce, Near-site	A-41
BFVCTRL.	Produce, Background	A-41
BFHNEAR.	Forage, Near-site	A-41
BFHCTLS.	Forage, South, Background	A-41
BFHCTLN.	Forage, North, Background	A-41
BFBNEAR.	Beef, Near-site	A-41
BFBCTRL.	Beef, Background	A-41
BFDNEAR.	Venison, Near-site	A-41
BFDCTRL.	Venison, Background	A-41

DIRECT MEASUREMENT DOSIMETRY (FIGS. A-7, A-8, AND A-9)

DFTLD Series	Off-site Dosimetry	A-43
SNTLD Series	On-site Dosimetry	A-45