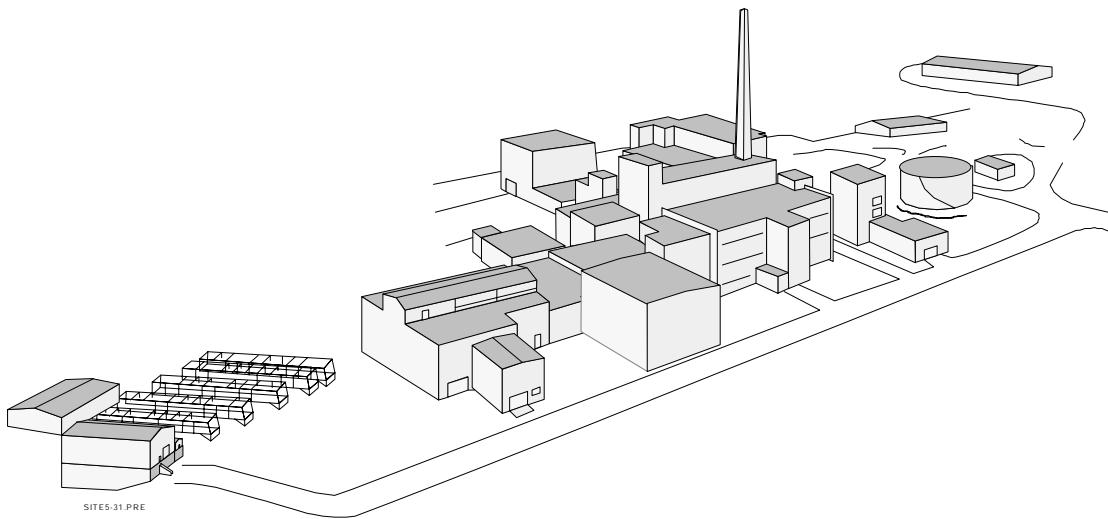


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# WEST VALLEY DEMONSTRATION PROJECT SITE ENVIRONMENTAL REPORT CALENDAR YEAR 2001



**WEST VALLEY NUCLEAR SERVICES COMPANY  
AND  
URS GROUP, INC.**



Prepared by: West Valley Nuclear Services Co. and URS Group, Inc.  
Prepared for: U.S. Department of Energy  
Ohio Field Office OH/WVDP

Under: Contract DE-AC24-81NE-44139

August 2002  
10282 Rock Springs Road  
West Valley, New York 14171-9799

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**Department of Energy**  
Ohio Field Office  
West Valley Demonstration Project  
10282 Rock Springs Road  
West Valley, NY 14171-9799

To The Reader:

This report, prepared by the U.S. Department of Energy (DOE) Ohio Field Office West Valley Demonstration Project (OH/WVDP), summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year 2001. As has been the practice in prior years, this report is being made available to the public as soon as possible in advance of DOE's required release date of October 1, 2002.

Monitoring and surveillance of the WVDP facilities are conducted in order to verify that public health and safety and the environment are protected. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's (NYSERDA) New York State-licensed Disposal Area (SDA).

Air, surface water, groundwater, soil, and biological samples collected and analyzed for radiological and nonradiological constituents are evaluated for indication of potential effects of activities at the WVDP. Monitoring of treated water effluents and facility ventilation system emissions verified that the dose received by off-site residents continues to be minimal.

Calculated doses to the hypothetical maximally exposed off-site individual from airborne and waterborne radiological releases in 2001 were less than one percent of the DOE limit. Radionuclide concentrations in biological samples were at levels near or statistically identical to background concentrations.

Nonradiological liquid effluent discharges are controlled and permitted through the New York State Pollutant Discharge Elimination System (SPDES). Discharges in 2001 were below regulatory limits with only one exception. Although this one release is not believed to have had a significant effect on the off-site environment, action was taken to prevent its recurrence. Refer to the Environmental Compliance Summary (ECS) section of the report for further discussion on this release.

The Project's continuing commitment to safety was recognized in 2001 when it was awarded the DOE Voluntary Protection Program Star of Excellence Award. In addition, the Project's continuing commitment to environmental responsibility was confirmed when the WVDP's status as a National Environmental Performance Track charter member was reaffirmed by the U.S. Environmental Protection Agency.

If you have any questions or comments about the information in this report, please contact the West Valley Nuclear Services Company (WVNSCO) Communication Department at (716) 942-4555 or complete and return the enclosed survey.

Sincerely,

A handwritten signature in cursive script that reads "Alice C. Williams".

Alice C. Williams, Director  
West Valley Demonstration Project





**West Valley Demonstration Project**  
**Site Environmental Report**  
**for**  
**Calendar Year 2001**

*Prepared for the U.S. Department of Energy*

*Ohio Field Office*

*West Valley Demonstration Project Office*

*under contract DE-AC24-81NE44139*

*August 2002*

*West Valley Nuclear Services Co.*

*10282 Rock Springs Road*

*West Valley, New York 14171-9799*

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# Preface

*Environmental monitoring at the West Valley Demonstration Project (WVDP) is conducted by the West Valley Nuclear Services Company (WVNSCO), under contract to the U.S. Department of Energy (DOE). The data collected provide an historical record of radionuclide and radiation levels and chemical data from natural and manmade sources in the survey area. The data also document the chemical and radiological quality of the groundwater on and around the WVDP and in the air and water released by the WVDP. Meteorological data are also presented.*

*It is the policy of the WVDP to conduct all activities, including design, construction, testing, start-up, commissioning, operation, maintenance, and decontamination and decommissioning, in a manner that is appropriate to the nature, scale, and environmental effects of these activities. The WVDP is committed to full compliance with applicable federal and New York State legislation and regulations for the protection of the environment, to continual improvement, to the prevention and/or minimization of pollution, and public outreach, including stakeholder involvement.*

*This report represents a single, comprehensive source of off-site and on-site environmental monitoring data collected during 2001 by environmental monitoring personnel. The environmental monitoring program and results are discussed in the body of this report. The monitoring data are presented in the appendices. Appendix A contains maps of on-site and off-site sampling locations. Appendix B is a summary of the site environmental monitoring schedule. Appendices C through J contain summaries of data obtained during 2001 and are intended for those readers interested in more detail than is provided in the main body of the report. Appendix K lists laws and regulations pertaining to the WVDP. Appendix L provides groundwater monitoring data from the New York State-licensed Disposal Area (SDA).*

*Requests for additional copies of the 2001 Site Environmental Report and questions regarding the report should be referred to the WVDP Communications Department, 10282 Rock Springs Road, West Valley, New York 14171 (telephone: 716-942-4555). Additional Project information is available on the internet at <http://www.wv.doe.gov>.*

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## **SUMMARY OF CHANGES TO THE 2001 WVDP SITE ENVIRONMENTAL REPORT FROM THE 2000 SITE ENVIRONMENTAL REPORT**

This report, prepared by the U.S. Department of Energy (DOE) West Valley Demonstration Project office, summarizes the environmental protection program at the West Valley Demonstration Project (WVDP) for calendar year (CY) 2001. Monitoring and surveillance of the facilities used by the DOE for the WVDP are conducted in order to protect public health and safety and the environment. The quality assurance protocols applied to the environmental monitoring program by the DOE ensure the validity and accuracy of the monitoring data. Also included in this report are groundwater and ambient air data from the New York State Energy Research and Development Authority's (NYSERDA) New York State-licensed Disposal Area (SDA).

Changes in content for the 2001 annual Site Environmental Report are summarized below. The overall organization of the report is the same as that of the 2000 Site Environmental Report.

### **REVISIONS AND ADDITIONS**

- The Executive Summary, Introduction, and Environmental Compliance Summary have been updated to describe implementation of the environmental monitoring program, special topics of importance, and status of regulatory compliance in CY 2001. The table of permits at the end of the Environmental Compliance Summary was updated to reflect those in effect in CY 2001.
- The section describing the purpose of the report was moved from the Introduction to the beginning of the Executive Summary. Summaries of compliance with DOE Orders 5400.5 and 435.1 were added to the Environmental Compliance Summary, as was a new section entitled Environmental Issues and Actions.
- Data and text were updated throughout the report to reflect results from the CY 2001 environmental monitoring program. Tables, graphs, maps, and references also were updated. The format for numerical data was standardized throughout to present standard units first, followed by metric units in parentheses.
- Chapter 1 summarizes 2001 activities at the WVDP, including vitrification, tank cleaning and characterization, preparation for spent fuel shipping, construction of the remote-handled waste facility, and environmental management of waste, liquid releases, and airborne emissions. All graphs were updated to include 2001 performance results.
- Chapter 2 includes a discussion of 2001 radiological results of sampling of air emissions and water effluents as compared to DOE concentration guides (as applicable). Results from air, water, soil, and biological samples taken from other on-site, near-site, and community locations are compared with results from background locations in order to evaluate effects of site activities. The current status of nonradiological monitoring on-site is also discussed. Special environmental evaluations done in 2001 are discussed. These include iodine emissions from the main stack, mercury at the low-level waste treatment facility, dose to biota, monitoring of contamination near the main process building, and monitoring of ambient air near preparation areas for soil shipments.

- Chapter 3 was updated to summarize and discuss results of the 2001 groundwater monitoring program, including continued monitoring, characterization, and mitigation of the strontium-90 plume on the north plateau. Figures were updated to reflect monitoring results in CY 2001.
- Chapter 4 provides an assessment of dose to the general public resulting from exposure to radiation and radionuclides released by the Project to the surrounding environment in 2001. Dose calculations were updated to reflect monitoring results from CY 2001. A new section entitled Dose to Biota: Aquatic and Terrestrial Wildlife and a table summarizing the evaluation of dose to biota were added to the report.
- Chapter 5 was updated to summarize the assessments of the environmental monitoring program under the WVDP quality assurance program. A new section entitled Data Verification and Validation was added.
- Maps in Appendix A were revised in a standardized format and updated to reflect the 2001 environmental monitoring program. A new map, detailing environmental sampling points between five and ten kilometers from the WVDP, was added.
- Changes in the environmental monitoring program in CY 2001 are summarized at the beginning of Appendix B.
- Appendices C, D, E, F, G, H, I, and L — the tables summarizing CY 2001 data for water, sediment, soil, air, groundwater, biological samples, State Pollutant Discharge Elimination System (SPDES) samples, direct radiation monitoring, meteorological monitoring, and NYSERDA samples — were updated with CY 2001 results.
- There were no errata or corrigenda from the 2000 Site Environmental Report.

## **SPECIAL ISSUES**

- Construction of the Remote-Handled Waste Facility continued in CY 2001.
- Ambient air in the NDA was monitored while soils for shipment were being moved from rolloffs to gondola cars.
- Low-level radioactive waste shipments continued in CY 2001.
- Spent fuel was removed from the FRS and prepared for shipping.
- Work to mitigate the gross beta plume on the north plateau continued.
- A contamination incident near the main process building was investigated and corrective actions were taken.
- Vitrification was almost completed. Cleaning and characterization of waste tanks continued in CY 2001.

## ERRATA and CORRIGENDA

### West Valley Demonstration Project Site Environmental Report Calendar Year 2000

A transcription error was identified in the 2000 Site Environmental Report in Table D-24 (p. D-22). The June 2000 gross alpha value for location AFGRVAL, which read  $6.13 \pm 1.00E-15$ , should be  $0.61 \pm 1.00E-15$ .

This change resulted in the aforementioned value no longer being bolded and the bolding being applied to the October value ( $1.33 \pm 1.22E-15$ ). This change caused no effect on evaluations throughout the report.

Any questions or comments about the corrigenda noted here may be directed to the Manager of Public and Employee Communications, John D. Chamberlain, West Valley Nuclear Services Company, at (716) 942-4610.

