



**Department of Energy**  
Carlsbad Field Office  
P. O. Box 3090  
Carlsbad, New Mexico 88221

NOV 17 2014

Mr. John E. Kieling, Chief  
Hazardous Waste Bureau  
New Mexico Environment Department  
2905 Rodeo Park Drive East, Building 1  
Santa Fe, New Mexico 87505-6303

Subject: Transmittal of the Waste Isolation Pilot Plant Project 2014 Waste Minimization Report,  
Permit Number NM4890139088-TSDF

Dear Mr. Kieling:

The purpose of this letter is to provide you with the Waste Isolation Pilot Plant (WIPP) Project 2014 Waste Minimization Report. This report, required by and prepared in accordance with the WIPP Hazardous Waste Facility Permit Part 2, Section 2.4, will be placed in the Information Repository.

We certify under penalty of law that this document and all attachments were prepared under our direction or supervision according to a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on our inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of our knowledge and belief, true, accurate, and complete. We are aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Please feel free to contact Ms. Susan McCauslin of the Carlsbad Field Office at (575) 234-7349, if you have any questions regarding this report.

Sincerely,

Original Signatures on File

Jose R. Franco, Manager  
Carlsbad Field Office

Robert L. McQuinn, Project Manager  
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure  
T. Kliphuis, NMED \*ED  
R. Maestas, NMED ED  
C. Smith, NMED ED  
S. Holmes, NMED ED  
CBFO M&RC  
\*ED denotes electronic distribution

**Waste Isolation Pilot Plant Project  
2014 Waste Minimization Report**

A waste minimization program is in place at the Waste Isolation Pilot Plant (WIPP) Project to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility. The purpose of this report is to comply with the WIPP Hazardous Waste Facility Permit (Permit) Part 2, Section 2.4 which states:

*The Permittees shall implement and maintain a waste minimization program to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility, as required by 20.4.1.500 NMAC (incorporating 40 CFR §264.73(b)(9)). The waste minimization program shall include proposed, practicable methods of treatment and storage currently available to the Permittees to minimize the present and future threat to human health and the environment. The waste minimization program shall include the following items:*

- 1. Written policies or statements that outline goals, objectives, and methods for source reduction and recycling of hazardous and mixed waste at the facility;*
- 2. Employee training or incentive programs designed to identify and implement source reduction and recycling opportunities for all hazardous and mixed wastes;*
- 3. Source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year;*
- 4. Estimated dollar amounts of capital expenditures and operating costs devoted to source reduction and recycling of hazardous and mixed waste;*
- 5. Factors which have prevented implementation of source reduction or recycling;*
- 6. Summary of additional waste minimization efforts that could be implemented at the facility that analyzes the potential for reducing the quantity and toxicity of each waste stream through production process changes, production reformulations, recycling, and all other appropriate means including an assessment of the technical feasibility, cost, and potential waste reduction for each option;*
- 7. Flow charts and/or tables summarizing all hazardous and mixed waste streams produced by the facility by quantity, type, building or area, and program; and*
- 8. Demonstration of the need to use those processes which produce a particular hazardous or mixed waste due to a lack of alternative processes, available technology, or available alternative processes that would produce less volume or less toxic waste.*

*The Permittees shall submit to the Secretary a report regarding progress made in the waste minimization program in the previous year. The report shall address items 1 – 8 above, shall*

*show changes from the previous report, and shall be submitted annually by December 1 for the year ending the previous September 30th.*

## PROGRESS

This is the fourth report prepared by the Permittees (the U.S. Department of Energy Carlsbad Field Office and Nuclear Waste Partnership LLC) under Permit Part 2, Section 2.4. This report describes how the WIPP project addressed items 1-8 for the period from October 1, 2013, through September 30, 2014, and any changes made since the previous report.

1. *Written policies or statements that outline goals, objectives, and methods for source reduction and recycling of hazardous and mixed waste at the facility.*

The WIPP Environmental Policy Statement (DOE/WIPP 04-3310) is a written policy statement that provides a strong commitment to pollution prevention (P2) and its continual improvement. In the policy statement, the Permittees commit to "...continually plan, perform, assess, and improve the environmental performance of the WIPP project." This policy statement was updated in July 2014 to incorporate commitment of the new Nuclear Waste Partnership LLC management.

In addition, the Permittees have implemented the WIPP Pollution Prevention Program Plan, WP 02-EC.11, which identifies and outlines the core components of the P2 program at the WIPP project and how the P2 related requirements of DOE Order 436.1 and Executive Orders 13423 and 13514 are implemented. The core components include annual P2 targets, defined responsibilities, communication, awareness activities, performing assessments to identify waste minimization or reduction opportunities, a recycling program, training, sustainable procurement, and reporting. This plan was updated in July 2014 to include wood waste as a waste stream.

2. *Employee training or incentive programs designed to identify and implement source reduction and recycling opportunities for all hazardous and mixed wastes.*

Every WIPP employee receives general employee training. The training includes content related to waste management, P2, waste minimization, and emergency response procedures. Employees involved in waste generation or handling activities and emergency response receive additional training to ensure that they are fully qualified to perform their tasks. Most of these training programs have elements in which waste minimization, source reduction, and recycling strategies are included. In addition, managers receive manager and supervisor training, as applicable to their positions, which includes a review of the P2 program.

During fiscal year (FY) 2014, training was provided during procurement classes on sustainable acquisition. Sustainable acquisition content included the requirement to

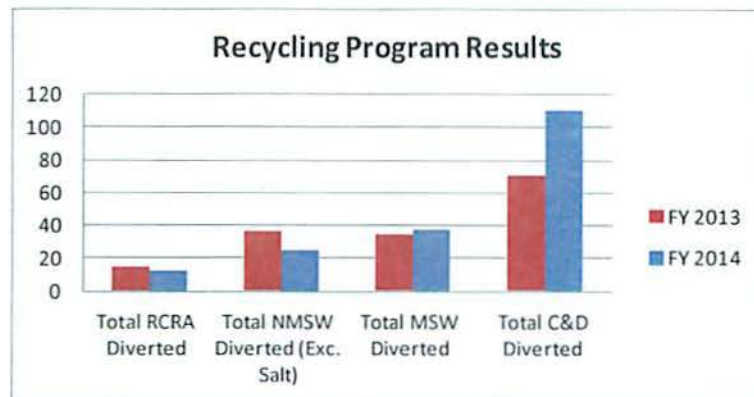
give purchasing preference to products that have recycled or biobased content, use less energy or water, are less toxic, do not use ozone depleting substances, or emit lower greenhouse gases. Also, a one page flyer called “P2 News” is distributed each month. Topics covered during FY 2014 included the handling of site-generated waste, used battery collection, using less (paper, water, and energy), and sustainable products purchasing.

3. *Source reduction or recycling measures implemented in the last five years or planned for the next fiscal year.*

The Permittees maintain an active recycling/reuse program and strive to continually improve performance in this area. Over the past five years, the Permittees recycling/reuse program at the WIPP Project has encompassed the following materials:

- Aluminum
- Antifreeze
- Asphalt
- Batteries
- Cardboard
- Chain-link fence
- Circuit boards
- Electrical Ballasts
- Electronics
- Lamps
- Metals
- Mined salt
- Mercury containing pressure cuffs
- Paper
- Plastic
- Tires
- Toner cartridges
- Used oil and oil filters
- Wood pallets, spools, timbers, and waste

In FY 2014, 185.36 metric tons of materials (excluding mined salt) and 11,298 metric tons of mined salt were diverted for recycling. The graph below compares FY 2013 and FY 2014.



RCRA – Resource Conservation and Recovery Act  
 NMSW – New Mexico Special Waste  
 MSW – Municipal Solid Waste  
 C&D – Construction and Demolition

4. *Estimated dollar amounts of capital expenditures and operating costs devoted to source reduction and recycling of hazardous and mixed wastes.*

The Permittees' FY 2014 budget for promoting and implementing P2 and waste minimization was \$150,000. This money was used for staffing support to maintain and implement the WIPP waste minimization program and to maintain P2 awareness.

During FY 2014:

- Recycle bins, to be placed in conference rooms, were purchased to enhance waste stream collection. The cost of the bins was \$2,717.70.
- Light-emitting diode (LED) task lights were purchased to replace fluorescent units with the purpose of reducing energy consumption and universal waste generation. The cost of the lights was \$1,611.52.
- Funds from FY 2104 were allocated to support travel for waste minimization staff to travel to the DOE-Hanford site in Richland, Washington in FY 2015 to observe and learn practical waste minimization techniques from a site with more extensive radiological waste experience. Lessons learned from this site visit will be applied to WIPP recovery waste minimization efforts.

5. *Factors which have prevented implementation of source reduction or recycling.*

There are no factors that have prevented the implementation of the WIPP waste minimization program to reduce the volume and toxicity of hazardous waste generated. Proposed waste streams that could generate hazardous wastes are reviewed regularly to ensure minimization of the hazardous constituents and to incorporate waste reduction, recycling and reuse whenever possible.

There were no changes from the 2013 Waste Minimization Report.

6. *Summary of additional waste minimization efforts that could be implemented at the facility that analyzes the potential for reducing the quantity and toxicity of each waste stream through production process changes, production reformulations, recycling, and all other appropriate means including an assessment of the technical feasibility, cost, and potential waste reduction for each option;*

A core component of the WIPP P2 program is conducting Pollution Prevention Opportunity Assessments (PPOAs). Assessments are performed on selected processes and/or waste streams to evaluate potential for waste minimization,

source reduction or recycling. In FY 2014, the Permittees performed six PPOAs and implemented the practicable P2 opportunities identified in the assessments. The assessments resulted in the following:

- An evaluation of the railroad crossing repair process was conducted when minor maintenance was needed to fill potholes. Previously when pothole repairs were needed at the railroad crossing, a subcontractor would deliver a truck load of asphalt mix to fill the holes. This process would require more man power and equipment (backhoe) to move the mix from the truck. It would also leave excess mix to handle. In discussions with the subcontractor and the person in charge of the work evolution it was decided to explore other options to fill the potholes. The subcontractor returned with multiple alternate product recommendations. Ready Road Repair<sup>®</sup> manufactured by Gardner Gibson was used as the pothole repair filler. This product is available over the counter by local vendors in buckets containing 40 pounds of product (approximately the size of a five gallon bucket). Use of this alternate product significantly reduced cost and waste, kept some equipment and workers off the road and has proved to be a sturdy product.
- A printer reduction project to gather printer and copier information, replace WIPP copiers and printers, and change purchasing requirements for copiers and printers was conducted. This project used a lean Six Sigma Green Belt (a disciplined, data-driven approach and methodology for eliminating defects by driving toward six standard deviations between the mean and the nearest specification limit) process to gather and analyze printer and copier usage at the WIPP project. Information identified was the number of desktop printers, the locations of printers and copiers, location of non-networked copiers and current printing costs. As a result of the evaluation, a new contract was implemented that replaced old copiers at the WIPP project with networked copiers that have double-sided printing as well as scanning capabilities to reduce overall printing resources. Desktop printers are inefficient resources and are being phased out. The printer reduction project looked at the current WIPP purchasing requirements for printers and copiers and identified procedural requirements that could be changed to reduce or eliminate inefficient purchases. The procurement process was modified to prohibit the purchase of desktop printers on a credit card, and a new hardware acquisition procedure was developed to ensure that the purchase of desktop printers that are necessary, under certain business conditions, is approved by a manager and the Information Resource Management (IRM) group.
- An evaluation of the bay lighting equipment used to illuminate the underground facility was conducted to identify if there was any energy



saving potential. The underground is equipped with Holophane ITT Weaver # VS15H48 High Pressure Light Fixture lights. The evaluation identified that the Holophane Petrolux® LED fixture would be a sustainable alternative to the Weaver fixture. Each light fixture switched to the Petrolux® model would save a total of 65,525 kWh and \$2,127 per year. This modification will also eliminate the use of metal halide lamps for underground bay lighting and eliminate the hazards and disposal costs associated with handling the lamps. This change was in process when normal operations in the underground facility were halted due to February 2014 events at the facility and will continue when normal underground operations resume.

- A review of groundwater detection monitoring program inventory identified laboratory products in stock that are no longer used due to changes made in the program. The equipment was excessed from the inventory and Property Management identified two local organizations that could utilize the equipment. A total of \$10,668 of lab equipment was donated to the U.S. Department of Interior, Bureau of Land Management Carlsbad Field Office (receiving the major portion) and the Carlsbad Environmental Monitoring and Research Center WIPP labs. The equipment included filters, flow-through adapters, amber jugs, amber round bottles, pipets, beakers, high-density polyethylene bottles, nalgene bottles, burets, vials and crucibles. A total of 287 pounds of materials were diverted from a landfill through this donation.
- When products are purchased, an evaluation to identify sustainable alternatives that meet performance, cost, and availability criteria is conducted. Sustainable alternatives include recycled or biobased content, energy or water efficient, less toxic, low greenhouse gas emitting, or non ozone-depleting products. Several sustainable products were purchased and used during FY 2014 at the WIPP Project. Ten paint products with less than or equal to fifty grams per liter of volatile organic compounds were used for different projects at the WIPP facility including painting stair rails, recycle bins, connexes, floors, and interior walls and restriping the asphalt. Additional sustainable products used during FY 2014 included a U.S. Environmental Protection Agency Design for the Environment® program certified cleaner and degreaser (Cal-Green™), a U.S. Department of Agriculture Biobased certified cleaner (Citrus-Scrub®), a Green Seal™ certified cleaner (Buckeye ECO pH Neutral Cleaner) and hand wash (Symmetry® Green Certified Foaming Hand Wash), LEED (Leadership in Energy and Environmental Design) approved wall panels, an adhesive with low volatile organic compounds emissions, and an EnergyStar® certified roof coating (Black Jack® White Elastomeric Roof Coating).

- During FY 2014, it was discovered that materials covered in the WIPP recycling program were being placed in waste containers located in some conference rooms. It was observed that these conference rooms had no recycling bins and the nearest recycling bins were not in a convenient location in relation to the conference rooms. Recycle bins have been purchased and will be delivered, assembled and placed in conference rooms during FY 2015.

7. *Flow charts and/or tables summarizing all hazardous and mixed waste streams produced by the facility by quantity, type, building or area, and program.*

The following table summarizes hazardous and mixed waste generated by the Permittees, at the WIPP Project, from October 1, 2013, to September 30, 2014, and does not include materials that were recycled.

Hazardous and Mixed Waste Summary Table

Type of Waste Generated	Area/Program	FY 2013 Metric Tons	FY 2014 Metric Tons
Lab Waste	Lab	0.03	0.01
Waste Water	Waste Shaft and Exhaust Shaft Interception Borehole	10.21	10.36
Off-spec and Expired Materials	Lab	0.01	0.02
Spent Filters (air, Granulated Activated Carbon / Zeolite)	Maintenance	0.01	0.28
Spill Clean-up (Gasoline, Floor Stripper)	Emergency Services	0.02	0.10
Broken Fluorescent Lamps	Maintenance	0.00	0.04
Miscellaneous (i.e., gasoline and water mixed, non-punctured aerosol cans)	Maintenance	0.13	0.05
	<b>Total Hazardous Waste</b>	<b>10.41</b>	<b>10.86</b>
Spent Filters, Personal Protective Equipment, NiCd Batteries	Recovery Activities	0.00	1.82
	<b>Total Mixed Waste</b>	<b>0.00</b>	<b>1.82</b>
	<b>Total Waste</b>	<b>10.41</b>	<b>12.68</b>



8. *Demonstration of the need to use those processes which produce a particular hazardous or mixed waste due to a lack of alternative processes, available technology, or available alternative processes that would produce less volume or less toxic waste.*

Processes required for successful operations at the WIPP Project generate hazardous/mixed waste as noted in the table above. In accordance with the Permit, a waste minimization program to reduce the volume and toxicity of hazardous and mixed wastes generated has been implemented and maintained. Processes that have the potential to generate hazardous/mixed waste are monitored to ensure present and future protection of human health and the environment. Processes are also evaluated through PPOAs, as appropriate to identify any new options/technology for waste minimization or recycling.

Recovery efforts from the February 2014 release of radioactive waste in the underground repository resulted in the generation of mixed waste. The potential to generate mixed waste will continue until the recovery is complete. Waste minimization efforts will be in place as recovery efforts move forward.

This report will be placed in the Information Repository in accordance with Permit Part 1, Section 1.14.2.