



Department of Energy
Carlsbad Field Office
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NOV 14 2013

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 Annual Waste Minimization Report

Dear Mr. Kieling:

The purpose of this letter is to provide you with the Waste Isolation Pilot Plant (WIPP) Annual Waste Minimization Report. This report is required by and has been prepared in accordance with the WIPP Hazardous Waste Facility Permit Part 2, Permit Condition 2.4.

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 E. McCauslin at (575) 234-7349, if you have any questions regarding this report.

Sincerely,

//Original Signatures on File//

Jose R. Franco, Manager
Carlsbad Field Office

M. F. Sharif, Project Manager
Nuclear Waste Partnership LLC

Enclosure

cc: w/enclosure
T. Blaine, NMED * ED
T. Kliphuis, NMED ED
CBFO M&RC
*ED denotes electronic distribution

Waste Isolation Pilot Plant Facility 2013 Waste Minimization Report

A waste minimization program is in place at the WIPP facility to minimize 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 third report prepared under Permit Part 2, Section 2.4. It describes the program required under items 1-8. Reports in subsequent years will show changes from 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 (DOE/WIPP 04-3310) is a written policy that provides a strong commitment to pollution prevention and its continual improvement. In the policy, the Permittees commit to “...*continually plan, perform, assess, and improve the environmental performance of the WIPP project.*” This policy was updated in October 2012 to incorporate the management and operating contractor change.

In addition, the Permittees have implemented the WIPP Pollution Prevention (P2) Program Plan, WP 02-EC.11, which identifies and outlines the core components of the program. These components include annual P2 goals, defined responsibilities, communication, awareness activities, performing assessments to identify waste minimization or reduction opportunities, a recycling program, training, sustainable procurement, and reporting.

There were no changes from the previous Waste Minimization report.

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

Every WIPP facility 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 FY 2013 training was provided for procurement credit card holders, requisitioners, and projects personnel on sustainable acquisition which 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 green house gases.

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 facility has encompassed the following materials:

- Aluminum
- Antifreeze
- Asphalt
- Ballasts
- Batteries
- Cardboard
- Chain Link Fence
- Circuit Boards
- Electronics
- Lamps
- Metals
- Mined salt
- Mercury containing pressure cuffs
- Paper
- Plastic
- Storm water
- Tires
- Toner Cartridges
- Used oil and oil filters
- Wood pallets/waste

In FY 2013, 156 metric tons of materials (excluding mined salt) and 24,030 metric tons of mined salt were recycled. During this time, wood waste was added to the recycling program.

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

The Permittees' FY2013 budget for promoting and implementing pollution prevention and waste minimization was \$150,000. This money was used for staffing support to maintain and implement the WIPP facility waste minimization program and to maintain P2 awareness.

During FY 2013:

- A recycling trailer with six bins was transferred from the National Parks Service to the WIPP facility (an estimated cost savings value of \$13,000).
- A process to reinvest funds received from recycling and the sale of auctioned excess property into sustainability projects was implemented. During FY 2013, eight hand dryers were purchased to reduce paper towel use and light emitting diode (LED) task lights were purchased to replace

fluorescent units at work stations with the purpose of reducing energy consumption and universal waste generation. These purchases cost approximately \$6,340.

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

There are no factors that have prevented the implementation of the WIPP facility waste minimization program to reduce the volume and toxicity of hazardous waste generated from activities or waste derived from the management of TRU mixed waste. 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 previous 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 reformations, 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 FY2013, the Permittees performed four PPOAs and implemented the practicable P2 opportunities identified in the assessments. The assessments resulted in the following:

- A review of the hazardous waste disposal program identified the potential to eliminate a hazardous waste stream by replacing leaded Hilti cartridges with a lead-free alternative. The Hilti cartridges are used for several purposes in the underground (i.e., hanging wire mesh on the rib, hanging ventilation tubing, and securing bulk head rubber stripping). The annual cost of the leaded Hilti cartridges was calculated at \$2,507 including the purchase and disposal costs. The annual cost of the lead-free Hilti cartridge was estimated at \$2,600. A box of the lead-free Hilti cartridges was purchased and used to determine if they would meet performance criteria and then were sampled to determine if they would need to be managed as hazardous waste. The review determined that the lead-free Hilti cartridges did meet performance criteria and the sample analysis demonstrated that they would not need to be managed as hazardous waste. Though the lead-free cartridges cost \$100 more annually than the leaded Hilti cartridges, switching to the lead-free cartridges prevents

potential damage to humans and the environment. This product change enhances safety, protects human health and the environment, and reduces the potential for compliance issues by eliminating the generation of a hazardous waste stream.

- The generator site recertification audit program records process was reviewed to identify opportunities for reducing paper use. For every generator site recertification audit performed a hardcopy record must be generated as evidence of the audit process. The review identified that the audit process required five hardcopies of each audit report to be made (the original plus four copies). Typically there are audits of eight large and several small generator sites each year often requiring enough paper to fill several bankers' boxes for each report.

An effort to minimize the number of hardcopies through use of electronic media was conducted. In the new records process all documentation resulting from a site generator recertification audit is assembled as a single "master copy" that is scanned to a portable document format (PDF). This PDF record provides a searchable and "protected-from-alteration" format, eliminates the need for multiple hard-copies, and maintains compliance with the Hazardous Waste Facility Permit. The electronic record is then disseminated as required and the "master copy" is submitted to NMED.

Annual cost savings from implementing the records process change are estimated at over \$17,600. It will also reduce the use of approximately 70,000 pages of paper each year.

- The solid waste going to the Eddy County Sandpoint Landfill was reviewed to identify waste streams that had potential for diversion from the landfill by way of reduction, reuse, or recycling. It was identified that a significant waste stream going to the community landfill was wood waste. Research was conducted to identify a potential diversion path for the wood waste. It was identified that the county landfill had a wood waste segregation area where wood waste was collected. The City of Carlsbad has the segregated wood waste chipped and uses the chips in local parks. The vendor that hauls waste from the WIPP facility to the landfill was contacted to see if they would be able to provide an additional roll-off bin for the collection of only wood waste and if they would be able to place the wood waste in the segregated location at the landfill. The vendor responded that it would be possible and they delivered an additional roll-off to the WIPP facility for collection of wood waste only. Information on the wood waste segregation process was disseminated among pertinent groups that have potential to dispose of wood waste. Signs were made directing the diversion of wood waste to the roll-off bin.

During FY 2013, 8,740 pounds of wood waste was diverted from the landfill.

- An evaluation of installing hand air dryers instead of using paper towels in the restrooms was conducted. The annual cost of using paper towels was estimated at \$12,091. The estimate includes the cost of purchasing 156 cases (748,800 paper towels), delivery charges, and handling costs. The annual cost of using hand dryers was estimated at \$94. The estimate includes the cost of electricity to operate the hand dryer for 299,520 hand dryings annually (number of paper towels used annually divided by 2.5 towels per hand drying). The switch to using hand dryers would result in an annual savings of \$11,997. In addition to the cost savings, approximately 3,300 pounds of waste generation would be eliminated and 10.92 cubic meters of landfill space would be saved annually. Based on this analysis, it was decided to move forward with conversion to hand dryers using a phased approach. Implementation was initiated in FY 2013 with the purchase of eight hand dryer units that will be installed in FY 2014. Additional hand dryers will be purchased and installed as funds become available (primarily from funds received from the recycling program as described in Item 4).

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.*

There was no mixed-waste generated by the Permittees at the WIPP facility during this reporting period. The following table summarizes hazardous waste generated by the Permittees, at the WIPP facility, from October 1, 2012, to September 30, 2013.

Hazardous Waste Summary Table

Type of Hazardous Waste Generated	Area/Program	Metric Tons
Lab Waste	Environmental Monitoring and Hydrology Lab	0.03
Waste Water	Waste Shaft and Exhaust Shaft Interception Borehole	10.21
Off-spec and Expired Materials	Maintenance	0.01
Spent Filters	Maintenance	0.01
Spill Clean-up (Battery Acid/Petroleum)	Emergency Services	0.02
Miscellaneous	Maintenance, Underground	0.13
Total RCRA Waste		10.41

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 the successful operation of the WIPP facility generate minimal 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 at the facility has been implemented and maintained. Processes that have the potential to generate hazardous/mixed waste are monitored to ensure protection of the environment. They are also evaluated as appropriate to identify any new options/technology for waste minimization or recycling through PPOAs.

There were no changes from the previous Waste Minimization report.