

LATA:23:525

November 29, 2023

Mr. Ricardo Maestas, Bureau 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 WIPP 2023 Waste Minimization Report, Hazardous Waste Facility
Permit Number: NM4890139088-TSDF

Dear Mr. Maestas:

The purpose of this letter is to provide you with the WIPP 2023 Waste Minimization Report.

I certify under penalty of law that this document and enclosure 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.

If you have any questions, please contact Mr. Rick Chavez at (575) 234-3225.

Sincerely,

Signatures on File

Ken Harrawood
Program Manager
Salado Isolation Mining Contractors

Enclosure

cc: with enclosure

A. Donahue, NMED *ED
M. McLean, NMED ED
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*ED denotes electronic distribution

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*ED denotes electronic distribution

Waste Isolation Pilot Plant 2023 Waste Minimization Report
Hazardous Waste Facility Permit, Number: NM4890139088-TSDF

The waste minimization program in place at the Waste Isolation Pilot Plant (WIPP) facility is intended to reduce the volume and toxicity of hazardous and mixed wastes generated at the facility. The purpose of this report is to demonstrate compliance 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.

This report is prepared by the Permittees (the U.S. Department of Energy [DOE] - Carlsbad Field Office [CBFO] and the Salado Isolation Mining Contractors LLC [SIMCO]) in accordance with Permit Part 2, Section 2.4. It describes how the Permittees addressed items 1-8 during Fiscal Year (FY) 2023 (October 1, 2022, through September 30, 2023) 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 *Waste Isolation Pilot Plant Environmental Policy Statement*, EA02EC14-1-0, establishes and communicates the Permittees' five strategic principles, including sustainability through waste minimization and recycling, to ensure environmental protection is of central importance during all activities at the WIPP site. This commitment is fulfilled through the implementation of the Environmental Management System (EMS), WP 02-EC.14, whose suitability, adequacy, and effectiveness are confirmed through continual independent certification to the International Organization for Standardization (ISO) 14001:2015 Standard. During FY23, two external surveillance audits and one internal audit were conducted on WIPP's EMS. Continual improvement of various environmental performance indicators is achieved through the completion of applicable environmental targets, including those related to waste minimization and recycling efforts. On May 23, 2023, six of SIMCO's senior leadership team reviewed and approved the *Waste Isolation Pilot Plant Environmental Policy Statement*. The first revision to the *Waste Isolation Pilot Plant Environmental Policy Statement* was published and made available to WIPP Project personnel on June 14, 2023. Recertification of the EMS to the ISO 14001:2015 Standard will take place in May of 2024.

The Permittees continue to communicate and educate site personnel regarding the data required for accurate reporting under the waste minimization programs. These actions are implemented through EMS core support programs including the *WIPP Sustainable Procurement Plan* (WP 02-EC.07) and the *WIPP Pollution Prevention Program Plan* (WP 02-EC.11). These core program plans implement standards that outline, define, and support the waste minimization strategy stated in Executive Order (EO) 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability*, and those required by the DOE Orders 436.1, *Departmental Sustainability*, and 436.1-1, *Federal Sustainable Print Management*. Core program components are captured and reported through the EMS. Additional waste minimization methods specific to hazardous and mixed wastes are described in the *WIPP Low-Level and Mixed Low-Level Waste Management Plan* (WP 02-RC.05) and the *WIPP Hazardous and Universal Waste Management Plan* (WP 02-RC.01). The *WIPP Industrial Hygiene Program-Hazard Communication and Hazardous Materials Management Plan* (WP 12-IH.02-4) also stresses the importance of minimizing waste and hazardous materials on site.

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 (inclusive of subcontractors) receives General Employee Training that incorporates content outlining the Permittees' EMS program, waste management and recycling expectations, site pollution prevention strategies, facility waste minimization strategies, and site sustainability expectations. Employees involved in universal or special site generated waste management and/or low-level waste handling activities receive additional training, including but not limited to classroom and hands-on training, to ensure that they are qualified to perform their assigned tasks. Classroom and hands-on field training emphasizes the importance of waste minimization, source reduction, and recycling strategies. In addition, managers and supervisors receive training, as applicable to their positions, which includes a review of the Pollution Prevention program.

Both the Hazardous Waste Facility Permit Overview (HWO-101) and Hazardous Waste Worker (HWW-101) technical training courses include practical information concerning the methods for reducing the amount of hazardous waste generated. This includes the procurement and use of less hazardous chemicals/materials, opportunities for recycling, reuse, and reducing the quantities purchased. Additionally, Environmental Management System Awareness Training (ENV-100) is required of all employees and provides an outline of the EMS and includes the Permittees' expectations of continued environmental protection, waste minimization, pollution prevention, and procurement of sustainable products and services.

Comparable to FY22, the primary focus of FY23 has been developing sustainable acquisition training and continuing one-on-one training with applicable personnel on the requirements for the proper handling and disposition of recyclable materials. Coordinating with WIPP's Training and Procurement departments to develop a Sustainable Acquisition and Procurement eLearning course remained a priority of FY23. Additionally, efforts have been underway to update the Sustainability SharePoint site on WIPP's internal website, WIPP Central, which includes information and resources on sustainable procurement and pollution prevention activities, programs, and expectations at the site.

In previous years, the Pollution Prevention program implemented a single stream recycling method, which required personnel to be more conscious of placing the proper materials in the correct recycling containers. During this reporting period, the single stream recycling continued, and recycling education and awareness was reinforced by site-wide emails and flyers encouraging the participation and proper use of the appropriate recycling bins and associated recycling centers.

Earth Day 2023 activities included a Sustainability Pledge campaign partnered with a sitewide clean-up effort. Site Environmental Compliance personnel coordinated with the

Communications department to inform employees of both efforts through numerous WIPP Communications. The Sustainability Pledge challenged site personnel to live more sustainably at home and during work activities, resulting in 104 volunteers spanning 25 different groups pledging to live more sustainably. Property Management personnel assisted during the clean-up effort to help redistribute unwanted property to site personnel, including computer monitors, desk organizers, and office supplies. Excessed property was donated to schools or other DOE-approved recipients.

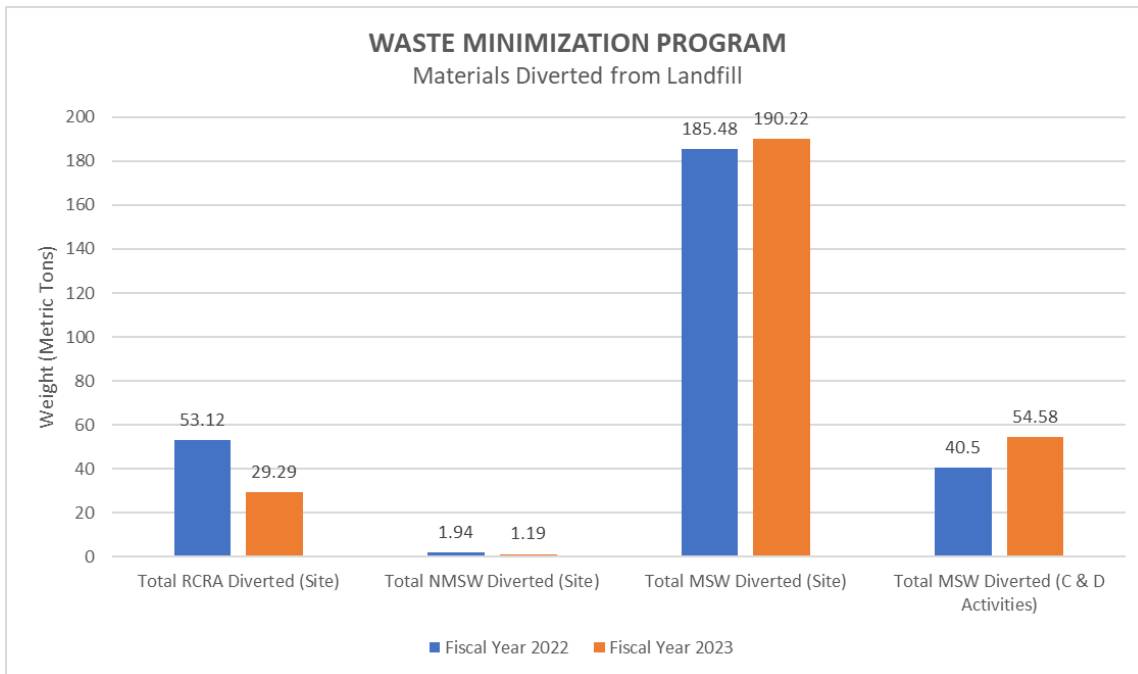
3. Source reduction or recycling measures implemented in the last five years or planned for the next federal fiscal year.

The Permittees maintain an active recycling/reuse program and strive to continually improve performance in this area while being vigilant in exploring new recycling venues. Future plans include reaching out to the commercial industry about the feasibility to recycle additional waste streams. Over the past five years, the Permittees recycling/reuse program at the WIPP facility has encompassed the following materials:

- Aluminum Cans
- Antifreeze
- Asphalt/Concrete
- Batteries (e.g., NiCad, Lithium, Alkaline, Lead Acid)
- Cardboard
- Circuit Boards
- Electrical Ballasts
- Electronics
- Office Equipment
- Ink/Toner cartridges
- Lamps/Lighting Fixtures
- Mixed Metals
- Paper
- # 1 PET Plastic
- Tires/Rubber
- Wood Pallets
- Used Oil and Oil Filters
- Hard Hats & Safety Wear

In FY23, the WIPP facility diverted 275.28 metric tons of waste materials from New Mexico landfills. This total is including all diverted Resource Conservation and Recovery Act (RCRA) materials, New Mexico special waste, and diverted municipal solid waste from both site- and construction-related activities. This decreased slightly from FY22, in which 281.04 metric tons were diverted from landfill. This resulted from a decrease in the site’s generation of RCRA-regulated waste materials during the fiscal year. There was an increase in mixed metals recycling from the two ongoing capital projects: the building of the Safety Significant Confinement Ventilation System (SSCVS) and the sinking of Shaft 5, and an increase in the site’s mixed materials recycling (summarized below as “Total MSW Diverted [C&D Activities]”).

The following graph shows the category of wastes diverted from landfill in 2023 as compared to 2022:



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

The Permittees’ FY23 budget for promoting and implementing pollution prevention and waste minimization was \$263,286. This funding allocation was used for staffing compensation, environmental awareness, and implementation programs of the Permittees’ EMS and Waste Minimization Program.

As in previous years, significant focus was placed on continuous improvement, reaching out to employees, clean recycling, and sustainable procurement methods.

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

The Permittees’ EMS program continues to be supported by the Environmental Management System Steering Committee (EMSSC). The committee, composed of cross-departmental personnel, helps drive continual improvement of the Permittees’ environmental performance via the EMS. During FY23, the EMSSC was reorganized to address its less than adequate effectiveness and engagement in EMS-related objectives, targets, and initiatives, including those related to waste minimization and recycling efforts. The new EMSSC, established on September 27, 2023, has shown improvement in attendance from the previous committee; however, it is still premature to determine the new committee’s effectiveness in assisting with EMS-related initiatives and targets.

There are standard factors that hinder the full implementation of the Permittees’ waste minimization program. Major recyclers have not yet increased their acceptance criteria for all waste streams generated at the WIPP facility, thereby restricting what is considered

recyclable through the Pollution Prevention program. Additionally, certain site activities generate radiologically contaminated items, including personal protective equipment (PPE), that are not able to be reused or recycled regardless of the original material. Although awareness campaigns and training are continually being created and distributed to site personnel, a lack of employee participation of the waste minimization program will always limit reduction and recycling efforts. Communication and training to educate employees of waste minimization and recycling requirements will persist through the next fiscal year, including an increased emphasis from senior leaders through their support of the *Waste Isolation Pilot Plant Environmental Policy Statement*.

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.*

In FY20, the Site Environmental Compliance (SEC) group integrated two processes that assisted in meeting the goal of reducing the amount and toxicity of hazardous materials used at the WIPP site, therefore reducing the potential for hazardous waste generation. These processes have continued through Fiscal Year 2023 and are effective methods of sustainable education and accountability.

- a) Site Environmental Compliance continues to review Approval/Variance Request forms and their associated Safety Data Sheets related to subcontract work at the WIPP site. This allows the opportunity to screen chemicals associated with a project for replacement with suitable less-hazardous chemicals (e.g., paints, lubricants, cleaning supplies etc.).
- b) Site Environmental Compliance continues to review Environmental Compliance Review forms to ensure pollution prevention and hazardous waste considerations are accounted for prior to any new project work or alterations being undertaken at the WIPP site.

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 two tables summarize the type and amount of hazardous waste and radioactive waste generated by the Permittees between October 1, 2022, and September 30, 2023. The tables also include the data from last fiscal year (FY22) for a side-by-side comparison.

Hazardous Waste Generated	Area/Program	FY 2022 Metric Tons	FY 2023 Metric Tons
Hazardous Waste			
Flammable or Ignitable, Corrosive, Reactive, and/or Toxic (Spent Hilti Cartridges, Contaminated Brine, Off-Spec and Expired Materials, Gasoline & Diesel Fuel)	Emergency Response / Maintenance	19.85	6.73
Total Hazardous Waste		19.85	6.73
Radioactive Waste Generated	Area/Program	FY 2022	FY 2023
Mixed Low-Level Waste			
Lead Acid & Lithium Ion Batteries from UG, PIDs	Recovery Activities	2.47	1.23
Low-Level Waste			
HEPAs, PIDs, UG Vehicle Oil, Brine Water, Sealant, Roof Bolts, Tires, Rims & PPE	UG Maintenance	30.80	21.33
Total Radioactive and Mixed Waste		33.27	22.56

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 facility that contribute to the generation of site hazardous, mixed low-level, and low-level radioactive waste as noted in the table above are necessary to safely complete the mission of the WIPP facility. However, there are ongoing efforts to review programs, work packages, and procurement acquisition to reduce the generation of hazardous waste resulting from necessary infrastructure and equipment. Program awareness enhancements such as those that replace petroleum-based products and equipment with bio-based products, electric and battery-operated equipment that replace fossil fuel engines, clean operating air compressors, and alternative power generation sources such as solar and wind are examples of improvements being evaluated and implemented at the WIPP site for waste reduction through the implementation of the EMS.

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