

**2019 Biennial  
Waste Minimization Report  
for the Portsmouth Gaseous Diffusion Plant  
Piketon, Ohio**



This document has been approved for public release:

*Richard N. Henderson* (signature on file)

8/07/2019

PORTS Classification Office/Export Controlled Information Officer

Date

**2019 Biennial  
Waste Minimization Report  
for the Portsmouth Gaseous Diffusion Plant,  
Piketon, Ohio**

U.S. Department of Energy  
DOE/PPPO/03-0942&D1

Date Issued—September 2019

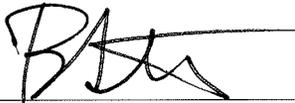
Prepared for the  
U.S. Department of Energy  
Portsmouth/Paducah Project Office

Prepared by  
Fluor-BWXT Portsmouth LLC  
Managing  
Environmental Management Activities at the  
Portsmouth Gaseous Diffusion Plant  
Under contract DE-AC30-10CC40017  
for the  
U. S. Department of Energy  
Portsmouth Gaseous Diffusion Plant  
Piketon, Ohio

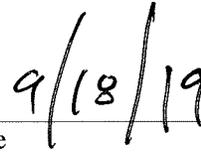
## CERTIFICATION STATEMENT

All applications, reports, and information shall be properly signed and certified in accordance with Ohio Administrative Code (OAC) Rules 3745-50-42 and 3745-50-58(K).

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my 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 my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."*



\_\_\_\_\_  
Bobby D. Smith, Site Project Director  
Fluor-BWXT Portsmouth LLC



\_\_\_\_\_  
Date

\_\_\_\_\_  
Robert E. Edwards, III, Manager  
U.S. Department of Energy  
Portsmouth/Paducah Project Office

\_\_\_\_\_  
Date

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## ACRONYMS

CY	Calendar Year
C&D	Construction and Demolition Materials
D&D	Decontamination and Decommissioning
DOE	U.S. Department of Energy
EPA	Environmental Protection Agency
EMS	Environmental Management System
FBP	Fluor-BWXT Portsmouth LLC
FY	Fiscal Year
GET	General Employee Training
NEPA	National Environmental Policy Act
OAC	Ohio Administrative Code
OEPA	Ohio Environmental Protection Agency
PORTS	Portsmouth Gaseous Diffusion Plant
RCRA	Resource Conservation and Recovery Act
U.S. EPA	United States Environmental Protection Agency

## **EXECUTIVE SUMMARY**

On March 25, 2011, a renewed Ohio Hazardous Waste Facility Installation and Operation Permit (i.e., Resource Conservation and Recovery Act [RCRA] Part B Storage Permit) was entered into the journal of the Director of the Ohio Environmental Protection Agency (OEPA) for the U.S. Department of Energy (DOE) Portsmouth Gaseous Diffusion Plant (PORTS). General Permit Condition A.29(c) of the RCRA Part B Storage Permit requires DOE to submit a waste minimization report to OEPA within 180 days of journalization of the referenced permit (Ohio ID No. 04-66-0680), and biennially thereafter. The information contained in this report satisfies the biennial submittal of this general permit condition for the year 2019 and fulfills the requirements of a waste minimization program required under Ohio Administrative Code (OAC) Rules 3745-54-75(H), (I), and (J); 3745-54-73(B)(9); and 3745-52-20(B).

On March 29, 2011, Fluor-BWXT Portsmouth, LLC (FBP) became the decontamination and decommissioning contractor under contract to the U.S. Department of Energy (DOE) and became a co-permittee on the RCRA Part B Permit. The scope of this report relates to activities under the responsibility of the RCRA Part B permittees and does not include activities under the responsibility of Centrus Energy Corporation or Mid-America Conversion Services.

FBP has in place programs to reduce the volume and toxicity of hazardous waste that is generated by activities at PORTS to the degree determined by DOE to be economically practicable. The FBP Waste Minimization and Pollution Prevention Plan (Appendix A) is the commitment of the FBP site management to reduce the generation of waste in all media at PORTS.

## 1. INTRODUCTION

This report is required by General Permit Condition A.29, Waste Minimization Report of the renewed Ohio Hazardous Waste Facility Installation and Operation Permit (i.e., RCRA Part B Storage Permit) issued on March 25, 2011, for the DOE PORTS. This report only addresses wastes that are generated by FBP on behalf of DOE PORTS.

PORTS has an active program of pollution prevention and waste minimization that is governed by and complies with both State and Federal requirements. This report provides a description of the waste minimization program for those activities under the responsibility of the RCRA Part B permittees.

## 2. GENERAL PERMIT CONDITION A.29 (a) REQUIREMENTS

RCRA Part B General Permit Condition A.29 (a) states the following:

*The Permittee shall submit a Waste Minimization Report describing the waste minimization program required by OAC [Ohio Administrative Code] Rules 3745-54-75(H), (I), and (J); 3745-54-73(B)(9); and 3745-52-20(B) at least once every two years. The provisions of OAC Rules 3745-54-75(H), (I), and (J); and 3745-54-73(B)(9) must be satisfied annually.*

### 2.1 OAC Rule 3745-54-75(H), (I), and (J) Program Requirements

#### 2.1.1 OAC Rule 3745-54-75(H)

OAC Rule 3745-54-75(H) requires a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated. FBP is the Decontamination and Decommissioning (D&D) contractor for the DOE. The operations of FBP often generate hazardous waste of variable amounts based on schedule of RCRA Corrective Actions and activities that support the D&D decision. FBP does not have standard operations that can be modified to reduce the amount of solid waste generated on-site. FBP's Purchasing Department works directly with the Safety and Environmental Protection departments when purchasing chemicals and supplies to reduce the amount of hazardous materials brought on-site. The D&D contract requires the implementation of a sustainable acquisition program. Additionally, FBP and DOE actively seek opportunities to recycle and reuse materials that are excess to the DOE mission through the Asset Recovery Program.

#### 2.1.2 OAC Rule 3745-54-75(I)

OAC Rule 3745-54-75(I) requires a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years to the extent such information is available for the years prior to 1984.

RCRA regulated waste generation volumes for calendar year 2017 at PORTS were recorded at 139,859 pounds (63,439 kilograms). For calendar year 2018, RCRA regulated waste volumes were recorded at 28,232 pounds (12,806 kilograms). Previous reports contain comparisons of waste volumes for prior years. RCRA regulated waste volumes prior to 1984 are not available. The toxicity of waste generated at the site has not changed significantly over time.

### **2.1.3 OAC Rule 3745-54-75(J)**

OAC Rule 3745-54-75(J) requires the biennial report include a certification signed by the owner or operator of the facility. A signed certification that the information provided throughout the biennial report is truthful, accurate, and complete is provided.

### **2.2 OAC Rule 3745-54-73(B)(9) Program Requirements**

In accordance with OAC Rule 3745-54-73(A), the owner or operator of a hazardous waste facility shall keep a written operating record at the facility. Pursuant to OAC Rule 3745-54-73(B)(9), the operating record shall include a certification by the permittee, no less often than annually, that the permittee has a program in place to reduce the volume and toxicity of hazardous waste generated to the degree determined by the permittee to be economically practicable and that the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

Appendix B contains a copy of the Operating Annual Waste Minimization Certification required for DOE RCRA-permitted facilities for calendar year (CY) 2019 required under RCRA Section 3005(h) and OAC Rule 3745-54-73(B)(9).

Further, to satisfy these requirements, a generator's certification statement appears in Section 15 of every Uniform Hazardous Waste Manifest that accompanies waste shipped off-site. A blank copy of the Uniform Hazardous Waste Manifest (USEPA Form 8700-22) is contained in Appendix C along with the continuation page. This generator certification states that a program is in place to reduce the volume and toxicity of hazardous waste generated to a degree that is economically practicable. The certification further states that a practicable method of treatment, storage, or disposal has been selected to minimize the present and future threat to human health and the environment.

A signed environmental awareness policy statement (see Appendix D) is included in the FBP Environmental Management System Program Description Document declares that the following waste minimization and pollution prevention strategies are implemented as part of the PORTS site environmental policy:

- Execute and complete all D&D and environmental remediation work activities in a manner that complies with DOE decision documents and has the least impact on the environment.
- Use all means practicable to minimize or eliminate any newly generated wastes. Whenever possible, newly generated wastes shall have a clear disposition path before they are generated.
- Conserve natural resources by reusing and recycling materials, purchasing recycled materials, and using recyclable materials.
- Establish documented environmental objectives and targets and update them as necessary to reflect FBP's changing needs, mission, and goals.

### **2.3 OAC Rule 3745-52-20(B) Program Requirements**

OAC Rule 3745-52-20(B) requires that a generator must designate on the manifest one facility which is permitted to handle the waste described on the manifest. PORTS uses the United States Environmental Protection Agency (U.S. EPA) form 8700-22, Uniform Hazardous Waste Manifest for all hazardous waste shipments. General OAC manifest requirements as included in OAC 3745-54-20(A) cover the completion of Item I (EPA waste number) and Items 1 through 15 on U.S. EPA form 8700-22 and, if necessary, Items 21 through 32 on the manifest continuation page. Specifically, Items 8 in the manifest designate the

receiving facility and its EPA identifying number. PORTS complies with these requirement by ensuring completion of all required items on all manifests prepared for off-site waste shipments from PORTS.

### **3. GENERAL PERMIT CONDITION A.29 (b) REQUIREMENTS**

RCRA Part B General Permit Condition A.29 (b) states the following:

*In completing this report, the Permittee should refer to the following information: instructions prepared by the Ohio EPA for completing the Waste Minimization Annual Report required by OAC Rules 3745-54-75(H), (I), and (J); the Federal Register notice of May 28, 1993, vol. 58, p. 3114, “Interim Final Guidance: Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program”; and U.S. EPA’s “Facility Pollution Prevention Guide” including planning and organization, assessment, feasibility analysis, implementation, measuring progress, and maintaining the program.*

Ohio EPA instructions for completing the Waste Minimization Annual Report required by OAC Rules 3745-54-75(H), (I) and (J) were referred to during compilation of this report. FBP’s abilities to fulfill the requirements of OAC Rules 3745-54-75(H), (I) and (J) are addressed in section 2 above.

The Federal Register Notice of May 28, 1993, Vol. 58, P. 31114, “Interim Final Guidance: Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program,” was also referred to in developing this report as specified under RCRA Part B General Permit Condition A.29(b). This report addresses planning and organization, assessment, feasibility analysis, implementation, measuring progress, and maintaining the program as referenced in U.S. EPA’s *Facility Pollution Prevention Guide* (U.S. EPA 1992).

#### **3.1 Planning and Organization**

The FBP Environmental Policy Statement signed by the FBP Site Project Director documents management support.

The EMS is the overriding environmental management document at PORTS and includes successive, independent programs that emphasize environmental protection. The EMS is used to address the goals and objectives including pollution prevention, waste minimization, affirmative procurement, sustainable design, and energy and water efficiency.

The EMS is a systematic and structured approach for addressing the environmental consequences of activities, products and services. The EMS:

- Includes a continual cycle of planning, implementing, reviewing, and improving our operations to positively address and manage environmental resources with a mindset that is proactive rather than reactive.
- Considers all personnel whose work activities could impact the environment.
- Enables more effective use of natural resources, protection of the environment, and achieves environmental sustainability.
- Helps to ensure consistency and rigor in existing environmental activities.

- Drives continual improvement in environmental performance.

Program development and strategy are defined in FBP's Environmental Management System Description as well as an organization description with defined roles and responsibilities.

### **3.2 Assessment**

A majority of the work performed at PORTS by FBP under its contract with DOE involves activities related to decontamination and decommissioning of the gaseous diffusion facilities, environmental remediation and management of wastes. During project development, FBP evaluates the project to identify pollution prevention or waste minimization opportunities. These opportunities are then included in project planning documents. Waste Management representatives also assist the project with implementing pollution prevention and waste minimization practices during project execution. This process is described in FBP-WM-PL-00084 Waste Minimization and Pollution Prevention (Appendix A).

Administrative tools such as the National Environmental Policy Act (NEPA) pre-planning documents (i.e., environmental compliance review checklists) are used to ensure that waste avoidance techniques encouraged by the U.S. EPA are identified and implemented in the initial phases of each applicable project. PORTS is challenged because these U.S. EPA waste minimization principles are not easily adapted to environmental restoration and decommissioning activities as most of the waste minimization principles are aimed at new or on-going activities, not environmental remediation and clean-up activities. To target waste reduction during cleanup activities, PORTS has aggressively pursued recycle/reuse activities of primary wastes and excess equipment, chemicals, and materials.

### **3.3 Feasibility Analysis**

Feasibility analyses of project options that minimize technical, economic, and environmental impacts, including waste generation within restoration projects, are currently conducted during project planning and review. Significant projects reviews incorporate NEPA values in the review process. Alternative project options are addressed with attention to technical feasibility, economic feasibility, and human health and environmental impacts, including types and quantities of wastes that would be generated as a result of the implementation of the remediation project.

### **3.4 Implementation**

The EMS at PORTS is implemented in such a way as to measure progress, develop new or innovative techniques, and promote awareness of pollution prevention, waste minimization, and energy saving activities. All DOE project work at the PORTS site which has the potential for generating waste is required to evaluate waste minimization/pollution prevention opportunities. This is accomplished through project reviews and implemented through the process described in FBP-WM-PL-00084 Waste Minimization and Pollution Prevention (Appendix A).

### **3.5 Measuring Progress**

PORTS tracks the quantity of the following items recycled by the site:

- aluminum cans
- cardboard
- plastics
- paper
- light bulbs

- batteries
- circuit boards
- mercury switches
- scrap metal
- electronic equipment (computers, monitors)

In addition to tracking recycling activities, PORTS also tracks the quantities of items purchased that contain recycled-content. This is part of the PORTS sustainable acquisition program. Buyers are required to be pro-active in the procurement of paper products, non-paper office products, and miscellaneous products that contain the required amount of recycled-content as stated in the EPA’s Comprehensive Procurement Guidelines. Tracking of wastes diverted from landfills through reuse or recycling efforts is also measured.

**Table 1. PORTS Pollution Prevention and Waste Minimization Accomplishments for Calendar Year 2017 and Calendar Year 2018**

Accomplishment	Waste Reduction
Waste Diversion	<p>CY 2017 – The generation volume of non-hazardous solid waste was 5,394 cubic meters with a total volume shipped offsite of 9,202 cubic meters. FBP diverted 1,974 cubic meters for reuse/recycle and landfilled 7,228 cubic meters.</p> <p>CY 2018 – The generation volume of non-hazardous solid waste was 3,745 cubic meters with a total volume shipped offsite of 3,133 cubic meters. FBP diverted 1,435 cubic meters for reuse/recycle and landfilled 1,698 cubic meters.</p>
Asset Recovery/Community Collaboration	<p>CY 2017 – FBP’s Asset Recovery and Recycling program diverted 911.81 cubic meters of material from landfills. The following Construction &amp; Demolition (C&amp;D) materials were shipped for reuse/recycle: wood chipper, mobile light plant, copper bus bars, transformers, welding wire, tire/wheel balancer, scrap metal, dielectric oil, and various janitorial/medical supplies totaling 1,234,072 pounds.</p> <p>CY 2018 – FBP’s Asset Recovery and Recycling program diverted 166.22 cubic meters of material from landfills. The following C&amp;D materials were shipped for reuse/recycle: Mechanic truck with crane and welder attachments, GMC flatbed truck, solar power equipment, copper and scrap metal from dry-type transformers, bio-synthetic oil, various office/janitorial supplies, and scrap metal totaling 206,470 pounds.</p>

### 3.6 Maintaining the Program

The waste minimization pollution prevention program is maintained through implementation of the following systems and activities:

- PORTS has developed and implemented a waste tracking system database to show accountability for DOE-generated waste. A field on the tracking form allows the project or source generating the waste to be tracked and a unique container identification number is assigned.

- DOE PORTS tracks and reports waste minimization data in the RCRA Biennial Hazardous Waste Report and the Annual Toxic Chemical Release Inventory Report.
- The EMS is reviewed and updated annually to address any programmatic issues and establish annual sustainability goals.
- EMS awareness is incorporated into the General Employee Training (GET) program. All new employees must attend GET and all employees require a biennial refresher course.

#### **4. GENERAL PERMIT CONDITION A.29(c) REQUIREMENTS**

RCRA Part B General Permit Condition A.29(c) states the following:

*The Permittee shall submit the Waste Minimization Report to the Technical Assistance Section, Office of Pollution Prevention within one hundred eighty (180) days of journalization of this permit, and shall submit updates to this report biennially thereafter.*

Journalization of the renewed Ohio Hazardous Waste Facility Installation and Operation Permit (Ohio ID No. 04-66-0680) for DOE PORTS occurred on March 25, 2011. Submission of this report satisfies the referenced requirement for the biennial report for 2019.

## 5. REFERENCES

1. Ohio EPA 1993. *Ohio Pollution Prevention and Waste Minimization Planning Guidance Manual*, Revised October 1994, Office of Pollution Prevention.
2. Ohio Administrative Code Rules 3745-54-75(H), (I), and (J); 3745-54-73(B)(9); and 3745-52-20(B).
3. U.S. EPA 1992. *Facility Pollution Prevention Guide*, EPA/600/R-92/088.
4. U.S. EPA 1993. "Interim Final Guidance: Guidance to Hazardous Waste Generators on the Elements of a "Waste Minimization Program," pp. 31114 in *Federal Register*, May 28, Vol.58.

Ohio Environmental Protection Agency  
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PPPO-03-xxxxxxx-19

Ohio Environmental Protection Agency  
Southeast District Office  
Division of Environmental Response and Revitalization  
2195 Front Street  
Logan, Ohio 43138

Dear Madam/Sir:

**RESOURCE CONSERVATION AND RECOVERY ACT PART B STORAGE  
PERMIT GENERAL CONDITION A.29 2019 BIENNIAL WASTE MINIMIZATION  
REPORT FOR THE PORTSMOUTH GASEOUS DIFFUSION PLANT PIKETON, OHIO  
(DOE/PPPO/03-0942&D1)**

Please find enclosed for your information the U.S. Department of Energy *2019 Biennial Waste Minimization Report for the Portsmouth Gaseous Diffusion Plant*.

In accordance with General Permit Condition A.29(c) of the renewed Ohio Hazardous Waste Facility Installation and Operation (i.e., Resource Conservation and Recovery Act Part B) Permit, a waste minimization report must be submitted to the Ohio Environmental Protection Agency within 180 days of journalizing of the permit, and biennially thereafter. This transmittal satisfies this requirement for 2019 and covers efforts conducted during calendar years 2017 and 2018.

If you should have any questions or need additional information, please contact Kristi Wiehle of my staff at (740) 897-5020.

Sincerely,

Joel B. Bradburne  
Deputy Manager  
Portsmouth/Paducah Project Office

Enclosure: 2019 Biennial Waste Minimization Report for the Portsmouth Gaseous Diffusion Plant

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