

Supplement Analysis of New Treatment and/or Disposal Facility

Introduction

The U.S. Department of Energy (DOE) has prepared this supplement analysis (SA) to evaluate one or more existing environmental assessments (EAs) (listed below) in light of changes that could have bearing on the potential environmental impacts previously analyzed. Section 3.9 of DOE's National Environmental Policy Act (NEPA) implementing procedures states that:

- (a) DOE is required to prepare supplements to environmental documents only if a major Federal action remains to occur, and:
 - (1) DOE makes substantial changes to the proposed action that are relevant to environmental concerns; or
 - (2) DOE decides, in its discretion, that there are substantial new circumstances or information about the significance of the adverse effects that bearing on the proposed action or its effects.
- (b) When it is unclear whether or not a supplement to an environmental document is required, DOE may prepare a supplement analysis.

In DOE/EA-2116, *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (Final EA), DOE analyzed the proposed action for the disposition of approximately 5,050,000 ft³ of waste and excess material to support deactivation and other non-Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (Public Law 95-510) DOE Environmental Management (EM) activities at the Paducah Gaseous Diffusion Plant, a DOE-owned facility in Paducah, Kentucky. Based on the analysis in the EA, DOE determined that the proposed action was not a major federal action and would not significantly alter the quality of the human environment within the context of NEPA; therefore, no Environmental Impact Statement (EIS) is required. This SA provides sufficient information for DOE to determine whether the existing Final EA remains adequate and whether to prepare a new EA, revise the Finding of No Significant Impact (FONSI), or prepare an EIS, as appropriate.

Existing EA evaluated in this SA:

- *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (DOE/EA-2116), <https://www.energy.gov/nepa/downloads/doe-2116-environmental-assessment-and-finding-no-significant-impact>.

The previous SA (DOE/EA-2116-SA-1), *Supplemental Analysis of New Treatment Facility and Transfer Facility for Disposition of Waste and Materials*, concluded that the addition of the Perma-Fix Environmental Services, Inc., Environmental Waste Operations Center treatment facility (Oak Ridge, Tennessee) and the Clean Harbors Greenbrier transfer station (Greenbrier, Tennessee) did not require a new EA, a revised FONSI, or the preparation of an EIS, and that no further NEPA documentation was required.

The previous SA (DOE/EA-2116-SA-2), *Supplement Analysis of New Treatment and/or Disposal Facilities and an Additional Accepted Waste Type*, concluded that the addition of the Cleanlites Recycling, Inc., recycling center (Cincinnati, Ohio), Veolia Gum Springs Complex treatment and/or disposal facilities

(Gum Springs, Arkansas), and an additional accepted waste type (R-114) for the previously analyzed Clean Harbors Deer Park treatment and/or disposal facility (La Porte, Texas) did not require a new EA, a revised FONSI, or the preparation of an EIS, and that no further NEPA documentation was required.

Changes to the Proposed Action or New Circumstances or Information¹

This SA was prepared in order to include a new treatment and/or disposal facility that has been identified since the completion of the Final EA dated June 2020. The facility listed in Table 1 is an additional potential treatment and/or disposal facility for waste generated, managed, and shipped from the Paducah Site. Activities at the treatment and/or disposal facility would be similar to those described in Sections 2.1.3 and 2.1.5 of the Final EA.

Table 1. Additional Treatment and/or Disposal Facility/Location

Treatment and/or Disposal Facility/Location	Accepted Paducah Site Waste Type	Transport Modes	Site Activities
Clean Harbors Lone Mountain Landfill Facility, Waynoka, Oklahoma	Nonradioactive Resource Conservation and Recovery Act hazardous waste	Highway	Treatment and Disposal

Since the finalization of the EA, Clean Harbors Lone Mountain Landfill Facility (Waynoka, Oklahoma) will potentially be used to treat and dispose of wastes from the Paducah Site in the future.

Background

The Final EA was prepared for the disposition of approximately 5,050,000 ft³ of waste and excess material over a 12-year period to support deactivation and other non-CERCLA (Public Law 95-510) DOE EM activities at the Paducah Site, a DOE-owned facility in Paducah, Kentucky. The waste management and disposition activities include waste generation and handling; waste staging and storage; container movement; packaging, overpacking, and repackaging; equipment and container sorting; physical volume reduction; equipment and waste container decontamination; marking, labeling, inspection, tracking, and inventory; and characterization, sampling, treatment, loading, and transporting of Paducah Site wastes to existing off-site DOE and commercial treatment and disposal facilities across the United States, including in Arkansas, Florida, Georgia, Nevada, North Carolina, Oklahoma, Ohio, Pennsylvania, Tennessee, Texas, Utah, and Washington.

Resource Areas Not Analyzed in Detail in this SA

DOE conducted an initial screening analysis of impacts to determine if there was a need for a detailed analysis in the Final EA. Where appropriate, DOE conducted impact analysis specific to the proposed action to support a decision regarding the environmental impacts of the Proposed Action. Table 5 in the Final EA describes the subject areas that were dismissed from detailed analysis in the Final EA, which subsequently have not been analyzed in detail in this SA. The new treatment and/or disposal facility does not affect the subject areas listed in Table 5 of the Final EA, and has negligible to no impact for on-site waste storage, staging, treatment, and transportation or for supporting activities for off-site waste transportation. Activities at the treatment and/or disposal facility would be similar to those described in Sections 2.1.3 of the

¹ Throughout this document, the phrase “changes to the proposed action or new circumstances or information” refers to a substantial change to the proposed action that may be relevant to environmental concerns or significant new circumstances or information that may be relevant to environmental concerns and have bearing on the proposed action or its impacts.

Final EA because such activities and impacts would be similar regardless of the treatment and/or disposal facility sites.

DOE screened other activities analyzed in detail in the Final EA that are not analyzed in detail in this SA. Affected environment on-site, described in Section 3.2.1 (i.e., air quality, demography, on-site workers, public health and safety, accidents, and intentional destructive acts) would be similar to those analyzed in the Final EA regardless of the treatment and/or disposal facility sites. Activities at the Paducah Site would be similar to those described in Sections 2.1.5 of the Final EA because such activities and impacts would be the same regardless of the treatment and/or disposal facility sites.

Resource Areas Analyzed in Detail in this SA

The resource areas in Table 2 are analyzed in detail in this SA.

Table 2. Comparison of Potential Environmental Impacts

Comparison of Potential Environmental Impacts			
Resource Area	Summary of Potential Impacts in the Final EA	Summary of Potential Impacts as a Result of Changes to the Proposed Action or New Circumstances or Information	Difference in Potential Impacts
Air Quality Off-Site	As described in Section 4.1.2.1, Air quality, the Final EA discusses the overall air quality impacts for transportation activities, which would be negligible, localized, and temporary.	Potential air quality impacts from transportation of the waste to the additional potential waste treatment and/or disposal facility would be negligible, localized, and temporary. Air emissions from transportation of the waste to the additional location would be essentially equivalent to the emissions analyzed in the Final EA. The new potential treatment and/or disposal facility transportation routes distance is bounded by the previously analyzed alternatives in the Final EA.* The analyzed treatment and/or disposal facility routes would be similar to those analyzed in the Final EA; no nonattainment or maintenance areas crossed will exceed distance bounded by the previously analyzed alternatives in the Final EA. Transportation routes are shown in Figure 1. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.

Table 2. Comparison of Potential Environmental Impacts (Continued)

Comparison of Potential Environmental Impacts			
Resource Area	Summary of Potential Impacts in the Final EA	Summary of Potential Impacts as a Result of Changes to the Proposed Action or New Circumstances or Information	Difference in Potential Impacts
Radiation and Chemical Risk Off-Site	As described in Section 4.1.2.2, Radiation and chemical impacts from off-site transportation, the Final EA discusses the risks associated with radiological impacts of shipments to the crew, population—routine, population—accident, and maximally exposed individual with the corresponding risks determined to be no latent cancer fatalities.	Potential radiation and chemical risk off-site from transportation of the waste to the additional potential waste treatment and/or disposal facility will be essentially equivalent for crew, population—routine, population—accident, and maximally exposed individual as analyzed in the Final EA because the transportation routes are similar to those analyzed in the Final EA. The new potential treatment and/or disposal facility transportation route distance is bounded by the previously analyzed alternatives in the Final EA. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.
Accident and Intentional Destructive Act Impacts from Off-Site Transportation	As described in Section 4.1.2.3, Accident and intentional destructive act impacts from off-site transportation, the Final EA discusses impacts from deaths and injuries resulting from the increase in total shipments. Due to the proposed action, the estimated number of highway accidents would result in 0.2 deaths and 4.6 injuries during the 12-year period. Due to the proposed action, the estimated number of railway accidents would result in 0.2 deaths and 1.0 injuries during the 12-year period.	Potential accident and intentional destructive act impacts from off-site transportation of the waste to the additional potential waste treatment and/or disposal facility will be the same as analyzed in the Final EA because the transportation routes are similar to those analyzed in the Final EA. The new potential treatment and/or disposal facility transportation route distance is bounded by the previously analyzed alternatives in the Final EA. Waste quantities are unchanged from those analyzed in the Final EA.	No difference in potential impacts.

*To consistently measure the impact of these shipments of waste, the transportation route was bounded for rail and highway miles by analyzing the longest route for each mode of transport (railroad route to Richland, Washington, and truck route to Mercury, Nevada).

Transportation routes for the treatment and/or disposal facilities are found in Figure 1.



Figure 1. Representative Highway Route for Waste Transportation

Mitigation

Based on this analysis, DOE will continue to implement mitigation measures as described in the Final EA. Section 4.3 of the Final EA discusses mitigation measures that will be taken for the potentially adverse environmental impacts. Because the new circumstances are similar in nature to the existing potential adverse environmental impacts analyzed in the Final EA, no new mitigation measures were identified.

Determination

In accordance with NEPA and DOE's NEPA implementing procedures, DOE prepared this SA to evaluate whether the existing Final EA remains adequate or whether the addition of a new treatment and/or disposal facility requires DOE to prepare a new EA, revise the existing FONSI, or prepare an EIS. DOE concludes that the environmental analysis that relates to the potential impacts to resource areas stemming from the proposed action in the final *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (DOE/EA-2116) properly takes the environmental impacts resulting from the proposed use of a new treatment and/or disposal facility into consideration, given the *de minimis* nature of the impacts as delineated in this SA. DOE has considered all relevant information included in the SA and project record and raised in the NEPA process. DOE concludes that the changes to the proposed action are not a substantial change relevant to environmental concerns, nor are there substantial new circumstances or information about the significance of the adverse effects. Consistent with DOE's NEPA implementing procedures Section 3.9, DOE concludes that the addition of the new treatment and/or disposal facility described in this SA does not require a new EA, a revised FONSI, or preparation of an EIS. No further NEPA documentation is required.

Issued in Washington, DC, this 5 day of February 2026.

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