

Supplement Analysis of New Treatment and/or Disposal Facilities and an Additional Accepted Waste Type

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. Based on the analysis in DOE/EA-2116, *Paducah Gaseous Diffusion Plant Final Environmental Assessment for Disposition of Waste and Materials* (Final 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 National Environmental Policy Act (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, 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/doeea-2116-environmental-assessment-and-finding-no-significant-impact>.

The previous SA (DOE/EA-2116-SA-1), *Supplement Analysis of New Treatment Facility and Transfer Facility for Disposition of Waste and Materials*, concluded that the addition of the treatment facility and transfer station did not require a new EA, 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 new treatment and/or disposal facilities that have been identified since the completion of the Final EA dated June 2020. The facilities listed in Table 1 are additional potential treatment and/or disposal facilities and includes 1,2-dichlorotetrafluoroethane (referred to as R-114) as an accepted waste type for a previously analyzed treatment facility for waste generated, managed, and shipped from the Paducah Site. Activities at the treatment and/or disposal facilities 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 Facilities/Locations

Treatment and/or Disposal Facility/Location	Accepted Paducah Site Waste Type	Transport Modes	Site Activities
Clean Harbors Deer Park, La Porte, TX	Nonradioactive RCRA-hazardous waste; R-114	Highway	Treatment and Disposal
Cleanlites Recycling Center (Anthony Wayne), Cincinnati, OH	Nonradioactive RCRA-hazardous waste	Highway	Treatment and Disposal
Veolia Gum Springs Treatment Complex, Gum Springs AR	Nonradioactive RCRA-hazardous waste; R-114	Highway, rail	Treatment and Disposal

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.

Since the finalization of the EA, Cleanlites Recycling Center (Anthony Wayne) (Cincinnati, Ohio) and Veolia Gum Springs Treatment Complex (Gum Springs, Arkansas) facilities will potentially be used to treat and dispose of wastes from the Paducah Site in the future. In addition, the Clean Harbors Deer Park (La Porte, Texas) facility may potentially start accepting R-114 and may be used as a waste treatment and/or disposal facility. This facility was evaluated in the Final EA and was included in the original analysis. The Final EA analyzed the environmental impacts of transporting nonradioactive Resource Conservation and Recovery Act (RCRA)-hazardous waste to Clean Harbors Deer Park, La Porte, Texas. Transportation routes for the Clean Harbors Deer Park facility are documented in Figure 4, Representative Highway Routes for Waste Transportation in the Final EA.

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-Comprehensive Environmental Response, Compensation, and Liabilities Act (Public Law 95-510) DOE Environmental Management activities at the Paducah Site; a DOE-owned facility in Paducah, Kentucky. The waste management and disposition activities include waste generation/handling; waste staging and storage; container movement; packaging/overpacking/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 Arkansas, Florida, Georgia, Nevada, North Carolina, 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 has 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 have been 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 facilities do 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, transportation, and supporting activities for off-site waste transportation. Activities at the treatment and/or disposal facilities would be similar to those described in sections 2.1.3 of the Final EA since 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 worker, 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 since 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 and material to the additional potential waste treatment and/or disposal facilities and previously analyzed treatment and/or disposal facilities would be negligible, localized, and temporary. Air emissions from transportation of the waste and materials to the additional locations would be essentially equivalent to the emissions analyzed in the Final EA. The new potential treatment and/or disposal facilities transportation routes distance is bounded* by the previously analyzed alternatives in the Final EA. The analyzed treatment and/or disposal facilities 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 4 in the Final EA. 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 and material to the additional potential waste treatment and/or disposal facilities and the previously analyzed treatment and/or disposal facilities 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 essentially unchanged from those analyzed in the Final EA. The new railway route is similar to those analyzed in the Final EA. The new route analyzed is a Class I railway that handles freight. The new potential treatment and/or disposal facilities transportation routes distances a 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.

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
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 and material to the additional potential waste treatment and/or disposal facilities and previously analyzed treatment and/or disposal facilities 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 railway route analyzed is a Class I railway that handles freight. The new potential treatment and/or disposal facilities transportation routes distances are 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.
Socioeconomics and Environmental Justice	As described in Table 5. Subject Areas Dismissed from Detailed Analysis, the Final EA discusses impacts to the region of influence (ROI). Due to the proposed action, any temporary or permanent increase in site workforce or population within the ROI would be minimal and have negligible impacts to housing, schools, health care, and other community services. There would be no disproportionately high or adverse human health effects or environmental impacts on minority or low-income populations.	Executive Order 14096, Revitalizing Our Nation’s Commitment to Environmental Justice for All, was issued in April 2023. DOE evaluated the environmental justice impacts of the proposed change and the environmental, health, and occupational safety impacts are expected to be minimal, temporary, and confined to the Paducah Site. There would be no disproportionate and adverse human health effects or environmental impacts on minority or low-income populations; therefore, no impact on environmental justice in the ROI is anticipated.	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.

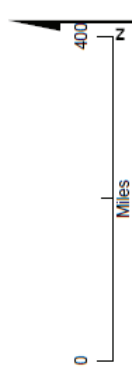
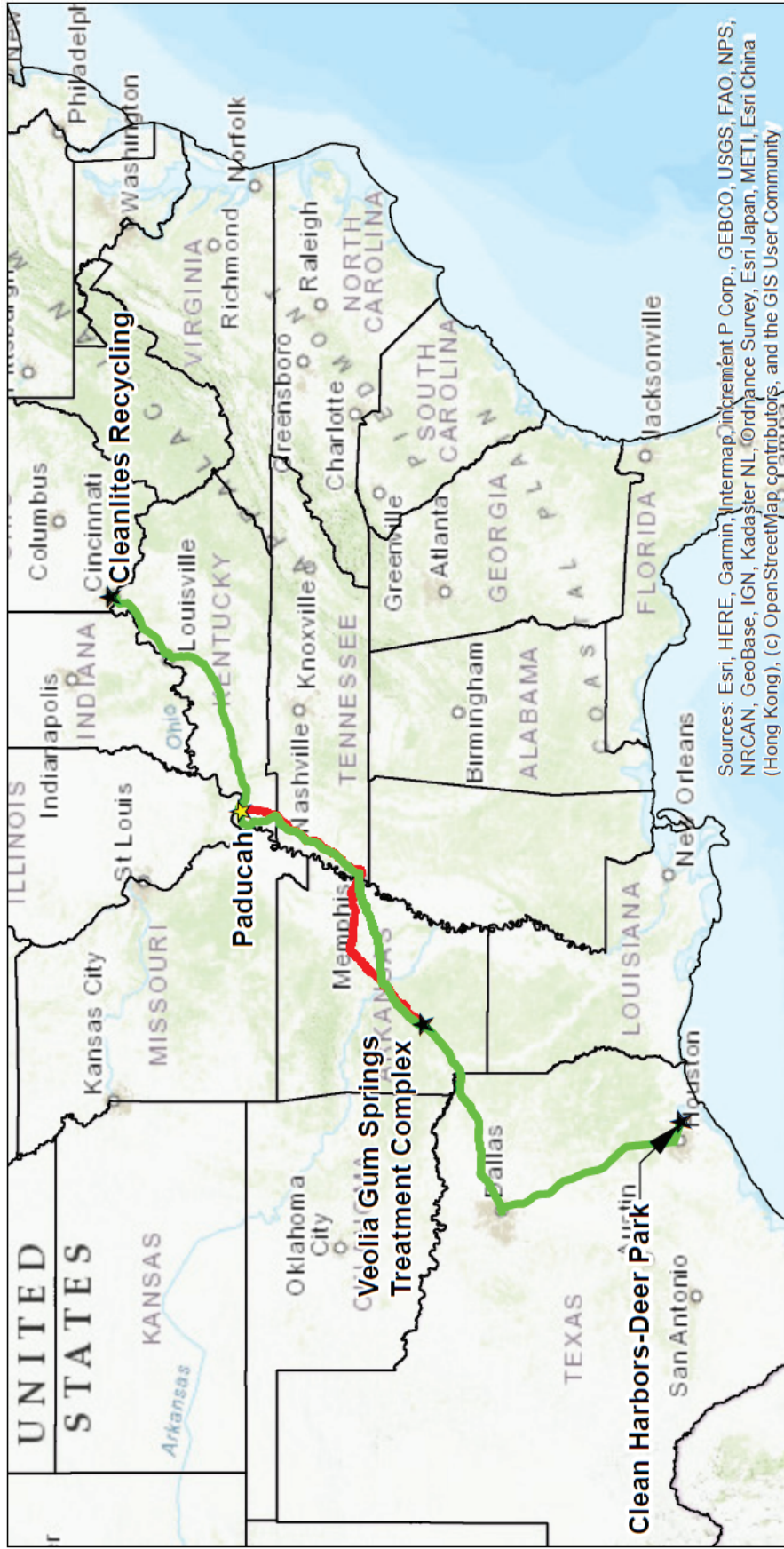


Figure 1. Representative Highway and Rail Routes for Waste Transportation

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 DOE's NEPA implementing regulations, and consistent with the *NEPA Recommendations for the Supplement Analysis Process*, 2nd Edition, DOE prepared this SA to evaluate whether the existing Final EA remains adequate or whether the addition of two new treatment and/or disposal facilities and an additional accepted waste type for a previously analyzed treatment and 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 two treatment and/or disposal facilities and an additional accepted waste type for a previously analyzed treatment and disposal facility into consideration, given the *de minimis* nature of the impacts as delineated in this SA. DOE concludes that the addition of the treatment and/or disposal facilities and an additional accepted waste type for a previously analyzed treatment and disposal facility described in this SA do not require a new EA, revised FONSI, or preparation of an EIS. No further NEPA documentation is required.

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