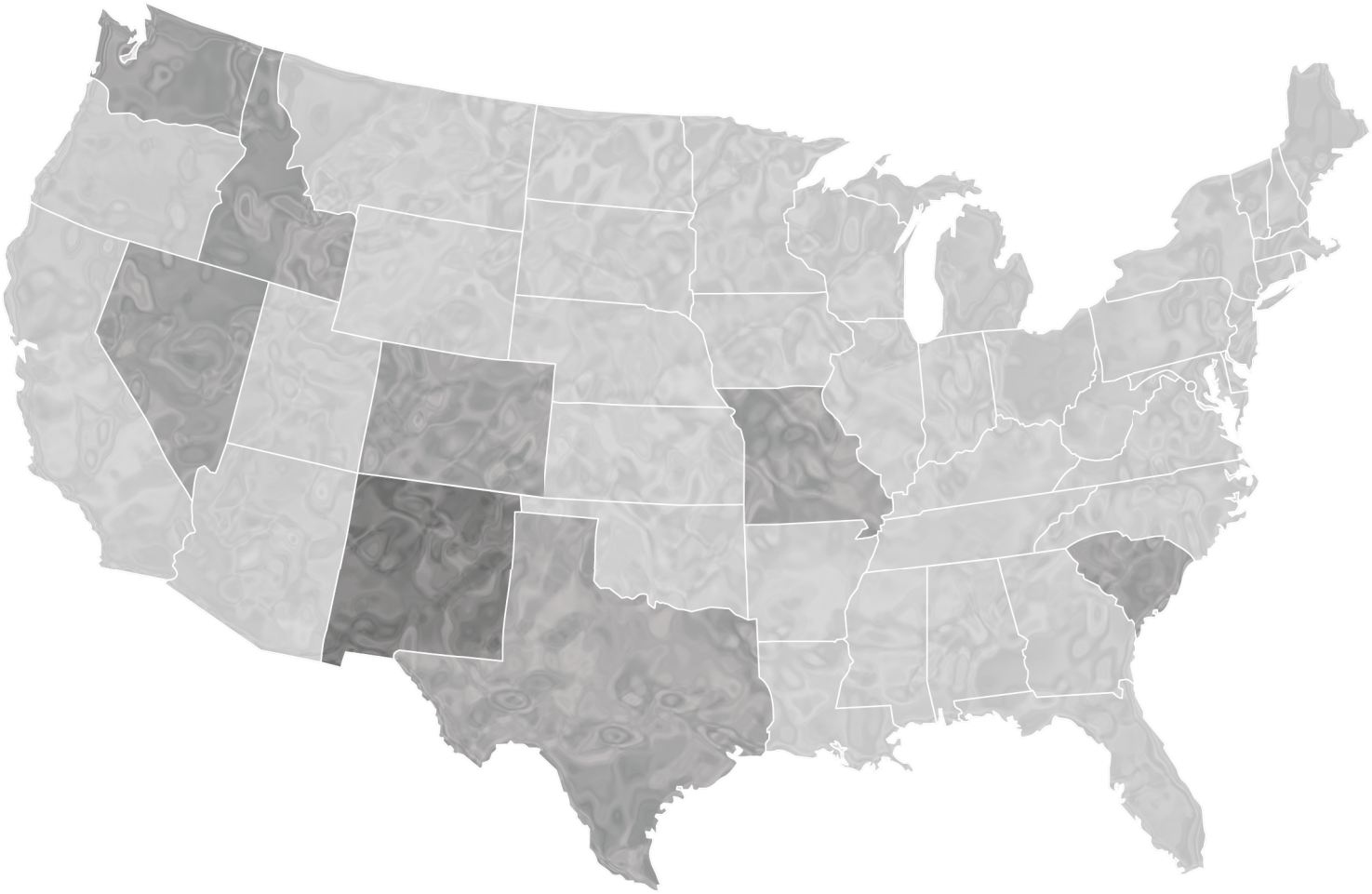
DOE/EIS-0423-S1
September 2013

Final

Long-Term Management and Storage of Elemental Mercury

Supplemental Environmental Impact Statement



Summary and Guide for Stakeholders

U.S. Department of Energy
Office of Environmental Management
Washington, DC

Availability of this
Final Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement

For additional information on this *Mercury Storage SEIS*, contact:

David Levenstein, Document Manager
Office of Environmental Compliance (EM–11)
U.S. Department of Energy
Post Office Box 2612
Germantown, MD 20874
Website: http://www.mercurystorageeis.com

Printed with soy ink on recycled paper

FINAL
LONG-TERM MANAGEMENT AND STORAGE OF ELEMENTAL MERCURY SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

Cover Sheet

Lead Agency: U.S. Department of Energy (DOE)

Cooperating Agencies: U.S. Environmental Protection Agency (EPA)
U.S. Bureau of Land Management (BLM)

Title: *Final Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement (Mercury Storage SEIS)* (DOE/EIS-0423-S1)

Candidate Locations for Storage Facility(ies): Colorado, Idaho, Missouri, Nevada, New Mexico, South Carolina, Texas, Washington

Contacts: For copies of this supplemental environmental impact statement (SEIS), visit DOE's National Environmental Policy Act (NEPA) website at http://energy.gov/nepa or contact David Levenstein at the address below.

For additional information on this *Mercury Storage SEIS*, contact:

David Levenstein, Document Manager
Office of Environmental Compliance (EM–11)
U.S. Department of Energy
Post Office Box 2612
Germantown, MD 20874
Website: http://www.mercurystorageeis.com

For general information on the DOE NEPA process, contact:

Carol M. Borgstrom, Director
Office of NEPA Policy and Compliance (GC–54)
U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585
Website: http://energy.gov/nepa
Telephone: 202-586-4600, or leave a message at 800-472-2756

Abstract: Pursuant to the Mercury Export Ban Act of 2008 (P.L. 110-414), DOE was directed to designate a facility or facilities for the long-term management and storage of elemental mercury generated within the United States. Therefore, DOE has analyzed the storage of up to 10,000 metric tons (11,000 tons) of elemental mercury in a facility(ies) constructed and operated in accordance with the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA) (74 FR 31723). DOE issued the *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement (Mercury Storage EIS)* (DOE/EIS-0423) in January 2011. The January 2011 *Mercury Storage EIS* analyzed the potential environmental, human health, and socioeconomic impacts of elemental mercury storage at seven candidate locations: Grand Junction Disposal Site near Grand Junction, Colorado; Hanford Site near Richland, Washington; Hawthorne Army Depot near Hawthorne, Nevada; Idaho National Laboratory near Idaho Falls, Idaho; Kansas City Plant in Kansas City, Missouri; Savannah River Site near Aiken, South Carolina; and Waste Control Specialists, LLC, site near Andrews, Texas. As required by Council on Environmental Quality (CEQ) NEPA regulations, the No Action Alternative was also analyzed as a basis for comparison. DOE has subsequently reconsidered the range of reasonable alternatives evaluated in the January 2011 *Mercury Storage EIS*. Accordingly, DOE has prepared this *Mercury Storage SEIS* to evaluate three additional locations for a long-term elemental mercury storage facility(ies), all three of which are in the vicinity of the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico. Both the January 2011 *Mercury Storage EIS* and this *Mercury Storage SEIS* were prepared in accordance with NEPA (42 U.S.C. 4321 et seq.), the CEQ implementing regulations (40 CFR 1500–1508), and DOE's NEPA implementing

procedures (10 CFR 1021). DOE intends to decide (1) where to locate the elemental mercury storage facility(ies), and (2) whether to use existing buildings, new buildings, or a combination of existing and new buildings. In the January 2011 *Mercury Storage EIS*, DOE identified the Waste Control Specialists, LLC, site near Andrews, Texas, as the Preferred Alternative for the long-term management and storage of elemental mercury. Based on analysis in this SEIS and public comment, DOE has not changed its Preferred Alternative, the Waste Control Specialists, LLC, site near Andrews, Texas. DOE will issue a Record of Decision no sooner than 30 days after publication of the EPA Notice of Availability for the *Final Mercury Storage SEIS* in the *Federal Register*. The selection of a site will be based on the January 2011 *Mercury Storage EIS*, this *Mercury Storage SEIS*, and other appropriate factors and will be announced in a Record of Decision in the *Federal Register*.

On January 1, 2013, the prohibition on the export of elemental mercury went into effect pursuant to the Mercury Export Ban Act of 2008. As of August 31, 2013, seven waste management companies have notified DOE of their intent to store elemental mercury at RCRA-permitted facilities in accordance with Section 5(g)(2)(B) of the Act. All of these companies have certified that they will ship the elemental mercury to a DOE-designated facility(ies), when such a facility(ies) is operational and ready to accept the mercury. Until such time that DOE has designated a facility(ies) and is ready to accept elemental mercury for long-term management and storage, similar notifications may be received by DOE from other waste management companies.

Public Comments: In preparing this final SEIS, DOE considered comments received during the scoping period (June 5, 2012, through July 5, 2012) and public comment period on the draft SEIS (April 19, 2013, through June 3, 2013). Comments on the draft SEIS were accepted during the 45-day period following publication of EPA's Notice of Availability in the *Federal Register*. All comments were considered during preparation of this final SEIS, including late comments received by August 31, 2013. Part II: Comment Response Document, contains the comments received on the draft SEIS and DOE's responses to these comments.

This final SEIS contains revisions and new information based in part on comments received on the draft SEIS. Vertical change bars in the margins indicate the locations of these revisions and new information. Editorial corrections are not indicated by change bars. The *Summary and Guide for Stakeholders* is now under separate cover. Part II: Comment Response Document, is entirely a new part of this final SEIS and therefore does not contain change bars.

DOE will consider the environmental impact information presented in the January 2011 *Mercury Storage EIS* and this SEIS, as well as other factors (e.g., cost, schedule, strategic objectives, and public comments), when making long-term elemental mercury management and storage decisions. As required by CEQ NEPA regulations (40 CFR 1506.10), DOE will make a decision on the proposed action no sooner than 30 days after publication of EPA's Notice of Availability of this *Final Mercury Storage SEIS* in the *Federal Register*. DOE will announce its decision in a Record of Decision published in the *Federal Register*.

A Message to Stakeholders

I am pleased to present this *Final Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement (Mercury Storage SEIS)*. It is a key step in carrying out the intent of Congress in the Mercury Export Ban Act of 2008 to reduce mercury in the global environment. The U.S. Environmental Protection Agency and the U.S. Bureau of Land Management are cooperating agencies in the preparation of this *Mercury Storage SEIS*.

DOE's goal is to provide safe, secure, long-term mercury storage by establishing a facility(ies) that can accept U.S. elemental mercury. This *Mercury Storage SEIS*, together with the January 2011 *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement*, is intended to provide decisionmakers and the public with clear, reliable, and credible information about the impacts of the proposed action and reasonable mercury storage alternatives. You can also find additional information on the website at *www.mercurystorageeis.com* and in the reading rooms listed in Section 6 of the *Summary and Guide for Stakeholders* of this *Mercury Storage SEIS*.

Thank you for participating in the National Environmental Policy Act process for preparing this SEIS.

David Levenstein
EIS Document Manager
U.S. Department of Energy

For additional information on this *Mercury Storage SEIS*, contact:

David Levenstein, Document Manager
Office of Environmental Compliance (EM–11)
U.S. Department of Energy
Post Office Box 2612
Germantown, MD 20874
Website: http://www.mercurystorageeis.com

SUMMARY AND GUIDE FOR STAKEHOLDERS

Table of Contents

Summary and Guide for Stakeholders **S–1**
S.1 Introduction S–1
S.1.1 Why Reduce the Amount of Mercury in the Environment? S–2
S.1.2 What Are DOE's Objectives? S–3
S.1.3 How Much Mercury Could DOE Manage and Store? S–3
S.1.4 Where Would the Mercury Come From? S–4
S.2 What Does This SEIS Address? S–5
S.2.1 Decisions to Be Made S–5
S.2.2 Scope of This SEIS S–6
S.2.3 Affected Environment and Environmental Consequences S–6
S.3 Mercury Storage Site Alternatives S–7
S.3.1 Candidate Sites Evaluated in the January 2011 *Mercury Storage EIS* S–8
S.3.2 Candidate Sites Evaluated in This *Mercury Storage SEIS* S–10
S.4 DOE Mercury Storage Facility(ies) Description S–13
S.4.1 New Storage Facility(ies) Design and Construction S–13
S.4.2 Existing Facility(ies) Modification and Upgrades S–15
S.4.3 Operation of a Mercury Storage Facility(ies) S–15
S.5 Comparison of Impacts and Alternatives S–15
S.5.1 Major Conclusions S–21
S.5.2 Cumulative Impacts S–24
S.5.3 The Preferred Alternative S–25
S.6 Public Involvement S–26
S.6.1 Public Scoping Meetings S–26
S.6.2 Public Scoping Comments S–26
S.6.3 Public Hearings on the *Draft Mercury Storage SEIS* S–26
S.6.4 Public Comments on the *Draft Mercury Storage SEIS* S–27
S.6.5 Changes Made to the *Draft Mercury Storage SEIS* S–28
S.6.6 Record of Decision S–29
S.7 Helpful Information S–29
S.7.1 Visit a Reading Room S–29
S.7.2 How This SEIS Is Organized S–31

List of Figures

Figure S–1. The Mercury Cycle S–3
Figure S–2. Potential Sources of Mercury in the United States S–5
Figure S–3. Alternative Sites Analyzed for U.S. Department of Energy Storage of Mercury S–7
Figure S–4. WIPP Facility in State of New Mexico S–11
Figure S–5. WIPP Vicinity Reference Locations S–12
Figure S–6. Conceptual Exterior of a New Mercury Storage Facility S–13
Figure S–7. Conceptual Layout of a New Mercury Storage Facility S–14
Figure S–8. Risk Ranking Matrix S–23

List of Tables

Table S–1. Anticipated Mercury Inventory S–4
Table S–2. Comparison of Action Alternatives – Physical Setting and Location Factors S–17
Table S–3. Comparison of Action Alternatives – Environmental Consequences S–18
Table S–4. Summary of Cumulative Impacts Assessment S–25

List of Acronyms and Abbreviations

BLM	U.S. Bureau of Land Management
CWC	Central Waste Complex
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
Final Mercury Storage SEIS	*Final Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement*
GTCC	greater-than-Class C
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
KCP	Kansas City Plant
LWA	Land Withdrawal Act
Mercury Storage EIS	*Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement*
NEPA	National Environmental Policy Act
NNSA	National Nuclear Security Administration
NOA	Notice of Availability
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
ROI	region of influence
SEIS	supplemental environmental impact statement
SRS	Savannah River Site
the Act	Mercury Export Ban Act of 2008
WCS	Waste Control Specialists, LLC, site
WIPP	Waste Isolation Pilot Plant

SUMMARY AND GUIDE FOR STAKEHOLDERS

S.1 INTRODUCTION

This *Summary and Guide for Stakeholders* presents an overview of the major issues addressed in this *Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement (Mercury Storage SEIS)*.

The U.S. Department of Energy (DOE) prepared this SEIS as part of DOE's ongoing process to establish a facility(ies) for storing elemental mercury in accordance with the Mercury Export Ban Act of 2008 (the Act). The U.S. Environmental Protection Agency (EPA) and the U.S. Bureau of Land Management (BLM) are cooperating agencies on this SEIS.

The Mercury Export Ban Act of 2008 (the Act)

- The Act prohibits the sale, distribution, or transfer of mercury by Federal agencies to other government agencies and private entities as of October 14, 2008.
- It bans the export of elemental mercury from the United States as of January 1, 2013.
- The U.S. Department of Energy (DOE) must designate a facility(ies) for long-term management and storage of mercury generated in the United States.
- Any such facility(ies) must comply with applicable requirements of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (42 U.S.C. 6901 et seq.).
- The Act does not specify how long mercury may require storage at the DOE-designated facility(ies).
- DOE is required to charge a fee to cover the cost of mercury storage.
- The Act requires the U.S. Environmental Protection Agency (EPA) to report to Congress on whether to expand the export ban to cover one or more mercury compounds. This report was issued in October 2009 (see Chapter 1, Section 1.3.1).
- EPA must report to Congress by January 1, 2017, on the global supply and trade of elemental mercury, including whether additional primary mercury mining has occurred as a consequence of the Act.

The text box at left provides a synopsis of the relevant features of the Act, and Appendix A of this SEIS contains a complete copy of the Act.

To evaluate the range of reasonable alternatives for siting, constructing, and operating a facility or facilities to meet its obligations under the Act, DOE prepared the *Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement (Mercury Storage EIS)* (DOE/EIS-0423) in accordance with the National Environmental Policy Act (NEPA) of 1969 and its implementing regulations (40 CFR 1500–1508, 10 CFR 1021). The *Final Mercury Storage EIS*, issued in January 2011 (76 FR 5156), evaluated seven candidate sites for the elemental mercury storage facility(ies), as well as a No Action Alternative. Those sites are the Grand Junction Disposal Site near Grand Junction, Colorado; Hanford Site near Richland, Washington; Hawthorne Army Depot near Hawthorne, Nevada; Idaho National Laboratory (INL) near Idaho Falls, Idaho; Kansas City Plant (KCP) in Kansas City, Missouri; Savannah River Site (SRS) near Aiken, South Carolina; and Waste Control Specialists, LLC, site (WCS) near Andrews, Texas. As stated in DOE's Notice of Intent issued on June 5, 2012 (77 FR 33204), DOE has subsequently reconsidered the range of reasonable alternatives evaluated in the January 2011 *Mercury Storage EIS*. Accordingly, DOE identified two candidate sites that would be evaluated in an SEIS for the long-term management and storage of elemental mercury in its Notice of Intent. Subsequently, after consideration of scoping comments received, DOE identified a third candidate site. DOE has prepared this SEIS to evaluate three additional alternative sites for a long-term mercury storage facility(ies), all of which are located in the vicinity

of the Waste Isolation Pilot Plant (WIPP) near Carlsbad, New Mexico, which DOE operates for disposal of defense transuranic waste.

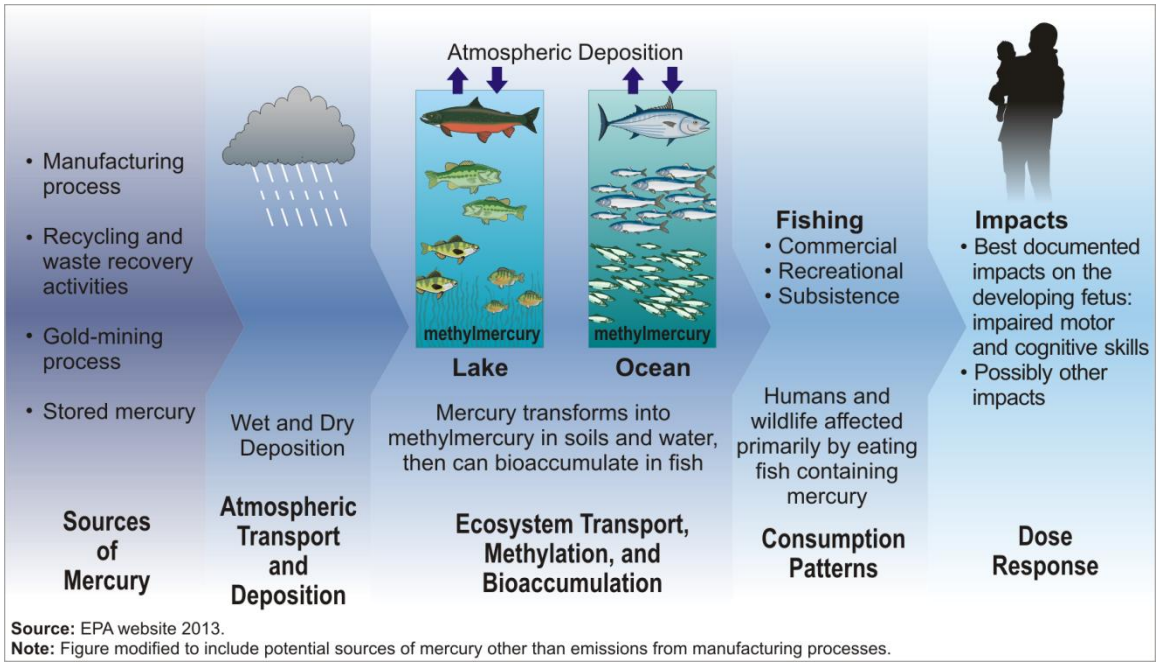
DOE's process for siting, constructing, and operating the requisite facility(ies) includes compliance with the provisions of NEPA, which requires Federal agencies to integrate environmental values into their decisionmaking by considering the potential environmental impacts of proposed actions and the range of reasonable alternatives to those actions. For major Federal actions significantly affecting the quality of the human environment, agencies must prepare an environmental impact statement, which considers the potentially affected environment, including the natural physical environment (e.g., air, water, geology, soils, plant and animal life), and the relationship between humans and the environment (e.g., health, safety, jobs, schools, housing, cultural resources, and aesthetics), and environmental justice (i.e., the identification and consideration of disproportionately high and adverse effects of agency programs, policies, and activities on minority and low-income populations). As discussed in Appendix E, Section E.4, environmental documentation that has become available since publication of the January 2011 *Mercury Storage EIS* has been reviewed, and with the exception of the socioeconomics and environmental justice resource areas, no other changes to the affected environment as presented in Chapter 3 of the January 2011 *Mercury Storage EIS* were found to be necessary. The analyses presented in Chapter 4 of the January 2011 *Mercury Storage EIS* remain valid and are incorporated into this SEIS with two exceptions: (1) the occupational and public health and safety analysis; and (2) the socioeconomics and environmental justice analysis. This SEIS includes updates to the occupational and public health and safety analysis resulting from changes to the definition of severity levels (i.e., magnitude of impacts) for acute-inhalation exposures to the public under certain accident scenarios. This SEIS also includes updates to the socioeconomics and environmental justice analyses to incorporate 2010 decennial census information that was not available at the time the January 2011 *Mercury Storage EIS* was published. The updates to the analyses are presented in Appendix B and Appendix E of this SEIS. In this SEIS, DOE has not changed any other assumptions, including the quantity or characteristics of the mercury inventory, the approach for long-term storage and management of this inventory, the design of the facilities, or the 40-year period of analysis, used in the January 2011 *Mercury Storage EIS*. Relevant information and data from the January 2011 *Mercury Storage EIS* that remain unchanged have been reproduced and presented in this SEIS for the convenience of the reader.

> For purposes of this supplemental environmental impact statement, "mercury" refers to elemental mercury unless otherwise indicated.

S.1.1 Why Reduce the Amount of Mercury in the Environment?

Mercury is an element that enters the environment as a result of natural processes (e.g., volcanoes, wildfires, surface emissions) and human activities (see Figure S–1). Mercury and its compounds are toxic; therefore, they pose human health and ecological risks. The potential effects may be widespread because mercury is easily dispersed throughout the environment. Moreover, the free trade of elemental mercury on the world market has encouraged its continued use, resulting in increasingly higher levels of mercury in the global environment. This has increased the risk of neurological and reproductive effects for humans and wildlife, and it means mercury is a pollutant of environmental concern throughout the world. By banning the export of U.S. mercury, Congress anticipated reducing the amount of mercury available in commerce worldwide, thus reducing the associated health risks.

Elemental mercury—the form DOE would manage and store—has long been used in manufacturing processes because it is a good conductor of electricity and it alloys, or mixes, readily with other metals. Historically, it has been used in batteries, paint, thermometers, thermostats, auto lighting switches, fluorescent lights, dental fillings, and medical devices such as blood pressure monitors. Many of these uses have declined in recent years.



Source: EPA website 2013.
Note: Figure modified to include potential sources of mercury other than emissions from manufacturing processes.

Figure S–1. The Mercury Cycle

S.1.2 What Are DOE's Objectives?

DOE prepared the January 2011 *Mercury Storage EIS*, and subsequently this SEIS, to evaluate the potential impacts of the proposed action, i.e., to establish a facility(ies) for the long-term management and storage of mercury. In accomplishing this, DOE is committed to the following overall objectives for its mercury storage program:

- Protect human health and the environment and ensure the safety of workers and the public.
- Meet the requirements of the Mercury Export Ban Act of 2008.
- Comply with applicable Federal, state, and local laws and regulations.

S.1.3 How Much Mercury Could DOE Manage and Store?

Based on the best available information, DOE anticipates that approximately 10,000 metric tons (11,000 tons) of excess mercury will need to be managed and stored in a facility(ies) designed to last at least 40 years. The Mercury Export Ban Act of 2008 does not specify how long the DOE mercury storage facility(ies) would need to be operated. Therefore, it is possible that more or less than 10,000 metric tons (11,000 tons) of mercury could eventually require storage for a period longer or shorter than 40 years. Additional NEPA review would be required to expand the facility(ies) to accept more than 10,000 metric tons (11,000 tons) of mercury or extend its operations beyond the 40-year period of analysis. The proposed mercury storage facility is not a permanent disposal facility. The storage of mercury will only be necessary until EPA approves a treatment and disposal standard for elemental mercury.

Table S–1 shows the DOE-estimated inventory of mercury that could be available for storage over the 40-year period of analysis.

Further discussion of the estimated mercury inventory is presented in Chapter 1, Section 1.3.1, of this SEIS.

Table S–1. Anticipated Mercury Inventory

Source	Years Sent to Storage[a]	Quantity (metric tons)[b]
DOE Y–12 National Security Complex in Oak Ridge, Tennessee[c]	1st – 2nd	1,200
Closure of chlor-alkali plants or conversion to non-mercury-cell technology	1st – 7th	1,100
Waste reclamation and recycling facilities	1st – 40th	2,500
Byproduct of gold mining	1st – 40th	3,700–4,900
Total		**8,500–9,700**

[a] For purposes of analysis, the January 2011 *Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement* and this *Long-Term Management and Storage of Elemental Mercury Supplemental Environmental Impact Statement* assume a 40-year operational period, with the first year starting in 2013 and the fortieth year, in 2052. An operational start date is not known at this time; however, the period of analysis remains 40 years. For example, if the mercury storage facility(ies) were to start operations in 2014, the last year of operations would likewise shift to 2053, and so forth. It was assumed that the mercury from the Y–12 National Security Complex would be shipped to the DOE-designated storage facility(ies) in the first 2 years of operation; chlor-alkali plant mercury would be shipped in the first 7 years of operation; and waste reclamation and recycling facility and gold-mining byproduct mercury would be shipped over the entire 40-year period of analysis.

[b] Rounded to two significant figures.

[c] Depending on ongoing DOE mission needs, the entire inventory of Y–12 National Security Complex mercury or a portion of this inventory could be retained in storage at the Y–12 National Security Complex. It is also possible that other governmental sources of elemental mercury could be transferred to the storage facility(ies).

Note: To convert metric tons to tons, multiply by 1.1023.

S.1.4 Where Would the Mercury Come From?

Potential sources of mercury that may require long-term storage by DOE are shown in Figure S-2. They include the following: chlor-alkali plants that continue to use mercury-cell technology;[1] gold mining, which produces byproduct mercury; mercury waste reclamation and recycling; and, potentially, some or all of the mercury currently stored at the Y–12 National Security Complex.

Shipment estimates from the January 2011 *Mercury Storage EIS* are presented in Appendix C, Section C.1, of this SEIS. It is estimated that there would be about 79 truck shipments per year during the first two years of operation, 39 per year between the third and seventh years of operation, and 27 per year between the eighth and fortieth years of operation. If transported by rail, there would be about 23 rail shipments per year during the first two years of operation, 8 per year between the third and seventh years of operation, and only 5 per year between the eighth and fortieth years of operation. Over the 40-year period of analysis, this totals 1,244 truck shipments or 251 rail shipments.

[1] Olin Corporation has announced that its chlor-alkali plants in Tennessee and Georgia will be consolidated and converted to mercury-free technology in 2012. The fate of this mercury is uncertain and may still be eventually shipped to a DOE facility(ies) for long-term management and storage; therefore, the quantities of mercury analyzed in this *Final Mercury Storage SEIS* remain unchanged.

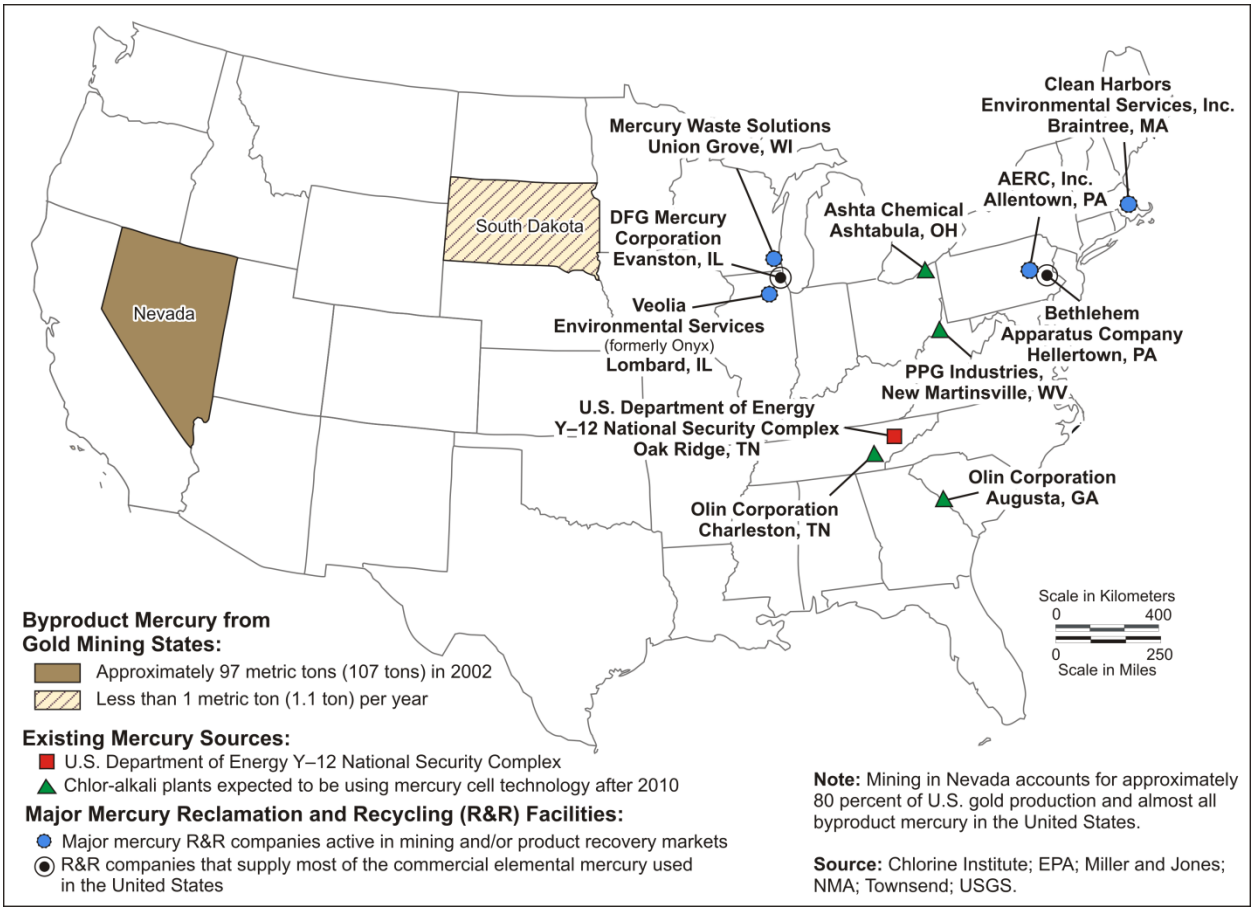


Figure S–2. Potential Sources of Mercury in the United States

S.2 WHAT DOES THIS SEIS ADDRESS?

This SEIS addresses the short- and long-term potential health and environmental effects of establishing and operating a DOE facility(ies) to provide the necessary capability for this storage at three new candidate locations in the vicinity of WIPP near Carlsbad, New Mexico.

S.2.1 Decisions to Be Made

In making long-term mercury management decisions, DOE will consider the results of the January 2011 *Mercury Storage EIS* and this SEIS, public comments, and other relevant factors. DOE intends to make the following decisions:

- Where to locate the mercury storage facility(ies)
- Whether to use existing buildings, new buildings, or a combination of existing and new buildings for mercury storage

DOE will make a decision on the proposed action no sooner than 30 days after publication of EPA's Notice of Availability of the *Final Mercury Storage SEIS* in the *Federal Register*. DOE will announce its decision in a Record of Decision (ROD) published in the *Federal Register*.

S.2.2 Scope of This SEIS

This SEIS includes the following:

- Identification of candidate sites for the mercury storage facility(ies)
- Consideration of the No Action Alternative
- Consideration of construction of new facilities
- Potential health and environmental effects, including transportation to potential storage facility(ies), and cumulative effects of establishing and operating a storage facility(ies)
- Comparison of the analytic results for all sites
- The issues and concerns raised by stakeholders during the public scoping period for the draft SEIS, along with DOE's responses
- The DOE Preferred Alternative
- Public comments on the draft SEIS with DOE's responses

S.2.3 Affected Environment and Environmental Consequences

Chapter 2 of this SEIS presents a description of the three new candidate locations in the vicinity of WIPP near Carlsbad, New Mexico, and a summary and comparison of potential impacts associated with providing a capability for the long-term management and storage of elemental mercury. These locations will be referred to individually as "WIPP Vicinity Section 10"; "WIPP Vicinity Section 20"; and "WIPP Vicinity Section 35" or together as the "WIPP Vicinity reference locations." The No Action Alternative is also discussed as required under NEPA for use as a basis of comparison.

The affected environment for the WIPP Vicinity reference locations is described in Chapter 3 of this SEIS and includes land use and visual resources; geology, soils, and geologic hazards; water resources; meteorology, air quality, and noise; ecological resources; cultural and paleontological resources; site infrastructure; waste management; occupational and public health and safety; socioeconomics; and environmental justice.

In Chapter 4 of this SEIS, DOE presents the potential environmental impacts of the proposed action for the three new alternative sites within defined regions of influence (ROIs) specific to each resource area and site evaluated. ROIs encompass the geographic areas within which any meaningful potential impact could be expected to occur, and can include the area within which the proposed action would take place, the site as a whole, or nearby offsite areas. ROIs that are defined with the term "nearby offsite areas" may be different for each site depending on the extent to which meaningful impacts would be expected to occur. For example, impacts on historic resources were evaluated at specific facility locations within each candidate site, whereas human health risks to the general public were assessed for offsite areas of the candidate location. Brief descriptions of the ROIs for each resource area are presented in Appendix B.

Resource areas analyzed for each candidate site include land use and visual resources; geology, soils, and geologic hazards; water resources; meteorology, air quality, and noise; ecological resources; cultural and paleontological resources; site infrastructure; waste management; occupational and public health and safety; ecological risk; socioeconomics; and environmental justice. The potential impacts analyzed from construction and modification of a mercury storage facility(ies) include those related to visual, ecological, and water resources; land disturbance; resource use; air emissions and noise; and employment. Operational impacts, including those related to resource use, air emissions, and human health effects, and transportation impacts, including those related to air emissions, human health, and ecological risk, are also analyzed. See Section S.5, "Comparison of Impacts and Alternatives," of this *Summary and Guide for Stakeholders*.

S.3 MERCURY STORAGE SITE ALTERNATIVES

To meet the requirements of the Act, DOE proposes to designate one or more existing or new facilities for the long-term management and storage of mercury. As required by NEPA, the No Action Alternative is evaluated to serve, among other things, as a basis for comparison with the action or site alternatives. Under the No Action Alternative, DOE would not establish a facility(ies) for long-term management and storage of mercury as is required by the Act. Because the Act also prohibits the export of mercury after January 1, 2013, companies in the United States would have to find another way to manage their excess mercury. Any excess mercury would remain the responsibility of its owners or would be sent to commercial waste management facilities. Approximately 1,200 metric tons (1,300 tons) of DOE mercury currently stored at the DOE Y–12 National Security Complex in Tennessee would continue to be managed and stored at this location. The candidate sites analyzed in the January 2011 *Mercury Storage EIS* and in this SEIS are presented below in Figure S–3.

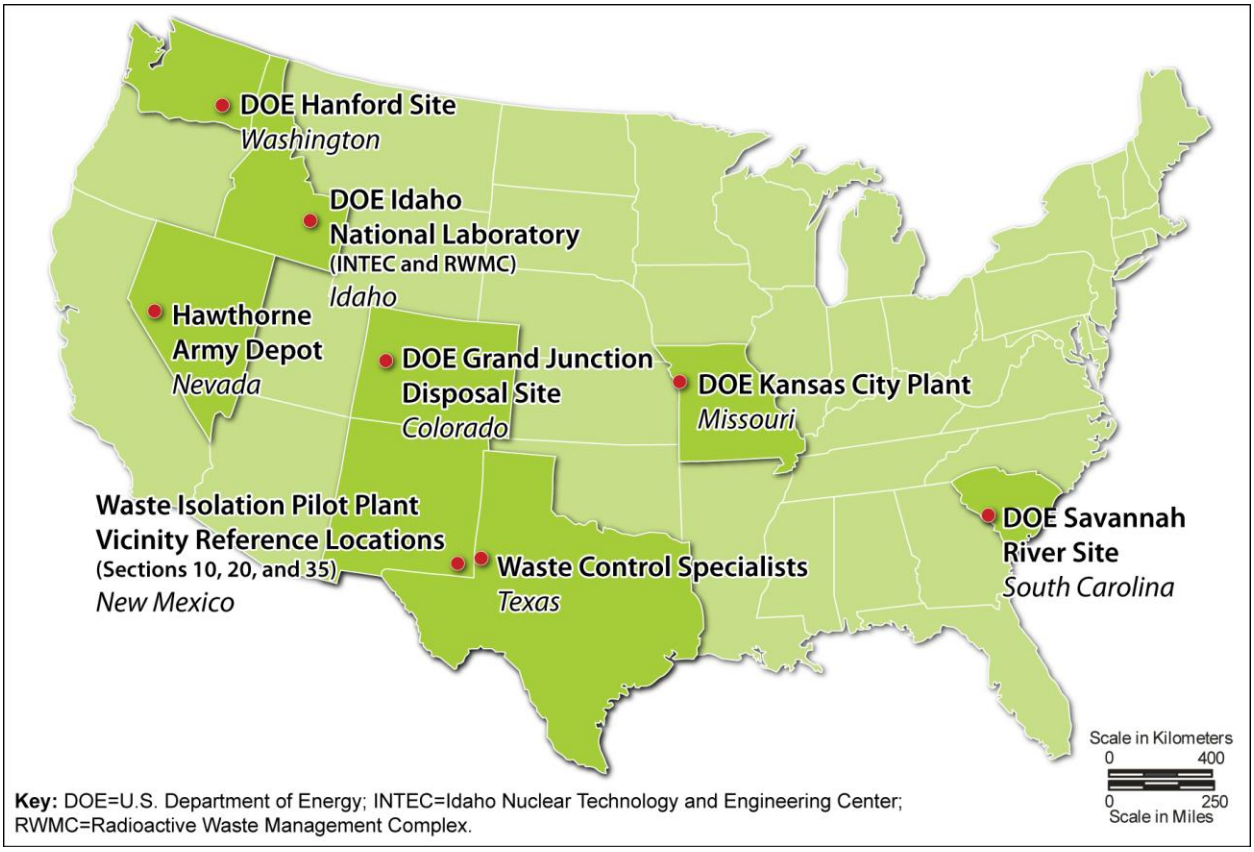


Figure S–3. Alternative Sites Analyzed for U.S. Department of Energy Storage of Mercury

S.3.1 Candidate Sites Evaluated in the January 2011 *Mercury Storage EIS*

The candidate sites analyzed in the January 2011 *Mercury Storage EIS*[2] are summarized as follows:

Grand Junction Disposal Site: The Grand Junction Disposal Site is located approximately 29 kilometers (18 miles) southeast of Grand Junction, Colorado. The new facility would be constructed in the northwestern corner of the 146-hectare (360-acre) site, which is owned by DOE and managed by DOE's Office of Legacy Management. Currently, the site has a 38-hectare (94-acre) area used to dispose of uranium mill tailings.

Hanford Site's 200-West Area: Hanford occupies 151,775 hectares (375,040 acres) along the Columbia River in the southeastern portion of the state of Washington. Hanford is owned by the Federal Government and is managed by DOE. The new facility would be located in the 200-West Area of Hanford at the Central Waste Complex (CWC). Located in the 200-West Area, the CWC receives, stores, and distributes solid radioactive and nonradioactive waste.

Hawthorne Army Depot's Central Magazine Area: The Hawthorne Army Depot is located approximately 16 kilometers (10 miles) from Hawthorne, Nevada. The 59,500-hectare (147,000-acre) site is owned and managed by the U.S. Department of Defense. DOE would designate a maximum of 29 buildings existing in the Central Magazine Area, which would provide up to approximately 27,000 square meters (290,000 square feet) of storage space for DOE storage of mercury. NOTE: Currently, Defense Logistics Agency Strategic Materials (formerly Defense National Stockpile Center) is storing approximately 4,400 metric tons (4,900 tons) of elemental mercury at the Hawthorne Army Depot.

Idaho National Laboratory's Idaho Nuclear Technology and Engineering Center or Radioactive Waste Management Complex: The INL site is a 230,323-hectare (569,135-acre) area located in southeastern Idaho. INL is owned by the Federal Government and is managed by DOE. INL consists of several facility areas situated on an expanse of otherwise undeveloped, cool desert terrain. A new facility would be located at the Idaho Nuclear Technology and Engineering Center (INTEC). Current operations at INTEC include management of sodium-bearing waste, special nuclear material disposition, spent nuclear fuel storage, nuclear material disposition, environmental remediation, and demolition of excess facilities. The Radioactive Waste Management Complex has a number of buildings in the Transuranic Storage Area currently dedicated to storage, staging, characterization, and shipping of transuranic waste. Seven Type II storage modules could be used for the storage of mercury; each building would provide approximately 2,700 square meters (29,000 square feet) of storage.

[2] DOE has interpreted Section 5 of the Act to authorize DOE to designate existing and/or new storage facilities at property owned or leased by DOE. Accordingly, if DOE decides to designate a facility that currently is owned by a commercial entity or by another Federal agency, DOE would acquire an appropriate ownership or leasehold interest in that facility to comply with Section 5 of the Act. DOE would ensure that any such facility currently owned by a commercial entity or by another Federal agency would afford DOE the same level of responsibility and control over stored mercury as a facility owned by DOE. This interpretation would apply to the Hawthorne Army Depot, owned and managed by the U.S. Department of Defense, and WCS, a commercial entity.

Bannister Federal Complex's Kansas City Plant: KCP is part of the 125-hectare (310-acre) Bannister Federal Complex located 13 kilometers (8 miles) south of downtown Kansas City, Missouri. KCP occupies 55 hectares (136 acres) of the complex and is under the custody and control of DOE's National Nuclear Security Administration (NNSA). Approximately 14,000 square meters (150,000 square feet) of existing storage space within KCP could be available for the long-term storage of mercury.

On October 11, 2011, NNSA published a Notice of Availability (NOA) in *Federal Business Opportunities* soliciting proposals from entities that might be interested in the KCP property. Through the NOA process, NNSA determined that only land uses consistent with mixed use (industrial, warehouse, and office) are feasible. Subsequent to the NOA, NNSA prepared an environmental assessment to evaluate the proposed action of transferring the KCP property to one or more entities for a use that is different than its current use. A Finding of No Significant Impact was published along with the environmental assessment in May 2013. If NNSA were to finalize the conveyance of the KCP property for another use prior to DOE's issuing a ROD for the long-term management and storage of elemental mercury, then the Bannister Federal Complex's KCP would no longer be considered a reasonable alternative in this SEIS.

Savannah River Site's E Area: SRS is located in south-central South Carolina and occupies approximately 80,290 hectares (198,400 acres) in Aiken, Barnwell, and Allendale Counties. SRS is owned by the Federal Government and is managed by DOE. E Area is located in the central part of SRS. The current land use designation for E Area is Site Industrial Use. E Area, which includes the Old Burial Ground, Mixed Waste Management Facility, transuranic waste pads, and E Area Vaults, receives low-level radioactive, transuranic, and mixed low-level radioactive waste from all site areas. The new facility would be located in E Area of SRS.

Waste Control Specialists, LLC, Site: Waste Control Specialists, LLC, a commercial entity, owns and operates a 541-hectare (1,338-acre) site for the treatment, storage, and landfill disposal of various hazardous and radioactive wastes. The WCS site is located approximately 50 kilometers (31 miles) west of Andrews, Texas, and 10 kilometers (6 miles) east of Eunice, New Mexico. The new mercury storage facility would be located either north or south of the existing WCS complex of buildings. The Container Storage Building, an existing building located within WCS, is presently configured to store hazardous waste and, with minor modifications, could provide storage of up to approximately 2,000 metric tons (2,200 tons) of elemental mercury.

WCS is licensed by the U.S. Nuclear Regulatory Commission to dispose of low-level radioactive waste. A portion of the WCS site, a 36.4-hectare (90-acre) burial site known as the Federal Waste Facility, has been designated for disposal of DOE low-level radioactive waste. The first shipment of low-level radioactive waste was received in June 2013. The Federal Waste Facility will be the responsibility of the Federal Government after it closes.

S.3.2 Candidate Sites Evaluated in This *Mercury Storage SEIS*

This SEIS evaluates three additional candidate sites for the long-term management and storage of elemental mercury:

- New construction at WIPP Vicinity Section 10
- New construction at WIPP Vicinity Section 20
- New construction at WIPP Vicinity Section 35

WIPP is the Nation's only underground repository for the permanent disposal of defense-generated transuranic waste. The WIPP site, located in Eddy County, New Mexico, encompasses approximately 41 square kilometers (16 square miles) under the jurisdiction of DOE pursuant to the Waste Isolation Pilot Plant Land Withdrawal Act (WIPP LWA) (P.L. 102-579). Three options for long-term storage of mercury in the vicinity of WIPP have been identified: (1) new construction in Section 10 outside the land withdrawal boundary; (2) new construction in Section 20 inside the land withdrawal boundary;[3] and (3) new construction in Section 35 outside the land withdrawal boundary. The candidate sites analyzed in this SEIS are presented below in Figures S-4 and S-5 and discussed further in Chapter 2, Section 2.3, of this SEIS.

[3] The WIPP LWA, Public Law No. 102-579, was signed into law on October 20, 1992, and was later amended by the WIPP LWA Amendments of 1996, Public Law No. 104-201. The WIPP LWA withdrew approximately 41 square kilometers (16 square miles) of land from the public domain for the purpose of creating and operating WIPP, the geologic repository in New Mexico designated as the national disposal site for transuranic waste generated by atomic energy defense activities.

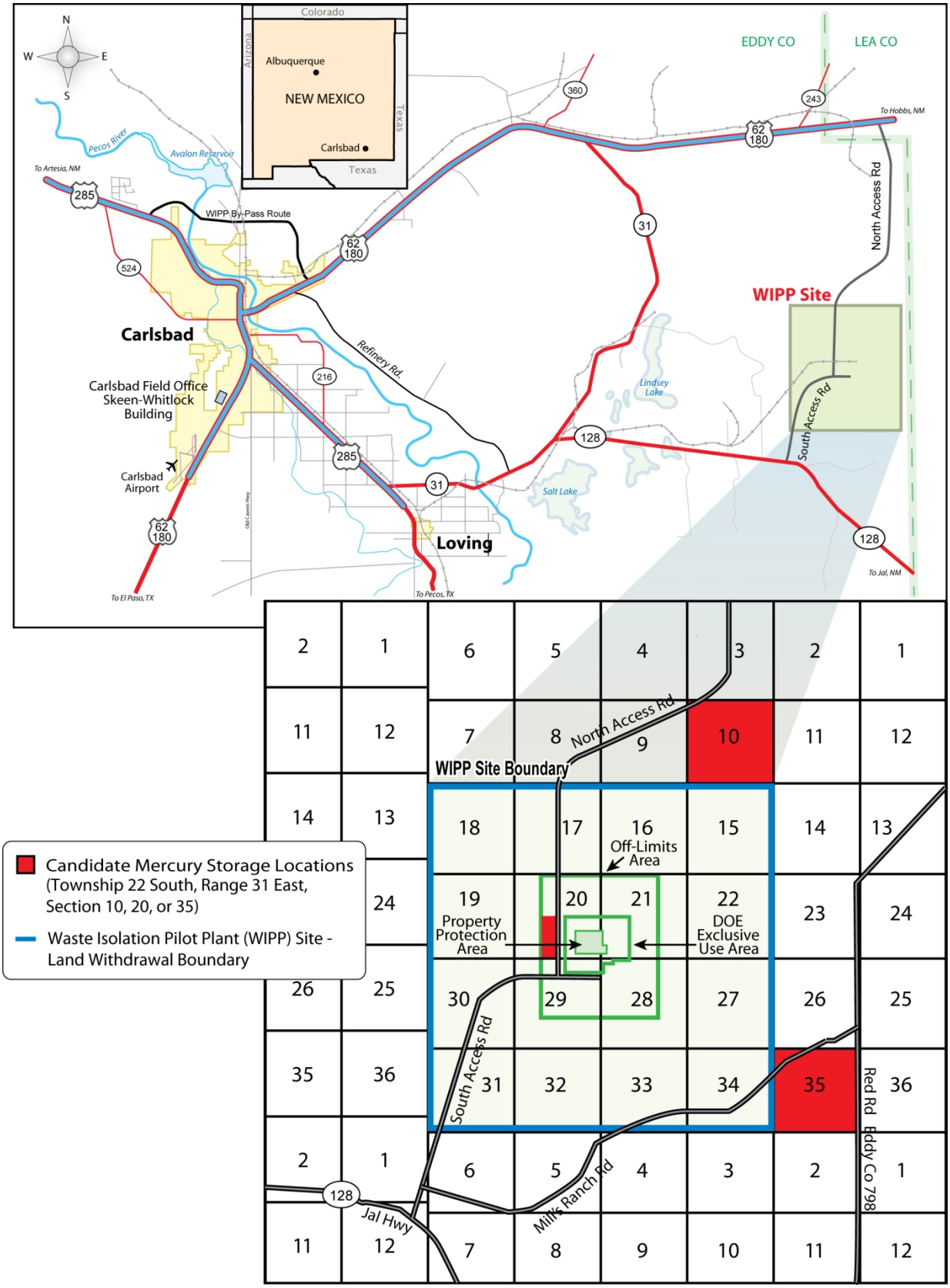


Figure S–4. WIPP Facility in State of New Mexico

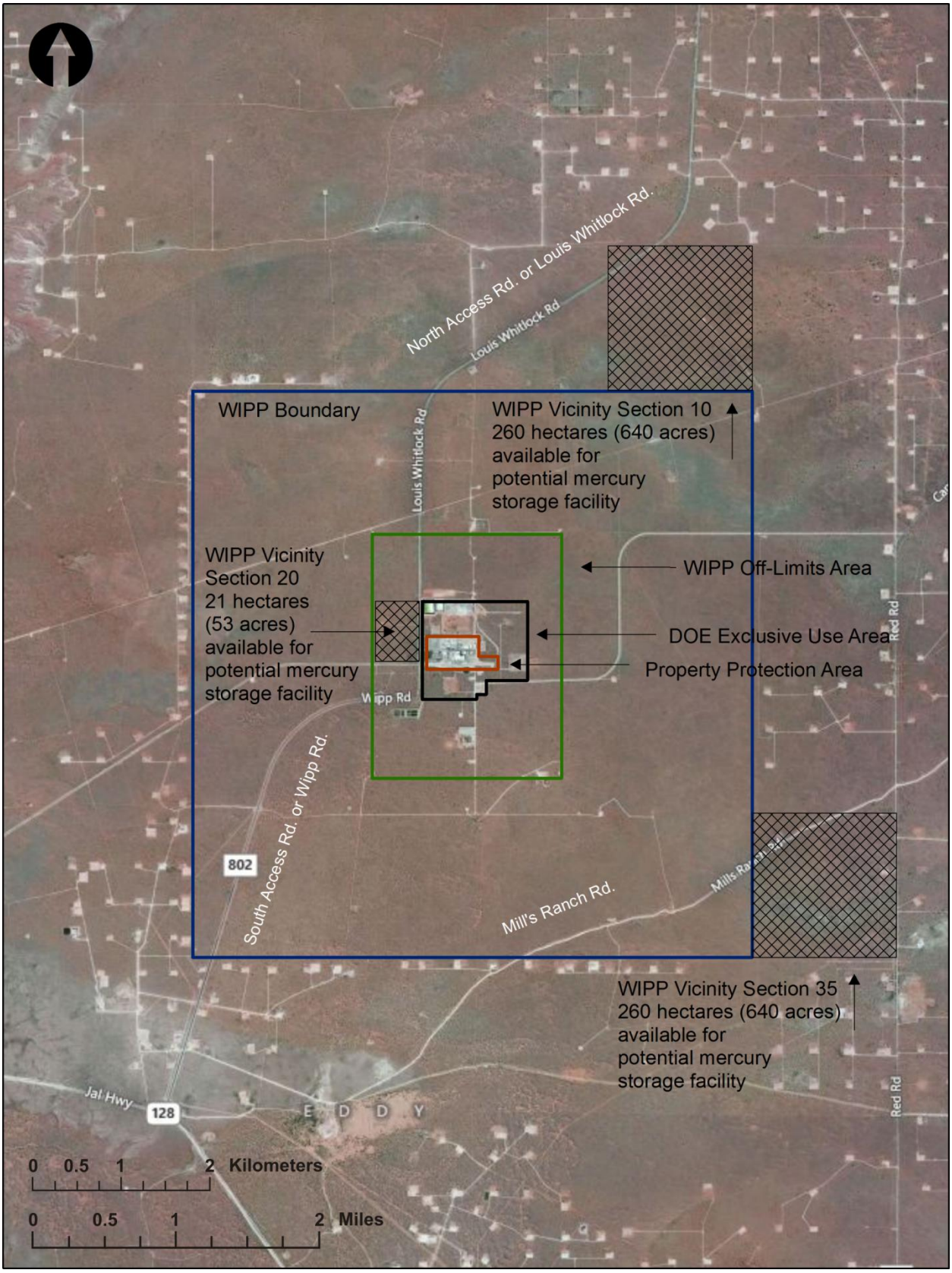


Figure S–5. WIPP Vicinity Reference Locations

S.4 DOE MERCURY STORAGE FACILITY(IES) DESCRIPTION

The DOE mercury storage facility(ies) would include the following characteristics:

- Resource Conservation and Recovery Act (RCRA)–regulated/permitted design with proper spill containment features and emergency response procedures
- Security and access control
- Fire suppression systems
- Ventilated storage and handling area(s)
- Fully enclosed weather-protected building(s)
- Reinforced-concrete floors able to accommodate mercury storage

The mercury storage facility(ies) would have areas for administration, receiving and shipping, storage, and handling. The Storage Area would constitute approximately 90 percent of the floor space. The Storage Area would generally be a large open space similar to a warehouse, where storage, inspection, and monitoring could be effectively performed. The mercury storage facility(ies) would accept two types of mercury containers: 3-liter (34.6-kilogram [76-pound]) flasks and 1-metric-ton (1.1-ton) containers. Other containers could be approved and accepted on a case-by-case basis. The 3-liter flasks would be single-, double-, or triple-stacked, and the 1-metric-ton containers would be single- or double-stacked.

Appendix C of the January 2011 *Mercury Storage EIS* addressed both the potential construction of new facilities and the potential modification of existing facilities for purposes of mercury storage at the candidate sites evaluated in the January 2011 *Mercury Storage EIS*. Since there are no existing facilities available for use at the three WIPP Vicinity reference locations, a new facility(ies) would have to be constructed. As such, only data for new construction are reproduced in Appendix C of this SEIS.

S.4.1 New Storage Facility(ies) Design and Construction

If a new mercury storage facility(ies) were built, it would be designed and constructed to provide the safe and secure long-term storage of up to 10,000 metric tons (11,000 tons) of mercury for at least 40 years. Figure S–6 provides a conceptual illustration of what the exterior of a new mercury storage facility might look like. Figure S–7 provides a conceptual layout of the interior and how the mercury containers might be stored, as well as additional details and data related to the requirements for construction and operation of a new facility(ies).

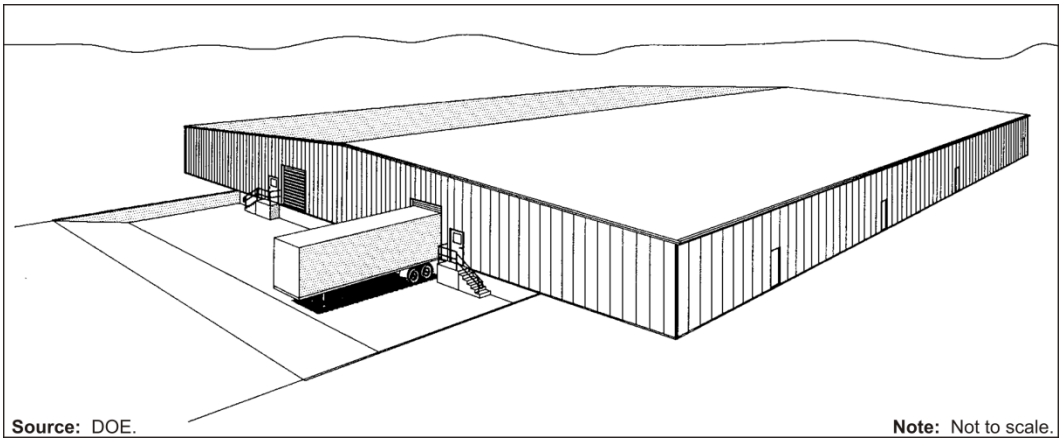
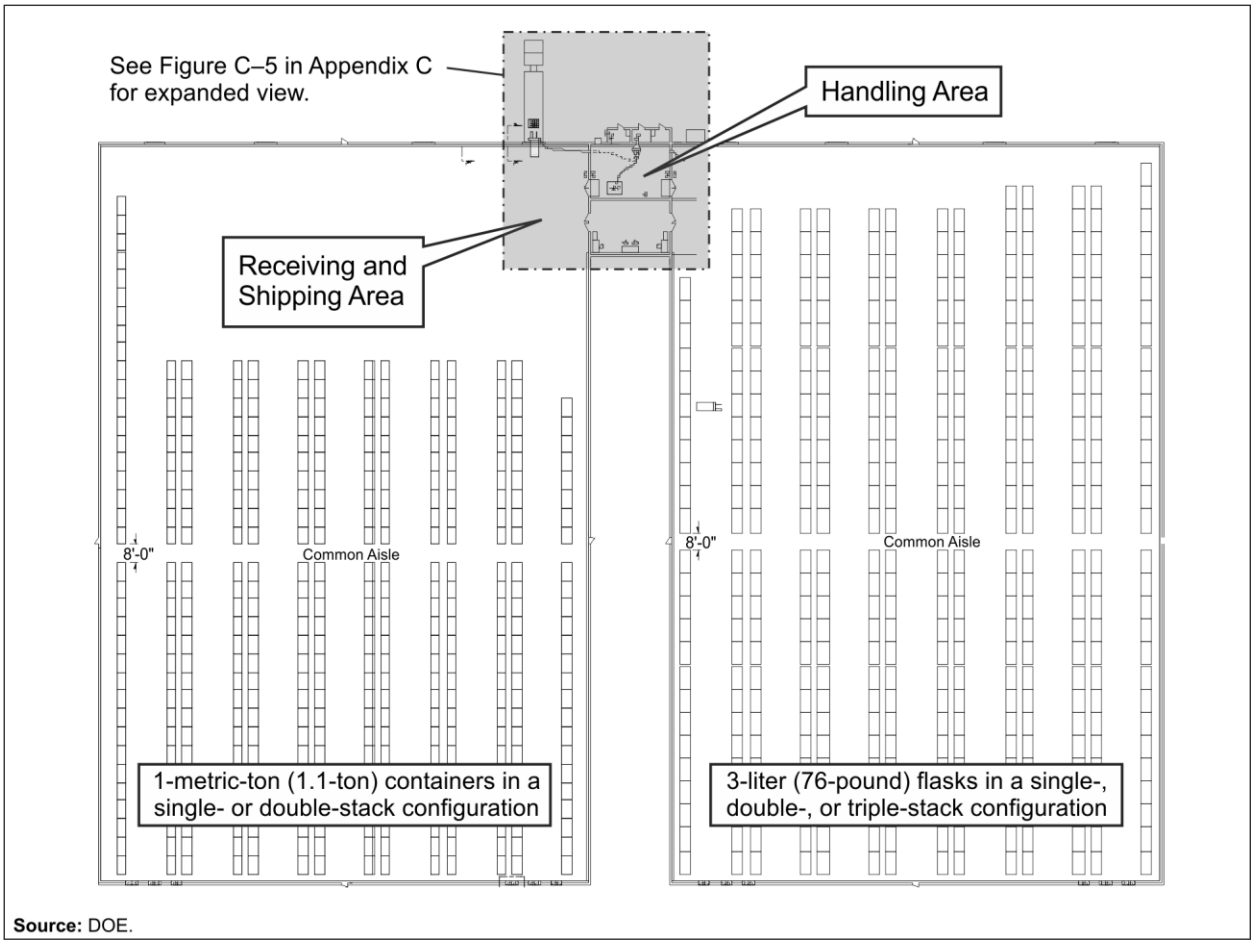


Figure S–6. Conceptual Exterior of a New Mercury Storage Facility



Source: DOE.

Figure S–7. Conceptual Layout of a New Mercury Storage Facility

A new mercury storage facility(ies) could require up to approximately 13,610 square meters (146,500 square feet) of storage space. The height of the building(s) would be approximately 6.1 meters (20 feet) to accommodate the potential for triple stacks of pallets of 3-liter flasks. The new facility(ies) design would feature a specific Handling Area where container integrity inspections and any necessary reflasking activities would be performed. The new facility(ies) would also have a reinforced-concrete floor, strong enough to withstand the heavy loads from mercury storage. The floors would be treated with an epoxy sealant to add strength and spill containment properties. Lighting, ventilation, fire suppression, and security systems would be incorporated into the facility(ies) design. Security systems could include security alarms and surveillance cameras. A new full-size, standalone facility would encompass approximately 3.1 hectares (7.6 acres). The facility(ies) would be RCRA-regulated and -permitted, and, as such, would require secondary containment (e.g., curbing), regular inspection of stored materials, strict record-keeping, and periodic reporting to the host state.

S.4.2 Existing Facility(ies) Modification and Upgrades

Existing facilities were considered in the January 2011 *Mercury Storage EIS* only if their former use was consistent with the storage of hazardous materials, thus keeping the need for modifications to a minimum. Alternative locations with existing facilities analyzed in the January 2011 *Mercury Storage EIS* were the storage buildings at the Hawthorne Army Depot, the Radioactive Waste Management Complex at DOE's INL, and the Main Manufacturing Building at DOE's KCP in Missouri. The Container Storage Building at WCS was also considered for interim storage pending construction of a new facility(ies). As stated previously, the analysis presented in this SEIS only considers new construction for the long-term management and storage of mercury at the WIPP Vicinity reference locations.

S.4.3 Operation of a Mercury Storage Facility(ies)

Regardless of the candidate site chosen, mercury storage operations would include the following:

- Security
- Shipping and receiving
- Inspections
- Monitoring and long-term storage
- Record-keeping
- Emergency and small-spill response

These tasks are described in greater detail in Chapter 2, Section 2.2.3, and Appendix C of this SEIS.

S.5 COMPARISON OF IMPACTS AND ALTERNATIVES

The overall conclusion of the impact analyses presented in this SEIS is that there would be no major differences in impacts on resource areas among the mercury storage site alternatives. This conclusion is based upon the evaluation of the candidate sites analyzed in the January 2011 *Mercury Storage EIS* and the three additional WIPP Vicinity reference location sites analyzed in this SEIS.

Chapter 2, Section 2.6, presents a more detailed comparison of the alternatives analyzed in this SEIS and the January 2011 *Mercury Storage EIS*, including a No Action Alternative. Table S–2 presents a comparison of key physical setting and location factors, i.e., those factors that provide some means of discerning the differences among action alternative sites regarding their surroundings, operational experience, or land use compatibility. Table S–3 presents a summary comparison of environmental consequences across action alternatives for some resource areas. The potential environmental consequences for all resource areas are summarized further in Chapter 2 of this SEIS. Additional details on potential environmental consequences are discussed in Chapter 4 of the January 2011 *Mercury Storage EIS* and this SEIS.

Potential impacts presented in the January 2011 *Mercury Storage EIS* associated with the No Action Alternative would remain unchanged relative to the scope of this SEIS. The No Action Alternative would affect all sources of mercury and would involve various mercury storage locations, many of which are undetermined. Such facilities could vary in location, size, natural and human environments, and in the nature of their operations. Because of the various sites and circumstances in which mercury would be stored under the No Action Alternative, the potential environmental consequences would be highly speculative. The DOE mercury currently stored at the Y–12 National Security Complex would continue to be managed and stored in this location. No new construction would be required at the Y–12 National Security Complex, nor would any incremental increase in impacts on resource areas occur because storage operations at the Y–12 National Security Complex would not change.

This page intentionally left blank.

Table S–2. Comparison of Action Alternatives – Physical Setting and Location Factors

Site/Resource Factor	Alternatives That Use Existing Buildings			Alternatives That Require New Construction							
	INL RWMC	Hawthorne Army Depot	KCP	GJDS	Hanford 200-West Area	SRS E Area	WCS	INL INTEC	WIPP Vicinity		
									Section 10	Section 20	Section 35
Site size in hectares (acres)	INL: 230,323 (569,135) RWMC: 76 (187)	59,500 (147,000)	55 (136)	146 (360)	Hanford: 151,775 (375,040) 200 Areas: 5,064 (12,513)	SRS: 80,290 (198,400) E Area: 134 (330)	Entire site: 5,460 (13,500) Facilities: 541 (1,338)	INL: 230,323 (569,135) INTEC: 107 (264)	WIPP: 4,144 (10,260) Section 10: 260 (640)	WIPP: 4,144 (10,260) Section 20: 21 (53)	WIPP: 4,144 (10,260) Section 35: 260 (640)
Compatible with land use plans?	Yes	Yes; facility use agreement between DoD and DOE may be required.	Yes	1996 MOU possible restriction on land use and current zoning – under evaluation.	Yes	Yes	Yes	Yes	BLM-administered land outside the WIPP LWB used for a mercury storage facility would be withdrawn from all forms of entry, appropriation, and disposal under the public land laws and reserved for the purposes of operating a mercury storage facility. Existing potash mining lease may impact siting a facility.	Land inside the WIPP LWB used for a mercury storage facility would be subject to the provisions of the WIPP LWA and may require Federal legislation.	BLM-administered land outside the WIPP LWB used for a mercury storage facility would be withdrawn from all forms of entry, appropriation, and disposal under the public land laws and reserved for the purposes of operating a mercury storage facility.
Facility or site operates under existing RCRA storage permits.[a]	Yes	Yes	No	No	Yes	Yes	Yes	Yes	WIPP operates under a RCRA storage and disposal permit.		
Seismic risk[b]	0.12 *g*	0.57 *g*	0.05 *g*	0.14 *g*	0.18 *g*	0.17 *g*	0.12 *g*	0.12 *g*	0.08 *g*		
Nearest surface-water feature	Big Lost River Channel 1.6 km (1 mile) northwest. Diversion spread areas (intermittent and seasonal) 1.6 km (1 mile) west.	Walker Lake 5.0 km (3.1 miles) northwest.	Blue River borders site to the east and Indian Creek borders site to the south.	Cheney Reservoir 0.6 km (1 mile) southeast.	Columbia River 10 km (6.2 miles) north. Cold Creek (ephemeral) 4.8 km (3 miles) south.	Upper Three Runs Creek 500 m (1,640 feet) north.	No perennial features within 16 km (10 miles). Ranch house drainage area (intermittent and seasonal) 0.4 km (0.25 miles) southeast.	Big Lost River channel 900 m (2,950 feet) northwest.	Laguna Grande de la Sal, a salt lake, approximately 13 kilometers (8 miles) to the west-southwest.		
Site in 100-year floodplain?	No	No	Yes; flood protection system designed for 500-year flood event.	No	No	No	No	Yes; diversion dam designed for 300-year flood event.	No		
Residential population within 16-km (10-mile) radius[c]	175 (9.8% minority) (18% low-income)	2,583 (23% minority) (15% low-income)	705,513 (36% minority) (13% low-income)	2,823 (14% minority) (11% low-income)	147 (38% minority) (18% low-income)	6,691 (38% minority) (20% low-income)	3,322 (47% minority) (12% low-income)	205 (11% minority) (15% low-income)	550 (44% minority) (6% low-income)	575 (45% minority) (5% low-income)	430 (44% minority) (6% low-income)
Residential population within 3.2-km (2-mile) radius[c]	0	169 (23% minority) (20% low-income)	26,192 (52% minority) (20% low-income)	194 (12% minority) (10% low-income)	0	0	27 (35% minority) (7.8% low-income)	0	36 (45% minority) (5% low-income)	21 (46% minority) (5% low-income)	13 (47% minority) (5% low-income)
Environmental justice considerations within 16-km (10-mile) radius[c]	No minority or low-income census block groups.	1 that is both a minority and low-income census block group (out of 4 blocks).	157 minority only, 5 low-income only, and 88 that are both minority and low-income census block groups (out of 659 blocks).	No minority or low-income census block groups.	2 minority only census block groups and 1 that is both a minority and low-income census block group (out of 4 blocks).	4 minority census block groups and 1 low-income census block group (out of 15 blocks).	2 minority and no low-income census block groups (out of 8 blocks).	No minority or low-income census block groups.	No minority or low-income census block groups.		
Site employment	8,485 (INL)	500–650	2,400	7	9,759 (Hanford)	8,400 (SRS)	150	8,485 (INL)	1,100 (WIPP)		

[a] This factor does not imply that a permit already exists for the storage of DOE mercury; rather, this factor is intended to establish a candidate site's experience operating under other RCRA storage permits. The conditions of any RCRA permit would have to be modified, or in some cases a new application would have to be submitted for approval.

[b] Seismic risk is based on predicted peak acceleration for an earthquake event expected to occur once in 2,500 years. Earthquake-produced ground motion is expressed in units of percent *g* (i.e., force of acceleration relative to that of Earth's gravity). Meteorological risks associated with tornadoes, hurricanes, or floods are bounded by earthquake scenario risks.

[c] Population data have been updated per 2010 census data. The January 2011 *Mercury Storage EIS* was based on 2000 census data. See Appendix E of this SEIS.

Note: Various mercury storage locations, many of which are undetermined, would be involved under the No Action Alternative; therefore, these locations are not presented in the above table. Chapter 2, Section 2.6, of this SEIS presents a discussion comparing the potential environmental consequences of the No Action Alternative against those of the action alternatives.

Key: BLM=U.S. Bureau of Land Management; DoD=U.S. Department of Defense; GJDS=Grand Junction Disposal Site; Hanford=Hanford Site; INL=Idaho National Laboratory; INTEC=Idaho Nuclear Technology and Engineering Center; KCP=Kansas City Plant; km=kilometers; LWA=Land Withdrawal Act; LWB=land withdrawal boundary; m=meters; MOU=Memorandum of Understanding; RCRA=Resource Conservation and Recovery Act; RWMC=Radioactive Waste Management Complex; SRS=Savannah River Site; WCS=Waste Control Specialists, LLC, site; WIPP=Waste Isolation Pilot Plant.

Table S–3. Comparison of Action Alternatives – Environmental Consequences

Resource/Site	Alternatives That Use Existing Buildings			Alternatives That Require New Construction							
	INL RWMC	Hawthorne Army Depot	KCP	GJDS	Hanford 200-West Area	SRS E Area	WCS	INL INTEC	WIPP Vicinity		
									Section 10	Section 20	Section 35
Land use and visual resources	New land would not be disturbed nor would any of the proposed existing buildings have to be expanded to accommodate the long-term storage of mercury. Therefore, there would be no impacts on land use or visual resources.			Construction of a new mercury storage facility(ies) would disturb approximately 3.1 hectares (7.6 acres) of land. Because of the low profile of a new storage building, there would be minimal impacts on visual resources.							
Geology and soils	None	May require minor trenching for utility connections.	None	Potentially would disturb and expose up to 3.1 hectares (7.6 acres) of land (i.e., soil) to a depth of approximately 60 centimeters (24 inches) for 6 months. Geologic resource commitments for construction of a new facility(ies) would include approximately 4,755 cubic meters (6,220 cubic yards) of concrete and 3,875 cubic meters (5,070 cubic yards) of crushed stone.							
Air quality	Negligible air emissions would occur for modification of existing buildings. Operation of a long-term mercury storage facility(ies) would not involve the treatment or processing of mercury; therefore, air emissions would be negligible and limited to employee vehicles, trucks, semiannual testing of emergency generators, and venting of residual mercury vapors. Truck and/or rail transport of mercury would result in negligible emissions of criteria and toxic air pollutants.			Minor short-term air quality impacts would occur during construction of a new storage facility(ies), primarily due to dust generation and emissions from heavy equipment. Operation of a long-term mercury storage facility(ies) would not involve the treatment or processing of mercury; therefore, air emissions would be negligible and limited to onsite employee vehicles, trucks, semiannual testing of emergency generators, and venting of residual mercury vapors. Truck and/or rail transport of mercury would result in negligible emissions of criteria and toxic air pollutants.							
	Carbon dioxide would be generated from fuel-burning equipment used in construction of a new facility(ies), if applicable, and from transportation of mercury to the storage facility(ies); however, emissions (maximum of 3,699 metric tons [4,077 tons]) would be negligible compared with the annual worldwide generation of carbon dioxide (estimated at 26.4 billion metric tons [29.1 billion tons]) and would have a negligible effect on the global climate.										
Infrastructure	Negligible; capacity would meet increased demands.	Negligible; capacity would meet increased demands.	Negligible; capacity would meet increased demands.	Moderate; electrical capacity would have to be increased. No public water supply. No rail access.	Negligible; capacity would meet increased demands.	Negligible; capacity would meet increased demands.	Negligible; capacity would meet increased demands.	Negligible; capacity would meet increased demands.	Minor upgrades would be required to provide water and sanitary service to site. Moderate impacts on electrical infrastructure. Negligible impacts on available infrastructure capacities.	Minor upgrades would be required to connect water and sanitary service to existing WIPP infrastructure. Moderate impacts on electrical infrastructure. Negligible impacts on available infrastructure capacities.	Minor upgrades would be required to provide water and sanitary service to site. Moderate impacts on electrical infrastructure. Negligible impacts on available infrastructure capacities.
Occupational and public health and safety[a]											
Normal operations[b]	SL-I consequences and negligible risk to involved workers, noninvolved workers, and members of the public at all sites.										
Facility accidents[b]	Consequences range from SL-I to SL-II with an associated negligible-to-low risk to involved workers and noninvolved workers from both inside and outside spills. Consequences of SL-I with an associated negligible risk to public receptors from inside and outside spills.										
Transportation[a, c]											
Truck kilometers (miles)	2,662,210 (1,654,225)	3,127,892 (1,943,587)	2,230,117 (1,385,734)	2,509,474 (1,559,319)	3,399,774 (2,112,527)	2,707,719 (1,682,503)	2,907,276 (1,806,502)	2,662,210 (1,654,225)	3,007,088 (1,868,523)		
Annual truck accident fatalities[d]	9.2×10^{-4}	1.1×10^{-3}	7.8×10^{-4}	8.7×10^{-4}	1.2×10^{-3}	9.4×10^{-4}	1.0×10^{-3}	9.2×10^{-4}	1.0×10^{-3}		
Truck accident – human health[b]	For spills onto the ground with subsequent evaporation of mercury, the frequency component of the human health risk would be negligible. The risk would also be negligible. Consequences could be in the SL-I, SL-II, SL-III, or SL-IV range. However, SL-III and SL-IV would only be encountered at short distances (< 100 meters [330 feet]). For direct spills of mercury into water, the consequences could be SL-I or SL-II with a negligible-to-low risk (but with a large degree of uncertainty). For truck accidents with fires, acute-inhalation exposures could be in the SL-I, SL-II, or SL-III range, all with corresponding low risks. For deposition directly onto the ground, consequences would be SL-I with negligible risks. For deposition onto the surface of a water body with subsequent human consumption of fish, the frequency side of the risk estimate is always negligible for fish consumption above the SL-I/SL-II threshold at the national average consumption rate and for subsistence fishermen at the average and 95th percentile consumption rates, with negligible risks. However, in severe cases, there is the potential for contaminating water bodies above the SL-I/SL-II threshold (but still with negligible risk) for the 95th percentile subsistence fisherman up 7,000 meters (23,000 feet) downwind.										

Table S–3. Comparison of Action Alternatives – Environmental Consequences *(continued)*

Resource/Site	Alternatives That Use Existing Buildings			Alternatives That Require New Construction							
	INL RWMC	Hawthorne Army Depot	KCP	GJDS	Hanford 200-West Area	SRS E Area	WCS	INL INTEC	WIPP Vicinity Section 10	WIPP Vicinity Section 20	WIPP Vicinity Section 35
Transportation[a, c] *(continued)*											
Rail kilometers (miles)	600,162 (372,924)	635,564 (394,922)	403,890 (250,966)	510,579 (317,260)	729,541 (453,317)	461,068 (286,495)	634,260 (394,112)	600,162 (372,924)	685,920 (426,212)		
Annual rail accident fatalities[d]	1.5×10^{-4}	1.6×10^{-4}	1.0×10^{-4}	1.3×10^{-4}	1.9×10^{-4}	1.2×10^{-4}	1.6×10^{-4}	1.5×10^{-4}	1.7×10^{-4}		
Rail accident – human health[b, e]	For spills of mercury onto the ground with subsequent evaporation of mercury, the frequency component of the human health risk would be negligible. The risk would also be negligible. Consequences could be in the SL-I, SL-II, SL-III, or SL-IV range. However, SL-III and SL-IV would only be encountered at short distances (< 100 meters [330 feet]). For direct spills of mercury into water, the consequences could be SL-I or SL-II with a negligible-to-low risk (but with a large degree of uncertainty). For railcar accidents with fires, acute-inhalation exposures could be in the SL-I, SL-II, or SL-III range with low risks. For deposition directly onto the ground, consequences would be SL-I with negligible risks. For deposition onto the surface of a water body with subsequent human consumption of fish, the frequency side of the risk estimate is always negligible for fish consumption at the national average consumption rate and for subsistence fishermen at the average and 95th percentile consumption rates, with negligible risks, with the exception of the dry deposition case, in which there is a low predicted frequency that the 95th percentile subsistence fisherman could be exposed above the SL-I/SL-II threshold. In severe cases, there is the potential for contaminating water bodies above the SL-I/SL-II threshold for the 95th percentile subsistence fisherman up to 10 kilometers (6.2 miles) downwind.										
Ecological impacts[a, b, c]	In the Truck Scenarios with dry deposition, three receptors could potentially be exposed at the SL-II level with a corresponding low risk: sediment-dwelling biota, soil invertebrates, and plants. All other ecological receptors would be exposed at the SL-I level with negligible risk. In the Truck Scenario with rain, only one ecological receptor could potentially be exposed at the SL-IV level: sediment-dwelling biota. The corresponding risk would be moderate. In the same accident scenario, soil invertebrates could be exposed at the SL-III level, with a corresponding low risk. Plants, the American robin, and the river otter could be exposed at the SL-II level, with corresponding low risk. All other ecological receptors would be exposed at the SL-I level with negligible risk. For Railcar Scenarios with dry deposition, sediment-dwelling biota could be exposed at the SL-III level with corresponding low risk; soil invertebrates, plants, and the American robin at the SL-II level with corresponding low risk; and all other ecological receptors at the SL-I level with corresponding negligible risk. For Railcar Scenarios with rain, the frequency of exposure of any ecological receptor is negligible and all risks would be negligible. Exposures within this negligible risk range could be SL-IV (sediment-dwelling biota and soil invertebrates), SL-III (plants), and SL-II (American robin, aquatic biota, and short-tailed shrew). Note that, in all transportation scenarios, aquatic biota, the short-tailed shrew, the great blue heron, and the red-tailed hawk have negligible predicted ecological risk.										
Environmental justice[f]	None	No disproportionately high and adverse impacts. Potential transportation routes are adjacent to identified minority and/or low-income populations; transportation accidents are predicted to pose a negligible-to-low risk to human health.	No disproportionately high and adverse impacts. Potential transportation routes are adjacent to identified minority and/or low-income populations; transportation accidents are predicted to pose a negligible-to-low risk to human health.	None	No disproportionately high and adverse impacts. Potential transportation routes are adjacent to identified minority and/or low-income populations; transportation accidents are predicted to pose a negligible-to-low risk to human health.	No disproportionately high and adverse impacts. Potential transportation routes are adjacent to identified minority populations; transportation accidents are predicted to pose a negligible-to-low risk to human health.	No disproportionately high and adverse impacts. Potential transportation routes are near identified minority populations; transportation accidents are predicted to pose a negligible-to-low risk to human health.	None	None	None	None

[a] Risk is an assessment that is a function of the frequency of an event and the magnitude of its potential impact. See Appendix D, Section D.3.1, of this SEIS, for detailed discussion on the qualitative (i.e., negligible, low, moderate, and high) risk assessment.
[b] Consequences are presented by SLs (Severity Levels), with SL-I representing negligible-to-very-low consequences and SL-IV representing the most severe consequences. SLs are defined in Appendix D, Section D.3.1, of this SEIS.
[c] The greatest transportation impact under either Truck Scenario 1 or 2 is presented in this table; see Chapter 4 and Appendix D of this SEIS for more details. Truck Scenarios 1 and 2 are defined in Appendix D, Section D.2.2, of this SEIS.
[d] Annual fatalities for truck or rail transportation are due to mechanical impacts only and represent the predicted annual average occurrence of an accident involving a fatality over the 40-year analysis period.
[e] Potential transportation impacts by rail to GJDS or WIPP Vicinity Section 10 or 35 would involve intermodal transportation: rail transport to Grand Junction/WIPP, transfer from rail to truck, and truck transport to GJDS/WIPP Vicinity Section 10 or 35.
[f] Population data have been updated per 2010 census data. The January 2011 *Mercury Storage EIS* was based on 2000 census data. See Appendix E of this SEIS.

Note: Various mercury storage locations, many of which are undetermined, would be involved under the No Action Alternative; therefore, these locations are not presented in the above table. Chapter 2, Section 2.6, presents a discussion comparing the potential environmental consequences of the No Action Alternative against those of the action alternatives.

Key: <=less than; GJDS=Grand Junction Disposal Site; Hanford=Hanford Site; INL=Idaho National Laboratory; INTEC=Idaho Nuclear Technology and Engineering Center; KCP=Kansas City Plant; RWMC=Radioactive Waste Management Complex; SL=Severity Level; SRS=Savannah River Site; WCS=Waste Control Specialists, LLC, site; WIPP=Waste Isolation Pilot Plant.

This page intentionally left blank.

On January 1, 2013, the prohibition on the export of mercury went into effect pursuant to the Mercury Export Ban Act of 2008. As of August 31, 2013, seven waste management companies have notified DOE of their intent to accumulate and store mercury at RCRA-permitted facilities in accordance with Section 5(g)(2)(B) of the Act. The companies and storage locations that have submitted notifications are (1) Chemical Waste Management, Inc., at its facility in Emelle, Alabama; (2) Clean Harbors Environmental Services, Inc., at its facility in Phoenix, Arizona; (3) Clean Harbors Environmental Services, Inc., at its facility in Wichita, Kansas; (4) EQ Detroit, Inc., at its facility in Detroit, Michigan; (5) Lamp Environmental Industries, Inc., at its facility in Hammond, Louisiana; (6) Veolia ES Technical Solutions, L.L.C., at its facility in Port Washington, Wisconsin; and (7) Waste Management Mercury Waste, Inc., at its facility in Union Grove, Wisconsin.[4] All of these companies have certified that they will ship the elemental mercury to a DOE-designated facility(ies) when such a facility(ies) is operational and ready to accept the mercury.

S.5.1 Major Conclusions

The impacts on the various resource areas at any of the candidate sites analyzed in the January 2011 *Mercury Storage EIS* or this SEIS from construction and operation of a mercury storage facility(ies) would range from none to minor. The analyses in this SEIS support the following conclusions, all of which remain valid for the seven candidate sites initially evaluated in the January 2011 *Mercury Storage EIS* and now similarly apply to the three additional WIPP Vicinity candidate sites subsequently evaluated in this SEIS.

- Impacts on **land use and visual resources** are expected to range from negligible to minor at all candidate sites.

- In the areas of **geology, soils, and geologic and meteorological hazards**, construction of a new storage facility(ies) would expose surface soil for up to 6 months. Although unlikely to occur over the 40-year analysis period, geologic hazards such as earthquakes could potentially have an adverse effect on a mercury storage facility(ies). However, design for construction of a new facility(ies) or modification of existing buildings would take seismic and meteorological risks into consideration to minimize potential adverse impacts.

- Construction and/or operation of a mercury storage facility(ies) are not expected to impact **surface-water or groundwater resources.** Under all alternatives, best management practices, including adherence to an integrated contingency plan and spill prevention, control, and countermeasures plan for mercury storage, would be employed to prevent **spills and releases**, including the use of spill trays under mercury containers, spill containment features, and regular inspections.

- Minor, short-term (6-month) **air quality** impacts would occur under alternatives involving construction of a new storage facility(ies). Impacts would include a small increase in air pollutant emissions from activities in the immediate vicinity of the construction site during working hours.

- **Air emissions** associated with operations using existing buildings for mercury storage would be negligible and limited to employee vehicles, trucks, semiannual testing of emergency generators, and small amounts of mercury vapor from storage containers or residual contamination, where applicable. Occasionally, some mercury vapors would result from repackaging of mercury in new containers. The Handling Area would be outfitted with a vacuum air exhaust and mercury vapor filter that would maintain air emissions exhausted to the outside at negligible

[4] The listing of companies by name is for informational purposes only and does not imply or suggest an endorsement by DOE. Until such time that DOE has designated a facility(ies) and is ready to accept mercury for long-term management and storage, similar notifications may be received by DOE from other waste management companies.

concentrations. Carbon dioxide is a compound associated with global climate change. The addition of carbon dioxide to the environment from constructing and/or operating a mercury storage facility(ies) at any of the candidate sites would have a negligible effect on the global climate.

- **Engine exhaust emissions from transporting mercury** would be in proportion to the number of miles required to transport the mercury to the storage facility(ies). For the WIPP Vicinity reference locations, these emissions are projected to fall within the range established for the candidate sites evaluated in the January 2011 *Mercury Storage EIS*. Truck and/or rail transport from various locations to the DOE long-term mercury storage facility(ies) would generate engine exhaust air emissions along routes of transport. Peak exhaust emissions from transport of mercury are expected to occur during the first year of facility(ies) operation. The frequency of truck and/or rail shipments is expected to decrease over time.

- **Noise** levels would not increase substantially above background levels at any of the candidate sites.

- There would be negligible impacts on **ecological resources** at candidate sites whether a new facility(ies) is built or existing buildings are used.

- No impacts on **cultural or paleontological resources** are expected under site alternatives involving the use of existing buildings because no new construction or external modifications of the buildings would be required. New facility(ies) construction would result in negligible impacts on cultural resources because it would occur in previously disturbed industrialized areas, except at the DOE Grand Junction Disposal Site in Colorado and the WIPP Vicinity reference locations in New Mexico, where procedures would need to be developed to plan for the possibility of inadvertent discoveries during construction.

- Adverse impacts on a potential site's **infrastructure** could occur if available capacity is approached or exceeded. Infrastructure includes roads and railways, electricity, fuel, and water supplies. Existing utility capacity in the vicinity of the candidate sites is adequate and could easily accommodate utility demands for construction and operations at all candidate sites except at the DOE Grand Junction Disposal Site in Colorado. For the WIPP Vicinity reference locations, minor to moderate infrastructure upgrades would be necessary to connect to existing utility infrastructure.

- Impacts on the site's **waste management infrastructure** of construction and operation of a mercury storage facility(ies) would be negligible under all alternatives.

- **Impacts on human health during normal operations** at the mercury storage facility(ies) were determined to be negligible for workers and the public under all alternatives evaluated with negligible associated risks. Risks were determined using the risk matrix approach, which defines levels of risk in terms of frequency of release and severity of consequence (see Figure S–8). DOE, EPA, and other Government agencies use this approach. Events have a high (level IV) frequency if they occur once in 100 years or more frequently; moderate (level III) between once in 10,000 years and once in 100 years; low (level II) between once in 1 million years and once in 10,000 years; and negligible (level I) less than once in 1 million years. Consequence severity levels depend on the receptor (human or ecological) and the pathway (e.g., inhalation or ingestion). For example, for acute (up to about 8-hour) inhalation exposures, severity level IV corresponds to the possibility of fatality; severity level III to severe, nonlethal health effects; severity level II to reversible health effects; and severity level I to negligible health effects or minor irritation. Risks are considered negligible if either frequency or severity is at level I. Frequency levels and severity levels are discussed in more detail in Chapter 4, Section 4.2.9, and Appendix D of this SEIS.

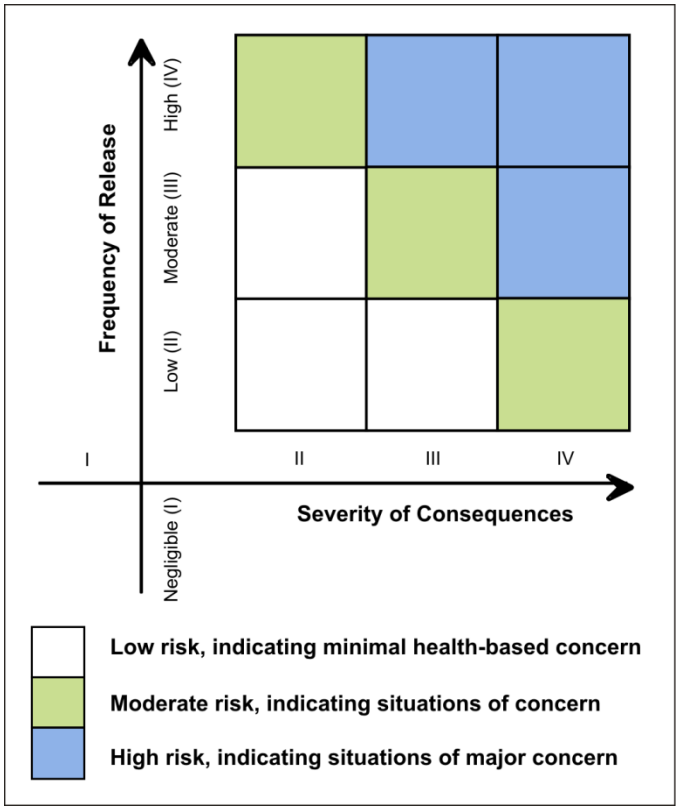


Figure S–8. Risk Ranking Matrix

- **Human health impacts from facility(ies) accidents** would range from severity level I to level II with an associated negligible-to-low risk for both involved and noninvolved workers and negligible risk to members of the public at all candidate sites evaluated.

- **Transportation impacts** under all alternatives would be dependent on the method of transportation (i.e., truck or rail), the number of miles traveled, and the nature of the potential accident. For truck travel, the projected frequency of fatalities due to mechanical impact would range from 7.8×10^{-4} to 1.2×10^{-3} per year for the action alternatives. For rail travel, the range would be slightly lower—from 1.0×10^{-4} to 1.9×10^{-4} fatalities per year. For the WIPP Vicinity reference locations, these impacts are projected to fall within the range established for the candidate sites evaluated in the January 2011 *Mercury Storage EIS*. In addition to the possibility of fatal accidents due to mechanical impact, exposure to mercury from spills could impact human health. For truck or rail spills directly onto the ground, the consequences could range from severity level I to IV with negligible risk. For truck or rail spills directly into water bodies, the consequences could be as high as severity level II with negligible-to-low risk (but with a large degree of uncertainty). For truck and rail spills with fire resulting in airborne mercury vapors, the consequences from the inhalation pathway could be severity level II with low risk or as high as severity level III with negligible risk. For truck or rail spills with fire, the consequences from deposition of airborne mercury onto soil could be severity level I with an associated negligible risk. For truck or rail spills with fire, the consequences from deposition of airborne mercury into water bodies, the transformation of mercury into methylmercury and bioaccumulation in fish, followed by the subsequent consumption of fish, could be severity level I to II with an associated negligible-to-low risk. Transportation impacts considered Truck Scenarios 1 and 2. Scenario 1 assumes fully loaded truck shipments, whereas Scenario 2 assumes a portion of mercury shipments would be on partially loaded trucks. Truck Scenarios 1 and 2 are defined in more detail in Appendix D, Section D.2.2, of this SEIS.

- **Socioeconomic impacts** would be negligible to minor on overall employment and population trends under all alternatives.

- The minimal increase in the number of vehicle trips projected for construction and operations of a mercury storage facility(ies) over baseline **traffic** would be negligible for all alternative sites.

- Minority and/or low-income populations (i.e., census block groups) have not been identified within the 16-kilometer (10-mile) or the 3.2-kilometer (2-mile) ROI associated with any of the WIPP Vicinity reference locations. Environmental justice analyses previously presented in the January 2011 *Mercury Storage EIS* were updated to reflect the 2010 decennial census and resulted in some changes to the data associated with those candidate sites previously analyzed, as discussed in Appendix B and Appendix E, Section E.3.1, of this SEIS. Census data indicate that minority and/or low-income populations are now present within the 16-kilometer (10-mile) ROI at the Hanford Site and Hawthorne Army Depot, in addition to the populations previously identified at the DOE KCP, the DOE SRS, and WCS. Within a smaller 3.2-kilometer (2-mile) radius, minority and low-income populations are now present at the Hawthorne Army Depot, in addition to those previously identified at the DOE KCP. However, **environmental justice** analyses indicate that no disproportionately high and adverse effects on minority or low-income populations would be expected at any of the candidate sites due to construction or operations of a mercury storage facility(ies).

S.5.2 Cumulative Impacts

Cumulative impacts are those impacts on the environment that would result from the proposed action when added to other past, present, and reasonably foreseeable future actions. Actions that may contribute to cumulative impacts include onsite and offsite projects conducted by government agencies, businesses, or individuals that are within the ROIs of the actions considered in this SEIS. For the WIPP Vicinity reference locations, the ROIs used in the cumulative impacts analysis were generally assumed to be within a 16-kilometer (10-mile) radius of the locations. This radius was selected because any adverse impacts from normal operations and facility(ies) accidents would be limited to a distance significantly less than 16 kilometers (10 miles).

Projected impacts on the various resource areas of constructing and operating a mercury storage facility(ies) range from none, to negligible, to minor. Those resource areas that were predicted to be impacted in a minor way were evaluated for their potential to contribute to cumulative impacts within the ROI; specifically, this SEIS analysis includes an evaluation of land use, air quality, infrastructure, and ecological resources. It was determined that the potential contribution to cumulative impacts on those resource areas evaluated would be negligible, as summarized in Table S–4 and addressed in greater detail in Chapter 2, Section 2.6.2, and Chapter 4, Section 4.4, of this SEIS. These findings are consistent with the level of cumulative impacts projected for the seven candidate storage locations evaluated in the January 2011 *Mercury Storage EIS* (see Chapter 2, Section 2.7.2, and Chapter 4, Section 4.11, of the January 2011 *Mercury Storage EIS*).

For the WIPP Vicinity reference locations, the only major projects ongoing or planned within the 16-kilometer (10-mile) ROI are the operations of WIPP for disposal of defense-generated transuranic wastes, the proposed greater-than-Class C (GTCC) waste disposal facility, which could be located in close proximity to WIPP, underground potash mining, and the operation of production oil wells. Depending on the type of facility selected (i.e., borehole, trench, or vault), the GTCC waste disposal facility could require up to 44 hectares (110 acres).

Table S–4. Summary of Cumulative Impacts Assessment

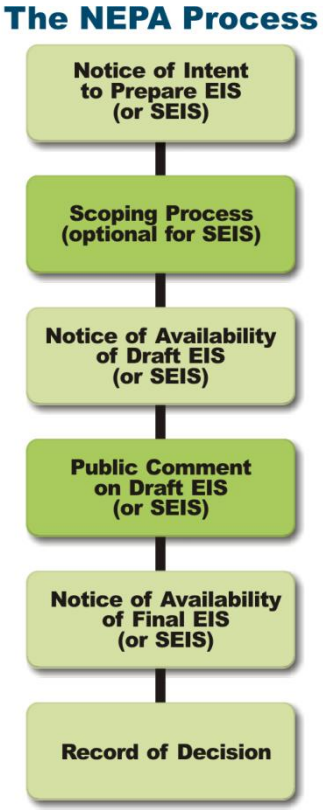
Alternative	Resource Area	Cumulative Impacts	Contribution of Proposed Action to Cumulative Impacts
WIPP Vicinity Reference Locations (Sections 10, 20, and 35)	Land Use	Rural area; limited development expected within the ROI. GTCC waste disposal facility could require up to 44 hectares (110 acres) if WIPP vicinity is selected; one of the locations being considered is WIPP Vicinity Section 35. A mercury storage facility and GTCC waste disposal facility could be located within the 260-hectare (640-acre) area that comprises Section 35 without interference of operations with each other or compromising the safety and security of these facilities. Also present within the ROI are a number of oil wells and underground potash mines located in the vicinity of WIPP, including an existing potash mine lease on WIPP Vicinity Section 10 and one oil well in WIPP Vicinity Section 35. No substantial cumulative impacts on land use.	Negligible
	Air Quality	No exceedance of air quality standards.	Negligible
	Infrastructure	No substantial cumulative impacts on regional power consumption or impact on existing capacities. A maximum of 79 shipments would be made to the proposed mercury storage facility during the peak year of operations and is not expected to appreciably increase demands on transportation systems near the WIPP Vicinity reference locations.	Negligible
	Ecological Resources	No substantial cumulative impacts on terrestrial resources or loss of habitat due to disturbance of land (see Land Use above).	Negligible

Key: GTCC=greater-than-Class C; ROI=region of influence; WIPP=Waste Isolation Pilot Plant.

S.5.3 The Preferred Alternative

In the January 2011 *Mercury Storage EIS*, DOE identified WCS near Andrews, Texas, as the Preferred Alternative for the long-term management and storage of mercury. Based on analysis from this SEIS and public comment, the Preferred Alternative has not changed. DOE will issue a ROD no sooner than 30 days after publication of the EPA Notice of Availability for the *Final Mercury Storage SEIS* in the *Federal Register*. The selection of a site will be based on the January 2011 *Mercury Storage EIS*, this *Mercury Storage SEIS*, and other appropriate factors and will be announced in a ROD in the *Federal Register*.

S.6 PUBLIC INVOLVEMENT



Public involvement for this *Mercury Storage SEIS* began with publication of the Notice of Intent in the *Federal Register* (77 FR 33204) on June 5, 2012, and establishment of a project website (www.mercurystorageeis.com) to give the public access to information on the NEPA process, this SEIS, public involvement opportunities, the January 2011 *Mercury Storage EIS*, and other relevant information. Paid advertisements were published in local newspapers to announce the dates and locations of public meetings and hearings and the mechanisms for submitting comments through the project website, by email, and by U.S. mail.

S.6.1 Public Scoping Meetings

Approximately 65 people attended public scoping meetings for this SEIS at which DOE provided information on the Mercury Export Ban Act of 2008, the January 2011 *Mercury Storage EIS*, and the proposed scope of this SEIS. The scoping period extended from June 5, 2012, to July 5, 2012. During this time, DOE solicited comments from stakeholders, including Federal, state, and local agencies; American Indian tribal nations; and the general public to assist in defining the proposed action, alternatives, and issues requiring analysis. Public scoping meetings were held on the following dates and in the following locations:

- June 26, 2012, in Carlsbad, New Mexico
- June 28, 2012, in Albuquerque, New Mexico

S.6.2 Public Scoping Comments

As discussed in Chapter 1, Section 1.6, of this SEIS, DOE received 92 comment documents (emails, letters, and transcripts of oral comments) during the scoping period, and after the scoping period ended. DOE considered all oral and written public comments in refining the scope of this SEIS.

Comments received during the public scoping period focused primarily on opposition to or support for including locations in the WIPP vicinity among the candidate sites, and environmental, health, and safety concerns associated with transporting and storing mercury.

S.6.3 Public Hearings on the *Draft Mercury Storage SEIS*

DOE issued the *Draft Mercury Storage SEIS* on April 19, 2013 (78 FR 23548), for review and comment by other Federal agencies, states, American Indian tribal nations, local governments, and the public. DOE distributed copies to those organizations and government officials who were known to have an interest in the SEIS, as well as to those organizations and individuals who requested a copy. Copies were also made available on the Internet and in regional DOE public document reading rooms and public libraries near the candidate locations.

The formal public comment period of 45 days extended from April 19, 2013, through June 3, 2013. As announced in the DOE Notice of Availability of the *Draft Mercury Storage SEIS* (78 FR 23548), public hearings were held to encourage public comments on the *Draft Mercury Storage SEIS*. The public hearings were held on the following dates and in the following locations:

- May 7, 2013, in Carlsbad, New Mexico
- May 9, 2013, in Albuquerque, New Mexico

In addition to comments received during the public hearings, the public was invited to submit comments on the *Draft Mercury Storage SEIS* to DOE via (1) the project website (http://www.mercurystorageeis.com), (2) email, and (3) U.S. mail.

S.6.4 Public Comments on the *Draft Mercury Storage SEIS*

As discussed in Part II: Comment Response Document, of this SEIS, DOE received 22 comment documents (emails, letters, and transcripts of oral comments). DOE considered all comments to determine whether corrections, clarifications, or other revisions were appropriate before publishing this final SEIS, including late comments received by August 31, 2013.

Several comments on the *Draft Mercury Storage SEIS* are of broad interest or concern and are summarized below. A more-detailed discussion of these issues, comment documents, and responses to comments are included in the Comment Response Document.

Why is DOE preparing a supplemental environmental impact statement and why are candidate sites near WIPP being considered?

During calendar year 2011, DOE and much of the Federal Government were operating under a Continuing Resolution. Funding limitations precluded DOE from finalizing site selection. This prompted DOE to reconsider several DOE sites using the same selection criteria found in Chapter 1, Section 1.5.1, of the January 2011 *Mercury Storage EIS*. Certain exclusionary selection criteria, e.g., site security, caused DOE to again rule out several DOE sites. This reevaluation of DOE sites led to a determination that several sites at and in the vicinity of WIPP would fit within the range of reasonable alternatives and should be evaluated. Similar to WCS (the Preferred Alternative), the WIPP vicinity is in a remote and arid location. In addition, it offers required infrastructure and is accessible to transportation routes. The WIPP site has personnel with an outstanding transportation management record and experience in implementing RCRA and other pertinent environmental requirements, records management, safety and security. The WIPP Vicinity reference locations have physical attributes that make such a site a favorable location for a DOE mercury storage facility. Input from within DOE, including Carlsbad Field Office site management, was sought prior to moving forward on this option.

What are the consequences of missing the January 2013 deadline for having a DOE facility operational? Will DOE ever build the storage facility?

Since the mercury export ban took effect on January 1, 2013, storage of elemental mercury at private facilities is the only option until a DOE facility becomes operational. As of August 31, 2013, seven waste management companies have notified DOE that they intend to store mercury in accordance with RCRA pursuant to Section 5(g)(2)(B) of the Mercury Export Ban Act. All of these companies have certified that they will ship the elemental mercury to a DOE-designated facility, when such a facility is operational and ready to accept the mercury. Whether elemental mercury would be stored in a RCRA-permitted DOE facility or a RCRA-permitted commercial waste management facility, the storage procedures for this mercury would be similar. DOE intends to fulfill its legal obligations, including completing the NEPA process and selecting a location for the construction and operation of a facility for the long-term management and storage of elemental mercury.

Why aren't the commercial sites that have notified DOE of their intent to store mercury being considered reasonable alternatives?

All seven of the waste management companies that have notified DOE of their intent to store mercury have certified that they will ship the mercury to a DOE facility when it is ready to accept the mercury for long-term management and storage. None of these waste management companies have indicated a desire to serve as DOE's facility for up to 40 years under an appropriate leasehold or ownership arrangement with DOE.

Would constructing and operating a mercury storage facility in the vicinity of WIPP interfere with WIPP operations, oil and gas exploration, or potash mining interests in the area?

DOE acknowledges in Chapter 4, Section 4.2.1, of this SEIS, that an existing potash mining lease exists in Section 10; however, a lease does not currently exist in Section 20 or 35. One oil well exists in Section 35; however, none exist in Section 10 or 20. Potash mining and well drilling are prohibited within the land withdrawal boundary, where Section 20 is located. As discussed in Chapter 4, Section 4.4.2, the proposed mercury storage facility and GTCC disposal facility could co-exist in the vicinity of WIPP without interference of operations with each other or with the current WIPP transuranic disposal operations. The proposed mercury storage facility would only occupy a maximum of 3.1 hectares (7.6 acres). Allowing for a subsidence buffer zone of approximately one-quarter mile surrounding the facility, the siting of a mercury storage facility would affect a portion, but not all, of the potash mining interests in a particular section. The proposed mercury storage facility is not a permanent disposal facility. The storage of mercury will only be necessary until EPA approves a treatment and disposal standard for elemental mercury. However, DOE does acknowledge that although the period of analysis for the long-term management and storage of mercury is 40 years, the need for storage could be longer. In the event that more than 10,000 metric tons (11,000 tons) of mercury need to be stored or storage beyond the 40-year period of analysis becomes necessary, additional NEPA review may be required. Once the mercury storage facility is no longer needed, additional potash reserves would then be available for mining in Sections 10 and 35.

Would construction and operation of a mercury storage facility violate the WIPP Land Withdrawal Act or the Federal Land Policy and Management Act?

DOE acknowledges in Chapter 5, Section 5.3, of this SEIS, that selection of a WIPP Vicinity reference location may involve a legislative process to amend the LWA (for Section 20) or a land withdrawal in accordance with the Federal Land Policy and Management Act (for Sections 10 and 35).

S.6.5 Changes Made to the *Draft Mercury Storage SEIS*

The *Draft Mercury Storage SEIS* was revised to provide additional information, include additional analyses, correct inaccuracies and editorial errors, and clarify text. These revisions resulted from public comments and internal review of the draft SEIS. Vertical change bars in the margins indicate the locations of these revisions and new information. Editorial corrections are not indicated by change bars.

The following revisions are noteworthy:

Changes to the Organization of the *Mercury Storage SEIS*: The *Summary and Guide for Stakeholders* was extracted from the main document of the draft SEIS and is now a separate bound volume of the final SEIS. The Comment Response Document, which includes all public comments and DOE's responses to comments on the draft SEIS, has been added to the final SEIS as Part II.

Editorial Revisions and Clarifications of Text: Editorial errors have been corrected where appropriate throughout the SEIS. In some cases, text or language was added to clarify the presentation of data or discussion of analyses.

Incorporation of Updated Environmental or Site-Specific Information: A thorough review of the *Draft Mercury Storage SEIS*, particularly Chapter 3, "Affected Environment," was conducted to verify that the SEIS contains the most recent time-sensitive data available for all candidate sites. Data and references were updated, and other associated revisions were made where appropriate. For example, environmental data used in the EIS were updated to the most recently published annual site environmental reports for the DOE sites. In addition, the status of the WCS waste operations and KCP's closure was updated.

Expanded Discussion on Air Quality Mitigation: Potential short-term air quality impacts due to construction at any of the WIPP Vicinity reference locations could include criteria air pollutants, with an emphasis on particulate matter. The discussion of potential mitigation measures was expanded to address this concern.

S.6.6 Record of Decision

DOE will announce a decision regarding future actions in a ROD to be published in the *Federal Register* no sooner than 30 days after EPA's Notice of Availability for the final SEIS is published. The ROD will describe the alternative selected for implementation and explain how environmental impacts will be avoided, minimized, or mitigated.

S.7 HELPFUL INFORMATION

This *Final Mercury Storage SEIS* is available on the project website (http://www.mercurystorageeis.com), on DOE's NEPA website (http://energy.gov/nepa), and for review in public reading rooms. Review copies of this *Final Mercury Storage SEIS* and other pertinent documents are available at the following reading rooms.

S.7.1 Visit a Reading Room

Colorado

Mesa County Library
530 Grand Avenue
Grand Junction, CO 81502-5019
(970) 243-4442

U.S. Department of Energy
Office of Legacy Management
2597 Legacy Way
Grand Junction, CO 81503
(970) 248-6089

District of Columbia

U.S. Department of Energy
Freedom of Information Reading Room
1000 Independence Avenue, SW
Room 1G-033
Washington, DC 20585
(202) 586-5955

Georgia

Augusta State University
Reese Library
2500 Walton Way
Augusta, GA 30904
(706) 737-1745

Georgia (continued)

Savannah State University
Asa H. Gordon Library
2200 Tompkins Road
Savannah, GA 31404
(912) 356-2183

Idaho

U.S. Department of Energy
Public Reading Room
1776 Science Center Drive
Idaho Falls, ID 83402
(208) 526-0833

Missouri

Mid-Continent Public Library
Blue Ridge Branch
9253 Blue Ridge Boulevard
Kansas City, MO 64138
(816) 761-3382

Nevada

Mineral County Library
First & "A" Street
Hawthorne, NV 89415
(775) 945-2778

New Mexico

U.S. Department of Energy
Government Information Department
Zimmerman Library/University of New Mexico
1 University of New Mexico
Albuquerque, NM 87131
(505) 277-7180

U.S. Department of Energy
Carlsbad Field Office
WIPP Information Center
4021 National Parks Highway
Carlsbad, NM 88220
(575) 234-7348

Eunice Public Library
1039 10th Street
Eunice, NM 88231
(575) 394-2336

Oregon

Portland State University
Government Information
Branford Price Millar Library
1875 SW Park Avenue
Portland, OR 97201
(503) 725-5874

South Carolina

University of South Carolina–Aiken
Gregg-Graniteville Library
471 University Parkway
Aiken, SC 29801
(803) 641-3320

South Carolina State Library
1500 Senate Street
Columbia, SC 29211
(803) 734-8026

Texas

Andrews County Library
109 NW 1st Street
Andrews, TX 79714
(432) 523-9819

Washington

U.S. Department of Energy
Public Reading Room
Consolidated Information Center
2770 University Drive
Room 101L
Richland, WA 99352
(509) 372-7443

University of Washington
Suzzallo-Allen Library
Government Publications Division
Seattle, WA 98195
(206) 543-1937

Gonzaga University
Foley Center Library
101-L East 502 Boone
Spokane, WA 99258
(509) 313-5931

S.7.2 How This SEIS Is Organized

Part I of this *Final Mercury Storage SEIS* consists of the following chapters and appendices:

- Chapter 1, Introduction and Purpose and Need for Agency Action, describes the proposed action, provides background information on the Mercury Export Ban Act of 2008, and describes the scope of this SEIS and other relevant NEPA documents.

- Chapter 2, Facility Description, Alternatives, and Comparison of Environmental Consequences, describes the candidate sites for management of the mercury, including the No Action Alternative. This chapter also provides a summary of impacts of the alternatives and a description of DOE's Preferred Alternative.

- Chapter 3, Affected Environment, describes the potentially affected environments at the WIPP Vicinity reference locations and the approach taken in describing these affected environments. The level of detail presented for each resource (e.g., air quality, water resources) depends on the likelihood that the resource would be affected by mercury storage activities and the significance of impacts.

- Chapter 4, Environmental Consequences, describes the potential impacts on the affected environments (presented in Chapter 3) of the proposed mercury storage alternatives (described in Chapter 2), including cumulative impacts and unavoidable adverse impacts. It also discusses potential future closure activities, irreversible and irretrievable commitments of resources, and the relationship between short-term uses of the environment and long-term productivity.

- Chapter 5, Environmental Laws, Regulations, Permits, and Other Potentially Applicable Requirements, describes potentially applicable environmental and health and safety compliance and permit requirements and the status of consultations with Federal and state agencies and American Indian tribal governments.

- Chapters 6, 7, 8, and 9 are, respectively, the Glossary, List of Preparers, Distribution List, and Index.

The following appendices include descriptions of methods used to estimate environmental impacts of the alternatives and the detailed information to support the impact analyses:

- Appendix A – The Mercury Export Ban Act of 2008 and *Federal Register* Notices
- Appendix B – Impact Assessment Methodology
- Appendix C – Storage Facility Construction and Operations Data
- Appendix D – Human Health and Ecological Risk Assessment Analysis
- Appendix E – Updates to the January 2011 *Mercury Storage EIS*
- Appendix F – Common and Scientific Names of Plant and Animal Species
- Appendix G – Cooperating Agency Agreements
- Appendix H – Contractor National Environmental Policy Act Disclosure Statement
- Appendix I – Responses to Consultation Requests

Part II of this *Final Mercury Storage SEIS* consists of the Comment Response Document. The Comment Response Document is composed of three sections, as follows:

- Section 1, "Overview of the Public Comment Process," describes the public comment process for the *Draft Mercury Storage SEIS*, as well as the procedure used to respond to these comments.
- Section 2, "Responses to Comments Received on the *Draft Mercury Storage SEIS*," includes copies of all comments received and DOE's responses to these comments. Comments and responses are presented in a side-by-side format for easy viewing.
- Section 3, "References," lists the references cited in the Comment Response Document.