

**ENVIRONMENTAL ASSESSMENT FOR
THE WASTE ISOLATION PILOT PLANT
NORTH ACCESS ROAD BYPASS**

DRAFT A



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ACRONYMS & ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
AGSC	Above Ground Storage Capability
BLM	U.S. Department of Interior, Bureau of Land Management
BMP	Best Management Practice
CFR	Code of Federal Regulations
CH	contact-handled
DEA	Draft Environmental Assessment
DOE	U.S. Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
EPA	Environmental Protection Agency
FR	Federal Register
GHG	greenhouse gas
IO	isolated occurrences
LWA	WIPP Land Withdrawal Act of 1992
NAR	North Access Road
NARB	North Access Road Bypass
NEPA	National Environmental Policy Act
NMCRIS	New Mexico Cultural Resources Information System
NMDOT	New Mexico Department of Transportation
NOA	Notice of Availability
PVS	Permanent Ventilation System
SA	Supplemental Analysis
SAR	South Access Road
SVS	Supplemental Ventilation System
TRU	transuranic
UG	underground
vpd	vehicles per day
WIPP	Waste Isolation Pilot Plant
WLWA	WIPP Land Withdrawal Area

1.0 PURPOSE OF AND NEED FOR THE PROPOSED ACTION**1.1 Introduction**

The Waste Isolation Pilot Plant (WIPP) is the nation's only approved repository for the disposal of defense related/defense generated transuranic (TRU) and mixed hazardous TRU waste (henceforth called TRU waste). The mission of the WIPP Project is to realize the safe disposal of TRU waste from TRU waste generator sites controlled by the U.S. Department of Energy (DOE).

The WIPP Project was authorized by Title II, Section 213(a) of Public Law 96-164 (U.S. Congress 1979). Congress designated the WIPP facility "...for the express purpose of providing a research and development facility to demonstrate the safe disposal of radioactive wastes resulting from the defense activities and programs of the United States exempted from regulation by the Nuclear Regulatory Commission." The WIPP facility is operated by the DOE. Transuranic waste that is disposed in the WIPP facility is defined by Section 2(18) of the WIPP Land Withdrawal Act of 1992 (LWA) (Public Law 102-578 as amended by Public Law 104-201) as: "...waste containing more than 100 nanocuries of alpha-emitting transuranic isotopes per gram of waste, with half-lives greater than 20 years, except for-

(A) high-level radioactive waste;

(B) waste that the Secretary has determined, with the concurrence of the Administrator, does not need the degree of isolation required by the disposal regulations; or

(C) waste that the Nuclear Regulatory Commission has approved for disposal on a case-by-case basis in accordance with part 61 of title 10, Code of Federal Regulations."

The WIPP facility is a deep geologic repository mined within a 2,000-foot-thick bedded-salt formation. The WIPP repository sits in the middle of a 41 square-kilometer (16 square-mile) area under the jurisdiction of DOE pursuant to the LWA. The underground (UG) portion of the repository, where waste is emplaced for disposal, is 2,150 feet beneath the surface.

The Proposed Action is to divert non-WIPP traffic on the North Access Road (NAR) and South Access Road (SAR) away from the WIPP facility entrances, thereby separating WIPP facility traffic from non-WIPP facility traffic. One of the tools used to implement the Proposed Action would be the construction of the North Access Road Bypass (NARB), which has an objective of diverting through traffic away from the entrances into the parking lot for the WIPP facility (Alternative 1). The bypass would relocate non-WIPP associated traffic approximately 1.5 miles to the west of the current NAR and SAR intersection. The NARB would connect the curve of the SAR with the curve of the NAR, thus offering more uniform traffic passage for all non-WIPP associated traffic. This would allow for a safer, less congested WIPP roadway to accommodate current WIPP operations and other surface activities.

1 **1.2 Project Location**

2 The WIPP facility is located 26 miles southeast of Carlsbad, New Mexico (see Figure 1, *General*
3 *Location of the WIPP Site*). The NAR provides access to the WIPP facility from U.S. Highway
4 62/180, which is approximately 13 miles to the north of the WIPP site boundary. The SAR
5 provides access to the WIPP facility from State Highway 128, which is approximately 3.75 miles
6 to the south of the WIPP Exclusive Use Area. The NARB project (Figure 2, *Proposed NARB*
7 *Project Area*) consists of a roadway that would be approximately 3 miles in length and would
8 connect the existing NAR and SAR at a location west of the WIPP facility. The portions of the
9 existing SAR and NAR extending to the WIPP facility shall remain as local access for WIPP
10 personnel and other authorized traffic to the WIPP facility parking area.

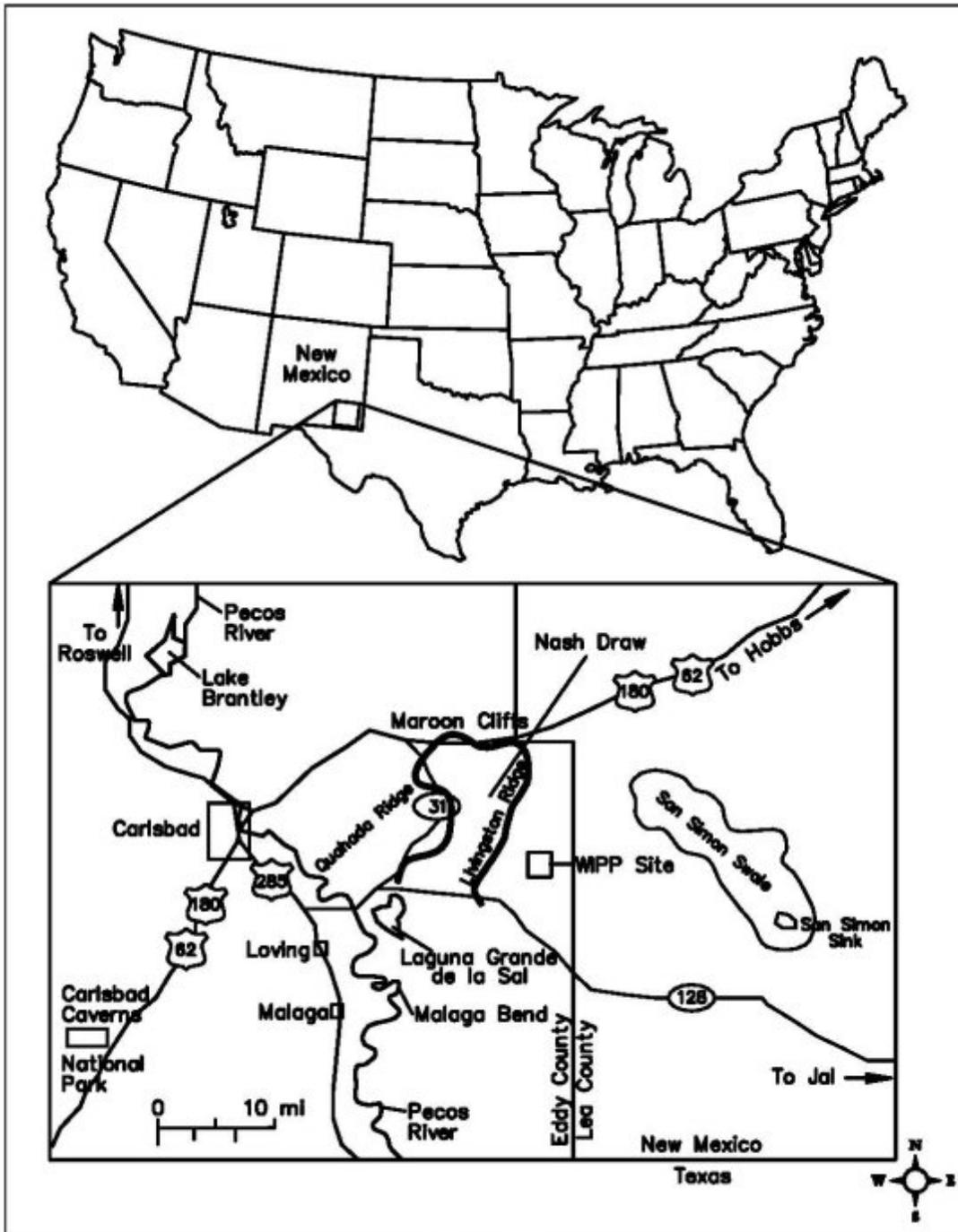
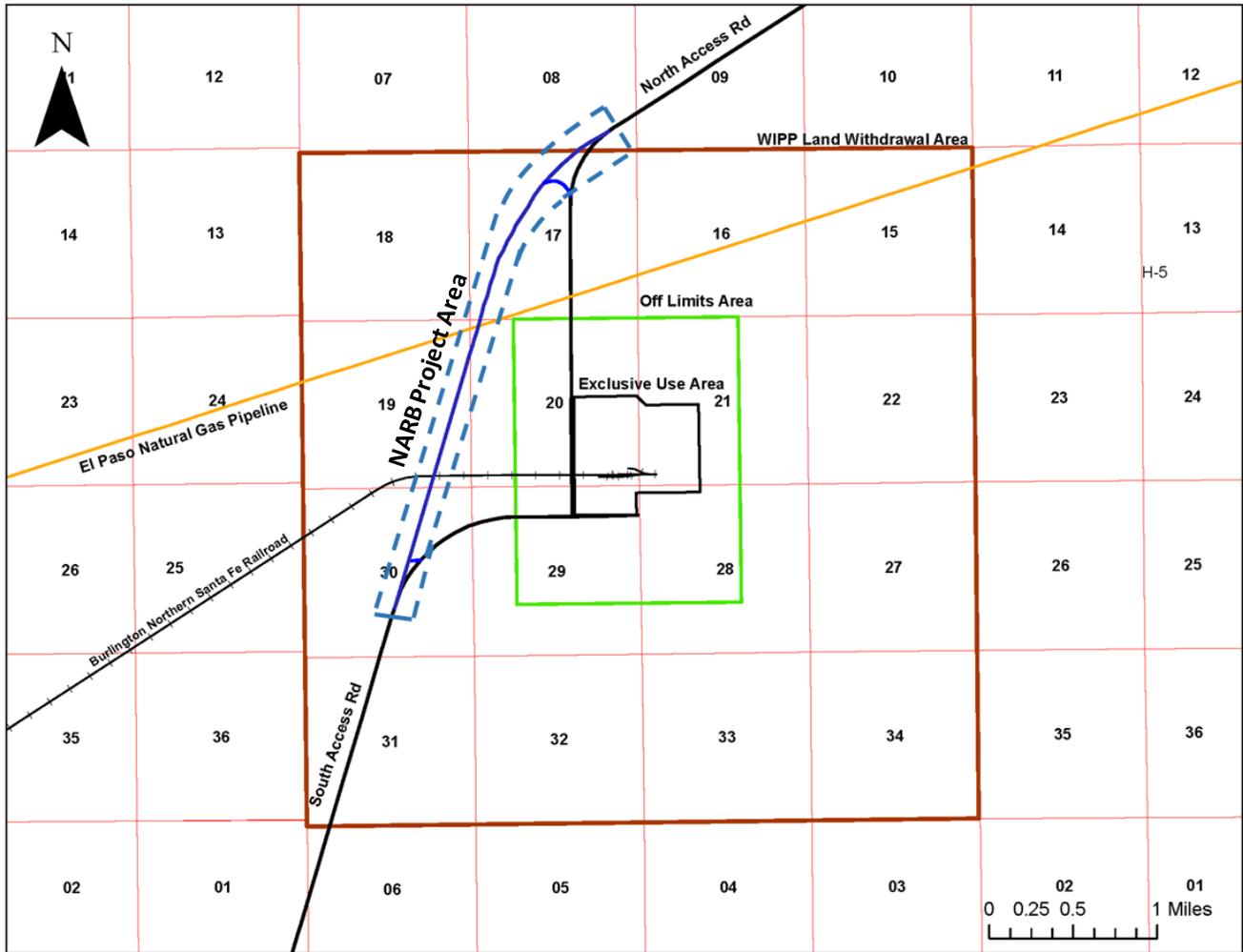


Figure 1. General Location of the WIPP Site

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2



1
2

Figure 2. Proposed NARB Project Area (dotted blue line)

1.3 Purpose of and Need for the Proposed Action

The Proposed Action is to divert non-WIPP traffic on the NAR and SAR away from the WIPP facility entrances, thereby separating WIPP facility traffic from non-WIPP facility traffic. Currently, the NAR is a two-lane asphalt road that is used by the WIPP TRU waste transportation trucks, WIPP employee vehicles, non-WIPP private vehicles, and commercial trucks, primarily oil and gas industry vehicles.

Increasing oil and gas industry activity has resulted in an increased number of large vehicles on the NAR. A traffic study conducted by the NARB designer, in support of the new NARB design (Alternative 1), determined that current use is at approximately 1,555 vehicles per day of non-WIPP traffic passing the parking lot entrance(s) (RPKA, 2018). Of this traffic, approximately 65 percent are oil/gas/water trucks. The oil and gas industry trucks are generally large vehicles carrying loads consisting of drilling water, other oil field supplies or products, and equipment. These large vehicles require long distances to negotiate a stop.

Beginning in 2013, the oil and gas industry activity began increasing in southeastern New Mexico. By the end of 2019, the oil rig count within the New Mexico portion of the Delaware Basin is estimated to increase three-fold (greater than 200 active rigs) with an estimated peak of greater than 500 in 2021 (Baker Hughes, NGI's Shale Daily calculations). According to Petroleum Services Association of Canada (Figure 3), each oil rig requires approximately 145 workers with an estimated 17 trucks per rig. This combined data predicts that an additional 3,400 trucks would be added to the current 1,555 vehicles per day of non-WIPP traffic, which will more than triple the current traffic flow along the WIPP access roads. In addition to the increase in the number of rigs, a sand loading facility is planned south of the WIPP facility. Sand is required for fracking operations, arriving by train, which is then loaded onto truck to support local fracking operations. Because the WIPP SAR/NAR serves as a connector between two highly used highways, Highway 128 and Highway 62/180, for oil field activity, the addition of the sand loading facility will further increase traffic.

The purpose of the Proposed Action is to provide a means for non-WIPP traffic, including oil and gas industry traffic, to be diverted from the NAR and SAR (i.e., be separated from WIPP facility¹ traffic at the location where the traffic slows in order to turn in to the WIPP facility parking lot). The Proposed Action is needed to reduce traffic congestion in the area caused by large, oil and gas industry trucks. This would allow for a safer, less congested WIPP roadway to accommodate current WIPP traffic associated with WIPP operations and other surface activities near the WIPP facility (e.g., monitoring, construction).

¹ In the context of this Draft EA, the term "WIPP facility" represents the operations areas located near the center of the 16-section WIPP Land Withdrawal Area.

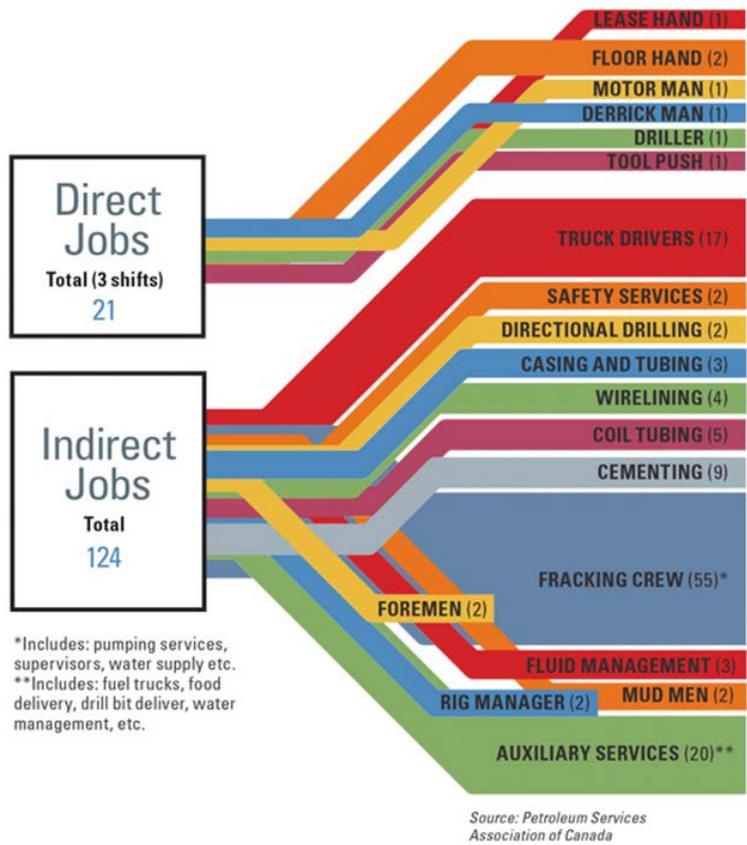


Figure 3. Direct and Indirect Jobs Associated with Oil Rig Equipment

1.4 National Environmental Policy Act Process and Public Involvement

The NEPA requires federal agencies to consider the potential environmental impacts of their proposed actions and alternatives. The DOE has prepared this Draft Environmental Assessment (DEA) to determine whether the potential environmental impacts of the Proposed Action would be significant to human health and the environment in accordance with DOE's NEPA implementing procedures, 10 Code of Federal Regulations (CFR) Part 1021, and the regulations promulgated by the Council on Environmental Quality for implementing NEPA (40 CFR Parts 1500-1508). This DEA will be released for a 30-day public review and comment period. After that, the DOE will review the comments received and prepare a Final Environmental Assessment (EA), and determine whether to issue a Finding of No Significant Impact or prepare an Environmental Impact Statement (EIS).

The resource-specific environmental impact analysis presented in this DEA was performed in compliance with relevant environmental laws applicable to the resource areas analyzed. Key documents previously prepared for the WIPP (e.g., the DOE/EIS-0026-S2) were reviewed regarding their applicability to the subject DEA. This review was conducted with respect to resource-specific existing conditions (i.e., the affected environment). This is because the previously prepared NEPA documents cover/address the geographic area of the proposed project. The impact analysis in this DEA has been prepared specifically for this project in order to provide sufficient information to support a decision regarding the environmental impacts of the proposed project. In further effort to reduce excessive paperwork, as directed by the regulations promulgated by CEQ for implementing NEPA 40 CFR 1500.4(j), DOE has incorporated by reference the NEPA analysis previously conducted for the WIPP Project, 40 CFR 1502.21. Where appropriate, DOE has conducted impact analysis specific to the NARB to support a decision regarding the environmental impacts of the Proposed Action.

Consultations with other agencies (e.g., State Historic Preservation Officer [SHPO], U.S. Fish and Wildlife Service) were not required or undertaken in connection with this DEA for the following reasons:

- According to the most recent Annual Site Environmental Report (DOE/WIPP-17-3591, *Waste Isolation Pilot Plant Annual Site Environmental Report for 2016*, September 2017), there have been no substantive changes in the biological resources at the WIPP site since SEIS-II. No species of plants or animals that are protected by the *Endangered Species Act* were identified within the WIPP Land Withdrawal Area (WLWA) (*Supplement Analysis for the Waste Isolation Pilot Plant Site-Wide Operations*, DOE/EIS-0026-SA-10).
- In August 1978, the Agency for Conservation Archaeology from Eastern New Mexico University conducted an archaeological survey of the area around the WIPP facility. The Agency for Conservation Archaeology surveyed various north/south corridors in the areas south of the WIPP site. None of these corridors indicated any archaeological sites within or near the corridors except in areas farther south than the project area. A Class III cultural resource inventory (BLM 10-NM-523-0041) was conducted in the area of the Proposed Action, and no historic properties were identified.

DOE/EA-2077

Draft Environmental Assessment for the Waste Isolation Pilot Plant North Access Road Bypass

1 As noted above, the DEA will be released for a 30-day public review and comment period as public
2 involvement is a key component of the NEPA process. Regarding the public involvement and
3 participation process, the public was made aware of the preparation of this DEA via the publication
4 of a Notice of Availability (NOA) on mm/dd/year in the following regional newspaper
5 publications:

- 6 • Carlsbad Current-Argus
- 7 • Albuquerque Journal
- 8 • Santa Fe New Mexican
- 9 • Roswell Daily Record
- 10 • Hobbs News-Sun

11 This DEA was made available to the public at the following DOE website: @@@. The publication
12 of the NOA initiated the 30-day public review and comment period commencing on mm/dd/year
13 and ending on mm/dd/year. For comments to be considered in the preparation of the Final
14 Environmental Assessment, they must be received by close of business on mm/dd/year (end date
15 of comment period). Written comments may be provided by mail to the contact identified below
16 or they may be submitted to the following email link:

17 WIPP.EA@wipp.ws

18 Or write:

19 CBFO Point-of-Contact:
20 Anthony Stone, Carlsbad Field Office
21 P.O. Box 3090
22 Carlsbad, New Mexico, 88221-3090

23 The DOE will review the comments provided by the public and modify the DEA, as appropriate.
24 Appendix A of this DEA presents the Public Involvement. Appendix B of the Final Environmental
25 Assessment will provide the public comments received as well as responses to the comments.

1 **2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

2 **2.1 Proposed Action**

3 The Proposed Action is to divert non-WIPP through traffic on the NAR and SAR away from the
4 WIPP facility entrances, thereby separating WIPP facility traffic from non-WIPP facility traffic.

5 As noted in section 1.3, a traffic assessment (RPKA, 2018) was conducted in early 2018 as part of
6 the design process. This assessment identified an average daily traffic rate of 1,555 vehicles per
7 day (vpd) on the WIPP Land Withdrawal Area (WLWA). Of this total, 1,015 vpd (65 percent)
8 were bypassing the WIPP facility, while 540 vpd (35 percent) were accessing the WIPP facility.
9 The bypass traffic was composed of 44 percent trucks and 56 percent cars, while the WIPP site
10 traffic was composed of 4 percent trucks and 96 percent cars.

11 The Proposed Action would shift 1,015 vpd, including 442 trucks per day, away from the WIPP
12 site. This would increase safety for WIPP personnel by decreasing traffic volumes at the facility
13 driveways and would increase safety for the bypass traffic by eliminating the need for it to travel
14 through the more congested area by the WIPP facility. This also enhances the safety for transuranic
15 waste shipments, which travel to the WIPP facility on the NAR. The current underlying cause of
16 traffic congestion is the overall increase in the number of non-WIPP traffic, including oil and gas
17 vehicles, where the WIPP facility is located.

18 One of the tools used to implement the Proposed Action would be the construction of the NARB
19 (Alternative 1). The contractor selected to construct the NARB would possess the equipment,
20 labor resources, applicable subcontractor contacts, management, and materials resources to
21 execute the NARB Project.

22 The first stage of construction is mobilization would include identifying a location near the
23 proposed roadway for a hot mix asphalt batch plant, a materials staging area, and other properties,
24 as necessary, to commence work. A Storm Water Pollution Prevention Plan, or equivalent, would
25 also be established to accommodate the necessary disturbed areas, as applicable. Finally, a Notice
26 of Intent would be filed prior to any soil disturbance, as needed. Traffic control would be provided
27 by the contractor and would ensure access to the WIPP facility would not be impacted by NARB
28 construction activities.

29 After initial mobilization, the contractor would perform excavation and setup temporary
30 construction facilities, such as testing laboratories, office space, sanitary facilities, a laydown yard,
31 water facilities, and fuel areas. A fence contractor would begin installing barbed wire fencing after
32 there is sufficient survey and staking completed.

33 Mainline construction would begin with clearing and grubbing of the surveyed area. Large brush
34 and debris that requires disposal outside of the right of way limits would be disposed in accordance
35 with applicable standards and regulations. During clearing and grubbing, and during other
36 subsequent phases of earthwork, on and off-highway water trucks would be present to control dust.

37 Subgrade and sub pavement layers of construction would progress in a linear fashion from the
38 south to the north. Heavy equipment would be used to shape the roadway grade. Subgrade
39 materials would be worked, placed, treated, compacted, and tested according to specifications.

1 As paving operations complete, final grading and cleanup would be performed ahead of seeding
2 operations. The seed mixture is specified by DOE/WIPP-93-004, Rev. F, *WIPP Land*
3 *Management Plan*, which is the governing document for land use within the WLWA. The Land
4 Management Plan incorporates BLM-approved seeding and range management practices.

5 The final activity would be de-mobilization at which time any remaining construction equipment,
6 temporary offices, associated equipment, and tanks would be removed. Final surveys and as-built
7 drawings would be completed. Final documentation would be delivered to DOE. The area would
8 also be left clean and ready to accept seeding or other reclaiming efforts, as appropriate.

9 **2.2 Alternative 1 – Construct the North Access Road Bypass (NARB)**

10 The NARB would relocate non-WIPP associated traffic approximately 1.5 miles to the west of the
11 NAR. The routing of the NARB would connect the curve of the NAR to the SAR, offering a more
12 uniform passage for all non-WIPP associated traffic while allowing WIPP facility traffic to more
13 safely and efficiently access the WIPP parking area entrance. The roadway design would be based
14 on NMDOT guidelines, which incorporate the American Association of Highway Transportation
15 Officials (AASHTO) Standards (Standard Specifications for Highway and Bridge Construction,
16 New Mexico State Department of Transportation, 2014). For their design standards, the DOE has
17 adopted the AASHTO and other policies, guides, and standards, which also include “A Policy on
18 Geometric Design of Highways and Streets” (Green Book) (2004), the AASHTO “Roadside
19 Design Guide” (2002), and NMDOT Standard Drawings and Design directives.

20 Additional design specifications for the NARB include the following:

- 21 • Asphalt Institute Standard Thickness Design, Asphalt Pavement Structures for Streets and
22 Highways
- 23
- 24 • Manual on Uniform Traffic Control Devices for Streets and Highways, as modified by the
25 State of New Mexico
- 26
- 27 • AASHTO Site Planning Guides

28 Also, specifications with regard to seeding and range management would be based on requirements
29 imposed by DOE/WIPP-93-004, Rev. F, *WIPP Land Management Plan*, which is the governing
30 document for land use within the WLWA. The Land Management Plan incorporates BLM-
31 approved seeding and range management practices.

32 The NARB would be approximately 3 miles in length and would connect to the existing NAR and
33 existing SAR (see Figure 2). Traffic control signage would be placed along the NARB. The
34 portions of the existing SAR and NAR extending to the WIPP facility shall remain as local access
35 for WIPP personnel and other associated traffic to the WIPP facility’s existing parking area.

36 The paved width of the NARB would be approximately 40 feet. The NARB would have two 12-
37 foot driving lanes, two 8-foot shoulders, which match the existing SAR and NAR, and turn lanes
38 for the local access roads as warranted. A minimum horizontal clearance of approximately 3 feet
39 would be maintained between the edge of paving and any structure projecting above shoulder
40 grade. Objects in or near the roadways would be prominently marked in accordance with the

1 standards contained in the Manual on Uniform Traffic Control Devices for Streets and Highways,
2 as modified by the State of New Mexico.

3 The overall construction area of the NARB would be within a 150-foot wide easement area. The
4 formal land survey of the NARB area has been performed to facilitate the performance of a
5 cultural/archaeological survey and a biological survey, which provide an outline for the NARB
6 work zones. The contractor would work within the 150-foot easement, which would be set by the
7 location of the new barbed-wire fencing. The disturbed areas inside this construction zone would
8 be graded for water drainage and re-seeded per applicable standards as part of the NARB project.

9 **2.3 No Action Alternative**

10 Under the No Action Alternative, the Proposed Action would not be implemented and all traffic
11 between Highway 62/180 and State Road 128 would continue to have the same routing. As noted
12 in Section 1.3, due to increased oil and gas industry traffic in southeast New Mexico, there would
13 be more non-WIPP associated traffic mixing with WIPP associated traffic, including transuranic
14 waste shipments, along the SAR and NAR. The potential for vehicle-to-vehicle or vehicle-to-
15 pedestrian collisions, and fatalities, would increase. Implementation of the No Action Alternative
16 would result in failure to correct the congestion and safety concerns associated with increased non-
17 WIPP road traffic.

3.0 AFFECTED ENVIRONMENT

This section presents a discussion, by relevant resources, of the current condition of the affected environment. In compliance with NEPA regulations (40 CFR §1502.15), a description of the affected environment focuses only on those resources potentially subject to impacts. In addition, the level of analysis is commensurate with the anticipated level of impact (or the sliding scale approach). Accordingly, the discussion of the affected environment (and associated environmental consequences) focuses on air quality, grazing range, soil, biological resources, cultural resources, and utilities. Conversely, the following resource areas were evaluated, but not carried forward for detailed analysis in this DEA because the Proposed Action and supporting action alternative would have only negligible impacts on these resources:

- **Geology:** The geology and seismology in the area surrounding the WIPP site boundary has not changed since publication of 1997 Supplemental Environmental Impact Statement (SEIS-II), although more recent seismic activity data are available, they do not indicate any change in the geological or seismological characteristics of the area. Seismic activity is not expected to impact the proposed NARB.
- **Hydrology:** There are no hydrological resources (groundwater, floodplains, or wetlands) in the project area that can be impacted by the proposed action. No major surface water bodies are located within 10 miles of the WIPP site boundary. The Pecos River is about 12 miles west of the WIPP site boundary at its closest point. The NARB project does not have the potential to discharge to waters of the United States or a storm sewer. In the vicinity of the WIPP site boundary, there are limited occurrences of potable water, and several water-bearing zones produce poor-quality water at significant depths below the surface. The presence of a caliche layer near the surface indicates that runoff that infiltrates into the subsurface is evaporated. Hydrological features are not expected to be impacted by the NARB.
- **Noise:** The DOE requires its facilities to comply with Occupational Safety and Health Administration standards regarding noise exposure to workers. The WIPP facility noise sources with the potential to exceed those standards are mitigated and are maintained in compliance with those standards. The types of equipment to be used for NARB construction, would include graders, compactors, loaders, and bulldozers. As with the NAR construction, mufflers along with engineering controls (earplugs/ear muffs) would reduce the noise impacts to workers near the area of construction. Chapter 9 of the 1980 Final Environmental Impact Statement for the WIPP contains the most recent thorough noise evaluation for construction activities. The evaluation in the FEIS included the 12-mile length for the NAR with similar construction equipment as the Proposed Action. Because the NARB would be both shorter than the existing NAR and would be constructed using similar equipment, the duration and magnitude of temporary noise impacts is less than what was analyzed in Chapter 9 of the 1980 FEIS; therefore, the Proposed Action would not notably impact noise resources in the region.
- **Waste Management:** The waste expected to be produced during construction of the NARB would be primarily vegetation cleared from the right-of-way along with minor

1 amounts of miscellaneous construction wastes such as concrete and asphalt. These
2 wastes along with other potential hazardous and non-hazardous wastes would be
3 managed and disposed of in accordance with applicable state regulations. For
4 example, industrial non-hazardous wastes would be disposed of in a permitted landfill.
5 Impacts to waste management would be negligible.

- 6 • Greenhouse Gases: Air quality is determined by atmospheric pollutants and chemistry,
7 dispersion meteorology and terrain, and also includes applications of noise, smoke
8 management, and visibility. The area of the proposed action is within the Pecos River
9 airshed and is classified as a Class II Air Quality Area. A Class II area allows moderate
10 amounts of air quality degradation. The primary causes of air pollution in the project
11 area are from motorized equipment and dust storms caused by strong winds during the
12 spring. Particulates from nearby oil and gas production, agricultural burning,
13 recreational and industrial vehicular traffic and ambient dust can also affect air quality.
14 Air quality in the area near the proposed action is generally considered good, and the
15 proposed action is not located in any of the areas designated by the Environmental
16 Protection Agency (EPA) as “nonattainment areas” for any listed pollutants regulated
17 by the Clean Air Act.

18 The EPA’s Inventory of *U.S. Greenhouse Gas Emissions and Sinks 1990-2014*, stated
19 that: In 2014, total U.S. greenhouse gas emissions were 6,870.5 million metric tons
20 or MMT carbon dioxide (CO₂) Eq. Total U.S. emissions have increased by 7.4 percent
21 from 1990 to 2014, and emissions increased from 2013 to 2014 by 1.0 percent (70.5
22 MMT CO₂ Eq.). The increase in CO₂ emissions from fossil fuel combustion was a
23 result of multiple factors including: (1) colder winter conditions in the first quarter of
24 2014 resulting in an increased demand for heating fuel in the residential and
25 commercial sectors; (2) an increase in transportation emissions resulting from an
26 increase in vehicle miles traveled (VMT) and fuel use across on-road transportation
27 modes; and (3) an increase in industrial production across multiple sectors resulting in
28 slight increases in industrial sector emissions. Since 1990, U.S. emissions have
29 increased at an average annual rate of 0.3 percent.

- 30 • Socioeconomics: The Proposed Action would not change workforce requirements and
31 would not notably impact socioeconomic resources in the region.
- 32 • Environmental Justice: Federal Actions to Address Environmental Justice in Minority
33 Populations and Low-Income Populations, Executive Order (EO) 12898 (POTUS, 1994)
34 requires that “each Federal Agency shall make achieving environmental justice part of its
35 mission by identifying and addressing, as appropriate, disproportionately high and adverse
36 human health effects of its programs, policies, and activities on minority populations and
37 low-income populations.” Due to the remote location of the WIPP facility and the large
38 land withdrawal area, there are no minority or low-income populations adjacent to the
39 project area that would be impacted by the Proposed Action. Therefore, impacts related to
40 EO 12898 would not occur.

41 A large number of minority and low-income individuals are located in Eddy and Lea

1 Counties, New Mexico. In this area, 53 percent of the population is classified as minority,
2 while 15.5 percent is classified as low-income. Although the number of minorities exceeds
3 50 percent of the total population in the area, the number is not meaningfully greater than
4 the state average based on 2010 Census data². The number of low-income individuals does
5 not exceed 50 percent of the total population in the area (DOE/EIS-0026-SA-10).
6 Therefore, no disproportionate impacts to low-income and minority populations are
7 anticipated.
8

- 9 • Transportation: The Proposed Action would result in long-term beneficial impacts to
10 transportation on the NAR and SAR as the NARB would accommodate all non-WIPP
11 associated traffic volumes. Impacts associated with NARB construction activities would
12 be short-term and less than significant.

- 13 • Climate: As discussed in 1997 SEIS-II, the regional climate is semiarid, with low
14 precipitation and humidity and a high rate of evaporation. Climate -related impacts such
15 as increased heat, drought, and insect outbreaks, declining water supplies, reduced
16 agricultural yields, health impacts in cities due to heat, and flooding and erosion are not
17 anticipated to affect the WIPP facility or the Proposed Action, as described in 1997 SEIS-
18 II.

19 Following are the resources carried forward for analysis:

20 **3.1 Air Quality**

21 Air quality is determined by atmospheric pollutants and chemistry, dispersion meteorology and
22 terrain, and also includes applications of noise, smoke management, and visibility. The area of
23 the Proposed Action is within the Pecos River air-shed and is classified as a Class II Air Quality
24 Area. A Class II area allows moderate amounts of air quality degradation. The primary causes of
25 air pollution in the project area are from motorized equipment and dust storms caused by strong
26 winds during the spring. Particulates from nearby oil and gas production, agricultural burning,
27 recreational and industrial vehicle traffic, and ambient dust can also affect air quality. Air quality
28 in the area near the Proposed Action is generally considered good. The Proposed Action is not
29 located in any of the areas designated by the EPA as “non-attainment areas” for any listed
30 pollutants regulated by the Clean Air Act.

31 **3.2 Grazing Range**

32 The Proposed Action is within the Livingston Ridge (Nº 77027) and Antelope Ridge (Nº 77032)
33 grazing allotments. The Livingston Ridge allotment is comprised of 55,581 acres and permitted
34 to a livestock rancher operating a year-round cattle business. Range improvement projects such as
35 windmills, water delivery systems (pipelines, storage tanks, and water troughs), earthen reservoirs,

² Recent information from the Bureau of Business and Economic Research indicate that the population of Eddy County has increased from 53,829 in 2010 to 57,578 persons in 2015 and the number of persons in poverty has decreased from 8,138 in 2011 to 7,015 in 2015. The decrease in the population at or below the poverty level is an indicator that the proposed action would have negligible impacts.

1 fences, and brush control projects may be located within the allotment. Land ownership of the subject
2 allotment is divided between Federal, State, and private (deeded) lands. Acreages distributed by
3 ownership are as follows

- 4 • 41,608 acres Federal ownership (2,880 acres within the WLWA boundary)
- 5
- 6 • 13,063 acres State Trust lands
- 7 • 910 acres private (deeded) land

8 The Antelope Ridge allotment contains 77,574 acres and is permitted to a livestock rancher
9 operating a year-round cattle business. Range improvement projects such as windmills, water
10 delivery systems (pipelines, storage tanks, and water troughs), earthen reservoirs, fences, and brush
11 control projects may be located within the allotment. Land ownership of the subject allotment is
12 divided between Federal, State, and private (deeded) lands. Acreages distributed by ownership
13 are as follows:

- 14 • 66,757 acres Federal land (7,360 acres within the WLWA boundary)
- 15 • 8,749 acres State Trust lands
- 16 • 2,068 acres private land

17 **3.3 Soil**

18 The area of the Proposed Action is mapped as BD – Berino-Dune sand complex, 0 to 3 percent
19 slopes, and KB – Kermit-Berino fine sands, 0 to 3 percent slopes. These are sandy type soils.

20 Typically, these soils are deep, well-drained to excessively drained, non-calcareous to weakly
21 calcareous sands. They are found on undulating plains and low hills in the “sand country” east of
22 the Pecos River. Permeability is moderate to very rapid, water-holding capacity is low to
23 moderate, and little runoff occurs. These soils are susceptible to wind erosion and careful
24 management is needed to maintain a cover of desirable plants and to control erosion.
25 Reestablishing native plant cover could take 3-5 years due to unpredictable rainfall and high annual
26 average temperatures (Lofton, 2010).

27 Low stability soils such as the deep sands found in this area typically contain only large
28 filamentous cyanobacteria. Cyanobacteria, while present in some locations, are not significant.
29 While they occur in the top 4 millimeters of the soil, this type of soil crust is important in binding
30 loose soil particles together to stabilize the soil surface and reduce erosion. The cyanobacteria
31 also function in the nutrient cycle by fixing atmospheric nitrogen, contributing to soil organic
32 matter, and maintaining soil moisture. Cyanobacteria are mobile and can often move up through
33 disturbed sediments to reach light levels necessary for photosynthesis. Horizontally, they occur in
34 nutrient-poor areas between plant clumps. Because they lack a waxy epidermis, they tend to leak
35 nutrients into the surrounding soil. Vascular plants, such as grasses and forbs, can then utilize
36 these nutrients (Lofton, 2010).

1 **3.4 Biological Resources**

2 **3.4.1 Vegetation**

3 Vegetation within the general Project Area is dominated by short- and mid-grasses such as black
4 grama, bush muhly, various dropseeds, and three-awns. Bluestems, bristlegrass, lovegrasses, and
5 hooded windmillgrass make up some of the less common grasses. Shrubs include mesquite,
6 shinnery oak, sand sagebrush, broom snakeweed, and yucca. A large variety of forbs varies from
7 year to year, and season to season. Common forbs include bladderpod, dove weed, globemallow,
8 annual buckwheat, and sunflower (Lofton, 2010).

9 **3.4.2 Wildlife and Habitat**

10 The Proposed Action occurs in a transition zone between the Chihuahuan Desert habitat (to the
11 west) and a sand shinnery habitat (to the east). This area is primarily dominated by mesquite
12 scrublands intermixed with various grasses. This mesquite scrubland community extends across
13 the southern Great Plains, occupying portions of north and west Texas, western Oklahoma, and
14 southeast New Mexico. Portions of Eddy and Lea Counties consist of mesquite scrublands. The
15 characteristic feature of the mesquite scrubland habitat is co-inhabited by various species of
16 grasses and cacti.

17 Various bird, mammal, reptile, and invertebrate species inhabit this ecosystem in southeast New
18 Mexico. Herbivorous mammals include mule deer, pronghorn, and numerous rodent species.
19 Carnivores include coyote, bobcat, badger, striped skunk, and swift fox. Two upland game bird
20 species, scaled quail and mourning dove, are prevalent throughout southeast New Mexico. Many
21 species of songbirds commonly nest in the habitat. A much larger number of bird species use the
22 habitat during migration or for non-nesting activities. Common avian predators include northern
23 harrier, Swainson's hawk, red-tailed hawk, kestrel, burrowing owl, and Chihuahuan raven.
24 Numerous snake and lizard species also inhabit this ecosystem.

25 In 1996, DOE conducted a Threatened and Endangered Species Survey to investigate the potential
26 for impact to rare, threatened, endangered, or sensitive plant or animal species as a result of the
27 potential actions presented in SEIS-II (DOE 1997). The 1996 survey included an assessment of
28 suitable habitats for these species. No threatened, endangered, or state-listed species were found
29 on the WLWA during the survey. The data reported in the survey, which support the conclusions
30 of other studies (Lynn 2000), suggest that dense and permanent populations of these species are
31 not presently established on WIPPlands.

32 Two species, previously listed as threatened or endangered, live in the shinnery oak sand dunes
33 areas near the WIPP site. These two species are the Dunes Sagebrush Lizard (*Sceloporus*
34 *arenicolus*) and the Lesser Prairie Chicken (*Tympanuchus pallidicinctus*). On June 19, 2012, the
35 proposal to list the Dunes Sagebrush Lizard was withdrawn under:

- 36 • the New Mexico Game and Fish Endangered Species Act
- 37 • the U.S. Fish and Wildlife Endangered Species Act (candidate species)

38 The U.S. Fish and Wildlife Service withdrew the proposed rule to list the Dunes Sagebrush Lizard
39 as endangered under the Endangered Species Act of 1973 based on the conclusion that the threats

1 to the species, as identified in the proposed rule, no longer are as significant as believed
2 (*Endangered and Threatened Wildlife and Plants; Withdrawal of the Proposed Rule to List Dunes*
3 *Sagebrush Lizard*, 77 Federal Register [FR] 36871).

4 On July 20, 2016, the U.S. Fish and Wildlife Service published a final rule formally vacating the
5 previous listing of the Lesser Prairie Chicken as threatened under the Endangered Species Act.
6 The listing of the Lesser Prairie Chicken was vacated in order to comply with a court order
7 regarding a challenge to the listing (*Endangered and Threatened Wildlife and Plants; Lesser*
8 *Prairie Chicken Removed from the List of Endangered and Threatened Wildlife*, 81 FR 47047).

9 **3.5 Cultural Resources**

10 The project falls within the Southeastern New Mexico Archaeological Region. This region
11 contains the following cultural and temporal periods: Paleoindian (ca. 12,000 – 6,200 B.C.),
12 Archaic (ca. 6,200 B.C. – A.D. 500), Ceramic (ca. A.D. 500 – 1540), Protohistoric and Spanish
13 Colonial (ca. A.D. 1400 – 1821), and Mexican and American Historical (ca. A.D. 1822 to early
14 20th century). Sites, in which evidence of past activity is preserved (either prehistoric or historic),
15 representing any or all of these periods are known to occur within the region (Lofton, 2010). A
16 more complete discussion can be found in *Living on the Land: 11,000 Years of Human Adaptation*
17 *in Southeastern New Mexico: An Overview of Cultural Resources in the Roswell District, Bureau*
18 *of Land Management*, published in 1989 by the BLM.

19 Fieldwork was conducted on December 12-14, 2017 by Statistical Research Inc., 2018. The survey
20 area consisted of a single linear corridor situated on lands administered by the DOE and the BLM.
21 The survey corridor includes both construction-work spaces and the permanent right-of-way. The
22 following documents and forms were used to assist in completing the study, which are included in
23 the survey crews final report: New Mexico Cultural Resources Information System (NMCRIS)
24 Investigation Abstract Form, a BLM authorization form, a table providing legal descriptions, a
25 U.S. Geological Survey 7.5-minute topographic map of the project area, the results of Statistical
26 Research Inc.'s pre-field search of BLM and NMCRIS records, a table of the isolated occurrences
27 (IOs), survey plat maps, and geographic information system shapefiles of the proposed segment.
28 There were no previously recorded sites that NMCRIS or BLM data showed intersecting the
29 planned corridor. The survey crew (Statistical Research Inc., 2018) did not encounter any new or
30 previously recorded sites but did record three IOs (see Figure 5, Area of Cultural Survey with
31 Isolates). The IOs are:

- 32 • IO-1: 3 fire-altered sandstone
- 33 • IO-2: 1 fire-altered caliche
- 34 • IO-3: 1 fire-altered caliche

35 **3.6 Utilities**

36 An existing gas pipeline located within the project area, which is owned by Enterprise Products,
37 supports the local oil and gas industry.

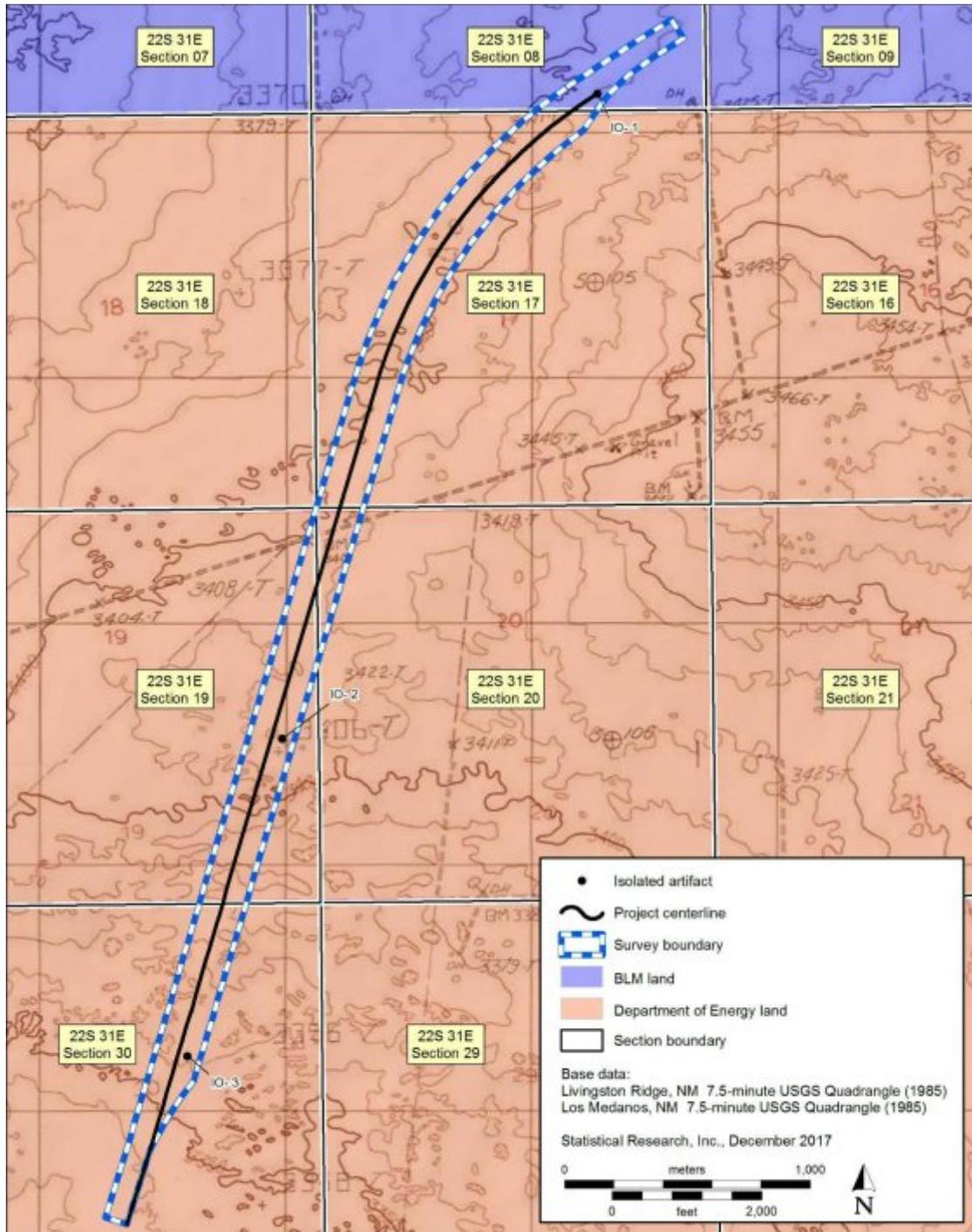


Figure 4. Area of Cultural Survey with Isolates

1 **4.0 ENVIRONMENTAL IMPACTS OR CONSEQUENCES**

2 This section presents a discussion of the potential resource-specific impacts of the Proposed Action
3 and action alternatives. The discussion includes direct, indirect, and cumulative impacts and
4 presents best management practices and industry standard protection measures that would be
5 incorporated into the Proposed Action to reduce impacts to a negligible level.

6 **4.1 Air Quality**

7 **4.1.1 Alternative 1**

8 The Proposed Action would not adversely affect long-term air quality. The winds that frequent
9 the southeastern part of New Mexico generally disperse odors and emissions. Air quality would
10 be impacted temporarily from exhaust emissions, chemical odors, dust caused by vehicles
11 traveling to and from the project area, and from motorized equipment used during construction of
12 the road. Potential impacts of road construction could include the creation of dust, releases of
13 GHG and volatile organic compounds during construction. Impacts to air quality would diminish
14 upon completion of the construction phase of the Proposed Action.

15 The EPA has the primary responsibility for regulating air quality, including seven nationally
16 regulated ambient air pollutants. The DOE uses the following standard practices to minimize
17 impacts to air quality on lands managed at the WIPP facility in southeastern New Mexico, where
18 applicable:

- 19 • Using existing disturbed areas when available
- 20 • Minimizing additional surface disturbance
- 21 • Reclaiming and quickly establishing vegetation on areas not necessary for production
- 22 • Periodic watering of unsurfaced access roads during dry periods
- 23 • Removal and reuse of caliche for other projects

24 Potential direct and indirect impacts to air quality would be reduced to a negligible level by
25 following standard practices for minimizing disturbances during construction. Emission sources
26 used during construction of the NARB would comply with the EPA Air Quality Standards.

27 **4.1.2 No Action Alternative**

28 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
29 the existing conditions (as described in section 3.1) would remain unchanged. Therefore, no
30 impacts to air quality would occur under the No Action Alternative.

32 **4.2 Grazing Range**

33 **4.2.1 Alternative 1**

34 Two existing roadway tangents would be extended and joined by a large-radius horizontal
35 curve. Vertical alignment was determined based on anticipated geotechnical recommendations for
36 section thickness to ensure pavement longevity and AASHTO design guidelines for vertical curves
37 to ensure required sight distance over terrain undulations to meet safety standards. Vertical profile
38 was also designed with an elevation above the existing ground in most locations to minimize

1 hazards from occasional drifting snow and blowing dust or sand. Vertical alignment was further
2 affected by required cover for unobstructed livestock crossings.

3 Three under-road livestock crossings (see Figure 5, *Locations for Under-Road Livestock*
4 *Crossings*) would be located in existing depression areas to minimize vertical rise in roadway
5 height required to pass over these structures. Fencing and cattle guards would be designed to
6 maximize use of existing fencing and minimize loss of grazing area while providing adequate
7 setback from the roadway. Drainage would be designed to minimize the potential for ponding in
8 crossing structures.

9 Structural components of Alternative 1 would include livestock crossings in the form of 8-foot
10 high x 10-foot wide box culverts. Standard NMDOT box culvert (see Figure 6, Under-Road
11 Livestock Crossings) drawings would be used to ensure availability and to decrease item costs.

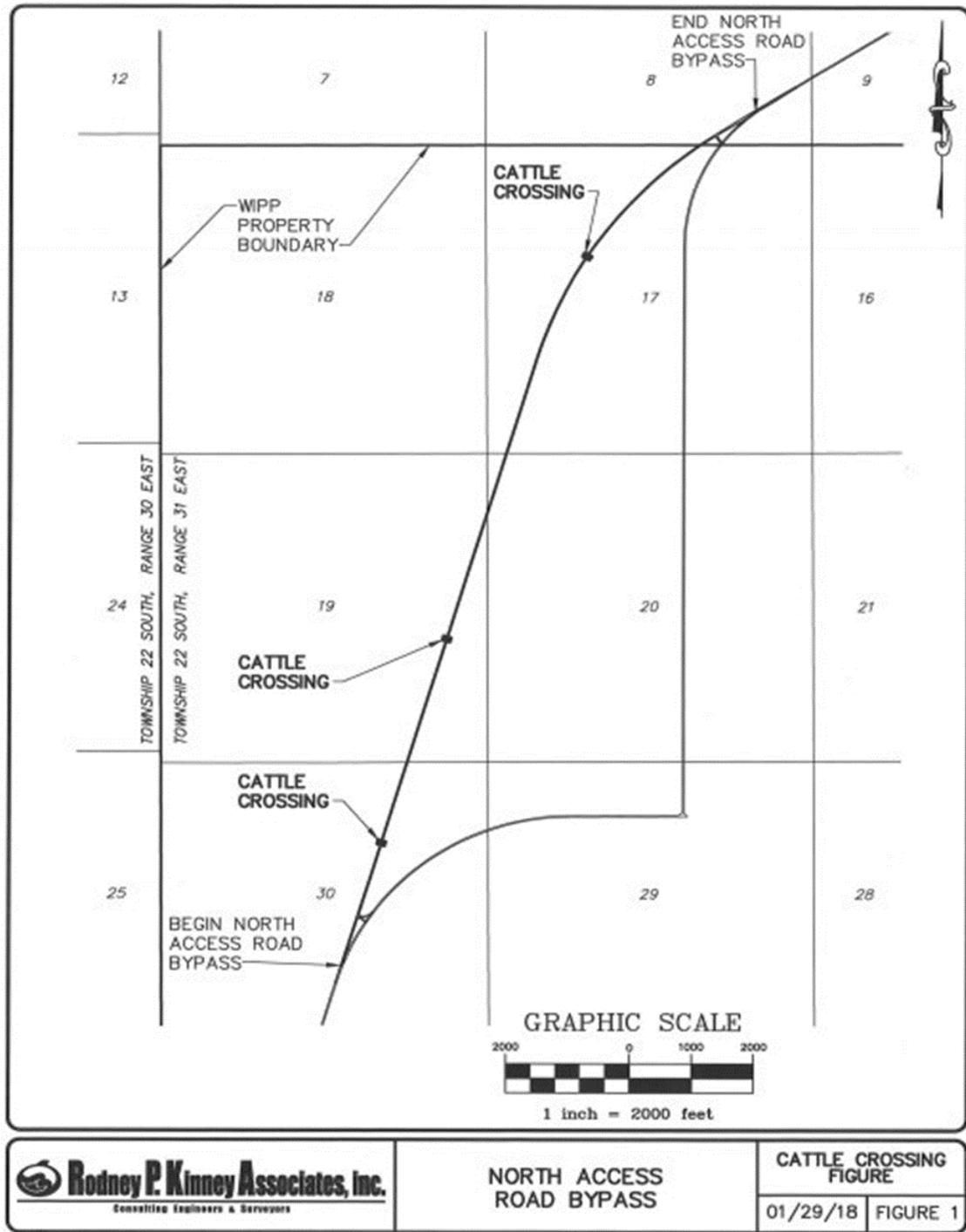


Figure 5. Locations for Under-Road Livestock Crossings

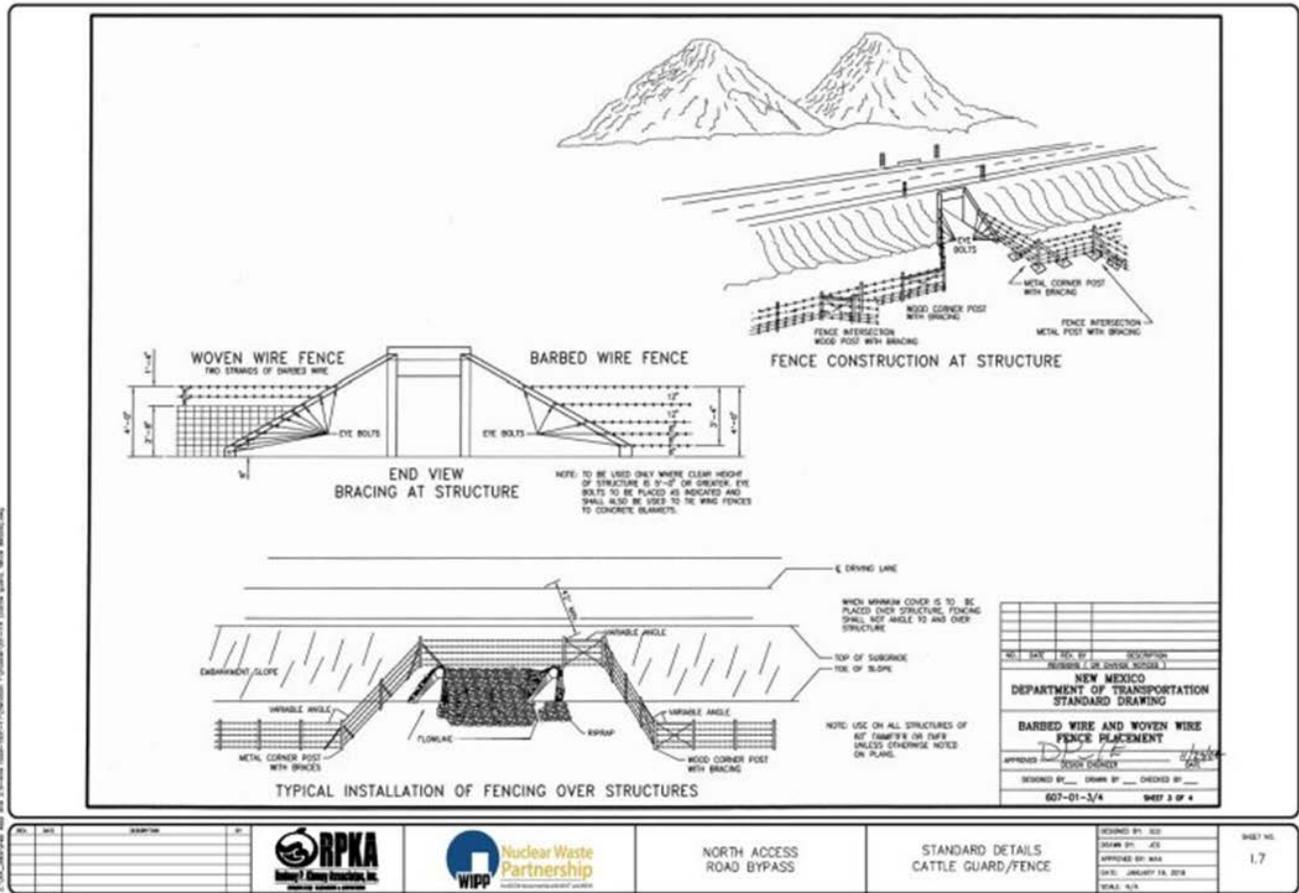


Figure 6. Under-Road Livestock Crossings

1 The following potential issues were identified with regard to implementing the Proposed Action:

- 2 • Other land use authorizations, which includes a gas pipeline owned by Enterprise
3 Products Co. and treatment thereof.
4
- 5 • Loss of vegetation. Based on analysis and field investigations, Alternative 1 construction
6 and operation would impact a total of approximately 60 acres of land, including 17 acres
7 (28 percent) of permanent disturbance consisting of easement, roadway, and sand
8 sagebrush steppe, which would be converted to roadway land use.
- 9 • Impacts to ranching operation.

10 To address the issues described above, the following measures would be incorporated into
11 Alternative 1 to reduce direct and indirect impacts to a negligible level:

- 12 • The existing gas pipeline, owned by Enterprise Products, would be protected and
13 undisturbed during the term of NARB construction and operation. The NARB designer
14 would incorporate any crossing treatments and/or encasing of existing pipeline as
15 requested by Enterprise Products into the final NARB design packages prior to
16 construction.
17
- 18 • The loss of approximately 17 acres of vegetation would not adversely affect the Animal
19 Unit Months, which would be authorized for livestock use in this area.
20
- 21 • Direct and indirect impacts to the ranching operation would be reduced to a negligible
22 level by the following BLM standard practices which include:
23
 - 24 ○ Utilizing existing surface disturbance
 - 25 ○ Minimizing additional vehicular use
 - 26 ○ Placing parking and staging areas on caliche-surfaced areas
 - 27 ○ Reclaiming the areas not necessary for road use
 - 28 ○ Quickly establishing vegetation on the reclaimed areas; minimize cut and fill
 - 29 ○ Conducting periodic surveys of sensitive wildlife habitat to ensure habitat avoidance
 - 30 ○ Controlling dust by limiting construction activities
 - 31 ○ Providing fencing to prevent livestock loss due to traffic collisions and provide three
32 cattle tunnels to re-connect grazing plots

33 **4.2.2 No Action Alternative**

34 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
35 the existing conditions (as described in section 3.2) would remain unchanged. Therefore, no
36 impacts to the grazing range would occur under the No Action Alternative.

1 4.3 Soil**2 4.3.1 Alternative 1**

3 There would be a potential for wind and water erosion due to the erosive nature of the soils once
4 the cover is lost. There would be the potential for soil contamination due to spills or leaks during
5 construction activities. Soil contamination from spills or leaks could result in decreased soil
6 fertility, less vegetative cover, and increased soil erosion. Direct and indirect impacts to soil
7 resources would be reduced to a negligible level by following standard practices such as cleaning
8 up spills and releases and re-establishing vegetation as soon as practicable on the disturbed areas
9 that are not permanent portions of the NARB.

10 Impacts to soil resources would be reduced by following standard practices such as utilizing
11 existing surface disturbance, which includes placing parking and staging areas on caliche surfaced
12 areas. By utilizing existing surface disturbances for parking and staging areas, additional surface
13 disturbance would be minimized.

14 4.3.2 No Action Alternative

15 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
16 the existing conditions (as described in section 3.3) would remain unchanged. Therefore, no
17 impacts to soil would occur under the No Action Alternative.

18 4.4 Biological Resources**19 4.4.1 Alternative 1**

20 According to the most recent annual site environmental report (DOE/WIPP-17-3591, *Waste*
21 *Isolation Pilot Plant Annual Site Environmental Report for 2016*, September 2017), there have
22 been no substantive changes in the biological resources at the WIPP site since SEIS-II. During
23 2016, no species of plants or animals that are protected by the Endangered Species Act were
24 identified within the WLWA (*Supplement Analysis for the Waste Isolation Pilot Plant Site-Wide*
25 *Operations*, DOE/EIS-0026-SA-10).

26 Most recently, a Federal and State listed species assessment using meandering transects of all
27 NARB project areas was performed in December 2017. The survey included a 600-foot wide
28 assessment encompassing potential road and construction workspace along the NARB project
29 corridor for the length of the proposed road. One raptor stick nest and 33 avian nests (all of
30 unknown origin) were observed and field located in the 600-foot wide survey area encompassing
31 the 140-foot wide NARB project area.

32 The majority (61 of 74) of Federal and State listed species occurring within the project area have
33 no potential to be affected by the Proposed Action, as their specific range or baseline habitat
34 requirements do not occur within or adjacent to the NARB project area. The 13 remaining species
35 are characterized as having “low” potential to be affected by the Proposed Action (Tetra Tech,
36 2017).

37 The NARB project would be constructed and operated using applicable typical industry-standard
38 Best Management Practices (BMPs) and Environmental BMPs (which include U.S. Fish and
39 Wildlife Services and BLM Carlsbad Field Office commonly recommended construction and

1 operation BMPs and voluntary conservation measures). These practices would be incorporated
2 into construction contracts, land use permits, or plans for development as applicable. Therefore,
3 direct and indirect impacts would be negligible.

4 **4.4.2 No Action Alternative**

5 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
6 the existing conditions (as described in section 3.4) would remain unchanged. Therefore, no
7 impacts to biological resources would occur under the No Action Alternative.

8 **4.5 Cultural Resources**

9 **4.5.1 Alternative 1**

10 The cultural survey team declared the survey negative (i.e., no new or previously recorded sites
11 [either prehistoric, or historic]) and documented such in the NMCRIS as activity number 139541
12 (Statistical Research Inc. (2017), *An Archaeological Survey and Inventory of the WIPP North*
13 *Access Road Bypass*). Therefore, direct and indirect impacts would be negligible.

14 **4.5.2 No Action Alternative**

15 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
16 the existing conditions (as described in section 3.5) would remain unchanged. Therefore, no
17 impacts to cultural resources would occur under the No Action Alternative.

18 **4.6 Utilities**

19 **4.6.1 Alternative 1**

20 The existing gas pipeline located within the NARB project area, which is owned by Enterprise
21 Products, would be protected and undisturbed during the term of the NARB construction and
22 operation. The NARB designer would incorporate any crossing treatments and/or encasing of
23 existing pipeline as requested by Enterprise Products into the final NARB design packages prior
24 to construction; therefore, direct and indirect impacts would be negligible.

25

26 **4.6.2 No Action Alternative**

27 Under the No Action Alternative, the Proposed Action would not be implemented. Consequently,
28 the existing conditions (as described in section 3.6) would remain unchanged. Therefore, no
29 impacts to utilities would occur under the No Action Alternative.

1 **5.0 CUMULATIVE IMPACTS**

2 The Council on Environmental Quality regulations in "Cumulative Impact" (40 CFR § 1508.7)
3 define cumulative impacts as "the incremental impacts of the action when added to other past,
4 present, and reasonably foreseeable future actions regardless of what agency (Federal or non-
5 Federal) or person undertakes such other actions. Cumulative impacts can result from individually
6 minor but collectively significant actions taking place over a period of time." This chapter presents
7 an analysis of the resource-specific cumulative impacts resulting from implementation of the
8 Proposed Action in conjunction with any reasonably foreseeable projects to be initiated at the
9 WIPP site. The focus of the cumulative impacts analysis is this DEA is on reasonably foreseeable
10 projects that would be within the same geographic space and temporal space as the Proposed
11 Action. Past and present actions at the WIPP site are represented in the resource impact analysis
12 discussed in this document, and in the NEPA analyses referenced herein.

13 **5.1 Reasonably Foreseeable Projects Considered for Cumulative Impacts Analysis**

14 **5.1.1 Above Ground Storage Capability (AGSC) Project**

15 The purpose of the AGSC project would be to improve TRU waste shipping throughout the DOE
16 complex and to improve the WIPP disposal process efficiency by adding the capability to
17 temporarily store TRU mixed waste above ground in concrete overpack containers at the WIPP
18 site. As a result of the AGSC project, the DOE plans to provide a 65,280 cubic foot contact-
19 handled (CH) TRU mixed waste concrete container storage unit on the surface of the WIPP
20 facility. This additional surface storage capacity would be for TRU waste in containers shipped
21 to WIPP in TRUPACT-II and HalfPACT shipping packages and would be managed as CH TRU
22 waste. The proposed storage time for the concrete overpack containers on the surface at WIPP
23 is up to 365 days. Up to 408 concrete overpack containers of CH TRU mixed waste would be
24 proposed to be stored on the concrete pad. The impact analysis presented in the EA prepared for
25 this project indicates that impacts for the resources analyzed would be negligible (*Environmental*
26 *Assessment for Above Ground Storage Capability at the Waste Isolation Pilot Plant*, DOE/EA-
27 2064).

28 **5.1.2 New Permanent Ventilation System**

29 The DOE has begun implementing a three-phase ventilation system upgrade to support increased
30 UG operations at the WIPP. The first phase, the Interim Ventilation System, is already
31 operational. The second phase is the addition of the Supplemental Ventilation System (SVS),
32 which became operational early in Fiscal Year 2018. The SVS facilitates full-scale mining
33 operations by creating an unfiltered exhaust path for construction air. The third phase of the
34 ventilation upgrade includes construction and installation of a new Permanent Ventilation System
35 (PVS) (*Supplement Analysis for the New Permanent Ventilation System* DOE/EIS-0026-SA-11).
36 The PVS would support simultaneous waste emplacement, mining, and mine maintenance
37 operations. The PVS would include a salt reduction building, a new filter building along with its
38 appurtenances and a new shaft and access drifts. The PVS would be expected to be operational
39 in the 2021 timeframe. The impact analysis presented in the SA prepared for this project indicates
40 that impacts for the resources analyzed would be negligible.

1 5.2 Cumulative Impacts Analysis

2 The DOE has prepared this DEA to determine whether the potential environmental impacts of the
3 proposed action would be significant to human health and the environment in accordance with
4 DOE's NEPA implementing procedures, 10 CFR Part 1021, and the regulations promulgated by
5 the Council on Environmental Quality for implementing NEPA, 40 CFR Parts 1500-1508. As
6 indicated above, resource impacts associated with the reasonably foreseeable projects would be
7 negligible. As reflected in this DEA's environmental resource impact analysis, these impacts
8 would also be negligible. Based on the analysis presented in this DEA, the DOE's Proposed Action
9 does not represent substantial changes to the 1997 SEIS-II and to portions of the 1980 FEIS not
10 considered in 1997 SEIS-II that would be relevant to environmental concerns. There would be no
11 new circumstances nor information relevant to environmental concerns that bear on the Proposed
12 Action or its potential environmental impacts that would warrant additional NEPA analysis.
13 Therefore, the Proposed Action, in conjunction with the reasonably foreseeable projects would not
14 result in significant resource-specific cumulative impacts. It should be noted that it is anticipated
15 that the NARB project would be constructed and operational before both the AGSC project and
16 the PVS project are fully implemented.

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Appendix A
Public Involvement

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Appendix B
Public Comment Resolution

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