

# APPENDIX A

## SITE PHOTOGRAPHS

## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 1**

**Date:** March 10, 2020

**Description:**

Depiction of the existing storage building along Boles Well Field Road.

**Direction:**

North



**Photo: 2**

**Date:** March 10, 2020

**Description:**

Overview of study area, vegetation density, and erosional feature. Note, sparsely vegetated surface due to erosion.

**Direction:**

South

## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 3**

**Date:** March 10, 2020

**Description:**

Depiction of a several hundred-pound slab of concrete that was moved by surface water flow. This exemplifies the potential volume and force of surface flow throughout the study area.

**Direction:**

East



**Photo: 4**

**Date:** March 10, 2020

**Description:**

Depiction of erosional feature running through study site.

**Direction:**

Southwest



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 5**

**Date:** March 10, 2020

**Description:**

Depiction of one of many cultural resource stakes present throughout the study area, which demarks a previous cultural resources survey site.

**Direction:**

N/A



**Photo: 6**

**Date:** March 10, 2020

**Description:**

One of the existing operational water wells and access roads within the study area.

**Direction:**

South

## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 7**

**Date:** March 10, 2020

**Description:**

Cryptogamic crusts occur frequently throughout the study area where vegetation is more widely spaced. These crusts occur less frequently in large open areas that are subject to erosion, or in areas of dense vegetation.

**Direction:**

Southwest



**Photo: 8**

**Date:** March 10, 2020

**Description:**

Depiction of bare or sparsely vegetated area, where almost no vegetation grows. This likely indicates high erosional potential due to waterflow and wind erosion.

**Direction:**

Southeast



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 9**

**Date:** March 10, 2020

**Description:**

Overview of the patch size of cryptogamic crust in the study area.

**Direction:**

North



**Photo: 10**

**Date:** March 10, 2020

**Description:**

Lotebush (*Ziziphus obtusifolia*) are the largest tree-like bushes within the study site. Mesquite (*Prosopis glandulosa*) dominates the majority of the study area.

**Direction:**

Southwest

## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 11**

**Date:** March 10, 2020

**Description:**

Depiction of the southern half of the study area between the Preferred Alternative and Alternative 2 project areas. Highly eroded bare soils predominate.

**Direction:**

North



**Photo: 12**

**Date:** March 10, 2020

**Description:**

Remnants of pottery and cultural resources were found scattered throughout the study area. Water and wind erosion have likely degraded any cultural resources in the study area.

**Direction:**

N/A



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 13**

**Date:** March 10, 2020

**Description:**

Overview of increased vegetative cover in the Preferred Alternative project area.

**Direction:**

West



**Photo: 14**

**Date:** March 10, 2020

**Description:**

Maintained gravel road runs through study area, allowing access to water wells.

**Direction:**

North



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 15**

**Date:** March 10, 2020

**Description:**  
Overview of sparsely  
vegetated area.

**Direction:**  
East



**Photo: 16**

**Date:** March 10, 2020

**Description:**  
Depiction of erosional scour  
running off site along the  
westernmost boundary fence.

**Direction:**  
West



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 17**

**Date:** March 10, 2020

**Description:**

Additional view of western boundary fence with erosional feature and bare soil.

**Direction:**

North



**Photo: 18**

**Date:** March 10, 2020

**Description:**

Mammal burrows were found more frequently in densely vegetated areas within the Preferred Alternative project area.

**Direction:**

N/A



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo:** 19

**Date:** March 10, 2020

**Description:**

Overview of densely vegetated area in the Preferred Alternative project area.

**Direction:**

North



**Photo:** 20

**Date:** March 10, 2020

**Description:**

Depiction from Boles Well Field Road. Culverts cross the road channeling water to create densely vegetated areas.

**Direction:**

South



## Project Photographs

Holloman Air Force Base – Renewable Energy Draft EA  
Otero County, New Mexico



**Photo: 21**

**Date:** March 10, 2020

**Description:**

Additional view of dense vegetation resulting from channelization and culvert placement along Boles Well Field Road.

**Direction:**

North



**Photo: 22**

**Date:** March 10, 2020

**Description:**

Depiction of culverts along Boles Well Field Road. Photo indicates high water flow and erosional impacts.

**Direction:**

South



## APPENDIX B

### INTERAGENCY/INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING – PUBLIC SCOPING LETTER



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

Alamogordo Chamber of Commerce  
Attn: Randy Rabon  
1301 N. White Sands Boulevard  
Alamogordo, NM 88310

Dear Mr. Rabon:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

The Proposed Action is the development of a renewable energy production facility, such as photovoltaic (PV) cells, wind turbines, and/or geothermal systems, within the study area to generate a minimum of 500 kilowatts (kW) of supplemental electricity to provide power for the operation of the well field pumps and associated infrastructure (**Figure 2**). If viable, the renewable energy power generation capacity could be increased to 5 megawatts (MW) for added base resiliency. Although the specific type of renewable energy to be used is not defined or limited at this time, it should be expected to include solar energy production methods, and may be either grid-tied or off-grid by using emerging energy storage technologies.

NEPA requires the USAF to analyze the potential environmental impacts of this proposed project on the installation and local community. The Draft EA includes brief discussions of the proposed action, alternatives, the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted during the process. The EA also examines a No Action Alternative and provides evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).



The development of the EA requires the completion of Interagency/Intergovernmental Coordination for Environmental Planning (IICEP). As part of the IICEP process, we request your input on the proposed project to identify general or specific issues or areas of concern that you feel should be addressed in the EA. To ensure the USAF has sufficient time to consider public and agency input in the preparation of the EA, please submit written comments to Mr. Spencer Robison at 550 Tabosa Ave, Holloman AFB NM 88330-8458 within 30 days from the date of receiving this letter to ensure USAF has sufficient time to consider your input in the preparation of the EA. If you would like to submit comments or questions by telephone, you may contact the HAFB Public Affairs office by telephone at (575) 572-7381.

Thank you for your assistance in this effort.

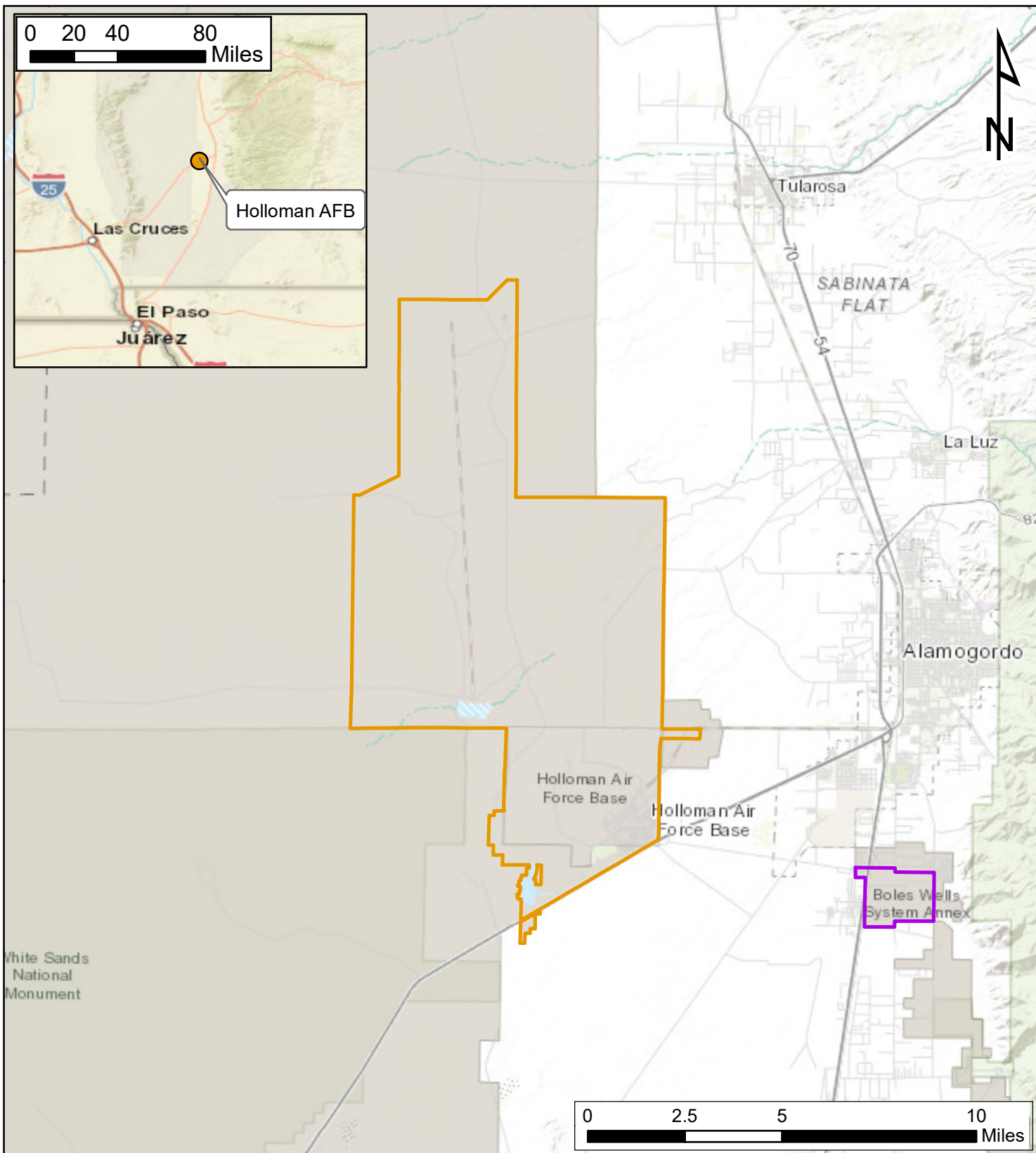
Sincerely

A handwritten signature in black ink, appearing to read "Ryan P. Keeney". The signature is fluid and cursive, with a large initial "R" and "K".

RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

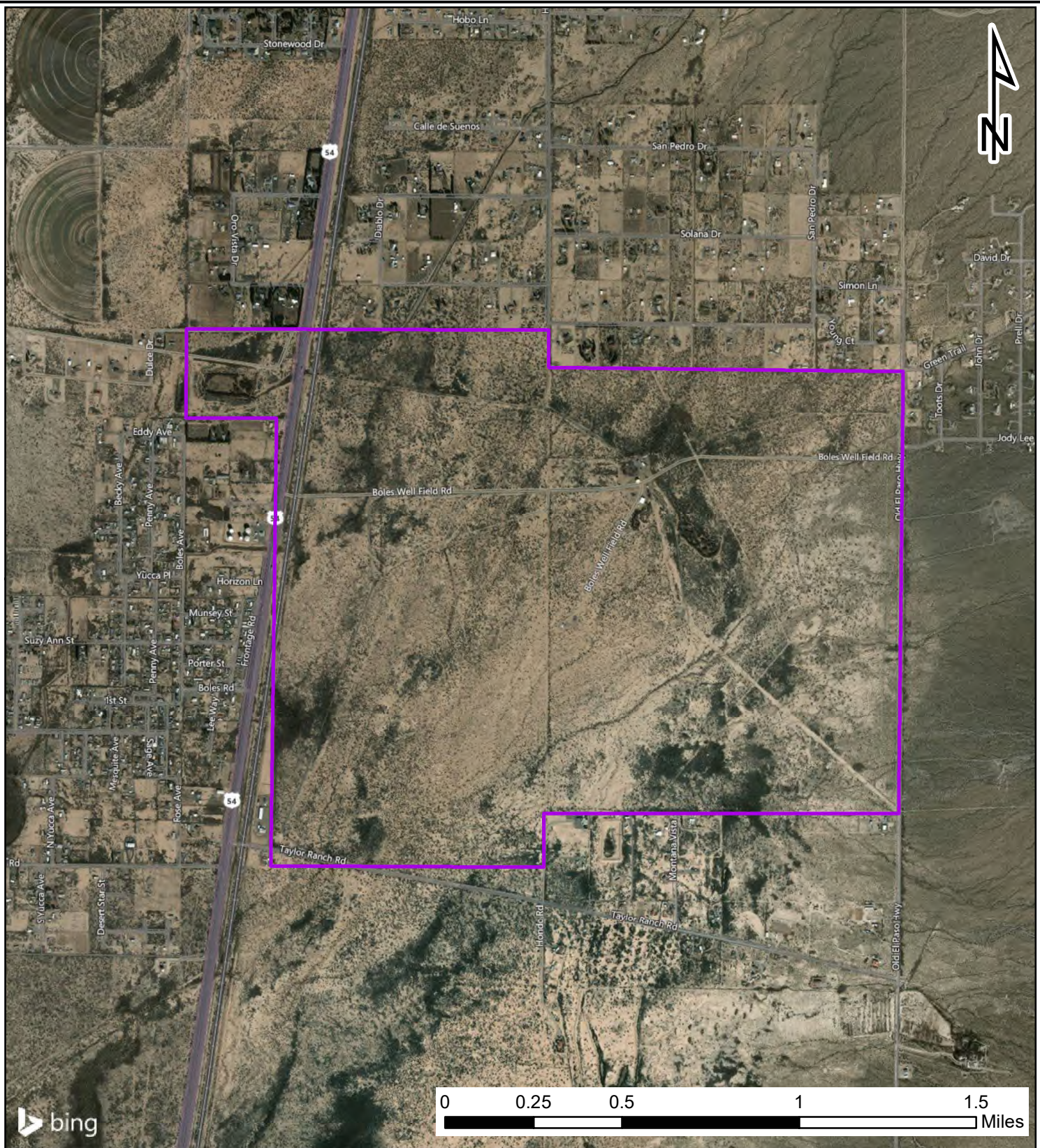
HAFB Renewable Energy - Draft EA



FIGURE

1





PROJECT: PATH: G:\PROJECTS\ ENV\Perikin Enterprises\GIS\HAFB 8.5x11 Figure2 StudyAreaMap.mxd

## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

## STUDY AREA MAP

HAFB Renewable Energy - Draft EA



FIGURE

# 2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

City of Alamogordo  
Attn: The Honorable Susie Galea  
1376 East 9<sup>th</sup> Street  
Alamogordo, NM 88310

Dear Ms. Galea:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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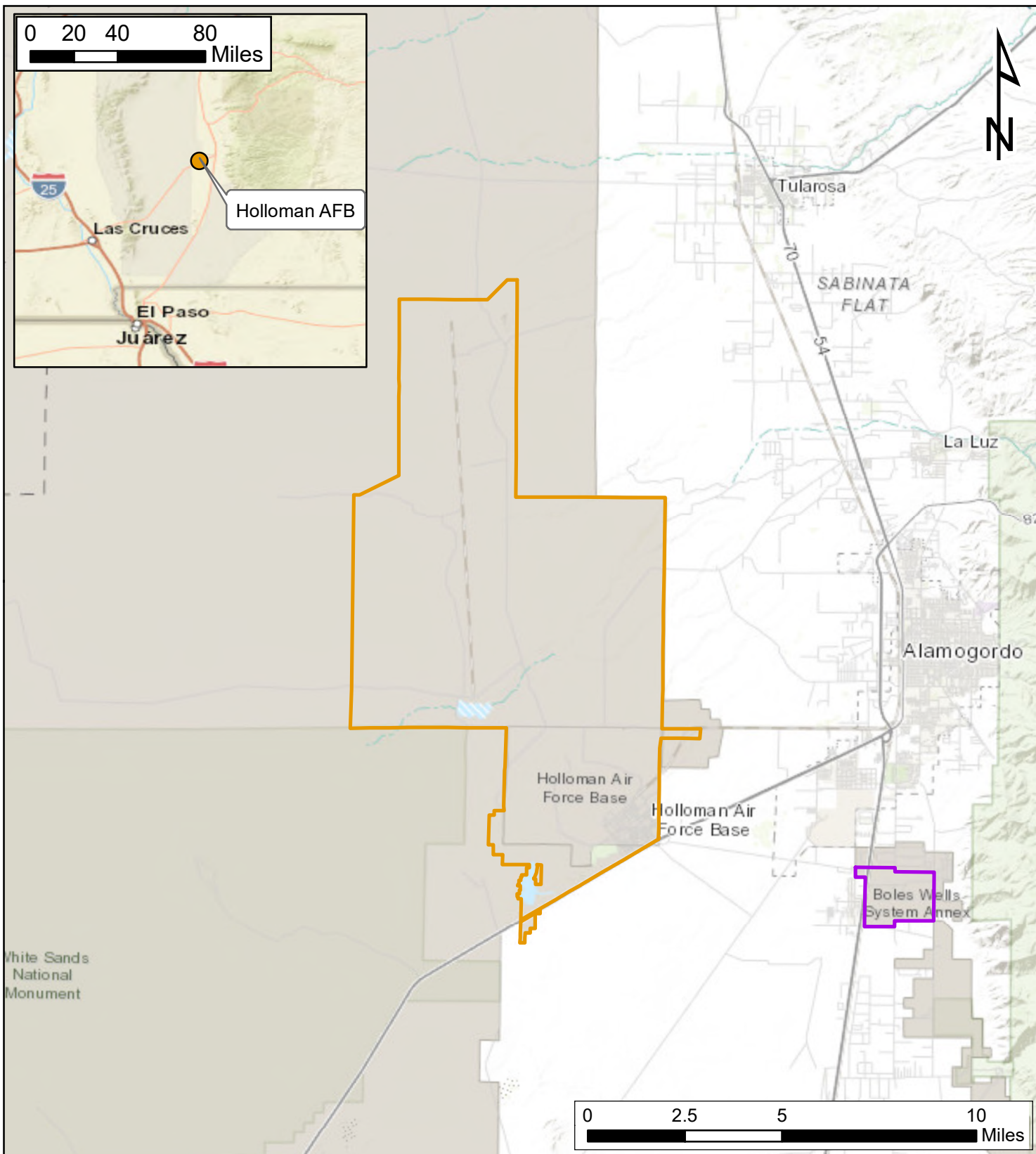
Sincerely

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RYAN P. KEENEY, Colonel, USAF  
Commander

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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

HAFB Renewable Energy - Draft EA



FIGURE

1









DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

Otero County Planning Commission  
Attn: Sylvia Tillbrook  
1101 New York Avenue  
Alamogordo, NM 88310

Dear Ms. Tillbrook:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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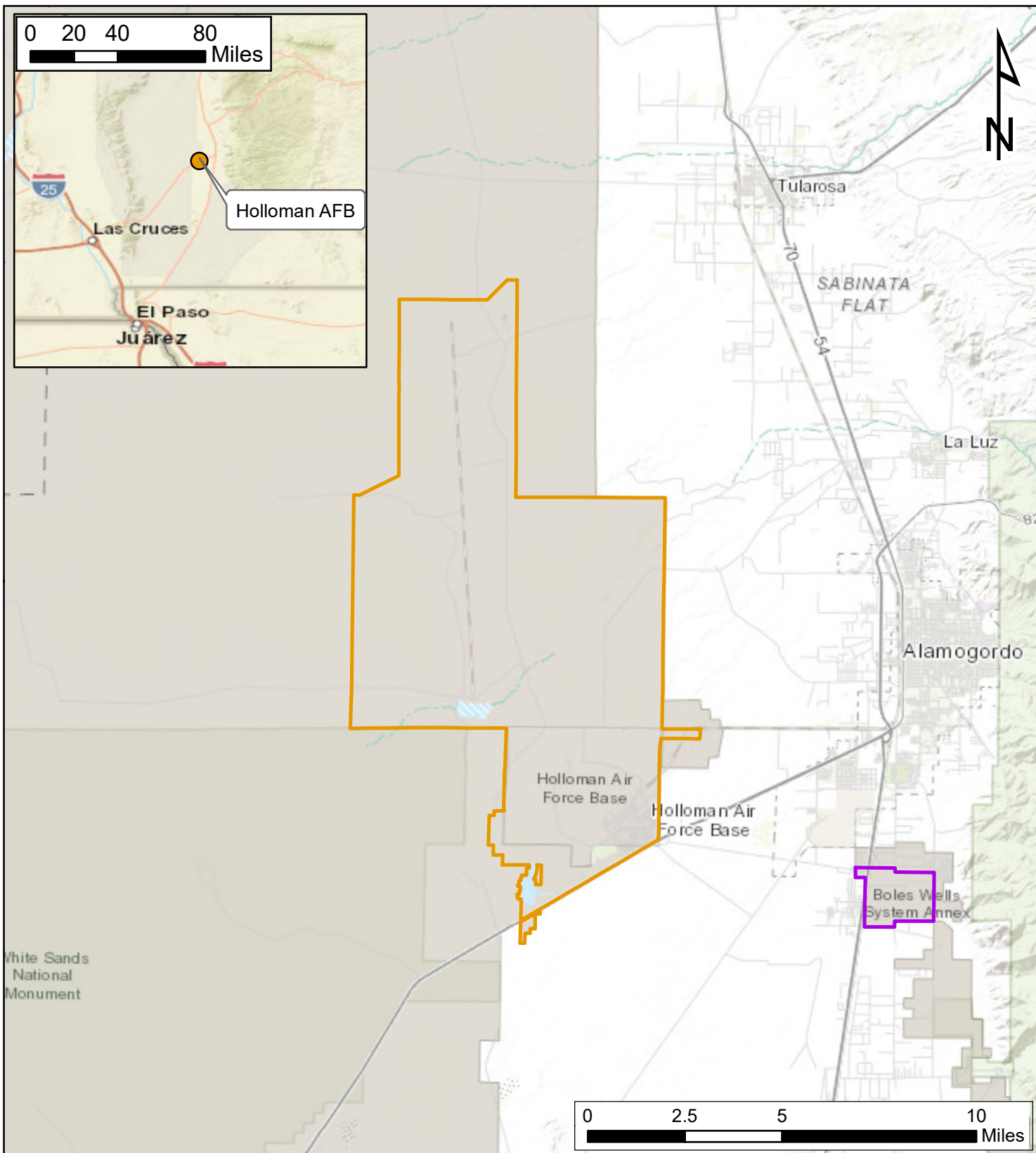
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Commander

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- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

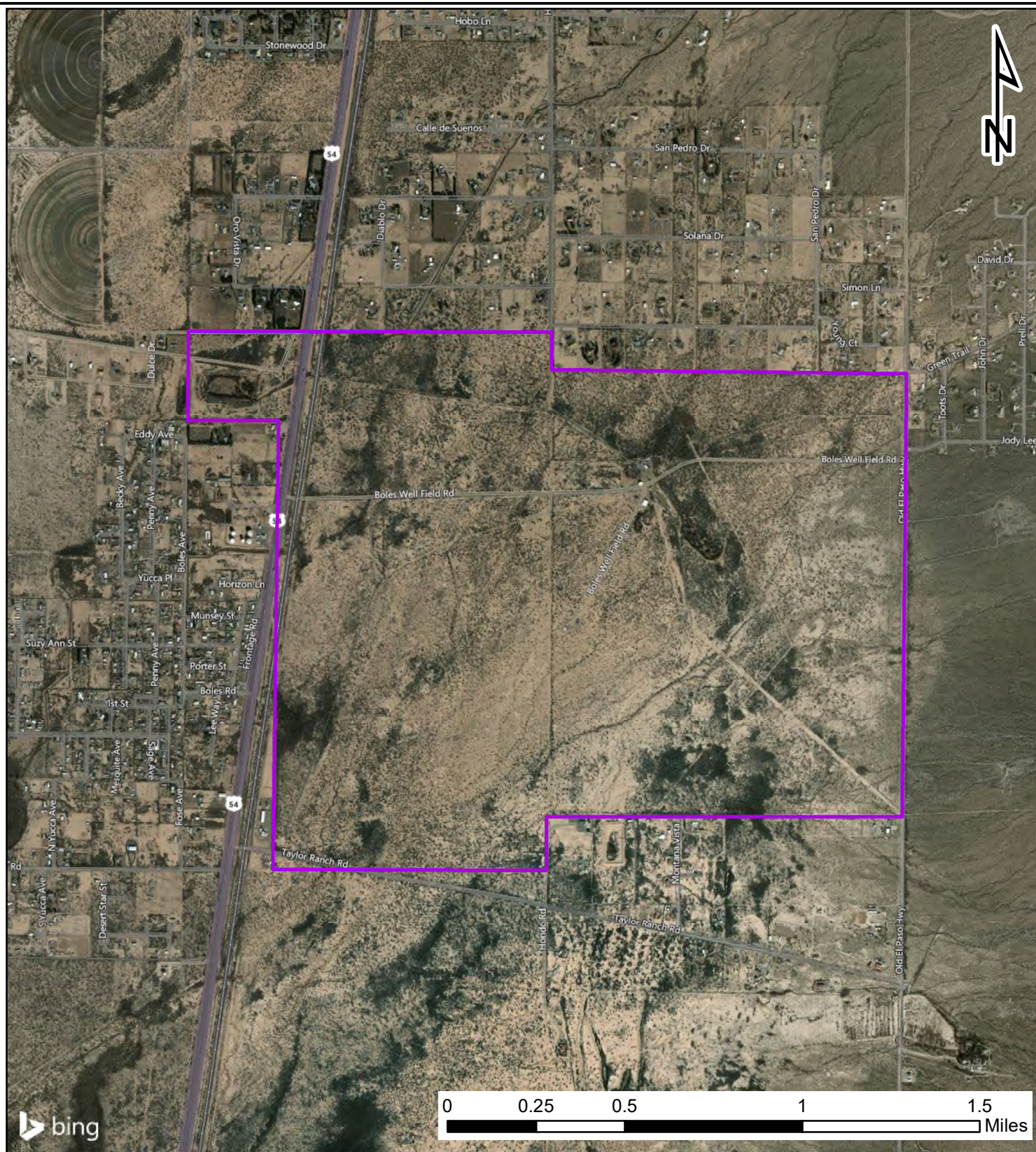
HAFB Renewable Energy - Draft EA




FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

## STUDY AREA MAP

HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

The Honorable Michelle Lujan Grisham  
Governor of the State of New Mexico  
490 Old Santa Fe Trail, Room 400  
Santa Fe, NM 87501

Dear Governor Lujan Grisham:

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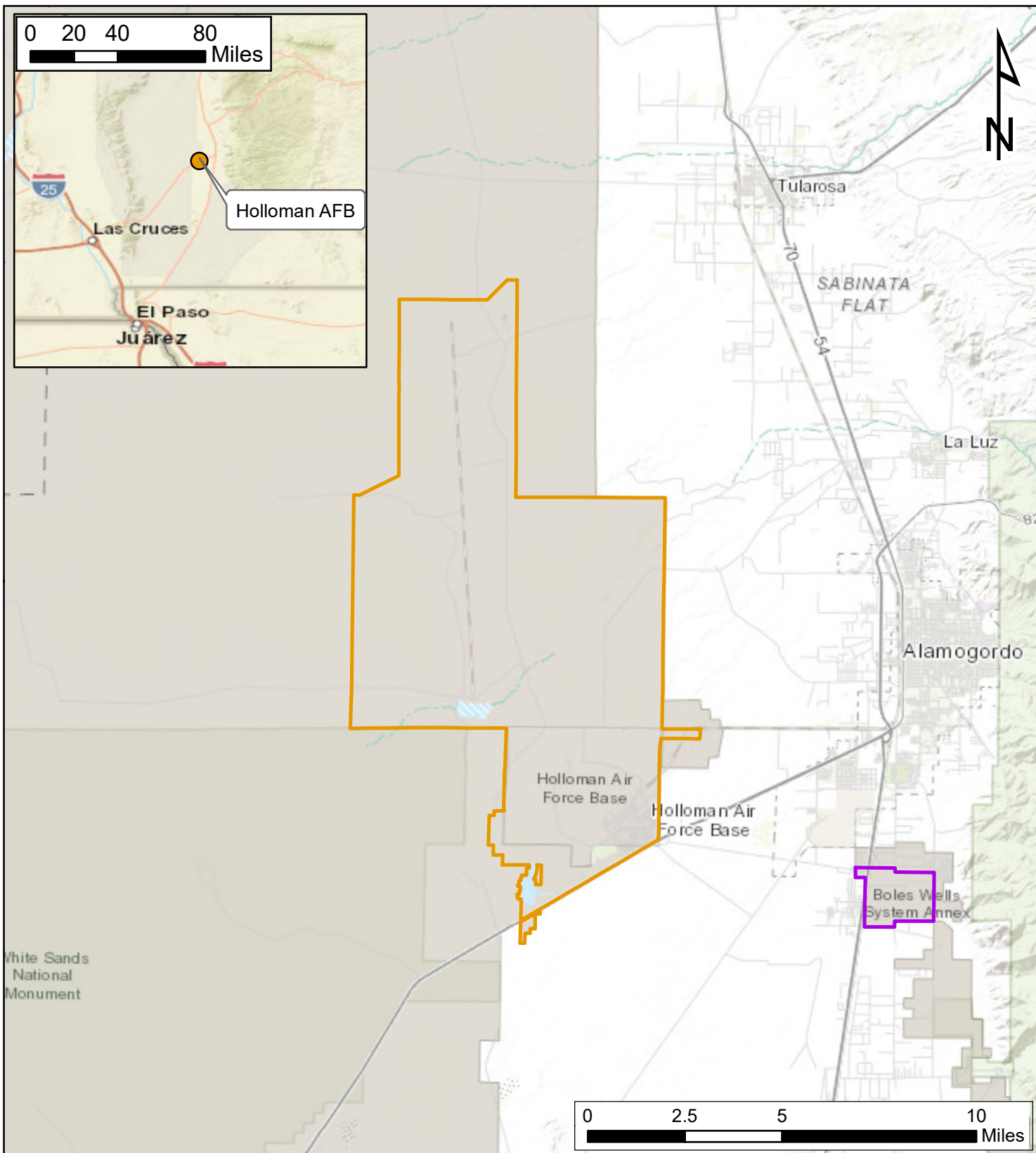
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Commander

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Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

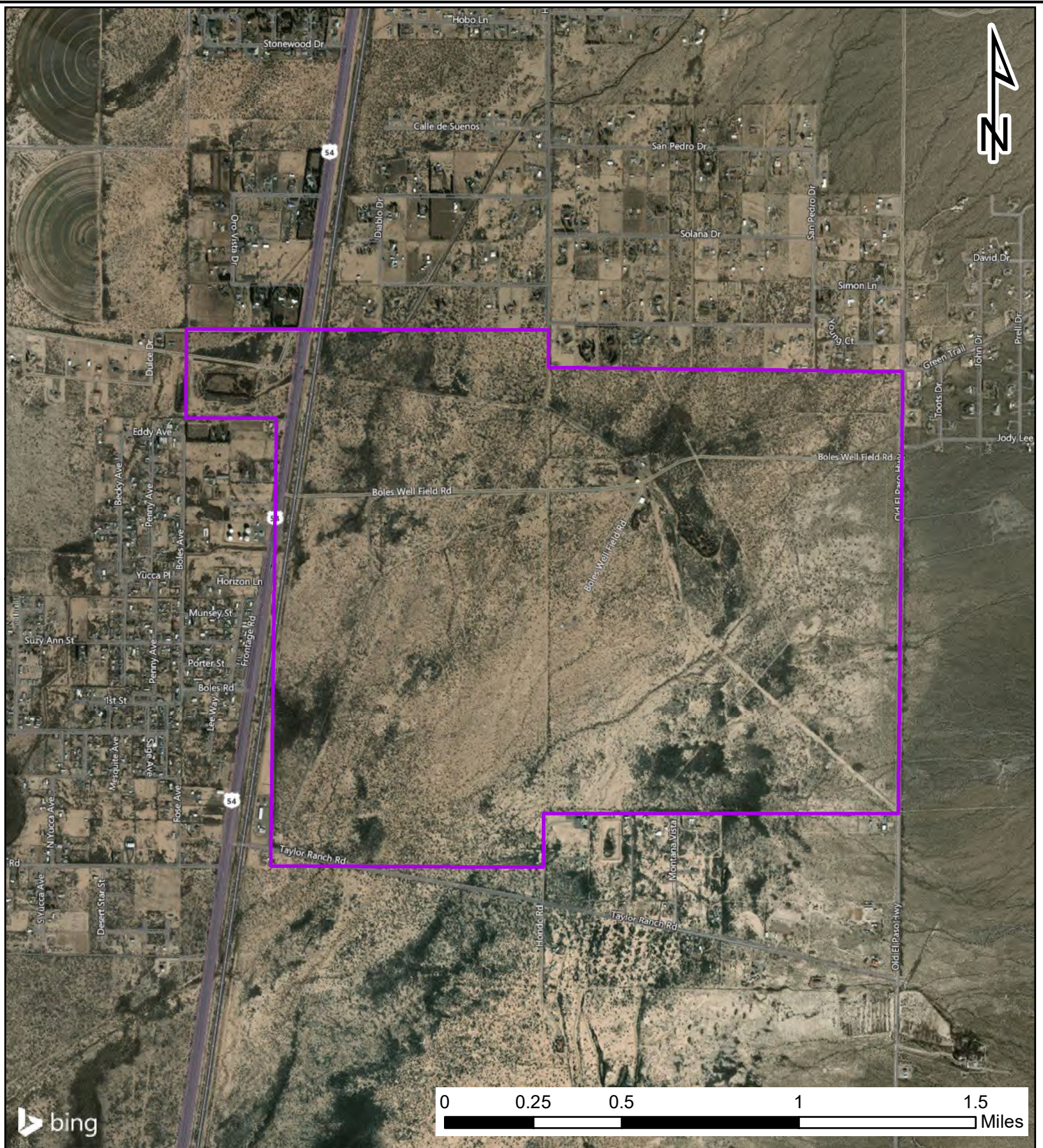
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Department of Game and Fish  
Attn: Matt Wunder  
P.O. Box 25112  
Santa Fe, NM 87507

Dear Mr. Wunder:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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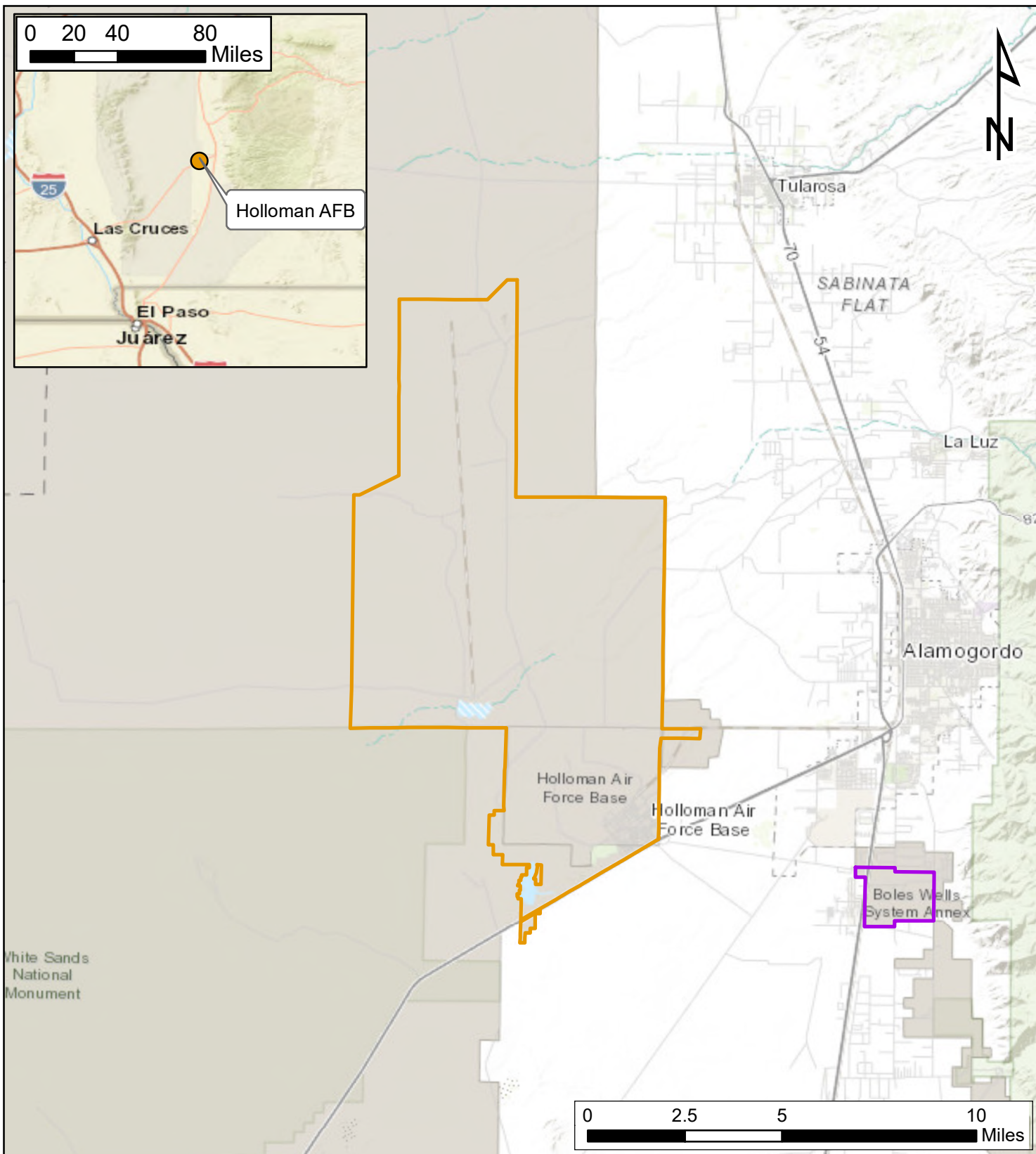
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Commander

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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

HAFB Renewable Energy - Draft EA



FIGURE

1









DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Department of Game and Fish  
Attn: Michael Sloane  
P.O. Box 25112  
Santa Fe, NM 87507

Dear Mr. Sloane:

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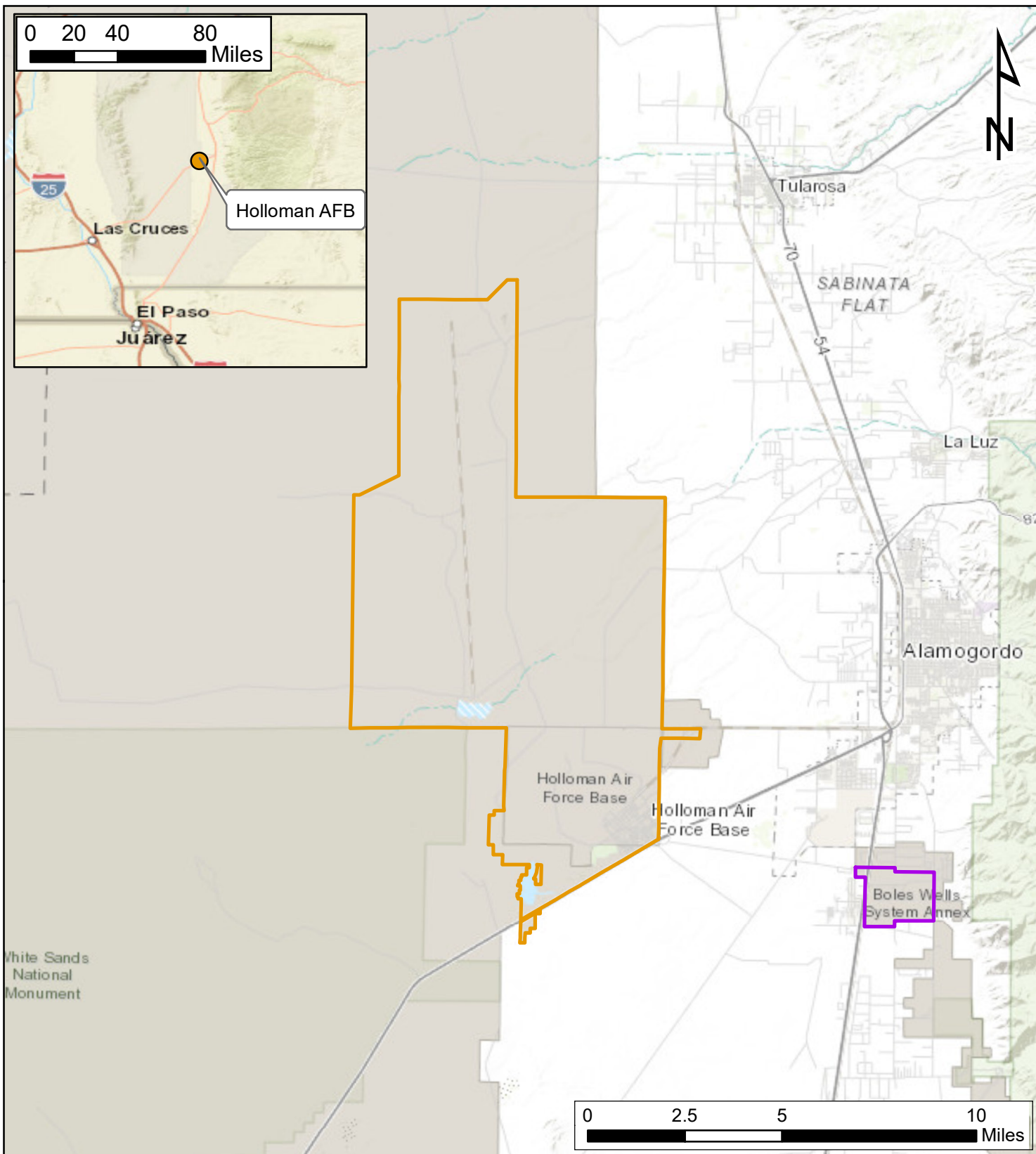
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Commander

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Holloman Air Force Base  
Otero County, New Mexico

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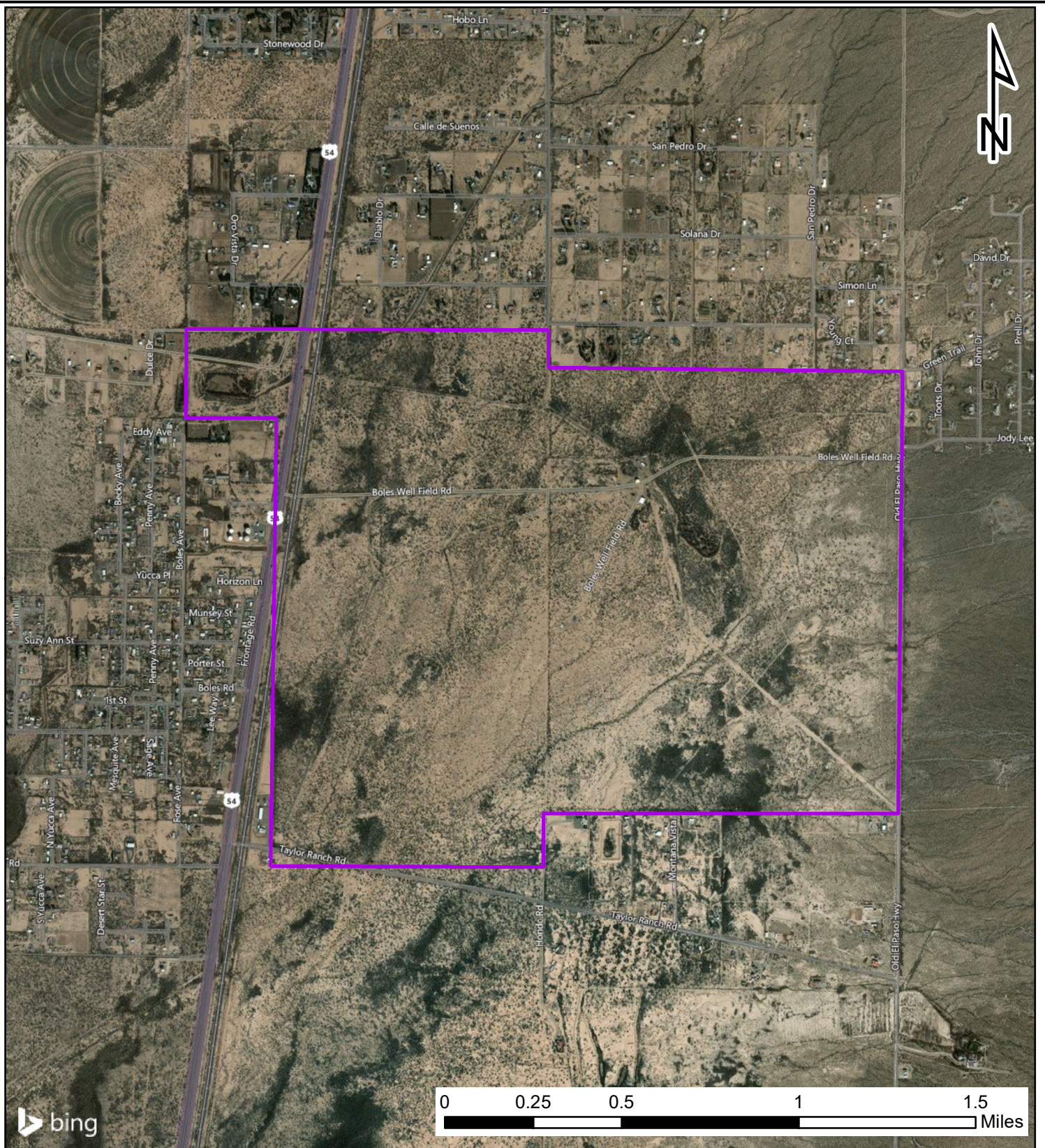
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Department of Transportation Aviation Division  
Attn: Pedro Real  
3501 Access Road C  
Albuquerque, NM 87106

Dear Mr. Real:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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Thank you for your assistance in this effort.

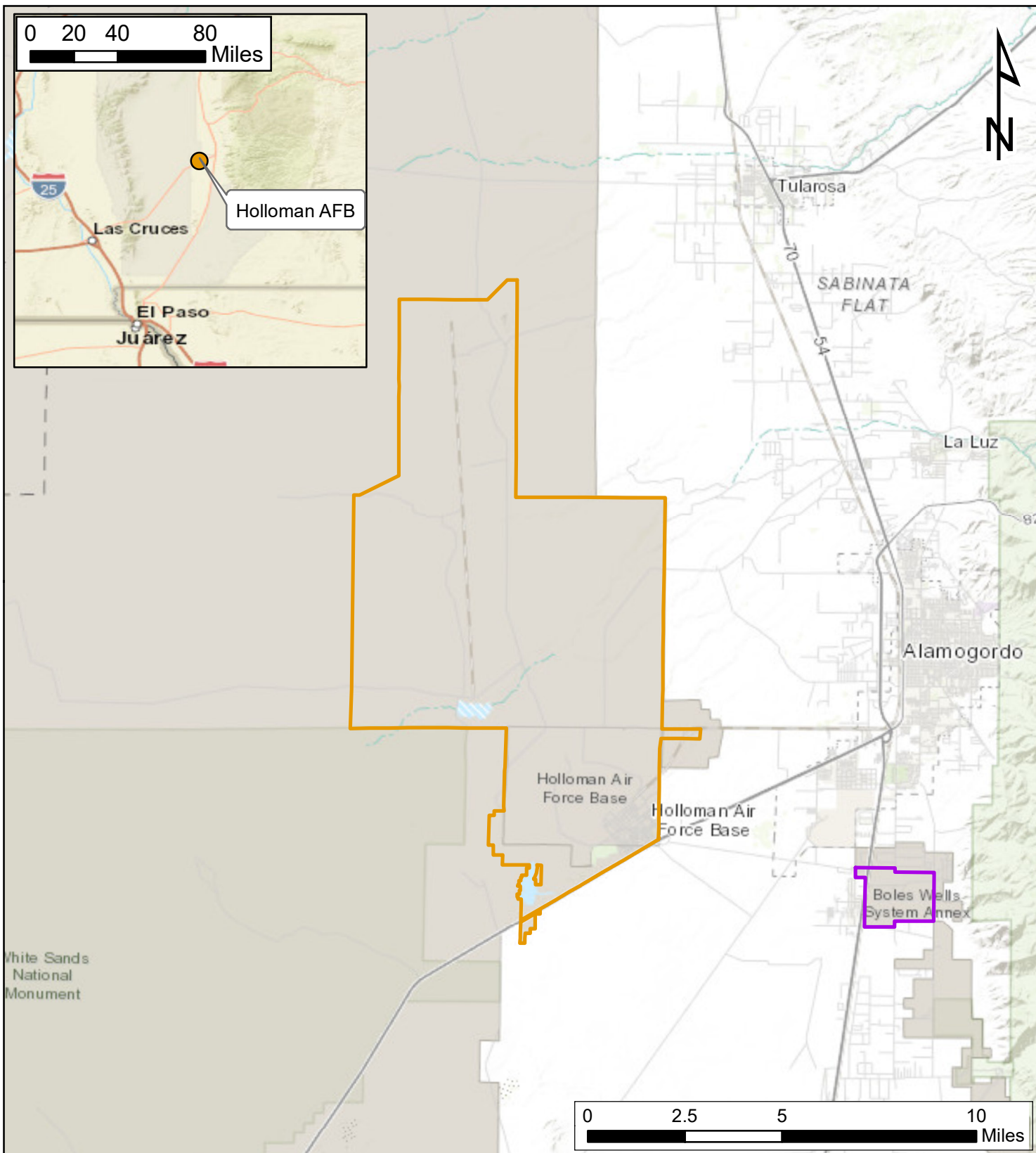
Sincerely

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RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

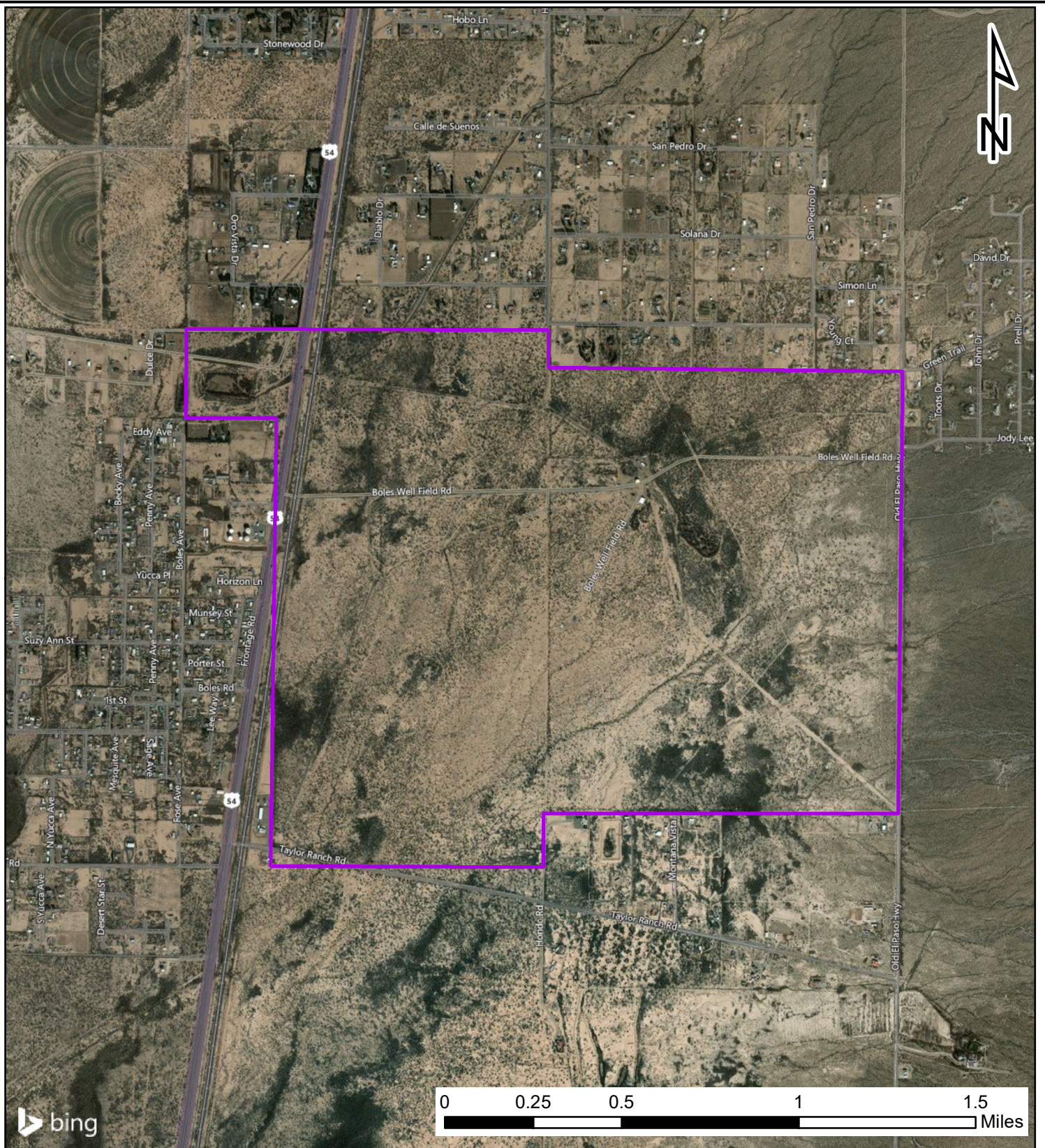
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Energy, Minerals, and Natural Resources Department  
Attn: Christy Tafoya  
1220 South St. Francis Drive, Suite 215  
Santa Fe, NM 87505

Dear Ms. Tafoya:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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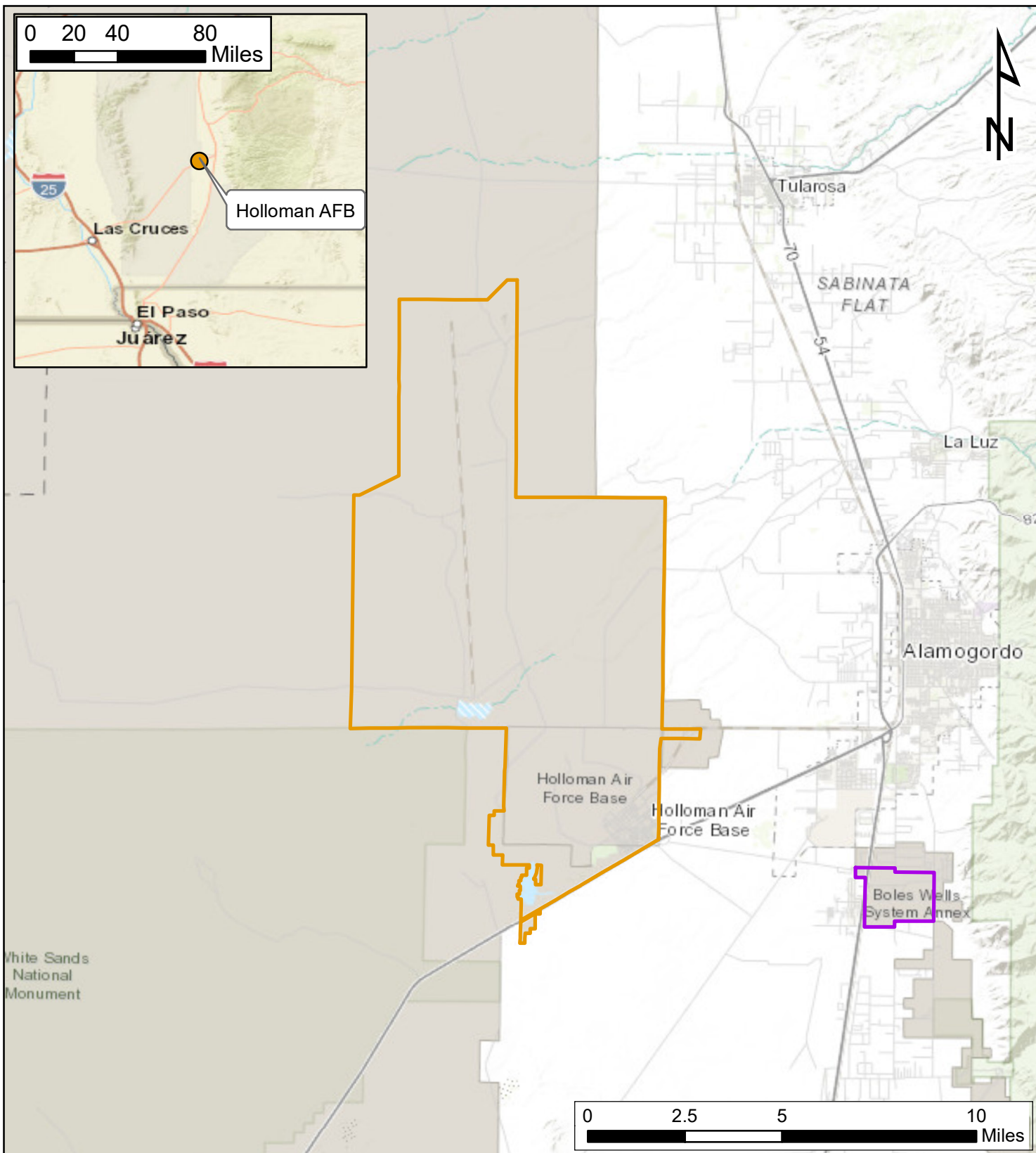
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Commander

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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

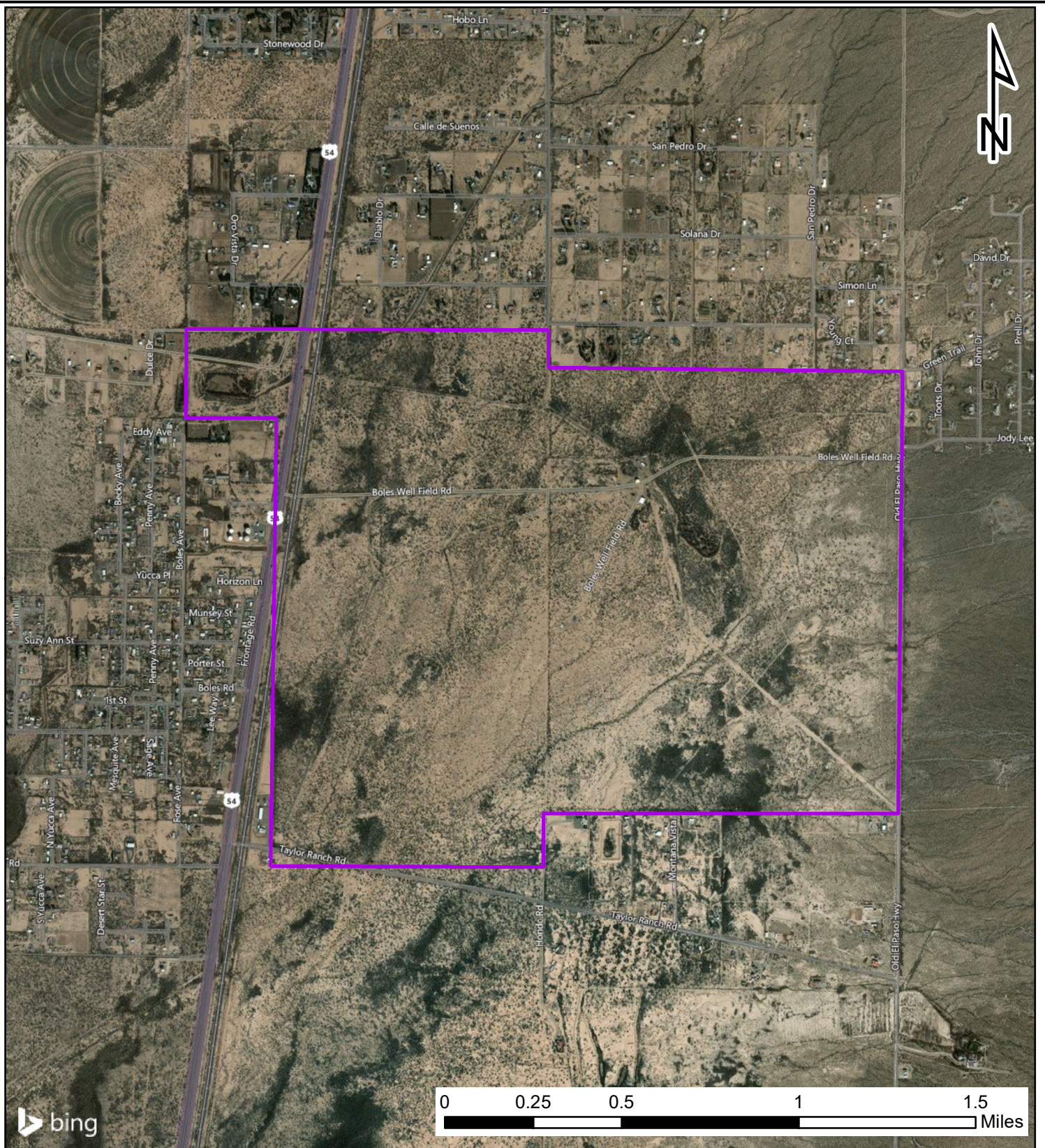
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Environment Department  
Attn: Sandra Ely  
P.O. Box 5469  
Santa Fe, NM 87502

Dear Ms. Ely:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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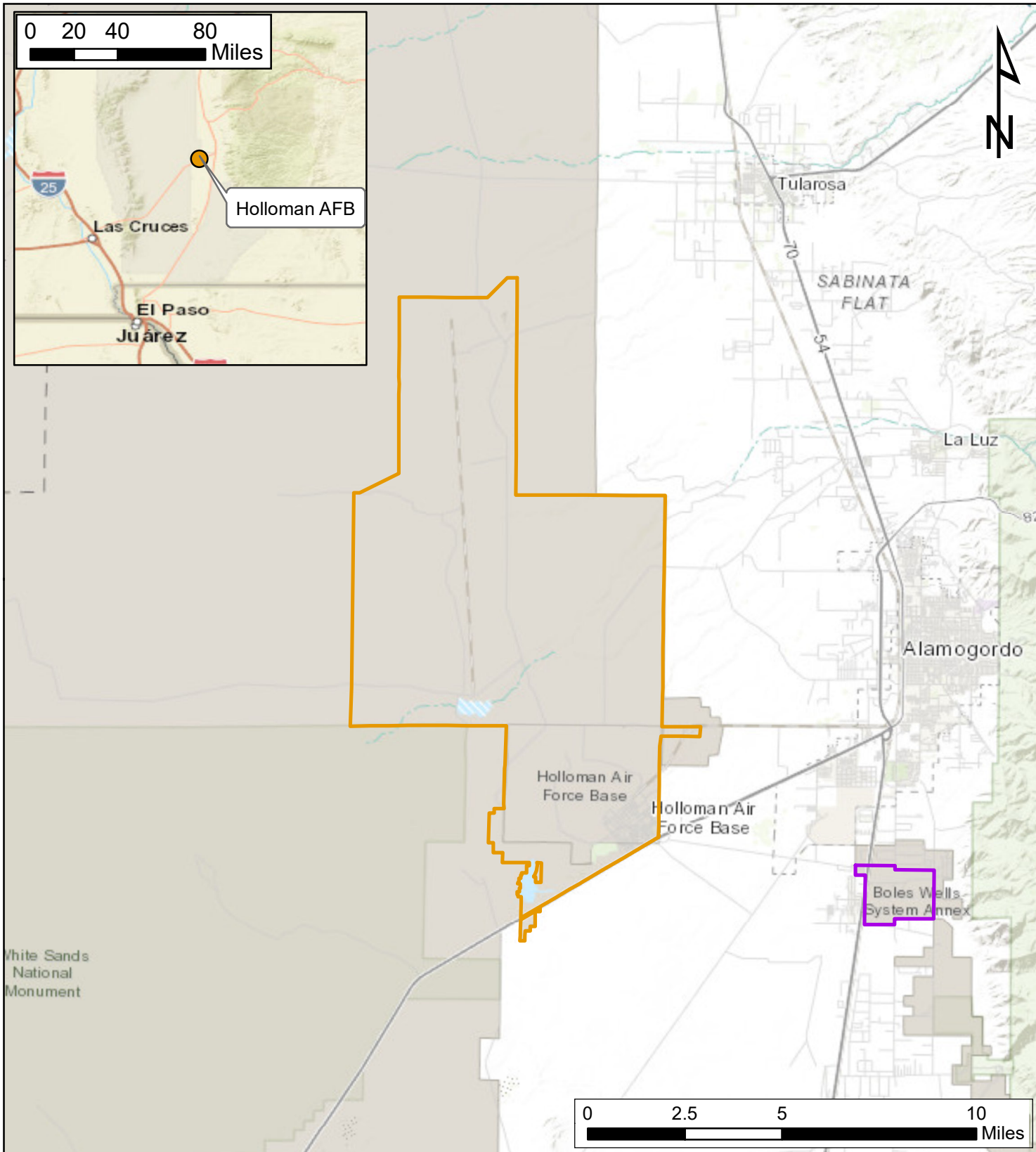
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RYAN P. KEENEY, Colonel, USAF  
Commander

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2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

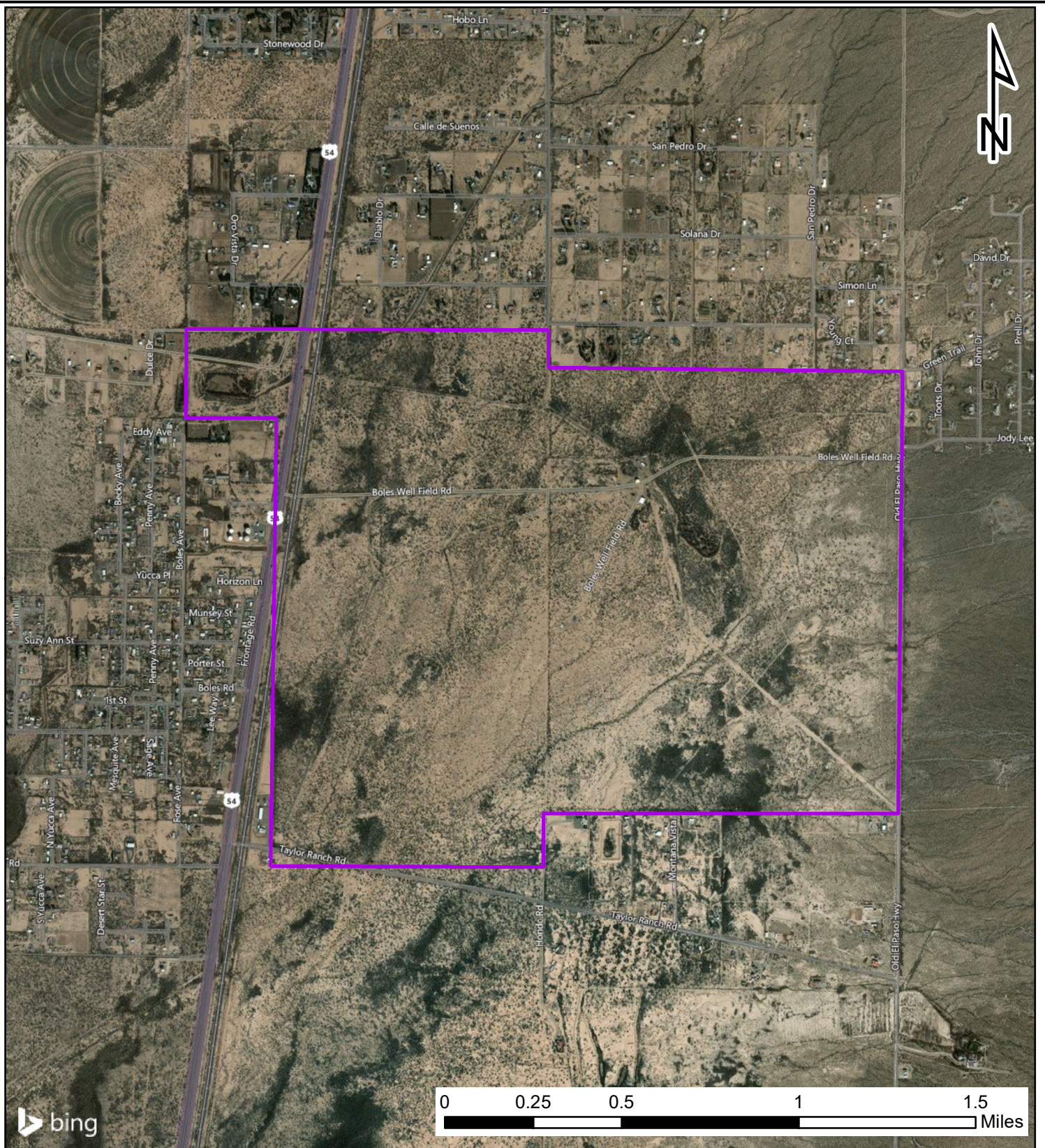
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Environment Department  
Attn: Michael Kesler  
811 E. First Street, Suite D  
Alamogordo, NM 88310

Dear Mr. Kesler:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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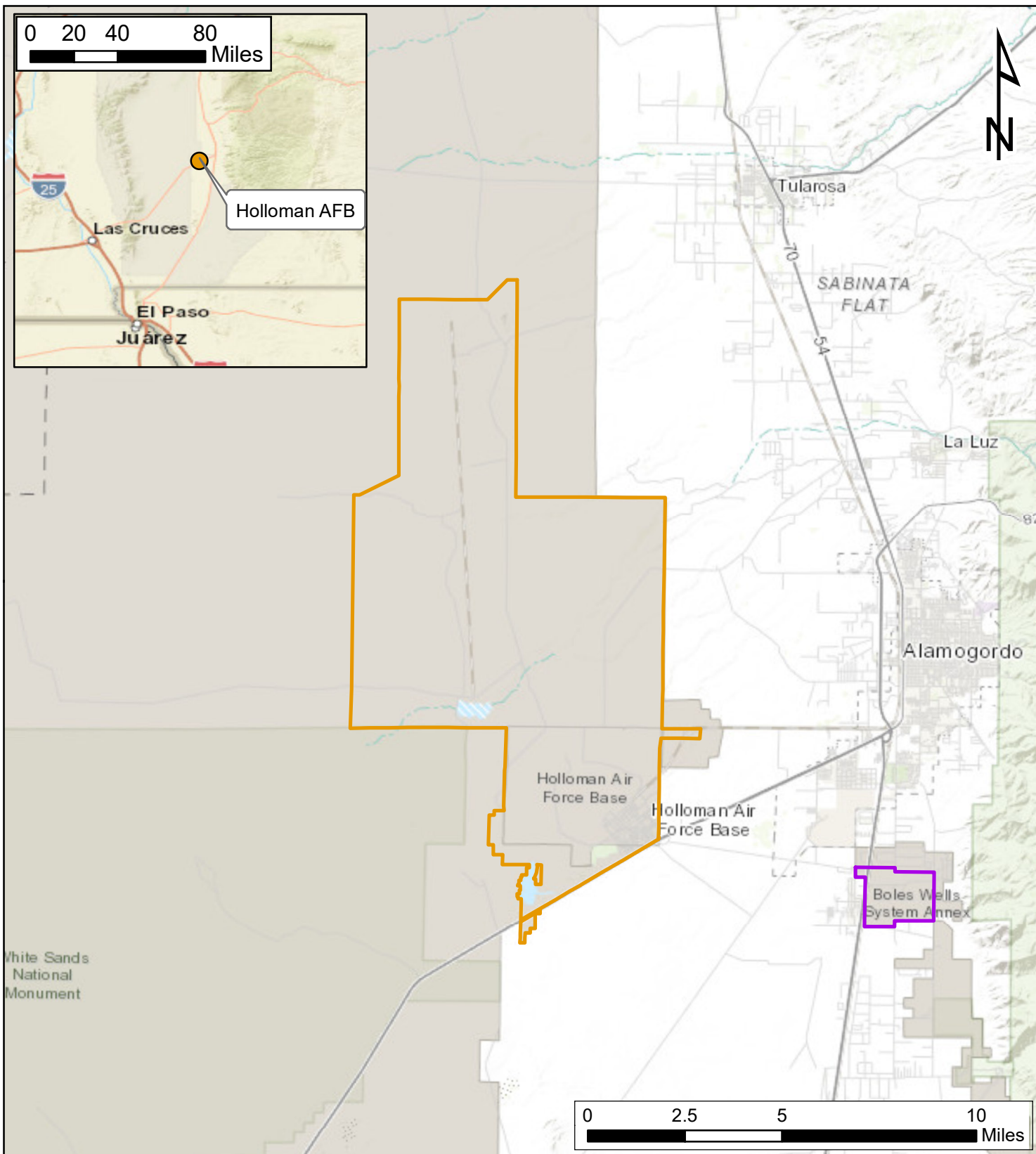
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RYAN P. KEENEY, Colonel, USAF  
Commander

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## Legend

- Holloman AFB
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Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

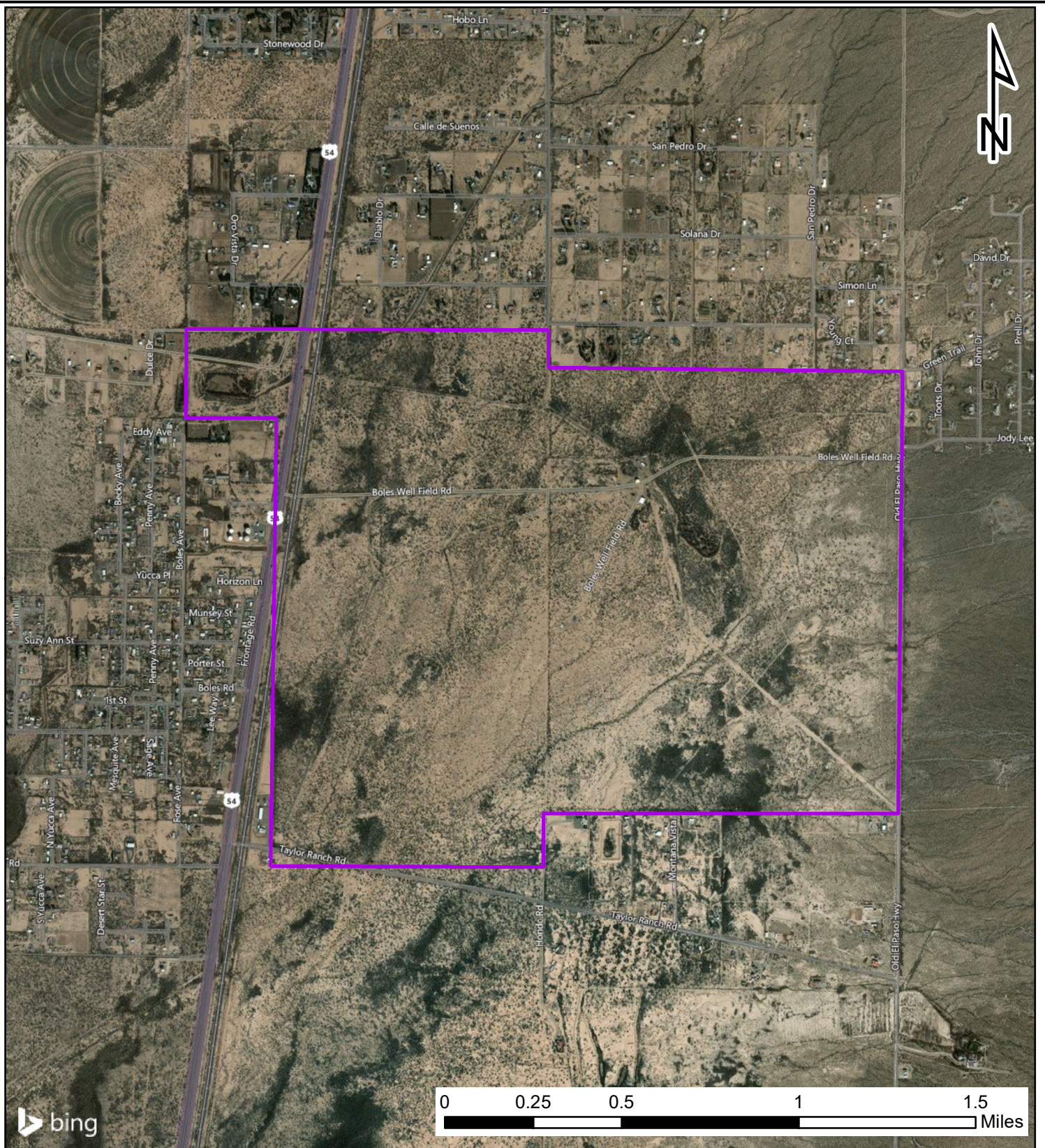
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico Historic Preservation Division  
Attn: Jeff Pappas, PhD  
407 Galisteo Street, Suite 236  
Santa Fe, NM 87501

Dear Dr. Pappas:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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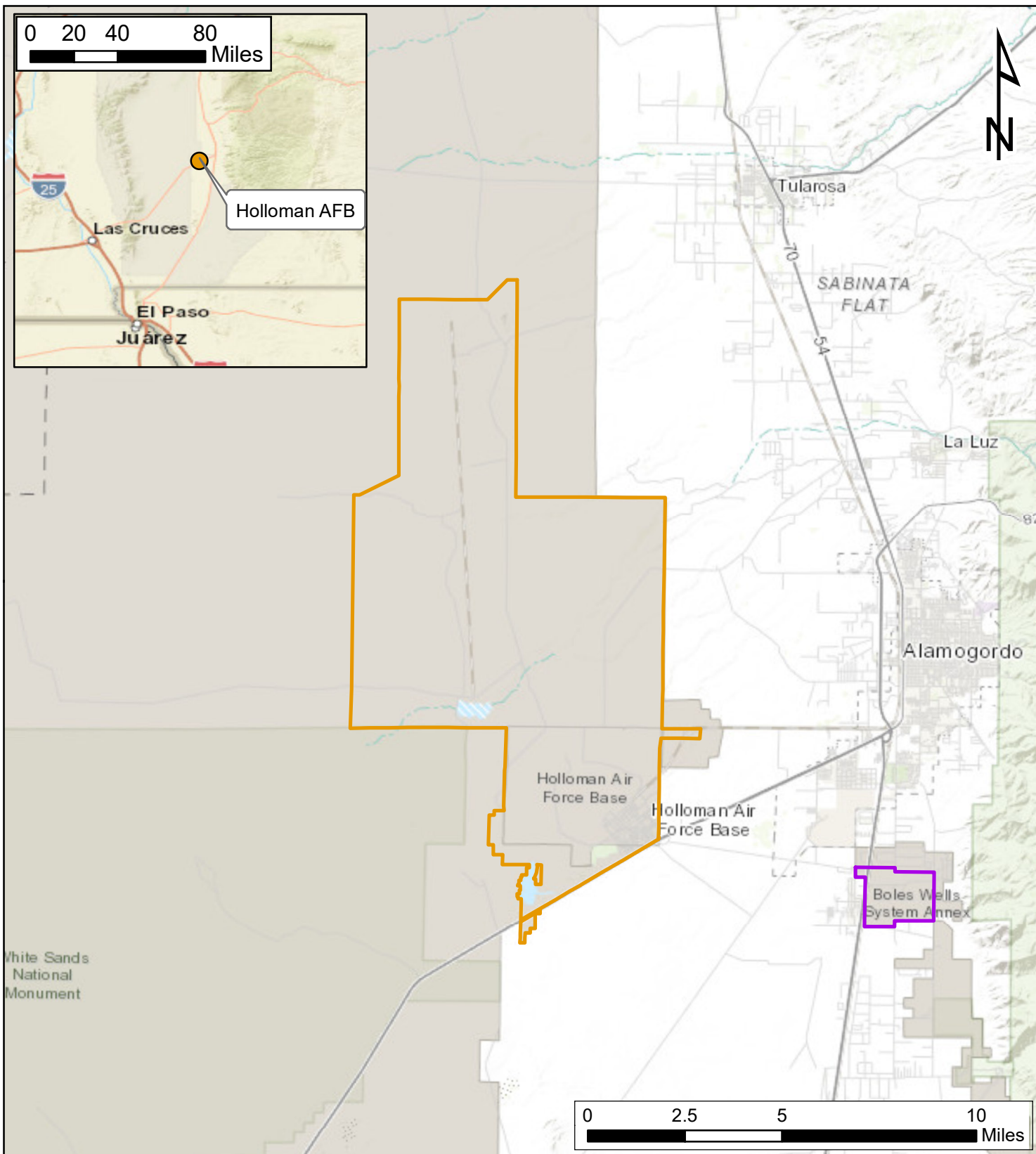
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## Legend

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- Study Area

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## Vicinity Map

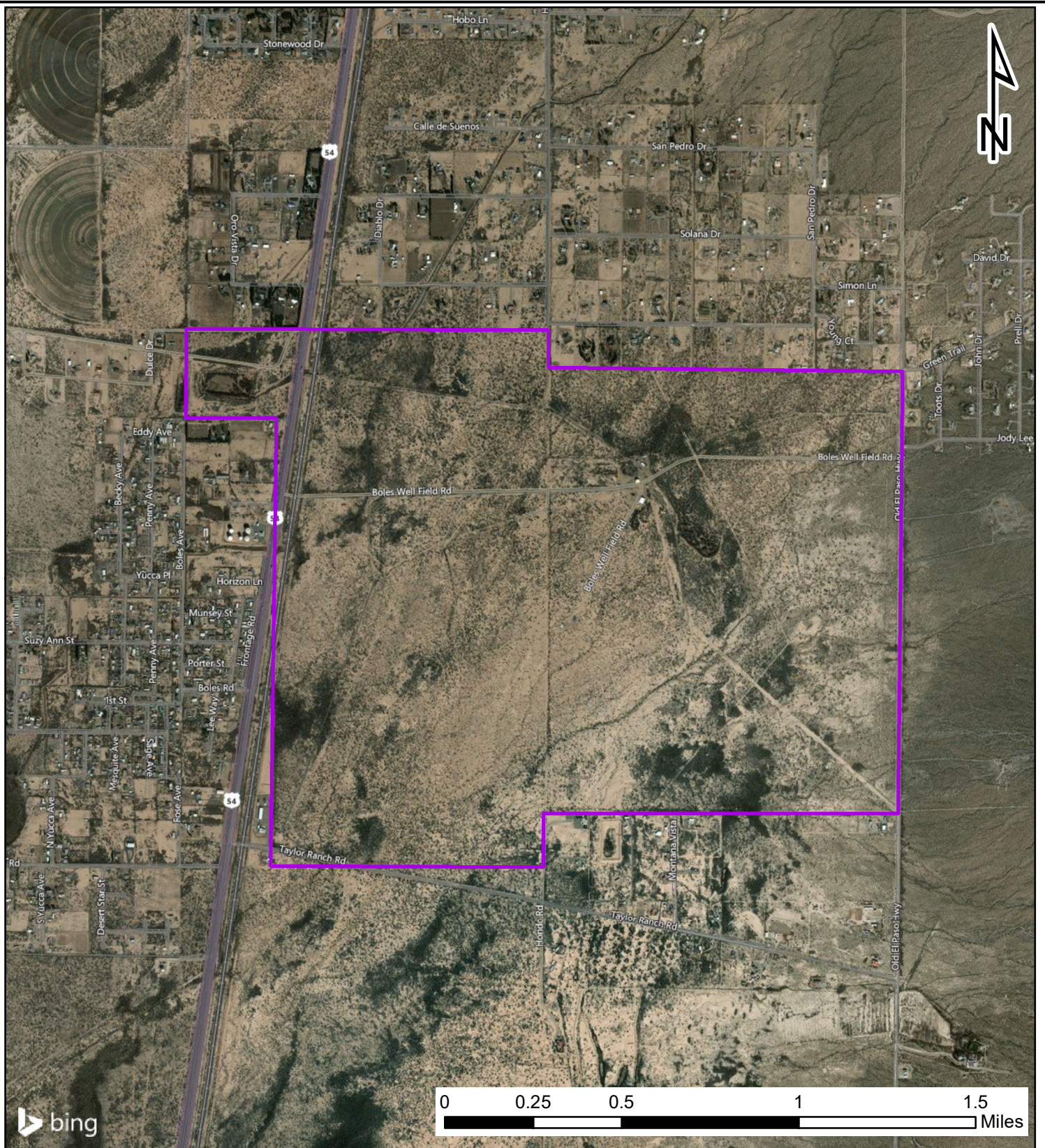
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

New Mexico State Land Office  
Attn: Stephanie Garcia Richard  
310 Old Santa Fe Trail  
Santa Fe, NM 87504

Dear Ms. Garcia Richard:

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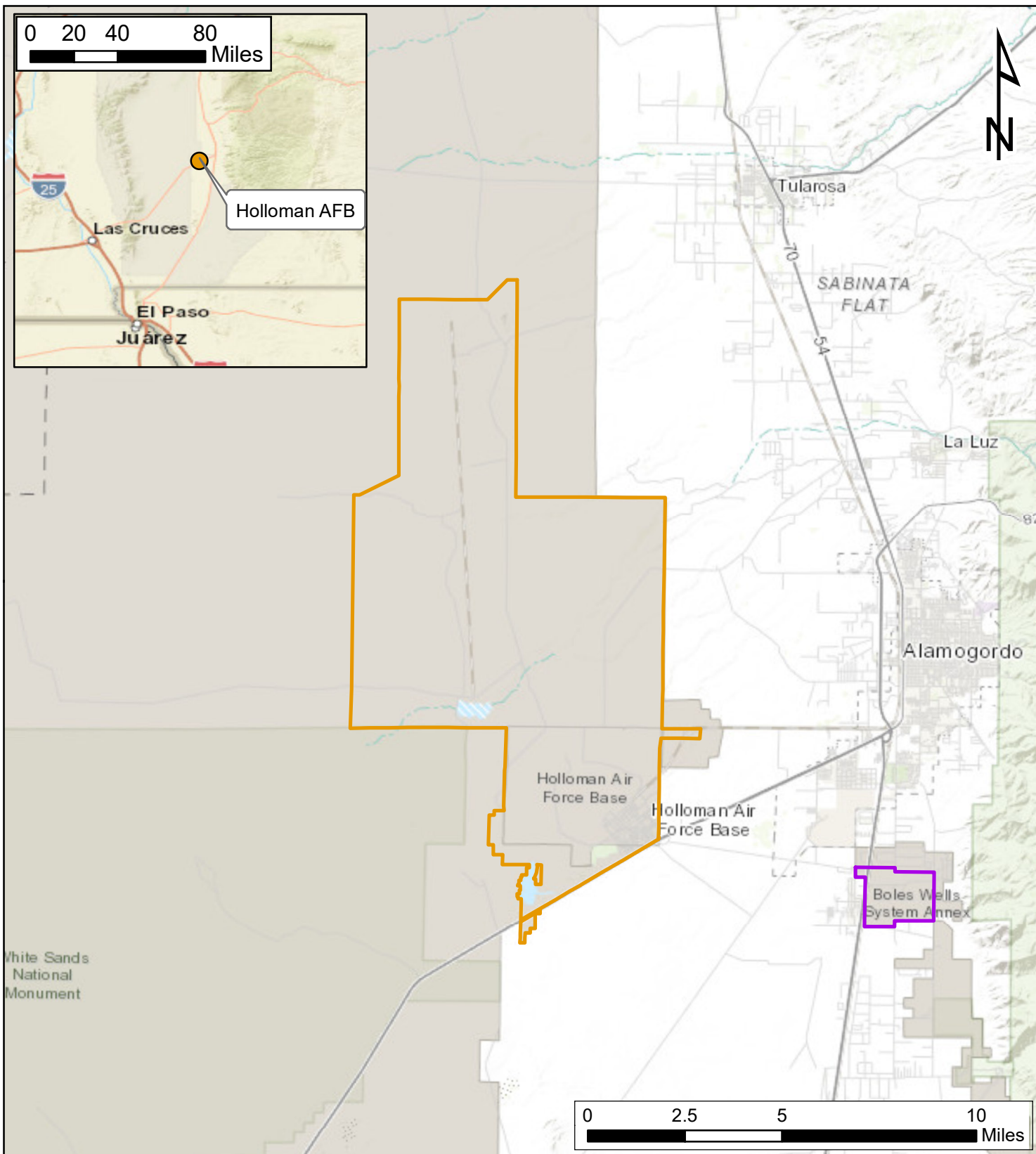
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Otero County, New Mexico

## Vicinity Map

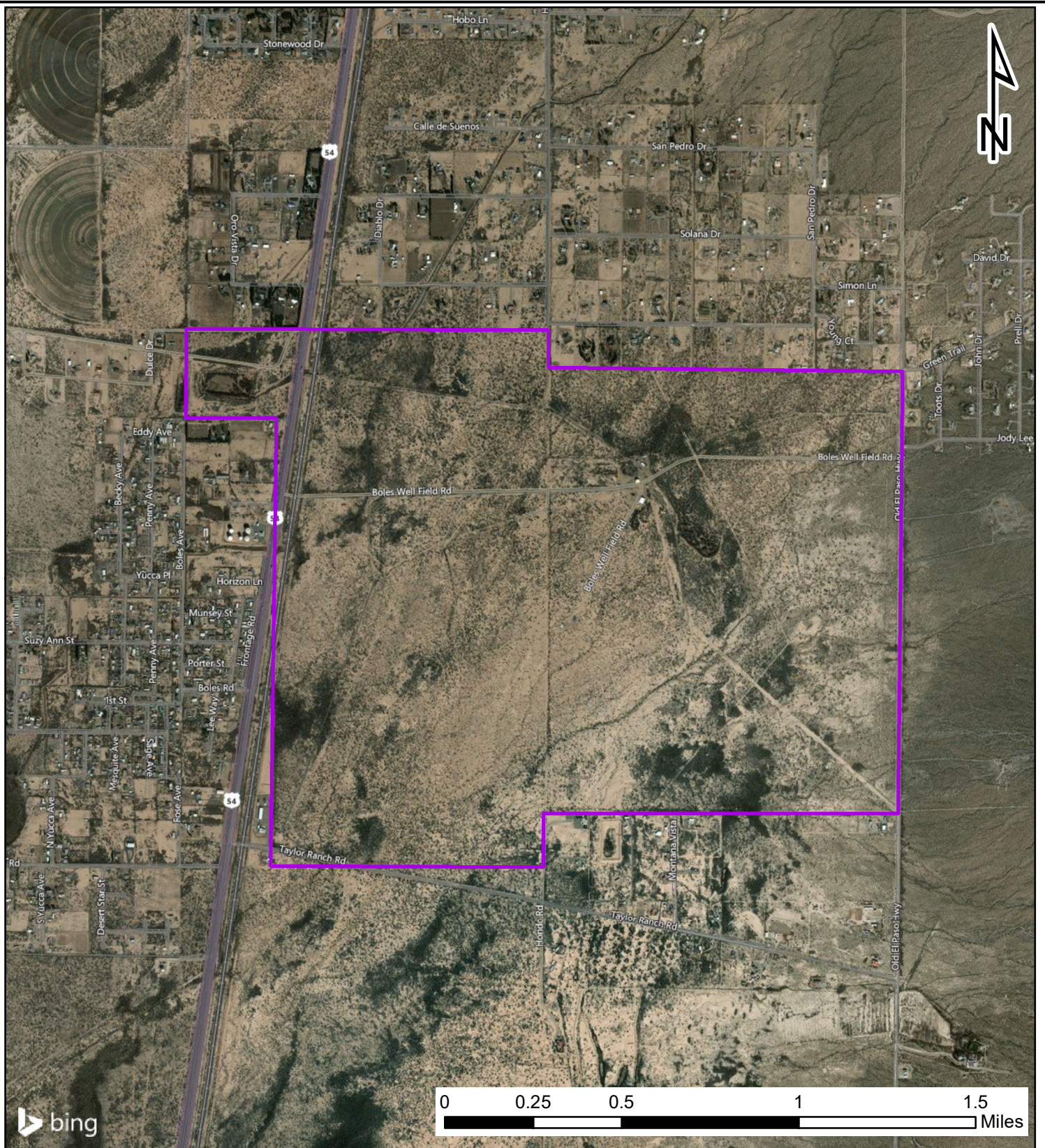
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

Oliver Lee State Park  
Attn: Kate German  
409 Dog Canyon Road  
Alamogordo, NM 88310

Dear Ms. German:

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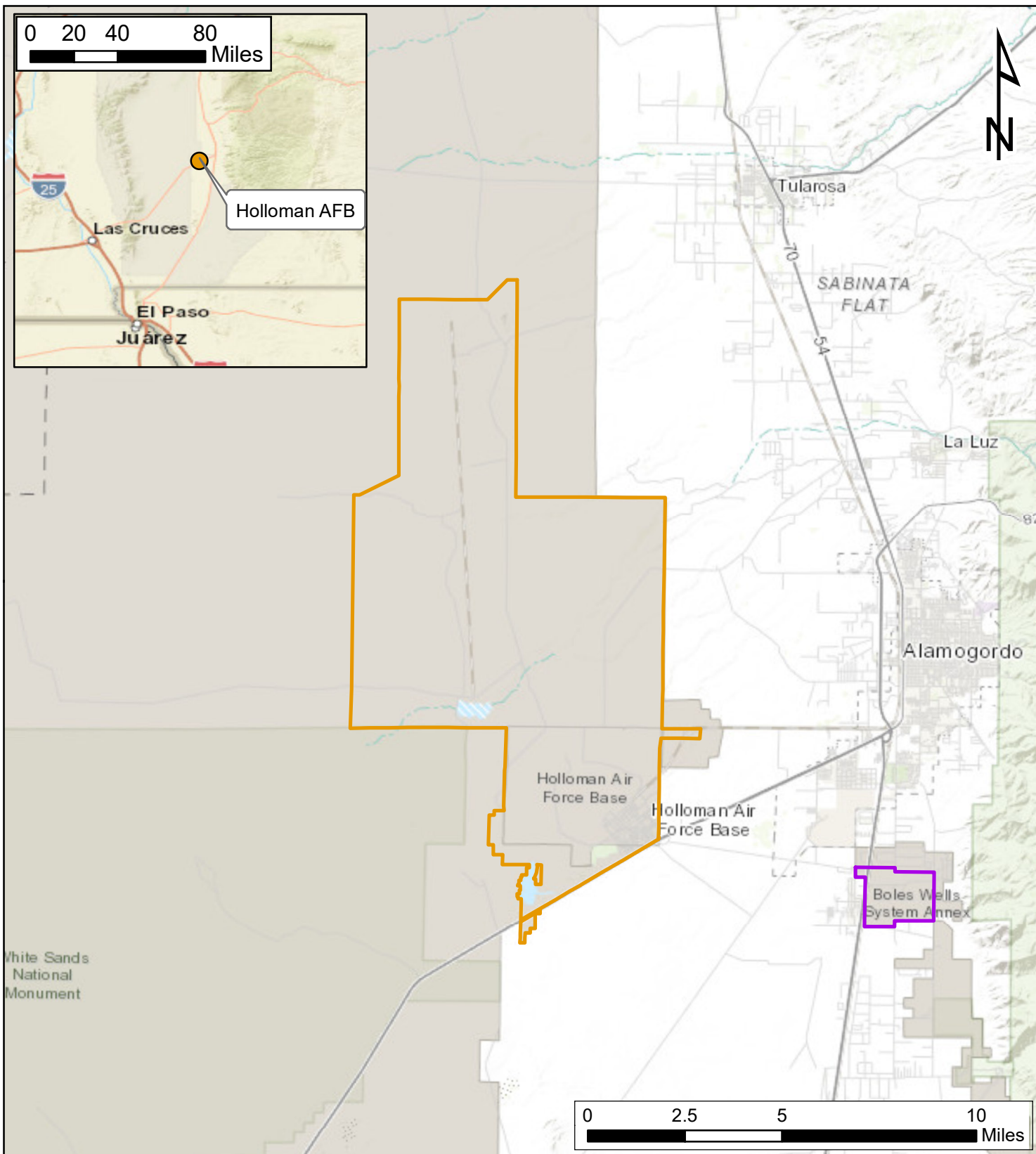
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2 Attachments:

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2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

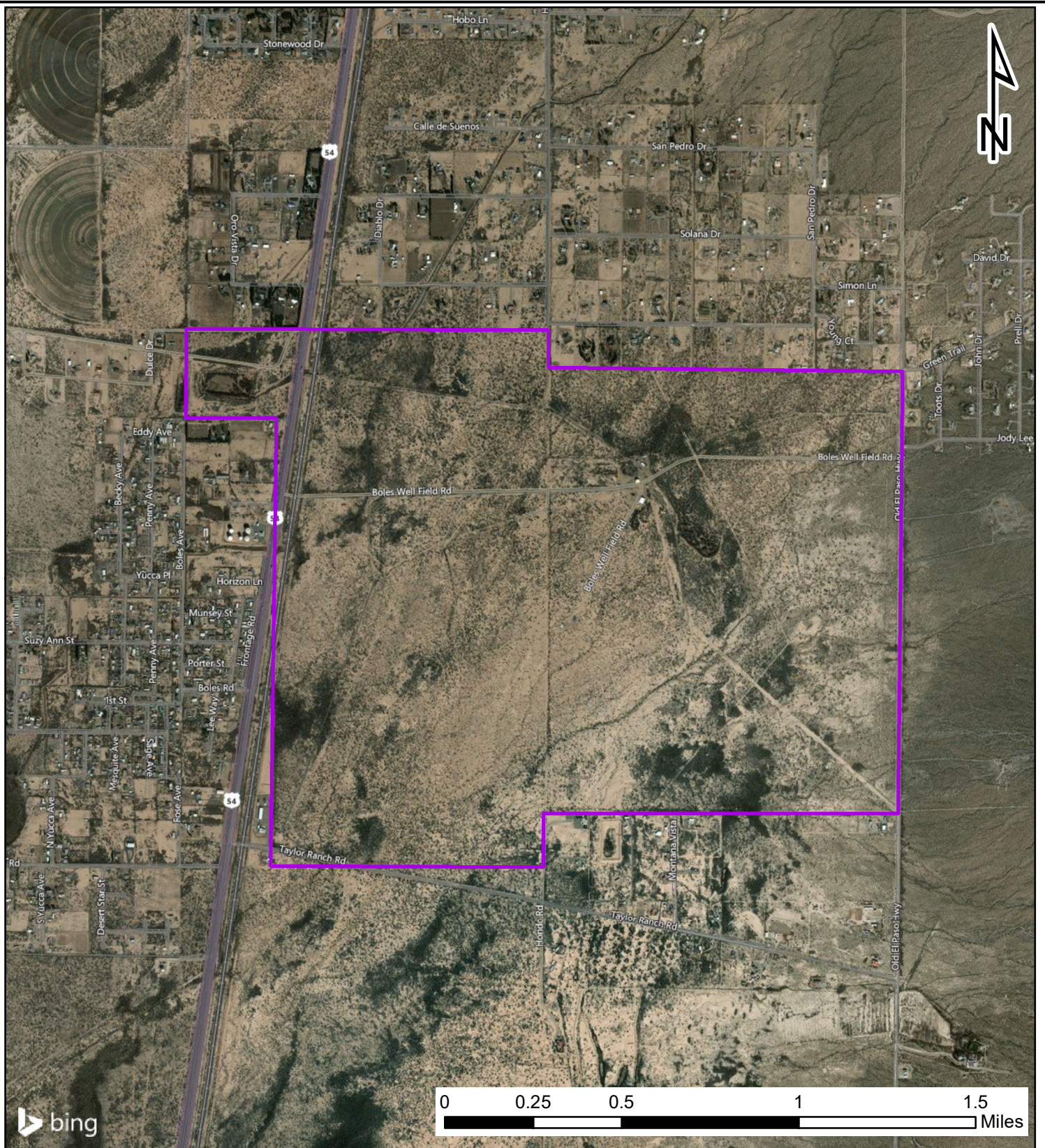
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

U.S. Bureau of Land Management, Las Cruces District  
Attn: Bill Childress  
1800 Marquess Street  
Las Cruces, NM 88005

Dear Mr. Childress:

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Thank you for your assistance in this effort.

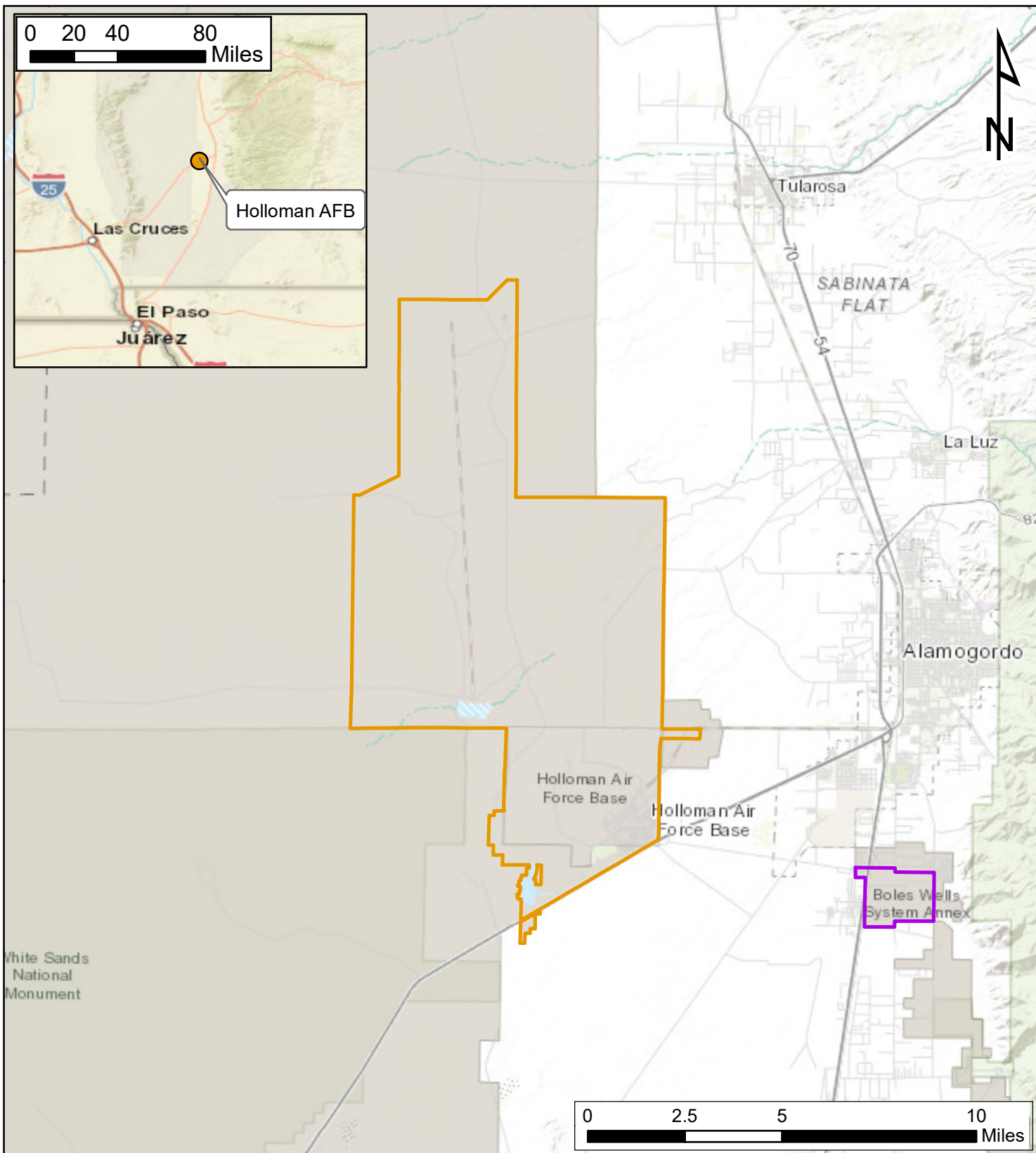
Sincerely

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RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

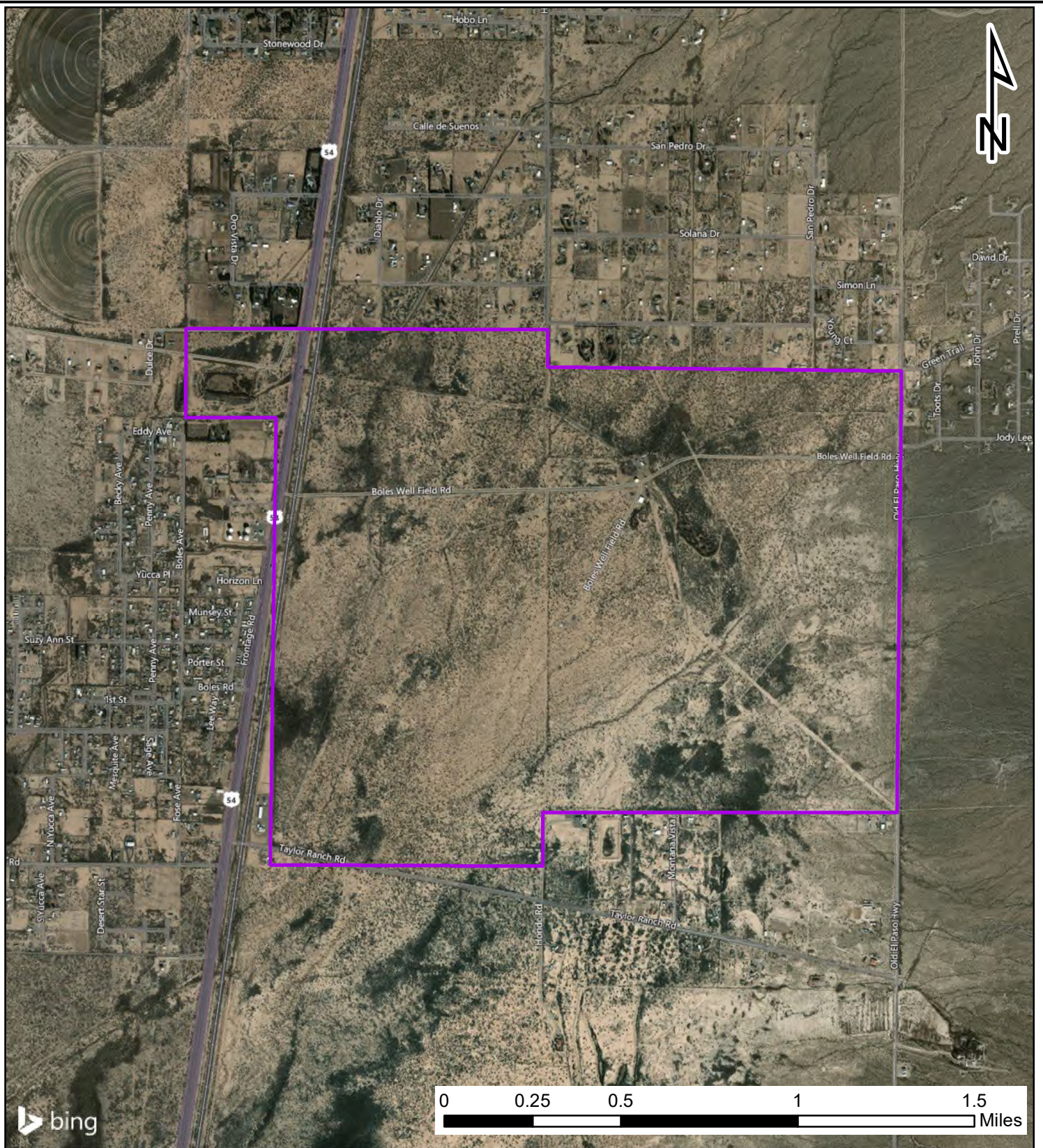
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

U.S. Environmental Protection Agency, Region 6  
Attn: Ken McQueen  
1201 Elm Street, Suite 500  
Dallas, TX 75270

Dear Mr. McQueen:

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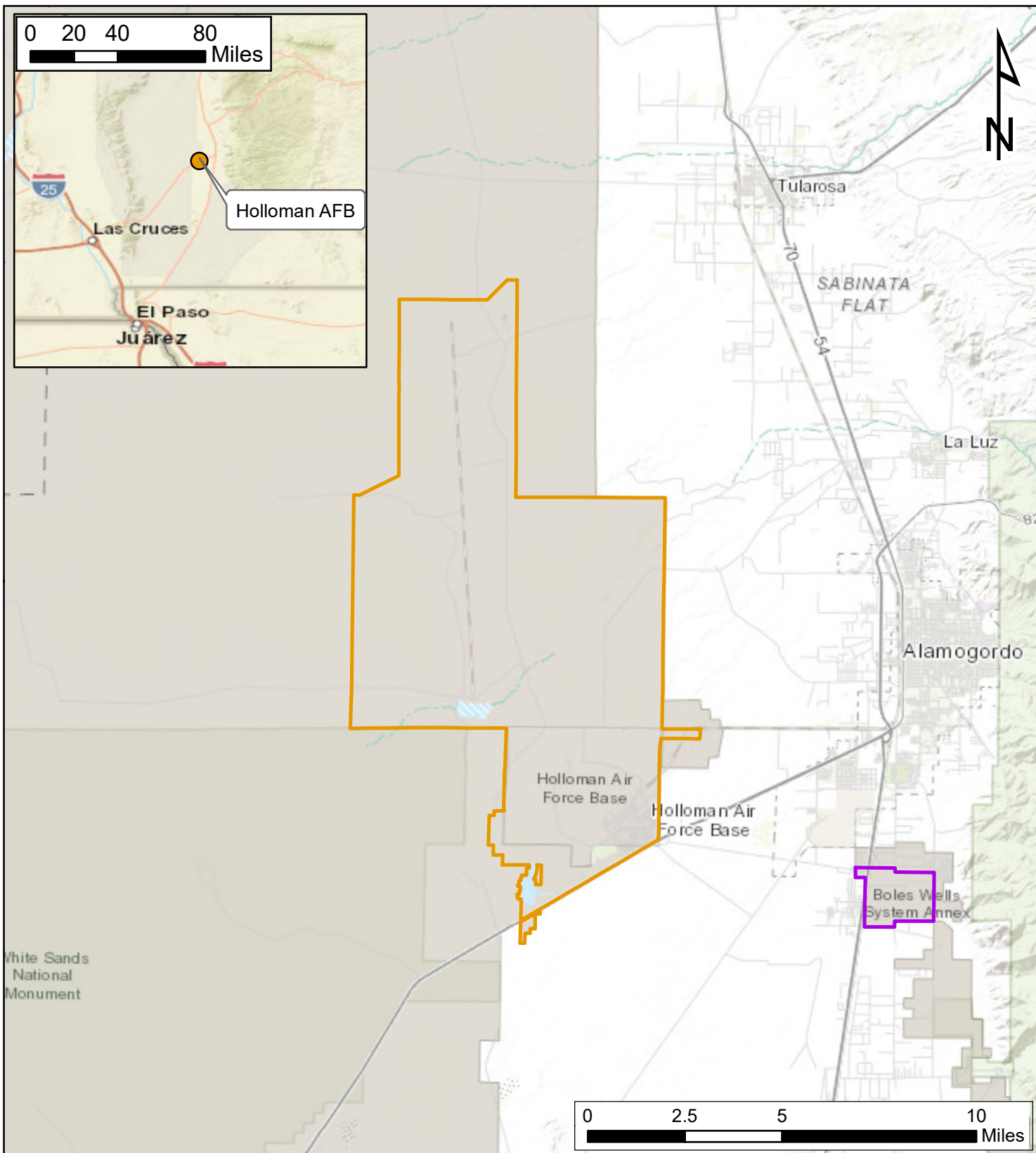
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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

HAFB Renewable Energy - Draft EA



FIGURE

1









DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

USDA Natural Resources Conservation Service  
Attn: Xavier Montoya  
100 Sun Avenue NE, Suite 602  
Albuquerque, NM 87109

Dear Mr. Montoya:

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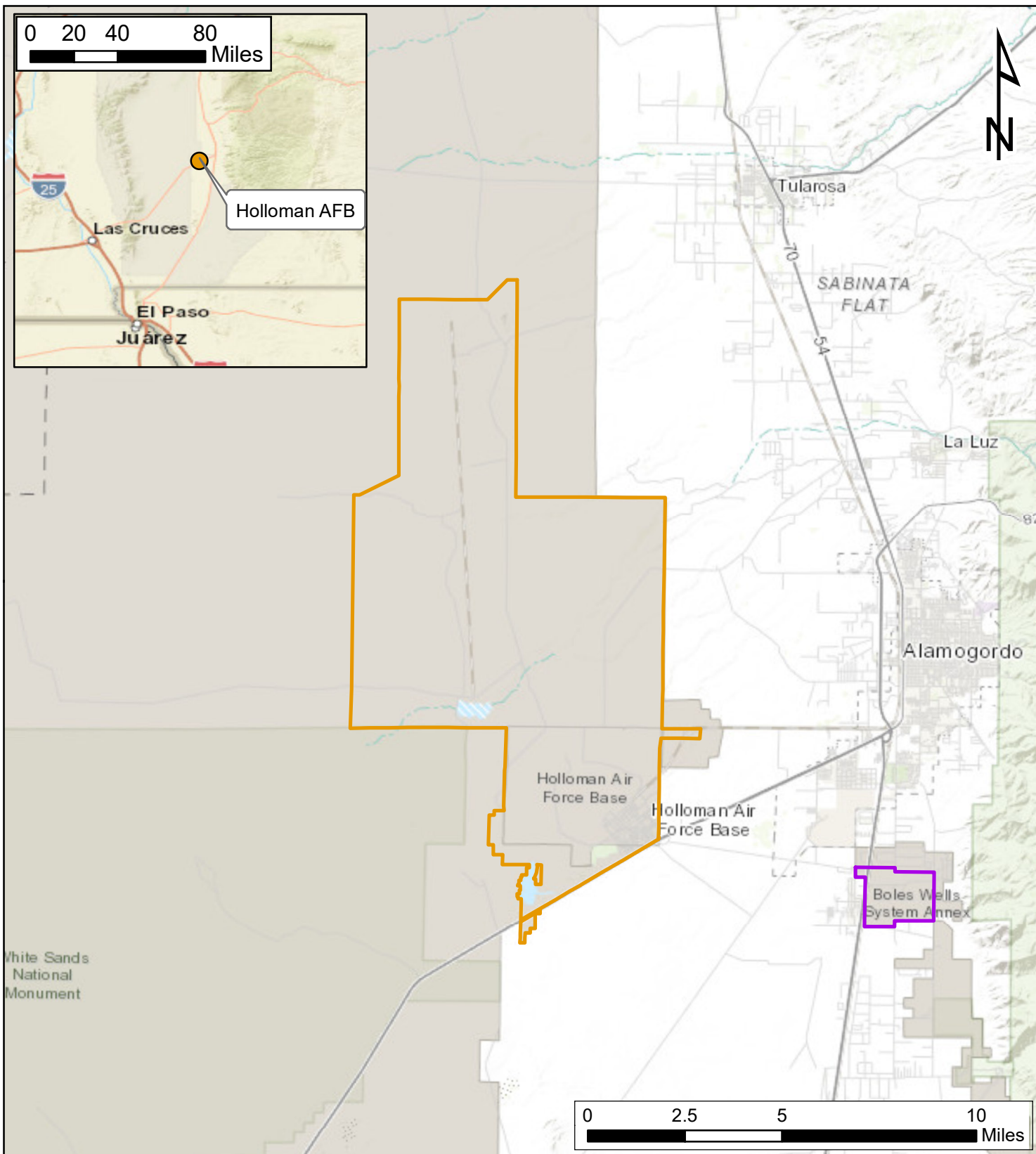
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RYAN P. KEENEY, Colonel, USAF  
Commander

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1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

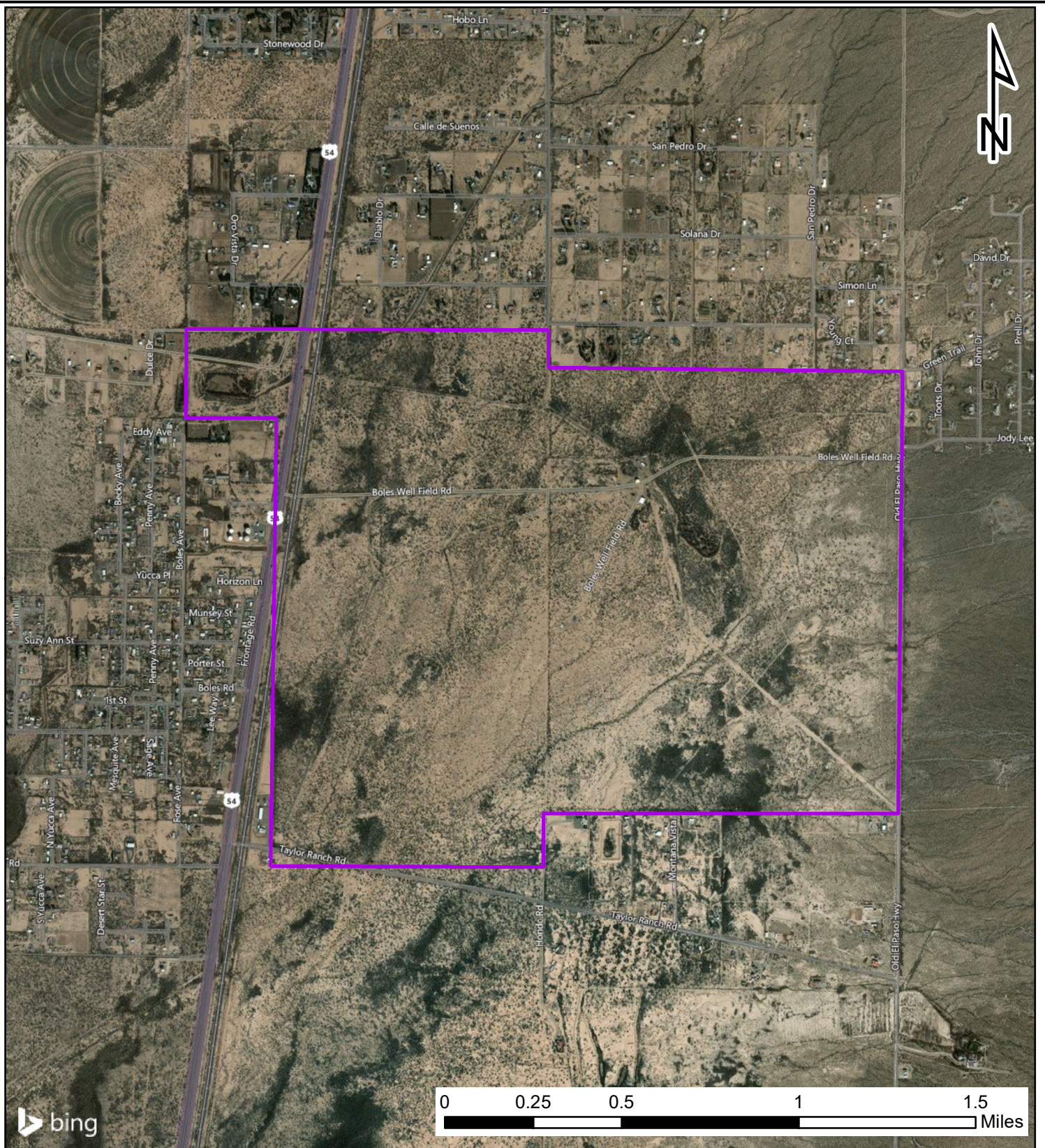
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

U.S. Fish and Wildlife Service, Southwest Region  
Attn: Amy Leuders  
P.O. Box 1306  
Albuquerque, NM 87103

Dear Ms. Leuders:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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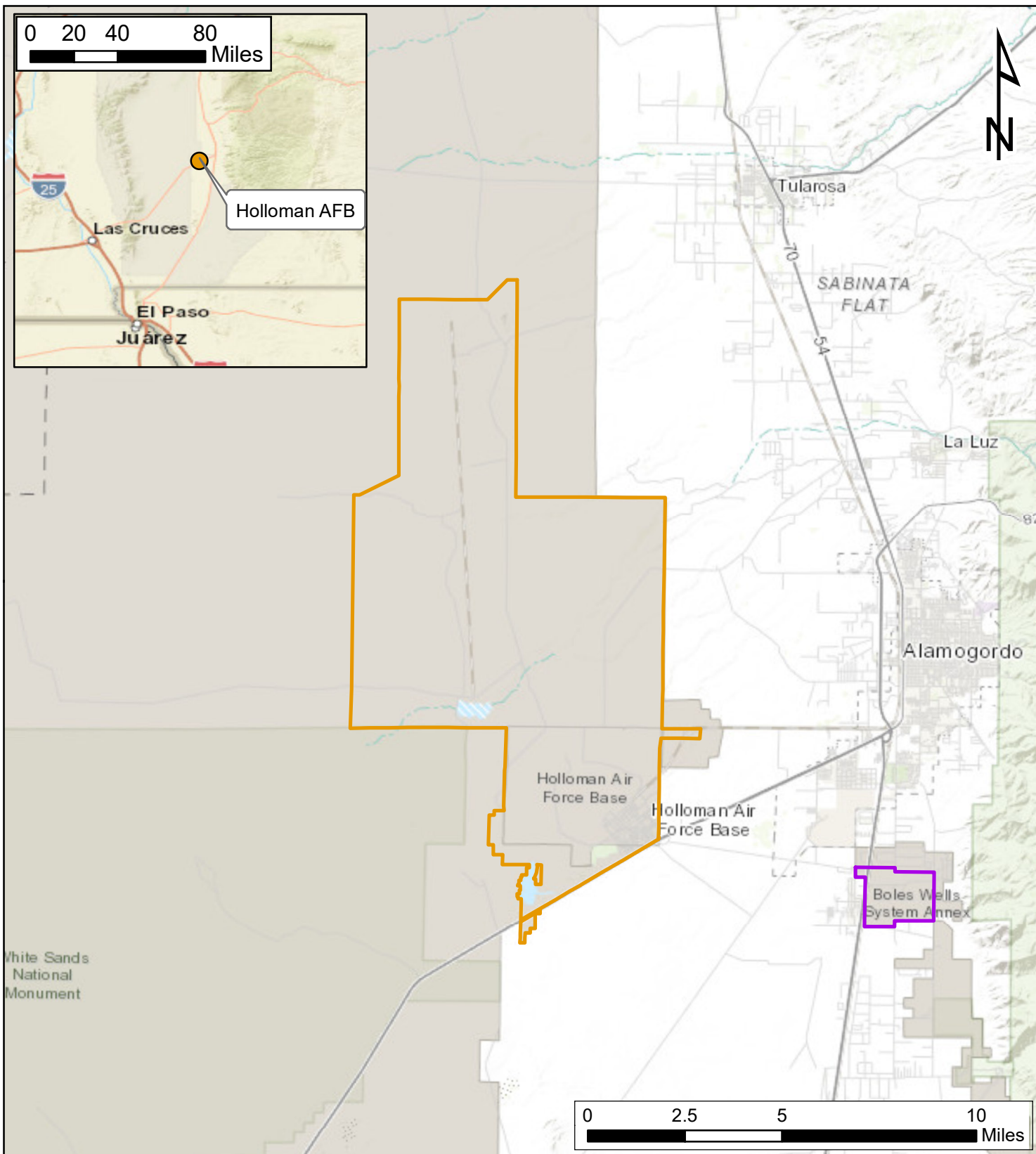
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## Legend

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Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

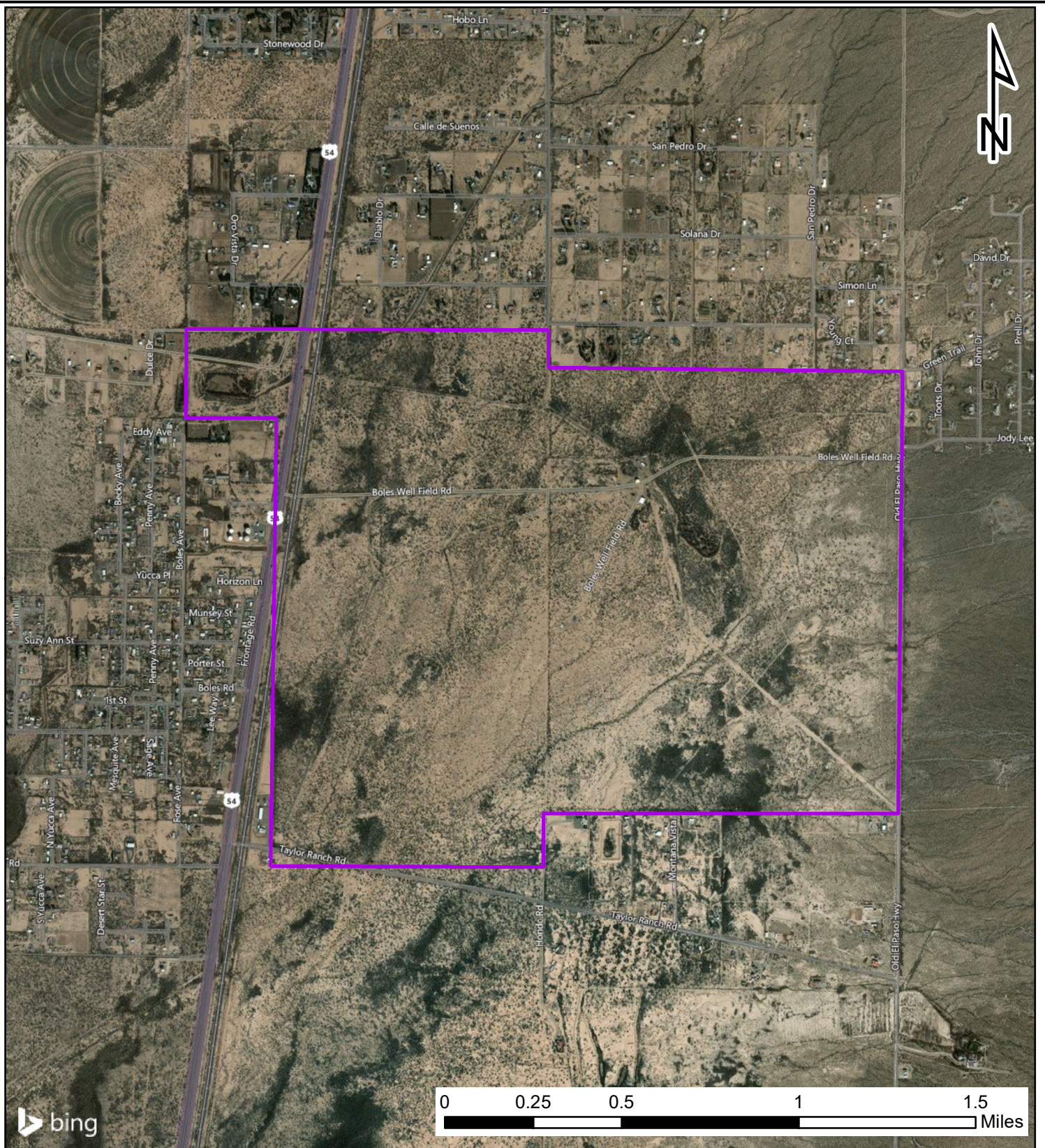
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49<sup>th</sup> Wing  
490 First Street, Ste 1700  
Holloman AFB NM 88330-8277

U.S. Fish and Wildlife Service, Southwest Region  
Attn: Jeff Flemming  
P.O. Box 1306  
Albuquerque, NM 87103

Dear Mr. Flemming:

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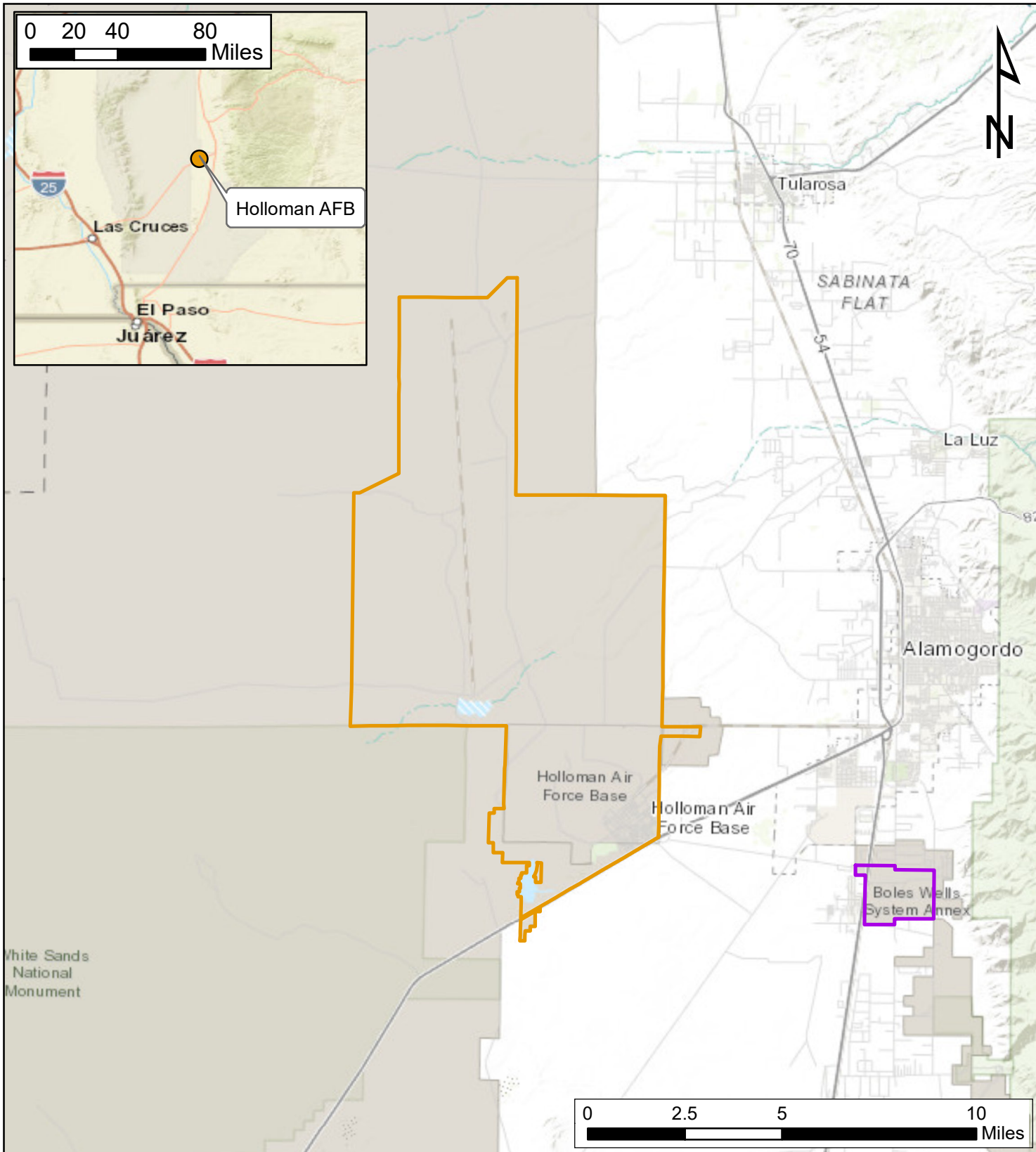
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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

HAFB Renewable Energy - Draft EA



FIGURE

1









DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Bureau of Indian Affairs, Southwest Regional Office  
Attn: Patricia Mattingly  
1101 Indian School Road NW  
Albuquerque, NM 87104

Dear Ms. Mattingly:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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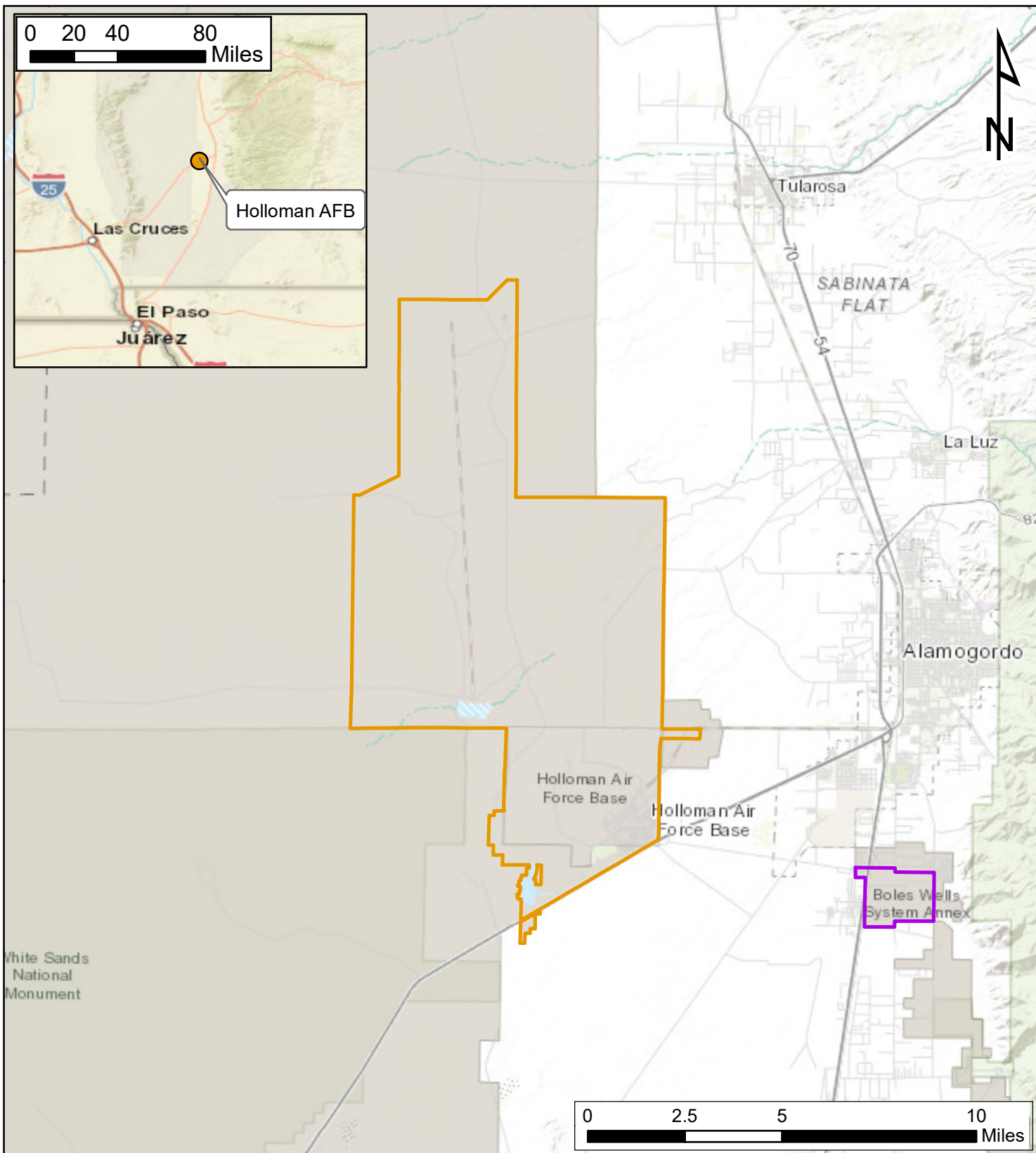
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RYAN P. KEENEY, Colonel, USAF  
Commander

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## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

HAFB Renewable Energy - Draft EA



FIGURE

1









DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Mescalero Apache Tribe  
Attn: Arthur Blazer  
P.O. Box 227  
Mescalero, NM 88340

Dear Mr. Blazer:

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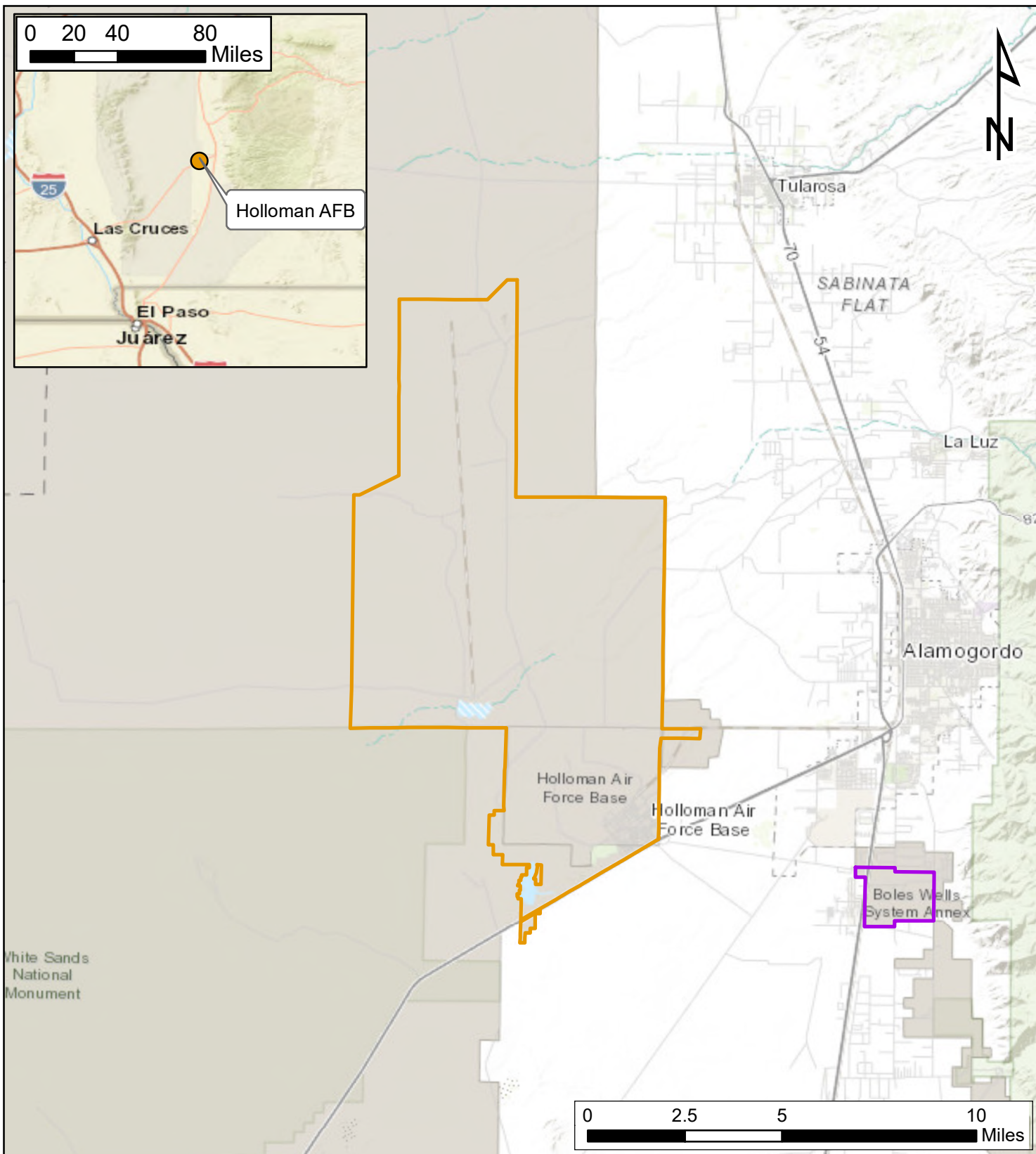
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Holloman Air Force Base  
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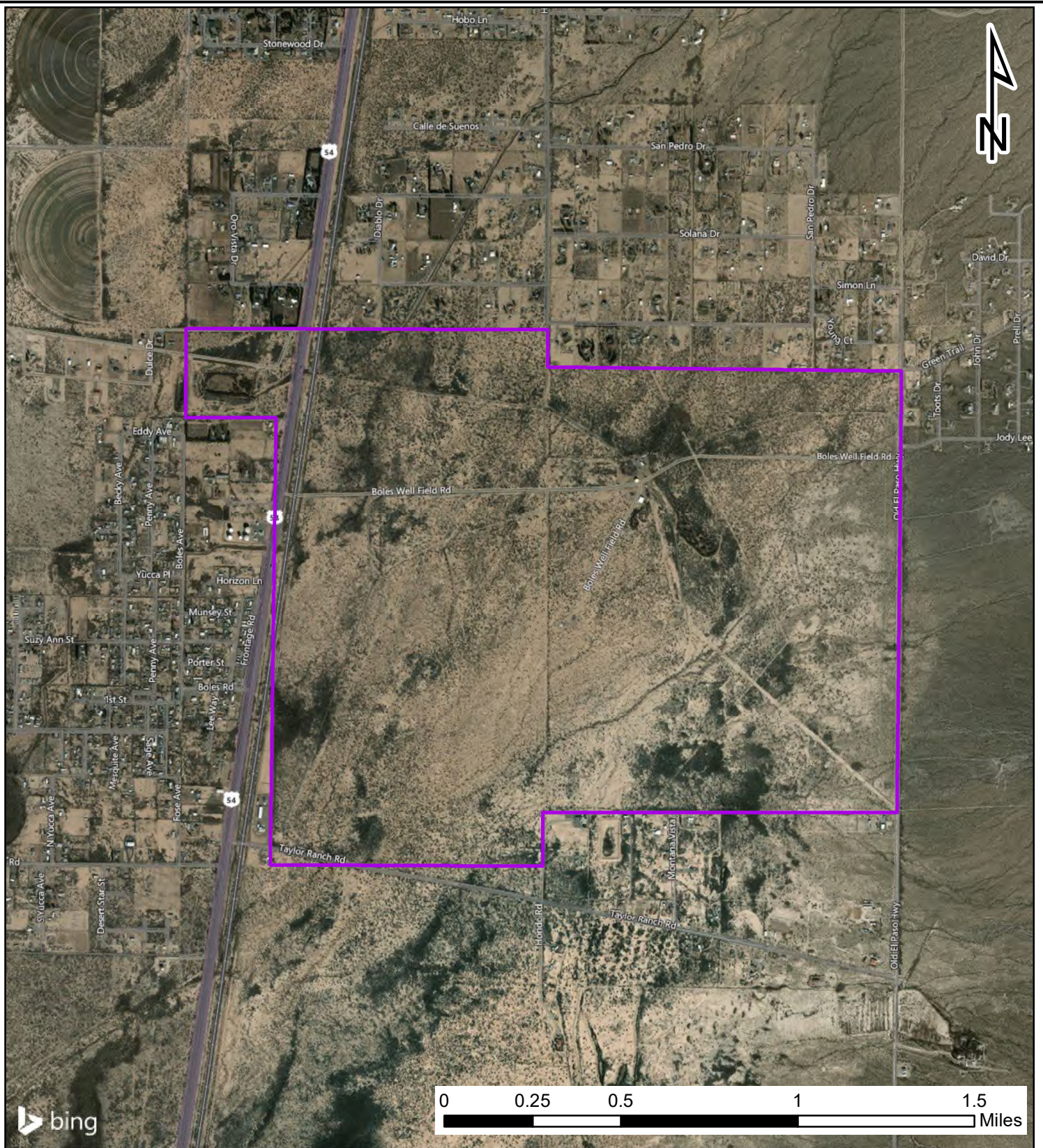
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Acoma  
Attn: Brian Vallo  
P.O. Box 309  
Acoma Pueblo, NM 87034

Dear Mr. Vallo:

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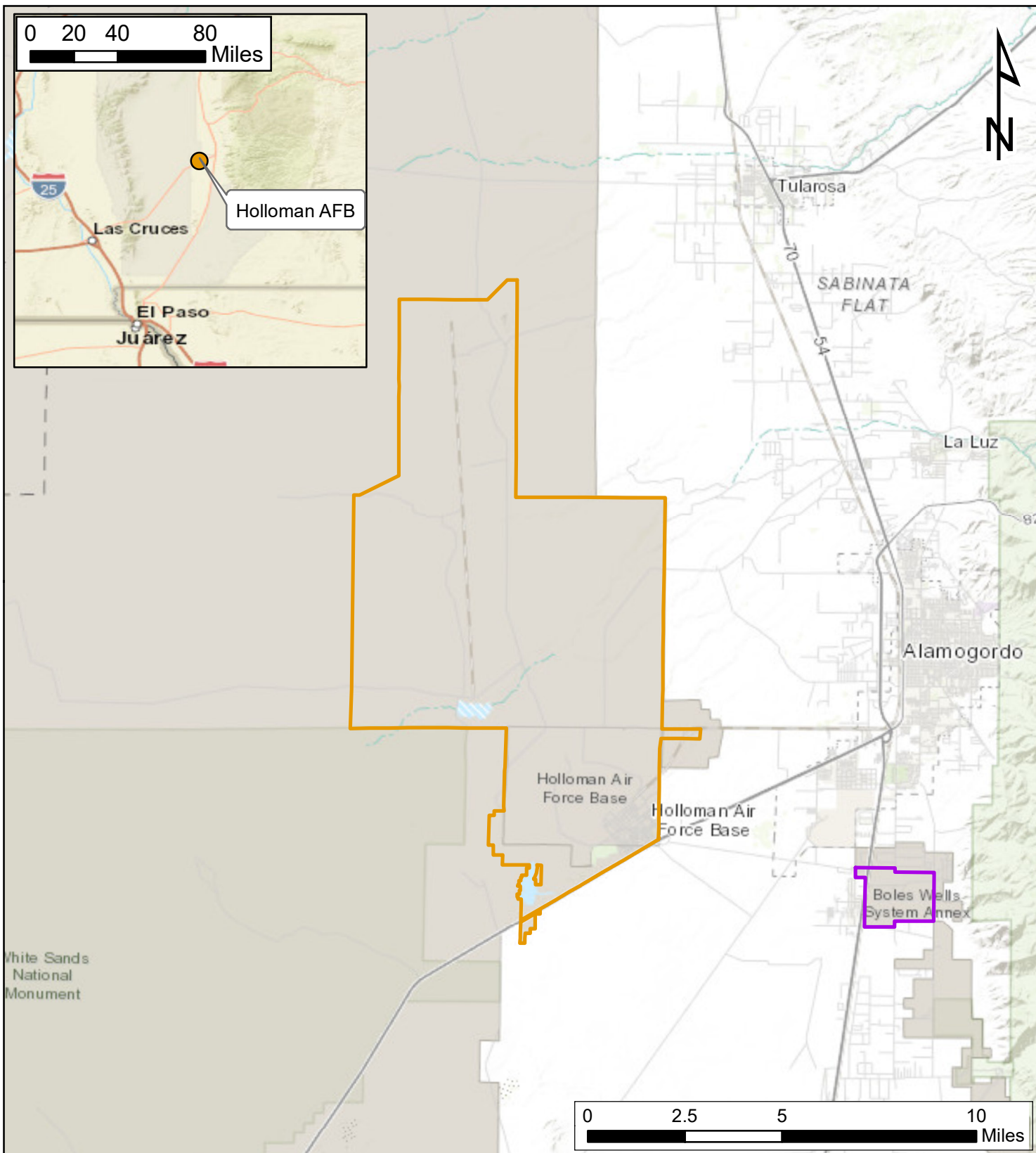
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Commander

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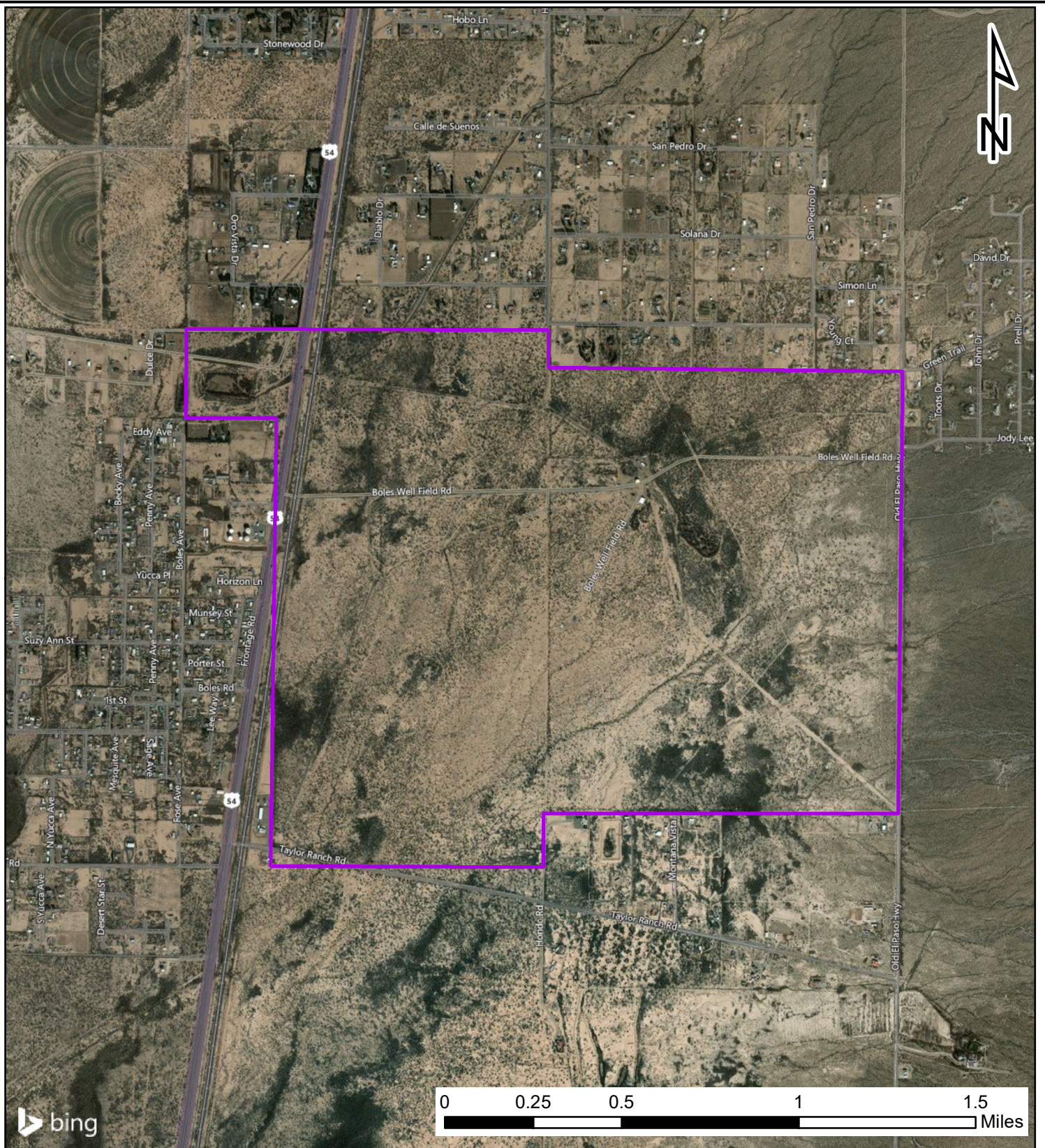
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Acoma  
Attn: Todd Scissons  
P.O. Box 309  
Acoma Pueblo, NM 87034

Dear Mr. Scissons:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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In order to comply with government-to-government consultation requirements of NEPA and the National Historic Preservation Act (NHPA), we request your input on the proposed project to identify general or specific issues, areas of concern, traditional cultural properties, or historic properties that should be addressed in the EA. With regards to Executive Order 13007 and the American Indian Religious Freedom Act, we would appreciate notification of any impact to Native American sacred sites that may result from the proposed action. Please submit written comments to Mr. Spencer Robison at 550 Tabosa Ave, Holloman AFB NM 88330-8458 within 30 days from the date of receiving this letter to ensure the USAF has sufficient time to consider your input in the preparation of the EA. If you would like to submit comments or questions by telephone, you may contact Mr. Robison by telephone at (703) 909-8247.

Thank you for your assistance in this effort.

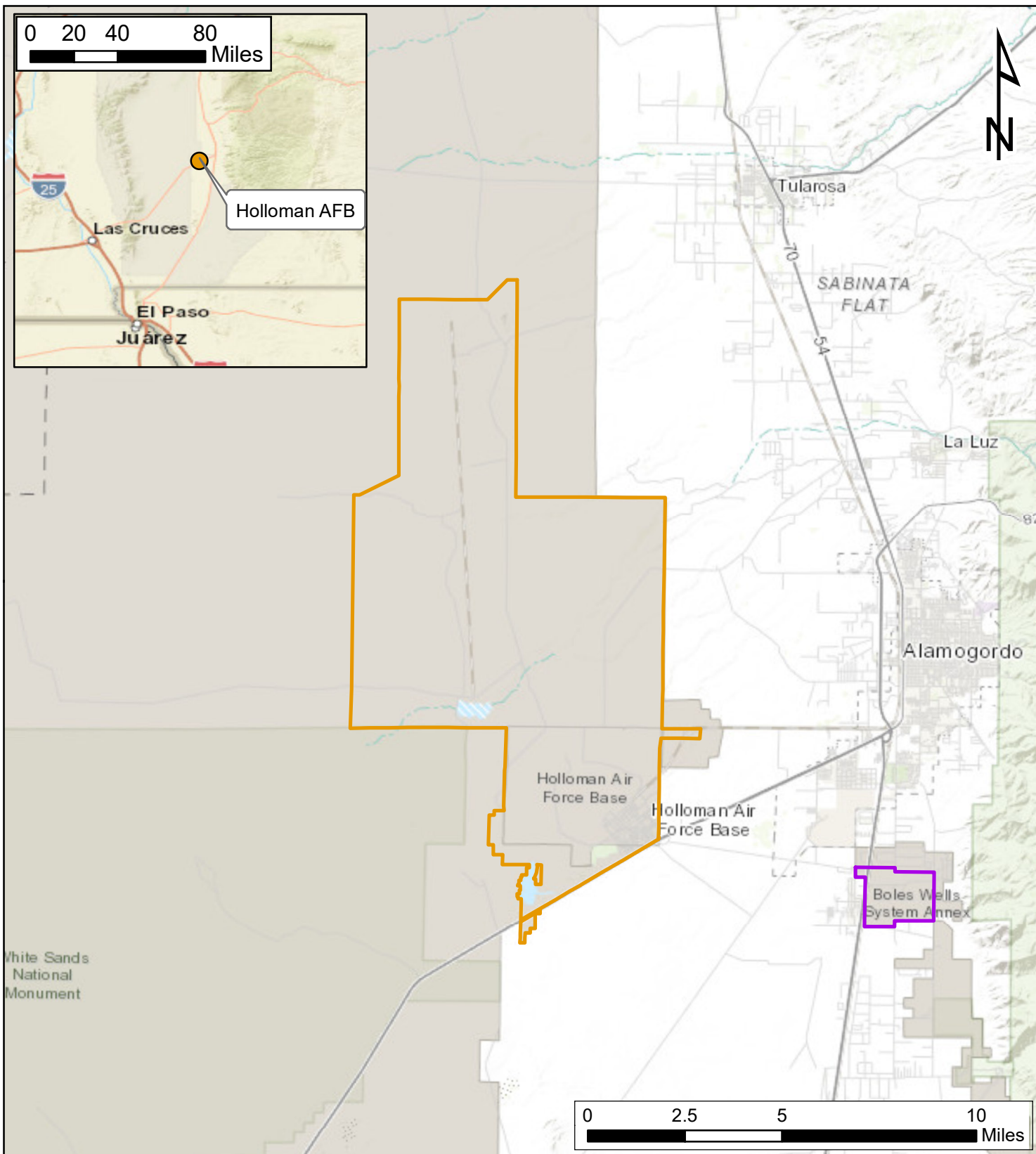
Sincerely



RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

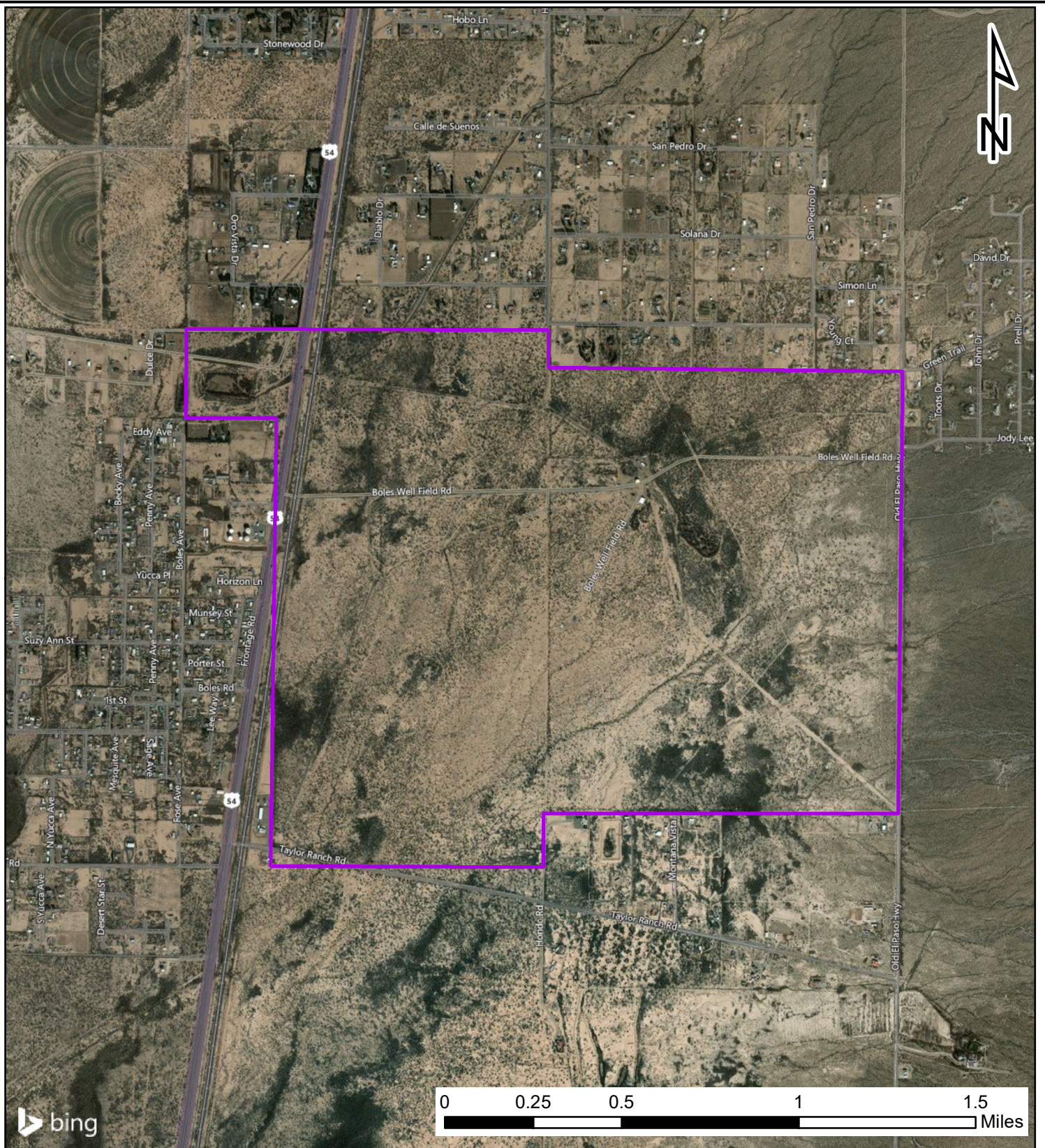
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Laguna  
Attn: Wilfred Herrera, Jr.  
P.O. Box 194  
Laguna Pueblo, NM 87026

Dear Mr. Herrera:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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Thank you for your assistance in this effort.

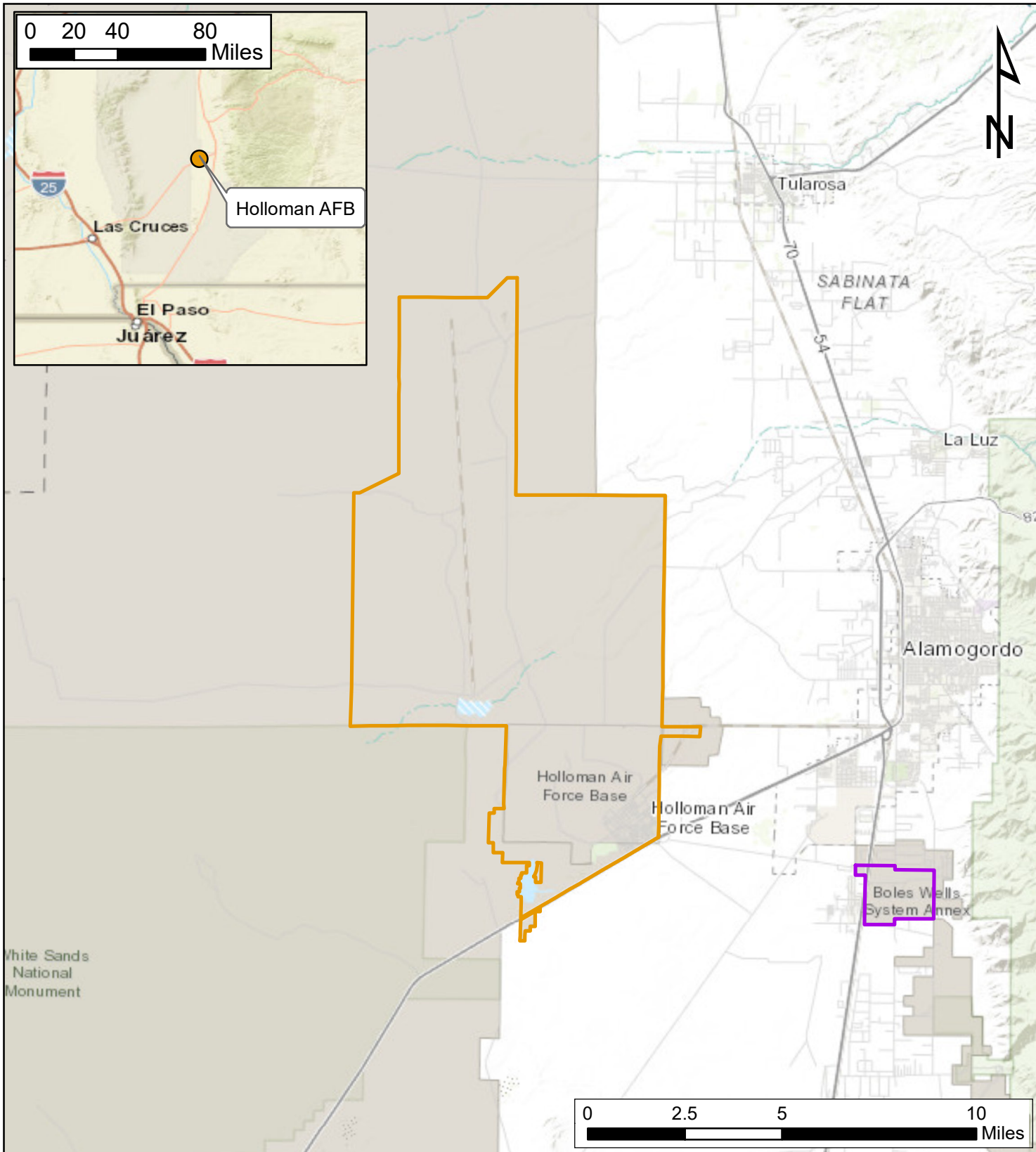
Sincerely



RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

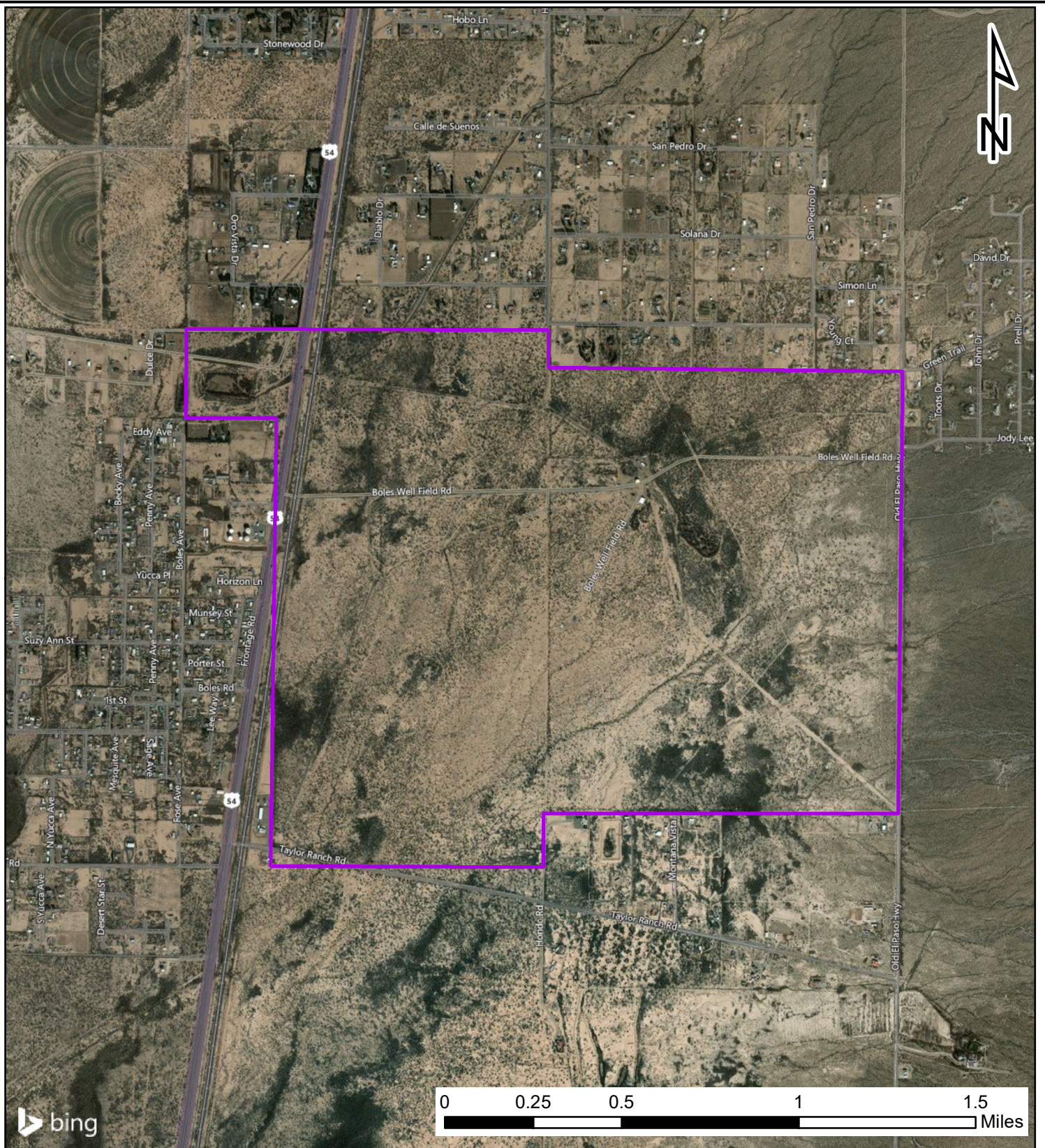
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Laguna  
Attn: Adam Ringia  
P.O. Box 194  
Laguna Pueblo, NM 87026

Dear Mr. Ringia:

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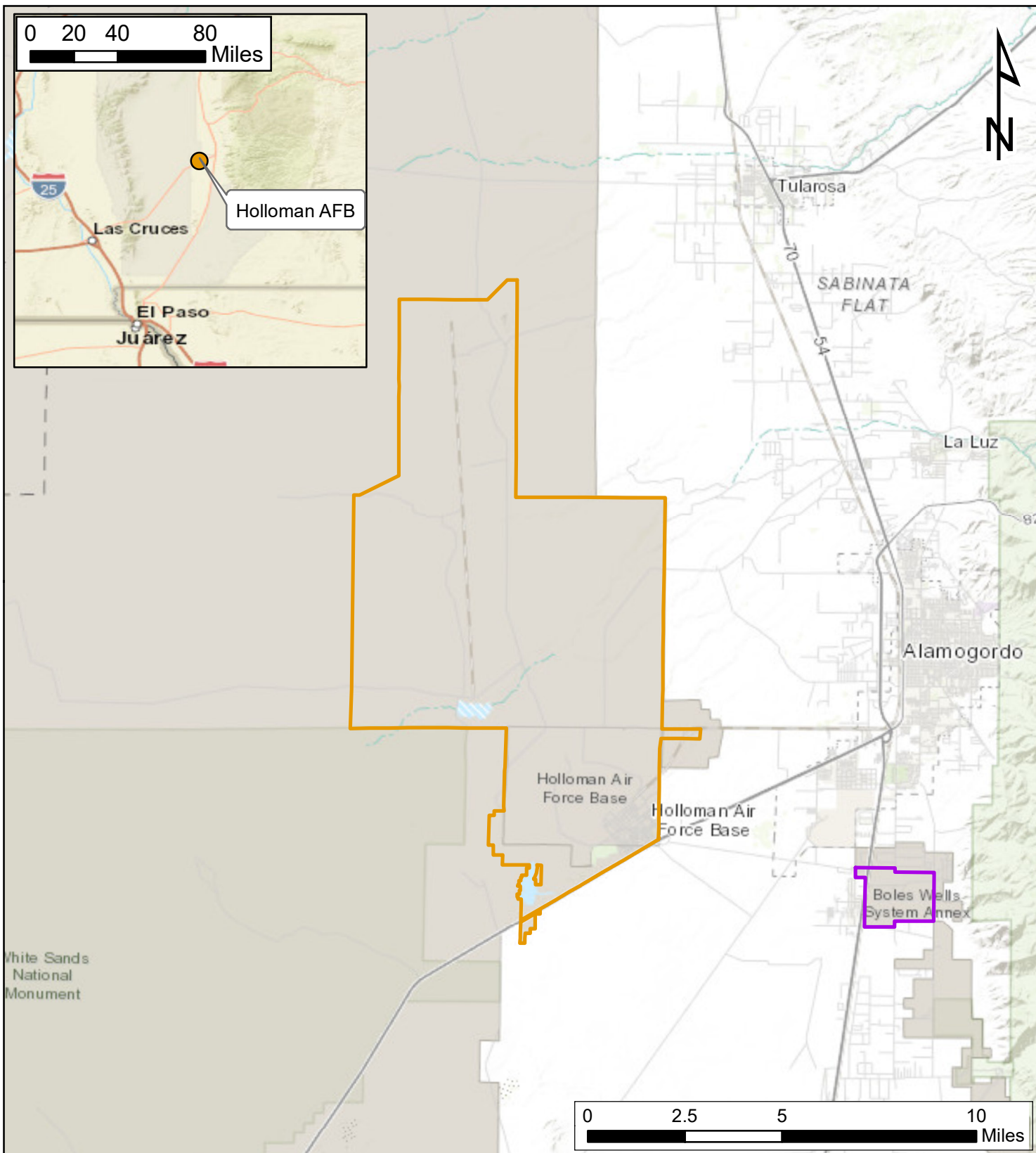
Sincerely



RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

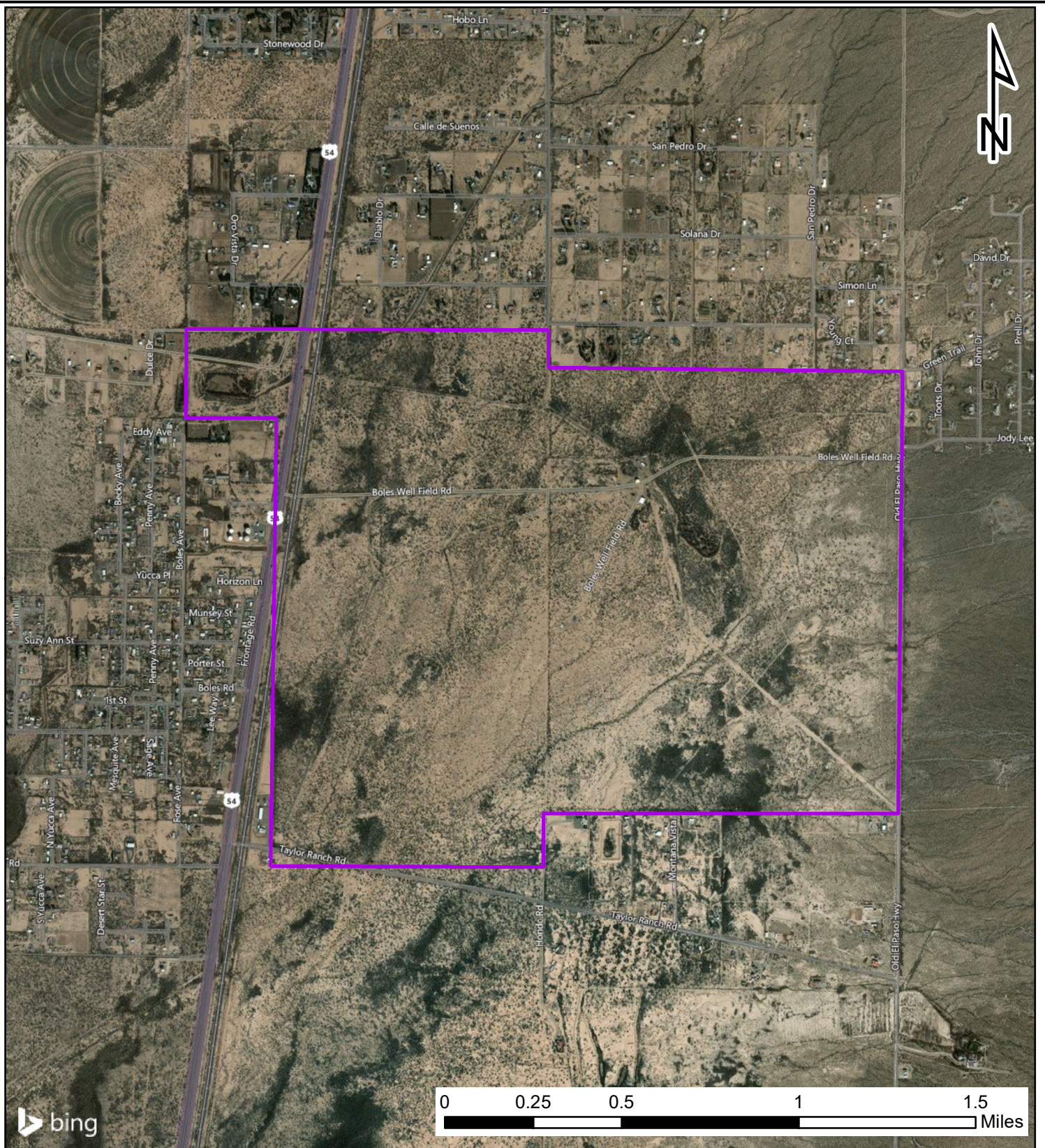
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Santa Clara  
Attn: Michael Chavarria  
P.O. Box 580  
Espanola, NM 87532

Dear Mr. Chavarria:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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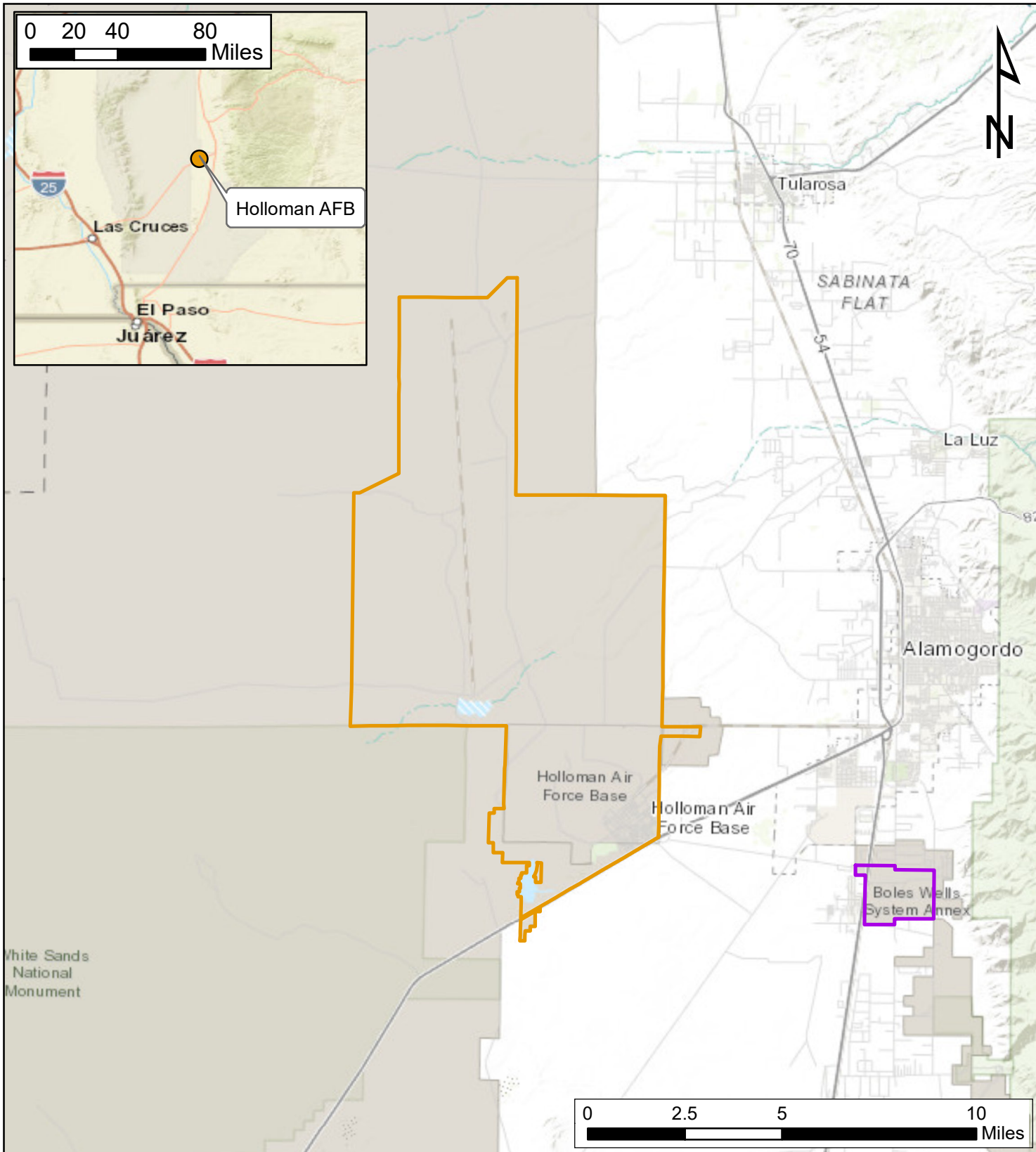
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RYAN P. KEENEY, Colonel, USAF  
Commander

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Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

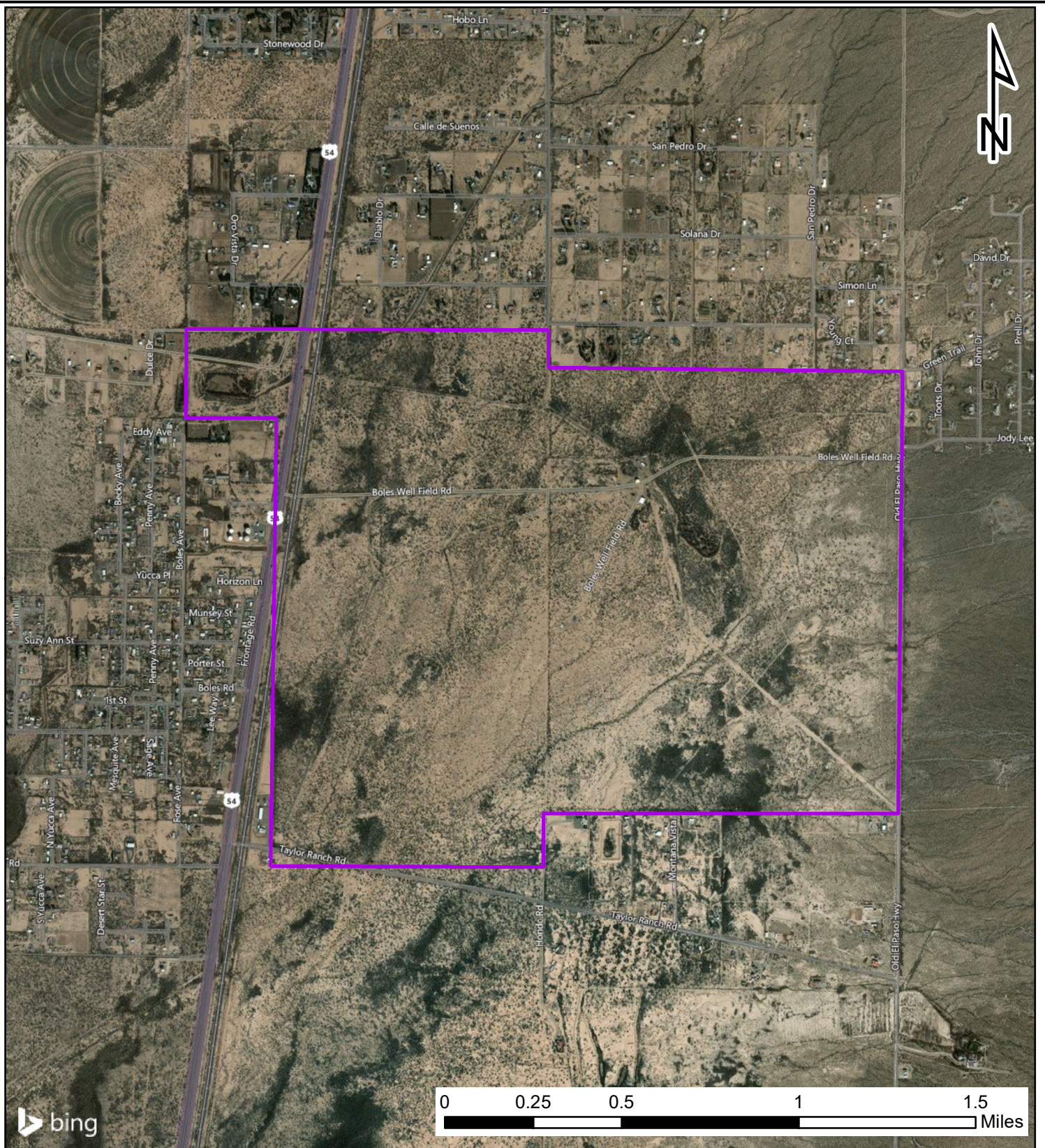
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Taos  
Attn: Ruben Romero  
P.O. Box 1846  
Taos, NM 87571

Dear Mr. Romero:

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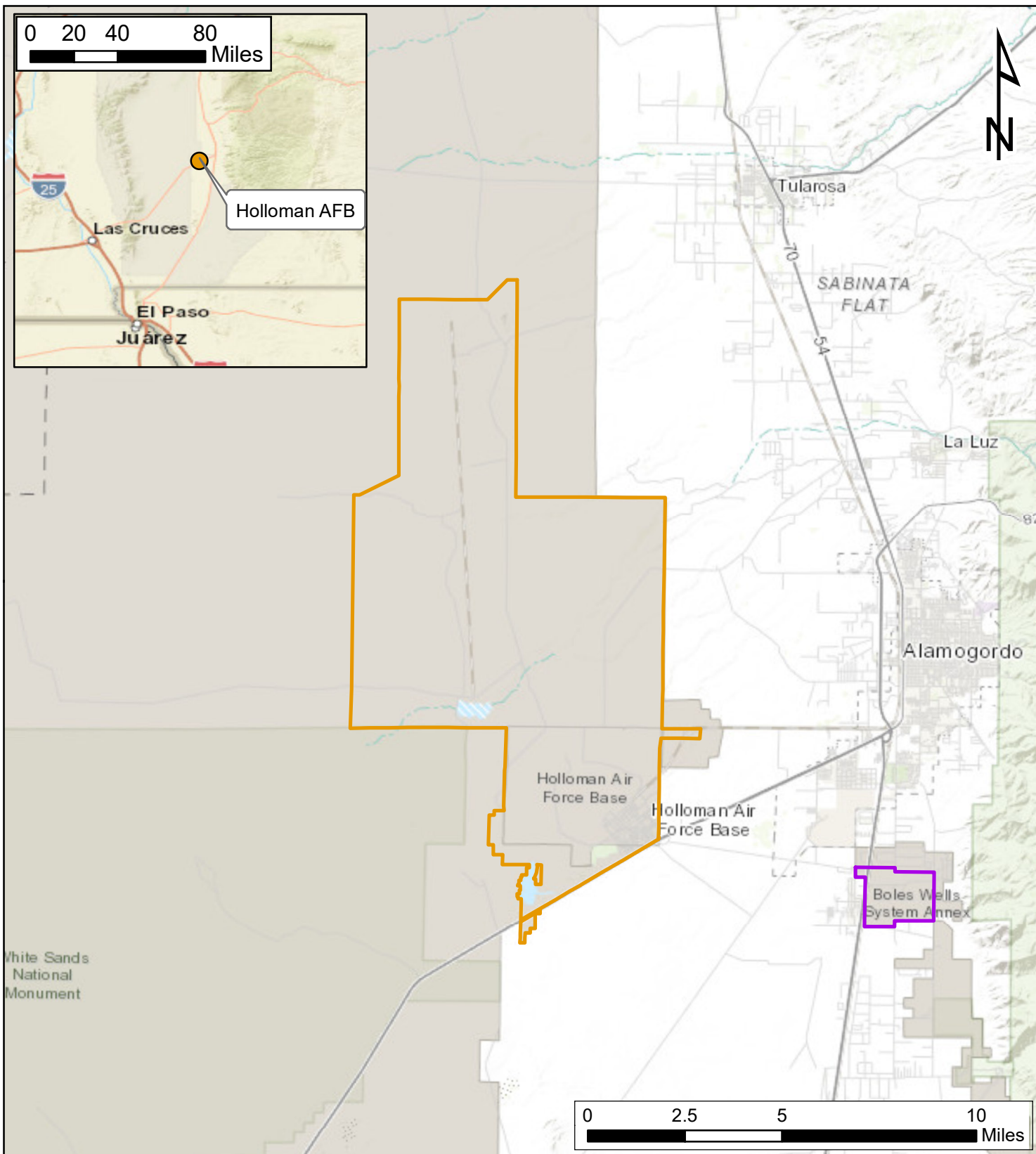
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RYAN P. KEENEY, Colonel, USAF  
Commander

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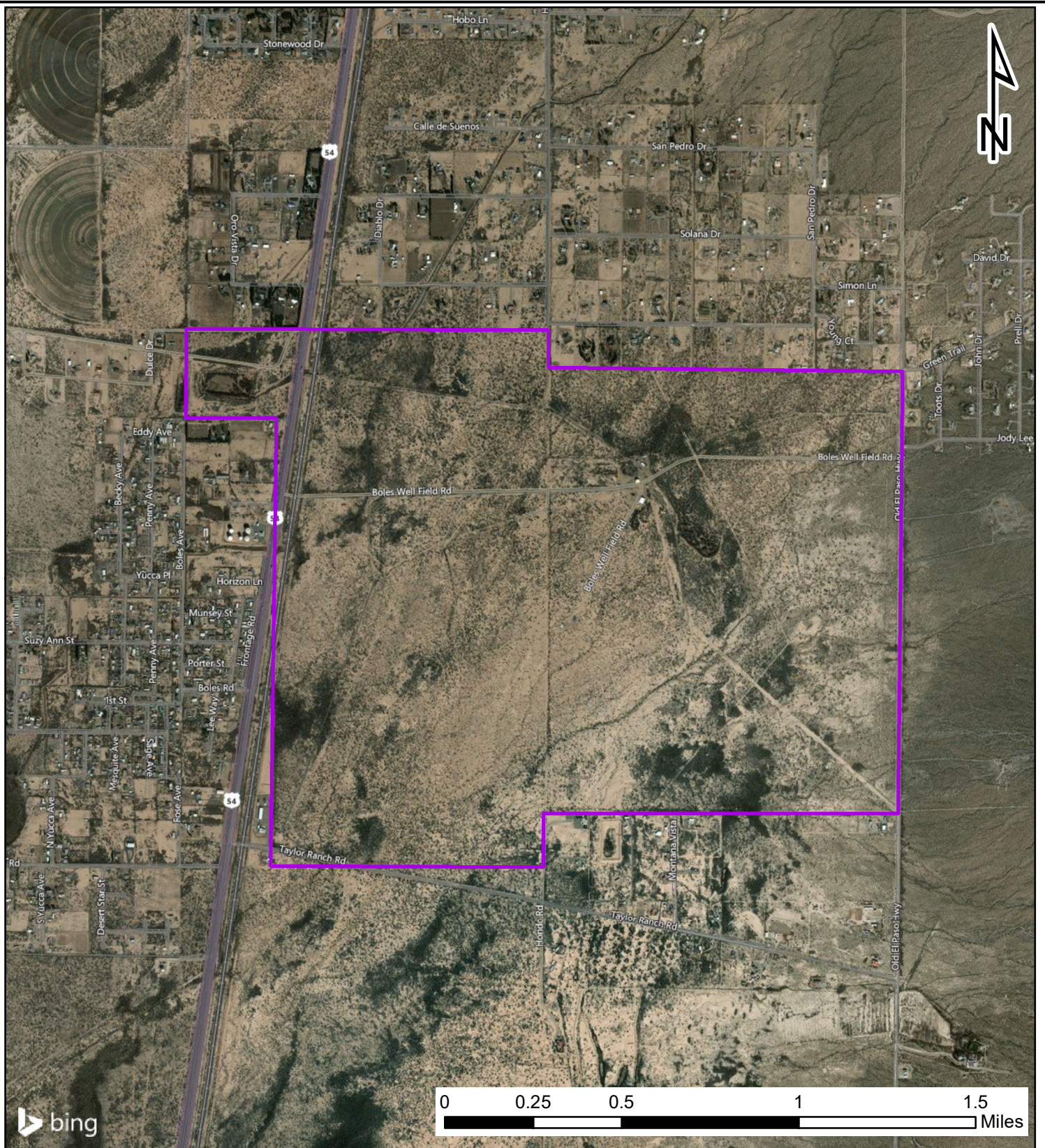
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Pueblo of Zuni  
Attn: Val Panteah, Sr.  
P.O. Box 339  
Zuni, NM 87327

Dear Mr. Panteah:

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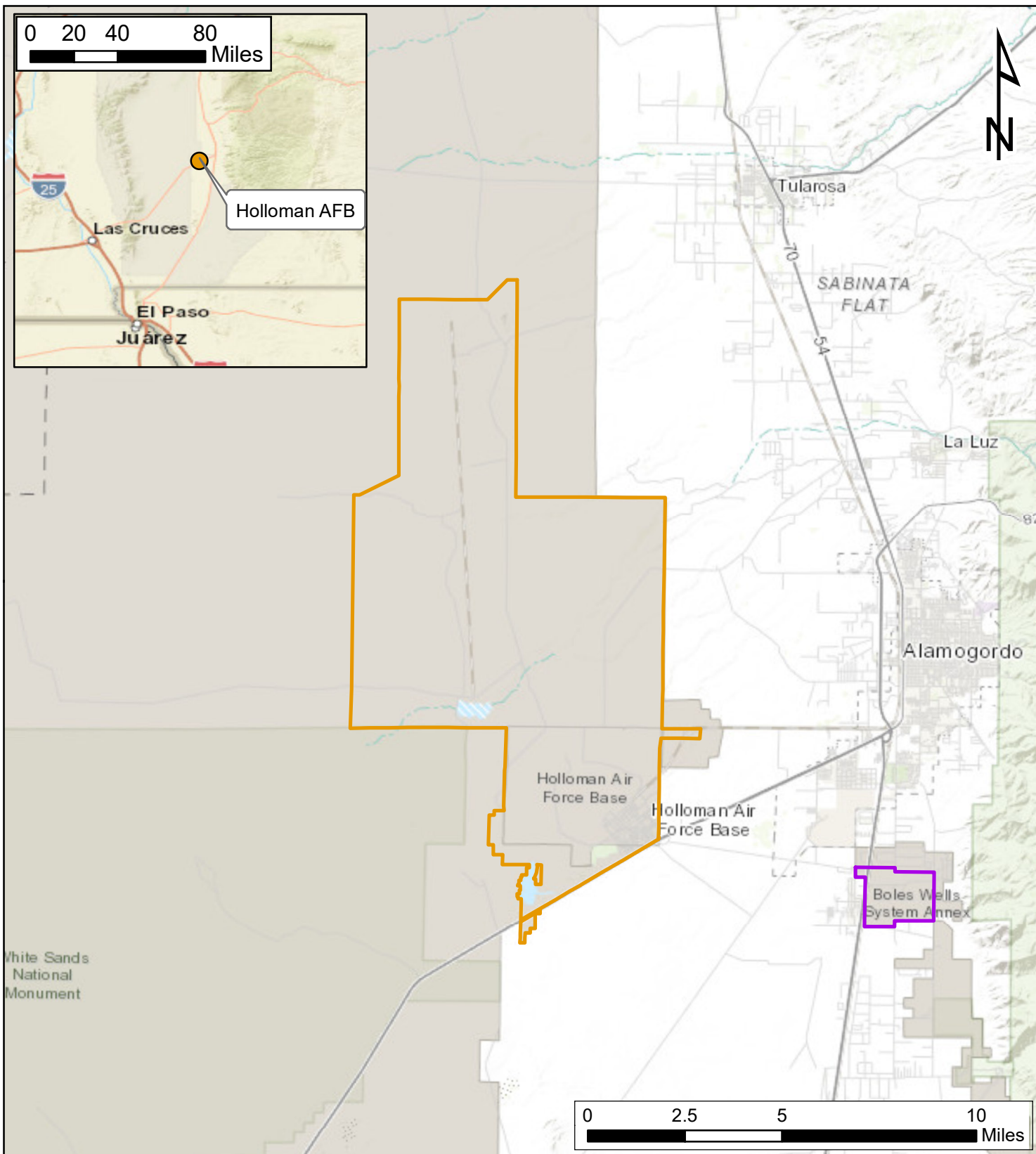
Sincerely

A handwritten signature in black ink, appearing to read 'R. P. Keeney', is written over a horizontal line.

RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

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- Holloman AFB
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Holloman Air Force Base  
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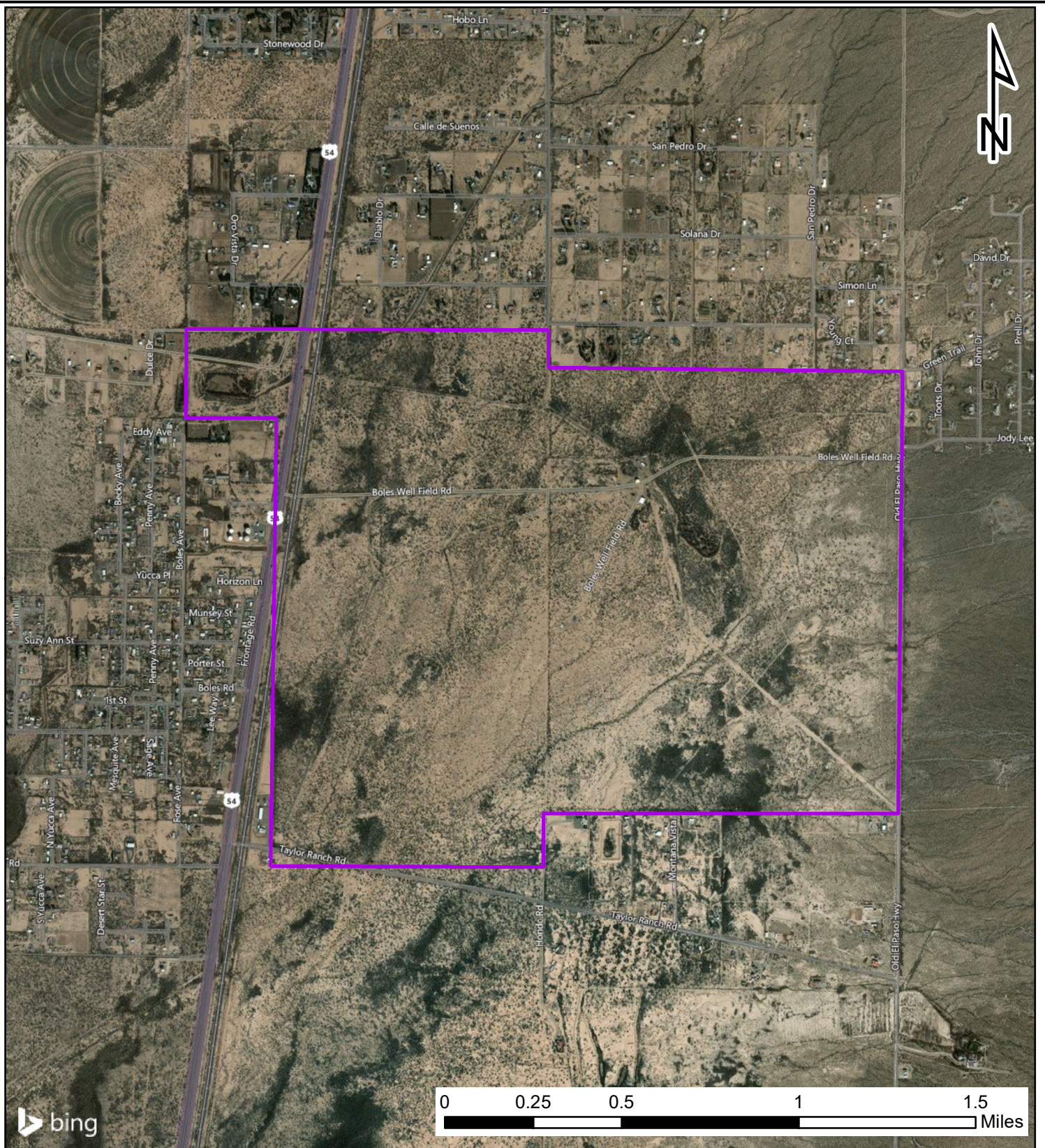
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

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Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

The Hopi Tribe  
Attn: Timothy Nuvangyaoma  
P.O. Box 123  
Kykotsmovi, AZ 86039

Dear Mr. Nuvangyaoma:

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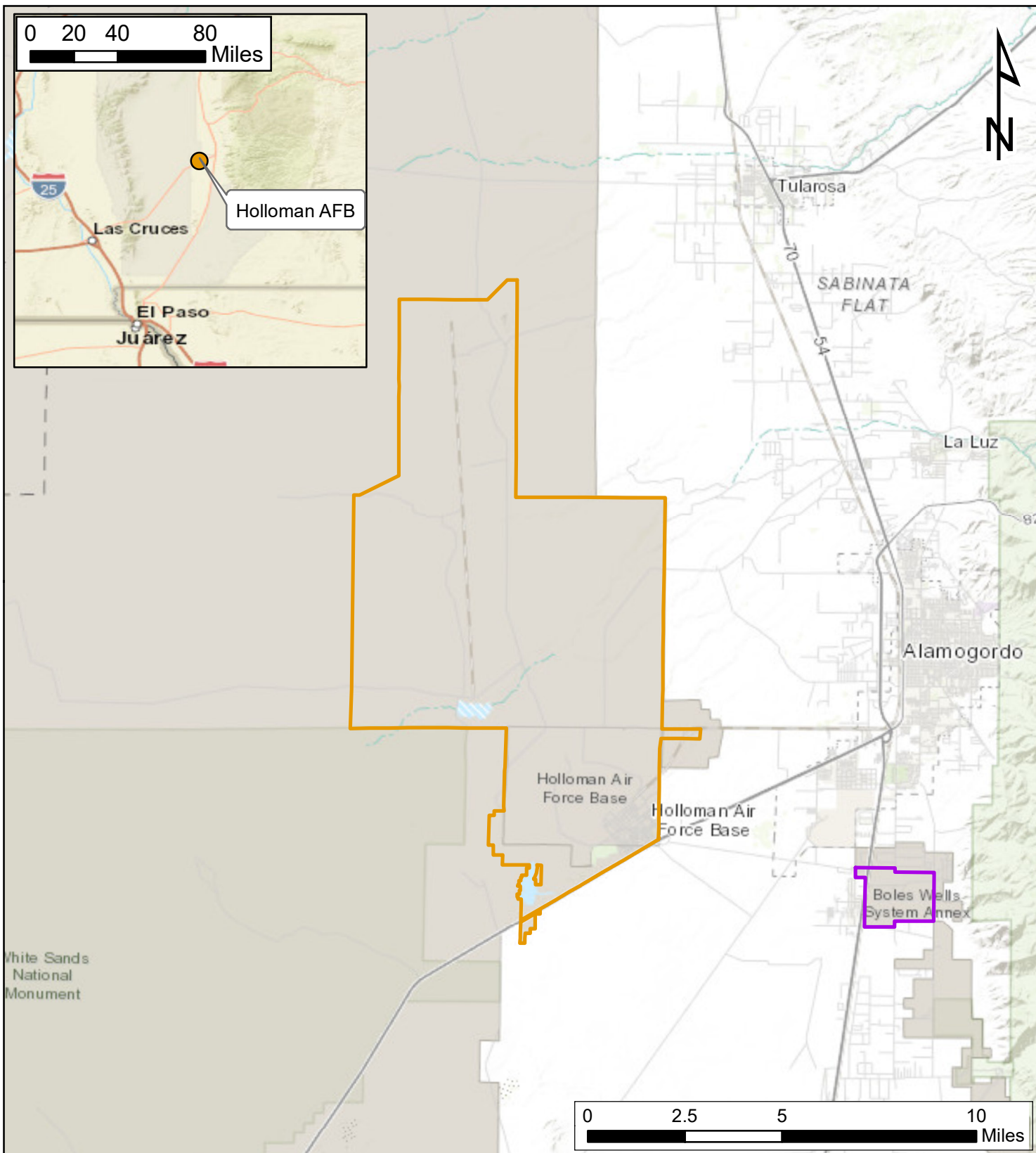
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RYAN P. KEENEY, Colonel, USAF  
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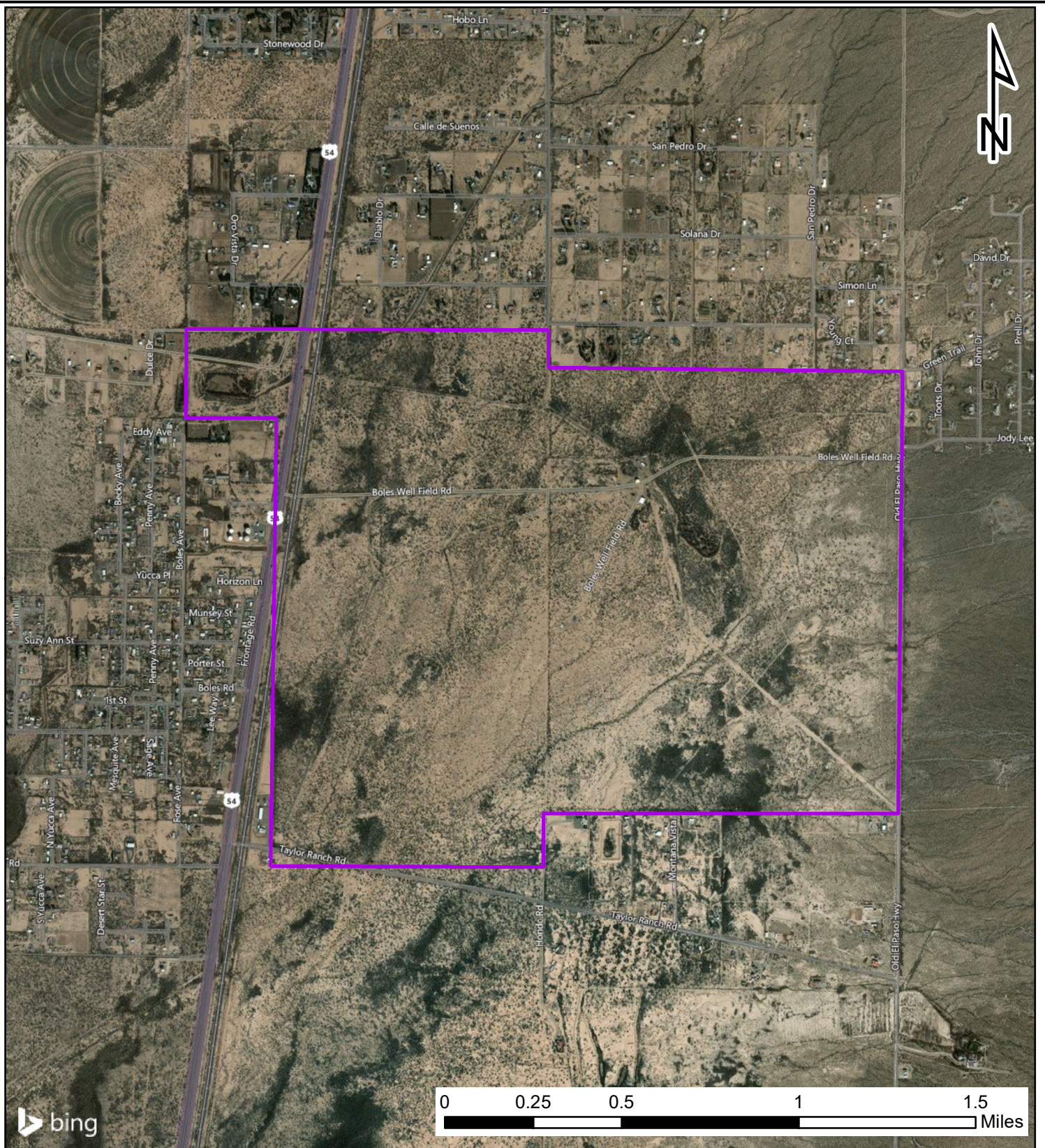
HAFB Renewable Energy - Draft EA



FIGURE

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## Legend

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Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

The Hopi Tribe  
Attn: Stewart Koyiyumtewa  
P.O. Box 123  
Kykotsmovi, AZ 86039

Dear Mr. Koyiyumtewa:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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NEPA requires the USAF to analyze the potential environmental impacts of this proposed project on the installation and local community. The Draft EA includes brief discussions of the proposed action, alternatives, the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted during the process. The EA also examines a No Action Alternative and provides evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).



In order to comply with government-to-government consultation requirements of NEPA and the National Historic Preservation Act (NHPA), we request your input on the proposed project to identify general or specific issues, areas of concern, traditional cultural properties, or historic properties that should be addressed in the EA. With regards to Executive Order 13007 and the American Indian Religious Freedom Act, we would appreciate notification of any impact to Native American sacred sites that may result from the proposed action. Please submit written comments to Mr. Spencer Robison at 550 Tabosa Ave, Holloman AFB NM 88330-8458 within 30 days from the date of receiving this letter to ensure the USAF has sufficient time to consider your input in the preparation of the EA. If you would like to submit comments or questions by telephone, you may contact Mr. Robison by telephone at (703) 909-8247.

Thank you for your assistance in this effort.

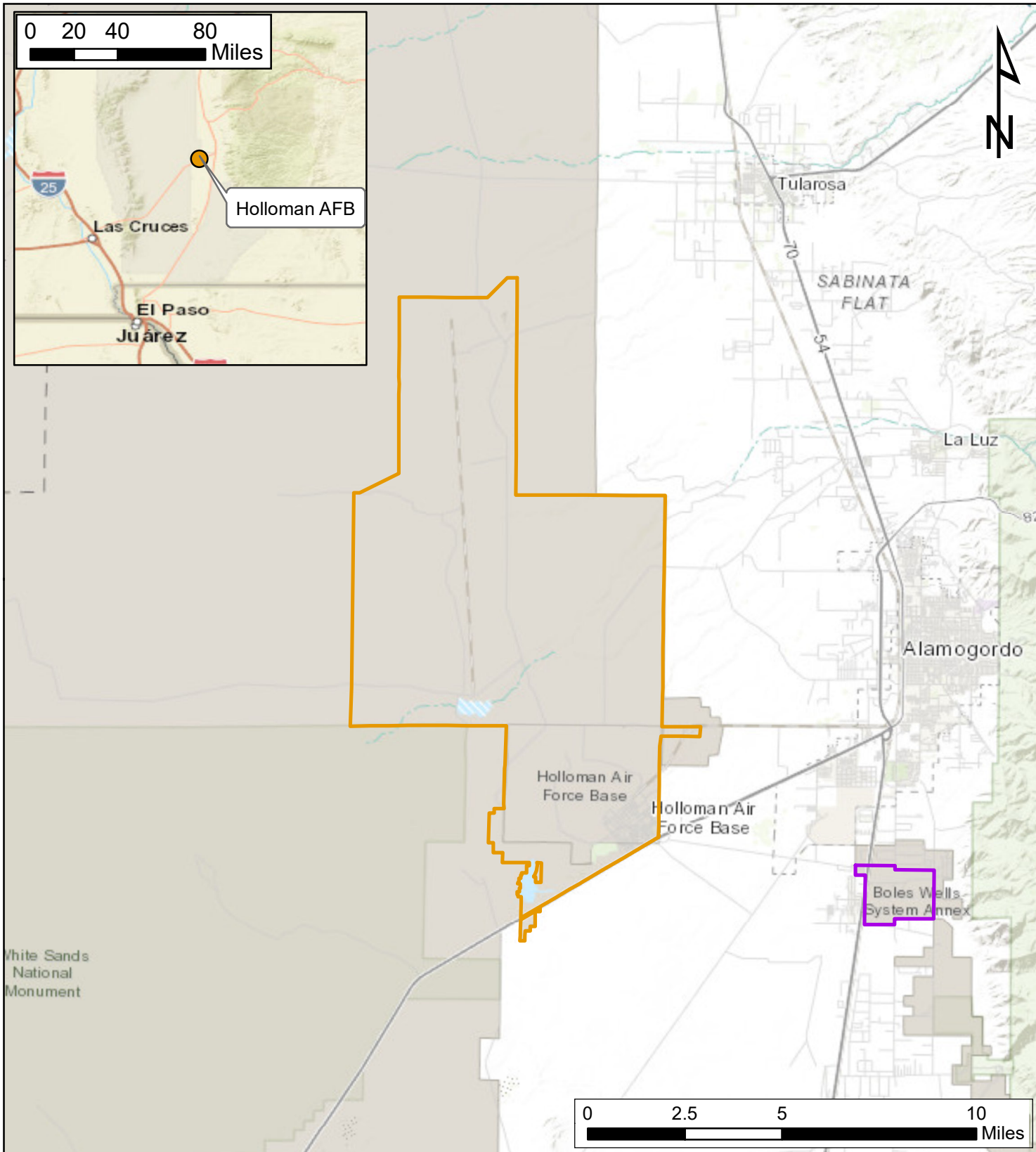
Sincerely



RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

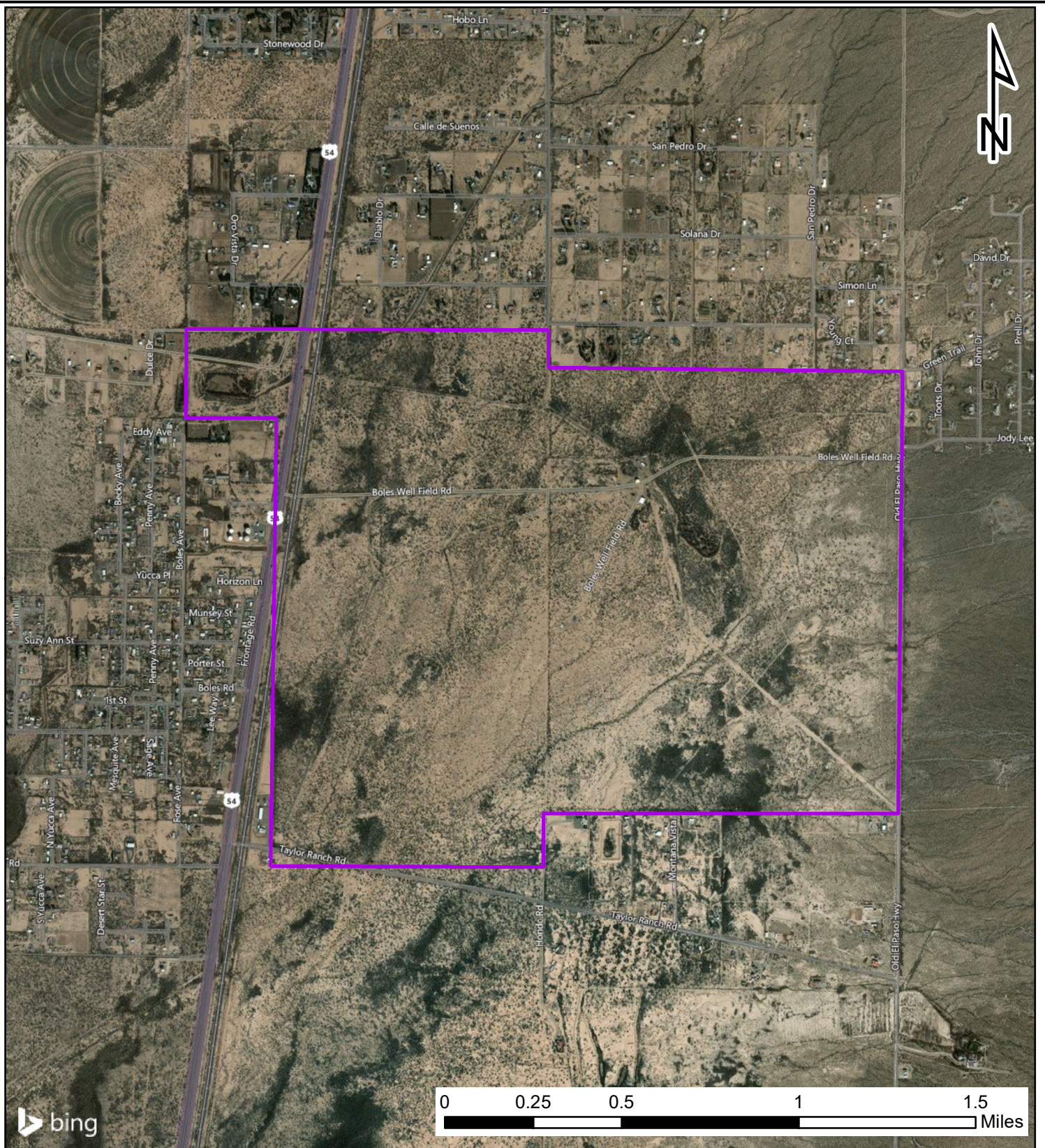
HAFB Renewable Energy - Draft EA



FIGURE

1





## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

**STUDY AREA MAP**  
HAFB Renewable Energy - Draft EA



FIGURE

2





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 49TH WING (AETC)  
HOLLOMAN AIR FORCE BASE NEW MEXICO

June 5, 2020

Colonel Ryan P. Keeney  
Commander, 49th Wing  
490 First Street, Suite 1700  
Holloman AFB NM 88330-8277

Ysleta del Sur Pueblo  
Attn: Michael Silvas  
P.O. Box 17579  
Ysleta del Sur Pueblo, TX 79907

Dear Mr. Silvas:

The United States Air Force (USAF) has prepared a Draft Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) to assess the potential environmental impacts associated with renewable energy development at Holloman Air Force Base (HAFB). The Draft EA is available on the Holloman Public Website at: <https://www.holloman.af.mil/Environmental-Information/>. The study area consists of approximately 1,591 acres south of Alamogordo, New Mexico (**Figure 1**) and HAFB currently leverages the land for the purposes of producing potable water from a system of wells located on the property. HAFB would like to explore further use of this property to offset energy consumption associated with the wells and to provide increased energy resiliency through the installation of renewable energy infrastructure.

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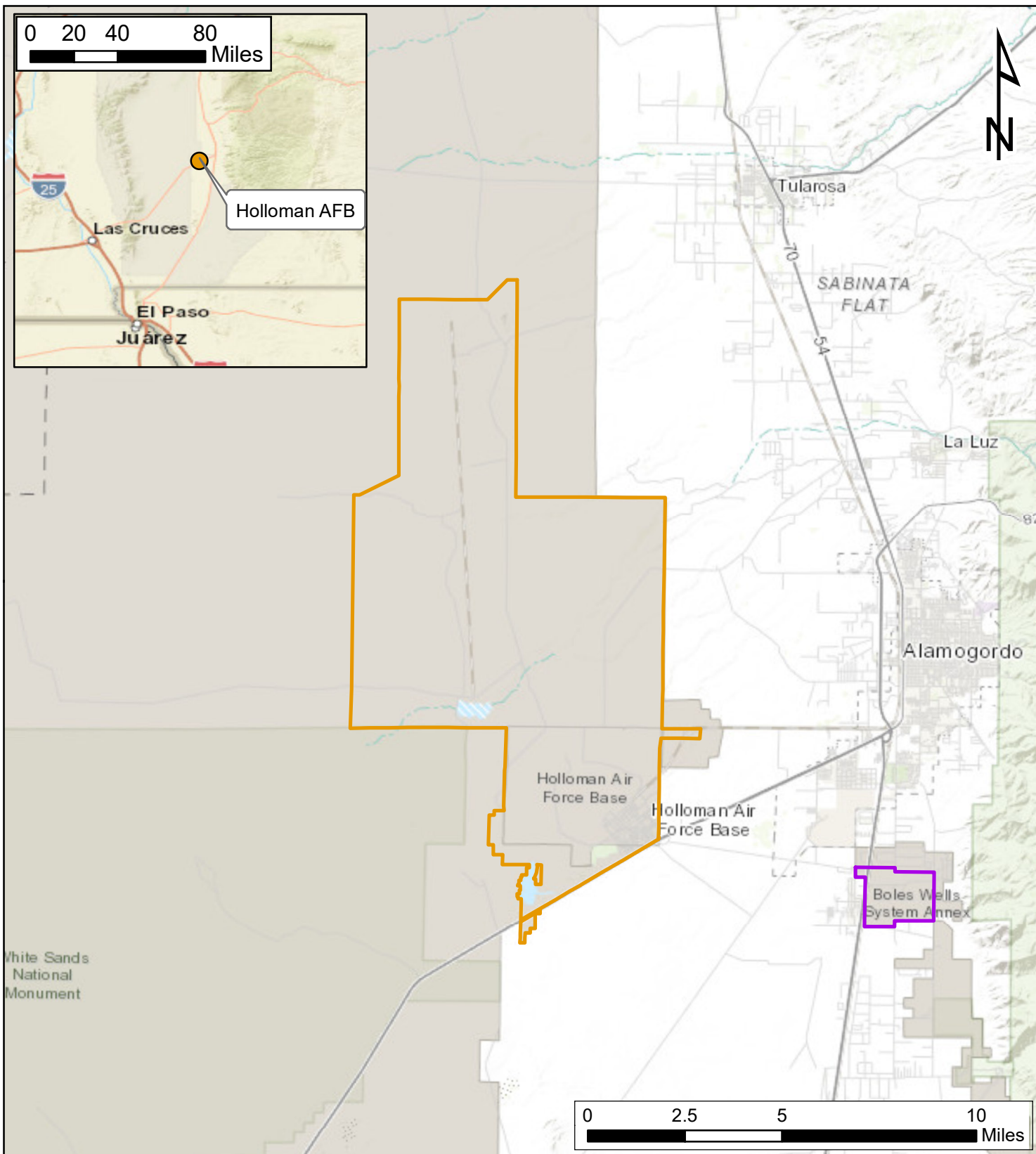
Sincerely

A handwritten signature in black ink, appearing to read 'Ryan P. Keeney', is written over the typed name.

RYAN P. KEENEY, Colonel, USAF  
Commander

2 Attachments:

1. Vicinity Map
2. Proposed Action Map



## Legend

- Holloman AFB
- Study Area

Holloman Air Force Base  
Otero County, New Mexico

## Vicinity Map

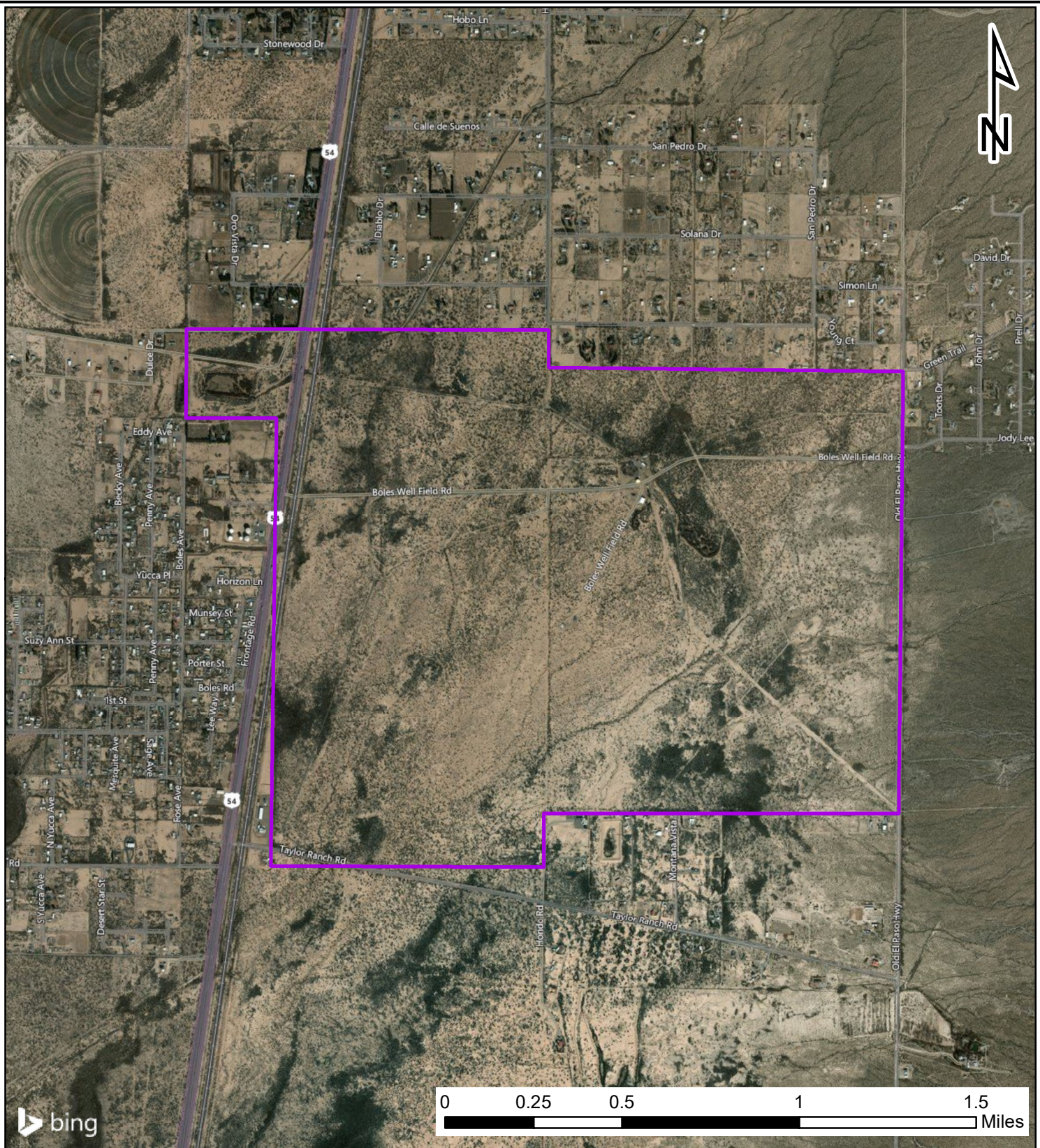
HAFB Renewable Energy - Draft EA



FIGURE


1





PROJECT: PATH: G:\PROJECTS\ ENV\Perikin Enterprises\GIS\HAFB 8.5x11 Figure2 StudyAreaMap.mxd

## Legend

 Study Area

Holloman Air Force Base  
Otero County, New Mexico

## STUDY AREA MAP

HAFB Renewable Energy - Draft EA



FIGURE

# 2



# APPENDIX C

## THREATENED, ENDANGERED, AND SENSITIVE SPECIES





## United States Department of the Interior



FISH AND WILDLIFE SERVICE  
New Mexico Ecological Services Field Office  
2105 Osuna Road Ne

Albuquerque, NM 87113-1001

Phone: (505) 346-2525 Fax: (505) 346-2542

<http://www.fws.gov/southwest/es/NewMexico/>

[http://www.fws.gov/southwest/es/ES\\_Lists\\_Main2.html](http://www.fws.gov/southwest/es/ES_Lists_Main2.html)

In Reply Refer To:

October 21, 2019

Consultation Code: 02ENNM00-2020-SLI-0076

Event Code: 02ENNM00-2020-E-00164

Project Name: Holloman Airforce Base EA

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

Thank you for your recent request for information on federally listed species and important wildlife habitats that may occur in your project area. The U.S. Fish and Wildlife Service (Service) has responsibility for certain species of New Mexico wildlife under the Endangered Species Act (ESA) of 1973 as amended (16 USC 1531 et seq.), the Migratory Bird Treaty Act (MBTA) as amended (16 USC 701-715), and the Bald and Golden Eagle Protection Act (BGEPA) as amended (16 USC 668-668c). We are providing the following guidance to assist you in determining which federally imperiled species may or may not occur within your project area and to recommend some conservation measures that can be included in your project design.

### **FEDERALLY-LISTED SPECIES AND DESIGNATED CRITICAL HABITAT**

Attached is a list of endangered, threatened, and proposed species that may occur in your project area. Your project area may not necessarily include all or any of these species. Under the ESA, it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with the Service further. Similarly, it is the responsibility of the Federal action agency or project proponent, not the Service, to make "no effect" determinations. If you determine that your proposed action will have "no effect" on threatened or endangered species or their respective critical habitat, you do not need to seek concurrence with the Service. Nevertheless, it is a violation of Federal law to harm or harass any federally-listed threatened or endangered fish or wildlife species without the appropriate permit.

If you determine that your proposed action may affect federally-listed species, consultation with the Service will be necessary. Through the consultation process, we will analyze information contained in a biological assessment that you provide. If your proposed action is associated with Federal funding or permitting, consultation will occur with the Federal agency under section 7(a)(2) of the ESA. Otherwise, an incidental take permit pursuant to section 10(a)(1)(B) of the ESA (also known as a habitat conservation plan) is necessary to harm or harass federally listed threatened or endangered fish or wildlife species. In either case, there is no mechanism for authorizing incidental take "after-the-fact." For more information regarding formal consultation and HCPs, please see the Service's Consultation Handbook and Habitat Conservation Plans at [www.fws.gov/endangered/esa-library/index.html#consultations](http://www.fws.gov/endangered/esa-library/index.html#consultations).

The scope of federally listed species compliance not only includes direct effects, but also any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects that may occur in the action area. The action area includes all areas to be affected, not merely the immediate area involved in the action. Large projects may have effects outside the immediate area to species not listed here that should be addressed. If your action area has suitable habitat for any of the attached species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts.

### **Candidate Species and Other Sensitive Species**

A list of candidate and other sensitive species in your area is also attached. Candidate species and other sensitive species are species that have no legal protection under the ESA, although we recommend that candidate and other sensitive species be included in your surveys and considered for planning purposes. The Service monitors the status of these species. If significant declines occur, these species could potentially be listed. Therefore, actions that may contribute to their decline should be avoided.

Lists of sensitive species including State-listed endangered and threatened species are compiled by New Mexico state agencies. These lists, along with species information, can be found at the following websites:

Biota Information System of New Mexico (BISON-M): [www.bison-m.org](http://www.bison-m.org)

New Mexico State Forestry. The New Mexico Endangered Plant Program:  
[www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html](http://www.emnrd.state.nm.us/SFD/ForestMgt/Endangered.html)

New Mexico Rare Plant Technical Council, New Mexico Rare Plants: [nmrareplants.unm.edu](http://nmrareplants.unm.edu)

Natural Heritage New Mexico, online species database: [nhnm.unm.edu](http://nhnm.unm.edu)

### **WETLANDS AND FLOODPLAINS**

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Under Executive Orders 11988 and 11990, Federal agencies are required to minimize the destruction, loss, or degradation of wetlands and floodplains, and preserve and enhance their natural and beneficial values. These habitats should be conserved through avoidance, or mitigated to ensure that there would be no net loss of wetlands function and value.

We encourage you to use the National Wetland Inventory (NWI) maps in conjunction with ground-truthing to identify wetlands occurring in your project area. The Service's NWI program website, [www.fws.gov/wetlands/Data/Mapper.html](http://www.fws.gov/wetlands/Data/Mapper.html) integrates digital map data with other resource information. We also recommend you contact the U.S. Army Corps of Engineers for permitting requirements under section 404 of the Clean Water Act if your proposed action could impact floodplains or wetlands.

## **MIGRATORY BIRDS**

The MBTA prohibits the taking of migratory birds, nests, and eggs, except as permitted by the Service's Migratory Bird Office. To minimize the likelihood of adverse impacts to migratory birds, we recommend construction activities occur outside the general bird nesting season from March through August, or that areas proposed for construction during the nesting season be surveyed, and when occupied, avoided until the young have fledged.

We recommend review of Birds of Conservation Concern at website [www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html](http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BCC.html) to fully evaluate the effects to the birds at your site. This list identifies birds that are potentially threatened by disturbance and construction.

## **BALD AND GOLDEN EAGLES**

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the ESA on August 9, 2007. Both the bald eagle and golden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For information on bald and golden eagle management guidelines, we recommend you review information provided at [www.fws.gov/midwest/eagle/guidelines/bgepa.html](http://www.fws.gov/midwest/eagle/guidelines/bgepa.html).

On our web site [www.fws.gov/southwest/es/NewMexico/SBC\\_intro.cfm](http://www.fws.gov/southwest/es/NewMexico/SBC_intro.cfm), we have included conservation measures that can minimize impacts to federally listed and other sensitive species. These include measures for communication towers, power line safety for raptors, road and highway improvements, spring developments and livestock watering facilities, wastewater facilities, and trenching operations.

We also suggest you contact the New Mexico Department of Game and Fish, and the New Mexico Energy, Minerals, and Natural Resources Department, Forestry Division for information regarding State fish, wildlife, and plants.

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Thank you for your concern for endangered and threatened species and New Mexico's wildlife habitats. We appreciate your efforts to identify and avoid impacts to listed and sensitive species in your project area. For further consultation on your proposed activity, please call 505-346-2525 or email [nmesfo@fws.gov](mailto:nmesfo@fws.gov) and reference your Service Consultation Tracking Number.

Attachment(s):

- Official Species List
- Migratory Birds



## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**New Mexico Ecological Services Field Office**

2105 Osuna Road Ne

Albuquerque, NM 87113-1001

(505) 346-2525

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## Project Summary

Consultation Code: 02ENNM00-2020-SLI-0076

Event Code: 02ENNM00-2020-E-00164

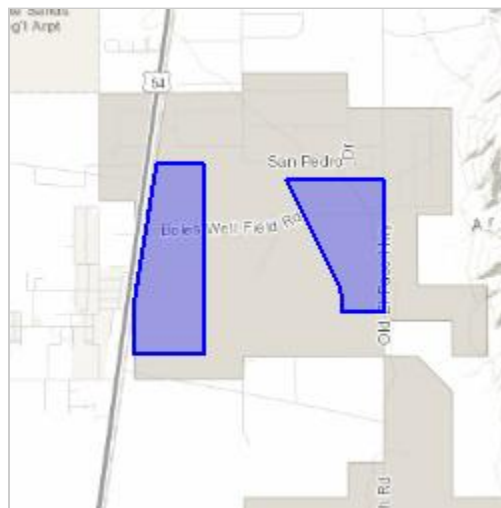
Project Name: Holloman Airforce Base EA

Project Type: POWER GENERATION

**Project Description:** HAFB seeks to explore further use of the subject property to offset energy consumption associated with the operation of existing potable water wells and provide increased energy resiliency through the installation of renewable energy infrastructure. At present, HAFB has only one source of electrical power, which makes it vulnerable to power outages, high energy demands, and high energy costs. Further, the Department of Defense (DOD) is obligated to make the best use of available resources, financial and otherwise. Thus, HAFB proposes to improve energy resiliency while reducing energy costs and better using available land resources.

### Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/32.81412251426039N105.94953175352606W>



Counties: Otero, NM

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## Endangered Species Act Species

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

- 
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
New Mexico Meadow Jumping Mouse <i>Zapus hudsonius luteus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/7965">https://ecos.fws.gov/ecp/species/7965</a>	Endangered
Penasco Least Chipmunk <i>Tamias minimus atristriatus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5126">https://ecos.fws.gov/ecp/species/5126</a>	Candidate

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## Birds

NAME	STATUS
Least Tern <i>Sterna antillarum</i> Population: interior pop. No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8505">https://ecos.fws.gov/ecp/species/8505</a>	Endangered
Mexican Spotted Owl <i>Strix occidentalis lucida</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/8196">https://ecos.fws.gov/ecp/species/8196</a>	Threatened
Northern Aplomado Falcon <i>Falco femoralis septentrionalis</i> Population: U.S.A (AZ, NM) No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1923">https://ecos.fws.gov/ecp/species/1923</a>	Experimental Population, Non- Essential
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is <b>proposed</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3911">https://ecos.fws.gov/ecp/species/3911</a>	Threatened

## Flowering Plants

NAME	STATUS
Kuenzler Hedgehog Cactus <i>Echinocereus fendleri</i> var. <i>kuenzleri</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/2859">https://ecos.fws.gov/ecp/species/2859</a>	Threatened
Sacramento Mountains Thistle <i>Cirsium vinaceum</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/7486">https://ecos.fws.gov/ecp/species/7486</a>	Threatened
Sacramento Prickly Poppy <i>Argemone pleiacantha</i> ssp. <i>pinnatisecta</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/3332">https://ecos.fws.gov/ecp/species/3332</a>	Endangered
Todsens Pennyroyal <i>Hedeoma todsenii</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/1081">https://ecos.fws.gov/ecp/species/1081</a>	Endangered
Wright's Marsh Thistle <i>Cirsium wrightii</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/8963">https://ecos.fws.gov/ecp/species/8963</a>	Candidate

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

- 
1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Black Throated Sparrow <i>Amphispiza bilineata</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Mar 15 to Sep 5

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the

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FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### **Probability of Presence (■)**

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### **Breeding Season (■)**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### **Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

### **No Data (—)**

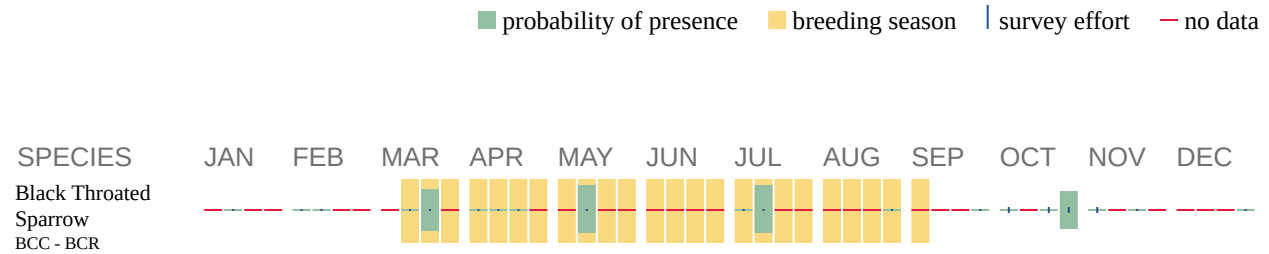
A week is marked as having no data if there were no survey events for that week.

### **Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

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For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

### **Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

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## Species of Greatest Conservation Need and Federal or State Threatened/Endangered Otero

<u>Taxonomic Group</u>	<u># Species</u>	<u>Taxonomic Group</u>	<u># Species</u>
Amphibians	1	Birds	16
Fish	1	Mammals	3
Reptiles	2		

**TOTAL SPECIES: 23**

<u>Common Name</u>	<u>Scientific Name</u>	<u>NMGF</u>	<u>USFWS</u>	<u>Critical Habitat</u>	<u>SGCN</u>	<u>Photo</u>
<a href="#">Spotted Bat</a>	Euderma maculatum	T			Y	<a href="#">View</a>
<a href="#">Meadow Jumping Mouse</a>	Zapus luteus luteus	E	E	Y	Y	<a href="#">View</a>
<a href="#">Penasco Least Chipmunk</a>	Neotamias minimus atristriatus	E	C		Y	<a href="#">View</a>
<a href="#">Common Ground-dove</a>	Columbina passerina	E			Y	<a href="#">View</a>
<a href="#">Broad-billed Hummingbird</a>	Cynanthus latirostris	T			Y	<a href="#">View</a>
<a href="#">Least Tern</a>	Sternula antillarum	E	E		Y	<a href="#">View</a>
<a href="#">Neotropic Cormorant</a>	Phalacrocorax brasilianus	T			Y	<a href="#">View</a>
<a href="#">Bald Eagle</a>	Haliaeetus leucocephalus	T			Y	<a href="#">View</a>
<a href="#">Common Black Hawk</a>	Buteogallus anthracinus	T			Y	<a href="#">View</a>
<a href="#">Mexican Spotted Owl</a>	Strix occidentalis lucida		T	Y	Y	<a href="#">View</a>
<a href="#">Elegant Trogon</a>	Trogon elegans	E			Y	<a href="#">View</a>
<a href="#">Aplomado Falcon</a>	Falco femoralis	E	E		Y	<a href="#">View</a>
<a href="#">Peregrine Falcon</a>	Falco peregrinus	T			Y	<a href="#">View</a>
<a href="#">Southwestern Willow Flycatcher</a>	Empidonax traillii extimus	E	E	Y	Y	<a href="#">View</a>
<a href="#">Bell's Vireo</a>	Vireo bellii	T			Y	<a href="#">View</a>
<a href="#">Gray Vireo</a>	Vireo vicinior	T			Y	<a href="#">View</a>
<a href="#">Baird's Sparrow</a>	Centronyx bairdii	T			Y	<a href="#">View</a>
<a href="#">Yellow-eyed Junco</a>	Junco phaeonotus	T			Y	<a href="#">View</a>
<a href="#">Varied Bunting</a>	Passerina versicolor	T			Y	<a href="#">View</a>
<a href="#">Gray-banded Kingsnake</a>	Lampropeltis alterna	E			Y	<a href="#">View</a>
<a href="#">Mottled Rock Rattlesnake</a>	Crotalus lepidus lepidus	T			Y	<a href="#">View</a>
<a href="#">Sacramento Mountain Salamander</a>	Aneides hardii	T			Y	<a href="#">View</a>
<a href="#">White Sands Pupfish</a>	Cyprinodon tularosa	T			Y	No Photo




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## Report County TES Table for Otero

### NEW MEXICO WILDLIFE OF CONCERN

For complete up-dated information on federal-listed species, including plants, see the US Fish & Wildlife Service website at <http://ecos.fws.gov/ipac/wizard/chooseLocation!prepare.action>. For information on state-listed plants, contact the NM Energy, Minerals and Natural Resources Department, Division of Forestry, or go to <http://nmrareplants.unm.edu/>. If your project is on Bureau of Land Management, contact the local BLM Field Office for information on species of particular concern. If your project is on a National Forest, contact the Forest Supervisor's office for species information. E = Endangered; T = Threatened; s = sensitive; SOC = Species of Concern; C = Candidate; Exp = Experimental non-essential population; P = Proposed

#### Export to Excel

Common Name	Scientific Name	NMGF	US FWS	Critical Habitat
<a href="#">Spotted Bat</a>	<i>Euderma maculatum</i>	T		
<a href="#">Penasco Least Chipmunk</a>	<i>Neotamias minimus atristriatus</i>	E	C	
<a href="#">Meadow Jumping Mouse</a>	<i>Zapus luteus luteus</i>	E	E	Y
<a href="#">Brown Pelican</a>	<i>Pelecanus occidentalis</i>	E		
<a href="#">Common Black Hawk</a>	<i>Buteogallus anthracinus</i>	T		
<a href="#">Bald Eagle</a>	<i>Haliaeetus leucocephalus</i>	T		
<a href="#">Aplomado Falcon</a>	<i>Falco femoralis</i>	E	E	
<a href="#">Peregrine Falcon</a>	<i>Falco peregrinus</i>	T		
<a href="#">Arctic Peregrine Falcon</a>	<i>Falco peregrinus tundrius</i>	T		
<a href="#">Least Tern</a>	<i>Sternula antillarum</i>	E	E	
<a href="#">Neotropic Cormorant</a>	<i>Phalacrocorax brasilianus</i>	T		
<a href="#">Common Ground-dove</a>	<i>Columbina passerina</i>	E		
<a href="#">Mexican Spotted Owl</a>	<i>Strix occidentalis lucida</i>		T	Y
<a href="#">Broad-billed Hummingbird</a>	<i>Cynanthus latirostris</i>	T		
<a href="#">White-eared Hummingbird</a>	<i>Hylocharis leucotis</i>	T		
<a href="#">Elegant Trogon</a>	<i>Trogon elegans</i>	E		
<a href="#">Southwestern Willow Flycatcher</a>	<i>Empidonax traillii extimus</i>	E	E	Y
<a href="#">Bell's Vireo</a>	<i>Vireo bellii</i>	T		
<a href="#">Gray Vireo</a>	<i>Vireo vicinior</i>	T		
<a href="#">Sprague's Pipit</a>	<i>Anthus spragueii</i>		C	
<a href="#">Yellow-eyed Junco</a>	<i>Junco phaeonotus</i>	T		
<a href="#">Baird's Sparrow</a>	<i>Ammodramus bairdii</i>	T		
<a href="#">Varied Bunting</a>	<i>Passerina versicolor</i>	T		
<a href="#">Gray-banded Kingsnake</a>	<i>Lampropeltis alterna</i>	E		
<a href="#">Mottled Rock Rattlesnake</a>	<i>Crotalus lepidus lepidus</i>	T		
<a href="#">Sacramento Mountain Salamander</a>	<i>Aneides hardii</i>	T		
<a href="#">White Sands Pupfish</a>	<i>Cyprinodon tularosa</i>	T		

[Close Window](#)



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## PROJECT INFORMATION

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**Project Title:** Holloman Airforce Base EA  
**Project Type:** ENERGY DEVELOPMENT, SOLAR  
**Latitude/Longitude (DMS):** 32.811876 / -105.971510  
**County(s):** OTERO  
**Project Description:** HAFB seeks to explore further use of the subject property to offset energy consumption associated with the operation of existing potable water wells and provide increased energy resiliency through the installation of renewable energy infrastructure. At present, HAFB has only one source of electrical power, which makes it vulnerable to power outages, high energy demands, and high energy costs. Further, the Department of Defense (DOD) is obligated to make the best use of available resources, financial and otherwise. Thus, HAFB proposes to improve energy resiliency while reducing energy costs and better using available land resources.

## REQUESTOR INFORMATION

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**Project Organization:** US ARMY CORP OF ENGINEERS  
**Contact Name:** Elizabeth Hingle  
**Email Address:** elizabeth.hingle@arcadis.com  
**Organization:** Arcadis  
**Address:** 1717 W. 6th Street, Suite 210, Austin TX 78703  
**Phone:** 5046503930

## OVERALL STATUS

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This report contains an initial list of recommendations regarding potential impacts to wildlife or wildlife habitats from the proposed project. Your project proposal is being forwarded to a New Mexico Department of Game and Fish (Department) biologist for review to determine whether there are any additional recommendations regarding the proposed actions. You should be notified within 30 days whether there are further recommendations regarding this project proposal.





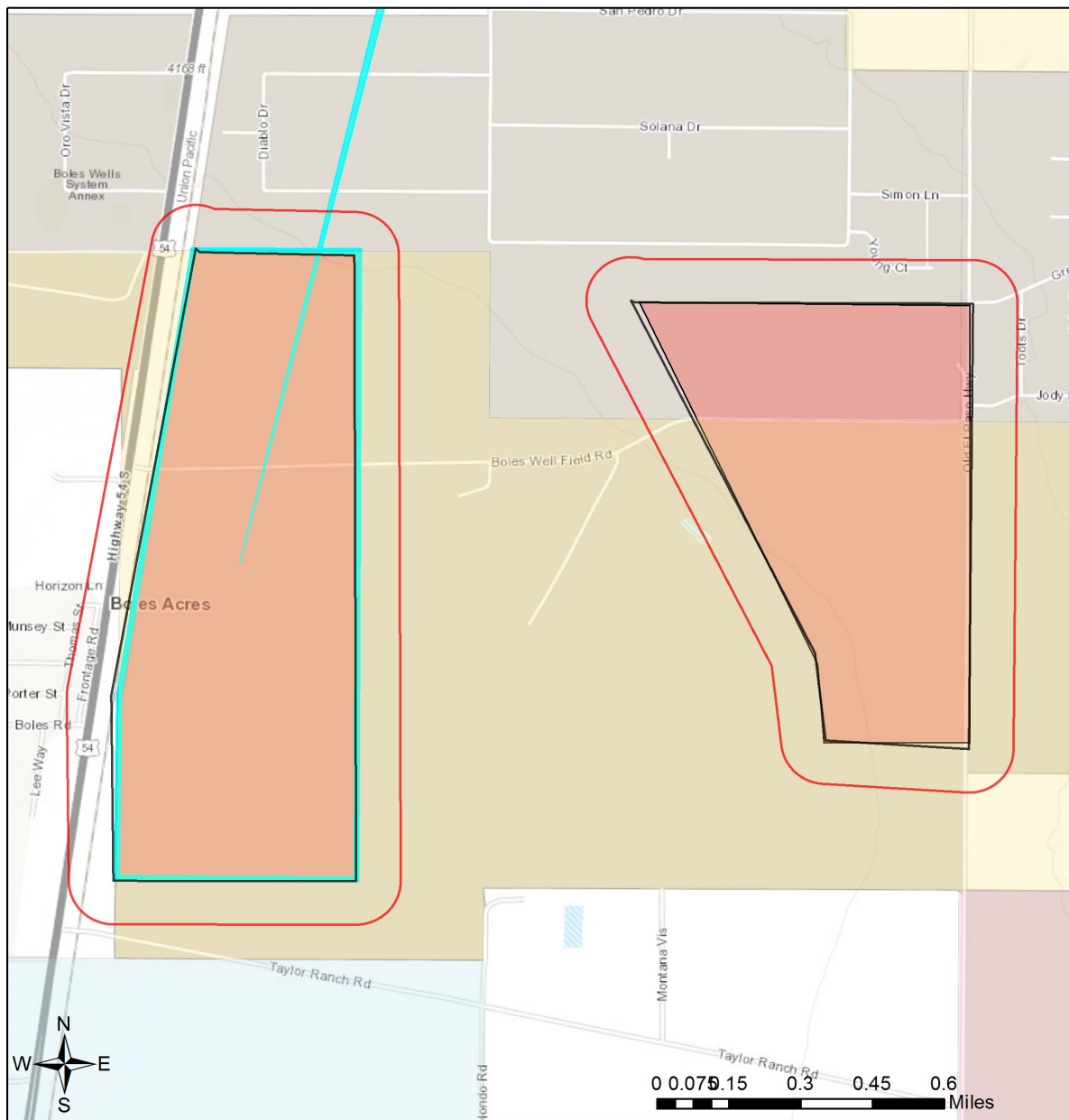
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**About this report:**

- This environmental review is based on the project description and location that was entered. The report must be updated if the project type, area, or operational components are modified.
- This is a preliminary environmental screening assessment and report. It is not a substitute for the potential wildlife knowledge gained by having a biologist conduct a field survey of the project area. Federal status and plant data are provided as a courtesy to users. The review is also not intended to replace consultation required under the federal Endangered Species Act (ESA), including impact analyses for federal resources from the U.S. Fish and Wildlife Service (USFWS) using their [Information for Planning and Consultation tool](#).
- The New Mexico Environmental Review Tool (ERT) utilizes species observation locations and species distribution models, both of which are subject to ongoing change and refinement. Inclusion or omission of a species within a report can not guarantee species presence or absence at a precise point location, as might be indicated through comprehensive biological surveys. Specific questions regarding the potential for adverse impacts to vulnerable wildlife populations or habitats, especially in areas with a limited history of biological surveys, may require further on-site assessments.
- The Department encourages use of the ERT to modify proposed projects for avoidance, minimization, or mitigation of wildlife impacts. However, the ERT is not intended to be used in a repeatedly iterative fashion to adjust project attributes until a previously determined recommendation is generated. The ERT serves to assess impacts once project details are developed. The [New Mexico Crucial Habitat Assessment Tool](#) is the appropriate system for advising early-stage project planning and design to avoid areas of anticipated wildlife concerns and associated regulatory requirements.



## Holloman Airforce Base EA



Project Boundary	Military	Private
Buffered Project Boundary	Dept. of Energy	State Land Office
<b>NM_SurfaceOwnership_2016</b>		
Bureau of Land Management	US Forest Service	NM Game & Fish Dept.
Bureau of Reclamation	Wildlife Area/Refuge	State Park
US Dept. of Agriculture	Tribal	
	National Park/Mon.	

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





### Special Status Animal Species within 150 Meters of Project Area

Common Name	Scientific Name	USFWS (ESA)	NMDGF (WCA)	NMDGF SGCN/SERI
<a href="#">Common Black-Hawk</a>	<a href="#">Buteogallus anthracinus</a>		T	SGCN
<a href="#">Aplomado Falcon</a>	<a href="#">Falco femoralis</a>		E	SGCN
<a href="#">Peregrine Falcon</a>	<a href="#">Falco peregrinus</a>		T	SGCN
<a href="#">Lewis's Woodpecker</a>	<a href="#">Melanerpes lewis</a>			SGCN
<a href="#">Williamson's Sapsucker</a>	<a href="#">Sphyrapicus thyroideus</a>			SGCN
<a href="#">Pinyon Jay</a>	<a href="#">Gymnorhinus cyanocephalus</a>			SGCN
<a href="#">Clark's Nutcracker</a>	<a href="#">Nucifraga columbiana</a>			SGCN
<a href="#">Juniper Titmouse</a>	<a href="#">Baeolophus ridgwayi</a>			SGCN
<a href="#">Pygmy Nuthatch</a>	<a href="#">Sitta pygmaea</a>			SGCN
<a href="#">Western Bluebird</a>	<a href="#">Sialia mexicana</a>			SGCN
<a href="#">Bendire's Thrasher</a>	<a href="#">Toxostoma bendirei</a>			SGCN
<a href="#">Sprague's Pipit</a>	<a href="#">Anthus spragueii</a>			SGCN
<a href="#">Loggerhead Shrike</a>	<a href="#">Lanius ludovicianus</a>			SGCN
<a href="#">Bell's Vireo</a>	<a href="#">Vireo bellii</a>		T	SGCN
<a href="#">Gray Vireo</a>	<a href="#">Vireo vicinior</a>		T	SGCN
<a href="#">Spotted Bat</a>	<a href="#">Euderma maculatum</a>		T	SGCN
<a href="#">Black-Tailed Prairie Dog</a>	<a href="#">Cynomys ludovicianus</a>			SGCN
<a href="#">Mule Deer</a>	<a href="#">Odocoileus hemionus</a>			SERI

ESA = Endangered Species Act, WCA = Wildlife Conservation Act, SGCN = Species of Greatest Conservation Need, SERI = Species of Economic and Recreational Importance

### Project Recommendations

Your proposed project activities may require a custom review for assessment of potential effects to wildlife. If the information provided under the "OVERALL STATUS" section above indicates that your project will be forwarded for review, a Department biologist will confirm whether any additional conservation measures are needed. You should expect to receive any additional project recommendations within 30 days of your project submission. If the "OVERALL STATUS" section indicates that no further consultation with the Department is required, you should not expect to receive additional project feedback from the Department, and you may proceed with project planning as indicated.

Burrowing owl is known to occur within or near your project area. Before any ground disturbing activities occur, the Department recommends that a preliminary survey be conducted between April and September, using the Department's [burrowing owl survey protocol](#). Should burrowing owls be documented in the project area, please contact the Department or USFWS for further recommendations regarding relocation or avoidance of impacts.



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**Disclaimers regarding recommendations:**

- The Department provides technical guidance to support the persistence of all protected species of native fish and wildlife, including game and nongame wildlife species. Species listed within this report include those that have been documented to occur within the project area, and others that may not have been documented but are projected to occur within the project vicinity.
- Recommendations are provided by the Department under the authority of § 17-1-5.1 New Mexico Statutes Annotated 1978, to provide "communication and consultation with federal and other state agencies, local governments and communities, private organizations and affected interests responsible for habitat, wilderness, recreation, water quality and environmental protection to ensure comprehensive conservation services for hunters, anglers and nonconsumptive wildlife users".
- The Department has no authority for management of plants or Important Plant Areas. The [New Mexico Endangered Plant Program](#), under the Energy, Minerals, and Natural Resources Department's Forestry Division, identifies and develops conservation measures necessary to ensure the survival of plant species within New Mexico. Plant status information is provided within this report as a courtesy to users. Recommendations provided within the ERT may not be sufficient to preclude impacts to rare or sensitive plants, unless conservation measures are identified in coordination with the Endangered Plant Program.
- Additional coordination may also be necessary under the federal ESA or National Environmental Policy Act (NEPA). Further site-specific recommendations may be proposed during ESA and/or NEPA analyses, or through coordination with affected federal agencies.



## APPENDIX D

### U.S. ENVIRONMENTAL PROTECTION AGENCY – ONLINE ENVIRONMENTAL JUSTICE SCREEN AND MAPPING TOOL REPORT

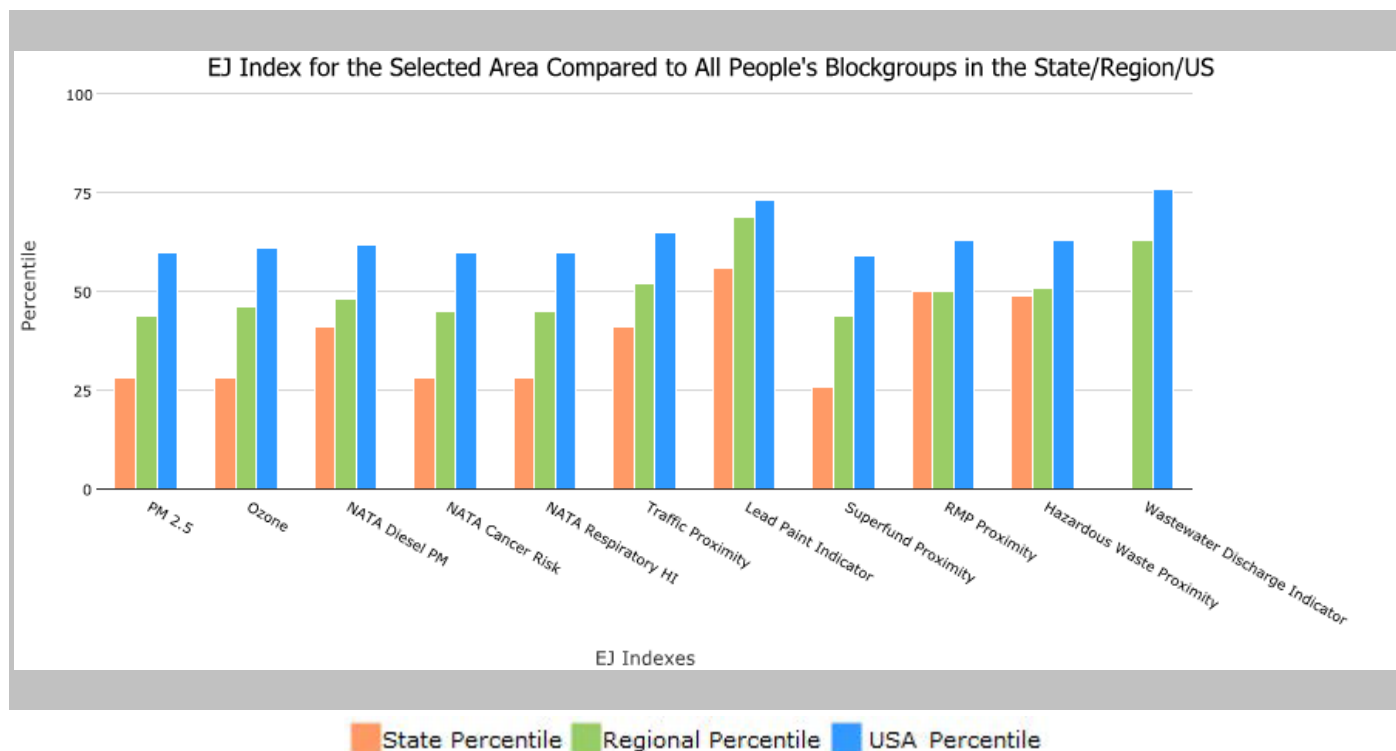
15 mile Ring Centered at 32.811883,-105.961349, NEW MEXICO, EPA Region 6

Approximate Population: 45,271

Input Area (sq. miles): 706.66

Study Area Centerpoint 932.811883, -105.961349)

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	28	44	60
EJ Index for Ozone	28	46	61
EJ Index for NATA* Diesel PM	41	48	62
EJ Index for NATA* Air Toxics Cancer Risk	28	45	60
EJ Index for NATA* Respiratory Hazard Index	28	45	60
EJ Index for Traffic Proximity and Volume	41	52	65
EJ Index for Lead Paint Indicator	56	69	73
EJ Index for Superfund Proximity	26	44	59
EJ Index for RMP Proximity	50	50	63
EJ Index for Hazardous Waste Proximity	49	51	63
EJ Index for Wastewater Discharge Indicator	N/A	63	76



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

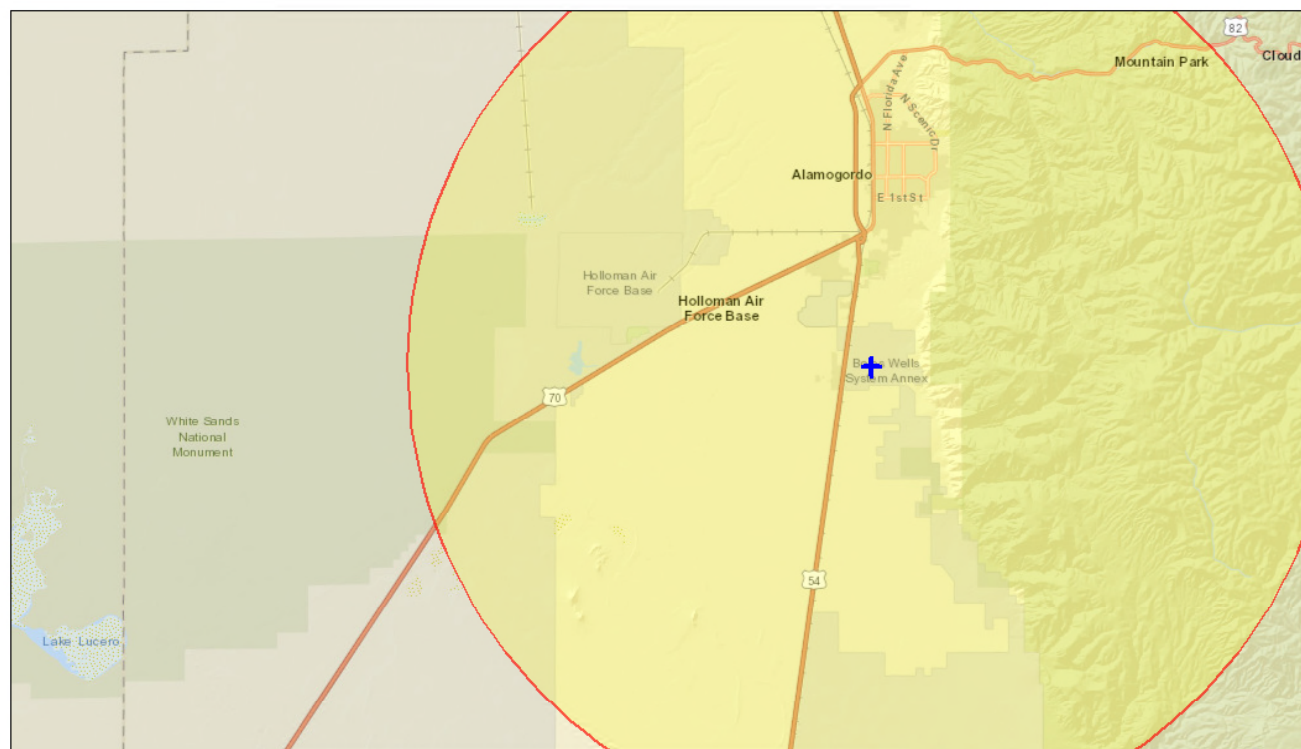


15 mile Ring Centered at 32.811883,-105.961349, NEW MEXICO, EPA Region 6

Approximate Population: 45,271

Input Area (sq. miles): 706.66

Study Area Centerpoint 932.811883, -105.961349)



October 25, 2019

Buffer Area

Digitized Point

1:288,895  
0 2.5 5 10 mi  
0 4 8 16 km

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

#### Sites reporting to EPA

Superfund NPL

0

Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)

1

## EJSCREEN Report (Version 2018)

15 mile Ring Centered at 32.811883,-105.961349, NEW MEXICO, EPA Region 6

Approximate Population: 45,271

Input Area (sq. miles): 706.66

Study Area Centerpoint 932.811883, -105.961349)

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	6.16	6.25	37	9.55	2	9.53	3
Ozone (ppb)	48	49.7	23	40.4	92	42.5	88
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.268	0.473	42	0.721	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	26	32	28	42	<50th	40	<50th
NATA* Respiratory Hazard Index	0.64	1.4	17	1.8	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	74	290	46	320	47	600	46
Lead Paint Indicator (% Pre-1960 Housing)	0.18	0.19	65	0.18	69	0.29	49
Superfund Proximity (site count/km distance)	0.01	0.13	15	0.07	14	0.12	8
RMP Proximity (facility count/km distance)	0.12	0.22	62	0.8	25	0.72	27
Hazardous Waste Proximity (facility count/km distance)	0.11	0.39	56	0.86	32	4.3	27
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0	2.1	N/A	0.38	36	30	40
<b>Demographic Indicators</b>							
Demographic Index	40%	52%	30	44%	48	36%	63
Minority Population	40%	61%	20	51%	42	38%	59
Low Income Population	41%	43%	48	38%	57	34%	65
Linguistically Isolated Population	4%	5%	54	6%	57	4%	66
Population With Less Than High School Education	11%	15%	43	17%	42	13%	54
Population Under 5 years of age	8%	6%	66	7%	58	6%	67
Population over 64 years of age	17%	15%	64	13%	75	14%	68

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.





**PERIKIN Enterprises, LLC**

1314 Madeira Dr. SE  
Albuquerque, NM 87108  
Tel 505 333 0501  
Fax 505 843 8424

[www.PERIKIN.com](http://www.PERIKIN.com)

**Arcadis U.S., Inc.**

1717 West 6th Street  
Suite 210  
Austin, Texas 78703  
Tel 512 451 1188  
Fax 512 451 2930

[www.arcadis.com](http://www.arcadis.com)