DRAFT

Environmental Assessment for the Installation of New Urban Operation Complex Targets and Unmanned Aerial Vehicle Targets for the Nevada Test and Training Range

United States Air Force

Nellis Air Force Base

March 2006

DRAFT FINDING OF NO SIGNIFICANT IMPACT

1.0 NAME OF THE PROPOSED ACTION

Environmental Assessment (EA) for the Installation of New Urban Operation Complex Targets and Unmanned Aerial Vehicle Targets for the Nevada Test and Training Range.

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The United States Air Force, Nellis Air Force Base proposes to construct an Urban Operations Complex (UOC) Target and an Unmanned Aerial Vehicle (UAV) Target on the Nevada Test and Training Range (NTTR), Nye County, Nevada. The UOC Target would simulate a weapons of mass destruction site and the UAV Target would simulate a terrorist encampment in a canyon. A threat emitter site would be placed in association with the UAV target. Ordnance to be dropped on these targets would be the same as those currently in use on the unmanned ranges of the NTTR. Target construction and maintenance would be consistent with current policy and procedures.

Alternative Action A. Under Alternative Action A, only the UOC Weapons of Mass Destruction Target would be constructed, used, and maintained.

Alternative Action B. Under Alternative Action B, only the UAV Terrorist Canyon Target would be constructed, used, and maintained.

No-Action Alternative. Under the No-Action Alternative, the proposed UOC and UAV targets would not be constructed on the NTTR.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

Eleven resource areas were evaluated in this EA. Seven resource areas, water, air quality, geology, cultural, biology, solid/hazardous waste, and safety, were analyzed in detail due to greater potential for impacts from the proposed action and alternatives. Based on the environmental analysis, implementation of the Proposed Action or any of the Alternative Actions would result in no significant impacts to these environmental resource areas. The actions are consistent with existing land uses on the NTTR. Cumulative impacts would not be significant and irreversible or irretrievable commitment of resources would not occur.

4.0 CONCLUSION

On the basis of the EA findings, no significant impact to human health or the natural environment would be expected from implementation of the Proposed Action. Therefore, issuance of a Finding of No Significant Impact is warranted, and the preparation of an Environmental Impact Statement pursuant to the National Environmental Policy Act of 1969 (Public Law 91-1900) is not required.

_____ _____

MICHAEL R. SCOTT Date
Colonel, USAF
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ACRONYMS AND BREVITY CODES

°F	degrees Fahrenheit
AAA	anti-aircraft artillery
ACC	Air Combat Command
AFB	Air Force Base
Air Force	United States Air Force
BMP	Best Management Practice
CAS	Close Air Support
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	carbon monoxide
CSAR	Combat Search and Rescue
DoD	Department of Defense
EA	Environmental Assessment
EO	Executive Order
EOD	explosive ordnance disposal
FORSCOM	United States Army Forces Command
H_2S	hydrogen sulfide
ICRMP	Integrated Cultural Resources Management Plan
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
JDAM	Joint Direct Attack Munition
LEIS	Legislative Environmental Impact Statement
MLWA	Military Land Withdrawal Act
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NEPA	National Environmental Policy Act
NGS	National Geographic Society
NO_2	nitrogen dioxide
NRHP	National Register of Historic Places
NTTR	Nevada Test and Training Range
O_3	ozone
P.L.	Public Law
Pb	lead
PH3	phosphine
PLO	Public Land Order
PM_{10}	particulate matter less than 10 micrometers in diameter
$PM_{2.5}$	particulate matter less than 2.5 micrometers in diameter
PSD	prevention of significant deterioration
R-71S	Range 71S
R-76	Range 76
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
RPA	Remote Piloted Aircraft
SAM	surface-to-air missile
SHPO	State Historic Preservation Officer
SO_2	sulfur dioxide
U.S.	United States
UAV	Unmanned Aerial Vehicle
UOC	Urban Operations Complex
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UXO	unexploded ordnance
WMD	Weapons of Mass Destruction

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EXECUTIVE SUMMARY

This Environmental Assessment (EA) describes the potential environmental consequences resulting from the proposed installation of New Urban Operation Complex (UOC) Targets and Unmanned Aerial Vehicle (UAV) Targets for the Nevada Test and Training Range (NTTR), Nevada.

ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (Public Law [P.L.] 91-190) and the implementing regulations of the President's Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Parts 1500 through 1508), which require federal agencies to analyze the potential environmental impacts of their proposed actions. Additionally, the document was prepared in compliance with 32 CFR 989, which implements NEPA and CEQ regulations for Air Force actions.

PURPOSE AND NEED FOR ACTION

The purpose of the Proposed Action is to enable the United States Air Force (Air Force) to implement training initiatives that will improve, enhance, and provide simulated combat training for pilots using NTTR. In order to fully prepare pilots for real-world missions, combat conditions must be replicated to the greatest extent possible. UOC and UAV targets are realistic for real-world conflicts that are occurring in combat theaters of today.

The need for the Proposed Action is to enhance the realism of the target training scenarios and train aircrews. The Proposed Action would consist of realistic targets and assets, which simulate an urban environment for aircrews. These types of training capabilities would allow the Air Force to continue its practice of enhancing combat capabilities and survivability of military personnel.

PROPOSED ACTION AND ALTERNATIVES

This EA analyzes the Proposed Action, Alternative A, Alternative B, and the No-Action Alternative.

Proposed Action: The Air Force, Nellis Air Force Base (AFB) proposes to construct UOC targets and UAV targets at NTTR. The proposed target structures and facilities would be located in Range 71S (R-71S) and Range 76 (R-76). For the UOC Weapons of Mass Destruction (WMD) Storage Area, targets would consist of simulated buildings, anti-aircraft artillery (AAA)/surface-to-air missile (SAM) site, bunkers, caves, and vehicles. For the UAV Terrorist Canyon, targets would consist of simulated tents, huts and buildings, SAM, AAA site, military and civilian target vehicles and weapons storage buildings. An emitter site would also be constructed in association with this target.

Alternative A: Alternative A consists of the development of the UOC target of the Proposed Action, and does not include the development of the UAV target.

Alternative B: Alternative B consists of the development of the UAV target of the Proposed Action, and does not include the development of the UOC target.

No-Action Alternative: Under the No-Action Alternative, the proposed UOC and UAV targets would not be constructed on NTTR. This alternative would limit the Air Force's ability to conduct credible training in a modern urban environment with multiple scenarios that depict the types of threats and terrorist facilities that the Air Force must operate against. The No-Action Alternative would require pilots to train on existing targets with limited variation in their exercises, without benefit of the targets that represent the newest threats found where the Air Force is currently deployed.

SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This EA provides an analysis of the potential environmental impacts resulting from implementing the Proposed Action and alternatives. Seven resource areas were evaluated in detail to identify potential environmental consequences of each alternative. Resource categories discussed in the EA are: earth, water, air quality, cultural, biology, solid/hazardous waste, and safety. Based on the environmental analysis, implementation of the Proposed Action would not significantly impact environmental resources or affect existing conditions at NTTR. Below is a summary of this conclusion.

Geology and Soils: There would be no impacts to geology and soils from the Proposed Action. Potential soil erosion would be controlled through the use of best management practices. The Air Force would follow the NTTR Facility Wide Fugitive Dust Control Plan as required by the Nevada Division of Environmental Protection (NDEP) Title V permit reduce or minimize fugitive emissions.

Surface Water and Ground Water: Potential soil erosion from construction at the targets will be minimized using best management practices (BMPs) such as silt fencing or the construction of a temporary detention pond. The effect on ground water will be negligible due to the depth of ground water and the minimal annual precipitation. Current surface drainage patterns and flows will not be significantly modified by the construction of the targets.

Air Quality: Airborne emissions generated during construction would not affect public health and safety due to the remoteness of the target area, its relatively small size, and restricted access. In addition, all construction activities must comply with the NTTR Facility Wide Fugitive Dust Control Plan.

Cultural Resources: No sites eligible for nomination to the National Register of Historic Places (NRHP) were identified in the proposed target area. Thus, no significant impacts to cultural resources would occur.

Biological Resources: Native vegetation would be removed or disturbed on 180 acres due to construction of the UOC and UAV targets. Some small animals would be displaced and potentially taken by the construction activities. Wildlife could be temporarily disturbed by construction and training noise. No threatened or endangered species or sensitive plants are known to occur in the affected area.

Solid/Hazardous Waste: There would be no effect on current procedures and practices as a result of construction and operation of the UOC and UAV targets. Monitoring and clean up would be accomplished at each target location in accordance with existing Air Force requirements.

Safety: The remoteness and restricted access of the NTTR would ensure the public's safety. Personnel would follow appropriate procedures during construction of targets. Hence, no safety impacts would result from the proposed action.

Land Use: Construction and use of the targets is consistent with current NTTR land use.

Noise. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. No change in aircraft operations or personnel would occur to alter the noise levels. Existing targets in the area of the proposed targets are currently used by Air Force personnel for training. Use of additional targets in the same areas would not significantly increase noise levels, which are consistent with the ongoing mission at the NTTR.

Socioeconomics. The Proposed Action or alternatives would not involve any changes that would affect the socioeconomic resources such as personnel changes or changes in sorties or airspace configuration. Consequently, no socioeconomic impacts would be anticipated.

Environmental Justice. Due to the sparse population in the region surrounding the range and the improbability of human encounters with munitions, the potential for disproportionately high and adverse human health or environmental effects on minority, low-income, or youth populations is considered unlikely.

Transportation and Utilities. These infrastructure resources of NTTR will not change under the Proposed Action or alternatives. While construction of short roads (less than 1 mile [1.6 kilometers]) is a part of the proposed project, target range construction and associated access roads are common on the NTTR. Visits to the target areas would be limited to incidental maintenance trips by existing personnel. Therefore, the proposed additional targets are not expected to affect transportation or utilities of NTTR.

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

The United States Air Force (Air Force), Nellis Air Force Base (AFB), Nevada proposes to construct Urban Operations Complex (UOC) Targets and Unmanned Aerial Vehicle (UAV) Targets at the Nevada Test and Training Range (NTTR) (Figure 1-1). The proposed target structures and facilities would be located in Range 71S (R-71S) and Range 76 (R-76) (Figure 1-2). The target facilities would consist of the development of a simulated UOC Weapons of Mass Destruction (WMD) Storage Area and a simulated UAV Terrorist Canyon. These target structures and facilities are described in Chapter 2.0, Description of Proposed Action and Alternatives.

1.1 BACKGROUND

The NTTR is located in southern Nevada and consists of approximately 2.9 million acres. It is bounded by United States (U.S.) Highway 95 on the west, southwest, and south; Las Vegas to the southeast; U.S. Highway 93 on the east; Nevada State Highway 375 on the northeast; and U.S. Highway 6 on the north (see Figure 1-1). NTTR was originally established by Executive Order (EO) 8578 in 1940 as the Las Vegas Bombing and Gunnery Range. The range operated through numerous EOs and Public Land Orders (PLOs) until 1958 when operating authority was established in compliance with the Engle Act on Public Law (P.L.) 87-310. The Secretary of the Air Force was given authority for exclusive military use by enactment of the Military Land Withdrawal Act (MLWA) of 1986, P.L. 99-606. In 1999, Congress renewed the land withdrawal for continued use as a national test and training facility (Air Force 1999a).

A wide spectrum of training capabilities exists on the NTTR to provide a realistic combat training environment. NTTR includes over 196 tactical target complexes containing more than 1,969 simulated targets. These capabilities include, but are not limited to, scorable bombing and gunnery ranges, conventional and tactical ranges, and electronic combat threat emitters. Many different types of ordnance, both live and inert, are used on the NTTR to provide training, tactics testing, and evaluation needed to maintain full combat readiness.

The proposed UOC and UAV target facilities would consist of the development of a simulated WMD Storage Area and a Terrorist Canyon. These targets would be located in R-71S and R-76 of the North Range of NTTR. Existing targets are arranged to simulate urban combat scenarios including airfields, surface-to-air missile (SAM) sites, truck convoys, missile storage sites, artillery, batteries, etc. Targets are constructed of materials including wood and camouflage netting, sea-land containers, cement blocks, buses, tanks, and automobiles. Tunnel type targets on NTTR consist of cargo containers positioned adjacent to hills and covered with soil from the surrounding hillside.

Many of the NTTR target complexes have threat emitters to provide a realistic arena for operational training and testing of weapons systems, tactics, and combat readiness. Live munitions are also delivered on designated targets on the range.

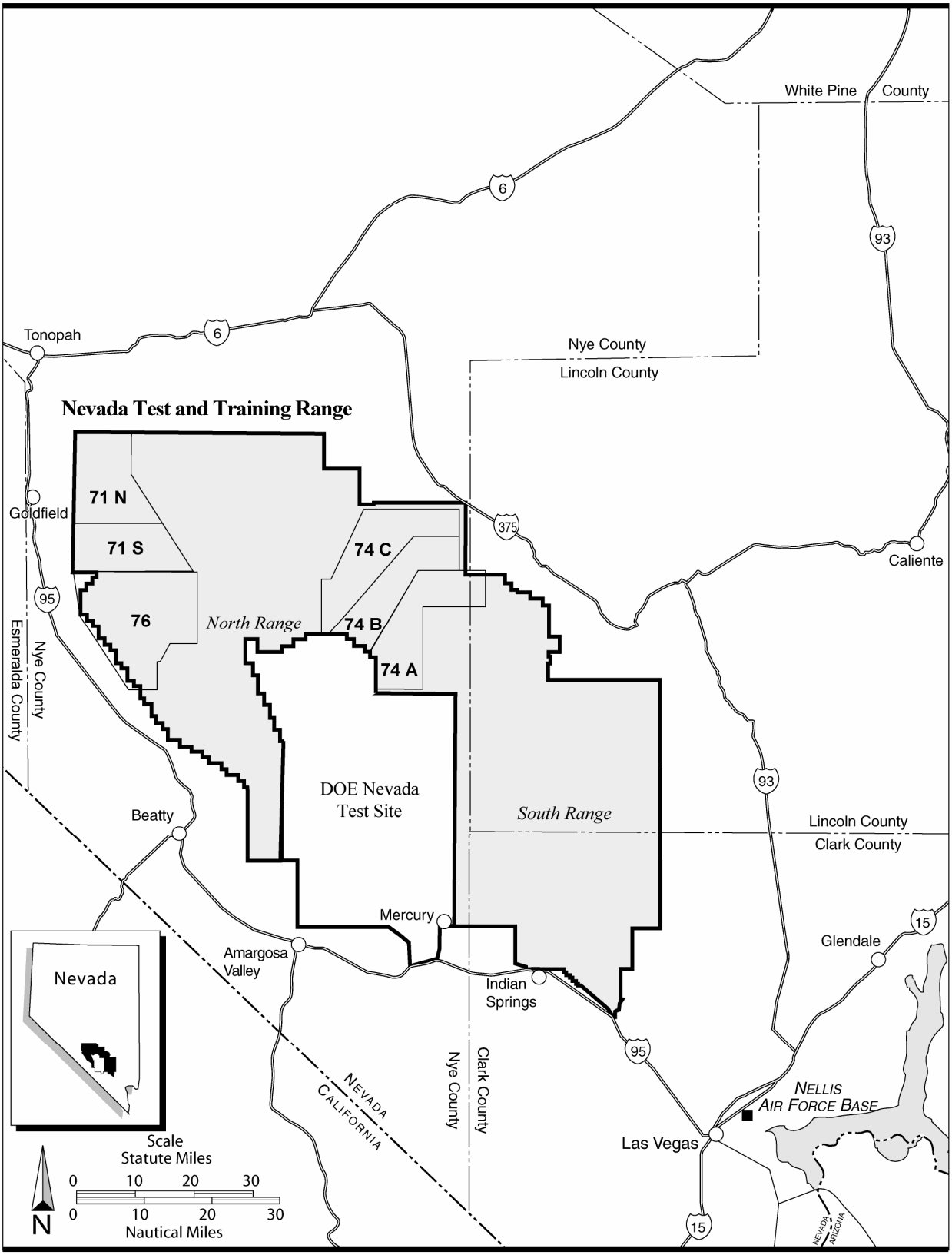

Figure 1-1. Nevada Test and Training Range

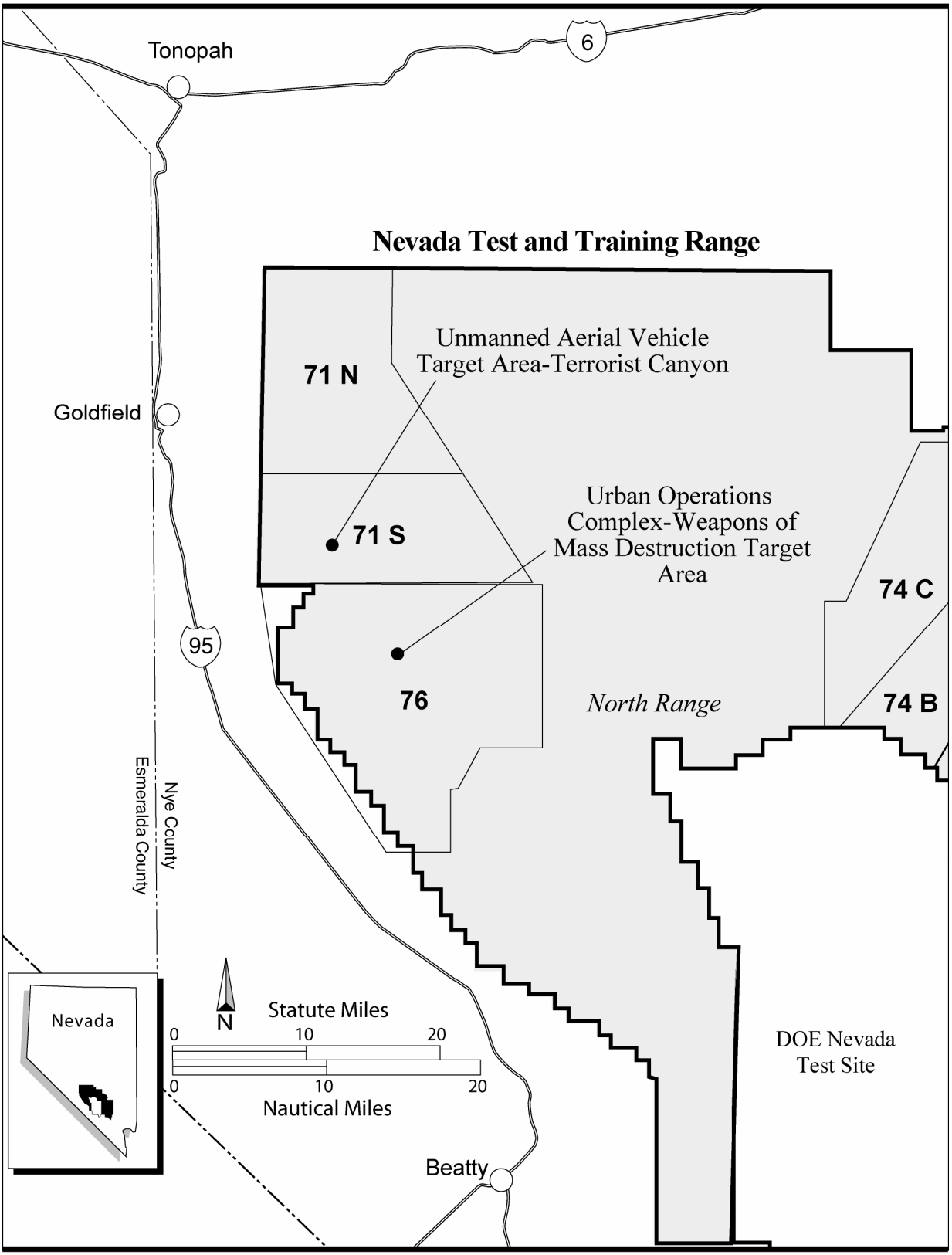

Figure 1-2. Project Areas on NTTR

1.2 PURPOSE AND NEED FOR ACTION

The purpose of the Proposed Action is to enable the Air Force to implement training initiatives that will improve, enhance, and provide simulated combat training for pilots using NTTR. In order to fully prepare pilots for real-world missions, combat conditions must be replicated to the greatest extent possible. UOC and UAV targets simulate real-world conflicts that are occurring in combat theaters of today.

The U.S. military forces face new and evolving combat scenarios. Aircrews are expected to fight battles in open terrain as found during the Gulf War, and they also must undertake military operations that are directed at specific towns and cities, even specific city blocks and individual buildings. Recent conflicts in Iraq and Afghanistan highlight these varying military operations. Often, air strikes are avoided if there is the potential to affect large portions of cities, entire towns, or civilians. Realistic training that simulates these urban scenarios is necessary to obtain the level of accuracy needed in combat situations (ACC 2003b).

Constructing and implementing UOC and UAV targets at the NTTR would fulfill the Air Force's need to train aircrews in a modern urban environment. Planning for combat in an urban environment is a complex task. The urban environment combines the challenge of conventional combat with the complexity of three-dimensional terrain, constrained maneuver space, and a high density of people on the battlefield. As the combat theater has changed from one in remote areas to more urban areas, developing UOC targets and testing pilots in this environment is critical.

UAVs are remotely piloted or self-piloted aircraft that can carry cameras, sensors, communications equipment and other payloads. They have been used in reconnaissance and intelligence-gathering roles as well as supporting combat missions. The UAV targets would provide multiple current world scenarios that depict the types of threats and terrorist facilities that the Air Force must operate against. UAV mission roles include support of Close Air Support (CAS), Combat Search and Rescue (CSAR), and Special Operations. This target complex will bring together UAV operations with CAS, CSAR, and Special Operations.

The need for the Proposed Action is to enhance the realism of the target training scenarios and train aircrews. The Proposed Action would consist of realistic targets and assets, which simulate an urban environment for aircrews. These types of training capabilities would allow the Air Force to continue its practice of enhancing combat capabilities and survivability of military personnel.

1.3 REGULATORY AND PERMIT REQUIREMENTS

The potential environmental impacts resulting from the construction and implementation of the proposed target structures are analyzed in this Draft Environmental Assessment (EA). This Draft EA is prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (P.L. 91-190) and the implementing regulations of the President's Council on Environmental Quality (CEQ) (40 Code of Federal Regulations [CFR] Parts 1500 through 1508), which require federal agencies to analyze the potential environmental impacts of their proposed actions. Additionally,

the document was prepared in compliance with 32 CFR 989 which implements NEPA and CEQ regulations for Air Force actions.

Previous NEPA documentation presents additional information on NTTR. A brief description of these NEPA documents is provided below.

- *Renewal of the Nellis Air Force Range Land Withdrawal Legislative Environmental Impact Statement* (1999). In response to Congressional direction (1986 MLWA, P.L. 99-606), the Air Force prepared a Legislative Environmental Impact Statement (LEIS) to address environmental consequences of continuing to use NTTR (formerly Nellis Air Force Range) land for a military national test and training facility. The land withdrawal allows for exclusive use by the military to ensure national security and public safety.
- *Environmental Assessment for the Installation of the New Joint Direct Attack Munition (JDAM) and High Fidelity Targets for the NTTR* (2004). This EA analyzed the environmental consequences of constructing and using JDAM targets in R-71S, R-76, and R-74 of the NTTR. This EA found no significant impacts to resources from this action.
- *Environmental Assessment for the Joint Red Flag '05 ADA activities Nellis Air Force Base* (2005). This EA analyzed the environmental impacts from the proposed training exercise known as "Joint Red Flag '05." The purpose of the training activities was to conduct an overall exercise involving ground-to-air, air-to-air, and air-to-ground combat scenarios in a combined multi-service arms setting. The proposed training activities are conducted on Bureau of Land Management lands under airspace controlled by Nellis AFB. This EA found no significant impacts to resources from this action.

PERMIT REQUIREMENTS

An ongoing storm water construction permit currently exists for range targets (NVR100000-32084). Potential soil erosion from construction targets will be minimized using best management practices (BMPs) such as silt fencing or the construction of a temporary detention pond. Adherence to the NTTR Fugitive Dust Control Plan will be maintained during construction activities.

1.4 PUBLIC INVOLVEMENT

The Air Force has consulted with the Nevada State Historic Preservation Officer (SHPO). This Draft EA is being provided to agencies for their comment. Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) process is a requirement to satisfy NEPA and other federal regulations. IICEP allows agencies having purview over environmental resources that could be affected by implementation of an action to express any question or environmental concerns which should be addressed.

The Air Force prepared and published newspaper advertisements announcing the availability of the Draft EA for public and agency review. The notice of availability appeared in the Las Vegas

Review Journal, Tonopah Times, and Lincoln County Record on March 23. The public comment period for the Draft EA ran from March 28 to April 17, 2006.

1.5 ORGANIZATION OF THIS DOCUMENT

This EA is presented in seven chapters as follows:

Chapter 1.0 - Purpose and Need for the Proposed Action. This chapter describes why the Air Force needs to construct the training targets. It also provides a brief description of NTTR, regulatory and permit requirements, and public involvement process.

Chapter 2.0 - Description of Proposed Action and Alternatives. This chapter provides a detailed account of the Proposed Action and alternatives including target size, location, activities, and land area affected by the action. It also contains a discussion of alternatives considered but not carried forward and the No-Action Alternative. A summary of environmental consequences as a result of this action is provided at the end of the chapter.

Chapter 3.0 - Affected Environment. This chapter presents information on environmental conditions for resources potentially affected by the Proposed Action and alternatives described in Chapter 2.0.

Chapter 4.0 – Environmental Consequences. This chapter describes the potential environmental consequences or impacts of the Proposed Action and alternatives and No-Action Alternative described in Chapter 2.0, on the resources described in Chapter 3.0.

Chapter 5.0 - Cumulative Effects and Irreversible and Irretrievable Commitment of Resources. This chapter discusses any impacts of the Proposed Action when combined with other past, present, and reasonable foreseeable future projects in the area.

The EA concludes with Chapter 6.0, References, and Chapter 7.0, List of Preparers.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter contains the description of the Proposed Action and alternatives evaluated for the UOC and UAV targets. The proposed target structures are located within R-76 and R-71S of the NTTR, located in north Nye County, Nevada. The proposed targets would be similar to existing target structures and facilities located on the NTTR.

The proposed target areas were selected due to topographic requirements for the targets. A canyon area would provide narrow ravines and steep slopes which, in the combat theater, can hide enemy forces and armament. A target simulating WMD storage would require hillsides that are similar to those found in combat terrain.

This EA evaluates the potential environmental impacts associated with developing targets in two locations. The Proposed Action analyzes both targets while each alternative analyzes construction and use of only one target in either location. The No-Action Alternative is described in Section 2.4.

2.1 PROPOSED ACTION

The proposed targets would be located in R-76 and R-71S of the NTTR. The target facilities would consist of the development of a WMD Storage Area and Terrorist Canyon. Section 2.1.1 provides a narrative description of these targets.

Ordnance used on NTTR includes general purpose bombs, guided bombs (also known as smart bombs), 2.75-inch rockets, chaff and flares, captive missiles, and various sizes of ammunition. These ordnance and the type of training they support is discussed in the *Nellis Air Force Range Renewal LEIS* (1999). Ordnance expended would be the same as ordnance currently used on NTTR. As a result, the use of these ordnance would not result in additional storage of ordnance or changes in spent ordnance disposal procedures. Explosive ordnance disposal (EOD) clean-up would occur on a regular basis as it does with existing NTTR practices. Reporting procedures for ordnance would also remain unchanged.

NTTR provides the training area for numerous aircraft. These proposed targets would not increase the number of aircraft using the NTTR, rather the targets would enhance the training available to existing users. These targets are not scored and therefore personnel would not be required to visit the site regularly. Incidental maintenance trips to the site by trained personnel are anticipated.

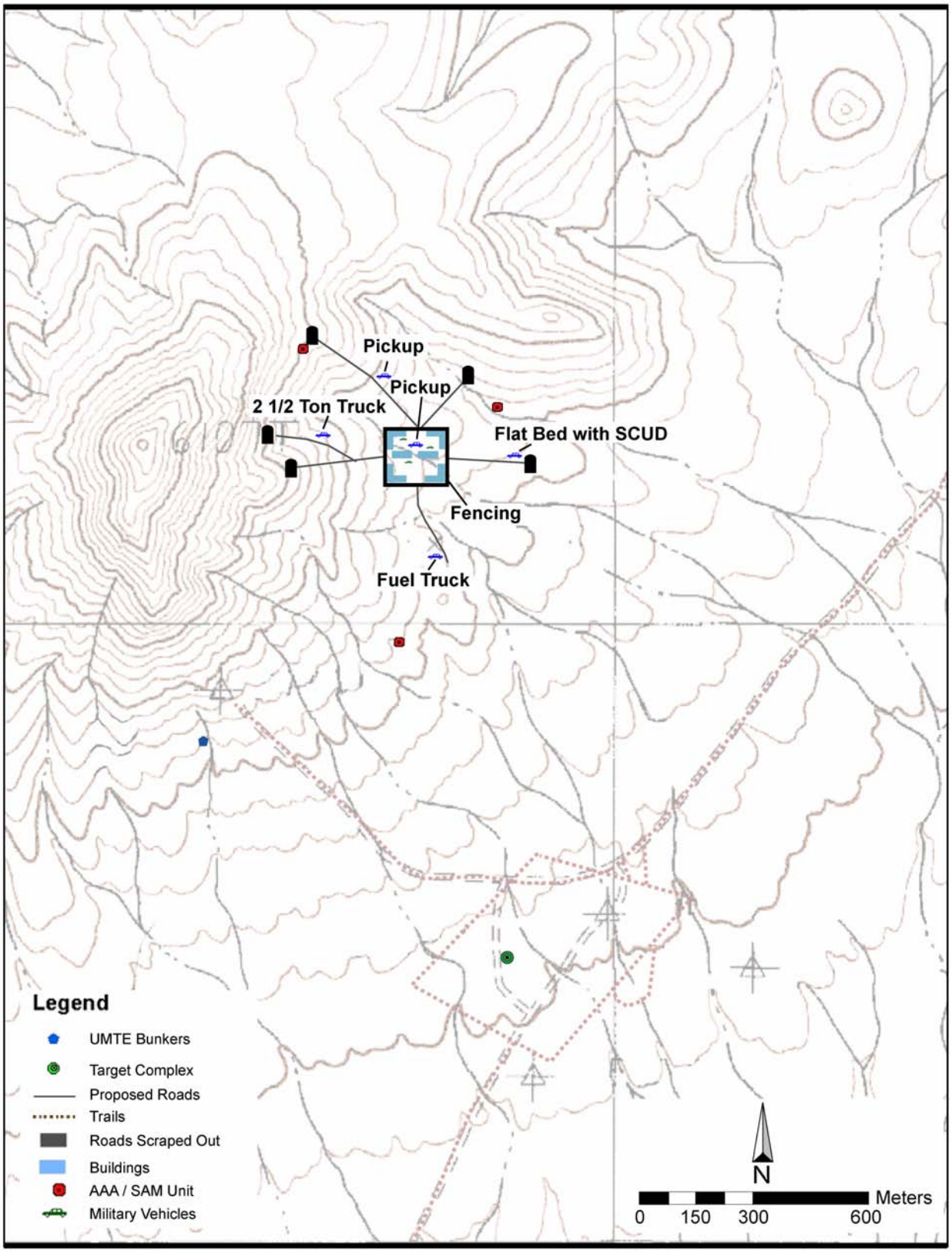

Figure 2-1. Urban Operations Complex-Weapons of Mass Destruction Storage Area

2.1.1 Target Description

2.1.1.1 URBAN OPERATIONS COMPLEX - WEAPONS OF MASS DESTRUCTION STORAGE AREA

This proposed target (#76-31), approximately 27 acres in size, would be located about 0.75-mile (1.2 kilometers) north of the existing Prison Camp Target (Figure 2-1). A single road would connect the Prison Camp target with the WMD target array and would follow one of the natural elevated "fingers" between the ravines. A proposed central Administration/Security compound would be located at the end of this road. At least six to eight separate large buildings would be constructed in a generally rectangular pattern with numerous additional small support buildings nearby. Buildings would be painted to indicate doors/windows and would have mock defensive gun positions mounted on roofs. A simulated radio tower and satellite dish antennas would be located inside the compound either on the ground or mounted on roofs. Other items typical of a secure military/government facility may also be arranged in the compound area. Chain link or similar fencing would surround the compound; simulated guard towers would be located at the corners. A mock small guard shack would be positioned outside the fenced area, next to the main entrance road.

In addition to the main entry/exit road connecting the target with the compound area, five additional roads would be positioned in a "spider" pattern from the compound to the cliff faces and hillsides to the east, north, and west. Road lengths would vary from 500 feet to over 1,000 feet, depending on the distance from the compound to the hillsides. Each road would terminate at a simulated cave entrance constructed of large concrete blocks (2 feet by 2 feet by 8 feet), timber, and dirt. Paint may be used on the dirt or rock faces to enhance the appearance of a cave entrance. All five entrances would simulate an opening that could accommodate large trucks and equipment (about a 20 foot by 20 foot opening). Camouflage would be added for realism and to complicate targeting for the aircrews.

Outside the mock cave entrances, three trucks or flatbed trailers would be positioned containing simulated weapon items, from bombs to missiles. In addition, throughout the entire compound, numerous defluidized military and civilian cars and trucks as well as mannequins or silhouettes simulating personnel, would be positioned. Finally, three simulated defensive SAM and three anti-aircraft artillery (AAA) sites would be set up. The three SAM sites would be positioned between the mock Prison Camp and the WMD Storage Area. The three simulated AAA sites would be positioned in the hills above the mock cave entrances, as high up as can be accessed with delivery vehicles.

The proposed target areas would provide bomber and fighter aircrews practice in targeting deep bunker/cave areas with difficult access. Ordnance to be used includes full scale inert unguided and guided munitions up to and including the GBU-28 (5,000 pounds).

2.1.1.2 UNMANNED AERIAL VEHICLE - TERRORIST CANYON TERRORIST TRAINING COMPOUND AND HOSTAGE HOLDING AREA

This proposed target area (#71-15) would be located in "Pack Rat Canyon," a north/south oriented canyon area (approximately 250 feet to 300 feet deep) that extends from the southern portion of R-71S across the south border into the northern portion of R-76 (Figure 2-2). Access to the south end of the canyon (rim level) exists through R-76. An access road would be developed that extends from the mouth of the canyon south 1.8 to 2.5 miles (3 to 4 kilometers) and then branch into three separate fork canyons: southwest, south, and east. These secondary roads would be 0.3 to 1 mile (0.5 to 1.5 kilometers) long, depending on distance to the canyon walls. The entire canyon area is approximately 495 acres. However, only 153 acres would actually be used as target areas, the remaining acreage would be open space.

No more than 50 infrastructure targets consisting of mock single-story buildings representing administration, security, guard shacks/towers, prisoner holding cells, and warehouse/storage facilities would be placed along the main and fork roads. No more than 50 military and civilian type defluidized vehicles of various sizes would be dispersed along the roads. Most buildings would be concentrated at the south end of the canyon and into the canyon forks. Tent encampments and/or other mock buildings to represent barracks would be placed off and along the roads. A simulated fence would cross the mouth of the canyon at the north end. The simulated fence along with buildings would be designed to represent security facilities. Camouflage and other deception or concealment methods would be employed to hide these various building targets. Numerous (up to 50) simulated personnel represented by either mannequins or silhouettes would be positioned on the valley floor and among the rocks and crags of the canyon walls.

A threat emitter would be placed on top of the south side of the canyon rim. The threat emitter consists of radio frequency antennas powered by a generator and mounted on trailers. The generator used would be under 100 kilowatts and hold 275 gallons of fuel. It would be surrounded by a portable secondary containment unit which has the capacity to hold 305 gallons. The proposed emitter site would be approximately 0.25 to 0.50 acre in size. Improvements at the site would consist of sufficient vegetation removed to permit safe operation of the emitter.

The proposed target area will also provide aerial imagery challenges for Remote Piloted Aircraft (RPA) assets. RPA mission roles include support of CAS, CSAR, and Special Operations. This target complex will bring together RPA operations with CAS, CSAR, and Special Operations. The proposed target will provide multiple realistic scenarios for Special Operations. The Special Operations ordnance will include small arms fire up to 50 caliber, 40 millimeter inert grenades, smoke flares, and facility breaching devices. Special Operations ground movement will be by foot, helicopter, and rubber wheeled vehicles.

In addition, the proposed target would provide aerial and airborne gunnery practice in steep terrain/canyon wall areas for helicopter and A-10 training. Ordnance would include small scale practice bombs (BDU-33, MK-106), 2.75-inch rockets, and training chaff and flares.

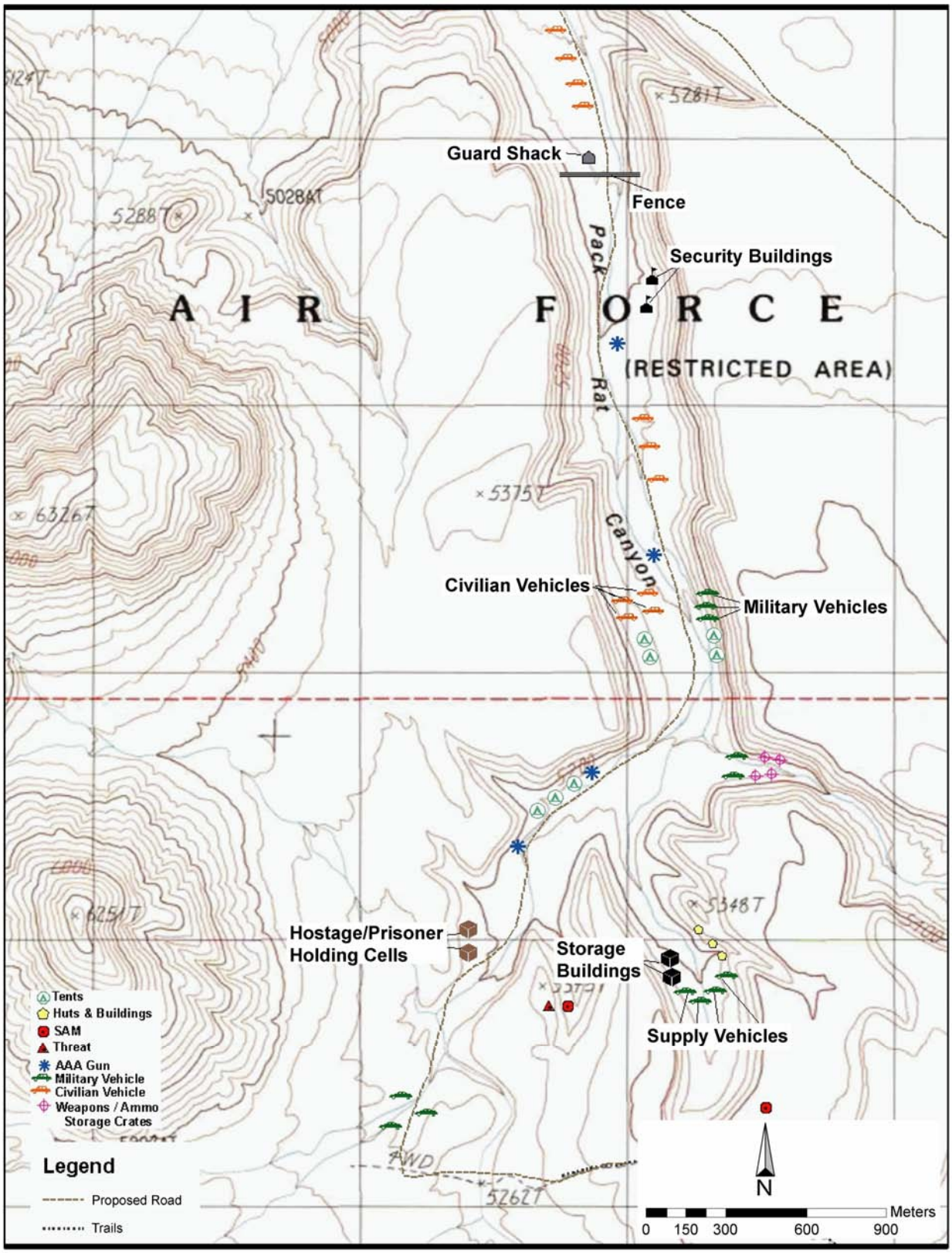

Figure 2-2. Unmanned Aerial Vehicle Target Area-Terrorist Canyon

2.2 ALTERNATIVE A: CONSTRUCTION OF UOC

Alternative A would consist of the construction of the UOC targets only in the R-76 of NTTR. The targets developed are described in Section 2.1.1.1 above.

2.3 ALTERNATIVE B: CONSTRUCTION OF UAV

Alternative B would consist of the construction of the UAV targets in R-71S of NTTR. The targets developed are described in Section 2.1.1.2 above.

2.4 NO-ACTION ALTERNATIVE

The No-Action Alternative would maintain the status quo of targets and facilities on ranges R-76 and R-71S of the NTTR. The proposed additional UOC and UAV targets would not be constructed. Munitions use on these ranges would not change. This alternative would limit the Air Force's ability to conduct credible training in a modern urban environment with multiple scenarios that depict the types of threats and terrorist facilities that the Air Force must operate against. The No-Action Alternative would require pilots to train on existing targets with limited variation in their exercises, without benefit of targets that represent current areas of military actions.

2.5 SCOPE OF RESOURCE ANALYSIS

Several environmental resources in this EA are unlikely to experience environmental consequences if the Proposed Action or alternatives were implemented.

The EA provides a focused analysis on key resources including: earth, water, air quality, cultural resources, biological resources, solid/hazardous waste, and safety. Resources not requiring further analysis include the following.

Land Use: Construction and use of the targets are consistent with current NTTR land use.

Noise. Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. No change in aircraft operations or personnel would occur to alter the noise levels. Existing targets in the area of the proposed targets are currently used by Air Force personnel for training. Use of additional targets in the same areas would not significantly increase noise levels, which are consistent with the ongoing mission at the NTTR.

Socioeconomics. The Proposed Action or alternatives would not involve any changes that would affect the socioeconomic resources such as personnel changes or changes in sorties or airspace configuration. Consequently, no socioeconomic impacts would be anticipated.

Environmental Justice. Due to the sparse population in the region surrounding the range and the improbability of human encounters with munitions, the potential for disproportionately high and adverse human health or environmental effects on minority, low-income, or youth populations is considered unlikely.

Transportation and Utilities. These infrastructure resources of NTTR are not expected to change under the Proposed Action or alternatives. While construction of short roads (less than 1 mile [1.6 kilometers]) is a part of the proposed project, target range construction and associated access roads are common on the NTTR. Visits to the target areas would be limited to incidental maintenance trips by existing personnel. Therefore, the proposed additional targets are not expected to affect transportation or utilities of NTTR.

2.6 ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD

Specific needs required for continued effective mission operations were developed in the form of screening criteria (40 CFR §1502.14). The screening criteria included review of topography, access, and existing and future training requirements. While there are numerous areas on NTTR that may be used for target development, the areas selected for the Proposed Action represent the best available and most suitable areas. Another specific area on NTTR was reviewed and screening criteria applied, but because of the remote access to that area, it was not carried further for analysis.

2.7 COMPARISON OF THE PROPOSED ACTION AND ALTERNATIVES

Table 2-1 summarizes the potential effects of each resource area that may result from implementation of the Proposed Action, Alternative A, Alternative B, and the No-Action Alternative.

Table 2-1. Comparison of Environmental Impacts of the Alternatives (Page 1 of 4)

Resource	*Proposed Action*	*Alternative A*	*Alternative B*	*No Action*
Geology and Soils	No impacts to geology and soils would result from the Proposed Action. Potential soil erosion would be controlled through the use of best management practices (BMPs).	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to geology or soils from this alternative.

Table 2-1. Comparison of Environmental Impacts of the Alternatives (Page 2 of 4)

Resource	*Proposed Action*	*Alternative A*	*Alternative B*	*No Action*
Surface Water and Ground Water	Potential soil erosion from construction at the targets will be minimized using best management practices (BMPs) such as silt fencing or the construction of a temporary detention pond. The effect on ground water will be negligible due to the depth of ground water and the minimal annual precipitation. Current surface drainage patterns and flows will not be significantly modified by the construction of the targets.	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to water resources from this alternative.
Air Quality	Airborne emissions generated during construction would not affect public health and safety due to the remoteness of the target area, its relatively small size, and restricted access. In addition, all construction activities must comply with the NTTR Facility Wide Fugitive Dust Control Plan.	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to air quality from this alternative.

Table 2-1. Comparison of Environmental Impacts of the Alternatives (Page 3 of 4)

Resource	*Proposed Action*	*Alternative A*	*Alternative B*	*No Action*
Cultural Resources	No sites eligible for nomination to the National Register of Historic Places (NRHP) were identified in the proposed target area. Thus, no significant impacts to cultural resources would occur.	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to cultural resources from this alternative.
Biological Resources	Native vegetation would be removed or disturbed on 180 acres due to construction of the UOC and UAV targets. Some small animals would be displaced and potentially taken by the construction activities. Wildlife could be temporarily disturbed by construction and training noise. No threatened or endangered species or sensitive plants are known to occur in the affected area.	Native vegetation would be removed or disturbed on 27 acres. Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action.	Native vegetation would be removed or disturbed on 153 acres. Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action.	There would be no impact to biological resources from this alternative.
Solid/Hazardous Waste	No effect on current procedures and practices as a result of construction and operation of the UOC and UAV targets. Monitoring and clean up would be accomplished at each target location in accordance with existing Air Force requirements	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to solid/hazardous waste practices from this alternative.

Table 2-1. Comparison of Environmental Impacts of the Alternatives
(Page 4 of 4)

Resource	***Proposed Action***	***Alternative A***	***Alternative B***	***No Action***
Safety	The remoteness and restricted access of the NTTR would ensure the public's safety. Personnel would follow appropriate procedures during construction of targets. Hence, no safety impacts would result from the Proposed Action.	Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site.	Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the 153-acre UAV target site.	There would be no impact to safety practices from this alternative.

3.0 AFFECTED ENVIRONMENT

This section presents information on environmental conditions for resources potentially affected by the alternatives described in Chapter 2.0. Under NEPA, the analysis of environmental conditions only addresses those areas and environmental resources with the potential to be affected by the Proposed Action or alternatives; locations and resources with no potential to be affected need not be analyzed.

The resources to be analyzed are identified in the following section. The expected geographic scope of potential impacts, known as the region of influence (ROI), is defined as the land area proposed for the UOC (Terrorist Canyon) (27 acres) and UAV (WMD Storage Area) (153 acres) target areas. Resources that have a different ROI are identified in their respective sections.

3.1 GEOLOGY AND SOILS

This section describes the geology and soils of the NTTR, and more specifically R-71S and R-76. The NTTR is located within the southern part of the Great Basin, the northern-most subprovince of the Basin and Range physiographic province. The Basin and Range province is generally characterized by a series of north-south trending mountain ranges separated by alluvial basins that were formed by faulting. The Great Basin subprovince is an internally draining basin, which means precipitation that falls over the basin has no outlet to navigable waters of the U.S. The proposed target areas are located on the floor of a canyon and on a hillside, respectively.

3.1.1 Geology

The bedrock geology of the NTTR can be divided into a southeastern area of largely Paleozoic sedimentary rocks, and a northwestern area of mainly volcanic rocks of late Cenozoic age (Air Force 1997a). Tertiary volcanic rocks dominate the geology of the North Ranges. The bedrock geology of the WMD target site and the Terrorist Canyon site is composed of Late Tertiary silicic ash-flow tuff with Quaternary alluvial deposits (Air Force 1997a).

The Stonewall Mountain fault is located less than 0.5 mile (0.8 kilometer) north of the UAV target site along Stonewall Mountain. The fault consists of several overlapping northeast-striking fault traces. The fault is approximately 14.5 miles (23.5 kilometers) in length with an average slip rate of less than 0.2 millimeters per year. The unnamed faults of the Pahute Mesa are located approximately 1 mile (1.6 kilometers) south of the WMD target site, which are discontinuous and mostly weakly expressed lineaments or scarps. The faults are categorized with a slip rate of less than 0.2 millimeters per year; however, no data was available for their actual slip rate or recurrence (U.S. Geological Survey [USGS] 2005).

Elevations vary substantially across NTTR. The valley bottoms of the South Range vary in elevation from approximately 3,000 to 3,600 feet, whereas those of the North Range are approximately 2,000 feet higher. Similarly, mountain ranges on the South Range exceed 6,000 feet and are more than 8,600 feet on the North Range (Air Force 1997a).

As shown in Figure 2-1**,** the UOC target (simulated WMD Storage Area) is located in high terrain between a 6,107 foot mountain and a 5,917 foot mountain. The main target area would be constructed south of a saddle in a flat area between the two mountains at an elevation of 5,540 feet. The simulated tunnel entrances associated with the main target would be located on the eastern and western lower slopes (at approximately 5,600 feet) of the adjacent mountains.

As shown in Figure 2-2, the UAV target (simulated Terrorist Canyon) is located in "Pack Rat Canyon," an elongated canyon area with a north/south orientation that is approximately 150 to 200 feet (45 to 76 meters) deep and approximately 2,000 feet (600 meters) wide. The canyon forks into three short but distinct smaller branches at the southern terminus. The total length of the canyon is approximately 3 miles (4,500 meters) from the northern junction with the valley floor to the southern branched terminus. The rim of the canyon has a steep slope, but the floor of the canyon is relatively flat.

3.1.2 Soils

In general, the soils in the North Range are similar to those in the surrounding area. The basin floors generally consist of the Mazuma and Ragtown soil series. The Mazuma series are very deep, well-drained soils that formed in alluvium and lacustrine materials from mixed rock sources. Mazuma soils occur on fan skirts and alluvial flats, with slopes of 0 to 15 percent. The Ragtown series are very deep, moderately well-drained soils that formed in moderately fine and fine-textured lacustrine materials from mixed rock sources. This series occurs on lake plain terraces with slopes of 0 to 4 percent (Air Force 2004). Most soils are underlain by a hardpan of caliche. Soil loss through wind and water erosion is a common occurrence throughout the North Range and surrounding areas. None of the soil series in southwestern Nye County are considered prime farmland.

3.1.3 EARTH RESOURCES

Neither the Terrorist Canyon target site nor the WMD target sites are located within the 25 major mining districts or the 13 smaller areas of prospecting activity defined by the *Mineral and Energy Resource Assessment of the Nellis Air Force Range* (Air Force 1997a).

3.2 SURFACE WATER AND GROUND WATER

The following section discusses the surface water and ground water at the NTTR.

3.2.1 Surface Water

The North Range of NTTR is within the Great Basin, a hydrographic basin in which no surface water leaves except by evaporation. Hydrographic basins in the region have internal drainage controlled by topography. Streams in the region are ephemeral. Runoff results from snowmelt and from precipitation during storms that occur primarily in the summer. Much of the runoff quickly infiltrates into rock fractures or into the dry soils, some is carried down alluvial fans in arroyos, and some drains into playas.

Most surface water is temporarily present as a result of ponding in low permeability playas and as ephemeral channel flow from infrequent precipitation and snowmelt runoff. Playas are not

major recharge zones due to the low infiltration potential (Air Force 1998). There are no perennial surface water bodies in the vicinity of the target areas.

3.2.2 Ground Water

The primary ground water flow system on the NTTR is a regional flow system. The general direction of regional flow within the boundaries of the NTTR is from the northeast toward the southwest. Depth to ground water varies from a few feet to over 1,000 feet below the surface, but on the average exceeds 200 feet (Air Force 1998). Ground water is used as the primary water supply in support of range personnel and operations at the NTTR.

Three types of aquifers underlie portions of southern Nevada and the NTTR: valley-fill or alluvial aquifers, volcanic aquifers, and carbonate aquifers (Air Force 1998). The primary source of ground water recharge on the NTTR is precipitation in the form of rain or snow falling in the mountains and infiltrating into alluvial and bedrock aquifers. Mountain precipitation infiltrates directly into aquifer outcroppings providing recharge to the bedrock aquifers.

3.3 AIR QUALITY

This section discusses air quality considerations and conditions in the area around the NTTR in Nye County, Nevada. Identifying an ROI for air quality depends on a particular pollutant emission, the proximity of the emission source to other emission sources, and local and meteorological conditions. As impacts to air quality are expected from construction and operation of the targets, the ROI for air quality is the local airshed of Nye County and greater NTTR. It addresses air quality standards and describes current air quality conditions in the region.

Air quality is described by the atmospheric concentrations of six criteria pollutants: ozone (O_3), nitrogen dioxide (NO_2), carbon monoxide (CO), sulfur dioxide (SO_2), particulate matter less than 10 micrometers in diameter (PM_{10}) and less than 2.5 micrometers ($PM_{2.5}$) in diameter, and lead (Pb), relative to national ambient air quality standards (NAAQS) established by the U.S. Environmental Protection Agency (USEPA) under the Clean Air Act. The State of Nevada has its own air quality standards for the criteria pollutants and an additional standard for hydrogen sulfide (H_2S), a toxic gas characterized by a disagreeable odor. Monitoring for H_2S is generally confined to areas close to the industrial sources of this pollutant. For the criteria pollutants, the Nevada standards are the same as the NAAQS, except for the 1-hour O_3 standard, which remains a Nevada standard but has been repealed on the federal level for most of the U.S. (including Nevada), and the 8-hour CO standard above 5,000 feet elevation. For these exceptions, the Nevada standards are more stringent. The Nevada standards are used in considering whether to issue a permit, which ensures that the stationary source will not cause these standards to be exceeded where the general public has access (Nevada Division of Environmental Protection [NDEP] 2003).

The NTTR is located in Nye County, Nevada, which is in attainment for all criteria pollutants except for a portion of the Pahrump Valley, near the California-Nevada border and outside

(southwest) of the NTTR, which was recently designated nonattainment for PM_{10} (USEPA 2005).

The Clean Air Act established the goal of prevention of significant deterioration (PSD) of air quality in sensitive areas, called Class I areas, including certain national parks and wilderness areas. The closest such area to the Proposed Action is Death Valley National Park, which is more than 62 miles (100 kilometers) southwest of the NTTR.

The General Conformity rule under the Clean Air Act established requirements for federal facilities to demonstrate conformity of proposed activities with the local air quality implementation plans. General conformity does not apply to areas that are in attainment of the NAAQS.

Air emissions on the NTTR and in the vicinity of the proposed target locations result primarily from aircraft operations, which fly over an area spanning more than 12,000 square miles, horizontally, from the surface to high altitudes. The NTTR is located in southern Nevada, where the average maximum temperature is 87.7 degrees Fahrenheit (°F) (Western Regional Climate Center 2006). Table 3.3-1 provides a climate summary of the NTTR area. Prevailing winds from the southwest provide adequate transport and dispersion of locally generated air pollutants. The pollutants emitted from aircraft are therefore well dispersed and contribute only minor concentrations at any one location.

Table 3.3-1. Climate Summary

	Jan	***Feb***	***Mar***	***Apr***	***May***	***Jun***	***Jul***	***Aug***	***Sep***	***Oct***	***Nov***	***Dec***	***Annual***
Average Max. Temperature (F)	37.9	42.9	50.6	60.2	69.0	78.5	87.8	85.5	77.3	63.6	49.7	40.6	62.0
Average Min. Temperature (F)	22.4	25.6	29.9	37.4	44.5	51.7	61.4	59.7	52.7	41.8	31.3	25.5	40.3
Average Total Precipitation (in.)	0.36	0.39	0.60	0.62	0.38	0.21	0.34	0.41	0.30	0.55	0.34	0.44	4.95
Average Total Snowfall (in.)	2.3	2.2	2.4	1.8	0.1	0.0	0.0	0.0	0.1	0.4	2.4	2.5	14.4
Average Snow Depth (in.)	1	0	0	0	0	0	0	0	0	0	0	0	0

Source: Western Regional Climate Center 2006.

Ground-based operations include fugitive dust and engine emissions from ordnance delivery, target maintenance activities, and range vehicle travel on unpaved roads. Ordnance used on the NTTR includes small-scale practice bombs (BDU-33 and MK-106 type ordnance), bullets up to

30 millimeter, 2.75-inch rockets, and white phosphorus. White phosphorus burns spontaneously in air to produce a dense, white smoke made up of various oxides of phosphorus, which react rapidly with moisture in the air to produce a mixture of phosphoric acids. White phosphorus smoke may contain small quantities of unreacted phosphorus and phosphine (PH_3), both of which are considered hazardous air pollutants by the USEPA. The low levels of hazardous air pollutants from white phosphorus are not significant compared to regulatory thresholds (Air Combat Command [ACC] 2003a).

Ground-based training activities within the NTTR, including road maintenance, target and threat-site maintenance, and weed abatement, are regulated under a Facility Wide Fugitive Dust Control Plan (see Appendix A), which is required under the NDEP Title V permit (Permit #AP9711-1233) to reduce or minimize fugitive emissions. Approximately 11,834 acres of surface area are maintained annually, through a program of weed control and removal, terrain leveling, water spraying, and removal of UXO.

A summary of criteria pollutant emissions at the NTTR is presented in Table 3.3-2 (ACC 2003b).

Table 3.3-2. Baseline Emissions at NTTR

	Annual Emissions (tons per year)				
	CO	***VOC***	***NO_x***	***SO_x***	***PM_{10}***
Ground-Based	21.0	11.2	81.4	5.08	84.2
Aircraft operations	695	52	8,983	214	230

3.4 CULTURAL RESOURCES

3.4.1 Definition of the Resource

Cultural resources management is directed by federal laws. Section 106 of the *National Historic Preservation Act of 1966* requires that Federal agencies take into account the effects of their undertakings on historic properties which are locations, features, and objects older than 50 years and determined eligible for nomination to the *National Register of Historic Places*. Cultural resources are sites, buildings, structures, or objects that are over 50 years old. Locations with significant importance to a group are traditional properties.

Resources and locations are recorded and evaluated by archaeologists and historians. Those that meet one or more criteria in 36 CFR 60.4 are determined by the Air Force as eligible for nomination to the *National Register of Historic Places*. An Area of Potential Effect includes eligible properties that could be affected by the action even if not within the ROI, such as a shelter cave that is visible to construction personnel who have the potential to conduct visits and remove artifacts. If the federal action has potential for adverse effects to eligible sites, the Air Force makes a determination of adverse effect; if no eligible properties are present, the determination is either no historic properties present or no adverse affects. The Area of Potential Effect for this action is defined as the ROI.

3.4.2 Regional Review

The Integrated Cultural Resources Management Plan (ICRMP) (Air Force 2006) presents a regional archaeology, history, and Native American cultural summary. Evidence indicates people were in the Great Basin and Eastern Mojave Desert up to 10,000 years ago. The largest population and use of the region is within the past 2,000 years. Water sources, the differential distribution of numbers of animals and edible plants, and seasons of maturation guided settlement and movement patterns for people who moved throughout large family territories. Families met in the fall in mountains such as Kawich Range to harvest pine nuts; they constructed brush shelters for winter occupation. Canyons such as Airfield and Civet Cat were visited to utilize water stored in natural rock basins and also places for rock art carvings, and religious and healing ceremonies. The descendents of the aboriginal users of NTTR are distributed in 17 tribes in a 250-miles radius of Nellis AFB. Each tribe is part of the Southern Paiutes, Western Shoshones, or Ft. Mojave cultural groups.

Diffuse ranching commenced circa 1900 on NTTR, with operational remains in the Belted Range and Civet Cat Canyon, the site of a unique line shack. The regional 1905 mining boom resulted in creation of several north NTTR districts. Technology was primarily limited to human efforts and though many large tailings dumps are visible, the percentage of gold and silver was too low to be profitable. The Depression Era seduced a new group of miners, with most use centered within and in a 25-mile radius of Cactus Range. Research from 2004 to 2006 shows Cactus Range mining was by individuals or small families from 5-30 years rather than worked by small companies or groups of men for short periods.

Packrat Canyon, southwest of the center of Cactus Range mining, is adjacent to Civet Cat Canyon, with ceremonial rock art and shallow natural basins that hold water. Both are cut into basalt with dark-colored, sheered walls in which rock art is arguably the most aesthetically-visible compared to other rock types. Civet Cat Canyon's floor is flat and easily accessible, thus was likely a major travel route by aborigines and is shown on historic maps as the historic road to Goldfield for miners from 1905 to circa 1945, the restriction of the NTTR for military uses. Packrat Canyon's terrain is not easily-accessible for use as a travel route.

ARCHAEOLOGICAL RESOURCES

In total, cultural resource surveys have examined the entire 22,341 acres of Nellis AFB and 167,882 acres (5.7 percent) of NTTR resulting in 2,579 recorded sites. Site types include those related to Native American activities, mining, and ranching. The most common sites are small lithic scatters, plant processing areas, and hunting camps along dry lake margins (ACC 2005).

ARCHITECTURAL RESOURCES

Evaluations of architectural resources on Nellis AFB and the Tonopah Test Range have not identified any structures or facilities that are eligible to the NRHP under any criteria including special considerations afforded to Cold War era facilities (ACC 2005). However, the 1995 evaluation recommended the Threat Facility, the Red Flag Air Combat Training Center, the Weapons School Facility, the Thunderbirds maintenance facility, and the Command Center for

additional research. As a result, the current Nellis ICRMP lists historic building evaluation as a priority for Fiscal Year 2006 (ACC 2005).

CULTURAL RESOURCES WITHIN THE ROI

A cultural resource survey of the current ROI was conducted to support this EA. Results of the survey concluded that the ROI did not contain any significant or eligible cultural resources.

TRADITIONAL RESOURCES

Between the culture groups of the Mojaves, the Owens Valley Paiutes, the Southern Paiutes, and the Western Shoshone, there are 17 tribes with cultural ties to the Nellis AFB and NTTR. Since its creation in 1996, an average of 35 individuals participate in the Air Force Native American Program annually. According to the Nellis ICRMP, Nellis AFB actively consults with local tribes on all projects having the potential to impact cultural resources.

3.5 BIOLOGICAL RESOURCES

Biological resources are natural living resources, which include plant and animal species and the habitats within which they occur. Plant and animal life are typically referred to as vegetation and wildlife, respectively. Habitat is the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there. Biological resources discussed in this EA include vegetation and wildlife, including special-status species. Special-status species are those plant and animals species listed as threatened, endangered, candidate, or species of concern by the USFWS under the Endangered Species Act, as well as those species with special-status designations by the state of Nevada.

The ROI for biological resources is the area within which the Proposed Action has the potential to affect biological resources. This includes all lands affected by the proposed UOC and UAV targets. A biologist conducted a site survey of the ROI to support this EA. The biologist identified general habitat conditions, confirmed community types, surveyed for special-status species, and recorded all wildlife species observed.

3.5.1 Vegetation

The existing vegetation within the ROI is consistent with that of Great Basin desert scrub community (U.S. Army Forces Command [FORSCOM] 2005). Vegetation typically consists of small shrubs and patches of grass along the canyon floors and open scrubland, with saltbush species present along washes. The Pack Rat Canyon floors and open desert scrub of the WMD target area comprise greasewood (*Sarcobatus vermiculatus*), blackbrush (*Coleogyne ramosissima*), hopsage (*Grayia spinosa*), rubber rabbitbrush (*Ericameria nauseosus*), and sagebrush (*Artemisia* spp.) populations, with intermixed shrubs of winter fat (*Krascheninnikovia lanata*). Populations of saltbush species occurring near washes include four-wing saltbush (*Atriplex canescens*) and shadscale (*A. confertifolia*). Scatterings of desert trumpet (*Ergonium inflatum*), ephedras (*Ephedra* spp.), yellow-saucers (*Malacothrix sonchoides*), cliff rose (*Purshia mexicana*), and early evening primrose (*Oenothera primiveris*) occur throughout the canyon floor and along the canyon walls. Utah juniper (*Juniperus osteosperma*) is rare, and only found atop the Pack Rat Canyon rim. Grasses occurring within the proposed project area include

galleta (*Hilaria jamesii*), Indian ricegrass (*Oryzopsis hymenoides*), and fluffgrass (*Erioneuron pulchellum*) (Bowers 1993; Taylor 1998; Rhode 2002).

Red brome (*Bromus rubens*) and cheatgrass (*B. tectorum*) are the two most common invasive species in the proposed project area. Both species of grass flourish rapidly on disturbed soil and can persist, becoming dominant annuals of the landscape (Air Force 2001). Tamarisk (*Tamarix ramosissima*) is intermittently present along major wash channels.

Appendix B, Special-Status Species Recorded in R-71S and R-76, provides the list of special-status plant species that are known or likely to occur on the NTTR near the proposed target locations. The Nevada Natural Heritage Program compiled the list on 9 December 2003. An updated list will be provided at the Final EA phase. No federally listed threatened or endangered plants are known or likely to occur within or adjacent to the ROI.

3.5.2 Wildlife

Small mammal burrows were observed in soils throughout the proposed project areas, although only a desert cottontail *(Sylvilagus audubonii)* was observed at Pack Rat Canyon. No mammals were noted at the WMD target site, but scat from small rodents were ubiquitous at the site. Common small mammals known to occur or forage within the ROI include the white-tailed antelope squirrel *(Ammospermophilus leucurus)*, round-tailed ground squirrel *(Spermophilus tereticaudus)*, pallid kangaroo mouse (*Microdipodops pallidus*), dark kangaroo mouse (*M. megacephalus*), chisel-toothed kangaroo rat (*Dipodomys microps*), Townsend's ground squirrel *(Spermophilus townsendii)*, Nuttall's cottontail *(Sylvilagus nuttallii)*, sagebrush vole *(Lemmiscus curtatus)*, and Great Basin pocket mouse *(Perognathus parvus)* (Air Force 2001). American badger (*Taxidea taxus*), common coyote (*Canis latrans*), and kit fox (*Vulpes macrotis*) are also found in the area.

A herd of bighorn sheep *(Ovis canadensis)* were observed near Pack Rat Canyon and are known to occur throughout the area (Air Force 2001). Wild horse (*Equus callabas*) and/or wild burro (*E. assinus*) scat was observed within Pack Rat Canyon; however, the animals were not present during the site survey. Other common large mammals known to occur within the ROI include pronghorn antelope (*Antilocapra americana*) and mule deer (*Odocoileus hemionus*) (Air Force 2001; FORSCOM 2005). Pronghorn antelope are found in both R-71S and R-76 on a permanent basis (Air Force 2004).

Since the overwhelming majority of the ROI consists of open scrubland, bat nesting and roosting habitat is extremely limited. Some bat species may forage in the area, including the long-legged myotis (*M. volans*), fringe-tailed myotis (*M. thysanodes*), California myotis (*Myotis californicus*), pipistrelle (*Pipistrellus hesperus*), Townsend's big-eared bat (*Plecotus townsendii*), and pallid bat (*Antrozous pallidus*) (Air Force 2004).

Bird species known to occur within or adjacent to the ROI include the sage sparrow (*Amphispizabelli belli*), vesper sparrow (*Pooecetes gramineus*), sage thrasher (*Oreoscoptes montanus*), horned lark (*Eremophia alpestris)*, red-tailed hawk (*Buteo jamaicensis*), prairie falcon (*Falco mexicanus*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco*

sparverius), northern harrier *(Circus cyaneus)*, ferruginous hawk (*Buteo regalis*), and turkey vulture (*Cathartes aura*). Chukars (*Alectoris chukar*) and common ravens (*Corvus corax*) were observed foraging in Pack Rat Canyon during the site visit. Other species that may occur within the area include the green-tailed towhee (*Pipilo chlorurus*), black-throated gray warbler (*Dendroica nigrescens*), mourning dove (*Zenaida macroura*), greater roadrunner (*Geococcyx californianus*), common nighthawk (*Chordeiles minor*), and western meadowlark (*Sturnella neglecta*) (Air Force 1997a; National Geographic Society [NGS] 1999).

During precipitation events, temporary surface waters may accumulate in washes or low lying portions on the proposed project areas and could potentially provide habitat for migrating bird species, such as raptors and waterfowl.

Reptiles within the ROI include the gopher snake (*Pituophis melanoleucus*), leopard lizard (*Gambelia wislizenii*), side-blotched lizard (*Uta stansburiana*), desert night lizard (*Xanthusia vigilis*), zebra-tailed lizard (*Callisaurus draconoides*), and the sagebrush lizard (*Sceloporus graciosus*). Reptiles observed in the ROI were the Great Basin rattlesnake (*Crotalus viridis luteosus*), collared lizard (*Crotaphytus collaris*), western fence lizard (*Sceloporus occidentalis*), desert horned lizard (*Phyrnosoma platyrhinos*), and western whiptail (*Cnemidophorus tigris*) (Stoops and Wright 2000). Desert tortoises (*Gopherus agassizii*) prefer the warmer climate of the Mojave Desert to the south and are not known to occur in the ROI (FORSCOM 2005).

No permanent water sources occur within the ROI. As a result, no fish are present and amphibians are scarce. During wet seasons, heavy precipitation events could attribute to standing water and provide short-lived, limited habitat for amphibians. The Great Basin spade-foot toad (*Scaphiopus intermontanus*) is the most common amphibian found on the northern areas of NTTR and, although unlikely, would be the most probable amphibian to occur in the proposed project area.

A list of special-status wildlife species that are known or likely to occur on the NTTR near the proposed project is found in Appendix B. The Nevada Natural Heritage Program compiled the list on 9 December 2003. No federally listed threatened or endangered wildlife are known or likely to occur within or adjacent to the proposed project areas. The long-legged myotis is a species of concern that has been reported in the general area; however, important habitat for this species includes caves, mines, and cliffs, which are not present in the ROI.

3.6 SOLID/HAZARDOUS WASTE

Hazardous materials are defined and regulated under CERCLA, Title 42 of United States Code (USC) §§ 9601-9675, as amended, and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 USC §§ 69016992, as amended. Hazardous materials are defined as any substance that, due to quantity, concentration, and physical, chemical, or infectious characteristics, may present substantial danger to public health, welfare, or the environment if released. The most commonly used hazardous materials include aviation and motor fuels, various grades of petroleum products, paints, solvents, thinners, adhesives, cleaners, batteries, acids, bases, refrigerants, compressed gases, and pesticides.

Munitions are routinely handled on the NTTR in support of its operational and training missions. However, no munitions are actually stored at any of the Proposed Action locations. There is the potential for UXO to be present at the Proposed Action locations, although none was observed during site visits.

Use of hazardous substances (e.g., paint or gasoline for fueling and equipment maintenance) are handled following the Nellis AFB Hazardous Material Management Plan (Air Force 2002). Adherence to policies relating to hazardous substances storage and use during operations is monitored under the Air Force's Environmental Compliance Assessment Management Program. To ensure safety and properly trained personnel, hazardous waste management training and associated refresher courses are offered monthly.

On the North Range, nonhazardous solid refuse, office wastes, dining hall wastes, and garbage that are generated in the major operating areas are disposed of per Nellis AFB Solid Waste Management Plan (Air Force 2003).

3.7 SAFETY

This section addresses ground and explosive safety associated with operations and maintenance of the Proposed Action at NTTR. Ground safety considers issues associated with operations and maintenance activities that support NTTR operations, including fire response. Explosive safety discusses the management and use of ordnance or munitions associated with training activities. The ROI for safety encompasses the two proposed target areas.

Ground Safety

Operation, construction, and maintenance activities are on-going at the NTTR. Day-to-day NTTR operations and activities are performed by qualified personnel and are conducted in accordance with applicable Air Force safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health requirements.

Nellis AFB provides fire and crash response by convoy to those ranges located close to Nellis AFB. Fire suppression on the North Range is the responsibility of the Nellis Fire Department at Tonopah Test Range with additional assistance available under mutual aid agreements with the Bureau of Land Management.

Explosive Safety

Personnel at Nellis AFB control, maintain, and store all ordnance and munitions required for mission performance. This includes training, and inert bombs and rockets, live bombs and rockets, chaff, flares, gun ammunition, small arms ammunition, and other explosive and pyrotechnic devices. Ordnances are handled and stored in accordance with Air Force explosive safety directives (Air Force Manual 91-201), and all munitions maintenance is carried out by trained, qualified personnel using Air Force-approved technical data.

Use of ordnance during training is limited to ranges within Restricted Airspace. R-71S and R-76 are located beneath R-4807A. The Air Force safety standards require safeguards on weapons systems ordnance to ensure against inadvertent releases. All munitions mounted on an aircraft,

as well as the guns carried in the aircraft, are equipped with mechanisms that preclude release or firing without activation of an electronic arming circuit.

NTTR UXO and munition debris are cleared from targets on an annual basis under the Coronet Clean Program. UXO and munition scrap metals are recycled and solid waste disposed of in accordance with the Nellis AFB Solid Waste Management Plan (Air Force 2003).

Weapons safety footprints are developed for each type of ordnance used on NTTR. The weapon safety footprints are geographic areas surrounding target where inert or live ordnance could cause injury or damage property. Personnel are not permitted within these safety footprints when the targets/ranges are in use. A computer model, SAFE-RANGE, facilitates the application of these footprints to specific locations and conditions. Range operations require that the surface area encompassing the weapon safety footprints (as defined in SAFE-RANGE) be protected by purchase, lease, or other restriction to ensure the safety of personnel, structures, and the public from expended rockets, missiles, or target debris (Air Force Instruction 13-212).

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4.0 ENVIRONMENTAL CONSEQUENCES

This chapter presents an assessment of the potential environmental consequences of implementing the Proposed Action or alternatives including the No-Action Alternative within the proposed target areas. The analysis presented in this chapter is based on overlaying the potential impacts of the Proposed Action or alternatives from Chapter 2.0 on the baseline conditions from Chapter 3.0. Potential impacts were assessed as a result of construction and operation of the proposed targets. Cumulative effects of the Proposed Action or alternatives with other past, present, and reasonably foreseeable future actions within the ROI are presented in Chapter 5.0.

4.1 GEOLOGY AND SOILS

4.1.1 Proposed Action

Potential effects to soils would occur during construction and would be of short duration and localized geographic extent. Grading activities and target placement associated with the UOC and UAV target areas would require the disturbance of approximately 180 acres. Impacts associated with project construction would also be temporary and limited by BMPs as required under the ongoing storm water construction permit for range targets (NVR 100000-32084). The Air Force would follow the NTTR Facility Wide Fugitive Dust Control Plan (Appendix A) as required by the NDEP Title V Permit to reduce or minimize fugitive emissions.

The UOC target area would include the use of full scale inert unguided and guided munitions up to and including the GBU-28 (5,000 pounds). The 27 acres of the project site would potentially be subject to aerial bomber and fighter practice. Project operation would result in localized erosion, as craters would be formed from the use of 5,000 pound ordnance which would be mitigated during annual Coronet Clean operations.

The UAV target area would include the use of small scale practice bombs, forward firing ordnance and bullets. Approximately 153 acres of the canyon area would potentially be subject to aerial and airborne gunnery practice. Project operation would result in localized erosion from ordnance embedded in the ground surface at shallow depths near the target sites. The Coronet Clean program annually reconditions target areas by clearing UXO, refurbishing targets, and removing bombing craters. Therefore, localized erosion would be minimal.

Neither target area would have inhabited structures or populations associated with them, therefore, seismic safety and ground stability is not relevant. The Stonewall Mountain fault and the faults of Pahute Mesa exhibit negligible seismic activity and would not impact any structure related to either target area. Additionally, both project sites have a low probability of soil liquefaction and subsidence due to the subsurface bedrock proximity.

Specific issues and potential impacts of training chaff and flares on biological resources have been examined by Department of Defense (DoD) research (Air Force 1997b, Cook 2001), General Accounting Office review (United States General Accounting Office 1998), independent review (Spargo 1999), resource agency instruction, and public concern and perception. No

reports to date have documented negative impacts of training chaff and flares to biological resources.

4.1.2 Alternative A: Construction of UOC

Impacts from construction and operation of the UOC targets would be similar to those discussed under the Proposed Action, but limited to the 27-acre UOC target site in R-76.

4.1.3 Alternative B: Construction of UAV

Impacts from construction and operations of the UAV targets would be similar to those discussed under the Proposed Action, but limited to the UAV target site in R-71S.

4.1.4 No-Action Alternative

The No-Action Alternative would not result in the construction of targets in either R-71S or R-76. No change to current geologic conditions would result from this alternative, therefore no impact would occur.

4.2 SURFACE WATER AND GROUND WATER

4.2.1 Proposed Action

There are no perennial surface water features in the vicinity of either of the proposed targets. Therefore, no impact to surface water from soil erosion during construction or aerial target practice would occur. Minimal temporary ponding of surface water runoff occurs at both project sites. Therefore, the installation of targets would not impact temporary ponding or the flow of surface water runoff during storm events.

Construction of the targets and emitter site would not require subsurface disturbance of more than 2 to 3 feet. Aerial gunnery at the WMD target site would disturb up to 5 feet of the subsurface. Bombing practice at the Terrorist Canyon target site has the potential to disturb up to 15 feet of the subsurface. Depth to ground water on the NTTR averages approximately 200 feet below the ground surface. Therefore, impacts to ground water would not occur.

The Proposed Action would have negligible effects on water resources from training chaff deposition. The major components of chaff are silica, aluminum, and stearic acid. These components are prevalent in the environment. Silica (silicon dioxide) (SiO_2) belongs to the most common mineral group, silicate minerals. Silica is inert in the environment and does not represent an environmental concern with respect to soil chemistry. Aluminum (Al) is the third most abundant element in the earth's crust, forming some of the most common minerals, such as feldspars, micas, and clays (Air Force 1997b). Stearic acid is animal fat that degrades when exposed to light and air. Chaff is currently being deployed on NTTR. The proposed use of chaff is not expected to change the amount used on NTTR. Therefore, no impact is expected from the use of chaff.

As described in the *Nellis Air Force Range Renewal LEIS* (1999), flares are authorized for use on R-71S and R-76. Flares are designed to completely burn out in about 4 seconds. The only two constituents of flares, magnesium (Mg) and boron (b) showed levels in sufficient

concentrations for further evaluation in field and laboratory tests (Air Force 1997b). Magnesium is an essential nutrient often found in nuts, seafood, and cereals and is a principle component of chlorophyll. Only in extremely large quantities can magnesium affect water properties. Given that the dispersal, reliability, and no increase in the numbers of flares used, accumulation of such levels would be impossible.

4.2.2 Alternative A: Construction of UOC

Alternative A would be limited to the 27 acre UOC target area in R-76. As with the Proposed Action, the implementation of Alternative A would not impact the water resources of the region.

4.2.3 Alternative B: Construction of UAV

Alternative B would be limited to the 153 acre UOC target area in R-71S. As with the Proposed Action, the implementation of Alternative B would not impact the water resources of the region.

4.2.4 No-Action Alternative

The No-Action Alternative would not result in change to the current water resources in R-71S and R-76, therefore no impact would occur.

4.3 AIR QUALITY

4.3.1 Proposed Action

The Proposed Action would involve construction and maintenance of UAV targets and an access road in Pack Rat Canyon (Terrorist Canyon) and in the UOC WMD storage area. The Proposed Action would result in redistribution of ordnance deployments within the NTTR, but would not involve any net increase in the amount of ordnance deployed. No changes in aircraft sortie operations would result from implementation of the Proposed Action.

Adherence to the NTTR Facility Wide Fugitive Dust Control Plan during construction activities will eliminate any potential adverse effects to air quality.

4.3.2 Alternative A: Construction of UOC

Alternative A would involve only the construction of the UOC targets and access roads, as described in Section 4.3.1. The UAV target complex and roads would not be constructed. Air emissions resulting from implementation of Alternative A would be a subset and necessarily less than those described for the Proposed Action.

4.3.3 Alternative B: Construction of UAV

Alternative B would involve only the construction of the UAV targets and access roads, as described in Section 4.3.1. The UOC WMD storage area and roads would not be constructed. Air emissions resulting from implementation of Alternative B would be a subset and necessarily less than those described for the Proposed Action.

4.3.4 No-Action Alternative

The No-Action Alternative would maintain the status quo of targets and facilities at the NTTR. The proposed targets and access roads would not be constructed and air emissions would remain the same as shown in Section 3.3 for the baseline.

4.4 CULTURAL RESOURCES

Section 106 of the *National Historic Preservation Act of 1966* requires that Federal agencies take into account the effects of their undertakings on historic properties which are locations, features, and objects older than 50 years and determined eligible for nomination to the *National Register of Historic Places*. Efforts to identify and evaluate cultural resource properties for this project according to 36 CFR 800.4 are described in two reports dated 2000 and 2006 on file in the Cultural Resources Program in the Environmental Management Flight (99 CES/CEVN). A portion of the Area of Potential Effect was surveyed in a 1999 all-NTTR sample inventory for locations under 5,000 feet (Kolvett *et. al.*, 1999). Five locations with flaked stone tool material, indicating tool re-shaping or sharpening, were recorded in the Area of Potential Effect. SAIC archaeologists completed inventory, without locating additional sites, for acreage not covered in the 1999 survey (Corn 2006).

The sites, 26Ny10868, 26Ny10869, 26Ny10870, 26Ny10872, and 26Ny10874 are limited in size, lack subsurface deposits, and do not contain unrecorded information to contribute to identified regional and local research questions, thus determined ineligible. Nellis AFB created a 5-member Document Review Committee that makes comments on all cultural resources reports. It is composed of five tribal members elected by representatives of the 17 ancestral tribes. The Document Review Committee reviewed the 2006 archaeology survey report in March 2006 and concurred with the determinations of ineligibility and *no adverse effects*. SHPO concurred with the sufficiency of the inventories and the determinations in a letter dated April ___, 2006. The Air Force completed its cultural resources responsibilities for this undertaking.

4.4.1 Proposed Action

The Proposed Action involves the development of targets intended to simulate current world scenarios (refer to Figures 2-1 and 2-2). The two target developments would include surface disturbances associated with target and access road construction. No historic properties were located within the ROI of the Proposed Action, therefore, no impacts to cultural resources are expected. However, if a previously unrecorded cultural resource is encountered during construction for the Proposed Action, or subsequent use of the targets, work or use should stop and the Air Force archaeologist should be contacted immediately until the resource can be evaluated for NRHP eligibility.

4.4.2 Alternative A: Construction of UOC

Alternative A consists of the development of the UOC target described for the Proposed Action, and does not include the development of the UAV target. As no historic properties were located within the ROI of Alternative A, this alternative is not expected to impact cultural resources. As described for the Proposed Action, if a previously unrecorded cultural resource is encountered

during construction or use of the target, work should stop and the air Force archaeologist should be contacted immediately to evaluate the resource for NRHP eligibility.

4.4.3 Alternative B: Construction of UAV

Alternative B consists of the development of the UAV target described by the Proposed Action, and does not include the development of the UOC target. As no historic properties have been identified within the ROI of Alternative B, this alternative is not expected to impact cultural resources. As described for the Proposed Action, if a previously unrecorded cultural resource is encountered during construction or use of the target, work should stop and the Air Force archaeologist should be contacted immediately to evaluate the resource's NRHP eligibility.

4.4.4 No-Action Alternative

Under the No-Action Alternative, no new UOC or UAV targets would be constructed. As such, no impacts to cultural resources would occur.

4.5 BIOLOGICAL RESOURCES

Four areas of consideration are used to identify the potential environmental consequences to biological resources. These areas are (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; (2) the proportion of the resource that would be affected relative to its occurrence in the region; (3) the sensitivity of the resource to proposed activities; and (4) the duration of any ecological ramifications. Impacts to resources would be considered significant if special-status species or habitats are adversely affected over relatively large areas or disturbances cause significant reductions in population size or distribution of a special-status species.

Federal laws and regulations that apply to biological resources include: Fish and Wildlife Coordination Act, NEPA, Federal Land Policy and Management Act, Endangered Species Act, state hunting regulations, and state laws protecting plants and nongame wildlife. Additionally EO 13186 and the Migratory Bird Treaty Act, outline requirements for managing and protecting migratory birds.

4.5.1 Proposed Action

In general, the Proposed Action would have minimal impacts on the biological resources of the NTTR. Because noise levels and general military use of the area would not change, only biological resources associated with the proposed projects in Pack Rat Canyon and the WMD site in the North Range of NTTR would be affected. Specifically, biological resources located in and near areas of target and road construction would be directly impacted. Likewise, aerial and gunnery practice in the ROI would continue to impact biological resources over the life of the project.

Impacts to native vegetation would include disturbance, damage, and removal of plant materials during target and road construction. Following construction, the areas would continue to be impacted as they are used for targets of aerial and airborne gunnery practice. A total of approximately 180 acres would be disturbed during construction and use of both UOC and UAV

target locations (Table 4.5-1), which is less than 1 percent of the 2.9 million acres of the NTTR. Furthermore, the plant species and communities are not unique to the NTTR and no federally listed threatened and endangered species or sensitive plants occur in the ROI. Additionally, the ROI does not contain Joshua trees (*Yucca brevifolia*), which would require coordination with the Bureau of Land Management for proper disposal as described under Nevada state protection laws.

Table 4.5-1. Estimated Acres Disturbed from the Proposed Action

Location	***Proposed Action (acres)***
WMD Site – UOC Target	27.0
Terrorist Canyon – UAV Target	153.0
Total Acres Disturbed	180.0

Impacts to wildlife due to construction and operation of the proposed targets would be variable, but would not negatively affect long-term population viability. Some small animals, such as reptiles and rodents, would be displaced and potentially taken during construction. Other animals, such as birds and large mammals, would be temporarily disturbed by the construction and would relocate to nearby undisturbed habitat. These animals may return when construction is completed. No federally listed wildlife species are known to occur in the ROI.

Some wildlife species, including bighorn sheep, pronghorn antelope, and migratory birds, could be startled by aerial and gunnery noise; however, noise effects would be localized and temporary. The NTTR has a long history of military training and animals on the NTTR are likely habituated to this noise. Furthermore, overall noise and training levels would not change due to the Proposed Action.

4.5.2 Alternative A: Construction of UOC

Under Alternative A, approximately 27 acres would be disturbed for construction of new roads and targets and during aerial and airborne gunnery practice. Impacts to vegetation and wildlife would mirror impacts described in the Proposed Action, but would only affect 27 acres. Overall, impacts to biological resources under Alternative A would be minimal and less than the Proposed Action.

4.5.3 Alternative B: Construction of UAV

Under Alternative B, approximately 153 acres would be disturbed for construction of new roads and targets and during aerial and airborne gunnery practice. Impacts to vegetation and wildlife would mirror impacts described in the Proposed Action, but would only affect 153 acres. Overall, impacts to biological resources due to Alternative B would be minimal and would not affect long term population viability.

4.5.4 No-Action Alternative

Under the No-Action Alternative, no change would occur from the baseline biological conditions.

4.6 SOLID/HAZARDOUS WASTE

4.6.1 Proposed Action

Use of hazardous substances (such as paint or gasoline for fueling and equipment maintenance) during construction would be handled following the Nellis AFB Hazardous Material Management Plan (Air Force 2002). Fueling and equipment maintenance would be conducted only at the threat emitter site and would follow Nellis AFB Plan 16, Aboveground Storage Tank Management Plan and Nellis AFB Plan 19-14, Petroleum Product Management Plan (Air Force 2000, 1999b). Some paint could be used at the site of the Proposed Action to create a more realistic look for the targets. Given the enforced requirement to ensure safe handling of materials, and the minimal amounts of materials likely to be used, the probability of an effect on the environment would be negligible. Spill and pollution prevention plans would be updated as needed to address activities related to the Proposed Action in accordance with Air Force regulations.

A thorough survey for UXO would be performed prior to construction activities to ensure the safety of construction workers. Any UXO encountered during construction of the Proposed Action would also be handled according to Air Force procedures.

Ordnance for the UOC and UAV targets are identified in Section 2.1.1. Munitions used on the proposed target areas are the same as those currently employed on NTTR. Bullets up to 30 millimeter and 2.75-inch rockets (inert) would be used. Chaff and flares would also be employed. These munitions were analyzed for use on NTTR in a previous EIS (Air Force 1999a). No ordnance, not currently approved on the range, would be used. Ordnance clean up would be in accordance with established Air Force procedures.

4.6.2 Alternative A: Construction of UOC

Under Alternative A, only one UOC target would be constructed. Impacts to solid or hazardous waste management would be less than those anticipated from the Proposed Action.

4.6.3 Alternative B: Construction of UAV

For Alternative B, the UAV target would be constructed. Impacts to solid or hazardous waste management would be less than those anticipated from the Proposed Action.

4.6.4 No-Action Alternative

Construction of the UOC or UAV targets would not occur under the No-Action Alternative. Therefore, the use of solid or hazardous materials would not change from the baseline conditions.

4.7 SAFETY

4.7.1 Proposed Action

In terms of ground and explosive safety, the Proposed Action does not represent a change in current NTTR use. There are no significant issues involving land area sufficiency (i.e., adequate area within the boundaries of NTTR to contain weapons footprints of expected ordnance used).

The Proposed Action includes placement of an electronic threat emitter site on the canyon rim of Terrorist Canyon target site. Electronic emitters emit radio frequency emissions[1] which can be hazardous if not operated properly. DoD and Air Force safety instructions provide guidance for the safe operation of radio frequency-emitting equipment as well as the training requirements for personnel who operate the equipment. All radio frequency emitters are considered nonhazardous as long as applicable safety precautions and calculated hazard distances are followed. For the proposed emitter site, separation distances between the equipment and a receptor would be calculated so that a person beyond that distance would not receive radio frequency energy that exceeds permissible exposure limits. All radio frequency-producing equipment would be oriented so that the radio frequency energy is directed away from personnel, and safe separation distances are maintained.

Flares are authorized for use in R-71S and R-76. Flares would not be dropped over manned sites, ground parties, or within 3.3 miles of forested areas. The minimum flare release altitude for R-71S and R-76 is 700 feet for all aircraft except B-52s (900 feet). Flares are not authorized for use during the dry season when the fire code is “extreme” (Air Force 1999a). With these safety precautions in place, fire risk on the proposed targets is not expected to change on NTTR.

4.7.2 Alternative A: Construction of UOC

Under this alternative, only the construction of the UOC would occur. The impacts to safety would be the same as those described above for the UOC target. As no impact was expected from the construction of both targets, the implementation of this alternative would also result in no impact.

4.7.3 Alternative B: Construction of UAV

Under this alternative, only the construction of the UAV would occur. The impacts to safety would be the same as those described above for the UAV target. As no impact was expected from the construction of both targets, the implementation of this alternative would also result in no impact.

4.7.4 No-Action Alternative

The No-Action Alternative would not result in the construction of targets in either R-71S or R-76. No change to safety measures would result from this alternative, therefore no impact would occur.

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[1] Radio frequency emissions consist of the transmission of non-ionizing energy through space to receptive objects.

5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires the consideration of cumulative impacts, which are the incremental impacts of an action when added to other past, present, and reasonably foreseeable future actions (40 CFR § 1508.7). Where there are few existing projects, and where the environment has not been degraded, the impacts of past and present actions combine to form existing conditions. Existing conditions were considered in Chapter 3.0 of this document.

Cumulative impacts result "from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal), individual, or industry undertakes such actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time" (40 CFR § 1508.7).

5.1 CUMULATIVE IMPACTS

Actions of agencies of the federal government include those of the Air Force, U.S. Navy, Department of Energy, and Department of the Interior (Bureau of Land Management and USFWS). It is expected that these agencies would continue to use the resources available to them and proceed with approved plans for the management and/or development of these resources.

The reasonably foreseeable future actions identified for the project areas include the continued use of the NTTR for military training. Additional UOC and UAV targets would create similar impacts as those resulting from existing military training activities. The Air Force continues to modify training scenarios on NTTR to meet changing combat situations. Development of these targets would have cumulative impacts on earth resources and biological resources through increased ground disturbance, erosion potential, and habitat degradation. However, the impacts would not be significant.

Actions potentially relating to the cumulative effects for the proposed targets could include those of the DoD, Department of Energy, Department of Interior, and local counties. These actions have been analyzed previously in the Nellis Renewal Legislative EIS (Air Force 1999a). The activities, when evaluated with the Proposed Action, would not generate additive cumulative effects to the region since these actions would take place on withdrawn land and are consistent with current NTTR activities.

5.2 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of "…any irreversible and irretrievable commitments of resources which would be involved in the Proposed Action should it be implemented." Irreversible and irretrievable resource commitments are related to the use of

nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

The continuation of activities at NTTR as described under the Proposed Action would, for most resources, neither irreversibly nor irretrievably commit resources. As in the past, activities that have the potential to produce ground disturbance also have the potential to impact water resources, air quality, biological resources, and cultural resources. However, management policies and practices in place and proposed to continue are designed to minimize potential impacts to these resources.

Construction and maintenance of targets and other facilities on NTTR would require the consumption of limited quantities of aggregate, steel, concrete, petroleum, oil, and lubricants. The commitment of these resources would apply under all action alternatives.

Use of training ordnance during operations would involve the commitment of certain quantities of resources; however, none of these resources are considered rare and their long-term commitment would not have a substantial effect on their future availability.

All alternatives, including the No-Action Alternative, would involve fuel use by aircraft and some by surface vehicles. Training activities would continue under all alternatives (although to a lesser degree under the No-Action Alternative.

6.0 REFERENCES

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APPENDIX A
NTTR FACILITY WIDE FUGITIVE DUST CONTROL PLAN

NTTR Facility Wide Fugitive Dust Control Plan
July 2, 2003

Name of Facility (source): Nevada Test and Training Range (NTTR)

Address of site:
Tonopah, NTTR
Nellis Air Force Base, 89191
Nye and Lincoln Counties

Activity Duration: Indefinite

Process description: Testing and training activities are performed on the Nevada Test and Training Range. Support of those activities includes a maintenance and fire protection program throughout the military range complex including the range boundaries, test areas, firebreaks, interior roads, and military cantonment areas.

The range maintenance and support program includes the removal of combustible materials around the boundaries of the range, along firebreaks and internal roads, and internally where military resources are maintained. In addition, target areas require maintenance to remove plant growth and terrain obstacles that impact the activities at the targets. Plant growth removal and terrain leveling on target areas facilitates identification and removal of unexploded ordnance and prevents the spread of fires.

Ground surface materials; silty soil (clay and sand) and plant materials are disturbed in the process. Approximately 11,834acres of surface area are maintained annually. The materials remain on site at the NTTR. The UTM coordinates (NAD 27) of a stationary emission point is:
4,182,846 meters Northing
520,230 meters Easting

Description of Facility Wide Fugitive Dust Emission Activities: Road maintenance, target and threat site maintenance, and weed abatement. Throughout the NTTR military range complex including the range boundaries, test areas, firebreaks, interior roads, and military cantonment areas.

The range maintenance and support program includes the removal of combustible materials (plant growth) and terrain surfacing around the boundaries of the range, along fire breaks and internal roads, and internally where military resources are maintained. In addition, target areas require maintenance to remove plant growth and terrain obstacles that impact the activities at the targets. Plant growth removal and terrain leveling on target areas facilitates identification and removal of unexploded ordnance, prevents the spread of wildfires, and facilitates control of natural or man induced wildfires.

Silty soil (clay and sand) and plant material particulate are generated as emissions. The estimated size of the release area for road maintenance would be approximately 222 acres per year. Approximately 11,612 acres would be disturbed during threat site and target maintenance activities. Bulldozers, front-end loaders, and graders used in the maintenance activities generate the fugitive dust.

Individual who oversees the implementation and maintenance of fugitive dust control measures is:

Roger Christensen
Environmental Management
(702) 652-2548

Description of Facility Wide Fugitive Dust Emission Controls:

1) 'On' and 'off' property emission controls:

a) Activities will not be initiated when the sustained wind speed is greater than 20 knots and dry soil conditions exist based on extended weather forecasts.
b) Equipment speed in transit will be maintained at, or below, posted speed limits (45 mph maximum on the facility) based on employee education programs.
c) Herbicide sprays are used when appropriate around targets and roads for removal of growth in lieu of ground disturbing activities.

2) Additional emission controls:

a) Land disturbing activities during dry soil conditions will be suspended when sustained wind speeds are forecast above 20 knots for extended period of time.
b) At the facility's option, to continue target maintenance operations with forecasted wind speeds in excess of 20 knots, water may be applied as a dust suppressant to prevent 20% opacity over a 6 minute period. Should the facility elect this option, sufficient quantities of water would be applied to reduce dust emission associated with construction equipment to less than 20 percent opacity using modified EPA Method 9 opacity screening.

3) Method of application of dust suppressant:

Water will be placed on the road using a spray water truck.

4) Frequency of application of dust suppressant:

As required to maintain an opacity less than 20% during high wind events (i.e, in excess of 20 knots).

5) Location of water source for dust suppressant:

Water trucks will be filled at either TPECR, TECR, or TTR.

6) Provisions for additional water trucks:

If water trucks are unavailable or can not maintain an opacity less than 20% during wind events in excess of 20 knots then the activity will cease until the area can be sufficiently wetted with available water trucks to maintain an opacity less than 20%.

7) **Frequency of application of dust suppressant:**
As required to maintain an opacity less than 20% during wind events in excess of 20 knots.

8) **Training of project supervisors, equipment operators and contractors:**
Project supervisors, equipment operators and contractors will be given a copy of the Dust Control Plan and instructed on the proper Best Management Practices to undertake while performing surface disturbing activities. The instruction will be an informal class conducted by the Nellis AFB Air Quality Manager or representative. An annual refresher course will be conducted for the affected parties.

9) **Persons authorized to cease operations when wind or meteorological conditions prevent the maintaining an opacity less than 20%:**
The senior person in charge of the work detail is authorized to cease activities when there is a failure to maintain an opacity less than 20%.

10) **Update of the Dust Control Plan:**
If current surface area disturbing activities change in a manner that is not consistent with the process or project description then the Dust Control Plan will be updated and resubmitted to NDEP.

NTTR Activity Specific Fugitive Dust Emission Controls

Aggregate processing activities on NTTR are required to conduct dust control and mitigation. Since it is a unique activity covered under the operating permit, a separate dust control plan has been developed for the activity.

Fugitive Dust Control Plan, Aggregate Processing, NTTR

Aggregate Processes and Activities:
Aggregate Processing activities occur through the majority of the year

Description of Aggregate Processing Activities: Activities associated with aggregate processing on NTTR occur through the majority of the year. approximately seven million tons can be processed annually. The aggregate processing activities can only occur at authorized burrow pits. The UTM coordinates (NAD 27) and approximate acres for the authorized burrow pits are as follows:

Borrow Pit Identification	Easting (meters)	Northing (meters)	Approximate Acres
BP TPECR 03	516112.5	4126054.5	3.2
BP R4809A 01	518748.1	4191423.5	13.4
BP R64 01	609069.9	4059737.0	3.0
BP R4809A 02	522056.8	4191476.3	11.0
BP R64 02	611125.6	4059131.5	3.3
BP R4909A 04	519193.5	4181335.5	144.3
BP R64 03	622769.1	4084328.3	3.2
BP R4809A 05	522360.3	4179114.8	6.0
BP R64 04	622855.1	4083835.0	1.6
BP ECW 01	524554.3	4167106.8	5.0
BP R64 05	622506.7	4083749.0	3.1
BP ECW 02	527004.1	4161357.3	11.7
BP R65 01	622392.3	4056560.8	13.2
BP ECW 06	533751.4	4159560.5	3.6
BP R65 02	621660.8	4056626.8	6.8
BP ECW 07	536007.6	4158155.5	4.6
BP R63 02	626119.8	4050291.0	10.1
BP ECW 08	537630.4	4157759.5	6.4
BP R63 07	633110.6	4056023.3	3.9
BP ECW 09	541331.4	4158036.8	6.3
BP R63 05	637127.6	4052804.3	5.5
BP ECW 10	549357.8	4159245.0	9.3
BP R63 03	638013.0	4049614.3	3.6
BP ECW 21	544342.1	4175820.8	8.0
BP R63 01	637102.8	4047370.8	15.7
BP BLOCKHOUSE 01	556567.8	4163486.3	21.5
BP ECE 10	628754.5	4044232.8	5.2
BP ECE 09	558900.4	4163189.3	3.5
BP ECE 08	559960.8	4163019.8	2.7
BP ECE 07	564510.2	4162308.8	2.8
BP ECE 06	565031.1	4164276.3	4.3
BP ECE 04	567135.4	4171088.5	5.1
BP 4809A 06/07	526142.4	4180546.3	11.3
BP R4809A 08	526835.6	4180742.3	2.6
BP R4809A 09	528082.9	4181970.3	2.9
BP ECW 12	530932.2	4180462.8	2.8
BP ECW 13	532508.9	4179688.3	5.7
BP ECW 14	536337.7	4180502.0	4.6
BP ECW 15	537514.6	4181606.5	3.0
BP ECW 18	542567.5	4188690.8	5.9
BP R4807A 01	551165.8	4173914.8	13.3
BP ECE 01	555234.2	4176951.8	4.2
BP ECW 16	541529.9	4176198.8	7.6
BP ECW 17	546421.6	4178987.3	3.3
BP ECW 19	538444.6	4179412.3	2.6
BP ECW 20	543136.9	4181539.5	4.8
BP ECE 02	561787.0	4176770.0	1.9
BP ECE 03	566525.1	4176857.3	6.1
BP ECE 05	566494.1	4168119.5	11.6
BP R63 04	637975.0	4049840.5	3.2

Borrow Pit Identification	Easting (meters)	Northing (meters)	Approximate Acres
BP ECS 01	525047.9	4111865.5	7.8
BP FAC A 01	519395.0	4133605.0	5.1
BP ECS 02	515875.4	4116318.3	24.0
BP R4809A 03	520218.1	4192319.5	9.4
BP TPECR 02	522294.8	4127680.5	20.4
BP R62 01	636637.4	4080830.8	33.5
BP R63 06	631994.6	4054412.5	24.2
BP R65 05	619891.0	4067779.0	34.7
BP R65 03 A/B	613154.3	4058342.0	24.9
BP R65 04	622940.6	4058879.3	20.5
BP R71 01	509737.4	4171594.5	5.2
BP R71 02	510221.7	4161757.8	53.0
BP TPECR 01	531326.9	4129526.5	9.2
BP RAGGED RIDGE	577759.9	4174449.8	10.9
BP ECW 05	532003.6	4160007.3	51.4
BP ECW 03/04	529353.8	4156957.5	5.8
BP ECW 11	549103.3	4161026.3	28.5
BP R4809A 04	528940.4	4182786.5	10.0
BP R4809B 01	545169.2	4177120.5	51.8
BP TPECR 04	522394.8	4131505.3	14.0

Description of Landfill Fugitive Dust Emission Activities: Aggregate processing activities consist of surface disturbing activities such as scraping and digging. The fugitive emissions are caused from the operation of heavy equipment such as bulldozers and front end loaders. The supervisor for this activity is:
Mr Roger Christensen
Air Quality Program Manager
(702) 652-2548

Description of Aggregate Processing Fugitive Dust Emission Controls:

1) In place emission controls:

a) All equipment will be used on moist days when soil produces no visible emission; or.

b) For days when soil is dry enough to produce visible emission greater than 20%, moisture will be applied to the working area soil when the fugitive dust emissions continue to meet or exceed opacity of 20% using modified method 9.

c) Activities will not be conducted when the forecasted wind speed is greater than 20 knots.

d) If fugitive dust continues to be generated, in spite of mitigation, activities will be ceased.

2) 'On' and 'off' property emission controls:

a) Equipment speed at burrow sites is limited to 20 mph or less.
b) Forecasted wind speeds are monitored
c) Water spray is used to suppress dust (see items 4-5).

3) Additional emission controls:

a) Empty bucket slowly into crusher.
b) Keep the bucket as close to the hopper as possible.
c) Pre-wet storage piles and maintaining approximately 1.5% moisture content in stockpiles before transferring material.
d) Ensure that stockpiles do not have steep sides

4) Method of application of dust suppressant:

Water spray truck, garden hose, natural precipitation or equivalent.

5) Frequency of application of dust suppressant:

As required by the appearance of fugitive dust during aggregate processing operations:

a) Increased dust opacity meeting or exceeding 20% with a modified method 9.
b) High winds forecasted in excess of 20 knots average over an extended period of time.

6) Location of water source for dust suppressant:

Water trucks will be filled at either TPECR, TECR, or TTR.

7) Provisions for additional water trucks:

If water trucks are unavailable or can not maintain an opacity less than 20% during operations then the activity will cease until the area can be sufficiently wetted with available water trucks to maintain an opacity less than 20%.

8) Training of project supervisors, equipment operators and contractors:

Project supervisors, equipment operators and contractors will be given a copy of the Dust Control Plan and instructed on the proper Best Management Practices to undertake while performing surface disturbing activities. The instruction will be an informal class conducted by the Nellis AFB Air Quality Manager or representative. An annual refresher course will be conducted for the affected parties.

9) Persons authorized to cease operations when wind or meteorological conditions prevent the maintaining an opacity less than 20%:

The senior person in charge of the work detail is authorized to cease activities when there is a failure to maintain an opacity less than 20%.

10) Update of the Dust Control Plan:

If additional burrow pits not authorized are needed then the Dust Control Plan will be updated and resubmitted to NDEP.

As the Projects Responsible Official, I have read the provisions of Nevada Administrative Code (NAC) Section 445B.22037 "Emissions of Particulate Matter; Fugitive Dust". I am also aware that the project is responsible for preventing controllable fugitive dust from disturbed areas from becoming airborne on a 7-day/week, 24-hour/day basis.

Colonel Michael P. Norris, 99th ABW/CV

Signature of the Responsible Official

APPENDIX B
SPECIAL-STATUS SPECIES RECORDED IN R-71S AND R-76

Special-Status Species Recorded in R-71S and R-76
9 December 2003

Scientific Name	***Common Name***	***USFWS***	***BLM***	***USFS***	***Srank***
PLANTS					
Asclepias eastwoodiana	Eastwood milkweed	xC2	N	S	S2
Astragalus gilmanii	Gilman milkvetch	xC2	N		S1
Astragalus oophorus violanus	Clokey eggvetch	RA	S	S	S2
Camissonia boothii spp. *alyssoides*	bottlebrush suncup				S3
Castilleja martinii var. *clokeyi*	Clokey paintbrush				S3
Cymopterus ripleyi var. *lcides*	sanicle biscuitroot	xC2	N,C		S3
Erigeron ovinus	Sheep fleabang	xC2	N		S2
Galium hilendiae ssp. *ktoise*	Kingston Mountains bedstraw	xC2	N,C		S1
Gilia heterostyla	Cochrane gilia				S3S4
Gilia nyensis	Nye gilia				S3
Hulsea vestita ssp. *inyds*	Inyo hulsea			W	S2
Penstemon pahutensis	Pahute Mesa beardtongue	xC2	N		S3
Polygala heterorhynch	notch-beak milkwort				S3
Stipa shoshoneana	cliff needlegrass				S1
MAMMALS					
Myotis volans	long-legged myotis	xC2	N		S4B

Source: Air Force 2004

U.S. Fish and Wildlife Service (USFWS) Categories for Listing under the Endangered Species Act:

- xC2 Former Category 2 Candidate, now species of concern
- RA Former Candidate or Proposed species, still a species of concern

Bureau of Land Management (BLM) Species Classification:

- S Nevada Special Status Species – USFWS listed, proposed or candidate for listing, or protected by Nevada State Law
- N Nevada Special Status Species – designated Sensitive by State Office
- C California Special Status Species (see definition S and N)

United States Forest Service (USFS) Species Classification:

- S Region 4 (Humboldt-Toiyabe NF) sensitive species
- W Region 5 (Inyo NF) watch species

Nevada Natural Heritage Program Global (Grank) and State (Srank) Ranks for Threats and/or Vulnerability:

- G Global rank indicator, based on worldwide distribution at the species level
- T Global trinomial rank indicator, based on worldwide distribution at the infraspecific level
- S State rank indicator, based on distribution within Nevada at the lowest taxonomic level
  - 1 Critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity, imminent threats, or other factors
  - 2 Imperiled due to rarity or other demonstrable factors
  - 3 Vulnerable to decline because rare and local throughout its range, or with very restricted range
  - 4 Long-term concern, though now apparently secure; usually rare in parts of its range, expecially at its periphery
  - 5 Demonstrably secure, widespread, and abundant
    - A Accidental within Nevada
    - B Breeding status within Nevada (excludes resident taxa)
    - H Historical; could be rediscovered
    - N Non-breeding status within Nevada (excludes resident taxa)
    - Q Taxonomic status uncertain
    - U Unrankable
    - Z Enduring occurrences cannot be defined (usually given to migrant or accidental birds)
    - ? Assigned rank uncertain