Hill Air Force Base, Utah

Final

Environmental Assessment: Proposed Carriage Test Facility, Hill Air Force Base, Utah

January 8, 2004

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

1. REPORT DATE *(DD-MM-YYYY)*	2. REPORT TYPE	3. DATES COVERED *(From - To)*
08-01-2004	N/A	-

4. TITLE AND SUBTITLE

Environmental Assessment (EA):
Proposed Carriage Test Facility, Hill AFB Utah

5a. CONTRACT NUMBER

5b. GRANT NUMBER

5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S)

Klein, Randal
Winn, Kay

5d. PROJECT NUMBER

5e. TASK NUMBER

5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

Streamline Consulting, LLC
1713 N. Sweetwater Lane
Farmington, Utah 84025

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)

Hill Air Force Base
7274 Wardleigh Road
Hill AFB UT 84056

10. SPONSOR/MONITOR'S ACRONYM(S)

75 CEG/CEVOR

11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT

Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

The original document contains color images.

14. ABSTRACT

Hill AFB proposes to construct a carriage test facility to the east of Building 847 at Hill Air Force Base (AFB). The facility would be used to conduct testing and repair of transfer carriages that are used to hold and transport Minuteman (MM) stage I motors.
The proposed could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. The alternative to construct a new facility at UTTR could be implemented with minor air emissions of both short term and long term duration. Erosion control measures would also be implemented. Generation of hazardous waste would not be anticipated; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

15. SUBJECT TERMS

Environmental Assessment
Hill Air Force Base

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			Randal B. Klein - rbklein@streamlineut.com
unclassified	unclassified	unclassified	UU	32	19b. TELEPHONE NUMBER *(Include area code)* (801) 451-7872

Final

Environmental Assessment (EA): Proposed Carriage Test Facility, Hill Air Force Base, Utah

Hill Air Force Base, Utah 84056

January 8, 2004

Prepared in accordance with the Department of the Air Force Environmental Impact Analysis Process (EIAP) 32 CFR Part 989, Effective July 6, 1999, which implements the National Environmental Policy Act (NEPA), the President's Council on Environmental Quality (CEQ) regulations.

EXECUTIVE SUMMARY

Purpose and Need

The purpose of the proposed action is to accommodate current United States Air Force (USAF) missions by constructing a carriage test facility to the east of Building 847 at Hill Air Force Base (AFB). The facility would be used to conduct testing and repair of transfer carriages that are used to hold and transport Minuteman (MM) stage I motors. The facility would house a reaction mass (a weight to be placed on each carriage for testing its ability to perform as intended) for a test stand to meet MM loads for stage I motors, and an overhead crane.

The proposed action is needed because it is required by weapons safety concerns. A risk assessment code 3 (RAC 3) safety violation was identified at the current location, Oasis Building 30024 at the Utah Test and Training Range (UTTR). The RAC 3 safety violation is related to lack of sufficient floor space. Additionally, the presence of carriage test equipment is encroaching upon designated fire egress routes.

Scope of Review

No cultural and/or historical resources were identified within the area of the proposed action on Hill AFB property or the UTTR alternative. No species of plants or animals listed as threatened or endangered are known to occur on Hill AFB or in the vicinity of the UTTR alternative site. No solid or hazardous waste is expected to be generated by the project, but accidental spills of fuel, lubricants, or other chemicals during construction could occur. Environmental effects of the proposed action, one potential alternative, and the no action alternative were all considered.

Selection Criteria

The future carriage test facility at Hill AFB or UTTR should:

- possess the proper design and equipment to accomplish the carriage test function for MM stage I motors, including ability to support 20,000 pound axle loads;
- have sufficient capacity to meet USAF mission objectives;
- eliminate the RAC 3 safety violations related to explosives safety quantity-distance (QD) criteria and fire egress; and
- be protective of facilities, human health, and the environment.

Proposed Action

Proposed Action - The proposed structure would be approximately 4,000 square feet, with concrete walls floor. Cargo doors would be located on the east and west sides of the structure. During construction, utilities to include: power; telephone service; heating and ventilation; sanitary sewer; a floor drain to the industrial sewer; culinary water; and a fire protection system would be installed. An overhead crane system would be attached to the structure following construction of the building. Asphalt driveways would be provided on the east and west sides of the structure.

Alternative to Construct a New Facility at UTTR – Under this alternative, the facility would be constructed on an abandoned gravel parking area at the Oasis Complex of UTTR.

No Action Alternative – Under the no action alternative, the new facility would not be constructed. It is not known how operational requirements would be met.

Results of the Environmental Assessment

The proposed action, one proposed alternative, and the no action alternative were all considered in detail. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. The alternative to construct a new facility at UTTR could be implemented with minor air emissions of both short term and long term duration. Erosion control measures would also be implemented. Generation of hazardous waste would not be anticipated from the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

COMPARISON OF ALTERNATIVES

Issue	**Proposed Action** **Construct the Proposed Carriage Test Facility at Hill AFB**	**UTTR Alternative** **Construct the Carriage Test Facility at UTTR**	**No Action** **Do Not Construct the Facility**
Air Quality	Minor, short term construction related emissions.	Minor, short term construction related emissions. Minor long term vehicle emissions related to hauling carriages to and from Oasis.	Minor long term vehicle emissions related to hauling carriages to and from Oasis.
Solid and Hazardous Wastes	Small amounts of construction debris. No hazardous waste during construction or operations.	Small amounts of construction debris. No hazardous waste during construction or operations.	No hazardous waste during operations.
Surface Soils	Construction-related erosion control measures may be required.	Construction-related erosion control measures may be required.	No impact.
Groundwater	No impact (contaminated groundwater is below the maximum depth of excavation).	No impact.	No impact.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS AND TERMS

AFB	Air Force Base
bgs	Below Ground Surface
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
DAQ	Utah Division of Air Quality
EA	Environmental Assessment
EPA	United States Environmental Protection Agency
FONSI	Finding of No Significant Impact
HC	Hydrocarbons
hp	Horsepower
IRP	Installation Restoration Program
kg	Kilograms
MAKP	Hill AFB Maintenance Directorate
MM	Minuteman
NAAQS	National Ambient Air Quality Standards
NDCSD	North Davis County Sewer District
NEPA	National Environmental Policy Act
NO_x	Oxides of Nitrogen
O_3	Ozone
OSHA	Occupational Safety and Health Administration
PM	Particulate Matter
PM-10	Particulate Matter Smaller Than 10 Microns in Diameter
QD	Quantity Distance
RAC	Risk Assessment Code
RCRA	Resource Conservation and Recovery Act
SO_2	Sulfur Dioxide
UAC	Utah Administrative Code
UPDES	Utah Pollutant Discharge Elimination System
USAF	United States Air Force
UTTR	Utah Test and Training Range
VOC	Volatile Organic Compound

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

Hill Air Force Base (AFB) is an air logistics center that maintains aircraft, missiles, and munitions for the United States Air Force (USAF). In support of that mission, Hill AFB: provides worldwide engineering and logistics management for the F-16 Fighting Falcon and A-10 Thunderbolt; accomplishes depot repair, modification, and maintenance of the F-16, A-10 Thunderbolt, and C-130 Hercules aircraft; and overhauls and repairs landing gear, wheels and brakes for military aircraft, rocket motors, air munitions, guided bombs, photonics equipment, training devices, avionics, instruments, hydraulics, software, and other aerospace related components.

This document addresses activities related to testing and repair of transfer carriages that are used to hold and transport Minuteman (MM) stage I motors. The Missile Maintenance Support Branch of the Hill AFB Maintenance Directorate (the branch organizational designation is MAKAS) is responsible for accomplishing the carriage test activity, currently conducted at Building 30024, Utah Test and Training Range (UTTR).

1.2 Purpose and Need

The purpose of the proposed action is to accommodate current USAF missions by constructing a carriage test facility to the east of Building 847 at Hill AFB. The carriage test facility would house a reaction mass for a test stand to meet MM loads for stage I motors, and an overhead crane. The reaction mass is a weight to be placed on each carriage for testing its ability to perform as intended.

The proposed action is needed because it is required by weapons safety concerns. A risk assessment code 3 (RAC 3) safety violation was identified at the current location, Oasis Building 30024 at UTTR. The RAC 3 safety violation is related to lack of sufficient floor space in Building 30024. Building 30024 houses MM stage I motor roll transfer operations in addition to carriage test activities. Because of the current co-location of the carriage test activity, the working areas in Building 30024 are too crowded for adequate explosives safety quantity-distance (QD) criteria to be met. Additionally, the presence of carriage test equipment is encroaching upon designated fire egress routes. When the carriage test activity is relocated, the RAC 3 safety violation will no longer exist.

1.3 Location of the Proposed Action

Hill AFB is located approximately twenty five miles north of downtown Salt Lake City and 7 miles south of downtown Ogden, Utah (Figure 1). Hill AFB is surrounded by several communities: Roy and Riverdale to the north; South Weber to the northeast; Layton to the south; and Clearfield, Sunset, and Clinton to the west. The base lies primarily in northern Davis County with a small portion located in southern Weber County.

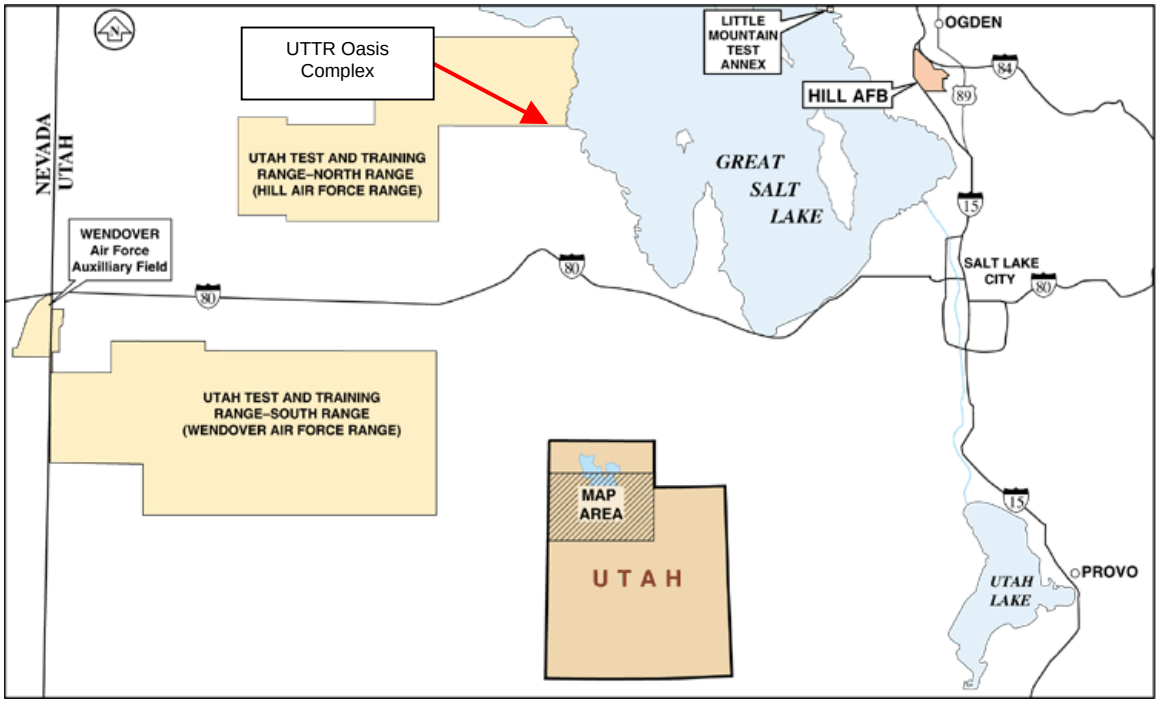
The proposed carriage test facility would be located in the southwestern portion of the base, to the east of existing Building 847, and north of existing Building 841 (Figure 2). The site plan for the proposed carriage test facility is presented in Figure 3.

1.4 Scope of the Environmental Review and Anticipated Environmental Issues

The scope of this environmental review is to analyze environmental concerns related to constructing a carriage test facility on Hill AFB. During construction, utilities to include: power; telephone service; heating and ventilation; sanitary sewer; a floor drain to the industrial sewer; culinary water; and a fire protection system would be installed. No chemicals are planned to be used during carriage testing. No hazardous waste is expected to be generated. During construction activities, solid wastes may be generated, and hazardous wastes could be generated if a spill of fuel, lubricants, or construction-related chemicals occurs.

The proposed area on Hill AFB has been previously disturbed, and there are no cultural resources or historic properties known to exist in the area of the proposed action on Hill AFB property or the UTTR alternative. No species of plants or animals listed as threatened or endangered are known to occur on Hill AFB or in the vicinity of the UTTR alternative site. The proposed project area consists of less than ¼ acre of previously disturbed land in an existing industrial area of Hill AFB. No surface water resources exist within the area of the proposed action. Hill AFB conducts groundwater monitoring of the shallow, unconfined aquifer within the area of the proposed action. Contamination has been detected in wells approximately 900 feet to the northeast of the proposed carriage test facility. Shallow soil contamination has not been detected in the vicinity of the proposed carriage test facility.

The issues that have been identified for detailed consideration and are therefore presented in Sections 3 and 4 are: air quality, solid and hazardous wastes, and physical environment (surface soils and groundwater). Environmental effects of the proposed action, one potential alternative, and the no action alternative were all considered.



Source: http://www.em.hill.af.mil/restoration/map02/index.html Current as of 06/24/03

Figure 1: Hill AFB and UTTR Location Map

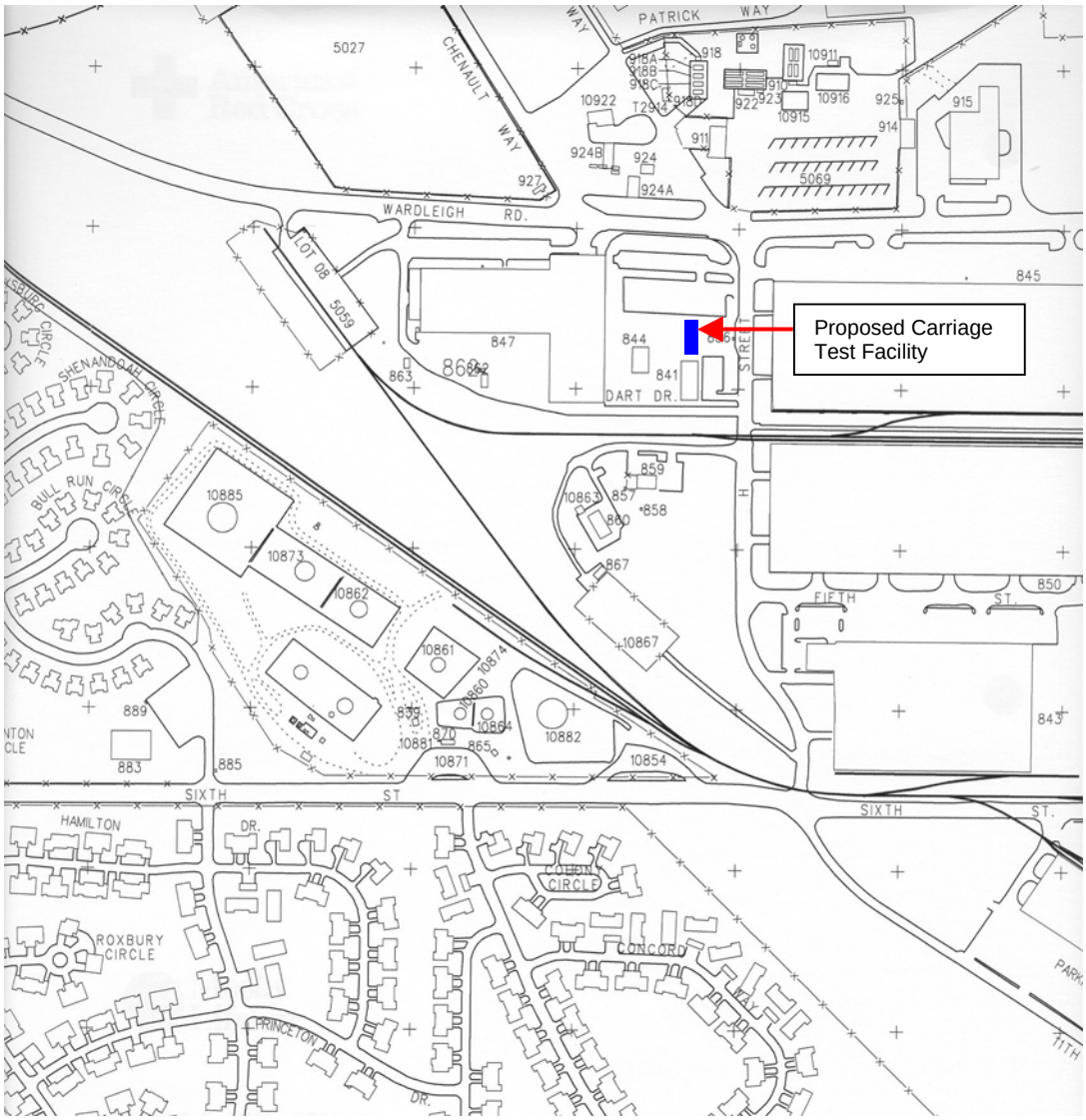


Figure 2: Location of the Proposed Carriage Test Facility

North

Scale in Feet

0 400

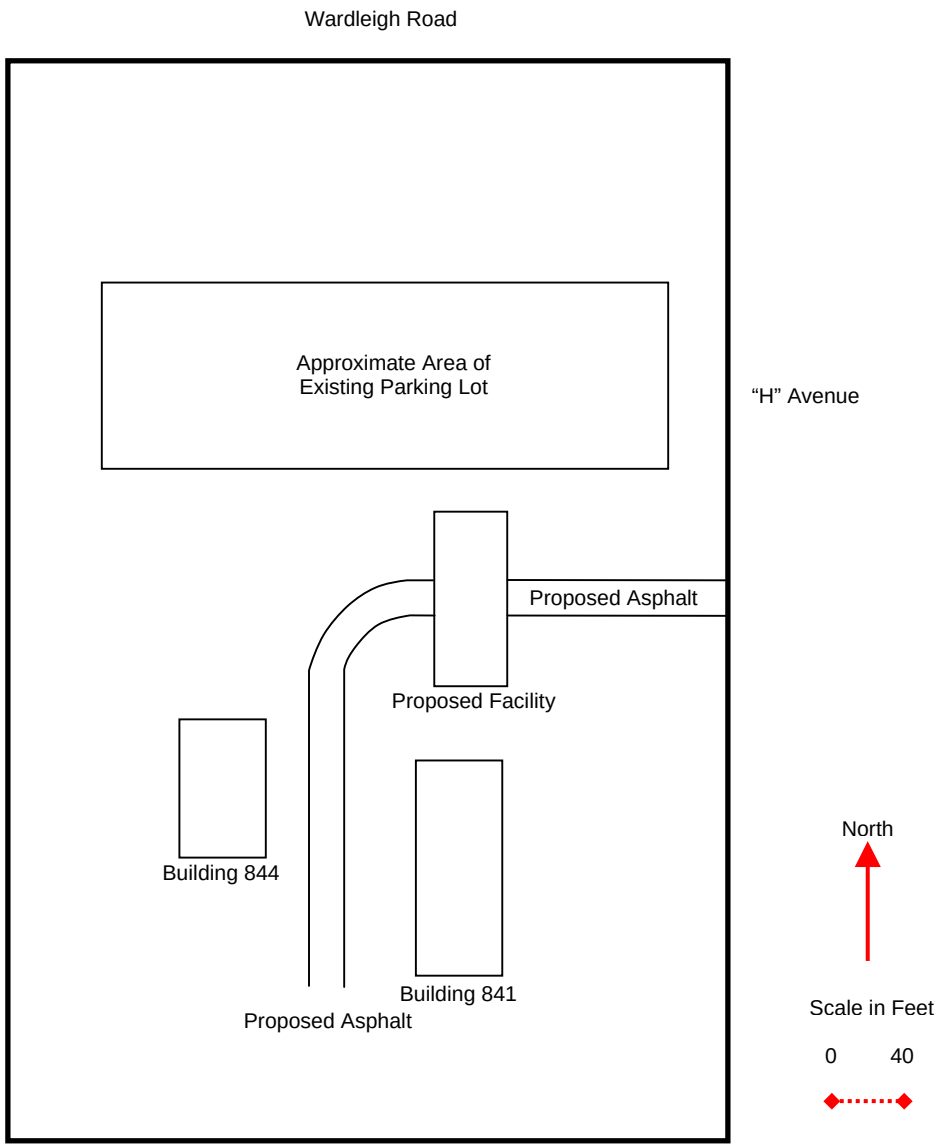


Figure 3: Site Plan, Proposed Carriage Test Facility

1.5 Applicable Regulations and Permits

Throughout the construction phase of the project, Hill AFB contractors would follow safety guidelines of the Occupational Safety and Health Administration (OSHA) as presented in the *Code of Federal Regulations* (CFR) not limited to trenching, Title 29 Part 1926 Subpart P, and power distribution, 29 CFR 1926 Subpart V. Should any Hill AFB employees participate in constructing the proposed action, they would comply with relevant Air Force Occupational Safety and Health Standards.

The proposed action would disturb less than ¼ acre. Since the project would disturb less than 1 acre, a stormwater construction permit would not be required.

The proposed construction is not expected to contact any cultural resources (defined as archaeological, architectural, or traditional cultural properties). If suspected cultural resources are observed during any Hill AFB construction project, work in the immediate vicinity stops, and the Hill AFB cultural resources manager implements inadvertent discovery procedures in accordance with the Hill AFB *Draft Integrated Cultural Resources Management Plan*.

Hill AFB has completed remedial investigations in the vicinity of the proposed action according to the conditions of a federal facility agreement and the Comprehensive Environmental Response Compensation and Liability Act (CERCLA). Specific discussions for ongoing CERCLA activities and requirements related to the proposed action are presented in Sections 3 and 4 of this document.

The contractor would be required to have a water truck on site as needed during especially dry and windy weather for the purpose of dust suppression. Specific discussions for current air emissions and potential impacts related to the proposed action are presented in Sections 3 and 4 of this document. Air emissions generated by the proposed action must be addressed in accordance with Utah's *State Implementation Plan*, which complies with the Clean Air Act's *General Conformity Rule*, Section 176 (c). A conformity analysis was conducted for this proposed action as specified by "*Determining Conformity of Federal Actions to State or Federal Implementation Plans*," 40 CFR 93, revised July 1, 1998 (see Sections 3.1 and 4.1 of this document).

The proposed construction is not expected to generate any wastes that are regulated by the Resource Conservation and Recovery Act (RCRA), Toxic Substances Control Act, or similar law. Hazardous wastes at Hill AFB are routinely and properly handled in accordance with RCRA regulations, Utah hazardous waste management regulations contained in the Utah Administrative Code (UAC) Section R315-1, and the *Hill AFB Hazardous Waste Management Plan*. These regulations control hazardous waste from its origin and storage to ultimate treatment, and/or disposal. In Utah, the above regulations are enforced by the Utah Division of Solid and Hazardous Waste. No chemicals are planned to be used during carriage testing, and no hazardous waste is expected to be generated.

Hill AFB industrial wastewater discharges must comply with an industrial pretreatment permit issued by the North Davis County Sewer District (NDCSD). The pretreatment permit regulates the quality of water entering the county sewer system and ensures compliance with requirements of the Clean Water Act (CWA) and the Utah Pollutant Discharge Elimination System (UPDES).

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section describes selection criteria, the proposed action, one additional alternative that was considered, and the no action alternative.

2.1 Selection Criteria

As discussed in Sections 1.1 and 1.2, the Hill AFB Maintenance Directorate (MAKP) is responsible for conducting the carriage test activity, currently conducted at Building 30024, within the Oasis Complex of UTTR. The current RAC 3 safety violation at Building 30024 precludes continued long-term use of Building 30024 for accomplishing the carriage test activity.

Due to these considerations, the following selection criteria were established. The future carriage test facility at Hill AFB or UTTR should:

- possess the proper structural design and installed equipment to accomplish the carriage test function for MM stage I motors, including ability to support 20,000 pound axle loads;
- have sufficient capacity to meet USAF mission objectives;
- eliminate the RAC 3 safety violations related to QD and fire egress; and
- be protective of facilities, human health, and the environment.

2.2 Proposed Action: Construct the Carriage Test Facility East of Building 847

The proposed action includes all work necessary to construct a carriage test facility to the east of Building 847 and to the north of Building 841 at Hill AFB. The proposed addition would house a reaction mass for a test stand to meet MM loads for stage I motors, and an overhead crane.

The proposed structure would be approximately 4,000 square feet, with concrete walls floor. Cargo doors would be located on the east and west sides of the structure. During construction, utilities to include: power; telephone service; heating and ventilation; sanitary sewer; a floor drain to the industrial sewer; culinary water; and a fire protection system would be installed. An overhead crane system would be attached to the structure following construction of the building. Asphalt driveways would be provided on the east and west sides of the structure.

The deepest point of excavation would be 10-15 feet below ground surface (bgs). While open, the sides of any excavations would be sloped at 1.5 horizontal to 1.0 vertical or other such angle as approved by the design and geotechnical engineering contractors. The construction contractor would restore nearby surfaces to their original condition.

The environmental impacts of the proposed action are summarized in Section 4.4 of this document, and are discussed at greater length throughout Section 4 of this document.

2.3 Alternative to Construct a New Facility at UTTR

Hill AFB engineers identified a location at UTTR that could be used to construct a new carriage test facility. The potential location is currently an abandoned gravel parking area, situated to the northeast of Building 40085 (Figure 4). If constructed at UTTR, the facility would be the same as the proposed facility; only the location would be different.

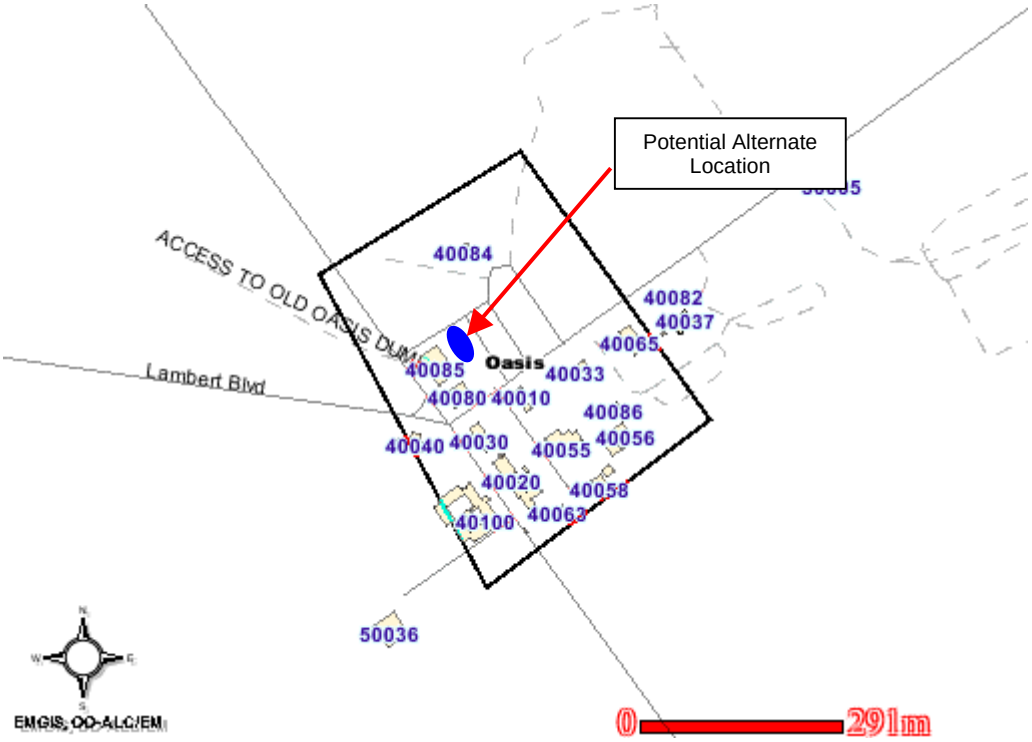
The environmental impacts of the alternative to construct a new facility at UTTR are summarized in Section 4.4 of this document, and are discussed at greater length throughout Section 4 of this document.

2.4 No Action Alternative: Do Not Construct the Facilities

The no action alternative does not meet the selection criteria to have sufficient capacity to meet USAF mission objectives; eliminate the RAC 3 safety violations related to QD and fire egress; or to be protective of facilities and human health. However, the framework of an environmental assessment requires that the no action alternative must be considered even if it does not meet all of the selection criteria.

Under the no action alternative, it is predicted that Hill AFB may be unable to provide sufficient capacity for testing carriages for the MM stage I motors. Testing could only occur when Building 30024 was not being used for MM stage I motor roll transfer operations. Under the no action alternative, it is not known how operational requirements would be met.

The environmental impacts of the no action alternative are summarized in Section 4.4 of this document, and are discussed at greater length throughout Section 4 of this document.



Source: Hill AFB, provided by 2Lt James Keller, current as of 06/23/03

Figure 4: Site Plan, Potential Alternate Location at UTTR

3.0 EXISTING ENVIRONMENT

3.1 Air Quality

Hill AFB is located in Davis and Weber Counties, Utah. Neither county is in complete attainment status with federal clean air standards (Figure 4). Nonattainment areas fail to meet national ambient air quality standards (NAAQS) for one or more of the criteria pollutants: oxides of nitrogen (NO_x), sulfur dioxide (SO_2), ozone (O_3), particulate matter less than 10 microns in diameter (PM-10), carbon monoxide (CO), and lead. Davis County was upgraded from an ozone non-attainment area to a maintenance area, effective 1997. Current status according to the Utah Division of Air Quality (DAQ 2002) for the City of Ogden in Weber County (approximately 7 miles north of the proposed action) is designation as a non-attainment area for PM-10 and a maintenance area for CO.

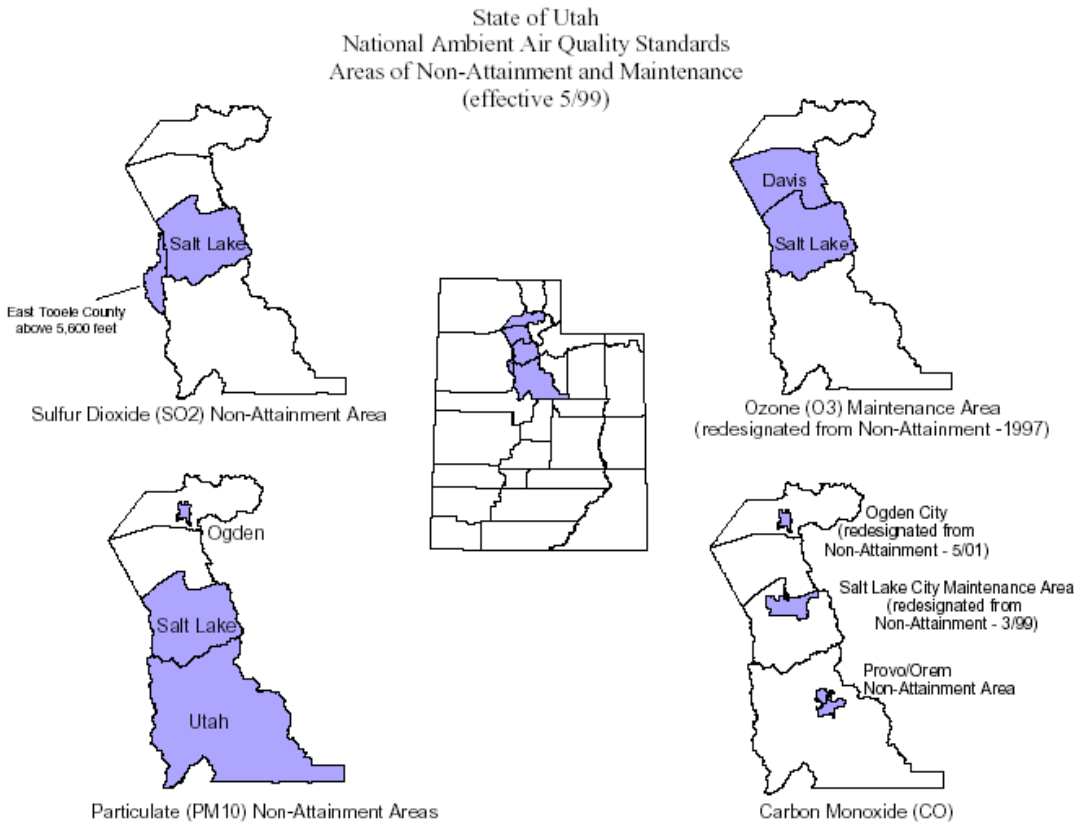


Figure 5: State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective 5/99)

The current air quality trend at Hill AFB is one of controlling emissions as Hill AFB managers implement programs to eliminate ozone-depleting substances, limit use of volatile organic compounds (VOCs), install VOC emission control equipment for painting operations, switch to lower vapor pressure solvents and aircraft fuel, convert internal combustion engines from gasoline and diesel to natural gas, and improve the capture of particulates during painting and abrasive blasting operations (in compliance with the base's Title V air quality permit).

The Oasis Complex of UTTR is located in Box Elder County, Utah. Box Elder County is in attainment status with federal clean air standards.

3.2 Solid and Hazardous Wastes

In general, hazardous wastes include substances that, because of their concentration, physical, chemical, or other characteristics, may present substantial danger to public health or welfare or to the environment when released into the environment or otherwise improperly managed. Hazardous wastes generated at Hill AFB are managed as specified in the *Hill AFB Hazardous Waste Management Plan* with oversight by personnel from the Environmental Management Directorate and the Defense Reutilization and Marketing Office. Hazardous wastes at Hill AFB are properly stored during characterization, and then manifested and transported off site for treatment and/or disposal.

The carriage test activity uses no chemicals, and therefore does not produce solid or hazardous waste.

3.3 Physical Environment

3.3.1 Surface Soils

The surface soils in the vicinity of proposed excavations are flat and covered with gravel and/or pavement. There is no known shallow soil contamination on the east side of Building 847 or the north side of Building 841 (personal communication, Ms. Shannon Smith).

3.3.2 Groundwater

Groundwater contamination has been detected in wells approximately 900 feet to the northeast of the proposed action (Hill 2003). In the vicinity of the proposed action, depth to groundwater is approximately 145 feet bgs (personal communication, Ms. Shannon Smith).

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Impacts of the Proposed Action

Short term air quality impacts of the proposed action would be related to generation of PM-10 during excavation, backfill, and general construction operations, and construction equipment emissions during the same time period.

Emissions of PM-10 would be produced as soil is disturbed during proposed construction activities. The US Environmental Protection Agency (EPA) has estimated that fugitive dust emissions from construction activities produce 0.11 tons of PM-10 per acre per month (EPA 1996). The proposed action would involve approximately 1 week of excavation and backfill activities for approximately 0.25 acres being disturbed during construction of buried power lines, foundations, and pavement. Fugitive dust emissions of 0.007 tons of PM-10 were therefore calculated for the proposed action. To mitigate emissions of fugitive dust, the construction contractor would be required to have a water truck on site as needed during dry and windy weather for the purpose of dust suppression and reducing the emissions of PM-10.

The internal combustion engines of heavy equipment would also generate emissions of PM-10, VOCs, NO_x, and CO. Fugitive emissions from construction activities should be mitigated according to *Utah Administrative Code, Rule R307-205, Emission Standards: Fugitive Emissions and Fugitive Dust*. Good housekeeping practices should be used to maintain construction opacity at less than 20 percent. Haul roads should be kept wet, and any soil that is deposited on nearby paved roads by construction vehicles should be removed from the roads and returned to the site or appropriate disposal area.

Assumptions and estimated emissions for the construction period are listed in Table 1.

Table 1: Calculated Heavy Equipment Emissions

Data Assumptions

Equipment Type	Diesel Emission Factor (lbs/hr)					
	VOC (HC)	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	0.28	1.24	2.96	0.24	0.05	0.25
Concrete Truck	0.80	3.55	8.50	0.69	0.15	0.72
Crane	2.14	6.96	17.08	2.39	0.33	1.54
Dump Truck	0.63	2.04	6.98	0.58	0.16	0.65
Flat Bed Truck	0.48	1.54	5.29	0.44	0.12	0.49
Fork Lift	0.42	2.47	1.98	0.40	0.05	0.23
Front End Loader	0.87	4.12	6.12	0.64	0.06	0.52
Motored Grader	0.83	2.01	5.08	0.53	0.06	0.46
Scraper	0.33	2.31	4.03	0.58	0.13	0.42
Track Hoe	0.91	6.65	13.75	1.84	0.26	1.19
Vibratory Compactor	0.38	1.44	4.31	0.36	0.09	0.46
Water Truck	1.10	3.58	12.28	1.02	0.28	1.14
Wheeled Dozer	0.46	1.48	5.08	0.35	0.08	0.49

Note: VOCs = Hydrocarbons and HAPs = Aldehydes
Source: Industry Horsepower Ratings and EPA 460/3-91-02

Construct Carriage Test Facility

EQUIPMENT TYPE	HOURS OF OPERATION	Diesel Emissions (lbs)					
		VOC	CO	NOx	PM10	HAPs	SOx
Asphalt Paver	10	2.8	12.4	29.6	2.4	0.5	2.5
Concrete Truck	24	19.2	85.2	204.0	16.6	3.6	17.3
Crane	16	34.2	111.4	273.3	38.2	5.3	24.6
Dump Truck	36	22.7	73.4	251.3	20.9	5.8	23.4
Flat Bed Truck	8	3.8	12.3	42.3	3.5	1.0	3.9
Fork Lift	4	1.7	9.9	7.9	1.6	0.2	0.9
Front End Loader	24	20.9	98.9	146.9	15.4	1.4	12.5
Motored Grader	4	3.3	8.0	20.3	2.1	0.2	1.8
Scraper	2	0.7	4.6	8.1	1.2	0.3	0.8
Track Hoe	24	21.8	159.6	330.0	44.2	6.2	28.6
Vibratory Compactor	16	6.1	23.0	69.0	5.8	1.4	7.4
Water Truck	20	22.0	71.6	245.6	20.4	5.6	22.8
Wheeled Dozer	8	3.7	11.8	40.6	2.8	0.6	3.9
TOTAL ESTIMATED EMISSIONS (lbs)		**162.9**	**682.2**	**1668.9**	**175.0**	**32.2**	**150.5**
TOTAL ESTIMATED EMISSIONS (tons)		**0.08**	**0.34**	**0.83**	**0.09**	**0.02**	**0.08**

Source of Hours: Discussions With 2Lt Jim Keller, Hill AFB CE Project Manager

No chemicals are planned to be used by the carriage testing activity. There would be no operational air quality impacts associated with the proposed action.

Related to conformity with Utah's State Implementation Plan, and therefore the Clean Air Act's General Conformity Rule and 40 CFR 93, the proposed action is expected to emit less than 500 pounds per year of a single HAP and less than 2,000 pounds per year of a combined HAPs. Therefore, it does not require a new source review. Conformity was determined to exist.

4.1.2 Impacts of the UTTR Alternative

Short term air quality impacts (construction emissions) of the alternative to construct a new facility at UTTR would be the same as the impacts calculated for the proposed action.

Implementing the UTTR alternative would require the use of diesel trucks to haul the carriages to and from the Oasis Complex of UTTR. Approximately 30 round trips per year are required to support mission objectives, and the diesel engines that would be used are 475 horsepower (hp) (personal communication, Ms. Brenda Chatwin).

According to an EPA reference guide (EPA 1997), diesel engines manufactured for model years 1998 and later should emit not greater than the following amounts of pollutants per hp-hour (15.5 grams CO; 1.3 grams hydrocarbons [HC]; 4.0 grams NO_x; 0.1 grams PM). Depending on traffic flow, each round trip from Hill AFB to Oasis could be expected to have a duration of approximately 4 hours for a truck hauling an empty carriage. For 30 round trips, the engines would be used 120 hours per year.

Based on the values in the preceding paragraph, implementing the UTTR alternative would create additional vehicle air emissions, compared to the proposed action, in the following amounts in kilograms (kg) or tons:

- CO : 884 kg or 0.97 tons;
- HC : 74 kg or 0.08 tons;
- NO_x : 228 kg or 0.25 tons;
- PM : 6 kg or 0.01 tons.

No chemicals are planned to be used by the carriage testing activity. Other than use of vehicles for hauling, there would be no operational air quality impacts associated with the UTTR alternative. Conformity with the Clean Air Act's General Conformity Rule was determined to exist.

4.1.3 Impacts of the No Action Alternative

There would be no short term air quality impacts (construction emissions) related to the no action alternative.

The carriage test activity is currently located at the Oasis Complex of UTTR. Assuming the current facility could continue to operate in spite of the RAC 3 safety violations, air quality impacts associated with the no action alternative would be the same as for the alternative to construct a new facility at UTTR.

4.1.4 Cumulative Impacts

Air emissions would either be temporary, during the construction period, or in conformance with the Clean Air Act's General Conformity Rule. There are no cumulative impacts to air quality associated with the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

4.2 Solid and Hazardous Wastes

4.2.1 Impacts of the Proposed Action

During the proposed construction activities, no solid wastes would be generated except for minor amounts of construction debris that would be treated as uncontaminated trash. It is possible that equipment failure or a spill of fuel, lubricants, or construction-related chemicals could generate solid or hazardous wastes. In such a case, or if excavated soils exhibit suspicious odors or appearance, the following procedures would apply on Hill AFB.

Hill AFB personnel have specified procedures for handling construction-related solid and hazardous wastes in their engineering construction specifications. The procedures are stated in *Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection.* All solid non-hazardous waste is collected and disposed on a daily basis. Samples from suspect wastes are analyzed for hazardous vs. non-hazardous determination. The suspect waste is safely stored while analytical results are pending. Hazardous wastes are stored at sites operated in accordance with the requirements of 40 CFR 265. The regulations require the generator to characterize hazardous wastes with analyses or process knowledge. Hazardous wastes are eventually labeled, transported, treated, and disposed in accordance with federal and state regulations.

The proposed action would not generate any solid or hazardous wastes during operations.

4.2.2 Impacts of the UTTR Alternative

Impacts to solid and hazardous waste for the alternative to construct a new facility at UTTR would be the same as for the proposed action.

4.2.3 Impacts of the No Action Alternative

With respect to solid and hazardous wastes, the no action alternative has no impacts.

4.2.4 Cumulative Impacts

Proper handling of solid and hazardous wastes eliminates releases of contaminants to the environment. There are no cumulative solid or hazardous waste impacts associated with the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

4.3 Physical Environment

4.3.1 Surface Soils

4.3.1.1 Impacts of the Proposed Action

The surface soils in the vicinity of the proposed excavation are flat and covered with gravel and/or pavement. Construction projects can increase soil erosion. Since the area of proposed construction is flat, the potential for erosion is small. Hill AFB construction specifications would mitigate any erosion potential that does exist by requiring the contractor to monitor the site during construction, and then restore the land to its original condition. In this case, the area disturbed by excavation would be backfilled and gravel/pavement would be replaced to prevent soil erosion.

4.3.1.2 Impacts of the UTTR Alternative

Impacts to surface soils for the alternative to construct a new facility at UTTR would be the same as for the proposed action.

4.3.1.3 Impacts of the No Action Alternative

With respect to surface soils, the no action alternative has no impacts.

4.3.1.4 Cumulative Impacts

There are no cumulative impacts to surface soils associated with the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

4.3.2 Groundwater

4.3.2.1 Impacts of the Proposed Action

Groundwater contamination has been detected in wells approximately 900 feet to the northeast of the carriage test facility (Hill 2003). In the vicinity of the proposed action, depth to groundwater is approximately 145 feet bgs (personal communication, Ms. Shannon Smith). The anticipated depth of excavation would not exceed 15 feet bgs, and no contact with groundwater would exist.

4.3.2.2 Impacts of the UTTR Alternative

In the vicinity of the alternative to construct a new facility at UTTR, depth to groundwater is approximately 400 feet bgs (personal communication, Mr. Lynn Hill). The anticipated depth of excavation would not exceed 15 feet bgs, and no contact with groundwater would exist.

4.3.2.3 Impacts of the No Action Alternative

With respect to groundwater, the no action alternative has no impacts.

4.3.2.4 Cumulative Impacts

There are no cumulative impacts to groundwater resources associated with the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

4.4 Summary of Impacts

The proposed action, one proposed alternative, and the no action alternative were all considered in detail. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and paving operations would prevent erosion of the site. The alternative to construct a new facility at UTTR could be implemented with minor air emissions of both short term and long term duration. Erosion control measures would also be implemented. Generation of hazardous waste would not be anticipated from the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action, the alternative to construct a new facility at UTTR, or the no action alternative.

Table 2: Summary Comparison of Alternatives

Issue	**Proposed Action** **Construct the Proposed Carriage Test Facility at Hill AFB**	**UTTR Alternative** **Construct the Carriage Test Facility at UTTR**	**No Action** **Do Not Construct the Facility**
Air Quality	Minor, short term construction related emissions.	Minor, short term construction related emissions. Minor long term vehicle emissions related to hauling carriages to and from Oasis.	Minor long term vehicle emissions related to hauling carriages to and from Oasis.
Solid and Hazardous Wastes	Small amounts of construction debris. No hazardous waste during construction or operations.	Small amounts of construction debris. No hazardous waste during construction or operations.	No hazardous waste during operations.
Surface Soils	Construction-related erosion control measures may be required.	Construction-related erosion control measures may be required.	No impact.
Groundwater	No impact (contaminated groundwater is below the maximum depth of excavation).	No impact.	No impact.

5.0 LIST OF PREPARERS

ML Technologies
1713 N. Sweetwater Lane, Farmington UT 84025
(801) 451-7872
Randal B. Klein, P.E., Project Manager

Environmental Management, OO-ALC/EMOR
7274 Wardleigh Road, Hill AFB UT 84056
(801) 777-0383
Kay Winn, NEPA Manager

6.0 LIST OF PERSONS AND AGENCIES CONSULTED

Environmental Management, OO-ALC/EM
7274 Wardleigh Road, Hill AFB UT 84056
Kay Winn, NEPA Manager, (801) 777-0383
Lynn Hill, PE, Chief, Environmental Compliance, (801) 777-0288
Dana McIntyre, Stormwater Program, (801) 775-3651
Shannon Smith, IRP Project Manager, (801) 775-6913
Marcus Blood, Natural Resources Manager, (801) 777-4618
Jaynie Hirschi, Cultural and Historical Resources (801) 775-6920

Maintenance Directorate, ICBM Division, OO-ALC/MAKP
Building 1258, Hill AFB UT 84056
Steven Hendry, Mechanical Engineering Technician, (801) 775-2354
Mike Hall, Environmental Program Manager, (801) 777-1297
Brenda Chatwin, Chief, Missile Maint. Support Section, (801) 777-6574

Civil Engineering, 75CEG
7302 Wardleigh Road, Hill AFB UT 84056
2Lt James Keller, Project Manager, (801) 777-1214

UTTR Civil Engineering, 75th RANS/SUE
Utah Test and Training Range, Oasis
Ron Short, Supervisor, (801) 777-1550

Weapons Safety, OO-ALC/SEW
Building 383, Hill AFB UT 84056
Ray Tidwell, Chief, (801) 777-3862

7.0 REFERENCES

CFR: *Code of Federal Regulations*, US Government Printing Office, Office of the Federal Register (various sections and dates).

DAQ 2003: *State of Utah National Ambient Air Quality Standards, Areas of Non-Attainment and Maintenance (Effective May, 1999)*, Utah Division of Air Quality Website, July, 2003.

EPA 1991: *Nonroad Engine and Vehicle Emission Study - Report*, Table 2-07a, US Environmental Protection Agency, 1991.

EPA 1996: *National Air Pollutant Emission Trends, Procedures Document for 1900-1996*, US Environmental Protection Agency, Page 4-285, 1996.

EPA 1997: *Emission Standards Reference Guide for Heavy-Duty and Nonroad Engines*, US Environmental Protection Agency, EPA420-F-97-014, 1997.

Hill AFB: *Construction Specifications, Section 01000, General Requirements, Part 1, General, Section 1.24, Environmental Protection*, Hill AFB, UT, current version.

Hill 2003: *Hill AFB 2001 Environmental Restoration Management Plan (Web Page)*, content as of 06/13/03, http://www.em.hill.af.mil/restoration/map02/hill.html.

FINDING OF NO SIGNIFICANT IMPACT

1. NAME OF ACTION: Construct a carriage test facility on Hill Air Force Base (AFB), Utah.

2. DESCRIPTION OF THE PROPOSED ACTION: Hill AFB proposes to accommodate United States Air Force (USAF) missions by constructing a carriage test facility to the east of Building 847 at Hill AFB.

The proposed action includes all work necessary to construct a carriage test facility to the east of Building 847 and to the north of Building 841 at Hill AFB. The proposed addition would house a reaction mass for a test stand to meet Minuteman (MM) loads for stage I motors, and an overhead crane.

The proposed structure would be approximately 4,000 square feet, with concrete walls floor. Cargo doors would be located on the east and west sides of the structure. During construction, utilities to include: power; telephone service; heating and ventilation; sanitary sewer; a floor drain to the industrial sewer; culinary water; and a fire protection system would be installed. An overhead crane system would be attached to the structure following construction of the building. Asphalt driveways would be provided on the east and west sides of the structure.

The deepest point of excavation would be 10-15 feet below ground surface (bgs). While open, the sides of any excavations would be sloped at 1.5 horizontal to 1.0 vertical or other such angle as approved by the design and geotechnical engineering contractors. The construction contractor would restore nearby surfaces to their original condition..

3. SELECTION CRITERIA: The following criteria were used to assemble alternatives. The future carriage test facility at Hill AFB or UTTR should:

- possess the proper design and equipment to accomplish the carriage test function for MM stage I motors, including ability to support 20,000 pound axle loads;
- have sufficient capacity to meet USAF mission objectives;
- eliminate risk assessment code 3 (RAC 3) safety violations related to explosives safety quantity-distance (QD) criteria and fire egress; and
- be protective of facilities, human health, and the environment.

4. ALTERNATIVES CONSIDERED OTHER THAN THE PROPOSED ACTION:

Under an alternative to construct a new facility at UTTR, the facility would be constructed on an abandoned gravel parking area at the Oasis Complex of UTTR.

Under the no action alternative, the new facility would not be constructed. It is not known how operational requirements would be met.

5. SUMMARY OF ANTICIPATED ENVIRONMENTAL EFFECTS:

a. Proposed Action: This alternative fully satisfies all applicable regulations and provides for accomplishment of mission objectives without impacts to human health or the environment. The proposed action could be implemented with minor short-term environmental impacts such as air emissions and controlling erosion during construction activities. Following the construction phase, backfill and paving operations would prevent erosion of the site. Generation of hazardous waste would not be anticipated; however, waste management plans and adequate spill response resources exist should the need arise. No long-term environmental impacts or cumulative impacts are expected from the proposed action.

b. Alternative to Construct a New Facility at UTTR: The alternative to construct a new facility at UTTR could be implemented with minor air emissions of both short term and long term duration. Implementing the UTTR alternative would require the use of diesel trucks to haul the carriages to and from the Oasis Complex of UTTR, generating minor air emissions. Other than the slight increase in air emissions, environmental impacts of this alternative would be the same as those from the proposed action. No other long-term environmental impacts and no cumulative impacts are expected from the alternative to construct a new facility at UTTR.

c. No Action Alternative: The no action alternative would not have any construction related impacts. With the carriage test activity being currently located at UTTR, the no action alternative would generate the same long term air emissions as the alternative to construct a new facility at UTTR. No other long-term environmental impacts and no cumulative impacts are expected from the no action alternative.

6. FINDING OF NO SIGNIFICANT IMPACT: Based on the above considerations, a Finding of No Significant Impact (FONSI) is appropriate for this assessment.

Approved by: _____ Date: _____

Environmental Protection
Committee Chairman