Final

Environmental Assessment for Improvements to Irrigation System and Land Application of Treated Wastewater Effluent at Existing Golf Course, Mountain Home AFB, Idaho

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ACRONYMS AND ABBREVIATIONS

ACC	Air Combat Command	IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
AFB	Air Force Base	L	Liter
AFI	Air Force Instruction	mg/L	Milligrams per Liter
AQCR	Air Quality Control Region	ML	Milliliter
BASH	Bird/Wildlife Aircraft Strike Hazard	MOA	Military Operations Area
BPW	Base Production Well	MSL	Mean Sea Level
CAA	Clean Air Act	MTR	Military Training Route
CATEX	Categorical Exclusion	NAAQS	National Ambient Air Quality Standards
CD	Compact Disc	NEPA	National Environmental Policy Act
CEQ	Council on Environmental Quality	NO_2	Nitrogen Dioxide
CFR	Code of Federal Regulations	O_3	Ozone
CO	Carbon Monoxide	Pb	Lead
dB	Decibels	PBS&J	Post, Buckley, Schuh & Jernigan
DEQ	Department of Environmental Quality	PDF	Portable Document Format
DNL	Day – Night Levels	PI	Principal Investigator
DOPAA	Description of Proposed Action and Alternatives	PM_{10}	Particulate Matter equal to or less than 10 microns
EA	Environmental Assessment	PMP	Program Management Plan
EIAP	Environmental Impact Analysis Process	RIB	Rapid Infiltration Basin
ERP	Environmental Restoration Program	SBR	Sequencing Batch Reactor
FONSI	Finding of No Significant Impact	SDR	Scheduled Dimension Ratio
Ft/Sec	Feet Per Second	SIP	State Implementation Plan
GPM	Gallons per Minute	SO_2	Sulfur Dioxide
GWMA	Ground Water Management Area	TDH	Total Dynamic Head
HAP	Hazardous Air Pollutant	USEPA	United States Environmental Protection Agency
HDPE	High Density Polyethylene	VOCs	Volatile Organic Compounds
HQ	Headquarters	WW	Wastewater
IDHW	Idaho Department of Health and Welfare	WWTP	Wastewater Treatment Plant
IDWR	Idaho Department of Water Resources	$<$	Less Than
		$>$	Greater Than

FINDING OF NO SIGNIFICANT IMPACT

1.0 NAME OF THE PROPOSED ACTION

Improvements to Irrigation System and Land Application of Treated Wastewater Effluent at Existing Golf Course, Mountain Home Air Force Base, ID

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The proposed action would construct a pipeline to carry treated wastewater from the south lagoon at Mountain Home AFB's existing wastewater treatment plant (WWTP) to the Silver Sage golf course, and then use the treated wastewater for irrigating the golf course. A wet well would be constructed to receive treated wastewater, which will be infiltrated into the irrigation system. The differences between the proposed action and Alternative A are primarily in the alignment of the pipelines and the impacts associated with those alignments. Neither alternative would require any groundwater from the regional aquifer, but may be supplemented with it for blending or to maintain capacity.

The pumping system would be designed for 700,000 gallons per day or approximately 500 gallons per minute (gpm). The proposed action would require an approximate 14,750 foot pipeline, which would begin at the south lagoon and proceed east for approximately 1500 feet before turning southeast and running for approximately 3000 feet parallel and southwest of the groundwater pipeline from existing base production well (BPW) 9. At BPW 9, the pipeline turns east southeast for approximately 3000 feet before running through an existing jacketed sleeve located under the 200-foot wide runway and 80-foot wide taxiway. Northeast of the taxiway, the pipeline turns east for approximately 3000 feet before turning northeast and running for an approximate final 4000 feet to the Silver Sage golf course. Alternative A would require as much as 30,000 linear feet of pipeline, which would begin at the south lagoon and bypass the existing runways by traveling along existing gravel roads south for at least 5000 feet, then east for approximately 10,000 feet, and then north for at least 5000 feet before reaching the golf course. The No Action Alternative would continue using groundwater solely from the region's aquifer to irrigate the Silver Sage golf course. Based on present usage, irrigating the golf course would require 0.4 million gallons of ground water from the regional aquifer per day. The proposed action and alternative would eliminate the use of 91.2 million gallons of water per year from the regional aquifer.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

This Environmental Assessment analyzes the potential environmental impacts from the Proposed Action or alternatives. According to the analysis in this EA, implementation of the proposed action or alternatives at Mountain Home AFB would not result in significant impacts to any resource category or significantly affect existing conditions at Mountain Home AFB. The following summarizes and highlights the results of the analysis by resource category.

Airspace Management and Safety: No impacts or changes to airspace management, runway operations and safety would result from the proposed action. A surface impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. Mountain Home AFB has a BASH Plan in place and conducts daily evaluations of hazards and reacts accordingly. BASH can therefore be maintained to acceptable, current levels with continued implementation of the Plan. Bird scaring techniques in accordance with the Plan can be implemented at the golf course as needed.

Land Use and Transportation: Implementation of the proposed action and alternatives would not noticeably change the baseline conditions. Construction of the pipeline and golf course features would be consistent with existing land use and would require no changes to the base's *General Plan*. In locations where the proposed pipeline will pass through open space, the underground piping will be covered following installation and will follow the same general use criteria as the other buried utility lines throughout the base. Access to the project site would be the same as current use.

Socioeconomics and Environmental Justice: Implementation of the proposed action and alternatives would result in a no net-loss or gain of employees or base personnel and no changes would occur to socioeconomics and environmental justice compared to baseline conditions.

Noise. Implementation of the proposed action would have minor, temporary increases in localized noise levels in the vicinity of the project area during construction. The base is an active military facility that typically experiences high noise levels from daily flight operations. The proposed action location is located in the below 65 dBA noise zone for the golf course area, and can increase to greater than 85 dB closer to the runway, as determined by the base's Air Installation Compatible Use Zone (AICUZ) program measurements. Noise during construction would be similar to typical construction noise, last only the duration of the specific construction activities, and could be reduced by the use of equipment sound mufflers and restricting construction activity to normal working hours. These noise levels would be well within normal noise contours in the project area as determined by the AICUZ.

Air Quality: Implementation of the proposed action and alternatives would not be expected to significantly impact air quality. Temporary emissions from construction work would be well within air quality parameters, or are easily mitigated using standard construction controls. Irrigation with treated wastewater would provide sufficient capacity to fully irrigate during the nighttime hours when the golf course is not in use, so potential for spray to effect persons using the facility is eliminated.

Hazardous Materials and Waste: The pipeline for the proposed action and alternative can be routed to avoid ERP sites. As a result, no new types of hazardous waste streams would be created, no new permits would have to be obtained, and there would be no changes in the types of hazardous materials stored on base for the proposed action and the alternatives. Hazardous waste would continue to be reduced at Mountain Home AFB as it has over the last six years.

Water Resources. Implementation of the proposed action and alternative would impact water resources beneficially. Using treated wastewater to irrigate the Silver Sage golf course would reduce the amount of groundwater removed from the regional aquifer by 91.2 million gallons per year and have a positive effect in reducing the rate of aquifer decline. The treated wastewater will provide additional nitrogen for direct uptake by the root zone of the golf course turf and reduce the need for supplemental fertilizer. This will likely reduce the elevated levels of chloride and nitrogen that have been observed historically in the groundwater wells near the golf course. Under the No Action Alternative, groundwater usage for irrigation will continue to contribute to the declining aquifer in the region. Mountain Home AFB is located in the Mountain Home Plateau Ground Water Management Area (GWMA), in which groundwater withdrawals are restricted and regulated by the Idaho Department of Water Resources (IDWR). If regional groundwater levels continue to decline, the IDWR may re-designate the Mountain Home Plateau GWMA as a Critical Management Area, which may place even greater restrictions on groundwater use.

Natural Resources: Implementation of the proposed action and alternatives would not be expected to significantly impact natural resources. Under the proposed action, construction would temporarily disturb surface soils along the proposed pipeline route and in the irrigation trenches for the golf course piping. Those areas disturbed by trenching activities would be reseeded for protection against erosion. The majority of this area is currently undeveloped. No displacement of sagebrush, which is controlled by the

base's sagebrush protection plan, is expected as no sagebrush protection areas are designated along the project areas. There are no federally recognized threatened or endangered species or critical habitats located on base. The burrowing owl, a Bureau of Land Management state-listed species, is located on the base. Burrowing owl species habitat (primarily abandoned mammal burrows in disturbed areas) occurs in the proposed project area, and may be located in areas that may be disturbed for the water impoundment or irrigation system trenches. The surface water impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. No such habitat is likely along the pipeline route from the wastewater lagoons to the golf course area. Controls are in place on base to limit burrows by filling in burrows while owls are not present (winter) to avoid conflict. Construction of a surface water impoundment at the golf course may provide additional habitat for the proliferation of mosquitoes that may carry the West Nile virus. Vector control measures can be implemented to reduce the mosquito population that may reside in the impoundment. Such control measures may include application of pesticides in the area or placement of larvicidal briquettes in the impoundment.

Cultural Resources: There would be no adverse effects to National Register-listed or eligible cultural resources due to the implementation of the proposed action or alternatives.

4.0 CONCLUSION

On the basis of the findings of the EA, which has been conducted in accordance with the National Environmental Policy Act, the Council on Environmental Quality regulations, and Air Force Instruction 32-7061, implementing the proposed action would not result in significant impacts to human health or the natural environment. Therefore, a Finding of No Significant Impact is warranted and further analysis under an Environmental Impact Statement is not required.

BLAIR E. HANSEN, Colonel, USAF
Commander, 366th Fighter Wing

13 Oct 03
Date

Availability Ad

Environmental Assessment for Improvements to Irrigation System and Land Application of Treated Wastewater Effluent at Existing Golf Course, Mountain Home AFB, Idaho

***The U.S. Air Force** has approved a Finding of No Significant Impact (FONSI) for Improvements to the Irrigation System and Land Application of Treated Wastewater Effluent at the Existing Golf Course, Mountain Home Air Force Base, ID*

The Air Force has approved a Finding of No Significant Impact (FONSI) for the improvements to the irrigation system and land application of treated wastewater effluent at the existing Golf Course at Mountain Home Air Force Base, ID. The action would construct a pipeline to carry treated wastewater from the south lagoon at Mountain Home Air Force Base's existing wastewater treatment plant (WWTP) to the Silver Sage golf course, and then use the treated wastewater for irrigating the golf course. A wet well would be constructed to receive treated wastewater, which will be infiltrated into the irrigation system.

For more information, the Finding of No Significant Impact (FONSI) is available for review at the 366th Fighter Wing Public Affairs Office starting December 8, 2003.

To request a copy of the FONSI, please contact the 366th Fighter Wing Public Affairs Office at (208) 828-6800; the e-mail address is 366wgpa@mountainhome.af.mil

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1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 Introduction

The United States Air Force and Mountain Home Air Force Base (AFB) propose to construct a pipeline from the on-base wastewater treatment plant (WWTP) to the Silver Sage golf course, pumping system, and wet well in order to use treated wastewater instead of groundwater for golf course irrigation. This Environmental Assessment (EA) has been prepared to analyze the potential environmental consequences associated with the proposed action in accordance with the requirements of the *National Environmental Policy Act of 1969* (NEPA) (Public Law [P.L.] 91-190, 42 United States Code 4321 *et seq.*) as amended in 1975 by P.L. 94-52 and P.L. 94-83. In addition, this document was prepared in accordance with the following:

- The Council on Environmental Quality (CEQ*) Regulations for Implementing the Procedural Provisions of NEPA* (40 CFR 1500-1508); and

- Air Force Instruction AFI 32-7061, *The Environmental Impact Analysis Process*, 32 Code of Federal Regulations (CFR) 989, which implements Section 102 (2) of NEPA.

Section 1.2 provides background information on Mountain Home AFB. The purpose and need for the proposed action are described in Section 1.3.

A detailed description of the proposed action and the alternatives under consideration, including the No Action Alternative, is provided in Section 2.0. Section 3.0 describes the existing conditions of various environmental resources that could be affected if the proposed action were implemented. Section 4.0 describes how those resources would be affected by implementation of the proposed action and the No Action Alternative. Section 5.0 addresses the cumulative effects of the proposed action, as well as other recent past, current, and future actions that may be implemented in the region of influence (ROI) for the proposed action.

1.2 Background

Mountain Home AFB is located on the Mountain Home Plateau in southwestern Idaho approximately 40 miles southeast of Boise and approximately 10 miles southwest of the city of Mountain Home in Elmore County, Idaho (Figure 1-1). The Mountain Home Plateau is underlain by a regional aquifer which serves not only Mountain Home AFB, but also the city of Mountain Home and its surrounding areas. On November 9, 1982 (IDWR, 1999), the Idaho Department of Water Quality designated the Mountain Home Plateau a Critical Ground Water Resource and identified it as the Mountain Home Ground Water Management Area. This designation was initiated because the regional groundwater levels had been in rapid decline for the last several decades.

In July 1997, Mountain Home AFB introduced a new wastewater treatment system. The base was authorized by Idaho Department of Health and Welfare (IDHW), Department of

Environmental Quality permit number LA-000154-01 to land-apply wastewater to a series of rapid infiltration basins (RIB) located on base. Over the past 5 years base personnel have identified a number of locations where treated wastewater could be substituted for potable water and/or groundwater being pumped from the regional aquifer. The Silver Sage golf course was one of the identified locations. Because this permit was due to expire on March 20, 2001, Mountain Home AFB submitted a Wastewater Land Application permit renewal and amendment application to the IDHW in September 2000. Although not yet approved, this permit application requested authorization to land-apply treated wastewater to six specific locations on the base, including the Silver Sage golf course.

Silver Sage is an 18-hole golf course located in the southeast portion of the base (Figure 1-2). While the golf course covers an area of approximately 200 acres, only 100 acres is irrigated. This irrigation is conducted from the beginning of April to the end of October. During this time, irrigation must occur nearly continuously to apply sufficient water to meet demands from the high evapotranspiration rate and low available pumping capacity (750 GPM) from the existing well. Groundwater for irrigation is pumped from the regional aquifer by base production well (BPW) 8, located south of and adjacent to the golf course. During the seven-month irrigation period, the golf course uses approximately 0.4 million gallons (Larry Rodgers Design Group, 2000) of water per day. This usage equates to approximately 6.7 percent of the total groundwater pumped by Mountain Home AFB during this same period.

Between late fall and early spring, Mountain Home AFB pumps approximately 0.8 million gallons of water per day from the regional aquifer, while the city of Mountain Home pumps approximately 1.74 million gallons of water per day. Usage increases substantially between early spring and late fall when Mountain Home AFB pumps approximately 6.0 million gallons per day and the city of Mountain Home pumps approximately 6.8 million gallons per day. Because of increased water usage, the regional aquifer is being depleted at the rate of two feet per year.

1.3 Purpose and Need

The purpose of the proposed action is to reduce the amount of groundwater being removed from the regional aquifer by substituting treated wastewater for groundwater to irrigate the Silver Sage golf course. The EA addresses potential impacts associated with adding a new pump at the WWTP's south lagoon, constructing a new eight-inch pipeline from the south lagoon to the Silver Sage golf course, constructing a wet well to receive the treated wastewater at the golf course, and irrigating the golf course with treated wastewater. Utilizing available treated wastewater for golf course irrigation will reduce the amount of groundwater removed from the regional aquifer by approximately 91.2 million gallons per year and relieve some of the stress on the regional aquifer.

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

This chapter describes proposed action to implement the construction of the new treated wastewater pipeline from Mountain Home AFB's WWTP south lagoon to the Silver Sage golf course so that treated wastewater could be substituted for groundwater from the regional aquifer. It also describes Alternative A, which would construct a new treated wastewater pipeline from the WWTP's south lagoon to the Silver Sage golf course so that treated wastewater could be substituted for groundwater from the regional aquifer, but on a different alignment from the proposed action. In addition, the No Action Alternative, which would continue to use groundwater from the regional aquifer for the golf course's irrigation system, is described.

2.1 Proposed Action

The proposed action would both reduce the consumption of groundwater from the regional aquifer by constructing a pipeline to carry treated wastewater from the WWTP's south lagoon to the Silver Sage golf course, and then use the treated wastewater for irrigating the golf course. A wet well would be constructed to receive treated wastewater, which will be infiltrated into the irrigation system. A surface impoundment will be built to receive water from existing well #8. No treated wastewater will be stored in the surface impoundment. Proposed site layout is shown in Figure 2-1.

The differences between the proposed action and Alternative A are primarily in the alignment of the pipelines and the impacts associated with those alignments. Neither alternative would require any groundwater from the regional aquifer, but may be supplemented with it for blending or to maintain capacity. Based on present usage, both alternatives would eliminate the use of 0.4 million gallons of groundwater per day from the regional aquifer by irrigating the golf course with treated wastewater. Pipeline routes for each alternative are depicted in Figure 2-2. The routes are based on present assumptions and may be subject to slight changes in exact alignment. Both alternatives would eliminate the use of 91.2 million gallons of water per year from the regional aquifer.

Under the proposed action, a new vertical turbine pump and motor would be required to force wastewater to the golf course. The existing pump station at the WWTP has three vertical turbine pumps in a wet well with space to add a fourth turbine pump with a check valve, butterfly valve, air release/vacuum release valve, and ductile iron fittings above ground. In addition, a magnetic flow meter would be installed at the pump station to record instantaneous discharge to the golf course. This new pump will force treated wastewater into an eight-inch high-density polyethylene pipeline from the WWTP's south lagoon to the Silver Sage golf course (EnerTech Services, 2000) where it will be used for irrigation.

The pumping system would be designed for 700,000 gallons per day or 486 gallons per minute (gpm) (rounded to 500 gpm). In addition, the proposed action would include remote telemetry on/off control so the vertical turbine pump at the south lagoon could be operated remotely from the golf course. To provide safety against running the pump and motor dry, a low water ultrasonic sensor or probe sensor would be installed in the wet well at the existing pump station. Also, a high-pressure switch would be installed on the discharge piping in order to provide safety

against over pressurizing the system and operating at shutoff heads for an extended period of time.

The proposed action would require a 25 horsepower pump and motor be added to the existing pump station. The pump would be designed for 500 gpm and 140 feet of total dynamic head (TDH). It would force treated wastewater from the south lagoon into the pipeline for its entire 14,750 linear foot length. The pipeline would be bedded in sand with approximately 18 – 24 inches of cover and require repairs to street surfaces that were cut and then covered. The trench backfill and surface repairs would meet Idaho Standards for Public Works Construction. When crossing under the runway and taxiway, the pipeline would be placed in an existing jacketed sleeve.

The pipeline would begin at the south lagoon and proceed east for approximately 1500 feet before turning southeast and running for approximately 3000 feet parallel and southwest of the groundwater pipeline from BPW 9. At BPW 9, the pipeline turns east southeast for approximately 3000 feet before running through an existing jacketed sleeve located under the 200-foot wide runway and 80-foot wide taxiway. Northeast of the taxiway, the pipeline turns east for approximately 3000 feet before turning northeast and running for an approximate final 4000 feet to the Silver Sage golf course.

2.2 Alternative A

Alternative A would require that a 40 horsepower pump and motor (instead of 25 horsepower) be added at the existing pump station. The pump would be designed for 500 gallons per minute (gpm) and 225 feet of TDH. It would force treated wastewater from the south lagoon into the pipeline for the approximate 30,000 linear foot length. The pipeline would be bedded in sand with approximately 18 – 24 inches of cover and require repairs to street surfaces that were cut and then covered. The trench backfill and surface repairs would meet Idaho Standards for Public Works Construction.

The pipeline would begin at the south lagoon and bypass the existing runways by traveling along existing gravel roads south for at least 5000 feet, then east for approximately 10,000 feet, and then north for at least 5000 feet before reaching the golf course. The total estimated pipeline length of 30,000 lineal feet for this alternative will most likely allow for additional turns and final approaches to the pump stations. Both alternatives would eliminate the use of 91.2 million gallons of water per year from the regional aquifer.

2.3 No Action Alternative

The No Action Alternative would continue using groundwater from BPW 8 to irrigate the Silver Sage golf course. Under this alternative, water for the golf course would continue to come solely from the region's aquifer. Based on present usage, irrigating the golf course would require 0.4 million gallons of ground water from the regional aquifer per day.

2.4 Alternatives Considered But Not Carried Forward

This EA analyzes the reasonable alternatives for pumping treated wastewater to the Silver Sage golf course for purposes of spray irrigation and eliminating the need for irrigation with potable groundwater. Because the source of the treated effluent is located at the lagoons south of the WWTP, which is on the opposite side of the base runway from the golf course, alternatives for piping the treated wastewater include relatively long piping runs to reach the golf course. The proposed action would take advantage of the jacketed sleeve at the runway to allow passage of the pipeline under the runway without disruption. If this option were not available, Alternative A would allow a longer piping run that circumvents the runway. Other piping runs besides Alternative A could be examined, however these would inevitably be longer and less efficient than the other alternatives and so do not merit consideration from an engineering or feasibility standpoint.

Trucking the treated wastewater from the source to the golf course, for either direct spraying onto the course or placement into a storage tank or impoundment for pumping via the irrigation system, also was not examined due to the extremely large volumes of water that would need to be filled, trucked and deposited at the course on a continual basis. The surface water impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment.

2.5 EA Process

This EA examines the specific affected environment for each alternative, considers the current conditions of the affected environment, and compares those conditions that might occur under other alternatives, including the No Action Alternative. It also examines the cumulative impacts within the affected environment of these alternatives as well as past, present, and reasonably foreseeable actions of the Air Force and other federal, state, and local agencies. The following steps are involved in the preparation of this EA.

1. *Conduct Agency Coordination.*

2. *Prepare a draft EA.* The first comprehensive document for public agency review is the draft EA. This document examines the environmental impacts of the proposed action and action alternatives as well as the No Action Alternative.

3. *Announce that the draft EA has been prepared.* An advertisement, in the papers local to the proposed action, will be posted notifying the public as to the draft EA's availability for review in local libraries and at a web site (www.mountainhome.af.mil). After the draft EA is distributed, a 30-day public comment period begins.

4. *Provide a public comment period.* Our goal during this process is to solicit comments concerning the analysis presented in the draft EA.

5. *Prepare a final EA.* Following the public comment period, a final EA is prepared. This document is a revision (if necessary) of the draft EA, includes consideration of public comments, and provides the decision maker with a comprehensive review of the proposed action and the potential environmental impacts.

6. *Issue a Finding of No Significant Impact (FONSI).* The final step in the NEPA process is a signed FONSI if the analysis supports this conclusion or a determination that an Environmental Impact Statement would be required for the proposal.

2.6 Regulatory and Permit Requirements

This EA has been prepared in compliance with NEPA, other federal statutes, such as the Clean Air Act, the Clean Water Act, Endangered Species Act, and the National Historic Preservation Act, Executive Orders, and other applicable statutes and regulations.

2.7 Summary of Impacts

According to the analysis in this EA, implementation of the proposed action or alternatives at Mountain Home AFB would not result in either significant impacts in any resource category or significantly affect existing conditions at Mountain Home AFB. The following summarizes and highlights the results of the analysis by resource category.

Air Quality. Implementation of the proposed action and alternatives would not be expected to significantly impact air quality. Temporary emissions from construction work would be well within air quality parameters, or are easily mitigated using standard construction controls. Irrigation with treated wastewater would provide sufficient capacity to fully irrigate during the nighttime hours when the golf course is not in use, so potential for spray to effect persons using the facility is eliminated.

Under the No Action Alternative, no changes would occur to air quality compared to baseline conditions.

Water Resources. Implementation of the proposed action and alternatives would be expected to impact water resources beneficially. Using treated wastewater to irrigate the Silver Sage golf course would reduce the amount of groundwater removed from the regional aquifer by 91.2 million gallons per year and have a positive effect in reducing the rate of aquifer decline. The treated wastewater will provide additional nitrogen for direct uptake by the root zone of the golf course turf and reduce the need for supplemental fertilizer. This will likely reduce the elevated levels of chloride and nitrogen that have been observed historically in the groundwater wells near the golf course.

Under the No Action Alternative, no changes would occur to water resources compared to baseline conditions, and groundwater usage for irrigation will continue to contribute to the declining aquifer in the region. Mountain Home AFB is located in the Mountain Home Plateau Ground Water Management Area (GWMA), in which groundwater withdrawals are restricted

and regulated by the Idaho Department of Water Resources (IDWR). If regional groundwater levels continue to decline, the IDWR may re-designate the Mountain Home Plateau GWMA as a Critical Management Area, which may place even greater restrictions on groundwater use.

Natural Resources. Implementation of the proposed action and alternatives would not be expected to impact natural resources. The surface water impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. Constructing a surface water impoundment at the course may provide an additional attractant for waterfowl to the base, potentially increasing BASH if these birds are then approaching or leaving the golf course by flying across the flight line. Mountain Home AFB has a BASH Plan in place and conducts daily evaluations of hazards and reacts accordingly. BASH can therefore be maintained to acceptable, current levels with continued implementation of the Plan. Bird scaring techniques in accordance with the Plan can be implemented at the golf course as needed.

Under the No Action alternative, no changes would occur to natural resources compared to baseline conditions.

Cultural Resources. There would be no adverse effects to National Register-listed or eligible cultural resources due to the implementation of the proposed action or alternatives.

Under the No Action alternative, no changes would occur to cultural resources compared to baseline conditions.

Land Use and Transportation. Implementation of the proposed action and alternatives would not noticeably change the baseline conditions.

Under the No Action alternative, no changes would occur to either land use or transportation compared to baseline conditions.

Hazardous Materials and Waste. As long as the pipeline route remained north of ERP site FT-07B, no new types of hazardous waste streams would be created, no new permits would have to be obtained, and there would be no changes in the types of hazardous materials stored on base for the proposed action and the alternatives. Hazardous waste would continue to be reduced at Mountain Home AFB as it has over the last six years.

Under the No Action Alternative, no changes would occur to hazardous materials and waste compared to baseline conditions.

Socioeconomics and Environmental Justice. Implementation of the proposed action and alternatives would result in a no net-loss or gain of employees or base personnel.

Under the No Action Alternative, no changes would occur to socioeconomics and Environmental Justice compared to baseline conditions.

Noise. Implementation of the proposed action and alternatives would not noticeably change the noise conditions at the base, and would remain consistent with present noise profiles at the base.

Under the No Action Alternative, no changes would occur to noise compared to baseline conditions.

Cumulative Impacts.

A previous EA for the implementation of a force structure change at Mountain Home AFB did not identify any significant environmental consequences (Air Force 2002). The result of the force structure change left Mountain Home AFB operating at levels below those occurring in the early 1990's.

Although not fully analyzed at this time in separate environmental analysis, none of the future infrastructure actions would be expected to result in more than negligible impacts either individually or cumulatively. All actions affect very specific, circumscribed areas, and the magnitude of the actions is minimal. Given that the proposed action would likewise have a minimal effect within the base, the combined impacts of these actions would remain well below the threshold of significance for any resource category.

3.0 AFFECTED ENVIRONMENT

3.1 Air Quality

Understanding air quality for the affected area requires knowledge of: 1) applicable regulatory requirements; 2) types and sources of air quality pollutants; 3) location and context of the affected areas; and 4) existing setting.

Applicable Regulatory Requirements. Air quality in a given location is described by the concentration of various pollutants in the atmosphere. The 1970 Clean Air Act (CAA) and the 1990 CAA Amendments regulate air pollution emissions from stationary (such as generators) and mobile sources (such as motor vehicles and aircraft) to protect public health and welfare. The project is regulated by Title V requirements. It is a major source for NAAQS emissions, and a minor source of HAPS emissions. There are also no air quality restrictions preventing the project.

The significance of the pollutant concentration is determined by comparing it to the federal (national) and state air quality standards. National Ambient Air Quality Standards (NAAQS) are established by the USEPA for six criteria pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 microns (PM_{10}), and lead (Pb). NAAQS represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and welfare. Short-term standards (1-, 8- and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (annual averages) are established for pollutants contributing to chronic health effects.

Based on measured ambient criteria pollutant data, the USEPA designates areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. Individual states are delegated the responsibility to regulate air quality in order to achieve or maintain air quality in attainment with these standards. States are required to develop a state implementation plan (SIP) that sets forth how the CAA provisions will be implemented within the state. The SIP is the primary means for the implementation, maintenance, and enforcement of the measures needed to attain and maintain the NAAQS in each state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants.

Types and Sources of Air Quality Pollutants. Pollutants considered in the EA include the criteria pollutants measured by state and federal standards. These include volatile organic compounds (VOCs), which are precursors to (indicators of) O_3, nitrogen oxides (NO_x), which are also precursors to O_3, as well as CO, SO_2, and PM_{10}. Airborne emissions of lead (Pb) are not addressed because no significant sources of these criteria pollutants are contained in the affected area and it is not associated with the proposed action and alternatives.

Location and Context of Affected Areas. The affected environment varies according to pollutant, the source of emissions, and meteorological and topographical considerations. Emissions released at high altitudes (such as aircraft emissions) or buoyant emissions (such as

from a power plant smokestack) generally have larger areas of influence than non-buoyant ground-based emission sources. For pollutants that do not undergo a chemical reaction (PM_{10} and SO_2), the affected area is generally restricted to a region in the immediate vicinity of the base. However, the region of concern for ozone and its precursors (NO_x and VOCs) is a larger regional area, because they undergo a chemical reaction and change as they disperse from the source.

Existing Setting – Mountain Home AFB. The Idaho Department of Environmental Quality (IDEQ) has primary jurisdiction over air quality and sources of stationary source emissions at Mountain Home AFB. Stationary source emissions at Mountain Home include jet engine testing, external and internal combustion sources, degreasing operations, storage tanks, fueling operations, solvent usage, surface coating, asphalt production, and miscellaneous general process operations. Fugitive source emissions include aircraft operations (take offs and landings) as well as associated, aerospace ground equipment, and ground support equipment. Emissions from aircraft landings and takeoff operations, as well as other flight operations include both based and transient aircraft. Actual emissions of criteria pollutants from the base are less than 100 tons/year. Table 3-1 summarizes calendar year 2001 actual and potential air emissions for each criteria pollutant and total Hazardous Air Pollutant (HAP) emissions at Mountain Home AFB for stationary and fugitive sources and compares those emissions with the Title V operating permit applicability thresholds. The project is regulated b Title V requirements. It's a major source for WAAQS emissions, and a minor source of HAPS emissions. There are also no air quality restrictions preventing the project.

Table 3-1: 2001 Air Pollutant Emission Summary (Tons/Year), Stationary and Fugitive Sources, Mountain Home Air Force Base, Mountain Home, Idaho

	Actual	Potential
Pollutant	**Stationary**	**Stationary**
NOx	28	210
CO	28	144
SOx	2	12
VOCs	17	46
Particulates (PM)	2	15
Particulates (PM-10)	2	15
Total HAPs	2	4

NOx = Oxides of Nitrogen
CO = Carbon monoxide
SOx = Oxides of sulfur
VOCs = Volatile organic compounds
PM = Particulate matter
PM-10 = Particulate matter of 10 microns or less (respirable dust)
HAP = Hazardous Air Pollutant

Mountain Home AFB lies within the Idaho Intrastate Air Quality Control Region (AQCR) #63. This AQCR, which was developed for planning purposes, consists of 22 counties in central Idaho, including Elmore County. Air quality in the vicinity of Mountain Home AFB, the city of Mountain Home, and Elmore County is generally considered as very good. Air quality in the

AQCR #63 has been designated as either in "attainment" or "unclassifiable/attainment" for NAAQS. Due to the extremely large extent of the AQCR, base emissions from Mountain Home are compared to Elmore County. Table 3-2 summarizes the regional emissions of criteria pollutant and precursor emissions for Elmore County. Mountain Home AFB produces approximately 0.2 to 11 percent of the emissions for Elmore County.

Table 3-2 Regional Emissions for Mountain Home AFB Affected Environment

	CO	VOCs	NOx	SOx	PM-10
Elmore County (emissions in tons/year)	16,543	2,572	3,027	398	8,565
Mountain Home AFB (percent of total emissions)	4.2	5.4	11.4	2.7%	0.2

[1]USEPA, 2002. National Emissions Trends (NET) Database, 1999 emissions data.

3.2 Water Resources

3.2.1 Drinking Water

Mountain Home AFB is located within the C.J. Strike reservoir watershed and is situated in a small, very shallow basin with approximately 55 square miles of drainage area. Surface water tends to flow from northeast to southwest into Canyon Creek, which ultimately drains into the Snake River. No significant drainages or natural impoundments occur on the Mountain Home AFB. Topography at Mountain Home AFB is level and drainages are not well defined. Surface water runoff from thunderstorms and snowmelt tends to collect in small depressions. During spring snowmelts and rainfall, the small amount of surface water on the base flows into either two ephemeral stream channels or four man-made drainage ditches. No large natural drainages cross Mountain Home AFB and no 100-year floodplains have been identified in the area (FEMA maps 1988).

The results of a biological wetland survey, originally conducted in 1990 and revised in 1995, indicated nine playas or vernal pools on Mountain Home AFB. Playas are areas of seasonal water accumulation that evaporates as spring progresses into summer. They fall into the "problem area" category defined by the Army Corps of Engineers, because of their lack of vegetation, high salinity and low organic matter content of the soil. However, the Army Corps of Engineers does consider them jurisdictional wetlands. While one of the playas supports a population of Davis' peppergrass, a species of special concern, neither it nor any of the other playas are located within the golf course irrigation area or proposed pipeline areas.

Mountain Home AFB relies on a regional, unconfined aquifer for water, which is shared with the city of Mountain Home and surrounding areas. Each day during late fall to early spring, approximately 800,000 gallons are pumped out by Mountain Home AFB and approximately 1.74 million gallons a day are pumped out by the city of Mountain Home. In comparison, each day during the summer months, approximately 6.0 million gallons are pumped out by Mountain Home AFB and approximately 6.8 million gallons are pumped out by the city of mountain Home. Currently, this rate of pumping exceeds the rate of recharge, and the water table is dropping at an average rate of 2.07 feet per year for Mountain Home AFB.

Approximately 80 – 90 percent of the 6.0 million gallons of water pumped out of the aquifer every day by Mountain Home AFB in the summer is used for irrigation purposes. During the approximately 214 days between April and October when the golf course is irrigated, it uses 91.2 million gallons of water, or an average of 426,088 gallons per irrigation day.

Groundwater at Mountain Home AFB occurs locally in the Bruneau Formation basalt, which is approximately 490 feet thick, and regionally in the confined deposits and basalt flows of the Glenns Ferry Formation. Production wells in the Glenns Ferry Formation can yield up to 350 gpm, while wells at Mountain Home AFB, in the Bruneau Formation, yield from 10 to 3100 gpm. Estimates of hydraulic parameters for the aquifer at Mountain Home AFB are a saturated thickness of 179 feet, hydraulic conductivity of 100 ft/day, and transmissivity of 17,900 ft^2/day (Woodward Clyde, 1993). The water table occurs at about 365 feet below ground surface, with a general flow direction toward the south-southwest. Flow direction and gradients can be greatly influenced by irrigation pumping and recharge. This is demonstrated by measured capture zones in the vicinity of base production wells that produce a cone of depression. For example, the capture zone measured around BPW8, the present golf course irrigation well, shows a circular pattern cone of depression for the water table during the summer (irrigation period) that is estimated to capture water over much of the golf course area within an estimated 10-year time of travel (HDR, 1998). In recharge areas, such as the rapid infiltration basins south of the WWTP, a slight groundwater mound occurs during the highest flow periods

3.2.2 Wastewater

Wastewater (WW) from the base consists almost entirely of domestic sewage, with less than 1% of the flow originating from intermittent, low volume, non-domestic sources such as equipment maintenance, cleaning, corrosion control, and X-ray development. Non-domestic wastewater discharges are pretreated prior to entering the sanitary sewer. As reported in the base's Wastewater Land Application Permit Renewal and Amendment Application (Mountain Home AFB, 2000), wastewater flow rate averaged 0.48 MGD for calendar year 1999. A new WWTP began startup at the base in 1997. WW is treated in a sequencing batch reactor (SBR) that includes three basins for alternating cycles of fill, aeration, settling, and drawdown. The system provides oxidation of soluble organics and achieves nitrification and denitrification to reduce total nitrogen concentrations to below 20 mg/L. The treatment plant also provides for disinfection of WW with a chlorine contact basin, and stabilization of WW sludge with the use of a holding tank, belt filter press for dewatering, and lime stabilization. Sludge is then further dewatered by air-drying and sent to the base landfill.

During a site visit to the base on 4 November 2002, PBS&J met with WWTP operator Tony Sanchez. Mr. Sanchez reported that the plant averages about 0.45 MGD with approximately 1.3 MGD peak flow. He said that effluent quality is <20 mg/L nitrate and <23 colonies per 100 mL of total coliforms. WW flow is directed to surface water discharge 001 or the rapid infiltration basins south of the plant. During peak flow season, April through August, plant discharge is routed to the storage lagoons, which have a capacity of 78 million gallons.

A chemical analysis of the WW effluent is provided in the Land Application Permit attached in Appendix B.

3.3 Natural Resources

Natural resources incorporate living, native or naturalized plant and animal species, and the habitats in which they occur. The affected area for natural resources includes Mountain Home AFB. Baseline data were gathered from existing studies such as the *Integrated Natural Resource Management Plan for Mountain Home Air Force Base, Idaho* (USAF 2002a), as well as surveys for plants and animals, and waters of the United States including wetlands.

Vicinity of Mountain Home AFB. Prior to development, vegetation on and surrounding Mountain Home AFB consisted of sagebrush grasslands habitat. However, a regional history of development, agriculture, grazing, frequent fires, and exotic plant species invasions have removed all but scattered remnants of the original sagebrush habitat. Most (93 percent) of the base has been altered or developed, including conversions to landscaped areas, buildings, or paved lots. Only about 7 percent of base land has remaining native habitat. These habitats consist of small patches of Wyoming big sagebrush located on the periphery of the base. These areas are not considered pristine, as exotic species invasion and disturbance has impacted species composition.

Wildlife on and immediately surrounding Mountain Home AFB is limited due to the lack of suitable or undisturbed habitat for most species. However, some disturbance-tolerant species such as coyotes, jackrabbits, voles, American robins, Canada geese, house finches, western meadowlarks, ravens, curlews, avocets, burrowing owls and badgers are commonly found in the undeveloped and landscaped areas of the base (USAF 2002a). Aquatic habitat is limited to two small man-made ditches, and seven ponds (including sewage lagoons). In addition, nine small playas or vernal pools exist on base and contain water for short periods in the spring.

No federally-listed threatened or endangered species, or candidate species are known to occur on Mountain Home AFB (USAF 2002a). Appendix C lists species with potential to occur within the habitat located on or near Mountain Home AFB. The majority of the base has been surveyed for both plant and animal species of concern. These surveys concluded that due to the disturbed nature of the habitats available on the base, the potential for occurrences on base is minimal.

One Bureau of Land Management state-listed sensitive species, the burrowing owl, is known to occur on base at particular locations. One of these locations is the golf course. The burrowing owl species occupies abandoned mammal burrows in disturbed areas with short vegetation in the surrounding area (USAF 2002a). The owl can hunt at all times of day and night, however, most prey is captured at dawn and dusk. They frequently hover a short distance above ground, searching for insects, amphibians, small mammals, and birds that comprise their diet.

Waterfowl concentrate along the Snake River and use it year-round. Because of the proximity to the base, these waterbirds stopover at the storage lagoons. Mallards, other ducks, and geese use the storage lagoons. A greater number of birds migrate through the area during the spring and fall, but some birds are found year round. Canada geese, mallards, wood ducks, blue-winged teal, buffleheads, goldeneyes, coots, western grebes, and avocets occur as well. Because the

storage lagoon supports waterfowl, bald eagles may forage here during the winter. However, bald eagles have never been reported.

Bird-Aircraft Strike Hazards (BASH). One of the consequences of a bird population at an air force base is the potential for aircraft strikes. Bird-aircraft strikes are considered a safety concern because of the potential for damage to aircraft and injury to aircrews and local populations. Aircraft can encounter birds at altitudes of 30,000 feet above mean sea level (MSL)or higher. However, most birds fly close to the ground, and over 97% of reported bird strikes occur below 3,000 feet. Of these, approximately 30% happen in the airport area and 55% occur during low-altitude flight training (Bird-Aircraft Strike Hazard [BASH] Team, 2000).

Mountain Home AFB has developed procedures to minimize the occurrence of BASH, including ground level sound cannons to disperse bird flocks and discourage congregation at the base, such as at and near surface water areas (personal communication, Angelia Martin, Chief, Conservation, January 2003). Mountain Home AFB has had a very low incident of BASH. In accordance with the base's BASH reduction plan (USAF 2001), bird-aircraft strike hazard is evaluated daily by Flight Safety, who determines the level of risk each morning and evening by identifying bird locations and counting number of birds. Dispersing birds by sound cannons or other scare tactics is used to reduce the number of birds around the flight line. Other control measures include reducing potential bird habitat by controlling high grass and shrubs. If control methods fail, then Flight Safety is authorized by the State of Idaho and U.S. Fish and Wildlife Service to kill a minimal number of birds. Approximate numbers of birds that are killed under this plan range from 80 to 150 birds per year. The WWTP storage lagoons continue to be an attractant for waterfowl, especially during fall migration (November). BASH protocols include sound cannons and other diversion techniques in these areas. (USAF, 2001, 2002a).

3.4 Cultural Resources

Cultural resources are prehistoric and historic sites, buildings, districts, or objects that are important to a culture or community. Cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural resources.

Archaeological resources are places where people changed the ground surface or left artifacts or other physical remains (e.g., arrowheads or bottles). Archaeological resources can be classed as either sites or isolates and may be either prehistoric or historic in age. Isolates often contain only one or two artifacts, while sites are usually larger and contain more artifacts.

Architectural resources are standing buildings, dams, canals bridges, and other structures.

Traditional cultural resources are associated with the cultural practices and beliefs of a living community that link that community to its past and help maintain its cultural identity. Most traditional cultural resources in the affected environment are associated with Native Americans. Traditional cultural resources may include, but are not limited to, archaeological resources, location of historic events, sacred areas, sources of raw materials for making tools, sacred objects or traditional hunting and gathering areas.

Under the National Historic Preservation Act and various federal regulations, only significant cultural resources are considered when assessing the possible impacts of a federal action. Significant archaeological, architectural, and traditional cultural resources include those that are listed and those recommended as eligible for listing on the National Register of Historic Places (National Register).

The significance of archaeological and architectural resources is usually determined by using specific criteria (listed in 36 CFR 60.4), including: association with an important events, association with a famous individual, embodiment of the characteristics of a period, and ability to contribute to scientific research. Cultural resources must usually be at least 50 years old to be considered eligible for listing. However, more recent structures, such a Cold War-era resources, may warrant protection if they manifest "exceptional significance." Traditional cultural resources can be evaluated for National Register eligibility as well. However, even if a traditional cultural resource is determined to be not eligible for the National Register, it may still be significant to a particular Native American tribe. In this case, such resources may be protected under the Native American Graves Protection and Repatriation Act, and Executive Order 13007 addressing sacred Indian sites. The significance of a Native American traditional cultural resource is determined by consulting with the appropriate Native American Tribes. The area of analysis for cultural resources considers the Mountain Home AFB.

Vicinity of Mountain Home AFB. Mountain Home AFB has been surveyed for archeological and architectural resources (USAF 2002a). This survey identified five historic archaeological sites, none of which are considered eligible for listing on the National Register (USAF 2002a). There are no National Register-listed archaeological sites at Mountain Home AFB (USAF 1998a).

While there are no National Register-listed architectural resources at Mountain Home AFB, six World War II structures and five Cold War structures at the base are eligible for listing on the National Register. Other buildings from the Cold War-era also may be eligible for the National Register, but have not yet been evaluated (USAF 1998a). However, neither the proposed action nor alternatives would involve any construction or modification to buildings, so no historic structures would be affected.

No traditional resources have been identified at Mountain Home AFB (USAF 1998a).

3.5 Land Use and Transportation

Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of uses that are allowable or protect specially designated or environmentally sensitive areas. Special use areas are identified by agencies as being worthy of more rigorous management.

Transportation resources refer to the infrastructure and equipment required for the movement of people, raw materials, and manufactured goods in geographic space. Particular emphasis for this analysis is given to the road and rail networks in the region. The region of influence for land use

and transportation resources consists of Mountain Home AFB and the area in the immediate vicinity.

3.5.1 Land Use

Land uses on Mountain Home AFB are grouped by function in distinct geographic areas (Figure 3-1). The runway bisects the base from northwest to the southeast. Lands to the southwest are largely undeveloped. Undeveloped lands are commonly called open space in planning documents and may include grazing areas, safety buffers, or other similar land uses. Developed areas occur in the central and northeastern portions of the base. Main categories of developed land uses include airfield and flight line, industrial areas, administrative facilities, housing, recreation, sites, and community as well as medical facilities. Adopted plans and programs guide land use planning on Mountain Home AFB. The primary planning document for Mountain Home AFB is the *General Plan*, which provides an overall perspective concerning development opportunities and constraints. The base's *Integrated Natural Resource Management Plan* is used to coordinate natural resource management. Base plans and studies present factors affecting both on- and off-base land use and include recommendations to assist on-base officials and local community leaders in ensuring compatible development.

The location for the proposed action lies within the "Outdoor recreation" land use for those actions proposed on the golf course, such as the water feature irrigation pond and the actual irrigation system. The wastewater effluent pipeline will approach from the wastewater lagoon area in the western portion of the base, designated as "industrial" land use, and then cross open space and airfield to eventually connect with the golf course. In this manner, the pipeline will lie in land use areas that are designated over a wide range of uses, but that are consistent with crossings for similar utility pipelines located throughout the base. In particular, the pipeline is proposed to cross the airfield at a jacketed sleeve that passes under the airfield pavement to allow such utility crossings with minimal impacts and no disruption to the runway.

3.5.2 Transportation

Access to the main gate of Mountain Home AFB is provided from Airbase Road off of State Route 67. The project site is located well inside the main gate, with the golf course area located to the southeast and the treated wastewater effluent lagoon located to the southwest. No roads will be constructed or modified due to the proposed action.

3.6 Hazardous Materials and Hazardous Waste

Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation, and Liability Act; the Occupational Safety and Health Act; and the Emergency Planning and Community Right-to-Know Act. Hazardous materials have been defined in AFI 32-7086, Hazardous Materials Management, to include any substance with special characteristics that could harm people, plants, or animals when released. Hazardous wastes are managed in accordance with the *Mountain Home AFB Wing Plan 3208-02 Hazardous Waste Management Plan*.

The majority of the hazardous waste produced by the base is derived from aircraft and equipment maintenance. Hazardous wastes are generated from a variety of functions on base, including aircraft support; wastewater treatment; soil and groundwater remediation; training exercises; civil engineering; printing; medical facilities; services; and security. According to 40 CFR 261.4, domestic sewage is not a hazardous waste. Because of the magnitude of flight operations, aircraft support functions are typically major sources of hazardous wastes at Air Force bases. Aircraft flight operations and maintenance at each base, as well as many other activities, require the use and storage of a variety of hazardous material which include flammable and combustible liquids, acids, corrosives, caustics, anti-icing chemicals, compressed gasses, solvents, paints, paint thinners, pesticides, petroleum hydrocarbons, batteries, hydraulic fluids, fire retardant, and photographic chemicals.

Facilities that generate more than 2,200 pounds of hazardous waste or 2.2 pounds of acute hazardous waste per month are considered to be large quantity generators by the USEPA. According to the Resource Conservation And Recovery Act (RCRA), Mountain Home AFB is considered to be a large quantity generator. Hazardous wastes at the base are managed under the Mountain Home AFB Wing Plan 3208-02 Hazardous Waste Management Plan. Idaho Hazardous Waste Generator Annual Report for CY 2002 reported 115,674 pounds of hazardous waste generated by the base. Hazardous waste generation at Mountain Home AFB is currently largely affected by maintenance activities associated with base-assigned aircraft. Types of waste generated at Mountain Home AFB include combustible solvents from parts washers, fuel filters, metal-contaminated spent acids from aircraft corrosion control, painting wastes, battery acid, corrosive liquids, washracks sludge and fuel from tank cleanouts. The shops which provide maintenance support have been identified as primary contributors to hazardous waste streams at Mountain Home AFB. They include: Aerospace Ground Equipment; Corrosion Control; Fuels Management; Munitions and Armament Shops; In-Squadron Maintenance; and the Wheel and Tire Shop. Numerous other shops (e.g., avionics, egress systems, electrical metals, hydraulics, radio, and jet engine) collectively add to hazardous waste streams. Currently, all maintenance activities are performed at Mountain Home AFB with the exception of depot-level maintenance, which occurs every four years at separate maintenance facilities on other bases.

Waste minimization programs are mandated by law and Air Force policy. The Air Force has implemented a continuous process for minimizing waste, which includes identifying opportunities for substitution of nonhazardous materials. Mountain Home AFB has reduced the volume of hazardous waste generated on the base from 169,977 pounds in 1996 to 90,920 pounds in 2001. The 90,920 pounds generated in 2001 included 30,000 pounds of light bulbs disposed during the Energy Savings Performance Program (personal communication, Miller 2002). This reduction is attributed to Mountain Home AFB's policy of substituting equipment and materials used in the maintenance processes to reduce the amounts or kinds of hazardous waste generated. Mountain Home AFB also participates in a closed loop oil-recycling program. This program has eliminated used oil as Resource Conservation and Recovery Act waste stream.

The *Hazardous Materials Wing Plan 3209-02 Emergency Planning and Response Plan* addresses storage locations on base and proper handling procedures for all hazardous materials to minimize the potential for spills and releases, including general aircraft maintenance activities. If

a spill occurs, the plan outlines how base personnel should respond, including notification, containment, decontamination, and cleanup of spilled materials to minimize the adverse effects of a spill.

Mountain Home AFB inventories and tracks all hazardous material and established waste streams. Wastes generated on base are stored at the central collection facility not in excess of 90 days at which point they are transported off site to a certified treatment and storage and disposal facility.

3.6.1 Environmental Restoration Program Sites

The base also manages Environmental Restoration Program (ERP) sites under an active assessment and restoration program (ATSDR 1999; Figure 3-2). Up to three different ERP sites potentially may be impacted by the proposed action and the alternative, depending on the route of the pipeline.

Site LF-03 has been the principle sanitary landfill for the base since 1969. This site is located south of the wastewater treatment infiltration ponds and west of the runway. Empty drums were disposed in a metals trench and petroleum wastes were possibly disposed at the site. Site operation procedures and records do not indicate that hazardous wastes have been disposed at the site, however asbestos is reported to have been disposed in one of the open pits (ATSDR, 1999). The public health assessment for this site concluded that no public health hazard is associated with LF-03 and that no asbestos or other materials should be disturbed or released to the environment if proper landfill procedures and compacting procedures are followed.

Site LF-23 is a solid waste disposal area consisting of three trenches, which contain tires and household and solid wastes. This site is located at the south perimeter of the base, southwest of the Prime Beef Training Area and Communications Tower. The site is described as an open, non-irrigated field that receives minimal maintenance (ATSDR, 1999). Soil samples collected as part of the public health assessment for this site indicated metals, semivolative organics, and hydrocarbons were detected slightly above background levels at depths of approximately 15 feet. The public health assessment concluded that these contaminants did not represent a health hazard.

Site FT-07B was used as a Fire Department training area between 1953 and 1962. FT-07B consists of two circular burn pits on the north side of the abandoned east-west runway. Motor and aviation fuels, solvents, waste oils, and petroleum lubricants were reportedly transported to the site in 55-gallon drums. The contents of the drums were then poured onto a mock-up aircraft and ignited. Training exercises were conducted approximately twice per week, using 200 to 300 gallons of combustible material. Prior to 1972, training fires were extinguished primarily with protein foam and water. FT-07B is currently a non-irrigated open field. (USACE, 2002). Soil samples collected as part of the public health assessment indicated metals, polyaromatic hydrocarbons, and total recoverable petroleum hydrocarbons at concentrations above ATSDR comparison values. The public health assessment concluded that no public health hazard was associated with this site since public access is believed to be limited due to the site's proximity to the flight line and distance from the residential area (ATSDR, 1999).

3.7 Socioeconomics and Environmental Justice

This section of the EA focuses on the general features of the economy – employment, earnings, population, and housing – that could be affected by the proposed action or alternatives. The affected area for socioeconomics is composed of the counties and communities whose economies are closely related to activities at the military installation. For Mountain Home AFB, the affected area includes Ada, Elmore, and Owyhee counties.

Employment. Mountain Home, the county seat of Elmore County, is primarily a rural community of 10,743 residents (1999) with a strong ranching and agri-business economy. Unemployment rates for Elmore County were 6.5% in 1999 and 6.1% in 2000. Mountain Home AFB is the largest employer in Elmore County, providing employment for approximately 4,500 military employees and 877 civilian employees.

The value of payroll associated with active-duty military and civilian personnel at the base was approximately $162 million in FY 2001 (USAF 2002b). Mountain Home AFB also purchases significant quantities of goods and services from local regional firms. In FY 2001, annual expenditures by the base were over $61 million. The Air Force estimates that the economic stimulus of Mountain Home AFB created approximately 1,690 secondary jobs in the civilian economy (USAF 2002b).

Population. Population in the tri-county region was 340,678 in 2000, an increase of 44 percent from 1990. For comparison, the population of Idaho grew by 28 percent to 1,293,953 in 2000 (U.S. Census Bureau 2003).

Approximately 77 percent of the 2000 population of the three counties resided in incorporated communities. These cities and towns range in size from Boise (with a population of 185,787) to Grand View (with a population of 470). The largest cities are Boise, Meridian (34,919 persons), Mountain Home (11,143), Eagle (11,085), and Garden City (10,624) (U.S. Census Bureau 2003).

The socioeconomic analysis in the F-22 EIS (USAF 2001a) estimated the place of residence (by zip code) of active-duty personnel stationed at Mountain Home AFB. The majority of military personnel (approximately 57 percent) who reside off base live in the city of Mountain Home. The next largest group resides in Boise (approximately 7 percent). Other communities have small numbers of active-duty military residents (USAF 2002b). Total on-base population was 6,282 in FY 2001.

Housing. There were a total of 133,495 housing units in the tri-county region in 2000, with a homeowner vacancy rate of about 2.7 percent and a rental vacancy rate of about 8.1 percent. Of the vacant units, 4.0 percent were for seasonal and recreational use (U.S. Census Bureau 2003.)

The Housing Market Analysis (USAF 2002b) evaluated all aspects of the housing market area and the military's requirements from 1999 to 2004. The housing market area for Mountain Home AFB is defined as a 30-minute commute time from the installation's headquarters building during peak traffic and includes portions of Elmore and Owyhee Counties. The report concluded

that there is a private sector housing deficit for the military families (1,688 units) and unaccompanied personnel (226 units).

The city of Mountain Home is the only significant population and housing center contained within the housing market area boundary. In 2000, there were 401 vacant housing units in the city of Mountain Home and the vacancy rate in the city was 8.5 percent. Most of the vacant housing units were rental units (12.8 percent) while the vacancy rate for homeowner units was much lower at 2.8 percent. Over the period 1990 - 1999, an average of 104 housing unit permits were issued annually in the city of Mountain Home and of these, 71 were for single-family homes (USAF 2002b).

Of the active-duty personnel assigned to Mountain Home AFB in FY 2001, 53 percent resided on base in government family and unaccompanied housing (USAF 2002b).

3.8 Noise

Noise is defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance and, in the extreme, hearing impairment.

The standard unit employed for noise measurements is the decibel (dB). Decibels are measured on a logarithmic scale, which quantifies sound intensity in a manner similar to the Richter Scale's use for earthquake magnitudes. Thus, an increase of three dB doubles the noise level; a decrease of three dB halves the noise level. The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, the "A-weighted" noise scale, which weights the frequencies to which humans are sensitive, is used for measurements. Noise levels using A-weighted measurements are sometimes written db(A) or dBA.

As noise fluctuates from moment to moment, noise levels over a specific time period are condensed into a single number called the Equivalent Noise Level (L_{eq}). The L_{eq} is the level of constant sound that, in a given situation and time period, has the same energy as does time-varying sound. In other words, the fluctuating sound levels of traffic noise are represented in terms of steady noise level with the same energy content; $L_{eq(3)}$ would signify a three hour average. When no time period is indicated, a one-hour average may be assumed.

At Mountain Home AFB, noise levels from flight operations exceeding ambient background noise typically occur beneath the main approach and departure corridors and in areas immediately adjacent to parking ramps and aircraft staging areas Figure 3-3). As aircraft take off and gain altitude, their contribution to the noise environment drops to levels indistinguishable from the ambient background. The height at which the noise becomes indistinguishable varies depending on the aircraft and meteorological conditions.

As would be expected, the highest noise levels generated by take off and landing are found at the runway on Mountain Home AFB. Noise studies, including those completed under the Air Installation Compatible Use Zone (AICUZ) program, express day-night levels (DNL) as contours developed from the following data: aircraft types, runway-use patterns, engine power

settings, altitude profiles, flight-track locations, airspeed, number of operations per flight track, engine maintenance, and time of day. DNL is an energy average (with nighttime weighting) based on noise levels in dBA. These studies were based on an average busy day, which represents airfield activity during a 24-hour period when the airfield is in full operation. The advantage of the "average busy day" approach is that it is unaffected by daily, monthly, and yearly fluctuations in the rate of use by individual aircraft at the base. Table 3-3 presents the on-base acres affected by noise levels of 65 DNL and greater. Noise levels contours are presented in Figure 3-1. Noise levels at the golf course project site are currently estimated in the 65 dBA DNL noise contour.

Table 3-3: Area affected by Baseline Noise Contours in the Vicinity of Mountain Home AFB

Noise Contour (DNL)	Acres Affected: On-base
65-70	1,068
70-75	1,125
75-80	864
80-85	595
85+	850
Total	4,502

4.0 ENVIRONMENTAL CONSEQUENCES

4.1 Air Quality

4.1.1 Proposed Action

The air quality analysis for the proposed action at Mountain Home AFB quantifies the changes due to the construction and operation of a new pipeline and irrigation system for treated wastewater effluent at the golf course. The Clean Air Act (CAA) prohibits federal agencies from supporting activities that do not conform to a State Implementation Plan (SIP) approved by the USEPA. To assess the affects of the proposed action, analysis must include direct and indirect emissions from all activities that would affect the regional air quality. Emissions from the proposed action are either "presumed to conform" (based on emissions levels that are considered insignificant in the context of overall regional emissions) or must demonstrate conformity with approved SIP provisions.

Emissions generated by construction projects are temporary in nature and would end when construction is complete. The emissions from fugitive dust (PM_{10}) would be significantly less due to the implementation of control measures in accordance with standard construction practices. For instance, frequent spraying of water on exposed soil during construction, proper soil stockpiling methods, and prompt replacement of ground cover or pavement are standard landscaping procedures that could be used to minimize the amount of dust generated during construction of a pipeline or trench. Using efficient grading practices and avoiding long periods where engines are running at idle may reduce combustion emissions from construction equipment. Vehicular combustion emissions from construction worker commuting may be reduced by carpooling.

No change in direct operational emissions from the current golf course is expected. The facility would be heated in the same manner as currently. No additional emissions are anticipated from personnel traveling to the facility, since no significant increase in use of the golf course is expected.

4.1.2 Alternative A

Construction impacts to air quality will be similar in this alternative, except approximately twice as much pipeline will be installed, thereby creating longer construction time. Control measures would be similar, and would effectively control temporary emissions as with the proposed action.

4.1.3 No Action Alternative

Under the No-Action Alternative, a new pipeline would not be constructed and the golf course irrigation operations would continue to be met by existing facilities. There would be no environmental consequences to this resource.

4.2 Water Resources

4.2.1 Proposed Action

The proposed action is expected to have beneficial impacts to water resources at the base. Between late fall and early spring, Mountain Home AFB pumps approximately 0.8 million gallons of water per day from the regional aquifer, while the city of Mountain Home pumps approximately 1.74 million gallons of water per day. Usage increases substantially between early spring and late fall when Mountain Home AFB pumps approximately 6.0 million gallons per day and the city of Mountain Home pumps approximately 6.8 million gallons per day. Because of increased water usage, the regional aquifer is being depleted at the rate of two feet per year. Utilizing available treated wastewater for golf course irrigation will reduce the amount of groundwater removed from the regional aquifer by approximately 91.2 million gallons per year and relieve some of the stress on the regional aquifer.

The proposed system to provide treated wastewater has not reached the design stage and is still in conceptual planning. The new system will incorporate new irrigation piping and sprinkler heads. A wet well will be constructed to receive treated water, which will be infiltrated into the irrigation system. A storage tank, chlorination system to further disinfect the water, and pump station are also proposed near a surface water impoundment. The impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. A process schematic for the proposed treatment and application processes is shown in Figure 4-1. No additional power lines are expected for the pumping system. A fourth pump would be installed at the pumping station, which currently is served by electrical power. No additional power consumption at the golf course from operation of the irrigation system is expected.

This secondary chlorination system will supplement the chlorine contact chamber at the WWTP and will provide additional chlorination for water from the south storage lagoon that may have developed coliform bacteria from waterfowl in the lagoon, or that may lose some chlorine residual from stagnation or travel time in the proposed pipeline to the golf course. Chlorination will be designed to provide a minimum chlorine residual of 2 mg/L in the effluent to ensure proper disinfection of the wastewater prior to spray irrigation on the golf course and prevent negative health effects from the effluent.

As a further precaution, irrigation with the new treated wastewater system is proposed only for night time hours when the course is not in use, to prevent human contact with wastewater. Irrigation will occur during the growing season, from April to September. Treated wastewater will be applied at an average rate of about 24 inches per year, sufficient to meet the forecasted

irrigation demands (Mountain Home AFB, 2000). The system will be designed to operate on 100% treated wastewater, with supplemental groundwater available from BPW8 if needed to maintain water level in the wet well. Further controls to reduce contact with the treated wastewater will be as follows:

- signs will be posted every 500 feet along the fairways indicating that the golf course is irrigated with non-potable water;
- irrigated portions of the course will be maintained a minimum of 250 feet from base housing areas, in accordance with Idaho DEQ regulations for land application of treated wastewater;
- pumps and piping systems will be painted purple, the standard for reclaimed water systems; and
- WW treatment plant effluent will be monitored weekly to ensure chlorine disinfection maintains total coliform <23 colonies per 100 mL, and the golf course chlorinator operation will be monitored continuously to ensure a minimum 2 mg/L chlorine residual in the sprayed water.

An additional benefit of treated wastewater application at the golf course is that the effluent will provide an average of 32 pounds of nitrogen per acre per year. According to analysis of the treated wastewater quality, golf course loading calculations, and calculated application rates (Mountain Home AFB, 2000), this will reduce the current annual fertilizer application rate by approximately one-half, from the current need of 68 pounds per acre to approximately 36 pounds per acre.

An impact evaluation has been conducted by Mountain Home AFB to determine if irrigation with treated wastewater will affect the quality of groundwater underlying the golf course (Mountain Home AFB, 2000). Mountain Home AFB has conducted extensive monitoring of groundwater wells at the base. Past investigations have identified elevated levels of chloride and nitrogen near the golf course, most likely due to historical fertilization and irrigation practices (Woodward Clyde, 1993a). Future use of treated wastewater will reduce the need for supplemental fertilizer. Since application rates are determined by uptake rates of the turf, treated wastewater application can be adjusted to limit the amount of excess nitrogen that is unused by the grass and left to migrate downward. Because nitrogen is in the treated effluent and is applied continually over time, instead of 68 lbs in one or two applications, it may be all that is necessary. There maybe no nitrogen excess to migrate downward because it is continually applied.

4.2.2 Alternative A

Alternative A will simply allow for a longer pipeline run to circumvent the runway, but quality, quantity, and application rates of treated wastewater at the golf course will be the same as for the proposed action, and have the same beneficial impacts.

4.2.3 No Action Alternative

Under the No Action Alternative, no changes would occur to water resources compared to baseline conditions, and groundwater usage for irrigation will continue to contribute to the declining aquifer in the region. Mountain Home AFB is located in the Mountain Home Plateau

Ground Water Management Area (GWMA), in which groundwater withdrawals are restricted and regulated by the Idaho Department of Water Resources (IDWR). If regional groundwater levels continue to decline, the IDWR may re-designate the Mountain Home Plateau GWMA as a Critical Management Area, which may place even greater restrictions on groundwater use.

4.3 Natural Resources

4.3.1 Proposed Action

Terrestrial Communities

Under the proposed action, construction would temporarily disturb surface soils along the proposed pipeline route and in the irrigation trenches for the golf course piping. Those areas disturbed by trenching activities would be reseeded for protection against erosion. Approximately 3 acres will be disturbed for construction of the storage impoundment. The impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. The majority of this area is currently undeveloped. No displacement of sagebrush, which is controlled by the base's sagebrush protection plan, is expected as no sagebrush protection areas are designated along the project areas.

Wetland Communities

Wetland areas on Mountain Home AFB include any of the nine identified playas. None of the playas are located within the project area. The nearest playa is located approximately 2,000 feet east of the project site, east of the hospital. There would be no environmental consequence to this resource.

Threatened, Endangered, and Special Status Species/Communities

Species listed, proposed for listing, or candidates for listing as threatened and endangered in accordance with the Endangered Species Act of 1973 are not likely to be adversely affected by the proposed action. There are no federally recognized threatened or endangered species or critical habitats located on base.

The burrowing owl, a Bureau of Land Management state-listed species, is located on the base. The burrowing owl species occupies abandoned mammal burrows in disturbed areas with short vegetation in the surrounding area. This habitat occurs in the proposed project area, and may be located in areas that may be disturbed for the water storage impoundment or irrigation system trenches. The impoundment will be used to store water pumped from a base production well to provide pressure to the irrigation system. Any treated effluent piped into the system will be done through a mixing chamber, i.e. the wet well, and at no time will the treated effluent be mixed into or stored in the existing impoundment. No such habitat is likely along the pipeline route from the wastewater lagoons to the golf course area. The burrowing owl species occur in the infield and near the runway.

Controls include checking for active burrows, and filling in burrows while owls are not present (winter) to avoid conflict.

Bird-Aircraft Strike Hazards (BASH)

Constructing a surface water impoundment at the golf course may provide an additional attractant for waterfowl to the base, potentially increasing Bird/Wildlife Strike Hazards (BASH) if these birds are then approaching or leaving the golf course by flying across the flight line. Mountain Home AFB has a BASH Plan in place and conducts daily evaluations of hazards and reacts accordingly. BASH can therefore be maintained to acceptable, current levels with continued implementation of the Plan. Bird scaring techniques in accordance with the Plan can be implemented at the golf course as needed.

West Nile Virus

Construction of a surface water impoundment at the golf course may provide additional habitat for the proliferation of mosquitoes that may carry the West Nile virus. Vector control measures can be implemented to reduce the mosquito population that may reside in the impoundment. Such control measures may include application of pesticides in the area or placement of larvicidal briquettes in the impoundment.

4.3.2 Alternative A

Construction of the longer pipeline that avoids the runway crossing will disturb a larger area of the base. However, no federally recognized threatened or endangered species or critical habitats are located on base or have been identified in the proposed pipeline route for Alternative A. No significant impacts to natural resources are expected under this Alternative.

4.3.3 No Action Alternative

Under the No-Action Alternative, a new pipeline would not be constructed and the golf course irrigation operations would continue to be met by existing facilities. There would be no environmental consequences to this resource.

4.4 Cultural Resources

4.4.1 Proposed Action

No impacts to archaeological resources are expected under the proposed action. No significant archaeological resources have been identified in the proposed project area. No impacts to architectural resources are expected under the proposed action. The current buildings on the golf course are not listed on the National Register as historic structures, nor are they World War II or Cold War structures.

4.4.2 Alternative A

Construction of the longer pipeline that avoids the runway crossing will disturb a larger area of the base. However, no significant archaeological resources have been identified in the proposed pipeline route for Alternative A. No impacts to architectural resources are expected under this Alternative.

4.4.3 No Action Alternative

Under the No-Action Alternative, a new pipeline would not be constructed and the golf course irrigation operations would continue to be met by existing facilities. There would be no environmental consequences to cultural resources.

4.5 Land Use and Transportation

4.5.1 Proposed Action

According to the base's *General Plan*, the location of the proposed action is designated as the following:

Project Element	Land Use
Wastewater treatment plant south lagoon and pump station	Industrial
Pipeline	Open space and Airfield
Golf course features and wet well	Outdoor recreation

Construction of the pipeline and golf course features would be consistent with existing land use and would require no changes to the base's *General Plan*. In locations where the proposed pipeline will pass through open space, the underground piping will be covered following installation and will follow the same general use criteria as the other buried utility lines throughout the base.

Transportation

Access to the project site would be the same as current use. An increase in the traffic in the area would be expected during construction of the pipeline and wet well. However, the increase due to construction vehicles would be short-term and would last only for the duration of construction. In the long-term, vehicular traffic making trips to the golf course would be similar to the current use. Interruption in service to existing roads should be minimal because the pipeline will travel primarily along open space and existing utility service areas.

4.5.2 Alternative A

Transportation may temporarily be impacted under Alternative A, as this alternative calls for routing the pipeline along existing roads around the runway to avoid a crossing. Because road

alignments are proposed for this alternative, there is potential for greater disturbance to road use and travel patterns during construction. Although the exact route for this alternative has not been established, it is possible that portions of existing gravel and paved roads may be temporarily blocked to allow for installation of the pipeline.

4.5.3 No Action Alternative

Under the No-Action Alternative, a new pipeline would not be constructed and the golf course irrigation operations would continue to be met by existing facilities. Land use would continue as is and no wastewater application would be employed. There would be no new environmental consequences to existing land use and transportation.

4.6 Hazardous Materials and Waste Management

4.6.1 Proposed Action

Construction of the proposed action may require the use of hazardous materials by contractor personnel. In accordance with the base's HAZMAT procedure, copies of Material Safety Data Sheets must be provided to the base and maintained on the construction site. The base would maintain any hazardous materials used by base personnel. No adverse environmental consequences are anticipated from the proposed action with regard to hazardous materials.

Hazardous Waste

Hazardous waste, such as paints, adhesives and batteries, may be generated by contractor personnel during the construction of the pipeline and irrigation system. Storage and disposal of these wastes would be the responsibility of the site contractor and the base's hazardous waste management program. No additional hazardous wastes are anticipated to be generated by base personnel during the operation and maintenance of the proposed action. No adverse environmental consequences are anticipated from proposed action with regard to hazardous waste.

The pipeline route may impact ERP site FT-07B, which is a former fire training area located north of the abandoned east-west runway. Impacts to this ERP site can be avoided if the pipeline is located north of ERP site FT-07B. Elevated concentrations of metals, polyaromatic hydrocarbons and total recoverable petroleum hydrocarbons were identified in soil sampling conducted as part of an ASTDR public health assessment. Soils excavated from this site may require handling and disposal as hazardous waste and employee protective measures may be required during site excavations that may impact this ERP site.

Solid Waste

Construction of the proposed action will generate some construction debris. If possible existing road base material in pipeline crossing areas would be recycled or disposed of as solid waste. Operation of the golf course with irrigation from treated wastewater effluent would not be

expected to generate any additional solid waste than is generated by current operations. No adverse environmental consequences would be expected with the implementation of the proposed action.

4.6.2 Alternative A

Generation of small amounts of wastes will be similar in this alternative, except approximately twice as much pipeline will be installed, thereby creating longer construction time. Control measures would be similar, and would effectively reduce such wastes in a similar manner as for the proposed action.

If the pipeline is routed along base perimeter roads as shown in Figure 3-2, there is potential for disturbance of ERP sites adjacent to these areas. The pipeline for Alternative A may pass adjacent to site LF-03, the base sanitary landfill since 1969. Site operations records do not indicate that hazardous wastes have been disposed at this site, however asbestos is reported to have been disposed in one of the open pits (ATSDR, 1999). The public health assessment for this site concluded that no public health hazard is associated with LF-03 and that no asbestos or other materials should be disturbed or released to the environment if proper landfill operations and compacting procedures are followed.

The pipeline for Alternative A also may pass adjacent to site LF-23, a solid waste disposal area that consists of three trenches which contain tires and household and solid wastes. The site is described as an open, non-irrigated field that receives minimal maintenance (ATSDR, 1999). Soil samples collected as part of the public health assessment for this site indicated metals, semivolatile organics, and hydrocarbons were detected slightly above background levels at depths of approximately 15 feet. The public health assessment concluded that these contaminants did not represent a health hazard. Since excavation for the pipeline can be routed to avoid this area, or remain at a relatively shallow depth above the suspected contaminants, impacts from hazardous wastes or hazardous materials if Alternative A is selected can be minimized.

4.6.3 No Action Alternative

Under the No-Action Alternative, a pipeline would not be constructed and the golf course irrigation would continue to be met by existing facilities. There would be no new environmental consequences with respect to hazardous materials and waste management.

4.7 Socioeconomic and Environmental Justice

4.7.1 Proposed Action

Socioeconomic

Construction of the new pipeline and irrigation system, in the short-term, would support construction jobs. Operationally, no population changes are expected and no jobs would be added or eliminated by changing the irrigation from groundwater to treated wastewater.

Infrastructure

Interconnections to the existing Mountain Home AFB utility infrastructure are available to support the pumping of treated wastewater to the golf course. No significant relocation of base personnel or impacts to base housing would be necessary. Consumption of potable water, electricity, and natural gas would not be expected to increase with the operation of the facilities. Rather, a beneficial impact through saving groundwater resources and reducing demand on the drinking water aquifer would be realized. No adverse environmental consequences are anticipated with the proposed action.

4.7.2 Alternative A

Construction of the longer pipeline that avoids the runway crossing will disturb a larger area of the base. However, as with the proposed action, no changes that would cause long term or significant impacts to socioeconomics or infrastructure will be created by Alternative A.

4.7.3 No Action Alternative

Under the No-Action Alternative, a pipeline would not be constructed and the golf course irrigation would continue to be met by existing facilities. There would be no new environmental consequences with respect to this resource.

4.8 Noise

4.8.1 Proposed Action

Implementation of the proposed action would have minor, temporary increases in localized noise levels in the vicinity of the project area during construction. The base is an active military facility that typically experiences high noise levels from daily flight operations. The proposed action location is located in the below 65 dBA noise zone for the golf course area, and can increase to greater than 85 dB closer to the runway, as determined by the base's Air Installation Compatible Use Zone (AICUZ) program measurements.

Use of heavy equipment for site preparation and development (i.e., grading, fill, and construction) would generate noise. However, noise would be similar to typical construction noise, last only the duration of the specific construction activities, and could be reduced by the use of equipment sound mufflers and restricting construction activity to normal working hours (i.e., between 7:00 a.m. and 5:00 p.m.). Compared with aircraft noise, noise produced by construction would generally be more impulsive, relatively lower in magnitude, and spread out during the day. Major construction activities anticipated, such as earth removal, hauling, grading, paving, and small building construction, typically have an average noise level of 75dB measured at 200 feet. Point source noise is reduced by 6 dB for each doubling of distance, whereby a noise level of 75 dB at 200 feet is 69 dB at 400 feet and 63 dB at 800 feet. These noise levels would be well within normal noise contours in the project area as determined by the AICUZ.

4.8.2 Alternative A

Construction of the longer pipeline that avoids the runway crossing will disturb a different portion of the base, in areas with lower noise profiles than those closest to the runway jacketed sleeve. However, construction noise would cause only minor, localized increases in noise levels that are still consistent with noise profiles in other areas of the base.

4.8.3 No Action Alternative

Under the No-Action Alternative, a new pipeline would not be constructed and the golf course irrigation operations would continue to be met by existing facilities. There would be no changes to the current noise profiles from this alternative.

5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

5.1 Cumulative Effects

This section provides (1) a definition of cumulative effects, (2) a description of past, present, and reasonably foreseeable actions relevant to cumulative effects, and (3) and evaluation of cumulative effects potentially resulting from these interactions.

5.1.1 Definition of Cumulative Effects

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Recent CEQ guidance in Considering Cumulative Effects affirms this requirement, stating that the first steps in assessing cumulative effects involve defining the scope of the other actions and their interrelationship with the proposed action. The scope must consider geographic and temporal overlaps among the proposed action and other actions. It must also evaluate the nature of interactions among these actions.

Cumulative effects are most likely to arise when a relationship or synergism exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in close proximity to the proposed action would be expected to have more potential for a relationship than actions that may be geographically separated. Similarly, actions that coincide, even partially, in time would tend to offer a higher potential for cumulative effects.

To identify cumulative effects, this EA analysis addresses three questions:

1. Does a relationship exist such that elements of the proposed action might interact with elements of past, present, or reasonably foreseeable actions?

2. If one or more of the elements of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?

3. If such a relationship exists, does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

In this EA, an effort has been made to identify all actions that are being considered and that are in the planning phase at this time. To the extent that details regarding such actions exist and the actions have a potential to interact with the proposed action in this EA, these actions are included in this cumulative analysis. This approach enables decision makers to have the most current information available so that they can evaluate the environmental consequences of the proposed action.

5.1.2 Past, Present, and Reasonably Foreseeable Actions

This EA applies a stepped approach to provide decision makers with not only the cumulative effects of the proposed action but also the incremental contribution of past, present, and reasonably foreseeable actions.

Past and Present Actions Relevant To The Proposed Action

Mountain Home AFB is an active military installation that undergoes continuous change in mission and in training requirements. This process of change is consistent with the United States defense policy that the Air Force must be ready to respond to threats to American interests throughout the world. In 2002 the Air Force implemented a force structure change that removed six B-1 aircraft, decreasing personnel by 504; removed six operational KC-135 aircraft, decreasing personnel by 225; and added six operational F-15 aircraft, increasing personnel by 151. The base, like any other major institution, also requires new occasional construction, facility improvements, and infrastructure upgrades.

Incremental Impacts of the Proposed Action with Reasonably Foreseeable Future Actions

During the timeframe FY01 to FY05 Mountain Home AFB has proposed a number of actions that are independent of the proposed action and would be implemented irrespective of a decision on the proposed treated wastewater irrigation and wet well project at the golf course.

5.1.3 Analysis of Cumulative Impacts

The following analysis examines how the impacts of these other actions might be affected by those resulting from the proposed action at Mountain Home AFB and whether such a relationship would result in potentially significant impacts not identified when the proposed action is considered alone.

A previous EA for the implementation of a force structure change at Mountain Home AFB did not identify any significant environmental consequences (USAF, 2002b). The result of the force structure change left Mountain Home AFB operating at levels below those occurring in the early 1990's.

Although not fully analyzed at this time in separate environmental analysis, none of the future infrastructure actions would be expected to result in more than negligible impacts either individually or cumulatively. All actions affect very specific, circumscribed areas, and the magnitude of the actions is minimal. Given that the proposed action would likewise have a minimal effect within the base, the combined impacts of these actions would remain well below the threshold of significance for any resource category.

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 that the uses of these resources 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 site.)

For the proposed action, most resource commitments are neither irreversible nor irretrievable. Most environmental consequences are short term and temporary (such as air emissions from construction) or longer lasting but negligible (e.g., utility increases). Those limited resources that may involve a possible irreversible or irretrievable commitment under the proposed action are discussed below.

Construction of the treated wastewater pipeline and wet well would require consumption of limited amounts of materials typically associated with utility construction, such as PVC piping, glues, pipe wrap, wiring. The amount of these materials used is not expected to significantly decrease the availability of the resources. Permanent loss of habitat for burrowing owls at the golf course may result from construction of the irrigation system. Because other suitable habitat exists within close proximity elsewhere on the base, and the owls are opportunistic in seeking available burrows, the loss may be a relocation.

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FIGURES

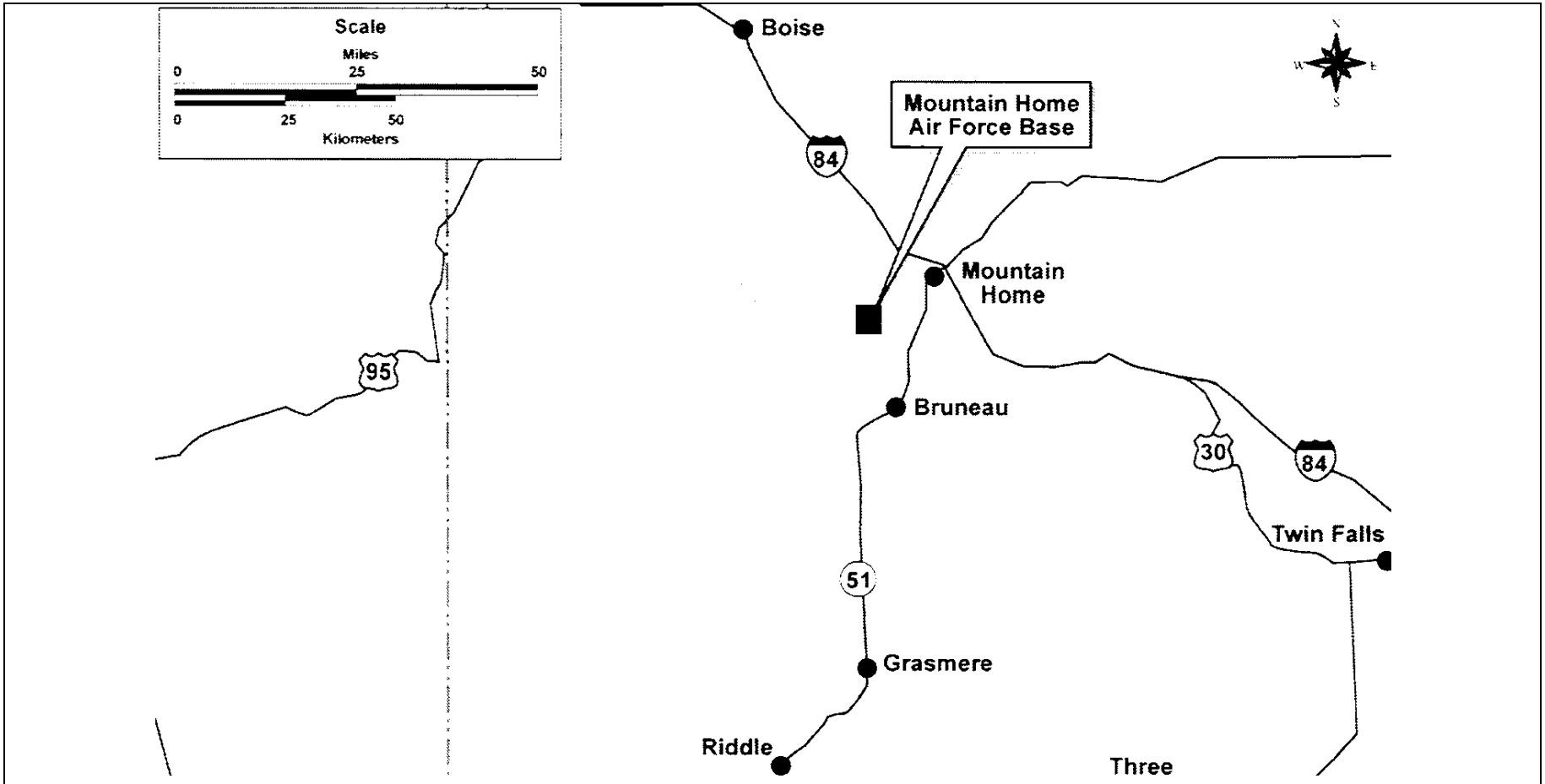


Figure 1-1
Site Location
Mountain Home Air Force Base
Mountain Home, Idaho

August 2003

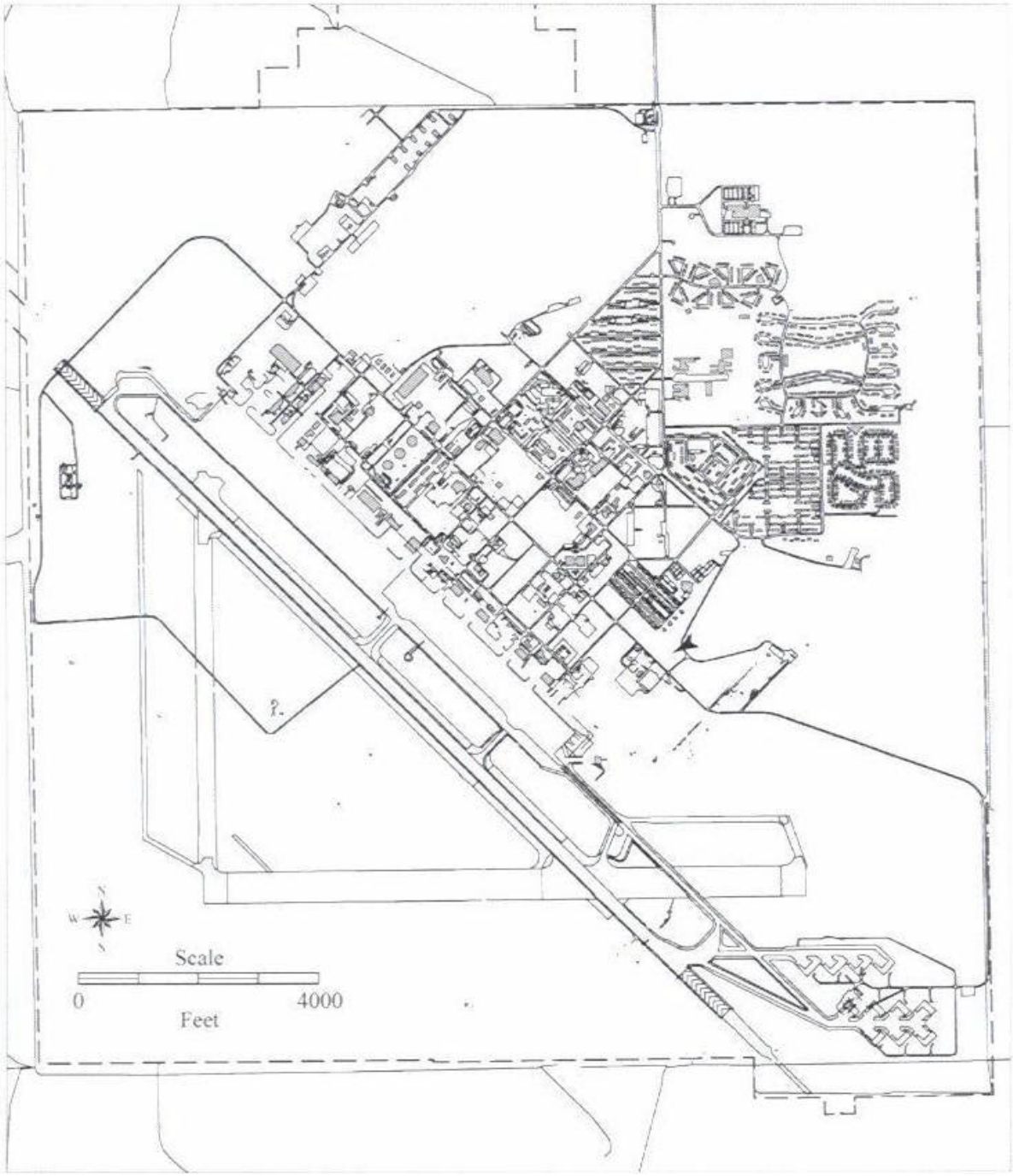
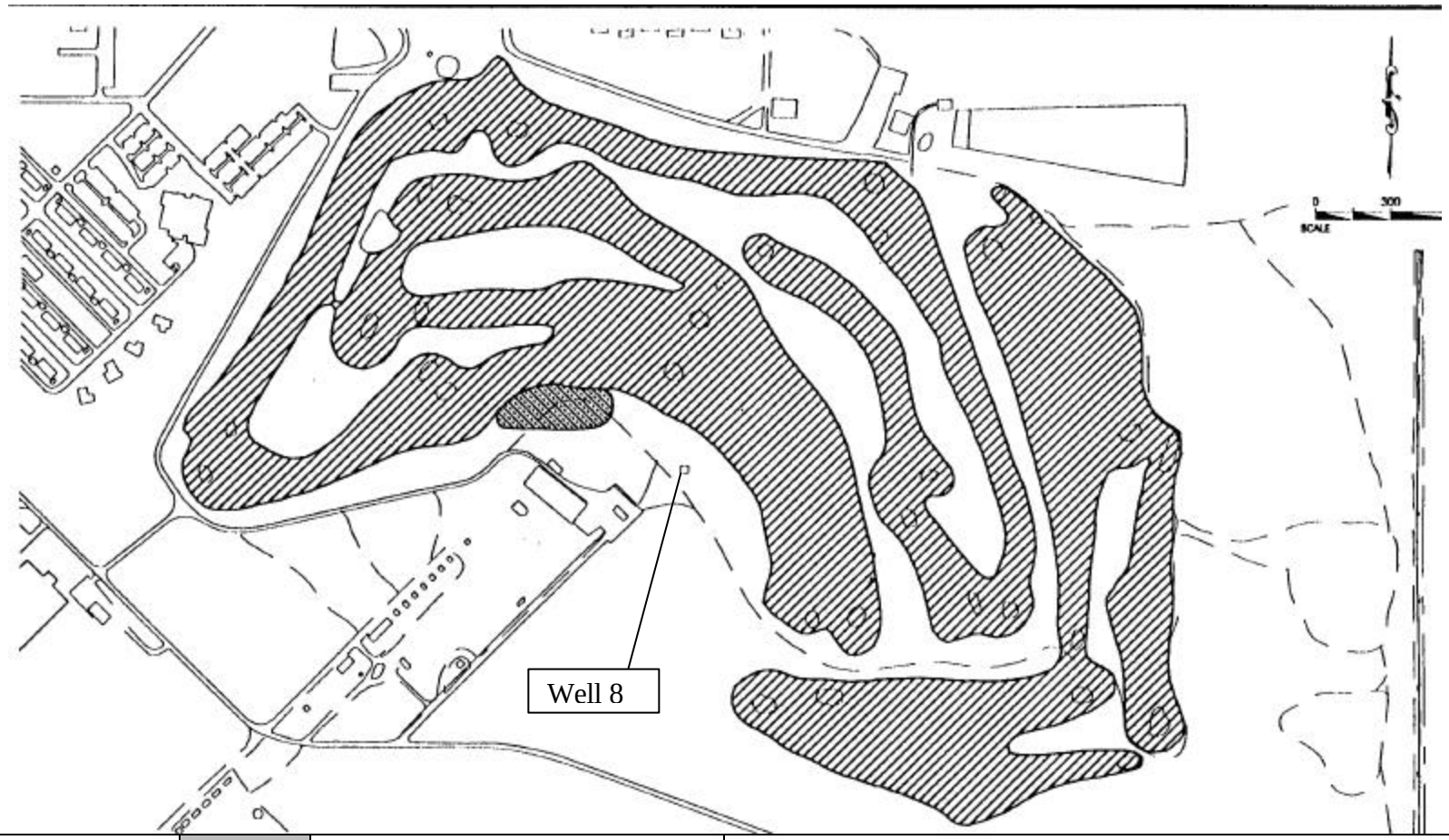


Figure 1-2

Mountain Home Air Force Base
Mountain Home, Idaho

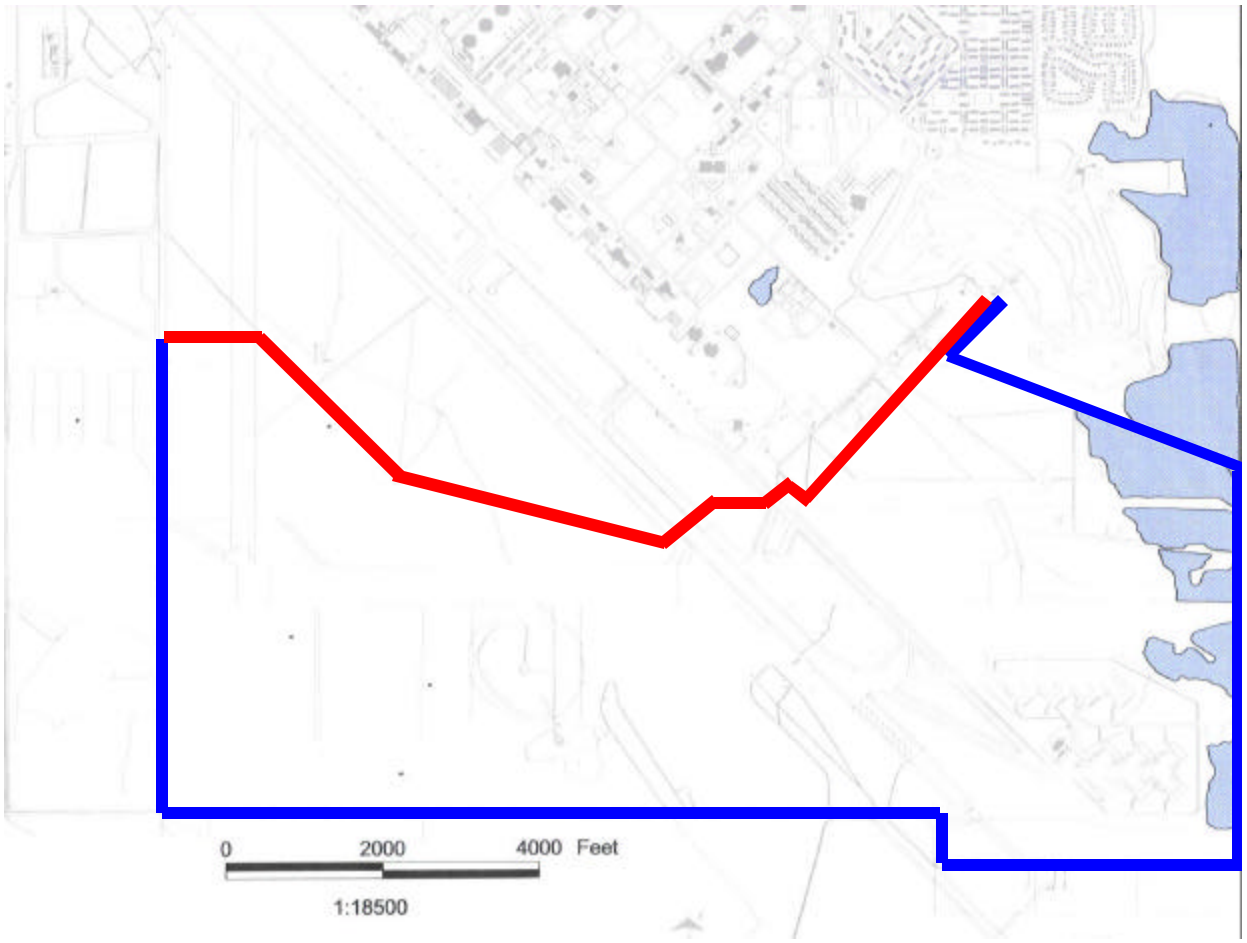
August 2003



Irrigated Portion of the Golf Course

Surface Water Impoundment

Figure 2-1
Site Layout Plan
Proposed Golf Course Irrigation System
Mountain Home Air Force Base
Mountain Home, Idaho
August 2003



Proposed Action Pipeline Route

Alternative A Pipeline Route (estimated)

Figure 2-2
Pipeline Routing for Proposed Action and Alternative A
Mountain Home Air Force Base
Mountain Home, Idaho
August 2003

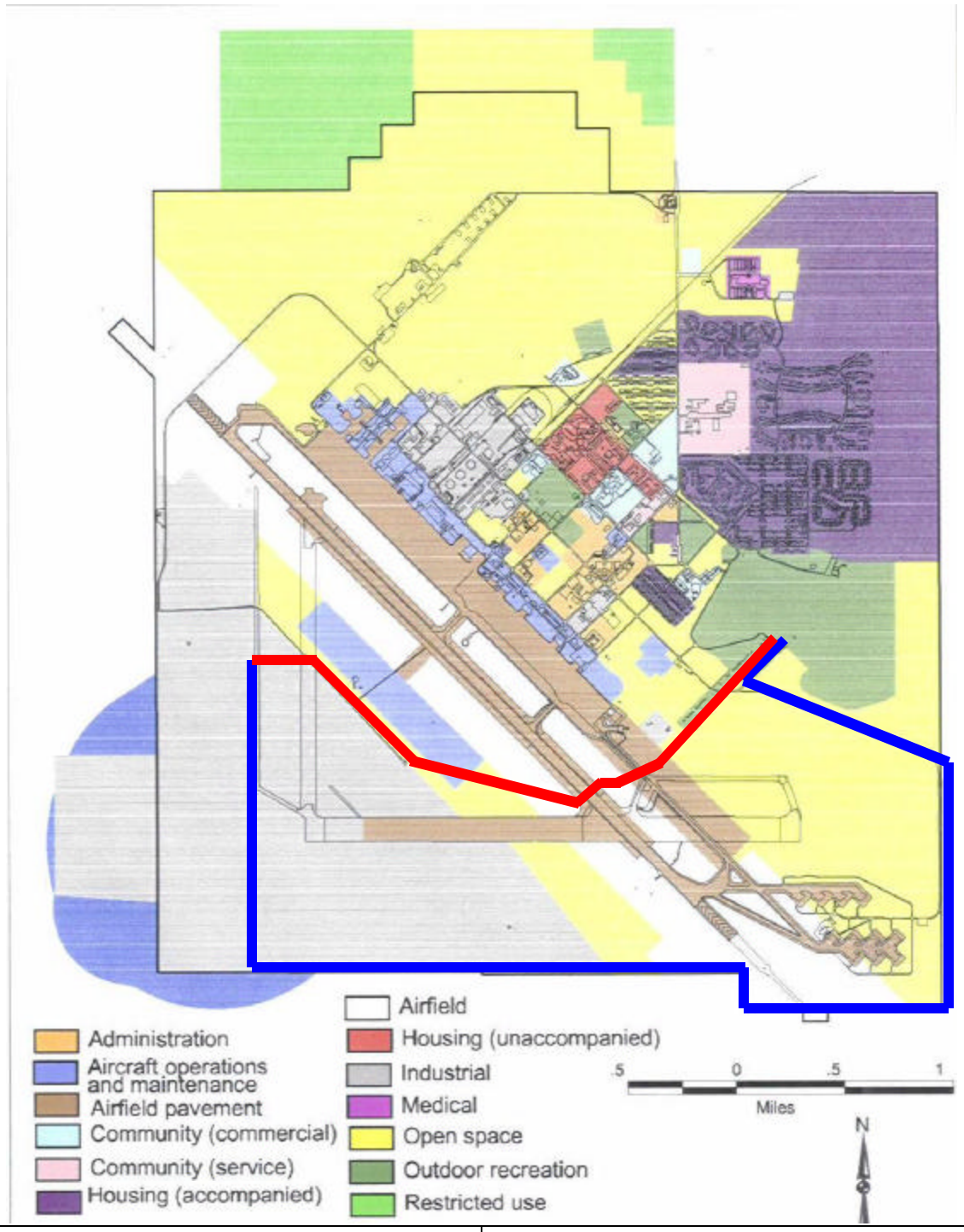
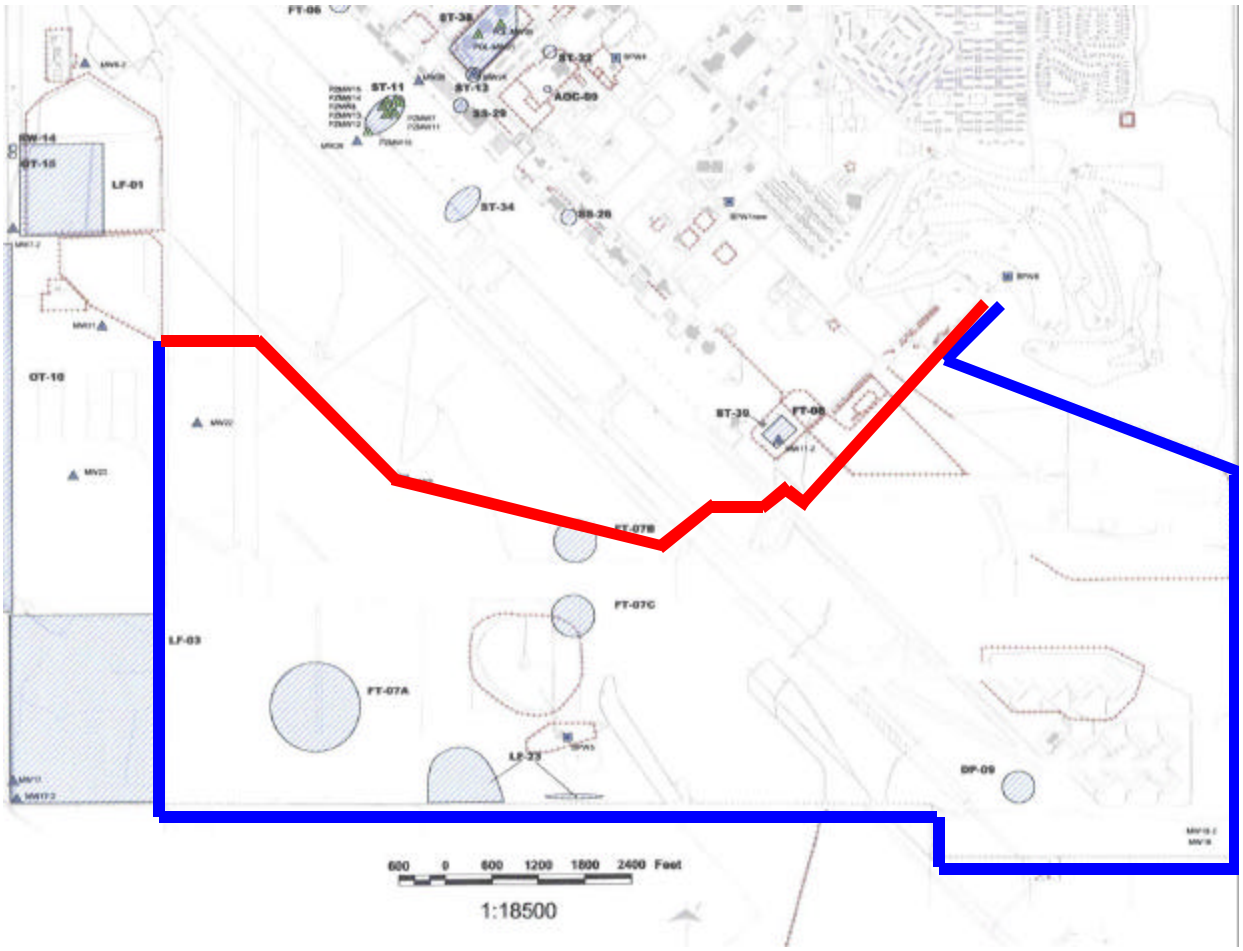


Figure 3-1
Future Land Use Plan for
Mountain Home Air Force Base
Mountain Home, Idaho

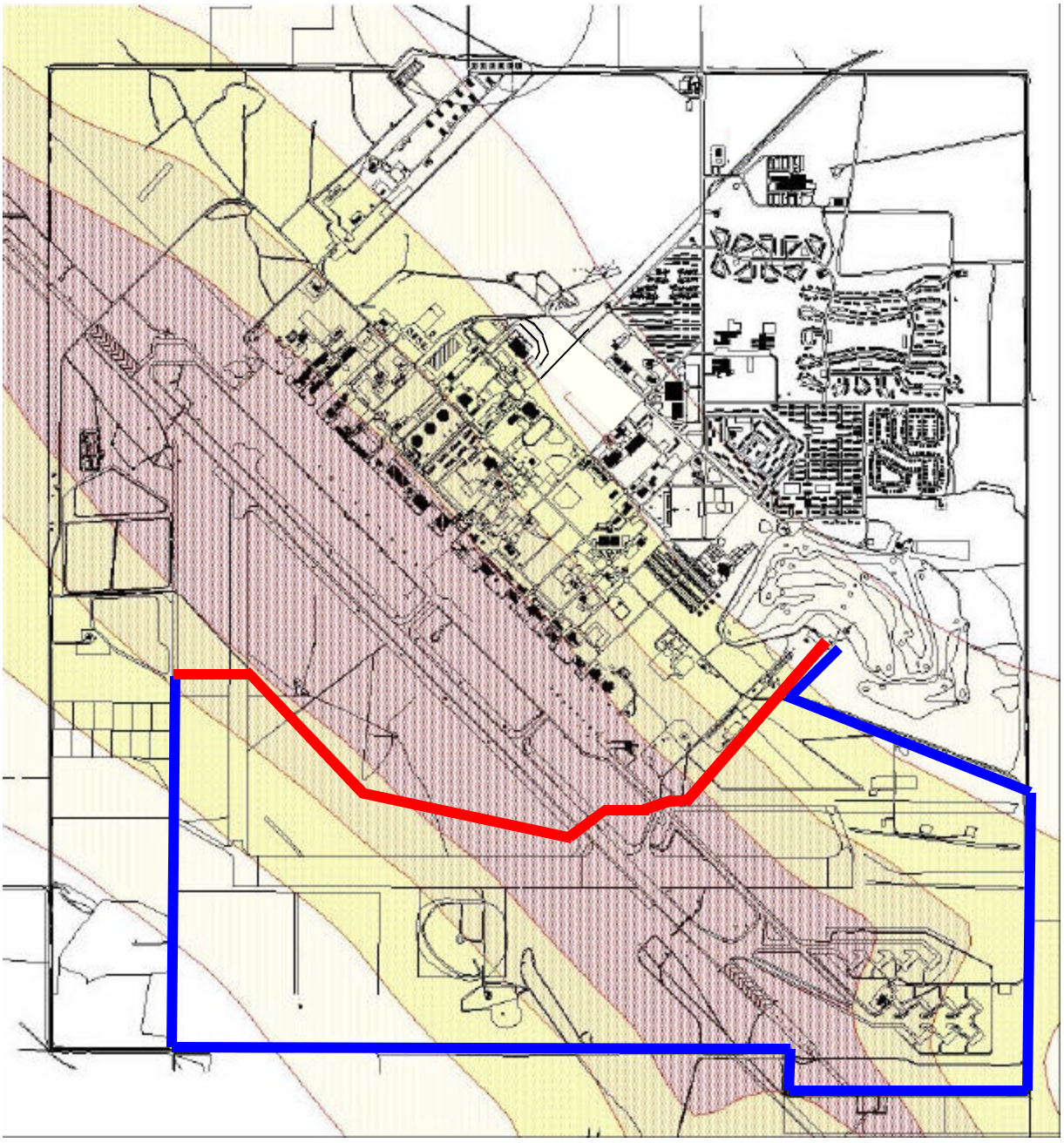
August 2003



Proposed Action Pipeline Route

Alternative A Pipeline Route (estimated)

Figure 3-2
Environmental Restoration Program
(ERP) Sites and Well Locations
Mountain Home Air Force Base
Mountain Home, Idaho
August 2003



Noise Contours

65 75

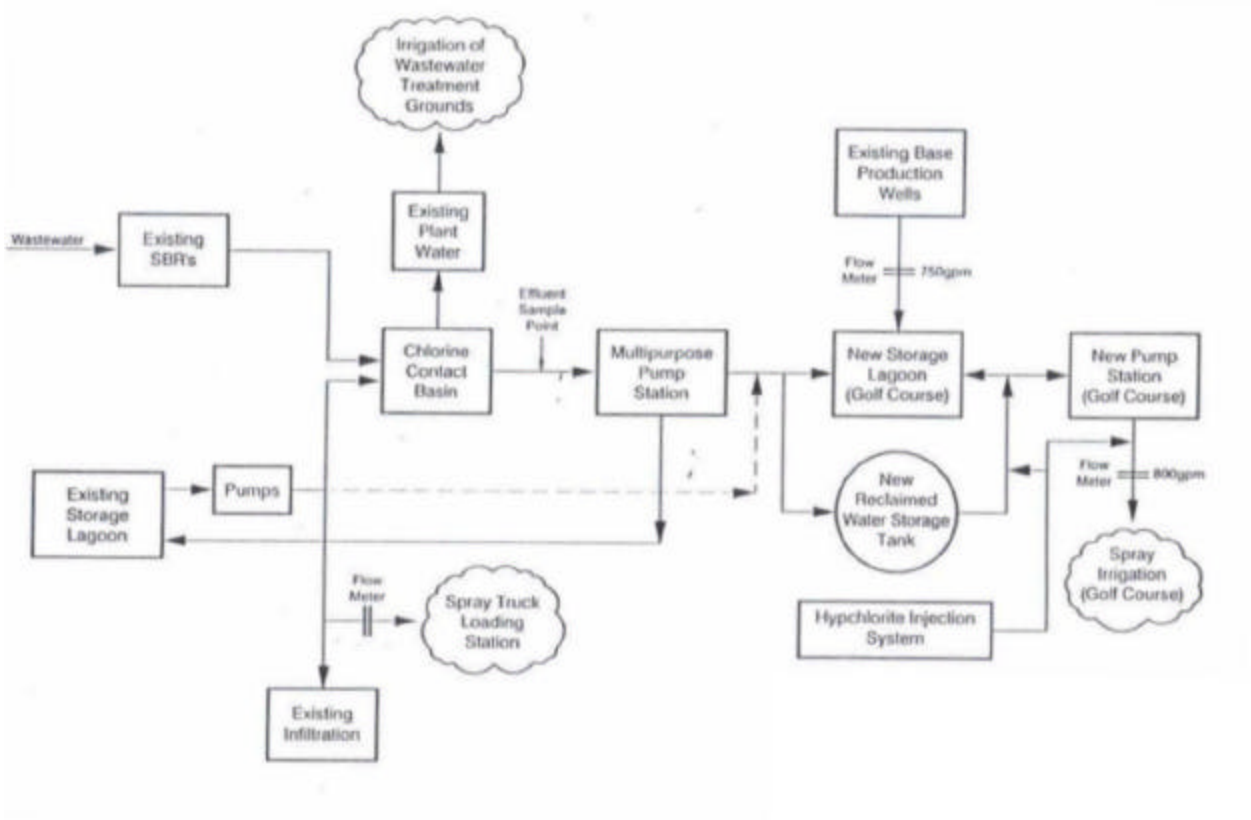
70 80

Proposed Action Pipeline Route

Alternative A Pipeline Route (estimated)

Figure 3-3
DNL Noise Contours at
Mountain Home Air Force Base
Mountain Home, Idaho

August 2003



Source: Parsons Engineering Science, Inc.

Figure 4-1
Flow Schematic for Treated Wastewater Application
Mountain Home Air Force Base
Mountain Home, Idaho

August 2003

APPENDIX A

CONSULTATION LETTERS

Agencies Contacted

State Historic Preservation Office
Attn: Ms. Susan Neitzel
210 Main Street
Boise, ID 83702-7264

U.S. Fish & Wildlife Service
Attn: Ms. Anne Badgely
Regional Office – Northwest
911 North East 11th Avenue
Portland, OR 97232

Idaho Fish & Game
Attn: Mr. Tracey Trent
600 South Walnut
PO Box 25
Boise, ID 83707

Governor's Special Assistant for Military Affairs
Attn: Mr. Colonel William Ritchey (retired)
150 South 3rd East
Mountain Home, Idaho 83647

Elmore Soil Conservation District (III)
Attn: Ron Blake
795 S. Haskett
Mountain Home, ID 83647-3378

APPENDIX B

PERMITS

Application for
Wastewater Land Application Permit

Instructions: Complete the following form and attachments as completely as possible. Failure to provide sufficient information will delay processing of the application and final action on the permit. A preapplication meeting between the applicant and DEQ is strongly encouraged to discuss site specific issues and level of detail needed. If clarification is needed, contact DEQ, Permits & Enforcement in Boise at 208-373-0502, and in Coeur d'Alene at 208-769-1422.

Type of application (attach appropriate checklists)			For DEQ use only
__New	__Renewal		
__Level 1	X Level 2	__Level 3	
X Major Modification	__Minor Modification	__Waiver	

Legal Name of Applicant	United States Air Force	
Address	1030 Liberator Street Mountain Home AFB, Idaho 83648-	
Facility Address, if different		
	Responsible Official	Alternate Official
Name	Lt Col. Richard B. Stonestreet	Mr. Gary L. Burton, R.E.M.
Title	Commander	Chief, Environmental Flight
Address	Mountain Home AFB, ID 83648	Mountain Home AFB, ID 83648
Phone/Fax	(208) 828-1684/(208) 828-2194	(208) 828-6351//(208) 828-2194

Attachments (complete all that apply)

__X__ Facility Information

__X__ Signed Applicability Checklist

__X__ List of local, state, federal permits, licenses, and approvals related to activity which have been applied for and which have been received and the dates of application or approval. Include planning & zoning or conditional use permit.

____ Copy of lease, rental agreement, or ownership documentation.

__X__ Preliminary Technical Report and Checklist: including climatic, hydrogeologic, soils, wastewater quantity and quality, site characteristics, buffer distances, and general description of application methods.

__X__ Plan of Operation and Checklist: including operation, maintenance, and management of land application systems. If new, submit draft outline of plan of operation; if existing, submit detailed plan of operation.

The information contained in this application and attached documents is true and correct to the best of my knowledge and belief.

Signature of Owner or legally authorized Representative _____

Title Commander

Date _____

Facility Information

Type of Waste	X Municipal/Domestic _Cheese Processing Potato Processing _ Sugar Beet Processing _Industrial Processing Other
Method of Treatment	X Rapid Infiltration X Slow Rate Overland Flow Activated sludge advanced secondary treatment
Type of Facility	_ Public Private X Federal
Amount of wastewater land applied	78 Million Gallons Annually - Slow rate (golf course) 310 million gallons annually - rapid infiltration
Site Elevation	2988 Feet
Legal Location (Township, Range, Section)	4S Township 4E Range SE Section
County	Elmore
USGS Quadrangle	Crater Rings SE, Crater Rings SW
Representative soil profile (textures and depths to 60 inches)	See Technical Report Tables, 7,12
Seasonal High Ground Water	310 Depth to seasonal high ground water S Season encountered
Depth to Aquifer	310 Depth to first water 375 Depth to regional aquifer
Beneficial Uses of Ground Water	X Agriculture X Industrial X Domestic Aquaculture
Nearest surface water and distance	Snake River 4 miles
Beneficial uses of surface water	X Agriculture X Industrial X Domestic X Recreation X Aquatic Life
Engineer/Consultant Name/Address Phone/Fax	Parsons Engineering Science, Inc. 8000 Centre Park Dr Ste 200
Engineer/Consultant Name/Address Phone/Fax	Austin, TX 78754 (512) 719-6000 (512) 719-6099 (FAX)

WASTEWATER-LAND APPLICATION PERMIT (WLAP) PROGRAM

Checklists for Determining Applicability of Facilities for Level I, Level II and Level III Permit Application Review Status

These series of "*Applicability Checklists*", as referenced in the WLAP permit application, are to be used in determining whether a facility needs a Level I, Level II, or Level III WLAP Permit Application Review (PAR) prior to permit issuance.

Begin by going through Level I PAR *Checklist A*. If the facility is able to answer all questions in the negative, it is eligible for a Level I PAR. If the facility cannot answer in the negative to all questions in the Level I checklist, it may not qualify for a Level I PAR and must proceed to the Level II PAR *Checklist B*. If all questions in *Checklist B* can be answered by the facility in the negative, the facility qualifies for a Level II PAR. If it cannot, the facility will qualify for a Level III PAR. It is highly recommended that the applicant schedule a pre-application conference with the Department to go over checklist contents. Those having further questions regarding this checklist should contact the Division of Environmental Quality, Permits and Enforcement Bureau in Boise at (208) 373-0502 and in Coeur d'Alene at (208) 769-1422.

A. Checklist A to Determine Whether Conditions Exist for Conducting a Level I Wastewater-Land Application PAR.

If all questions in *Checklist A* are answered in the negative, the facility qualifies for a Level I PAR. If any questions are answered in the affirmative, the facility may not qualify for a Level I PAR and must go to *Checklist B*.

Level I Permit Application Review Checklist A: *A Level I permit application review applies to a wastewater-land application facility having site specific conditions and operating conditions at or below Guideline rates which constitute little regulatory concern, review, or oversight. Another part of the application called a Preliminary Technical Report Checklist must also be submitted by the applicant to document that the conditions exist as checked below. A Level 1 PAR receives a fast-track review by the Department. Generally, no ground water/soil water or soil nutrient monitoring are required in permits receiving Level I PARs. Some wastewater monitoring and reporting are required however.*

Operating Condition/Environmental Condition		Yes	No	
1.	Does the facility utilize rapid infiltration to treat wastewater?	X		If yes, the facility does not qualify for either a Level I or Level II PAR
2.	Does the facility land apply during the Non-Growing Season (NGS)?	X		If yes, the facility does not qualify for a Level I PAR

	Operating Condition/Environmental Condition	Yes	No	
3.	Does the Facility hydraulically load treatment fields above the monthly irrigation water requirement during the growing season (GS)? (c.f. 1994 Technical Supplement (1996) pp. IV-6-7)	X		If yes, the facility does not qualify for a Level I PAR
4.	Does the facility land apply cheese processing wastewater or other high strength wastewater by truck application?		X	If yes, the facility does not qualify for a Level I PAR
5.	Are buffer zones from sprinkle irrigated treatment fields and dwellings or furrow/flood irrigated treatment fields and dwellings less than guideline distances (c.f. 1988 Guidelines (Revised 1995) pp. III.-23, 36 and 1994 Technical Supplement, pp. IV-15-16)		X	If yes, the facility does not qualify for a Level I PAR
6.	Are buffer zones from sprinkle irrigated treatment fields or furrow/flood irrigated treatment fields and areas accessible to the public less than guideline distances? (c.f. 1994 Technical Supplement pp. IV-15-16)	X		If yes, the facility does not qualify for a Level I PAR
7.	If a municipal site, is wastewater total coliform count greater than 23 organisms/100 mL? (c.f. 1994 Technical Supplement p. IV-15)	X		If yes, the facility does not qualify for a Level I PAR
8.	Are buffer zones from any surface water body less than 50 feet? (c.f. 1988 Guidelines (Revised 1995) p. III-23)		X	If yes, the facility does not qualify for a Level I PAR
9.	Are any guideline posting requirements not being met? (c.f. 1994 Technical Supplement pp. IV-15-16)		X	If yes, the facility does not qualify for a Level I PAR
10.	Are constituent loadings of nitrogen from wastewater greater than 250 lb/acre-year, or phosphorus loading greater than 60 lb/ac-yr?		X	If yes, the facility does not qualify for a Level I PAR
11.	Are constituent loadings of nitrogen from all sources (fertilizer, wastewater, etc.) greater than 150 percent of crop uptake? (c.f. 1988 Guidelines (Revised 1995) p. III-29)		X	If yes, the facility does not qualify for a Level I PAR
12.	Are constituent loadings of TDS (inorganic fraction) from wastewater and irrigation water greater than 4000 lb/acre-year?	X		If yes, the facility does not qualify for a Level I PAR
13.	Are GS constituent loadings of COD greater than 50 lb/ac-day based on a monthly average during the growing season? (c.f. 1988 Guidelines (Revised 1995) pp. III-26 and III-27)	X		If yes, the facility does not qualify for a Level I PAR
14.	Are constituent loadings of metals listed in 40 CFR Part 503.13(b) 4 in excess of the limits given?		X	If yes, the facility does not qualify for a Level I PAR
15.	Is the SAR of the wastewater greater than 10 meq$^{1/2}$/L$^{1/2}$?		X	If yes, the facility does not qualify for a Level I PAR
16.	Is the electrical conductivity of the wastewater greater than 2000 µmhos/cm on average per year? (c.f. 1988 Guidelines (Revised 1995) p. III-26)		X	If yes, the facility does not qualify for a Level I PAR
17.	Are there existing ground water contamination problems as a result of present or past wastewater-land application land use activity?	X		If yes, the facility does not qualify for a Level I PAR
18.	Are there any domestic wells closer than 500 feet from the WLAP site? (c.f. 1988 Guidelines (Revised 1995) p. III-23)	X		If yes, the facility does not qualify for a Level I PAR
19.	Are there any municipal wells closer than 1000 feet from the WLAP site? (c.f. 1988 Guidelines (Revised 1995) p. III-23)	X		If yes, the facility does not qualify for a Level I PAR
20.	Is there any soil factor rated "severe" or worse according to the 1988 Guidelines (Revised 1995) Table 4 p. III-???		X	If yes, the facility does not qualify for a Level I PAR

	Operating Condition/Environmental Condition	Yes	No	
21.	If a municipal site, are food animals grazed?		X	If yes, the facility does not qualify for a Level I PAR
22.	Are animals grazed at any time other than for fall clean-up of fence rows, ditches, etc.?		X	If yes, the facility does not qualify for a Level I PAR
23.	Are there wastewater lagoons on site having no recent seepage test data? (c.f. 1994 Technical Supplement pp. IV-58 and IV-99)		X	If yes, the facility does not qualify for a Level I PAR
24.	Are there wastewater lagoons on site having seepage test data showing seepage in excess of acceptable rates? (c.f. 1994 Technical Supplement pp. IV-58 and IV-99)		X	

B. Checklist B to Determining Whether Conditions Exist for Conducting a Level II Wastewater-Land Application PAR.

If any of the questions in *Checklist A* were answered in the affirmative, the facility may not qualify for a Level I PAR, and must go through the following *Checklist B* to see if the facility would qualify for a Level II PAR. If all the questions *Checklist B* are answered in the negative, the facility qualifies for a Level II PAR. If any of the following questions are answered in the affirmative, the facility must have a Level III PAR.

Level II Permit Application Review Checklist B: *A Level II permit application review applies to a wastewater-land application facility having site specific conditions and operating conditions which meet the WLAP regulations, water quality standards and maximum guideline rates and limits and constitute some regulatory concern which requires some review and oversight. Another part of the WLAP application called a Preliminary Technical Report Checklist must also be submitted by the applicant to document that the conditions exist as checked below. The Level II PAR will receive an efficient review and analysis by the Department. Ground water/soil water, soil nutrient, and wastewater monitoring may be required in permits receiving Level II PARs.*

	Operating Condition/Environmental Condition	Yes	No	
1.	Does the facility land apply during the Non-Growing Season (NGS) at hydraulic rates exceeding guideline rates (c.f. 1994 Technical Supplement pp. IV-11-12)?	X		If yes, the facility does not qualify for a Level II PAR
2.	Does the facility hydraulically load treatment fields above the monthly irrigation water requirement during the growing season (GS)? (c.f. 1994 Technical Supplement pp. IV-6-7)	X	X	If yes, the facility does not qualify for a Level II PAR
3.	Are constituent loadings of nitrogen from wastewater greater than guideline rates (c.f. 1994 Technical Supplement pp. IV-8, 10-11)?	X		If yes, the facility does not qualify for a Level II PAR
4.	Are GS constituent loadings of COD greater than 100 lb/ac-day based on a monthly (30 day) average during the growing season?	X		If yes, the facility does not qualify for a Level II PAR
5.	Are NGS constituent loadings of COD greater than 50 lb/ac-day based on a monthly (30 day) average during the non-growing season? (c.f. 1994 Technical Supplement p. IV-10).	X		If yes, the facility does not qualify for a Level II PAR
6.	Is there any soil factor rated "severe" or worse according to the 1988 Guidelines (Revised 1995) Table 4 p. III-22?		X	If yes, the facility does not qualify for a Level II PAR
7.	If a municipal site, are any guideline buffer or posting requirements not being met? (c.f. 1994 Technical Supplement p. IV-15)	X		If yes, the facility does not qualify for a Level II PAR
8.	Are there existing ground water contamination problems as a result of present or past wastewater-land application land use activity?	X		If yes, the facility does not qualify for a Level II PAR
9.	Does ground water modelling show potential ground water contamination due to constituent loading from wastewater-land application land-use activity? (c.f. 1994 Technical Supplement pp. IV-19-23)	X		If yes, the facility does not qualify for a Level II PAR
10.	Do any site or well locations fail the Well Location Acceptability Analysis (c.f. 1994 Technical Supplement pp. IV-19-23)?	X		If yes, the facility does not qualify for a Level II PAR

If a facility does not meet the criteria in Checklist A and Checklist B to qualify for a Level I or a Level II PAR, then by default, the facility will receive a Level III Wastewater-Land Application PAR.

Level III Permit Application Review: *A Level III permit application review applies to a wastewater-land application facility having site specific conditions and operating conditions which exceed maximum guideline rates and limits and may be at the allowable limit for selected water quality standard and whose operation constitutes substantial regulatory concern requiring review and oversight. A Preliminary Technical Report Checklist and a Preliminary Plan of Operation must be submitted by the applicant to document environmental and operational conditions. A Level III receives thorough review and analysis by the Department. Ground water/soil water, soil nutrient, and wastewater monitoring are generally required in applications receiving Level III PARs.*

I have competed this checklist. The answers to the above are correct to the best of my knowledge.

Steven W. Schrader
Signature

Environmental Engineer
Title

7/13/2009
Date

WASTEWATER LAND APPLICATION
PRELIMINARY TECHNICAL REPORT CHECKLIST

The preliminary technical report is the core of the application. Failure to provide sufficient information will delay processing of the application and final action on the permit. A preapplication meeting between the applicant and DEQ is strongly encouraged. The Report shall describe the manner by which the facility will comply with Wastewater-Land Application Permit regulations and conform to the guidelines (see Handbook for Land Application of Municipal and Industrial Wastewater) as applicable. The following checklist is provided to assist the Wastewater-Land Application permit applicant to prepare a WLAP application having sufficient information to be evaluated by Department staff. The application should include those items from the following checklists *as applicable and necessary to characterize the land application site*. Use the itemized checklist below for the type of application for which you are applying (i.e. Level 1, Level 2/3 Application). If clarification is needed, contact DEQ, Permits and Enforcement in Boise at 208-373-0502, and in Coeur d'Alene at 208-769-1422.

Level 1	Level 2/3	Preliminary Technical Report Checklist
	X	**WLAP Site Location Information-Topographic map(s) (or other maps of appropriate scale) with:** a. Land application site(s) clearly marked.
	X	b. Size of individual land application sites (in acres).
	X	c. Location of wells, springs, wetlands and surface waters within 1/4 mile of site.
	X	d. Location of public and private drinking water supply sources, public roads, dwellings, and private and public gathering places within 1/4 mile of the site.
	X	e. Location of 25, 50, and 100 year flood plains as available.
	X	f. Locations of service roads, berms, natural or man-made features necessary for treatment.
	X	g. Locations of buildings, structures, and process chemicals and residue storage facilities.
	X	h. Wastewater monitoring points located on facility maps.
	X	i. Buffer zone delineations between dwellings, areas of public access, wells, and treatment facilities.
	X	j. Location of lysimeters, soil monitoring points and monitoring wells on topographic or other facility maps as appropriate. Include township/Range/Section/ (1/4, 1/4,1/4 section of each monitoring well).
	X	**Site Management** a. Method of wastewater application and irrigation scheduling information.
	X	b. Site management history.
	X	c. Crops to be grown and harvest frequency (crop management and rotation).
	N/A	d. Grazing Management Plan.
	X	**Soils:** a. Soil survey map identifying soils on site (including legend of symbols and map unit descriptions where available).
	X	b. Chemical analysis of the soil for the 0-12 and 12-24 inch depths (including nitrate and ammonium-nitrogen, phosphorus, potassium, organic matter, SAR, and electrical conductivity [EC]).

Level 1	Level 2/3	Preliminary Technical Report Checklist
	X	**Chemical analysis of wastewater** (*select only relevant constituents*) a. Nutrients and other constituents including: TKN, NH_3-N, NO_3-N + NO_2-N, P, K, Ca, Mg, Na, Cl, COD, EC, VDS, TS, VS, SAR, and TDS.
	X	b. Metals including: Pb, Zn, Cu, Ni, Cd, Cr, Hg, Mo, Se, As, and others.
	X	c. Other parameters including: total coliform, fecal coliform, oil, grease, electrical conductivity.
	X	**Projected and/or actual loading rates for the following:** a. Wastewater (million gallons/year and (acre-inches/acre-month during application period)
	X	b. Irrigation water (inches/acre-month during application period)
	X	c. Organic (COD) loading (lbs/acre/day during application period(s))
	X	d. Nitrogen, phosphorus, potassium, and inorganic TDS loading - (pounds/acre/year)
		e. Trace element loading - (units as appropriate)
	X	**Location of wastewater inlets and outlets.**
	X	**Description of wastewater treatment process including schematics of each waste stream, treatment and control facilities.**
	N/A	**Description of alternate treatments if being considered.**
	X	**Storage structures** a. Location of storage structures and facilities (digesters, lagoons, etc.).
	X	b. Specify volumetric capacities of each storage structure
	X	**Contingency Options** Procedures which would be followed if the principal wastewater treatment procedures could not be used temporarily.
	X	**Ground water/surface water protection.** Provide information detailing steps to be taken in protecting ground water and surface water during construction and operation of the facility.
	X	**Monitoring Schedule.** a. Specify protocol and schedule for periodic analysis of wastewater.
	X	b. Specify protocol and schedule for soil and plant analysis. Include map showing soil monitoring delineations and respective acreages.
	X	c. Specify protocol and schedule for ground water monitoring.
	X	d. Include map of hydraulic management units and respective acreages.
	X	**Ground Water/Hydrogeology** a. Obtain ground water quality data/characterize ground water quality up and down gradient of site.
	X	b. Identify ground water depth, direction of flow, and seasonal fluctuations of depth and flow.
	X	**Estimates of:** c. Transmissivity ($feet^2$/day)
	X	d. Aquifer thickness (feet)
	X	e. Hydraulic conductivity (feet/day)
	X	f. Gradient (feet/foot)
	X	g. Aquifer porosity (no units)

APPENDIX C

SPECIES OF POTENTIAL CONCERN

Table C-1 Common or Characteristic Flora and Fauna and Associated Habitats on Mountain Home AFB (Page 1 of 2)	
Species	***Associated Habitat***
Plants	
Biscuitroot Lomatium sp.	Sagebrush
Bottlebrush squirreltail Sitanion hystrix	Sagebrush/ Grasslands/ Urban
Bur buttercup Ranunculus testiculatus	Disturbed[1] /Sagebrush/ Urban
Cheatgrass Bromus tectorum	Disturbed[1] /Sagebrush/ Grasslands
Halogeton Halogeton glomeratus	Disturbed[1] /Sagebrush/ Grasslands
Indian ricegrass Oryzopsis hymenoides	Sagebrush
Lupine Lupinus sp.	Sagebrush
Russian thistle Sasola kali	Disturbed
Sagebrush Artemisia spp.	Sagebrush/ Grasslands
Sandberg's bluegrass Poa sandbergii	Sagebrush/ Grasslands
Tumble mustard Sisymbrium altissimum	Disturbed/ Grasslands
Winterfat Eurotia lanata	Sagebrush
Yellow salsify Tragopogon dubius	Sagebrush/ Urban
Amphibians	
Pacific tree frog Pseudacris regilla	Aquatic
Reptiles	
Western terrestrial garter snake Thamnophis elegans	Urban/ Various
Gopher snake Pituophis catenifer	Various

Table C-1 Common or Characteristic Flora and Fauna and Associated Habitats on Mountain Home AFB (Page 2 of 2)	
Species	***Associated Habitat***
Birds	
American robin Turdus migratorius	Various
Brown-headed cowbird Molothrus ater	Agriculture/ Urban
Canada goose Branta Canadensis	Aquatic/ Urban/ Agriculture
Common goldeneye Bucephala clangula	Aquatic
European starling Sturnus vulgaris	Urban/ Various
House finch Carpodacus mexicanus	Urban/ Grasslands/ Shrubland/ Canyon
Killdeer Charadrius vociferous	Wetlands or dry uplands
Mallard Anas platyrhyncos	Aquatic/ Urban Deleted Biscuitroot – came after mallard & before hawk
Red-tailed hawk Buteo jamaicensis	Various
Red-winged blackbird Agelaius phoeniceus	Wetlands
Western meadowlark Sturnella neglecta	Sagebrush or other shrubland
Mammals	
Badger Taxidea taxus	Shrublands/ Grasslands
Little brown bats Myotis spp.	Various
Coyote Canis latrans	Shrublands/ Grasslands
Hoary bat Lasiurus cinereus	Various
Silver-haired bat Lasionycteris noctivagans	Various
Townsend's ground squirrel Spermophilus townsendii	Sagebrush/ Grasslands
Vole Microtus spp.	Various

[1] = Primary Habitat

Table C-2 Threatened, Endangered, and Special-Status Species/ Communities That Occur or Potentially Occur on Mountain Home AFB (Page 1 of 2)		
Species	***Status***	***Areas of Occurrence***
Lichens		
Wovenspore lichen Texosporium sancti-jacobi	FSC	Sagebrush steppe with native bunch grass component. No records from base.
Plants		
Bugleg goldenweed Haplopappus Insecticruris	FSC	Disturbed sagebrush communities with grass component. No records from base.
Davis' Peppergrass Lepidium davisii	FSC	Davis's Peppergrass occurs on playas, typically in association with Wyoming Big Sagebrush. Found on the Small Arms Range and on Base.
Slickpot peppergrass Lepidium papilliferum	C	Small sodic slickspots in shrubsteppe habitat. Endemic to western Idaho. No records from base.
Ute ladies'-tresses Spiranthes diluvialis	LT	Sandy gravel bars in a riverine situation. No records from western Idaho. No habitat on base.
Invertebrates		
Bliss Rapids snail Taylorconcha serpenticola	FT	Aquatic habitats. Does not occur on base.
Idaho springsnail Fontelicella idahoensis	FE	Aquatic habitats. Does not occur on base.
Snake River physa snail Physa natricina	FE	Aquatic habitats. Does not occur on base.
Amphibians		
Northern leopard frog Rana pipiens	FSC/SSC	Riparian areas with high vegetation. No records from base.
Western toad Bufo boreas	FSC/SSC	Variety of forested, meadow, and desert habitats in proximity to appropriate aquatic breeding habitat. Not well known from southwestern Idaho. No records from base.
Reptiles		
Ground snake Sonora Semiannulata	SSC	Sagebrush, grasslands, and salt desert scrub with loose or sandy soil. Does not occur on base.
Longnose snake Rhinocheilus lecontei	SSC	Shrub habitats and grasslands with rocky component. Does not occur on base.

Table C-2 Threatened, Endangered, and Special-Status Species/ Communities That Occur or Potentially Occur on Mountain Home AFB (Page 2 of 2)		
Species	***Status***	***Areas of Occurrence***
Birds		
Bald eagle Haliaeetus leucocephalus	FT/SE	Near rivers and lakes with tall trees or cliffs. Winters along Bruneau, Owyhee, and Snake rivers. No habitat on base. Has potential to range onto base from Snake River habitats.
Black tern Chlidonias niger	SSC	Lakeshores and wetlands. Potential habitat exists, but no confirmed occurrences on the base or in the airspace.
Columbian sharp-tailed grouse Tympanuchus phasianellus	FSC/SSC	Open grasslands and shrub habitats in proximity to stands of low growing trees. Extirpated from most of its former range. No records from base.
Long-billed curlew Numenius americanus	FSC	Open grasslands in landscapes with good visibility. May occur in non-native vegetation and near agricultural fields. Birds observed on base.
Western burrowing owl Athene cunicularia hypugaea	SSC	Grasslands and shrublands. Frequents disturbed habitats. Associated with Townsend's ground squirrel and badger burrows. Four use areas identified on base.
Mammals		
Pygmy rabbit Brachylagus idahoensis	SSC/SGSC	Occurs in dense stands of tall sagebrush (big sagebrush). Distribution not well described. No habitat on base. No records on base.