

# RECLAMATION

*Managing Water in the West*

## **Newton Reservoir Mineral Extraction Environmental Assessment PRO-09-002 and Finding of No Significant Impact PRO-FONSI-09-004**

Bear River Basin Project, Cache County, Utah  
Upper Colorado Region  
Provo Area Office



U.S. Department of the Interior  
Bureau of Reclamation  
Provo Area Office  
Provo, Utah

May 2009

## **Mission Statements**

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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**U.S. Department of the Interior  
Bureau of Reclamation  
Provo Area Office  
Provo, Utah**

**May 2009**



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# Chapter 1 - Background and Need for Proposed Action

## 1.1 Introduction

This document is a final environmental assessment (Final EA) of the potential environmental consequences of the Bureau of Reclamation (Reclamation) providing right-of-way access and right-of-use permitting for gravel extraction east of Newton Reservoir on the northwest flank of Little Mountain in Cache County, Utah. The preparation of this document is in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA) and the Council on Environmental Quality (CEQ) and Department of the Interior (DOI) regulations implementing NEPA. Zeotech Corporation has requested that Reclamation authorize them to construct and use an access/haul road extending approximately one-half mile from County Road (5800 West) to Zeotech's property boundary to the east. Furthermore, Zeotech Corporation is proposing some gravel resource extraction to occur on Reclamation land, however, the majority of the excavation will occur on privately owned land adjacent to the Reclamation property boundary (See Figure 1.1-1).

## 1.2 Background

### History

Newton Reservoir is located on Clarkston Creek approximately 2 miles north of Newton, Utah and 1.25 miles east of the Trenton, Utah corporate boundary (See Figure 1.1-1). Newton Reservoir was originally constructed to provide supplemental irrigation water to help rehabilitate and stabilize an established agricultural area. The President authorized construction of the Newton Dam Project on October 17, 1940, under terms of the Water Conservation and Utilization Act of August 11, 1939 (Reclamation 2008). The reservoir is designed to detain the water collected from the Clarkston Creek watershed. The total drainage area at the dam is approximately 23 square miles and includes an annual average discharge of 5,512 acre-feet (Reclamation 2008).

The southern portion of Newton Reservoir lies within Section 4 and Section 5 of Township 13 North, Range 1 West of the Salt Lake Base and Meridian. Within these sections the United States Department of the Interior, Bureau of Reclamation owns and manages approximately 155 acres of dry land area. The land uses within this area include agriculture, primitive recreation, gravel pit operations, dam operations, and open space. The Newton Reservoir Resource Management Plan (RMP) divides this area into management classifications based upon natural

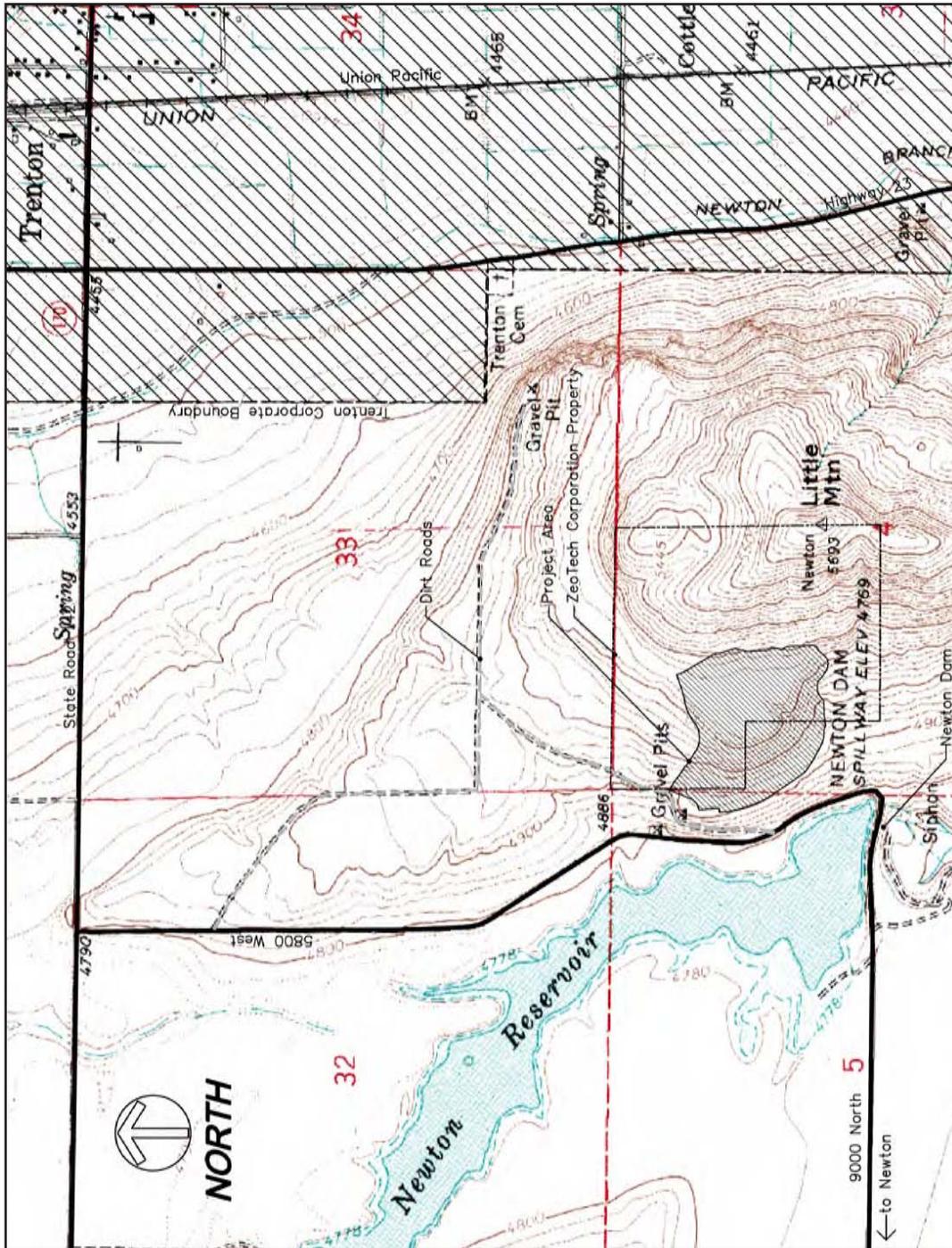


Figure 1.1-1. Project location and vicinity

resource features, land management, recreational activities, and existing facilities. The RMP designates land use categories upon Reclamation lands surrounding Newton Reservoir, the purpose of these categories are to “describe present and future management strategies for different portions of the Study Area” and to “facilitate understanding and consistency between land management agencies.”

The current access road to the Newton Reservoir recreation areas and the project area (5800 West) has been constructed and maintained by Cache County. It extends south from State Road 142 and connects to Highway 23 in Newton, Utah via 9000 North and 6400 West (See Figure 1.1-1).

**Management**

Operation and maintenance responsibilities for the water operations at Newton Reservoir were transferred from the Bureau of Reclamation to the Newton Water Users Association in 1948 at the conclusion of the two-year development period (Reclamation 2008). This association continues to hold primary responsibility for operation of the water works, however several agencies are responsible for management of various other activities that occur on and around Newton Reservoir to include the following (Utah DEQ 1997):

<b>Newton Reservoir Land Management Agencies</b>	
<b>MANAGEMENT AGENCY</b>	<b>PRIMARY RESPONSIBILITY</b>
Bureau of Reclamation	Resource Management/Admin.
Bear River Association of Governments	Administration
Utah Division of Wildlife Resources	Fishery
Utah Division of Water Quality	Water Quality
Cache County Corporation	Recreation/Enforcement
Newton Water User's Association	Water System Operations

**Table 1.2-1.** Management agency responsibilities

In June 2004, Reclamation completed a Resource Management Plan for Newton Reservoir to “provide for the development, use, conservation, protection, enhancement, and management of resources on Reclamation lands in a manner that is compatible with the authorized purposes of the Reclamation project associated with the Reclamation land (Reclamation 1992).”

**Gravel Resource**

Zeotech Corporation has identified and delineated a clinoptilolite (natural zeolite mineral) deposit on the northwest flank of Little Mountain in Cache County, Utah. The deposit is located in Section 4, T13N, R1W between the towns of Trenton and Newton in northern Cache Valley and about 15 miles north of Logan, Utah. The zeolite mineral occurs as an alluvial deposit that contains zeolite mineral ore clasts from about 12 inches down to sand size. The Utah Department of Natural Resources has determined that the deposit should be governed under “Sand,

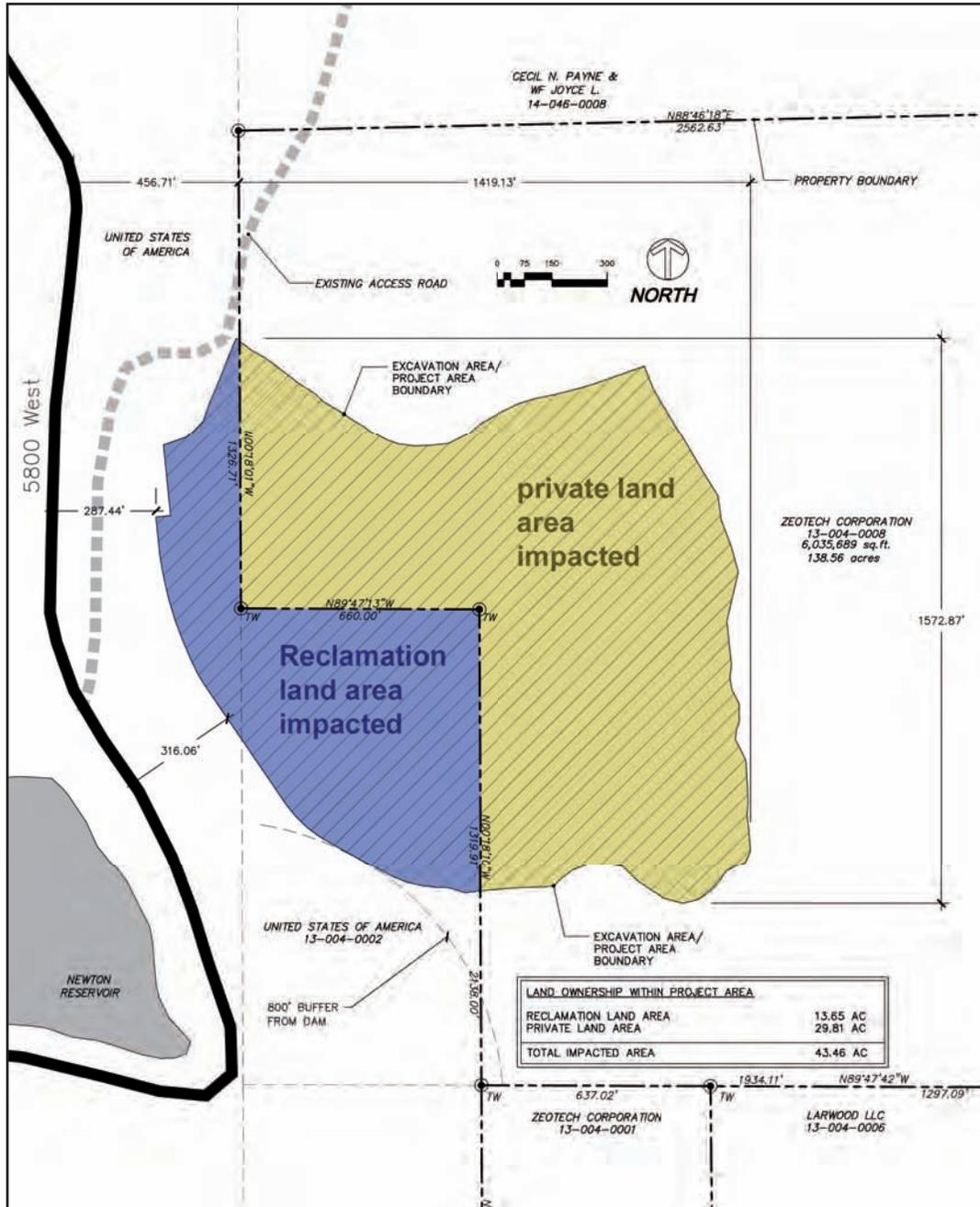


Figure 1.2-1. Land ownership within project area

Gravel and Rock Aggregate” regulations (Utah DNR 2006). Zeotech owns 138.56 acres in the NW quarter of Section 4 adjacent to 32.5 acres owned by the United States of America and managed by Reclamation. The resource deposit lies on a portion of each of these parcels and is identified in Figure 1.2-1 as the project area. This project area has been defined by the anticipated limits of excavation of the identified resource. Successful excavation of this deposit would require the combination and use of the adjoining lands and respective zeolite resource found therein.

<b>Land Ownership within the Newton Reservoir Mineral Extraction Area</b>	
<b>LAND OWNERSHIP</b>	<b>AREA OF RESOURCE (%)</b>
US Department of the Interior	13.65 AC (31.4%)
Private	29.81 AC (68.6%)
<b>Total</b>	<b>43.46 AC (100%)</b>

**Table 1.2-2.** Land Ownership within the Newton Reservoir Mineral Extraction Area

In July and August, 2006 Zeotech drilled 16 holes in Reclamation (Reclamation 2005) and private lands to determine the nature and extent of the zeolite deposit. Results of the work determined that the deposit contains in excess of two million tons of clinoptilolite ore ranging from about 10 feet to over 100 feet thick. The ore is a potassium clinoptilolite with 70 to 80 percent zeolite mineral content and an average cation exchange capacity (CEC) of 96 meq. per 100g. A truckload sample was loaded and sent to Zeotech’s Tilden, Texas plant where it was processed and evaluated for various applications. It was determined that the zeolite ore at Little Mountain is suitable for a large number of commercial applications (Zeotech 2006).

### **1.3 Purpose, Need and Scope of Analysis**

The purpose for the proposed action is to enable Zeotech Corporation to extract a large zeolite deposit near Newton Reservoir.

The need for the proposed action is to determine whether to authorize Zeotech Corporation to construct access through Reclamation land to the zeolite deposit on private lands and to extract the portion of the deposit that is located on Reclamation lands.

The scope of analysis in this Final EA is limited to consideration of whether or not to authorize Zeotech Corporation access to and through Reclamation property and to lease the rights to extract zeolite from the Reclamation lands.

## 1.4 Authorizing Actions, Permits and Licenses

Implementation of the proposed action could require a number of authorizations from Local, State and Federal agencies. These are summarized below.

- Reclamation authorization needed to construct and operate facilities on Reclamation lands and extract zeolite located on Reclamation lands.
- Reclamation authorization needed to cross Reclamation land to access Zeotech Corporation private lands.
- Agreement with Reclamation for the interim and final restoration of disturbed lands.
- A General Construction Storm Water Permit as a part of the Utah Pollutant Discharge Elimination System (UPDES) from the State of Utah Division of Water Quality would be required if the area of disturbance equals or exceeds 1 acre. The contractor would need to implement erosion and sediment controls according to a storm water pollution prevention plan prepared in compliance with the general permit.
- Rezone approval required from Cache County Corporation from Agricultural to Mineral Extraction.
- Master Plan approval required from Cache County Corporation.
- Development agreement negotiated and approved by Cache County Corporation.

## 1.5 Relationship to Other Projects

- Newton Reservoir Resource Management Plan, June 2004.  
Reclamation made the determination to implement Alternative C from the RMP for the Newton Reservoir (the Multi-Purpose Alternative). Furthermore, Reclamation made specific land use and jurisdiction/land management designations that have been referenced and used in this Final EA. A brief description of Alternative C has been excerpted from the RMP and given below:

### ***Alternative C - Multi-purpose Emphasis***

*The Multi-Purpose Emphasis Alternative provides for a variety of multiple uses including improved developed recreation areas and improved dispersed recreation areas (e.g. designated sites, some limited facilities). New boating, camping, and picnicking facilities and the accompanying access roads may be developed. Facilities that improve or protect environmental quality are included, as well as regulation and information systems to enhance public information. The types of activity opportunities and management practices remain the same, but there are additional recreational opportunities*

# **Chapter 2 - Proposed Action and Alternatives**

## **2.1 Introduction**

The proposed action analyzed in this Final EA is Reclamation's authorization and permitting for Zeotech Corporation to construct an access road and staging area for gravel extraction. It also includes the provision of the rights to extract gravel from Reclamation lands. The Final EA will be used to determine the potential effects to the human environment and will serve to guide Reclamation's decision making process.

If Reclamation decides to authorize the proposed action allowing Zeotech Corporation to proceed with its proposed project, Zeotech would construct all proposed improvements using non-federal funds. Additionally, there may need to be roadway improvements that extend outside the project area analyzed in this Final EA. These additional roadway improvements shall be negotiated with Cache County Corporation and would fall within the existing County right of way. All improvements to these roadways would be completed by Cache County Corporation with an agreement for cost sharing with Zeotech Corporation.

A range of action alternatives have been identified and analyzed in this Final EA, along with a no action alternative to facilitate comparison of potential effects of the proposed action.

## **2.2 No Action Alternative**

Under the no action alternative Reclamation would not authorize Zeotech Corporation to extract any gravel resource or construct any roadway improvements or staging facilities on Reclamation land.

## **2.3 Action Alternatives**

The following action alternatives would provide access through Reclamation land to the adjacent parcel to the east. Both action alternatives would allow for improvements to be made to the haul road and would allow for staging and gravel extraction to occur on Reclamation land.

### **2.3.1 Staging and Gravel Extraction Alternative**

The staging and gravel extraction alternative would maintain use of the existing access road alignment and would provide for staging and operations to occur within the existing unregulated, open pit (See Figure 2.3-1). There would be some minor improvements made to the road to include regrading, widening, and providing stormwater conveyance features and erosion control best management practices (BMPs). It is not anticipated that there would be any re-alignment of the horizontal geometry of the roadway, however, some minor adjustments would be necessary to maintain continued access to the existing road/easement to the top of Little Mountain.

This alternative proposes that material be extracted in a three-phase progression as shown in Figure 2.3-1. The open area at the base of the existing excavated face would be re-graded to provide necessary haul truck staging and a location for the crusher. Primary crushing to minus 3" material is proposed in this area. Additional material processing shall be done at an off-site location. Additionally, there would need to be a significant area provided for material stockpiling and processed material. A perimeter fence would be installed to control access and to prevent unregulated OHV use across the private lands and to prevent vandalism. Gated access would be provided to allow through access to the existing road/easement to the top of Little Mountain.

Earthwork would be completed to provide the necessary stormwater storage features to prevent any downstream sedimentation. All necessary stormwater conveyance structures would be installed including grate inlets, boxes, culverts, check dams and spillways. Stormwater storage basins are proposed near the staging/turnaround area. Stormwater calculations have been generated based upon a 25 year 1 hour design storm. A sediment trap system would be implemented prior to runoff reaching the lowest stormwater retention basin.

### **2.3.2 New Haul Road Alignment/Improvements, Staging and Gravel Extraction Alternative**

The new haul road alignment/improvements alternative would abandon use of the existing access road alignment, this area would be restored and a new site access would be provided at a location 1250 feet to the north along 5800 West. Staging and operations would be moved to a location to the far south and east, immediately adjacent to the Zeotech Corporation parcel (See Figure 2.3-2). These roadway improvements would include road grading, excavation of all necessary material, road cut-slope stabilization and revegetation, stormwater conveyance and erosion control BMP installation.

This alternative proposes that material be extracted in a three-phase progression as shown in Figure 2.3-2. The staging/turnaround area would be graded to provide

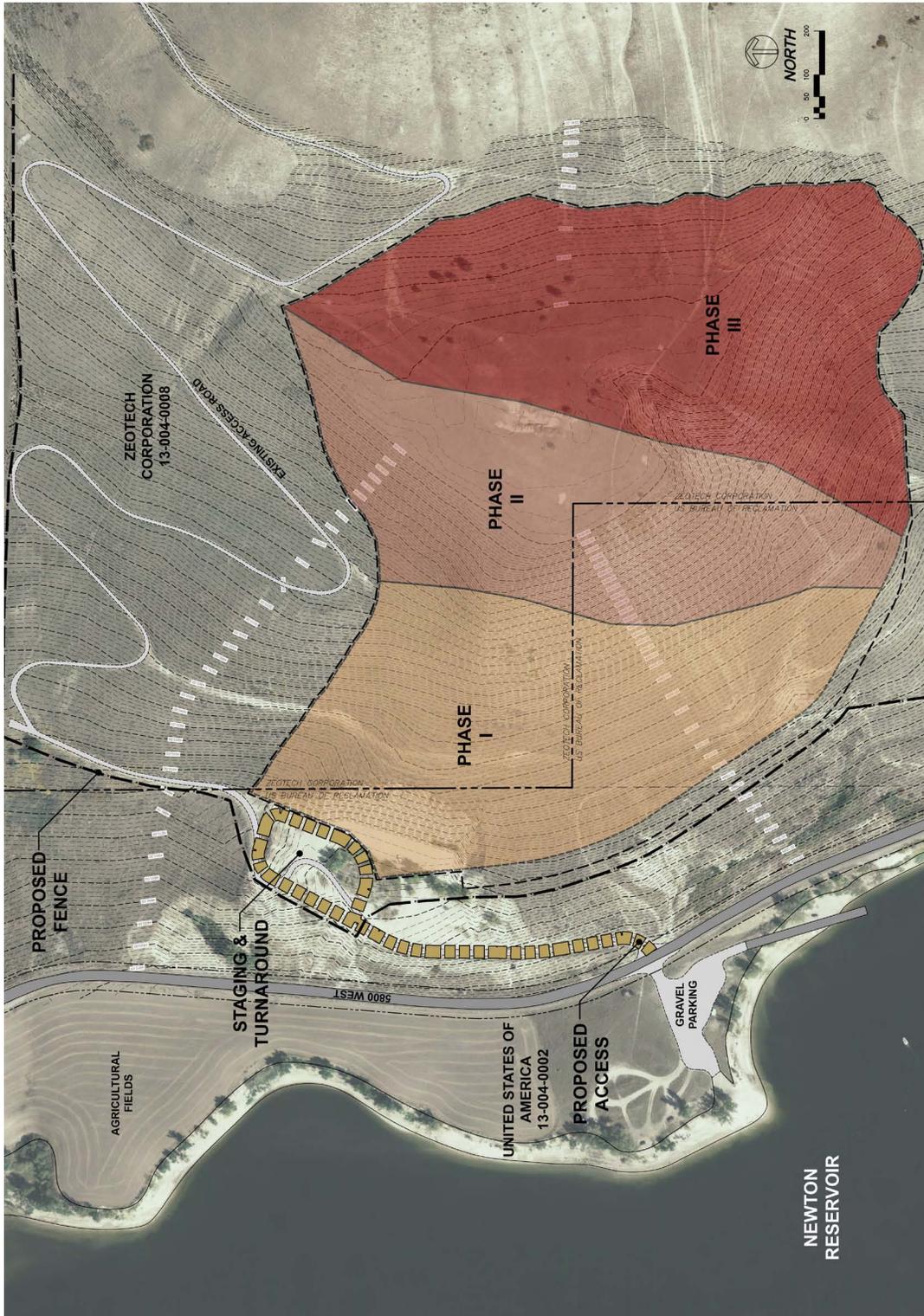
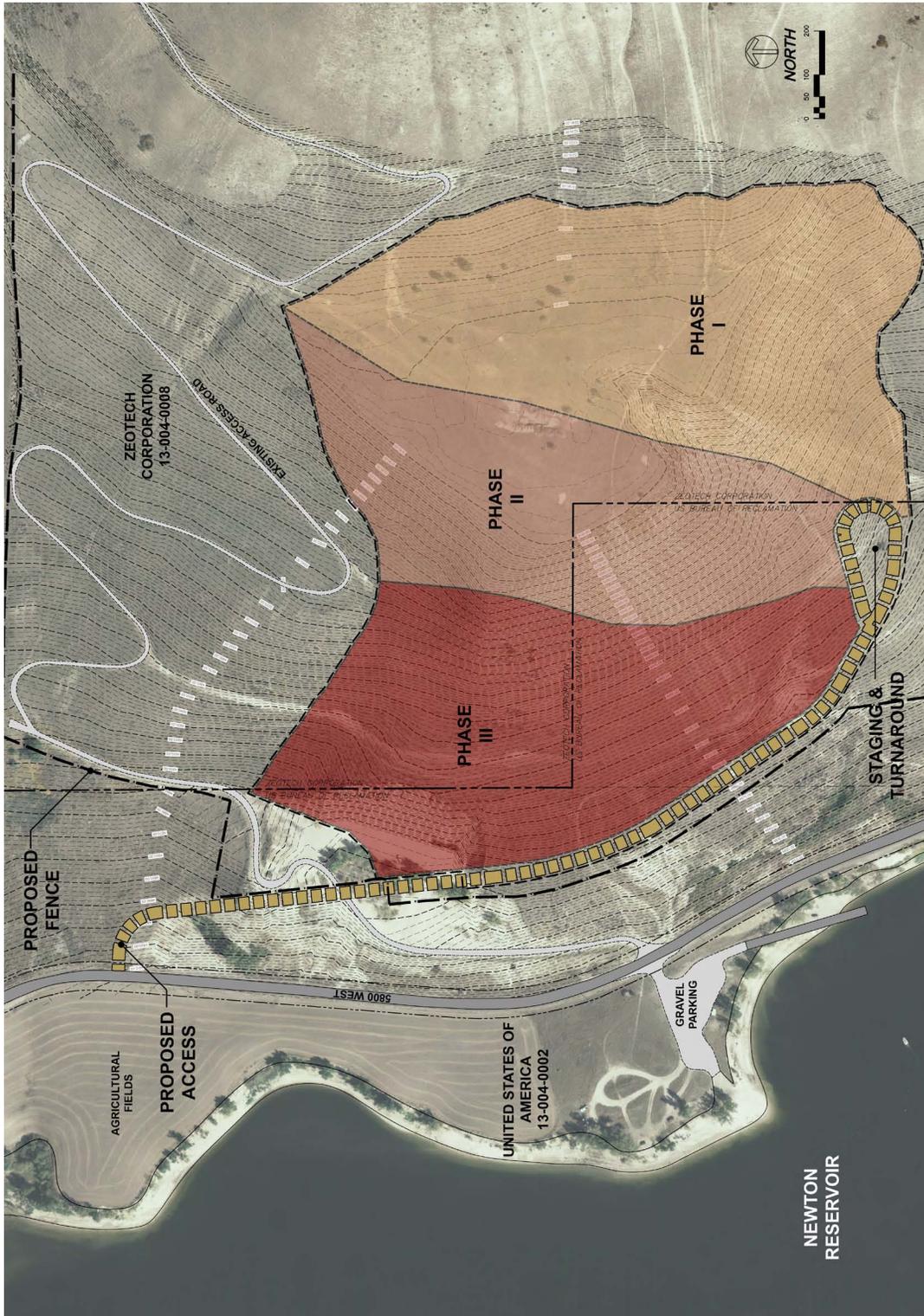


Figure 2.3-1. Staging and Gravel Extraction Alternative (2.3.1)



**Figure 2.3-2.** *New Haul Road Alignment/Improvements, Staging and Gravel Extraction Alternative (2.3.2)*

all necessary haul truck staging, a stockpiling location and a location for the crusher. Primary crushing to minus 3” material is proposed in this area. Additional material processing shall be done at an off-site location. A perimeter fence would be installed to control access and to prevent unlimited OHV use across the private lands and to prevent vandalism. Gated access would be provided to allow through access to the existing road/easement to the top of Little Mountain.

Earthwork would be completed to provide the necessary stormwater storage features to prevent any downstream sedimentation. All necessary stormwater conveyance structures would be installed including grate inlets, boxes, culverts, check dams and spillways. All stormwater runoff generated within the project area would be stored near the base of the proposed access road adjacent to 5800 West, with a sedimentation basin located higher near the existing gravel pit area. Stormwater calculations have been generated based upon a 25 year 1 hour design storm. A sediment trap system would be implemented prior to runoff reaching the lowest stormwater retention basin.

## **2.4 Alternatives Considered but Eliminated from Further Study**

The following alternatives were considered but eliminated from further study because they were determined to be economically unfeasible due to construction and maintenance costs.

### **2.4.1 Access Improvements, No Staging or Gravel Extraction Permitting Alternative**

The access improvements, no staging or gravel extraction permitting alternative would follow the same horizontal alignment as the action alternative 2.3.2. However, the alignment would extend further to the east and the staging and operations area would be located on the immediate western edge of the Zeotech Corporation property boundary. These roadway improvements would include road grading, excavation of all necessary material, road cut-slope stabilization and re-vegetation, stormwater conveyance and erosion control BMP installation. This alternative would allow access across Reclamation lands, but would not allow gravel extraction from Reclamation lands.

The staging/turnaround area would be graded to provide all necessary turnaround/truck queuing, a stockpiling location and a place for a crusher. Primary crushing to minus 3” material is proposed in this area. Additional material processing shall be done at an off-site location. A perimeter fence would be installed to control access and to prevent unlimited OHV use across private lands and to prevent vandalism. Gated access would be provided to allow through access to the existing road/easement to the top of Little Mountain.

Significant earthwork would be completed to provide the proposed stormwater storage features required to prevent any downstream sedimentation. These features would be located on Reclamation land. Additionally, all necessary stormwater conveyance structures would be installed including grate inlets, boxes, culverts, check dams and spillways.

This alternative would allow for resource extraction to occur only on private lands. There would be no authorization granted by Reclamation for resource extraction on Reclamation land. This alternative would not allow access to the deepest resource deposit and would only allow for removal of approximately one-third of the total estimated resource. With these constraints this alternative was eliminated from further consideration because it was determined to be cost prohibitive.

# Chapter 3 - Affected Environment and Environmental Effects

## 3.1 Introduction

This chapter describes the environment potentially affected by each of the previously described alternatives including the no action alternative and the predicted impacts of the action alternatives. These impacts are addressed within the following resource headings; recreation; public safety, access and transportation; visual resources; air quality; water quality; vegetation; soils and geology; cultural resources; paleontological resources; wildlife resources; threatened, endangered and other special status species. The current condition and/or characteristics of each resource are described within the “affected environment”, followed by a discussion of the predicted impacts as “environmental effects of alternatives” under the no action and action alternatives. The environmental effects are summarized in Table 3.3-1 at the end of this chapter.

## 3.2 Affected Environment

### 3.2.1 Recreation

Recreation facilities at Newton Reservoir are managed by Reclamation at the minimum basic level for outdoor public recreation purposes. The only improvements include a boat ramp, a gravel parking area, and some informational signage. The primary recreation activities that occur are water based, including: swimming, water-skiing, pleasure boating, personal watercraft use, and fishing. In the Resource Management Plan for Newton Reservoir four major recreation areas have been identified: the Boat Ramp Recreation Area, the Southwest Recreation Area, the Southwest Primitive Area, and the North End Area. Currently there is no way to tabulate an annual visitation, however the Newton Reservoir Resource Management Plan estimates the annual visitation to be around 7000 users (Reclamation 2004).

The project area sits outside these identified areas. Primary recreational uses that occur within the project area are OHV use and target shooting. Both of these activities are unregulated and have contributed greatly to environmental degradation within the project area.

### **3.2.2 Public Safety, Access and Transportation**

Several communities are interspersed throughout Cache County nestled between the Wellsville and Bear River Mountain ranges. Newton Reservoir rests between the communities of Trenton, Newton, and Clarkston and is encircled by a major collector, State Road 142, which connects each of these communities. Direct access to the reservoir is through a network of small, rural county roads, 5800 West Street from the North and 6400 West connecting to 9000 North from the south. These roads are located next to the reservoir on the south and east side, and adjacent to the proposed project area. This network of county roads facilitates all public access to the reservoir including all the identified recreational areas and adjacent lands.

An existing rural access road (two-track) currently passes through the project area as an easement to provide access to a radio tower at the top of Little Mountain east of the project area. This rural road connects to 5800 West near the Boat Ramp Recreation Area. This is currently the only access to the neighbouring properties to the east of Reclamation land (See Figure 1.2-1). There is a large amount of unregulated and unrestricted OHV access evident throughout the project area on both public and private lands.

### **3.2.3 Visual Resources**

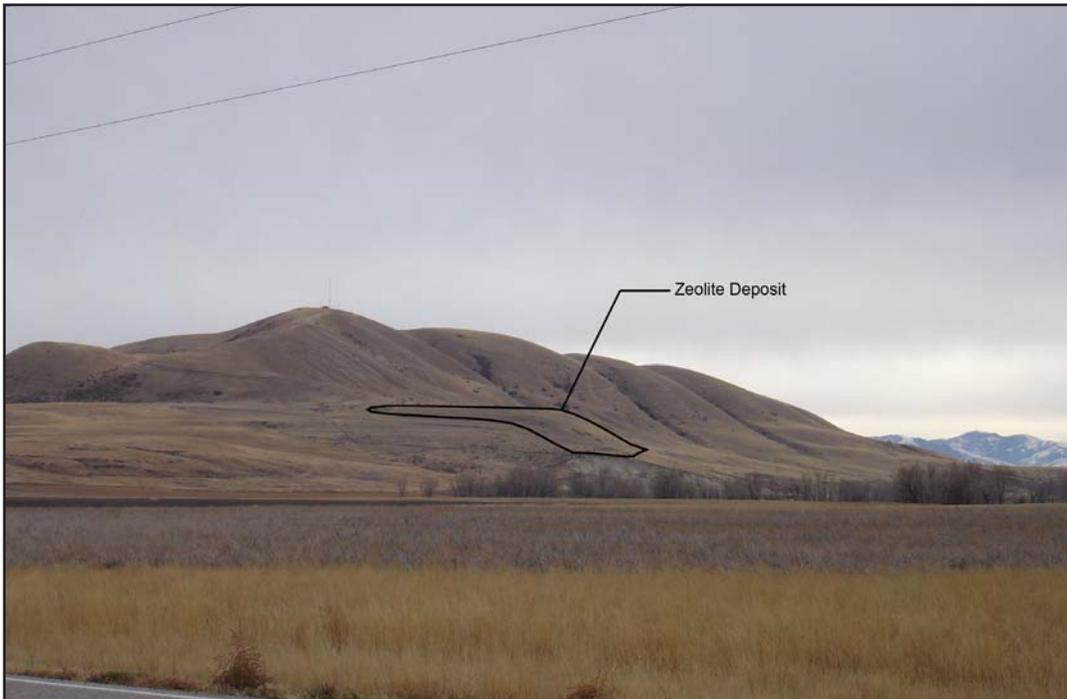
Newton Reservoir is located on the western edge of Little Mountain and situated on the eastern edge of the Great Basin, a part of the Basin and Range physiographic province. The reservoir is situated in a natural drainage created by Clarkston Creek. The reservoir extends generally north and west from the dam. The landscape is characterized by rolling agricultural lands, with expanses framed between Little Mountain on the east and the Clarkston Mountain Range on the west. The reservoir and down stream drainage are strong visual elements in the landscape, especially in contrast to the uniform textures and straight lines of the adjacent agricultural lands.

Newton Reservoir has been analyzed by Reclamation using the Visual Management System (VMS). This analysis is documented in the Newton Reservoir Visual Analysis Report (Reclamation 2000) and summarized in the Newton Reservoir Resource Management Plan (Reclamation 2004).

The RMP provides ratings of the visual integrity (the state of disturbance created by human activity or alteration) for each of these defined jurisdiction areas. The Dam Primary Jurisdiction Area has been identified as having a moderate Scenic Integrity Level. This indicates that the long-range results of human activities within this area should remain visually subordinate to the natural-appearing landscape and any activity should borrow naturally established line, form, color and texture. The Gravel Pit Jurisdiction Area has been identified as having a low Scenic



**Figure 3.2-1.** Characteristic landscape view of project area from Southwest (on dam along 9000 North).



**Figure 3.2-2.** Characteristic landscape view of project area from Northwest (along SR142).

Integrity Level. This indicated that the long-range results of human activities may dominate the natural appearing landscapes but any activity or impact should borrow naturally established line, form, color and texture (USDA Forest Service 1995).

The project area on the northwestern flank of Little Mountain is a strong visual element in the Newton Reservoir viewshed due to its proximity to the reservoir. The fine to moderate texture across the project area is interrupted by significant land scarification (vertical and diagonal lines) created from unregulated OHV use. See Figure 3.2-1 and 3.2-2 for characteristic landscape views of the project area.

### **3.2.4 Air Quality**

Air quality in Cache Valley is regulated by Utah Division of Air Quality. The main monitoring location is in Logan, however there have been some studies conducted with sampling occurring at various locations throughout the valley (Martin 2006). The United States Environmental Protection Agency (EPA) has established the National Ambient Air Quality Standards (NAAQS) These standards are based upon six harmful pollutants that require statewide monitoring including; carbon monoxide; lead; nitrogen dioxide; particulate matter (PM10 & PM2.5); ozone; and sulfur dioxides. Cache Valley is currently in attainment of each of the established NAAQS (Utah DEQ 2006), however there is a serious threat for non-attainment for particulate matter based upon monitoring that has been conducted since 2000 (Martin 2006).

Air quality data for the project area is unavailable.

### **3.2.5 Water Quality**

There is no surface water within the project area, however the proposed site is approximately 380 feet from the Newton Reservoir water's edge. The proposed site and Newton Reservoir are separated by 5800 West, and the proposed site is a part of the Newton Reservoir/Clarkston Creek watershed. The water quality of Newton Reservoir has been rated as 'fair', with past exceedences of State water quality standards for total phosphorus and dissolved oxygen (Utah DEQ 1997). The following is a brief summary of water quality within the Newton Reservoir/Clarkston Creek watershed.

#### **3.2.5.1 Surface Watershed**

The Utah Division of Water Quality identifies the Clarkston Creek watershed within the Middle Bear Hydrologic Unit and a part of the greater Bear River watershed (Utah DEQ 2006). The Clarkston Creek watershed drains approximately 23.3 square miles of the northwestern portion of Cache County. The watershed consists of low mountains, alluvial fans and desert valley, a large portion of which are gently undulating crop and pastureland. The City of Clarkston lies within the watershed and is the only developed area within the watershed. Elevations within the watershed range from 8100 feet in the Clarkston Mountains along the

western boundary to 4778 feet at the reservoir water elevation. Land use within the watershed is composed of the following coverage classifications: dry agriculture (57%), grazing lands (27%), United States Forest Service multiple use lands (8%), irrigated pasture land (6%), and urban (2%) (Utah DEQ 1997).

### **3.2.5.2 Groundwater**

Regional groundwater studies indicate that groundwater flows to the south near Newton Reservoir and flows to the east in the Clarkston Mountain foothills. Recharge to the groundwater supply in this area is most likely to occur through infiltration precipitation, stream seepage and consolidated and unconsolidated deposit subsurface inflow (Kiriya et al. 1994). Wallace and Lowe have identified the project area as a secondary recharge area. These areas are defined by thick confining layers with downward gradient thus inhibiting the free flow of infiltration waters, primary recharge areas lack these thick confining layers (Lowe et al. 2003). Their study also identifies and classifies the area based upon the total-dissolved solids (TDS) concentration for the principal basin-fill aquifer. The project area lies on the margin between Class IA and Class II groundwater classifications (Wallace and Lowe 2003). Class IA groundwater is considered pristine groundwater with total-dissolved solids of less than 500 mg/l and no contaminant concentration that exceed the state groundwater quality standard. Class II groundwater is considered drinking water quality groundwater with total-dissolved solids greater than 500 mg/l and less than 3000 mg/l and no contaminant concentrations that exceed the state groundwater quality standard (Utah DEQ 2008). There are no active public or private wells within a one-mile radius of the project area.

### **3.2.6 Vegetation**

Vegetation in the project area has been identified and classified in two categories: Sagebrush-Perennial Grassland and Disturbed/Unvegetated (Reclamation 2004). The coverages of each of these plant communities within the project area can be found in (Table 3.2-1). Distribution of these communities within the project area can be seen in Figure 3.2-3. Additionally, there are some Noxious Weeds species that have been identified within the project area (Merritt 2008). Weeds species found within the project area are listed in Table 3.2-2.

#### **3.2.6.1 Sagebrush-Perennial Grassland**

There are 41.31 acres of sagebrush-perennial grass plant community within the project area. Within the project area this plant community is characterized by perennial grasses and forbs that have some widely dispersed patches of sagebrush and other shrub species. Perennial grasses and forbs that may be found within the project area include bluebunch wheat grass (*Agropyron spicatum*), blue gramma (*Bouteloua gracilis*), indian ricegrass (*Oryzopsis hymenoides*), and buffalograss (*Buchloe dactyloides*). Associated principal grass species may include cheatgrass (*Bromus tectorum*). The principal shrub species that may be found within the project area is big sagebrush (*Artemesia tridentata*), with associated shrub species such as rabbitbrush (*Chrysothamnus sp.*) and saltbrush (*Atriplex sp.*) (USU 2008).

Vegetation Classifications within the Newton Reservoir Mineral Extraction Area	
CLASSIFICATION	AREA (%)
Sagebrush/Perennial Grassland	41.31 AC (95.1%)
Disturbed/Unvegetated	2.15 AC (4.9%)
<b>Total</b>	<b>43.46 AC (100%)</b>

*Table 3.2-1. Vegetation Classifications within the Newton Reservoir Mineral Extraction Area.*

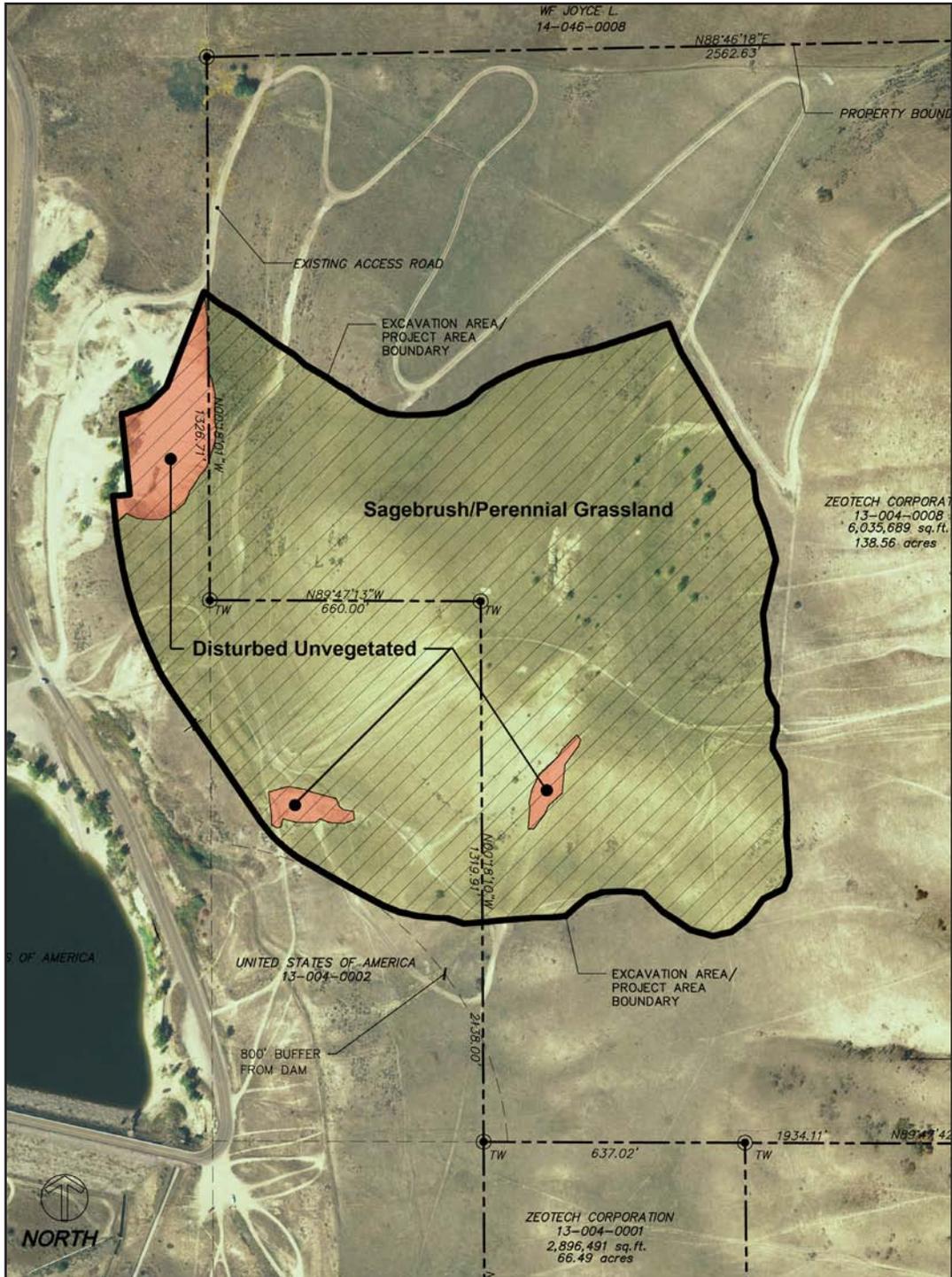
### **3.2.6.2 Disturbed/Unvegetated**

There are 2.15 acres of disturbed or unvegetated land within the project area. This land coverage is characterized by sparse vegetative coverage and ground disturbances. Ground disturbances observed in the project area include open pit gravel excavation (borrow), primitive recreation sites, unregulated shooting ranges and OHV use areas.

### **3.2.6.3 Noxious Weeds**

Noxious weeds have been defined under the Federal Noxious Weed Act of 1974 as “...plant of a kind which is of foreign origin, is new to or not widely prevalent in the U.S., and can directly or indirectly injure crops, other useful plants, livestock, poultry or other interests of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health (U.S. Congress 1974).” Furthermore the State of Utah declares noxious weeds as “...any plant that is especially injurious to public health, crops, livestock, land or other property (Utah Administrative Code 2008).” The following tables list officially designated noxious weeds for the State of Utah and Cache County (See Table 3.2-2 and Table 3.2-3).

Invasive and noxious weeds have been observed within the project area, especially in the disturbed/unvegetated areas. These areas of high disturbance that remain unmanaged and unreclaimed provide significant opportunity for invasive species. The only limitation faced by the invasive species are the severe slopes and incompatible soils. The Cache County Weed Department have identified several species present in the Newton Reservoir area including; Dyer’s Woad; Canada Thistle; Scotch Thistle; and Leafy Spurge. The County has identified Scotch Thistle and Leafy Spurge as species of concern due to their relative low concentrations throughout the valley (Merritt 2008).



**Figure 3.2-3.** Vegetation Classification and coverage areas within Newton Reservoir Mineral Extraction Area (See Table 3.2-1 for acreages).

State of Utah - Noxious Weeds List - October 2008	
SPECIES	COMMON NAME
<i>Cynodon dactylon</i>	Bermudagrass
<i>Hyoscyamus niger</i>	Black Henbane
<i>Cirsium arvense</i>	Canada Thistle
<i>Linaria dalmatica</i>	Dalmation Toadflax
<i>Centaurea diffusa</i>	Diffuse Knapweed
<i>Isatis tinctoria L.</i>	Dyers Woad
<i>Convolvulus arvensis</i>	Field Bindweed (Wild Morning Glory)
<i>Cardaria sp.</i>	Hoary Cress
<i>Cynoglossum officinale</i>	Houndstongue
<i>Sorghum halepense</i>	Johnsongrass
<i>Euphorbia esula</i>	Leafy Spurge
<i>Taeniatherum caput-medusae</i>	Medusahead
<i>Carduus nutans</i>	Musk Thistle
<i>Chrysanthemum leucanthemum</i>	Ox-Eye Daisy
<i>Lepidium latifolium</i>	Perennial Pepperweed
<i>Sorghum halepense L. &amp; Sorghum almum</i>	Perennial Sorghum
<i>Conium maculatum</i>	Poison Hemlock
<i>Lythrum salicaria L.</i>	Purple Loosestrife
<i>Agropyron repens</i>	Quackgrass
<i>Centaurea repens</i>	Russian Knapweed
<i>Tamarix ramosissima</i>	Saltcedar
<i>Onopordum acanthium</i>	Scotch Thistle
<i>Centaurea maculosa</i>	Spotted Knapweed
<i>Centaurea squarrosa</i>	Squarrose Knapweed
<i>Hypericum perforatum</i>	St. John's Wort
<i>Potentilla recta</i>	Sulfur Cinquefoil
<i>Centaurea solstitialis</i>	Yellow Starthistle
<i>Linaria vulgaris</i>	Yellow Toadflax

**Table 3.2-2.** State of Utah Noxious Weed List - October 2008 (Utah Administrative Code 2008)

Cache County - Noxious Weeds List - October 2008	
SPECIES	COMMON NAME
<i>Galega officinalis</i>	Goatsrue
<i>Conium maculatum</i>	Poison Hemlock
<i>Tribulus terrestris</i>	Puncture Vine

**Table 3.2-3.** Cache County Noxious Weed List (Cache County 2003)

### 3.2.7 Soils and Geology

The USDA soil survey within the project area identifies the primary soil type as Munk-Blackrock Gravelly Loams (MoG2). This is identified as an eroded classification with severe slopes (30%-70%). This soil type is considered to be well



**Figure 3.2-4.** *Geologic landform signature.*

drained (NRCS 2006). Several other soil types are adjacent to the project area and include; Blackrock Gravelly Loam, 6-10% (BmC); Blackrock Gravelly Loam, 10-20% (BmD); Gravel Pit (Gp); and Mendon Silt Loam, 3-6% (MeB).

These soils are likely to have formed as sediment deposits during the regression of Lake Bonneville. B.J. Solomon has identified these as lacustrine gravel and sand (lbg) deposits that occurred during the Bonneville Phase of the Bonneville Lake Cycle (1999). These deposits are typically formed by wave action and deposition that has left ‘benches’ at the highest water level. This signature formation can be clearly seen in the project area (See Figure 3.2-4).

The project area sits on the northwest flank of Little Mountain in the north central part of Cache Valley. Little Mountain is a part of a ridge of bedrock that extends north/south along Little Mountain to just south of the Utah-Idaho border. This ridge is bound on the east by the Dayton fault and by the Newton fault on the west. The exposed rock and underlying bedrock of Little Mountain consist of sandstone and siltstone that are predominantly of the Tertiary Salt Lake Formation (Allison 1990; Solomon 1999).

### **3.2.8 Cultural Resources**

Cultural resources are defined as the expressions of human culture and history in the physical environment, including culturally significant landscapes, historic and archaeological sites, Native American and other sacred places, and artifacts and documents of cultural and historic significance.

Section 106 of the National Historic Preservation Act of 1966 (NHPA) stipulates that Reclamation take into account the potential effects of a proposed Federal undertaking on historic properties. Historic properties are defined as any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places (NRHP). This stipulation falls within the broad requirement to preserve important historic, cultural and natural aspects of our national heritage under NEPA. Further, according to the Reclamation Manual Directives and Standards related to cultural resources management, all Reclamation NEPA actions will be coordinated with the NHPA Section 106 compliance process. Potential effects of the described alternatives on historic properties are the primary focus of this analysis.

### **3.2.8.1 Cultural History**

In 1870, over 70 years before the construction of Newton Dam and Reservoir, a serious shortage of moisture in the town of Newton, Utah caused the local farming community to hold a public meeting at which a decision to build a dam on Clarkston Creek was made. The dam was built in 1872 with ox and horse drawn scrapers, and stored 1,566 acre-feet of water. This reservoir was the first large body of irrigation storage in the State of Utah and possibly the first in the United States.

From 1918 to 1938, studies were undertaken to increase the storage facilities in the reservoir. The data acquired were turned over to the Bureau of Reclamation for further investigation in 1938. It was decided that a new dam, Newton Dam, was needed to provide more water storage for the increasing farming activity in the area. Construction was approved by the President on October 17, 1940, under the terms of the Water Conservation and Utilization Act of August 11, 1939, as amended. A supplemental funding for completion of the project pursuant to the July 16, 1943, amendment to the act was approved by the President on August 31, 1943.

Construction of Newton Dam and Reservoir by the Bureau of Reclamation started in the spring of 1941 with Works Projects Administration (WPA) labor and funds. Work was suspended by the WPA in November 1942, and the War Production Board issued a stop order in December 1942. Construction was resumed in the fall of 1943, using the balance of WPA funds and an allotment of reimbursable funds made available by the Bureau of Reclamation. Construction of Newton Dam and Reservoir was completed in June 1946.

### **3.2.8.2 Cultural Resources Status**

According to the Section 106 regulations, 36 CFR Part 800 (“Protection of Historic Properties”), of the NHPA, the affected environment for cultural resources is identified as the APE (area of potential effects). The APE is the geographic area or areas within which a Federal undertaking (proposed action) may directly or indirectly cause alterations in the character or use of historic properties. No recorded historic or prehistoric sites are located around Newton Dam and Reservoir.

The APE defined in the action alternatives and analyzed for the proposed action was subjected to both Class I and Class III cultural resource inventories by the Provo Area Office archaeologist in December 2008. A total of approximately 35.1 acres were inventoried in order to include the proposed excavation areas and access roads on Reclamation lands. No historic properties were identified within the APE. In compliance with 36 CFR 800.11(d), a cultural resource inventory report and determination of effect for the APE have been submitted to the Utah State Historic Preservation Office for consultation and concurrence. In addition, the report and determination of effect have been sent to tribes and additional consulting parties for consultation in compliance with 36 CFR 800.2.

### **3.2.9 Paleontological Resources**

A paleontological file search was conducted for the project area by the Utah Geological Survey (UGS). Martha Hayden, Paleontological Assistant with the UGS, was consulted regarding the potential for encountering previously documented and presently unknown paleontological resources in the vicinity of the project area APE.

The UGS reply, dated December 22, 2008, on file at the Provo Area Office, Bureau of Reclamation, stated that surface deposits in the APE consist primarily of Quaternary and Recent alluvium that have a low potential for yielding significant fossil localities. There may, however, be exposures of Lake Bonneville shoreline sand and gravel deposits and the Tertiary Salt Lake Group that have the potential for yielding significant vertebrae fossil localities. Unless fossils are discovered as a result of construction activities, the UGS determined that this project should have no impact on paleontological resources

### **3.2.10 Wildlife Resources**

Wildlife resources identified in the Newton Reservoir Resource Management Plan include fish, reptiles and amphibians, mammals, and birds (Reclamation 2004). The general habitat type found within the project area consists of upland plant communities (e.g. sagebrush-perennial grassland). The project area has no surface water and no significant riparian vegetation; generally the project area is perennial grassland with minimal sagebrush and no significant mid story and upper story vegetation. The Newton Reservoir Resource Management Plan defines and identifies two wildlife categories around the reservoir; “sensitive wildlife habitat” and “important wildlife habitat”. The project area is located outside of these designations. Existing wildlife conditions have been described based upon field investigation and available information concerning species distribution, occurrence and habitat type available from Utah Division of Wildlife Resources and the United States Department of the Interior, Fish and Wildlife Service.

### **3.2.10.1 Fish**

Although no surface water exists within the project area, nearby Newton Reservoir supports a year round warm water fishery. It has traditionally provided sport fishing for a variety of fish for both boat and shore anglers, and in the past there were attempts to establish a trout fishery in the reservoir. These attempts persistently fell short due to illegal introduction of carp (*Cyprinus carpio*) and Panfish coupled with poor water quality from upstream agricultural practices. Water quality is a constant concern, especially as it relates to the health of the fishery.

Currently, the reservoir is managed as a warm water fishery comprised of six species of fish. The existing fish population includes self sustaining populations of largemouth bass (*Micropterus salmoides*), bluegill (*Lepomis macrochirus*), black crappie (*Pomoxis nigromaculatus*), and yellow perch (*Perca flavescens*); and stocked populations of tiger muskie (*Esox masquinongy*) and channel catfish (*Ictalurus punctatus*). These species are able to survive the yearly fluctuations of the reservoir's water surface elevation (Utah DEQ 1997).

### **3.2.10.2 Reptiles and Amphibians**

Reptiles and amphibians with potential to occur in proximity to the project area include the Common Gartersnake (*Thamnophis sirtalis*), Common Sagebrush Lizard (*Sceloporus graciosus*), Eastern Racer (*Coluber constrictor*), Gophersnake (*Pituophis catenifer*), Great Basin Rattlesnake (*Crotalus oreganus lutosus*), Terrestrial Gartersnake (*Thamnophis elegans*), Great Basin Spadefoot (*Spea intermontana*), Great Plains Toad (*Bufo cognatus*), Tiger Salamander (*Ambystoma tigrinum*), and Woodhouse's Toad (*Bufo woodhousii*) (UDWR 2008).

### **3.2.10.3 Mammals**

#### *Big Game*

The project area sits on the foothills above Newton Reservoir on the northwest flank of Little Mountain, the site is mostly covered with grassland with some very sparse sagebrush throughout. This area has potential to serve as summer and winter habitat for the mule deer (*Odocoileus hemionus*), however it does lie outside of their preferred movement corridors along the drainages of Clarkston and Newton Creek (UDWR 2008).

#### *Small Mammals*

The open grassland areas of the site, with their proximity to the surface waters of Newton Reservoir provides suitable habitat for a wide range of small mammals. Small mammals with potential to occur on or near the project area include: BlackTailed Jackrabbit (*Lepus californicus*), Deer Mouse (*Peromyscus maniculatus*), Meadow Vole (*Microtus pennsylvanicus*), Northern Raccoon (*Procyon lotor*), Red Fox (*Vulpes vulpes*), Striped Skunk (*Mephitis mephitis*), and Western Harvest Mouse (*Reithrodontomys megalotis*). Additionally, the project area is

likely to be within the range of several bat species (e.g. *Myotis lucifugus*) due to its proximity between an abundant source of insect prey and nearby roosting sites (UDWR 2008).

### **3.2.10.4 Birds**

#### *Waterfowl*

Although no surface water exists within the project area, nearby Newton Reservoir serves as a destination for several species of waterfowl and shorebirds. It is not anticipated that the project area supports any significant presence of waterfowl.

#### *Raptors*

Birds of prey (raptors) have been observed adjacent to the project area. Trees along the reservoir are limited but provide potential nesting habitat for raptors such as Swainson's Hawk (*Buteo Swainsoni*), American Kestrel (*Falco Sparverius*), Barn Owl (*Tyto alba*), and Long-Eared Owl (*Asio otus*). The open grasslands within the project area provide suitable habitat for many of the small mammals that constitute a large portion of the raptor diet. The Northern Harrier (*Circus cyaneus*) may also make use of the open grasslands throughout the project area for both hunting and potential roosting sites. Suitable habitat near the project area may also provide the necessary hunting and roosting grounds for two raptors that are listed by the State of Utah as Species of Concern. These include the Short Eared Owl (*Asio flammeus*) and the Ferruginous Hawk (*Buteo regalis*) (UDWR 2008).

#### *Upland Game Birds*

Several species of upland game birds are likely to occur on or near the project area including California Quail (*Callipepla californica*), Gray Partridge (*Perdix perdix*), and Ring-Necked Pheasant (*Phasianus colchicus*). The Utah Gap Analysis predicted habitat maps indicate that the project area lies within the known distribution area of the Sharp-Tailed Grouse (*Tympanuchus phasianellus*). This species has been listed as a Species of Concern by the State of Utah.

#### *Other Birds*

The lack of complex vertical structure within the vegetation is unsuitable for many other birds including songbirds and flycatchers. These species are not likely to be found within the project area. More suitable habitat for this classification can be found in the Riparian areas near the reservoir.

### 3.2.11 Threatened, Endangered and Other Special Status Species

The proposed project is located in Cache County. Threatened, Endangered and other Special Status Species found to occur in this county are:

Threatened, Endangered and Other Special Status Species		
COMMON NAME	SCIENTIFIC NAME	STATUS
Maguire Primrose	<i>Primula maguirei</i>	Threatened
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	Candidate
Canado Lynx	<i>Lynx canadensis</i>	Threatened
Bluehead Sucker	<i>Catostomus discobolus</i>	Conservation Agreement Sp.
Bonneville Cutthroat Trout	<i>Oncorhynchus clarkia</i>	Conservation Agreement Sp.
Northern Goshawk	<i>Accipiter gentilis</i>	Conservation Agreement Sp.
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Bald and Golden Eagle Protection Act

**Table 3.2-4.** State of Utah Threatened, Endangered and Other Special Status Species.

Of the above listed species, only bluehead sucker, Bonneville cutthroat trout, and bald eagle are likely to occur near the project area. Newton Reservoir below the proposed extraction site may contain remnant populations of the two fish species, however habitat conditions would be considered poor for these species. Bald eagles may use the reservoir and adjacent cottonwood trees as foraging and roosting habitat.

## 3.3 Environmental Effects

Assumptions applied in analyzing the effects of both the no action and the action alternatives in this Final EA include the following:

The Newton Reservoir RMP has been adopted and implemented based upon jurisdictional areas defined in the RMP 2004 .

### 3.3.1 Recreation

#### 3.3.1.1 No Action Alternative

The no action alternative would have no effect on the existing recreational resources of Newton Reservoir.

### **3.3.1.2 Action Alternatives**

#### **Staging and Gravel Extraction (2.3.1)**

No significant long term impacts to recreation are likely to occur from this action alternative, however some minor impacts may be likely to occur due to the conflict of uses near the proposed haul road entry and existing gravel parking area access to 5800 West (See Figures 2.3-1).

#### **New Haul Road Alignment/Improvements, Staging and Gravel Extraction (2.3.2)**

No significant impacts to recreation are likely to occur from this action alternative.

## **3.3.2 Public Safety, Access and Transportation**

### **3.3.2.1 No Action Alternative**

The no action alternative would have no effect on public safety, access and transportation.

### **3.3.2.2 Action Alternatives**

#### **Staging and Gravel Extraction (2.3.1)**

In this action alternative some minor impacts to access are expected during the course of construction of the access/haul road. Additionally, potential conflicts with recreational users and through traffic are likely due to the necessity of the haul trucks to perform a right turn onto 5800 West when leaving the haul road. The access to the existing gravel parking area is located directly across 5800 West from the haul road (See Figures 2.3-1). This parking area is currently used by all visitors to Newton Reservoir who intend to use the boat ramp and park large vehicles and trailers.

Additionally, the increased frequency of travel and vehicle weight on 5800 West from the haul road access to State Road 142 will reduce the life cycle of the roadway.

#### **New Haul Road Alignment/Improvements, Staging and Gravel Extraction (2.3.2)**

No impacts to public safety or access are anticipated from this action alternative. However, the increased frequency of travel and vehicle weight on 5800 West from the haul road access to State Road 142 will reduce the life cycle of the roadway.

## **3.3.3 Visual Resources**

### **3.3.3.1 No Action Alternative**

The no action alternative would produce no change to the existing characteristic landscape.

### **3.3.3.2 Action Alternatives**

#### **Staging and Gravel Extraction (2.3.1)**

This action alternative would produce a change in the characteristic landscape during the course of operations. This change would be evident in form, line, color and texture of the landscape in views from the northwest toward the project area and in views from the southwest toward the project area. It is anticipated that the long term impacts would be minimal after restoration of the proposed operation, therefore long-term changes due to operational activities would remain subordinate to the existing characteristic landscape.

#### **New Haul Road Alignment/Improvements, Staging and Gravel Extraction (2.3.2)**

This action alternative would produce a change in the characteristic landscape during the course of operations. This change would be evident in form, line, color and texture of the landscape, however phasing the excavation from the back of the deposit may allow for partial retention of the characteristic landscape in views from the west during the course of operations. It is anticipated that the long term impacts would be minimal after restoration of the proposed operation, therefore long-term changes due to operational activities would remain subordinate to the existing characteristic landscape.

### **3.3.4 Air Quality**

#### **3.3.4.1 No Action Alternative**

The no action alternative would have no effect on the existing air quality within and around the project area.

#### **3.3.4.2 Action Alternatives**

There would be minor impacts to air quality from both of the proposed action alternatives during the course of operations. Fugitive dust and other particulate matter will be produced by both action alternatives as a result of topsoil stripping, material excavation, primary crushing and travel on unpaved roads. The Utah Department of Environmental Quality, Division of Air Quality has outlined all the required permitting, standards and monitoring procedures that must be followed by a gravel excavation operation to control fugitive dust.

Under both action alternatives, following these standards and procedures can ensure compliance with all State of Utah regulations and can significantly reduce impacts to air quality. These best management practices would significantly reduce fugitive dust and other particulate matter within and around the project area.

Upon completion of the excavation and full vegetative restoration of the excavated slopes, impacts from fugitive dust and particulate matter would be reduced. No long-term impacts are anticipated as a result of any of the action alternatives.

### **3.3.5 Water Quality**

#### **3.3.5.1 No Action Alternative**

The no action alternative would have no effect on the existing water quality of the Newton Reservoir resource.

#### **3.3.5.2 Action Alternatives**

Under both action alternatives, best management practices would be employed during construction and operational activities to minimize on-site erosion and sedimentation. The total site area will generate 112,439 cubic feet of stormwater runoff based upon a 25 year - one hour design storm. It is anticipated that this stormwater will be collected and retained on-site allowing for all sedimentation and other solids to settle out. The remaining stormwater volume will be allowed to infiltrate in a large surface storage basin and there will be no stormwater discharge from the project area.

Although the ground water within and near the project area has been classified as pristine and of drinking water quality the slope of the site, and depth to water table inhibit a significant amount of recharge from occurring on-site. No ground water was encountered in any of the test holes drilled to investigate the extent of the resource. The native zeolitic material has a high capacity for absorption of suspended solids, metal ions and organic compounds, reducing the likelihood of infiltration of groundwater contaminants. Additionally, there are no active wells within a one-mile radius of the project area.

Therefore, the proposed action is anticipated to have no significant impact on the surface water or groundwater quality.

### **3.3.6 Vegetation**

#### **3.3.6.1 No Action Alternative**

The no action alternative would have no effect on the existing vegetation within or around the project area.

#### **3.3.6.2 Action Alternatives**

Vegetative cover across the site is limited to short grasslands with a few isolated stands of sagebrush and other native and non-native woody plants. Several disturbed areas within the project area have contributed to the establishment of noxious weeds and further disturbance could contribute to the spread of the noxious weed community. Adequate weed management techniques will be implemented to reduce impacts from noxious weeds identified by the State of Utah and Cache County. Potential impacts from noxious weeds is dependent upon operational management and monitoring.

It is apparent that disturbance of these plant communities is an unavoidable impact of the proposed action alternatives. These disturbances will be readily apparent during construction and for the life of the operation. Proper re-vegetation and establishment through the course of construction, operations and post-operations will limit the extent of the impacts. Slope re-vegetation shall occur along all road cut and fill slopes, within excavated basins and after the conclusion of each of the outlined phases of operation. Upon closure and establishment of all necessary re-vegetated areas, impacts will be minimized. Long-term impacts to vegetation are anticipated to be minimal.

### **3.3.7 Soils and Geology**

#### **3.3.7.1 No Action Alternative**

The no action alternative would have no effect on the existing soils and geology.

#### **3.3.7.2 Action Alternatives**

Both action alternatives propose the removal of 4.1 million cubic yards of zeolite material from the project area. Geologic investigations and site observation have identified the horizontal and vertical extents of the zeolitic deposit. The limits of the deposit are well defined and topographic analysis shows the extraordinary nature of the landform created by the deposit. Because of the confined nature of the deposit, the method of deposition and the topographic signature, the removal of the deposit is not anticipated to have a significant impact on the overall geologic composition of the region or the post operations geomorphology of the project area.

### **3.3.8 Cultural Resources**

#### **3.3.8.1 No Action Alternative**

Under the no action alternative, there would be no effect to historic properties. Reclamation would not authorize the proposed action, and there would be no need for ground disturbance for any potential borrow or staging areas, spoils deposit areas, or new roads. The existing conditions would remain intact and would not be affected.

### **3.3.8.2 Action Alternatives**

For the APE included in the alternatives, a 100 percent cultural resource inventory has been completed by the Provo Area Office archaeologist. Documentation of the APE for both action alternatives, including maps and photographs, and a determination of effect to cultural resources have been included in a report which was sent to the Utah State Historic Preservation Office (SHPO), tribes, and additional consulting parties. No historic properties were discovered within the APE during the cultural resources inventory. Therefore, there are no anticipated effects to historic properties as a result of any of the action alternatives. SHPO concurred with Reclamation's determination of no historic properties affected in a letter dated January 21, 2009.

### **3.3.9 Paleontological Resources**

#### **3.3.9.1 No Action Alternative**

Under the no action alternative, there would be no effect to paleontological resources. Reclamation would not construct any of the alternatives, and there would be no need for ground disturbance for any potential borrow or staging areas, spoils deposit areas, or new roads. The existing conditions would remain intact and would not be affected.

#### **3.3.9.2 Action Alternatives**

A file search for the APE, as presently designed, of the action alternatives by the UGS in Salt Lake City was completed December 22, 2008. The geological formations present in the proposed APE have a low potential for yielding significant fossil localities, therefore no effect to paleontological resources is anticipated.

### **3.3.10 Wildlife Resources**

#### **3.3.10.1 No Action Alternative**

The no action alternative would have no effect on the existing wildlife resources.

#### **3.3.10.2 Action Alternatives**

Both action alternatives will disturb over 40 acres of sagebrush/perennial grassland habitat. Big game would be displaced from this small area during the course of construction, however there are no major barriers adjacent to the project area that would inhibit movement of these game species around the project area to access water and browse areas. Due to the relatively small extent and poor quality of the habitat, big game would not be significantly impacted and any impacts would not reduce the capacity of the area to support the current population.

Other small mammals existing within the project area would be impacted and displaced by construction and operation activities. These effects would be limited to the identified project area and these mammals would be capable of moving to immediately adjacent and similar, extensive habitats in the surrounding area.

Construction and operation associated with both action alternatives could impact and disturb reptiles and amphibians from preferred habitat. These effects would be limited to the identified project area and these animals would be capable of moving to similar adjacent habitat.

Lack of significant vertical structure in the vegetation would limit the use of the project area by most bird species. There is a general lack of any suitable roosting sites and cover for game birds. No significant impact to bird species is anticipated.

### **3.3.11 Threatened, Endangered and Other Special Status Species**

#### **3.3.11.1 No Action Alternative**

Under the no action alternative Zeotech Corporation would not be permitted to extract resources on Reclamation lands or build access roads through Reclamation lands. This would not exclude extraction on adjacent private lands owned by them. Therefore, any impacts would be substantially similar to the preferred alternative. Extraction activities on the private lands would not significantly affect any threatened, endangered or other special status species. Some limited short term displacement of eagles to adjacent areas may occur at times.

#### **3.3.11.2 Action Alternatives**

Under either of the action alternatives, resource extraction would occur on both private and Reclamation lands. These activities are not expected to significantly affect any threatened, endangered, or other special status species. Any short term displacement of occasional individuals of these species would be to immediately adjacent and similar, extensive habitats in the surrounding area.

### 3.4 Summary of Environmental Effects

The following table provides a summary of the environmental effects to each resource of the no action alternative and the action alternatives.

Summary of Environmental Effects		
Resource	Alternatives	
	No Action Alternative	Action Alternatives
Recreation	No Effect	<p>2.3.1 Minimal impacts are expected during construction. No significant long term impacts.</p> <p>2.3.2 No significant impacts</p>
Public Safety, Access and Transportation	No Effect	<p>2.3.1 Some minor impacts to access expected during the course of construction. Potential conflicts with recreational users accessing existing parking lot.</p> <p>2.3.2 No impacts to access, some minor impacts to 5800 West.</p>
Visual Resources	The no action alternative would produce no change to the existing characteristic landscape.	<p>2.3.1 Short term impacts to visual resources. Long term, no significant impact</p> <p>2.3.2 Minimal impacts in the short term. Long term, no significant impact.</p>
Air Quality	No Effect	Short term impacts would require implementation of dust control procedures and monitoring. No long term impacts are anticipated as a result of any of the action alternatives.
Water Quality	No Effect	No significant impact on the surface water or groundwater quality.
Vegetation	No Effect	Short term impacts to vegetation are unavoidable. Long term impacts to vegetation are anticipated to be minimal. Potential impacts from noxious weeds are dependent upon operational management, treatment and monitoring.
Soils and Geology	No Effect	No significant impact anticipated on the overall geologic composition of the region or the post operations geomorphology of the project area.
Cultural Resources	No Effect	Potential effect to subsurface cultural material during construction.
Paleontological Resources	No Effect	No effect to paleontological resources is expected.
Wildlife Resources	No Effect	Big game and bird species would not be significantly impacted. Small mammals, reptiles and amphibians are likely to be temporarily impacted and displaced from suitable habitat. These animals would be capable of moving to similar adjacent and extensive habitat.
Threatened and Endangered Species	No Effect	No Effect

*Table 3.3-1 Summary of Environmental Effects.*

## **3.5 Indian Trust Assets**

Indian Trust Assets have been defined by the United States Department of the Interior as “...lands, natural resources, money, or other assets held by the federal government in trust or that are restricted against alienation for Indian tribes and individual Indians (U.S. DOI).” These trusts are legal interests held in trust by the United States for Federally recognized Indian tribes or Indian individuals. Assets can be real property, physical assets, or intangible property rights, such as lands, minerals, hunting and fishing rights, and water rights. The United States has a responsibility to protect and maintain the rights reserved by or granted to such tribes or individuals by treaties, statutes, and executive orders. These rights are sometimes further interpreted through court decisions and regulations.

The proposed action will have no effect on Indian Trust Assets.

## **3.6 Environmental Justice**

Executive Order 12898 established environmental justice as a Federal agency priority to ensure that minority and low-income groups are not disproportionately affected by Federal actions. Newton Reservoir is located in Cache County. As of 2006, the estimated population of Cache County was 98,662 of which 12.4 % were living below poverty level (2004 estimate) and 13.1% belonging to various minority groups. (Census Bureau 2008.)

Implementation of the Proposed Action would not disproportionately (unequally) affect any low-income or minority communities within the project area. The proposed project would not involve major facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. This action would therefore have no adverse human health or environmental effects on minority and low-income populations as defined by environmental justice policies and directives.

# Chapter 4 - Environmental Commitments

The following environmental commitments would be implemented as an integral part of the proposed action.

1. Additional Analysis-If the proposed action were to change significantly from that described in the Final EA because of additional or new information, additional environmental analysis including cultural and paleontological analyses may be necessary.
2. A General Construction Storm Water Permit from the State of Utah Division of Water Quality would be required.
3. Air Quality Monitoring - The proposed action in this Final EA shall be subject to Utah Air Quality Rule R307-205-7, Mining activities. The project proponent shall secure all necessary permitting related to the control and monitoring of fugitive dust and other particulate matter.
4. Public Safety, Access and Transportation - The proposed access in this Final EA shall not inhibit the existing prescriptive easement allowing access to the top of Little Mountain. The project proponent shall provide an access point to the existing access road through the course of construction and during operations. The site shall be controlled through a gated access point and adequate fencing shall be maintained through the course of operations to limit access to the general public to the excavation site. Furthermore, the proposed action in this Final EA shall be subject to all Cache County requirements for thoroughfare and access on 5800 West.
5. Disturbed Area Reclamation - All disturbed areas outside the open pit excavation shall be graded and revegetated within one year of construction to meet Bureau of Reclamation standards. These areas include but are not limited to road cut and fill slopes, stormwater retention/detention basins, screen berms, topsoil stockpiles and any other impacted areas. All disturbed areas will be monitored by Zeotech Corporation for five years to ensure Reclamation standards are met for weed control and revegetation. Following five years of treatment and monitoring if Reclamation standards are not met Zeotech Corporation will be required to apply additional weed treatment and revegetation treatment as needed.
6. Cultural Resources - Any person who knows or has reason to know that he/she has inadvertently discovered possible human remains on Federal land, must provide immediate telephone notification of the discovery to Reclamation's Provo Area Office archaeologist. Work would stop until the proper authorities were able to assess the situation on-site. This action would promptly be followed by

written confirmation to the responsible Federal agency official with respect to Federal lands. The Utah State Historic Preservation Office and interested Native American tribal representatives, in this case the Northwest Band Shoshone Tribe located in Brigham City, Utah, would be promptly notified. Consultation would begin immediately. This requirement is prescribed under the Native American Graves Protection and Repatriation Act (43 CFR Part 10); and the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470).

The above process is listed on a “yellow card,” to be placed in the cabs of heavy equipment used during construction of the proposed project. This card would be distributed to the equipment operators and verbal direction and description of possible inadvertent discovery scenarios would be given at a pre-construction meeting by the Provo Area Office archaeologist prior to any ground-disturbing activity.

# **Chapter 5 - Consultation and Coordination**

## **5.1 Introduction**

This chapter details the consultation and coordination between Reclamation and other Federal, state, and local government agencies, Native American Tribes, and the public during the preparation of this Final EA. Compliance with NEPA is a Federal responsibility that involves the participation of all of these entities in the planning process. NEPA requires full disclosure about major actions taken by Federal agencies and accompanying alternatives, impacts, and potential mitigation of impacts.

## **5.2 Public Involvement**

A public scoping period was conducted from October 9 to November 14, 2008, to provide the public an opportunity to give input regarding the scope of this EA. One scoping comment was received and considered in preparing the EA.

A Final EA was sent on March 24, 2009 to over 50 municipalities, organizations or agencies, and private land owners considered to have an interest in the proposed action. Two comment letters were received and considered in preparing this final EA.

## **5.3 Native American Consultation**

Reclamation has conducted Native American consultation during the public scoping process. Letters describing the proposed project, including maps have been sent by the Provo Area Office archaeologist to Ms. Patty Timbimboo-Madsen, Director of Cultural and Natural Resources for the Northwestern Band of the Shoshone Nation, Brigham City, Utah. This consultation was conducted in compliance with 36 CFR 800.2(c)(2), on a government-to-government basis. Through this effort, the tribe is given a reasonable opportunity to (1) identify any concerns about historic properties; (2) advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance; (3) articulate their views on the undertaking's effects on such properties; and (4) participate in the resolution of adverse effects.

## **5.4 Coordination with Other Agencies**

A paleontological report was requested from the UGS and received in December 2008. The UGS determined that unless fossils are discovered as a result of construction activities, this project should have no impact on paleontological resources.

## Chapter 6 - List of Preparers

The following is a list of preparers who participated in the development of the Final Environmental Assessment for the Little Mountain Zeolite project. The project team includes private consultants, Reclamation team members and other contributors.

<b>Name</b>	<b>Position Title</b>	<b>Contribution</b>
<i>Reclamation Team</i>		
Peter Crookston, MS	Environmental Protection Specialist	NEPA Compliance
Russ Findlay, MS	Biologist	Threatened and Endangered Species
Malaina Gaddis	Student Trainee (Biological Science)	Project lead for NEPA compliance
Beverley Heffernan, AB History	Chief, Environmental Group	Environmental Justice; Indian Trust Assets; NEPA Compliance
Brian Joseph, MA	Archaeologist	Cultural Resources; Paleontology
<i>Cache Landmark Team</i>		
Lance Anderson, PE	Supervisory Civil Engineer	Project Oversight; Public Safety, Access and Transportation
Ben Davis, BLA	Site Planner	Recreation; Visual Resources
Tim Gibbons, PE	Civil Engineer	Soils and Geology
Kristofor L. Kvarfordt, RLA	Landscape Architect	Project Management Vegetation; Wildlife Resources
Danny Macfarlane, EIT	Engineering	Air Quality; Water Quality
<i>Other Contributors</i>		
Stephen Peterson	Professional Geoscientist	Soils and Geology
Jon Scott, RLA	Landscape Architect	Alternatives Analysis

**Table 6.1-1** List of Preparers



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