

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

## **2.1 Introduction**

The proposed action analyzed in this EA is Reclamation's authorization for Summit Water Distribution Company to construct a new water intake structure at East Canyon Reservoir and pipeline crossing Reclamation lands. The EA will be used to determine the potential effects to the human environment and will serve to guide Reclamation's decision, along with other pertinent information, whether to implement the proposed action.

If Reclamation decides to implement the proposed action, Summit Water Distribution Company would be authorized to proceed with its proposed project, a new water intake would be constructed in East Canyon Reservoir and the necessary pipeline, powerline, and pumping station would be constructed in order to convey this water to an existing 30-inch ductile iron pipeline built by Summit Water Distribution Company along the East Canyon Road.

The proposed action would be designed with the capacity to withdraw up to 12,500 acre-feet per year of water from East Canyon Reservoir into facilities already built or under construction.

If authorized to proceed, Summit Water Distribution Company would construct, operate, and maintain this new system.

A number of action alternatives have been identified and considered in preparing this 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 Summit Water Distribution Company to construct the proposed water intake structure and pumping station at East Canyon Reservoir. The no action alternative does not require any change to project features.

## **2.3 Action Alternative**

The following action alternative is an intake structure and pipeline to withdraw water from the reservoir. Up to 12,500 acre-feet of water per year would be delivered via this pipeline to the existing Jeremy Ranch water treatment plant. Of this water to be developed, 5,000 acre-feet would come from a long term lease agreement with DWCCC, approximately 2,000 acre-feet would come from existing shares held by SWDC, and 5,500 acre-feet could come from additional water acquisitions from the Weber Basin Project or DWCCC. In addition to the 12,500 acre-feet of project water, SWDC would voluntarily dedicate 2 cfs of the pipe capacity for non-consumptive water deliveries to help improve the East Canyon Creek fishery (Section 3.2.2.1).

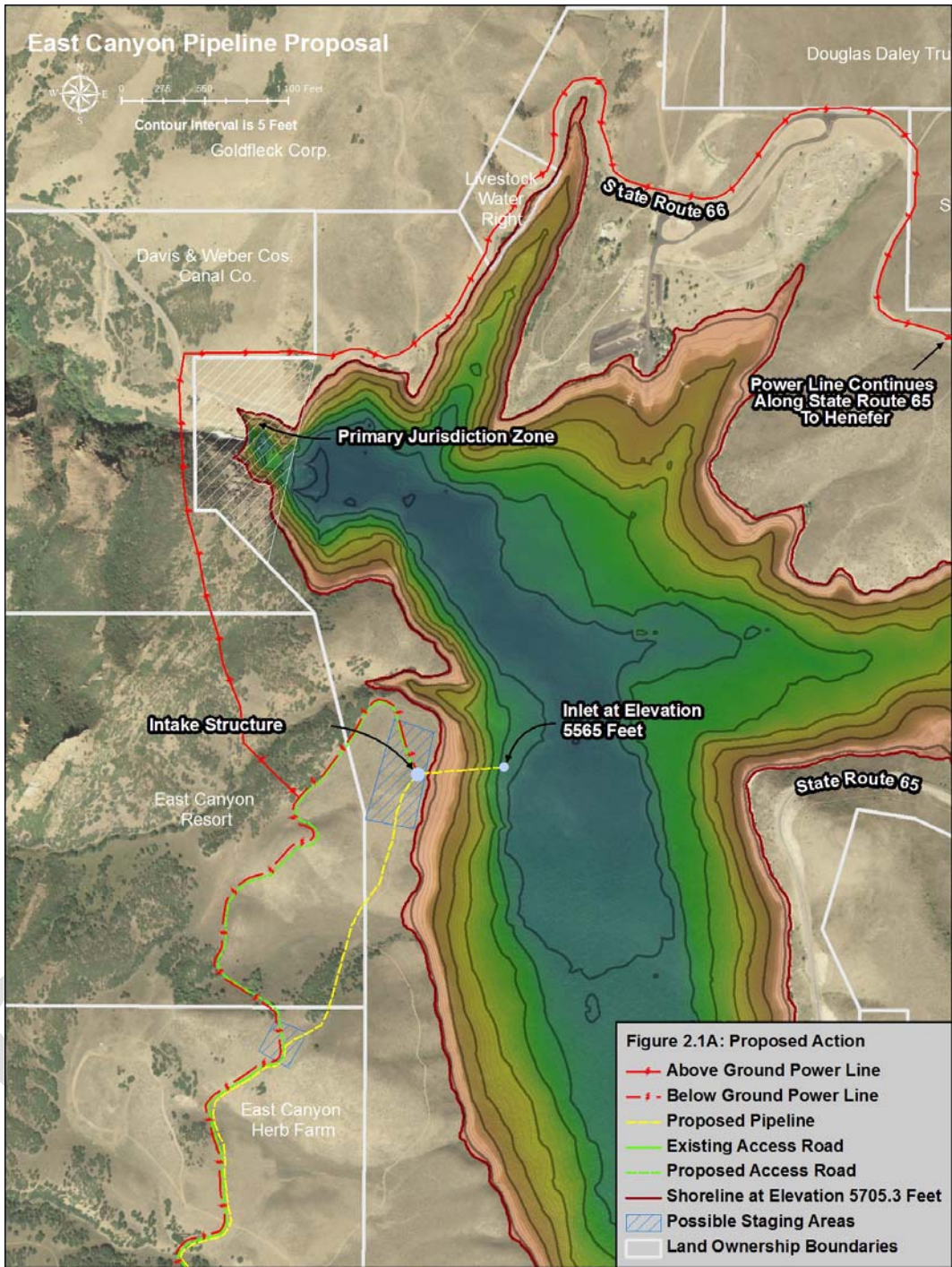
### **2.3.1 Lake Tap with Vertical Shaft Intake Structure**

Reclamation is considering granting the necessary easements and approvals for the construction of facilities to pump water from East Canyon Reservoir and convey it upstream approximately one mile south of the East Canyon Resort (Figures 2.1A-2.1D).

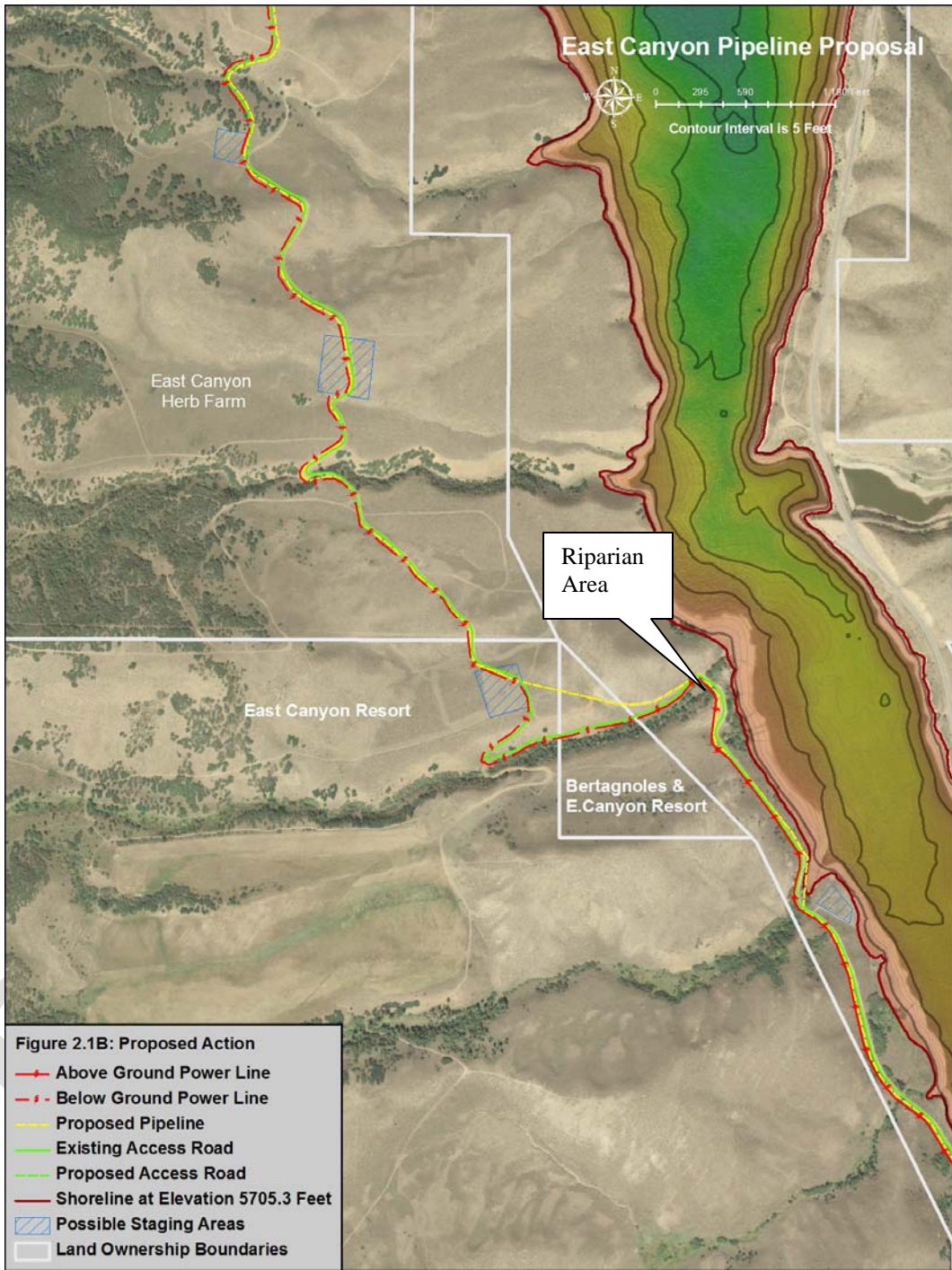
This action alternative would involve the construction of a large diameter vertical shaft that is connected to East Canyon Reservoir with a lateral (horizontal) tunnel. A vertical shaft with a lateral inlet tunnel, commonly referred to as a “lake tap,” is an established construction method that has been successfully implemented for several water supply projects, including those in Lake Havasu City, Arizona, and Las Vegas, Nevada.

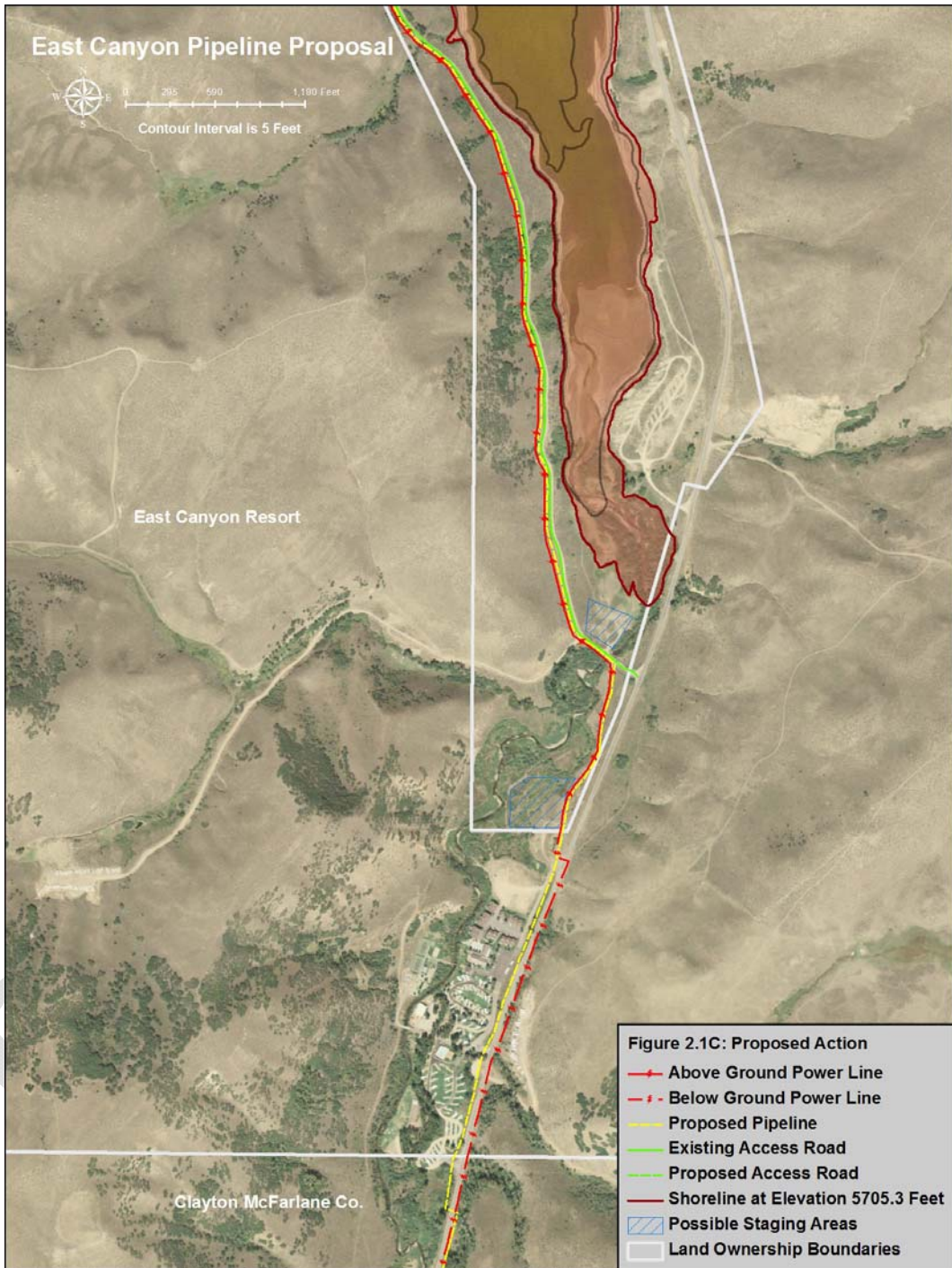
The preferred location for the lake tap structure is approximately 1/3 mile south of East Canyon Dam on the West Side bank of the reservoir (Figure 2.2). The lake tap structure would consist of a 15 to 20 foot diameter vertical shaft drilled roughly 160 feet deep. The lateral tunnel would be drilled at the bottom of the vertical shaft due east into the reservoir. A 48-inch pipe would be extended through the lateral tunnel into the reservoir (Figure 2.3).

In order to obtain a consistent supply of water, the intake would be placed at elevation 5,565 feet which corresponds to half a foot above the top of dead pool and 12 feet below the top of inactive storage. The intake would be screened and a minimum of 15 feet off the reservoir bottom.











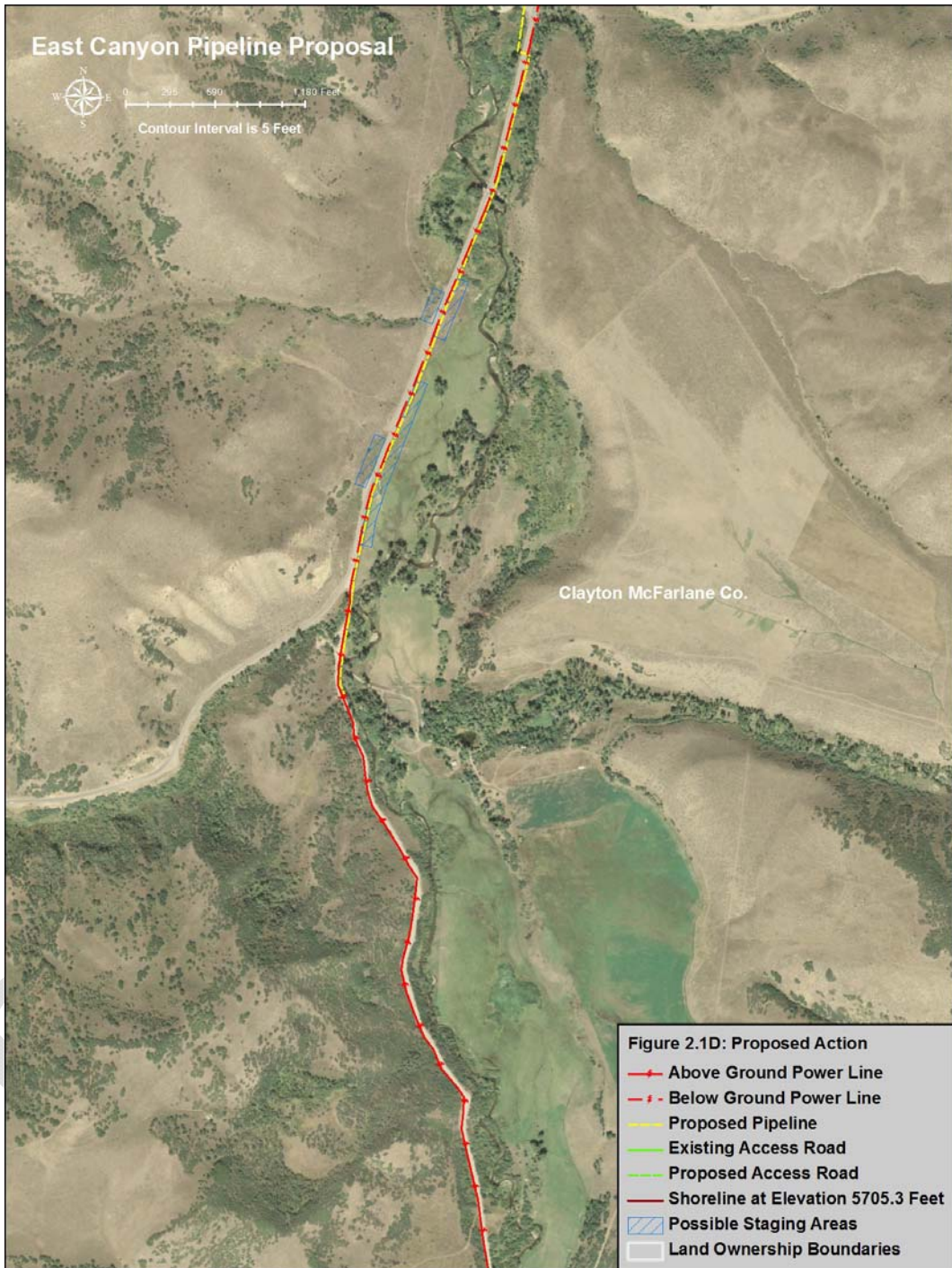




Figure 2.2: Intake Location



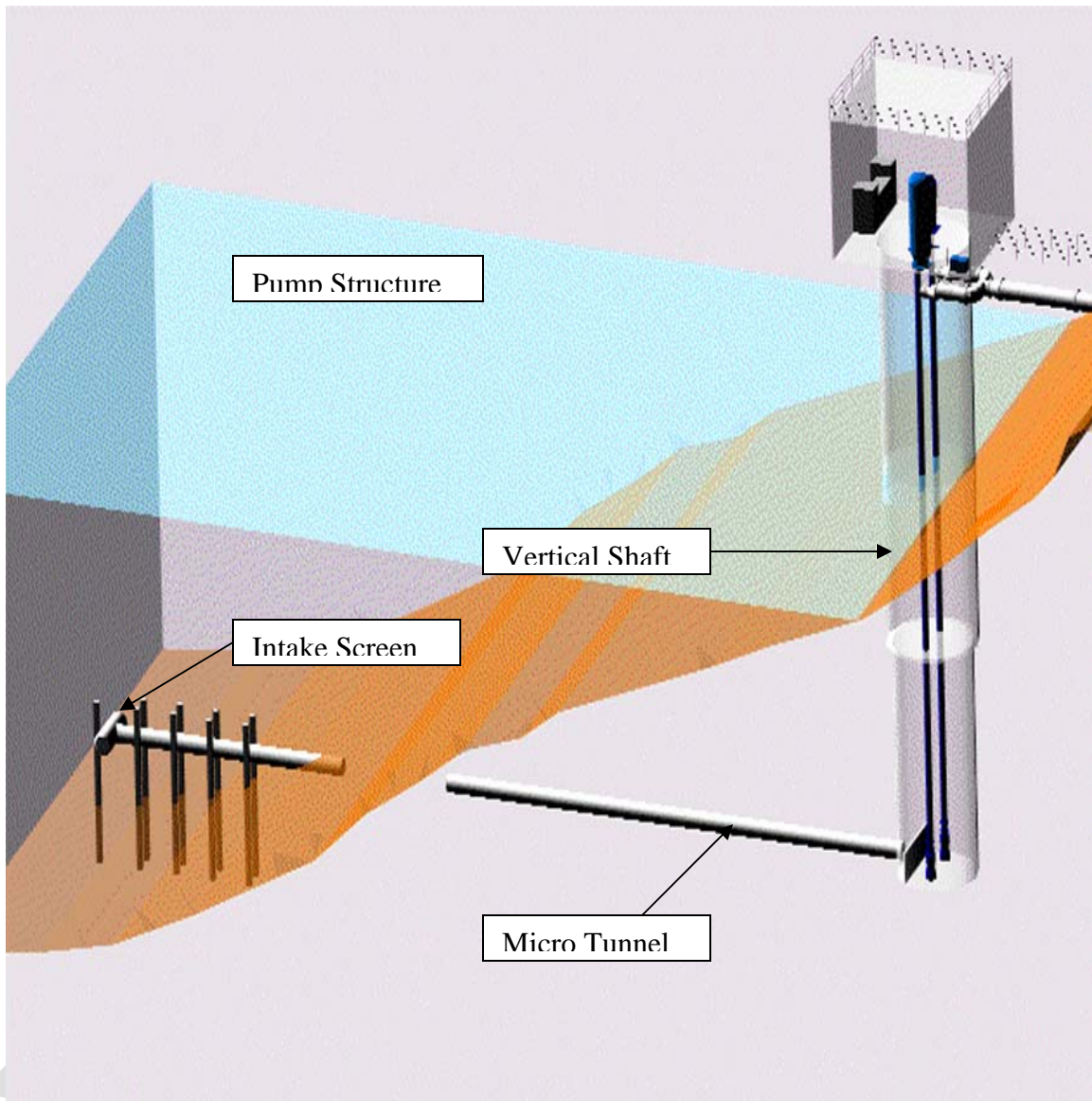


Figure 2.3: Lake Tap Structure

A pump station would be installed on top of the vertical shaft and the reservoir water would be pumped into a buried 30-inch ductile iron pipe that would mainly follow the access road on the West Side of the reservoir. The buried pipe would follow the access road to where it tees with State Road 65 at which point the pipe would travel along the west shoulder of State Road for 1.5 miles to the intersection of the state road with Jeremy Ranch Road.

The pipeline would require a temporary 50 foot wide easement for construction and a permanent 50 foot wide easement for operation and maintenance. Temporary staging areas along the pipeline would be required, including a large



one (about 120 by 400 feet) at the intake site, and about 9 additional smaller ones along the pipeline and access road. A permanent 120 by 120 foot easement would be required at the intake site. The west access road would need to be up to 75 feet wide for both a temporary and a permanent easement where the pipeline follows the road. The road by itself would need to be 26 feet wide for county road standards and an additional 15 feet for powerline clearance. In some places the cut and fill of the road would temporarily disturb a much larger area. The buried powerline (when not along the existing road) would need a 20 foot wide temporary easement and a 10 foot wide permanent easement. Most of the overhead powerline would be built in the existing road rights-of-way.

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

Summit Water Distribution Company evaluated a number of alternatives in 1999 to develop a water supply of 5,000 acre-feet per year for the Snyderville Basin area. These alternatives are described in their report titled “East Canyon Pipeline Project, Environmental Assessment (Morgan and Summit Counties, Utah), September 1999.” Their proposed action was called the West Side Alignment, and included a diversion facility consisting of five diversion intake pipes extending into the reservoir between the 1916 concrete dam and the 1896 rock-fill dam. This alternative is referred to as the 1999 Intake Structure and Upper Alignment.

Summit Water Distribution Company also looked at the following options:

- East Side Alignment – Alternative A
- Development of Existing Water Rights
- Direct Diversion from East Canyon Creek near Jeremy Ranch
- East Side Alignment – Alternative B
- East Side Alignment – Alternative C
- West Side Alternatives – several pipeline alignments

Reclamation did not re-evaluate the alternatives already studied in detail by Summit Water Distribution Company. However, during the Value Engineering study effort, the following additional ideas/alternatives were considered, but eliminated from further study. These alternatives would also function to locate a reliable source of water and to lift water.

### **2.4.1 1999 Intake Structure and Upper Alignment**

The intake structure was proposed to be located in Reclamation’s primary jurisdiction zone and may not be allowable because of security concerns. The pipeline alignment was contested by the affected landowners and other publics.

#### **2.4.2 Use Old Dam as an Anchor for Intake Structure**

This alternative would require costly investigation and access would be difficult. It is also within Reclamation's primary jurisdiction zone.

#### **2.4.3 Floating Intake Structure**

This alternative would not provide enough capacity for the head required, and ice could pose a significant problem.

#### **2.4.4 Tap into Dam Outlet Works**

This alternative was physically and economically difficult. A longer pipeline would be required, and it would be difficult to get the pipeline out of the canyon and around the dam. It would result in greater expense rather than savings.

#### **2.4.5 River Intake Structure**

This alternative was determined to be unreliable because of insufficient flows upstream of the reservoir and water quality may be poorer than if taken from East Canyon Reservoir. Ice build up during winter operation would pose a problem for a river diversion.

#### **2.4.6 Place an Intake Structure on the East Side of the Reservoir**

This alternative was initially considered and eliminated from consideration because placing a pipeline along the east side of the reservoir would have required that a significant portion of Highway 65 be replaced. The reconstruction costs associated with rebuilding Highway 65 made an East Side pipeline alignment unfeasible.

### **2.5 Preferred Action Alternative**

As a result of the analysis presented in this EA and other studies, Reclamation considers the Lake Tap with Vertical Shaft to be the preferred action alternative.