substation and a transmission structure on the Mead-Liberty 345-kV transmission line, west of the proposed substation, and OPGW spool storage and handling areas. It is anticipated that all pulling and tensioning sites would be within the existing transmission line right-of-way. Each pulling and tensioning site would temporarily disturb an area about 120 by 120 feet or 0.33 acre. The sites would be located in previously disturbed areas to the extent feasible within the existing right-of-way. The number of pulling and tensioning sites would depend on the lengths of OPGW procured for the installation. Typically, the cable lengths average about 3 miles in length. Therefore, with a length of about 46 miles, 15 sites would be needed, involving the temporary disturbance of about 5 acres of existing right-of-way.

The OPGW would be composed of not more than 48 dielectric fibers (which do not conduct electricity) encased in a metal jacket that protects the fibers and serves the purpose of the static line it would replace. The fibers with their protective coatings, including the metal jacket, would create a cable about 1 inch in diameter. The cable would not emit any additional noise, or electric or magnetic fields. The OPGW would be attached at or near the top of each electrical transmission line structure above the electrical conductors. The OPGW would not be used for commercial purposes.

2.2.3 Water Supply System

The water supply system for the Project water requirements would consist of up to five groundwater wells, pumps, a water storage tank, and associated piping. Groundwater from a deep aquifer in the Big Sandy Valley is the planned source of water for the Project. Raw water would be provided from up to five groundwater wells drilled and completed to a depth of about 1,500 feet. Up to four of these would be on private land in Section 7, and one well that already has been drilled as a test production well is in the southwest corner of Section 5 adjacent to the proposed power plant site. A water pipeline (either aboveground or buried within the access road right-of-way) would direct the water to the proposed power plant and agricultural area. Where the pipeline would parallel the power plant access road, it would be buried within the road right-of-way. Figure 2-10 shows the proposed location of the wells and water pipelines, plus other plant utilities.

Under normal operating conditions, two of the wells would be pumped at any one time, each at a rate of about 1,200 gpm. The wells would be cycled at about two-week intervals. The maximum pumping rate would be about 5,000 gpm, which would utilize up to all five of the wells. The maximum annual consumption of water would be about 4,850 acre-feet (equivalent to 3,000 gpm). Approximately 81 percent of the water extracted would be used for cooling within the cooling towers themselves and 2 percent of the water would be conveyed to the evaporation ponds. Of the remaining 17 percent, approximately 13 percent would be used for the proposed agricultural activities, and 4 percent would be used for plant personnel and evaporative losses.

The electrical groundwater pumps would be powered from the proposed power plant via an underground 4,160-V electrical circuit. That line, and a control line, would be buried in or immediately adjacent to the well access roads.

An aboveground pipeline from each well would be constructed to a 250,000-gallon water storage or “head” tank to be located on the northeast well pad site in Section 7 (Figure 2-10). A single underground line would convey water from this tank to the 600,000-gallon raw water supply tank on the proposed power plant site near the administration (control room) building. Some of the wells also would be able to provide water directly to the proposed agricultural activities discussed in Section 2.2.6 through either aboveground or buried pipelines that would be placed within the access road right-of-way.

Demineralized water for power plant requirements would be generated from the well water using a reverse-osmosis system, followed by a mixed-bed demineralizer unit. The output of this unit would go to one demineralized water

storage tank with a capacity of about 600,000 gallons, located on the proposed power plant site near the raw water tank. It then would be distributed to the various users within the proposed power plant and associated facilities.

2.2.4 Access Road

Access to the proposed power plant site, groundwater well field, and other properties in the vicinity would be principally provided by about 2.3 miles of a new Mohave County road. The road would begin at the Cholla Canyon Ranch Road intersection with US 93, cross Sycamore Creek, and end at the proposed power plant. The portion of the access road from the southwest corner of Section 5 to the proposed power plant would be a private road.

The Mohave County road would be constructed within a 150-foot-wide county road and utility easement adjacent to the section lines between Sections 1 and 12, T15N, R13W and Sections 6 and 7, T15N, R12W. The Mohave County road right-of-way would not be fenced. The private road would be posted to reduce unauthorized access to private lands.

The area needed for construction would be a 90-foot wide path for a total disturbed area of 21 acres. The width of the permanent roadbed would be 26 feet wide. The road would include a concrete box culvert at the Sycamore Creek crossing and seven pipe culverts at smaller drainages. The concrete box culvert across Sycamore Creek would be constructed of 10 individual boxes, each having a cross-section of 12 feet wide by 8 feet high and each will be 58 feet long as the creek flows. The boxes would be constructed side by side and extend 120 feet across the Sycamore Creek streambed. The culvert would provide an 8-foot clearance above the streambed and an apron with riprap would be provided at grade on the downstream side of the culvert. The box culvert and road would be designed to handle a 100-year storm event.

Figure 2-11 shows the proposed location of the access road and associated land jurisdiction. The road would cross about 700 feet of BLM-managed public land at the junction with US 93 and a small portion of BLM-managed land at the southwest corner of Section 5.

2.2.5 Natural Gas Supply Pipeline

A new 16- to 20-inch diameter high-pressure underground natural gas supply pipeline would bring natural gas to the proposed power plant from one or more of three interstate natural gas transmission pipelines located about 39 miles north of the proposed power plant site, immediately north and south of I-40. The proposed natural gas supply pipeline would have a nominal 50-foot-wide right-of-way and request authorization for construction disturbance within a nominal 100-foot-wide area. The pipeline would be constructed, owned, and operated by either the Project proponent (Caithness) or another entity. Figure 2-12 depicts the location of the proposed and alternative pipeline corridors evaluated in this Draft EIS.

This Draft EIS uses a corridor concept to locate and analyze alternative pipeline routes. Rather than identifying a specific alignment for the pipeline right-of-way, the routes follow broader corridors that allow adjustments to be made in the final engineered alignment of the pipeline, so that constraints identified during pre-construction surveys and right-of-way negotiations can be accommodated. Use of corridors rather than a specific alignment in this EIS provides the flexibility to make adjustments for these circumstances.

To the extent feasible, the pipeline would be located within a corridor such that permanent displacement of an existing use, such as a residence or business, is avoided. Compensation for use of lands would be determined through mutually agreeable business negotiations or, to the extent applicable, a court of law under a condemnation action. If the pipeline owner does not have the power of eminent domain, it would not be able to initiate a condemnation action and no use of the land would occur unless the proponent obtained the consent of the landowner.