- Permit from the U.S. Army Corps of Engineers (Corps) in compliance with Section 404 of the Clean Water Act, as amended (permit has been acquired; see Appendix A)
- New Mexico Department of Transportation permit to install utility facilities in a public right-of-way

### Decision to be Made

Reclamation is the lead federal agency responsible for determining whether the proposed action will have a significant effect on the human environment. If the EA demonstrates that the environmental consequences are not significant, Reclamation will issue a Finding of No Significant Impact (FONSI). The FONSI will allow the project to proceed without preparation of an Environmental Impact Statement (see Chapter 5 for additional environmental compliance requirements).

# Chapter 2. Proposed Action and Alternatives

This EA analyzes one design alternative for addressing the purpose and need for the project. Several alternative pipeline alignments were considered but eliminated due to impacts on cultural resources. The No Action Alternative is included as a baseline for comparing potential effects of the action alternative.

### No Action Alternative

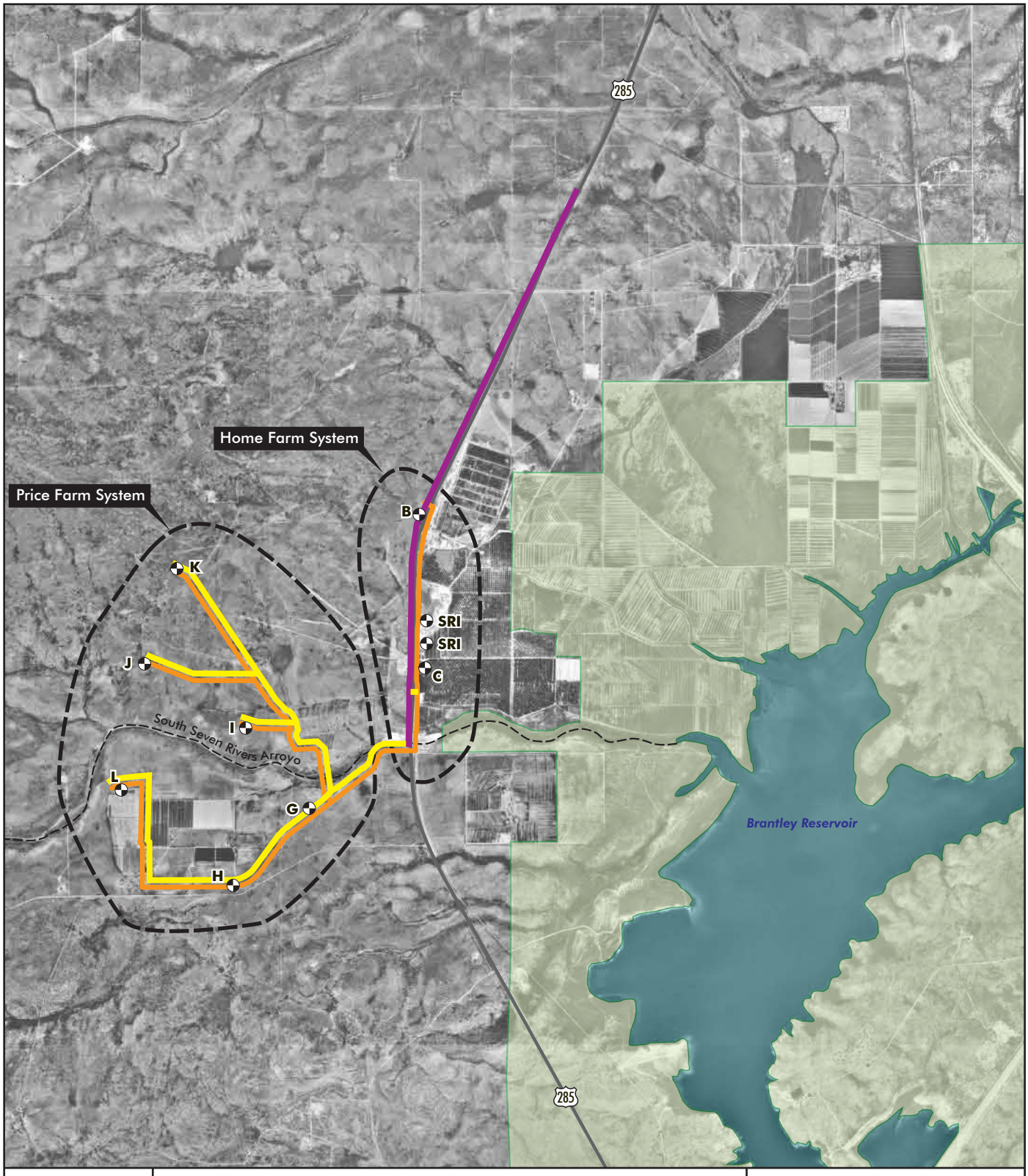
Under the No Action Alternative, Reclamation would not provide a license for right-of-use to the NMISC. The NMISC would not construct a pipeline and associated facilities through Reclamation-administered land to Brantley Reservoir. In the absence of a license from Reclamation, the NMISC would construct an alternative pipeline alignment that would release wellfield water into South Seven Rivers arroyo upstream of federal property. This alternative would not be practical because water delivered to the arroyo would be lost to a variety of reasons prior to reaching Brantley Reservoir, including:

1. High seepage to the shallow aquifer underlying the arroyo;
2. Heavy infestations of salt cedar;
3. Presence of multiple earthen dams (height 7 to 8 feet) perpendicular to the arroyo channel.

In the No Action Alternative, a buried pipeline network would carry water from 10 to 13 wells (Price Farm System and Home Farm System) to the South Seven Rivers arroyo (see Figure 2). Total pipeline length would be 7.3 miles, and maximum disturbance width would be 50 feet, resulting in a temporary disturbance area of 44.2 acres. Under the No Action Alternative, the Lewis Farm System would likely be abandoned due to the lack of a feasible way to get the water to the reservoir. To meet project water demands, it would be desirable to increase the volume pumped by the Price Farm System and the Home Farm System to compensate for the loss of the Lewis Farm System's capacity; however, this is not physically possible due to pumping constraints.

The maximum pipe diameter would be 42 inches, designed to carry a total of 22,400 gallons per minute (gpm) from the Price and Home Farm Systems. The Price Farm System would operate under gravity flow conditions, and the Home Farm system would require pressurization with pumps. An outfall/stilling basin structure would be constructed to prevent erosion damage during pumping and discharge. The final dimensions of the outfall/stilling basin structure would be 20 feet by 25 feet. Riprap scour protection would be placed at the base of the outfall/stilling basin structure.

Upgrades to existing power supply lines and new power supply lines would be required for well pumps and pipeline pressurization (see Figure 2). New power supply lines for the well pumps would be placed in the same disturbance area as the water pipeline. About 3.1 miles of the existing power supply system

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## NMISC Seven Rivers Pipeline

- Pipeline Alignment
- Existing Powerline
- Existing Powerline Upgrade
- New Powerline
- Reclamation Property
- Well Location

0 ½ 1 Mile

N

## Figure 2
## No Action Alternative

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March 2007

would require upgrading. For the No Action Alternative, the upgraded transmission line corridor would be along the western side of U.S. 285, within and just west of the right-of-way fence. For this 3.7 miles, the existing utility poles would be removed and replaced. The disturbance width would be 50 feet or less, and the total disturbance would be 22.4 acres. All disturbances other than the pole footprint would be temporary. The upgraded power poles would have the same height and diameter of the existing power powers. The spacing of the power poles would be 300 feet instead of the existing 400-foot spacing. Once pole and power supply line installation is completed, the disturbed areas along power line alignments would be re-seeded.

An outfall structure would be located at the terminus of the combined Price Farm-Home Farm system (see Figure 3). The structure would have baffle-style energy dissipaters to control flow. The shoreline would be reinforced with a riprap anti-scour protection to prevent erosion.

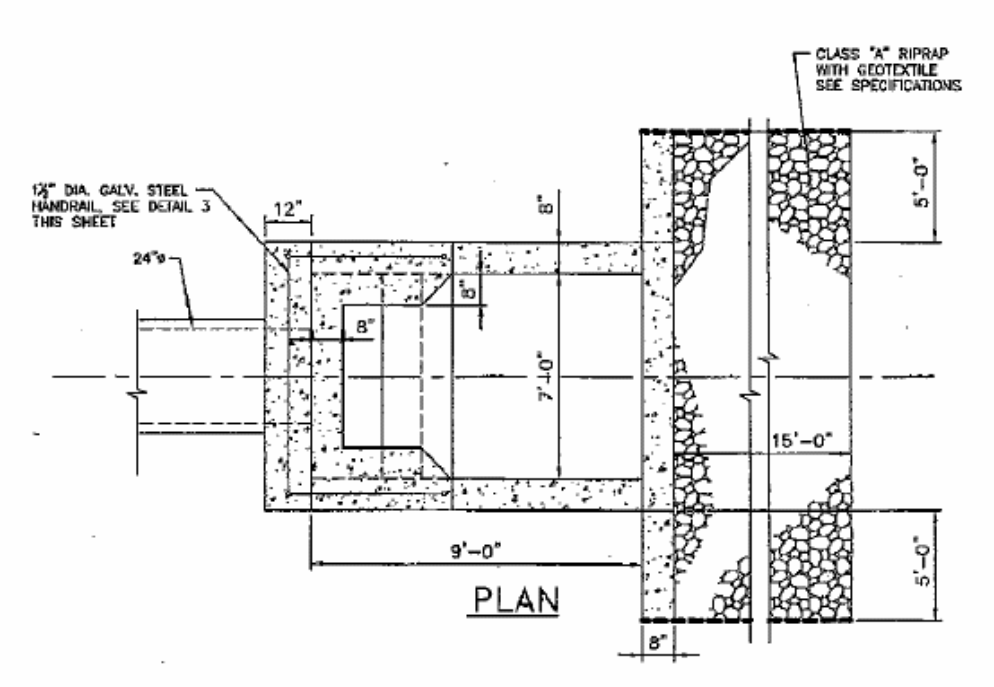
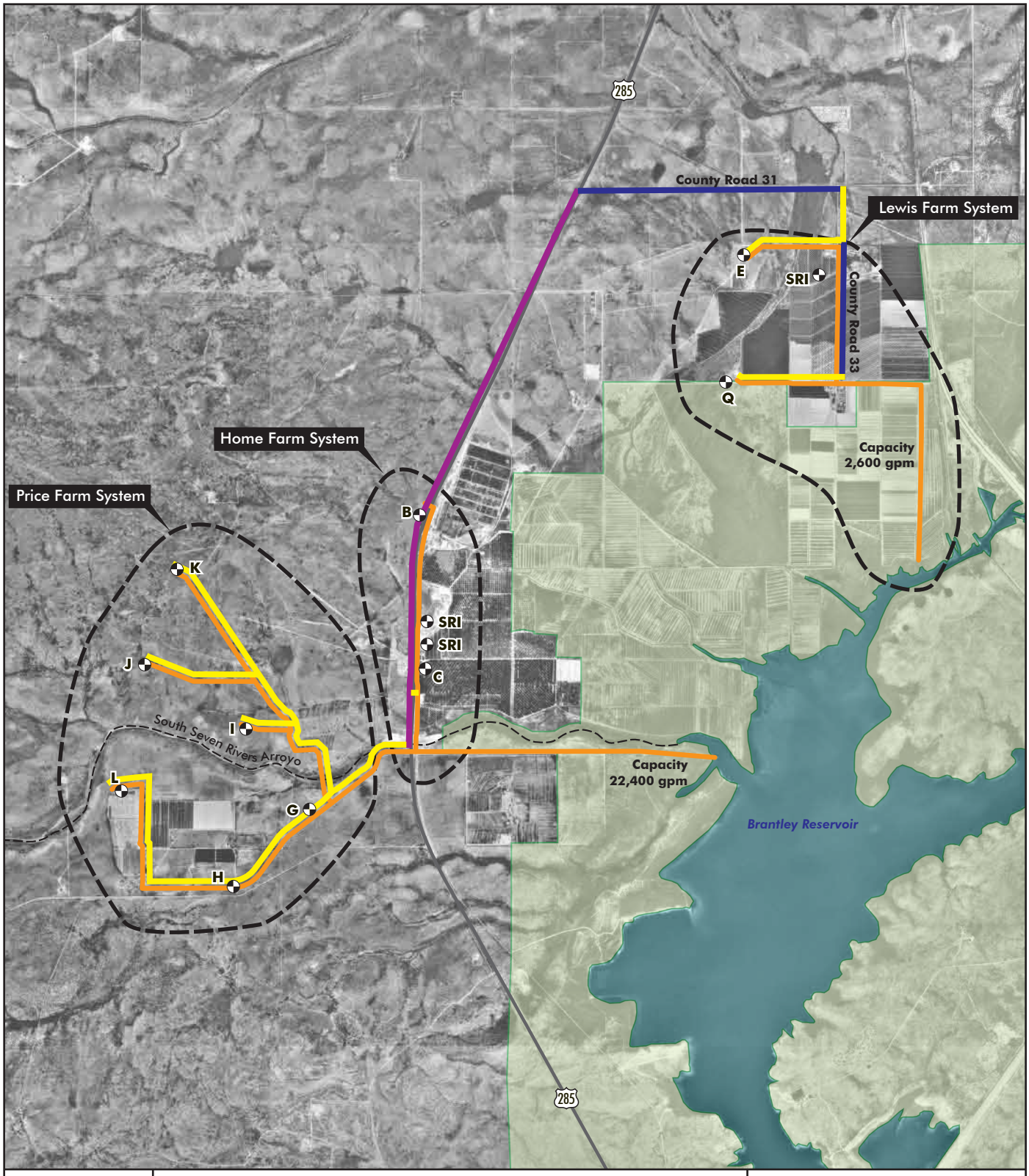



**Figure 3. Diagram of proposed outfall/stilling basin construction.**

Minimum burial depth for the pipeline would be 3 feet, and actual burial depth would range from 3 feet to 15 feet. Deeper burial would be required in some locations in order to maintain gravity flow. During construction, all open trenches would be constructed to reduce small mammal access and/or to allow small mammals to escape. No trenches would be left unprotected during the night. Pressure tanks would be buried at intervals along the pipeline as needed. Once pipeline installation is completed, the disturbed areas along pipeline alignments and in staging areas would be re-seeded. The construction disturbance width for the pipeline would be a maximum of 50 to 65 feet. With the exception of manhole, surge tanks, and outfall structure locations, all disturbances would be temporary.

Due to the high permeability of the soils in the South Seven Rivers arroyo and other factors mentioned previously, the No Action Alternative would be less efficient in water delivery, and could result in higher evaporation losses and increased aquifer recharge instead of the desired result of supplementing storage in Brantley Reservoir. The No Action Alternative would not meet the project purpose and need.

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## NMISC Seven Rivers Pipeline

- Pipeline Alignment
- Existing Powerline
- Existing Powerline Upgrade
- New Powerline
- Reclamation Property
- Well Location

0 ½ 1 Mile

N

# Figure 4
# Proposed Action

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March 2007

## Proposed Action

Under the Proposed Action, Reclamation would provide a license for right-of-use to the NMISC, which would allow for the construction and operation of an underground pipeline across Reclamation-administered land to Brantley Reservoir (see Figure 4). The average annual volume proposed for delivery to the reservoir is 12,000 acre-feet. This volume would vary annually.

Under the Proposed Action, the pipeline would consist of two distinct segments. Total pipeline length would be 10.5 miles, and a maximum disturbance width would be 50 feet, resulting in temporary disturbance area of 63.6 acres. There would be two discharge points—one from the northern area wells (Lewis Farm System) into an outfall/stilling basin structure at the northwestern edge of Brantley Reservoir, and one from the western area wells (Price Farm System and Home Farm System) into an outfall/stilling basin structure on the west shore of Brantley Reservoir south of the South Seven Rivers arroyo. The dimensions of the outfall/stilling basin structures for both the Lewis Farm System and Price and Home Farm Systems would be 20 feet by 25 feet (see Figure 3). Riprap scour protection would be placed at the base of the outfall/stilling basin structure. The maximum pipe diameter for the western system (Price Farm and Home Farm) would be 42 inches, designed to carry a total of 22,400 gpm from the western section. The maximum pipe diameter for the Lewis Farm system would be 22 inches, designed to carry 2,600 gpm from the northern section. The maximum rate of delivery would be 25,000 gallons per minute (gpm), or 55.7 cubic feet per second (cfs). Most of the system would operate under gravity flow conditions.

The Price Farm and Lewis Farm systems would operate by gravity flow, and the Home Farm system would require pressurization with pumps. Minimum burial depth for the pipeline would be 3 feet, and actual burial depth would range from 3 feet to 15 feet. Deeper burial would be required in some locations in order to maintain gravity flow. Pressure tanks would be buried at intervals along the pipeline as needed. During construction, all open trenches would be constructed to reduce small mammal access and/or to allow small mammals to escape. No trenches would be left unprotected during the night.

Upgrades to existing power supply lines and new power supply lines would be required for well pumps and pipeline pressurization (see Figure 4). New power supply lines for the well pumps would be placed in the same disturbance area as the water pipeline. About 3.4 miles of the existing power supply system would require upgrading. For the Proposed Action Alternative, the upgraded power supply corridor would be along the west side of U.S. 285, within and just west of the right-of-way fence. For this 3.7 miles, the existing utility poles would be removed and replaced. A disturbance width of approximately 50 feet would result from removal and replacement of the utility poles and installation of a new power supply line (22.4 acres). New power supply line installation also would be necessary. New power supply lines would be required for the Lewis Farm System. The first portion would be south from the intersection of County Road 31 and County Road 33 along County Road 33, and would be 0.3 mile long (2.0 acres). New power supply lines would also follow the pipeline corridors to Wells E and Q. New power supply lines on the Price Farm System would follow the pipeline alignments (see Figure 4). The Home Farm System would require only a short tie-in section of power supply line (see Figure 4). All disturbances other than the pole footprint would be temporary. The upgraded power poles would have the same height and diameter of the existing power poles. The spacing of the power poles would be 300 feet instead of the existing 400-foot spacing. Once pole and power supply line installation is completed, the disturbed areas along the alignments would be re-seeded.

The western section of the Seven Rivers pipeline would cross 1.3 miles of federal property and 6 miles of private property. The northern section of the pipeline would cross 1.4 miles of federal property and 1.5 miles of private property.

Two crossings of U.S. 285 would be required, one near Well B on the Home Farm System and one from the Price Farm System (see Figure 4). These crossings would be encased in steel and would be accomplished by boring under the roadway.

Outfall structures would be located at the termini of the combined Price Farm-Home Farm system, and the Lewis Farm System (see Figure 3). These structures would have baffle-style energy dissipaters to control flow. The shoreline would be reinforced with a riprap anti-scour protection to prevent erosion.

Once pipeline installation is completed, the disturbed areas along pipeline alignments and in staging areas would be re-seeded. The construction disturbance width for the pipeline would be a maximum of 50 to 65 feet. With the exception of manhole, surge tanks, and outfall structure locations, all disturbances would be temporary.

Construction and maintenance access would be along existing rights-of-way. For the Lewis Farm System, ownership of a portion of County Road 33 (also known as Sweetwater Road) would be transferred from the Eddy County to the adjacent landowner. Reclamation holds a perpetual easement for access over the road known as County Road 33. An encroachment agreement will be provided to NMISC for placement of its pipeline with Reclamations senior rights. The NMISC will be responsible to ensure Reclamation and NMDGF unrestricted access and will repair the road to a condition as found or better. Reclamation will not be subject to agreements between NMISC and third parties.

### Actions Common to Both Alternatives

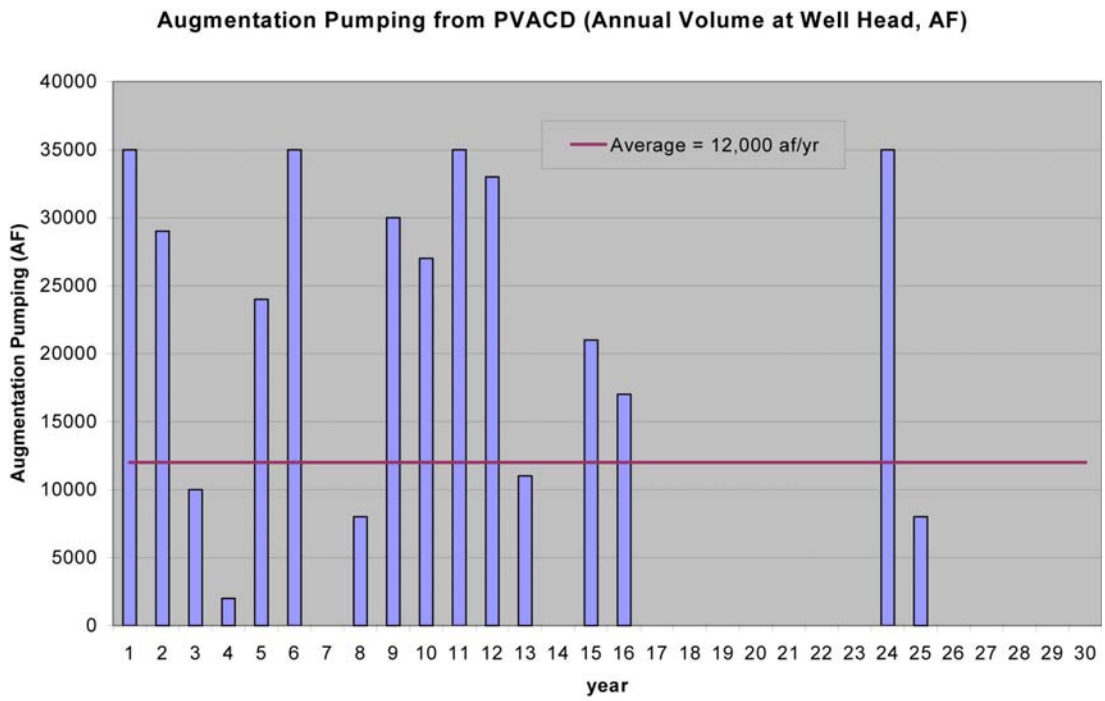
Augmentation pumping would be the similar for both the No Action Alternative and the Proposed Action. Augmentation pumping would occur based on Carlsbad Project water supply levels (acre-feet) listed in the Settlement Agreement. The Settlement Agreement lists "target dates" and "target supplies" for Carlsbad Project water (see Table 1). If the Project water supply is anticipated to fall short of the targets, water would be delivered from the augmentation wellfield to Brantley Reservoir until target levels are met. The Settlement Agreement states,

> "The State Engineer shall determine, in good faith consultation with CID, the United States and PVACD, the Project Water Supply on March 1, May 1, June 1, July 15, September 1 and November 1 of each year. The quantity of water delivered from the Augmentation Wells to the Pecos River pursuant to this Paragraph 9 shall be based upon the Project Water Supply on each of the "Target Dates", measured against a "Target Supply" for each of the Target Dates."

**Table 1. Settlement Agreement target dates and Carlsbad Project supply for augmentation pumping.**

| Target Date | Target Supply |
|---|---|
| March 1 | 50,000 acre-feet |
| May 1 | 60,000 acre-feet |
| June 1 | 65,000 acre-feet |
| July 15 | 75,000 acre-feet |
| September 1 | 90,000 acre-feet |

Augmentation well pumping modeling was completed based on the Settlement Agreement target dates, target volumes, and restrictions (Carron 2004; also see Appendix C). Historical water supplies were used in the modeling. In addition, augmentation water supply is limited in the Settlement Agreement to no more than 100,000 acre-feet during any 5-year accounting period and no more than 35,000 acre-feet during any one year. In Figure 5, the volume of augmentation water never exceeds the 35,000 acre-feet per year restriction, and also never exceeds 100,000 acre-feet during any 5-year period. This means that the target volumes in Table 1 would not be met. The average annual volume of water that NMISC anticipates would be delivered to the reservoir is 12,000 acre-feet. This volume would vary from year to year depending on hydrologic conditions. The maximum rate of delivery of the augmentation pumping would be 25,000 gpm, or 55.7 cubic feet per second (cfs). In addition, the NMISC may use the augmentation wells to deliver water to the New Mexico-Texas state line in the event of a shortfall in state line deliveries.




Source: Carron 2004.

**Figure 5. Augmentation pumping model results.**

### Actions Eliminated from Further Consideration

A pipeline alignment that would traverse BLM property was considered, but eliminated due to cultural resource concerns. Additionally, several minor realignments of the pipelines were completed to avoid cultural resource impacts.

### Preferred Action Alternative

As a result of the analysis presented in this EA, Reclamation considers the Proposed Action to be the preferred action alternative.