

Pipeline Construction in Sensitive Areas: El Paso's Kofa National Wildlife Refuge Experience

by James F. George

James F. George is an environmental consultant with the Environmental Affairs Department of El Paso Natural Gas Company in El Paso,

Texas. His duties are primarily related to obtaining the kinds of environmental permits and approvals discussed in this paper.

In order to meet the increasing demand for natural gas in the state of California, El Paso Natural Gas Company constructed a 13-mile loop pipeline of 30-inch O.D. (outside diameter) across the Kofa National Wildlife Refuge, located in

western Arizona, in late 1990. This article describes the regulatory hurdles that El Paso encountered for approval of the construction through that environmentally sensitive area, and how those hurdles were accommodated.

INTRODUCTION

If you were going to construct a pipeline, it would be hard to imagine a route more difficult than through a national wildlife refuge. When El Paso constructed its original 24-inch natural gas pipeline westward to California in 1946, the route went through what then was known as the Kofa Game Range, located approximately 100 miles west of Phoenix, in Yuma County, Arizona, and managed by the Bureau of Land Management (BLM). This game range, located in an area characterized by long hot summers, short mild winters and only three to eight inches of rainfall per year, was created by executive order of President Franklin D. Roosevelt in 1939 to protect the desert bighorn sheep and their habitat, as well as to protect the animals during their annual migration between the lambing grounds in the New Water and Plomosa Mountains located north of the pipeline, and the Kofa Mountains located to the south. The bighorn sheep population was down to less than 150 animals before the refuge was established, but the population has grown to over 600 animals at the present time and serves as a source of animals for transplanting to other areas. Bighorn sheep hunting, by permit, has been allowed on the refuge since 1960. The Kofa Game Range was renamed the Kofa National Wildlife Refuge in 1978 after it

was placed under the jurisdiction of the U.S. Fish and Wildlife Service two years earlier. Livestock grazing and wild burros were removed from the refuge in 1981 to further protect the bighorn sheep habitat.

No records exist of the environmental requirements El Paso had to meet when the original pipeline was constructed in 1946, but it's a new ball game today. The environmental conditions placed on El Paso for the installation of a 13-mile loop of 30-inch O.D. pipeline on the Kofa Refuge in 1990 were considerable. Some of those requirements will be discussed here.

PROJECT HISTORY

A right of way across the refuge was granted to El Paso in 1970, but that right-of-way grant expired in 1975 because construction never took place. In 1976, El Paso applied for 24.9 miles of new right of way through the refuge, but that project was abandoned in 1979, and never constructed. On May 30, 1989, El Paso submitted an application for public convenience and necessity to the Federal Energy Regulatory Commission (FERC) for the expansion of its California Mainline system to carry up to 200 mmcf/d (million cubic feet per day) of additional gas to California's Southern California Gas Company. That application included the 13-mile loop pipeline within the

refuge for which El Paso applied to the Fish and Wildlife Service for a permit for 15 feet of new, permanent right of way within the refuge. That permit across the Kofa National Wildlife Refuge required Congressional approval, which was obtained the next year.

ENVIRONMENTAL REQUIREMENTS

In January of 1990, an environmental assessment prepared for the project by El Paso's Environmental Affairs Department (EAD) was submitted to the Fish and Wildlife Service (a similar document was submitted to FERC as part of the application). As part of the environmental analysis conducted for the project, a consulting firm from Tempe, Arizona, conducted an archaeological survey of the proposed right of way, with no cultural resources discovered. El Paso subsequently received archaeological clearance, or concurrence that the project would not adversely impact cultural resources, from the Arizona historic preservation officer and FERC. El Paso consulted with the Fish and Wildlife Service Office of Ecological Services in Phoenix, who requested that surveys be conducted for threatened or endangered plants as well as the Sonoran desert population of the desert tortoise, which is a candidate species for federal threatened or endangered status. Those surveys were conducted in March 1990, without any sensitive plants or desert tortoises found.

In February, the Arizona Commission of Agriculture and Horticulture had conducted an inventory of the right of way for plants protected under the Arizona Native Plant Law, such as various species of cactus, so they could be moved off the area to be disturbed during pipeline construction. The Fish and Wildlife Service later increased the number of



plants to be moved, resulting in El Paso paying over \$123,000 to have approximately 3,300 individual plants transplanted off the right of way.

In response to FERC requirements, El Paso contracted with a consultant for the preparation of an erosion control plan. This plan, which involved consulting with the Fish and Wildlife Service, the BLM and the local office of the Soil Conservation Service, explained how El Paso would control soil erosion on the right of way during and after construction, so soil loss due to erosion would not exceed allowable amounts. That plan was submitted to the Fish and Wildlife Service regional office in Albuquerque, New Mexico and to FERC in April.

In April, the Fish and Wildlife Service Office of Ecological Services agreed the project would not adversely affect any threatened or endangered plant species. However, despite the fact that no desert tortoises, burrows or their sign were found during the survey, they required that El Paso have a wildlife biologist on location during construction as a tortoise monitor. The biologist, a consultant, was instructed to examine the open trench each morning for desert tortoises that may have fallen in since the day before, and to move any desert tortoises found during construction off the right of way. An educational program was held for all construction workers to ensure they were aware of proper procedures if a tortoise was encountered. It should be noted that no desert tortoises were seen during the entire project.

Additional work conducted by El Paso prior to construction included a

geologic study for potentially unstable slopes that resulted in the re-alignment of a 2,000-foot section of the pipeline 20 feet to the north, to remove potential for slope instability problems that could result in the integrity of the pipeline being endangered by erosion.

In order to hydrostatically test the new pipe to ensure there were no leaks, it was necessary for El Paso to acquire enough water to fill the pipe. Alternatives examined by El Paso included trucking the water from a well located several miles north of the route, laying a temporary surface pipeline from the well alongside the road into the area, and trucking or laying a surface pipeline to bring the water in from an aqueduct from the Colorado River located about 15 miles from the right of way. The refuge had an existing windmill only a couple of miles from the project site, but it had not been in use for several years. El Paso provided the labor to install a pump at the well, provided three metal tanks for water storage for use by the refuge, and also purchased a windmill motor for use by the Fish and Wildlife Service at another refuge in the state. Water from the windmill was hauled by trucks the short distance to the eastern end of the new pipeline and stored in a lined pond. This water was used to control dust during construction as well as for the hydrostatic test of the new pipe. After the hydrostatic test, the used water was disposed of in another pond constructed at the western end of the new pipeline loop, in accordance with regulations of the Arizona Department of Environmental Quality.

El Paso installed a new cattle guard on the road alongside the pipeline right of way, requested by the refuge to help in correcting a problem with people leaving the old gate

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Pipeline Construction in Sensitive Areas

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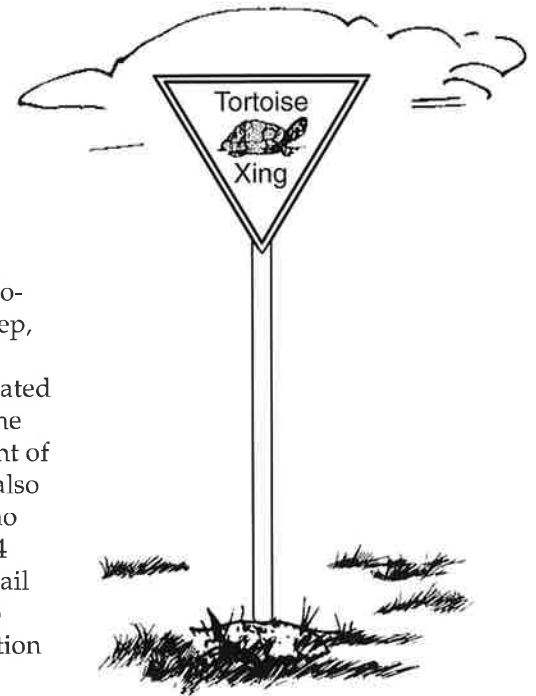
open, as well as a new 14-foot gate. The unpaved pipeline road paralleling El Paso's right of way is an officially designated route across the northern portion of the Kofa National Wildlife Refuge and was restored to its original condition after construction, as was the unpaved road leading to the refuge from I-10. El Paso also scattered large rocks obtained from the pipeline trench over the new right of way at the request of the refuge management in an effort to dissuade off-road vehicle traffic. Revegetation of disturbed areas was not required due to the poor potential for successful reseeding in this arid region.

Mitigation measures that El Paso agreed to perform to protect the bighorn sheep included scheduling the construction during August and September to minimize disruption of the sheep's annual migration. However, delays in the granting of the certificate by FERC resulted in the certificate not being received by El Paso until October 5. This resulted in construction taking place from October 10 until November, 28, 1990, which was during the annual sheep migra-

tion period. In order to mitigate potential impacts to the bighorn sheep, El Paso agreed to limit the open trench to a half-mile length, separated by untrenched sections to allow the sheep access routes across the right of way. That construction schedule also had to be modified so there was no construction on October 13 and 14 or November 3 and 4, to allow quail and deer hunting on the refuge to proceed undisturbed by construction activities.

CONCLUSION

And what about the desert bighorn sheep that the refuge was established to protect? The project seems to have been completed in an environmentally acceptable manner. Perhaps the greatest indication that the construction of the pipeline was not a problem with the refuge comes from the U.S. Fish and Wildlife Service officers who oversee the Kofa Refuge on an ongoing basis. According to the refuge manager, Mr. Milt Haderlie, the project was successful. The willingness of El Paso to "do what's right" during the project and excellent communication and cooperation among



El Paso Natural Gas Company, Kofa Refuge personnel, the construction contractor and the environmental contractors involved were directly attributable to the success of the project.

With the ever-increasing demand for natural gas as a clean-burning fuel, the need to increase the capacity of existing pipeline systems installed years ago will become more frequent in the future. Hopefully, such construction can be accommodated by land-use changes that have occurred since the original pipelines were installed. This example of pipeline construction on the Kofa National Wild-



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life Refuge provides such an illustration of multiple land uses working.

Could El Paso have played hardball and not agreed to some of the items discussed here? They certainly could have, and probably saved some money in the process. But at what cost? El Paso has approximately 27 miles of pipeline right of way on the Kofa Refuge, and someday soon may be calling on Mr. Haderlie, or his successor, to ask for permission to allow more construction on the Kofa. The likelihood of successful negotiation in future projects will be greater because of El Paso's willingness to "do what's right."

And what advice would I have for someone considering the establishment or expansion of a right of way across environmentally or socially sensitive areas?


- Be creative. Don't be afraid to suggest alternatives. There are often several ways of arriving at the same end point.
- Be prepared to provide "unusual" mitigations. Remember the gift of a windmill motor for another

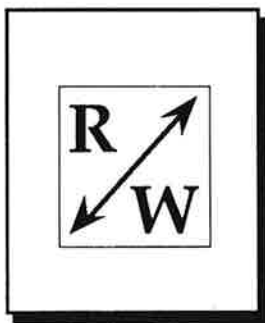
refuge and the spreading of rocks on the right of way to deter off-road vehicles?

- Be prepared to deal with issues beyond the obvious. Keep in mind that the land managing agency or landowner usually has a different agenda and different priorities than you do. There may be additional sensitive issues that are not immediately apparent.
- Be prepared to meet the available construction windows established by the agency or landowner, or provide suitable mitigation.
- Be flexible. While it may look easy on paper, remember that the land managing agencies and landowners probably won't share the same sense of urgency for project completion that you have.
- Cooperate with the agencies and landowners, especially the field representatives. A little back-scratching usually goes a long way. 

gence in assessing the previous uses of the property consistent with good commercial or customary practice for potential CERCLA "Innocent Landowner Immunity."

The ESA can also accomplish and provide information on other project concerns and issues. The client should be made aware of these additional benefits from conducting an appropriate ESA. Planning to institute the ESA at the earliest possible date will benefit the client and the project. Implementing the ESA during the early stages of the project can avoid problems later on during the project. Early initiation of the ESA can assist in planning the project to reduce project delays and cost overruns.

Understanding the project's environmental needs and planning ahead to satisfy those needs can be accomplished through the ESA process. When conducted from a sufficient planning approach, the ESA can be cost-effective, as well as protect the client from future liabilities. 



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