

3.4 CULTURAL AND PALEONTOLOGICAL RESOURCES

Cultural resources and paleontological resources investigations were conducted for the Proposed Project in 2011. The Cultural Resources Survey Report and Paleontological Resources Assessment Report are provided in Appendices D and E, respectively. The following sections summarize these reports. It should be noted that these reports were completed when proposed Well 36 and its associated pipeline were still under consideration. This well and pipeline have since been removed from the Proposed Project.

3.4.1 Environmental Setting

3.4.1.1 Cultural Resources

Definition of Resources. Cultural resources include prehistoric archaeological sites, historic archaeological sites, and historic structures, and generally consist of artifacts, food waste, structures, and facilities made by people in the past. Prehistoric archaeological sites are places that contain the material remains of activities carried out by the native population of the area (Native Americans) prior to the arrival of Europeans in southern California. Artifacts found in prehistoric sites include flaked stone tools such as projectile points, knives, scrapers, drills, and the resulting waste flakes from tool production; ground stone tools such as manos, metates, mortars, and pestles for grinding seeds and nuts; bone tools, such as awls; ceramic vessels or fragments; and shell or stone beads. Prehistoric features include hearths or rock rings, bedrock mortars and milling slicks, rock shelters, rock art, and burials.

Historic archaeological sites are places that contain the material remains of activities carried out by people during the period when written records were produced after the arrival of Europeans. Historic archaeological material usually consists of domestic refuse, such as bottles, cans, ceramics, and food waste, deposited either as roadside dumps or near structure foundations. Archaeological investigations of historic-period sites are usually supplemented by historical research using written records. Historic structures include houses, garages, barns, commercial structures, industrial facilities, community buildings, and other structures and facilities that are more than 50 years old.

Cultural Background. It is generally believed that human occupation of southern California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 6,000 years BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found, but cannot definitely be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and vegetal foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978).

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

Around 6,000 years BP, there was a shift in focus from hunting towards a greater reliance on vegetal resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 3,000 years BP, is sometimes referred to as the "Millingstone Horizon" (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 6,000 years BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

In sites dating to after about 3,000 years BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Chipped-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. The exact time of their entry into the region is not known; however, they were present in southern California during the final phase of prehistory. During this period, known as the "Late Horizon," population densities were higher than before and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction (Erlandson 1994). The introduction of the bow and arrow into the region sometime around 1,500 to 1,000 years BP is indicated by the presence of small projectile points (Moratto 1984).

The Proposed Project area is located in territory originally used by the Kawaiisu. Kawaiisu villages were located in the Piute Mountains at the southern end of the Sierra Nevada Range and the northern part of the Tehachapi Mountains. They also used temporary camps in the adjacent Mojave Desert where the Proposed Project area is located (Zigmond 1986). The Kawaiisu spoke a language belonging to the Numic branch of the Uto-Aztecan language family while their neighbors to the south, the Kitanemuk and, closer to the coast, the Tatavium and the Gabrielino, spoke languages belonging to the Takic branch of the Uto-Aztecan language family. The Numic and Takic groups developed in the southwestern Great Basin. The Takic-speaking groups moved into coastal southern California from the southwestern Great Basin probably around 2,000 years ago, while Numic groups expanded to the northeast throughout the Great Basin about 1,000 years ago (Golla 2007:75). The Kawaiisu remained in place and did not take part in the Numic expansion.

The Kawaiisu had winter villages in Cache Creek Canyon northeast of the modern town of Tehachapi. In summer and fall, some of these people moved to higher elevations and occupied temporary camps. In the fall, acorns and pinyon nuts were collected at

WATER SUPPLY IMPROVEMENT PROJECT DRAFT ENVIRONMENTAL IMPACT REPORT

elevations above 4,000 feet (Macko et al. 1993:36). Acorns were processed in bedrock mortars using a pestle, although portable mortars were also used. The Kawaiisu also made trips into the Mojave Desert to the east and northeast, including the area around China Lake (Zigmond 1986). In addition to acorns and pinyon nuts, the Kawaiisu exploited a wide array of plant foods, including grass and chia seeds, berries, and roots. Baskets were used to transport and store plant foods. Deer was the preferred animal food and was hunted with bow and arrow. Smaller animals, such as rabbits and rodents, were often caught using traps and snares (Zigmond 1986:400).

In the winter, people occupied circular houses made of a willow pole framework and covered with brush and mats made of bark and tule reeds. In the summer, open flat-roofed shade houses were used. Other structures included sweathouses, circular brush enclosures (windbreaks), and small granaries (Zigmond 1986:401).

Archaeologically, the Numic speakers, such as the Kawaiisu, have been associated with the appearance of Desert Side Notched arrow points and Owens Valley Brown Ware ceramics (Macko et al. 1993:16). These first appear in the northern Tehachapis about 1,000 BP and indicate the beginning of the Late Prehistoric Period. The preceding Rose Spring or Saratoga Springs period (circa 1,500 to 1,000 BP) is indicated by the presence of Rose Spring points (small corner notched expanding stem points) and Cottonwood Triangular arrow points.

Cultural Resources in the Project Area. To identify known resources in and near the project area, a cultural resources records search was conducted by ECORP Consulting staff on May 6, 2011, at the Southern San Joaquin Valley Information Center of the California Historic Resources Information System, located at the California State University, Bakersfield. The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the Proposed Project location (Wells 18, 34, 35, and 36), and whether previously documented prehistoric or historic archaeological sites, architectural resources, cultural landscapes, or ethnic resources exist within these areas. The results of the records search of Wells 18, 34, and 35 are provided below.

The results of the records search indicate that one cultural resource investigation had been conducted within the Proposed Project areas, at the Well 18 location. Seven inventories have been previously conducted within 1 mile of the Proposed Project areas. As a result of the previous surveys conducted in the area, four cultural resources have been recorded within 1 mile of the Proposed Project areas. These resources consist of three isolated prehistoric artifacts and the Southern Pacific Railroad Line. All four resources are located between 0.2 and 0.85 mile from the Proposed Project areas. No previously-recorded sites are located within the boundaries of the current project areas.

Fieldwork was conducted on June 16, 2011 by ECORP archaeologists and consisted of an intensive systematic pedestrian survey of the Proposed Project location of Well 35. The proposed location of Well 36 along with the associated water pipeline was also surveyed; however, this well and pipeline are no longer being considered as part of the Proposed Project. The results of the survey of proposed Well 36 are described in Appendix D, but are not further discussed in this section. Because the Proposed Project

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

does not include any new ground disturbance at Wells 18 and 34, field survey of the those two well locations was not required.

The Well 35 project area is located on a four-acre parcel of land, south of West Bowman Road. It is bordered to the east by Star Place and to the south by Calsilco Avenue. Ground visibility was fair, and vegetation consists of creosote, bursage, and low-lying desert grasses.

No prehistoric archaeological resources were identified within the project area as a result of the field survey. One possible historic-age (i.e., 50 years old or older) site, consisting of a sparse surface trash scatter, was recorded within the Proposed Well 35 location. This site was designated IWW-01 and is described below. The site appears to represent a roadside dump along Bowman Road and is unlikely to have a subsurface component.

IWW-001 is a historic-period refuse deposit containing one concentration of refuse (C1) measuring 32 feet east-west by 42 feet north-south and a sparse refuse scatter.

Concentration 1 (C1) is a concentration of historic-period refuse in an area measuring 32 feet north-south by 23 feet east-west. Cans and miscellaneous refuse present within Concentration 1 include one large knife-opened juice can, one crushed powder tin, nine rotary-opened sanitary cans, one jab lift-opened sanitary can, three small round meat tins, one chemical solvent type can, two knife-opened matchstick filler cans, one knife-punched matchstick filler can, two steel beverage cans which were first produced in 1935 and fell out of production in the early 1960s (Rock 1989), two metal jar lids, one light bulb filament, and two pieces of charcoal. Bottle fragments present within Concentration 1 consist of one Seven-Up bottle fragment with a circa 1939-1953 applied color label (Lockhart 2004), three colorless glass Royal Crown Cola shoulder fragments, one colorless glass bottle fragment embossed with "Absorbine Jr", two shards of milk glass, one aqua glass hobble skirt Coke bottle fragment, two colorless glass bottle bases with a Glass Containers maker's mark, one colorless glass bottle base embossed with "National Distillers" and one bottle body fragment, one colorless glass Best Foods condiment jar base with an Owens Illinois maker's mark dated 1941, two colorless glass bottle bases with Hazel Atlas maker's marks, and one amber glass bottle base with an Owens Illinois maker's mark dated 1942 (Toulouse 1971). Bottle finishes present consist of one Royal Crown Cola bottle finish; six colorless glass bottle finishes consisting of four screw top finishes, three with metal caps attached, and two cork stop finishes; one amber glass crown cap bottle finish; and one milk bottle finish. Ceramics present consist of two white porcelain dish fragments, and one stoneware dish fragment with white glaze. Glass fragments present consist of five fragments of colorless glass from a drinking glass, approximately 70 shards of colorless glass, and approximately 50 shards of amber glass.

The sparse refuse scatter outside the concentration consists of four rotary opened matchstick filler cans and one crushed matchstick filler can measuring 3 12/16 inches high by 2 14/16 inches diameter, one key wind coffee tin, one coffee tin embossed with "RICHARDSON & ROBBINS/ DOVER, DEL. U.S.A.", one large church key-opened juice

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

can, one crushed sanitary can, one knife punch-opened sanitary can, and one colorless glass drinking glass fragment.

Site IWW-001 was evaluated for eligibility to the California Register of Historical Resources (CRHR). As a refuse deposit with no indications of occupation on the land, the site does not have the potential to yield information important in local or regional history. It cannot be determined who deposited the materials at this site or if the materials were deposited here during a particular occasion or event. Therefore, the site has no association with any specific individual(s) or event in history. In addition, the age of the material (1940s and 1950s) makes the material less useful since there are few, if any, research topics for this period that cannot be better addressed using historical sources (written records and oral accounts), rather than historical archaeological material. Given the lack of association and data potential of the site, IWW-001 is not eligible for the CRHR.

To identify Native American resources located within or near the Project Area that could be affected by the Proposed Project, a search of the Sacred Lands File was conducted by the Native American Heritage Commission (NAHC) in Sacramento, California. The search of the Sacred Lands File did not indicate the presence of any Native American cultural resources within or near any of the project areas. The NAHC identified nine Native American groups and organizations with traditional/historical ties to the Project Area. Letters were sent to all nine contacts to inform them of the Proposed Project, to solicit their comments, and to identify potential impacts to Native American resources from the Proposed Project. To date, no responses have been received from any of the Tribes.

3.4.1.2 Paleontological Resources

Definition of Resources. Paleontological resources are the recognizable remains of once-living, non-human organisms and early hominids. Identified as fossils, these resources represent a record of history of life on the planet dating as far back as 4 billion years ago. Paleontologic resources can include shells, bones, leaves, tracks, trails, and other fossilized floral or faunal materials (National Research Council 1987). These resources provide valuable information on evolution, climatology, and taxonomy and can provide information for measuring time in earth history, as well as for understanding ancient environments and geographies (National Research Council 1987; Science Applications International Corporation 1994).

Paleontological Resources in the Project Vicinity. To determine whether the Proposed Project would have a significant impact to nonrenewable paleontological resources, a literature and records review was performed by the Vertebrate Paleontology Section of the Natural History Museum of Los Angeles County. Museum staff consulted geologic maps to determine what formations are present in the project area and assess the potential of those formations to contain buried fossils, and then consulted reports of previous investigations and records of known fossil localities in the Proposed Project vicinity (McLeod 2011).

Review of geologic maps of the region indicate that the majority of the project area contains surface sediments of younger Quaternary Alluvium, primarily deposited by drainages. These types of sediments typically do not contain significant fossil resources

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

and no vertebrate fossil localities have been recorded in similar deposits in the vicinity. To the north of the Proposed Project area, however, sediments of older Quaternary Alluvium exist. These deposits may also underlie the surficial deposits in the Proposed Project area. Thirteen fossil localities have been recorded in older Quaternary Alluvium northeast of the project area, within Quaternary lake deposits of China Lake. These fossils are typical of Late Pleistocene fauna including mammoth, bison, camel, horse, and duck. These fossils were all found at lower elevations than the Proposed Project area (McLeod 2011).

3.4.2 Thresholds of Significance

3.4.2.1 Cultural Resources

According to the CEQA Guidelines, a project would have a significant impact on cultural resources if it would:

- ◆ Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5;
- ◆ Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines Section 15064.5; and/or
- ◆ Disturb any human remains, including those interred outside of formal cemeteries.

The CEQA Guidelines state that a project that causes a substantial adverse change in the significance of a historical resource is considered to have a significant effect on the environment unless mitigated. Historical resources are buildings, structures, districts, sites, or objects that are listed in or considered eligible for listing in the California Register of Historical Resources (CRHR) or is on a local (city or county) inventory of historical resources (California Code of Regulations, Title 14, Section 15064.5).

The CEQA Guidelines (Section 15064.5(a)(3)) define historical resources as any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource has integrity and meets the criteria for listing on the CRHR as follows:

- ◆ Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- ◆ Is associated with the lives of persons important in our past;

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

- ◆ Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- ◆ Has yielded, or may be likely to yield, information important in prehistory or history.

Thus, historical resources are cultural resources (as defined in Section 3.4.1) that are eligible for inclusion in the CRHR.

3.4.2.2 Paleontological Resources

According to the CEQA Guidelines, a project would have a significant impact on cultural resources if it would:

- ◆ Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

CEQA Guidelines indicate that a project that directly or indirectly destroys a unique paleontologic resource or site or a unique geologic feature is considered to have a significant effect on the environment unless mitigated. Unique paleontologic resources are significant, nonrenewable fossils that are rare or unique regionally, diagnostically, or taxonomically. This definition includes vertebrate fossils, invertebrate fossils that are previously unknown within the given context, or fossils that will aid in further scientific interpretations (National Research Council 1987; Science Applications International Corporation 1994).

A fossil may be considered significant if it provides data useful in determining the ages(s) of a rock unit or sedimentary stratum, therefore contributing to an increased knowledge of the depositional history of a region and the timing of geologic events therein. A paleontologic resource may also be considered significant if it provides important information on the evolutionary trends among organisms, particularly relating living inhabitants of the earth to extinct organisms or if it demonstrates unusual or spectacular circumstances in the history of life. The significance of a paleontologic resource may also be determined by its relative abundance, or lack thereof, within a region. For example, if a fossil type is in short supply or is not found in other geologic locations and it is in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, the resource is likely to be considered significant (Science Applications International Corporation 1994).

Adverse impacts to paleontologic resources would include the physical destruction or damage of fossil-bearing geologic formations and the resulting loss of fossil resources. Other adverse impacts could occur within increased public accessibility to known fossil-bearing localities.

3.4.3 Environmental Impacts

3.4.3.1 Cultural Resources

Only impacts to cultural resources that meet the CEQA definition of an historical resource can be considered significant (CEQA Guidelines Section 15064.5). In CEQA, an historical resource is one which meets the eligibility criteria for the CRHR (see Section 3.5.2.1). Archaeological sites are evaluated under CRHR Criterion D, the potential to yield information important in history or prehistory (California Code of Regulations, Title 14, Section 4852).

One historic archaeological site (IWW-001) was identified in the Proposed Project area, which may be disturbed during the construction of proposed Well 35. IWW-001 was evaluated and is not eligible for the CRHR. Therefore, the impacts to Site IWW-001 from the Proposed Project would be less than significant, and no mitigation measures are required for this site.

Because no prehistoric sites were found within the Proposed Project area and only three isolated artifacts have been recorded within one mile of the Proposed Project Areas, the potential for the Proposed Project area to contain intact buried prehistoric archaeological deposits is considered low. Any historic archaeological sites in this area would likely be visible on the surface and only one, IWW-001, was found. Thus, the potential for buried historical archaeological deposits is also low. However, if unknown, buried archaeological deposits are encountered during construction, impacts to them would be potentially significant without mitigation.

The search of the Sacred Lands File did not indicate the presence of any Native American cultural resources within or near any of the project areas. To date, no Native American resources have been identified by any of the nine Native American Tribes contacted about the Proposed Project. As a result, impacts to Native American resources are not anticipated, and no mitigation measures are required.

Improvements to existing Wells 18 and 34 would not include any new ground-disturbing activity and no impacts to prehistoric or historic archaeological resources or Native American resources is anticipated. No mitigation measures are required.

3.4.3.2 Paleontological Resources

Surface grading and shallow excavations in younger Quaternary Alluvium is unlikely to encounter any significant vertebrate fossils (McLeod 2011). Vegetation clearing and grading of the Well 35 site is not likely to impact significant paleontological resources.

Deeper excavations that extend below the uppermost sediments of the project area into underlying older deposits may encounter paleontological resources (McLeod 2011). The trenching for the pipeline from Well 35 to the existing pipeline in Bowman Road could result in a significant impact to paleontological resources. Likewise the drilling of Well 35 could also result in impacts to paleontological resources; however, impacts from well drilling are unlikely given the relatively small diameter of the well. Impacts to

**WATER SUPPLY IMPROVEMENT PROJECT
DRAFT ENVIRONMENTAL IMPACT REPORT**

paleontological resources from the proposed pipeline trenching can be mitigated as described below. Because impacts from the drilling of Well 35 are not expected, no mitigation measures are required for the well.

Improvements to existing wells 18 and 34 would not include any new ground-disturbing activity and no impacts to paleontological resources are anticipated. No mitigation measures are required.

3.4.4 Mitigation Measures

3.4.4.1 Cultural Resources

CR-1: In the event that archaeological materials are encountered during ground-disturbing construction activities, these activities must be suspended in the vicinity of the find until the deposits are recorded and evaluated by a qualified archaeologist. If evaluated and determined eligible, the archaeological site must be avoided and preserved. If this is not feasible, an archaeological data recovery program shall be completed. The data recovery report will be submitted to the Indian Wells Valley Water District and filed with the Southern San Joaquin Valley Archaeological Information Center at CSU Bakersfield.

If human remains of any kind are found during construction activities, all activities must cease immediately and the Kern County Coroner must be notified, as required by state law (Section 7050.5 of the Health and Safety Code). If the coroner determines the remains to be of Native American origin, he or she will notify the Native American Heritage Commission (NAHC). The NAHC will then identify the most likely descendant(s) (MLD) to be consulted regarding treatment and/or reburial of the remains (Section 5097.98 of the Public Resources Code). Work can continue once the MLD's recommendations have been implemented or the remains have been reburied by the landowner if no agreement can be reached with the MLD (Section 5097.98 of the Public Resources Code).

3.4.4.2 Paleontological Resources

CR-2: Monitoring during the trenching for the pipeline from Well 35 to the existing pipeline in Bownman Road shall be conducted by a qualified vertebrate paleontologist. The monitor shall be equipped to recover fossils and sediment samples during excavation, and shall have the authority to temporarily halt or divert equipment to allow for recovery of large or numerous fossils. If any fossils are recovered, they shall be analyzed to a point of identification and curated at an established accredited museum repository with permanent retrievable paleontologic storage. A technical report of findings shall be prepared with an appended itemized inventory of identified specimens and submitted with the recovered specimens to the curation facility.

3.4.5 Residual Impacts After Mitigation

3.4.5.1 Cultural Resources

Implementation of the mitigation measure for cultural resources will reduce impacts to less than significant. There will be no residual impacts after mitigation.

3.4.5.2 Paleontological Resources

Implementation of the mitigation measure for paleontological resources will reduce impacts to less than significant. There will be no residual impacts after mitigation.