**DRAFT**
**ENVIRONMENTAL ASSESSMENT**

# CITY OF YERINGTON ARSENIC TREATMENT PLANT
# LYON COUNTY, NEVADA

**June 2010**

US Army Corps
of Engineers ®
Sacramento District

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**DEPARTMENT OF THE ARMY**
**U.S. ARMY ENGINEER DISTRICT, SACRAMENTO**
**CORPS OF ENGINEERS**
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**SACRAMENTO, CALIFORNIA 95814-2922**

**REPLY TO ATTENTION OF**

Environmental Resources Branch

FINDING OF NO SIGNIFICANT IMPACT
City of Yerington Arsenic Treatment Plant
Lyon County, Nevada

I have reviewed and evaluated the information in this Environmental Assessment (EA) for the City of Yerington Arsenic Treatment Plant, Lyon County, Nevada, project. The work would involve construction of an arsenic treatment plant and installation of new waterlines to connect the new plant to two existing groundwater wells and water distribution mains. Operation of the plant would reduce the current arsenic in the City's water supply to a level at or below the U.S. Environmental Protection Agency's maximum contaminant level (MCL) for safe drinking water. The City has been mandated by the State of Nevada to comply with the MCL by January 23, 2011.

During this review, the possible consequences of the work described in the EA have been studied with consideration given to environmental, social, cultural, and engineering feasibility. In evaluating the effects of the proposed project, specific attention has been given to significant environmental resources that could potentially be affected. I have also considered the views of other interested agencies, organizations, and individuals concerning the project. Any effects on environmental resources would be avoided or minimized by using best management practices. There are no Federally listed species in or near the project area, and the Nevada State Historic Preservation Officer has concurred with our determination of no effect on any historic properties.

Based on my review of the EA and my knowledge of the project area, I am convinced that the proposed project is a logical and desirable alternative. Furthermore, I have determined that the project would have no significant effects on the environment. All construction will be implemented in compliance with applicable Federal, State, and local laws, rules, and regulations. Based on the results of the environmental evaluation and completion of interagency coordination, I have determined that the EA and Finding of No Significant Impact provide adequate documentation and that no further environmental document is required.

_____ _____

Date

Thomas C. Chapman, P.E.
Colonel, U.S. Army
District Engineer

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# 1.0 PURPOSE AND NEED

## 1.1 Proposed Action

The City of Yerington in Lyon County, Nevada, is proposing to (1) construct an arsenic treatment plant and (2) install new waterlines to connect the new plant to two existing groundwater wells and water distribution mains. Operation of the treatment plant would reduce the current arsenic in the City's water supply to a level at or below the U.S. Environmental Protection Agency's (EPA) maximum contaminant level (MCL) for safe drinking water. The City has been mandated by the State of Nevada to comply with the MCL by January 23, 2011.

## 1.2 Location of the Project Area

The City of Yerington is located in the Mason Valley, approximately 68 miles southeast of Carson City in the western part of Nevada (Plates 1). The project area includes a small parcel of City property, sections of several paved streets, an alley, and a section of gravel/dirt road primarily within a residential area in southeast Yerington (Plate 2). The project area extends from Broadway Avenue on the north, Bovard Street on the south, the Mountain View municipal well and existing 12-inch water main on the west, and the Broadway Avenue well on the east (Plate 3).

The City parcel is located along California Street just south of Broadway Avenue. The parcel encompasses approximately 0.7 acre of highly disturbed area covered in dirt, gravel, several concrete foundation slabs, and scattered weedy vegetation. Existing structures on the parcel are an elevated water storage tank, well shed, and new municipal well. A 6-foot-high chain link fence with some open sections in need of repair surrounds the parcel. Current access onto the property is through an open section of fence via the City's unpaved alley on the east side of the parcel.

The paved streets in the project area include portions of Mountain View Street, Van Ness Avenue, Broadway Avenue, California Street, Meadow Drive, Main Street, Bovard Street, Whitacre Street, and Bridge Street. Many of these streets have concrete gutters, curbs, and/or sidewalks although there are areas with only dirt shoulders and scattered weedy vegetation. The east end of Broadway Avenue transitions from pavement to gravel to a dirt surface in the less developed area nearest the well.

## 1.3 Need for Proposed Action

On January 22, 2001, the U.S. EPA adopted a new MCL for arsenic in drinking water to protect public health by reducing the potential for arsenic-associated cancers and skin changes. The MCL for arsenic was reduced from 0.050 milligrams per liter (mg/L) (50 parts per billion [ppb]) to 0.010 mg/L (10 ppb), and all community water systems were required to comply with the new MCL by January 23, 2006 ( U.S. EPA, 2001). However, communities were allowed to apply for an initial extension based on their influent arsenic concentration and state discretion.

All states (except Wyoming) were granted enforcement authority over the implementation of the new Federal MCL (U.S. EPA, 2004). In Nevada, many small community water systems applied to the State for an extension because of the high costs of arsenic treatment systems and lack of available funding. This included the City of Yerington, which was granted an initial extension to January 23, 2009. Since the City has demonstrated progress toward meeting the mandate, the Nevada State Environmental Commission has granted another extension to January 23, 2011 (Appendix A).

In Nevada, weathering and dissolution of natural rocks, minerals, and ores containing arsenic are the causes of arsenic in drinking water. Long-term exposure to this arsenic can lead to cancer of the skin, lungs, urinary bladder, and kidney, as well as other skin changes such as pigmentation changes and thickening (hyperkeratosis). Increased risks of lung and bladder cancer and of arsenic-associated skin lesions have been observed at arsenic concentrations of less than 0.05 mg/L in drinking water (City of Yerington, 2008).

The cost and difficulty of reducing arsenic in drinking water vary with the arsenic concentration in the water source, chemical makeup of the water, availability of alternative sources of low-arsenic water, mitigation technologies, and amount of water to be treated. Possible methods include abandon and replace high-arsenic sources, dilute low-arsenic water, connect to another water system, or chemical or mechanical removal of arsenic prior to delivery (City of Yerington, 2008). Control of arsenic is also more complex where drinking water is obtained from several sources, such as groundwater wells.

The City of Yerington's public water supply currently comes from four groundwater wells: Mountain View, Broadway, Rio Vista, and Mason. The Rio Vista and Mason wells are located in developed areas to the south and southwest outside the City center. A fifth well has recently been constructed at the treatment plant site. This new California well is a feature of the City's ongoing water and sewer project, and eventually will replace the previous California well, which failed a few years ago. This new well has piping designed to provide influent to either the new treatment plant or directly to the distribution system.

Based on water quality sampling and analysis, the City's four wells tap an aquifer that has average arsenic concentrations of about 0.015 to 0.030 mg/L, exceeding the U.S. EPA's 0.010-mg/L MCL (City of Yerington, 2008). Thus, the residents of Yerington will continue to be at higher risk for arsenic-associated cancers and other serious skin changes until arsenic in the water supply can be reduced prior to delivery. In addition, failure to meet the MCL standard would result in the City being in violation of the State's mandate, resulting in a Finding of Violation (DCNR, 2008). The U.S. EPA could then take further action, including the possibility of civil action and fines.

Table 1 shows groundwater sampling data at the four City of Yerington wells (City of Yerington, 2008; McKay Heggen, 2010). The sampling data show that while individual wells may be in compliance at times, the overall water system does not comply

**Table 1. Historic Arsenic Concentrations at City Wells in mg/L[1]**

| Date | Mountain View | Broadway | Rio Vista | Mason |
|---|---|---|---|---|
| 31-Jan-96 | 0.013 | 0.016 | - | - |
| 25-Sep-98 | 0.009 | 0.017 | - | - |
| 19-Oct-00 | 0.008 | 0.014 | - | - |
| 31-Oct-02 | - | 0.017 | - | - |
| 17-Jun-04 | 0.01 | 0.016 | - | - |
| 1-Feb-07 | 0.011 | 0.022 | 0.015 | 0.0065 |
| 10-May-07 | 0.021[2] | - | - | - |
| 21-Nov-07 | 0.022[2] | - | - | - |
| Sep-09 | 0.0222 | 0.007 | 0.017 | 0.007 |
| Dec-09 | 0.018[2] | 0.013 | 0.023 | 0.005 |

[1]U.S. EPA MCL is 0.010 mg/L (10 ppb).
[2]New well.
Source: Modified from table in City of Yerington, 2008; McKay Heggen, 2010.

with the arsenic MCL standard. The data also verify the need for continued action by the City to reduce the arsenic in the water supply. However, since the current arsenic levels are very close to the MCL, lowering the arsenic level in only part of the City's water supply system would likely result in compliance of the overall water system with the U.S. EPA's arsenic standard.

## 1.4 Project Authorization

This project was authorized by the Water Resources Development Act of 1999 (Public Law 106-53), as amended, which authorized the U.S. Army Corps of Engineers (Corps) to participate in environmental infrastructure projects in rural Nevada and Montana. The Corps is the Federal lead agency, and the City of Yerington is the local sponsor for the project.

## 1.5 Purpose of the Environmental Assessment

This Environmental Assessment (EA) discusses the environmental resources in the project area; evaluates the effects of the alternatives (including the proposed action) on the resources; and proposes measures to avoid, minimize, or mitigate any adverse effects to less than significant. This EA is in compliance with the National Environmental Policy Act and provides full public disclosure of the effects of the proposed action.

## 2.0 ALTERNATIVES

### 2.1 Alternatives Not Considered Further

Initially, the City considered a variety of potential methods to reduce the arsenic in the drinking water prior to delivery. These included the non-treatment methods of abandoning one or more existing wells and re-drilling new wells, developing a new surface supply, and connecting to another low-arsenic water system. Treatment methods included ion exchange, activated alumina, adsorbents, membranes, lime softening, coagulation/filtration, and oxidation/filtration (City of Yerington, 2008) either at the wellhead or a centralized treatment plant.

The City determined that none of the non-treatment methods were feasible for the water supply system. Since the average concentration in the underlying aquifer has arsenic concentrations exceeding the MCL, it can be assumed that water from any new well would also very likely exceed the new MCL. The City has water rights to Walker River water for agriculture only, and there are no other potential surface sources such as lakes or springs nearby. The closest existing water system without a similar arsenic problem is at least 40 miles from Yerington.

Evaluation of treatment methods is a complex process, involving determination of chemical constituents and concentrations, pH levels, chemical waste products, water system operation and maintenance, efficiency, and cost factors. Initial studies favored use of adsorbent treatment at the Broadway wellhead. However, the City subsequently determined that use of coagulation/filtration at a centralized treatment plant between the Broadway Avenue and Mountain View wells would be the most efficient and cost effective method to remove sufficient arsenic from the water supply for the overall water system to meet the MCL (City of Yerington, 2008). In essence, the arsenic in the Mason and Rio Vista well water would be diluted by the water from the treatment plant.

### 2.2 No Action

Under the no action alternative, the City would not construct a centralized arsenic treatment plant and install new waterlines to connect the new plant to two existing groundwater wells and water distribution mains. The levels of arsenic in the water supply delivered to residents and businesses in Yerington would continue to exceed the U.S. EPA's MCL for safe drinking water. As a result, the residents would continue to be at higher risk for arsenic-associated cancers and other serious skin changes. In addition, the City would still need to take action to meet the MCL by January 23, 2011, or be in violation of the State's mandate.

### 2.3 Arsenic Treatment Plant (Preferred Alternative)

The preferred alternative consists of constructing a centralized arsenic treatment plant and installing new waterlines to connect the new plant to two existing groundwater wells and water distribution mains. During operation, water from the groundwater wells

would first flow through the new treatment plant, where arsenic would be removed, and then flow via new waterlines into the existing City mains for distribution. Project features are shown on Plates 3 and 4.

### 2.3.1 Pre-Construction Activities

Permits and Utilities. Prior to initiation of construction, the contractor would be required to obtain all Federal, State, and local rights-of-way, permits and approvals necessary to perform the work, including those related to new treatment plants, roadways, stormwater discharge, fugitive dust, and traffic safety. Permits and approvals related to environmental resources are discussed in Section 3.0.

The contractor would also be required to verify the depths and locations of all existing utility lines and underground facilities in the project area. Potentially affected utility companies would be notified and coordinated with concerning the timing and scope of the proposed work. These utility companies could include, NV Energy, Southwest Gas Company, Verizon, and Charter Communications.

Mobilization and Staging. Staging for the project would be located on the City's 0.7-acre parcel. Because of the limited space, the construction contractor would be required to schedule construction and large deliveries of materials carefully to minimize the storage time for large equipment, trucks, and materials on the small parcel. Access to the parcel would be via Broadway Avenue and California Street.

During mobilization, construction equipment would be moved to the staging area, along with various tools, supplies, piping, and construction materials. Types of equipment could include hydraulic excavators, front end loaders, compactors, dump trucks, haul trucks, and water trucks. In addition, areas would be provided for an administrative trailer and parking of worker vehicles.

Because of the distance between the staging area and parts of the new waterline alignment, equipment and materials would also be staged temporarily at the work sites during installation of the waterlines. All such areas used for staging would be limited to highly disturbed areas devoid of vegetation or covered in concrete, asphalt, or gravel within the construction footprint.

### 2.3.2 Construction Details

Arsenic Treatment Plant. To reduce the arsenic in the City's domestic water supply, the project would include a new centralized arsenic treatment plant. Work activities would involve preparing the work site, constructing a new building, installing the water treatment system and associated piping, constructing a backwash water tank, installing a new generator, constructing a small detention basin, and landscaping and replacing fencing.

*Prepare Work Site*. Work on the treatment plant would begin by clearing the work site of existing concrete slabs, gravel, weedy vegetation, and other debris. The small well shed would be demolished, and sections of fencing and gates would be removed. The fencing would be salvaged for possible reuse, while all demolished waste material (concrete, wood, and metal) and surface debris would be transported offsite for disposal. If necessary, additional fencing or protective barriers would be placed around the base of the elevated water storage tank and any above-ground well structures to protect them from damage during construction.

*Construct New Building*. The new building housing the treatment system equipment would be located on the west side of the parcel along California Street. The rectangular building would be composed of a steel frame with prefabricated metal siding and roof. The dimensions of the building would be approximately 50 feet wide, 115 feet long, and 22 feet high. Construction would involve excavating footings; backfilling aggregate base; pouring a concrete slab; erecting the metal building; and installing all the associated structural, mechanical, and electrical interior and exterior features of the building (Plate 5).

*Install Treatment System and Piping*. A packaged water treatment system would be purchased and installed within and near the new metal building. The system would include arsenic removal filters, valves, gauges, pumps, pipelines, and other equipment within the building; and various pipelines connecting the building to the wells, backwash tank, and existing sewer system. Installation of these connecting pipelines on the work site would include excavation, placing pipeline and fittings, backfilling, compaction, and disposal of unsuitable excavated material.

*Construct Backwash Tank*. The new backwash tank would be located east of the new metal building on the south part of the parcel. The cylindrical tank would be welded steel and have a maximum capacity of 75,000 gallons of usable storage. The dimensions of the tank would be approximately 25.5 feet in diameter and 24 feet high. Construction would involve excavating footings; backfilling with aggregate base; pouring a concrete slab; erecting and welding the tank structure; and installing all the associated structural, mechanical, and electrical interior and exterior features of the tank (Plate 6).

*Install New Generator*. The new backup generator would be located northeast of the existing elevated water storage tank. Installation of the new generator would begin by excavating, shaping, and pouring a concrete slab foundation. The dimensions would be approximately 10 feet wide and 23 feet long. The generator and transfer switch would be placed on the foundation, connected to the water treatment plant, and programmed to provide electricity in the event of a reduction or loss of utility power in the system.

*Construct Detention Basin*. The new detention basin would be located east of the existing elevated water storage tank. The rectangular basin would be approximately 10 feet wide, 20 feet long, and 2 feet to 3 feet deep. Interior side slopes would be 2 horizontal to 1 vertical, and the entire basin would be lined with riprap. Construction

would involve excavating and shaping the basin, installing the outflow pipeline, and placing the riprap.

The basin would collect periodic waste discharge from the new California well and stormwater runoff from the treatment plant site. This runoff would flow east and discharge into an existing drainage ditch via an underground pipeline along Oregon and Kay Way. Public safety would be ensured by locating this basin within a fenced area.

*Replacing Fencing and Landscaping*. Once the excavation and construction work is completed, new sections of chain link fencing would be installed to limit public access to the parking area and building. This fencing would be 6 feet high and would be topped with barbed wire for security. Several new gates and locks would also be installed in the chain link fencing to provide access for operation and maintenance personnel to the backwash tank, detention basin, and other plant features.

In addition, areas along the northern boundary of the parcel, California Street, and northern edge of the treatment plant building would be landscaped with grasses and small shrubs or trees. This landscaping would help to improve the overall visual effect of the new treatment plant.

Underground Waterlines. To connect the new arsenic treatment plant to the City wells and distribution system, the project would include approximately 1.9 miles of new pipeline. This pipeline would total approximately 4,335 feet of 12-inch-diameter waterline, 280 feet of 16-inch waterline, and 700 feet of 12-inch stormwater pipeline. Table 2 shows the lengths and diameters of new pipeline per roadway.

**Table 2. Lengths and Diameters of New Pipeline per Roadway**

| **Roadway** | **12-inch Diameter** (linear ft) | **16-inch Diameter** (linear ft) | **Total** (linear ft) |
|---|---|---|---|
| Mountain View Street | 200 | - | 200 |
| Van Ness Avenue | 1,360 | - | 1,360 |
| Broadway Avenue | 2,775 | - | 2,775 |
| Alley | - | 280 | 280 |
| | | | |
| California Street | 1,840 | - | 1,840 |
| Meadow Drive | 885 | - | 885 |
| Main Street | 100 | - | 100 |
| Bovard Street | 1,100 | - | 1,100 |
| Whitacre Street | 425 | - | 425 |
| Bridge Street | 275 | - | 275 |
| | | | |
| Kay Way | 700 | - | 700 |
| **Total** | 9,660 | 280 | 9,940 |

Source: James, 2010a

The new waterline would include approximately 4,335 feet of 12-inch waterline from the Mountain View well east along Van Ness and Broadway Avenue to the

Broadway Avenue well. This section of waterline would carry the non-potable water (i.e., containing higher levels of arsenic) from both wells into a 280-foot section of 16-inch waterline into the new plant for treatment. Once treated, the resulting potable water would flow through 4,625 feet of 12-inch waterline to the existing distribution main via California Street, Meadow Drive, Main Street, Bovard Street, Whitacre Street, and Bridge Street. In addition, 700 feet of 12-inch pipeline would carry well discharge and stormwater runoff to an existing drainage ditch at the east end of Kay Way.

Installation work on the paved roadways would include (1) removing the surface asphalt and aggregate base; (2) excavating trenches approximately 4 feet wide by 100 feet long by 3.5 to 8 feet deep; (3) laying bedding material; (4) placing and connecting the pipeline(s) and associated equipment in the trench; (5) covering the pipeline(s) with bedding material; and (6) backfilling with soils and compacting the surface of the excavated area. Installation along the unpaved alley and roadway at the east end of Broadway Avenue would be the same except that work would begin with the removal of dirt, surface gravels, ruderal vegetation, and/or other debris (Plate 7).

Once the installation of the waterline is completed, the disturbed paved roadways would be repaired and resurfaced with aggregate base and asphalt, and any damaged curbs, sidewalks, or landscaping would be replaced. The disturbed unpaved alley and roadway at the end of Broadway Avenue would be resurfaced with dirt or gravel. Access to the new waterlines for maintenance would be via the existing paved City roadways and unpaved section of roadway near the Broadway Avenue well.

Highway 208 Crossings. Main Street in the City of Yerington is actually a section of State Highway 208, which runs between U.S. 95A on the north and U.S. 395on the southwest. The new waterline alignment would cross Highway 208 at the two intersections with Broadway Avenue and Bovard Street. To avoid any effects on the highway and ongoing traffic, the waterline would be installed under the highway surface using the jack and bore drilling method and steel sleeve casing as required by the Nevada Department of Transportation. The depth of the new waterline would range from 5 feet to 8 feet below the bottom of the highway.

Work would consist of excavating working and receiver pits; shoring the walls of the pits, if necessary; laying the boring machine in the pit; setting up tracks; using the machine to push an auger and steel sleeve casing while turning a cutting head through the ground; and inserting the pipeline through the steel sleeve (Plate 7). Once the boring is complete, the machine and tracks would be removed, and the pits would be backfilled and restored to pre-project conditions. The excavation would be conducted in previously disturbed or paved areas along the highway to minimize any effects on vegetation.

### 2.3.3 Borrow, Stockpiling, and Disposal

Borrow Materials and Sources. Borrow materials would include drain rock, aggregate base, gravel, and sand to be used as layering materials for trenches. Gravel, concrete, and asphalt would also be needed at the treatment plant site, as well as for

resurfacing or repairing local paved roadways, curbs, and sidewalks. These materials would be obtained from local commercial sources in Yerington. Sufficient suitable soil material needed as backfill would be available from the soils excavated during trenching, as well as excavation at the treatment plant site.

Stockpiling Areas. Stockpiling for the project would also be located on the treatment plant site. During construction, excess excavated soil material would be moved to a temporary stockpiling area. Based on testing, soils found to be suitable for reuse would be retained while unsuitable soils would be moved offsite for disposal. Because of the limited space, the construction contractor would be required to minimize storage of unsuitable soils.

Because of the distance between the treatment plant site and parts of the waterline alignment, suitable excavated soils could also be stockpiled temporarily at the work sites for reuse during installation of the pipelines. All such areas used for stockpiling would be limited to highly disturbed areas devoid of vegetation or covered in concrete, asphalt, or gravel within the construction footprint.

Disposal Areas. Any excess suitable soil material would be transported offsite to a City-owned disposal area located just northwest of the existing wastewater treatment plant. This disposal area encompasses approximately 2 acres of open disturbed area with scattered weedy vegetation. This suitable soil material would be reused by the City for other local projects, as needed.

Cleared weedy vegetation, unsuitable soil material, concrete and asphalt waste, demolished waste material, and other debris would be transported offsite via trucks and disposed of at an approved commercial disposal site, depending on the type of material. The cleared vegetation and soil material would likely be transported to a regional landfill. The closest landfill to the project area is the Lockwood Landfill, which is located in Lockwood about 5 miles west of Reno.

### 2.3.4 Construction Schedule

The project is anticipated to begin in October 2010 and be completed in May 2011 unless severe winter weather delays construction. Work would begin with construction of the treatment plant, followed by installation of the waterlines. The contractor would be required to notify homeowners and business owners of any work that would affect their property or water service at least 48 hours in advance.

Work during most of the year would be conducted in 10-hour shifts from 7:00 a.m. to 5:30 p.m., Monday through Thursday. During the winter months, work could be conducted in 8-hour shifts from 7:00 a.m. to 3:30 p.m., Monday through Friday. The schedule would be planned to keep outages to a minimum. No work would be conducted on weekends, or during late evening or night hours.

### 2.3.5 Post-Construction Activities

Demobilization and Clean Up. After all construction and restoration work is completed, the construction equipment, tools, and unused materials would be removed from the treatment plant site. All work areas would be cleaned of excess soils and rubbish, and disturbed dirt areas would be reseeded with native species to minimize erosion, if necessary. All parts of the work would be left in a neat and presentable condition, including both the treatment plant site and along the pipeline alignments.

Operation and Maintenance. After successful testing of the arsenic treatment plant and distribution system, the project would be operated and maintained by the City of Yerington as part of the City's existing water supply system. The treatment plant would be integrated into the City's radio-operated supervisory control and data (SCADA) system designed to remotely monitor the operation of the water supply system. City staff would make regular inspections and repairs, as needed, to ensure the integrity of the system. City staff would also remove accumulated sediments from the detention/infiltration basin and dispose of them offsite.

## 3.0 AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS

The resources not considered in detail are discussed in Section 3.1. Sections 3.2-3.9 describe the significant resources in the project area, as well as any effects of the alternatives on those resources. When necessary, mitigation measures are also proposed to avoid, reduce, minimize, or compensate for any effects determined to be significant.

### 3.1 Resources Not Considered in Detail

Because of the location and nature of the project, there would be no effect on climate, geology and seismicity, topography, fisheries, prime farmland, and environmental justice. The project could have minimal to no effect on soils; vegetation and wildlife; land use and zoning; socioeconomics; recreation; and hazardous, toxic, and radiological waste as discussed below.

#### 3.1.1 Soils

The soils in and near the project area are deep, moderately well drained soils typical of those formed in mixed alluvium. The soil series consist mainly of Dithod loam, East Fork clay loam, Dia loam, and Sagouspe sandy loam. They vary mainly in degree of acidity/alkalinity: Dithod loams are pH neutral; East Fork clay loams are moderately to strongly alkaline; Dia loams are neutral to strongly alkaline; and Sagouspe loams are moderately to strongly alkaline (NRCS, 2008; 2009; 2009a; 2009b). Near surface soils at the treatment plant site and along the pipeline alignment would be disturbed during construction. However, excavated soils would be reused as fill onsite and for other City projects, so the project would have no effect on the overall soil conditions in and near the project area.

### 3.1.2 Vegetation and Wildlife

The plant communities in the project area include ornamental landscaping and a few areas of ruderal vegetation. Nonnative trees, shrubs, grasses, and flowers are planted at residences and businesses along the pipeline alignment to provide shade and enhance the quality of life (Corps, 2009). Ruderal vegetation, dominated by nonnative, weedy plant species, is found in frequently disturbed areas along the City streets with no sidewalks or curbs, the alley, and the gravel and dirt sections of east Broadway Avenue near the Broadway well.

Both ornamental landscaping and ruderal vegetation provide very low habitat value for wildlife. Typical species associated with these communities are limited to a few small rodents, reptiles, and some birds adapted to the more urban environment. Migratory birds would likely avoid ornamental landscaped areas for nesting because of the close proximity of human activities, domesticated cats, and nesting predators such as jays and squirrels (Matlack, 1993).

Landscaped areas would be avoided during construction to the extent possible. Any damaged ornamental plants or lawns would be replaced once construction is completed. Surface clearing at the treatment plant site and the streets without sidewalks and curbs would disturb small areas of ruderal vegetation. However, this community has very low habitat value, and weedy species would be expected to rapidly revegetate these frequently disturbed areas after construction is completed. As a result, the project would have minimal effect on the overall vegetation and wildlife, including migratory birds, in the project area.

### 3.1.3 Land Use and Zoning

The City of Yerington completed a Master Plan in 2005 to help manage growth and development in the area (City of Yerington, 2005a). The Master Plan identified infrastructure developments and updated the City's zoning to reflect these developments. According to the City's zoning map, the project area is zoned for single and multiple family residential (R-1, R-2), residential-commercial (R-C), and commercial use (C-1, C-2) (City of Yerington, 2005b). The City has determined that the project is consistent with the 2005 Master Plan and the current zoning designations.

The land in the project area is currently being used for public works on the treatment plant site, residences and commercial businesses along most of the pipeline alignment, and open space at the east end of Broadway near the Broadway well. Construction of the project would have no effect on these land uses. The treatment plant would be part of the City's public works, and the residential and commercial areas are already established.

The U.S. Federal Emergency Management Agency has designated all but one very small part of the project area as being in Zone X (0.2 pct), an area with minimal flood risk (FEMA, 2009). A very small area at the end of Van Ness is in Zone A, an area

within the 100-year floodplain for the Walker River. However, the project would have no effect on the floodplain of the river because there would be no new above-ground structures within Zone A and all disturbed surfaces would be restored to pre-project conditions (including elevation) once construction is completed. The project is not designed to support new development in the floodplain.

### 3.1.4 Socioeconomics

Lyon County is a sparsely populated rural county in western Nevada. Yerington, the only incorporated city, is the County seat for local government. The population of the City was 2,883 in 2000 (U.S. Census Bureau, 2000) and has since increased to 3,319 (NDEP, 2009). In 2000, the ethnic makeup of the city was approximately 77.4 percent White, 15.4 percent Latino, 6.2 Native American, and 1 percent others (U.S. Census Bureau 2000, 2000a). Since the project has been designed to improve the quality of the water supply for all City residents, there would be no disproportionate effects on any minority or low-income populations in Yerington.

The local economy is based largely on irrigated agriculture, with principal crops including alfalfa, onions, garlic, grains (oat, wheat, barley, and other hays), and potatoes. Most of the workers in Yerington are employed in educational, health, and social services, as well as recreation, accommodations, and food services. In 1999, the median household income in Yerington was $31,151 per year; the poverty rate was 17.9 percent; and the unemployment rate was 4.2 percent (U.S. Census Bureau, 2000a).

The project would not be expected to affect the socioeconomic conditions in the City. The purpose of the project is to improve the quality of the City's domestic water supply by removing arsenic prior to distribution. Without the project, the population growth, ethnic makeup, income, and poverty rate would continue to depend on factors such as social trends and overall economic conditions.

### 3.1.5 Recreation

The City of Yerington offers numerous recreational facilities and opportunities for residents and visitors. The City owns three parks: Mt. View Park, Soroptimist Park, and Veterans Park. All of these parks provide shaded, grassy areas; walking paths; and picnic tables. The Veterans Park also has a gazebo with 100 seats, kiddy play area, horseshoe pit, and fishing pond. The City has an outdoor swimming pool; tennis, basketball, and volleyball courts; four ball fields; and an 18-hole golf course (City of Yerington, 2005a; 2009a).

There are no developed recreational facilities at or near the arsenic treatment plant site or along the pipeline alignment. However, a few residents or visitors could use these streets to walk, bike, or drive to the City parks for relaxing, picnicking, swimming, or participating in the numerous sports activities offered by the City. Recreational use is highest primarily during the late spring, summer, and early fall. Recreationists include both adults and children, and use is heaviest on the weekends during the summer.

Because no work would be conducted near the parks, the project would have no effects on recreational facilities, activities, or opportunities offered by the City. Thus, the quality of the recreational experience of users would be expected to remain the same. Residents or visitors could use adjacent nearby City streets to avoid the work areas and walk, bike, or drive to the parks with minimum delay. As a result, the project would have no effect on overall access to the City parks and recreational facilities.

### 3.1.6 Hazardous, Toxic, and Radiological Waste

The Corps completed a Phase I Environmental Site Assessment (ESA) for the City of Yerington Water and Sewer Project in September 2008 (Corps, 2008). The purpose of the ESA was to identify the presence or likely presence of any hazardous waste that may affect construction of the water and sewer project. A comprehensive records review and site visit were conducted to compile information for the ESA. This assessment did not include sampling for analysis of soil or groundwater.

The records review showed 14 sources of potential contamination near Yerington. However, none of these sources were within the project area for the water and sewer project. In addition, site reconnaissance revealed no evidence that HTRW contamination would affect the project (Corps, 2008). Since the project area for the water and sewer project included the same 0.7-acre City parcel and nearby residential and commercial streets as the project area for the arsenic treatment plant project, the results of the 2008 ESA also apply to the arsenic treatment plant project.

Construction of the project would involve use of substances that could be considered hazardous, such as fuels, lubricants, and oils. Inadvertent spills or leaks of these substances could enter surface waters via runoff or percolate into the groundwater. However, all spills or leaks would be cleaned up immediately. In addition, construction of the project would follow the regulatory requirements of the Nevada Department of Environmental Protection NPDES permitting process. As a result, the project would have no effect on any existing HTRW nor would it create any new HTRW.

## 3.2 Threatened and Endangered Species

### 3.2.1 Existing Conditions

In a letter dated February 9, 2010, and reconfirmed in an email dated June 1, 2010, the U.S. Fish and Wildlife Service (USFWS) indicated that no listed, proposed, or candidate species occur in the project area (Appendix A). In addition, the list of sensitive species for Lyon County from the Nevada's Natural Heritage Program website was obtained and reviewed on March 10, 2010 (DCNR, 2004). Based on field observations by a Corps biologist, there is no suitable habitat for any of the sensitive species in the project area.

### 3.2.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect if it would (1) result in the take of a Federally listed threatened or endangered species, or (2) adversely affect a species designated critical habitat.

No Action. This alternative would have no effect on Federally listed threatened or endangered species or their habitat.

Arsenic Treatment Plant. This alternative would have no effect on Federally listed threatened or endangered species or their habitat as none of these species occur in the project area. In any case, all work would be conducted to avoid or minimize any disturbance of any wildlife habitat outside the construction area.

### 3.2.3 Mitigation

Since there would be no effects on Federally listed species or their habitat, no mitigation would be required.

## 3.3 Water Resources and Water Quality

### 3.3.1 Existing Conditions

Water Resources

*Surface Water*. There are no natural sources of surface water or wetland areas in or near the project area. The closest source is the Walker River, located approximately 0.7 mile to the west. The designated beneficial uses of the Walker River in the Yerington area are irrigation; livestock watering; recreation; industrial, municipal, and/or domestic water supply; and propagation of wildlife (BWQP, 1999). The City has water rights to divert water from the river for irrigation only.

*Groundwater*. The City of Yerington relies on pumping groundwater for its municipal water supply. The City has water rights to pump up to 1.7 billion gallons annually. However, the system pumped only 487 million gallons in 2006 and 562 million gallons in 2007 (City of Yerington, 2008). The water system holds water rights that will support the City's growth well into the future.

Per their existing water rights, the City currently uses four active wells to pump groundwater from the underlying aquifer to supply water to its residents and businesses. The volume of groundwater in the aquifer varies seasonally; i.e., greater volume in the spring and summer due to recharge from snow melt and irrigation, and less volume during the fairly dry fall and snowy winter. As the groundwater volume decreases, the levels of arsenic increase.

Water Quality

*Surface Water*. The quality of the water in the Walker River is determined by seasonal flows, amount and timing of agricultural diversions and runoff, and past and ongoing development along the river. The primary water quality concerns are the amount of total dissolved solids and water temperature because of their potential adverse effects on fish and other aquatic life (Sharpe, et al., 2008).

*Groundwater*. Based on water quality sampling and analysis by the City of Yerington, the groundwater meets Federal drinking water standards for all physical and chemical parameters except arsenic. The current U.S. EPA's Arsenic Rule has established a maximum contaminant level for arsenic at 0.010 mg/L (10 ppb), and the City's four groundwater wells tap an aquifer that has average arsenic concentrations of about 0.015 to 0.030 mg/L (City of Yerington, 2008).

### 3.3.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on water resources if it would (1) substantially reduce natural surface or groundwater resources, (2) interfere with groundwater recharge, or (3) exceed or interfere with existing water rights.

An alternative would be considered to have a significant effect on water quality if it would (1) substantially degrade the quality of natural surface water resources, (2) contaminate a public water supply, or (3) substantially degrade the quality of groundwater resources.

No Action. This alternative would have no effect on surface or groundwater resources, groundwater recharge, or existing water rights in the project area. In addition, the quality of natural surface or groundwater resources would not be affected. However, under no action, the arsenic levels in the City's domestic water supply would continue to exceed U.S. EPA's MCL standard, and the residents would continue to be at higher risk for arsenic-associated cancers and other serious skin changes. In addition, the City would still need to take action to meet the MCL by January 23, 2011, or be in violation of the State's mandate.

Arsenic Treatment Plant

*Water Resources*. This alternative would have no effect on surface water resources, groundwater recharge, or existing water rights in the project area. No work would be conducted in or near the Walker River or tributaries. The amount of water withdrawn from the aquifer at the Mountain View and Broadway Avenue wells would continue to be consistent with existing water rights.

*Walter Quality*. This alternative would have no effect on the quality of natural surface or groundwater in the project area. No work would be conducted in or near the Walker River or tributaries. Per the project purpose, the project would improve the

quality of the water withdrawn from the aquifer at the Mountain View and Broadway Avenue wells by removing arsenic prior to distribution. This treated water would then flow into the system distribution system and dilute the arsenic level in the City's water supply to meet the U.S. EPA's MCL for arsenic.

### 3.3.3 Mitigation

Although the project would have no significant effects on water resources, the City would be required to obtain any permits and comply with State statutes and codes intended to protect water resources and quality as discussed below.

Construction of the project would disturb a total of approximately 1.6 acres of ground surface. As a result, the NDEP would require that the City obtain an NPDES permit in accordance with the Clean Water Act, as amended. This permit is required for construction activities that disturb 1 or more acres of land and involve possible storm water discharges to surface waters. Prior to construction, the City's contractor would be required to prepare a Storm Water Pollution Prevention Plan, which would identify best management practices (BMP's) to avoid or minimize any adverse effects of construction on surface waters. The contractor would be required to implement these BMP's during construction in accordance with the NPDES permit.

In addition, the project would be required to comply with all provisions of the Nevada Revised Statutes (NRS), Chapter 534, "Underground Water and Wells." Compliance with Nevada Administrative Code (NAC) 445A.6715 to 445A.6718, inclusive, "Regulations for Public Water Systems," would also be required. As a result, no additional mitigation would be required.

## 3.4 Air Quality

### 3.4.1 Existing Conditions

The Nevada Bureau of Air Pollution Control (BAPC) and Nevada Bureau of Air Quality Planning (BAQP) are responsible for ensuring compliance with Federal and State air quality regulations in all Nevada counties except Washoe and Clark Counties (BAPC, 2009; BAQP, 2009). Among other activities, the Nevada BAPC issues emission and surface area disturbance permits while the Nevada BAQP monitors and manages ambient air quality throughout the rest of the State.

The State has adopted the U.S. EPA's National Ambient Air Quality Standards in determining compliance. According to the U.S. EPA (2008), the project area is classified as an "attainment" area (meets standards) for all required pollutants, including carbon monoxide, ozone, and particulate matter ($PM_{10}$ and $PM_{2.5}$). The primary sources of hydrocarbon emissions and fugitive dust in and near the project area are vehicles and agricultural activities.

Air quality sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in air quality due to emissions and fugitive dust from the project. Air quality sensitive land uses in the project area include residences, businesses, and a small regional hospital; sensitive receptors include residents, visitors, and hospital patients and staff.

### 3.4.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on air quality if it would (1) violate any ambient air quality standard, (2) contribute on a long-term basis to an existing or projected air quality violation, (3) expose sensitive receptors to substantial pollutant concentrations, or (4) not conform to applicable local standards.

No Action. This alternative would have no effect on existing air quality in the project area. Air quality would continue to be influenced by climatic conditions, wild fires, and local and regional emissions from vehicles and agriculture.

Arsenic Treatment Plant. This alternative would have short-term effects on air quality during construction of the project. The operation of vehicles and heavy equipment including front end loaders, trenchers, backhoes, and water trucks would produce emissions as hydrocarbon exhaust and $PM_{10}$ and $PM_{2.5}$. In addition, there would be short-term increases in $PM_{10}$ and $PM_{2.5}$ as fugitive dust during soil excavation and operation of vehicles and heavy equipment.

However, these short-term emissions are not expected to violate any Federal ambient air quality standards or expose any sensitive receptors to substantial pollutant concentrations. Once the project is completed, air quality would return to pre-project conditions so there would be no long-term effects on air quality in the region.

### 3.4.3 Mitigation

Although the project would have no significant effects on air quality, the City would be required to obtain any permits and comply with State statutes intended to protect air quality as discussed below.

Construction of the project could disturb a total of approximately 1.6 acres of ground surface. Since construction would disturb fewer than 5 acres, a Surface Area Disturbance permit would not be required from the State. Prior to construction, however, the construction contractor would prepare a Fugitive Dust Control Plan identifying BMP's to minimize the amount of emissions, $PM_{10}$, and $PM_{2.5}$ generated during construction. These practices could include water trucks, sprinklers, fences or windbreaks, and speed limits. The contractor would be required to implement these BMP's and maintain dust controls during construction.

In addition, the project would be required to comply with all provisions of the NRS Chapter 445B, "Air Pollution," and NRS Chapter 486A, "Alternative Fuels: Clean-Burning Fuels." Compliance with NAC Chapter 445B, "Air Controls," would also be required. As a result, no additional mitigation would be required.

## 3.5 Traffic

### 3.5.1 Existing Conditions

Vehicular Traffic

*Regional and Local Roadways*. The major roadways in and near the project area are Nevada Highways 208 (Main Street) and 340 (east end connects to Bridge Street). These roadways have two paved lanes and provide two-way traffic movement. Both highways run through the City of Yerington, providing access to other parts of the City and Lyon County. The new water line would cross under Highway 208 (Main Street) at two locations: (1) intersection where Van Ness becomes Broadway Avenue and (2) between east side of Highway 208 and Bovard Avenue.

The local roadways in the project area are Mountain View Street, Van Ness Avenue, Broadway Avenue, alley behind the treatment plant site, California Street, Meadow Drive, Main Street, Bovard Street, Whitacre Street, and Bridge Street. Except for the alley, these streets are paved and provide two-way traffic movement. The east end of Broadway Avenue transitions from pavement to gravel to a dirt surface near the well. New waterline would be installed along sections of these local roadways.

*Traffic Types and Volumes*. The types of traffic on the highways include cars, recreational vehicles, small utility vehicles, commercial trucks, buses, and motorcycles. City traffic includes primarily cars, small utility vehicles, and pickup trucks, while City maintenance vehicles use the unpaved section of Broadway Avenue and the alley.

The Nevada Department of Traffic (NDOT) records and compiles annual average daily traffic (AADT) volumes along the highways and many roadways in Nevada. Table 3 shows the most recent AADT counts at locations nearest the project area (NDOT, 2009). The east end of Broadway and the alley would have only occasional use by cars and City maintenance vehicles.

### 3.5.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on traffic if it would cause (1) an increase in vehicular traffic that is substantial in relation to the existing traffic on a roadway; (2) an increase in safety hazards on area roadways; or (3) substantial deterioration of the physical condition of area roadways.

No Action Alternative. This alternative would have no effect on existing roadway traffic in the project area. The volume of traffic on local roadways would likely increase

**Table 3. Traffic Volumes on Roadways near the Project Area in 2008**

| Roadway | Location | AADT[1] |
|---|---|---|
| Hwy 208 (Main Street) | 200 feet south of U.S. 95A (Goldfield Ave) | 5,700 |
| Hwy 208 (Main Street) | 150 feet north of Bridge St | 5,400 |
| Hwy 340 (Bridge Street) | 0.1 west of Main St | 4,100 |
| Hwy 208 (Main Street) | 0.1 mile south of Hwy 340 (Bridge St) | 4,300 |

[1]AADT = Annual average daily traffic.
Source: NDOT, 2009.

as the City continues its planned development of other parts of the City (City of Yerington, 2005a).

Arsenic Treatment Plant. This alternative would have short-term effects on vehicle traffic in and near the project area during construction. The project would affect the types of traffic, volume of traffic, and physical conditions of the roadway surfaces. However, there would be no long-term effects on traffic once the project is completed.

Construction equipment and worker vehicles would use existing local paved roadways to access the staging and work areas. In addition, haul trucks would use Highway 95A and other major roadways to transport construction materials to the work areas, as well as remove and dispose of any unsuitable soils and other waste materials. Estimated increases in traffic on Highway 95A and other major roadways during construction include 20 worker vehicle trips each day and 10 haul truck trips each day, for a total of only 30 trips per day on weekdays. Since this short-term increase in traffic would not be substantial as compared to existing traffic volumes as shown in Table 3, it would be considered less than significant.

Traffic congestion could increase along the local roadways in the project area since sections of the roadways would be closed or restricted to one lane during installation of the pipeline. In addition, driveways would be inaccessible for short periods during pipe installation and road repair. However, access for emergency vehicles and personnel along these streets would be maintained at all times. The City would notify residents and coordinate with local police, fire, and emergency services prior to all work to minimize inconvenience and ensure public safety along these streets. As a result, any effects would be reduced to less than significant.

This alternative would have short-term effects on the physical condition of the local roadways in the project area during installation of the pipelines. However, after the pipeline work is completed, the disturbed roadways would be repaired by resurfacing with asphalt, and the streets would be returned to pre-project conditions. As a result, there would be no significant long-term effects on the physical conditions of area roadways.

### 3.5.3 Mitigation

Although the project would have no significant effects on traffic or roadways, the City would be required to ensure public safety on roadways during construction. Prior to initiation of construction, the City's construction contractor would be required to prepare a traffic management plan and have it approved by the City. This plan would identify those measures that the contractor would implement during construction to minimize any effects on traffic and ensure public safety. These measures could include signs, flaggers, cones, barricades, traffic delineation, and designated detours.

## 3.6 Noise

### 3.6.1 Existing Conditions

Noise can be defined as unwanted sound and noise levels, and effects are interpreted in relationship to its effects on residents. The City of Yerington manages excessive noise that is injurious to health or interferes unreasonably with the comfortable enjoyment of life or property within the City. Per the City Code (1973 Code 8.12.010), excessive noise in the developed areas of the City is considered to be a nuisance (City of Yerington, 2009b).

The primary sources of ambient (background) noise in the project area are motor vehicles and occasional human activities such as yard maintenance. The noise levels in the project area vary, depending on the time of day, number and types of noise sources, and distance from the sources of noise. Levels of noise during the day are highest along city streets during commute hours because of the increased number of motor vehicles. Typical noise levels in decibels (dB) range from 40 to 50 dB's in quiet residential areas to 60 to 70 dB's on busy streets to over 80 dB's at construction sites (Coolmath.com, 2009).

Noise-sensitive receptors include sensitive land uses and those individuals and/or wildlife that could be affected by changes in noise sources or levels due to the project. Noise-sensitive land uses in the project area include residences, businesses, and a small regional hospital. Sensitive receptors include residents, visitors, and hospital patients and staff.

### 3.6.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on noise if it would (1) substantially increase long-term ambient noise levels or (2) constitute a nuisance as defined in the Yerington City Code (1973 Code 8.12.010). The significance of noise effects is evaluated with reference to the distance from the noise source and the number of sensitive receptors affected.

No Action Alternative. This alternative would have no effects on existing noise in the project area. Existing sources and levels of noise would be expected to remain the same. The City would continue to manage excessive noise per the City Code.

Arsenic Treatment Plant. This alternative would have both short-term and long-term effects on noise. Construction of the project would result in short-term increases in noise. The operation of vehicles and heavy equipment including front end loaders, trenchers, backhoes, and water trucks would generate intermittent or constant noise, increasing ambient noise levels in the project area. In addition, there would be short-term increases in noise from worker activities such as moving supplies, installing pipe connections, and area cleanup.

The effects of noise decrease as the distance from the source increases due to the attenuation of sound (double the distance results in reduction in sound by factor of 4) (Lyman, 2010). At the same time, the effects increase as the number of sensitive receptors increases. The increase in noise levels during construction could be considered substantial near the treatment plant site and along the waterline alignment. The site is surrounded by a residential area, and both sensitive land uses and sensitive receptors are located along the alignment. Residents, visitors, and hospital patients and staff could be disturbed by the construction noise, especially when the work is being conducted nearby.

The City does not consider construction noise a nuisance per the City Code because the project is short term and is intended to improve service to the City residents. In addition, short-term construction noise would cease once the project is completed. As a result, short-term effects on noise would be considered less than significant. However, the contractor would be required to minimize the effects of construction noise on sensitive receptors by implementing the mitigation measures identified in Section 3.6.3. In addition, the City would notify the residents and hospital prior to the work along those streets.

Operation of the above-ground pumps and backup generator at the treatment plant site would result in long-term increases in noise. However, the pumps are located within the new building so the resulting noise levels outside the building would be minimized by the walls and other structures within the building. The backup generator outside the building would be equipped with a Level II sound attenuator, which would reduce the noise level to approximately70 dB's at a distance of 23 feet (James, 2010b). Since the nearest residence to the proposed backup generator is approximately 86 feet north, the resulting sound level at that location would be less than 10 dB's. As a result, the project would have no significant long-term effects on noise.

### 3.6.3 Mitigation

Although the project would have no significant effects on noise, the construction contractor would implement the following measures to minimize short-term effects on noise: (1) equip construction equipment with mufflers; (2) limit days and hours of construction near residential areas, businesses, and the hospital; and (3) limit haul truck speeds on roads adjacent to residences. No additional mitigation would be required.

## 3.7 Esthetics

### 3.7.1 Existing Conditions

Esthetic resources are those natural resources, landforms, and manmade structures in the regional and local environment that generate one or more sensory reactions and evaluations by viewers. The regional landscape in the Mason Valley is dominated by flat open areas or agricultural fields with trees and shrubs along the Walker River. Foothills and mountains are seen in the distance both to the west and east.

Local views in the project area are primarily developed City areas. Views at the treatment plant site include a highly disturbed area surrounded by a residential neighborhood with single family homes. Existing structures on the parcel are an elevated metal water storage tank; small dilapidated concrete, wood, and metal well shed; and tall chain link fencing. Views along the pipeline alignment include residences with landscaping, businesses with small parking areas, and open rural areas at the east and west ends of several streets.

Potential viewers include residents, visitors, and hospital patients and staff. The number of viewers would be highest in the more commercial areas near along Center and Main Streets than in the residential areas.

### 3.7.2 Effects

Basis of Significance. An alternative would be considered to have a significant effect on esthetics if long-term changes in landforms or structural features substantially increase levels of visual contrast as compared to surrounding conditions. The significance of effects on esthetics is evaluated in relation to the number of viewers affected.

No Action Alternative. This alternative would have no effect on existing esthetics in the project area. The regional and local views would be expected to remain the same. The City would likely repair sections of existing fencing around the treatment plant site to improve security.

Arsenic Treatment Plant. This alternative would have both short-term and long-term effects on esthetics. The short-term effects would include changes in local views due to the presence of construction equipment, vehicles, and activities. These changes in local views would be apparent to viewers near the treatment plant site, as well as the work areas along the pipeline alignment. However, since the effects during construction would be short-term, they would be considered less than significant.

The long-term effects on esthetics would include changes in local views due to the presence of the new treatment plant building and backwash tank, removal of the well shed, and repair of chain link fencing. Numerous viewers could be affected because the project is located in a developed area of the City. However, the levels of visual contrast would not be considered substantial because the changes would be consistent with the

historic use of the 0.7-acre parcel for City utilities and storage. That is, the elevated water storage tank would remain in place, and the City garage and well shed would be replaced with a treatment plant building and backwash tank. As a result, the project would have no significant effects on esthetics.

### 3.7.3 Mitigation

Since effects on esthetics would be less than significant, no mitigation would be required.

## 3.8 Cultural Resources

### 3.8.1 Existing Conditions

Ethnography. Yerington is located within the area originally inhabited by the Northern Paiute (Stewart, 1939). This group occupied parts of northwestern Nevada, as well as parts of southwestern Idaho, southeastern Oregon and eastern California. The word “Paiute”, as used for the Native Americans of this area, has been explained as a combination of the Paiute words *pa* (water) and *ute* (direction) (Stewart, 1939). The Paiute call themselves *nomo* (people).

Research by Omer Stewart in the mid-1930’s led him to divide the Northern Paiute into 21 separate bands (Stewart, 1939). Yerington appears to have been within the *Tövusidökadö* territory, which included the Mason and Smith Valleys, an area of 2,100 square miles. The adjacent *Aga'idökadö* "trout eaters" occupied the Walker Lake and vicinity, an area of 1,750 acres, and used the resources of Walker Lake and Walker River.

In general, the Northern Paiute followed a gathering/hunting life style based on seasonal use of plant resources, especially seeds, berries, and roots; hunting and trapping of game such as antelope and rabbits; occasional to intensive fishing; and hunting of waterfowl, where possible. Although little data are available on the seasonal round, it was probably similar to that known for *Kidutokado* group of Surprise Valley where several families wintered together and then broke up into individual family resource groups in the spring to follow a seasonal round until the next winter encampment (Kelly, 1932).

The *Tövusidökadöt* territory now includes the Yerington Reservation/Yerington Colony located approximately 1.5 mile north of the project area. The Paiute Tribe of the Yerington Colony & Campbell Ranch, Nevada, a Federally recognized Indian Tribe, had 155 individuals in 1950, 290 in 1970, and 342 in 1980. The total land area of the Yerington Reservation and Colony is 1,156 acres (Fowler and Liljeblad, 1986; USDI/BIA, 2002).

The *Aga'idökadö* territory now includes a reservation on the lower Walker River and north end of Walker Lake, which was initially set aside in 1859, but not formally established until 1984. The Walker River Paiute Tribe of the Walker River Reservation,

Nevada, is also a Federally recognized Indian Tribe. The population of this group has varied from 371 in 1950, 385 in 1970, to 862 in 1980. The total land area of the Walker River Reservation encompasses 320,512 acres.

Historic Context. Originally part of the Utah Territory, Lyon County was one of the original nine Nevada territories admitted to the Union in 1864. The importance of Yerington as a regional center is underscored by the transfer in 1911 of the county seat, which had initially been established at Dayton. The still prominent Lyon County Courthouse is located on Main Street (Goddard, 1857; Thompson and West, 1881/1958; Elliot, 1973; Moreno, 2000).

Until 1879, the town of Yerington was known as Pizen Switch, mainly because of homemade liquor serviced in the saloon (Carlson, 1974; Moreno, 2000). Greenfield, the town's successor name, alluded to the "its location in the green fields of Mason Valley" (Carlson, 1974). By 1880, Greenfield had a population of 200, five stores, three hotels, two saloons, two restaurants, three livery stables, and three blacksmith shops (Thompson and West, 1881/1958). The post office of Yerington was established on February 6, 1894 (Gamett and Paher, 1983). The growth of Yerington depended first on irrigated agriculture and later mining with rail transport.

Agricultural water rights date to the late-1800's and were encouraged by the Federal Government's Homestead Acts (beginning in 1862), the Desert Land Entry Act (1877), and the Carey Act (1894). Agricultural ditches diverting flow from the Walker River in the Yerington area include the Campbell Ditch, Spragg-Woodcock Ditch, WRID Ditch, Sand Ridge Ditch, and Nichol-Merrit Ditch.

The Yerington Mining District included all of the Singatse Range, towns and camps in the Mason Valley, and a small part of the Wassuk Range. In addition to copper - the district was the second largest copper producer in Nevada - gold, silver, lead, gypsum, turquoise, iron, and nickel were extracted (Lincoln, 1923; Carlson, 1974; Tingley, 1992). This copper mining resulted in demand for a branch railroad servicing the mines as well as Mason Valley farms. Construction of the Nevada Copper Belt Railroad (NCB) was started in 1909, and the first passenger train to the Yerington Station arrived on January 14, 1910. The mines were the principal users of the NCB. The line was operated until the mid-1940's, with abandonment in March 1947 (Myrick, 1962; Robertson, 1986).

The 1940's marked the beginning of a period of rapid growth in the City of Yerington, largely fueled by the operation of the Anaconda Mining Company. Between 1950 and 1960, the population of Lyon County increased 67 percent and continued to grow at an increasing pace, although the economic base of the county shifted from mining to agriculture, manufacturing, and service industry jobs (U.S. Census Bureau, 2000).

Records Search. The area of potential effect (APE) is located in the southeast quarter of Section 15, southwest quarter of Section 14, northwest quarter of Section 23,

and northeast quarter of Section 22, Township 13 North, Range 25 East, on the Yerington, Nevada (1986), USGS 7.5-minute topographic quadrangle. The APE includes approximately 9,940 linear feet of waterline alignment and 16 acres at and around the treatment plant site. The APE for cultural resources includes the area with the potential to be directly or indirectly affected by the project. features.

In May 2010, the Corps conducted a records and literature search of the Nevada Cultural Resource Information System database. Ms. Karyn de Dufour, Data Manager at the Nevada State Historic Preservation Office, also provided the Corps with a search of historical architecture records. The search indicated that four archaeological surveys and one architectural assessment had been conducted within the APE.

- 1977, Seelinger surveyed a portion of south West Street for the Yerington Paiute Housing Authority.

- In 1978, Kuffner surveyed a parcel of land west of south Mountain View Street between the end of Van Ness Avenue and Grove Street for the construction of the Yerington Park. One historic refuse scatter (26LY60) was located on the park parcel just outside the APE. This site was determined not eligible for the National Register of Historic Places (NRHP) and was obliterated by the construction of the park.

- In 1987, Seldomridge surveyed a portion of Main Street that crosses the APE and the block of West Bridge Street between south Whitacre Street and south Mountain View Street.

- In 1987, Comp and Beckham (1987) conducted an architectural survey of the buildings on Main Street between Pearl and Grove Streets.

- In 2009, Basin Research Associates surveyed California Street and the treatment plant site as part of a larger cultural survey for the City of Yerington's Water and Sewer Improvement Project. A small well shed on the treatment plant site was recommended as individually ineligible to the NRHP (Harmon, 2008), but was not formally evaluated.

Field Survey. On February 18-19, 2010, and June 2, 2010, the Corps visited and evaluated the APE. Most of the APE is paved except the treatment plant site, 870 feet of dirt road east of the end of Broadway Avenue, and 140 feet between Kay Way and an unnamed drainage ditch . The Corps performed an intensive pedestrian survey of these unpaved areas by walking them in a zigzag pattern. The pedestrian survey did not indicate the presence of any prehistoric cultural remains. The rest of the APE was covered by driving along the paved alignment in a vehicle.

The field survey and additional background research indicated that 32 structures 45 years of age or older are located within the APE. These included 28 houses, a church,

a well shed, an elevated water storage tank, and an unnamed drainage ditch (YER-SJG-001).

Evaluation. The Corps is currently consulting with the Nevada State Historic Preservation Officer (SHPO) regarding the eligibility of these structures on the treatment plant site and along the waterline alignment. The results of the consultation will be included in the final EA.

### 3.8.2 Effects

Basis of Significance. An alternative would be considered to have a significant adverse effect on cultural resources if it would adversely affect any properties listed, or eligible for listing, on the NRHP. Types of potential effects include physical destruction, damage, or alteration; isolation or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

No Action Alternative. This alternative would have no effects on existing cultural resources in the project area. Any cultural resources and historic structures in or near the APE would be expected to remain the same.

Arsenic Treatment Plant. The Corps is currently consulting with the Nevada SHPO regarding potential effects of the alternative on any historic structures on the treatment plant site and along the waterline alignment. Once that consultation is completed, a letter will be sent to the Nevada SHPO, requesting concurrence with the Corps' anticipated determination of no historic properties affected in accordance with 36 CFR Part 800.4(d)(1).

### 3.8.3 Mitigation

Since there would be no significant effects on any properties listed, or eligible for listing, on the NRHP, no mitigation would be required. If buried or previously unidentified cultural resources are located during project activities, all work in the vicinity of the find would cease and the Nevada SHPO's office would be contacted for additional consultation per NRS 383.150-383.190 and 36 CFR 800.13(b)(3), Post Review Discoveries.

## 4.0 CUMULATIVE EFFECTS

Cumulative effects are effects of the project considered with other past, present, or reasonably foreseeable projects in the area. Currently, there are no other ongoing or reasonably foreseeable projects in or near the project area. As the City grows, the existing water and sewer systems are likely to be extended into other developing areas. However, location and features of such projects have yet to be determined. As a result, when the effects of the proposed project are considered with other past, present, and reasonably foreseeable projects in the area, no significant cumulative effects are anticipated at this time.

## 5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS

**Clean Air Act, as amended and recodified (42 U.S.C. 7401 et seq.)**. *Compliance*. The project is not expected to violate any Federal or State air quality standards, or hinder the attainment of air quality objectives in the local air basin. The Corps has determined that the proposed project would have no significant effect on the future air quality of the area.

Section 176(c) of this act requires that Federal agencies ensure that their activities are in conformance with Federally approved State Implementation Plans for areas designated as "non-attainment" and "maintenance." This project would not be located in either type of designated area and therefore is not subject to this provision of the act.

**Clean Water Act (33 U.S.C. 1251 et seq.)**. *Compliance.* Since the project would not include any work in waters of the U.S., Section 401 and 404 permits would not be required. The project would require an NDPES permit from the State since it would disturb 1 or more acres of land and involve possible stormwater discharges to surface waters.

**Endangered Species Act (16 U.S.C. 1531 et seq.)**. *Compliance.* In a letter dated February 9, 2010, and reconfirmed in an email dated June 1, 2010, the USFWS indicated that no listed, proposed, or candidate species occur in the project area (Appendix A). As a result, the project would have no effect on any Federally listed species.

**Executive Order 11988, Floodplain Management.** *Compliance*. This order directs all Federal agencies to avoid (to the extent possible) any adverse effects of modifying floodplains, and to avoid support of floodplain development when there is a practicable alternative. The project would have no effect on the existing floodplain of the Walker River because there would be no new above-ground structures, changes in surface elevation, or increased floodplain development in the project area once construction is completed.

**Executive Order 11990, Wetlands**. *Compliance*. This order directs all Federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Since there are no wetlands in the project area, the project would have no effects on wetlands.

**Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.** *Compliance.* The order directs all Federal agencies to identify any disproportionate human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The project would have no such effects on any minority or low-income populations.

**Farmland Protection Policy Act (7 U.S.C. 4201)**. *Compliance.* The project would have no effect on prime farmland or farmland of statewide importance because there is no such farmland in the work areas for the project.

**Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.)**. *Compliance*. The project would modify the infrastructure of the City's existing water supply system to reduce the current arsenic in the City's water supply to a level at or below the U.S. EPA's MCL for safe drinking water. Since construction would not divert, modify, impound, or otherwise control the Walker River or another waterway, this act does not apply to this project.

**Migratory Bird Treaty Act (15 U.S.C. 701-18h)**. *Compliance.* This act requires that the project avoid destruction of active bird nests or young of migratory birds that breed in the area from March to August. The plant communities in the project area are ornamental landscaping and a few areas of ruderal vegetation. These communities provide very low habitat value for wildlife and no suitable nesting habitat for birds. As a result, the project is not expected to have any effect on migratory birds.

**National Environmental Policy Act (42 U.S.C. 4321 et seq.)**. *Partial Compliance.* Comments received during the public review period will be considered and incorporated into the final EA, as appropriate. The final EA and signed FONSI will complete the Corps' NEPA process.

**National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.).** *Partial Compliance.* The Corps is currently consulting with the Nevada SHPO regarding the eligibility of the existing structures on the treatment plant site and along the waterline alignment. The results of the consultation will be included in Section 3.8 of the final EA.

Once that consultation is completed, a letter will be sent to the Nevada SHPO, requesting concurrence with the Corps' anticipated determination of no historic properties affected in accordance with 36 CFR Part 800.4(d)(1). Letters will also be sent to potentially interested Native Americans, requesting information regarding traditional cultural sites or concerns. The response from the Nevada SHPO, as well as any responses from Native Americans, will be included in the final EA.

## 6.0 PUBLIC INVOLVEMENT

The public involvement for this project has included public attendance and participation at Yerington City Council meetings where the need to improve the water supply system has been discussed. The public and other interested/affected parties have been encouraged to comment on the proposed plans, funding decisions, and City Council decisions. The City is not aware of any public opposition to the project.

The City of Yerington also provides information on completed and ongoing capital improvement projects on the City's website at www.yerington.net. Contact information is provided, and the public can obtain additional information or make comments during the design and construction process.

## 7.0 COORDINATION AND REVIEW OF THE FINAL EA

The draft EA and FONSI will be circulated for 21 days to agencies, organizations, and individuals known to have an interest in the project (Appendix E). All comments received will be carefully considered and incorporated into the final EA, as appropriate.

This project is being coordinated with the following Federal, State, and local agencies:

U.S. Fish and Wildlife Service
Nevada Division of Environmental Protection
Nevada Bureau of Safe Drinking Water
Nevada Bureau of Air Quality Planning
Nevada State Historic Preservation Officer
Nevada Division of Wildlife
Lyon County
City of Yerington

## 8.0 CONCLUSIONS

Based on the information in this EA, the proposed project would have no significant adverse effects on the environment. No mitigation beyond avoidance, best management practices, measures proposed in this EA, and permit requirements would be required. Following the public review period, a determination will be made whether a FONSI is warranted or whether preparation of an EIS is necessary.

## 9.0 LIST OF PREPARERS

Aimee Kindel
Engineering Student, U.S. Army Corps of Engineers

Joe Griffin
Archeologist, U.S. Army Corps of Engineers

Lynne Stevenson
Environmental Manager, U.S. Army Corps of Engineers

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# PLATES

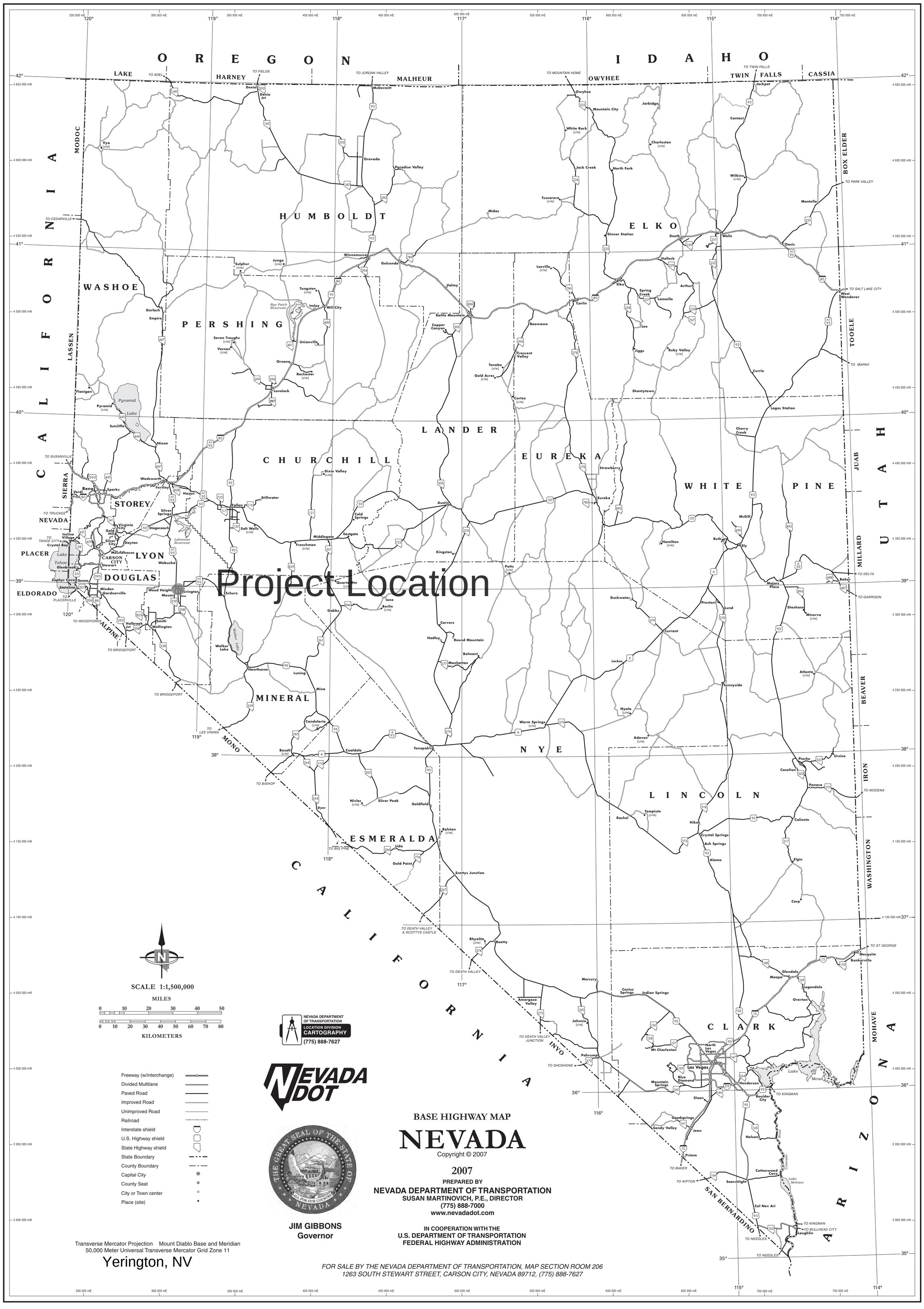
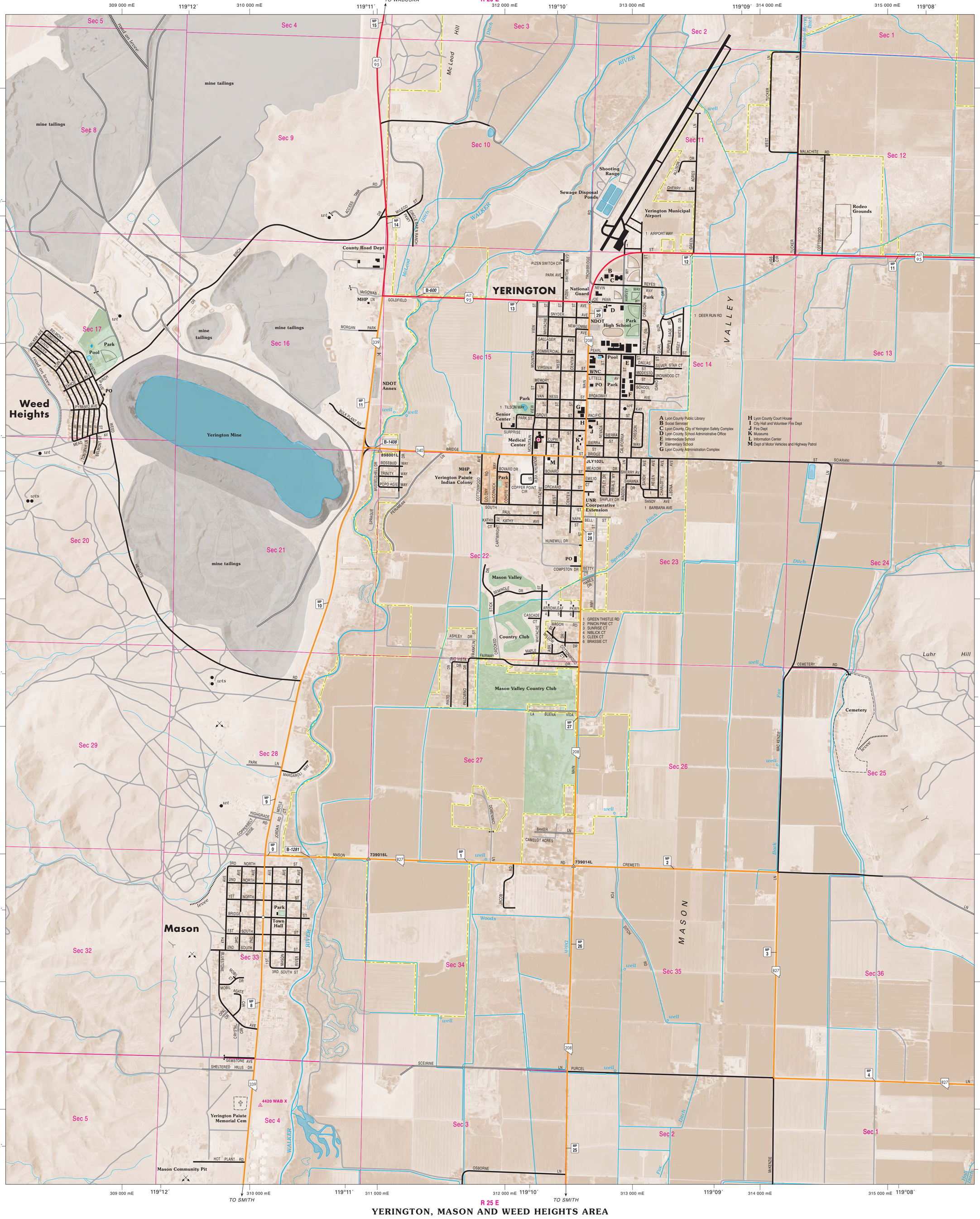



Plate 1. Project Location

NEVADA DOT

NEVADA DEPARTMENT OF TRANSPORTATION
LOCATION DIVISION
CARTOGRAPHY
(775) 888-7627




## YERINGTON, MASON AND WEED HEIGHTS AREA
2007

Population* 3,257
Mean Elevation 4,378'
*2006 Nevada State Demographer

Transverse Mercator Projection 1983
Mount Diablo Base and Meridian

1,000 Meter Universal Transverse Mercator Grid Zone 11
North American Datum 1983

Horizontal and vertical control data on file at Carson City, Nevada

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Nevada Department of Transportation

Orthophoto courtesy of USDA NAIP
Photography date: 2006

- Freeway, Federal
- Highway, Federal
- Highway, State
- Frontage Road
- Other Paved Road
- Improved Surface
- Unimproved
- 123 Interchange Number
- MP 123 Interstate Milepost Marker
- MP 12 Interstate Milepost Marker (by County)
- MP 12 US or State Route Milepost Marker (by County)
- I-123W NDOT Bridge Number
- HM 123 Nevada Historical Marker

N
GN MN
1°22' 14°
UTM Grid and
2007 Magnetic North Declination

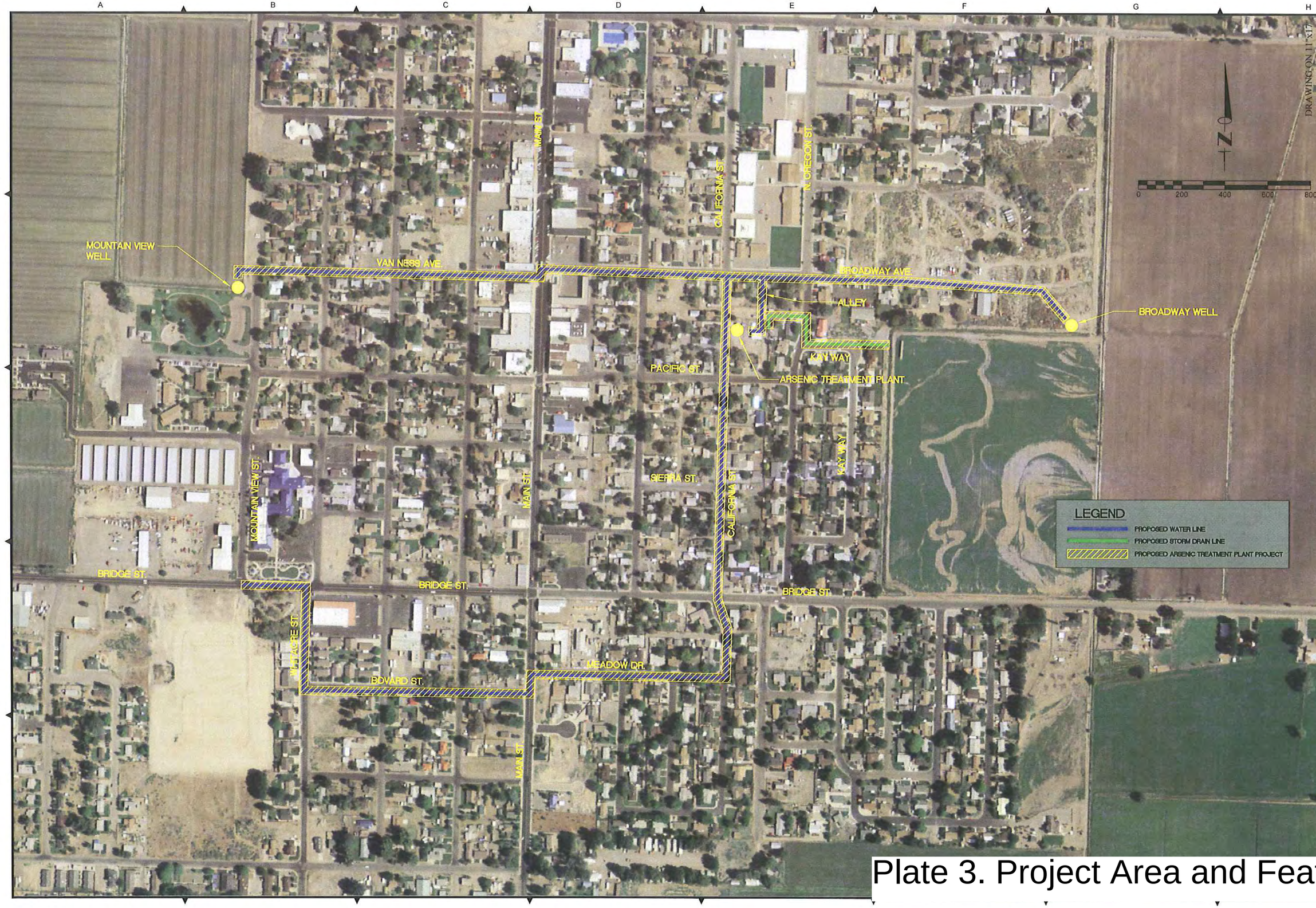
1:15,000
FEET
0 500 1000 1500 2000 2500
0 200 400 600 800
METERS

LYON COUNTY
Yerington Area

Prepared by and for sale at:
**NEVADA DEPARTMENT OF TRANSPORTATION**
Location Division, Cartography Section
1263 South Stewart Street, Room 206
Carson City, Nevada 89712

In cooperation with the
**U.S. Department of Transportation**
**Federal Highway Administration**

# Plate 2. Vicinity Map




DRAWING ON 11"X17" IS HALF SCALE

| REVISION | DESCRIPTION | BY | APP | DATE |
|---|---|---|---|---|
| | | | | |

JOB NO.: 0253.1938-WTP
DATE: MAY, 2010
SCALE:
DESIGNED:
DRAWN:
CHECKED:

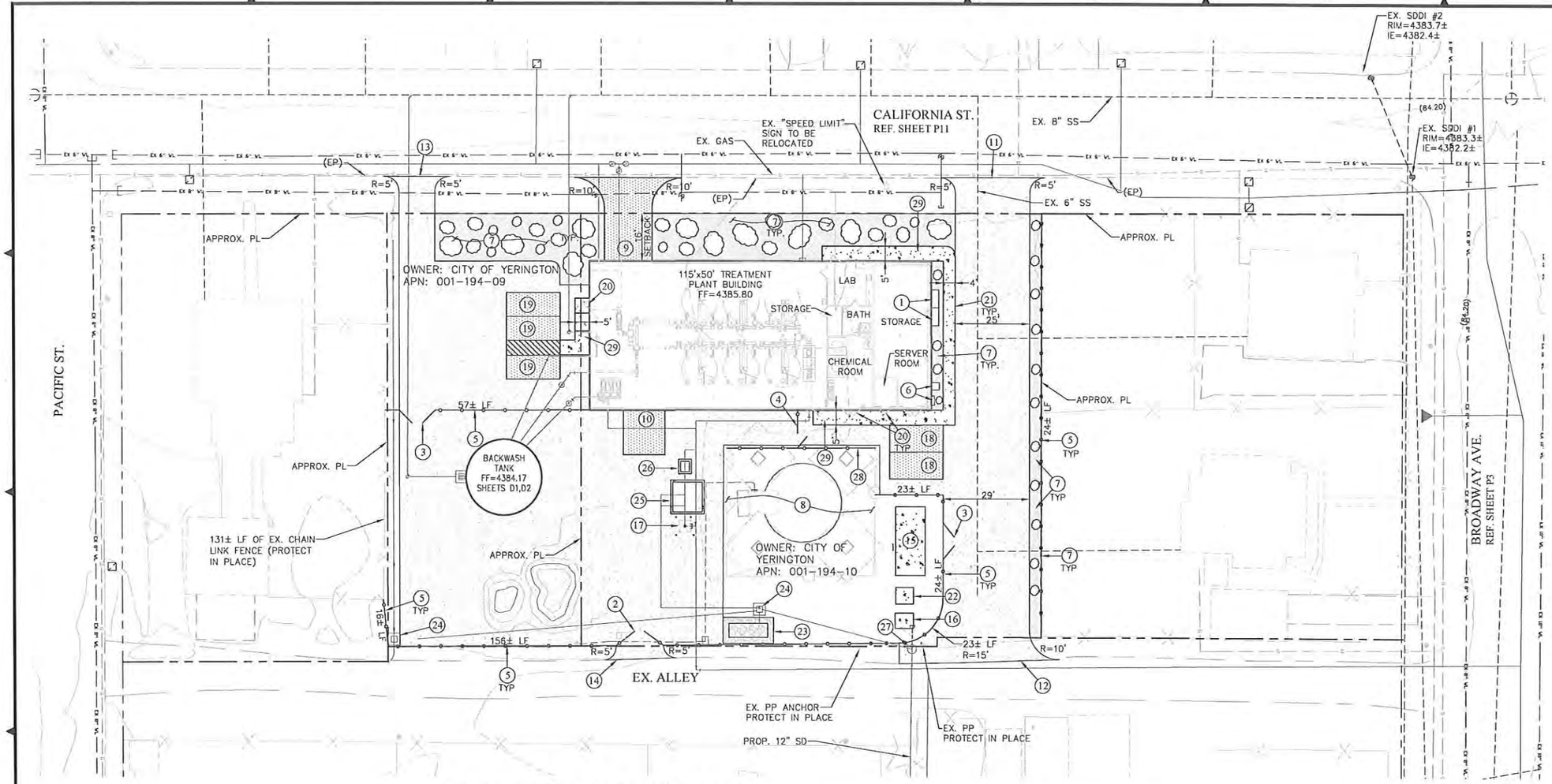
FARR WEST ENGINEERING
5442 LONGLEY LANE, SUITE B
RENO, NEVADA 89511
PHONE: (775) 851-7788
FAX: (775) 851-0766

PLATE 3
YERINGTON WATER TREATMENT PLANT
PROJECT AREA AND FEATURES
YERINGTON NEVADA

SHEET NUMBER

P:\Projects\0253 Yerington WTP\5.0 Design\5.11 Drawings\5.11.2 Exhibits\PL3_PLATE 3 - AREA AND FEATURES.dwg, 6/2/2010 7:07:44 PM

# Plate 3. Project Area and Features




DRAWING ON 11"x17" IS HALF SCALE

## GENERAL NOTES (THIS SHEET):

1. VERIFY UTILITY ENTRY LOCATIONS AT BUILDING WITH MECHANICAL/ELECTRICAL/PLUMBING (MEP) PLANS.
2. FOR GAS DESIGN FROM STREET TO THE METER SEE PLANS BY SOUTHWEST GAS. COORDINATE WITH MEP PLANS.
3. FOR ELECTRIC SERVICE SEE PLANS BY NEVADA ENERGY. COORDINATE WITH MEP PLANS.
4. FOR TELEPHONE SERVICE SEE PLANS BY AT&T. COORDINATE WITH MEP PLANS.
5. ALL DUCTILE IRON WATER PIPE SHALL BE CEMENT MORTAR LINED.
6. SEE DETAIL SHEETS FOR DESIGN INFORMATION REGARDING LATERALS, WATER FITTINGS, VERTICAL SEPARATION, RESTRAINTS, ETC.
7. REF. SHEET C3, GENERAL NOTE 9 FOR DEFINITION OF CUT & CAP.
8. REF. SHEET C3, GENERAL NOTE 10 REGARDING INDENTIFICATION AND LOCATION OF EX. UTILITIES.

## CONSTRUCTION NOTES (THIS SHEET):

1. PROPOSED ELECTRICAL SWITCH GEAR LOCATION. SEE ELECTRICAL PLANS.
2. INSTALL 16' WIDE DOUBLE SWING GATE, REF. DTL. E, SHT. D5
3. INSTALL 12' WIDE DOUBLE SWING GATE, REF. DTL. E, SHT. D5
4. INSTALL 8± LF OF 6' HIGH CHAIN LINK FENCE AND 5' WIDE MAN-GATE, REF. DTL. E, SHT. D5
5. INSTALL 6' HIGH CHAIN LINK FENCE. USE SALVAGED FENCE MATERIAL AS MUCH AS IS PRACTICABLE. REF. DTL. E, SHT. D5. FENCE LENGTHS AS SHOWN.
6. HEATING/COOLING UNITS APPROXIMATE LOCATION. SEE MECHANICAL PLANS.
7. LANDSCAPE AREA.
8. EX. WATER STORAGE TANK AREA (FENCED).
9. 16' WIDE AC PAVEMENT PLANT ACCESS AND DRIVEWAY.
10. 14' WIDE AC PAVEMENT PLANT ACCESS..
11. 25' WIDE AGGREGATE BASE DRIVEWAY.
12. 29' WIDE AGGREGATE BASE DRIVEWAY.
13. 12' WIDE AGGREGATE BASE DRIVEWAY.
14. 16' WIDE AGGREGATE BASE DRIVEWAY.
15. PROPOSED 23'x10' BACK-UP GENERATOR CONCRETE PAD.
16. PROPOSED 72"x62" TRANSFORMER CONCRETE PAD.
17. EXISTING WELL AND CONCRETE PAD.
18. 18'x9' STANDARD PARKING SPACES.
19. 18'x8' ADA COMPLIANT PARKING SPACES.
20. ADA COMPLIANT DOORWAY ACCESS AND RAMPS.
21. ADA COMPLIANT 4' WIDE CONCRETE SIDEWALK.
22. METERED SWITCH GEAR CONCRETE PAD.
23. 20'x10' RIP RAP DETENTION BASIN (DEPTH=2.0')
24. TYPE 3-R CATCH BASIN.
25. 10'x10' CONNECTION VAULT (CALIFORNIA WELL).
26. 3.5'x3' METER VAULT.
27. TYPE I STORM DRAIN MANHOLE.
28. 50± LF OF RELOCATED CHAIN LINK FENCE.
29. ADA COMPLIANT 5' WIDE CONCRETE SIDEWALK.

## LEGEND:

- APPROXIMATE PROPERTY LINE
- PROPOSED CONCRETE
- PROPOSED AC PAVEMENT
- PROPOSED AGGREGATE BASE
- PROPOSED LANDSCAPING
- ADA LOADING/UNLOADING AREA

| REVISION | DESCRIPTION | BY | APP | DATE |
|---|---|---|---|---|
| | | | | |

JOB NO.: 0253.YTR-WTP
DATE: MAR. 2010
SCALE: 1"=40'
DESIGNED: ERJ
DRAWN: VJW
CHECKED: RBE

FARR WEST ENGINEERING
5442 LONGLEY LANE, SUITE B
RENO, NEVADA 89511
PHONE: (775) 851-4788
FAX: (775) 851-0766

PLATE 4
YERINGTON WATER TREATMENT PLANT
SITE PLAN - TREATMENT PLANT
YERINGTON NEVADA

SHEET NUMBER

P:\Projects\0253 Yerington WTP\5.0 Design\5.11 Drawings\5.11.2 Exhibits\PL4_PLATE 4 - SITE PLAN.dwg, 6/4/2010 2:26:27 PM

Plate 4. Site Plan

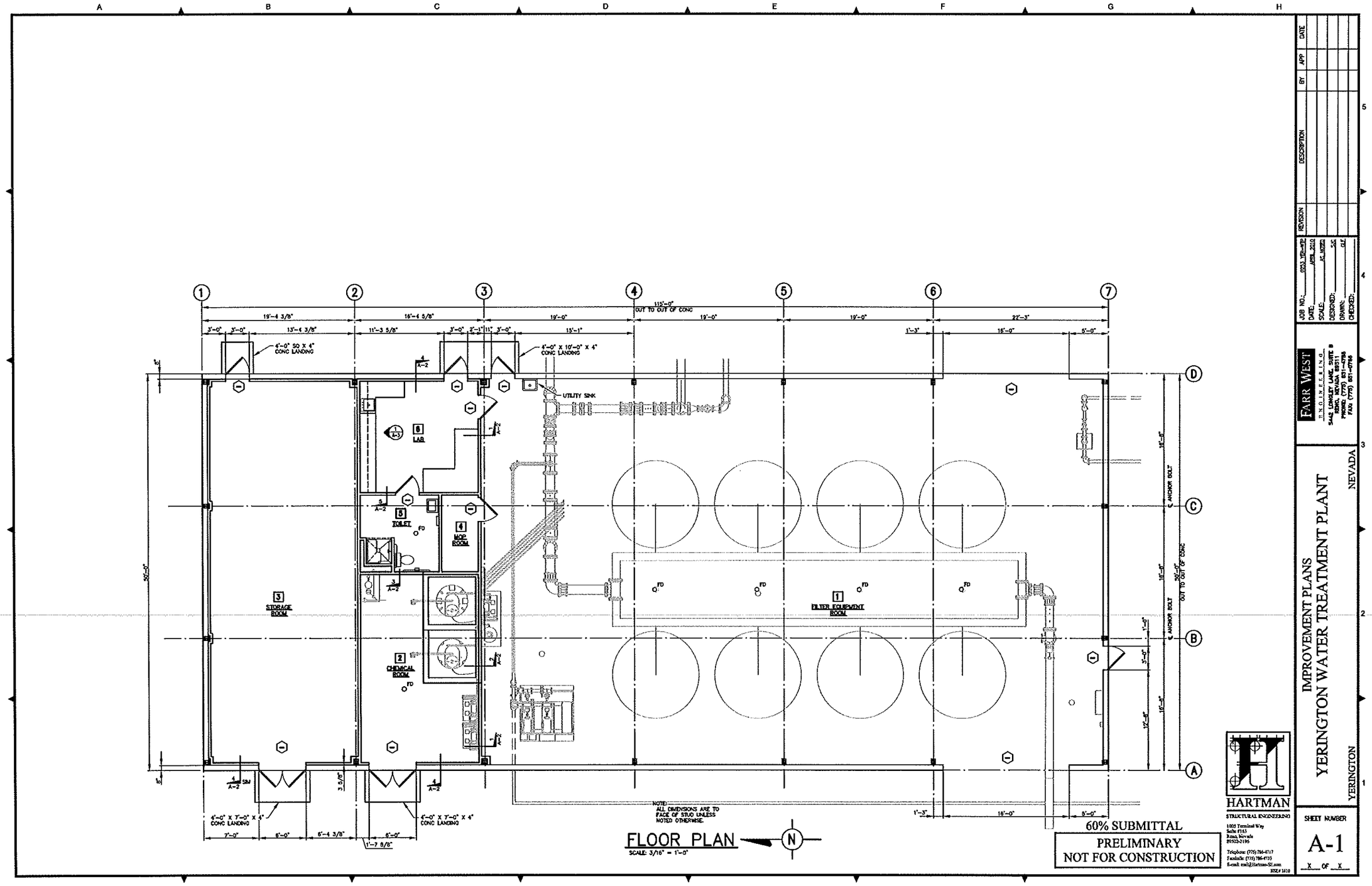
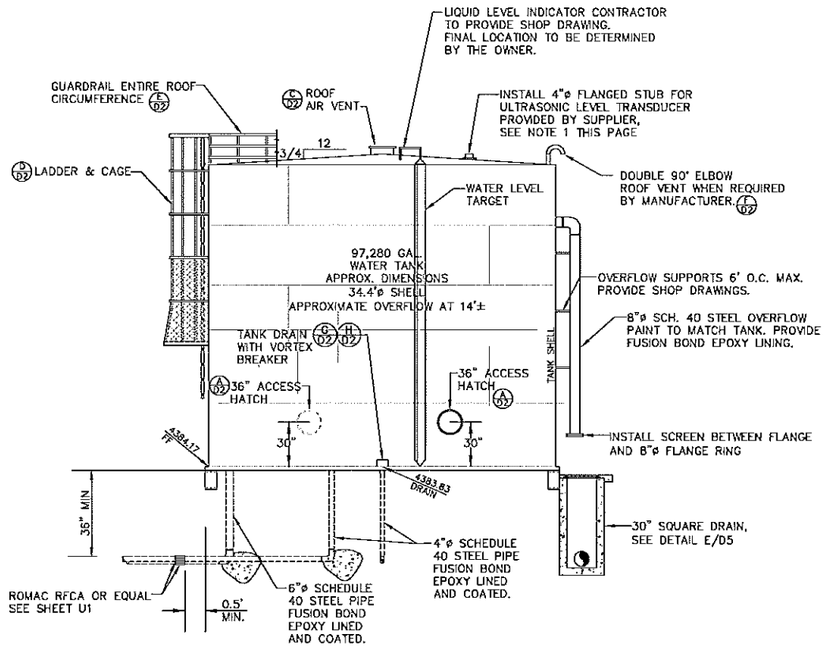
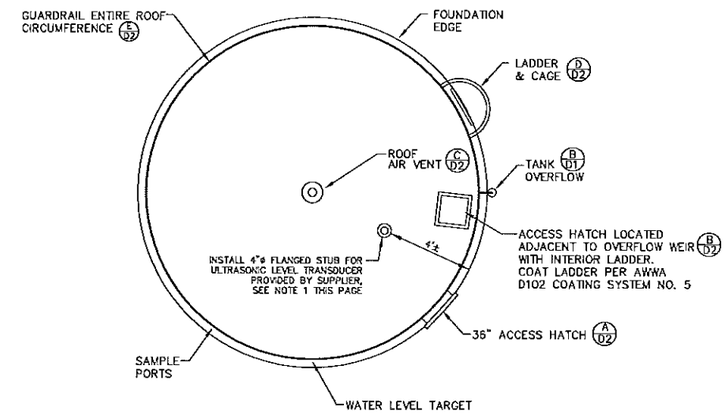


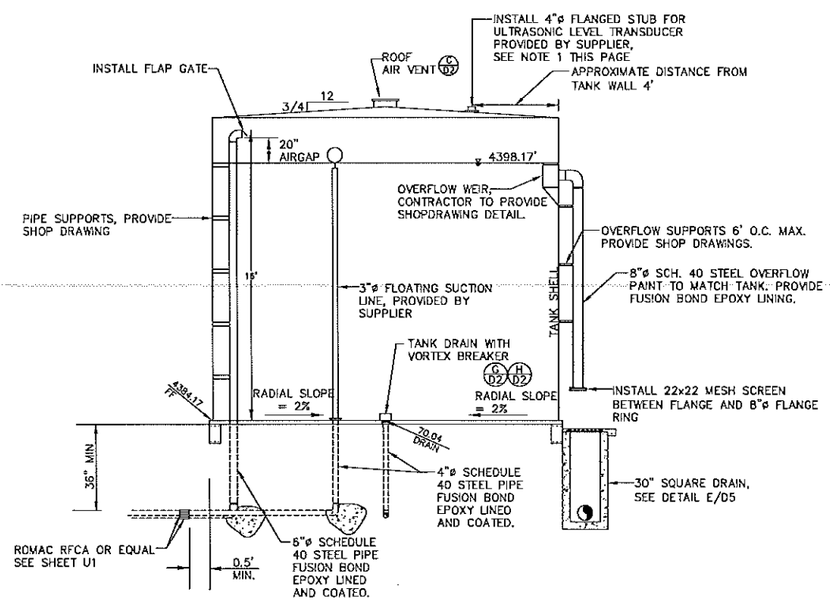

Plate 5. Building Floor Plan




PROPOSED WATER TANK (ELEVATION) (A/D1)
N.T.S.




TANK TOP VIEW DETAIL (C/D1)
N.T.S.




INSIDE TANK ELEVATION (B/D1)
N.T.S.

NOTES:

1. INSTALL LEVELED 4"ø FLANGED STUB TO TOP OF TANK WITH 4"ø BLIND FLANGE WITH FIELD THREADED 2"ø FEMALE NPT PENETRATION TO MOUNT SUPPLIER PROVIDED ENDRESS+HAUSER ULTRASONIC LEVEL TRANSDUCER. MOUNT SUPPLIER PROVIDED ENDRESS+HAUSER WEATHER PROTECTION COVER. ENDRESS+HAUSER ULTRASONIC LEVEL TRANSDUCER MUST BE LOCATED OPPOSITE OF INFLOW PIPE. SEE ELECTRICAL DWGS FOR WIRING

2. BACKWASH STORAGE TANK INTERIOR PAINTING SHOULD BE AWWA 4.46 D102-06, INSIDE COATING SYSTEM NUMBER 5

60% SUBMITTAL

Plate 6. Backwash Tank

DRAWING ON 11"x17" IS HALF SCALE

| REVISION | DESCRIPTION | BY | APP | DATE |
|---|---|---|---|---|
| | | | | |

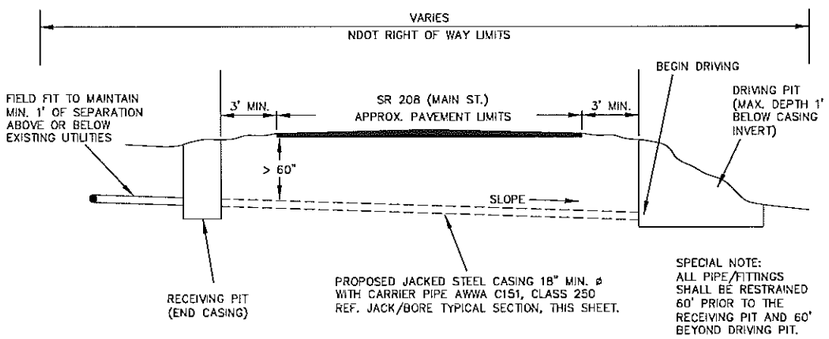
JOB NO.: 0253.VER-WTP
DATE: OCTOBER, 2009
SCALE: AS SHOWN
DESIGNED: EMH
DRAWN: VJW
CHECKED: BRF

FARR WEST ENGINEERING
5442 LONGLEY LANE, SUITE B
RENO, NEVADA 89511
PHONE: (775) 851-4788
FAX: (775) 851-0766

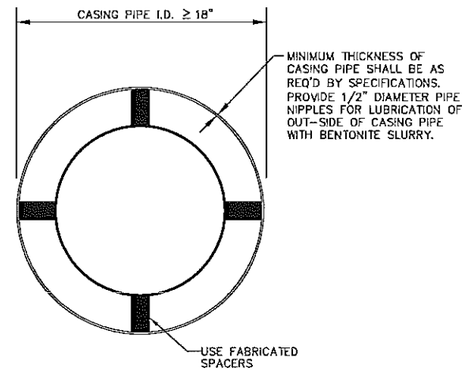
IMPROVEMENT PLANS
YERINGTON WATER TREATMENT PLANT
BACKWASH TANK DETAILS
YERINGTON NEVADA

SHEET NUMBER

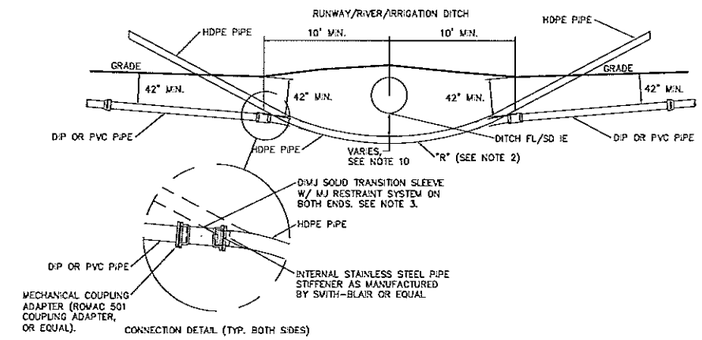
P:\Projects\0253 Yerington WTP\5.0 Design\5.11 Drawings\5.11.1 DWG\C2_0253_YER-WTP_D1.dwg, 4/12/2010 2:53:07 PM




JACK AND BORE - SR 208 (MAIN ST.) (A / D7)
LOOKING NORTH ~ NTS




JACK/BORE TYPICAL SECTION

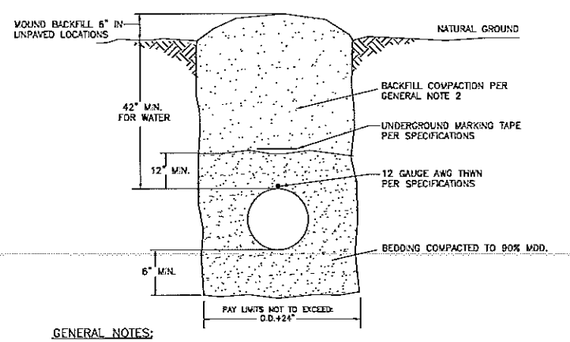



NOTES:

1. CONTRACTOR TO SUBMIT CALCULATIONS APPROVED BY PIPE MANUFACTURER FOR DETERMINATION OF REQUIRED HDPE PIPE THICKNESS FOR EACH INSTALLATION.
2. "R" IS TO BE BASED ON 125% OF MANUFACTURER'S RECOMMENDED MINIMUM RADIUS.
3. HDPE/MJ ADAPTER MAY BE USED IN LIEU OF STIFFENER AND SOLID TRANSITION SLEEVE.
4. A "GO/NOGO" MANDREL DEVICE, SIZED AT 80% OF THE PIPE I.D. SHALL BE PULLED THROUGH THE COMPLETED PIPELINE. REFER TO SPECIFICATION SECTION 02446.
5. HDPE PIPE SIZING SHALL BE DETERMINED AS FOLLOWS:
   - FOR 6" (OR LESS) ø PIPES: HDPE PIPE I.D. TO MATCH PVC PIPE I.D. TO WITHIN 0.25±"
   - FOR 8" (OR GREATER) ø PIPES: HDPE PIPE I.D. TO MATCH PVC PIPE I.D. TO WITHIN 0.50±"
6. TRENCHES SHALL NOT DISTURB EXISTING DITCH BANKS OR ROADWAYS UNLESS APPROVED BY THE ENGINEER.
7. CONTRACTOR SHALL SUBMIT A BORE LOG (INCLUDES APPROX. LOCATION AND DEPTH OF ALL JOINTS AND FITTINGS, ETC.) TO CITY OF YERINGTON PUBLIC WORKS UPON COMPLETION OF BORE.
8. CONTRACTOR SHALL INCLUDE TRACER WIRE TAPED AT 5' INCREMENTS, AT ALL BORES.
9. AIR RELEASE VALVE LOCATIONS AS SHOWN ON PLANS.
10. MINIMUM CLEARANCE AS SPECIFIED ON PLAN AND PROFILE SHEETS FOR EACH DIRECTIONAL BORE.

DIRECTIONAL BORE DETAIL (B / D7)
NTS

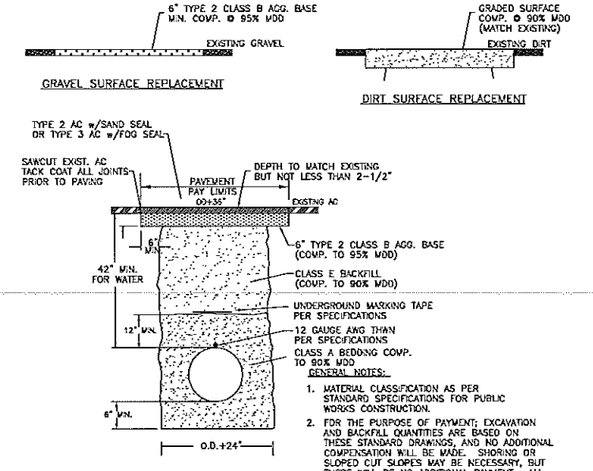
DRAWING ON 11"x17" IS HALF SCALE




GENERAL NOTES:

1. WATER DENSIFIED BACKFILL AND TUNNELING SHALL BE BY SPECIAL PROVISION ONLY.
2. BACKFILL SHALL MEET THE REQUIREMENTS FOR CLASS "E" BACKFILL AS SHOWN IN SUBSECTION 200.03.06 OF THE STANDARD SPECIFICATIONS. MATERIAL SHALL BE PLACED IN LIFT THICKNESSES SPECIFIED IN SUBSECTION 305.10 OF THE STD. SPECS. AND DENSIFIED TO 90% RELATIVE COMPACTION.
3. BEDDING SHALL MEET THE REQUIREMENTS FOR CLASS "A" BACKFILL AS SHOWN IN SUBSECTION 200.03.02 OF THE STANDARD SPECIFICATIONS MATERIAL SHALL BE DENSIFIED TO 90% RELATIVE COMPACTION.
4. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.

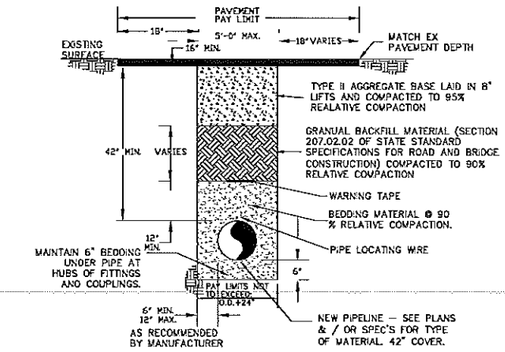
TRENCH EXCAVATION & BACKFILL (UNPAVED) (C / D7)
SCALE: N.T.S.




GENERAL NOTES:

1. MATERIAL CLASSIFICATION AS PER STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
2. FOR THE PURPOSE OF PAYMENT; EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
3. COMPACTION VALUES CAN BE MODIFIED BY ENGINEER.

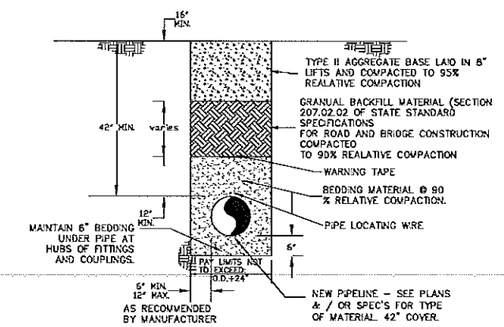
TRENCH EXCAVATION & BACKFILL (TRAVELWAYS) (D / D7)
SCALE: N.T.S.




NOTES:

1. TRENCH DETAIL FOR WATERLINE WITHIN NDOT ROW INCLUDING PAVED AREAS.
2. GRANULAR BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 207 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, NEVADA DEPARTMENT OF TRANSPORTATION.
3. WHEN PIPE IS WITHIN N.D.O.T. PAVED AREA, PIPE COVER MUST BE 42" (3.5 FEET), AS APPROVED BY N.D.O.T.
4. EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
5. WITHIN NDOT PAVED AREAS THE PIPE JOINTS AND APPURTENANCES ARE TO BE RESTRAINED, OUTSIDE PAVED AREAS STANDARD CONSTRUCTION APPLIES.

TYP. TRENCH DETAIL NDOT R.O.W (PAVED) (E / D7)
SCALE: N.T.S.




NOTES:

1. TRENCH DETAIL FOR WATERLINE WITHIN NDOT R/W OUTSIDE OF PAVED AREAS
2. GRANULAR BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 207 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, NEVADA DEPARTMENT OF TRANSPORTATION.
3. WHEN PIPE IS CLOSER THAN 15' TO EDGE OF HIGHWAY, PIPE COVER MUST BE 42" (3.5 FEET), AS APPROVED BY N.D.O.T..
4. EXCAVATION AND BACKFILL QUANTITIES ARE BASED ON THESE STANDARD DRAWINGS, AND NO ADDITIONAL COMPENSATION WILL BE MADE. SHORING OR SLOPED CUT SLOPES MAY BE NECESSARY, BUT THERE WILL BE NO ADDITIONAL PAYMENT. ALL EXCAVATIONS SHALL CONFORM TO THE LATEST O.S.H.A. REQUIREMENTS.
5. WITHIN NDOT PAVED AREAS THE PIPE JOINTS AND APPURTENANCES ARE TO BE RESTRAINED, OUTSIDE PAVED AREAS STANDARD CONSTRUCTION APPLIES.

NDOT R.O.W (UNPAVED) (F / D7)
SCALE: N.T.S.

| REVISION | DESCRIPTION | BY | APP | DATE |
|---|---|---|---|---|

JOB NO.: 0253 YER-WTP
DATE: OCTOBER, 2009
SCALE: AS SHOWN
DESIGNED: FBJ
DRAWN: VAW
CHECKED: DRE

FARR WEST ENGINEERING
5442 LONGLEY LANE, SUITE B
RENO, NEVADA 89511
PHONE: (775) 851-4700
FAX: (775) 851-0768

IMPROVEMENT PLANS
YERINGTON WATER TREATMENT PLANT
DETAIL SHEET
YERINGTON NEVADA

SHEET NUMBER
D7

60% SUBMITTAL
PRELIMINARY

Plate 7. Trenching and Boring

P:\Projects\0253 Yerington WTP\5.0 Design\5.11.1 DWG\D8_0253_YER-WTP_D7.dwg 4/12/2010 12:23:09 PM

# APPENDIX A

## Arsenic Exemption Extension for Yerington Public Water System

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
protecting the future for generations

# STATE OF NEVADA

Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Jim Gibbons, Governor
Allen Biaggi, Director
Leo M. Drozdoff, P.E., Administrator

November 20, 2008

CERTIFIED MAIL
7007 0220 0003 5224 2008
Return Receipt Requested

Mr. ROY MCDONALD
CITY OF YERINGTON
227 S MAIN STREET
YERINGTON, NV. 89447

RE: Arsenic exemption extension for the YERINGTON CITY OF Public Water System, NV0000255

Dear Mr. MCDONALD;

On November 12th, 2008, the Nevada State Environmental Commission (SEC), acting on recommendations from the Bureau of Safe Drinking Water (BSDW), granted the YERINGTON CITY OF Public Water System (PWS) an extension to the arsenic compliance exemption, which is scheduled to expire on January 23rd, 2009. The extension prolongs the period for the PWS to come into compliance with the new arsenic standard of 10 ppb until January 23rd of 2011. During this time frame, the PWS will need to meet the compliance milestones outlined in the extension, just as it did for the exemption process. These milestones are outlined in the accompanying document titled "Extensions Finding of Fact". The process is a continuation of the exemption. The PWS will be required to submit quarterly progress reports to the BSDW each year the extension is in place (see page two of "Findings of Fact"). Public notice is required upon receipt and again once a year while the system is operating under an extension. The public notice should include the reasons for the extension, the date the extension was issued, and the steps the PWS is taking to become compliant. Please read this agreement fully.

***Systems with arsenic concentrations above 25 parts per billion (0.025 mg/L) will not be recommended for additional extensions beyond 2011.***

Despite the national and state economic picture, now may actually be the best time to make progress on your arsenic compliance project. Due to the economic slow down, current construction costs are considerably lower than we have seen in the last few years. The AB198 Board for Financing Water Projects continues to meet quarterly and *has money available for grants* to eligible entities. Also, there is strong opinion that the next federal economic stimulus bill will include funds for improving America's infrastructure. The federal bill is expected to be enacted sometime between now and soon after the Obama Administration takes over on January 20, 2009. If passed, it is expected to include additional funding to the Drinking Water State Revolving Loan Fund. Based on the proposed bill, it may be possible for the NDEP to provide loans at lower interest rates than have been experienced in the past, possibly zero percent. National organizations are also lobbying for principal subsidy provisions that would essentially result in turning a loan into a "grant".

If the federal bill moves forward as proposed, you will have to move quickly. Binding agreements will have to be executed within 120 days of when funds are available to the program, or else the money could revert back to other states that are ready. For all these reasons, please consider your needs carefully and determine if now may be the right time to progress on your project; *even if you think you'll have future extensions to your exemption agreement.*

If you have any questions related to funding options for your arsenic compliance project, please contact Adele Basham at 775-687-9488.

If you have any questions related to your arsenic extension, please contact me at 775-687-9525 or bbellows@ndep.nv.gov.

Bert Bellows

Bert Bellows, P.E.
Bureau of Safe Drinking Water

Cc: Jennifer Carr, P.E., C.E.M., Chief, Bureau of Safe Drinking Water
Jim Balderson, Engineering Supervisor, BSDW
Patricia Lechler, Drinking Water Supervisor, BSDW
Judy Neubert, SDWIS Database Administrator, BSDW
System File

bcb

# NEVADA STATE ENVIRONMENTAL COMMISSION

## ARSENIC EXEMPTION EXTENSION

| | |
|---|---|
| IN THE MATTER OF THE REQUEST | ) |
| OF THE | ) |
| YERINGTON CITY OF | ) |
| FOR AN EXTENSION OF AN | ) |
| EXEMPTION FROM | ) |
| REGULATIONS GOVERNING PUBLIC | ) |
| WATER SYSTEMS, ARSENIC | ) |

## FINDINGS OF FACT

The above entitled matter came before the Nevada State Environmental Commission, hereafter known as the Commission, at a duly noticed public hearing on November 12th, 2008. The Commission, having heard the presentation from staff of the Nevada Division of Environmental Protection (NDEP) recommending approval of the extension and having extended an opportunity to the public to be heard, finds as follows:

- The YERINGTON CITY OF public water system, hereafter known as the System, was in operation prior to January 23, 2006, the effective date of the revised arsenic standard of 10 parts per billion (ppb).
- The System has a source or sources of drinking water that exceed the revised standard.
- The System was granted an exemption on September 6th, 2006.

The Safe Drinking Water Act, resulting Federal regulations and guidance, and the regulations of the Commission provide for an extension of the exemption if the following conditions exist:

1. The System's population does not exceed 3,300 and arsenic levels are equal to or less than 30 parts per billion (ppb).
2. The System has complied with the exemption public notice requirements.
3. The System is taking practicable steps to become compliant.

Review of the exemption compliance milestones by NDEP staff has found the System meets the above stated conditions. Furthermore, NDEP staff has found that the System has established that it needs financial resources to comply with the maximum contaminant level and has either entered into a financial assistance agreement to make capital improvements or has shown that financial assistance or resources are reasonably likely to be available within the period of time that the exemption will be in effect. In consideration of the above, the System is seeking an extension to allow two additional years to comply, by January 23, 2011.

## CONCLUSIONS

This matter is properly before the Commission pursuant to Nevada Administrative Code (NAC) 445A.489, and the determination of this matter is properly within the subject matter jurisdiction of the Commission.

The Commission specifically finds that the System was in operation prior to January 23, 2006, is unable to comply with the regulation due to compelling factors and no unreasonable risk to public health will result if the extension is granted. The Commission, having considered the relative interests of first, the public and second, the System, being fully advised and by vote, does grant the exemption until January 23, 2011.

## DECISION

It is the decision of the Commission to grant an extension of the System's exemption, effective through January 23, 2011, subject to the following schedule of compliance:

1) The System shall provide public notice that the extension was granted on November 12, 2008, and provide proof of posting of such public notice to the BSDW by December 26, 2008. (NRS445A.940) Public notice shall be provided annually while the extension is in effect;
2) If not yet completed, the System shall investigate and secure, to the extent that funds are available, all sources of financial assistance by June 23, 2009;
3) The System shall complete an evaluation of compliance alternatives, including retaining the services of a engineer and conducting pilot testing as needed to select a final compliance option by January 25, 2010;
4) The System shall install, test and have in full operation a treatment system or other compliance option capable of producing drinking water that meets the arsenic standard of 10 ppb by January 23, 2011;
5) The System shall provide quarterly progress reports to NDEP by January 10th, April 10th, July 10th and October 10th of each year of the extension period; and
6) The System shall continue to monitor and report quarterly for arsenic.

Systems serving a population less than 3,300 and with arsenic compliance concentrations less than or equal to 25 ppb may qualify for up to two more two-year extensions if the System demonstrates significant progress during this extension, and additional extensions are approved by the State Environmental Commission.

Date: 11/20/2008

Lew Dodgion
Chairman
Nevada State Environmental Commission

# APPENDIX B

## Correspondence Regarding Federally Listed Threatened and Endangered Species

## Stevenson, Lynne L SPK

**From:** James_Harter@fws.gov
**Sent:** Tuesday, June 01, 2010 9:07 AM
**To:** Stevenson, Lynne L SPK
**Cc:** Marcy_Haworth@fws.gov
**Subject:** Re: Request for updated listing

Lynne,
We have reviewed your previous species list request for the Yerington Arsenic Treatment Plant Project received in our office February 2, 2010 and consider our letter dated February 9, 2010 (File No. 2010-SL-0164) to be current for this project.

James Harter
U.S. Fish and Wildlife Service

"Stevenson, Lynne L SPK" <Lynne.L.Stevenson@usace.army.mil>

05/28/2010 11:35 AM To
<James_Harter@fws.gov>
cc
<Marcy_Haworth@fws.gov>
Subject
Request for updated listing

Hello James,

In a letter dated February 9, 2010 (File No. 2010-SL-0164), your agency indicated that no listed, proposed, or candidate species occur in the project area for the Yerington Arsenic Treatment Plant Project in Lyon County, Nevada. Unfortunately, work on this project has been delayed until this week due to my temporary reassignment to assist during the absence of the Project Manager.

Nothing has changed on the project. Do I need to submit another letter requesting an updated list, or could your agency just confirm in an email that there have been no changes to the letter? Please advise.

Thank you!

Lynne

# United States Department of the Interior

**Pacific Southwest Region**
**FISH AND WILDLIFE SERVICE**
Nevada Fish and Wildlife Office
1340 Financial Blvd., Suite 234
Reno, Nevada 89502
Ph: (775) 861-6300 ~ Fax: (775) 861-6301


February 9, 2010
File No. 2010-SL-0164

Mr. Francis Piccola
U.S. Army Corps of Engineers
(Attn: L. Stevenson)
1325 J Street
Sacramento, California 95814

Dear Mr. Piccola:

Subject: Species List Request for Yerington Arsenic Treatment Plant Project, Lyon County, Nevada

This responds to your letter received on February 2, 2010, requesting a species list for the Yerington Arsenic Treatment Plant Project in Lyon County, Nevada. To the best of our knowledge, no listed, proposed, or candidate species occur in the subject project area. This response fulfills the requirements of the Fish and Wildlife Service (Service) to provide a list of species pursuant to section 7(c) of the Endangered Species Act of 1973 (Act), as amended, for projects that are authorized, funded, or carried out by a Federal agency.

The Nevada Fish and Wildlife Office no longer provides species of concern lists. Most of these species for which we have concern are also on the sensitive species list for Nevada maintained by the State of Nevada's Natural Heritage Program (Heritage). Instead of maintaining our own list, we are adopting Heritage's sensitive species list and partnering with them to provide distribution data and information on the conservation needs for sensitive species to agencies or project proponents. The mission of Heritage is to continually evaluate the conservation priorities of native plants, animals, and their habitats, particularly those most vulnerable to extinction or in serious decline. Consideration of these sensitive species and exploring management alternatives early in the planning process can provide long-term conservation benefits and avoid future conflicts.

For a list of sensitive species by county, visit Heritage's website at www.heritage.nv.gov. For a specific list of sensitive species that may occur in the project area, you can obtain a data request form from the website or by contacting Heritage at 901 South Stewart Street, Suite 5002, Carson City, Nevada 89701-5245, (775) 684-2900. Please indicate on the form that your

TAKE PRIDE IN AMERICA

request is being obtained as part of your coordination with the Service under the Act. During your project analysis, if you obtain new information or data for any Nevada sensitive species, we request that you provide the information to Heritage at the above address. Furthermore, certain species of fish and wildlife are classified as protected by the State of Nevada (see http://www.leg.state.nv.us/NAC/NAC-503.html). Before a person can hunt, take, or possess any parts of wildlife species classified as protected, they must first obtain the appropriate license, permit, or written authorization from the Nevada Department of Wildlife (visit http://www.ndow.org or call 775-688-1500).

Based on the Service's conservation responsibilities and management authority for migratory birds under the Migratory Bird Treaty Act of 1918 (MBTA), as amended (16 U.S.C. 703 *et seq.*), we are concerned about potential impacts the proposed project may have on migratory birds in the area. Given these concerns, we recommend that any land clearing or other surface disturbance associated with proposed actions within the project area be timed to avoid potential destruction of bird nests or young, or birds that breed in the area. Such destruction may be in violation of the MBTA. Under the MBTA, nests with eggs or young of migratory birds may not be harmed, nor may migratory birds be killed. Therefore, we recommend land clearing be conducted outside the avian breeding season. If this is not feasible, we recommend a qualified biologist survey the area prior to land clearing. If nests are located, or if other evidence of nesting (*i.e.*, mated pairs, territorial defense, carrying nesting material, transporting food) is observed, a protective buffer (the size depending on the habitat requirements of the species) should be delineated and the entire area avoided to prevent destruction or disturbance to nests until they are no longer active.

Please reference File No. 2010-SL-0164 in future correspondence concerning this species list. If you have any questions regarding this correspondence or require additional information, please contact me or James Harter at (775) 861-6300.

Sincerely,

Marcy Haworth

for Robert D. Williams
State Supervisor

# APPENDIX C

## Correspondence Regarding Cultural Resources

**[Letter from the Nevada SHPO to be included in the final EA]**

# APPENDIX D

## Mailing List

U.S. Fish and Wildlife Service
Nevada Fish and Wildlife Office
1340 Financial Boulevard
Reno, NV 89502

NV Division of Environmental Protection
Bureau of Air Pollution Control
901 So. Stewart Street, Suite 4001
Carson City, NV 89701

NV Bureau of Health Protection Services
4150 Technology Way, Suite 300
Carson City, NV 89706

Nevada Bureau of Safe Drinking Water
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Department of Transportation
1263 South Stewart Street
Carson City, NV 89701

NV Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Ms. Adele Basham, P.E.
NV Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Nevada Division of Wildlife
1100 Valley Road
Reno, NV 89512

Nevada State Clearinghouse
209 East Musser Street, Room 200
Carson City, NV 89701

Nevada State Historic Preservation Office
100 North Stewart Street
Carson City, NV 89701

Lyon County Planning Department
Yerington Office
27 S. Main Street
Yerington, NV 89447

Lyon County Library
20 Nevin Way
Yerington, NV 89447

City Council
City of Yerington
102 S. Main Street
Yerington, NV 89447

Public Works
City of Yerington
227 S. Main Street
Yerington, NV 89447

Mason Valley News
207 W. Goldfield Avenue
Yerington, NV 89447-2349

Yerington Paiute Tribe
171 Campbell Lane
Yerington, NV 89447