



WOOD RODGERS

DRAFT

May 21, 2019

Mr. Gabriel Edwards
State Water Resources Control Board
1001 I Street, 16th Floor.
Sacramento, California 95814

Dear Mr. Edwards:

Wood Rodgers, Inc. on behalf of the Madera County Public Works Department (MCPW) has prepared and is submitting this Biological Assessment for the Parkwood CMD 19A&B Water System Improvements.

On behalf of MCPW we have determined that the proposed action will have No Effect on listed species/designated critical habitat and we are requesting concurrence on this determination of effect.

Sincerely,
WOOD RODGERS, INC.

Leslie Burnside, Associate
Environmental program Manager

Attached:
Biological Assessment
CNDDDB Query Results
USFWS Species List
60 percent Progress Design Plans

CC: Ramon Mendez, MCPW
Jeffrey Lodge, Wood Rodgers

I. Introduction

The purpose of this Biological Assessment is to assess the effects of the proposed action on federally protected resources.

Lead Agency: Madera County Public Works Department

Federal Nexus: Drinking Water State Revolving Fund (SRF) Program

The Proposed Action is as follows:

The project goals include the development of a new municipal supply well that meets State and Federal Drinking Water Regulations, protects the groundwater resource, provides 1,000 gallons per minute (gpm) capacity, and provides a well structure with a service life of approximately 75 years.

II. Project description

Based on the data gathered during the exploratory drilling program completed in 2018, Wood Rodgers designed Well 4A to target the aquifers between 460 and feet. The estimated design capacity for a well constructed at this site is 1,000 gpm. The recommended well design for the Production Well 4A Site targets the intermediate Older Alluvium Aquifers. Data from each test well completion suggests that the water produced from the proposed Production Well 4A, as designed, should meet all DDW drinking water quality standards.

Figure 1 provides a map of the existing conditions including test well locations and proposed new well location.

Exploratory Drilling and Test Wells

Wood Rodgers contracted with Bradley and Sons Drilling (Bradley) of Del Rey, California, to conduct the exploratory drilling and construction of a multiple-completion test well at the site. Beginning on September 18, 2018, Bradley drilled an 8 ¾-inch borehole to a total depth of 600 feet, using the direct rotary drilling method. The test hole was geophysically logged on September 19, 2018 by Pacific Surveys, LLC of Claremont, California. The response of the geophysical surveys and the drill cutting samples suggested the best permeable aquifers were located between 460 to 540 feet below ground surface (bgs).

Production Well Design

Above Grade Infrastructure Design

The design includes a 5-foot square concrete well pedestal, sole plate, base plate, discharge head, pump, motor, 360 feet of column pipe, and extension of the 3-inch gravel fill tube, and 2-inch sounding tubes. The discharge head will be connected to a restrained flanged coupling adapter which connects the discharge head to the discharge piping then a 3 ft. 9-inch spool piece which has a pressure switch (or transmitter) and pressure gage and air vacuum/air release valve connections. The spool piece is supported by a pipe support and connects to an 8-inch x 4-inch x 8-inch tee for pump to waste. The pump to waste 8-inch x 4-inch tee consists of the 8-inch flow thru dimension and a 4-inch connection for the pump to waste. The 4-inch pump to waste tee connects to manually operated gate valve, and a 4-inch blind flange. The 8-inch flow-thru end connects to an 8-inch swing check valve, 8-inch dismantling joint and then to a 1 ft. 6-inch pipe spool supported by a pipe support.

The pipe spool connects to a manually operated 8-inch gate valve which is attached to an 8-inch 90-degree elbow and then a 4 ft. – 9-inch pipe that goes below the 6-inch concrete base slab about 2 feet

below the 90-degree elbow. The 4 ft. – 9-inch pipe spool connects to a 8-inch 90 degree mechanical joint elbow which starts the pipeline consisting of; 13 feet of pipe, a 90 degree elbow, 36 feet of pipe, a 90 degree elbow, 68 feet of pipe, a 45 degree elbow, 67 feet of pipe, a 45 degree elbow, 5 feet of pipe, a 90 degree elbow, 5 feet of pipe, a 90 degree elbow, a gate valve, 5 feet of pipe (pipe supported), an 8-inch dismantling joint, a flow meter, 3 feet of pipe (pipe supported) and connection to the existing Well 4A hydro pneumatic tank piping inlet butterfly valve.

In addition to the mechanical piping already identified, this project will have a 6-inch thick reinforced concrete slab on grade 20 feet long by 12 feet wide. The concrete slab on grade will have a footing and the area will be fenced with removable posts for well rehabilitation. Electrical conduits will be installed from the new pump/motor location back to the previous well pump and motor location where the original power conduits are located. The new pump and motor will have a Sound Attenuation Hood installed on it to dampen the noise to levels in compliance with the local noise ordinance. The pump will be a vertical turbine deep well pump equipped with a premium efficiency 1800 rpm vertical hollow shaft 150 hp motor. Some limited site grading will occur for the 20-foot long and 12-foot wide area for the concrete slab on grade. Additional site components include low pedestal LED lighting for the facility.

Below Grade Infrastructure Design

The design includes a 32-inch diameter mild steel conductor casing grouted in place to a depth of 50 feet below ground surface (bgs). The conductor casing will serve to stabilize the upper formations during borehole drilling, and also to provide the DDW required sanitary seal. Inside the conductor casing, a 28-inch diameter borehole extends to a depth of 570 feet bgs. The well structure includes a 16-inch outside diameter mild steel well casing to a depth of 300 feet and transitions into a stainless-steel well casing and louvered well screen assembly. The design consists of a 10-foot sump, 40 feet of well screen, and 510 feet (excluding the stick-up above ground surface) of blank well casing, extending to a depth of 550 feet bgs.

To accommodate for the potential of future inelastic land subsidence in the area, it was determined to add additional protection of the well structure. A fully extended compression section is included from 380 to 400 feet to accommodate for any potential subsidence. The screen section has been designed to be “Ful-Flo” louvered well screen, with a slot size of 0.055 inches to provide the acceptable inlet velocities, suitable open area, and retention of the selected gravel envelope material. A 3-inch diameter steel gravel fill pipe extends to a depth of 327 feet bgs and a 2-inch diameter stainless steel sounding pipe will extend to and enter the well casing at a depth of 378 feet bgs. The annular space will be filled with 8x16 graded gravel from the bottom of the borehole to 312 feet bgs. A two-foot fine sand transition seal will be placed on top of the gravel envelope from 312 feet to 310 feet bgs, with a sand/cement grout annular seal from 310 feet bgs to ground surface.

Figure 1. Existing Conditions and Proposed Well Location

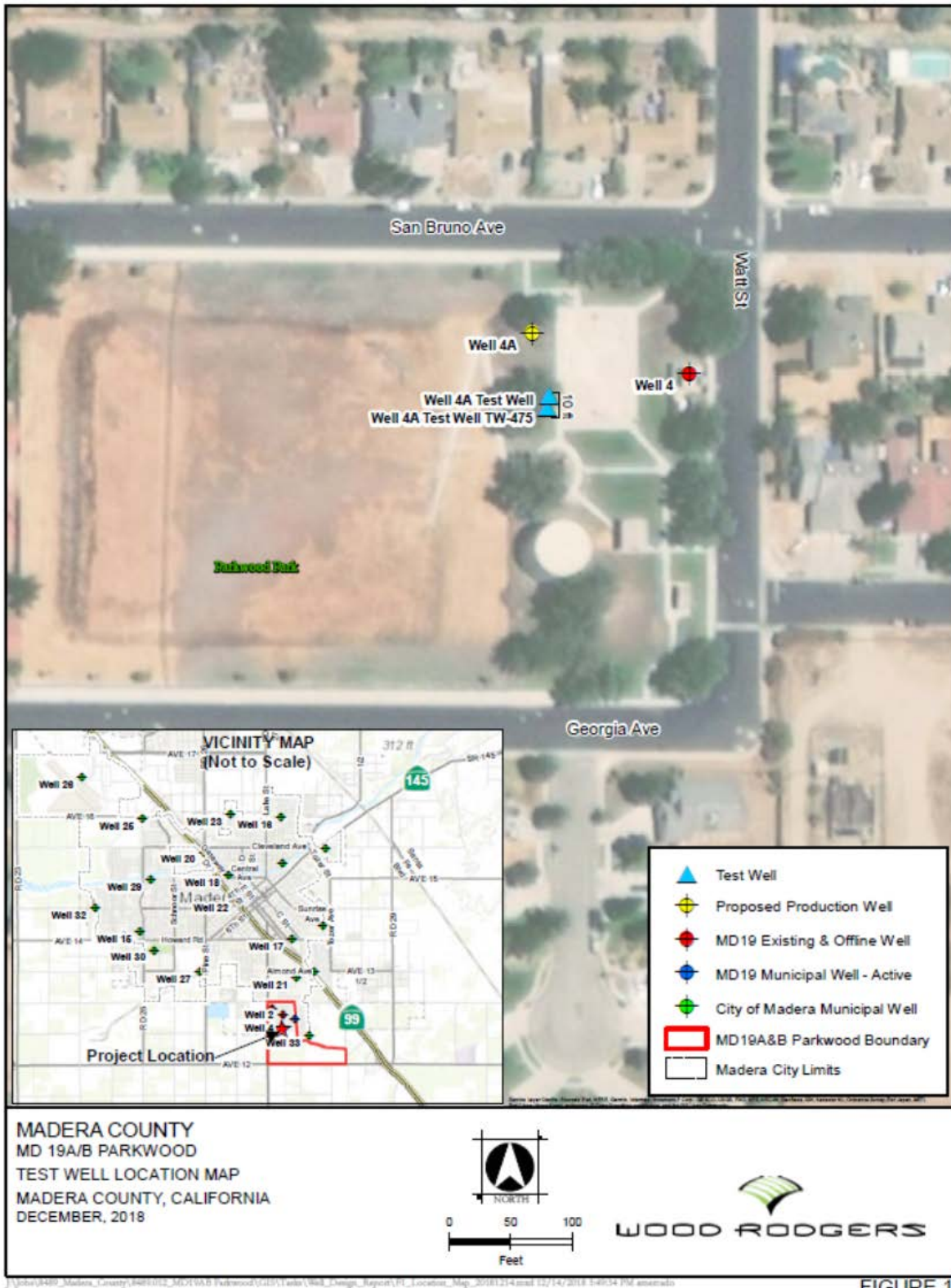


FIGURE 1

MEASURES INCLUDED IN THE PROPOSED PROJECT TO MINIMIZE IMPACTS

The Parkwood CMD (County Maintenance District) 19&B Water System Improvements site is located in an area that has existing facilities and will be constructed near the existing onsite pumping station within a county park.

Aesthetics

- There is potential that two trees would be removed to facilitate construction of the proposed project (Appendix 2, Sheet C-3). These trees will be replaced in the vicinity of the trees that will be removed with tree specimens of the same species and a minimum of one-half the existing tree's caliper. Madera County Parks Department will determine where the replacement trees would be planted. Due to the location of this well within a park, measures will be taken to mitigate disturbance to park activities. The existing adjacent basketball court will be protected during construction of the well. Most of the construction activities will only occur during daylight hours to minimize the potential of contributing to light pollution. A small portion of the well construction will require 24-hour activities. During this portion of the construction, mitigative measure will be taken to limit both light pollution and noise from construction related activities.

Biological Resources

- Based on current 60 percent Progress Design Plans, two trees would be removed to facilitate construction of the proposed project (Appendix 2, Sheet C-3). If tree removal will coincide with the Migratory Bird Nesting Season, the required survey protocol will be implemented in compliance with the Migratory Bird Treaty Act to avoid all impact to nesting migratory birds.

Air Quality

Because the construction of the Proposed Project has the potential to create fugitive dust, Madera County Public Works will require the construction contractor to implement the following measures:

- Water all exposed surface two times daily, or as required to eliminate fugitive dust.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Keep the street clean and free of loose soil. Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads as least once per day. Use of dry power sweeping is prohibited.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before it is operated.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrance to the site.

Cultural Resources

- If previously unidentified cultural resources are encountered during earth-moving activities, construction activities in their vicinity will be halted immediately and the appropriate authorities notified. Authorities should include the County Coroner if suspected human remains are discovered and a qualified archaeologist if prehistoric or historic-period artifacts are found.

Energy

- Although the well itself will have limited energy consumption, an emergency generator for the facility will be provided. This generator will be diesel powered and located at the northeast extent of the project area immediately adjacent to existing facilities (Figure 2).

Hydrology and Water Quality

- To minimize the introduction of sediment to the storm water system during construction, Madera

County Public Works will implement standard erosion management measures, including the following Madera County's storm water best management practices (BMPs):

- The use of straw wattles and/or silt fences onsite to prevent the flow of sediment off the site.
- The use of sediment traps or gravel bags at drainage inlets to prevent any sediment from entering the storm water system.
- Use of the existing stormwater detention pond for construction wastewater. The Madera County Public Works will comply with the conditions of the State Water Resources Control Board, National Pollutant Discharge Elimination System, and General Construction Permit.

Geology and Soils

- Permanent erosion control measures and BMPs will be implemented during and after construction.
- The Madera County Public Works will comply with the conditions of the State Water Resources Control Board, National Pollutant Discharge Elimination System, and General Construction Permit. Given the extent of proposed disturbance is less than 1 acre, the project will not require preparation of a Storm Water Pollution Prevention Plan (SWPPP) for the project site.
- Geotechnical information will be collected prior to the construction of the proposed pump pedestal and pad. The recommendations from the geotechnical investigation will be incorporated into the design to rectify any soil characteristics adverse to the stability of the facilities.

Noise

Because of the proximity of the well site several sensitive noise receptors (park, single family residential), **and because the well drilling portion of construction could operate twenty-four hours a day for multiple days over a 4-week construction period**, Madera County Public Works will implement the following measures to minimize noise effects:

- During the well drilling and construction portion of the project, equipment will be required to be rated for residential area use. Night time activities will be limited to only time sensitive and critical tasks that require 24-hour per day operations.
- A key design component to eliminate operational noise at the site includes use of the existing submersible pump and motor for the well surrounded by a concrete pedestal and pad.
- During the construction of the well, Madera County Public Works will work with the Madera County Park District to ensure that the construction schedule takes into consideration previously scheduled park events.
- The emergency generator will be equipped with standard noise attention equipment.

Recreation:

- Although the site is located within a public park, the well site is fully fenced not allowing public access. Construction activities will be fully contained in the fenced area of the parcel and will not impact activities at the park; however, strict safety measures will be adhered to during construction at this site and Madera County Public Works will work closely with the events calendar for Parkwood Park to minimize impacts to the public's park experience.

Transportation:

Madera County Public Works will prepare a transportation management plan to maintain the safe operation of all vehicle modes along San Bruno Avenue, Watt Street and Georgia Avenue during the period of construction of the well. This plan will contain the following provisions:

- Avoid blocking traffic on all roads and intersections
- Allow for continuous pedestrian traffic along Watt Street, San Bruno and Georgia Avenue.

III. Species/Critical Habitat Considered

There are no critical habitats within the proposed project area under the jurisdiction of the USFWS. There is a total of 9 threatened, endangered, or candidate species that have potential to occur in the vicinity of the proposed project area. Please see the attached USFWS Species List. The project area does not support habitat required for amphibians (2), fishes (1), and crustaceans (1). Although one flowering plant and one reptile have potential to occur, both are either extirpated or presumed extant, in the vicinity of the proposed project area.

Fresno kangaroo rat (*Dipodomys nitratooides exilis*) is listed as an endangered species. Although there is final critical habitat for this species, the proposed project area is outside that critical habitat. It is very unlikely for this species to occur within the proposed project area as it is a fully developed public park. Therefore, there will be no effect to this species or critical habitat for this species as a result of the proposed project.

Fresno kangaroo rats occupy sands and saline sandy soils in chenopod scrub and annual grassland communities on the Valley floor. Topography is often nearly level, consisting of bare alkaline clay-based soils subject to seasonal inundation and are broken by slightly rising mounds of more crumbly soils, which often accumulate around shrubs or grasses. Associated plant species include seepweed, iodine bush, saltbushes, peppergrass, filaree, wild oats, and mouse-tail fescue (Williams et.al. 1998).

San Joaquin Kit Fox (*Vulpes macrotis mutica*) is listed as an endangered species. There has been no critical habitat designated for this species. It is very unlikely that this species occurs within the proposed project area as it is a fully developed public park. Therefore, there will be no effect to this species or critical habitat for this species as a result of the proposed project.

Historically, San Joaquin kit foxes occurred in several native plant communities of the San Joaquin Valley. Because of extensive land conversions and intensive land use, some of these communities only are represented by small, degraded remnants today. Other habitats in which kit foxes are currently found have been extensively modified by humans. These include grasslands and scrublands with active oil fields, wind turbines, and an agricultural matrix of row crops, irrigated pasture, orchards, vineyards, and grazed annual grasslands (non irrigated pasture)(Williams 1998).

Giant garter snake (*Thamnophis gigas*) is listed as a threatened species wherever it is found. There has been no critical habitat designated for this species. It is very unlikely that this species occurs within the proposed project area as it is a fully developed public park that does not support the required habitat attributes for the species. Therefore, there will be no effect to this species or critical habitat for this species as a result of the proposed project.

The giant garter snake has specific habitat needs that include summer aquatic habitat for foraging, bankside basking areas with nearby emergent vegetation for cover and thermal regulation, and upland refugia for extended periods of inactivity. Perennial wetlands provide the highest quality habitat for the giant garter snake, and ricelands, with the interconnected water conveyance structures, serve as an alternative habitat in the absence of higher-quality wetlands (USFWS 2017).

IV. Literature Cited

Daniel F. Williams, Ellen A. Cypher, Patrick A. Kelly, Karen J. Miller, Nancy Norvell, Scott F. Phillips, Cheryl D. Johnson, and Gary W. Colliver. 1998. Recovery Plan for Upland Species of the San Joaquin Valley, California



ATTACHMENTS