
TECHNICAL MEMORANDUM

To: Sierra Valley Groundwater Management District
CC: Mr. Bruce Troedson, Chairman, Sierra County Waterworks District No. 1,
batroedson@gmail.com
Mr. Dean Marsh, PE, Sauers Engineering, dean@sauerseng.com
From: Dwight L. Smith, PG, CHG, Principal Hydrogeologist
Date: October 11, 2026
Subject: **New Municipal Well #3 for Community of Calpine, Sierra County, CA**

This memorandum has been drafted to provide additional information on the planned new municipal well (Well #3) to be drilled for the community of Calpine by the Sierra County Waterworks District No. 1. The new well has been in the planning phase for many years, and grant funds have been secured to drill and connect the well to the existing municipal water system. Well #3 will supplement existing Wells #1 and #2. Well #3 is being designed to be equipped with a 50-80 gpm pump system and will provide redundancy to Wells #1 and #2. The well is not being built to expand water system capacity.

A test borehole was drilled at the Well #3 location in 2018. Drilling encountered the following geology:

0 – 100 ft: Alluvial sands and clays

100 – 195 ft: Clays

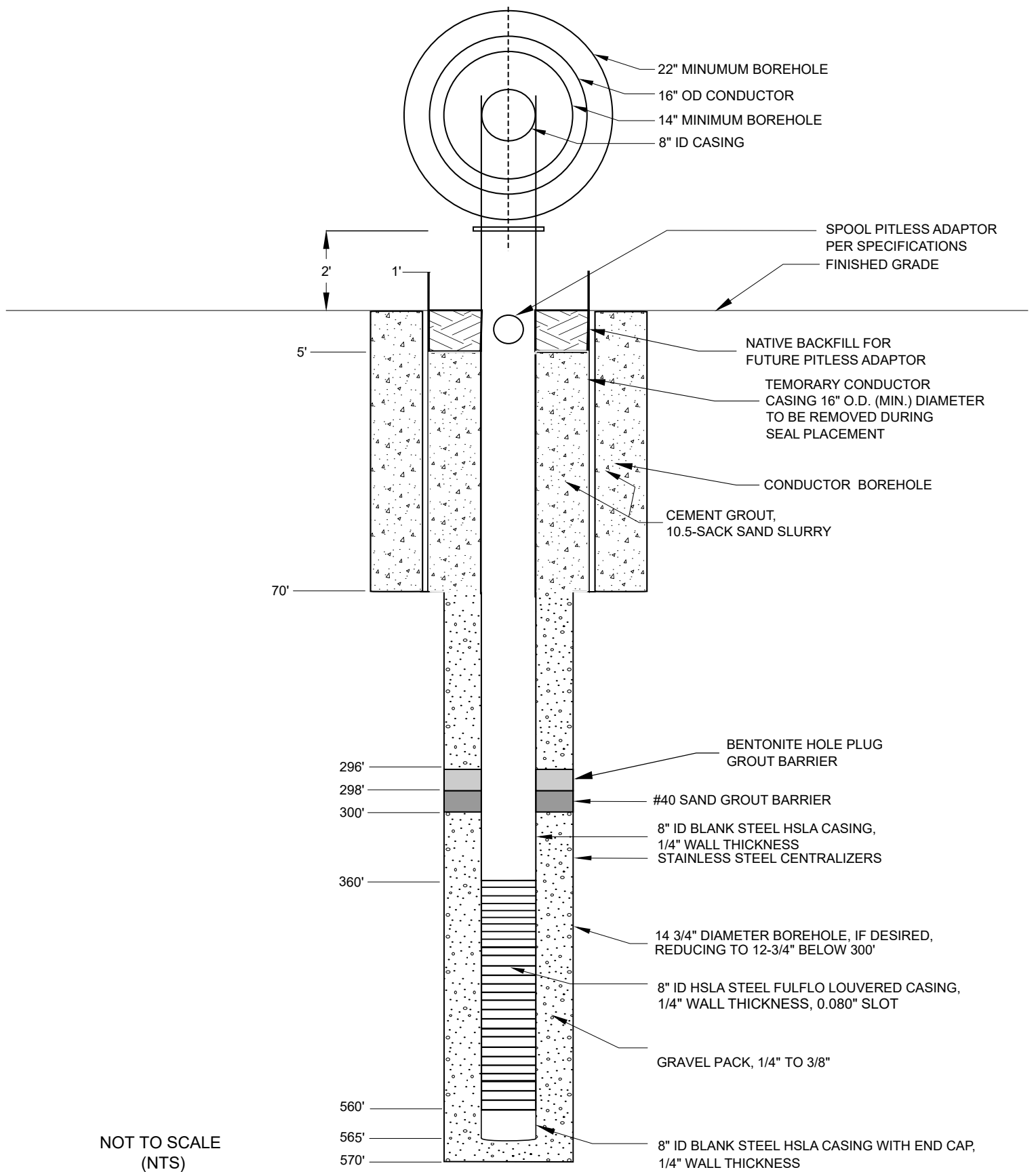
195 – 267 ft: Volcanic rocks

267 – 565 ft: Granite bedrock with significant fractures zones below 345 ft

Testing of groundwater yield and water quality was completed in the test borehole from both the shallow alluvium and deeper fractured granite, which led to the current well design to source groundwater from the deeper fractured granite. The upper-most 300 ft of the well will be sealed off from production, and the well screen will be placed from 360 to 560 ft in depth (see attached well design). This design was made based on a finding of more suitable water quality in the deep fractured granite as contrasted with the shallow alluvium. In 2018, the exploration borehole at the Well #3 site was plugged in a manner that can be redrilled and reamed open to a sufficient diameter for completion of the new 8-inch diameter well (see attached borehole plugging figure).

Some individual domestic wells are in use along the southern edge of community of Calpine (see Figure 2 from Interflow Hydrology 2019, exploration drilling report, Well #3 location labeled as “EX-1 Test Well”). These domestic wells are all completed in alluvium and are generally less than 200 ft deep (DWR well logs). The new Well #3 groundwater source being in deeper granite bedrock is separated from the overlying alluvial aquifer by a thick sequence of clay and low permeability volcanic rocks. No impacts to domestic wells or surface waters are expected from use the new Well #3.

Please feel to reach out to me if you would like to discuss or require additional information.



Title:

Calpine Well #3

Project Name:
**Sierra County Water Works District No. 1
Water Supply Well**

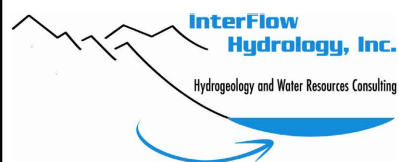
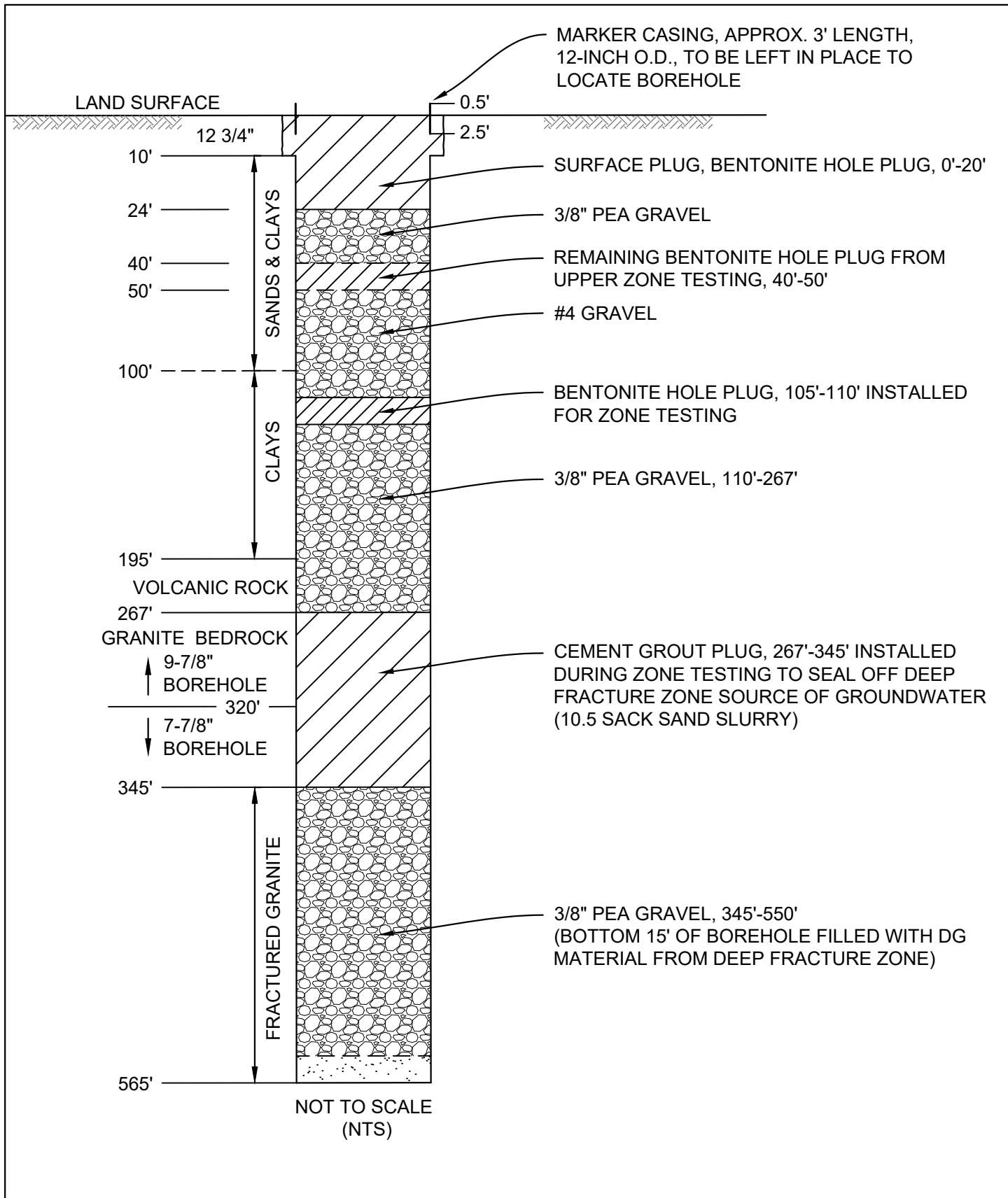
Project Number:
SAUERS002

Figure:

1

Client Name:
Sauers Engineering

Date:
3/19/2025



P.O. BOX 1482
TRUCKEE, CA 96160
TELE: (530)-582-1622

CALPINE TEST BOREHOLE
PLUGGING DETAIL
SIERRA COUNTY, CALIFORNIA
D. SMITH 12-20-2018

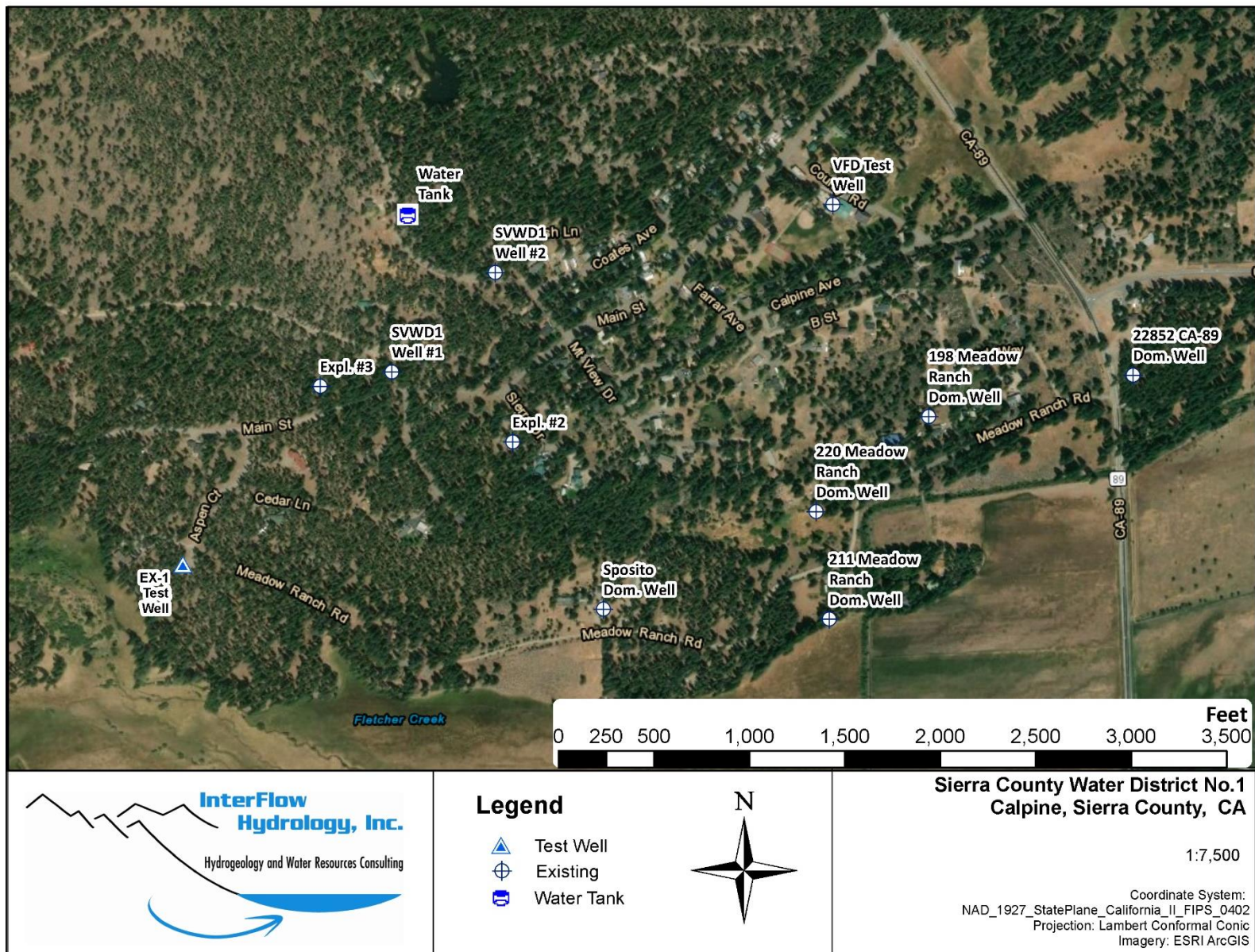


Figure 2 - Wells Located in the Community of Calpine