Luhdorff & Scalmanini
Consulting Engineers

July 26, 2022
File No. 22-2-006

Mr. Sandeep Nayyar
530 Lawrence Expressway, No. 365
Sunnyvale, CA 94085

SUBJECT: BAY AREA VIPASSANA CENTER TEST WELL INSTALLATION AND TESTING REPORT

Dear Mr. Nayyar,

Luhdorff and Scalmanini, Consulting Engineers (LSCE) is pleased to submit this summary report of our investigation, installation, and testing of the Bay Area Vipassana Center (BAVC) Test Well No. 1. The purpose of the investigation and testing was to determine if a well could be completed in the alluvial aquifer at the BAVC that would meet projected project demands and to determine if, and to what extent, operation of the well may impact other nearby wells.

Summary

Two boreholes were drilled at the BAVC project site located west of the intersection of Redwood Retreat Road and El Matador Drive in Gilroy California (**Figure 1**). The materials encountered in borehole #1 were determined not to be favorable for the construction of a production well, however, a monitoring well (MW-1) was constructed in the borehole in order to allow for long term groundwater level monitoring. The materials encountered in borehole #2 were determined to be favorable for the construction of a test well. A six-inch diameter test well (TW-1) was constructed in the reamed borehole to a depth of 155 feet below ground surface (bgs) with screen sections between 70 and 150 feet bgs. TW-1 was pump tested for 72-hous at a rate of 15 gallons per minute (gpm). During the pump test, water levels in accessible nearby wells were monitored. Test pumping results demonstrated that TW-1 could meet projected project water demands without impacting adjacent wells. The siting, borehole drilling, monitoring well and test well construction, and test pumping of the wells is detailed below.

Well Siting

The locations of both boreholes were selected to intersect the maximum thickness of alluvial material on the project site and to comply with minimum setback requirements from proposed project sanitary features (septic/storm water system components) and well head control zone requirements per the State Water Resources Control Board, Department of Drinking Water (DDW) and the Santa Clara County Department of Environmental Health (SCCDEH) (**Figure 2**). LSCE utilized a preliminary project layout prepared by MH Engineering Company (December 2021) that depicted planned project septic and

stormwater infrastructure to site the boreholes with at least 100-feet separation from septic and stormwater infrastructure as required by DDW for community supply wells.

MW-1

Borehole #1 was drilled by Guardino Well Drilling (C-57 license #664960) of Morgan Hill, California under Valley Water permit number C20220503003. An 8-inch diameter borehole was drilled using both the air and mud rotary drilling methods to a depth of 140 feet bgs (**Figure 3**). The lithology intersected by the borehole included clayey sands and gravels to approximately 90 feet bgs and mudstone from 90 to 140 feet bgs. Based on inspection of the drill cuttings and lack of water in the borehole, it was determined that materials encountered in the borehole would not likely transmit water in sufficient quantity to meet projected project demands. A three-inch diameter, Schedule 40, PVC casing was installed in the borehole to a depth of 100 feet bgs to serve as a monitoring well. The casing was perforated with 0.032-inch slots from 75-95 feet bgs. A gravel envelope was installed in the annulus between the borehole wall and the casing up to a depth of 50 feet bgs. A Valley Water inspector witnessed the placement of a 10.3 sack sand/cement seal in the annulus from 50 feet bgs to ground surface.

TW-1

Borehole #2 was drilled by Guardino Well Drilling under Valley Water permit number C20220519001. An 8-inch diameter borehole was drilled using both the air and mud rotary drilling methods to a depth of 160 feet bgs (**Figure 4**). The lithology intersected by the borehole included gravely clay to a depth of 20 feet bgs, poorly indurated sand and gravel from 20 to 60 feet bgs, clay from 60 to 70 feet bgs, and sand and poorly indurated sand from 70 to 160 feet bgs. Based on inspection of the drill cuttings and presence of water in the borehole, it was determined that the materials encountered in the borehole could likely transmit water in sufficient quantity to meet projected project demands.

The borehole was reamed to a diameter of 14-inches to accommodate a well casing. A six-inch diameter, Schedule 40, PVC casing was installed in the borehole to a depth of 155 feet bgs. The casing was perforated with 0.050-inch slots from 70 to 95, and 130 to 150 feet bgs. A gravel envelope was installed in the annulus between the borehole wall and the casing from 160 to 125 and 115 to 52 feet bgs. A bentonite chip seal was installed in the annulus from 125 to 115 feet bgs. A two-foot bentonite chip transition seal was placed in the annulus from 52 to 50 feet bgs. A Valley Water inspector witnessed the placement of a 10.3 sack sand/cement seal in the annulus from 50 feet bgs to ground surface.

After the seal set, the well was developed by airlifting until the water produced was clear and sand free.

Test Pumping

The purpose of the test pumping TW-1 was to determine if the well could yield sufficient water to meet the projected project maximum daily demand (MDD) of 8,440 gallons per day (gpd). The was pumped for 72 hours to assess the long-term pumping water level and sustainable yield of the well.

Water levels in several accessible nearby wells were monitored during the pumping test using pressure transducers to determine if pumping of the test well would result in drawdown in those wells. The following wells were monitored during the pumping test (**Figure 1**):

- Happy Acres Mutual Water Company Well No. 1 (HVNWC Well No. 1)
- BAVC irrigation well
- BAVC Monitoring Well No. 1
- Swenson Well

A temporary submersible pump was installed into the well between the well screen sections (120 feet bgs) by Guardino Well Drilling for the pump test. The discharge line from the pump was outfitted with a totalizing flow meter and gate valve to regulate flow. Discharge from the well during the test was directed via hose approximately 200 feet from the well. The target flow rate for the pump test was 15 gallons per minute (gpm).

The static water level in the well before pumping began was 37.75 ft below the top of the well casing. The pump test began at 8:10 am on June 7, 2022. After approximately 10 minutes of pumping, the discharge was measured using a 20-gallon container and a stopwatch to confirm that the installed flow meter was accurately measuring the flow rate. The installed flow meter was indicating a flow rate of 15 gpm while the container/stopwatch method indicated that the actual flow rate was 22 gpm. The flow was adjusted to 15 gpm using the container method to measure flow. The flow rate was regularly confirmed with the container and stopwatch throughout the remainder of the test. After the flow rate was adjusted to 15 gpm, the installed pressure transducer was reset and reinstalled in the well to ensure that it would remain submerged during the entire 72-hour test. Reliable water levels were not collected during the first hour of the test due to the time spent adjusting the flow rate and transducer. After approximately 9 hours of pumping, a safety switch on the generator powering the pump was tripped resulting in the brief shutdown of the pump. The pump was immediately restarted.

Water level data collected by the pressure transducers installed in TW-1 and the monitored wells was downloaded, barometrically compensated, and plotted on hydrographs. **Figure 5** shows the pumping and recovery water levels in TW-1. During the pumping test, the water level declined at a relatively constant rate for approximately the first 7 hours, after which the pumping water level was constant between approximately 81 and 82 feet bgs for the reminder of the test. **Figure 6** shows the water levels in the test well and the monitored wells during test pumping. There were no discernable impacts on water levels in the monitored wells due to pumping of the test well. Approximately 1 foot of drawdown was observed in the BAVC irrigation well in response to pumping of the HVMWC Well No. 1. The approximately 2 feet of water level decline observed in the HVMWC No. 1 in the last 16 hours of the pump test is not believed to be due to pumping of the test well because similar water levels were observed in the well before pumping of TW-1 began.

Approximately 8-hours after pumping ended, the water level TW-1 recovered to 36.69 ft bgs, representing a 96% recovery of the pretest water level.

Approximately 21,600 gallons of water was pumped from the well each of day of the three-day test which equates to 2.5 times the projected project MDD of 8,440 gallons. At a pumping rate of 15 gpm, the projected project MDD would be satisfied with 9.4 hours of pumping. Based on the lack of any response

in the monitored wells to pumping TW-1 for 72-hours, no impacts to water levels in the monitored wells would be expected due to pumping to meet projected project demands.

Water Quality

Water samples were collected from TW-1 on July 18, 2022, using a temporary submersible pump for Title 22 Drinking Water analysis. The well was sampled after volume equal to three wet casing volumes was pumped and field parameter stabilization. Samples were collected in laboratory suppled bottles and submitted to California Laboratory Services (ELAP No. 1322) for analysis.

Results of water quality testing showed that the water produced from TW-1 meets all Title 22 requirements for drinking water with the exception of manganese which was measured at 190 µg/L, which exceeds the maximum contaminate level (MCL) of 50 µg/L (**Table 1**).

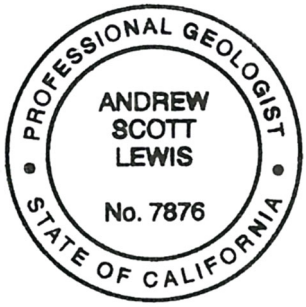
If you should have any questions, or would like additional information, we will be pleased to respond.

Sincerely,

LUHDORFF AND SCALMANINI,
CONSULTING ENGINEERS

Scott Lewis

Scott Lewis, P.G
Senior Principal Geologist



Attachments:
Figure 1: Bay Area Vipassana Center - Site Map
Figure 2: BAVC – Setback Distance Figure
Figure 3: BAVC Monitoring Well No. 1 As-Built Diagram
Figure 4: BAVC Test Well No. 1 As-Built Diagram
Figure 5: BAVC Test Well No. 1 Pump Test Hydrograph
Figure 6: BAVC Pump Test – Multiple Well Hydrograph
Table 1: BAVC Test Well No. 1 Water Quality Summary Sheet

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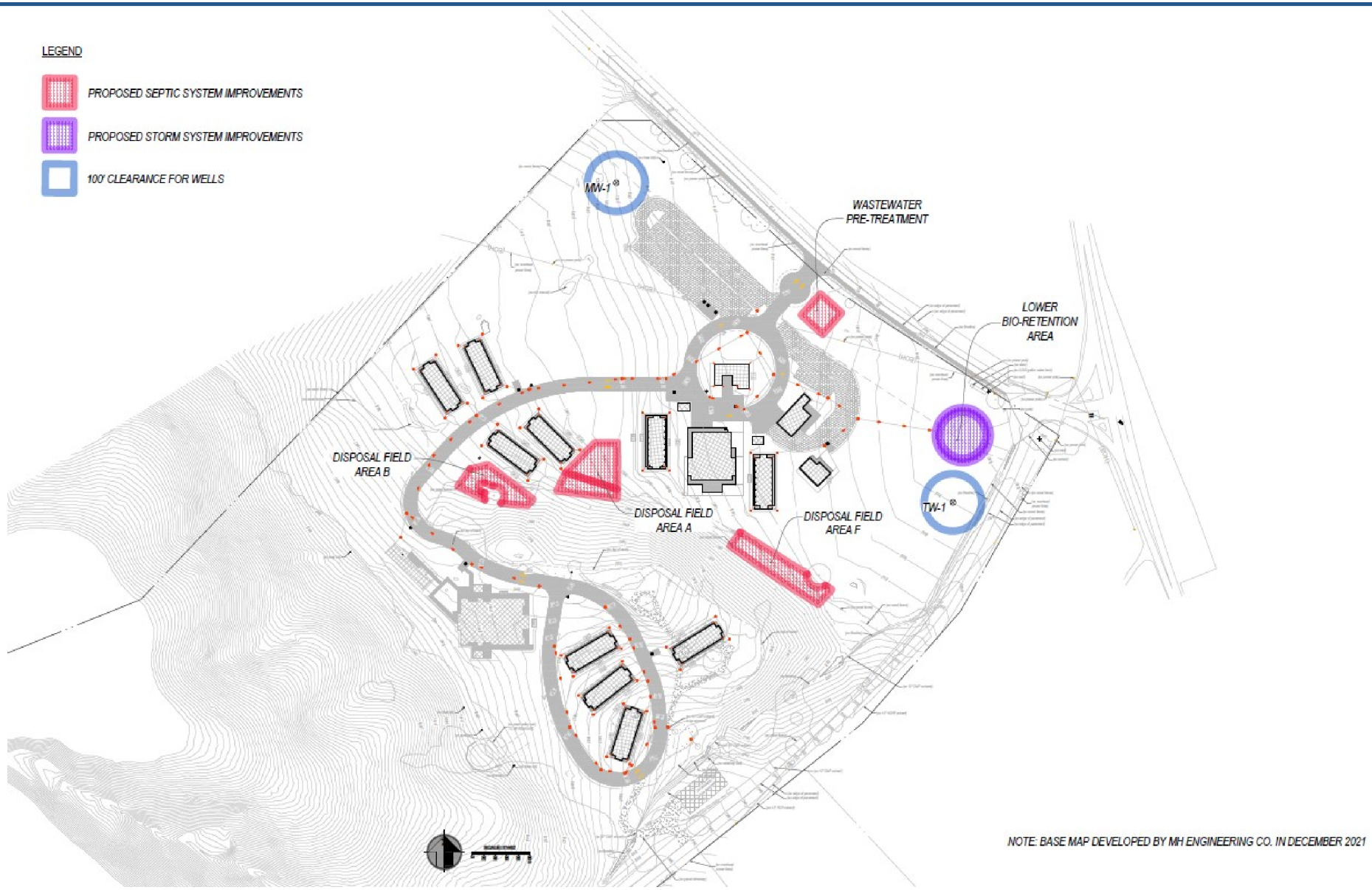
Bay Area Vipassana Center - Site Map

BAVC Water System
Gilroy, CA

Figure 1-6



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BAVC - Setback Distance Figure

BAVC Water System
Gilroy, CA

Figure 2-6

Client: Bay Area Vipassana Center	**Lat/Long:** 37.027141/-121.658757
Project Name: BAVC Water System	**Well Name:** BAVC Monitoring Well
LSCE #: 22-2-006	**Drill Date:** 5/13/2022 - 5/27/2022
Location: Gilroy, CA	**Drilling Method:** Air & Mud Rotary
Geologist: R. Sanchez, GIT	**Driller:** Guardino Well Drilling Inc.

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Depth (ft bgs)	Lithologic Description	Strat-Column	As-Built Well Profile

0
Silty Clay - low plasticity, dark brown, trace gravel up to 1/8"

10
Clayey Silty Gravel - gravel up to 1.5", low plasticity, dark brown

20
Clayey Gravel - gravel up to 1.5", low plasticity, dark brown

30

40
Sand and Gravel - fine to coarse sand, gravel up to 1/4"

50
Clayey Sand & Gravel - fine to coarse sand, gravel up to 3/4", low to medium plasticity sandy clay, tan to dark brown

60
Clayey Gravel - low to high plasticity, grey-brown, fine to coarse sand, gravel up to 1/2"

70
Gravelly Clay - low to high plasticity, grey, fine to coarse sand, gravel up to 1/4"

80
Clayey Gravel - gravel up to 1.5", low to high plasticity, grey

90
Grey Mudstone - brittle, gravel up to 1/4"

100

110

120

130

140

0---
8" Diameter Borehole

Annular Seal - 10.3 Sack Sand/Cement Grout

50---

Blank Casing - 3" Dia. Sch. 40 PVC (Typ.)

Gravel Envelope - SRI 8x16 (Typ.)

75---

Screened Casing - 3" Dia. Sch. 40 PVC w/ 0.032" Slot Size (Typ.)

95---

Well Sump - 3" Dia. Sch. 40 PVC

100---

105---

Bentonite Chip Seal

120---

Native Fill

Client: Bay Area Vipassana Center	**Lat/Long:** 37.025742/-121.656972
Project Name: BAVC Water System	**Well Name:** BAVC Test Well
LSCE #: 22-2-006	**Drill Date:** 5/24/2022 - 5/27/2022
Location: Gilroy, CA	**Drilling Method:** Air & Mud Rotary
Geologist: B. Kearney	**Driller:** Guardino Well Drilling Inc.

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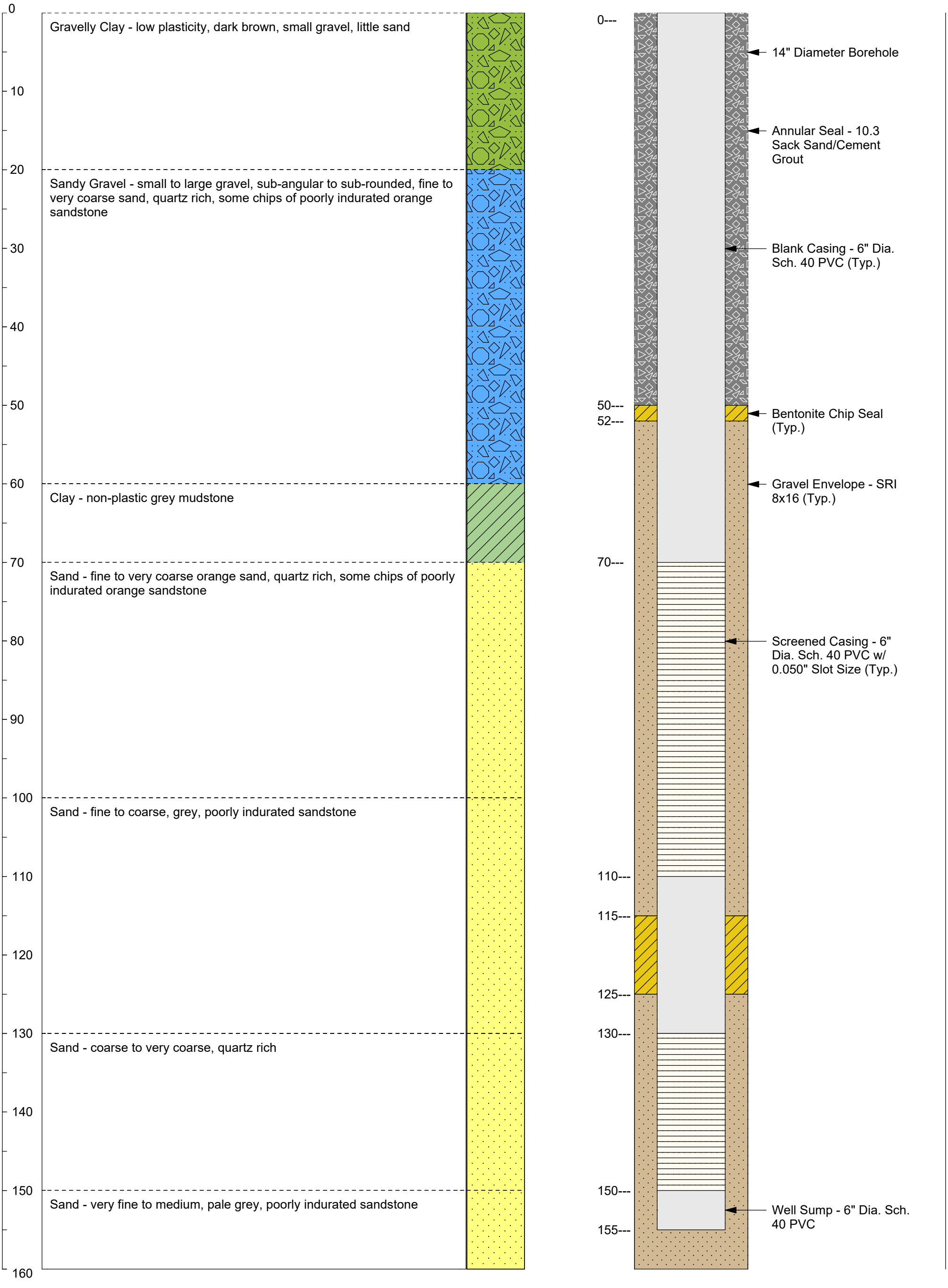
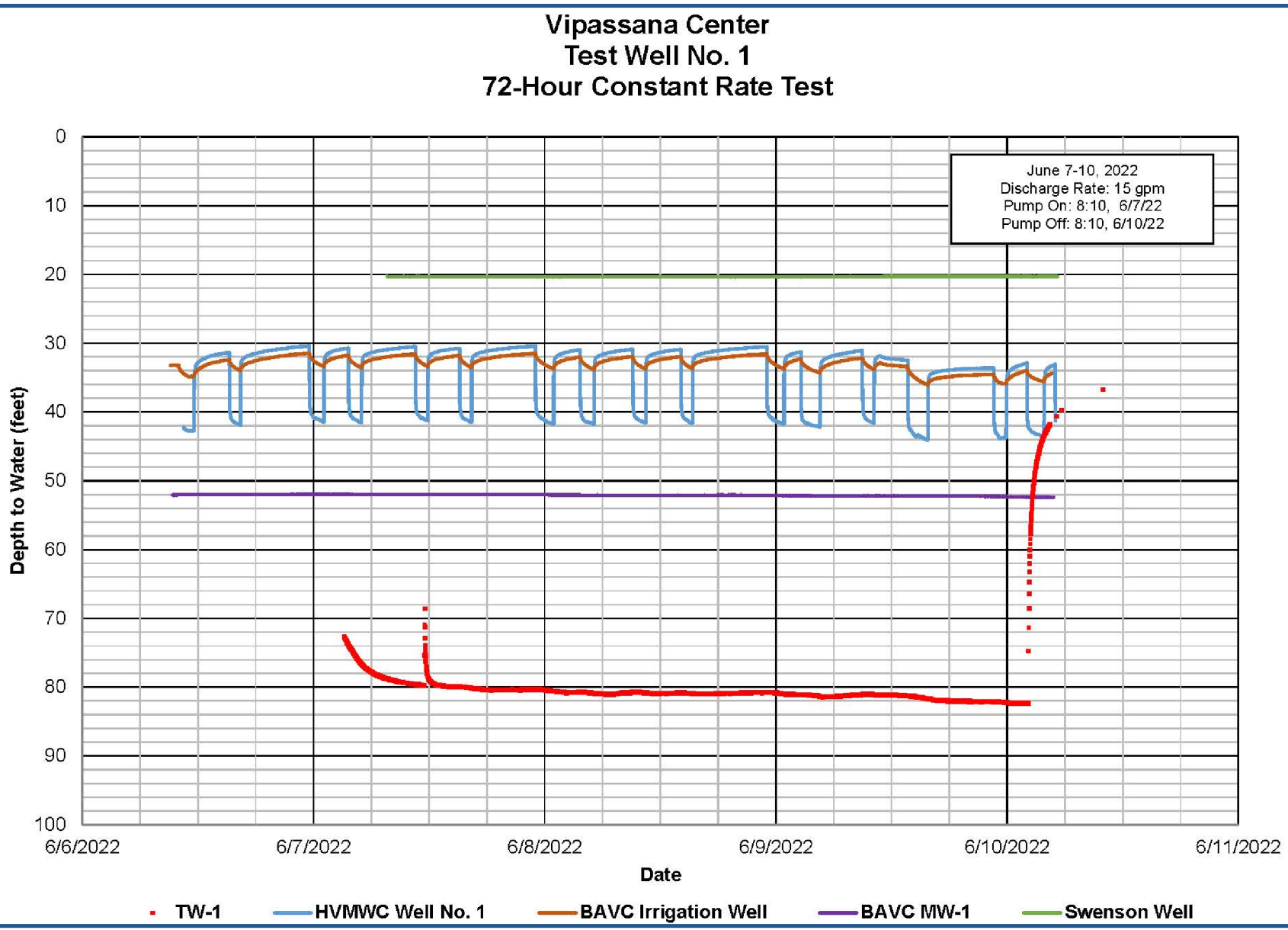
Depth (ft bgs)	Lithologic Description	Strat-Column	As-Built Well Profile





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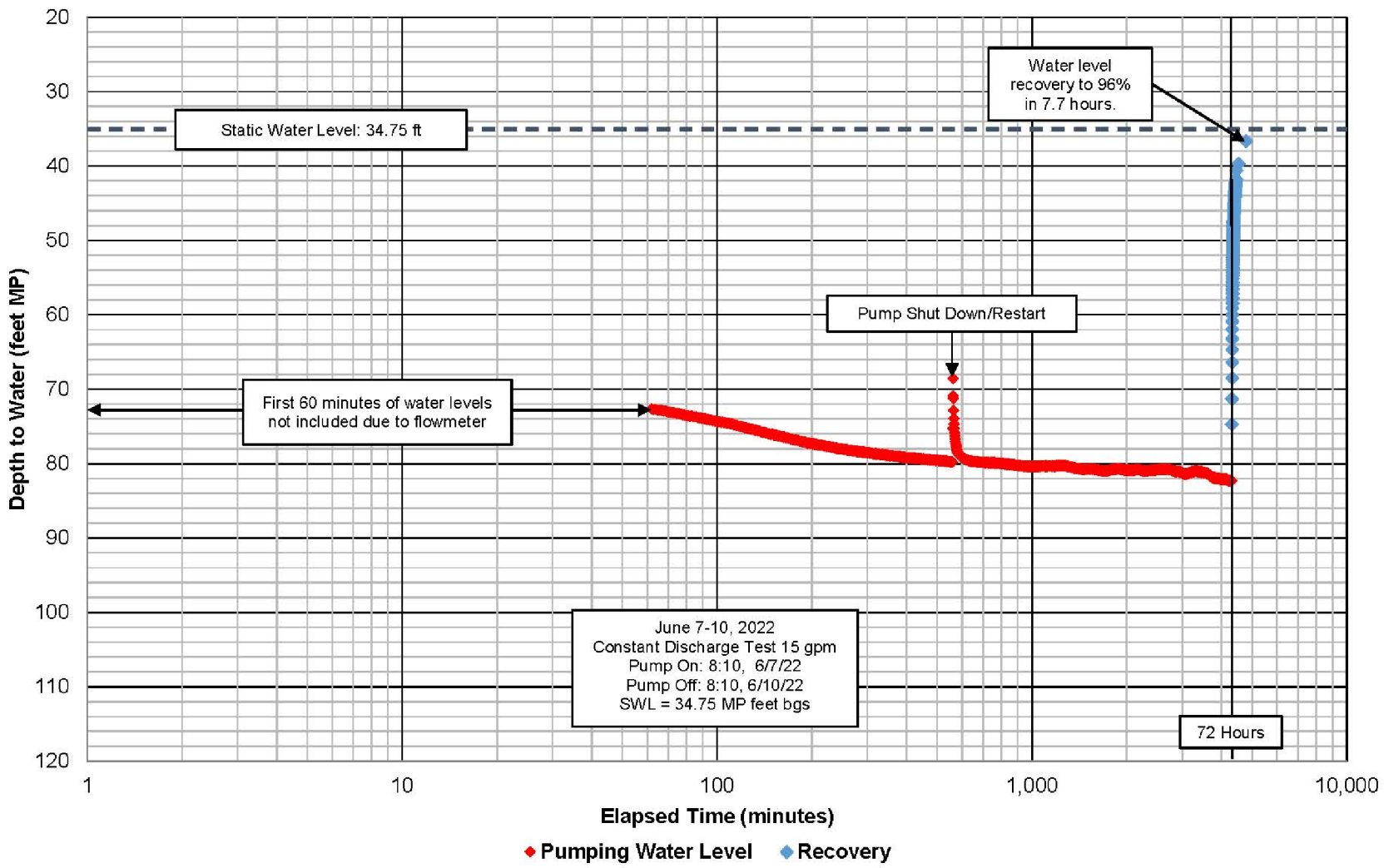
BAVC Pump Test - Multiple Well Hydrograph

BAVC Water System
Gilroy, CA

Figure 6-6



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BAVC Test Well No. 1 Pump Test Hydrograph

BAVC Water System
Gilroy, CA

Figure 5-6

Table 1. BAVC Test Well No. 1
Water Quality Summary Sheet

ANALYTE	UNITS	REPORTING LIMIT	METHOD	MCL	7/18/2022
CATIONS					
Calcium	mg/L	1.0	200.7		45
Magnesium	mg/L	1.0	200.7		27
Potassium	mg/L	1.0	200.7		1.7
Sodium	mg/L	1.0	200.7		39
Hardness as $CaCO_3$	mg/L	1.0	200.7		230
ANIONS					
Bicarbonate Alkalinity	mg/L	5.0	SM 2320B		200
Carbonate Alkalinity	mg/L	5.0	SM 2320B		ND
Chloride (Cl)	mg/L	2.5	300.0	250/500[2]	44
Cyanide (total)	µg/L	100	SM4500-CNE	150	ND
Fluoride	mg/L	0.10	300.0	2	ND
Hydroxide Alkalinity	mg/L	5.0	SM 2320B		ND
Nitrate (as N)	mg/L	0.40	300.0	10	ND
Nitrate/Nitrite (as N)	mg/L	0.40	300.0	10	0.61
Nitrite (as N)	mg/L	0.40	300.0	1	ND
Sulfate (as SO_4)	mg/L	2.5	300.0	250/500[2]	49
Sulfide	mg/L	1.0	SM4500-S F		ND
Total Alkalinity	mg/L	5.0	SM 2320B		200
Perchlorate	µg/L	2.0	314.0	0.006	ND
PHYSICAL PARAMETERS					
Color (A.P.H.A)	Color Units	1	SM 2120B	15[2]	ND
pH	pH units	0.01	SM 4500-H B	6.5/8.5[4]	6.9
Methylene Blue Active Substance	mg/L	0.10	SM 5540C	0.5[2]	ND
Specific Conductance	µmhos/cm	1.0	SM 2510 B-1997	900/1,600[2]	610
Total Dissolved Solids (TDS)	mg/L	10	SM 2540C	500/1,000[2]	390
Odor	TON	1	140.1	3	ND
Turbidity	NTU	0.10	180.1	5[2]	0.45
INORGANICS					
Aluminum	µg/L	50	200.7	1000[1]/200[3]	ND
Aluminum (Dissolved)	µg/L	50	200.7		ND
Antimony	µg/L	4.0	200.8	6	ND
Arsenic	µg/L	2.0	200.8	10	ND
Arsenic (Dissolved)	µg/L	2.0	200.8		ND
Barium	µg/L	100	200.8	1000	150
Beryllium	µg/L	1.0	200.8	4	ND
Boron	µg/L	100	200.8	1000[3]	250
Cadmium	µg/L	1.0	200.8	5	ND
Chromium (Total)	µg/L	10	200.8	50	ND
Chromium (Dissolved)	µg/L	10	200.7		ND
Hexavalent Chromium	µg/L	1.0	218.6	50	ND
Copper	µg/L	50	200.8	1300[2]	ND
Iron	µg/L	100	200.7	300[2]	ND
Iron (Dissolved)	µg/L	100	200.7		ND
Lead	µg/L	5.0	200.8	15[3]	ND
Manganese	µg/L	20	200.8	50[2]	**190**
Manganese (Dissolved)	µg/L	20	200.7		160
Mercury	µg/L	1.0	245.1	2	ND
Nickel	µg/L	10	200.8	100	ND
Selenium	µg/L	5.0	200.8	50	ND
Silver	µg/L	10	200.8	100[2]	ND
Thallium	µg/L	1.0	200.8	2	ND
Vanadium	µg/L	3.0	200.8	50[3]	ND
Zinc	µg/L	50	200.8	5000[2]	ND
RADIOCHEMISTRY					
Gross Alpha	pCi/L	1.04	900.0	15	4.28
Gross Beta	pCi/L	2.40	900.0		4.11
Uranium	pCi/L	0.02	908.1	20	2.21
Ra 226	pCi/L	0.89	903.1		0.73
Ra 228	pCi/L	0.15	904.0		1.29
Ra 226 + Ra 228	pCi/L			5	2.02
Strontium-90	pCi/L	0.36	905.0	8	0.26
Tritium	pCi/L	186	906.0	20,000	87
OTHER ANALYSES					
Asbestos	MFL	0.18	600/R-94/134	7[1]	ND
Purgeable Organic Compounds (VOCs)	µg/L	*	524.2		ND
Semi-Volatile Organic Compounds (SVOCs)	µg/L	*	525.2		ND
EDB and DBCP	µg/L	*	504.1		ND
Nitrogen/Phosphorus Pesticides	µg/L	*	507		ND
Chlorinated Pesticides and PCB's	µg/L	*	508		ND
Chlorinated Acids	µg/L	*	515.3		ND
DEHA/DEHP	µg/L	*	525		ND
Carbamates	µg/L	*	531.1		ND
Glyphosate	µg/L	5	547	700	ND
Endothall	µg/L	5	548.1	100[1]	ND
Diquat and/or Paraquat	µg/L	*	549.2	20	ND
Benzo-a-pyrene	µg/L	0.10	550	0.2	ND
2,3,7,8-TCDD (Dioxin)	pg/L	5	1613B	700[1]	1.88
1,2,3-Trichloropropane	µg/L	0.0050	SRL 524M-TCP	0.0050	ND
Total Trihalomethanes (THM)	µg/L	0.50	524.2	80	54
Haloacetic acids (five) HAA5	µg/L	*	552.2	60	13
Bromate	µg/L	5	300.1	10	ND
Chlorite (ClO2)	mg/L	0.02	300	1.0	ND

[1] - Primary MCL
[2] - Secondary MCL (recommended/upper range)
[3] - Notification Level
[4] - Suggested lower/upper acceptable range
* - Various Reporting Limits
ND = Non-Detect

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