

CRESCENTA VALLEY WATER DISTRICT

2700 FOOTHILL BOULEVARD
LA CRESCENTA, CALIFORNIA

Agenda for the Meeting of the Engineering Committee
of the Crescenta Valley Water District

To be held on

July 29, 2016 at 8:00 AM

Posted July 28, 2016 at 10:00 am

Call to Order

Adoption of Agenda

Information Items

1. Status of Groundwater Wells and Well Capacity
2. FY 15/16 CIP – Review of Project Costs
3. FY 16/17 CIP – Review of Project Schedule
4. Draft 10-year CIP Program
5. Discussion on Main Office Building Upgrades

Public Comments

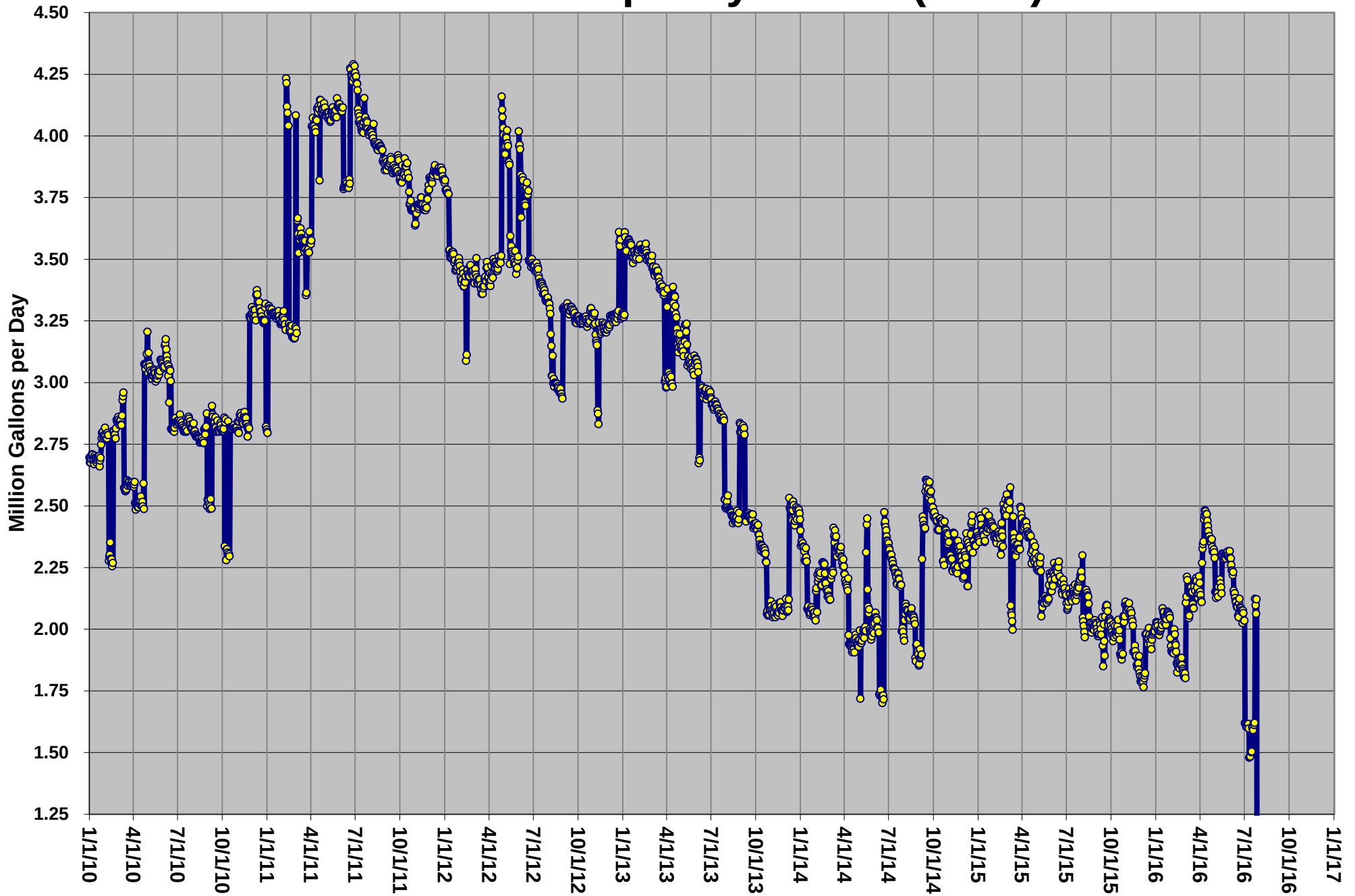
At this time, members of the public shall have an opportunity to address the Committee on items of interest that are within the subject matter jurisdiction of this Committee. This opportunity is non-transferable and speakers are limited to three (3) minutes each.

Committee Member's Request for Future Agenda Items

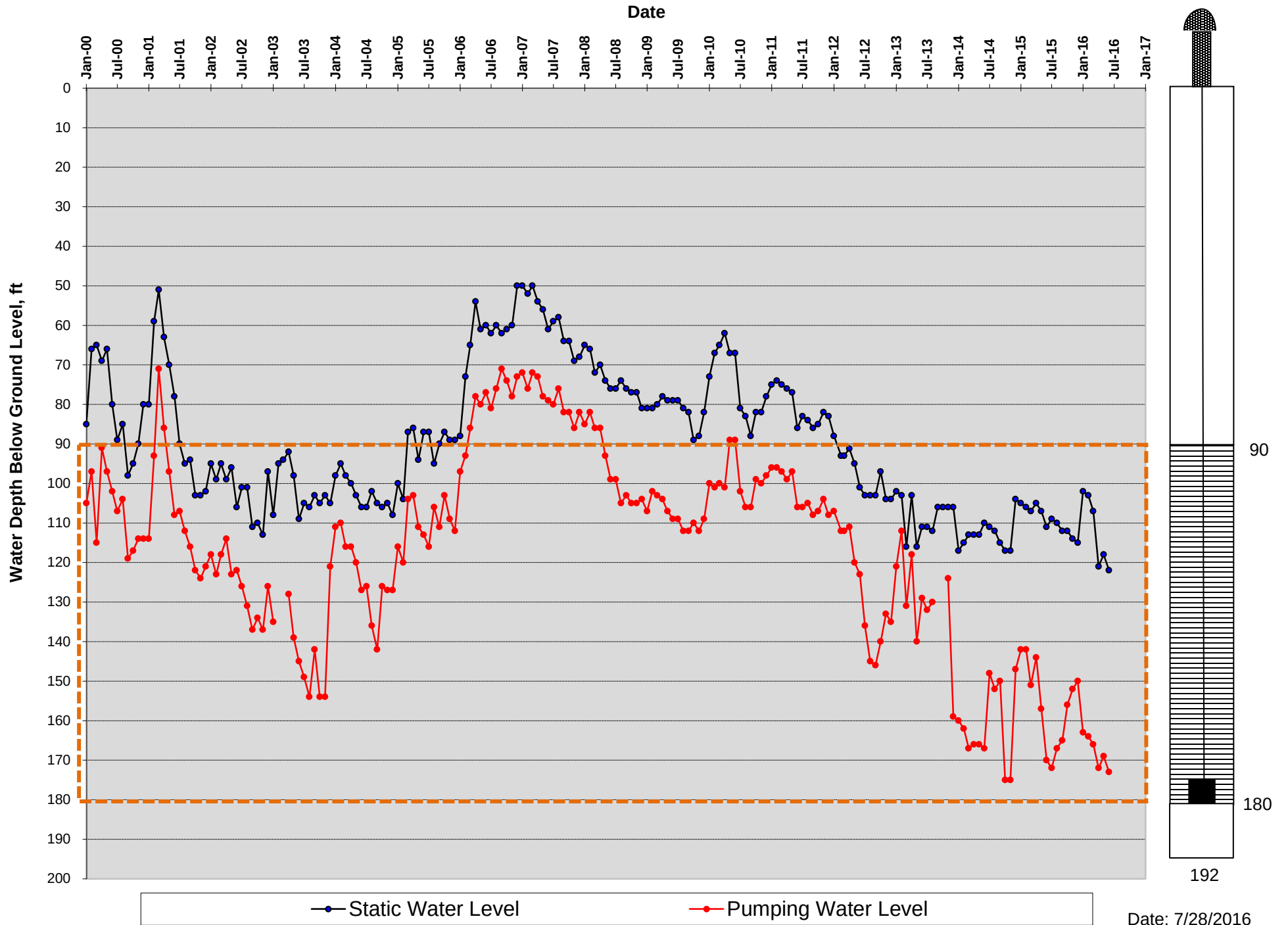
Next Engineering Committee Meeting – September 16, 2016

Adjournment

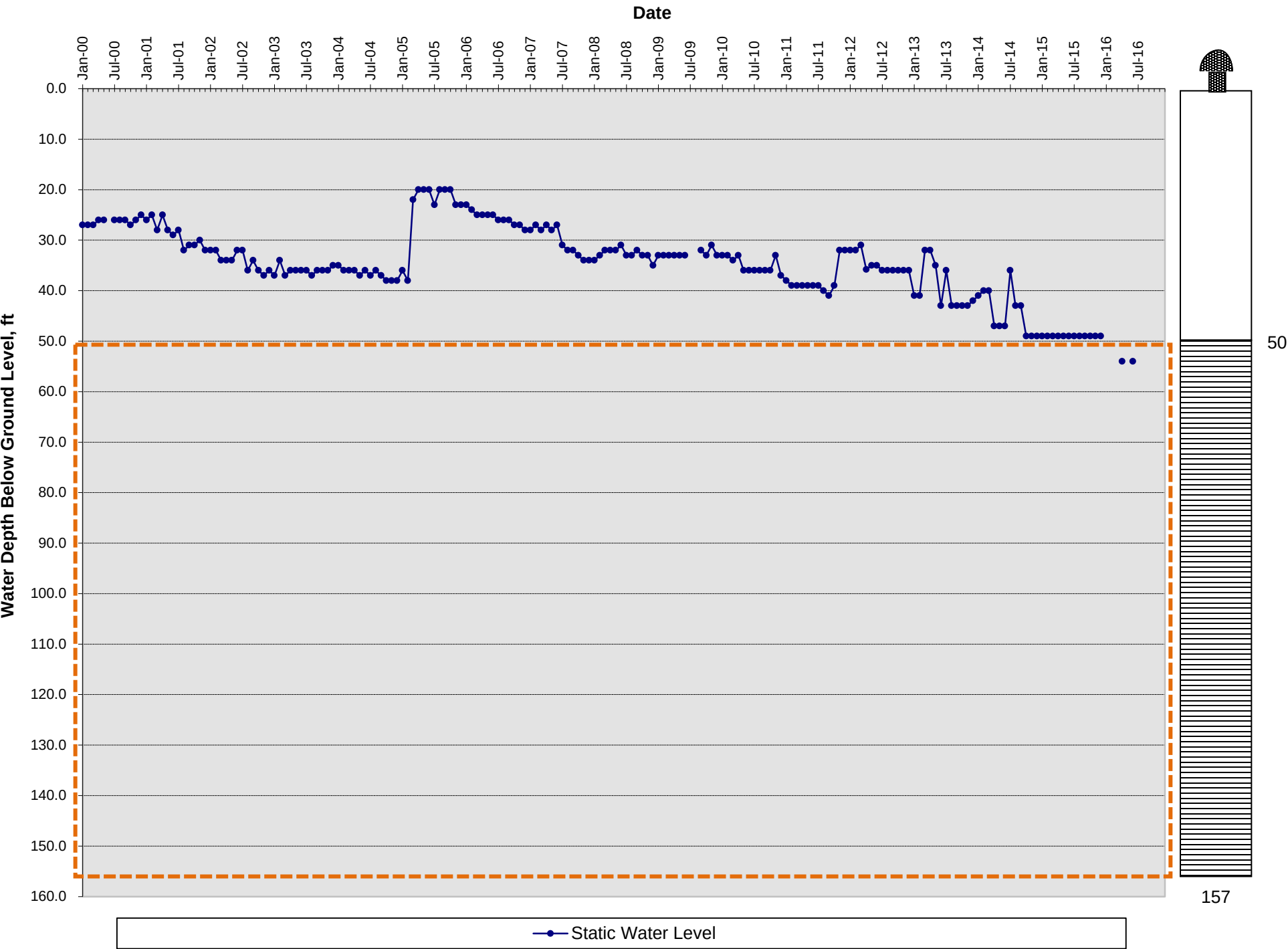
Crescenta Valley Water District 2010-16 Well Capacity Status (MGD)



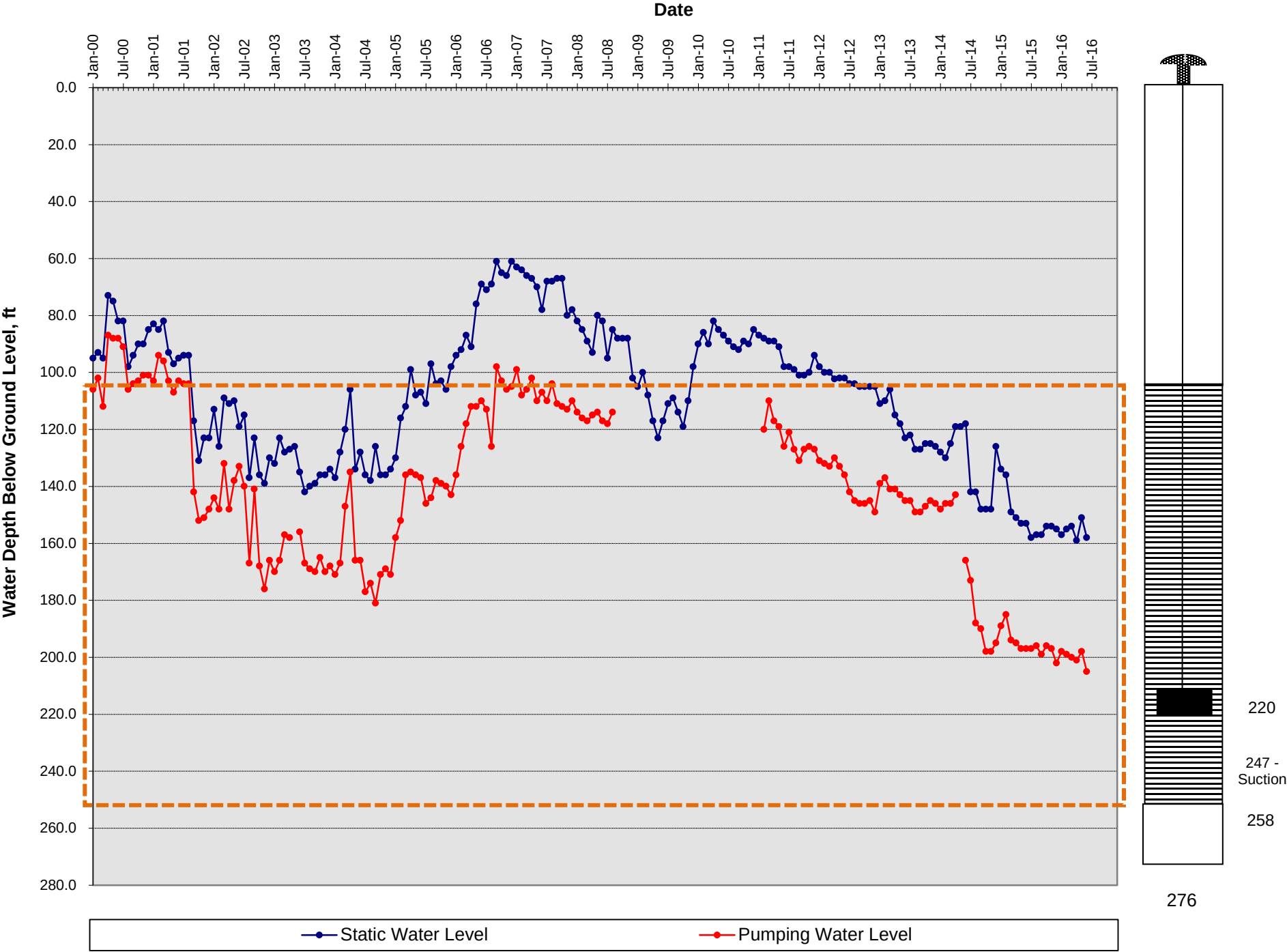
Well 1: 2000 - 2016 - Static and Pumping Levels



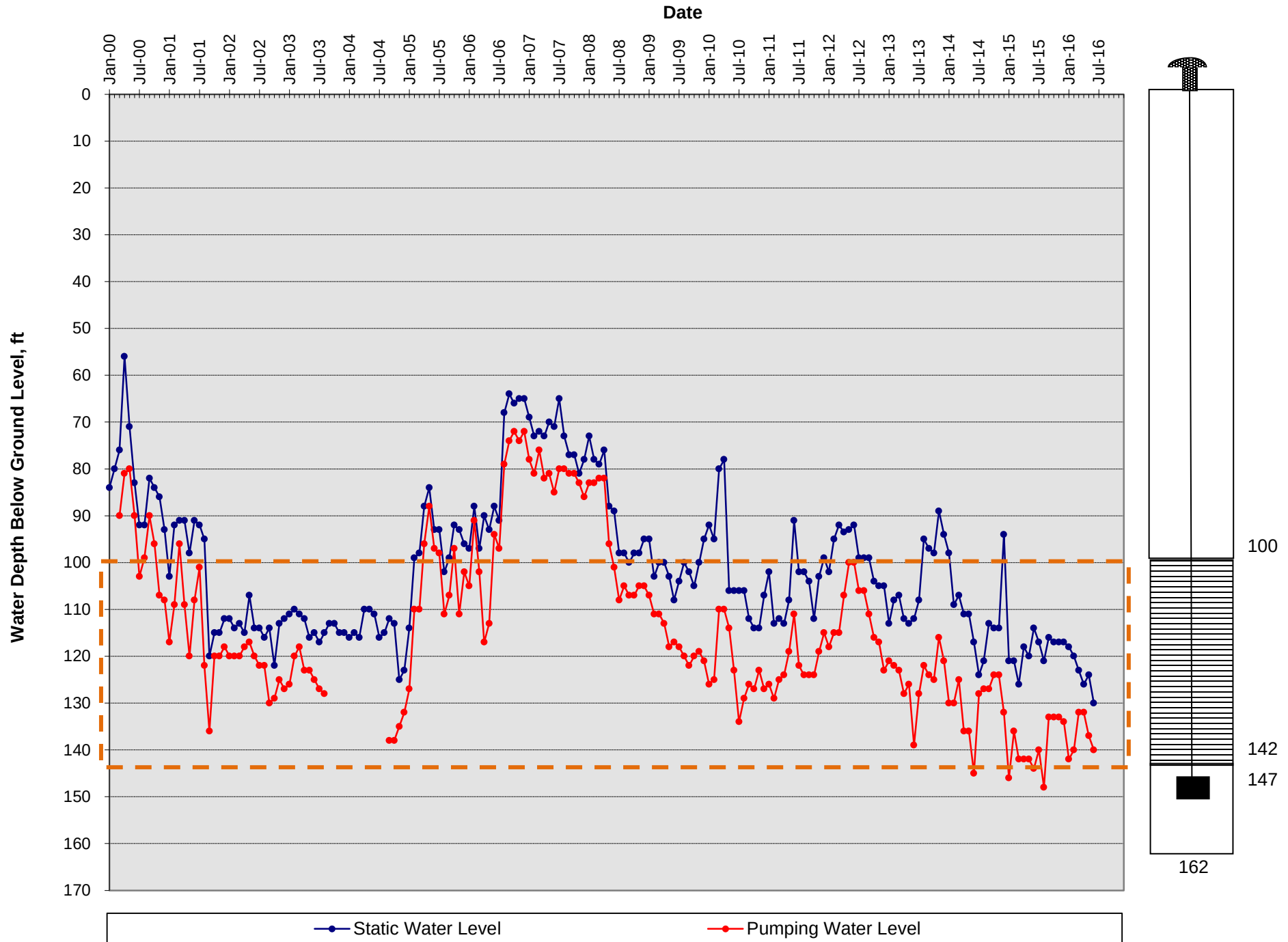
Well 2: 2000 - 2016 - Static Level



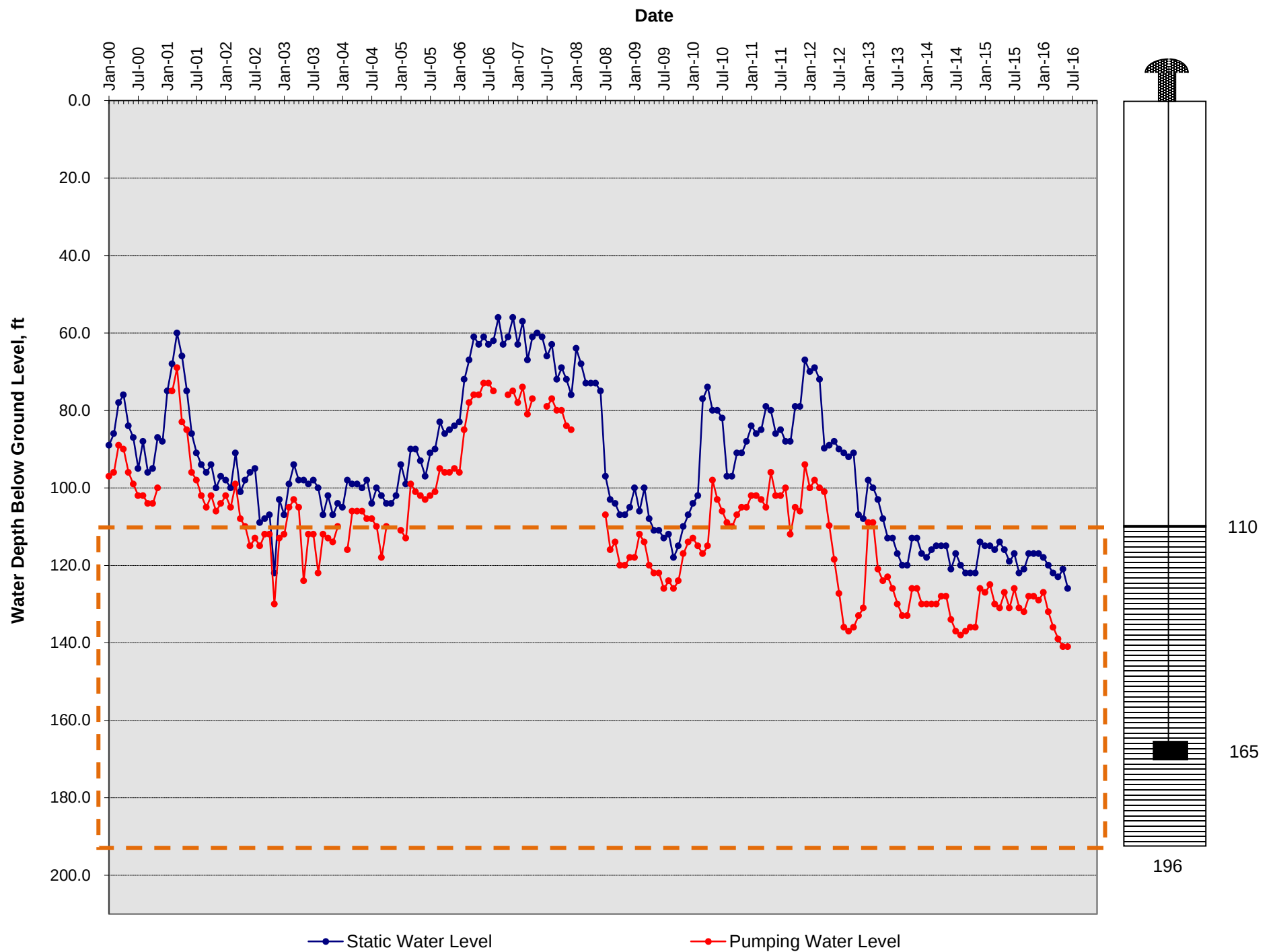
Well 5: 2000 - 2016 - Static and Pumping Levels



Well 6: 2000 - 2016 - Static and Pumping Levels

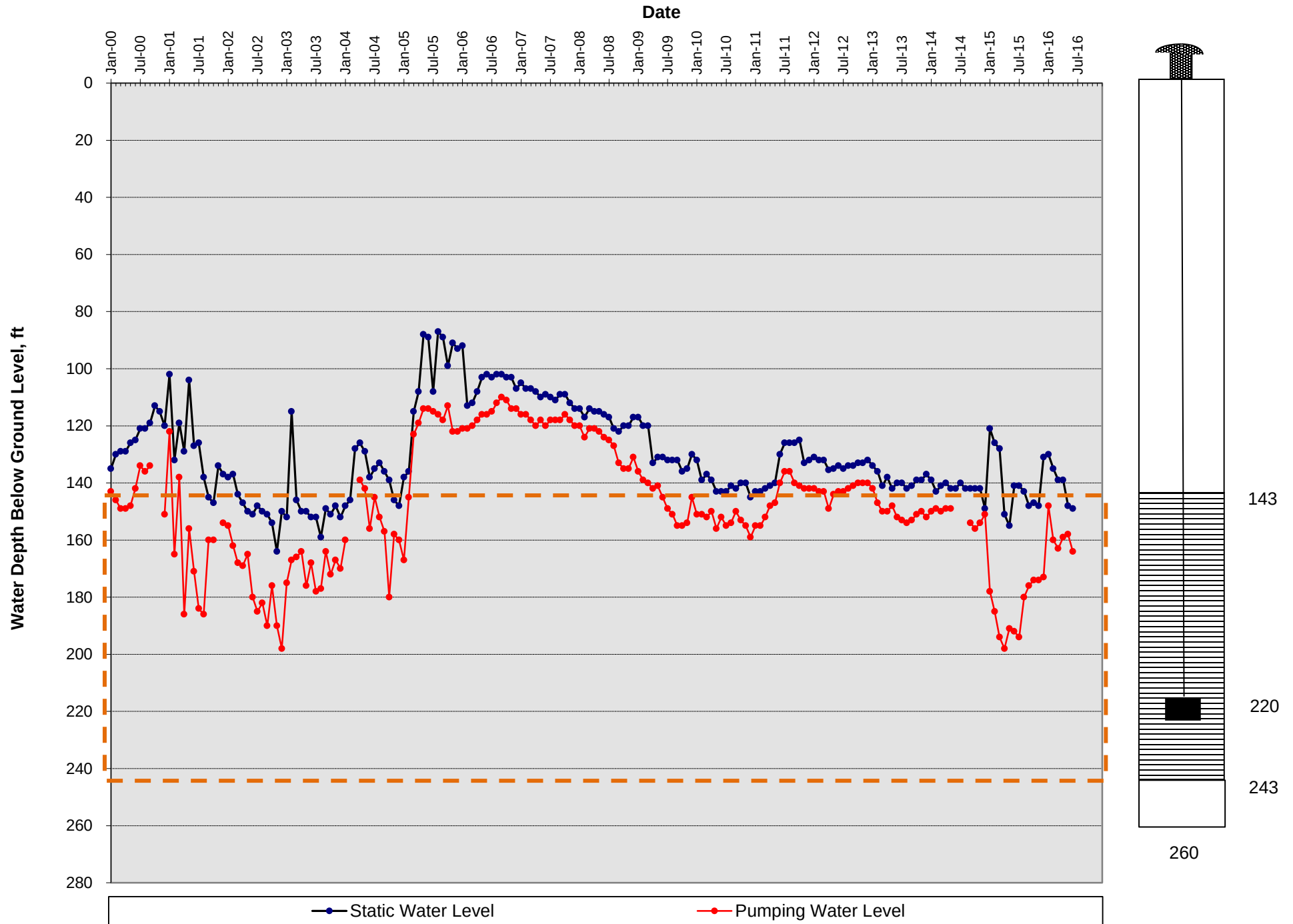


Well 7: 2000 - 2016 - Static and Pumping Levels



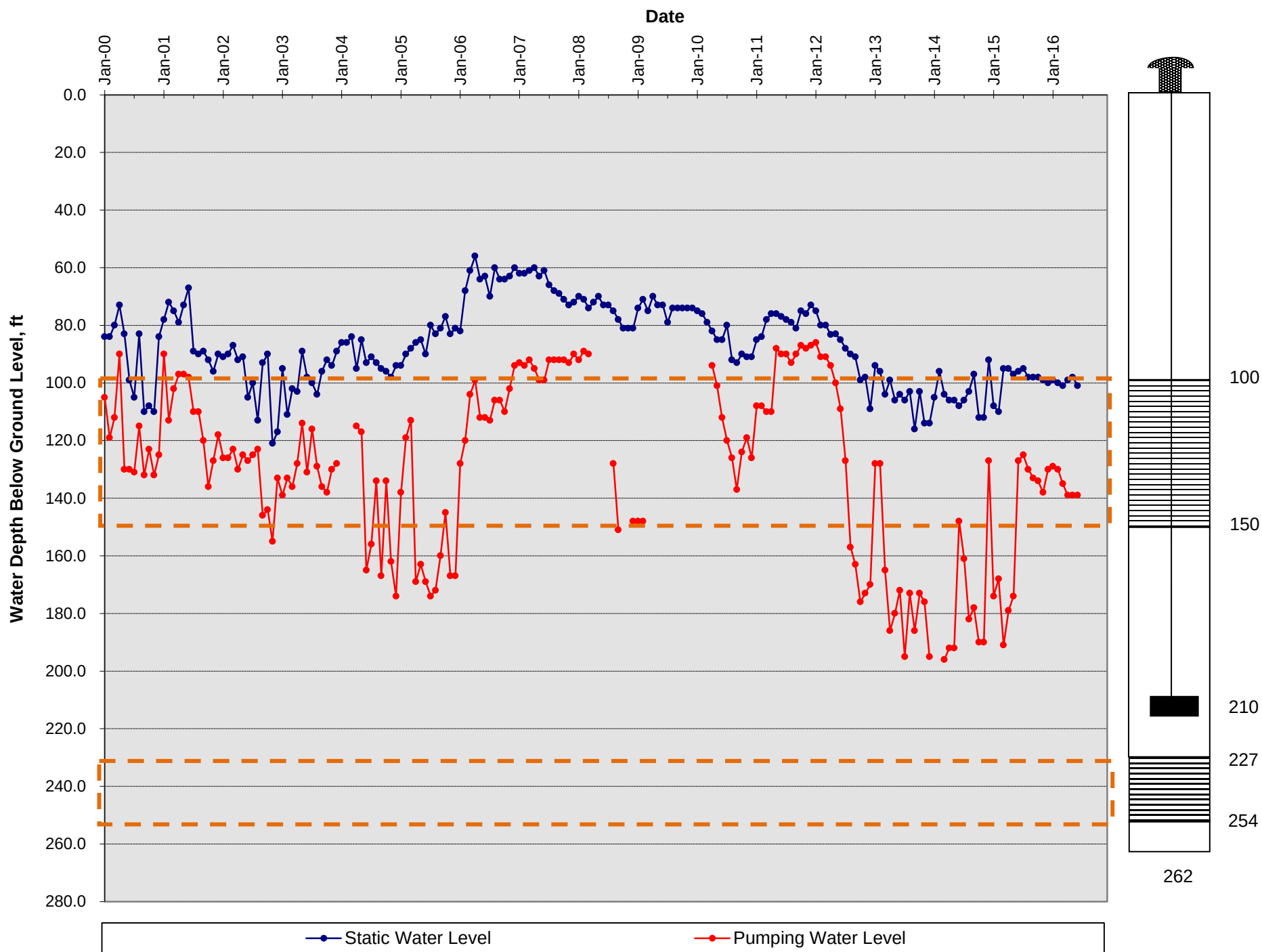
Date: 7/28/2016

Well 8: 2000 - 2016 - Static and Pumping Levels

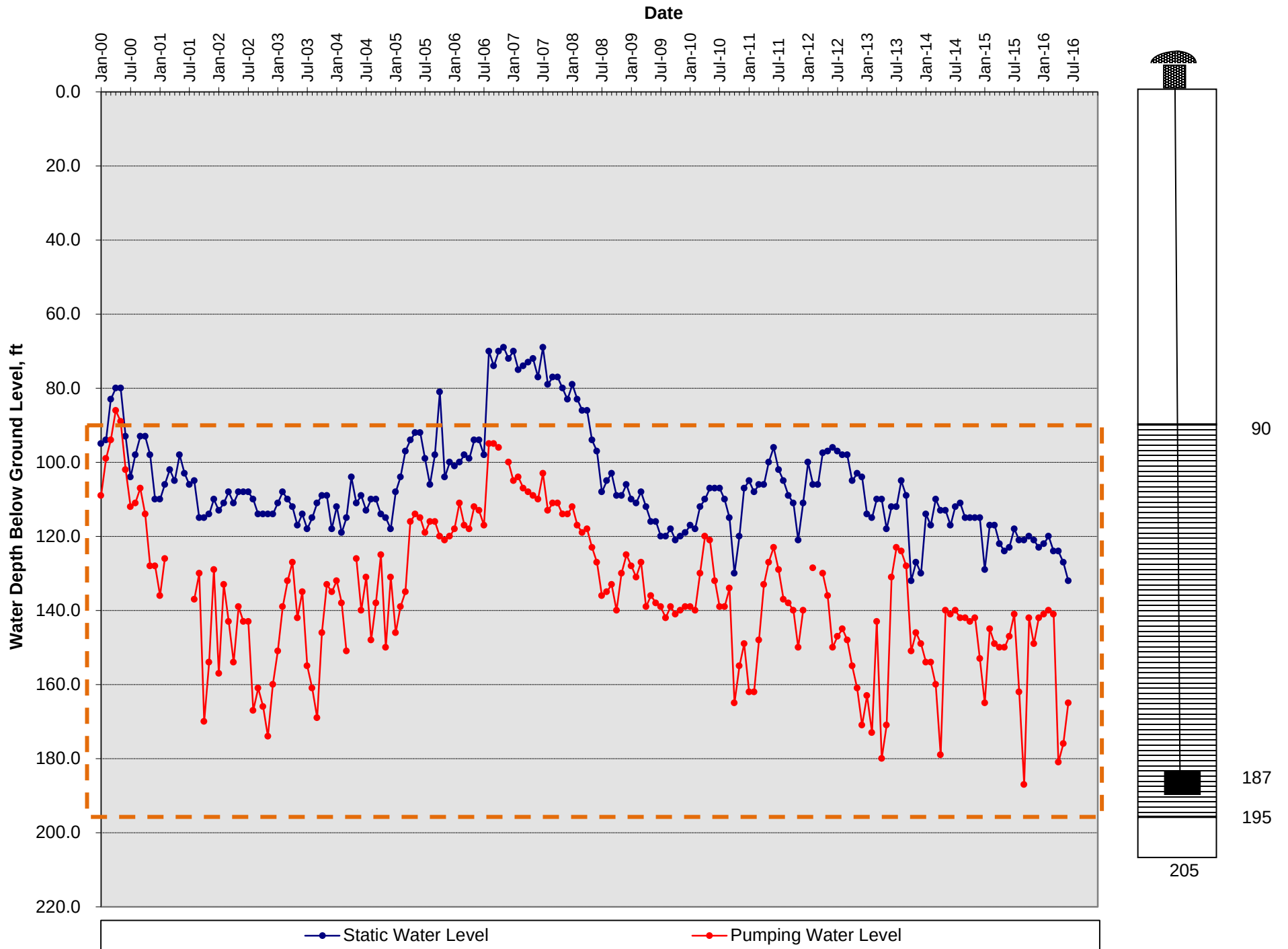


Date: 7/28/2016

Well 9: 2000 - 2016 - Static and Pumping Levels

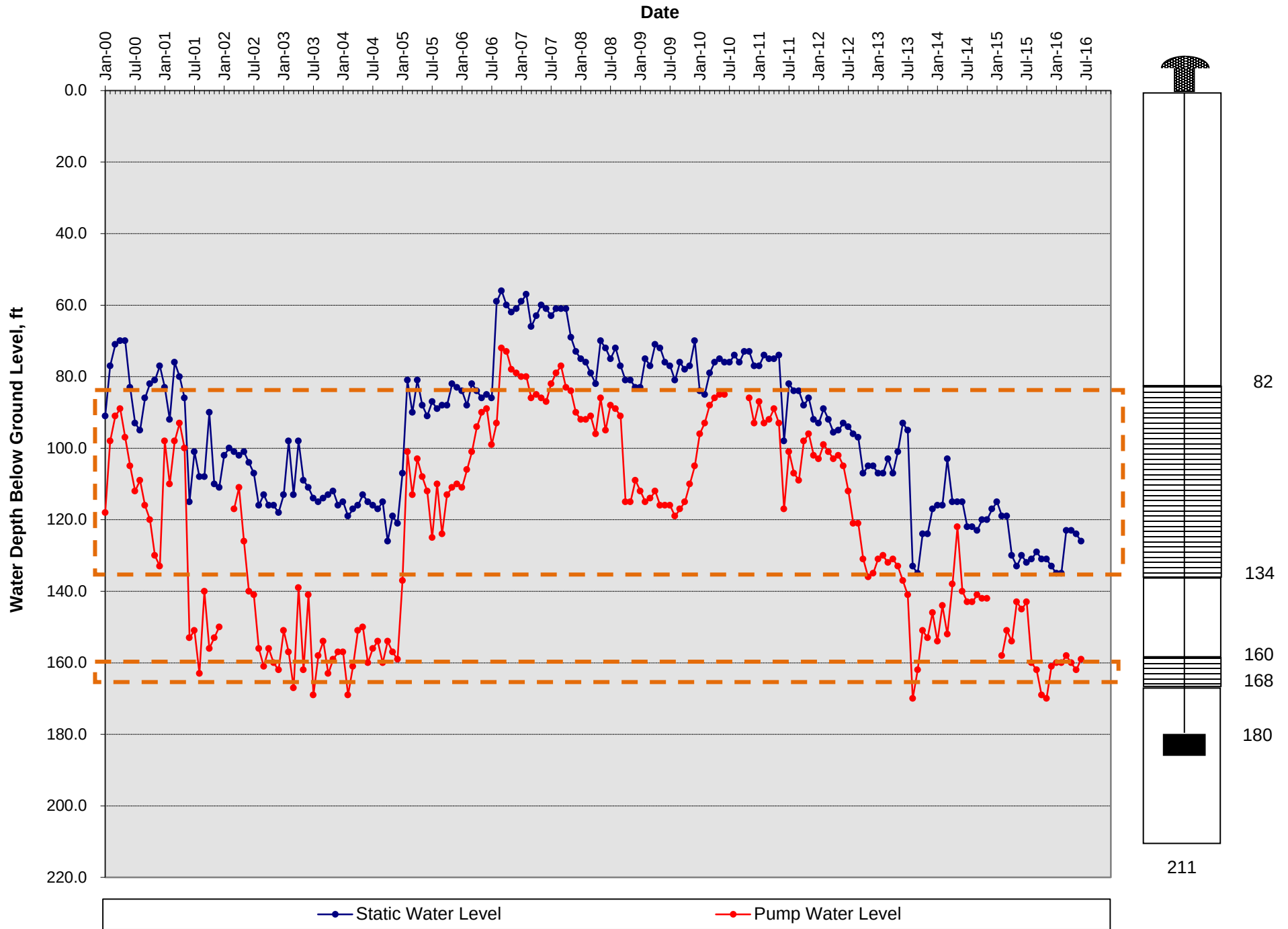


Well 10: 2000 - 2016 - Static and Pumping Levels



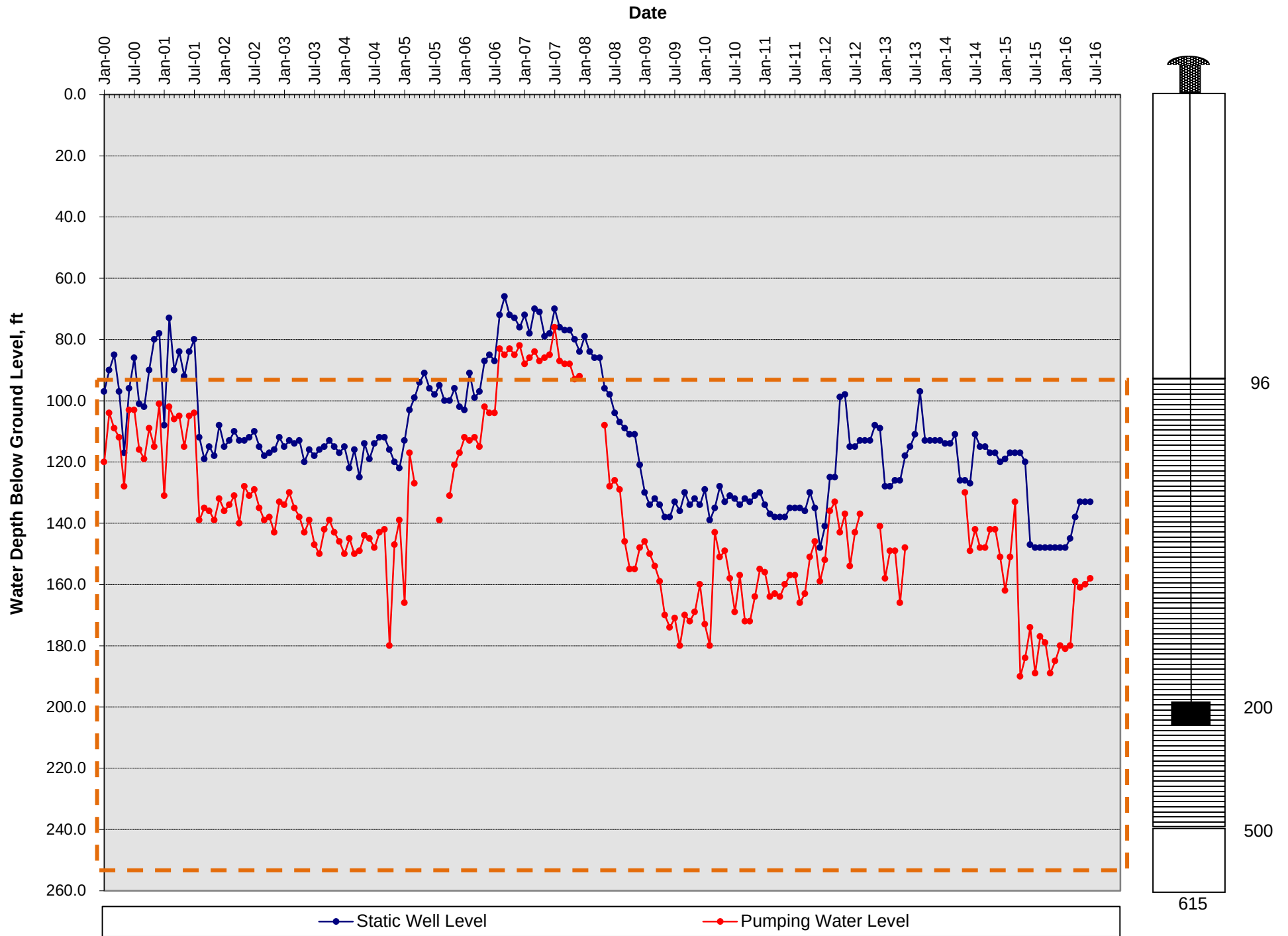
Date: 7/28/2016

Well 11: 2000 - 2016 - Static and Pumping Levels



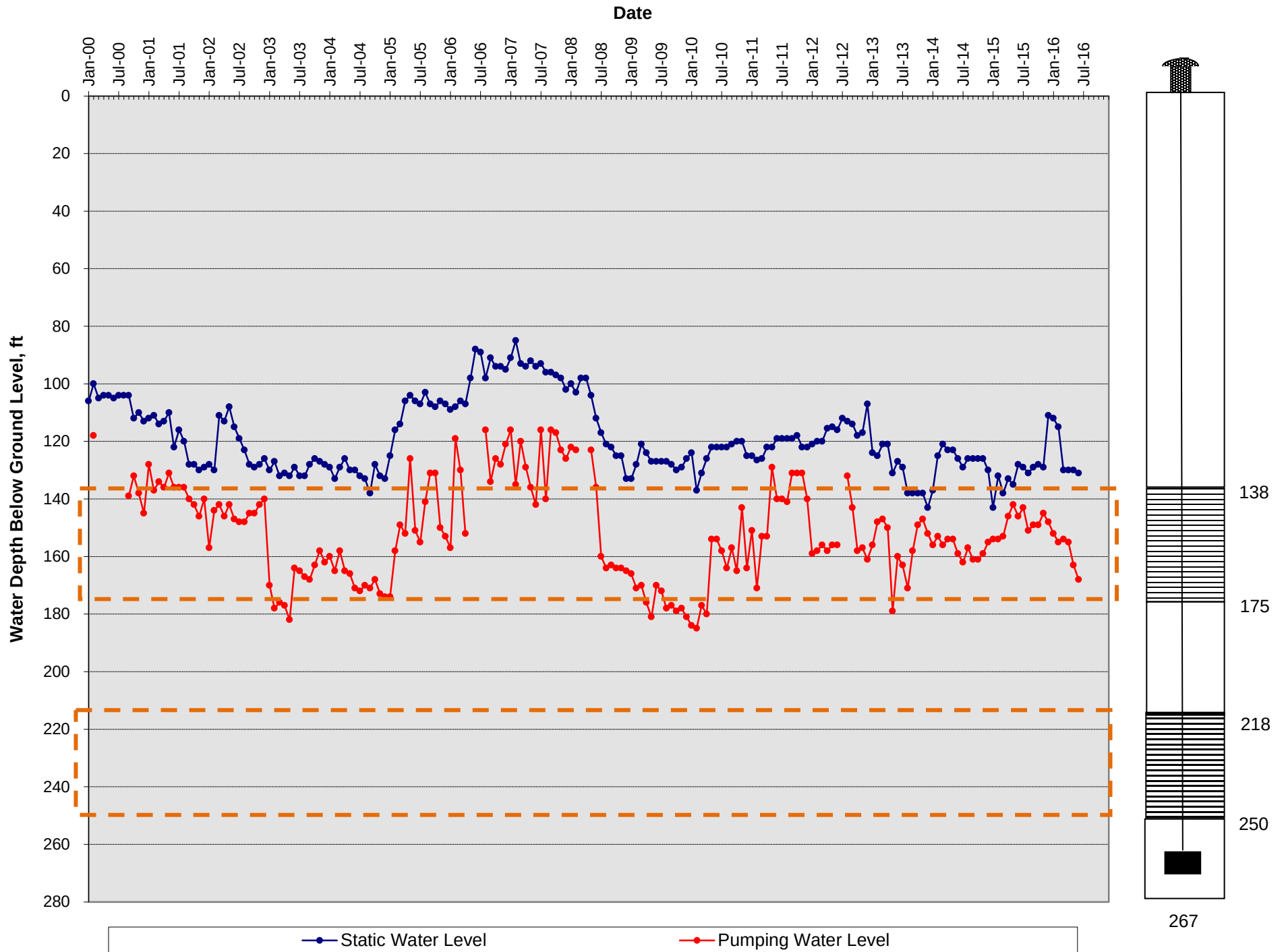
Date: 7/28/2016

Well 12: 2000 - 2016 - Static and Pumping Levels



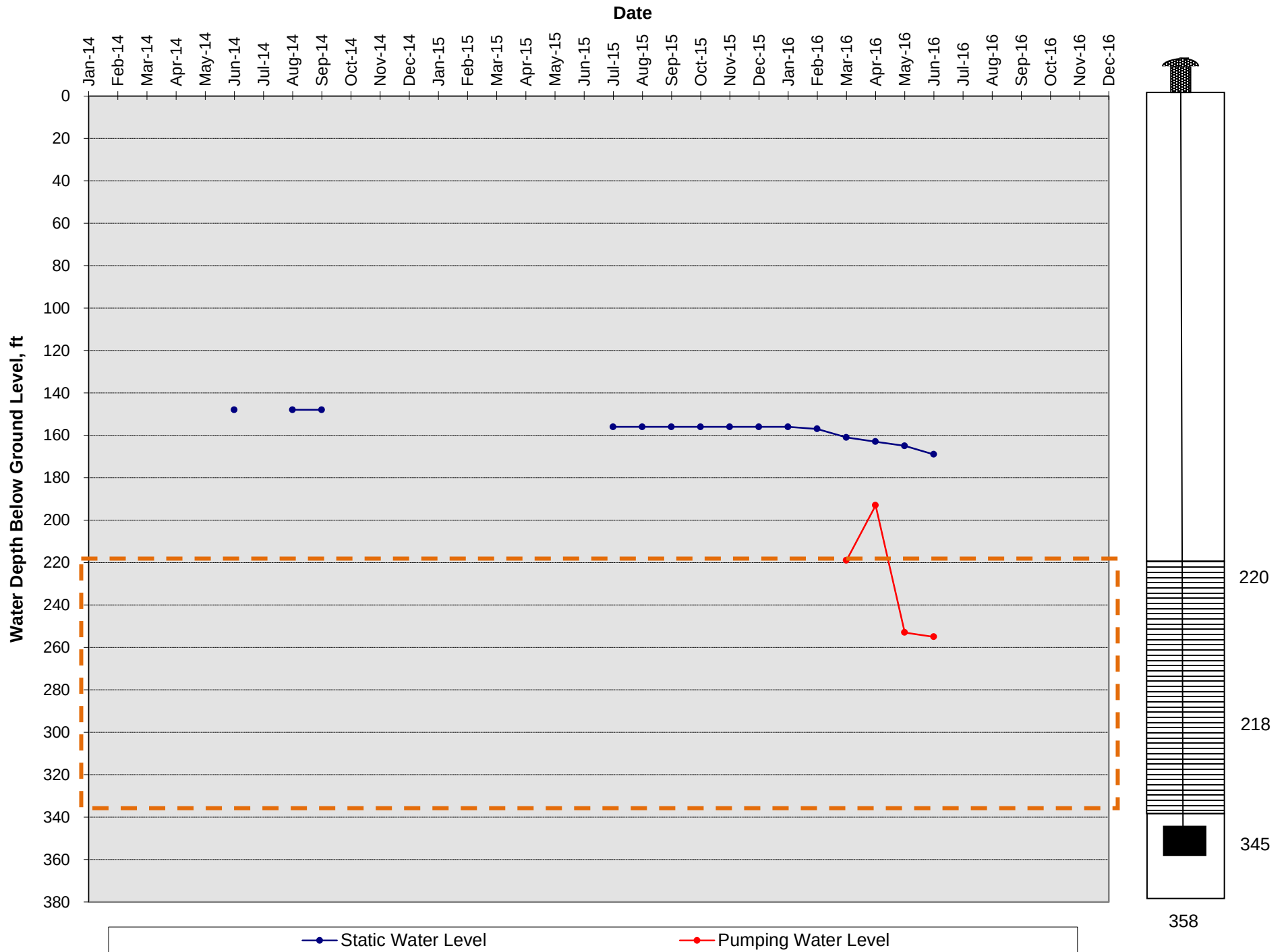
Date: 7/28/2016

Well 14: 2000 - 2016 - Static and Pumping Levels



Date: 7/28/2016

Well 16: 2014 - 2016 - Static and Pumping Levels



Date: 7/28/2016

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: FY 15/16 - Capital Improvement Project Program Update

July 29, 2016

1. Review of FY 15/16 – CIP Project Costs

Attached is a summary of the FY 15/16 Capital Improvement Projects (CIP) program, which does not include reimbursements from grants. Staff's goal was to stay within the budget amount of \$3.22M and as shown on the attached, the total CIP amount spent in FY 15/16 was \$2.45M. However, four (4) projects will need to be carried over into FY 16/17 as the project schedules were extended. The carry over amount for these projects is \$756,000, which will bring the total cost for FY 15/16 to \$3.21M.

The following FY 15/16 projects will be carried over into FY 16/17:

- The pipeline replacement project on the 2600 Block of Harmony, 3900 Block of Park Place, 3700 Block of Glenwood, and the 2800 Block of Prospect is nearly complete; however, the invoices for this project have not been submitted at this time.
- The Proposition 50 interconnection water supply project is 85% complete with a majority of the construction completed. The next step will be testing the system and obtaining final approval from the State Water Resource Control Board. Staff anticipates the project to be completed by early December 2016 and the carry-over amount will be about \$125,000, which includes invoices for the treatment equipment and other costs.
- Staff and its consultant, AMEC, are finalizing the Crescenta Valley County Park Storm Water Recharge Facility Study, which should be completed by late September 2016.
- The design portion of the Well 2 project was supposed to be completed by the end of the fiscal year, however, due to delays from CVWD and the consultant, the design of the project should be completed by the end of November 2016. The construction portion of the project has been included in the FY 16/17 CIP budget.

A number of projects which were deferred in FY 15/16 include rehabilitation of Well 7, booster pump replacement, rehabilitation surge tanks at Glenwood, and seismic sensors & valve actuators at Dunsmore and Pickens Reservoirs and have been included in the FY 16/17 CIP budget.

New projects were also added in FY 15/16 including the Lower Pickens Canyon interim repair and the new nitrate removal treatment plant at Well 2 and were included in the FY 15/16 project costs.

The Lower Pickens Canyon pipeline and slope replacement project, new nitrate removal treatment plant at Well 2, and the SCADA/RTU replacement project will be continuation projects which are included in the FY 16/17 CIP budget.

In summary, FY 15/16 was a busy year for the CIP program and staff believes that they were very successful in managing the projects under demanding situations in addition to assisting the operations/maintenance staff.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. FY 15/16 CIP Cost and Project Schedule – Revised 7/29/16

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Capital Improvement Project Program FY 15-16 - Final	E-Job	Status	Budget FY 15/16	FY 15/16 Actual Costs	Cost Carryover to FY 16/17	Project Total Cost for FY 15-16
1. Water Supply						
A. Groundwater						
i. Well Rehabilitation						
Well 11 Rehabilitation	E-934	Complete	\$ -	\$ 14,954	\$ -	\$ 14,954
Well 7 Rehabilitation		Deferred	\$ 60,000	\$ -	\$ -	\$ -
ii. New Wells						
Well 16 - Equipment & Pipeline (Grant - Matching Funds)	E-940	Complete	\$ 435,000	\$ 425,818	\$ -	\$ 425,818
Well 16 - Construction (Grant - Matching Funds)	E-940	Complete	\$ 866,000	\$ 902,295	\$ -	\$ 902,295
Re-Activate Well 2 - Design (Grant - Matching Funds)	E-956	Carryover	\$ -	\$ 49,105	\$ 70,895	\$ 120,000
Re-Activate Well 2 - Construction (Grant - Matching Funds)	E-956	Carryover	\$ -	\$ 125,000	\$ -	\$ 125,000
iii. Studies						
B. Imported Water						
CVWD/LADWP Inter. at Ordunio (Grant - Matching Funds)	E-766	Complete	\$ 75,000	\$ 27,344	\$ -	\$ 27,344
Ocean View Piping & Vaults (Grant - Matching Funds)	E-733CS-1	Complete	\$ 45,000	\$ 7,704	\$ -	\$ 7,704
Ocean View Chlorination St (Grant - Matching Funds)	E-733CS-2	Carryover	\$ 215,500	\$ 236,623	\$ 50,000	\$ 286,623
Ocean View - Equip. (Grant - Matching Funds)	E-733CS-3	Carryover	\$ 48,500	\$ 32,370	\$ 40,000	\$ 72,370
Ocean View - Elect (Grant - Matching Funds)	E-733CS-4	Carryover	\$ 85,000	\$ 105,820	\$ 35,000	\$ 140,820
C. Groundwater Basin Recharge						
Crescenta Valley County Park Storm Water Recharge Facility Study (Grant - Matching Funds)	M-903A	Carryover	\$ 115,000	\$ 99,730	\$ 28,270	\$ 128,000
WS Total			\$ 1,945,000	\$ 2,026,763	\$ 224,165	\$ 2,250,928
2. Water Storage						
WS Total			\$ -	\$ -	\$ -	\$ -
3. Water Distribution						
A. Pipeline Replacement						
3000 Block-Paraiso Way, Cloud, & Ramsdell	E-947	Complete	\$ -	\$ 1,796	\$ -	\$ 1,796
2600 Block - Harmony Place - 450 LF	E-960	Carryover	\$ 126,000	\$ 36,181	\$ 151,800	\$ 187,981
3900 Block - Park Place - 450 LF	E-960	Carryover	\$ 126,000	\$ 36,181	\$ 151,800	\$ 187,981
3700 Block - Glenwood Avenue - 800 LF	E-960	Carryover	\$ 219,000	\$ 36,181	\$ 151,800	\$ 187,981
2800 Block - Prospect & 4400 Block - Glenwood - 700 LF	E-961	Carryover	\$ 115,000	\$ 30,743	\$ 76,435	\$ 107,178
Lower Pickens Canyon Interim Repair	E-957	Complete	\$ -	\$ 123,230	\$ -	\$ 123,230
C. Booster Pump System						
i. Annual Pump /Motor Replacement						
1 - Boosters		Deferred	\$ 44,000	\$ -	\$ -	\$ -

Capital Improvement Project Program FY 15-16 - Final	E-Job	Status	Budget FY 15/16	FY 15/16 Actual Costs	Cost Carryover to FY 16/17	Project Total Cost for FY 15-16
iv. MCC Replacement						
<i>MCC upgrade at Oak Creek</i>	E-931	Complete	\$ 185,000	\$ 99,484	\$ -	\$ 99,484
E. Miscellaneous Projects						
i. Water Surge Control						
<i>Rehabilitation Surge Tanks at Glenwood</i>		Deferred	\$ 65,000	\$ -	\$ -	\$ -
WD Total			\$ 880,000	\$ 363,796	\$ 531,835	\$ 895,631
4. Water Treatment						
WT Total			\$ -	\$ -	\$ -	\$ -
5. Technology						
B. Supervisory Control and Data Acquisition (SCADA) System						
<i>SCADA RTU Replacement (35 sites) - Design</i>	E-939	Carryover	\$ 15,000	\$ -	\$ -	\$ -
<i>SCADA RTU Replace - Equipment & Integration</i>	E-939	Carryover	\$ 300,000	\$ 59,327	\$ -	\$ 59,327
TECH Total			\$ 315,000	\$ 59,327	\$ -	\$ 59,327
6. Public Safety/Emergency Response						
B. Water Storage						
<i>Seismic Sensors & Valve Actuators - Duns/Pickens</i>		Deferred	\$ 75,000	\$ -	\$ -	\$ -
SF/ER Total			\$ 75,000	\$ -	\$ -	\$ -
7. Facilities & Planning						
F & P Total			\$ -	\$ -	\$ -	\$ -
Capital Improvement Projects - Total			\$ 3,215,000	\$ 2,449,886	\$ 756,000	\$ 3,205,886

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: FY 16/17 - Capital Improvement Project Program

July 29, 2016

FY 16/17 – CIP Project Schedule & Cost Estimate - The FY 16/17 Capital Improvement Project (CIP) program includes the following projects which are summarized below:

1. **Rehabilitation of Well 7** – Well 7 was planned to be rehabilitated in FY 14/15, yet, Well 7 maintained its well capacity during the course of the last year and it would have meant the loss of water production during rehabilitation. Therefore, this project was deferred until FY 16/17.

Staff has observed that Well 7 has started losing well capacity, going from 240 gpm to 180 gpm in the last few months, which could be due to low water levels and/or the pump failure since Well 7 was last rehabilitated in 2005. Well rehabilitation projects typically include repairing or replacing the pump and motor assembly, cleaning or chemical treatment of well casing, replacement of meters, valves or other appurtenances.

Project Schedule: The project will be designed in-house using previous bid specification and should be completed by the end of September 2016. The project will be advertised for bids in October 2016 and award a contract in November 2016. Construction will begin in January 2017, during the low winter demand and completed by the end of February 2017.

Cost Estimate: - \$60,000

2. **Nitrate Removal Treatment Plant at Well 2** – CVWD received a grant under Proposition 84 2015 IRWM Implementation Grant with the Department of Water Resources (DWR) to install a new nitrate removal treatment plant and re-activation of Well 2. Staff has been working with SA Associates on the design of the project and APTwater on the design of the new nitrate removal treatment plant.

The re-activation of Well 2 and the new nitrate removal treatment facility will allow CVWD to utilize a local water resource, increase CVWD's ability to use its adjudicated rights within the Verdugo Basin, reduce CVWD's dependence on imported water from MWD, and reduce nitrates levels within the Verdugo Basin.

Project Schedule: The design should be completed by the end of December 2016 and the project advertised for bids in January 2017. Construction should begin May 2017 and completed by November 2017. In addition, staff is planning to pre-order the electrical motor control center (MCC) since the MCC will be a long lead item to procure.

Cost Estimate: - FY 16/17 - \$720,000 and remainder to be included in FY 17/18 CIP Budget

3. **Proposition 50 - Emergency Water Supply Interconnection Between LADWP, CVWD, and FMWD** - The new interconnection will allow CVWD to receive an alternative water supply from LADWP water and the water transferred to the FMWD's System via existing piping, reservoirs and upgrades to existing FMWD interconnections. The project will give CVWD and FMWD the capability to offset the impact of a shutdown of the Metropolitan Water District's (MWD) Weymouth Plant, located in La Verne, which is the only source of water to FMWD during a planned or unplanned emergency.

The overall project is near completion with the construction at Ordunio Reservoir completed and the Chloramination Station at Ocean View Reservoir nearly complete. The next step is testing of the interconnection system between the three agencies and obtaining final approval from the State Water Resources Control Board.

Project Schedule: - Construction should be completed by September 2016, testing of the system in October 2016, and final approval in November 2016.

Cost Estimate: - Carry over from FY 15/16 - \$125,000

4. **Crescenta Valley County Park Storm Water Recharge Facility Study** - The Crescenta Valley County Park Stormwater Recharge Project Facility Study (Study) was conducted to provide important data and geologic information to determine if portions of Crescenta Valley County Park in the La Crescenta area of Los Angeles County can be utilized for storm water capture for groundwater recharge. The Study is a feasibility study which will be called Phase 1 of a two-phase project to create storm water capture for groundwater recharge to maintain water levels, so there is not a wide fluctuation in groundwater levels during dry and wet rainfall years. The Study will investigate CVWD's ability to construct facilities to divert stormwater flow and dry weather runoff to infiltration basins for groundwater recharge within the Verdugo Basin, and reduce surface water runoff from the existing parking areas. Recharge of stormwater runoff will help improve groundwater quality, increase water-supply reliability, and improve surface water quality in downstream receiving waters.

Project Schedule: - The Study should be completed by August 2016 and submitted to the DWR for approval.

Cost Estimate: - Carry over from FY 15/16 - \$28,270

5. **Crescenta Valley County Park Storm Water Recharge Facility Preliminary Design** – Staff will be utilizing the information from the Study to create preliminary design plans and cost estimate which will be used for submittal of a DWR – Proposition 1 Stormwater Recharge Grant. Staff will be utilizing consultants to assist in preparing the preliminary design plans and the Grant Application.

Project Schedule: - Proposition 1 Stormwater Recharge Grant Application is due in October 2016 and DWR will be awarding grants in March or April 2017.

Cost Estimate: - \$60,000

6. **Steel Reservoir Rehabilitation at Oak Creek Reservoir** - The District has two (2) 1.6 MG steel tanks at its Oak Creek Reservoir site which were built in 1958 and 1961. The Oak Creek Reservoirs were re-coated and seismic structural upgrades in 2001. In 2005, the reservoirs were inspected and the report indicated random general corrosion on the roof and rafters. In 2011, the reservoirs were again inspected and the report stated that there was increased corrosion on the roof and rafters above the water line.

The 2011 inspection report stated that the underside of the roof and structural elements are in poor condition. It was recommended to sand blast, remove the coating and corrosion, and re-coat the interior roof and shell. In addition, any structural members damaged by the corrosion should also be replaced. It was believed that the advanced corrosion in the open area above the water line was due to “off-gassing” of the chlorine as it came out of solution and not enough ventilation or air circulation to remove the chlorine into the atmosphere.

Project Schedule: - Inspection and design are currently underway and the project will be advertised for bid in October 2016. The contract will be awarded in November 2016 and construction will start in January 2017 during the winter low demand season.

Cost Estimate: - \$320,000

7. **Pipeline Replacement - Mills Plant Pumphouse Replacement** – The District’s goal is to replace a minimum of 2,000 liner feet of pipeline, 50 years or older, per year as shown in the FY 16/17 Budget. Staff’s original plan was to replace the water mains on the 2700, 3000 & 3100 Blocks of Brookhill Avenue since they are undersized (4-inch pipe), have had numerous leaks over the last 5 years and were installed in 1946. The total amount of pipeline to be replaced was 2,400 liner feet.

However, within the last six (6) months, one of the two 8-inch water mains on Pennsylvania Ave (See attached map) which delivers water from the Mills Plant to the Paschall Booster station has had three (3) major main breaks. Staff believes that the main breaks on the 8-inch main on the west side were due to hydraulic surging and age of the pipeline. The Mills lines on Pennsylvania are 8-inch water mains which were installed in 1938 and 1947 and are under high (over 200 psi) pressure. These pipelines are the main water mains which bring groundwater from the Mills Plant into the water distribution system.

Staff is recommending substituting the planned pipeline replacement on Brookhill Ave with the Mills Pumpline from the 210 Freeway overpass, north to Community Avenue due to the critical nature of this pipeline relative to CVWD's water supply. Staff will be working with GEI Consultants on the hydraulic and surge design of the pipeline. The operations staff will be testing the 8-inch water main on the east side to determine if it also needs to be replaced. Another factor is that the City of Glendale is planning a major paving project on Pennsylvania Ave from the 210 Freeway overpass to Markridge Rd, which is planned for summer 2017 and after Glendale's project is complete, there is a 5-year moratorium on new construction in the street.

Project Schedule: - Design should be completed by October 2016 and advertising for bids in November 2016. The contract will be awarded in December 2016 and construction will start in late January 2017.

Cost Estimate: - \$600,000 Budget; will be revised after analysis of the pipelines.

8. **Lower Pickens Canyon Pipeline and Slope Replacement Project** – In May 2015, the 8-inch Lower Pickens Canyon Pipeline located within the easterly slope of Pickens Canyon, near the 5800 Block of Ocean View had a water main break which caused damage to the existing slope. An interim slope repair project was completed in February 2016 to stabilize the exposed pipeline and the exposed slope.

The next step is the design for the replacement of pipeline, which was installed in 1972 and restoration of the slope area. Staff will be meeting with DMC Engineering and AMEC within the next month to review possible pipe materials, construction methods, and recommendations for slope restoration. From this meeting, staff will develop a scope of work for each of the consultants for this project. In addition, staff and its consultants will be meeting with Los Angeles County Public Works about construction in Pickens Canyon Channel and permit requirements.

Project Schedule: - Staff will be meeting with consultants and preparing the scope of work in August 2016, the design should be completed by December 2016, and advertising for bids in January 2017. The contract will be awarded in February 2017 and construction will start in late March 2017.

Cost Estimate: - \$500,000 Budget; will be revised after analysis of preliminary design from consultants.

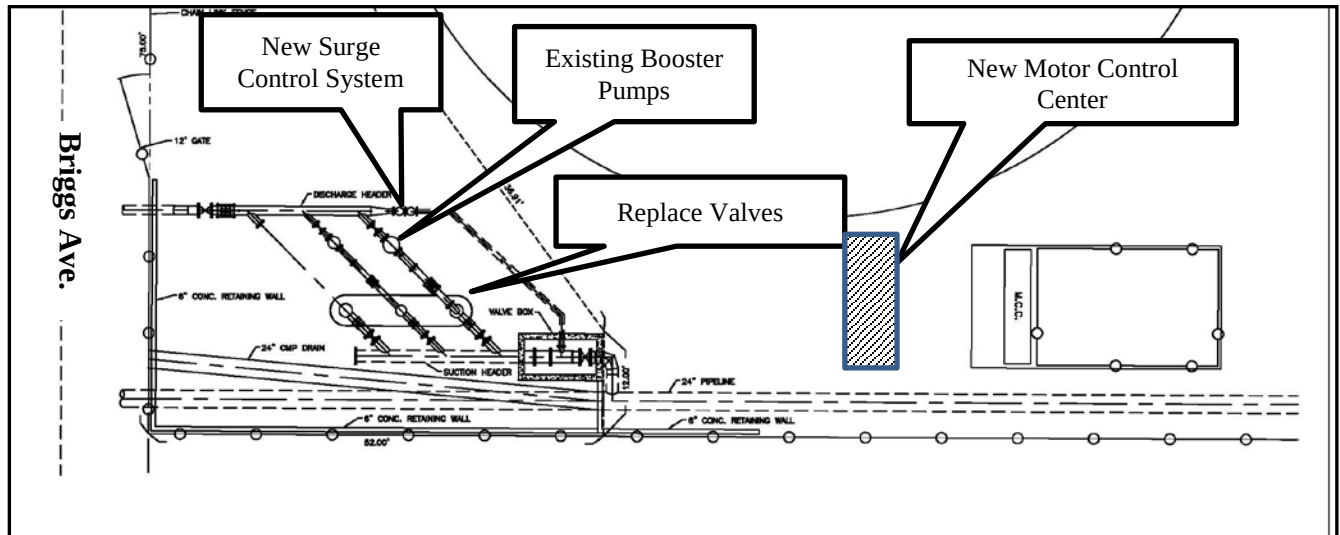
9. **Annual Booster Pump Replacement** – Staff plans on replacing one or two booster pumps per year as part of the annual budget. For FY 16/17, Booster 12 at Markridge will be replaced. Booster 12 is a 600 gpm pump which was taken out of service in June due to a pump failure. Booster 12 was installed in 1998 and has had over 17,000 hours of use. Booster 12 and Booster 25 deliver water from Zone 5 at the Markridge Reservoir to Zone 8 and the Cresta Heights Reservoirs.

General Pump Company provided an inspection report stating that the pump assembly should be replaced and the motor should be refurbished. Staff has reviewed the recommendations and is proceeding with the pump replacement.

Project Schedule: - Staff anticipates the pump assembly and motor to be re-installed by the end of August 2016.

Cost Estimate: - \$50,000 Budget; will be revised after final costs from General Pump.

10. **Paschall Booster Station Piping Upgrades and New Motor Control Center** – The Paschall Booster Station located on Briggs Avenue was constructed in 1955 and it's one of three CVWD's connections to FMWD. Over the years, the Booster Station piping and boosters have been upgraded to meet the needs of the District. During the last upgrade around 1972; new gate valves were installed on the inlet side of the two booster pumps, which are now broken in the open position. In addition, the main valve to the inlet of the booster pumps is in poor condition and it is very difficult to shut down the station for maintenance and repairs. The existing valves are located in 16 foot-deep pits with very limited access for repairs or replacement. Staff's goal is to re-design the station to replace the valves and create easier access to the valves in the future. In addition, a storm drain was constructed over the valve area, which will need to be relocated. Staff also wants to take this opportunity to re-evaluate the layout of the Station for ease of use and future maintenance. Staff also wants to investigate possible hydraulic surges at the station and include it as part of the design.



Another portion of this project will be the replacement of the electrical motor control center (MCC) with a modern MCC which will include variable frequency speed drivers for the existing pumps which will increase the efficiency of water flow out of the Station. The replacement of the MCC is part of CVWD's ongoing MCC replacement program.

The project will be a two-year project with the design being completed in FY 16/17 and construction in FY 17/18.

Project Schedule: - Prepare request for proposal for a consultant by September 2016, award the consultant contract in November 2016, and complete the design for bidding by April 2017.

Cost Estimate: - \$150,000 for Design Services.

11. **Rehabilitation Surge Tanks at Glenwood** - CVWD has an existing surge tank for three (3) booster pumps located at the Glenwood Plant. The purpose of the surge tank is to defuse a water surge wave during an outage event and protect the booster pumps. The surge tank was installed in 1955 and needs to be rehabilitated with an air-surge system. Staff has been working with GEI Consultants on the design of this project. The recommendations included resizing the piping and replacing the surge tank equipment. This project was deferred from FY 15/16 CIP to the FY 16/17.

Project Schedule: - Prepare plans and specifications by October 2016, advertise for bids in November 2016, award contract in December 2016, and construction beginning in February 2017.

Cost Estimate: - \$65,000 for construction.

12. **Seismic Sensors & Valve Actuators at Dunsmore and Pickens Reservoirs** - The District has been working on installing seismic sensors and valve actuators on the outlet valves for each reservoir to prevent water loss during an earthquake event. The seismic sensor detects ground movement and the valve actuators will automatically close the valve and thereby containing the water for public health. The District has ten (10) of these systems installed on the 17 tanks and the program is to install 2 seismic sensors each year for the next three years. This project was deferred from FY 15/16 CIP to the FY 16/17.

CVWD will order the equipment from AES, Inc, who will assist with the installation and staff will install the concrete pads and electrical conduits for the system.

Project Schedule: - Purchase the equipment in October 2016 and install in January 2017.

Cost Estimate: - \$75,000

The attached project schedule shows the schedule for FY 16/17 and the carry-over projects from FY 15/16 for discussion with the Engineering Committee.

Prepared & Submitted by:

A handwritten signature in black ink, appearing to read 'D. S. Gould', written over a horizontal line.

David S. Gould, P.E.
District Engineer

Attachments:

1. FY 16/17 CIP Cost and Project Schedule

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Capital Improvement Project Program FY 16/17 - Updated 7/29/16		E-Job	Status	Carryover from FY 15/16	Budget FY 16/17
1. Water Supply					
A. Groundwater					
i. Well Rehabilitation					
<i>Well 7 Rehabilitation</i>		E-973	Deferred from FY 15/16		\$ 60,000
ii. New Wells					
<i>Re-Activate Well 2 - Design</i>		E-956	Carryover	\$ 70,895	
<i>Re-Activate Well 2 - Construction</i>		E-956	Continue		\$ 720,000
B. Imported Water					
<i>CVWD/LADWP Inter. at Ordunio (Grant - Matching Funds)</i>		E-766	Complete		
<i>Ocean View Piping & Vaults (Grant - Matching Funds)</i>		E-733CS-1	Complete		
<i>Ocean View Chlorination St (Grant - Matching Funds)</i>		E-733CS-2	Carryover	\$ 50,000	
<i>Ocean View - Equip. (Grant - Matching Funds)</i>		E-733CS-3	Carryover	\$ 40,000	
<i>Ocean View - Elect (Grant - Matching Funds)</i>		E-733CS-4	Carryover	\$ 35,000	
C. Groundwater Basin Recharge					
<i>CVC Park Storm Water Recharge Facility Study (Grant - Matching Funds)</i>		M-903A	Carryover	\$ 28,270	
<i>CVC Park Stormwater Recharge Project - Preliminary Design</i>		E-974	New		\$ 60,000
WS Total				\$ 224,165	\$ 840,000
2. Water Storage					
A. Reservoir Rehabilitation					
i. Roof/Vents Rehabilitation					
<i>Oak Creek #1 - Roof/Air Vents/Recoat</i>		E-975	New		\$ 320,000
B. Reservoir Water Quality					
C. New Reservoir Water Storage					
WS Total				\$ -	\$ 320,000

Capital Improvement Project Program FY 16/17 - Updated 7/29/16	E-Job	Status	Carryover from FY 15/16	Budget FY 16/17
3. Water Distribution				
A. Pipeline Replacement				
2600 Block - Harmony Place - 450 LF	E-960	Carryover	\$ 151,800	
3900 Block - Park Place - 450 LF	E-960	Carryover	\$ 151,800	
3900 Block - Glenwood - 650 LF	E-960	Carryover	\$ 151,800	
2800 Block - Prospect & 4400 Block - Glenwood - 800 LF	E-961	Carryover	\$ 76,435	
Lower Pickens Canyon Crossing & Slope Replacement - 600 LF	E-957	Continue		\$ 500,000
Mills Pumphline Replacement - 1500 LF	E-976	New		\$ 600,000
B. New Pipelines				
C. Booster Pump System				
i. Annual Pump /Motor Replacement				
Markridge - Booster 12	E-971	New		\$ 50,000
ii. Pump Station Upgrade				
Paschall Booster Station inlet piping & valves - Design	E-972	New		\$ 75,000
iv. MCC Replacement				
MCC upgrade at Paschall - Design	E-972	New		\$ 75,000
E. Miscellaneous Projects				
i. Water Surge Control				
Rehabilitation Surge Tank at Glenwood	E-977	Deferred from FY 15/16		\$ 65,000
iii. Misc.				
WD Total			\$ 531,835	\$ 1,365,000
4. Water Treatment				
A. Nitrate Removal				
C. Convert to Chloramines				
WT Total				\$ -

Capital Improvement Project Program FY 16/17 - Updated 7/29/16	E-Job	Status	Carryover from FY 15/16	Budget FY 16/17
5. Technology				
B. Supervisory Control and Data Acquisition (SCADA) System				
<i>SCADA RTU Replace - Equipment & Integration</i>	E-939	Continue		\$ 200,000
C. Graphical Information System (GIS)				
TECH Total				\$ 200,000
6. Public Safety/Emergency Response				
A. Emergency Electrical Generators				
B. Water Storage				
<i>Seismic Sensors & Valve Actuators - Duns/Pickens</i>	E-978	Deferred from FY 15/16		\$ 75,000
SF/ER Total				\$ 75,000
7. Facilities & Planning				
F & P Total				\$ -
Capital Improvement Projects - Total			\$ 756,000	\$ 2,800,000
Capital Improvement Projects - Revised Total				\$ 3,556,000

Crescenta Valley Water District

Design and Construction Schedule for FY 16/17											
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Project	July				August				September				October				November				December				January				February				March				April				May				June						
	4	11	18	25	1	8	15	22	29	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6	13	20	27	6	13	20	27	3	10	17	24	1	8	15	22	29	5	12	19
FY 15/16 - Carryover Projects																																																			
OV Chlorination Station - Install Treatment & Electrical Equipment	Construction- Contractor																																																		
OV Meter Testing - FMWD to CVWD					Construction - CVWD																																														
OV Chlorination Station - SCADA Equipment					Design - TESCO				Construction - TESCO																																										
Interconnection - Project Testing													Construction - CVWD																																						
CVC Park Stormwater Recharge Project - Report	Final Project Report																																																		
Ordunio - Wall					Construction- Contractor																																														
8" Pipeline - Harmony, Park Pl, & Brookhill; Prospect & Glenwood	Construction- Contractor																																																		
FY 16/17 - Projects																																																			
Well 7 Rehabilitation									Design - CVWD					Advertise for Bids				AC	Shop Draw Review				Construction- Contractor																												
Re-Activate Well 2 - Design/Construction	Design - SA Associates & APTwater																		Advertise for Bids								Shop Drawing Review						Construction- Contractor																		
CVC Stormwater Recharge Project - Grant Application & Preliminary Design	Pre-App				Grant Application & Prelim Design																				Preliminary Design																										
Oak Creek #1 - Roof/Air Vents/Recoat	RFP	AC	Design - Harper & Assoc.						Advertise for Bids						AC	Shop Draw Review				Construction- Contractor																															
4200 - 4300 Blocks of Pennsylvania (Mills Pumpline) - 1400 LF	Design - CVWD												Advertise for Bids						AC	Shop Draw Review				Construction- Contractor																											
Lower Pickens Canyon Crossing & Slope	RFP								AC	Design - DMc Engineering & AMEC										Advertise for Bids				AC	Shop Drawing Review				Construction- Contractor																						
Booster Pump Replacement																	Design - CVWD				Advertise for Bids				AC	Shop Draw Review				Construction- Contractor																					
Paschall Booster Station inlet piping & valves MCC - Design									RFP						AC		Design																		Advertise for Bids																
Rehabilitation Surge Tank at Glenwood													Design - CVWD				Advertise for Bids		AC	Shop Draw Review						Construction- Contractor																									
Seismic Sensors & Valve Actuators - Duns/Pickens					RFQ				AC	Shop Draw Review				Construction - CVWD & AES																																					
SCADA RTU Replace - Equipment & Integration	Design																																																		

CRESCENTA VALLEY WATER DISTRICT

STAFF REPORT

To: Engineering Committee
From: David S. Gould, P.E. – District Engineer
Subject: 10-year – Draft Capital Improvement Project Program

July 29, 2016

10-Year CIP Draft Report – “Draft 10-year Capital Improvement Project (CIP) program for review and discussion

Attached is a Draft 10-year Capital Improvement Project (CIP) program with projected costs that staff has been working on for the last 6-months. Staff has completed a majority of the work through Section 4 – Water Distribution. Staff will continue working on the draft and plans to present it further at a Board Meeting in November or December 2016.

Prepared & Submitted by:



David S. Gould, P.E.
District Engineer

Attachments:

1. Draft 10-year CIP Report
2. Draft 10-year CIP Projected Costs



CRESCENTA VALLEY WATER DISTRICT

10-YEAR CAPITAL IMPROVEMENT PROJECT PROGRAM

DRAFT

June 2016

INTRODUCTION

The purpose of this report is to provide the Board of Directors with staff's recommendation relative to the District's capital improvement projects (CIP) needs in FY 2016/17 and the over the next 5years (FY 16/17 to FY 20/21) to continue upgrading CVWD's infrastructure. The Board has determined that it is important factor for the District when preparing the annual water budget.

This report is divided into seven (7) main categories that defines the District's CIP program and are listed below:

- | | | |
|-----------------------|-------------------------------------|----------------------------|
| 1. Water Supply | 4. Water Quality and Treatment | 7. Facilities and Planning |
| 2. Water Storage | 5. Technology | |
| 3. Water Distribution | 6. Public Safety/Emergency Response | |

Staff prepared goals and objectives for each category that meets the needs of the District today and into the future. Each of these categories was further divided into separate components to focus on different aspects of the water system. This report also includes proposed 5-year project schedule with estimated costs for the various individual projects.

Finance Capital Projects

Pay-as-you-go (as called "pay-go" or "cash") and pay-as-you-use ("pay-use" or "debt") are two mechanisms used to finance capital projects. A third mechanism used for financing capital projects is utilizing Grants provided by the State under Proposition 84 and Proposition 1. Agencies such as the US Bureau of Reclamation (USBR) or the US Environmental Protection Agency (EPA) also have grant programs for water projects.

Pay-as-you-go: This method uses funds collected from the ratepayers to finance the CIP program. The impact on rates are such that the rates are higher to offset the cost of the CIP program.

Pay-as-you-use: This method uses debt financing by issuing Certificate of Participation (COP's) Bonds or other financial borrowing method. Issuing COP's is a well-established means for funding public infrastructure and spreads the cost for long lasting improvements over many years, typically 20 to 30 years. Issuance costs and interest expense are also spread over the life of the certificates. The impact on rates is generally lower since the costs are spread over a long period.

Another financing method is to use the State of California Clean Water State Revolving Fund (CWSRF) program which offers low cost financing for a wide variety of water quality projects. The program has significant financial assets, and is capable of financing projects from \$1 million to \$100 million. The current interest rate for a CWSRF loan is 1.6%.

In 2007, CVWD issued Certificate of Participation (COP's) notes in the amount of approximately \$10,000,000. The funds derived from this sale were utilized to perform necessary water system upgrades and was completed in FY 2010/11.

In order to continue to maintain and replace worn out infrastructure, CVWD must decide on the funding mechanism in order to continue infrastructure renewal/replacement.

DISCUSSION:

As the Board and staff go through this discussion of Capital Improvement Projects, it may be useful to refer back to the District's Mission, Vision and Values Statement to help in determining the priority of projects to be done, and the annual budget that is "achievable" from both a funding standpoint and staffing standpoint with CVWD personnel.

Please keep in mind that the cost estimates provided on the FY 2016/17 and the over the next 5-years are rough estimates in many cases and there are numerous factors that may cause the numbers to change over time.

The Board, Engineering Committee and staff have been discussing the Capital Improvement Projects program and the prospect of issuing bonds as a method of financing the CIP program. The CIP program presented in the various budget scenarios was based on improvements needed for the system and the Engineering Department's ability to complete the projects within the time frame. Staff believes that it could complete about \$2 million dollars of capital work a year at its current staffing level.

However, the question had been asked, "Is \$2 million dollars a year in CIP adequate to meet the needs of replacing and/or maintaining CVWD's infrastructure?" This prompted staff to re-evaluate the 10-year CIP program to determine if we are meeting that goal.

The 10-year CIP program was originally prepared in 2006 and staff utilized it as the basis for the update. Staff re-assessed each category to determine the goals and objectives for the next ten years. The analysis was also based on input from management, operations, and from comments received from Board members during the tour of CVWD facilities. In addition, staff did an analysis of the age and critical function of the infrastructure to determine priority for the 10-year CIP program.

Staff is presenting this 10-year CIP program as a planning document or tool to be used by the Board and staff to make informed decisions on the next level for the CIP program. The goals and objectives expressed in the following document can be used as a measure to conclude if the level of CIP program proposed in each year's budget is meeting the needs of the District.

About two-thirds of the improvements that are presented here are projects that need to complete so that the system can be maintained into the future. The remaining one-third of the improvements is projects that should be considered but may not be necessary to maintain the system.

The following is a detailed written summary of the CIP programs relative to water supply, water storage, water distribution, water treatment, technology, public safety/emergency response and facilities and planning including goals, objectives, project descriptions and proposed schedules. A preliminary cost estimate relative to the projects is attached.

1. WATER SUPPLY

GOAL: **Provide a sustainable water supply to meet existing and future water demands.**

- A. Groundwater - Pump annual adjudicated rights of 3,294 ac-ft per water year
- B. Imported Water – Utilize imported water to meet demands and to stay within Tier 1 limit of 2,154 ac-ft per calendar year
- C. Groundwater Basin Recharge -
- D. Recycled Water – Develop a plan to utilize recycled water for irrigation customers

OBJECTIVE:

A. **Groundwater Wells:**

- 1. *Maintain CVWD's existing groundwater wells to produce CVWD's annual adjudicated rights of 3,294 ac-ft*
- 2. *Install at least two (2) new wells or re-activate an existing well within the next five (5) years to:*
 - a. *Increase the utilization of the Verdugo Basin*
 - b. *Increase CVWD's ability to produce its adjudicated right as the water levels in the Basin rise and fall based on annual rainfall.*

Objective No. 1 - Well Rehabilitation – Well rehabilitation projects include repairing or replacing pump and motors assemblies, cleaning or chemical treatment of well casings, installation of well liners, replacement of meters, valves or other appurtenances. The program has been going on since 1998 as shown on the summary table below.

CVWD - Well Rehabilitation Program - 1998 - 2015																			
Well No.	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
1						X										X			2
2										X									1
5		X					X										X		3
6	X						X												2
7			X					X											2
8			X	X			X										X		4
9							X			X		X					X		4
10				X						X					X				3
11					X								X					X	3
12								X			X				X		X		4
14	X		X			X	X				X			X	X				7
15				X					X										2
16																			0
17			X																1
Total	2	1	4	3	1	2	5	2	1	3	2	1	1	1	3	1	4	1	38

Staff maintains records on water levels, pumping rates, well specific capacity and other data information to trend the condition and performance of each existing groundwater well. This information is utilized to forecast future well rehabilitation projects. In addition, staff tracks the construction costs for past well rehabilitation project that are used to estimate the cost for future projects.

Staff has reviewed previous data information and has determined that this objective can be accomplished by the following the Well Rehabilitation Project 5-year schedule below:

CVWD - 5-yr Well Replacement Project From FY 16/17 through FY 20/21								
Well No.	Last Rehab Date	FY 16/17	FY 17/18	FY 18/19	FY 19/20	FY 20/21	Total	Rehab. Frequency (years)
1	2013				X		1	7
2	2017	R					0	5
5	2014					X	1	6
6	2004						0	9
7	2005	X					1	7
8	2014						0	10
9	2014			X			1	5
10	2012		X				1	5
11	2015					X	1	6
12	2014			X			1	4
14	2012		X		X		2	3
15	2006						0	7
16	2016	N					0	7
17	-						0	0
Total		1	2	2	2	2	9	

The Well Rehabilitation project schedule shows that at least two (2) groundwater wells will be rehabilitated each year.

- Well 16 is a new well installed in 2016
- Well 2 is currently inactive and will be put back into service in 2017
- Well 6 & 15 are a low producing Wells (about 60 gpm or less) and the rehabilitation schedule will be re-evaluated annual.
- Well 17 is inactive and there is no plans to put the well into service due to its location to the La Tuna Fault.
- Well 14 has a history of pump failure within two (2) years of installation. Recent well data shows Well 14 has been in good condition and the rehabilitation schedule has been revised to every four (4) years.

Objective No. 2 - New or Re-Active Groundwater Wells – Installation of a new groundwater well or re-active existing groundwater well to increase CVWD's well capacity and its ability to extract its groundwater adjusted rights on an annual basis.

- a) **Re-activate Well 2** – CVWD has been award a grant under Proposition 84 to install a nitrate treatment removal system and to re-activate Well 2. The project should provide an additional 150 gpm and should be completed by July 2017.

- b) **Well 18 at 2815 Sycamore Ave.** – CVWD purchased the property in FY 11/12, which is located north the of the Glenwood Operations facility with the intention of drilling a new groundwater well to replace Well 10. The design will start in FY 20/21 and construction should be completed by July 2022.
- c) **Studies**
 - i. **Update Water Well Replacement Study** - Prepare an update to the 1999 Water Well Replacement Study with new information from the 2004 the Geophysical Study, the new monitoring wells from the MTBE investigation and the monitoring wells from the Crescenta Valley Park Stormwater Recharge Facility Study. The purpose of this study will utilize the Verdugo Basin Groundwater Model to determine optimal locations of future well sites and transmission pipeline within the Verdugo Basin to replace the existing groundwater wells. The study will start in FY 20/21 and completed by July 2022.
 - ii. **Pilot Hole Study** - This involves drilling 4-inch diameter pilot holes in areas near the proposed new locations to determine the geological profile, water quality and well capacity parameters of the site. It is anticipated that five (5) pilot holes will be drilled. This is typically performed at a lower cost to determine if the site is feasible for a water production well before proceeding with drilling a new well. In addition, the pilot holes can be converted to be used as monitoring wells. The Pilot Hole study will start in FY 22/23 and completed by July 2023.

OBJECTIVE:

B. Imported Water

1. **Maintain imported water supply availability** – *Maintain the existing three (3) connections to FMWD at the Paschall Booster Station, the Foothill/Briggs meter and the Ocean View meter.*
2. **Increase imported water supply availability** – *Increase CVWD's ability to obtain additional imported water supply during a planned FMWD outage or a local emergency.*

Objection No. 1 – Maintain imported water supply availability

- a. The existing connections at the Paschall Booster Station and the Foothill/Briggs meter are adequate to meet the District's needs.
- b. Re-activate the Ocean View Meter. The existing connection at the Ocean View meter has been out of service since 2008, when the extension of the pipeline from the intersection of Foothill Blvd and Ocean View Blvd to just south of the reservoir site was installed.

The re-activation of the Ocean View Meter will allow Imported Water to flow directly into Pressure Zone 2, which will aid in supply additional water to the upper pressure zones.

The Proposition 50 grant for the interconnection with the City of Los Angeles and FMWD will include a new two-way meter to allow flow from CVWD to FMWD and allow CVWD to provide water to FWMD in an emergency. The project also includes the installation of a chloramination station to achieve "breakpoint" chlorination with taking imported water from FMWD to CVWD.

The project is currently under construction with the piping, vaults and meters installed and the chloramination station with the treatment equipment and electrical work should be completed by April 2016.

The Ocean View Meter should be back into service by May 2016.

Objection No. 2 – Increase imported water supply availability

CVWD received a Proposition 50 Grant to install an emergency water supply interconnection between the Los Angeles Department of Water and Power (LADWP), CVWD and FMWD. The project will include installation of a new pipeline with a meter to provide 2.2 cfs flow from LADWP to CVWD at Ordunio Reservoir, installation of piping to direct water into Pressure Zone 2 and Ocean View Reservoir and the installation of a piping a two-way meter and a chloramination station at Ocean View Reservoir to allow water to flow by gravity from the La Crescenta Area to the Altadena area. Also includes the installation of an aqueous ammonia system to produce chloramines with chlorinated CVWD water to match FMWD water.

The project is currently under construction with the piping, vaults and meters installed and the chloramination station with the treatment equipment and electrical work should be completed by April 2016.

OBJECTIVE:

C. Groundwater Basin Recharge

1. *Recharge the Verdugo Groundwater basin with other water sources such as storm water, recycled water, or ASR wells such that it will increase the amount of groundwater water in the basin and lessen the effects of fluctuating water levels during droughts or dry weather conditions.*
2. *Stored Water Credits - Propose to the ULARA Watermaster a method to use for storage water credits within the Verdugo Basin.*

Objection No. 1 – Recharge the Verdugo Groundwater basin with other water sources

- a) **Crescenta Valley County Park Stormwater Recharge Feasibility Study** – Complete the Crescenta Valley County Park Stormwater Recharge Feasibility study which includes installation of monitoring wells, flow monitoring stations within the Verdugo Wash and infiltration testing pits. The study will also include geological work at Crescenta Valley County Park to determine possible locations for stormwater recharge areas and design parameters and identify other potential areas within CVC Park for stormwater recharge. Study should be completed by July 2016.
- b) **Crescenta Valley County Park Groundwater Recharge System** – Design of a stormwater infiltration system within CVC Park that will divert stormwater from the Verdugo Wash into infiltration galleries for groundwater recharge. Included in the FY 16/17 budget are costs for preliminary design services and Proposition 1 Grant submittal. The project cost will be reviewed at the end of FY 16/17 and additional funding will be included in FY 17/18 CIP budget.
- c) **Crescenta Valley County Park Groundwater Recharge System** – Construction of the stormwater infiltration system within CVC Park. The project cost and schedule will be determined after the preliminary design and Proposition 1 Grant submittal.

Objection No. 2 – Storage Water Credits within the Verdugo Basin

The 1979 ULARA Judgement does not allow any storage water credits within the Verdugo Basin and long-term objective to work with the ULARA Watermaster and the City of Glendale on a method for determining (if possible) storage water credits within the Verdugo Basin. Information gathered from the Crescenta Valley County Park Stormwater Recharge Feasibility Study and the Verdugo Basin groundwater model will be used to determine storage water credits within the Verdugo Basin.

OBJECTIVE:

D. Recycled Water

1. *Implementation of a Recycled Water (non-potable source of water) system for irrigation use and possible groundwater recharge as an alternative water source and reduce the demand on the potable water system.*
2. *Utilizing Membrane Bioreactor Technology (MBR) for as non-potable source of water for irrigation use and possible groundwater recharge.*

Objection No. 1 – Implementation of a Recycled Water System

- a) Recycled Water System Study – Update the 2004 Recycled Water Study including determining the number of potential customers, extending GWP's recycled water system to the Crescenta Valley Area, determining the infrastructure needed such as pipelines, booster and storage tanks for a new recycled water system and discussing the types of funding available through pay-go, grants or low-interest loans. The update of the recycled water study is not a part of the 5-year CIP program. Staff will review the possibility of including this study as part of the budget process each year and if there is grant funding available for the study.
- b) Recycled Water System – Design – Design for the installation of a recycled water system as recommended from the Study. Staff will review the installation of a recycled water system as part of the annual budget process and if there is grant funding available for the project.
- c) Recycled Water System – Construction – Installation of a recycled water system as recommended from the Study. Staff will review the installation of a recycled water system as part of the annual budget process and if there is grant funding available for the project.

Objection No. 2 – Membrane Bioreactor Technology (MBR) Project

- a) MBR Plant Study – Staff completed a MBR plant study for Two Strike Park in 2015 and it was determined it was economically not feasible to install the MBR plant and its appurtenances. Staff will review the possibility of preparing an update on the MBR plant study at Two Strike Park or other locations within the District as part of the budget process each year and if there is grant funding available for the study. The update of a MBR plant study is not a part of the 5-year CIP program.
- b) MBR Plant – Design – Design for the installation of a MBR plant as recommended from the Study. Staff will review the installation of a MBR plant as part of the annual budget process and if there is grant funding available for the project.
- c) MBR Plant – Construction – Installation of a MBR plant as recommended from the Study. Staff will review the installation of a MBR plant as part of the annual budget process and if there is grant funding available for the project.

2. WATER STORAGE

GOAL: Provide a water storage system to meet average, high or peak demands, emergency water storage, and water quality parameters.

- A. Reservoir Rehabilitation - maintain or improve conditions of the existing steel or concrete reservoirs to sustain the longevity of the water storage system.
- B. Reservoir Water Quality - maintain or improve the water quality within the water storage system.
- C. New Reservoir Water Storage - provide additional water storage to meet existing and future water demand.

OBJECTIVE:

A. Reservoir Rehabilitation

1. *Removal and replacement of interior and exterior coatings for Steel Reservoirs*
2. *Re-conditioning and rehabilitation of Concrete Reservoirs*
3. *Maintain corrosion protection system for Steel Reservoirs*
4. *Modification to reservoirs to maintain air circulation and reduce corrosion in the upper half of steel reservoir*

Objection No. 1 – Re-Coating of Steel Reservoirs

CVWD's Steel Reservoirs were re-coated between 1997 and 2001 and the epoxy coating system applied has a life expectancy of 20 years, and the reservoirs should be re-coated to maintain the longevity of the steel tanks. . Staff has been working with Harper & Associates to clean and inspect each reservoir on 5-year cycle. Each inspection includes a summary report of the condition of the interior and exterior coating. After 2019, each reservoir will have been inspected three (3) times during the 20 years life expectancy of the coating system. Staff will review the inspection reports and perform a field investigation in FY 18/19 to determine the priority of reservoirs to be re-coating, the project schedule and prepare a cost estimate for the work. It is anticipated that work will commence in FY 21/22.

Objection No. 2 – Concrete Reservoir Rehabilitation

In 2000, CVWD and Harper & Associates performed a structural and field investigation of CVWD's three (3) concrete reservoirs. The investigation showed that the interior and exterior joints and various cracks needed to be re-caulked to extend the life of the reservoirs and the roof and columns at Edmund #1 needed to be replaced.

- a) Williams (Ocean View) Reservoir rehabilitation was completed in 2004
- b) Edmund #1 Reservoir rehabilitation was completed in 2009 and the new roof was completed in June 2014.
- c) Encinal Reservoir – Rehabilitation work on Encinal Reservoir will be completed after the pressure reducing station from Zone 2 to Zone 1 (completed in 2013), the re-installation of the FMWD Ocean View meter (to be completed in 2016) and the repairs to the Ramsdell Mixing Station (schedule to be completed in January 2017) are finished. The design will start in July 2017 and work will start at Encinal Reservoir during the low winter demand period in December 2017.

Objection No. 3 – Replacement of Corrosion Protection System for Steel Reservoirs

In 2005, CVWD installed a sacrificial anode cathodic protection system in the 15 steel reservoirs. The sacrificial anodes move positive ions away from the steel and corrode the material on the anodes instead of the steel tank. This cathodic protection system is called a passive system. Another system available is called impressed current cathodic protection which uses electricity to provide cathodic protection. This would require installation of an electrical system to each reservoir with continued monitoring. This system is called an active system.

Staff will review each system relative to cost, construction, and maintenance. However, for planning purposes, we are planning to replace the cathodic protection system in 10 years after installation.

Objection No. 4 –Rehabilitation to Roof and Air Vents for Steel Reservoirs

In 2005, it was found that five (5) reservoirs had advanced interior corrosion on coating within the interior area of the steel reservoir from the water line to the top of the roof. After further investigation, including a tank corrosion study and discussion with a number of experts in the field, it was determined that air is not circulating properly inside the tank and off gassing of chlorine has increased the corrosion in this area. It was recommended that additional vents with fans on the roof would be needed to move the air for proper ventilation of the chlorine.

The project will include the design and installation of additional roof vents with electrical or solar-power fans to circulate the air inside the reservoir and re-coating of the interior roof and walls.

The following is the proposed schedule for the Roof/Vents Rehabilitation Project:

Priority	Reservoir Site	FY
1	Oak Creek #1Reservoir	16/17
2	Oak Creek #2 Reservoir	17/18
3	Rosemont Reservoir	18/19
4	Markridge Reservoir	19/20
5	Goss Canyon #1 & #2 Reservoirs - Air Vents	20/21

B. Reservoir Water Quality

1. CVWD's objective is to maintain or improve the water quality such as reducing Total Trihalomethanes's (TTHM) and maintaining proper water mixing to eliminate stagnate water.
2. Replace common inlet/outlet piping that will improved water flow in and out of the reservoir, and to prevent future nitrification, should CVWD change its disinfection process to chloramination.

Objection No. 1 – Water Quality & Mixing System

This project includes preparing a Reservoir Water Mixing Study to determine how water inside the reservoirs is being disturbed within the reservoir and potential water quality issues, a review of available water mixing systems and to provide recommendations. Upon completion of the study, staff will proceed with the design and construction based on the recommendations from the study. The study is slated to be completed during FY 19/20. The design and construction project schedule and costs will be determined after the completion of the study.

Objection No. 2 – Replacement of Common Inlet and Outlet Piping

This project involves installing new inlet/outlets for ten (10) reservoirs with new pipelines, valves and other necessary improvements. This project is not a part of the 5-year CIP program and will be re-assessed during the annual CIP Budget review.

C. New Reservoir Storage

1. *Provide additional water storage to meet existing and future water demand as recommended by the Water Master Plan.*
2. *Provide a new water storage tank on Ocean View Blvd in La Canada and remove the pipelines crossing Pickens Canyon.*

Objection No. 1 – Additional Water Storage

New Zone 7 Reservoir – The Water Master Plan recommended that an additional 1.5 million gallons (MG) reservoir be installed for Zone 7 to meet operational, emergency and fire flow demands. The new reservoir can be located at the existing Dunsmore Reservoir site and the scope of work will include a geotechnical study, permits, CEQA, design and construction. This project is not included in the 5-year CIP budget.

Objection No. 2 – New Ocean View Reservoir

New Ocean View Reservoir – This project includes locating a new reservoir at the top of Ocean View Blvd that will provide for water storage for the 160 homes located on Ocean View Blvd and eliminate the three (3) pipeline crossings of Pickens Canyon. The project will include land acquisition, hydraulic modeling to create a new pressure zone, geotechnical study, new pipeline and pumps from the existing Ocean View Reservoir to the new reservoir, permits, CEQA, design and construction. This project is not included in the 5-year CIP budget, but will be used as a place holder for future projects.

3. WATER DISTRIBUTION

GOAL: Provide for the ability to move water within the distribution system to meet existing and future water demands, fire flow requirements, and emergency conditions.

- A. Pipeline Replacement – To replace existing older water pipelines based on age, size and number of leaks to meet existing or future water demands and have reached the end of their useful life.
- B. New Pipelines - install new water pipelines to meet future water demands, fire flow requirements, and conductivity between pressure zones, water quality, and recommendations from the Water Master Plan.
- C. Booster Pump System - maintain, replace, or upgrade the 34 booster pumps to meet customer water demands, maximize "water to wire" efficiency and controlling electrical power usage.
- D. Pressure Reducing Stations - install pressure reducing valve (PRV) stations between pressure zones to allow for the movement of water in an emergency from higher pressure zones to lower pressures zones.
- E. Miscellaneous Projects -

OBJECTIVE:

A. Pipeline Replacement

CVWD's objective is to replace existing water pipelines to meet existing or future water demands as identified in the 2007 Water Master Plan and to replace pipeline that has developed leaks, and which have reached the end of their useful life.

Starting in 1975, CVWD began tracking the number of leaks on existing pipelines to determine which pipeline needed to be replaced as part of the annual Pipeline Replacement Program. From 1975 to 1994, CVWD had a construction crew that replaced pipeline. Starting 1995, CVWD began hiring pipeline contractors to replace pipeline.

As construction costs increased and funding became limited, the amount of pipeline being replaced annually has decreased.

Staff utilized the pipeline database to summarize the pipelines utilizing the criteria: 1) Age of pipeline, 2) Pipe material, 3) Size of pipe and 4) Number of leaks

Other criteria used to determine pipeline replacement priority are fire flow or demand requirements as recommended by the water master plan, pavement replacement requirements, water quality, and replacement costs.

From the data above, it appears that the criterion with the greatest amount of pipeline to be replaced is the age of pipeline. In addition, a number of pipelines that were in the other criterion were also in the age of pipeline criteria. Therefore, staff used this criterion to base its goal for pipeline replacement for the 10-year CIP program.

Staff looked at establishing parameters for replacement of pipeline based on the age and the life of a pipeline being 50 years. The first pass was to replace all pipelines 15 years and older in the next 35 years. From the data above, that would be 80 miles of pipeline, which would average 2.3 miles per year at a cost of \$3.14M per year. In staff's opinion, this did not seem feasible.

The next pass was looking at only replacing the pipelines over 50 years in the next 50 years. From the data above, that would be 40.8 miles, which would average 0.8 miles or 4,300 feet per year at a cost of \$1.12M per year. While this does not replace pipeline in the under 50 years category, it is a feasible amount of pipeline to replace for the 10-year CIP program.

The following are summary tables from the pipeline database.

B. New Pipelines

CVWD's objective is to install new water pipelines to meet future water demands, fire flow requirements, conductivity between pressure zones, and water quality issues.

- i. Zone 1 inlet/outlet connection at Ramsdell Mixing Station - There is an existing condition at the Ramsdell Mixing Station where blended water flows either north to Encinal Reservoir or directly into Zone 1. This has created blending and chlorination problems within the distribution system. To correct this situation, a separate pipeline for the Zone 1 outlet from Encinal Reservoir needs to be installed. This will involve placing a new pipeline within the Ramsdell Bridge over the 210 freeway and changing the inlet/outlet configuration at Encinal Reservoir.

The scope of work will be:

- a) Hydraulic Analysis and Preliminary Design
- b) Coordination with Caltrans
- c) Design
- d) Construction

- ii. Zone 5 – Mountain Avenue and El Sereno – There is an existing zone break between Zone 4 and 5 that has created a water quality situation and restricted flow in the area. This project will involve adding a new pipeline on Mountain Avenue between Briggs Avenue and El Sereno to connect Zone 5.

The scope of work will be:

- a) Hydraulic Analysis and Preliminary Design
- b) Design
- c) Construction

- iii. Zone 6 – New York, Santa Carlotta, Cloudsdale, and El Caminito – There are existing dead-end mains on Cloudsdale at El Caminito and on New York Avenue and Santa Carlotta which have created a water quality situation and restricted flow in the area. This project will involve adding a new pipeline from New York Avenue to Santa Carlotta Avenue and then to Cloudsdale Avenue which will connect to Zone 5.

The scope of work will be:

- a) Hydraulic Analysis and Preliminary Design
- b) Design
- c) Construction

C. Booster Pumps

CVWD's objective is to maintain, replace, or upgrade the 34 booster pumps within the system to meet water demands in CVWD's 11 pressure zones while maximizing the "water to wire" efficiency and controlling electrical power usage.

Annual Pump /Motor Replacement

Pump Efficiency - CVWD performs a "wire to water" efficiency test on an annual basis for each pump. This test shows if a booster pump has fallen below 65% efficiency and if a pump and/or motor needs to be replaced or upgraded. This is one of criteria used by staff to evaluate the Annual Pump /Motor Replacement program.

List of Booster Pumps based on the latest "wire to water" efficiency test.

Latest Booster Pump Upgrade - Other criteria used to evaluate the booster pumps is the date of the last time that the booster pump was repaired or replaced or the age of the booster.

List of Booster Pumps based on the latest repaired or replaced date.

Staff utilized a ranking system and grouped pumps by booster stations to create a priority list of pumps to replace. For planning purposes, the following would be the schedule of replacement of booster pumps:

Booster Station	Fiscal Year
Encinal B	
Oak Creek - A, B, & C	
Eagle Canyon B	
Ed #2 - Booster 27 & 28	
Cresta Heights - Booster 26	
Goss Canyon - Booster 13	
Glenwood 32, 33 & 34	
Markridge - 11A, 11B, 12, 24, & 25	
Paschall A & B	
Ocean View A, B, & C	

i. Pump Station Upgrade

- a) New Booster Pump at Cresta Heights – Install an additional 500 gpm pump at Cresta Heights for redundancy, additional capacity for Zone 9 for ultimate demand and ability to boost water to Zone 10 in case of emergency.
- b) New Booster Pump at Goss Canyon – Install an additional 500 gpm pump at Goss Canyon for redundancy.

The Water Master Plan indicates that the water modeling results show that the booster pumps for Pressure Zone 1 and 2 are incapable of maintaining adequate reservoir levels in Encinal and Ocean View Reservoirs with respect to refilling the reservoirs in 2 days after a high demand emergency. This may be due to improper pump control settings or inferior pump performance curves. It suggests that further in-depth analysis be performed to determine if additional boosters or upgrades to the piping network between Zone 1 and 2 are needed.

- ii. Electrical Motor Control Center (MCC) Replacement - CVWD's objective is to maintain, replace, or upgrade the fourteen (14) electrical motor control centers that provide electrical power and controls to the booster pumps, and to maximum the use of new technology to reduce power costs.

A motor control center (MCC) typically consists of one or more vertical metal cabinet sections with power-bus and provision for plug-in mounting of individual motor controllers. Each motor controller contains a contactor or a solid-state motor controller, overload relays to protect the motor, fuses or

a circuit breaker to provide short-circuit protection, and a disconnecting switch to isolate the motor circuit. In addition, the MCC includes connection outlets for the District's portable electrical generators to run boosters during a power outage.

Staff experience from the design and construction of the Eagle Canyon MCC, was that design, planning with SCE or Glendale, and ordering equipment should occur at least one fiscal year before construction activity can proceed. For planning purposes, the design costs for an MCC upgrade will be included in the previous fiscal year budget.

For planning purposes, the following would be the schedule of replacement of the electrical motor control centers:

Electrical Motor Control Center Upgrade	
MCC Location	Fiscal Year
MCC upgrade at Eagle Canyon	Complete
MCC upgrade at Oak Creek	Complete
MCC upgrade at Paschall	
MCC upgrade at Ocean View	
MCC upgrade at Goss Canyon	
MCC upgrade at Mills Plant	
MCC upgrade at Rosemont	
MCC upgrade at Encinal	
MCC upgrade at Edmund #2	
MCC upgrade at Edmund #1	

D. Pressure Reducing Stations

CVWD's objective is to install pressure reducing valve (PRV) stations between pressure zones to allow for the movement of water in an emergency from higher pressure zones to lower pressures zones.

There are exiting gate valves in the distribution system that will allow water to flow between pressure zones, which are called "zone" valves. However, a number of these zone valves have not been used in over twenty years or more. Staff is very concerned that if a zone valve is opened, it will not be able to close, thereby adding additional pressure to a lower zone.

The Water Master Plan recommended installation of the PRV's as an emergency measure to maintain water in a pressure zone and for sharing water storage between pressure zones. The Water Master Plan suggested that PRV's be installed for each pressure zone at the existing locations of the zone valves and the existing PRV's should be upgraded to meet future demand.

Further hydraulic analysis would be needed to determine the proper location between pressure zones to meet future demands and fire flow protection.

For planning purposes, the following would be the schedule of the installation of pressure reducing stations:

E. Miscellaneous Projects

- i. Water Surge Control - CVWD's objective is to install and upgrade the water surge suppression system to protect existing booster pumps and pipelines from damage during a water surge condition. A water surge condition occurs when there is a sudden loss of power, booster pumps shut off and a wave of water occurs inside the pipe. This wave usually starts at the upstream side of a pressure zone and travels downstream to

the booster pump that had just been shut off. The wave speed could generate over 300 psi of pressure inside the pipe, which could burst the pipe or damage the downstream booster pump. This occurred in 2007, when a SCE power outage caused a hydraulic surge and the pump shaft in Booster 17 had a shear break, which cost about \$27,000 to repair.

There are two (2) existing surge protection devices, one at Paschall and the other at Glenwood. The surge protection device at Paschall was installed in 1955 and is currently out of service. The device at Glenwood was installed in 1972 and is also out of service.

A preliminary surge analysis was performed as part of the Water Master Plan. The results showed that about 65% of the pipeline will have a velocity greater than 10 ft/s in a surge condition and that the wave will surge up and down the pipes for over 5 minutes, which could cause further breaks in a pipeline.

The Water Master Plan recommended a detailed surge analysis be performed to identify key areas where a water surge suppression system needs to be installed. Also, the surge protection device at Paschall and Glenwood should be analyzed and upgraded.

For planning purposes, the following would be the schedule for the water surge system:

- a) Detailed Water Surge Analysis Study
 - b) Use data from 2007 Water Master Plan
 - c) Perform a detailed water surge analysis for each pressure zone and booster station
 - d) The study will provide recommendations for type of systems and cost estimates
 - e) Upgrade and repair surge protection at Glenwood & Paschall
 - f) Perform a detailed water surge analysis for the Glenwood and Paschall systems
 - g) Provide recommendations to upgrade the existing water surge suppression systems
 - h) Design and construction based on the recommendations from the water surge analysis study
- ii. Street/Utility/ Meter Adjustment & Upgrade – CVWD has been working with the City of Glendale Department of Public Works on adjusting to grade existing meter services as part of the City of Glendale's Street Rehabilitation Program. The Street Rehabilitation Program typically involves installation of new curbs & gutters, sidewalks and AC pavement, and CVWD is required to adjust their facilities. These projects are very time consuming and costly to CVWD. Staff is involved with the City of Glendale's Utility Coordination committee where information is provided on upcoming street projects. For planning purposes, staff is programming time and costs to these projects every three (3) years.
- iii. Miscellaneous Projects
- a) Ramsdell/Mayfield Mixing Station – The northerly piping in the Mixing Station needs to be replaced. However, the pipes cannot be replaced until the Zone 2 to 1 PRS and the Ocean View Meter are installed.
 - b) Water Master Plan Update – The Water Master Plan was completed in 2007 and is typically updated every 5 – 10 years. Staff is planning to update the Water Master Plan in FY 14/15.

4. WATER QUALITY AND TREATMENT

GOAL: Provide high quality water by improving existing treatment processes or installing new water treatment systems to meet Federal and State water quality standards.

- A. Nitrate Removal - provide nitrate removal treatment for all groundwater wells to maintain a maximum 35 mg/L nitrate level throughout the water distribution system.
- B. Chlorine Disinfection - provide for chlorine disinfection treatment to maintain minimum 1.0 mg/L chlorine residual throughout the water distribution system.
- C. New Federal and State Regulations - comply with all new United States Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) water quality regulations.
- D. Water Quality Studies - perform studies to improve water quality and/or as required by USEPA/CDPH.
- E. MTBE Removal - provide MTBE removal treatment for groundwater wells

OBJECTIVE:

- A. **Nitrate Removal** - CVWD's objective is to provide nitrate removal treatment for all groundwater wells such that water delivered to the customers is less than 35 mg/L. To accomplish this objective, CVWD plans on maintaining the existing Nitrate Removal Treatment plant at the Glenwood facility, installation of a new nitrate removal treatment plant at the Mills facility and a small nitrate removal treatment plant to treat Well 2.

- i. Nitrate removal treatment plant at the Glenwood facility – There is an existing ion exchange treatment plant that was installed in 1990 at Glenwood. The ion exchange treatment plant is designed at 1450 gpm and treats about 600 ac-ft of water per year. The nitrate removal process uses a resin designed to remove nitrates from the water. The resin needs to be changed out every 10 – 15 years.
 - ii. Nitrate removal treatment plant at the Mills facility – This project involves the installation of a new ion exchange treatment plant that will treat about 750 gpm or about 400 ac-ft per year.

The current nitrate removal process for the Mills facility is blending groundwater with imported water at the Paschall Blending Station. The new treatment plant will be in service during the low demand season, thereby reducing the amount of water imported from FMWD.

A number of issues will have to be resolved such as disposal of the waste brine used for treatment, upgrading the electrical power source, adding booster pumps to increase pressure through the ion exchange vessels and discussions with GWP about extra pumping in the Basin. The disposal of the waste brine issue would involve either storing the waste on-site in a fiberglass tank and hauling it on a weekly basis or connecting to the existing on-site Glendale sewer for disposal. The other issues could be handled during the design process.

Scope of work will include:

- a. Preliminary design and operations study
 - b. Design for new ion exchange treatment plant
 - c. Construction of the new ion exchange treatment plant

For planning purposes, the following would be the schedule for the existing Nitrate Removal Treatment plant and installation of new nitrate removal treatment plants at Mills:

B. Chlorine Disinfection

CVWD's objective is to provide for chlorine disinfection treatment for groundwater wells, "breakpoint" chlorination at the FMWD connection points and to maintain 1.0 mg/L chlorine residual throughout the water distribution system.

CVWD uses a sodium hypochlorite solution for disinfection at the Glenwood Facility, Mills Facility, Oak Creek Reservoir, Well 5 and Well 11. CVWD uses a calcium hypochlorite system at the Pickens Canyon Tunnel.

- i. New Chlorine Stations - The Water Master Plan and the 2001 Water Disinfection Practices Study suggested that since Zone 5 is the last chlorine station that boosts chlorine into the upper Zones, that additional chlorination stations should be installed in Zones 6, 8, & 9 to maintain an even chlorine residual of 1.0 mg/L in the distribution system. The new chlorine stations will be installed with sodium hypochlorite solution at reservoir sites and will include chlorine analyzers and telemetry systems.

For planning purposes, the following would be the schedule for installation of the new chlorine stations:

- ii. New Chlorine Analyzers - CVWD has chlorine analyzers at eight (8) sites to continually measure chlorine levels in the distribution system. Chlorine levels are checked every day in the field and monitored by the SCADA system. CVWD's goal is to install chlorine analyzers at all fourteen (14) reservoir sites. The key sites are the terminal reservoirs (Shields, Dunsmore & Pickens) to ensure that CVWD has a chlorine residual at the end of the distribution system.

For planning purposes, the following would be the schedule for installation of the new chlorine analyzers:

- iii. Convert to On-site Chlorine Generation - There are various types of chlorination systems that use sodium hypochlorite for the disinfection process. Typically, sodium hypochlorite is purchased from a chemical company that makes the sodium hypochlorite at their facility and trucks it to its customers. A fairly new method for producing sodium hypochlorite is utilizing an on-site chlorine generation system that converts salt by electrolysis to produce sodium hypochlorite.

This system has some advantages such as safety by not having to handle sodium hypochlorite solution, ease of making chlorine with salt, reduced costs for sodium hypochlorite deliveries and on-demand production. Some disadvantages are higher electrical costs for the electrolysis and regular cleaning and maintenance of the system.

CVWD would like to install one of these systems at Oak Creek Reservoir as a test site and ultimately would like to convert all the chlorination stations to on-site chlorination. For planning purposes, CVWD will schedule for installation of the new on-site Chlorine Generation system at Oak Creek in FY 19/20.

- C. **New Federal and State Regulations** - CVWD's objective is to meet and comply with all future Federal and State water quality regulations. A number of constituents are being discussed by the Environmental Protection Agency (EPA) and the California Department of Public Health (CDPH) such as Hexavalent Chromium. CDPH has recently adopted regulations on point-of-use treatment devices and is currently working on point-of-entry emergency regulations, groundwater recharge, and indirect/direct potable reuse. Other water quality issues that may occur over the next ten years are the detection of pharmaceuticals in drinking water and radon in drinking water.

Hexavalent Chromium - Hexavalent Chromium has been a water quality issue since 2000 and there is no MCL set at the present time. CDPH has a MCL of 50 ug/L for Total Chromium only. California's Office of Environmental Health Hazard Assessment (OEHHA) has made a public health goal of 0.02 ug/L or 2 parts per trillion. CDPH is planning to release a draft MCL within the next 18-24 months.

What does this mean to CVWD? Chromium is naturally occurring in rocks and soil and is used in the metal plating business. CVWD has tested for Hexavalent Chromium in the past few years and detected Hexavalent Chromium levels at range from non-detect to 0.90 ug/L. This is probably due to naturally occurring Chromium, since the Crescenta Valley does not have a history of metal plating businesses.

If the MCL is set at a low level by CDPH (i.e. 0.05 ug/L or less) then CVWD will have to submit a treatment plan for approval by CDPH. Another factor is that there is no treatment technique available besides blending with imported water. GWP is working on a pilot project, but it will be at least 5 years before any treatment technique will be approved by CDPH.

For planning purposes, no water quality regulation is scheduled as part of the 10-year CIP update.

- D. **Water Quality Studies** - CVWD's objective is to perform any water quality studies as required by CDPH or if any emerging constituents appear. For planning purposes, no water quality studies are scheduled as part of the 10-year CIP update.
- E. **MTBE Removal** - CVWD has been dealing with MTBE groundwater contamination for the past five (5) years and at the present time, the MTBE levels are low. However, if the MTBE levels rise again, which has been predicted, then CVWD will either have to blend with imported water, shut down the well producing MTBE, or install a GAC treatment system to remove the MTBE. Since this issue is unknown, we have left a placeholder, but have no funding for the project.

5. TECHNOLOGY

GOAL: Ability to utilize advancements in technology to maximum efficiency for CVWD.

- A. Automated Meter Information (AMI) system - install an AMI system to increase efficiencies, outage detection, tamper notification and reduce labor costs
- B. Supervisory Control and Data Acquisition (SCADA) System - upgrade the existing SCADA/Telemetry system to maximum newer technology and increase effectiveness
- C. Graphical Information System (GIS) - implement a GIS to integrate with asset tagging, customer service and operations

OBJECTIVE:

A. Automated Meter Information (AMI) system

CVWD's objective is to install an Automated Meter Information (AMI) system to increase efficiencies, outage detection, tamper notification and reduce labor costs as a result of automating reads, connections and disconnects. CVWD will be able to offer new innovative products, flexible billing cycles, leak detection, and on-line water consumption with AMI.

The AMR system is the technology of automatically collecting consumption, diagnostic, and status data from water meters and transferring that data to a central database for billing, troubleshooting, and analyzing. This technology saves utility providers the expense of periodic trips to each physical location to read a meter. Another advantage is that billing can be based on near real-time consumption. This timely information coupled with analysis can help both utility providers and customers' better control the use and production of water consumption.

- i. AMI –Research and Pilot Program – This involves three (3) phases to determine the type of system that CVWD wants to deploy and the cost of the AMR system.
 - a) Research and survey the AMR systems available within the water industry to determine the best system to meet CVWD's needs.
 - b) Perform a meter survey to determine if CVWD will standardize its entire meter system to one company, or replace parts to upgrade the existing meters to AMR. Determine if the meter conversion can be completed by CVWD crews or by hiring a contractor.

CVWD has a variety of meters within the system that were manufactured by different companies, the age of meters differ with the oldest meters over 20 years old and the method to measure water varies from positive displacements, single jet and rotating disk.
 - c) Determine the method of collecting the data. There are two (2) methods currently being implemented by other water agencies. The first method is called, "Drive-by" which is done by using a radio in a vehicle, where personnel drive into an area and the meter data is collected via the radio. Typically this can be done within 1 – 2 days depending on the areas. The second method is a fixed-area network that transmits the meter data via a radio frequency to a central location and meter data can be taken every day or every hour depending on the AMR units.
- ii. AMI – Design – After the Research and Survey Study is completed, and then a process needs to be implemented to determine the best method to phase in the AMR system.
- iii. ¾-inch & 1-inch Meter Conversion – CVWD has over 7,800 ¾-inch & 1-inch meters within the system. For planning purposes, this meter conversion will occur over a three (3) year period.

- iv. Large Meter Conversion – CVWD has over 200 meters that are 1½-inch or larger and about 100 fire service meters that will have to be converted to AMR. For planning purposes, the large meter conversion will occur after the 3 year period for the ¾-inch & 1-inch meter conversion and within one year.
- v. Data Collection System – CVWD has not determined the method for data collection, therefore for planning purposes, CVWD will be looking to install a Fixed Area Network that will utilize a radio frequency that collects data and transmits it to the Main office. This will also include integration of the data into the existing customer billing system.

B. Supervisory Control and Data Acquisition (SCADA) System

CVWD's objective is to upgrade the existing SCADA/Telemetry system to maximum newer technology and increase effectiveness.

CVWD has a SCADA system, which was installed in 1996 and transmits data on the status of CVWD's facilities such as pumps, reservoirs and the sewer lift station.

Data is transmitted to a central unit located at the Glenwood Plant and allows the system operators to send controls or commands remotely to turn on or off pumps, valves etc... In addition, the SCADA system is set up with alarms that alert the system operators of impending problems and allows the operators to react before a situation turns critical.

A SCADA Needs Assessment Study was performed by Westin Engineering in 2007 and identified three areas within the SCADA system that need to be improved to meet future needs.

- i. Upgrade hardware and software at the central computer system at the Glenwood plant - This was addressed by improvements to the computer and programming system at the Glenwood Plant (central computer system), which were completed in 2008.
- ii. SCADA - replace remote terminal units (RTU) at all sites. - The second area was to upgrade and/or replace the existing RTUs at all sites; however the overall cost was over \$800,000. Staff discussed this issue previously with the Board and deemed that the existing RTU's could function properly for at least the next five (5) years.

The existing RTU system was installed by TESCO in 1996 and they own the proprietary rights to the system, therefore, TESCO is the only company that can maintain the system.

This was an acceptable arrangement for the past 13 years since CVWD did not have on-site personnel who were able to maintain or troubleshoot the system. However, SCADA equipment in the water industry has advanced to provide the same services without being proprietary and CVWD now has personnel that have the knowledge to maintain and troubleshoot the SCADA equipment.

Therefore, CVWD is planning to replace the 15 year old equipment with new and upgraded SCADA equipment that will not be proprietary, thereby allowing for competitive bidding. Also, CVWD personnel will be trained to maintain or troubleshoot the system.

For planning purposes, the following would be the schedule for installation of the new SCADA equipment at the reservoir sites, well sites, nitrate plant, sewer lift station and other sites:

- iii. Upgrade the communication system - The third area was to upgrade the communication system which included determining if a wireless radio frequency system could be utilized within the District's boundaries with the existing topography.

In 2009, a radio frequency survey was performed to determine an efficient plan for frequencies and equipment placement necessary to transmit the data throughout the District. The survey concluded that the majority of the District's sites can receive and transmit a good radio signal which can be utilized for the SCADA system.

Wireless Radio Frequency System – CVWD has determined that a wireless radio frequency communication system can be installed at all sites, Glenwood Plant and the Main Office. This system allows for transmission of data over a redundant system that will decrease the amount of communications failures, increase the amount of data being utilized, increase the ability to remotely control the system and will reduce costs by eliminating land lines for communication. In addition, CVWD personnel will be trained and have the ability to troubleshoot the system without the assistance of outside consultants. This project is currently being implemented and should be completed shortly.

C. Geographic Information System (GIS)

CVWD's objective is to implement a Geographic Information System (GIS) to integrate with asset tagging, customer service and operations.

GIS is a system designed to capture, store, manipulate, analyze, manage, and present all types of water and sewer assets referenced data. In the simplest terms, GIS is the merging of cartography, statistical analysis, and database technology.

CVWD has begun a GIS for the District's water and sewer system that included data entry of water pipelines, valves, fire hydrants, sewer pipelines, manholes and other CVWD assets into a GIS system. This information needs to be reviewed and field-verified by CVWD personnel. In addition, the existing water and sewer as-built drawings need to be scanned and linked to the GIS, which can be done by CVWD personnel.

The GIS maps will be utilized by office and field crews which can be updated more efficiently in the field. The GIS will also be linked with the customer billing system that can be used for generating graphical water-use patterns, as an example. Finally, the GIS system can be linked to the SCADA system to graphically show where water is flowing and utilized for better pump efficiency.

- 1) Asset Tagging – this will involve inputting the field locations by GPS of meters, valves, fire hydrants, fire services, pressure reducing stations, blow offs, water sampling stations, sewer manholes, air release valves and any other District asset. CVWD will utilize either field crews, interns or hire a contractor to complete this work.

6. PUBLIC SAFETY/EMERGENCY RESPONSE

GOAL: Ability to meet customer water demands during local emergencies or natural disasters.

- A. Emergency Electrical Generators - provide portable emergency electrical generators at strategic locations within the District to ensure CVWD can meet water demands during a local emergency or natural disaster when electrical power has been disrupted
- B. Water Storage – install seismic sensors and valve actuators on all District reservoirs to prevent loss of water in case of an earthquake event from a break in the downstream piping
- C. Security - install security cameras at the Main Office, Glenwood Plant, Mills Plant, Reservoir Sites, Well Sites and other CVWD facilities
- D. Miscellaneous

OBJECTIVE:

A. Emergency Electrical Generators

CVWD's objective is to provide portable emergency electrical generators at strategic locations within the District to ensure CVWD can meet water demands during a local emergency or natural disaster when electrical power has been disrupted.

CVWD currently has two (2) stationary emergency electrical generators at Glenwood and the Main Office respectively. CVWD also has three (3) portable emergency electrical generators that are stored at Rosemont Reservoir. In an emergency situation, the portable emergency electrical generators can be deployed to a booster station site and connected to the MCC to run the booster pumps. All CVWD MCCs are equipped with emergency power connections.

The following is a list of the current emergency electrical generators:

New portable emergency electrical generators – To maximize water production during a power outage, a new 200KW stationary emergency electrical generator should be placed at the Mills Plant and the addition of a new 150KW portable emergency electrical generator for the Paschall Booster Station.

Replacement of portable emergency electrical generators – CVWD has an annual maintenance contract for the portable emergency electrical generators and should be adequate for the 10-year planning cycle.

Replacement stationary emergency electrical generators – The existing stationary generator at Glenwood is adequate for the 10-year planning cycle. The existing stationary generator at the Main Office is undersized to power the entire building and needs to be upgraded to at least a 25KW emergency generator.

B. Water Storage

CVWD's objective is to install seismic sensors and valve actuators on all District reservoirs to prevent loss of water in case of an earthquake event from a break in the downstream piping.

The seismic sensor and valve actuator system consists of two (2) components, the first being a seismic sensor device that reacts to an earthquake event and sends a signal to the second component, a valve actuator with a motor on the reservoir inlet/outlet valve that will close the valve, thereby preventing the loss of water inside the reservoir. CVWD has installed this system at seven (7) reservoir sites.

For planning purposes, the following would be the schedule for installation of the new seismic sensor and valve actuator systems.

	Site	Fiscal Year
1	Edmund #1	Installed – 00/01
2	Rosemont	Installed – 00/01
3	Eagle Canyon	Installed – 00/01
4	Markridge	Installed – 00/01
5	Goss Canyon	Installed – 00/01
6	Edmund #2	Installed – 00/01
7	Shields	Installed – 09/10
1	Cresta Heights	12/13
2	Dunsmore	13/14
3	Pickens	13/14
4	Ordunio	13/14
5	Oak Creek	14/15
6	Ocean view	15/16
7	Encinal	15/16

C. Security

CVWD's objective is to install security cameras at the Main Office, Glenwood Plant, Mills Plant, Reservoir Sites, Well Sites and other CVWD facilities. The security camera system will be linked to CVWD's computer network system which will allow personnel to monitor these locations either remotely or at the Main Office. The security camera system will record the data which can be used by law enforcement in case of damage to CVWD's facilities.

CVWD has installed security cameras at the Main Office and has installed the conduits and wiring at the Glenwood Plant. Staff has also set up motion cameras at three (3) reservoirs sites.

For planning purposes, the following would be the schedule for installation of the new security camera system.

D. Miscellaneous

CVWD's objective is to install the necessary facilities to upgrade the District's emergency preparedness.

7. FACILITIES & PLANNING

GOAL: Maintain and/or upgrade CVWD facilities to increase the life span of the facility, improve efficiency, and to meet the needs of the District. Also perform various planning studies to assist in defining the future direction of the District.

OBJECTIVE:

A. Main Office

CVWD's objective is to maintain and/or improve the existing facility at 2700 Foothill Blvd to meet the needs of the staff and customers.

- 1) New Roof – The existing roof was repaired in 1998 and has shown signs of breaking down. There are existing low spots that puddle water, which could lead to the roof leaking. A new roof with a slope needs to be installed to drain water off the roof. For planning purposes, this project is scheduled for FY 12/13.
- 2) Building Seismic Analysis Study – The Main Office was built in 1966 before earthquake building codes were enforced and an analysis needs to be performed to determine if any seismic upgrades are necessary. For planning purposes, this project is scheduled for FY 13/14.
- 3) Needs Assessment Study – A needs assessment is a systematic process for determining and addressing needs, or "gaps" between current conditions and desired conditions or "wants". The discrepancy between the current condition and wanted condition must be measured to appropriately identify the need. The need can be a desire to improve current performance or to correct a deficiency. A needs assessment study should be performed to determine the existing and future needs to meet personnel and operational existing and future conditions or goals.

This study will assist in determining if the existing building can meet the needs of the District or would a new large facility need to be constructed. For planning purposes, this project is scheduled for FY 14/15.

B. Glenwood Operations Facility

CVWD's objective is to maintain and/or improve the existing facility at 3730 Glenwood Avenue to meet the needs of the staff and operations.

- 1) New Automated Gate System - There are three (3) main access gates into the Glenwood Operations Facility. An automated security gate was installed for the employee parking lot in 2008. The other two (2) gates are manual gates which are opened in the morning and closed at the end of the work shift. This project is under construction and should be completed shortly.
- 2) New Roof – The existing roof was installed in 1972 and minor repairs have been made over the years, however, the roof has shown signs of leaking and a new roof needs to be installed. For planning purposes, this project is scheduled for FY 12/13.
- 3) Expansion of Electrical/SCADA Equipment Bldg – The existing electrical building at the Glenwood plant is sectioned into two (2) rooms. One room houses the electrical equipment for the wells, booster pumps, SCADA equipment and other devices. The other room previously housed chlorine gas, which was removed in 2008 and is vacant. The electrical equipment room is crowded which creates a lot of heat, which can reduce the life of the equipment.

This project will relocate the SCADA and other electrical equipment and add additional air conditioning units to reduce the heat and un-clutter the electrical equipment room. For planning purposes, this project is scheduled for FY 12/13.

- 4) Parking Lot Expansion – The existing parking available for employee vehicles and District equipment has become extremely limited with the addition of the sewer crews and new vehicles. This project will expand the employee parking lot by Well 10 and to create a parking area by the south gate. This will also require permits from the City of Glendale. For planning purposes, this project is scheduled for FY 13/14.
- 5) Needs Assessment Study – Perform a needs assessment study to determine the existing and future needs to meet personnel and operational existing and future conditions or goals.

This study will assist in determining if the existing buildings and overall facilities can meet the needs of the District or would a new large facility need to be constructed. For planning purposes, this project is scheduled for FY 14/15.

C. Mills Plant

CVWD's objective is to maintain and/or improve the existing facility at 3246 Mills Avenue to meet the needs of the staff and operations.

- 1) Air Conditioning & Cooling System – The existing building houses two (2) 150 Hp and one 30 Hp motors, MCC's and SCADA equipment which create a lot of heat inside the building. This project is to install an air conditioning and cooling system to reduce the heat, however, the system must be quiet to minimize the noise to the neighborhood. For planning purposes, this project is scheduled for FY 15/16.
- 2) Acoustical Tile Removal – The existing acoustical tiles that were installed in the 1970's were made out of an asbestos material. This material needs to be removed for employee safety reasons by a qualified asbestos removal contractor. For planning purposes, this project is scheduled for FY 12/13.

D. Reservoir Site Improvements

CVWD's objective is to maintain and/or improve the existing reservoir sites to meet the needs of the staff and operations.

Staff has completed an assessment to determine needed repairs, infrastructure, and equipment at each reservoir site. A number of projects have been previously identified for reservoir sites such as chlorine stations, inlet/outlet piping, interconnections, and MCC's.

For planning purposes, the following would be the schedule for reservoir site improvements:

E. Misc. Property

CVWD's objective is to maintain and/or improve CVWD's existing properties and facilities to meet the needs of the District.

- 1) Mills House – The District has been utilizing this property as an Engineering Department satellite office for the CIP Manager and Inspector since space is limited at the Main Office. This property can be used in the future for a new well site or installation of a water treatment system.

The roof on the existing front house is leaking and in bad condition. It needs to be replaced and is planned for FY 12/13.

- 2) Pennsylvania House – The District has not been utilizing this property and the house is currently vacant. This property can be used in the future for a new well site or installation of a water treatment system.

The house is in fair condition, but needs major repairs and painting, which can be done by CVWD crews. For planning purposes, no improvements are scheduled as part of the 10-year CIP update.

- 3) Sycamore House – The District recently purchased this house which is vacant. This property can be used in the future for a new well site.

The house is in fair condition, but needs minor repairs and painting, which can be done by CVWD crews. For planning purposes, no improvements are scheduled as part of the 10-year CIP update.

- 4) Encinal/ Pennsylvania Property – This is a vacant parcel with a monitoring well that was installed in 2002. For planning purposes, no improvements are scheduled as part of the 10-year CIP update.

F. District Planning

- 1) Strategic Planning – Staff has been discussing preparing a strategic plan for the District that would assist in defining the direction of the District in the coming years.

Strategic planning is an organization's process of defining its strategy, or direction, and making decisions on allocating its resources to pursue this strategy, including its capital improvements and personnel. A strategic plan is based on the following:

- a) **Vision:** Defines the way an organization or enterprise will look in the future. Vision is a long-term view, sometimes describing how the organization would like the world to be in which it operates.
- b) **Mission:** Defines the fundamental purpose of an organization or an enterprise, succinctly describing why it exists and what it does to achieve its vision.
- c) **Values:** Beliefs that are shared among the stakeholders of an organization. Values drive an organization's culture and priorities and provide a framework in which decisions are made.
- d) **Strategy:** A strategy is sometimes called a roadmap which is the path chosen to plow towards the end vision. The most important part of implementing the strategy is ensuring the company is going in the right direction which is towards the end vision.

For planning purposes, this project is scheduled for FY 12/13.

- 2) Asset Management – Staff has discussed planning and implementing an asset management program at CVWD to determine life cycles of its facilities, what is a proper method of replacement and financing these replacements.

Asset management is the integrated, multi-disciplinary set of strategies in sustaining public infrastructure assets such as water treatment plants, water and sewer lines and other facilities. Generally, the process focuses on the later stages of a facility's life cycle, specifically maintenance, rehabilitation, and replacement. Asset management specifically uses software tools to organize and implement these strategies with the fundamental goal to preserve and extend the service life of long-term infrastructure assets or to predict replacement of infrastructure which are vital components in maintaining a public utility.

Elements of an asset management system include:

- a) Inventory
- b) Condition Assessment
- c) Financial Forecast
- d) Customer Service
- e) Work Management
- f) Fixed Asset Accounting
- g) Regulatory Compliance
- h) Disaster Recovery

Staff has been working on updating CVWD's inventory of its assets such as pipelines, valves, water meters, booster and well pumps, chlorination stations, MCC's and so on. Staff is also looking at the condition of its assets. The next step will be for staff to put together a formal asset management work plan to present to the Board. The asset management work plan will address needs with respect to staff time, software tools, and consultants to complete an asset management program. For planning purposes, this project is scheduled for FY 13/14 & FY 14/15.

- 3) **Computerized Maintenance Management System (CMMS) program** – Staff has discussed planning and implementing a CMMS to better manage maintenance of equipment, assets and property. In addition, this could be one element of an asset management program.

A CMMS software package maintains a computer database of information about an organization's maintenance operations. This information is intended to help CVWD's personnel do their jobs more effectively (for example, determining which booster pumps require maintenance) and to help management make informed decisions (for example, calculating the cost of repair versus preventive maintenance, possibly leading to better allocation of resources). CMMS data may also be used to verify regulatory compliance.

CMMS packages can produce status reports and documents giving details or summaries of maintenance activities. The more sophisticated the package, the more analysis facilities are available.

CMMS can be used to generate work orders that can be tracked for scheduling jobs, assigning personnel, reserving materials for projects, recording costs, and tracking information such as cause of the problem, down time and recommendations for future action.

Staff can utilize the data generated from the asset management program, fleet maintenance and other available maintenance data to create the database for the CMMS software. CMMS will be a valuable tool for CVWD towards maintaining costs and to better predict future maintenance costs. For planning purposes, this project is scheduled for FY 13/14 & FY 14/15.

- 4) **Solar Power Feasibility Study** – Staff has been asked to look at the feasibility of installing and utilizing solar power systems to provide electrical power at the reservoir sites. Staff has done some preliminary work in the past and showed that solar power was not practical at that time. However, solar power systems have improved over the years and there may be grant funds available to assist with a project.

Staff will request a proposal for a consultant to perform a Solar Power Feasibility Study that will include site investigation, evaluation of solar power systems, cost analysis, and grant funding opportunities. For planning purposes, this project is scheduled for FY 13/14.

- 5) **LAFCO/Overlap Area Study** – In 2008, the Local Agency Formation Commission for Los Angeles County (LAFCO) had undertaken a review of the municipal services (water and wastewater) for the communities of La Cañada Flintridge, La Crescenta and Glendale. A recommendation from LAFCO's findings was that it will require an update of the municipal services review in five (5) years. CVWD and City of Glendale have had discussions on this matter and there has not been any progress so far. Both staffs agree that a joint detailed study on the overlap area including costs should be pursued; however, it was unclear when this would occur. Therefore, for planning purposes, this study is scheduled for FY 14/15.

Capital Improvement Project Program 10-Year Program - DRAFT		Budget FY 16/17	Forecast FY 17/18	Forecast FY 18/19	Forecast FY 19/20	Forecast FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26
1. Water Supply											
A. Groundwater											
i. Well Rehabilitation											
	Well 7 Rehabilitation	\$ 60,000									
	Well 10 Rehabilitation		\$ 75,000								
	Well 14 Rehabilitation		\$ 50,000								
	Well 9 Rehabilitation			\$ 75,000							
	Well 12 Rehabilitation			\$ 50,000							
	Well 1 Rehabilitation				\$ 75,000						
	Well 14 Rehabilitation				\$ 50,000						
	Well Rehabilitation (2 Wells per year)					\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000
ii. New Wells											
	Re-Activate Well 2 - Construction	\$ 720,000	\$ 680,000								
	Well 18 (Sycamore House) - Design					\$ 120,000					
	Well 18 (Sycamore House) - Construction					\$ 130,000	\$ 900,000				
	Well 19 - Design								\$ 120,000		
	Well 19 - Construction									\$ 1,100,000	
iii. Studies											
	Update Water Well Replacement Study					\$ 100,000					
	Pilot Hole Study							\$ 200,000			
B. Imported Water											
C. Groundwater Basin Recharge											
	CVC Park Stormwater Recharge Project - Preliminary Design	\$ 60,000									
	Stormwater Recharge Project - Construction			\$ 475,000	\$ 375,000						
D. Recycled Water System											
i. Recycled Water											
	Recycled Water System Study										
	Recycled Water System - GWP Contribute										
	Recycled Water System - Extension of System										
ii. Membrane Bioreactor Technology											
WS Total		\$ 840,000	\$ 805,000	\$ 600,000	\$ 500,000	\$ 500,000	\$ 1,050,000	\$ 350,000	\$ 270,000	\$ 1,250,000	\$ 150,000
2. Water Storage											
A. Reservoir Rehabilitation											
i. Roof/Vents Rehabilitation											
	Oak Creek #1 - Roof/Air Vents/Recoat	\$ 320,000									
	Oak Creek #2 - Roof/Air Vents/Recoat		\$ 320,000								
	Rosemont - Roof/Air Vents			\$ 300,000							
	Markridge - Air Vents				\$ 250,000						
	Goss Canyon #1 & #2 - Roof/Air Vents					\$ 400,000					

Capital Improvement Project Program 10-Year Program - DRAFT	Budget FY 16/17	Forecast FY 17/18	Forecast FY 18/19	Forecast FY 19/20	Forecast FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26
ii. Steel Reservoir Re-Coating										
Ordunio Reservoir - Recoating - Design						\$ 45,000				
Ordunio Reservoir - Recoating - Construction							\$ 365,000			
Edmund #2 Reservoir - Recoating - Design							\$ 25,000			
Edmund #2 Reservoir - Recoating - Construction								\$ 350,000		
Cresta Hts #1 & 2 Reservoir - Recoating - Design								\$ 25,000		
Cresta Hts #1 & 2 Reservoir - Recoating - Construction									\$ 230,000	\$ 550,000
iii. Concrete Reservoir Rehabilitation										
Encinal Reservoir - Concrete Rehabilitation			\$ 100,000							
iv. Corrosion Protection										
v. Overflow & Drain System Upgrade										
B. Reservoir Water Quality										
i. Water Mixing System										
Reservoir Water Quality & Mixing System Study				\$ 75,000						
Water Quality Mixing System - Design				\$ 75,000						
Water Quality Mixing System - Construction							\$ 150,000			
iv. Replace common inlet and outlet piping										
C. New Reservoir Water Storage										
WS Total	\$ 320,000	\$ 320,000	\$ 400,000	\$ 400,000	\$ 400,000	\$ 45,000	\$ 540,000	\$ 375,000	\$ 230,000	\$ 550,000
3. Water Distribution										
A. Pipeline Replacement										
Lower Pickens Canyon Crossing & Slope Replacement - 600 LF	\$ 500,000									
Mills Pumpline Replacement - 1500 LF	\$ 600,000									
Annual Pipeline Replacement - 3,000 LF		\$ 900,000								
Annual Pipeline Replacement - 4,000 LF			\$ 1,000,000							
Annual Pipeline Replacement - 4,000 LF				\$ 1,000,000						
Annual Pipeline Replacement - 4,000 LF					\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,300,000	\$ 1,500,000	\$ 1,500,000
B. New Pipelines										
C. Booster Pump System										
i. Annual Pump /Motor Replacement										
Markridge - Booster 12	\$ 50,000									
Annual Booster Replacement - 2 Boosters		\$ 50,000	\$ 70,000	\$ 75,000	\$ 75,000	\$ 80,000	\$ 85,000	\$ 90,000	\$ 95,000	\$ 95,000
ii. Pump Station Upgrade										
Paschall Booster Station inlet piping & valves - Design	\$ 75,000	\$ 200,000	\$ 100,000							
New Booster Pump Station						\$ 220,000	\$ 125,000	\$ 200,000	\$ 125,000	\$ 400,000
iii. VFD Pump Upgrade										
iv. MCC Replacement										
MCC upgrade at Paschall - Design	\$ 75,000	\$ 245,000								
MCC upgrade at Goss Canyon			\$ 75,000	\$ 200,000						

Capital Improvement Project Program 10-Year Program - DRAFT	Budget FY 16/17	Forecast FY 17/18	Forecast FY 18/19	Forecast FY 19/20	Forecast FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26
MCC upgrade at Cresta Heights				\$ 75,000	\$ 200,000					
MCC upgrade at Ocean View					\$ 75,000	\$ 200,000				
MCC upgrade at Edmund #2						\$ 100,000	\$ 200,000			
MCC upgrade at Mills Plant							\$ 100,000	\$ 200,000		
MCC upgrade at Encinal								\$ 100,000	\$ 300,000	\$ 300,000
D. Pressure Reducing Stations										
Annual PRS Installation							\$ 225,000	\$ 250,000		\$ 200,000
E. Miscellaneous Projects										
i. Water Surge Control										
ii. Street/Utility/ Meter Adjustment & Upgrade										
iii. Misc.										
WD Total	\$ 1,365,000	\$ 1,395,000	\$ 1,245,000	\$ 1,350,000	\$ 1,550,000	\$ 1,800,000	\$ 1,935,000	\$ 2,140,000	\$ 2,020,000	\$ 2,495,000
4. Water Treatment										
A. Nitrate Removal										
i. Glenwood										
Replace Ion Exchange Resin at Glenwood						\$ 400,000				
ii. Mills										
B. Chlorine Disinfection										
New Chlorination Station at Markridge Reservoir			\$ 50,000							
New Chlorine Analyzers at Various Sites				\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000	\$ 75,000		
C. Convert to Chloramines										
D. New Federal and State Regulations										
E. Water Quality Studies										
F. MTBE Removal										
WT Total	\$ -	\$ -	\$ 50,000	\$ 75,000	\$ 75,000	\$ 475,000	\$ 75,000	\$ 75,000	\$ -	\$ -
5. Technology										
A. Automated Meter Information (AMI) System										
Install & Integration of AMR & Fix Area Network								\$ 200,000		
B. Supervisory Control and Data Acquisition (SCADA) System										
SCADA RTU Replace - Equipment & Integration	\$ 200,000	\$ 205,000	\$ 430,000	\$ 350,000						
C. Graphical Information System (GIS)										
TECH Total	\$ 200,000	\$ 205,000	\$ 430,000	\$ 350,000	\$ -	\$ -	\$ -	\$ 200,000	\$ -	\$ -
6. Public Safety/Emergency Response										
A. Emergency Electrical Generators										
B. Water Storage										

Capital Improvement Project Program 10-Year Program - DRAFT	Budget FY 16/17	Forecast FY 17/18	Forecast FY 18/19	Forecast FY 19/20	Forecast FY 20/21	Forecast FY 21/22	Forecast FY 22/23	Forecast FY 23/24	Forecast FY 24/25	Forecast FY 25/26
Seismic Sensors & Valve Actuators - Duns/Pickens	\$ 75,000									
Seismic Sensors & Valve Actuators - Oak Creek		\$ 75,000								
Seismic Sensors & Valve Actuators - Ordunio			\$ 75,000							
C. Security										
D. Miscellaneous										
SF/ER Total	\$ 75,000	\$ 75,000	\$ 75,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
7. Facilities & Planning										
A. Main Office										
Needs Assessment Study				\$ 25,000						
New Building - Design					\$ 150,000					
New Building - Construction						\$ 750,000	\$ 750,000			
B. Glenwood Plant										
C. Mills Plant										
D. Reservoir Site Improvements										
Roof Replacement at Old Encinal				\$ 125,000						
Pickens - Access Road Improvements					\$ 175,000	\$ 130,000	\$ 250,000			
Edmund #2 - Lower Access Road Improvements					\$ 100,000		\$ 350,000			
Edmund #2 - Upper Access Road Improvements								\$ 350,000		
Cresta Heights - Site Improvements								\$ 90,000		
Rosemont - Site Improvements										\$ 125,000
Shields - Access Road Improvements										\$ 180,000
5. Misc. Properties										
6. District Planning										
F & P Total	\$ -	\$ -	\$ -	\$ 150,000	\$ 425,000	\$ 880,000	\$ 1,350,000	\$ 440,000	\$ -	\$ 305,000
Capital Improvement Projects - Total	\$ 2,800,000	\$ 2,800,000	\$ 2,800,000	\$ 2,825,000	\$ 2,950,000	\$ 4,250,000	\$ 4,250,000	\$ 3,500,000	\$ 3,500,000	\$ 3,500,000
Capital Improvement Projects - 10-Year Total										\$ 33,175,000

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

To: Engineering Committee
From: Thomas A. Love, General Manager
Subject: Main Office Building Improvements

July 29, 2016

ACTION ITEM:

Main Office Building Improvements – Discussion regarding repair and improvement needs for the Districts' main office building.

BACKGROUND

The Districts' main office building was designed by Jack Simpson Architects and constructed in 1966 to replace the District's original office. Attached are two news articles published at that time. Since 1966 there have been some additions and modifications to the office increasing the building space from 3,800 to 4,100 square feet (see attached site plan and floor plan). Approximately ten years ago structural improvements were required to reinforce the glulam beams supporting the southern building over the parking area.

Currently all available space within the main office is being utilized and in a less than ideal manner in some cases. For example, the IT Manager shares his office with the computer server room which is a noisy environment, the Engineering Department does not have room for the administrative assistant and the Board room can only accommodate a small number of public attendees. Over the years portions of the outer building have deteriorated beyond repair. The most obvious being the wooden timbers over the open courtyard and the flat roof. Other minor maintenance and repairs are also necessary to improve the appearance and functionality of the building.

DISCUSSION:

The main office building will require significant renovation and repairs within the next few years with an estimated cost range of \$750,000 to \$1,500,000 depending on the extent and magnitude of the renovation. The upper range of estimated cost includes a complete demolition and reconstruction of the building with about 30% more floor space.

Sale of the building and property and relocation to another purchased or leased space is an alternative. The Glenwood Plant property could accommodate a new main office building; however it is not within the District boundaries. The regular meetings of the Board are required to be held within the District boundaries.

RECOMMENDATION:

Given the current condition and appearance of the Main Office Building the necessary minor maintenance and repairs should be completed this year. The FY 2017 Budget includes \$38,000 for Main Office upgrades and \$16,000 for office maintenance. Staff is preparing a maintenance and repair "punch list" which will include minor painting and restoration and also removal or replacement of the timbers over the open courtyard.

Funding for the comprehensive renovation or replacement of the Main Office should be included in the Districts CIP Budget and prioritized with the CIP infrastructure projects.

Submitted by:

Thomas A. Love
General Manager

Attachments:

1. Newspaper Articles
2. site plan and floor plan

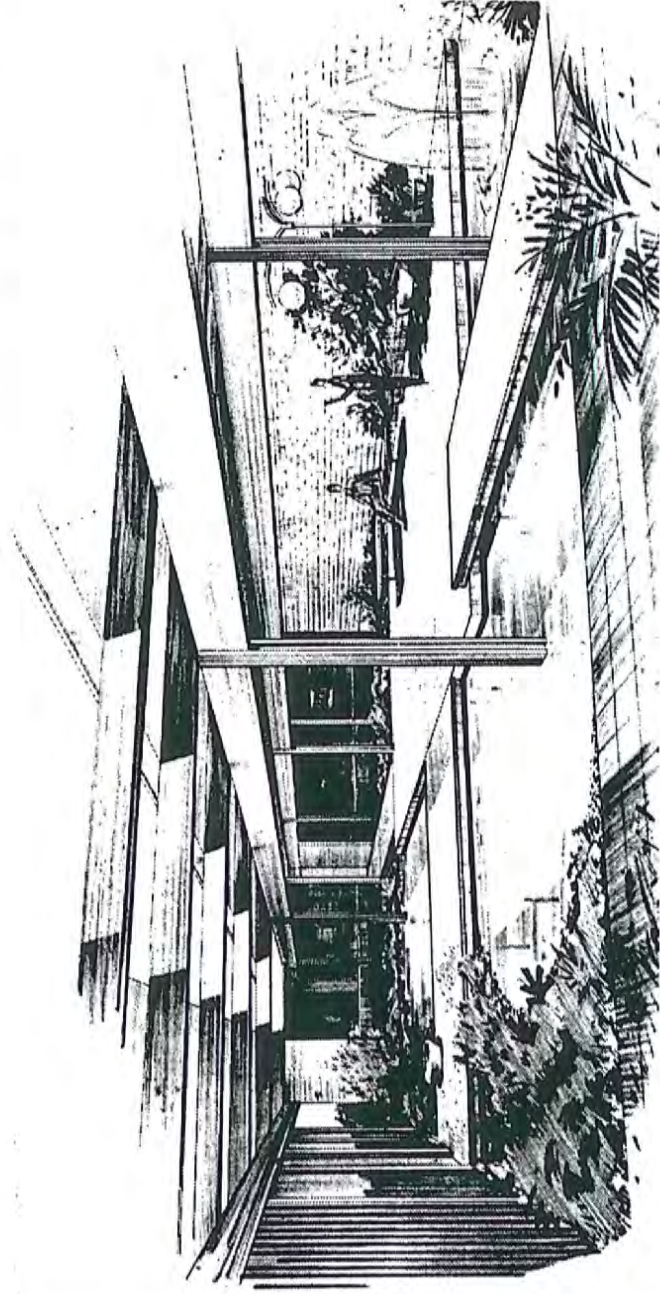
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CV County Water District Building



JACK H. SIMLISON
ARCHITECT A.I.A.
SAN FRANCISCO, CALIF.

NEW BUILDING—Shown here are two renderings by architect Jack H. Simlison of the new \$95,000 Crescenta Valley County Water District buildings to be constructed at 2700 Foothill boulevard. Above is a front view of the masonry and quarry-tiled front of the three-building complex, which will occupy a 3,800-square-foot area. The walkways connecting the three buildings, illustrated at right, will lend a relaxing atmosphere to the modernistic structures. Official groundbreaking ceremonies were held last Saturday, and construction is expected to get underway this week or early next week, according to water district official Bob Sloan. Tentative target date for completion of the new facilities, he said, is Oct. 1. The CVCWD is owner-builder of the project.



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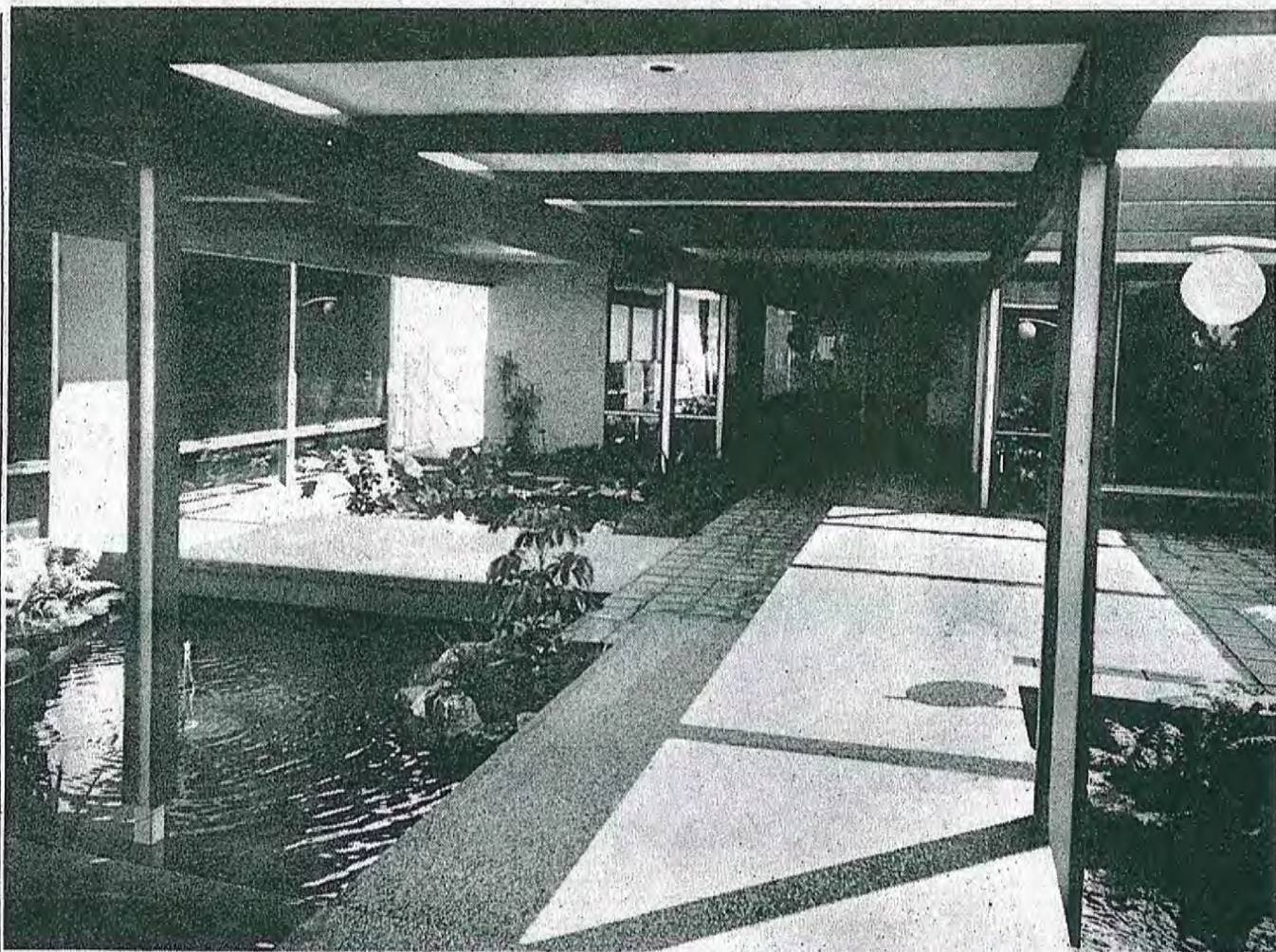
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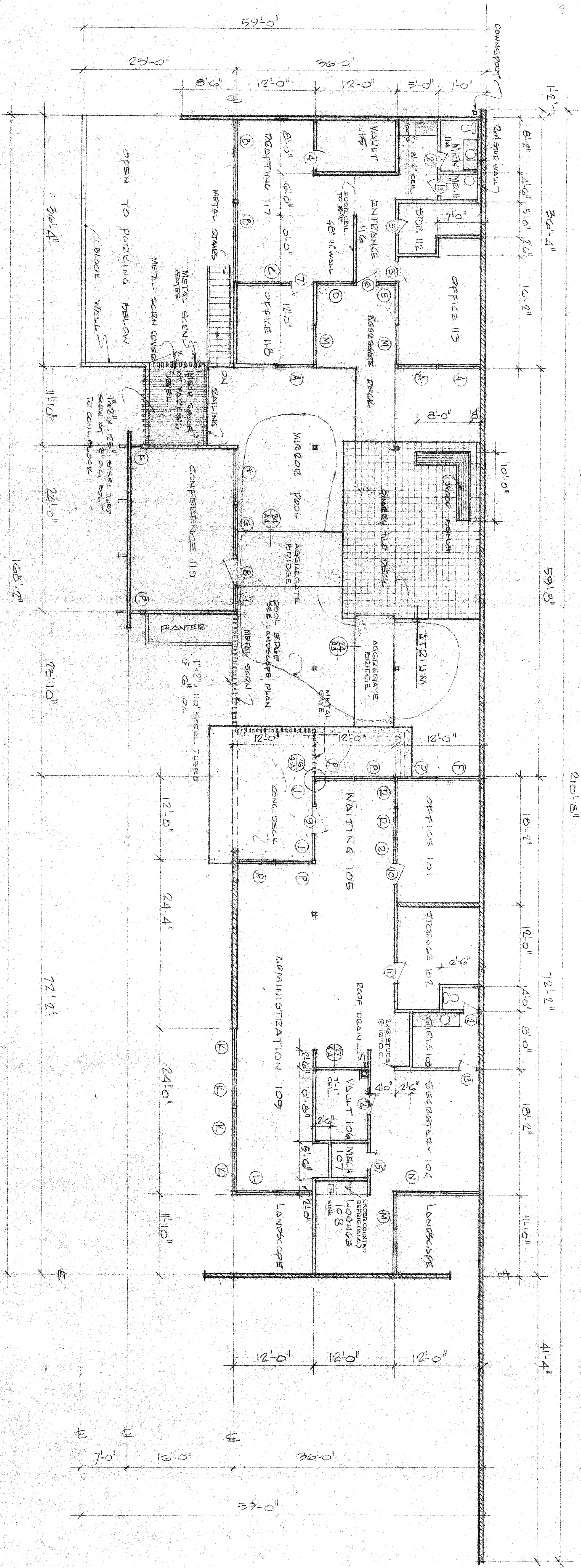
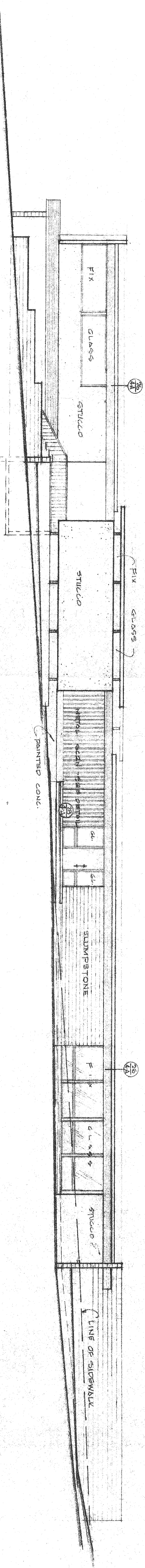
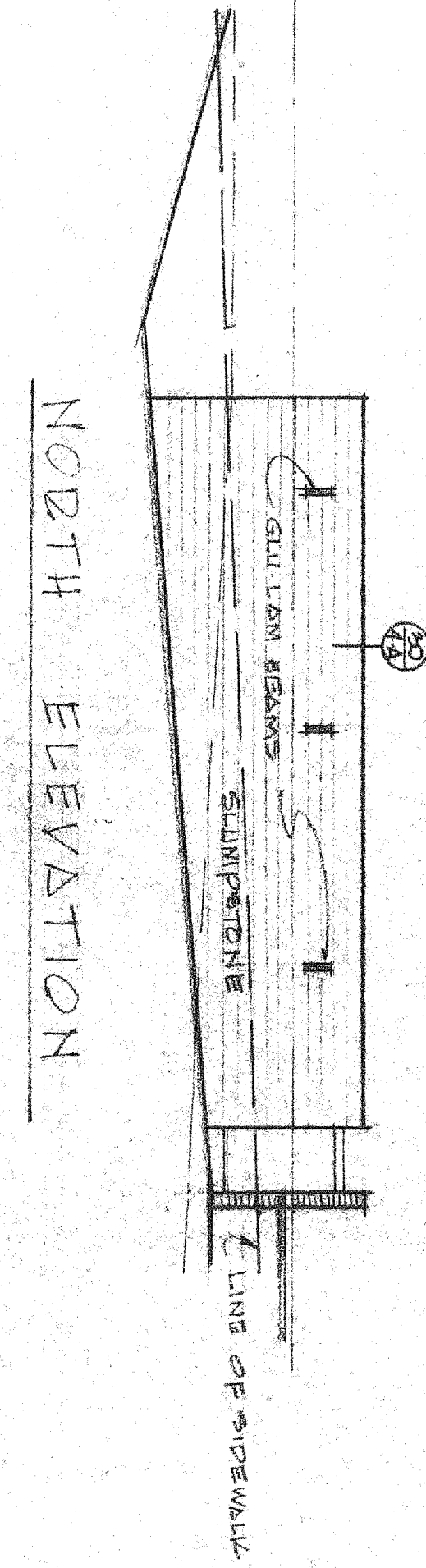
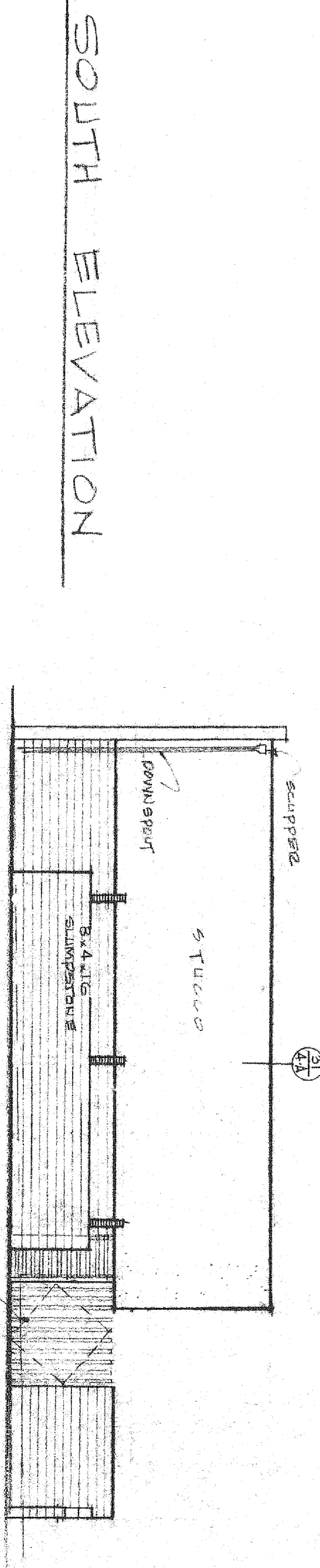
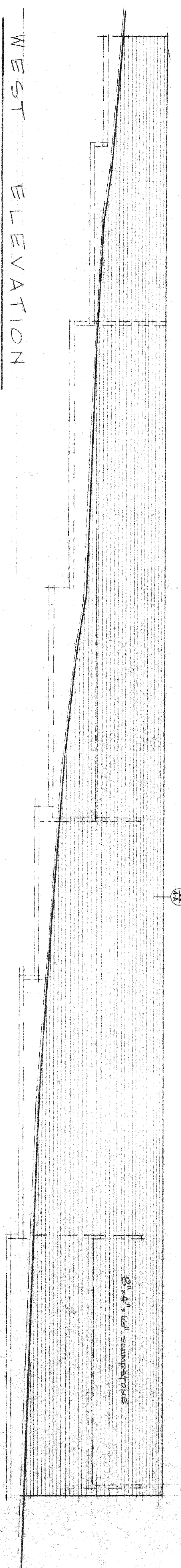


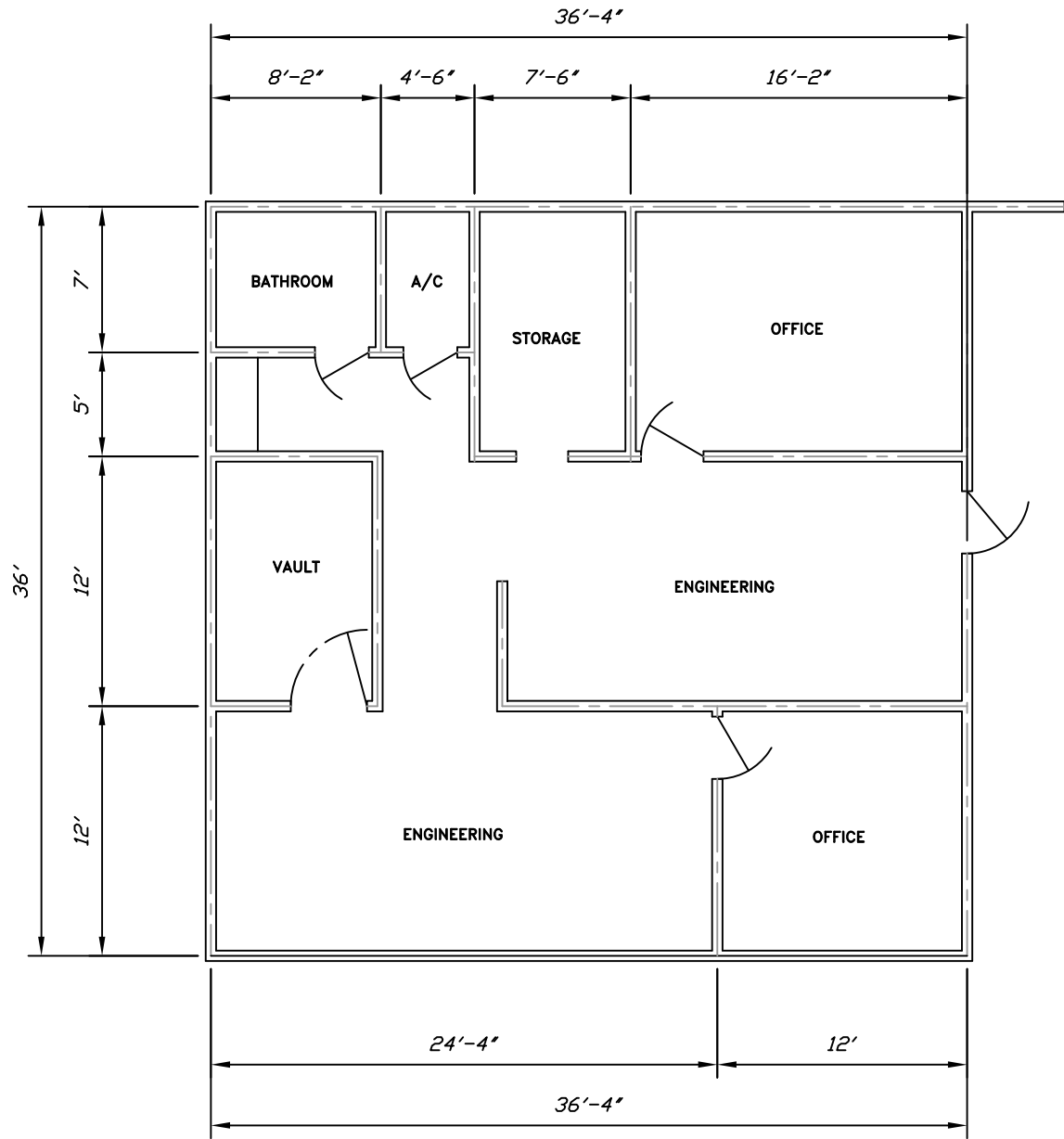
NEW HEADQUARTERS
— Crescenta Valley County Water District staff members tomorrow will be working in their new offices at 2700 Foothill boulevard, across from the Crescenta Shopping Center. An open house is being planned for next month. The beautifully landscaped entrance to the new building is shown in the top picture. Shown below in the antiquated quarters to be left behind are, from left, Sharon Simpson, Anne Horn, Renee Topia, and Millicent Heinz. The old facilities are located at 2904 Foothill.

—Stevens Studio



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FLOOR PLAN
SCALE: 1/4" = 1'-0"
1,307 Sq. Ft.

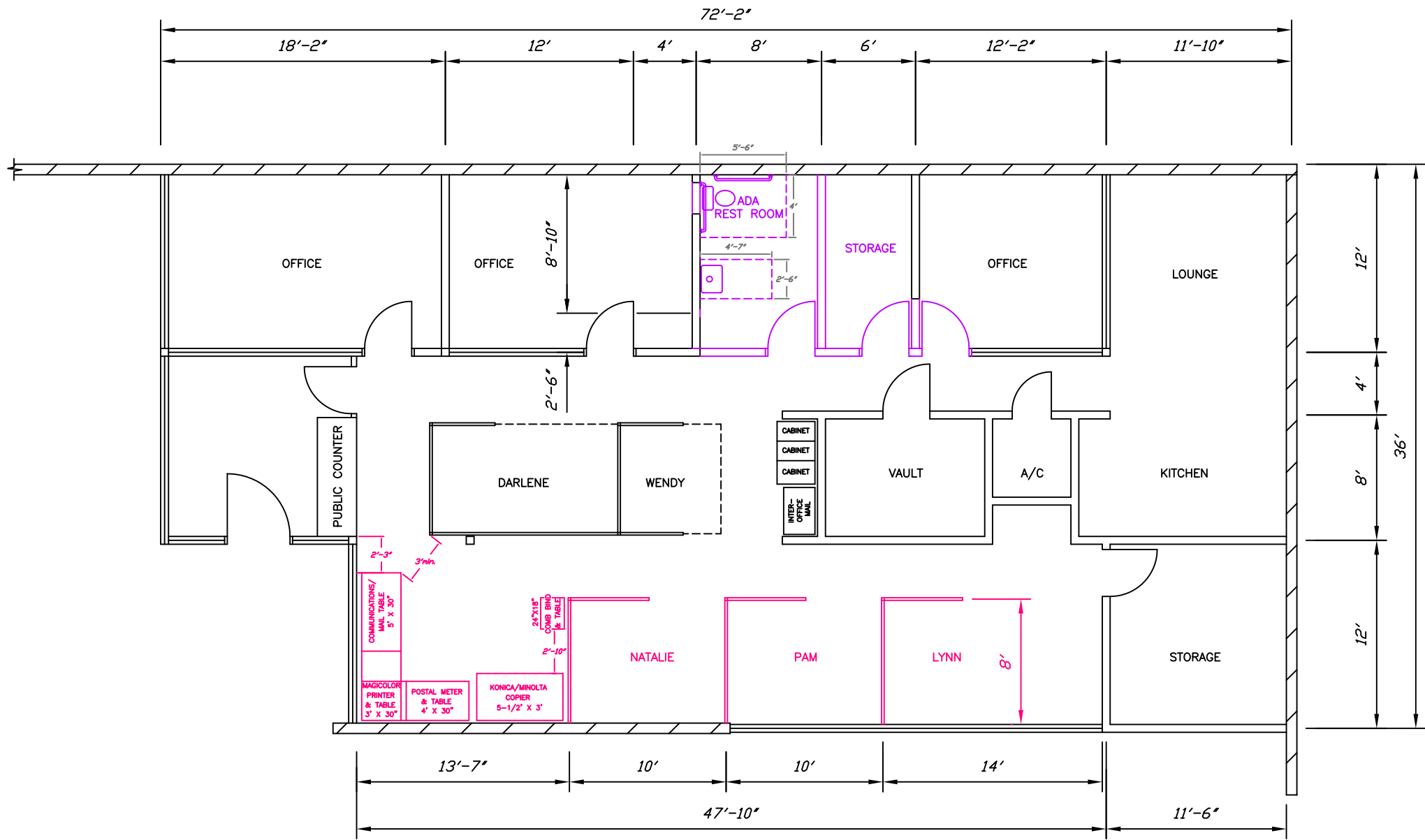
No.	Revision/Issue	Date

CRESCENTA VALLEY WATER DISTRICT

CVWD MAIN OFFICE SOUTH
FLOOR PLAN

DRAWN BY:	J. HUERTA	3/30/16
CHECKED BY:	D. GOULD	
APPROVED:		
AS BUILT:		

JOB NO.	SHEET
	<u>1</u> of <u>1</u>
DATE:	FILE NO.
3/30/16	
SCALE:	
1/4" = 1'-0"	



FLOOR PLAN
SCALE: 1/4" = 1'-0"
2,448 Sq. Ft.

No.	Revision/Issue	Date

CRESCENTA VALLEY WATER DISTRICT

CVWD MAIN OFFICE NORTH

REMODEL

DRAWN BY:	J. HUERTA	11/15/06
CHECKED BY:	D. GOULD	12/14/06
APPROVED:	D. GOULD	12/14/06
AS BUILT:		

JOB NO.	SHEET
DATE: 11/15/06	1 of 1
SCALE: 1/4" = 1'-0"	FILE NO.