AGENDA

REGULAR MEETING OF THE BOARD OF COMMISSIONERS
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY (VVWRA)
Victorville City Hall – Conference Room "D", 14343 Civic Drive, Victorville, CA 92392
Phone: (760) 246-8638

MEETING DATE: Thursday, April 18, 2019 **TIME: 8:00 AM (Closed Session)**
9:00 AM (Regular Session)

CALL TO ORDER

PUBLIC COMMENTS – CLOSED SESSION AGENDA

CLOSED SESSION

CLOSED SESSION: During the course of conducting the business set forth on this agenda as a regular meeting of the Board, the Chair may convene the Board in closed session to consider matters of pending real estate negotiations, pending or potential litigation, or personnel matters, pursuant to Government Code Sections 54956.8, 54956.9, 54957 or 54957.6, as noted.
Reports relating to (a) purchase and sale of real property; (b) matters of pending or potential litigation; or (c) employment actions, or which are exempt from public disclosure under the California Public Records Act, may be reviewed by the Board during a permitted closed session and are not available for public inspection. At such time the Board takes final action on any of these subjects, the minutes will reflect all required disclosures of information. Closed Session is scheduled to commence at 8:00 a.m.. If the matters discussed in closed session require additional time beyond 9:00 a.m., in deference to the public, the Board may continue the Closed Session discussion after Open Session is concluded. In that case, Closed Session will resume after the Commissioners Comments section and any reportable action will be reported after the continued Closed Session has concluded and before adjournment.

CONFERENCE WITH LEGAL COUNSEL- (Gov. Code Sec. 54954.5-54956.9(d)):

1. Flow Diversion

CONFERENCE WITH LEGAL COUNSEL-PUBLIC EMPLOYEE NEGOTIATION (Gov. Code Sections 54957(b)(1)):

CONFERENCE WITH LEGAL COUNSEL-POTENTIAL LITIGATION (Gov. Code Sec. 54956.9(d)):

2. Threatened or Potential Litigation- Upper Narrows Project

3. Threatened or Potential Litigation- Lahontan- NPDES Permit Negotiations

CONFERENCE WITH LEGAL COUNSEL—EXISTING LITIGATION- (Gov. Code Sec. 54956.9 (1)(D)):

Valles v. VVWRA, Case No. CIVDS 1822066

REGULAR SESSION

CALL TO ORDER & PLEDGE OF ALLEGIANCE

REPORT FROM CLOSED SESSION

PUBLIC COMMENTS – REGULAR SESSION AGENDA

ANNOUNCEMENTS AND CORRESPONDENCE:

4. **Possible conflict of interest issues**

5. **Staff Introductions- New Hire**

CONSENT CALENDAR:

6. **Approve March 2019 Disbursement Registers**

7. **Approve Minutes from the March 21, 2019 Regular Meeting**

8. **Recommendation to Approve the Purchase of Main Utility Breaker**

REPORTS & PRESENTATIONS:

9. **Presentation: Programmable Logic Controls (PLC's)**

10. **Presentation: The Impact of Water Conservation and Declining Flows on Wastewater Treatment**

ACTION & DISCUSSION ITEMS:

11. **Recommendation to Approve Professional Services for Howard Almgren, PhD., P.E.**

12. **Recommendation to Approve Resolution 2019-05 to Amend the Surplus Property**

13. **Recommendation to Approve Gas Collection Facilities Lease and Energy Services Agreement**

14. **Memo- VVWRA Interceptor Capacity Study Prepared by Dudek**

STAFF/PROFESSIONAL SERVICES REPORTS:

15. **Financial and Investment Report – March 2019**

16. **Operations & Maintenance Report – March 2019**

17. **Environmental Compliance Department Reports – March 2019**

18. **Septage Receiving Facility Reports – March 2019**

19. **Safety & Communications Report – March 2019**

NEXT VVWRA BOARD MEETING:

Thursday, May 16, 2019 - Regular Meeting of the Board of Commissioners

FUTURE AGENDA ITEMS

Construction Easement Agreement Lewis Learning Center

USDA Loan and Grant for the Oro Grand Interceptor Project

O&M Building Extension

COMMISSIONER COMMENTS

CLOSED SESSION (If Closed Session is continued as set forth above)

ADJOURNMENT

Agenda Posting: In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted in the main lobby of the Authority's Administrative offices not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the Board Secretary.

Items Not Posted: In the event any matter not listed on this agenda is proposed to be submitted to the Board for discussion and/or action, it will be done in compliance with Section 54954.2(b) as an emergency item or because there is a need to take immediate action, which came to the attention of the Board subsequent to the posting of the agenda, or as set forth on a supplemental agenda posted in the manner as above, not less than 72 hours prior to the meeting date.

Public Comments: Any member of the public may address the Board of Commissioners on specific agenda items or matters of general interest. As determined by the Chair, speakers may be deferred until the specific item is taken for discussion and remarks may be limited to five minutes. Persons desiring to submit paperwork to the Board of Commissioners shall provide a copy of any paperwork to the Board Secretary for the official record.

Matters of Interest addressed by a member of the public and not listed on this agenda cannot have action taken by the Board of Commissioners except as authorized by Section 54954.2(b). If you wish to speak, please complete a Speaker's Form (located at the table in the lobby outside of the Board Room) and give it to the Board Secretary prior to the start of the meeting.

If any individual wishes to challenge an action of the Commission in court, he or she may be limited to raising those issues that were raised at the public hearing pertaining to the Commission's actions, or in any written correspondence delivered to the Commission on or prior to the public hearing.

Consent Calendar: All matters placed on the Consent Calendar are considered as not requiring discussion or further explanation and unless any particular item is requested to be removed from the Consent Calendar by a Commissioner, staff member or member of the public in attendance, there will be no separate discussion of these items. All items on the Consent Calendar will be enacted by one action approving all motions, and casting a unanimous ballot for resolutions included on the consent calendar. All items removed from the Consent Calendar shall be considered in the regular order of business.

The Chair will determine if any items are to be deleted from the Consent Calendar.

Items Continued: Items may be continued from this meeting without further notice to a Committee or Board meeting held within five (5) days of this meeting per Government Code Section 54954.2(b)(3).

Meeting Adjournment: This meeting may be adjourned to a later time and items of business from this agenda may be considered at the later meeting by Order of Adjournment and Notice in accordance with Government Code Section 54955 (posted within 24 hours).

Accommodations for the Disabled: In compliance with the Americans with Disabilities Act (ADA), the Board of Commissioners Meeting Room is wheelchair accessible. If you require any special disability related accommodations, please contact the Victor Valley Wastewater Reclamation Authority Board Secretary's office at 760-246-2892 at least 72 hours prior to the scheduled meeting. Requests must specify the nature of the disability and the type of accommodation requested.

Victor Valley Wastewater Reclamation Authority
A Joint Powers Authority and Public Agency of the State of California

20111 Shay Rd. Victorville, CA 92394
Telephone: (760) 246-8638
Fax: (760) 948-9897

DATE: April 1, 2019

TO: Logan Olds
General Manager

FROM: Chieko Keagy
Controller

SUBJECT: Cash Disbursements Register

RECOMMENDED ACTION

It is recommended that the Board of Commissioners approve the cash disbursements and payroll register for the Victor Valley Wastewater Reclamation Authority.

BACKGROUND

The Cash Disbursements Register totals represented below are for the month of MARCH 2019, check numbers 122297-122386 and ACH's.

Accounts Payable			
Checks	***ACH's and EFT's***	***Payroll***	***Total***
$215,905.95	***$922,136.24***	***$309,745.65***	***$1,447,787.84***

Victor Valley Reclamation Authority
Cash Disbursement Register
From 3/1/19 through 3/31/19

Check Number	Check Date	Effective Date	Fund Code	Vendor Name	Transaction Description	Document Number	Check Amount
122297	3/7/2019	3/7/2019	07	Airgas Usa, Llc	Digester Project Nitrogen Rental	9959683576	$ 82.11
122297	3/7/2019	3/7/2019	01	Airgas Usa, Llc	E&I Gloves and Nitrogen	9085115065	$ 311.34
122297	3/7/2019	3/7/2019	01	Airgas Usa, Llc	Gas Replacements	9085462669	$ 1,747.54
122297	3/7/2019	3/7/2019	01	Airgas Usa, Llc	Gloves Lineman	9085115004	$ 212.54
122298	3/7/2019	3/7/2019	01	Liberty Utilities- Apple Valley Ranchos Water	Acct# 015133	22519	$ 169.48
122298	3/7/2019	3/7/2019	01	Liberty Utilities- Apple Valley Ranchos Water	Acct# 156245	022519	$ 635.51
122298	3/7/2019	3/7/2019	01	Liberty Utilities- Apple Valley Ranchos Water	Acct# 156250	022719	$ 94.54
122299	3/7/2019	3/7/2019	01	Applied Industrial Technologies	BB Exhaust Belts	7015533306	$ 25.21
122300	3/7/2019	3/7/2019	01	Apple Valley Transfer & Storage Dba Shredyourdocs.Com	Document Shredding Services	5124A	$ 45.00
122300	3/7/2019	3/7/2019	01	Apple Valley Transfer & Storage Dba Shredyourdocs.Com	Document Shredding Services	5247	$ 45.00
122300	3/7/2019	3/7/2019	01	Apple Valley Transfer & Storage Dba Shredyourdocs.Com	Document Shredding Services	5338	$ 45.00
122300	3/7/2019	3/7/2019	01	Apple Valley Transfer & Storage Dba Shredyourdocs.Com	Document Shredding Services	5339	$ 45.00
122301	3/7/2019	3/7/2019	01	World Oil Environmental Services	Used Oil Disposal	I500-00414103	$ 75.00
122302	3/7/2019	3/7/2019	01	Atmospheric Analysis And Consulting, Inc	Analysis and Reporting	A-19420	$ 1,385.00
122303	3/7/2019	3/7/2019	01	City Employees Associates	Supervisors Due Deductions	021919	$ 50.00
122304	3/7/2019	3/7/2019	01	Concorde Communications	Answering and Telephone Services	190210014	$ 94.90
122305	3/7/2019	3/7/2019	01	Daily Press	Septage Receiving Attendant Advertising	1901-00004121	$ 132.65
122306	3/7/2019	3/7/2019	01	Smart Care Equipment Solutions	Lab Dishwasher Repairs	95471241	$ 3,343.33
122307	3/7/2019	3/7/2019	07	Environmental Water Solutions, Inc.	Digester Hatch Cover Kits	2860	$ 788.20
122308	3/7/2019	3/7/2019	01	Flyers Energy, Llc	Gasoline	CFS-1836794	$ 1,088.44
122308	3/7/2019	3/7/2019	01	Flyers Energy, Llc	Gasoline	CFS-1846232	$ 1,720.35
122309	3/7/2019	3/7/2019	07	G.A. Osborne Pipe & Supply	Digester Project Parts	397308	$ 353.52
122309	3/7/2019	3/7/2019	01	G.A. Osborne Pipe & Supply	Stainless Pipe	397305	$ 489.19
122310	3/7/2019	3/7/2019	01	Harrington Industrial Plastics	Strainer Covers	012J4336	$ 251.46
122311	3/7/2019	3/7/2019	01	Honest Johns Septic Service, Inc.	VV Pumping and Dumping	7941	$ 550.00
122312	3/7/2019	3/7/2019	07	Jericho Systems, Inc.	CEQA Documentation for Desert Knolls	18-VVWRA-02-02	$ 11,443.54
122312	3/7/2019	3/7/2019	07	Jericho Systems, Inc.	Environmental Construction Monitoring Desert Knolls Wash	18-VVWRA-02-03	$ 20,946.70
122313	3/7/2019	3/7/2019	01	Konica Minolta Business Solutions	Printing Charges	9005451186	$ 293.58
122314	3/7/2019	3/7/2019	01	Mcr Technologies	Dig 5 Hex Temperature Transmitter	37870	$ 1,147.02
122315	3/7/2019	3/7/2019	01	Multi W Sytems, Inc	2G O-Rings and Seals	31930316	$ 956.01
122316	3/7/2019	3/7/2019	01	Napa Victorville	Fleet Vehicle Batteries	172138	$ 460.35
122317	3/7/2019	3/7/2019	01	Orkin	Hesperia Subregional Pest Control	182068929	$ 150.00
122317	3/7/2019	3/7/2019	01	Orkin	Pest Control	180237366	$ 390.61
122318	3/7/2019	3/7/2019	01	Prudential Overall Supply	Uniform Service	22753776	$ 534.17
122318	3/7/2019	3/7/2019	01	Prudential Overall Supply	Uniform Service	22757384	$ 560.94
122319	3/7/2019	3/7/2019	01	Quantum Labs, Inc	Quantum Labs Nitrile Gloves	INV-435944	$ 2,286.50
122320	3/7/2019	3/7/2019	07	R.F. Macdonald Co.	Monitor Sensors for Digs Vibration & Temp	272210	$ 1,306.82
122321	3/7/2019	3/7/2019	01	Robertson'S Ready Mix, Ltd	Ramp Concrete Delivery	395684	$ 819.65
122322	3/7/2019	3/7/2019	01	Royal Wholesale Electric	Draft Starter & Relays	6441-587022	$ 737.78
122322	3/7/2019	3/7/2019	01	Royal Wholesale Electric	Draft Starters & Relays	6441-587409	$ 1,271.45
122322	3/7/2019	3/7/2019	01	Royal Wholesale Electric	E&I Inventory Restock	6441-586676	$ 741.65
122322	3/7/2019	3/7/2019	01	Royal Wholesale Electric	E&I Inventory Restock	6441-586834	$ 1,186.34
122322	3/7/2019	3/7/2019	01	Royal Wholesale Electric	Ethernet Switch for Blowers	6441-587057	$ 1,021.10
122323	3/7/2019	3/7/2019	01	Safetynet Inc.	LOTO Training	66106	$ 1,155.60
122324	3/7/2019	3/7/2019	01	San Bernardino County Fire Protection Dist	CUPA Permit SB Co Fire	IN0136637	$ 1,192.00
122325	3/7/2019	3/7/2019	01	Sparkletts Drinking Water	Bottled Water	14877093 030319	$ 947.91
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	AV Subregional Compressor Crank Case Heaters	16751	$ 2,000.00
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	AV Subregional Service Call	22595	$ 946.52
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	Hesperia Subegional Service Call	22592	$ 842.30
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	Hesperia Subregional Service Call	22596	$ 2,000.00
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	Hesperia Subregional Service Call	22600	$ 170.00
122326	3/7/2019	3/7/2019	01	Thurlow'S Heating & A/C Inc.	Thurlow's Call Out Service	22591	$ 2,979.42
122327	3/7/2019	3/7/2019	01	United Rentals Northwest, Inc	Boom Rental	166048481-001	$ 155.53
122328	3/7/2019	3/7/2019	01	Cintas Corporation	First Aid Supplies	5012408616	$ 406.24
122328	3/7/2019	3/7/2019	01	Cintas Corporation	First Aid Supplies	5012996673	$ 348.04
122329	3/13/2019	3/13/2019	01	Airgas Usa, Llc	Gloves for Nitrogen	9085563615	$ 289.15
122329	3/13/2019	3/13/2019	01	Airgas Usa, Llc	Nitrogen Delivery	9085462668	$ 89.49
122330	3/13/2019	3/13/2019	01	Applied Industrial Technologies	Maintenance Belts	7015659832	$ 233.44
122331	3/13/2019	3/13/2019	07	Control Soft, Inc	Intune Maintenance Agreement	13120W	$ 3,700.00
122332	3/13/2019	3/13/2019	01	Daily Press	Notice of Public Hearing	300180400	$ 2,251.68
122333	3/13/2019	3/13/2019	01	Daily Press	VVWRA Public Notice	300180498	$ 147.70
122334	3/13/2019	3/13/2019	07	Dezurik C/O C.S.-Amsco	Digester Project Pneumatic Actutors	RPI/65002856	$ 14,990.18
122335	3/13/2019	3/13/2019	01	Done-Right Concrete Construction Services Inc.	Concrete Ramp Work	373	$ 1,900.00
122335	3/13/2019	3/13/2019	01	Done-Right Concrete Construction Services Inc.	Form & Form Concrete Pad	374	$ 1,980.00
122336	3/13/2019	3/13/2019	01	Edenbros, Llc	Multi-Tech Repairs	2006027242	$ 881.77
122337	3/13/2019	3/13/2019	01	G.A. Osborne Pipe & Supply	Emergency Drying Bed Pipe Material	397451	$ 909.67
122337	3/13/2019	3/13/2019	01	G.A. Osborne Pipe & Supply	Piping Reducer	397564	$ 59.55
122338	3/13/2019	3/13/2019	01	Gfoa	ANGELA VALLES MEMBERSHIP RENEWAL 222361002	0161002	$ 160.00
122339	3/13/2019	3/13/2019	01	Heritage Victor Valley Medical Group	Carrera Medical Attention	536	$ 65.00
122340	3/13/2019	3/13/2019	01	Hi-Desert Communications	Site Rent	38302	$ 100.00
122341	3/13/2019	3/13/2019	07	J&K Welding	Digester Welding	1467	$ 3,160.00
122342	3/13/2019	3/13/2019	01	Luhdorff And Scalmanini Consulting Engineers, Inc.	3 Year Groundwater Reporting	34625	$ 14,568.00
122343	3/13/2019	3/13/2019	01	Nobel Systems Inc.	GIS Date Update and Conversion Service	14523	$ 4,800.00
122344	3/13/2019	3/13/2019	01	Orkin	AV Subregional Pest Control	180238351	$ 150.00
122344	3/13/2019	3/13/2019	01	Orkin	Pest Control Service	181741584	$ 390.61
122345	3/13/2019	3/13/2019	07	R.F. Macdonald Co.	Gould Pump Repair	271995	$ 1,157.94
122346	3/13/2019	3/13/2019	01	Robertson'S Ready Mix, Ltd	Concrete Pad	399754	$ 2,692.09
122347	3/18/2019	3/18/2019	01	Donna Anthony	Retiree Health Benefit Allowance	ANTH031819	$ 435.00
122348	3/18/2019	3/18/2019	01	Dan Sentman	Retiree Health Benefit Allowance	SENT031819	$ 224.41
122349	3/22/2019	3/22/2019	01	Ced	DAFT Compressor Contactors	9085-681322	$ 539.83
122349	3/22/2019	3/22/2019	01	Ced	Explosion Proof Boxes for Otoe	9085-681988	$ 75.43
122350	3/22/2019	3/22/2019	01	Detection Instrument Corporation	Odaleg Services	4060-42217	$ 1,035.29
122351	3/22/2019	3/22/2019	01	Flyers Energy, Llc	Gasoline	CFS-1865820	$ 1,235.21
122352	3/22/2019	3/22/2019	01	G.A. Osborne Pipe & Supply	Emergency Drying Bed Piping Material	397841	$ 816.83
122353	3/22/2019	3/22/2019	01	Gfoa	Keagy - Closing Event GFOA Conference	2903236	$ 25.00
122353	3/22/2019	3/22/2019	01	Gfoa	Parker - Closing Event GFOA Conference	2903238	$ 25.00
122353	3/22/2019	3/22/2019	01	Gfoa	Wang - Closing Event GFOA Conference	2903239	$ 25.00
122354	3/22/2019	3/22/2019	01	Konica Minolta Business Solutions	Printing Charges	9005481370	$ 375.62
122355	3/22/2019	3/22/2019	01	Luhdorff And Scalmanini Consulting Engineers, Inc.	Groundwater Reporting	34668	$ 7,629.55
122356	3/22/2019	3/22/2019	01	Mailfinance	Postage Lease	N7614521	$ 269.61
122357	3/22/2019	3/22/2019	01	Orkin	Pest Control Service	181741585	$ 390.61

Victor Valley Reclamation Authority
Cash Disbursement Register
From 3/1/19 through 3/31/19

Check Number	Check Date	Effective Date	Fund Code	Vendor Name	Transaction Description	Document Number		Check Amount
122358	3/22/2019	3/22/2019	01	Prudential Overall Supply	Uniform Service	22760984	$	536.02
122358	3/22/2019	3/22/2019	01	Prudential Overall Supply	Uniform Service	22764457	$	539.26
122359	3/22/2019	3/22/2019	07	Royal Wholesale Electric	Digester Project E & I Material	6441-587278	$	907.87
122359	3/22/2019	3/22/2019	07	Royal Wholesale Electric	Digester Project E & I Material	6441-587411	$	3,728.77
122359	3/22/2019	3/22/2019	07	Royal Wholesale Electric	Digester Project E & I Material	6441-587836	$	542.58
122359	3/22/2019	3/22/2019	07	Royal Wholesale Electric	Digester Project E & I Material	6441-587851	$	2,842.25
122359	3/22/2019	3/22/2019	07	Royal Wholesale Electric	Digester Project E & I Material	6441-588376	$	2,107.07
122359	3/22/2019	3/22/2019	01	Royal Wholesale Electric	EQ Aerator Overloads	6441-587497	$	1,715.11
122360	3/22/2019	3/22/2019	01	Solinst Canada Ltd	Water Level Temp Meter	12814554	$	1,955.11
122361	3/22/2019	3/22/2019	01	Transcat	TPI-40 Hand Pump Repair	1466271	$	235.61
122362	3/22/2019	3/22/2019	01	Yale Chae Equipment And Services	JCB Control Panel Repair	PSV498738	$	4,449.94
122362	3/22/2019	3/22/2019	01	Yale Chae Equipment And Services	JCB Control Panel Repair	PSV498738	$	(4,449.94)
122363	3/27/2019	3/27/2019	01	Yale Chae Equipment And Services	JCB Control Panel Repair	PSV498738	$	4,449.94
122364	3/28/2019	3/28/2019	01	All Pro Pest Control	Weed Spraying Service	032019	$	1,950.00
122365	3/28/2019	3/28/2019	01	Atmospheric Analysis And Consulting, Inc	Analysis and Reporting	A-19545	$	1,385.00
122366	3/28/2019	3/28/2019	07	Automation Direct	Electrical Enclosure	9699773	$	944.00
122366	3/28/2019	3/28/2019	07	Automation Direct	Electrical Enclosure	9704752	$	1,274.60
122367	3/28/2019	3/28/2019	01	Larry Bird	Commissioner Stipend	BIRD032119	$	100.00
122368	3/28/2019	3/28/2019	01	James Cox	Commissioner Stipend	COX032119	$	100.00
122369	3/28/2019	3/28/2019	01	Davis Electric, Inc	Labor Otoe PS Grinder Conduit and Coring Installation	19-0045	$	1,958.00
122369	3/28/2019	3/28/2019	01	Davis Electric, Inc	Otoe PS Grinder Labor for Wire Pul and Landing	19-0046	$	1,958.00
122369	3/28/2019	3/28/2019	01	Davis Electric, Inc	pH Relocation At AWRP Conduit Run Davis Elect	19-0047	$	1,958.00
122369	3/28/2019	3/28/2019	01	Davis Electric, Inc	pH Relocation At AWRP Wire Pull and Install	19-0048	$	1,958.00
122370	3/28/2019	3/28/2019	01	G.P. Electric	Ebara Pump Repair	105055	$	4,526.11
122371	3/28/2019	3/28/2019	01	High Desert Laser Graphics	Commissioner Name Plate - Holland	46261	$	11.85
122371	3/28/2019	3/28/2019	01	High Desert Laser Graphics	Commissioner Name Plates - Bishop	46090	$	35.56
122372	3/28/2019	3/28/2019	07	Jericho Systems, Inc.	Environmental Construction Monitoring Desert Knolls Wash	18-VVWRA-02-04	$	14,057.15
122373	3/28/2019	3/28/2019	01	Mojave Desert A.Q.M.D.	MDAQMD Permit Renewal	MD10234	$	1,100.71
122374	3/28/2019	3/28/2019	01	Napa Victorville	Battery Core Deposit	174700	$	40.79
122375	3/28/2019	3/28/2019	01	Scott Nassif	Commissioner Stipend	NASS032119	$	100.00
122376	3/28/2019	3/28/2019	01	Prudential Overall Supply	Uniform Service	22768611	$	552.77
122376	3/28/2019	3/28/2019	01	Prudential Overall Supply	Uniform Service	22772577	$	574.51
122377	3/28/2019	3/28/2019	01	R.F. Macdonald Co.	Grundfos Pump Mech Seals & O-Rings	I207346	$	615.46
122378	3/28/2019	3/28/2019	07	Royal Wholesale Electric	Dig. 1-3 Material	6441-589532	$	627.92
122378	3/28/2019	3/28/2019	07	Royal Wholesale Electric	Dig. 1-3 Materials	6441-589230	$	843.53
122379	3/28/2019	3/28/2019	01	Safety-Kleen Systems Inc.	Parts Wash Service	79221181	$	1,313.96
122380	3/28/2019	3/28/2019	01	San Bernardino County Fire Department	FA0001972 Hazardous Material CUPA Permit	IN0137687	$	420.00
122381	3/28/2019	3/28/2019	01	Thurlow'S Heating & A/C Inc.	Hesperia Subregional Service Call	22659	$	1,297.16
122382	3/28/2019	3/28/2019	01	Transcat	Fluke Repair	1470855	$	445.62
122382	3/28/2019	3/28/2019	01	Transcat	Hart Communicator for Instrumentation	1468416	$	6,193.47
122382	3/28/2019	3/28/2019	01	Transcat	Test Instrument Calibration and Repair	1469681	$	147.72
122383	3/28/2019	3/28/2019	01	Verizon California	Acct# 472015939-00001	9826134991	$	1,754.89
122384	3/28/2019	3/28/2019	01	Verizon Wireless	Acct # 472015939-00013	9826134992	$	357.44
122385	3/28/2019	3/28/2019	01	City Of Victorville / Sanitation	Trash Service	3319038	$	5,870.88
122386	3/28/2019	3/28/2019	01	Cintas Corporation	First Aid Supplies	5012800240	$	417.12
122386	3/28/2019	3/28/2019	01	Cintas Corporation	First Aid Supplies	5013170692	$	499.40
						Total Checks	$	**215,905.95**
0034929-1	3/7/2019	3/7/2019	01	2G Energy Inc.	2G O-Rings	415-081900077	$	156.54
0034929-10	3/7/2019	3/7/2019	01	Dudek	Interceptor Capacity Study	20190041	$	11,320.00
0034929-11	3/7/2019	3/7/2019	01	Ehs International Inc.	Hazwioer Training	3-17630	$	4,950.00
0034929-12	3/7/2019	3/7/2019	01	Babcock Laboratories, Inc	Babcock Lab Testing January 2019	02012019	$	25,268.20
0034929-14	3/7/2019	3/7/2019	01	Grainger	Balaclava Fleece	9060925477	$	7.59
0034929-14	3/7/2019	3/7/2019	01	Grainger	Barricade Tape	9061886454	$	68.75
0034929-14	3/7/2019	3/7/2019	01	Grainger	Cold Protection Gloves	9060880862	$	19.69
0034929-14	3/7/2019	3/7/2019	01	Grainger	Cold Protection Gloves	9061075470	$	19.69
0034929-14	3/7/2019	3/7/2019	01	Grainger	Electrical Gloves	9060849743	$	81.63
0034929-14	3/7/2019	3/7/2019	01	Grainger	Fuse Block	9061206398	$	158.91
0034929-14	3/7/2019	3/7/2019	01	Grainger	Glass Disposal Box	9061872330	$	75.93
0034929-14	3/7/2019	3/7/2019	01	Grainger	LED Fixture	9070382883	$	1,448.91
0034929-14	3/7/2019	3/7/2019	01	Grainger	Mobil Grease	9066447781	$	616.33
0034929-14	3/7/2019	3/7/2019	01	Grainger	Multi-Tool	9061170859	$	36.67
0034929-14	3/7/2019	3/7/2019	01	Grainger	Open End Wrench	9061075454	$	20.53
0034929-14	3/7/2019	3/7/2019	01	Grainger	Open End Wrench	9061075462	$	15.60
0034929-14	3/7/2019	3/7/2019	01	Grainger	Ratcheting Wrench	9060973113	$	50.33
0034929-14	3/7/2019	3/7/2019	01	Grainger	Roller Chain	9070686077	$	32.64
0034929-15	3/7/2019	3/7/2019	01	Ilink Business Management	AV Subregional Custodial Services	80076	$	263.88
0034929-16	3/7/2019	3/7/2019	07	Jwc Environmental Inc	Digester Grinder Control	95928	$	5,682.36
0034929-17	3/7/2019	3/7/2019	01	Larry Walker Associates	Local Limits Update	00054.47-5	$	3,596.00
0034929-17	3/7/2019	3/7/2019	01	Larry Walker Associates	Regulatory Assistance	00054.49-14	$	855.00
0034929-18	3/7/2019	3/7/2019	07	Mc Master-Carr Supply Co.	Digester Project Parts	86332074	$	64.34
0034929-18	3/7/2019	3/7/2019	01	Mc Master-Carr Supply Co.	Stationary Cabinet	85557804	$	296.03
0034929-19	3/7/2019	3/7/2019	01	Msdsonline	MSDSonline Renewal	195383	$	2,858.00
0034929-2	3/7/2019	3/7/2019	01	A.D.S. Corp.	Flow Monitoring	12928.22-0219	$	8,333.28
0034929-20	3/7/2019	3/7/2019	01	Principal Life Ins. Co.	Dental and Vision Insurance	02152019	$	3,287.15
0034929-21	3/7/2019	3/7/2019	01	Raftelis	Rate and Capacity Study	11404	$	9,661.55
0034929-22	3/7/2019	3/7/2019	01	U.S. Bank	Cal Card Statement January 2019	012219	$	5,379.69
0034929-23	3/7/2019	3/7/2019	01	Walters Wholesale Electric	Otoe PS Control Panel and Grinder	S112370556.001	$	477.57
0034929-3	3/7/2019	3/7/2019	01	Alpha Omega Septic Service	Trasnfer Seed Solids to Hesperia Subregional	33480	$	39,675.00
0034929-4	3/7/2019	3/7/2019	01	Applied Maintenance Supplies & Solution	Consumables	97030972	$	664.97
0034929-4	3/7/2019	3/7/2019	01	Applied Maintenance Supplies & Solution	Consumables	97032783	$	32.14
0034929-5	3/7/2019	3/7/2019	07	Biogas Engineering	Integration of Digester	266	$	2,690.00
0034929-5	3/7/2019	3/7/2019	01	Biogas Engineering	Net Energy Metering	267	$	2,100.00
0034929-6	3/7/2019	3/7/2019	07	Carollo Engineers, A Professional Corporation	ESDC Desert Knolls Wash Interceptor	0174271	$	2,667.00
0034929-6	3/7/2019	3/7/2019	01	Carollo Engineers, A Professional Corporation	Plant Capacity Study	0174106	$	5,202.00
0034929-7	3/7/2019	3/7/2019	01	Cdw Government, Inc	Laptop Sleeve	QZG3788	$	22.05
0034929-7	3/7/2019	3/7/2019	01	Cdw Government, Inc	Marin Laptop	QZF8684	$	821.47
0034929-7	3/7/2019	3/7/2019	01	Cdw Government, Inc	Switch for Control Room	QZK0856	$	509.10
0034929-8	3/7/2019	3/7/2019	01	Crane Pro Services	Quarterly Crane Inspection	154061120	$	1,480.00
0034929-9	3/7/2019	3/7/2019	01	Culligan Water Conditioning	Water Softener	201902041401	$	502.90
0035191	3/14/2019	3/14/2019	01	Derek Evans	Training Expenses Reimbursement	EVAN030819	$	236.72
0035192-1	3/13/2019	3/13/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97032976	$	556.71
0035192-1	3/13/2019	3/13/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97034291	$	11.24
0035192-1	3/13/2019	3/13/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97035202	$	71.47
0035192-10	3/13/2019	3/13/2019	01	Ilink Business Management	Janitorial Services	164	$	2,569.76

Victor Valley Reclamation Authority
Cash Disbursement Register
From 3/1/19 through 3/31/19

Check Number	Check Date	Effective Date	Fund Code	Vendor Name	Transaction Description	Document Number	Check Amount
0035192-11	3/13/2019	3/13/2019	01	Mcgrath Rentcorp	Admin Office Lease	1887311	$ 3,995.37
0035192-12	3/13/2019	3/13/2019	01	Mine Safety Appliances C/O Msg Systems Inc.	Subregional Gas Tech Stationary Monitors	960116111	$ 3,059.13
0035192-13	3/13/2019	3/13/2019	01	Protection One	Protection One Monitoring	127453179	$ 871.83
0035192-14	3/13/2019	3/13/2019	01	Underground Service Alert Of Southern California	Dig Alert Charges	220190784	$ 130.45
0035192-14	3/13/2019	3/13/2019	01	Underground Service Alert Of Southern California	Regulatory Costs	18dsbfee1191	$ 52.67
0035192-15	3/13/2019	3/13/2019	01	U.S.A. Bluebook	Lab Supplies	815200	$ 440.69
0035192-15	3/13/2019	3/13/2019	01	U.S.A. Bluebook	OTOE Sump Pump Station Control Panel	816882	$ 2,368.84
0035192-15	3/13/2019	3/13/2019	01	U.S.A. Bluebook	Poly-Lift Line	815184	$ 967.11
0035192-16	3/13/2019	3/13/2019	01	Valley Power Systems, Inc.	Repair to Emergency Generator #2	B40903	$ 3,000.00
0035192-17	3/13/2019	3/13/2019	01	Walters Wholesale Electric	Control Wires	S112375358.002	$ 83.66
0035192-17	3/13/2019	3/13/2019	01	Walters Wholesale Electric	Electircal Work	S112564391.001	$ 54.72
0035192-17	3/13/2019	3/13/2019	01	Walters Wholesale Electric	Electrical Work	s112583573.001	$ 197.21
0035192-18	3/13/2019	3/13/2019	07	Watertrax Usa Inc.	Training	INVOICE	$ 820.00
0035192-19	3/13/2019	3/13/2019	01	Waxie Sanitary Supply	Janitorial Supplies	78089236	$ 323.54
0035192-2	3/13/2019	3/13/2019	01	Beck Oil, Inc.	Propane	349515	$ 22.38
0035192-3	3/13/2019	3/13/2019	01	Biogas Power Systems- Mojave, Llc	Biogas Project	VVWRA-19-03	$ 64,119.27
0035192-4	3/13/2019	3/13/2019	01	Cdw Government, Inc	Cork Bulletin Board	QZZ2496	$ 65.34
0035192-4	3/13/2019	3/13/2019	01	Cdw Government, Inc	Desktop Memory	RCS8193	$ 296.92
0035192-5	3/13/2019	3/13/2019	01	Christensen Brothers Gen Eng Inc	Discharge Service (emergency)	2018-143	$ 21,902.12
0035192-5	3/13/2019	3/13/2019	01	Christensen Brothers Gen Eng Inc	Otoe Air Vac Repair (Emergency)	2018-137	$ 5,409.00
0035192-5	3/13/2019	3/13/2019	01	Christensen Brothers Gen Eng Inc	Pipe Supports (emergency)	2018-163	$ 4,943.70
0035192-5	3/13/2019	3/13/2019	01	Christensen Brothers Gen Eng Inc	Tomahawk Air Vac Repair	2018-149	$ 16,325.00
0035192-6	3/13/2019	3/13/2019	01	Crane Pro Services	Mobile Crane Inspection	154067651	$ 878.00
0035192-7	3/13/2019	3/13/2019	01	Culligan Water Conditioning	Water Softener	2019030341401	$ 502.90
0035192-8	3/13/2019	3/13/2019	01	Gierlich Mitchell, Inc.	Shear Pins	15430	$ 521.75
0035192-9	3/13/2019	3/13/2019	01	Grainger	Diaphragm Pump	9075649468	$ 393.17
0035192-9	3/13/2019	3/13/2019	01	Grainger	Switch and Disconnect for OTOE	9075578774	$ 893.27
0035192-9	3/13/2019	3/13/2019	01	Grainger	Switch and Disconnect for OTOE	9075586520	$ 1,009.28
0035398-1	3/18/2019	3/18/2019	01	Billings, Richard	Retiree Health Benefit Allowance	BILL031819	$ 435.00
0035398-10	3/18/2019	3/18/2019	01	Randy Main	Retiree Health Benefit Allowance	MAIN031819	$ 435.00
0035398-11	3/18/2019	3/18/2019	01	Mark Mcgee	Retiree Health Benefit Allowance	MCGE031819	$ 435.00
0035398-12	3/18/2019	3/18/2019	01	Lillie Montgomery	Retiree Health Benefit Allowance	MONT031819	$ 163.37
0035398-13	3/18/2019	3/18/2019	01	L. Christina Nalian	Retiree Health Benefit Allowance	NALI031819	$ 435.00
0035398-14	3/18/2019	3/18/2019	01	Nave, Patrick	Retiree Health Benefit Allowance	NAVE031819	$ 435.00
0035398-2	3/18/2019	3/18/2019	01	Roy Dagnino	Retiree Health Benefit Allowance	DAGIN031819	$ 435.00
0035398-3	3/18/2019	3/18/2019	01	Tim Davis	Retiree Health Benefit Allowance	DAVI031819	$ 435.00
0035398-4	3/18/2019	3/18/2019	01	Terrie Gossard Flint	Retiree Health Benefit Allowance	FLIN031819	$ 258.83
0035398-5	3/18/2019	3/18/2019	01	Gillette, Randy	Retiree Health Benefit Allowance	GILL031819	$ 435.00
0035398-6	3/18/2019	3/18/2019	01	Darline Gyurcsik	Retiree Health Benefit Allowance	GYRU031819	$ 224.41
0035398-7	3/18/2019	3/18/2019	01	Thomas Hinojosa	Retiree Health Benefit Allowance	HINO031819	$ 435.00
0035398-8	3/18/2019	3/18/2019	01	Patricia J Johnson	Retiree Health Benefit Allowance	JOHN031819	$ 187.74
0035398-9	3/18/2019	3/18/2019	01	Olin Keniston	Retiree Health Benefit Allowance	KENI031819	$ 258.83
0035613-1	3/21/2019	3/21/2019	01	American Express	American Express Charges	022819	$ 13,892.37
0035613-10	3/21/2019	3/21/2019	01	Deloach & Associates, Inc	Organizational Performance Assesment	1503	$ 2,050.00
0035613-11	3/21/2019	3/21/2019	01	Elogger Inc.	eLogger Maintenance Agreement 1 Year	2465	$ 4,153.50
0035613-12	3/21/2019	3/21/2019	01	Endress+Hauser	ENDR001 6700570150	6700570150	$ (1,247.77)
0035613-12	3/21/2019	3/21/2019	01	Endress+Hauser	Probe Connection 50Foot Cable	6002039442	$ 1,832.09
0035613-13	3/21/2019	3/21/2019	01	Babcock Laboratories, Inc	Lab Testing February 2019	02282019	$ 19,255.60
0035613-14	3/21/2019	3/21/2019	01	Grainger	Connector Polypropylene	9077142728	$ 7.06
0035613-14	3/21/2019	3/21/2019	01	Grainger	Ear Muffs	9076864256	$ 271.53
0035613-14	3/21/2019	3/21/2019	01	Grainger	Hard Hats	9076864264	$ 252.50
0035613-14	3/21/2019	3/21/2019	01	Grainger	Polyline for Wire Pulling	9084388033	$ 69.39
0035613-15	3/21/2019	3/21/2019	01	Haaker Equipment Company	One Week Vactor Rental	E10962	$ 4,380.00
0035613-16	3/21/2019	3/21/2019	01	Ilink Business Management	AV Subregional Custodial Services	82480	$ 263.88
0035613-17	3/21/2019	3/21/2019	01	Lucity, Inc.	Constant Connection Program Annual Support and Maintenance	89003-1	$ 13,450.37
0035613-18	3/21/2019	3/21/2019	01	Teledyne Isco, Inc.	Sampler Tubing	S020310290	$ 1,340.41
0035613-19	3/21/2019	3/21/2019	01	Tunnel Vision Pipeline Cleaning & Video Inspection	CCTV Service Afterhours	2694	$ 5,528.77
0035613-2	3/21/2019	3/21/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97038157	$ 52.80
0035613-2	3/21/2019	3/21/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97038375	$ 89.18
0035613-2	3/21/2019	3/21/2019	01	Applied Maintenance Supplies & Solution	Maintenance Consumables	97040772	$ 8.98
0035613-20	3/21/2019	3/21/2019	01	Uc Regents	CEC Battery Installation Project	81043-016R.1	$ 2,555.09
0035613-21	3/21/2019	3/21/2019	01	U.S.A. Bluebook	Glass Fiber Filter	825804	$ 153.33
0035613-21	3/21/2019	3/21/2019	01	U.S.A. Bluebook	Lab TNT	819607	$ 147.07
0035613-21	3/21/2019	3/21/2019	01	U.S.A. Bluebook	Test Strips	824686	$ 117.78
0035613-21	3/21/2019	3/21/2019	01	U.S.A. Bluebook	USAB000 831564	831564	$ (80.13)
0035613-22	3/21/2019	3/21/2019	01	Xylem Dewatering Solutions	Emergency Dewatering Service Truck	400892904	$ 1,285.00
0035613-3	3/21/2019	3/21/2019	01	Solenis Llc	Polymer	131417586	$ 8,154.51
0035613-4	3/21/2019	3/21/2019	07	D.D.H. Apple Valley Construction, Inc.	Desert Knolls Wash Interceptor	3-DKW	$ 398,321.23
0035613-5	3/21/2019	3/21/2019	01	Beck Oil, Inc.	Diesel Delivery	349932	$ 2,367.99
0035613-6	3/21/2019	3/21/2019	01	Biogas Engineering	CEC Battery Installation	212-CEC	$ 129.60
0035613-7	3/21/2019	3/21/2019	01	Blackline Safety Corp	Loner Device Lease	INV2016282	$ 210.00
0035613-8	3/21/2019	3/21/2019	01	Cdw Government, Inc	Desktop Upgrades	RFN9373	$ 299.47
0035613-8	3/21/2019	3/21/2019	01	Cdw Government, Inc	Desktop Upgrades	RGP7920	$ 269.42
0035613-8	3/21/2019	3/21/2019	01	Cdw Government, Inc	Watertrax Tablets	RHS7812	$ 665.73
0035613-9	3/21/2019	3/21/2019	01	Consumers Pipe & Supply, Co.	Emergency Drying Bed Hoses	S1423592.001	$ 80.68
0035613-9	3/21/2019	3/21/2019	01	Consumers Pipe & Supply, Co.	Emergency Drying Bed Hoses	S1423592.002	$ 1,230.07
0035886-1	3/28/2019	3/28/2019	01	Allmax Software, Inc.	AllMax Ops10 Support	24078	$ 4,985.00
0035886-10	3/28/2019	3/28/2019	01	Industrial Solution Services, Inc	Urea Delivery	17855	$ 1,945.51
0035886-11	3/28/2019	3/28/2019	01	Principal Life Ins. Co.	Dental and Vision Insurance April 2019	31819	$ 3,654.56
0035886-12	3/28/2019	3/28/2019	01	Quinn Company	Oil Sample Containers	PCA10009975	$ 600.00
0035886-13	3/28/2019	3/28/2019	01	U.S.A. Bluebook	Lab Supllies Pipet	839976	$ 604.64
0035886-13	3/28/2019	3/28/2019	01	U.S.A. Bluebook	Lab Supplies TNT	840641	$ 1,284.91
0035886-14	3/28/2019	3/28/2019	01	Walters Wholesale Electric	Otoe PS ATS Work Cable	S112701469.001	$ 883.55
0035886-2	3/28/2019	3/28/2019	01	Bargain Byte	Otoe PS CCTV Work	13119	$ 6,446.76
0035886-2	3/28/2019	3/28/2019	01	Bargain Byte	Otoe PS CCTV Work	32019	$ 523.68
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Contract Review	843731	$ 1,425.60
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Evaluation of Victorville Project	843732	$ 3,499.20
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	FEMA Audit	843726	$ 291.60
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	General - Retainer	843722	$ 11,675.55
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	General Eminent Domain Matters	843723	$ 102.00
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Labor Matters	843728	$ 4,182.20
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Lahontan Regional Water Quality Control Board	843724	$ 2,235.60
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Projects	843729	$ 193.19
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Public Contract Drafting	843730	$ 254.70
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	Rate And Charges Analysis	843725	$ 680.40
0035886-3	3/28/2019	3/28/2019	01	Best, Best & Krieger, L.L.P.	State Revolving Fund Loans	843727	$ 129.60
0035886-4	3/28/2019	3/28/2019	07	Biogas Engineering	Anaerobic Digestors Integration	279	$ 3,260.00
0035886-4	3/28/2019	3/28/2019	01	Biogas Engineering	Net Energy Metering	278	$ 300.00
0035886-5	3/28/2019	3/28/2019	01	Brenntag Pacific, Inc	BREN001 BPI291833	BPI291833	$ (800.00)
0035886-5	3/28/2019	3/28/2019	01	Brenntag Pacific, Inc	Ferric Delivery	BPI923198	$ 11,496.13

Victor Valley Reclamation Authority
Cash Disbursement Register
From 3/1/19 through 3/31/19

Check Number	Check Date	Effective Date	Fund Code	Vendor Name	Transaction Description	Document Number	Check Amount
0035886-5	3/28/2019	3/28/2019	01	Brenntag Pacific, Inc	Phosphoric Acid	BPI924478	$ 1,581.55
0035886-6	3/28/2019	3/28/2019	07	Carollo Engineers, A Professional Corporation	Desert Knolls Wash Interceptor	0175200	$ 5,600.70
0035886-6	3/28/2019	3/28/2019	01	Carollo Engineers, A Professional Corporation	Plant Capacity Study	0175117	$ 10,514.78
0035886-7	3/28/2019	3/28/2019	01	D.K.F. Solutions Inc.	MSO Monthly	14331	$ 350.00
0035886-8	3/28/2019	3/28/2019	01	Global Equipment Company, Inc.	Water Transfer Pumps	113946232	$ 1,914.97
0035886-8	3/28/2019	3/28/2019	01	Global Equipment Company, Inc.	Water Transfer Pumps	114012837	$ 1,637.75
0035886-9	3/28/2019	3/28/2019	01	Hlink Business Management	AV Subregional Custodial Service	83472	$ 263.88
0035887-1	3/28/2019	3/28/2019	01	Benjamin Carrera	Wastewater Operations Class Book	CARR031919	$ 135.26
0035887-2	3/28/2019	3/28/2019	01	Julio Espinoza	Grade 2 Training Food Expenses	032519	$ 257.34
0035887-3	3/28/2019	3/28/2019	01	Latif Laari	College Educational Reimbursement	031819	$ 5,094.71
032019CHAR	3/22/2019	3/22/2019	01	Charter Communications	Telephone Charges	0013529030719	$ 4,850.70
032019SWG	3/22/2019	3/22/2019	01	Southwest Gas Company	Hesperia Subergional Natural Gas- Fresno	031219	$ 27.92
032019SWGB	3/22/2019	3/22/2019	01	Southwest Gas Company	Hesperia Subregional Natural Gas- Appaloosa	03122019	$ 290.17
032019SWGC	3/22/2019	3/22/2019	01	Southwest Gas Company	AV Subregional Natural Gas- Otoe	3132019	$ 191.80
032019SWGD	3/22/2019	3/22/2019	01	Southwest Gas Company	Natural Gas	022519	$ 1,123.94
032019UPS	3/22/2019	3/22/2019	01	Ups	Express Shipping	0000615V7V089	$ 63.58
032019UPS	3/22/2019	3/22/2019	01	Ups	Express Shipping	0000615V7V099	$ 38.44
032019UPS	3/22/2019	3/22/2019	01	Ups	Express Shipping	0000615V7V109	$ 20.37
032019UPS	3/22/2019	3/22/2019	01	Ups	Express Shipping	0000615V7V119	$ 336.45
079731	3/22/2019	3/22/2019	01	Southern California Edison	Electricty	030819	$ 517.10
079831	3/22/2019	3/22/2019	01	Southern California Edison	Hesperia Subregional Electricity- Fresno	031319	$ 808.54
079931	3/22/2019	3/22/2019	01	Southern California Edison	Electricty	030119	$ 46,230.63
079931B	3/22/2019	3/22/2019	01	Southern California Edison	Hesperia Subregional Electricity- Appaloosa	03132019	$ 9,128.51
19122711	3/22/2019	3/22/2019	01	Lincoln Financial Group	Life and Disability Insurance	3834155674	$ 3,725.75
19122711	3/22/2019	3/22/2019	01	Lincoln Financial Group	Life and Disability Insurance	3834156225	$ 94.66
40279780	3/22/2019	3/22/2019	01	Hesperia Water District	Hesperia Subregional Water Usage	030619	$ 2,003.02
883544	3/22/2019	3/22/2019	01	Konica Minolta Business Solutions	Printer Lease Payment	33171128	$ 351.02
						Total ACH & EFT	**$ 922,136.24**

APPROVED

Total Checks	**$ 215,905.95**
Total ACH and EFT	**$ 922,136.24**
Total Payroll - March 2019	**$ 309,745.65**
Total	**$ 1,447,787.84**

MINUTES OF A REGULAR MEETING
REGULAR MEETING OF THE BOARD OF COMMISSIONERS
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY (VVWRA)
March 21, 2019

CALL TO ORDER: Chair Scott Nassif called the meeting to order at 8:04 am; in Conference Room D at Victorville City Hall, located at 14343 Civic Drive, Victorville California, with the following members present:

ORO GRANDE (CSA 42) AND	**Jeff Rigney,** Chair
SPRING VALLEY LAKE (CSA 64)	
TOWN OF APPLE VALLEY	**Scott Nassif,** Vice-Chair
CITY OF VICTORVILLE	**Jim Cox,** Secretary
CITY OF HESPERIA	**Larry Bird,** Treasurer

VVWRA Staff and Legal Counsel:

Logan Olds, General Manager
Kristi Casteel, Secretary to GM/Board
Piero Dallarda, Legal Counsel (BB&K)
Chieko Keagy, Controller
Alton Anderson, Construction Manager
David Wylie, Safety & Communications Officer
Xiewi Wang, Senior Accountant
Robert Coromina, Director of Administration
Brad Adams, Lead Operator
Marcos Avila, Lead Mechanic
Eugene Davis, O&M Manager

Others Present:

Keith Metzler, City of Victorville
Doug Robertson, Apple Valley
Debra Jones, City of Victorville
George Harris, City of Victorville
Carl Coleman, MWA
Russ Bergholz, Dudek
Elizabeth Caliva, Dudek
Andrew Gilmore, Carollo
Tony Mejia, Supervisor Ramos Office
Nicole Hunt, Southwest Gas
Maria Rushings, Southwest Gas
Michael Clausell, Southwest Gas
Blanca Gomez, City of Victorville

CLOSED SESSION

PUBLIC COMMENTS- CLOSED SESSION AGENDA

Chair Rigney asked if there were any comments from the public regarding any item on the Closed Session Agenda. Hearing none, he called for a motion to enter into Closed Session.

Commissioner Cox made a motion to enter into Closed Session. Seconded by Commissioner Nassif.

REGULAR SESSION

CALL TO ORDER & PLEDGE OF ALLEGIANCE

Chair Rigney called the meeting to order at 10:14 AM.

REPORT FROM CLOSED SESSION

Nothing to report

PUBLIC COMMENTS- REGULAR SESSION AGENDA

Nicole Hunt from Southwest Gas made comments on VVWRA's Pipeline Injection Project.

ANNOUNCEMENTS AND CORRESPONDENCE:

5. **Possible conflict of interest issues**

   Commissioner Nassif will be abstaining from any disbursements to Napa Auto Parts on item 8

6. **Article: LA Needs to Reclaim What We Used to Consider 'Wastewater'**

7. **National Association of Clean Water Agencies Invitation to Participate**

CONSENT CALENDAR:

8. **Approve February 2019 Disbursement Registers**

9. **Approve Minutes from the February 11, 2019 Special Meeting and the February 21, 2019 Regular Meeting**

10. **Recommendation to Approve Grit Classifier Replacement**

    Commissioner Cox made a motion to approve the consent calendar, seconded by Commissioner Bird and approved by roll call vote with Commissioner Nassif abstaining from any disbursements to Napa Auto Parts.

    Chair Rigney: Yes

    Commissioner Nassif: Yes

Commissioner Bird: Yes

Commissioner Cox: Yes

REPORTS & PRESENTATIONS:

11. Presentation: Organizational Performance Assessment- Robert DeLoach - TABLED

12. Presentation: Regional Plant Capacity Study- Carollo

Andrew Gilmore gave a presentation on Regional Plant Capacity

13. Presentation: Collection System Capacity- Dudek

Elizabeth Caliva gave a presentation on Collection System Capacity

ACTION & DISCUSSION ITEMS:

14. Recommendation to Approve Resolution 2019-03- Reapportionment of Flow Billing Percentages

Manager Olds stated that this is done a couple times a year to ensure that the Member Agencies are billed correctly.

Commissioner Nassif made a motion to approve the recommendation, seconded by Commissioner Cox and approved by roll call.

Chair Rigney: Yes

Commissioner Nassif: Yes

Commissioner Bird: Yes

Commissioner Cox: Yes

15. Recommendation to Approve Resolution 2019-04- Amend and Approve 2019 CEQA Guidelines

Manager Olds stated that this is done annually and is required by State law to amend the CEQA Guidelines.

Commissioner Nassif made a motion to approve the recommendation, seconded by Commissioner Bird and approved by roll call.

Chair Rigney: Yes

Commissioner Nassif: Yes

Commissioner Bird: Yes

Commissioner Cox: Yes

16. Resolution 2019-02- Appreciation of Dedicated Service

Commissioner Nassif made a motion to approve the recommendation, seconded by Commissioner Cox and approved by roll call.

Chair Rigney: Yes

Commissioner Nassif: Yes

Commissioner Bird: Yes

Commissioner Cox: Yes

STAFF/PROFESSIONAL SERVICES REPORTS:

Latif Laari made comments on the implementation of VVWRA's new SCADA System.

17. Financial and Investment Report – February 2019

18. Environmental Compliance Department Reports – February 2019

19. Septage Receiving Facility Reports – February 2019

20. Safety & Communications Report – February 2019

NEXT VVWRA BOARD MEETING:

Thursday, April 18, 2019 - Regular Meeting of the Board of Commissioners

FUTURE AGENDA ITEMS

Recommendation to Approve Resolution 2019-XX- Categorical Exemption From CEQA for Storm Water Project

Construction Easement Agreement Lewis Learning Center

USDA Loan and Grant for the Oro Grand Interceptor Project

O&M Building Extension

Pipeline Injection Project

COMMISSIONER COMMENTS

CLOSED SESSION (If Closed Session is continued)

ADJOURNMENT

APPROVAL:

DATE: April 18, 2019 **BY:** _____

Approved by VVWRA Board James Cox,
Secretary VVWRA Board of Commissioners

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Report/Recommendation to the Board of Commissioners

April 8, 2019

FROM: Mauricio Marin WJM

TO: Logan Olds, General Manager

SUBJECT: Main Utility Breaker Replacement

RECOMMENDATION

It is recommended the Board of Commissioners approve the purchase of a GE Breaker from the sole source provider ABB EPIS formerly GE Industrial Solutions in the amount not to exceed $37,421.00

REVIEW BY OTHERS

This recommendation was reviewed by Latif Laari Business Applications Manager, Eugene Davis Operations and Maintenance Manager, Craig Taylor EI-C-Tech and Chieko Keagy Controller.

BACKGROUND INFORMATION

Supplying reliable power to the VVWRA Regional Plant is necessary. The main utility breaker is a mission critical piece of equipment that controls utility power to the plant. If failure of this breaker occurs, the operation of the plant will be jeopardized and may lead to a violation of our NPDES permit. The current Main Utility Breaker has been in service since 2001 and has reached its end of life.

The replacement of this important breaker will yield the following benefits:

- Increased plant availability and reliability
- Optimized cost
- High productivity
- Reduced environmental impact

This purchase has been budgeted in this fiscal year 18-19.

The existing breaker will be replaced by the new and will be reconditioned to serve as a spare breaker unit.

FINANCIAL IMPACT

Finance Approval:

Fund		01 [ ]	07 [X]	09 [ ]
Account	*example: 07-02-50-9000*	07-02-545-6010		

String		
Project Code	*example: C005 for Desert Knoll Wash*	6010
Budgeted Available before This Recommendation		$0
Budget Applied to This Staff Recommendation		$37,421.00
Budget Remaining (Over Budget)		$(37,421.00)

RELATED IMPACTS

- Prevents unnecessary and unscheduled repairs
- Prevents false plant trips, causing process interruptions
- Prevents equipment failures due to breaker interruptions

ABB- ELECTRIFICATION PRODUCTS INDUSTRIAL SOLUTIONS (EPIS)

Victor Valley Water Reclamation Authority
ATTN: Mauricio Marin
20111 SHAY ROAD
VICTORVILLE, CA 92324
UNITED STATES

John Dunn
Senior SALES MANAGER
M 951-339-6075
John.Dunn@us.abb..com

ABB Product: ABB and GE Switchgear
Product description: ABB and GE Paralleling and distribution switchgear equipment

The Sole Authorized Manufacturer Service provider and Direct Distributor Letter

04/01/2019

This letter is to confirm that ABB Inc. is the sole authorized manufacturer Service provider and direct distributor of the ABB and GE Paralleling switchgear and distribution switchgear equipment

Thank you for your interest in ABB Services. If we can be of further assistance, please contact us at 1-800-434-7378.

REGARDS,
ABB INC.
John Dunn
Senior SALES MANAGER

Parts & Service: 1-888-434-7378

QUOTATION NO.	JD1110805_022119JET_REV0
DATE	2/21/2019

BUYER'S INFORMATION:

Quote Requested by	Mauricio Marin
Company	VVWRA
Address	20111 Shay Road Victorville, CA 92394
Phone	760-246-8638
Email	mmarin@vvwra.com
Service Contact	James Hopkins
Phone	714-237-7271
BUYER'S PO	
DUNS #	901H3090

NOTICE: This quotation is void unless accepted within 30 days from date hereof and is subject to change upon notice. However, if ABB elects to perform the services covered by the quotation, in response to an order placed 30 or more days after the date of the quotation, the terms of the quotation will apply.

SUBMIT PURCHASE ORDER TO:
ABB INC.
305 Gregson Drive
Cary, NC 27511
Fax: 1-949-221-7866

REMIT PAYMENT TO:
ABB INC.
29714 Network Place
Chicago, IL 60673-1297
Tax ID: 36-3100018

Scope of Supply
ABB to supply QTY One (1) Wave Pro Circuit Breaker model, WPH-32

Built to specs per customers existing circuit breaker. Used, Remanufactured. Silver plate, xinc plate, power coat to applicable surfaces. Tested, 3-year warranty from manudfacture.

Equipment to be Serviced:
None

Equipment Only Work Description:

ABB, Inc. is pleased to offer this equipment / material only proposal to furnish the following:

- 34,325.00 USD
  Thirty-Four Thousand, Three Hundred Twenty-Five Dollars and Zero Cents, USD.

Lead Time: Estimated at 4-5 weeks after purchase order acknowledgement.

Payment is due upon receipt of invoice and parts.
Delivery is from stock, subject to prior sale.
Shipping, applicable taxes and handling is not included in the above pricing and will be added per the terms below.
Quote is for Parts Only. ABB can provide, upon request, a separate quote for installation and/or field testing.

This equipment is offered on a "parts only" basis. This offer does not include any design or field engineering services. Any applicable taxes (sales, state, county, etc.) and other fees (freight, etc.) are not included in the above price. Any additional equipment, labor and parts will be priced at user cost plus 35%. All equipment is F.O.B. shipping point, seller's dock, with freight prepaid and charged 3% of material price (a minimum per shipment charge of $100.00 shall apply). Seller reserves the right to select the method of transportation provided for all products unless specified by the Buyer not less than 72 hours prior to shipment. Any premium transportation or required special handling is in addition and shall be for the account of the Buyer. Past due payments will be subject to a late payment penalty at the rate of 1.5% per month. The sale of any service and products, and the integration thereof, ordered by the Buyer is expressly conditioned upon the terms and conditions contained herein and TERMS AND CONDITIONS FOR SALE AND LEASE OF PRODUCTS AND SERVICES, attached. Any additional or different terms and conditions set forth in the Buyer's purchase order or other communication are expressly objected to and will not be binding upon Seller unless specifically agreed to in writing by an authorized ABB employee.

This proposal and specification are submitted in confidence solely for use in consideration of the merits of the offering and for no other direct or indirect use by Buyer and its contents are proprietary to ABB. In taking receipt of this document, Buyer agrees not to reveal its contents except to those in its own organization who must evaluate it, to use

this document and the information that it contains exclusively for the above-stated purpose and to avoid disclosure of the information to competitor of ABB.

ABB INC. Buyer

By:	John Dunn		
Title:	Sr Sales Manager		
Email:	John.Dunn@us.abb.com		
Phone:	951-339-6075	Fax:	1-213-822-9903

Company:			
By:			
Title:			
Email:		Date:	

This proposal and specification are submitted in confidence solely for use in consideration of the merits of the offering and for no other direct or indirect use by Buyer and its contents are proprietary to ABB. In taking receipt of this document, Buyer agrees not to reveal its contents except to those in its own organization who must evaluate it, to use this document and the information that it contains exclusively for the above-stated purpose and to avoid disclosure of the information to competitor of ABB.

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Report/Recommendation to the Board of Commissioners

April 18, 2019

FROM: Logan Olds, General Manager LO

TO: Board of Commissioners

SUBJECT: Retention of Dr. Almgren to Assist with Resolution of Mediation Issues

---

RECOMMENDATION

It is recommended that the Board of Commissioners authorize the General Manager to increase the professional services of Dr. Almgren for tasks associated with resolving issues related to the mediation between parties in an amount not to exceed $7,831.19, seven thousand, eight hundred and thirty-one dollars, nineteen cents.

REVIEW BY OTHERS

This recommendation was reviewed by Piero Dallarda, Legal Counsel.

BACKGROUND INFORMATION

At the May 17, 2018 Board meeting a second invoice from Dr. Almgren was presented to the Board for consideration (attached). The Board chose not to revise the professional service agreement with Dr. Almgren and directed legal counsel to discuss the invoice with Justice King. VVWRA received a certified letter (attached) from Dr. Almgren on March 11, 2019 requesting payment. Payment of this final invoice would conclude the professional services of Dr. Almgren.

Justice King indicated that all parties involved in the mediation proceedings agreed to the retention of Dr. Almgren to assist in the resolution of issues associated with the mediation. The Board approved the professional service agreement with Dr. Almgren on December 21, 2017 with the initial amount of $10,000.00 that was revised to $35,000.00 on March 15, 2018. After paying his first invoice of $32,788.19, we have a remaining authorized amount of $2,211.81. VVWRA received a second invoice for $10,043.00. Justice King informed Dr. Almgren that there would be no further work needed after this second invoice. Staff recommends that the professional service agreement be revised to not-exceed $42,831.19, thus increasing the existing purchase order by $7,831.19.

FINANCIAL IMPACT

This would be an unbudgeted professional service expense and would complete payment for services rendered by Dr. Almgren.

11-2

CERTIFIED MAIL

SAN DIEGO

HOWARD ALMGREN
P. O. Box 16177
SAN DIEGO, CA 92176

7018 3090 0001 9764 9558

1000

92394

U.S. POSTAGE PAID
FCM LETTER
SAN DIEGO, CA
92116
MAR 08, 19
AMOUNT
$7.00
R2304H109806-65

3-17

Mr. Logan Olds
General Manager
Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville, CA 92394

92394-853911

11

VVWRA
MAR 11 2019

HOWARD ALMGREN, Ph.D., P.E.
CIVIL ENGINEER

PO Box 16177
San Diego, California 92176-6177

cell: 760.305.2522
e-mail: halmgren@hotmail.com

March 8, 2019

Mr. Logan Olds
General Manager
Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville, CA 92394

Reference: Invoice No. 2 of Howard Almgren, Ph.D., P.E. for Professional Services to the Victor Valley Wastewater Reclamation Authority (VVWRA).

Dear Mr. Olds:

The following is a review the situation concerning my outstanding Invoice No. 2.

Review points:

1) November 27, 2017, I sent my resume and fee schedule to Justice King in response to his telephone inquiry to me.

2) December 21, 2017, at the Regular Meeting of the Board of Commissioners of the Victor Valley Wastewater Reclamation Authority, Item 19 was Recommendation to Request Authorization to Retain the Professional Services of Dr. Almgren to Perform an Analysis of the Financial Impact of Flow Diversion.
   a) Commissioner Kennedy made a motion to approve the Recommendation, seconded by Commissioner Nassif.
   b) Chair Blewett: Yes
   c) Commissioner Rigney: Yes
   d) Commissioner Nassif: Yes
   e) Commissioner Kennedy: Yes

3) December 30, 2017, in an e-mail from Mr. Piero Dallarda, Xiwei Wang, Senior Accountant, was designated as the VVWRA representative to work with Dr. Almgren. Subsequently Mr. Wang and I were in communication several times and he furnished numerous documents to me.

4) I met with Justice King in the JAMS office in Ontario on February 17, 2018. Following the meeting I prepared Invoice No. 1.

5) I submitted Invoice No. 1 to Mr. Wang on February 20, 2018. He acknowledged receipt of the Invoice on the same day.

6) The VVWRA payment check for Invoice No. 1 from the Desert Community Bank, Account No. 8090005961, was dated March 29, 2018. This was 38 days after presentation of the invoice.

7) March 22, 2018. I attended and presented my work to the Mediation Meeting of VVWRA and the member Agencies at the JAMS office in Ontario, CA. This was the last item of work I did for VVWRA.

8) I submitted Invoice No. 2 to Mr. Wang on April 22, 2018. Mr. Wang acknowledged receipt of the Invoice the next day.

9) I sent a letter to Mr. Wang on July 9, 2018 requesting information on when Invoice No. 2 would be paid.

10) I did not receive a reply to my July 9, 2018 letter from VVWRA.

11) I sent a letter to Mr. Wang on September 18, 2018 requesting information on the status of Invoice No. 2 and when it would be paid. Mr. Wang acknowledged receipt of my letter the next day.

12) I did not receive a reply to my September 18, 2018 letter from VVWRA.

Invoice No. 2 was submitted 320 days before the date of this letter, March 8, 2019.

This Invoice is extremely overdue and I am requesting prompt payment.

Please reply to this letter.

Regards,

Howard Almgren

Howard Almgren, Ph.D., P.E.

Attachments:
"Invoice No. 2", "Expense Account" and "Log #2 of Activities" are attached to this letter.

The Log of Activities is an itemized list of my work for VVWRA with the date of the work, description of the work and time charge for that work.

HOWARD ALMGREN, Ph.D., P.E.
CIVIL ENGINEER

8583 Aero Drive, No. 1047
San Diego, California 92123

cell: 760-305-2522
e-mail: halmgren@hotmail.com

INVOICE

April 23, 2018

Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville, California 92394

Re: JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Invoice No. 2 – February 18, 2018 to April 23, 2018

Scope of Services:

Requested and researched documents.
Prepared Draft Report No. 2, Spreadsheet #7-4 and Spreadsheet #9 for Justice Jeffrey King.

Mediation Meeting with Justice Jeffrey King on March 22nd .

Professional Services 33.0 hours at $300.00/hour	$9,900.00
Expenses per attached accounting	$143.00
AMOUNT DUE – THIS INVOICE	**$10,043.00**

Howard Almgren, Ph.D., P.E.
Civil Engineer
760-305-2522

EXPENSE ACCOUNT - Howard Almgren

Re: JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Item No.	Date	Amount	Description	Receipt
1	3/22/2018	$143.00	Mileage to JAMS office, March 22nd - 220 miles @ 0.65/mile	no
		$143.00	TOTAL	

Howard Almgren, Ph.D., P.E.
Civil Engineer
760-305-2522

JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Almgren Work Product: No. 11
April 23, 2018

Log #2 of Activities

(Activities after submittal of Invoice No.1 on February 20, 2018.)

---

1. February 27th – telephone contact with Justice King; review of my draft Report No. 1
2 hours

2. February 28th – telephone discussion with Justice King; revised connection fees accounting spreadsheet #7-4; assembled accounting data for user fee spreadsheet
6 hours

3. March 1st – developed user fee spreadsheet no. 8, writing Almgren Report No. 2
6 hours

4. March 2nd – finished Almgren Report No. 2, e-mailed various materials to Justice King
5 hours - - - **19 hours total**

5. March 6th – e-mails to both points of contact for documents; e-mails with Justice King
1 hour

6. March 19th – developed spreadsheet no. 9 from IWTP Annual Reports and e-mailed to Justice King
4 hours

7. March 21st – telephone discussion with Justice King and preparation for March 22nd mediation meeting at JAMS
5 hours

8. March 22nd – **mediation meeting at JAMS office in Ontario**
4 hours - - - **33 total**

MINUTES OF A REGULAR MEETING
REGULAR MEETING OF THE BOARD OF COMMISSIONERS
VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY (VVWRA)
May 17, 2018

CALL TO ORDER: Chair Larry Bird called the meeting to order at 8:02 am; in Conference Room D at Victorville City Hall, located at 14343 Civic Drive, Victorville California, with the following members present:

CITY OF HESPERIA
ORO GRANDE (CSA 42) AND
SPRING VALLEY LAKE (CSA 64)
TOWN OF APPLE VALLEY
CITY OF VICTORVILLE

Larry Bird, Alternate
Jeff Rigney, Vice-Chair

Scott Nassif, Secretary
Jim Kennedy, Treasurer

VVWRA Staff and Legal Counsel:

Logan Olds, General Manager
Kristi Casteel, Secretary to GM/Board
Piero Dallarda, Legal Counsel (BB&K)
Chieko Keagy, Controller
Eugene Davis, O&M Manager

David Wylie, Safety & Communications Officer
Xiwei Wang, Senior Accountant
Marcos Avila, Lead Mechanic
Alton Anderson, Construction Manager
Robert Coromina, Director of Administration

Others Present:

Nils Bentsen, City of Hesperia
Keith Metzler, City of Victorville
Greg Snyder, Town of Apple Valley
Jim Cox, City of Victorville

Brian Gengler, City of Victorville
George Harris, City of Victorville

CLOSED SESSION

PUBLIC COMMENTS- CLOSED SESSION AGENDA

Chair Bird asked if there were any comments from the public regarding any item on the Closed Session Agenda. Hearing none, he called for a motion to enter into Closed Session.

Commissioner Nassif made a motion to enter into Closed Session. Seconded by Commissioner Rigney.

Manager Olds stated that there is a memo to the Board when VVWRA notifies the State. VVWRA has yet to dip into the SRF loan reserve which would require VVWRA to notify the State. The other issue is that the Desert Knolls Wash Project still needs to be completed. Manager Olds stated that the Board needs to be aware that his recommendation is regardless what occurs; VVWRA must build Desert Knolls Wash. If that pipeline breaks with an estimated 1.2 million gallons running through it, VVWRA is subject to a $120 million dollar fine per day. The cost of repairing that pipeline now is about $1.8 million and is a small price to pay. The Board needs to be aware, that project takes precedence over meeting debt service.

There were questions with the projections and actuals in the budget presentation. Staff is going to update the actuals and provide more detail categorically between the Operations, Maintenance, and Administrative departments.

ACTION & DISCUSSION ITEMS:

13. Recommendation to Request Additional Funding For the Professional Services of Dr. Almgren to Perform an Analysis of the Financial Impact of Flow Diversion

Commissioner Rigney asked that before getting the invoice were we notified about the increase.

Manager Olds recommended that the Board table this item and have legal speak with Justice King regarding more detail.

It was the consensus of the Board to table this item.

14. Initiation of Litigation against City of Hesperia—Tolling Agreement

Commissioner Kennedy made a motion to approve the recommendation, seconded by Commissioner Rigney and approved by roll call.

Chair Bird: Yes

Commissioner Rigney: Yes

Commissioner Nassif: Yes

Commissioner Kennedy: Yes

STAFF/PROFESSIONAL SERVICES REPORTS:

15. Financial and Investment Report – April 2018

16. Operations & Maintenance Report – April 2018

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Report/Recommendation to the Board of Commissioners

May 17, 2018

FROM: Chieko Keagy, Controller

TO: Logan Olds, General Manager

SUBJECT: Retention of Dr. Almgren to Assist with Resolution of Mediation Issues

RECOMMENDATION

It is recommended that the Board of Commissioners authorize the General Manager to increase the professional services of Dr. Almgren for tasks associated with resolving issues related to the current mediation between parties in an amount not to exceed $8,000.00, eight thousand dollars.

REVIEW BY OTHERS

This recommendation was reviewed by Piero Dallarda, Legal Counsel.

BACKGROUND INFORMATION

Justice King indicated that all parties involved in the mediation proceedings agreed to the retention of Dr. Almgren to assist in the resolution of issues associated with the mediation. The Board approved the professional service agreement with Dr. Almgren on December 21, 2017 with the initial amount of $10,000.00 that was revised to $35,000.00 on March 15, 2018. After paying his first invoice of $32,788.19, we have a remaining authorized amount of $2,211.81. We now received his second invoice for $10,043.00. Justice King informed Dr. Almgren there seemed to be no further work needed after this second invoice. Staff recommends we revise the professional service amount to not-exceeding $43,000.00, thus increasing the existing purchase order by $8,000.00.

FINANCIAL IMPACT

Finance Approval:

Fund 01 or 07	
Accounting Code (String) example: 01-xx-xxx-xxxx (project code if any)	01-02-300-8175
Transfer Needed due to Insufficient Budget	Y[ ] N[ ]
If Transfer, from Which Account String or Reserve	
Budgeted Amount Where Money Comes from	$10,000.00
Budget Remaining after the Recommendation	0
Outside Funding Source if applicable	$

Fund 09	
Accounting Code (String) example: 09-xx-xxx-xxxx (mandatory project code)	
Transfer Needed due to Insufficient Budget	Y[ ] N[ ]
If Transfer, from Which Account String or Reserve	
Budgeted Amount Where Money Comes from	
Budget Remaining after the Recommendation	
Outside Funding Source	$

Original Contract Amount	$
Change Order	Y[ ] N[ ]
Contract after Change	$43,000.00

Original Contract Amount	$
Change Order	Y[ ] N[ ]
Contract after Change	$

HOWARD ALMGREN, Ph.D., P.E.
CIVIL ENGINEER

8583 Aero Drive, No. 1047
San Diego, California 92123

cell: 760-305-2522
e-mail: halmgren@hotmail.com

INVOICE

April 23, 2018

Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville, California 92394

Re: JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Invoice No. 2 – February 18, 2018 to April 23, 2018

Scope of Services:

Requested and researched documents.
Prepared Draft Report No. 2, Spreadsheet #7-4 and Spreadsheet #9 for Justice Jeffrey King.

Mediation Meeting with Justice Jeffrey King on March 22nd .

Professional Services 33.0 hours at $300.00/hour	$9,900.00
Expenses per attached accounting	$143.00
AMOUNT DUE – THIS INVOICE	**$10,043.00**

Howard Almgren, Ph.D., P.E.
Civil Engineer
760-305-2522

JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Almgren Work Product: No. 11
April 23, 2018

Log #2 of Activities

(Activities after submittal of Invoice No.1 on February 20, 2018.)

---

1. February 27th – telephone contact with Justice King; review of my draft Report No. 1
2 hours

2. February 28th – telephone discussion with Justice King; revised connection fees accounting spreadsheet #7-4; assembled accounting data for user fee spreadsheet
6 hours

3. March 1st – developed user fee spreadsheet no. 8, writing Almgren Report No. 2
6 hours

4. March 2nd – finished Almgren Report No. 2, e-mailed various materials to Justice King
5 hours - - - **19 hours total**

5. March 6th – e-mails to both points of contact for documents; e-mails with Justice King
1 hour

6. March 19th – developed spreadsheet no. 9 from IWTP Annual Reports and e-mailed to Justice King
4 hours

7. March 21st – telephone discussion with Justice King and preparation for March 22nd mediation meeting at JAMS
5 hours

8. March 22nd – **mediation meeting at JAMS office in Ontario**
4 hours - - - **33 total**

'Howard Almgren, Ph.D., P.E.
Civil Engineer
760-305-2522

EXPENSE ACCOUNT - Howard Almgren

Re: JAMS REF# 1220054043 Victor Valley Wastewater Reclamation Authority

Item No.	Date	Amount	Description	Receipt
1	3/22/2018	$143.00	Mileage to JAMS office, March 22nd - 220 miles @ 0.65/mile	no
		$143.00	TOTAL	

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Report/Recommendation to the General Manager
April 18, 2019

FROM: Logan Olds, General Manager

TO: Board of Commissioners

SUBJECT: Recommendation to Approve Resolution No. 2019-05: Amend Surplus Property List of Unused Equipment and Scrap

---

RECOMMENDATION

It is recommended that the Board of Commissioners approve Resolution No. 2019-05 to amend the Surplus Property List and authorize the General Manager to approve the disposition of surplus equipment that no longer has any present or prospective use. Including the sale of two Elanco heat exchangers to Dublin Ramon Services District in the amount of $3000.00, three thousand dollars.

REVIEWED BY

This recommendation has been reviewed by Piero Dallarda, Legal Counsel.

BACKGROUND INFORMATION

VVWRA is currently in possession of equipment that is categorized as surplus property. Recently VVWRA experienced the theft of various surplus property including damage and theft of perimeter fencing. Pursuant to Resolution No. 2006-10, staff would like to begin the surplusing of the property listed on Exhibit "B." The majority of the surplus property is to be disposed of or sold as unserviceable junk or scrap. The equipment that is still functional will be disposed of under the policy and procedures regarding the disposal of surplus personal property as outlined in resolution 2006-10. Staff intends to dispose of the property to reduce the likelihood of further damage to VVWRA facilities.

FINANCIAL IMPACT

Revenue generated by the sale of surplus property will be deposited to VVWRA according to the guidelines provided in Resolution 2019-05 and associated policies and procedures.

RELATED IMPACTS

None

RESOLUTION NO. 2019-05

RESOLUTION TO AMEND LIST OF SURPLUS EQUIPMENT ESTABLISHED UNDER RESOLUTION 2006-10 (RESOLUTION ESTABLISHING POLICY AND PROCEDURES FOR DISPOSING OF SURPLUS PROPERTY, DECLARING ITEMS OF VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY TO BE SURPLUS PROPERTY AND AUTHORIZING THE SALE AND DISPOSITION THEREOF)

WHEREAS, the Board of Commissioners of the Victor Valley Wastewater Reclamation Authority [Authority] has deemed that it is in the best interest of VVWRA constituents to dispose of certain items of personal property and equipment [Property] as surplus property pursuant to Government Code Section 37350; and

WHEREAS, the Authority is empowered, pursuant to Government Code Section 37350, to dispose of said items of property when, in its discretion, it finds that said property is no longer required for purposes of the Authority; and

WHEREAS, the Authority adopted Resolution 2006-10 on July 18, 2006 establishing Policy and Procedures as the preferred policies and procedures for the disposal of such surplus property; and

WHEREAS, the Authority has determined that the General Manager may declare any personal property as surplus and that such declaration shall be made in writing, the equipment and materials listed in Exhibit B, which is attached hereto and incorporated herein by this reference, shall be disposed of as surplus property as contemplated in the Policy.

WHEREAS, the Authority has identified and the General Manager has declared further personal property as surplus to be disposed of; and

WHEREAS, the Authority desires to designate income derived from surplus miscellaneous metals recycling to offset costs associated with employee events.

NOW THEREFORE, BE IT RESOLVED that all items listed in Exhibit B shall be declared as surplus property, pursuant to the provisions of Government Code Section 37350, and that the Policy and Procedures attached hereto in Exhibit A shall be followed in order to dispose of said surplus property.

APPROVED AND AMENDED at a regular meeting of the Board of Commissioners of Victor Valley Wastewater Reclamation Authority on this 18^{h} day of April 2019.

Robert Lovingood, Chair
VVWRA Board of Commissioners

ATTEST:

James Cox, Secretary
VVWRA Board of Commissioners

APPROVED AS TO FORM:

Piero Dallarda of
Best Best & Krieger LLP
General Counsel, VVWRA

Exhibit A

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

POLICY AND PROCEDURES RE DISPOSAL OF SURPLUS PERSONAL PROPERTY

Designation of surplus personal property.

The General Manager may, after consultation with the appropriate personnel at VVWRA, declare any personal property as surplus. The declaration shall be in writing, and the property shall be delivered to the General Manager by those employees of VVWRA that have custody and control over it. The General Manager shall store the property and maintain a written inventory. If any supervisor or manager of any department at VVWRA has use of the property, he or she may so request from the General Manager who shall have the authority to assign the property to any department able to make best use of such property. If, however, no supervisor or manager makes request for the use of such property in his department after the inventory has been circulated at least once, then the property shall be finally deemed surplus and having no further public use or benefit.

Sale by sealed bid or auction of surplus personal property.

The General Manager shall, in all cases where the estimated value of the particular item of personal property is five thousand dollars or more, and may, in the sale of all other personal property where, in his or her discretion, he or she determines it in the best interest of VVWRA, sell surplus personal property by means of sealed bid or public auction. The procedure for conducting such sale shall be determined by the General Manager, providing, however, that the following are included in such procedure: (1) At least one notice, three days before the sale, shall be posted in three public places in the VVWRA service area, containing a general description of the type of property to be sold and the time and place of such bid opening or auction; (2) That the terms of all sales shall be cash; (3) The sale by sealed bid or auction shall be to the highest responsible bidder; (4) That a receipt be given to the purchaser. In conducting an auction, the General Manager may contract with a professional auctioneer, and his or her fee may either allow a flat fee, hourly fee, or a percentage of the amount of the sale, based upon that which is the common and customary method and rate for such auctioneering services. The auction may be conducted at the most convenient business location to the person or entity conducting the auction as long as VVWRA's General Manager concurs on the location.

Sale in open market of surplus personal property.

If the surplus property is in usable condition and its estimated value is less than five thousand dollars, the surplus property may be disposed of in the following manner: The General Manager shall make an investigation of the market conditions of personal property of the type declared surplus and determine prices for all surplus property which, in his or her opinion, will be competitive with prices in the open market. He or she may then sell the personal property at market prices by advertising in the most appropriate means which, in his or her opinion, will bring the greatest number of potential purchasers. A notice of the sale shall be posted in three public places within VVWRA's service area, at least three days before the sale, which notice shall set forth the day and time it shall begin; the number of days it is to be continued if it is to last more than one day; the place where the articles may be examined; the place where the

purchase price is to be paid and the property delivered; and a general description of the type of property being sold. The terms of all such sales shall be cash in the amount of the full purchase price. The General Manager or his or her authorized representative shall give a receipt to the purchaser of such property and keep a copy for the files. No sale may be made under this section to any employee. As an alternate to the procedure in this section, the General Manager may dispose of the property by contracting with a professional auctioneer, and his or her fee may either allow a flat fee, hourly fee, or a percentage of the amount of the sale, based upon that which is the common and customary method and rate for such auctioneering services. The auction may be conducted at the most convenient business location to the person or entity conducting the auction as long as VVWRA's General Manager concurs on the location.

Trade-in surplus personal property.

Notwithstanding any provisions of this article for the sale of surplus personal property in the open market or any auction, the General Manager may trade in surplus personal property with an amount he or she determines to be reasonable, to be allowed toward the purchase of a similar type of personal property. Typical situations where this might apply might be in the disposal of used motor vehicles and other machinery and equipment for which trade-ins are commonly permitted by the manufacturer.

Sale of unserviceable junk or scrap personal property.

When any surplus property is deemed to be unserviceable, junk or scrap, no longer suitable for its original purpose, the General Manager shall dispose of such personal property by destruction, trade or sale of said personal property at the best competitive price available in the open market without regards to the other provisions of this article.

Conveying surplus personal property to charitable, nonprofit organizations.

Notwithstanding the other provisions of this article, the Board of Commissioners may convey to a charitable nonprofit organization or a school district any surplus personal property upon receiving reasonable assurances that the property (or the proceeds therefrom) will be used for the benefit of educational, scientific, or charitable purposes, or for community matters such as recreation, education, aid to the destitute, city beautification, or any other activity in which the city government may legitimately participate. The maximum estimated value for said personal property shall not exceed five thousand dollars.

Conveying surplus personal property to other public agencies.

Notwithstanding the other provisions of this article, the Board of Commissioners may convey or sell without recourse to sealed bid or auction surplus personal property to other public agencies including cities, counties, school districts, special districts and joint powers agencies as may be determined by the Board.

Victor Valley Wastewater
Surplus Equipment
Exhibit B

Item	Item Description	Model #	LUCITY Asset#	Location	Qty
1	Elanco Heat Exchanger	M116-48-C-V-1E458	N/A	Yard	1
2	Elanco Heat Exchanger	M013-16-C-V-1E457	N/A	Yard	1
3	Electronic E Waste	Miscellaneous	N/A	Warehouse	2 pallets
4	Pumps, Motors, Valves	Miscellaneous	N/A	Yard	10 pallets
5	Metal Pipe	Miscellaneous	N/A	Yard	Approx. 1000 ft
6	Metal Manhole Frames and Covers	Miscellaneous	N/A	Yard	Approx. 40
7	Metal Equipment	Miscellaneous	N/A	Yard	30 Pallets
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Dublin San Ramon Services District
Water, wastewater, recycled water

Field Operations Facility
7035 Commerce Circle
Pleasanton, CA 94588

phone (925) 828-0515
www.dsrsd.com

VVWRA
MAR 11 2019

March 4, 2019

Mr. Logan Olds
Victor Valley Wastewater Reclamation Authority
20111 Shay Road
Victorville, CA 92394

Subject: Used VVWRA Heat Exchangers – Purchase Offer

Dear Logan:

The Dublin San Ramon Services (DSRSD) has been made aware that Victor Valley Wastewater Reclamation Authority (VVWRA) has two used heat exchangers that were used on its biogas treatment system. DSRSD operates a very similar biogas treatment system. These heat exchangers will enable DSRSD to increase the capacity of its biogas treatment system.

We understand through email communication and photos that these heat exchangers are in great condition. They are Elanco brand with model numbers M116-48-C-V-1E458 and M013-16-C-V-1E457 (see photo below). DSRSD is pleased to offer $3,000 total for both heat exchangers. DSRSD will arrange for pickup or shipping of the units.

Please send an invoice for the total and we can get a check issued.

Please feel free to contact me via email delight@dsrsd.com or by phone at (925) 875-2254.

Sincerely,

STEVEN DELIGHT
Senior Engineer

SD/es

cc: Judy Zavadil – DSRSD
Shawn Quinlan – DSRSD

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY
Report/Recommendation to the Board of Commissioners

18 April 2019

FROM: Logan Olds, General Manager

TO: Board of Commissioners

SUBJECT: Gas Collection Facilities Lease and Energy Storage Agreement

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RECOMMENDATION

It is recommended that the Board of Commissioners authorize the General Manager to sign the Gas Collection Facilities Lease and Energy Storage Agreement.

REVIEW BY OTHERS

This recommendation was reviewed by Piero Dallarda, Legal Counsel, Glen Price, Legal Counsel, The Engineering Committee including Brian Gengler City of Victorville and David Burkett City of Hesperia, and Chieko Keagy, Controller.

BACKGROUND INFORMATION

Of the 280 million cubic feet of biogas produced annually by VVWRA, the Authority flared over 50%. The remaining biogas was used to generate 70% of the electricity used by the treatment plant. Previously staff gave a presentation to the Board indicating that the biogas that is currently flared could have significant value. Anaergia has submitted a letter of interest to utilize VVWRA's flared biogas, clean it and inject it in to the Southwest Gas transmission line that currently runs adjacent to and through VVWRA's property.

The Authority's excess biogas would be treated as renewable natural gas and therefore eligible to obtain a Renewable Identification Number (RIN) from the EPA and State low carbon fuel standard credits (LCFS). RIN's and LCFS are valuable environmental credits generated by producing renewable natural gas from biogas and can sell for 3 to 4 times the cost of natural gas. The Board may also recall that staff was approached by Southwest Gas for the purpose of acquiring VVWRA's excess biogas. Anaergia has accessed a gas cleaning skid that is currently sitting idle and negotiated an offtake agreement with Southwest Gas that would include defraying costs associated with the interconnection (Attached). These agreements are difficult to obtain and have a limited window of opportunity.

Anaergia has indicated that they would furnish, own and operate the equipment as well as enter in to a revenue sharing agreement with VVWRA. This may create additional opportunities to secure fuel to produce biogas, significantly reduce our electrical expense, increase energy efficiency and provide resources for the repair and replacement of associated digestion infrastructure.

Currently staff is finalizing repairs to digesters 1-3 with the goal of placing them back on line so that we may repair the domes on digesters 4&5. The cost of re-commissioning digesters 1-3 will be substantial, as will the repairs to the domes. This project would provide additional revenue to VVWRA for the repair and replacement of the interior coatings to its digestion infrastructure at the main plant.

Once digesters 1-3 are back online and the repairs to digester domes 4&5 have been completed VVWRA would be able to generate as much as 1/3 more biogas or approximately 350 million cubic feet annually. This would be additional revenue in the form of tipping fees to pay for maintenance and repair activities. There may also be substantially more revenue generated from RIN's and LCFS credits.

However just as there are potentially many positive outcomes there are also the possibility of substantial problems if VVWRA were to agree to terms and conditions that were not protective of its infrastructure, fiscal responsibilities and digester capacity dedicated to serve the Member Entities.

The attached public private partnership (P3) agreement addresses the potential risks in several ways:

1. Section 1.2 page 2, VVWRA (landlord) does not make any representation that the digesters are suited for this purpose, therefore the risk is on the developer (tenant).
2. Section 1.3 page 3, the tenant is responsible for securing all financing to construct the project.
3. Section 1.4, page 3, the tenant is responsible for securing the interconnection agreement with Southwest Gas.
4. Section 1.5, page 3, VVWRA will review all permits associated with the project before submittal, this will ensure that the proposed project will not interfere with VVWRA's existing operational permits for air and water quality.
5. Section 1.6, page 3, VVWRA is the lead agency for CEQA.
6. Section 2(d), page 4, The project cannot interfere with VVWRA's existing or future infrastructure.
7. Section 3, page 4, the term is for ten years with two optional five-year extensions.
8. Section 4(a), page 5, base rent will be $1,000.00 per month during the project development phase and $10,000.00 ten thousand dollars a month during operation.
9. Section 4(b), page 5, additional rent will be paid annually based on the volume of gas produced and the revenue generated from RIN's and LCFS credits. Currently the rough estimate is that VVWRA would receive an additional $200,000.00 two hundred thousand dollars per year bringing the total annual revenue to approximately $320,000.00. This would be for biogas that is currently being burned off to the atmosphere and which costs money for VVWRA to dispose of.
10. Section 5(a), page 6, The value of the biogas is significant, and it may prove beneficial for VVWRA to operate its energy production equipment on natural gas and divert all biogas to this project. This section allows for that opportunity. VVWRA staff believes that due to the consistent quality of natural gas that it may reduce the maintenance costs of our generators.
11. Section 5(c), page 6, This section is **KEY,** the project cannot interfere with VVWRA's primary goal of wastewater treatment and protecting public health.
12. Section 5(e), page 6, It may be easier for VVWRA to transition anaerobically digestible material (ADM) procurement to the project to ensure contractual relationships with waste

haulers. VVWRA would retain the revenues associated with this activity which are currently $250,000 annually. This is an option in the future if the project is successful.

13. Section 5(f), page 7, This section is **KEY**, all project responsibilities belong to the tenant, they will design, build, own, operate and maintain their separate infrastructure. VVWRA is not in the business of cleaning, compressing, converting and injecting biogas in to the natural gas distribution pipeline. If the project runs it runs if it does not, then the tenant will be responsible for ensuring that it is operational.
14. Section 5(g), page 7, Tenant is responsible for obtaining all environmental credits (RIN's and LCFS) associated with the project. This is also not VVWRA's area of expertise, so this administrative responsibility is the tenants.
15. Section 5(h), page 7, VVWRA will operate and maintain our digesters they have no rights to them, only rights to the excess biogas if it is produced beyond VVWRA's needs.
16. Section 7(a-e), page 7, The Tenant will provide up to $1 million dollars to coat the inside of digesters 1&2. (Staff will complete the mechanical repairs to digesters 1-3) VVWRA will then allocate its portion of the project's revenue distributed to VVWRA annually to reimburse the tenant for its investment. This allows the costliest single repair item for the digesters to be paid for by the tenant and then reimbursed over five years at zero interest. VVWRA needs to retain as much cash as possible to meet debt service and repair and replacement needs for other infrastructure.
17. Section 17(b), page 13, if the project is successful VVWRA will consider expanding the project at the sole expense of the tenant but is under no obligation to do so.
18. Section 22(a)(ii), if the EPA and the State change the environmental credits and the project is no longer financially viable then the tenant can stop paying the base rent of $10,000.00 a month and go in to default. This would then allow the project to be removed at the cost of the tenant and VVWRA would return to burning the excess biogas in its flares.
19. Section 23(a), page 16, The tenant must remove the project at its cost at the end of the agreement.

FINANCIAL IMPACT

During the planning phase a revenue of $1,000.00 one thousand dollars per month.

During the operational phase a minimum of $10,000, ten thousand dollars a month in base rent in addition to 40% of the annual revenue less expenses, less the base rent.

RELATED IMPACTS

The South Coast AQMD has indicated that it will be regulating flaring from WWTP's within its jurisdiction. If this were to occur in MDAQMD territory VVWRA would have to construct, own and operate this facility at significant cost or enter in to a third-party agreement at substantially less lucrative terms.

EXHIBIT A

TRANSACTION CONFIRMATION
FOR IMMEDIATE DELIVERY

SOUTHWEST GAS CORPORATION	Printed Date: August 20, 2018 Accepted Date: August 20, 2018 Transaction Confirmation#: 21-2-SCA Pkg. No(s).: RNG2

This Transaction Confirmation is subject to the Base Contract between Seller and Buyer dated July 26, 2018.

SELLER:	BUYER:
SOCAL BIOMETHANE, LLC 5780 Fleet Street, Suite 310 Carlsbad CA 92008 Phone: 760-436-8870 Fax: 760-448-6847 Base Contract No.: Transporter : Transporter Contract Number :	Southwest Gas Corporation Attn: Olenick, John Las Vegas NV 89193-8510 Phone: 702/876-7209 Fax: 702/253-7084 Base Contract No.: GPAF18006 Transporter : Transporter Contract Number :

Contract Price: See Special Conditions below.

Delivery Period: See Special Conditions below.

Performance Obligation and Contract Quantity: (Select One)

Firm (Fixed Quantity): _____ MMBtus/day ☐ EFP

Firm (Variable Quantity): [redacted] MMBtus/day Minimum [redacted] MMBtus/day Maximum subject to Section 4.2 at election of Buyer ☐ Seller ☒

Interruptible: Up to _____ MMBtus/day

Delivery Point(s): See Special Conditions below.
(If a pooling point is used, list a specific geographic and pipeline location):

Special Conditions:

This Transaction Confirmation is entered effective as of the Accepted Date and serves to confirm the agreement to the following transaction between Southwest Gas Corporation ("Buyer" or "Southwest"), and SoCal Biomethane, LLC ("Seller" or "SoCal Biomethane"). SoCal Biomethane and Southwest may be referred to hereinafter individually as a "Party" and collectively as the "Parties."

This Transaction Confirmation shall be governed by the terms and conditions contained in that certain Base Contract for Sale and Purchase of Natural Gas dated July 26, 2018 executed by and between Southwest and Seller (being defined as the "Contract" for purposes of this Transaction Confirmation consistent with the definition set forth therein). The Parties agree that to the extent any terms and conditions in this Transaction Confirmation conflict with any terms in the Contract, this Transaction Confirmation shall govern for all purposes.

1.0 DEFINITIONS

1.1 "Accepted Date" means the date this Transaction Confirmation was entered as set forth above in this Transaction Confirmation.

[redacted]

EXHIBIT A

TRANSACTION CONFIRMATION
FOR IMMEDIATE DELIVERY

15.11 There is no third-party beneficiary to this Transaction Confirmation (other than a permitted successor or assignee bound to this Transaction Confirmation).

15.12 The Parties acknowledge and agree that this Transaction Confirmation and the transactions contemplated by this Transaction Confirmation constitute a "forward contract" within the meaning of the Bankruptcy Code and that Buyer and Seller are each "forward contract merchants" within the meaning of the Bankruptcy Code.

15.13 Each Party to this Transaction Confirmation represents and warrants that it has full and complete authority to enter into and perform this Transaction Confirmation. Each person who executes this Transaction Confirmation on behalf of either Party represents and warrants that it has full and complete authority to do so and that such Party will be bound thereby.

15.14 Each of the Parties to this Agreement shall, and shall cause their respective affiliates to, execute and deliver such additional documents, instruments, conveyances and assurances and take such further actions as may be reasonably required to carry out the provisions of this Agreement and the Base Contract for Sale and Purchase of Natural Gas dated July 26, 2018 and give effect to the transactions contemplated under those agreements. Failure to provide such assurances within twenty (20) calendar days shall be deemed a material default under this provision.

15.15 Any headings and subheadings contained in this Transaction Confirmation are used solely for convenience and do not constitute a part of the agreement between the Parties and shall not be used to construe or interpret the provisions of this Transaction Confirmation.

15.16 This Transaction Confirmation will be considered for all purposes as prepared through the joint efforts of the Parties and may not be construed against one Party or the other as a result of the preparation, substitution, submission, or other event of negotiation, drafting or execution hereof.

Seller: SOCAL BIOMETHANE, LLC	Buyer: Southwest Gas Corporation
By:	By: tmc
Title: Vice President	Title: Vice President / Gas Resources
Date: 8/23/18	Date: 8/20/2018

GAS COLLECTION FACILITIES LEASE AND ENERGY SERVICES AGREEMENT

THIS GAS COLLECTION FACILITY LEASE AND ENERGY SERVICES AGREEMENT ("***Lease***"), dated as of _____, 2019, is entered between VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY, hereinafter referred to as "***Landlord***," and SoCal Biomethane, LLC, a Delaware limited liability company, hereinafter referred to as "***Tenant***". Landlord and Tenant are hereinafter sometimes referred to individually as a "***Party***" and together as "***Parties***".

RECITALS

A. Landlord owns and operates a regional wastewater treatment plant ("***WWTP***") and related percolation ponds and other facilities in the City of Victorville, County of San Bernardino, State of California.

B. There are currently five anaerobic digesters located at the WWTP, two active digesters that are currently in active use in operations and three legacy digesters that are currently retired from active use but in the process of being put back into active use. The three legacy digesters are known as digesters 1, 2 and 3 ("***Legacy Digesters***") and the active digesters are known as digesters 4 and 5 ("***Active Digesters***"). For the purposes of this Lease, the Legacy Digesters and the Active Digesters are referred to collectively as the "***Digesters***". The Digesters are located within that portion of the WWTP which is shown on the map attached hereto as ***Exhibit "A"*** ("***Site***").

C. Landlord is undertaking certain improvements and upgrades to the Legacy Digesters to (i) restore the Legacy Digesters to active use; (ii) enhance the energy efficiency and operating capacity of the Legacy Digesters for VVWRA operations at the WWTP; (ii) to promote the recycling of anaerobically digestible material ("***ADM***") primarily composed of food waste; and (iii) to significantly enhance the generation of biogas from the treatment process carried out in the Legacy Digesters ("***Landlord Improvements***"). Tenant has agreed to engage a contractor to perform the interior coating to be applied to the Legacy Digesters in order to facilitate the enhanced generation of biogas at the Site as set forth in this Lease ("***Digester Coating***") and to finance the cost of such work.

D. Tenant desires to install, own and operate a gas conditioning facility at the Site which will be used to upgrade all the biogas produced in the Digesters ("***Biogas Upgrade Facility***") into biomethane which can be sold to unrelated third parties as renewable natural gas, using a natural gas pipeline owned by Southwest Gas, the local natural gas utility ("***Southwest***"). Tenant and Landlord will share the net benefits arising from the Biogas Upgrade Facility.

F. The Biogas Upgrade Facility and related infrastructure necessary for the collection of biogas from the Digesters and injection of biomethane at the interconnection with Southwest are collectively referred to herein as the "***SoCal Biomethane Facilities***".

G. Landlord and Tenant desire to document the terms and conditions upon which Tenant will provide the Digester Coating, lease or have easements on a portion of the Site for the SoCal Biomethane Facilities, and collect and sell biogas produced in the Digesters.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained, the Parties agree as follows:

1. Conditions Precedent to Lease. The effectiveness of this Lease will be subject to the following conditions precedent:

1.1 Site Plan. Tenant will work with Landlord to identify the proposed areas in or around the Site where it will require access for the siting, construction and operation of the SoCal Biomethane Facilities. The two primary factors in making the determination will be efficiency and avoidance of interference with Landlord operations. The area that will be used by Tenant on an ongoing basis for operation and maintenance of the SoCal Biomethane Facilities will be deemed the Premises and a map and legal description of the Premises will be attached hereto as ***Exhibit "B"*** ("***Premises***"). The final description of the Premises will be subject to the approval of Landlord and Tenant.

1.2 Feasibility Studies.

(a) For a period of sixty (60) days following the execution of this Lease ("***Feasibility Period***"), Tenant shall be entitled to make such investigations, examinations and studies of the Digesters and the applicable areas of the WWTP as it deems necessary or desirable (collectively, the "***Feasibility Studies***"), including without limitation, the right to: (i) review and approval of the condition of title, tax and appraisal issues, preliminary construction issues, and land use and regulatory issues; (ii) conduct soils tests and studies, environmental site assessments, and surveys, provided that no destructive or invasive testing will be done without the prior consent of the Landlord; and (iii) evaluate the power infrastructure and suitability for interconnection to Southwest for the delivery of biomethane. Landlord makes no representation or warranty concerning the suitability of the Digesters or any other portion of the WWTP for the uses contemplated herein and Tenant acknowledges and agrees that it is relying solely on the Feasibility Studies and its own knowledge and expertise to make a determination whether to move forward with the transactions contemplated herein. Landlord will cooperate with Tenant to provide requested information on the existing infrastructure of the WWTP. If Tenant, in its sole discretion at any time during the Feasibility Period, does not approve of any or all of the results of the Feasibility Studies or determines that it is no longer interested in moving forward with the SoCal Biomethane Facilities, then Tenant may, but shall not be obligated to, elect to terminate this Lease, and, in such event, Tenant and Landlord shall have no further duties, liabilities or obligations to each other under this Lease. All costs and expenses associated with the Feasibility Studies and any other due diligence of Tenant on the WWTP and its suitability for the SoCal Biomethane Facilities shall be the sole responsibility of Tenant. Tenant shall keep the WWTP free and clear of any liens or encumbrances as a result of its activities conducting the Feasibility Studies.

(b) Indemnity and Insurance. Tenant agrees not to cause any damage to the Digesters and/or the WWTP during any inspections thereof. Tenant further agrees to indemnify, defend and hold Landlord harmless from and against all loss, costs, damages or expenses (including reasonable attorney's fees and expenses) or any claims therefore arising from any and all activities of Tenant, its agents, employees and contractors, on the WWTP. Following the completion of any physically intrusive investigation, Tenant covenants and agrees to restore the Digesters and any other property in all respects to the same condition as existed prior to the testing. The obligation of Tenant pursuant to this section shall survive any termination of this Lease. Prior to any entry upon the WWTP by Tenant or its agents, employees and contractors, Tenant shall deliver to Landlord a current certificate of insurance evidencing that Tenant or its contractor has in place (i) a policy of commercial general liability and automotive liability insurance which names Landlord as an additional insured against personal injury and property damage with a minimum coverage of $1,000,000 per occurrence and $3,000,000.00 in the aggregate; and (ii) worker's compensation coverage in the amounts required by state law for any employees that will be present on the WWTP.

(c) Access. During the Feasibility Period, Landlord shall provide Tenant and its employees, agents, consultants and contractors with supervised access to those areas of the WWTP in or adjacent to the Digesters or the proposed locations of any SoCal Biomethane Facilities for the purpose of undertaking and completing the Feasibility Studies and subsequent due diligence review.

(d) Permits and Approvals. During the Feasibility Period, Tenant will have the right to contact relevant governmental and regulatory authorities regarding the feasibility and requirements for all permits and approvals that will be necessary for the SoCal Biomethane Facilities.

1.3 Financing. Tenant will have secured the financing necessary for the construction of the SoCal Biomethane Facilities or represented to the Landlord that the facility will be self-financed by Tenant.

1.4 Interconnection Agreement. Tenant shall have obtained firm commitments for (i) obtaining an interconnection agreement with Southwest for the pipeline to delivery biomethane from the SoCal Biomethane Facilities; and (ii) entering into a gas purchase agreement with Southwest for the biomethane to be generated from the SoCal Biomethane Facilities. It is expressly understood by Landlord that Tenant will not be obligated to proceed unless it obtains terms and pricing for the interconnection and purchase of biomethane from the SoCal Biomethane Facilities by Southwest that are acceptable to Tenant, in its sole discretion.

1.5 Cooperation by Landlord. Landlord shall reasonably cooperate with Tenant to contact regulatory agencies and obtain information that Tenant deems necessary or advisable for development of the SoCal Biomethane Facilities; *provided, however*, that (a) the costs for obtaining such permits, licenses, instruments and approvals, including the reasonable out-of-pocket costs and expenses incurred by Landlord in cooperating with Tenant, will be paid by Tenant; and (b) no filing of any application for a permit or governmental approval shall occur unless the Project Documents have been approved by the Landlord's governing board. Landlord understands and agrees that its cooperation in this regard is essential to successful development of the SoCal Biomethane Facilities and Landlord shall cooperate with Tenant to facilitate Tenant's Feasibility Studies and ongoing due diligence during the Feasibility Period.

1.6 CEQA. Landlord will be the lead agency for evaluating the environmental impact of the SoCal Biomethane Facilities under the California Environmental Quality Act ("***CEQA***"). Tenant will be responsible for the preparation of all reports and other documentation necessary for CEQA compliance and the submission of those proposed documents to the Landlord for its independent review, as well as complying with any mitigation measures that may be required in connection with the SoCal Biomethane Facilities. Tenant will further reimburse Landlord for all staff time and resources required in connection with CEQA compliance and will indemnify and cooperate in the defense of Landlord from any claim or lawsuit which is filed challenging any approval of the SoCal Biomethane Facilities by the Landlord. Notwithstanding the foregoing, in the event of a challenge to the approval of the SoCal Biomethane Facilities, Landlord and Tenant will meet and confer to discuss the feasibility of defending such challenge and moving forward with the Lease. If the Parties cannot agree on a strategy to move forward, then either Party may terminate this Lease and Tenant may withdraw the project. However, the obligation by Tenant to indemnify and cooperate in the defense of the Landlord shall survive any termination of this Lease or rescission of any approvals. The completion of the CEQA process and approval by the Landlord's governing board will be a condition precedent to the effectiveness of this Lease, and the Parties agree that nothing herein constitutes a commitment by the Landlord to issue any such approvals or otherwise restricts the Landlord's ability to impose feasible mitigation measures or

consider feasible alternatives as part of its CEQA process. Landlord will be solely responsible for CEQA compliance with respect to the Landlord Improvements and the Digester Coating.

1.7 Effective Date. The date upon which Landlord and Tenant have confirmed in writing that all conditions precedent set forth in this Section 1 have been satisfied will be the "***Effective Date***" of this Agreement, and it will become enforceable on this date. It is expected the Effective Date will occur no later than eighteen (18) months from the date this Lease is executed. If the conditions precedent have not been satisfied or waived within this period, then either Landlord or Tenant may terminate this Agreement upon thirty (30) days written notice to the other party.

2. Leased Premises.

(a) Premises. Landlord hereby leases to Tenant, and Tenant hereby leases from Landlord, the Premises, conditioned upon the terms of this Lease.

(b) Gas Pipeline Easement. Landlord will grant an easement for the pipeline between the Premises and the interconnection point with Southwest in a form that is reasonably acceptable to Landlord ("***Pipeline Easement***").

(c) Access Easement. Landlord grants to Tenant for the benefit of Tenant and its agents, contractors and assignees, at no additional cost or expense to Tenant, a non-exclusive easement, for ingress and egress along Shay Road to and from the Premises, subject to any reasonable security measures that Landlord may put in place along the perimeter of the Landlord Property and specifically including any security gate that may be installed to regulate access to the Landlord Property along Shay Road. Landlord will cooperate with Tenant to ensure that such security measures do not materially interfere with Tenant's ingress and egress along Shay Road to access the Premises.

(d) Retained Rights. Landlord will continue to have the right to operate the Digesters and operate, repair and replace all existing infrastructure including which is located on or below the Premises and further retains the right to locate infrastructure, pipelines or other utility installation across or under the Premises in the future, provided, however, that such infrastructure will be situated so as to cause minimal disruption and interference to Tenant's use of the Premises. Landlord will notify Tenant of any such intended use and provide plans and drawings for the same for Tenant's review and comment at least sixty (60) days prior to the commencement of any construction or other installation. The area utilized by Landlord will not include any areas of the Premises upon which Tenant has erected any permanent structures or improvements.

3. Term. The "***Term***" of this Lease will be that period of time commencing upon the Effective Date of this Lease and continuing until the tenth anniversary of the date on which delivery of biomethane in Southwest pipeline starts ("***Commercial Operation Date***"). The first day of the Term is referred to herein as the "***Commencement Date***". The last day of the Term is referred to herein as the "***Expiration Date***". Tenant will have the option, in its sole discretion, to extend the Term for two additional five (5) year periods provided that there is no default in its obligations under this Lease. Tenant will give notice of its intent to exercise such options no less than one hundred eighty (180) days prior to the expiration of the then current Term. If Tenant does not give such notice, then this Lease will expire at the end of the then current Term.

4. Rent.

(a) Base Monthly Rent. During the period from the Commencement Date to the Commercial Operation Date, Tenant will pay to Landlord as basic monthly rent for the Premises the sum of One Thousand Dollars ($1,000.00) per month ("***Basic Rent***"). Commencing on the Commercial Operation Date, the Basic Rent will increase to the sum of Ten Thousand Dollars ($10,000.00) per month.

(b) Additional Rent. As additional rent for the use of the Premises, Tenant will further pay to Landlord difference between (a) forty percent (40%) of the Net Revenue generated by Tenant from the operation of the SoCal Biomethane Facilities and (b) Base Rent ("***Additional Rent***" and together with the Basic Rent, the "***Rent***"). For the purposes of this Section 4(b), "***Net Revenue***" will be equal to (i) the gross revenue of the SoCal Biomethane Facilities that is earned from the sale of biomethane, biogas or any other product that is produced from biogas that is collected from the Site, including the revenue derived from any environmental or renewable energy credits; minus the sum of (ii) the actual direct operating costs of the SoCal Biomethane Facilities during each measurement period, including without limitation, any reimbursement to Landlord for natural gas costs in lieu of the use of biogas pursuant to Section 5(a); (iii) the actual capital costs incurred by Tenant in the design, construction and financing of the SoCal Biomethane Facilities amortized on a monthly basis over a period of three to seven years as determined by Tenant in accordance with reasonable accounting practice; (iv) the funding of a reasonable reserve for the repair and maintenance of the SoCal Biomethane Facilities over the Term and (v) all administrative and overhead costs of the Tenant which are directly attributable to its operation of the SoCal Biomethane Facilities, including reasonable allocations of costs and resources that are shared with affiliated entities.. Additional Rent that is payable to the Landlord will be applied to the outstanding balance of the cost that has actually been paid by Tenant for the Digester Coating as described in Section 7.1(c). Upon payment in full of the obligation of Landlord pursuant to Section 7.1(c), all Additional Rent will be paid directly to Landlord. An example of the calculation and application of Additional Rent is as follows: If the Net Revenue of the SoCal Biomethane Facilities in a given year is $500,000, then the Landlord's Additional Rent will be the difference of (a) $200,000, and (b) Base Rent, which is 120,000, resulting in Additional Rent of $80,000. If the balance due pursuant to Section 7.1(c) is $250,000, then the $80,000 would be applied in full, leaving a balance due of $170,000.

(c) Payment to Landlord. All Basic Rent due under this Lease shall be payable in advance on the first day of each month. In the event the Term of this Lease commences on a day other than the first day of the month, then the Basic Rent for the first month will be prorated based upon the number of days in such month and paid within ten (10) working days following the Commencement Date. If the term of this Lease expires on a day other than the end of a month, the payment of Basic Rent for the last partial month of the Term hereof will be prorated on such basis. All Additional Rent will be payable within thirty (30) days of the end of each calendar quarter during the Term and will accompanied by a written statement showing the source and calculation of the Additional Rent for such quarter. Landlord will have the right to audit the amount of the Additional Rent once during each calendar year by giving written notice to Tenant and Tenant will make its applicable books and records available to Landlord and its agents during normal business hours. Landlord will bear the cost of such audit unless Tenant is found to have underpaid the Additional Rent by an amount in excess of three percent (3%) of the Additional Rent due, in which case Tenant will reimburse Landlord for all costs of the audit. Tenant must pay all Rent to Landlord in lawful money of the United States of America at the address indicated in Section 26, or to such other person or at such other place as Landlord may from time to time designate in writing.

5. Use of the Premises.

(a) Right to Biogas. Landlord currently uses biogas generated from the Digesters to power two turbine generators that create electricity for Landlord's operations ("***Generators***"). Tenant will have the right to take all biogas collected from the Digesters in excess of the biogas used by Landlord for the Generators. Notwithstanding the foregoing, Tenant will further have the option to take all biogas collected from the Digesters provided that Tenant reimburses Landlord on a monthly basis in arrears for the adjusted cost of natural gas in lieu of biogas for the production of electricity by the Generators to meet the operations needs of the WWTP on an as-needed basis ("***Energy Production Volume***"). The adjusted cost of natural gas is: (i) the actual cost of natural gas used for the production of electricity by the Generators, less (ii) the cost that would have been incurred by Landlord to condition an equal volume of biogas for use by the Generators. For example, if Landlord must purchase 70,000 MMBTu of Natural gas in a year, and had to pay $6 per MMBTu for this gas, and the cost of conditioning biogas for use in the Generators was $1/MMBtu, the net reimbursement to Landlord would be $350,000 (70,000 multiplied by $5).

(b) Utilities. At the request of Tenant, Landlord will supply water and electricity through its facilities at the WWTP for the SoCal Biomethane Facilities. Tenant will install a utility grade meter at the delivery point of such water and electricity and will pay the actual cost to Landlord of its proportional share of such utilities no later than fifteen (15) days after receiving an invoice from Landlord:

(c) Cooperation. Landlord and Tenant will cooperate in good faith to manage the mix of waste in the Digesters to (i) maximize the production of biogas; (ii) produce biogas that is capable of being certified as compliant with EPA D3 qualification; and (iii) maximize the quality of biogas that is produced for efficient conditioning to biomethane. The foregoing cooperation may include modifying the volume of ADM in the Digesters. Tenant will provide data to Landlord from time to time on the target levels for constituents in the biogas and how such constituents are impacted by ADM. Notwithstanding the foregoing, Tenant acknowledges that the first priority of Landlord is the safe and efficient operation of the Digesters to fulfill Landlord's public purpose, which is the proper treatment of wastewater in compliance with Landlord's permits and legal obligations, and that Landlord may not be able to optimize the use of ADM if it could result in disrupting a healthy biological ecosystem in the Digesters.

(d) Gas Monitoring and Management. Tenant will be responsible for monitoring and managing the flow of gas within the gas collection system at the Site. If Tenant determines that storage facilities for the biogas are necessary to optimize production or operation, then Tenant may submit a plan to Landlord to build such storage on or around the Premises. The storage plan will be subject to review and approval by Landlord, which approval will not be unreasonably withheld provided that such storage does not create a risk to health or safety at the WWTP and that space for storage is reasonably available without disrupting Landlord operations. Tenant will be responsible for all costs and permitting required to build and operate biogas storage facilities.

(e) ADM Processing. It is the intent of Landlord to supplement wastewater treatment in the Digesters with the processing of ADM provided by third parties to maximize the volume of biogas production, subject to all of the federal, state and local permitting and other legal requirements applicable to the operation of the Digesters by Landlord. Landlord will be entitled to retain all tipping fees from the processing of ADM for third parties. Landlord and Tenant may enter into a separate agreement whereby Tenant will procure and manage the delivery of ADM for processing in the Digesters, in which case such agreement will control the scheduling, storage, processing and revenue sharing with respect to ADM.

(f) Permitted Use. Tenant is authorized to use the Premises to install, own, operate, maintain and repair the SoCal Biomethane Facilities for the purpose of collecting, conditioning and upgrading biogas for the production of biomethane and to deliver such biomethane for sale to Southwest and/or other third parties as appropriate to maximize the revenue from the project.

(g) Environmental Credits. Tenant will apply for and obtain all environmental credits that are available in connection with the production of biogas. Tenant will own all such credits, subject to the sharing of Net Revenue with Landlord.

(h) Maintenance of Digesters. Landlord will be responsible for all operating repairs and maintenance of the Digesters during the Term, subject to the warranty obligations of Tenant as set forth in Exhibit C.

6. Tenant Operations and Improvements.

(a) Covenants of Tenant. Tenant will comply with the following covenants and obligations in connection with its operations on the Premises:

(i) Legal Compliance. Tenant will comply with all permits issued in connection with the construction and operation of the SoCal Biomethane Facilities and all federal, state and local laws, rules and regulations applicable to the permitted activities of Tenant pursuant to Section 5.

(ii) Environmental Testing. Tenant agrees to allow Landlord to conduct safety and environmental testing at the Premises no less than once every calendar year. Such testing may include, but shall not be limited to, testing the integrity of the SoCal Biomethane Facilities for containment of biogas and biomethane, air sampling, soil samples and water quality samples. Landlord shall bear the costs of such testing. Tenant agrees to provide Landlord immediate access to conduct any such testing, subject to reasonable notice given to Tenant. Landlord also agrees to share with Tenant the results of any testing conducted at the Premises, including any testing required under Tenant's current permits.

(b) Tenant Improvements. All improvements required or permitted by this Lease will be constructed by licensed contractors. Tenant shall be responsible for obtaining all permits and approvals necessary for construction and operation of the improvements, including without limitation, compliance with all building codes of the City of Victorville. All permitted improvements must be inspected and approved by the City of Victorville prior to use. Landlord will reasonably cooperate with Tenant as necessary for the application process for any permits and approvals. All of Tenant's contractors shall carry the insurance required by this Lease while working on the Landlord Property and shall name Landlord as an additional insured.

7. Digester Coating.

(a) Tenant will undertake the Digester Coating work in accordance with the Digester Coating Documents (as defined below) and the terms and conditions set forth on Exhibit "C".

(b) Within sixty (60) days of the execution of this Lease, Tenant and Landlord will agree in writing on (i) a detailed scope of work for the Digester Coating; (ii) the schedule for completion of the Digester Coating; and (iii) the Digester Coating Cost as set forth in subsection (c) below. The scope of work, schedule and Digester Coating Cost are collectively referred to herein as the "***Digester***

Coating Documents". The Digester Coating Documents will be subject to the approval of Landlord and Tenant, each in their sole discretion.

(c) Tenant and Landlord will agree on a final construction budget for the Digester Coating, which budget will include a description in reasonable detail of all hard and soft costs to be incurred by Tenant to finance, design and complete the Digester Coating ("***Digester Coating Cost***"). Tenant has agreed to advance up to a maximum amount of One Million Dollars ($1,000,000.00) for the Digester Coating Cost, subject to reimbursement as set forth in Section 7(d) ("***Tenant Advance***"). Landlord has agreed to pay Tenant that portion of the Digester Coating Cost that exceeds the Tenant Advance up to a maximum amount of Five Hundred Thousand Dollars ($500,000.00). Upon the completion of the work on the Digester Coating, Tenant will provide Landlord with the final Digester Coating Cost and Tenant Advance based on actual expenditures, including a full reconciliation of the final construction budget to the actual costs incurred by Tenant. Landlord will have the right to audit the books and records of Tenant related to the actual Digester Coating Cost during normal business hours with ten (10) days prior written notice to Tenant. In no event will the final Digester Coating Cost exceed the amount of the final construction budget without the prior written approval of Landlord. All costs associated with the Tenant Advance will be included within the Digester Coating Cost and no interest will accrue on the outstanding balance of the Tenant Advance.

(d) If the Parties have not agreed on the Digester Coating Documents within the time period set forth in Section 7(b), then either Tenant or Landlord will have the right to terminate this Agreement upon thirty (30) days written notice to the other party. The Digester Coating work is anticipated to be completed no later than July 31, 2019 and is not contingent upon the conditions precedent set forth in Section 1. Notwithstanding the foregoing, if this Agreement is terminated as a result of the failure of the conditions precedent set forth in Section 1, then Landlord will reimburse Tenant for the full amount of the Tenant Advance in equal monthly payments over a term of five (5) years from the date of termination.

(e) Following the Effective Date, if Landlord's share of the Additional Rent, as set forth in Section 4(b), is not sufficient to fully reimburse Tenant for the full amount of the Tenant Advance during the five (5) year period following the Commercial Operation Date, then Tenant may invoice the Landlord for the outstanding balance of such advance on the fifth anniversary of the Commercial Operation Date and Landlord will pay such balance due within sixty (60) days of the date of such invoice.

8. Delivery of Premises; Condition "AS-IS".

Landlord shall deliver possession of the Premises to Tenant upon the Commencement Date free of any known defective, dangerous or unsafe conditions. Tenant acknowledges that Tenant has had an adequate opportunity to fully inspect the Premises and determine its suitability for Tenant's purposes. Except as set forth herein, Tenant acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the availability of utilities or other services to the Premises, permits or other governmental approvals, the condition of the Premises or the suitability of the Premises for Tenant's business. Tenant additionally acknowledges that Landlord shall not have any obligation for securing or protecting the Premises during the Term of this Lease, and that neither Landlord nor any agent of Landlord has made any representation with respect to the safety or security of the Premises for Tenant's business. Tenant shall be solely responsible for providing adequate security and protection of the Premises during the Term of this Lease. Subject to (and without limiting in any respect) the representations, warranties, covenants and obligations of Landlord set forth herein, Tenant is accepting and leasing the Premises in its current condition, "as-is".

9. Liens.

(a) Subject to the provisions of Section 9(b) below, Tenant will keep the Premises free from any liens arising out of any work performed, materials furnished, or obligations incurred by Tenant. Landlord has the right to post and keep posted on the Premises any notices that may be provided by law or which Landlord may deem to be proper for the protection of Landlord from such liens.

(b) Tenant has the right to contest the validity or amount of any lien or claimed lien, if Tenant takes all steps necessary to prevent any sale, foreclosure or forfeiture of the Premises or any portion thereof by reason of such nonpayment. On final determination of the lien or claimed lien, Tenant must immediately pay any judgment rendered with all proper costs and charges and have the lien or claimed lien released or judgment satisfied at Tenant's expense.

10. Landlord Mortgages and Other Encumbrances.

(a) As of the date of execution of this Lease, in the event the Premises or Landlord's interest or estate therein, or any portion thereof, is subject to any existing mortgages or deeds of trust, Landlord must obtain and deliver to Tenant, within ten (10) days after the date this Lease is executed, written agreements from each holder of such mortgages or deeds of trust providing that, any such existing mortgage or deed of trust is, and will at all times remain, subordinate to this Lease. Tenant will attorn to the person who acquires Landlord's interest hereunder through any such mortgages or deeds of trust delivered to Tenant. Landlord agrees to cause to be executed, acknowledged and delivered such further instruments evidencing such subordination of the lien of all such mortgages and deeds of trust to this Lease as may reasonably be required by Tenant.

(b) This Lease will be prior to any Encumbrance (as defined below) entered into and/or recorded after the date of this Lease affecting all or part of the Premises. The word "***Encumbrance***" as used in this Section 10(b) is an all-inclusive term referring to: (a) a deed of trust, mortgage, and/or other security device, including the note and/or obligation that is secured thereby; (b) easements of any kind or nature, including, without limitation, grants of rights of way; (c) leases, tenancy and rental agreements, including, without limitation, ground leases; (d) reservations of rights; and/or, (e) declarations of covenants, conditions and restrictions.

(c) If, however, Landlord and/or any third party to an Encumbrance requires this Lease be subordinate to such Encumbrance, this Lease will be subordinate to that Encumbrance as long as the Encumbrance does not adversely affect Tenant's rights under or in this Lease in any manner whatsoever. Such subordination will be conditioned on Landlord obtaining a written agreement from the other party(ies) to, and furnishing to Tenant a copy of such duly executed written agreement detailing, the subordinating Encumbrance to the effect that no foreclosure (including, without limitation, a deed in lieu of foreclosure), and/or termination of any such Encumbrance will affect Tenant's rights under this Lease. Tenant will attorn to any purchaser at a foreclosure sale, to any grantee or transferee of any deed given in lieu of foreclosure, or any successor of Landlord.

(d) Landlord may at any time, and from time to time, as it may see fit, mortgage, grant a deed of trust on, or otherwise hypothecate its fee estate in the Premises and/or its interest or rights hereunder, or any part thereof, subject always to Tenant's rights under this Lease. No such alienation or encumbrance shall relieve Landlord of any of its covenants, liabilities and obligations under this Lease. Tenant will cooperate reasonably with Landlord in the event Landlord at any time during the term of this Lease desires to mortgage, grant a deed of trust on, or otherwise hypothecate its fee estate in the Premises and/or its interest or rights hereunder, or any part thereof.

(e) Upon any default on the part of Landlord, as set forth in Section 24, Tenant will give notice to any beneficiary of a deed of trust or mortgagee covering the Premises who has provided Tenant with written notice of their interest together with an address for receiving notice.

(f) At least twenty (20) days before termination of this Lease by reason of Landlord's default or breach under this Section 10, Tenant shall provide written notice to each such beneficiary or mortgagee of Tenant's intention to terminate this Lease, which notice shall describe Landlord's default or breach. Tenant may not terminate this Lease because of Landlord's default or breach if, within twenty (20) days after such written notice, any such beneficiary or mortgagee shall have: (i) cured all defaults or breaches described in said notice that can be cured by the payment of money; or (ii) if defaults or breaches are not curable by the payment of money, commenced to cure such defaults or breaches and continue diligently to prosecute the same towards completion.

(g) Tenant agrees that each lender to whom this Lease has been assigned by Landlord is an express third party beneficiary hereof. Tenant shall not make any prepayment of rent more than one (1) month in advance without the prior written consent of each such lender.

11. Insurance.

(a) Tenant shall procure and maintain insurance of the types and in the amounts described below in this Section ("***Required Insurance***"). If any of the Required Insurance contains a general aggregate limit, such insurance shall apply separately to this Lease or be no less than two times the specified occurrence limit.

(i) General Liability Insurance. Tenant shall procure and maintain occurrence version general liability insurance, or equivalent form, with a combined single limit of not less than Two Million Dollars ($2,000,000) per occurrence and Five Million Dollars ($5,000,000) in the aggregate for bodily injury, personal injury and property damage.

(ii) "All Risk" Property Insurance. Tenant shall procure and maintain a policy of property insurance for perils usual to a standard "all risk" insurance policy on all its improvements or alterations in, on or about the Premises (collectively, the "***Improvements***"), with limits equal to one hundred percent (100%) of the full replacement value of all such improvements or alterations.

(iii) Business Vehicle and Automobile Liability Insurance. Tenant shall procure and maintain business automobile liability insurance, or equivalent form, with a combined single limit of not less than Two Million Dollars ($2,000,000) per occurrence. Such insurance shall include coverage for the ownership, operation, maintenance, use, loading or unloading of any auto owned, leased, hired or borrowed by the Tenant or for which the Tenant is responsible, and shall include specific coverage for all vehicles owned, contracted or used by Tenant in the removal, transportation and disposal of biosolids.

(iv) Workers' Compensation Insurance. Tenant shall maintain workers' compensation insurance with limits as required by the Labor Code of the State of California and employers' liability insurance with limits of not less than One Million Dollars ($1,000,000) per occurrence and in the aggregate as applicable, at all times during which Tenant retains employees.

(v) Renewal Terms. During any renewal term, Tenant will update the insurance coverage set forth in this Section 11(a) to reflect any changes in the policy coverage and limits that are generally required by Landlord for work or activities on site at the WWTP.

(b) Any deductibles or self-insured retentions must be declared to and approved by Landlord, which approval will not be unreasonably withheld. At the option of Landlord, either: (a) the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects Landlord, its elected officials, officers, employees, agents and volunteers or (b) Tenant shall provide a financial guarantee satisfactory to Landlord guaranteeing payment of losses and related investigation costs, claims and administrative and defense expenses, provided, however, that the foregoing shall not cover actions or claims arising out of or related to the negligence or willful misconduct of Landlord or its employees or agents.

(c) The Required Insurance shall name Landlord, its elected officials, officers, employees, agents, and volunteers as additional insureds. The Required Insurance shall contain standard separation of insureds provisions, and shall contain no special limitations on the scope of its protection to Landlord, its elected officials, officers, employees, agents, and volunteers.

(d) The Required Insurance shall be primary with respect to any insurance or self-insurance programs covering Landlord, its elected officials, officers, employees, agents, and volunteers. All policies for the Required Insurance shall provide that the insurance company waives all right of recovery by way of subrogation against Landlord in connection with any damage or harm covered by such policy.

(e) Tenant shall furnish Landlord with certificates of insurance and endorsements effecting coverage for the Required Insurance on the Commencement Date. The certificates and endorsements for each insurance policy shall be signed by a person authorized by that insurer to bind coverage on its behalf. Landlord reserves the right to require complete, certified copies of all required insurance policies, at any time.

(f) Landlord shall maintain the Required Insurance for the term of this Lease and any extension thereof, and shall replace any certificate, policy or endorsement which will expire prior to that date. All policies shall be endorsed to provide that the Required Insurance shall not be canceled without providing Landlord with thirty (30) days' prior written notice.

(g) Unless approved in writing by Landlord, all Required Insurance shall be placed with insurers licensed to do business in the State of California and with a current A.M. Best rating of at least A:VIII.

12. Indemnification.

(a) Tenant shall defend, indemnify and hold harmless Landlord, its elected officials, officers, employees, agents and volunteers, from any and all actual or alleged claims, demands, causes of action, liability, loss, damage or injury, to property or persons, including wrongful death, whether imposed by a court of law or by administrative action of any federal, state or local governmental body or agency ("***Claims***"), arising out of any acts, omissions, negligence or willful misconduct of Tenant, its personnel, employees, agents or subcontractors in connection with this Lease, Tenant's possession of the Premises, or Tenant's activities on the Premises. This indemnification includes, without limitation, the payment of all penalties, fines, judgments, awards, decrees, reasonable attorney's fees and related costs or expenses, and the reimbursement of Landlord, its elected officials, officers, employees, agents, and/or

volunteers for all reasonable legal expenses and costs incurred by each of them. This indemnification will not apply to the extent that a Claim is caused by the negligence or willful misconduct of Landlord or its employees or agents. Tenant's obligation to indemnify shall survive the expiration or termination of this Lease, and shall not be restricted to insurance proceeds, if any, received by Landlord, its elected officials, officers, employees, agents, or volunteers.

(b) Landlord shall indemnify, defend and hold harmless Tenant and its directors, officers, employees and agents for, from and against any Claims arising out of any acts, omissions, negligence or willful misconduct of Landlord in connection with this Lease, Landlord's possession of the Premises or Landlord Property, or Landlord's activities on the Premises or Landlord Property. This indemnification includes, without limitation, the payment of all penalties, fines, judgments, awards, decrees, reasonable attorney's fees and related costs or expenses, and the reimbursement of Tenant and its directors, officers, employees and agents for all legal expenses and costs incurred by each of them. This indemnification will not apply to the extent that a Claim is caused by the negligence or willful misconduct of Tenant or its employees or agents as determined by a court or administrative body of competent jurisdiction. Landlord's obligation to indemnify shall survive the expiration or termination of this Lease, and shall not be restricted to insurance proceeds, if any, received by Tenant, its employees and agents.

(c) The provisions of this Section 12 shall not apply to any Claims related to or arising out of Hazardous Materials on the Premises, all of which shall be governed by the provisions of Section 42.

13. Inspection. Upon at least forty-eight (48) hours prior written notice to Tenant, Tenant shall permit Landlord and its agents to enter into and upon the Premises at all reasonable times for the purpose of inspecting the same.

14. Landlord Cooperation. Landlord and Tenant agree that if and when any governmental entity or any public utility company requires the dedication, execution and delivery of any rights-of-way or easements over, under or through the Premises for the purpose of providing water, gas, steam, electricity, telephone, storm and sanitary sewer or any other necessary public utility service or facility for the benefit of the Premises in accordance with the intended use, subject to Landlord's reasonable approval, Landlord and Tenant will execute, acknowledge and deliver, such instruments or documents as may be reasonably required for such purpose. Landlord's cooperation, as provided for herein, includes, among other things, granting other necessary approvals, joining in any offers of dedication, and executing, acknowledging and delivering, subject to Landlord's approval, any necessary instruments or documents; provided, however, that Landlord is not obligated to expend any sums of money in connection with its obligation to cooperate as provided in this Section 14.

15. Utility Services. Except as set forth in Section 5(b), at Tenant's sole cost and expense, Tenant will obtain and pay for, all utilities including, but not limited to, electricity, gas, potable water, reclaimed water, sewer and telephone and other services which Tenant requires with respect to the Premises.

16. Maintenance and Repair.

(a) At all times during the term hereof, Tenant, at its sole cost and expense, shall operate its business on the Premises in a manner that will keep the Premises, every part thereof and all of the SoCal Biomethane Facilities, in good condition and repair, ordinary wear and tear and damage thereto by fire, earthquake, act of God or the elements excepted.

(b) If the SoCal Biomethane Facilities are damaged or destroyed by a risk that is covered by the insurance required by Section 11, then Tenant shall restore the SoCal Biomethane Facilities to substantially the same condition as they were immediately before the destruction or to the extent covered by insurance and relevant pursuant to codes and requirements at the time.

(c) If the SoCal Biomethane Facilities are materially damaged or destroyed by a risk that is not covered by the insurance, Tenant may terminate this Lease at its sole discretion. Alternatively, Tenant may repair the facility at its sole cost and expense. The cost of such repairs shall be added to the capital cost of the SoCal Biomethane Facility and amortized on a monthly basis over the remaining useful life of the facility. Tenant will be required to give written notice to Landlord of its intent to terminate or rebuild within sixty (60) days after the date on which the damage or destruction occurred. If Tenant does not elect to terminate the Lease or fails to give timely notice of termination, Tenant must restore the SoCal Biomethane Facilities. If Tenant terminates this Lease pursuant to this Section 16(c), termination shall be accomplished in accordance with Section 23.

(d) The provisions of Civil Code Sections 1932(2) and 1933(4), and any successor statutes, are inapplicable with respect to any destruction of the SoCal Biomethane Facilities (such sections providing that a lease terminates upon the destruction of a Premises unless otherwise agreed between the parties to the contrary).

17. Alterations and Expansion.

(a) Tenant shall not make any material alterations, additions or improvements to or of the Premises, or any part thereof without the prior approval of Landlord, which approval will be in Landlord's sole discretion unless the proposed alternations, additions or improvements are necessary to comply with applicable laws and safety requirements, in which case the Landlord will not unreasonably withhold approval. In exercising Landlord's approval rights in its sole discretion, Landlord agrees that it will evaluate proposed alternations, additions or improvements that would improve the efficiency or productivity of the SoCal Biomethane Facilities in good faith, but reserves that right at all times to make decisions consistent with the best interests of Landlord's primary purpose as a public utility. All material alterations, additions and improvements to the Premises will be made by Tenant at Tenant's sole cost and expense and shall comply with the requirements of Section 6(b). If an alteration, addition or improvement, following installation, is determined by Landlord to materially diminish or otherwise interfere with the proper operation of the Digesters, then Landlord may require Tenant to remove such alteration, addition or improvement.

(b) During the Term, Tenant may propose one or more expansions of its facilities within the boundaries of the WWTP for the diversion and treatment of ADM in response to market forces created by the requirements of SB1383. Such new facilities may only be located within areas of the WWTP that are not reasonably expected to be used by Landlord and which do not interfere with the operation of the WWTP. All costs associated with the design, construction and operation of any new facilities will be the responsibility of Tenant. Landlord agrees to consider any proposal from Tenant in good faith, but reserves that right at all times, in its sole discretion, to make decisions consistent with the best interests of Landlord's primary purpose as a public utility. Landlord will notify Tenant within ninety (90) days of the formal submission of a written plan for expansion whether Landlord desires to proceed with the negotiation of a new agreement to cover the operation of such facilities or an addendum to this Agreement.

18. Taxes.

(a) Real Property Taxes and Assessments. Tenant shall be responsible for the timely payment of all property taxes and assessments, including without limitation, any and all utility, city or county assessments which are assessed, levied, confirmed or imposed on the SoCal Biomethane Facilities during the term of this Lease. Although Landlord is exempt from property tax, the County of San Bernardino may impose possessory interest tax to the leasehold interest of Tenant as a private party.

(b) Other Taxes. Tenant shall be responsible for the payment of all personal property taxes and any local, state or federal taxes or fees resulting from the operation of Tenant's business. Furthermore, Tenant shall be responsible for all costs associated with any utility improvements upon the Premises which are required for the business of Tenant.

(c) Tenant's Right to Contest. Before any delinquency occurs, Tenant has the right to contest or object to the amount or validity of any taxes by appropriate legal proceedings. Landlord is not required to join in any such proceeding unless Landlord's participation is necessary to prosecute the proceeding properly and Tenant has fully indemnified Landlord to its reasonable satisfaction against all costs and expenses in connection with such proceeding.

19. Assignment and Subletting.

(a) Assignment. Except as otherwise permitted in Section 25, Tenant shall not assign, hypothecate or transfer, either directly or by operation of law, this Lease or any interest herein without prior written consent of Landlord. Any attempt to do so shall be null and void, and any assignee, hypothecate or transferee shall acquire no right or interest by reason of such attempted assignment, hypothecation or transfer. Landlord covenants and agrees that upon an assignment, or transfer of the Lease, Tenant is relieved of any and all covenants and obligations under this Lease accruing after such assignment or transfer.

(b) Subletting. Without the prior written consent of Landlord, Tenant may not sublet the Premises, or any part thereof, or permit the use or occupancy of the Premises by any person other than Tenant. Tenant covenants and agrees that no sublease relieves Tenant from any of its covenants and obligations accruing after such sublease, and Tenant will remain liable under this Lease for the full term hereof.

(c) Transactions with Affiliates. Notwithstanding Sections 19(a) and (b), Tenant has the right, without Landlord's consent, to assign or sublet this Lease to an Affiliate of Tenant. Any entity in which Tenant owns at least fifty percent (50%) of the outstanding voting stock (or similar evidence of management or voting control) hereinafter will be referred to as an "***Affiliate***". Tenant covenants and agrees that no such transaction with an Affiliate relieves Tenant from any of its covenants and obligations accruing after such transaction, and Tenant will remain liable under this Lease for the full term hereof.

(d) Consent Not to be Unreasonably Withheld. Notwithstanding Sections 19(a) and (b), Tenant may assign, hypothecate, transfer or sublet this Lease or any interest herein with the prior written consent of Landlord. Such consent of Landlord shall not be unreasonably withheld or delayed, provided, however, that in determining whether to consent to any such assignment, hypothecation, transfer or subletting, Landlord may consider any relevant factors or issues in connection therewith, including without limitation: (i) whether the proposed transferee has sufficient financial capability to perform all of Tenant's obligations under the Lease; (ii) whether the proposed transferee or the use or business to be carried on by the proposed transferee will cause a diminution in the reputation or value of

the Premises or any adjacent property owned by Landlord, or otherwise increase the risk of contamination of the Premises; (iii) the terms of any assignment or subletting of the Premises; and (iv) whether the proposed transfer might expose Landlord to any material additional risk, liability or cost. Landlord's determination as to whether the proposed transferee has sufficient financial capability to perform all of Tenant's obligations under the Lease shall not be influenced by the financial statements previously delivered to Landlord by the proposed transferor.

(e) No Waiver. Consent by Landlord to any assignment or subletting of this Lease shall not operate to exhaust Landlord's rights under this Section 19. Any such additional assignment or subletting shall be subject in each instance to the provisions of this Section 19.

20. Memorandum of Lease. Promptly following determination of the Commencement Date and the Expiration Date of the Term, the Parties may agree to execute and record a memorandum of this Lease. Promptly upon termination of this Lease, upon Landlord's written request, Tenant shall execute, acknowledge and deliver to Landlord a quitclaim deed relinquishing all interest in the Premises.

21. Title to Improvements. Throughout the term of this Lease, title to the SoCal Biomethane Facilities, and all changes, additions and alterations therein, and all renewals and replacements thereof, when made, erected, constructed, installed or placed upon the Premises are and shall remain vested in Tenant. During the term of this Lease, Tenant alone is entitled to claim depreciation on the Tenant's Improvements and all personalty and fixtures in or appurtenant thereto, and all changes, additions and alterations therein, for all taxation purposes.

22. Events of Tenant's Default and Landlord's Remedies.

(a) Events of Default. If one or more of the following events ("***Event of Default***") occurs, such occurrence constitutes a breach of this Lease by Tenant:

(i) Tenant fails to perform the Digester Coating in accordance with the terms of Exhibit C and such failure is not cured within thirty (30) days after Landlord gives written notice thereof to Tenant;

(ii) Tenant fails to pay any Rent as and when the same becomes due and payable, and such failure continues for more than sixty (60) days after Landlord gives written notice thereof to Tenant;

(iii) Tenant fails to pay any other sum or charge payable by Tenant hereunder as and when the same becomes due and payable, and such failure continues for more than sixty (60) days after Landlord gives written notice thereof to Tenant;

(iv) Tenant fails to comply in all material respects with any legal or regulatory requirement, permit obligation or operating covenant of Tenant pursuant to Section 6 and such failure is not remedied within thirty (30) days after Landlord gives written notice thereof to Tenant; or

(v) Tenant fails to perform or observe any other agreement, covenant, condition or provision of this Lease hereof to be performed or observed by Tenant as and when performance or observance is due, and such failure continues for more than thirty (30) days after Landlord gives written notice thereof to Tenant or, if such default cannot be cured within said thirty (30) day period and Tenant fails within such period to commence with due diligence and dispatch the curing of

such default or, having so commenced, thereafter fails to prosecute or complete with due diligence and dispatch the curing of such default.

(b) Landlord's Right to Terminate. If an Event of Default occurs, subject to Section 45(d) below, Landlord at any time thereafter has the right to terminate this Lease.

(c) Right to Enter. In the event of any termination of this Lease by reason of Tenant's default, Landlord has the immediate right to enter upon and repossess the Premises, and any personal property of Tenant may be removed from the Premises and stored in any public warehouse at the risk and expense of Tenant.

(d) Cumulative Remedies. The remedies given to Landlord or Tenant under this Lease shall be cumulative and in addition and supplemental to all other rights or remedies which Landlord or Tenant may have in equity, by statute or otherwise.

23. Tenant's Obligations Upon Expiration or Termination. Whenever this Lease expires or is terminated, Tenant shall, in accordance with all applicable local, state and federal laws and standards, perform all of the following (which will be at Tenant's sole costs and expense unless there is a termination for default by Landlord):

(a) Remove all of the SoCal Biomethane Facilities placed on the Premises by Tenant, under Tenant's direction, or while Tenant was in possession of the Premises. Removal of Improvements shall be at the direction of Landlord who may, at Landlord's absolute and sole discretion, agree to allow Tenant to surrender any Improvement, or portion thereof, to Landlord in its "as is" condition.

24. Events of Landlord's Default and Tenant's Remedies.

(a) If one or more of the following events (each a "***Landlord Event of Default***") occurs, such occurrence constitutes a breach of this Lease by Landlord:

(i) If Landlord fails to perform or observe any other agreement, covenant, condition or provision of this Lease to be performed or observed by Landlord as and when performance or observance is due, and such failure continues for more than sixty (60) days after Tenant gives written notice thereof to Landlord or, if the default cannot be cured within said sixty (60) day period, Landlord fails within said period to commence with due diligence and dispatch the curing of such default or, having so commenced, thereafter fails to prosecute or complete with due diligence and dispatch the curing of such default.

(b) Tenant's Remedies. Upon the occurrence of a Landlord Event of Default, Tenant will have all the rights and remedies available to it at law, in equity, by statute or otherwise.

25. Mortgaging of Leasehold Estate. Notwithstanding any other provision of this Lease, it is agreed that Tenant shall have the right to mortgage or otherwise encumber its leasehold interest. If Tenant mortgages its leasehold estate and the mortgagee or holders of the indebtedness secured by the leasehold mortgage or trust deed shall notify Landlord, in the manner provided for the giving of notice, of the execution of such mortgage or trust deed and name the place for service of notice upon such mortgagee or holder of indebtedness, then, in such event, Landlord agrees for the benefit of such mortgagees or holders of indebtedness from time to time:

(a) That Landlord will give to any such mortgagee or holder of indebtedness simultaneously with service on Tenant, a duplicate of any and all notices or demands given by Landlord to Tenant. Such notices shall be given in the manner and be subject to the terms of the notice provisions of this Lease.

(b) That such mortgagee or holder of indebtedness shall have the privilege of performing any of Tenant's covenants under this Lease, of curing any default of Tenant or of exercising any election, option or privilege conferred upon Tenant by the terms of this Lease.

(c) That no liability for the payment of rental or the performance of any of Tenant's covenants and agreements shall attach to or be imposed upon any mortgagee, trustee under any trust deed or holder of any indebtedness secured by any mortgage or trust deed upon the leasehold estate, unless such mortgagee, trustee or holder of indebtedness forecloses its interest and becomes the Tenant under this Lease.

26. Notices. All notices, demands, consents, approvals and other communications which may or are required to be given by either Landlord or Tenant to the other under this Lease will be deemed to have been fully given when made in writing and personally delivered or sent via commercial overnight courier, and addressed to Landlord or Tenant at the address set forth below, or at such other addresses as Landlord or Tenant may from time to time designate in writing in accordance with this Section 26:

Landlord:	Victor Valley Wastewater Reclamation Authority Attn: Logan Olds 20111 Shay Road Victorville, CA 92394 Phone No.: (760) 246-8638 Email Address: lolds@vvwra.com
with a copy to:	Best Best & Krieger LLP Attn: Piero Dallarda 3390 University Avenue Riverside, CA 92501 Phone No.: (951) 686-1450 Email Address: piero.dallarda@bbklaw.com
Tenant:	SoCal Biomethane Services, LLC a Delaware limited liability company Attn: Arun Sharma 5780 Fleet St., Ste. 310 Carlsbad, CA 92009 Phone No.: (760) 436-8870 Email Address: Arun.Sharma@SoCal Biomethane.com
with a copy to:	Thor Erickson, General Counsel Anaergia, Inc. 5780 Fleet St., Suite 310 Carlsbad, CA 92009 Phone No.: (760) 436-8870 Email Address: Thor.Erickson@anaergia.com

27. Quiet Enjoyment; Waiver. Landlord agrees that so long as Tenant is not in default hereunder, Tenant has the right to quiet enjoyment of the Premises without molestation or hindrance on the part of Landlord. Notwithstanding the preceding sentence, Tenant hereby acknowledges that the Premises are located adjacent to the WWTP which is operated by Landlord. Tenant hereby waives the right to assert any claim, demand or other legal action against Landlord arising out of Landlord's operation of the WWTP, so long as Landlord operates the WWTP in compliance with all local, state and federal laws and standards. Landlord hereby acknowledges that the Premises will contain an organic recycling facility. Landlord hereby waives the right to assert any claim, demand or other legal action against Tenant, arising out of Tenant's operation of the organic recycling facility, so long as Tenant operates the organic recycling facility in compliance with this Lease and all local, state and federal laws and standards.

28. Authority. Each person executing this Lease on behalf of Landlord and Tenant hereby covenants and warrants that (a) the entity on whose behalf such person is signing is duly organized and validly existing under the laws of its state of organization; (b) such entity has and is qualified to do business in California; (c) such entity has full right and authority to enter into this Lease and to perform all Landlord's and Tenant's obligations hereunder; and (d) each person, or both of the persons if more than one signs, signing this Lease on behalf of Landlord or Tenant is duly and validly authorized to do so. The individuals signing on behalf of Landlord further warrant that Landlord is the fee owner of the Premises.

29. No Waiver. The waiver by Landlord of any breach of any term, covenant or condition herein contained shall not be deemed to be a waiver of such term, covenant or condition or any subsequent breach of the same or any other term, covenant or condition herein contained. The subsequent acceptance of rent hereunder by Landlord shall not be deemed to be a waiver of any preceding breach by Tenant of any term, covenant or condition of this Lease, other than the failure of Tenant to pay the particular rental so accepted, regardless of Landlord's knowledge of such preceding breach at the time of acceptance of such rent.

30. Holding Over. If Tenant holds possession of the Premises after the term of this Lease or any extension thereof, Tenant shall, at the option of Landlord, to be exercised by Landlord giving written notice to Tenant and not otherwise, become a tenant from month-to-month upon the terms and conditions herein specified, so far as applicable, and shall continue to be such tenant until ninety (90) days after Tenant shall have given to Landlord, or Landlord shall have given to Tenant, a written notice of intention to terminate such monthly tenancy.

31. Eminent Domain.

(a) Termination Rights. If all or any part of the Premises are taken as a result of the exercise of the power of eminent domain or any agreement in lieu thereof, this Lease will terminate as to the part so taken as of the date of taking. In the case of a partial taking, Tenant has the right to terminate this Lease as to the balance of the Premises not taken by giving written notice to Landlord within sixty (60) days after such date; provided, however, that a condition to the exercise by Tenant of such right to terminate is that the portion of the Premises taken is of such extent and nature as substantially to handicap, impede or impair Tenant's use of the remaining portion.

(b) Condemnation Award. The proceeds of any condemnation award or any private sale in lieu thereof shall be allocated as follows:

(i) First, to Tenant, an amount equal to the sum of the following:

(A) A sum of that portion of the award attributable to the SoCal Biomethane Facilities; and

(B) A sum attributable to that portion of the award constituting severance damages for the restoration of the Premises, business interruption, trade fixtures or relocation and moving expenses incurred by Tenant.

(ii) Second, to Landlord, the balance of the award.

(c) Further Acts. Each Party agrees to deliver to the other all instructions that may be necessary to effectuate the provisions of this Section 31.

(d) Apportionment of Rent. In the case of a total taking or a partial taking which results in the termination of this Lease, the Basic Rent and any and all other additional rent theretofore paid or then payable must be apportioned and paid up to the date of termination and any unearned Basic Rent or other additional rent must be immediately refunded to Tenant. In the case of a partial taking which does not result in a termination of this Lease, Basic Rent and any additional rent thereafter to be paid by Tenant under this Lease must be equitably reduced in a pro-rata manner in proportion to the part of the Premises which has been taken.

32. Signage. Other than for compliance with the law or safety, Tenant will not place any signage on the Premises without prior approval of Landlord in Landlord's sole discretion other than ground level signage to direct third parties to the SoCal Biomethane Facilities.

33. Limitation of Liability. Neither Party shall be liable to the other for lost revenues or foreseeable and unforeseeable consequential, special or punitive damages. Landlord specifically acknowledges that Tenant has made no assurances regarding Landlord's share of Net Revenue. The foregoing limitation on liability shall not apply to the any liability imposed by a governmental or regulatory agency as a result of any violation of federal, state or local laws or regulations, including without limitation, any fines or penalties imposed in accordance with applicable law.

34. Force Majeure. Neither Party shall not be deemed in default of this Lease, nor shall such Party be responsible for, any cessation, interruption or delay in the performance of its obligations (excluding payment obligations) due to earthquake, flood, fire, storm, natural disaster, act of God (inclusive without limitation of extreme weather events, drought, earthquake, fire, flood, lightening, hurricane, high winds or other natural disasters), war, terrorism, armed conflict, labor strike, lockout, boycott or other similar events beyond the reasonable control of Tenant, provided that the Party asking to be excused from performance as a result of such occurrence gives the other Party prompt written notice thereof and takes all steps reasonably necessary to mitigate the effects of the event. The Party claiming the occurrence of force majeure shall use its best efforts to mitigate such event and resume performance as soon as reasonably practicable. If an event of force majeure continues for a period in excess of one hundred eighty (180) days, then the Parties will meet and confer in good faith to determine whether it is economically and operationally feasible to mitigate the effects of the event or to rebuild the facilities of either Party as necessary to restore performance of the terms of this Lease no later than one (1) year from the commencement of the event of force majeure or such longer period which the Parties shall mutually agree upon. If the Parties are not able to identify a mutually acceptable plan to restore performance of this Lease within such time period, then either Party may terminate this Lease.

35. Successors and Assigns. The covenants and conditions herein contained shall, subject to the provisions as to assignment, apply to and bind the heirs, successors, executors, administrators and assigns of all parties hereto, and all of the parties hereto shall be jointly and severally liable hereunder.

36. Complete Agreement. There are no written or oral agreements between Landlord and Tenant affecting this Lease, and this Lease supersedes and cancels any and all previous negotiations, arrangements, brochures, agreements and understandings, oral or written, if any, between Landlord and Tenant or displayed by Landlord to Tenant with respect to the subject matter of this Lease or the Premises. There are no representations between Landlord and Tenant or between any real estate broker and Tenant other than those expressly set forth in this Lease, and all reliance with respect to any representations is solely upon representations expressly set forth in this Lease.

37. Amendment and Modification. This Lease may not be amended or modified in any respect whatsoever except by an instrument in writing signed by Landlord and Tenant. This Lease and any instrument, agreement or document attached hereto or referred to herein, is intended by Landlord and Tenant as the final expression of the agreement with respect to the terms and conditions set forth in this Lease and any such instrument, agreement or document and as the complete and exclusive statement of the terms agreed to by Landlord and Tenant.

38. Cooperation of Parties. Landlord and Tenant each will cooperate with the other in performing the agreements, covenants, conditions and provisions of this Lease so as to allow the other to achieve its reasonable expectations with respect to the same. Neither Party will take any action which would frustrate the other's ability to achieve the benefits to be enjoyed under this Lease. Landlord will provide all reasonably necessary assistance to Tenant in obtaining all permits, authorizations and approvals of all governing public agencies required for Tenant's construction of the Tenant's Improvements, installation of any and all signage and subsequent operation of its business at the Premises.

39. Estoppel Certificates. At any time and from time to time but on not less than ten (10) days prior written request by Landlord or Tenant, the other Party will execute, acknowledge and deliver to the requesting Party, a certificate certifying, if accurate:

(a) that this Lease is unmodified and in full force and effect or, if there have been modifications, that this Lease is in full force and effect as modified, and stating the date and nature of each modification;

(b) the date, if any, to which all rent and other sums payable hereunder have been paid;

(c) that no notice has been received by such Party of any default by such Party hereunder which has not been cured, except as to defaults specified in the certificate;

(d) that the other Party is not in default hereunder, except as to defaults specified in the certificate;

(e) the existence of any options or other rights to purchase the Premises; and

(f) such other factual matters as may be reasonably requested.

The certificate may be relied upon by any actual or prospective purchaser, mortgagee or beneficiary under any deed of trust of the Premises or any part thereof.

40. Hazardous Materials.

(a) At all times and in all respects each Party will comply with all federal, state and local laws, ordinances and regulations ("***Hazardous Materials Laws***") relating to industrial hygiene, environmental protection or the use, analysis, generation, manufacture, storage, disposal or transportation of any oil, flammable explosives, asbestos, area formaldehyde, radioactive materials or waste, or other hazardous, toxic, contaminated or polluting materials, substances or wastes, including, without limitation, any "hazardous substances", "hazardous wastes", "hazardous materials" or "toxic substances" under any such laws, ordinances or regulations, which hereinafter are referred to collectively as "***Hazardous Materials***".

(b) Landlord represents and warrants to Tenant that as of the date hereof, to the best of Landlord's knowledge:

(i) No Hazardous Substances are now present, or have been used or stored, on or within any portion of the Premises, except those substances which are or have been used or stored on the Premises by Tenant or its predecessor in interest under the Original Lease Documents, or by Landlord in the normal course of use and operation of the Premises and in compliance with all applicable Environmental Laws;

(ii) Since the date of Landlord's acquisition of the Premises, Landlord is aware and Tenant acknowledges that the United States Air Force and/or the Department of Defense has initiated a clean-up of groundwater contaminated by activities conducted on the former George Air Force Base, and that said cleanup includes monitoring wells, recovery wells and appurtenances, some of which are located on the Parcel; each Party shall hold the other harmless relating to any and all issues, disputes and activities associated with this pre-existing condition on the Premises; and

(iii) No claims have been made by any third party against Landlord relating to any Hazardous Substances on or within the Premises.

(c) At its own expense, Tenant will procure, maintain in effect and comply with all conditions of any and all permits, licenses and other governmental and regulatory approvals required for Tenant's use of the Premises. Tenant will cause any and all Hazardous Materials removed from the Premises to be removed and transported solely by duly licensed haulers to duly licensed facilities for final disposal of such materials and wastes. Tenant will in all respects handle, treat, deal with and manage any and all Hazardous Materials in, on, under or about the Premises in conformity with all applicable Hazardous Materials Laws and prudent industry practices regarding management of such Hazardous Materials. Tenant will not take any remedial action in response to the presence of any Hazardous Materials in or about the Premises, or enter into any settlement agreement, consent decree or other compromise in respect to any claims relating to any Hazardous Materials in any way connected with the Premises, without first notifying Landlord of Tenant's intention to do so and affording Landlord ample opportunity to appear, intervene or otherwise appropriately assert and protect Landlord's interest with respect thereto.

(d) Each Party immediately will notify the other in writing of:

(i) Any enforcement, cleanup, removal or other governmental or regulatory action instituted, completed or threatened pursuant to any Hazardous Materials Laws with respect to the Premises

(ii) Any claim made or threatened by any person against Tenant, Landlord or the Premises relating to damage, contribution, cost recovery compensation, loss or injury resulting from or claimed to result from any Hazardous Materials; and

(iii) Any reports made to any environmental agency arising out of or in connection with any Hazardous Materials in or removed from the Premises, including any complaints, notices, warnings or asserted violations in connection therewith.

Each Party also will supply to the other as promptly as possible, and in any event within fifteen (15) business days after the first Party receives or sends the same, with copies of all claims, reports, complaints, notices, warnings or asserted violations, relating in any way to the Premises or Tenant's use thereof or Landlord's use thereof. Each Party will deliver promptly to the other copies of hazardous waste manifests reflecting the legal and proper disposal of Hazardous Materials removed from the Premises, as applicable.

(e) Tenant will indemnify, defend, by counsel chosen by Tenant and reasonably acceptable to Landlord, protect, and hold Landlord and each of Landlord's employees, agents, attorneys, successors and assigns, free and harmless from and against any and all claims, liabilities penalties, forfeitures, losses or expenses, including attorney's fees, for death of or injury to any person or damage to any property whatsoever, arising from or caused in whole or in part, directly or indirectly, by:

(i) The presence in, on, under or about the Premises or discharge in or from the Premises of any Hazardous Materials placed in, under or about, the Premises by Tenant or at Tenant's direction; or

(ii) Tenant's use, analysis, storage, transportation, disposal, release, threatened release, discharge or generation of Hazardous Materials to, in, on, under, about or from the Premises; or

(iii) Tenant's failure to comply with any valid and applicable Hazardous Materials Law.

(f) Landlord will indemnify, defend, by counsel reasonably acceptable to Tenant, protect, and hold Tenant and each of Tenant's employees, agents, attorneys, successors and assigns, free and harmless from and against any and all claims, liabilities penalties, forfeitures, losses or expenses, including attorney's fees, for death of or injury to any person or damage to any property whatsoever, arising from or caused in whole or in part, directly or indirectly, by:

(i) The presence in, on, under or about the Premises, or discharge, in or from the Landlord Property of any Hazardous Materials placed in, on, under or about the Premises by Landlord or at Landlord's direction, or

(ii) Landlord's use, analysis, storage, transportation, disposal, release, threatened release, discharge or generation of Hazardous Materials to, in, on, under, about or from the Premises; or

(iii) Landlord's failure to comply with any valid and applicable Hazardous Materials Law.

(g) The obligations of each Party ("***Indemnifying Party***") pursuant to Sections 40(e) and 40(f) includes, without limitation, all costs of any required or necessary repair, cleanup or detoxification or decontamination of the affected real property, and the preparation and implementation of any closure, remedial action or other required plans in connection therewith. The obligations of each Indemnifying Party under Sections 40(e) and 40(f) above shall survive the expiration or earlier termination of the term of the Lease.

(h) For purposes of the release and indemnity provisions hereof, any acts or omissions of a Party, or by employees, agents, assignees, contractors or subcontractors of such Party or others acting for or on behalf of such Party, whether or not they are negligent, intentional, willful or unlawful, will be strictly attributable to the Party.

41. Incorporation of Exhibits and Documents. Each and every exhibit or document referenced in this Lease, whether or not attached to this Lease, shall be incorporated into the body of this Lease and each point of reference.

42. Miscellaneous.

(a) The words "***Landlord***" and "***Tenant***" as used herein include the plural as well as the singular. If there is more than one Tenant or Landlord, the obligations hereunder imposed upon Tenant or Landlord are joint and several. Time is of the essence of this Lease and each and all of its provisions. Subject to the provisions applicable to assignment, the agreements, covenants, conditions and provisions herein contained apply to and bind the personal representatives, heirs, successors and assigns of Landlord and Tenant.

(b) This Lease is construed to effectuate the normal and reasonable expectations of a sophisticated Landlord and a sophisticated Tenant.

(c) This Lease has been submitted by Landlord and reviewed by Tenant, Landlord, and their respective professional advisors. Tenant, Landlord, and their respective advisors believe that this Lease is the product of all of their efforts, that it expresses their agreement and that it should not be interpreted in favor of or against either Tenant or Landlord.

(d) Should any dispute or claim arise between the Parties concerning the terms, interpretation, effect, or operation of this Agreement, the Parties agree to make good faith efforts to informally resolve such dispute or claim through discussions between the General Manager of VVWRA and the President/Chief Executive Offer of Tenant. If the Parties fail to resolve such disputes or claims , then either Party shall have the right to submit the dispute or claim to nonbinding mediation with Judicial Arbitration and Mediation Services in the County of San Bernardino, State of California, which mediation will be carried out within thirty (30) days of the submission date. The Parties will share equally in the cost of mediation. If mediation does not arrive at a mutually acceptable resolution of the dispute, then either Party may pursue any remedy available to it in law or in equity.

(e) This Lease is to be governed by and construed in accordance with the laws of the State of California. All disputes will be brought in the County of San Bernardino.

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first herein above written.

LANDLORD:

VICTOR VALLEY WASTEWATER
RECLAMATION AUTHORITY,
a California joint powers authority

By: _____
Name: Logan Olds
Title: General Manager

Approved as to form:

_____
Best Best & Krieger LLP

TENANT:

SOCAL BIOMETHANE SERVICES, LLC
a Delaware limited liability company

By: _____
Name: _____
Title: _____

EXHIBIT "A"

SITE MAP

EXHIBIT "B"

PREMISES

EXHIBIT "C"

TERMS AND CONDITIONS FOR DIGESTER COATING WORK

The undersigned Contractor hereby agrees to perform all work set forth in the Contract Documents in accordance with the following terms and conditions:

1. Defined Terms The following defined terms will have the meaning set forth below for the purposes of this Exhibit C:

1.1 "Contract Documents" shall mean the Digester Coating Documents.

1.2 "Contractor" shall mean SoCal Biomethane, LLC.

1.3 "Owner" shall mean Landlord.

1.4 "Project" shall mean the Digester Coating.

1.5 "Work" shall mean the scope of work agreed upon in writing for the Digester Coating as set forth in the Digester Coating Documents.

2. Contractor's Obligations

2.1 Scope of Work The Contractor agrees to furnish all engineering, designs, supervision, labor, equipment and materials, tools, utilities, communications, implements, appliances and transportation, to procure all governmental approvals, to erect, install, start-up, test and commission the Project, to perform all obligations set forth in the Contract Documents, to perform related activities for the successful completion of the Work and the delivery of the Project in compliance with the Contract Documents and to perform all the Work in a good and workmanlike manner, free from any and all liens and claims from mechanics, material suppliers, Subcontractors, artisans, machinists, teamsters, freight carriers, and laborers required for the Project as defined by the Contract Documents. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, procedures, and coordinating all portions of the Work under the Lease, unless Contract Documents give other specific instructions concerning these matters.

2.2 Performance of the Work Contractor shall perform the Work in accordance with requirements of the Contract Documents. To the extent that any portion of the Work is provided with the Contractor's own forces, any reference to Subcontractors or Consultants shall be equally applicable to the Contractor. If any of the Work is performed by contractors retained directly by the Owner, Contractor shall be responsible for the coordination and sequencing of the Work of those other contractors so as to avoid any impact on the Project Schedule.

2.3 Contractor Personnel

(a) Competency Contractor agrees to use, and agrees that it shall require each Subcontractor to use, only personnel who are qualified and properly trained and who possess every license, permit, registration, certificate or other approval required by applicable law or any governmental authority to perform the Work. The Contractor and each Subcontractor shall: furnish a competent and adequate staff as necessary for the proper administration, coordination, supervision, and superintendence of its portion of the Work; organize the procurement of all materials and equipment so that the materials

and equipment will be available at the time they are needed for the Work; and keep an adequate force of skilled workers on the job to complete the Work in accordance with all requirements of the Contract Documents. Owner shall have the right, but not the obligation, to require the removal from the Project of any Superintendent, staff member, agent, or employee of any Contractor, Subcontractor, material or equipment supplier, etc., for cause.

(b) Superintendent Contractor shall provide a competent superintendent and assistants as necessary, all of whom shall be reasonably proficient in speaking, reading and writing English, and, who shall be in attendance at the Project Site(s) during performance of the Work (the "Superintendent"). The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor.

(c) Prevailing Wage The Work shall be performed consistent with the requirements for a public work pursuant to the provisions of Section 1770 et seq. of the Labor Code of the State of California, which are hereby incorporated by reference and made a part hereof, the Director of Industrial Relations has determined the general prevailing rate of per diem wages and the general prevailing rate for holiday and overtime work in the locality in which the work is to be performed, for each craft, classification or type of worker needed to carry out the Work. Per diem wages shall be deemed to include employer payments for health and welfare, pension, vacation, apprenticeship or other training programs, and similar purposes. Copies of the rates are on file at the District's principal office. The rate of prevailing wage for any craft, classification or type of workmanship to be employed on this Project is the rate established by the applicable collective bargaining agreement which rate so provided is hereby adopted by reference and shall be effective for the life of this Lease or until the Director of the Department of Industrial Relations determines that another rate be adopted. It shall be mandatory upon the Contractor and on any Subcontractor to pay not less than the said specified rates to all workers employed in the execution of the Work.

(d) Employment List The Contractor and each Subcontractor shall keep or cause to be kept an accurate record for work on this Project showing the names, addresses, social security numbers, work classification, straight time and overtime hours worked and occupations of all laborers, workers and mechanics employed by them in connection with the performance of this Contract or any subcontract thereunder, and showing also the actual per diem wage paid to each of such workers, which records shall be open at all reasonable hours to inspection by the Owner, its officers and agents and to the representatives of the Division of Labor Law Enforcement of the State Department of Industrial Relations.

(e) Payroll Records Pursuant to Labor Code section 1776, Contractor and all subcontractors shall maintain weekly certified payroll records, showing the names, addresses, Social Security numbers, work classifications, straight time and overtime hours worked each day and week, and the actual per diem wages paid to each journeyman, apprentice, worker, or other employee employed by them in connection with the Work under this Lease. Contractor shall certify under penalty of perjury that records maintained and submitted by Contractor are true and accurate. Contractor shall also require subcontractor(s) to certify weekly payroll records under penalty of perjury. In accordance with Labor Code section 1771.4, the Contractor and each subcontractor shall furnish the certified payroll records directly to the Department of Industrial Relations ("DIR") on the specified interval and format prescribed by the DIR, which may include electronic submission. Contractor shall comply with all requirements and regulations from the DIR relating to labor compliance monitoring and enforcement. The requirement to submit certified payroll records directly to the Labor Commissioner under Labor Code section 1771.4 shall not apply to work performed on a public works project that is exempt pursuant to the small project exemption specified in Labor Code Section 1771.4. In the event of noncompliance with the requirements

of this Section, the Contractor shall have ten (10) calendar days in which to comply subsequent to receipt of written notice specifying in what respects the Contractor must comply with this Section.

2.4 Contractor Responsibility The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, material and Equipment suppliers, and their agents, employees, invitees, and other persons performing portions of the Work under direct or indirect contract with the Contractor or any of its Subcontractors. The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents by tests, inspections, or approvals required or performed by persons other than the Contractor. Contractor shall be responsible for inspection of Work already performed under the Contract Documents to determine that such portions are in proper condition to receive subsequent work.

2.5 Supply and Procurement of Equipment

(a) Contractor, at its expense, shall purchase, transport and deliver all equipment and shall inspect, unload, store, construct and install all equipment required to complete the Work. Contractor shall maintain all equipment warranties, obtain required extended warranties and, upon the expiration of the warranty period, cause any such remaining equipment warranties to be assigned and passed-through to Owner. Contractor shall at all times perform the Work in a manner consistent with all such equipment warranties and will not perform any actions that may violate such warranties.

(b) Contractor agrees that all materials and equipment to be supplied or used by Contractor or any Subcontractor in the performance of its obligations under this Lease shall be new, fit for the use(s) for which they are employed by Contractor or any Subcontractor, and fully compatible with the existing equipment and electrical infrastructure used at the WWTP. Such materials and equipment shall at all times be maintained, inspected and operated pursuant to industry standards and as required by applicable law. Contractor further agrees that all licenses, permits, registrations and certificates or other approvals required by applicable law or any governmental authority will be procured and maintained for such materials and equipment at all times during the use of the same by Contractor or any Subcontractor in the performance of any of Contractor's or such Subcontractor's obligations under this Lease.

2.6 Permits and Approvals

(a) Owner shall obtain, maintain and pay for all governmental approvals and governmental fees, licenses, and inspections necessary for the installation of the Work and which are legally required by any governmental authority for the Project.

(b) Contractor shall obtain, maintain and pay for all governmental approvals and governmental fees and licenses for the activities of Contractor at the Site.

2.7 Testing and Inspection The Contractor shall at its own expense conduct the start up and operational tests necessary to commission the Work and demonstrate that it has been completed in accordance with the Contract Documents. Contractor will notify Owner no less than five (5) days prior to the commencement of testing and Owner or its representative will have the right to observe all such tests. The following shall apply to the testing and inspection of the Project:

(a) Rejection of Work The Owner's selected representative may recommend to the Owner that the Owner reject Work which does not conform to the Contract Documents.

(b) Additional Testing or Inspection, and Costs Related Thereto

(i) If the Owner or governmental authority determines that any portion of the Work on the Project require additional testing, inspection, or approval, the Contractor will, upon Owner's written authorization, arrange for such additional testing, inspection, or approval. Owner shall bear such costs except in paragraph (ii), below.

(ii) If the testing or inspection of Work on the Project reveal that the Work does not comply with the Contract Documents, Contractor shall bear all costs arising from such failure, including those of re-testing, re-inspection, approval, or re-approval, including, but not limited to, compensation for services and expenses of the testing laboratory and any other professionals or entities retained by Owner.

(c) Tests and Inspections Not to Delay Work Tests and inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work on the Project.

2.8 Local and General Conditions Contractor has conducted a full and complete visual examination of the Site, and acknowledges and agrees that it has satisfied itself as to the general and local conditions and circumstances affecting the Work that could be reasonably ascertained and has identified and conducted all Assessments, at its own cost, required to ensure that the Project can be built in accordance with the Contract Documents.

2.9 Safety Precautions and Programs

(a) Contractor shall have responsibility for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Work. Subcontractors have the responsibility for participating in, and enforcing, the safety and loss prevention programs established by the Contractor for the Project including the safety plan, which shall cover all Work performed by the Contractor and its Subcontractors. Subcontractors shall promptly report in writing and by phone to the Contractor all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site, which caused death, personal injury, or property damage, giving full details and statements of witnesses. The Contractor will provide and maintain at the Site first-aid supplies for minor injuries.

(b) Prior to beginning construction, Contractor shall provide Owner with a copy of Contractor's safety plan, as well as an evaluation and appropriate documentation of the safety record of any licensed Subcontractor that will be performing Work on the Project. The safety plan shall include the location of emergency utility shutoffs (both manual and electronic shutoffs). Contractor shall review the emergency shut off and evacuation plan with Owner prior to start of construction.

(c) Contractor shall erect and maintain, as required by existing conditions and performance of the contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, promulgating safety regulations, and notifying owners and users of adjacent sites and utilities.

(d) When use or storage of explosives, other hazardous materials or equipment, or unusual methods are necessary for execution of the work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel. The Contractor shall notify the Owner any time that explosives or hazardous materials are expected to be stored on Site. Location of storage shall be coordinated with the Owner and local fire authorities.

2.10 Protection of Work and Property. Contractor and Subcontractors shall continuously protect and secure the Work, materials and equipment, the Owner's Property, and the property of others, from damage, injury, or loss arising in connection with operations under the Contract Documents. The Contractor and Subcontractors shall make good any such damage, injury, or loss, except such as may be solely due to, or caused by, agents or employees of the Owner.

2.11 Emergencies. In an emergency affecting the safety of persons or property, the Contractor shall take any action necessary, at the Contractor's discretion, to prevent threatened damage, injury, or loss. The Contractor shall promptly report in writing to the Owner all accidents arising out of or in connection with the Work, which caused death, personal injury, or property damage, giving full details, and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner.

2.12 Hazardous Materials. In the event the Contractor encounters or suspects the presence on the Site of material reasonably believed to be asbestos, polychlorinated biphenyl (PCB), or any other material defined as being hazardous by section 25249.5 of the California Health and Safety Code, which has not been rendered harmless, the Contractor shall immediately stop Work in the area affected and report the condition to the Owner in writing, whether or not such material was generated by the Contractor or the Owner

2.13 Changes and Extra Work. There will not be any change in the Work or the Contract Documents, including the budget for the Work, unless there is a written change order executed by Contractor and Owner.

2.14 Warranties.

(a) Warranties. Contractor warrants that, for the standard warranty period customary for such work,

(i) The Work will be designed, engineered and constructed to satisfy all applicable legal requirements, the requirements of the Contract Documents, and all descriptions set forth herein, applicable construction codes and standards and all other requirements of this Lease, and that the Work will function free of major defects, assuming customary operation and maintenance.

(ii) All equipment shall conform in all respects to the requirements of the Contract Documents and shall be new, unused and undamaged at the time it is put into service.

(iii) The Work, including all workmanship and materials incorporated therein, will be of suitable grade of their respective kinds for their intended use over the Term, will be free from defects in design, engineering, materials, construction, and workmanship, and shall conform in all respects with all legal requirements, the requirements of the Contract Documents, and all descriptions set forth herein, applicable construction codes and standards and all other requirements of this Lease;

(b) Remedies

(i) If any warranty set forth in Section 2.14(a) is breached or a defect or deficiency is discovered during the Term, Contractor shall, upon notice from Owner of a warranty claim prior to the expiration of the Term, at Contractor's sole option, re-perform, repair, replace and/or correct the applicable Work and resulting damage to the Project caused by such defective

Work on a reasonably expedited basis while minimizing any impact of the failure on the availability, output and functionality of the Project. Contractor shall have reasonable access to the Site as necessary to perform its warranty obligations hereunder. All costs of or incidental to Contractor's performance of its warranty obligations shall be borne by Contractor, including, where required, revising or re-engineering any deficient systems, the removal, replacement and reinstallation of all equipment necessary to gain access to defective Work, the repair of any and all damage to any part of the Project or the Site, and the cost of conducting all tests to confirm that all necessary corrective action has occurred. If the construction warranty failure has the effect of voiding any equipment warranty, then Contractor will at its own expense correct and condition as required in order to ensure that the equipment warranty is reinstated by the manufacturer on such item, or that a replacement item with full equipment warranty is provided and installed.

(ii) Should Contractor fail to begin to perform such necessary repairs, replacement, or correction within ten (10) days of notice of a warranty claim or such shorter period as necessary in the event of an emergency (but not less than twenty-four (24) hours) and thereafter diligently pursue such correction, Owner shall have the right to perform such repair, replacement or correction, and Contractor shall be liable for all reasonable costs, charges and expenses incurred by Owner in connection with such repair or replacement and shall forthwith pay to Owner an amount equal to such costs, charges and expenses upon receipt of invoices certified by Owner. Owner's action in correcting defects in accordance with this Section shall not void Contractor's warranty obligations hereunder, except in the case of Owner's or it agent's (other than Contractor or any Subcontractor) gross negligence or willful misconduct.

(c) Warranty Exclusions The warranty obligations of Contractor do not extend to Work that is damaged by (i) the gross negligence or willful misconduct of Owner; or (ii) the failure of Owner to maintain and operate the Digesters in accordance with industry standards.

2.15 Insurance The Work performed by Contractor will be covered by the insurance required pursuant to Section 11 of the Lease.

2.16 Notice. All notices, demands, consents, approvals and other communications which may or are required to be given by either Contractor or Owner pursuant to the Contract Documents will be deemed to have been fully given when made in writing and personally delivered or sent via commercial overnight courier, and addressed to Contractor and Landlord as set forth in Section 26 of the Lease.

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

MEMORANDUM

DATE: 18 April 2019

TO: Board of Commissioners

FROM: Logan Olds, General Manager LO

SUBJECT: Interceptor Capacity Study

The attached Interceptor Capacity Study (Study) was prepared by Dudek Engineering in consultation with the VVWRA Engineering Committee. The Study was used to address issues associated with the proposed revision to the Joint Power Authority and as a strategic planning document for the Authority's interceptors. Key findings include:

1. Establishing the interceptor evaluation criteria.
2. Determining the average dry weather flow (ADWF) allocations for each pipeline segment.
3. Determining the pipelines exceeding the criteria.
4. Evaluating the impact to interceptor capacity with and without the scalping of flows by the Hesperia and Apple Valley water reclamation plants (WRP's).
5. The WRP's reduce the interceptors exceeding capacity by 33,341 ft or 83.4% significantly reducing the capital cost for expansion and replacement of those interceptors.
6. The cost to address the interceptors not meeting the evaluation criteria is estimated at $10.8 million dollars. This reflects a reduction of approximately $10.0 million dollars from the prior capacity study which occurred before the advent of 24/7/365 flow monitoring technologies for interceptors.
7. VVWRA now has a planning tool to evaluate the impact of development on its interceptor system.

Staff is extremely pleased with the results of the modeling because it is the first study to utilize the ADS flow monitoring data. The ADS data significantly improved the accuracy of the analysis and resulted in substantial capital cost savings. The Engineering Committee as well as the Finance Committee reviewed the technical data associated with the report during its preparation to ensure that the Member Entities reached consensus with the findings of the study.

DUDEK

Interceptor Capacity Study

Prepared for:

Victor Valley Water Reclamation Authority
20111 Shay Road
Victorville, CA 92394
Contact: Logan Olds

March 2019

Dudek
760.942.5147

605 Third Street
Encinitas, California 92024

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DUDEK

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APPENDICES

1 Introduction

The following section provides a brief summary of the project background, goals and objectives and report organization.

1.1 Background

Victor Valley Wastewater Reclamation Authority (Authority) is a joint powers authority that collects, treats and disposes of wastewater from its four member agencies. The four member agencies include the Town of Apple Valley, City of Victorville, City of Hesperia and County of San Bernardino Service Areas 42 (Oro Grande) and 64 (Spring Valley Lake).

1.2 Goals and Objectives

The goal of this project is to develop a hydraulic model and sufficient data for use in developing cost of service scenarios relative to the allocation of flows amongst the member agencies.

The project includes three primary objectives:

1. Creation of a new interceptor system hydraulic model calibrated to the latest metered flow data.
2. Determine the flow in the Interceptor system, by reach, for average dry weather flow (ADWF), peak dry weather flow (PDWF), and peak wet weather flow (PWWF).
3. Determine allocations of flow, by member agency, under ADWF.

In addition to the above objectives, the project will update the model with past improvements and future projected improvements, as well as seek to identify opportunities to improve capacity and O&M efficiency.

1.3 Organization

The following report is organized according to the following sections:

- ***Hydraulic Model Development***: Process for creating the VVWRA Interceptor Model.
- ***Sewer Flow Generation and Loading***: Process for obtaining sewer flows and creation of average day and peak wet weather flows for capacity analysis.
- ***Interceptor Capacity Analysis.*** Provides results of capacity analysis.
- ***Pump Capacity Analysis.*** Provides results of pump station capacity analysis.
- ***Operations and Maintenance Summary.*** Provides overview of O&M performance.
- ***Conclusions and Recommendations.*** Summarizes overall findings.

2 Hydraulic Model Development

The following section provides a description of the process used for development the sewer interceptor hydraulic model, calculation of sewer input flows for both dry and wet weather conditions, and the calibration process of the model to validate proper reflection of existing flow conditions.

2.1 Model Development

A new sewer interceptor hydraulic model was developed specifically for addressing the project goals and objectives. The Authority's sewer system graphical information system (GIS) provided the majority of data used for the creation of model elements. Innovyze's InfoSewer was used as the hydraulic modeling package. GIS pipeline and manhole data were imported into the modeling package, including specific geometric data such as pipeline alignment geometry, manhole inverts, pipe diameters, and slope. Pump station data was also extracted from the GIS as well as from requested pump data sheets directly from the Authority.

A calibration of roughness coefficient's (Manning's "n" values) was performed as part of the 2010 Sewer Master Plan, Modeling and Condition Assessment project to support the Authority in making decisions regarding the construction of subregional reclamation plants. This analysis was performed due to an earlier (2005) hydraulic analysis predicting extensive capacity restrictions using an across the board Manning's "n" value of 0.013. This 2010 detailed study to refine Manning's "n" values for portions of the system resulted in Manning's "n" values that increased system capacity. The analysis found roughness coefficients to be correlated to pipe slope, and a curve was developed to estimate Manning's "n" values.

For this study, Manning's "n" value for all pipelines were set based on pipeline material, consistent with industry recommendations, and ranged from 0.010 to 0.014. Based on the calibration results (discussed further in Section 2.4) and results of the analysis, it was concluded that assignment of roughness coefficients based on pipe material was sufficient for this analysis.

Several improvements to the interceptor system have been recently constructed and had not yet been incorporated into the Authority's GIS. As-built drawings for these projects were provided by the Authority and incorporated into the new hydraulic model. Projects added include:

- Upper Narrows Interceptor
- Adelanto Interceptor
- Oro Grande Pump Station
- North Apple Valley Interceptor Pump Station

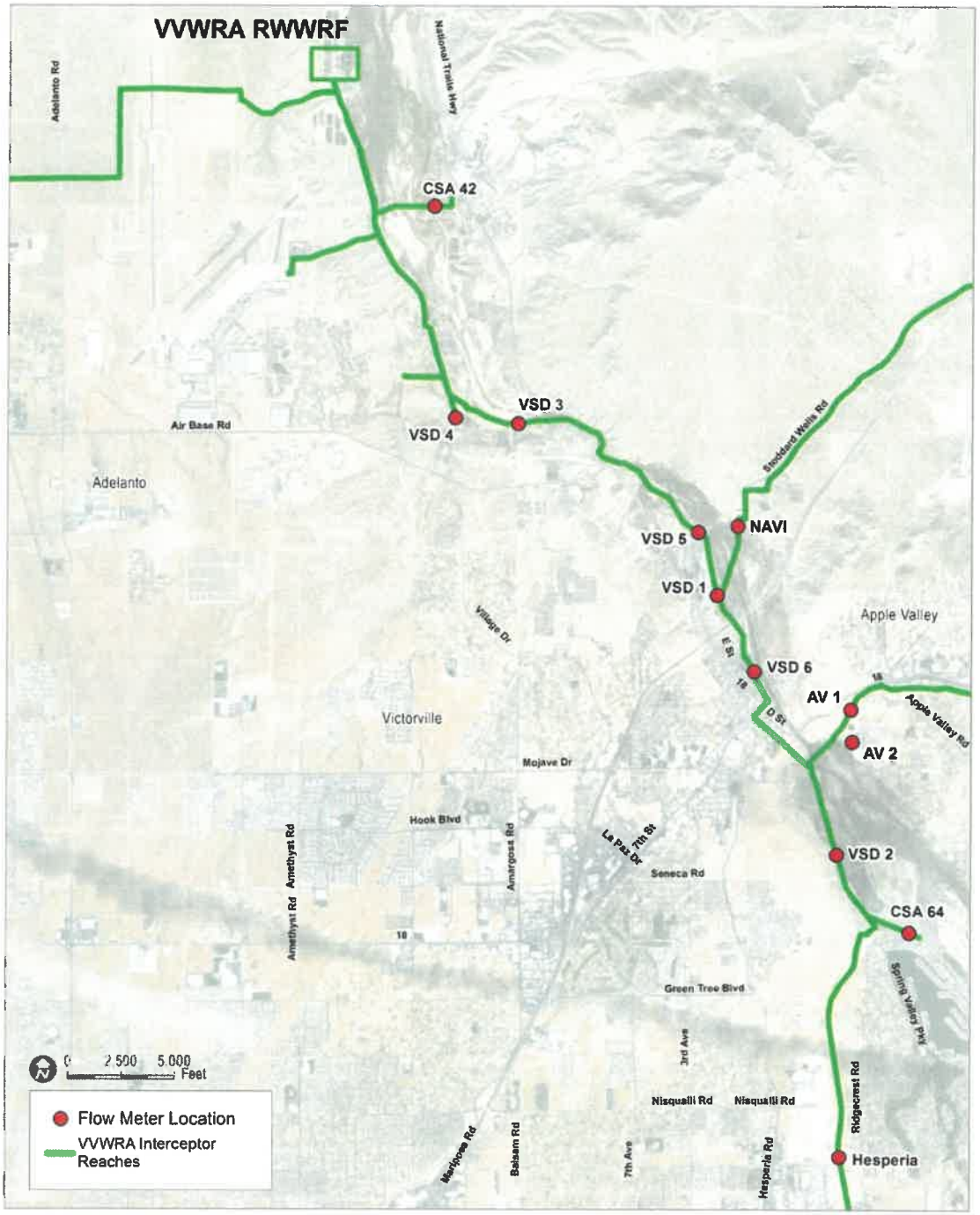
2.2 Sewer Flow Generation and Loading

Accurate representation of existing sewer flows is critical for evaluation of system capacity and for the estimation of subregional flow contribution. The process for allocation of sewer flows begins with quantifying average dry weather flows (ADWF) based on historic flow meter data. Following the identification of dry weather flows, an estimation of the contribution of inflow and infiltration that accompanies heavy rain events must be evaluated, calculated and applied. The combined ADWF and the estimated inflow and infiltration represents the peak wet weather flow (PWWF). The following subsection provides a summary of the approach to determining ADWF and PWWF.

2.2.1 Average Dry Weather Flows

In 2014, permanent sewer flow meters were installed within the interceptor system to begin capturing information on the contribution of flows by each subregional agency at their injection points into the interceptor system. The following **Figure 2-1** provides an overview of the interceptor system and the location of the twelve (12) permanent flow meters.

Figure 2-1: Flow Meter Locations



Average dry weather flow (ADWF) for each of the 12 flow meters was calculated using hourly sewer flow data from May 6, 2014 to September 18, 2018. To assess only dry weather days, the timing of rain events over the four (4) year period was researched. Three (3) NOAA rain gauges exist within the study area. Historic rain data was collected for these three rain gauges. For identified rain days (greater than 0.1 inches/day), the sewer flow data was manipulated to extract the wet weather flow data from the dry weather flows:

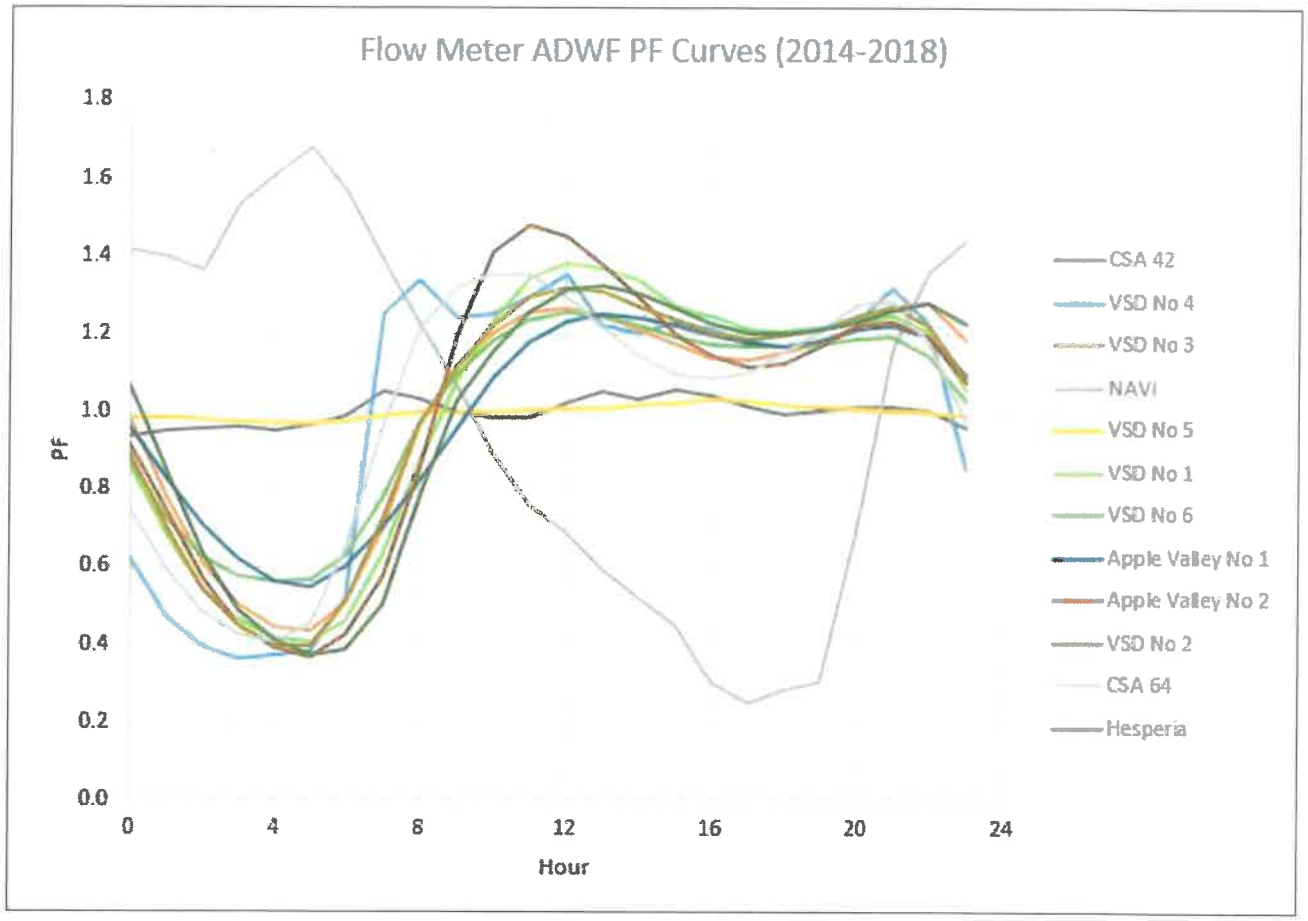
1. Remove flow data from one day before and three (3) days after identified wet weather events.
2. Average the remaining flow data for each hour in a day to produce individual 24-hour ADWF values for each meter (together these values create a flow meter's "24-hour diurnal peaking curve").
3. Average all 24 values to obtain the overall ADWF for each flow meter.

The above process creates an average representative 24-hour diurnal curve for each of the 12 sewer flow meters as well as a representative average day dry weather flow for each meter. The overall ADWFs for each flow meter are listed in **Table 2-1** and the curves are presented in **Figure 2-2.**

Table 2-1: Average Dry Weather Flow by Meter

Flow Meter	Average Dry Weather Flows (mgd)	% of Total
Hesperia	2.08	18%
CSA 64	0.56	5%
VSD No. 2	1.49	13%
Apple Valley No. 2	0.65	6%
Apple Valley No. 1	1.24	11%
VSD No. 6	0.78	7%
VSD No. 1	0.65	6%
NAVI	0.11	1%
VSD No. 5	0.06	1%
VSD No. 3	2.95	25%
VSD No. 4	1.01	9%
CSA 42	0.09	1%
Total	**11.67**	**100%**

Figure 2-2: Flow Meter 24-Hour Diurnal Curves



2.2.2 Wet Weather Flows

While ADWF represents the normal operating flow for the interceptor system, additional capacity with the collection system must be provided to account for unintended "defect" flow, more commonly referred to as inflow and/or infiltration (I&I), as well as headspace for the conveyance of sewer gasses. The contribution of flows associated to I&I can be minimal for newly constructed infrastructure to many times the ADWF for older parts of the system, which may have sustained long-term degradation, damage, corrosion or partial failure. "Inflow" generally refers to the unintended inflow into the pipeline either through the manhole ring or cover, for example in manholes submerged in a flooded roadway intersection or along a stream or creek, or for illicit connections from storm drain collection systems. The effect of inflow is typically reflected during storm events as a short-term spike in sewer flow. "Infiltration" generally refers to the effect of the groundwater level rising above the elevation of the pipeline and water seeping into the sewer collection system at separated joints or cracks within manhole rings or pipe. The effect of infiltration is typically reflected during both storm events and the overall storm season as the ground is saturated, causing a slow rise in sewer flows over an extended period of several days or weeks.

Rainfall data from three (3) NOAA rain gauges was collected during the 3-year flow monitoring period. The largest rain event during the monitoring period occurred on February 17, 2017, producing between 0.65 inches to 1.60 inches per day at each of the three rain gauges. Based on historical rainfall records for the region, this rain event is estimated to represent a 2- and 5-year storm event.

Due to the length of the VVWRA interceptor system, I&I can take a considerable amount of time to flow from the edges of the system through the flow meters and reach the treatment plan. Therefore, flow meter data was analyzed from February 17 to February 21, 2017 to find the day of consistent peak wet weather flow (PWWF) in all 12 VVWRA flow meters. Two (2) of the flow meters, VSD Nos. 2 & 3, had missing flow data during February 18-21, 2017. Therefore, a secondary wet weather event of September 8, 2015 (VSD No. 2) and January 21, 2017 (VSD No. 3) were selected as the PWWF days for these two flow meters. For the remaining 10 flow meters, PWWF occurred on February 17, 2017. The hourly contribution of I&I for each flow meter compared to the ADWF 24-hour flow curve was calculated to determine the peak wet weather flow (PWWF). The resultant comparison of AWDF and PWWF are commonly compared to assess the sensitivity of the upstream collection system to the effects of I&I. The following **Table 2-2** summarizes the ADWF, PWWF and resultant wet weather Peaking Factor.

Table 2-2: Wet Weather Peaking Factor

Flow Meter	Average Dry Weather Flows (mgd)	Peak Wet Weather Flows (mgd)	
	Average	PWWF	WW Peaking Factor
Hesperia	2.08	4.85	2.3
CSA 64	0.56	0.96	1.7
VSD No. 2	1.49	2.96	2.0
Apple Valley No. 2	0.65	1.11	1.7
Apple Valley No. 1	1.24	1.96	1.6
VSD No. 6	0.78	1.61	2.1
VSD No. 1	0.65	2.79	4.3
NAVI	0.11	2.43	22.1
VSD No. 5	0.06	0.09	1.5
VSD No. 3	2.95	4.34	1.5
VSD No. 4	1.01	1.65	1.6
CSA 42	0.09	0.2	2.2

Attention to the above table is focused on the NAVI and VSD No. 1 flow meters. Under ADWF conditions, NAVI generally sends very little flow into the VVWRA interceptor system. During rain events, however, there is high I&I on the line, as noticed by the Authority, resulting in a peak wet weather flow 22 times the average dry weather flow. Similar but on a much more typical scale VSD No. 1 is exhibiting upstream I&I. All other basins are reflecting I&I within typical levels (below 2.5) for mature collection systems.

For modeling the PWWF condition, the 24-hour flow data for each meter was used. It is noted that this approach only simulates a measured instance observed in the field through flow monitoring data. No modification of the resultant flow metering data and additional I&I flows were adjusted within the 24-hour diurnal curve to coincide with the peak dry weather flow hour, typically either approximately 8am or 5pm. In addition, the estimated rainfall event observed represented a 2- to 5-year storm event. Any larger storm event (10-year or greater) would be expected to result in higher I&I response. The modeled simulation is also based on current conditions, and does not take into account the potential for increased ADWF due to future population growth.

2.3 Sewer Flow Loading

The following section provides a description as to the approach for loading the hydraulic model with sewer flows summarized in the previous section.

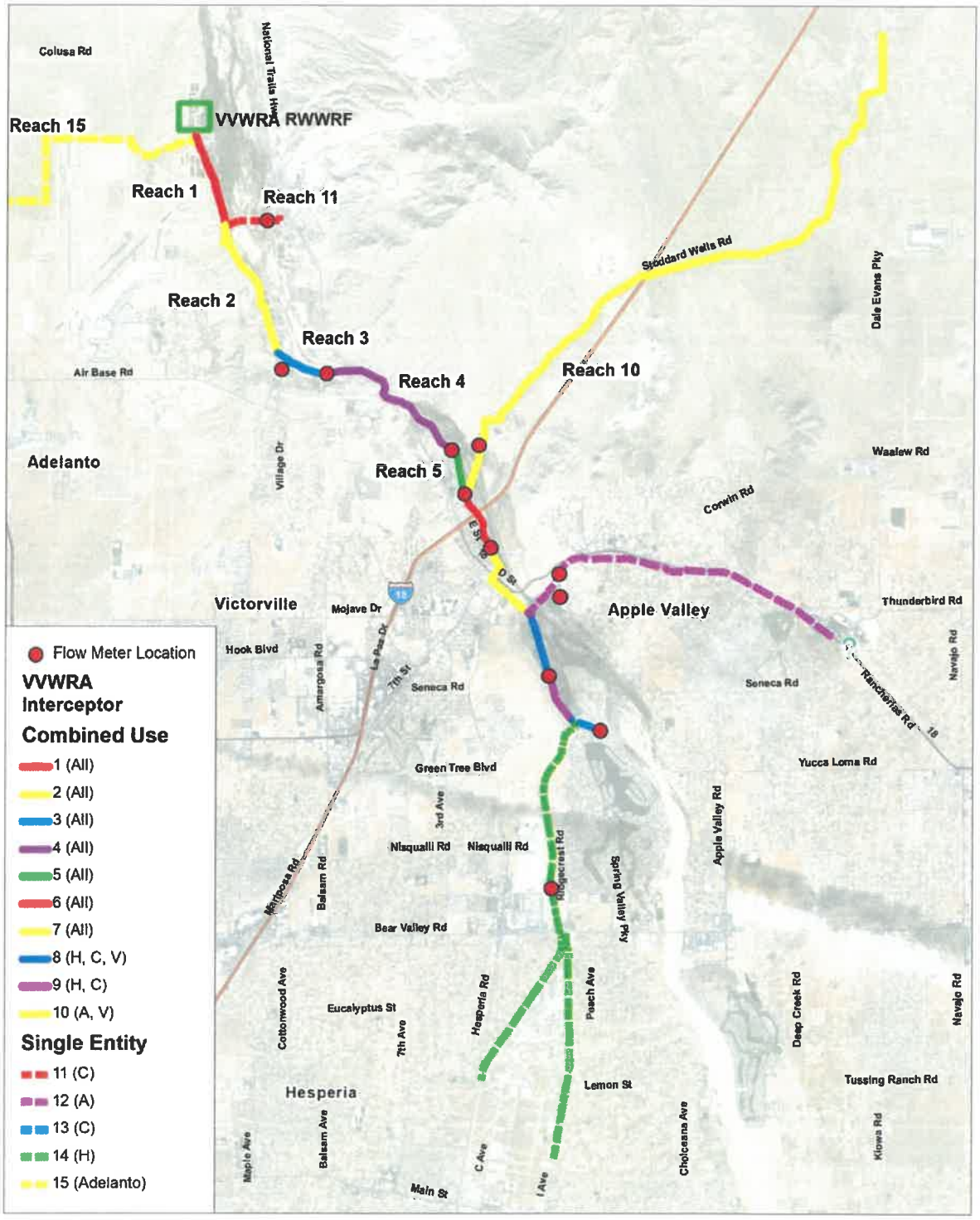
With exception of three (3) locations, the resultant ADWF and PWWF 24-hour diurnal curves are applied to the nearest upstream manhole of each flow meter. Using this approach, flows are injected into the VVWRA interceptor consistent with measured flows. At three locations, the upstream pipeline reach of the VVWRA interceptor system is utilized by a single subregional agency. Without additional information on the precise location of outfalls into the interceptor along these three upstream reaches, assessment as to the flows and resultant capacity cannot be accurately determined. For NAVI (Reach 10), due to the lack of information, a single point load was applied at the end of the system to provide the most conservative results. Loading for Apple Valley Meters No. 1 and No. 2 utilized loading allocations developed previously by RBF in their 2013 evaluation. Loading for the Hesperia meter is based on flow data provided by VVWRA prior to the construction of the Santa Fe Avenue Relief Interceptor (SAFARI), which indicated the predicted flow distribution between SAFARI and Hesperia interceptors. The following **Table 2-3** provides a list of each flow meter and identifies the flow loading approach, including the two meters where flow was loaded using RBF's approach. The following **Figure 2-3** shows a summary of Flow Meters and pipeline Reaches along the VVWRA Interceptor.

Table 2-3 Flow Loading Approach by Meter

Flow Meter	Loading Approach	Upstream Reach
Hesperia	Multiple Point Loads	#14
CSA 64	Point Load	
VSD No. 2	Point Load	
Apple Valley No. 2	Point Load	
Apple Valley No. 1	Multiple Point Loads	#12
VSD No. 6	Point Load	
VSD No. 1	Point Load	
NAVI	End of System	#10
VSD No. 5	Point Load	
VSD No. 3	Point Load	
VSD No. 4	Point Load	
CSA 42	Point Load	

Flow loading into the hydraulic model is based on a 24-hour diurnal curve pattern. This approach allows for an extended period simulation of flow characteristics through the pipeline network over time. As discussed in Section 2.2, flows are based on measured flow meter data. ADWF flows are based on the average 24-hours flows over the past three years of dry weather. PWWF flows are representative of actual measured flows over 24-hours during the largest rain event to occur in the past 3 years.

Figure 2-3 : Interceptor Reach Summary



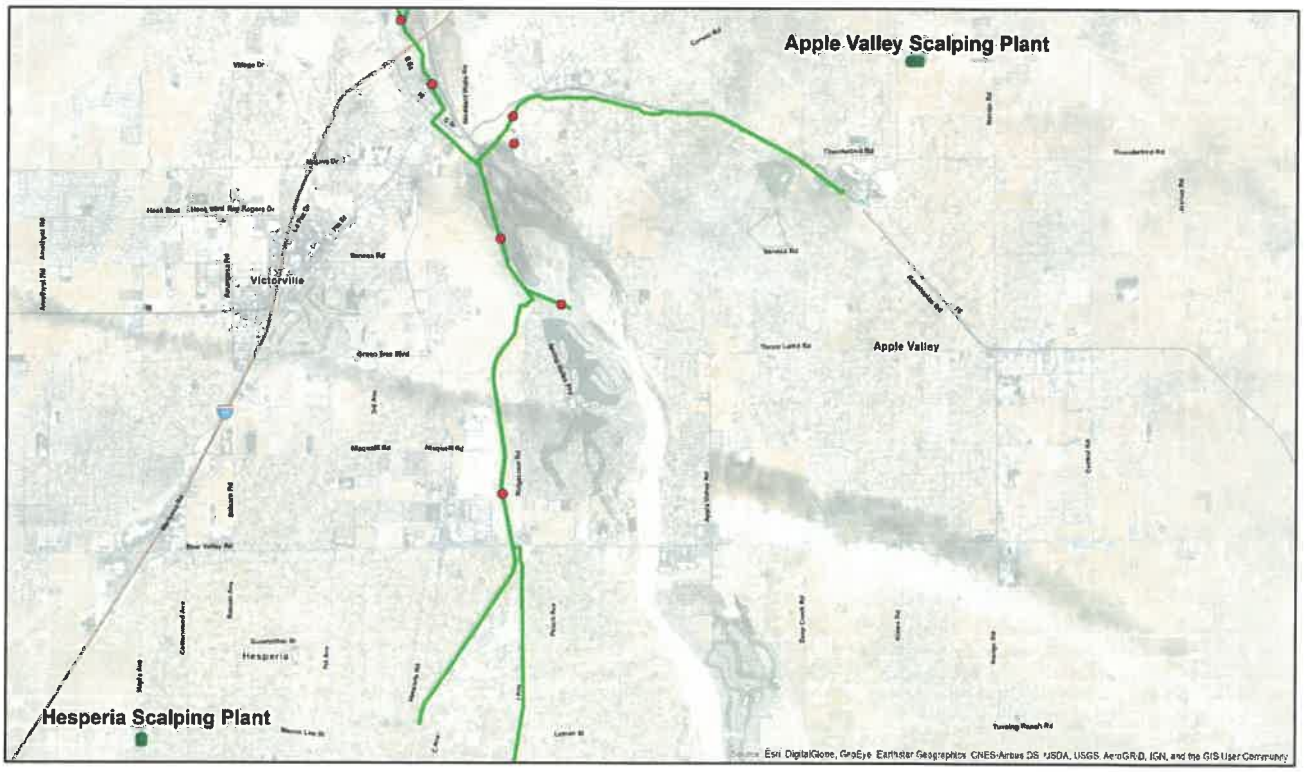
2.4 Model Calibration

Model calibration was performed using a dry weather flow scenario to confirm the model accurately reproduced real world conditions. Seven days' worth of data (May 13 through May 19, 2018) from the 12 flow meters were used to calculate average flows, which were input into the model. Peaking curves previously calculated for ADWF in the system remained unchanged. Results at the model output node (representing the VVWRA Regional Wastewater Reclamation Facility [RWWRF]) were compared to RWWRF influent flow meter data for the same time period. Resulting average modeled flows were within 5% of the plant inflow flow meter measurements and peak dry weather flows were within 3%. These values are within the industry standard of 10%; therefore, model calibration was considered satisfied.

2.5 Scalping Plants

The final demand loading scenario considered in this analysis included two future scalping plants. The Apple Valley scalping plant is located near Brewster Park on Otoe Road, removing approximately 0.7 MGD of effluent from Reach 12 at a constant rate. The Hesperia scalping plant is located near Maple and Mauna Loa Streets and removes up to a peak of 1.2 MGD of effluent from Reach 14 at a constant rate. Both scalping plants were modeled by inclusion of a negative load at the nearest loading manhole to the location described with no peaking curve, resulting in a consistent load being removed over a 24-hour period.

Figure 2-4: Scalping Plant Locations



3 Interceptor Analyses

This section presents the summary of results of the interceptor capacity analysis. Detailed results of the analysis are included in Appendix A.

3.1 Interceptor Capacity Evaluation Criteria

Pursuant to the *2018 Interceptor Capacity Analysis Approach* memorandum prepared by Dudek (Appendix B), the following design criteria were used in the evaluation of the hydraulic capacity analysis of the interceptor system:

- A maximum depth over diameter (d/D) ratio of 0.5 for pipes less than or equal to 15-inches in diameter.
- A maximum d/D of 0.75 for pipes greater than 15-inches in diameter
- Flows based on PWWF

3.2 ADWF Agency Allocations by Reach

ADWF values calculated from the flow meters were used to allocate average flows for each reach by Member Agency. The following **Table 3-1** provides a summary of the resultant ADWF contribution by each subregional agency for each reach of the VVWRA interceptor. For each reach, the percentage of contribution by each subregional is calculated. When considering the reduction in flows projected with the two proposed scalping plants proposed in Apple Valley and Hesperia, as described in Section 2.5, ADWF reduces from 11.6 MGD to 9.7 MGD. **Table 3-2** provides the resultant summary of ADWFs by reach for each subregional, with proportions included.

Table 3-1: ADWF by Reach (no scalping)

Reach	ADWF (MGD) / Percentage of Total Flow (%)				
	No Scalping				
	Town of Apple Valley	City of Hesperia	County of San Bernardino	City of Victorville	Total ADWF
1	1.89 / 16%	2.08 / 18%	0.65 / 6%	7.05 / 60%	11.67 / 100%
2	1.89 / 16%	2.08 / 18%	0.56 / 5%	7.05 / 61%	11.58 / 100%
3	1.89 / 18%	2.08 / 20%	0.56 / 5%	6.04 / 57%	10.57 / 100%
4	1.89 / 25%	2.08 / 27%	0.56 / 7%	3.09 / 41%	7.62 / 100%
5	1.89 / 25%	2.08 / 28%	0.56 / 7%	3.03 / 40%	7.56 / 100%
6	1.89 / 28%	2.08 / 31%	0.56 / 8%	2.27 / 33%	6.24 / 100%
7	1.89 / 31%	2.08 / 35%	0.56 / 9%	1.49 / 25%	5.46 / 100%
8	1.89 / 31%	2.08 / 35%	0.56 / 9%	1.49 / 25%	6.02 / 100%
9	1.89 / 42%	2.08 / 46%	0.56 / 12%	0 / 0%	4.53 / 100%
10[1]	0.06 / 50%	0 / 0%	0 / 0%	0.06 / 50%	0.11 / 100%
11	0 / 0%	0 / 0%	0.09 / 100%	0 / 0%	0.09 / 100%
12	1.89 / 100%	0 / 0%	0 / 0%	0 / 0%	1.89 / 100%
13	0 / 0%	0 / 0%	0.56 / 100%	0 / 0%	0.56 / 100%
14	0 / 0%	2.08 / 100%	0 / 0%	0 / 0%	2.08 / 100%
Adelanto Interceptor	0 / 0%	0 / 0%	0 / 0%	0.001 / 100%	0.001 / 100%

Notes:
[1] The flow split between City of Victorville and Town of Apple Valley in the NAVI line are unknown; therefore, a 50/50 split was assumed.

Table 3-2: ADWF by Reach (with scalping)

Reach	ADWF (MGD) / Percentage of Total Flow (%)				
	With Scalping				
	Town of Apple Valley (-0.7 MGD)[2]	City of Hesperia (-1.2 MGD)	County of San Bernardino	City of Victorville	Total ADWF
1	1.19 / 12%	0.88 / 9%	0.65 / 7%	7.05 / 72%	9.77 / 100%
2	1.19 / 12%	0.88 / 9%	0.56 / 6%	7.05 / 73%	9.68 / 100%
3	1.19 / 14%	0.88 / 10%	0.56 / 6%	6.04 / 70%	8.67 / 100%
4	1.19 / 21%	0.88 / 15%	0.56 / 10%	3.09 / 54%	5.72 / 100%
5	1.19 / 21%	0.88 / 16%	0.56 / 10%	3.03 / 54%	5.66 / 100%
6	1.19 / 24%	0.88 / 18%	0.56 / 11%	2.27 / 46%	4.90 / 100%
7	1.19 / 29%	0.88 / 21%	0.56 / 14%	1.49 / 36%	4.12 / 100%
8	1.19 / 29%	0.88 / 21%	0.56 / 14%	1.49 / 36%	4.12 / 100%
9	1.19 / 45%	0.88 / 33%	0.56 / 21%	0 / 0%	2.63 / 100%
10[3]	0.06 / 50%	0 / 0%	0 / 0%	0.06 / 50%	0.11 / 100%

Reach	ADWF (MGD) / Percentage of Total Flow (%) With Scalping				
	Town of Apple Valley (-0.7 MGD)[2]	City of Hesperia (-1.2 MGD)	County of San Bernardino	City of Victorville	Total ADWF
11	0 / 0%	0 / 0%	0.09 / 100%	0 / 0%	0.09 / 100%
12	1.19 /100%	0 / 0%	0 / 0%	0 / 0%	1.19 / 100%
13	0 / 0%	0 / 0%	0.56 / 100%	0 / 0%	0.56 / 100%
14	0 / 0%	0.88 / 100%	0 / 0%	0 / 0%	0.88 / 100%
Adelanto Interceptor	0 / 0%	0 / 0%	0 / 0%	0.001 / 100%	0.001 / 100%

Notes:
[2] Scalping flow reduction of 0.7 MGD comes from the South Apple Valley Interceptor.
[3] The flow split between City of Victorville and Town of Apple Valley in the NAVI line are unknown; therefore, a 50/50 split was assumed.

The 24-hour PWWF and PWWF with Scalping extended period simulations were run in the hydraulic model for the combined entity and single-entity reaches separately. The results of the analyses were compared against the evaluation criteria presented in Section 3.1.2. Detailed reach-by-reach results, including pipeline specific details and hydraulic profiles, are presented in Appendix A. A summary of the number of reaches exceeding the evaluation criteria are presented in **Table 3-3** and shown graphically in **Figures 3-1** and **3-2.**

It is recommended that flow monitoring be performed at the reaches exceeding criteria to confirm the results of this analysis. As part of the *2018 Interceptor Capacity Analysis Approach* memorandum prepared by Dudek (Appendix B), an approach to capacity analysis flow chart was developed. It is recommended this "Interceptor Risk Analysis" be followed to further evaluate and validate mitigation projects.

Table 3-3: PWWF Capacity Analysis Results Summary

Reach ID	Total Length (ft)	Diameter Range (in)	Number of Pipes Exceeding Criteria[1]		Length Pipes Exceeding Criteria (ft)	
			Without Scalping	With Scalping	Without Scalping	With Scalping
Combined Entity Reaches						
1[2]	12,610	36 - 42	0	0	0	0
2[2]	18,998	36 – 42	0	0	0	0
3[2]	7,304	36 – 42	1	0	500	0
4	11,100	27 – 36	12	5	8,113	2,147
5	3,408	27	7	6	3,408	2,999
6	3,846	27	9	1	3,846	496
7	6,073	27 – 48	16	2	6,073	635
8	4,266	21 – 27	0	0	0	0
9	3,250	21	5	0	2,725	0
10	48,218	15 – 24	0	0	0	0
Total Combined Reaches:			**50**	**14**	**24,665 ft**	**6,277 ft**
Single Entity Reaches[3]						
11	3,792	8	1	1	389	389
12	24,328	12 – 15	3	0	825	0
13	2,620	21	0	0	0	0
14	42,097	10 – 24	42	0	14,128	0
15	1,355	10	0	0	0	0
Total Single Entity Reaches:			**46**	**1**	**15,342 ft**	**389**
Total All Reaches:			**96**	**15**	**40,007 ft**	**6,666 ft**
Reduction by Scalping (All Reaches):			**81**		**33,341 ft**	

Notes:
[1] Scenarios based on 2017 PWWF.
[2] This reach is double-barrelled.
[3] As directed by VVWRA, the full PWWF loading was applied to the as listed in Table 2-3, as exact loading locations are unknown.

Figure 3-1 : Pipes Exceeding Design Capacity under PWWF Conditions

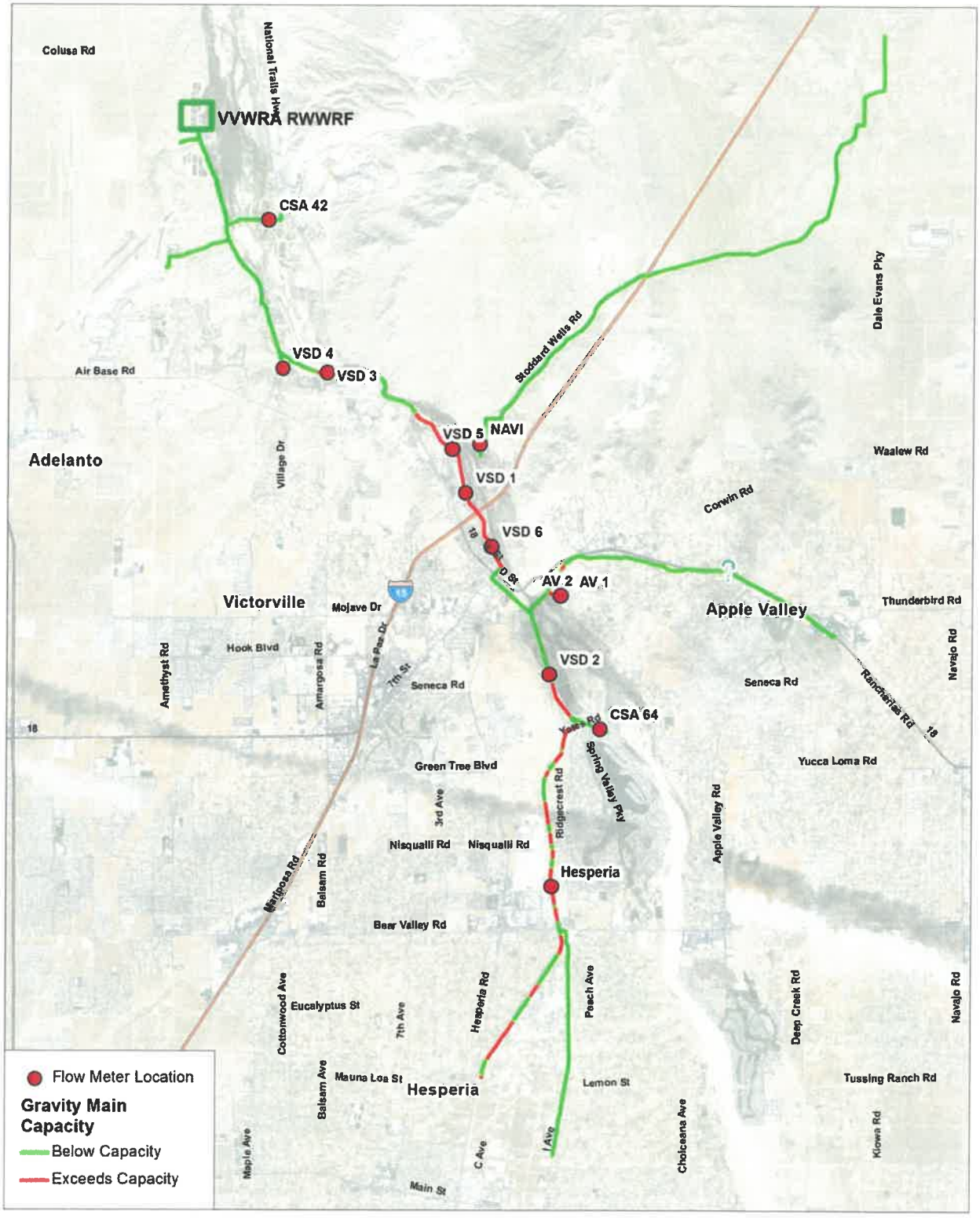
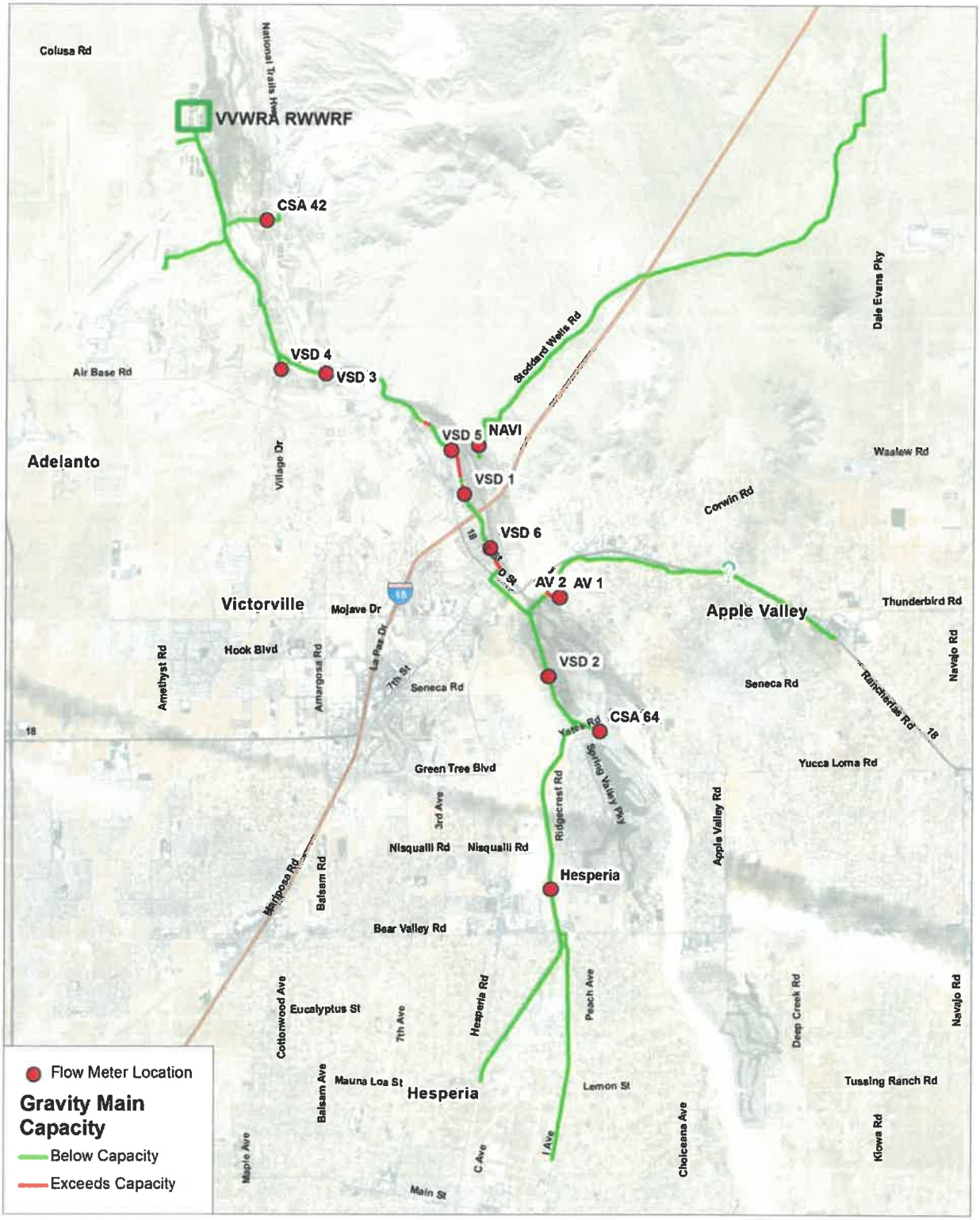


Figure 3-2 : Pipes Exceeding Design Capacity under PWWF with Scalping Conditions



3.3 Remaining Reach Capacities

Pipeline GIS data was used in conjunction with the evaluation criteria to calculate reach capacities using Manning's Equation. Capacities were determined for each pipeline within a reach. The pipeline with the lowest value set the capacity for the reach. The reach capacities were then compared against the PWWF with Scalping hydraulic model results to determine the remaining hydraulic capacity in each reach. A summary of the remaining reach capacities are presented in **Table 3-4.**

Table 3-4: Summary of Reach Capacities

Reach ID	Critical Diameter (in)	d/D Criteria[1]	Reach Capacity (MGD)[2]	PWWF with Scalping (MGD)[3]	Remaining Capacity (MGD)[4]
1	36	0.75	14.05	7.76	6.29
	42	0.75	20.09	7.33	12.76
	Combined	–	34.14	15.09	19.04
2	36	0.75	12.03	7.64	4.39
	42	0.75	16.85	13.77	3.08
	Combined	–	28.88	21.41	7.47
3	36	0.75	6.60	5.41	1.19
	42	0.75	17.17	8.04	9.13
	Combined	–	23.77	13.44	10.33
4	36	0.75	7.15	10.05	0
5	27	0.75	8.03	9.98	0
6	27	0.75	9.04	8.62	0.42
7	36	0.75	4.25	7.69	0
8	27	0.75	8.53	5.86	2.66
9	21	0.75	5.19	2.92	2.27
10	15	0.5	2.65	2.43	0.22
11	8	0.5	0.17	0.20	0
12	12	0.5	1.44	0.92	0.52
13	21	0.75	5.19	0.96	4.23
14	12	0.5	3.09	2.16	0.93

Notes:
[1] Criteria based on the evaluation criteria presented in Section 3.1.2.
[2] Reach capacity values listed are based on Manning's equation, which assumes uniform flow and does not take into consideration upstream and downstream flow conditions. Value listed represents the pipeline with the lowest capacity value of all pipelines within that reach.
[3] As determined from the results of the hydraulic modeling analysis.
[4] Reaches exceeding design capacity will need to undergo an "Interceptor Risk Analysis" to prioritize the significance of their condition and validate mitigation projects, per Figure 1 of the *2018 Interceptor Capacity Analysis Approach Memorandum* by Dudek, date October 22, 2018 (Appendix B)

3.4 Recommended Capacity Improvement Projects

Pursuant to the guidance of the Interceptor Capacity Analysis Approach (Appendix B), first-pass capacity-enhancement improvement projects were developed using the PWWF with Scalping analysis results to obtain a concept-level cost estimate for recommended improvements. As presented in **Table 3-5** and shown graphically in **Figure 3-3**, four projects were developed to parallel and replace six interceptor pipeline segments in Reaches 4, 5 and 7. These projects would increase system capacities in these areas by a significant margin and provide safeguards against potential future overflows during wet weather events. Detailed cost estimates are included in Appendix C.

Table 3-5: Summary of Recommended Projects

Project ID	Ex. Dia. (in)	Prop. Dia. (in)	Length (ft)	Excess Capacity (%)	Excess Capacity for Future Flows (MGD)	Est. Project Cost ($M)
R4A	36	42	1,000	35%	5.35	$1.68
R4B	27	36	500	53%	11.2	$0.83
R5	27	36	3,900	42%	7.3	$6.52
R7	36	54	650	39%	4.9	$1.44
R11	8	12	400	59%	0.3	$0.28
		TOTALS	**6,500**			**$10.75**

As part of the second and third pass risk assessment alternative analyses for the Interceptor Risk Analysis approach, **Figure 3-4**, it is recommended that a 10-year storm event (minimum) be used in conjunction with quantification of sewer generation associated with build-out of the sub regionals to best assess capacity deficiencies and identify length, diameter and project cost of future interceptor replacements.

Figure 3-3 : Recommended "First Pass" Improvement Project Locations

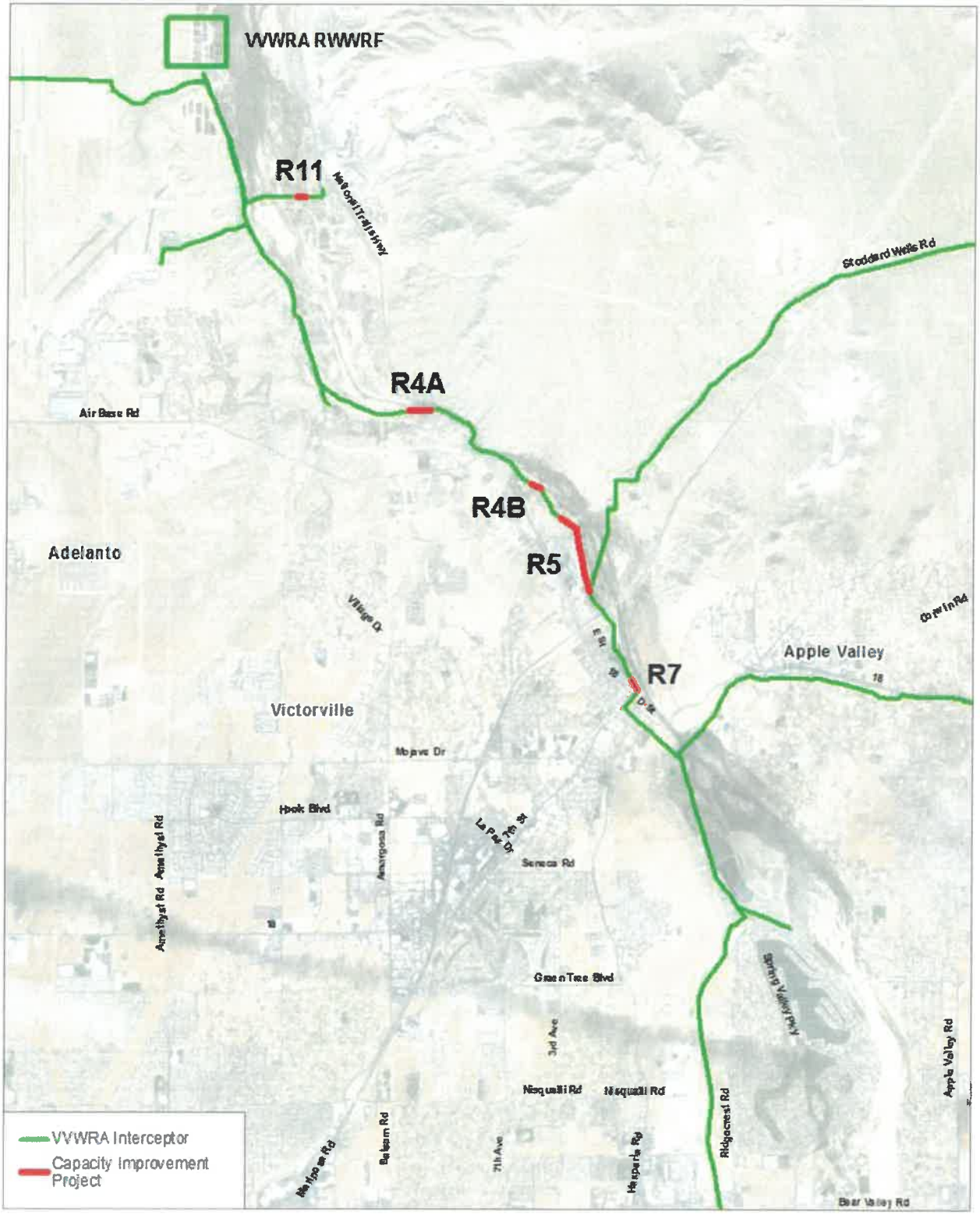
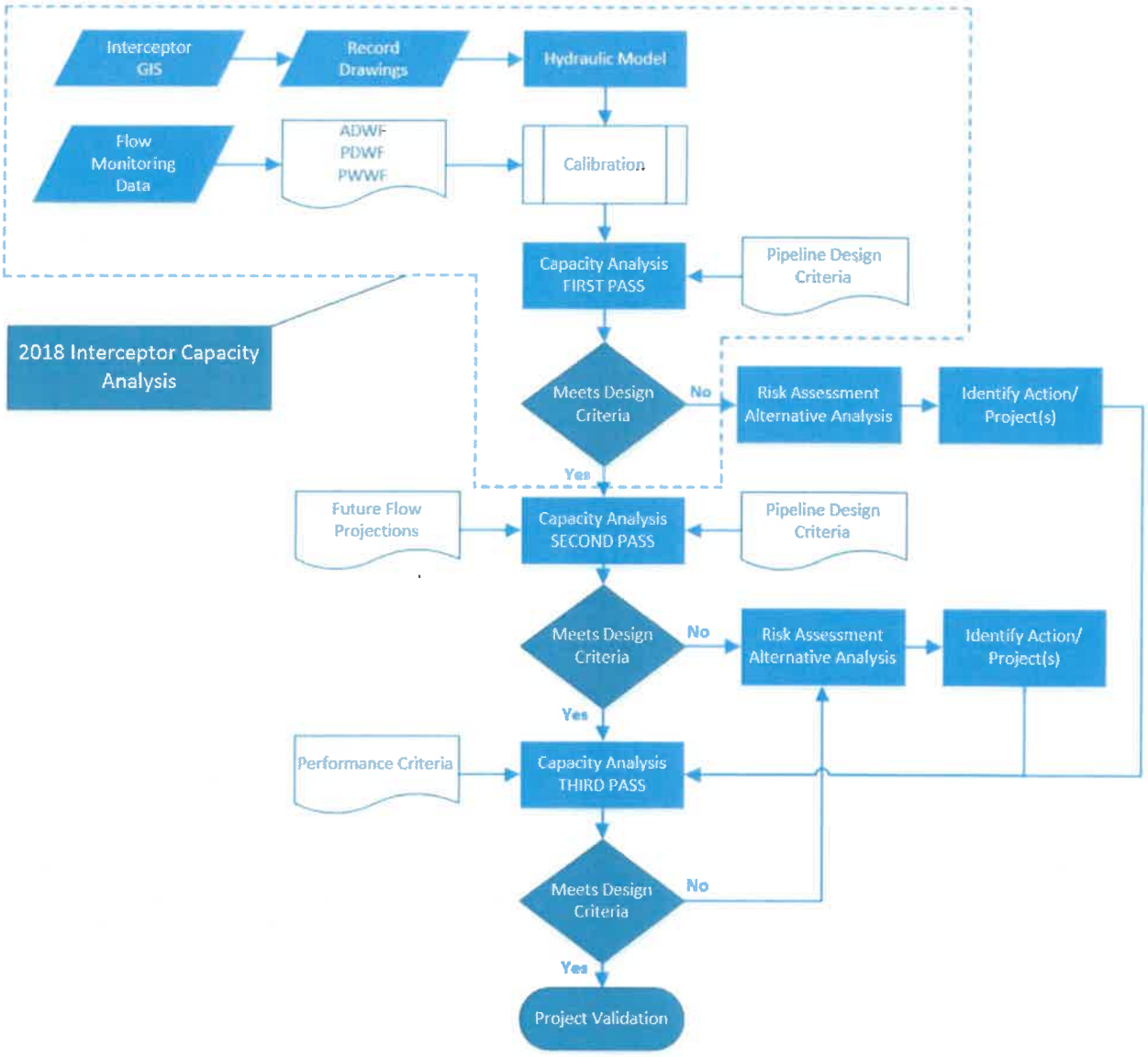


Figure 3-4 : Interceptor Risk Analysis Flow Chart



4 Pump Station Capacity Analyses

There are four (4) pump stations that were analyzed to determine if their design capacities are sufficient to accommodate their modeled or measured upstream peak flows. Two (2) of these pump stations, Oro Grande and Victorville, are located downstream of modeled system and the other two (2), Hesperia and Otoe, are located upstream of the modeled interceptor capacity system. The locations of the pipelines are shown in **Figure 4-1.**

Figure 4-1: Pump Station Location Map

The highest modeled peak wet weather flows (PWWF) in the pipe segments in Reaches 10 & 11 were compared with the capacity of the Victorville and Oro Grande pump stations, respectively. In Reach 10, the PWWF was modeled at 1,667 gallons per minute (gpm). The Victorville pump station has a 1,030 gpm design flow capacity. The pump curves for the Victorville pump station show a design operating range of 1,030 and 1,600 gpm; a PWWF of 1,667 gpm is well within the pump operation curve for the Victorville pumps; therefore, the pump station capacity is considered adequately sized. The Oro Grande pump station has a design flow rate of 100 gpm. The Reach 11 PWWF is 208 gpm. While this is above the 100 gpm pump station design capacity, an August 6, 1993 start-up log states that "according to the installed flow meter, the pumps were producing approximately 270 gpm each". Additionally, a PWWF of 208 gpm is well within the pump operation curve for the Oro Grande pumps; therefore, the pump station capacity is also considered adequately sized.

The Hesperia pump station was commissioned in January 2019. There is no upstream peak flow data available; however, the pump station was sized for the Hesperia Water Reclamation Plant flows only. Therefore, the pump station capacity is assumed to be adequate. The design point of the Hesperia pump station is listed in **Table 4-1.**

There was no upstream flow data available for Otoe pump station. Values of downstream flow to percolation ponds on days of that the full flow from the Otoe pump station was sent to the Apple Valley WRP were analyzed. The maximum daily flow from the data set was 526 gpm. The 1,240 gpm design flow of the Otoe pump is well above this maximum flow value; therefore, the pump station capacity is considered adequately sized.

Summarized results of the analysis are presented in **Table 4-1**

Table 4-1: Pump Station Capacity Analysis

Pump Station Name	Location	No. of Pumps	Individual Pump Design Flow (gpm)	Individual Pump Total Design Head (ft)	Pump Station Design Flow[1] (gpm)	Upstream Peak Flow (gpm)	Conclusion/ Recommendation
Hesperia	Mojave St (between Tamarisk Ave and Maple Ave) Hesperia, CA	2	1,042	107	1,042	N/A	Adequate[2]
Oro Grande	East of Shay Rd (34.60N, -117.35W) Victorville, CA	2	100	50	100	208	Adequate[3]
Otoe[4]	21024 Otoe Rd Apple Valley , CA 92307	3	1,240	116	2,480	526[5]	Adequate
Victorville	South of Abbey Ln (34.56N, -117.30W) Victorville, CA	2	1,030	185	1,030	1,667	Adequate[6]

Notes:
[1] Assumes one standby pump per pump station.
[2] Actual flow data not available; pump sized for Hesperia WRP plant flows only; therefore, assumed adequate.
[3] While the design point listed is 100, startup testing documented the pumps producing 270 gpm each.
[4] Otoe pump station pumps reclaimed water to percolation ponds. Pumps are on VFDs.
[5] This peak flow is downstream of the Otoe pump station.
[6] These pumps were designed to operate between 1,030 and 1,600 gpm; using the pump curve, a flow of 1,667 is acceptable.
N/A = Not available

5 O&M Improvement Evaluation

In September 2018, Larry Walker Associates performed an audit of the VVWRA Sewer System Management Plan (SSMP) from April 2012 and reviewed data related to each of VVWRA's reported Sanitary Sewer Overflows (SSOs) between 2007 and 2018. This audit and the April 2012 SSMP were used to evaluate ongoing VVWRA operation and maintenance (O&M) activities.

The April 2012 SSMP states that "VVWRA maintains a scheduled preventative maintenance, repair and cleaning database system. The purpose of this system is to facilitate as-required repairs and cleaning for the sanitary sewer collection network." The database includes:

- Last inspection (visual and/or video) date and next projected inspection date,
- Last maintenance date and next projected maintenance date,
- Last cleaning date and next projected cleaning date,
- Detail of repair(s) and date performed,
- Condition of pipe,
- Severity of damage, and
- Mineral deposits/build-up.

Preventative inspection, maintenance, and cleaning are on a 5-year cycle. Cleaning and inspection are performed by contractors. Scheduled maintenance, repair and cleaning needs are prioritized based on:

- Age of line segment,
- Criticality to the proper functioning of the collection network,
- Known line requirements, and
- "At-risk" issues.

VVWRA determined that a VVWRA Fails, Oils, and Grease (FOG) Control Program is unnecessary because VVWRA has not experienced any SSOs that were attributed to FOG and each VVWRA member agency has their own FOG Control Program. This determination was confirmed by the 2018 Audit.

VVWRA audits its SSMP every two (2) years, in conformance with state regulations.

The database, 5-year cleaning and inspection cycle, lack of FOG Control program, and regular audits of the VVWRA SSMP appear to be preventing SSOs effectively. There have been no SSOs related to inflow and infiltration (I&I) or high solids/debris since 2011, implying that O&M activities are sufficient at maintaining the necessary capacity in the sewer collection network.

The most recent (2013-2018) string of SSOs have been caused by improper installation of force mains that caused air relief valves to fail. Similar to the 2018 Audit, it is recommended that VVWRA increase the frequency of inspections and testing of contractor-performed work during and immediately following construction (prior to startup) of force mains to minimize valve failures in the future.

6 Conclusions and Recommendations

The following conclusions and recommendations were derived from this analysis:

- The sub-regional scalping plants will significantly improve available capacity in the Interceptor System.
- Even with the sub-regional plants reducing system flows, combined-entity Reaches 3 through 7 and single-entity reaches 11, 12 and 14 should be further evaluated to determine if improvement projects are warranted.
- With the sub-regional plants, first-pass evaluation of recommended improvements included five projects replacing five interceptor pipeline segments (via parallel pipelines) with an estimated total project cost of $10.8M.
- Analysis of the hydraulic capacity of the system under a larger (10-year) storm event would be useful in better assessing system capacity deficiencies.
- In particular, it is recommended additional flow monitoring be performed in Reaches R4A, R4B, R5, R7 and R11 to confirm modeling analysis results.
- Utilize the Interceptor Risk Analysis to validate mitigation projects.
- The Oro Grande and Victorville pump stations are adequately sized to handle existing PWWFs.
- The Authority's O&M activities appear to be adequate in reducing and minimizing SSOs.

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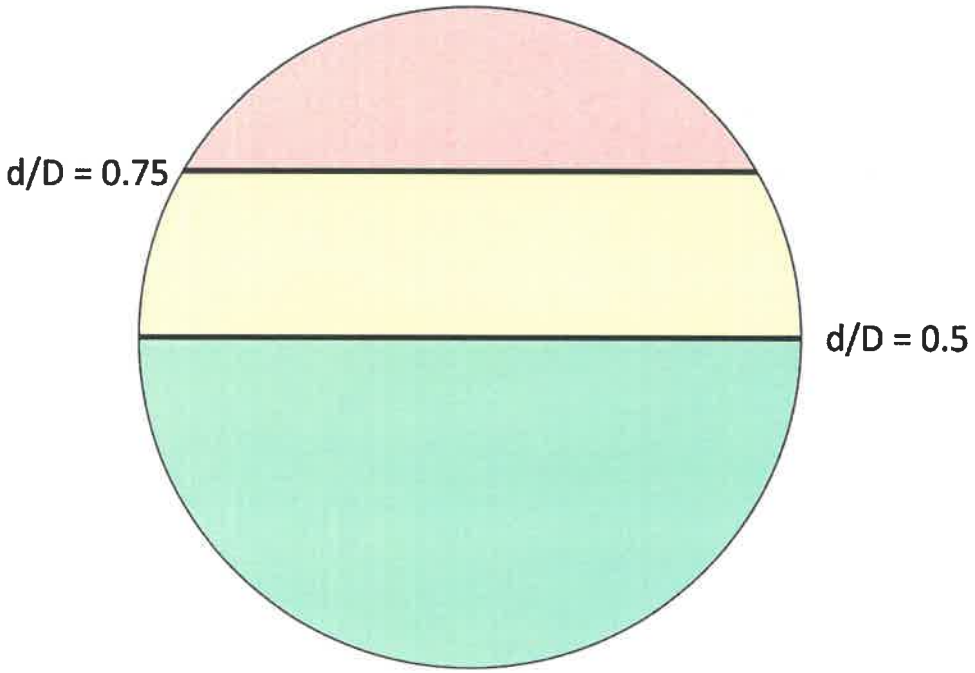
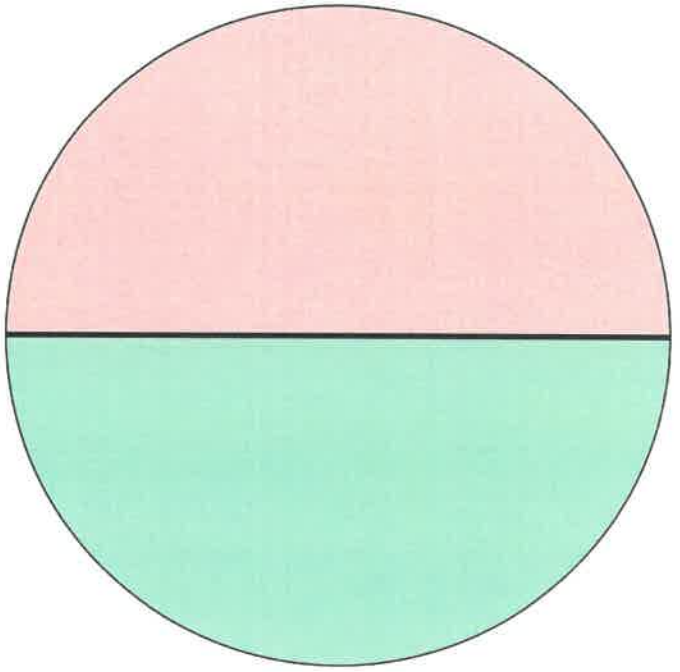
Appendix A

Reach–by–Reach Hydraulic Analysis Results

Reach by Reach Hydraulic Analysis Legend



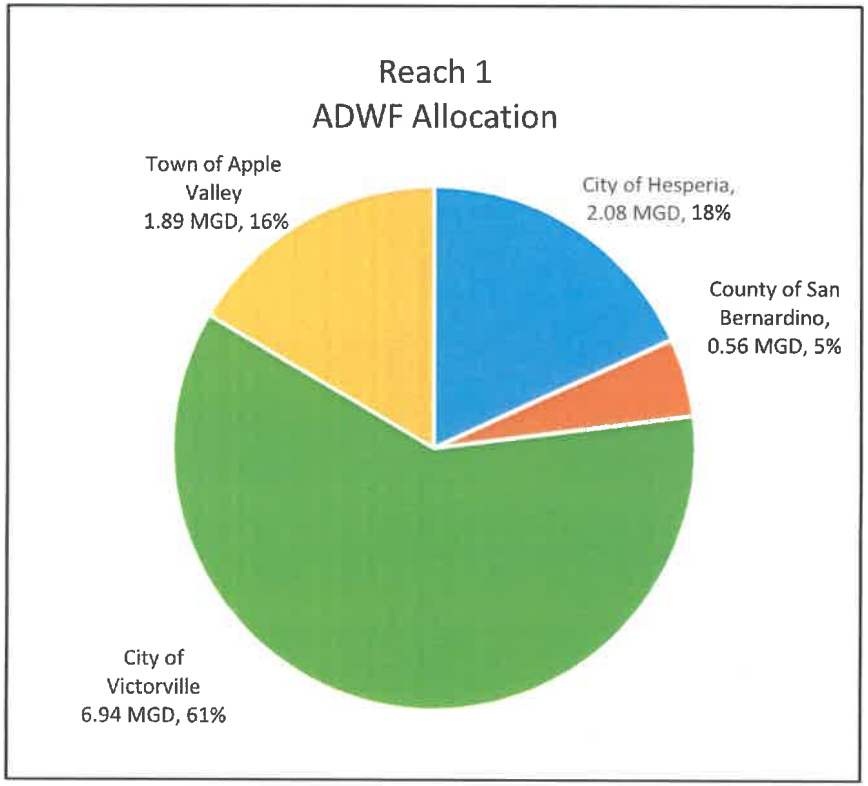
LARGE DIAMETER PIPE
> 15 INCHES

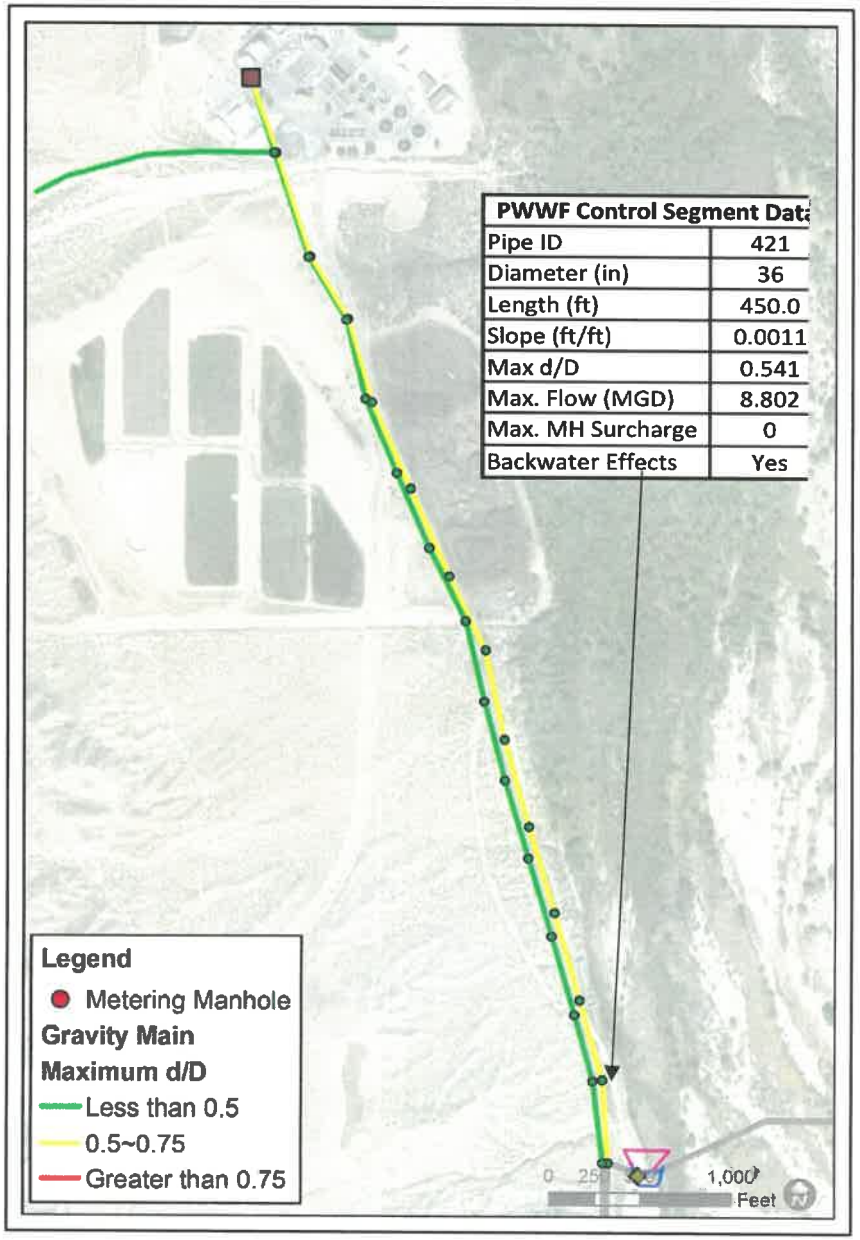


SMALL DIAMETER PIPE
≤ 15 INCHES

VVWRA Interceptor Reach 1

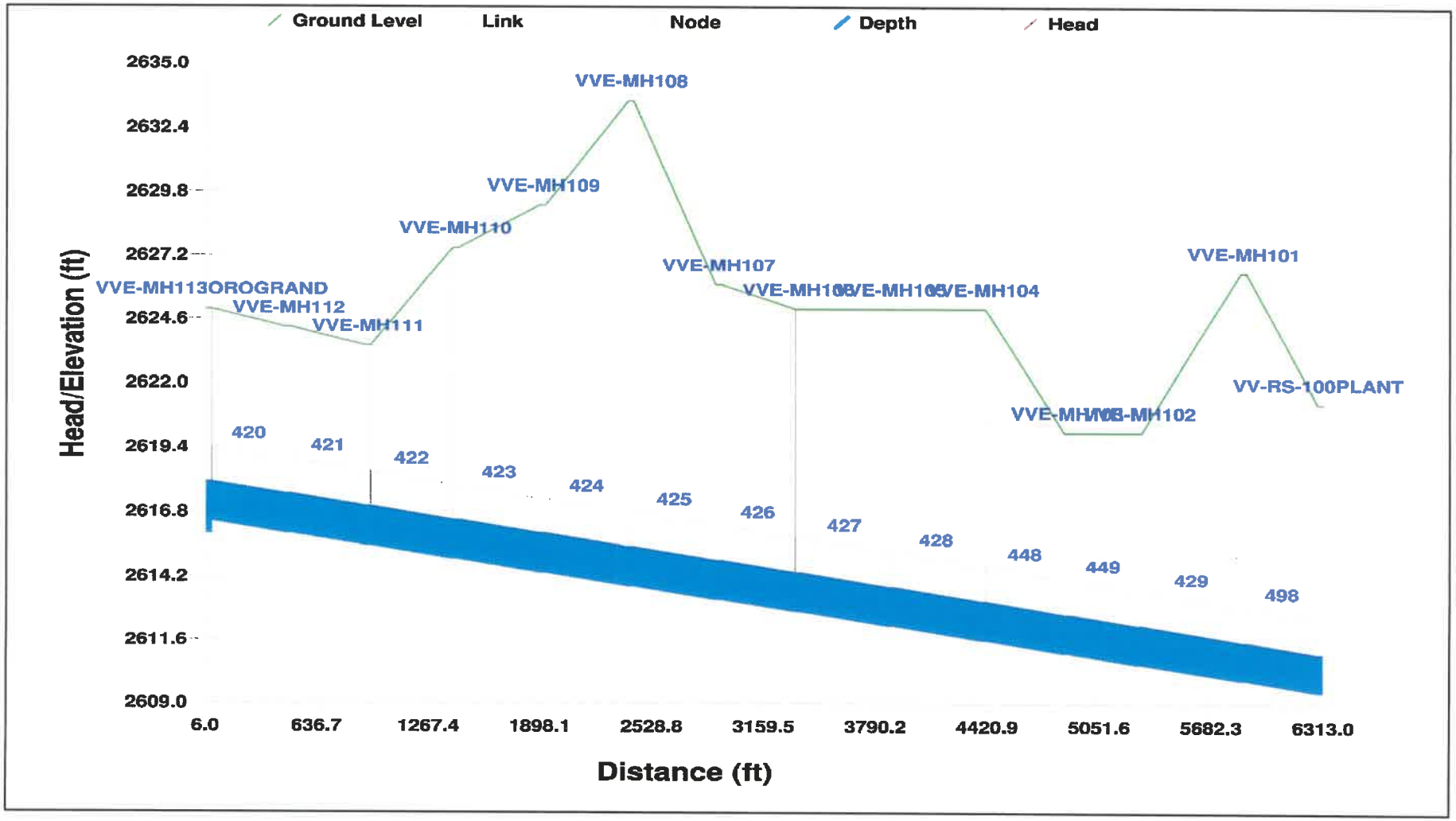
Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	17.2
Average Dry Weather Flow (ADWF) (MGD):	11.5
Total Length (ft):	5,880.3
Slope Range (ft/ft):	0.0008 - 0.0011
Diameter Range (in):	36 - 42
Material(s):	CML&C
Notes: 0 of 13 pipes in Reach 1 experienced d/D's greater than the design criteria.	





VVWRA Interceptor Reach 1

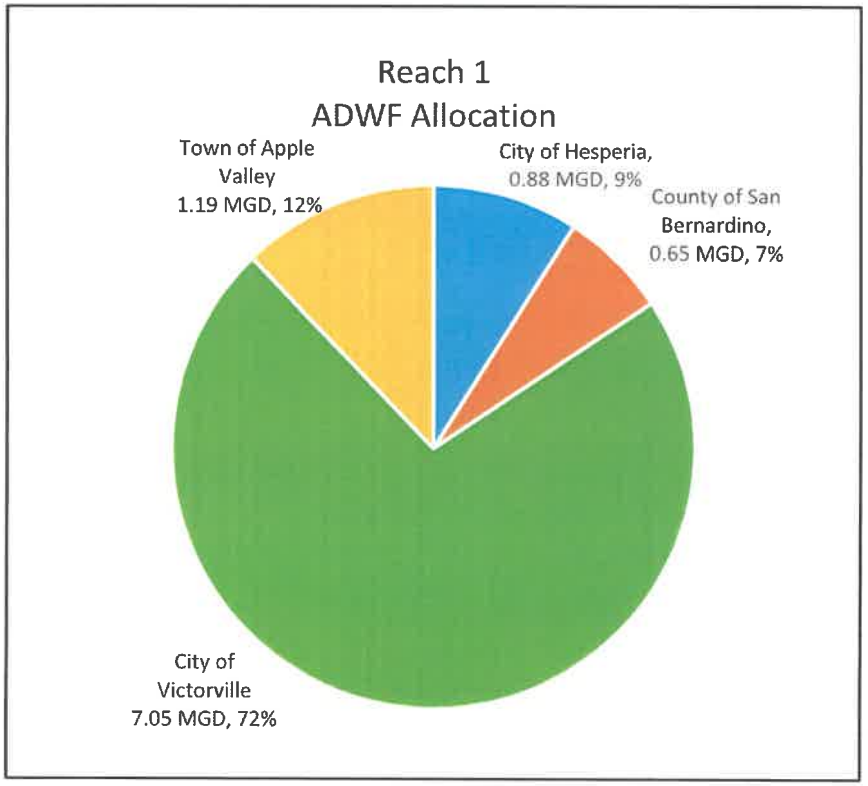
PWWF Hydraulic Profile

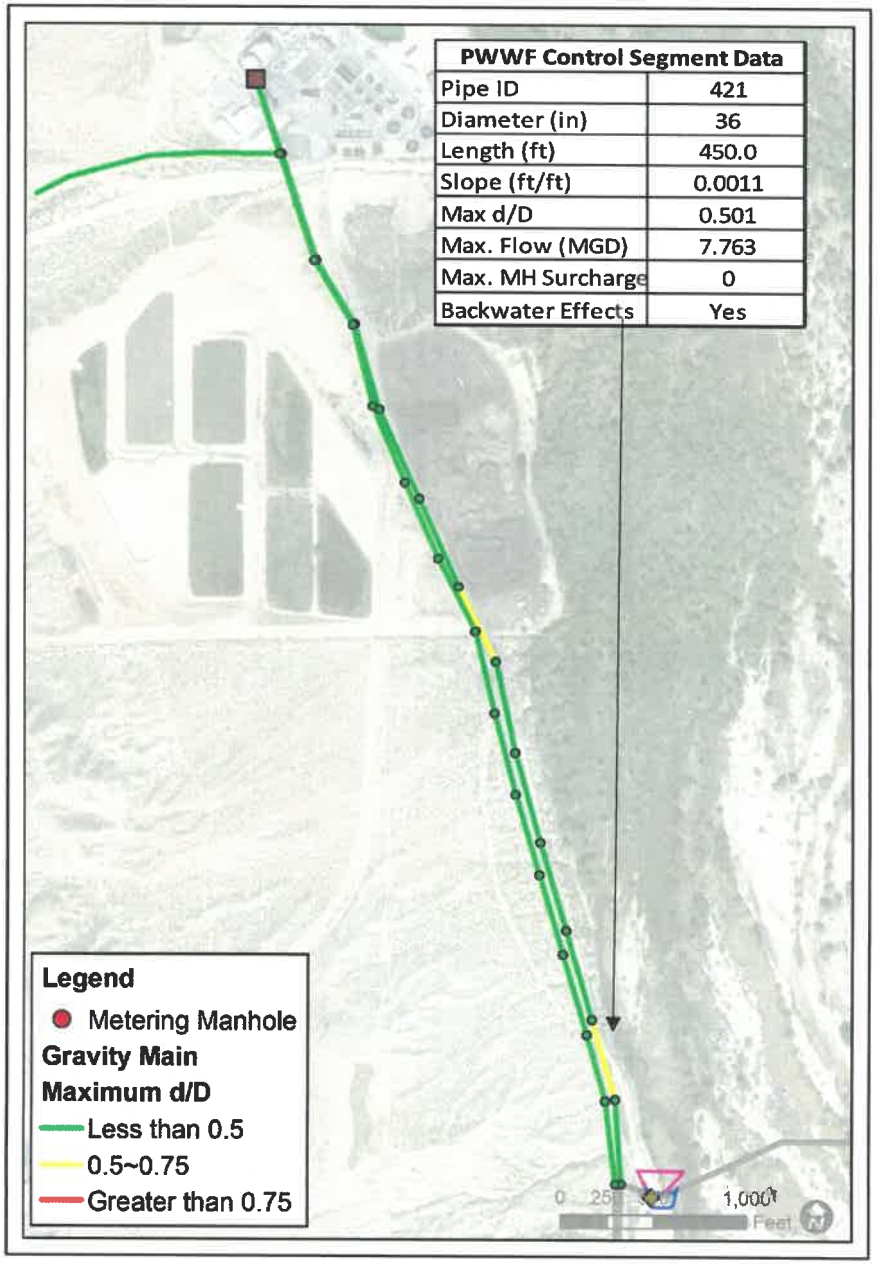


VVWRA Interceptor Reach 1 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	15.1
Average Dry Weather Flow (ADWF) (MGD):	9.8
Total Length (ft):	5,880.3
Slope Range (ft/ft):	0.0008 - 0.0011
Diameter Range (in):	36 - 42
Material(s):	CML&C

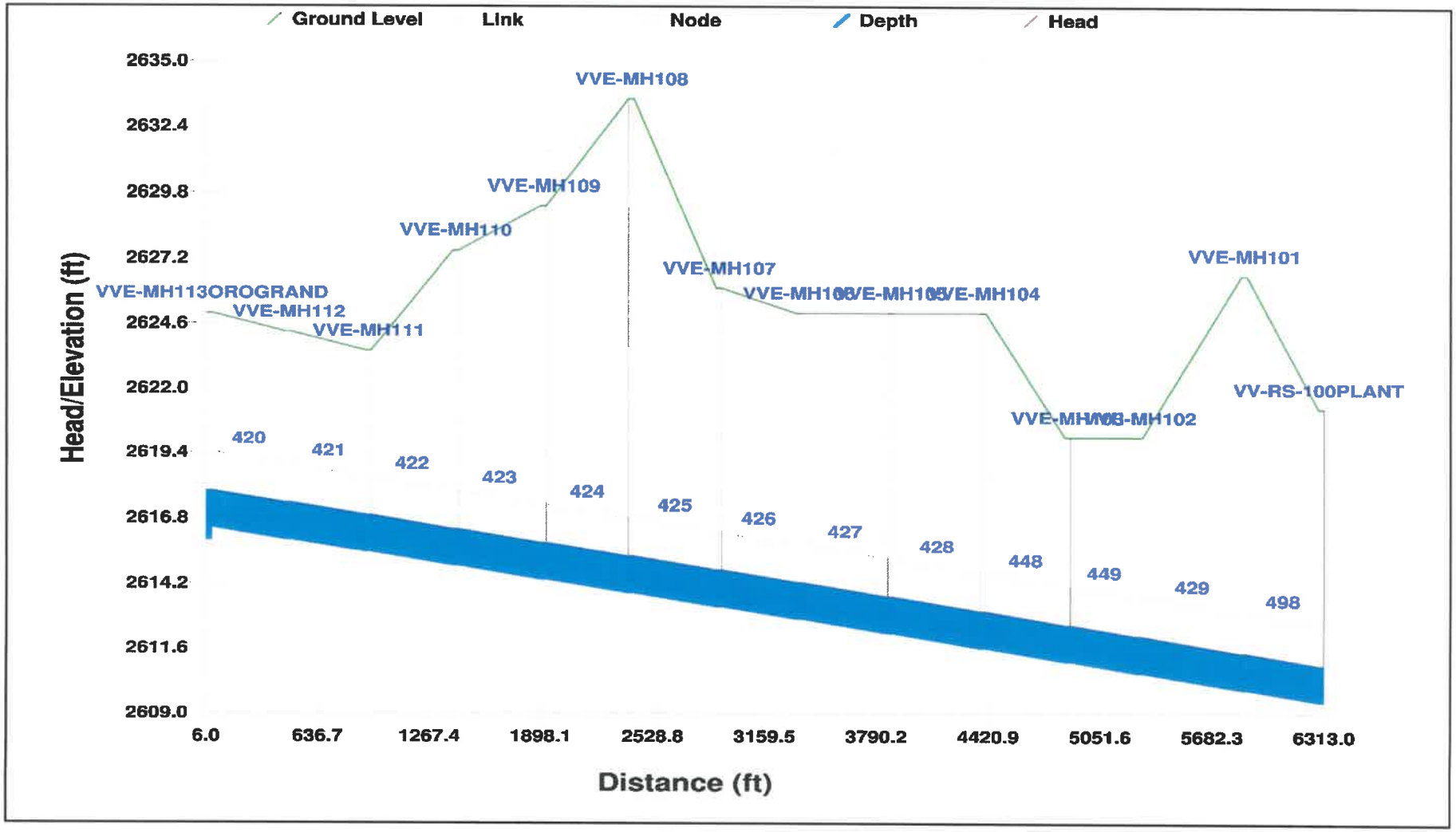
Notes: 0 of 13 pipes in Reach 1 experienced d/D's greater than the design criteria.





VVWRA Interceptor Reach 1 with Scalping

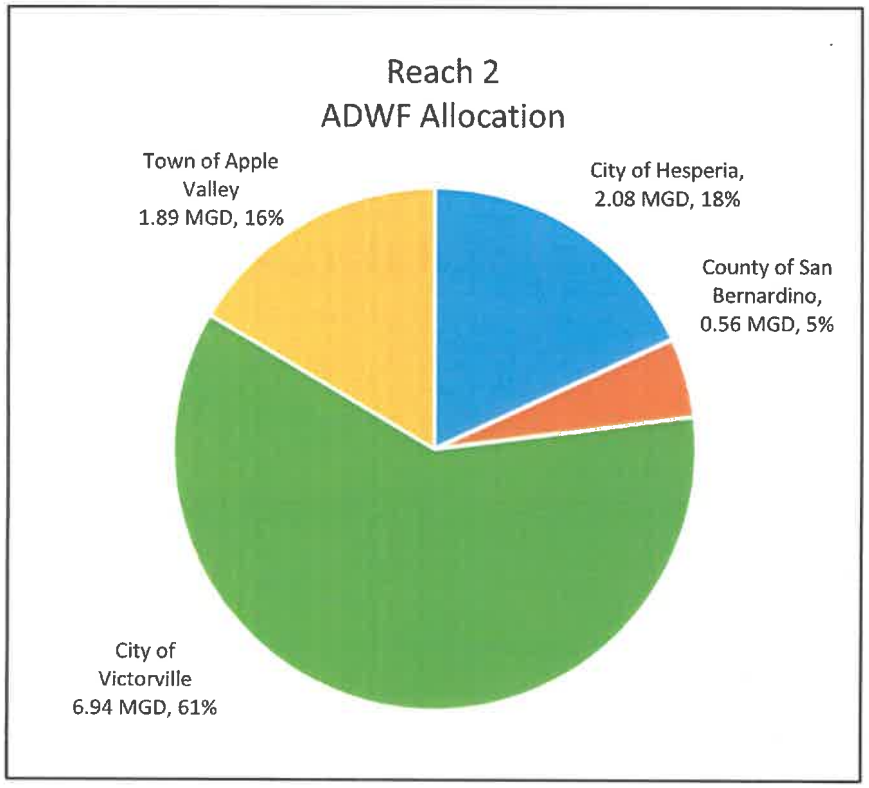
PWWF Hydraulic Profile

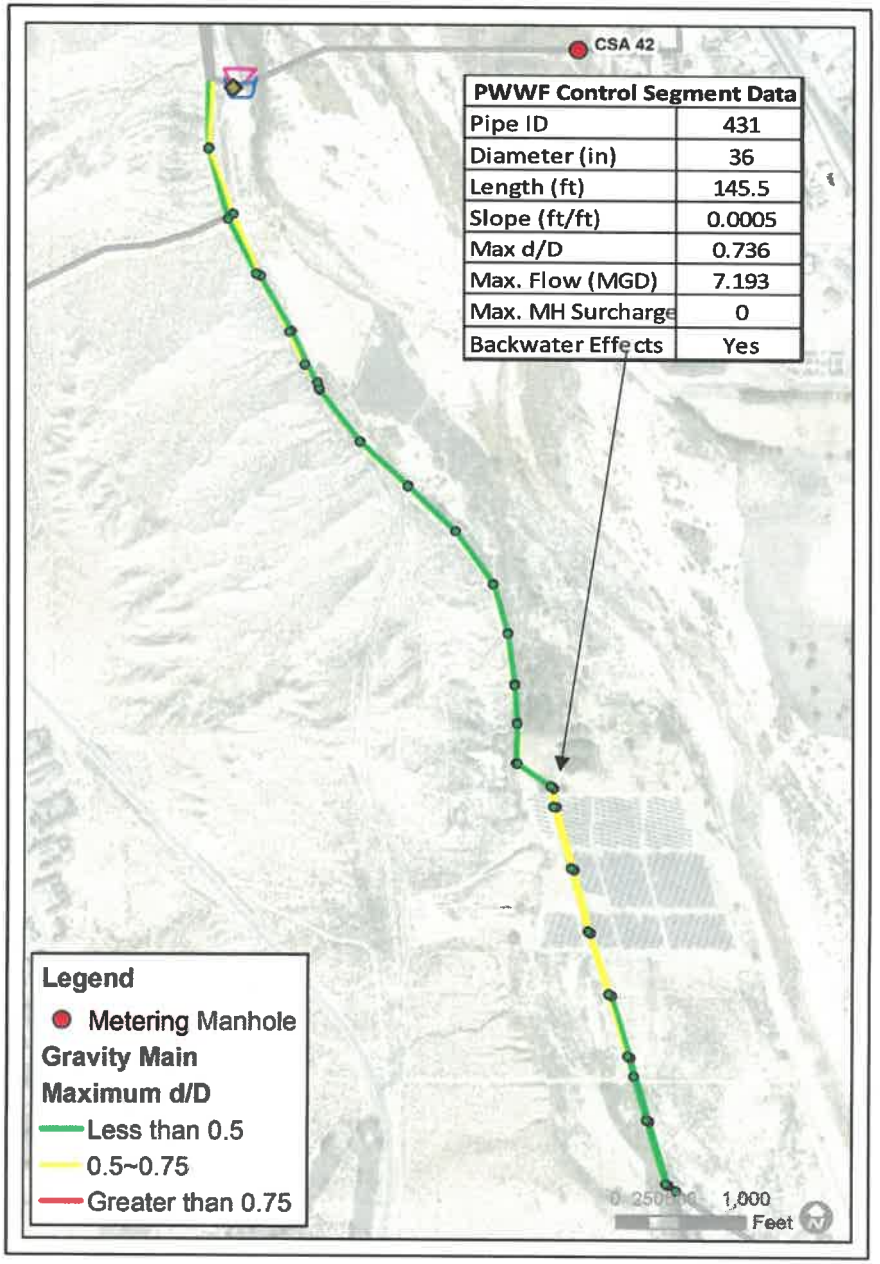


VVWRA Interceptor Reach 2

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	17.6
Average Dry Weather Flow (ADWF) (MGD):	11.5
Total Length (ft):	9,517.0
Slope Range (ft/ft):	0.0005 - 0.0054
Diameter Range (in):	36 - 42
Material(s):	CML&C

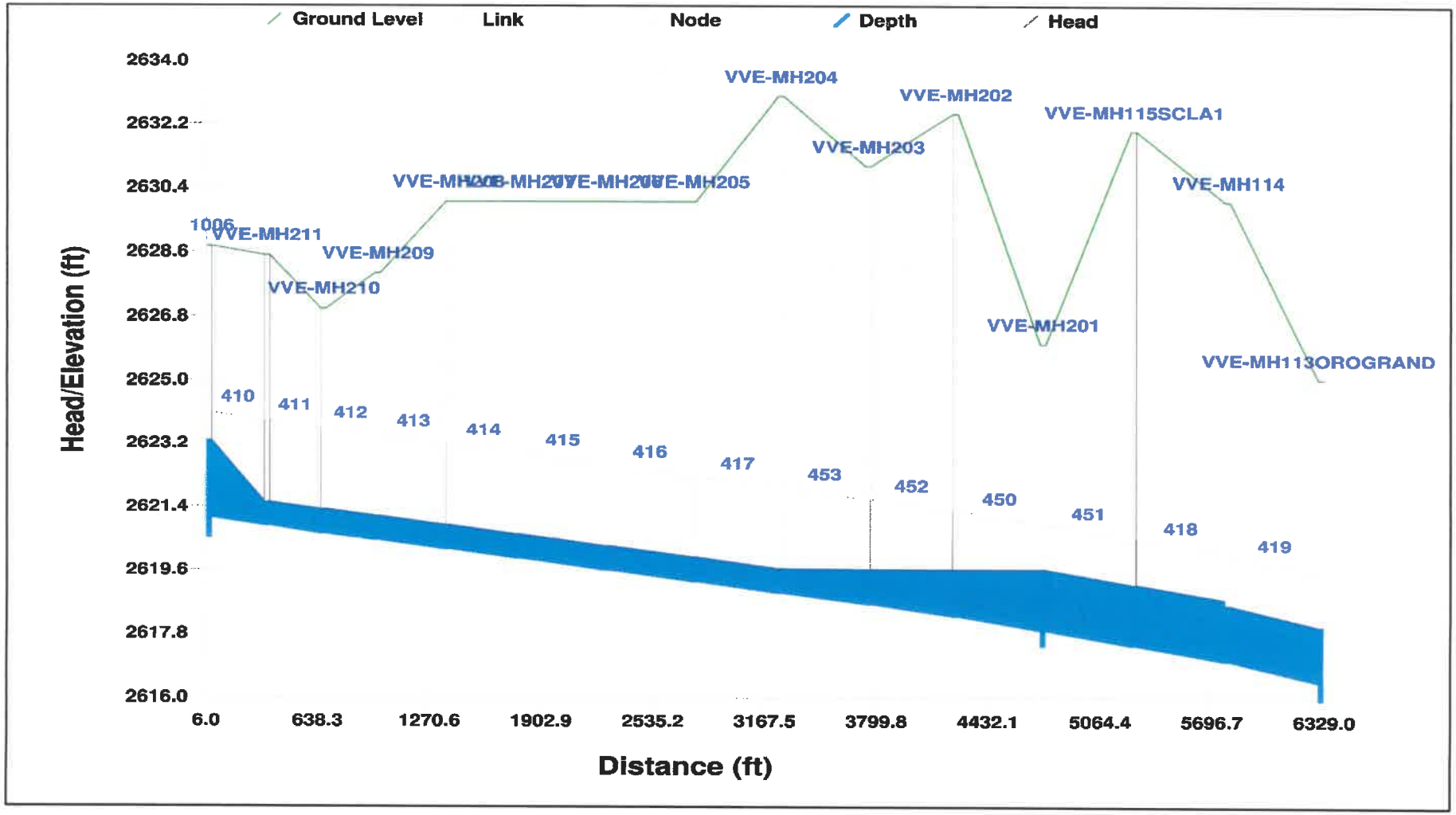
Notes: 0 of 21 pipes in Reach 2 experienced d/D's greater than the design criteria.





VVWRA Interceptor Reach 2

PWWF Hydraulic Profile

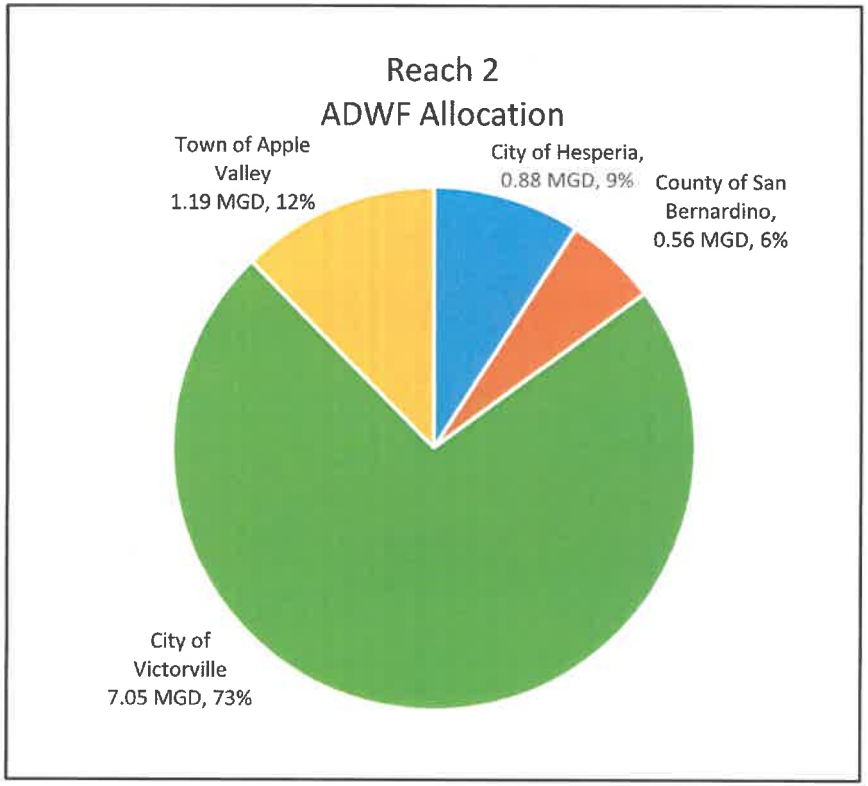


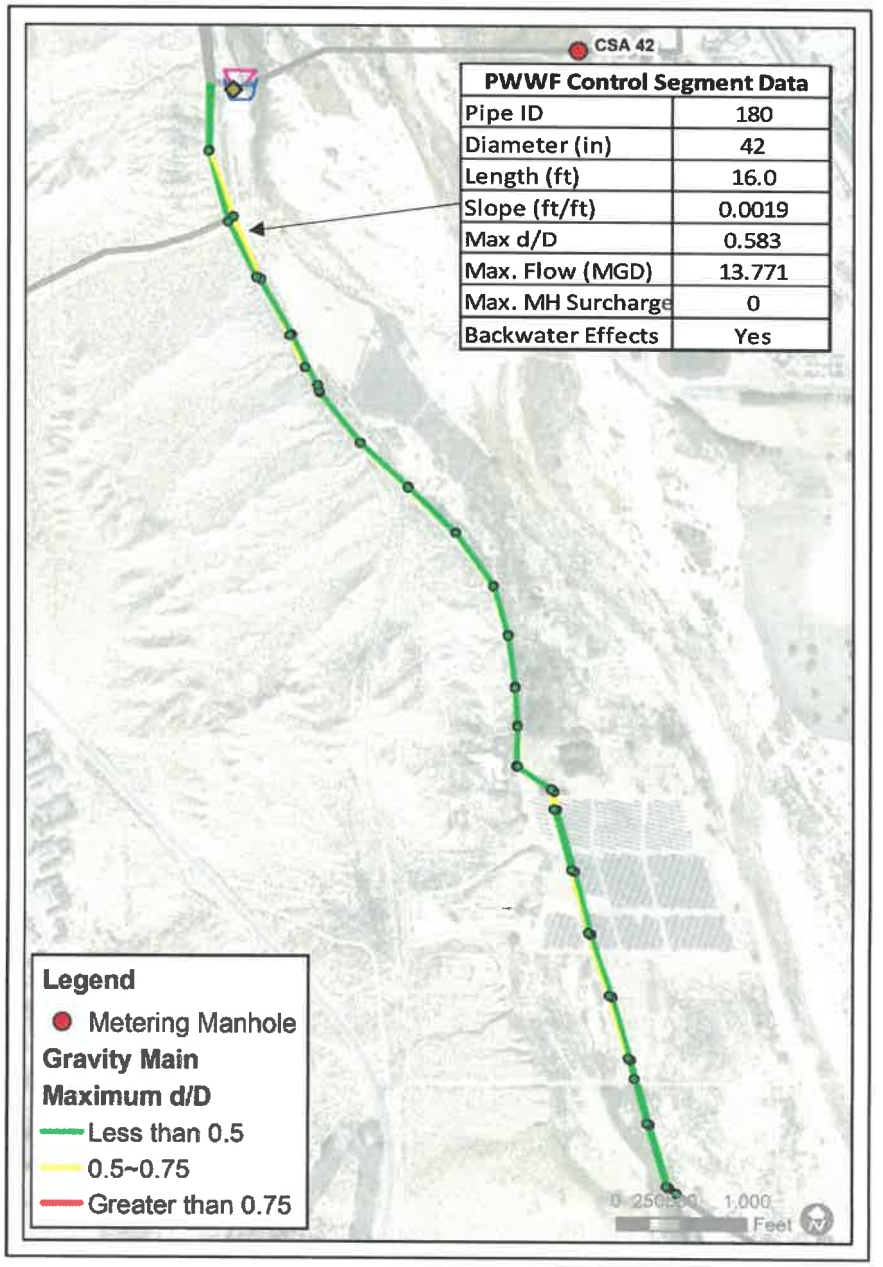
14-37

VVWRA Interceptor Reach 2 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	15.0
Average Dry Weather Flow (ADWF) (MGD):	9.7
Total Length (ft):	9,517.0
Slope Range (ft/ft):	0.0005 - 0.0054
Diameter Range (in):	36 - 42
Material(s):	CML&C

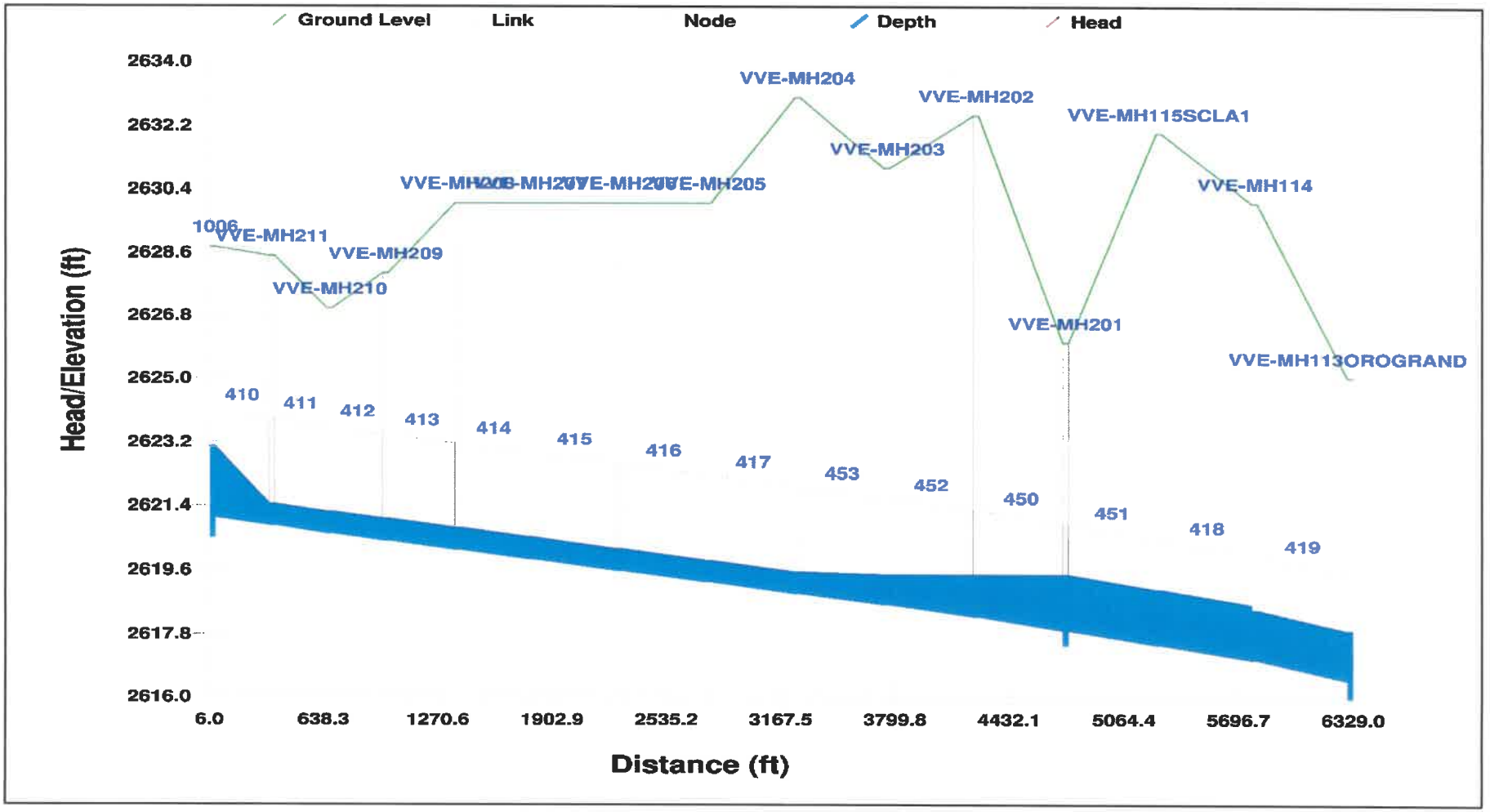
Notes: 0 of 21 pipes in Reach 2 experienced d/D's greater than the design criteria.





VVWRA Interceptor Reach 2 with Scalping

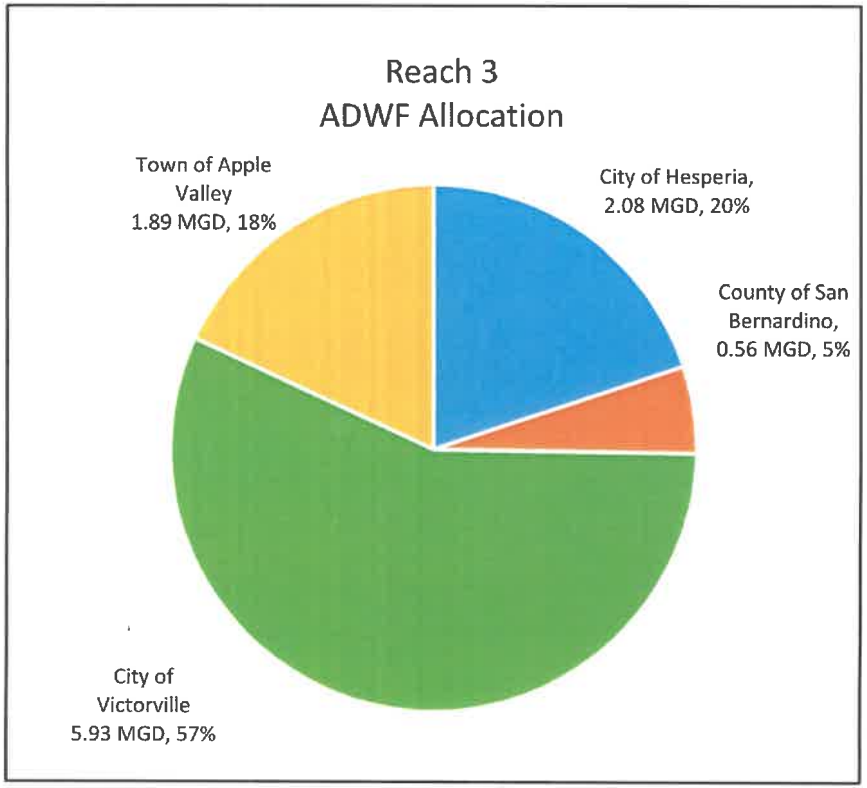
PWWF Hydraulic Profile

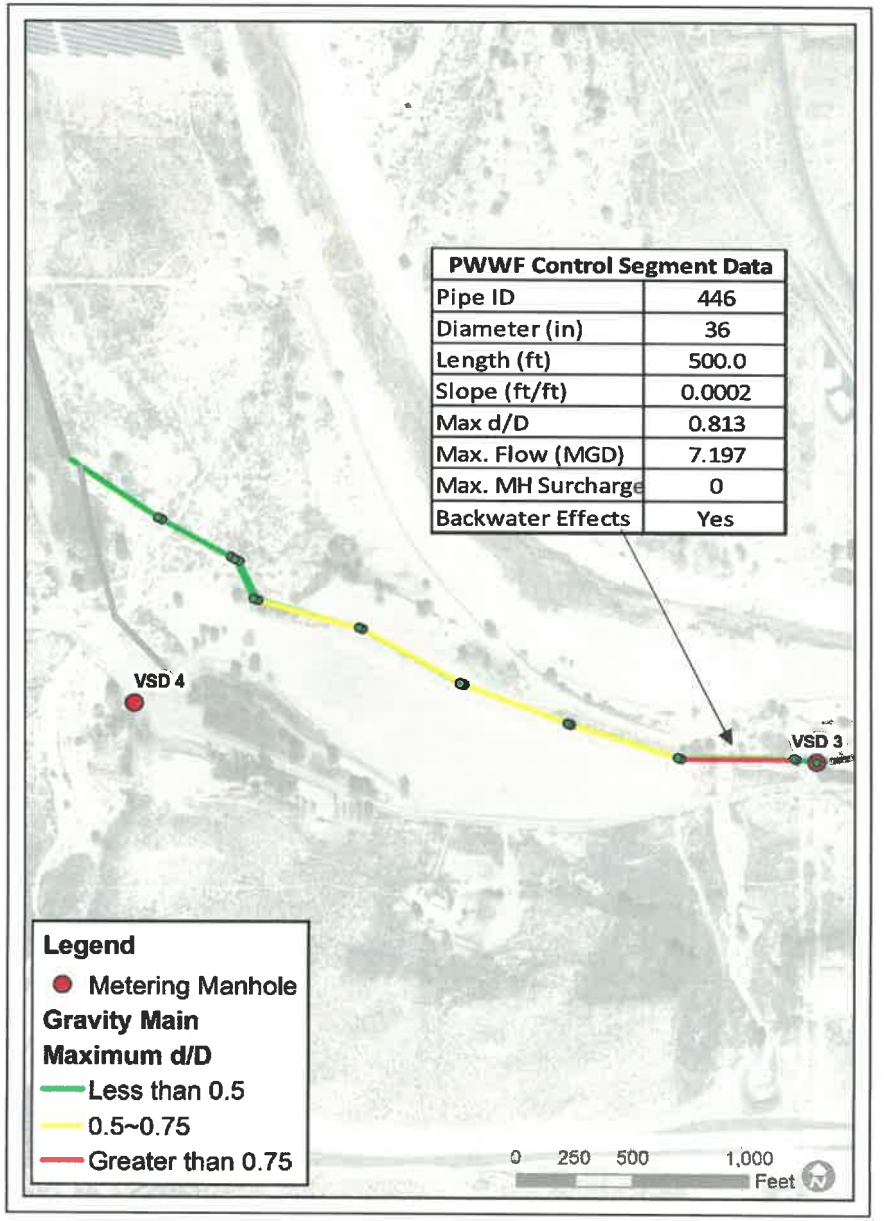


VVWRA Interceptor Reach 3

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	16.4
Average Dry Weather Flow (ADWF) (MGD):	10.5
Total Length (ft):	3,641.0
Slope Range (ft/ft):	0.0006 - 0.0054
Diameter Range (in):	36 - 42
Material(s):	CML&C

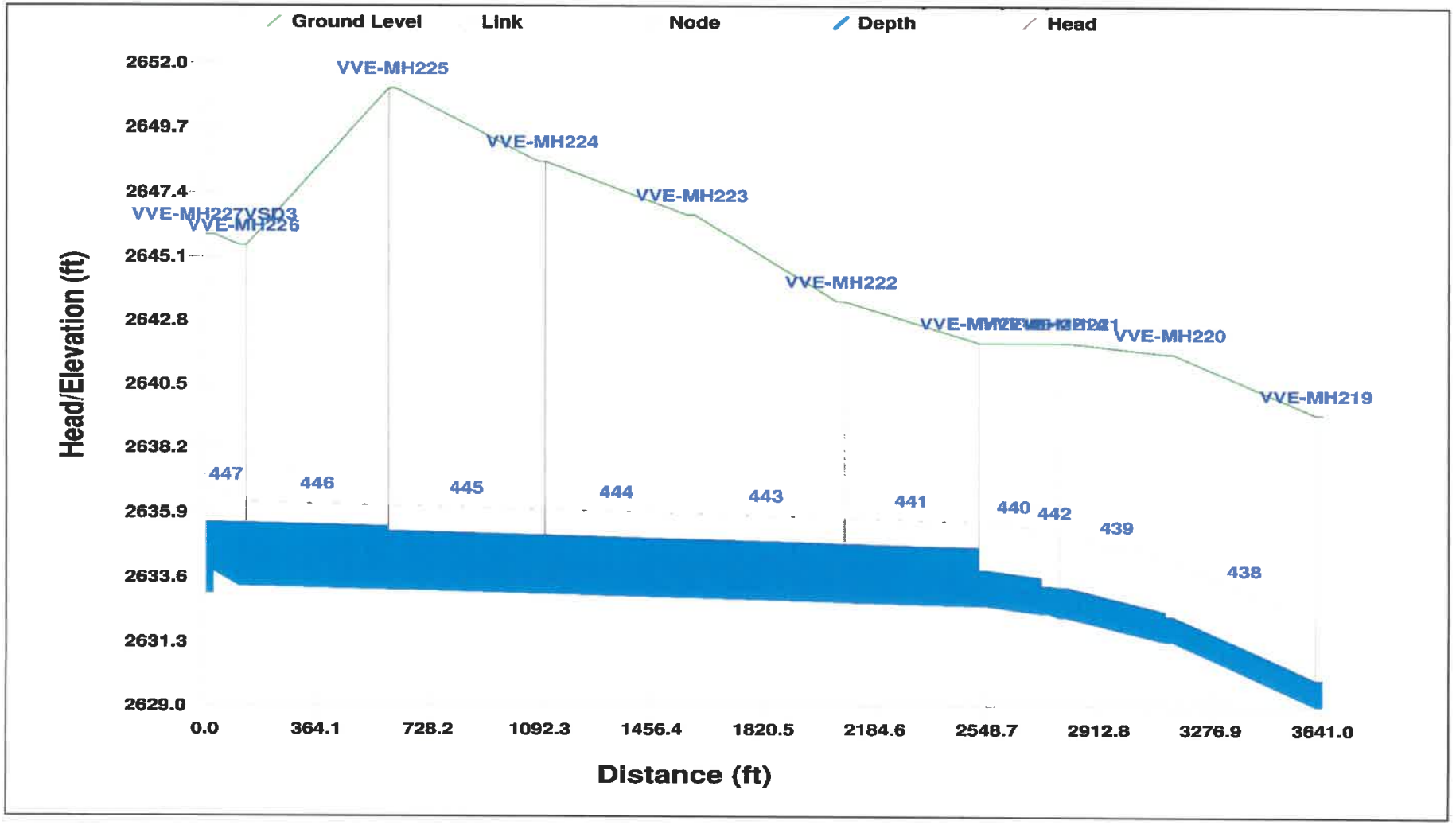
Notes: 1 of 10 pipes in Reach 3 experienced d/D's greater than the design criteria due to insufficient slope.





VVWRA Interceptor Reach 3

PWWF Hydraulic Profile

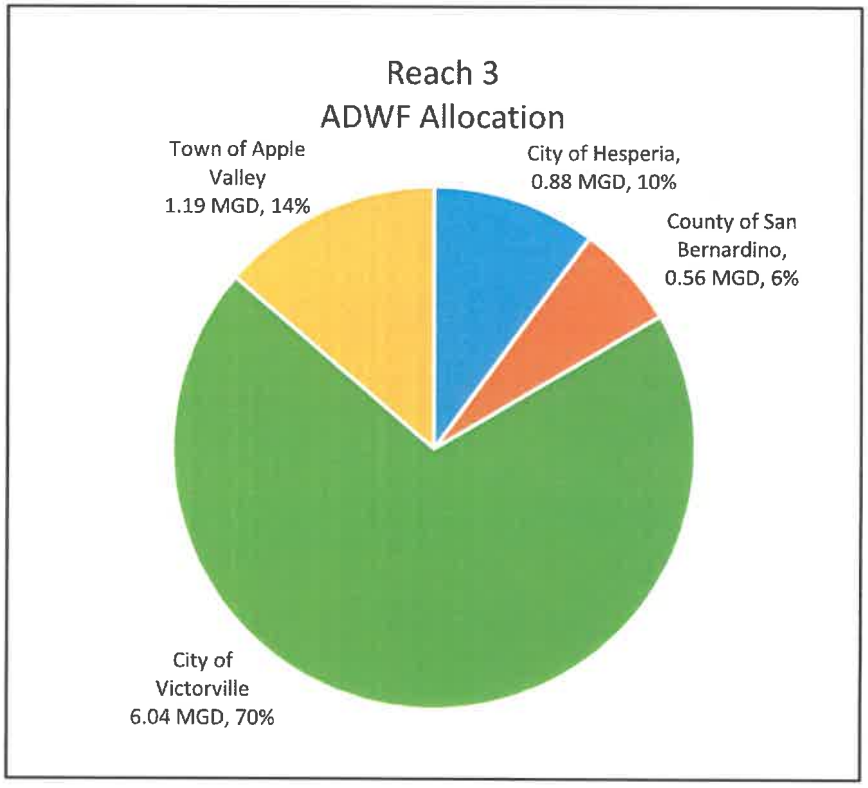


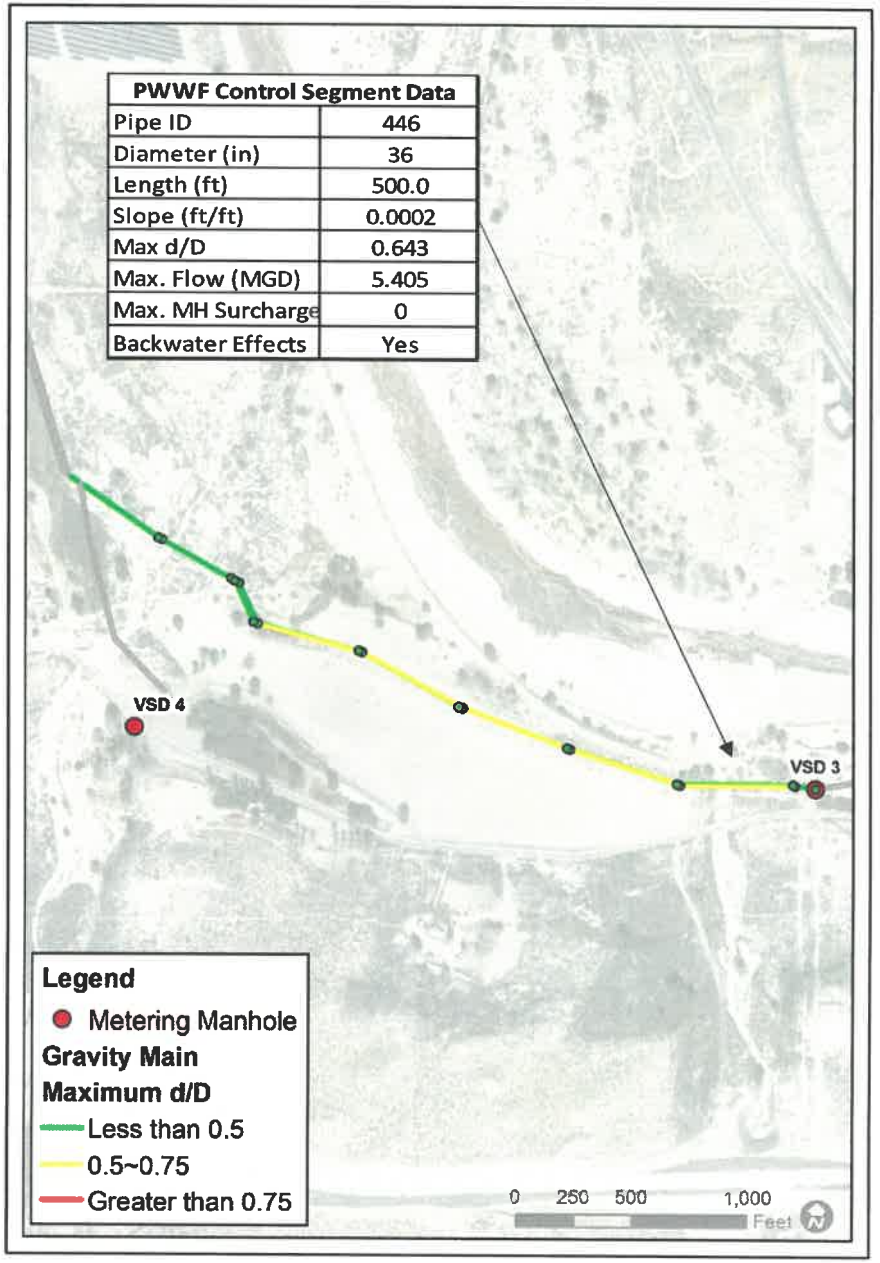
14-41

VVWRA Interceptor Reach 3 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	13.4
Average Dry Weather Flow (ADWF) (MGD):	8.7
Total Length (ft):	3,641.0
Slope Range (ft/ft):	0.0006 - 0.0054
Diameter Range (in):	36 - 42
Material(s):	CML&C

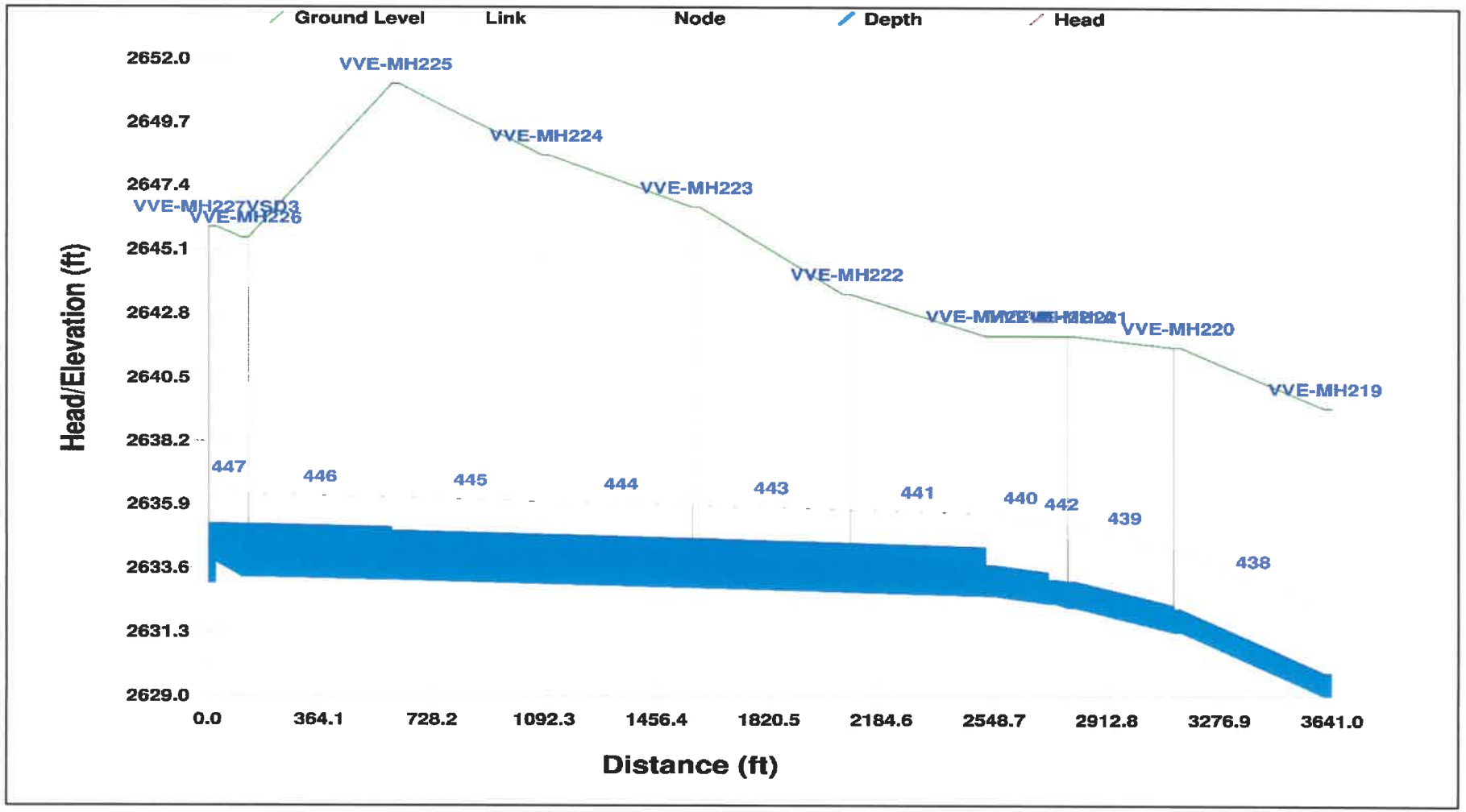
Notes: 0 of 10 pipes in Reach 3 experienced d/D's greater than the design criteria.





VVWRA Interceptor Reach 3 with Scalping

PWWF Hydraulic Profile

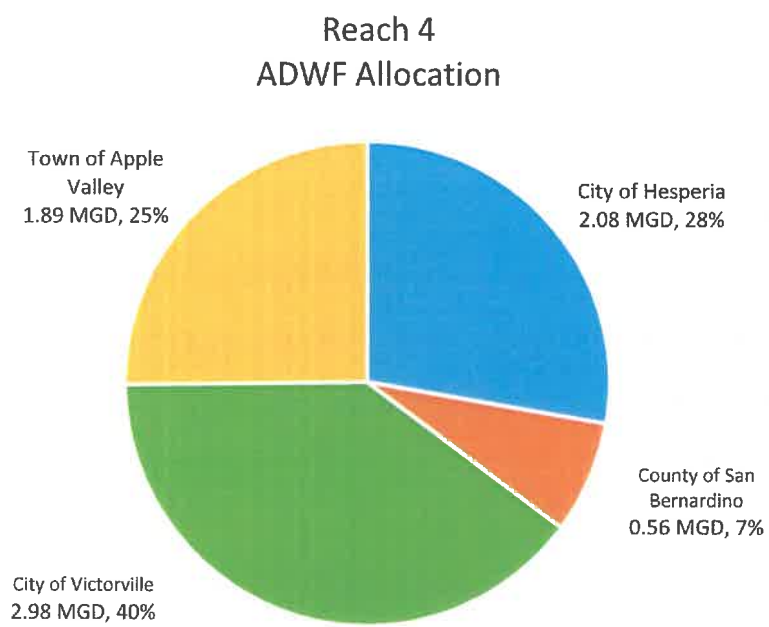


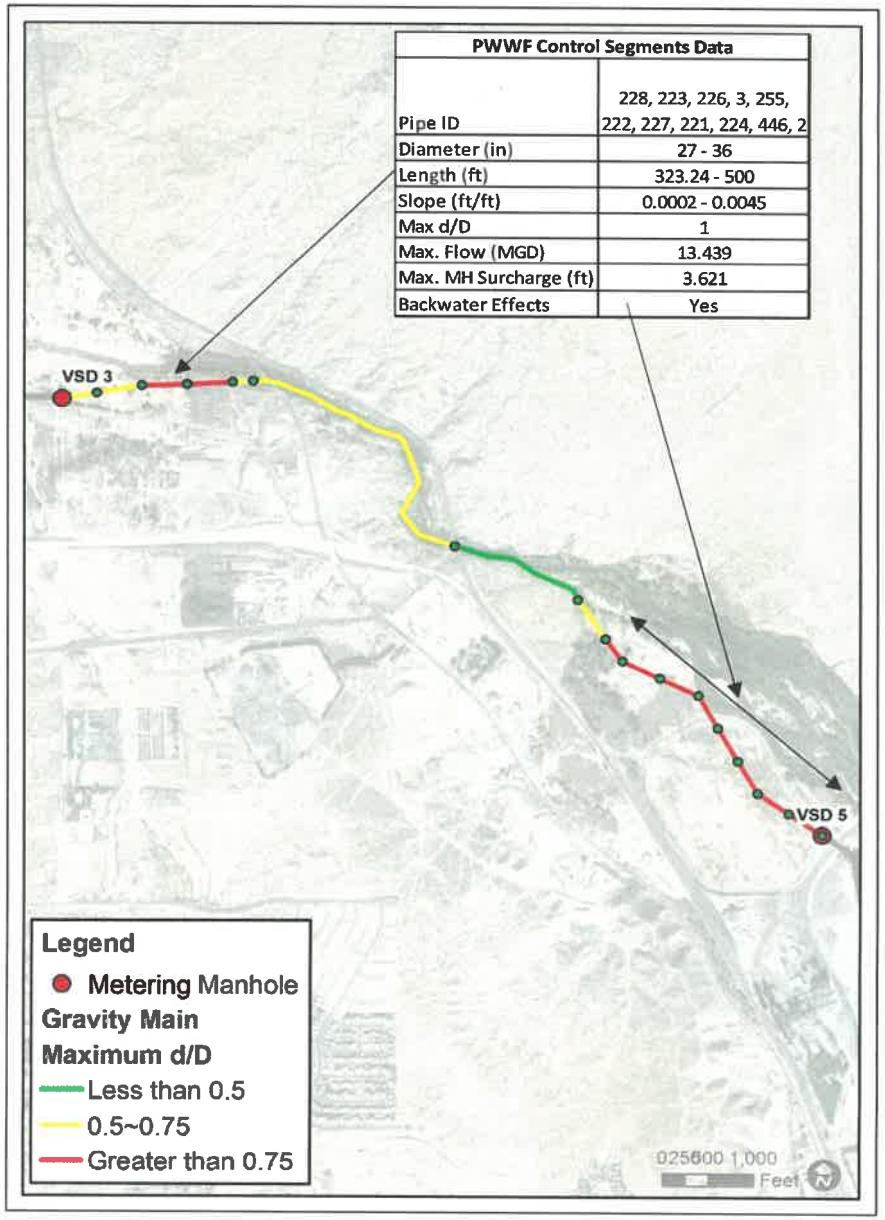
14-43

VVWRA Interceptor Reach 4

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	13.4
Average Dry Weather Flow (ADWF) (MGD):	7.5
Total Length (ft):	11,100.1
Slope Range (ft/ft):	0.0003 - 0.0111
Diameter Range (in):	27 - 36
Material(s):	CML&C, VCP

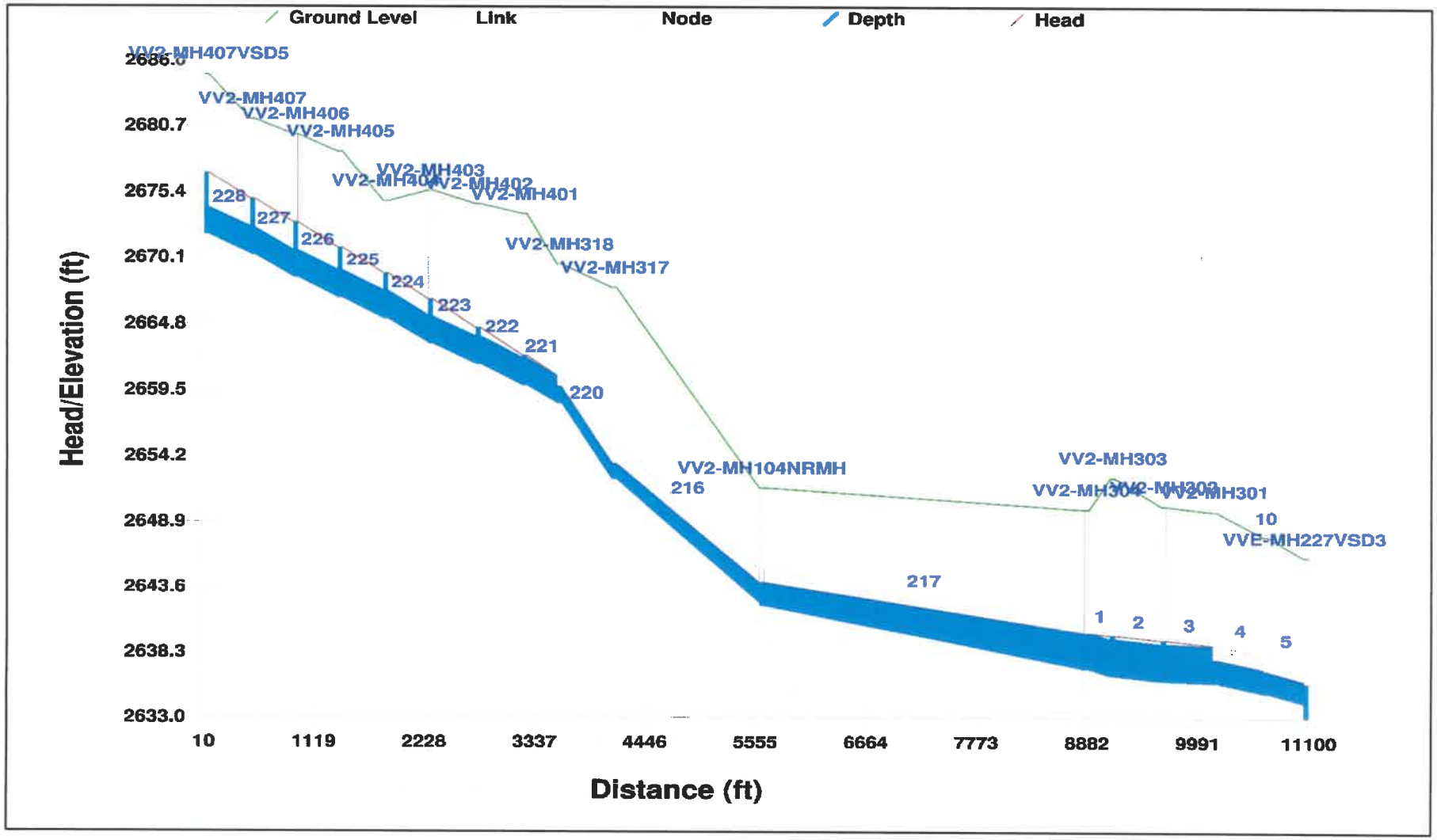
Notes: 11 of 16 pipes in Reach 4 experienced d/D's greater than the design criteria due to changes in slope. Two pipes are experiencing backwater effects.





VVWRA Interceptor Reach 4

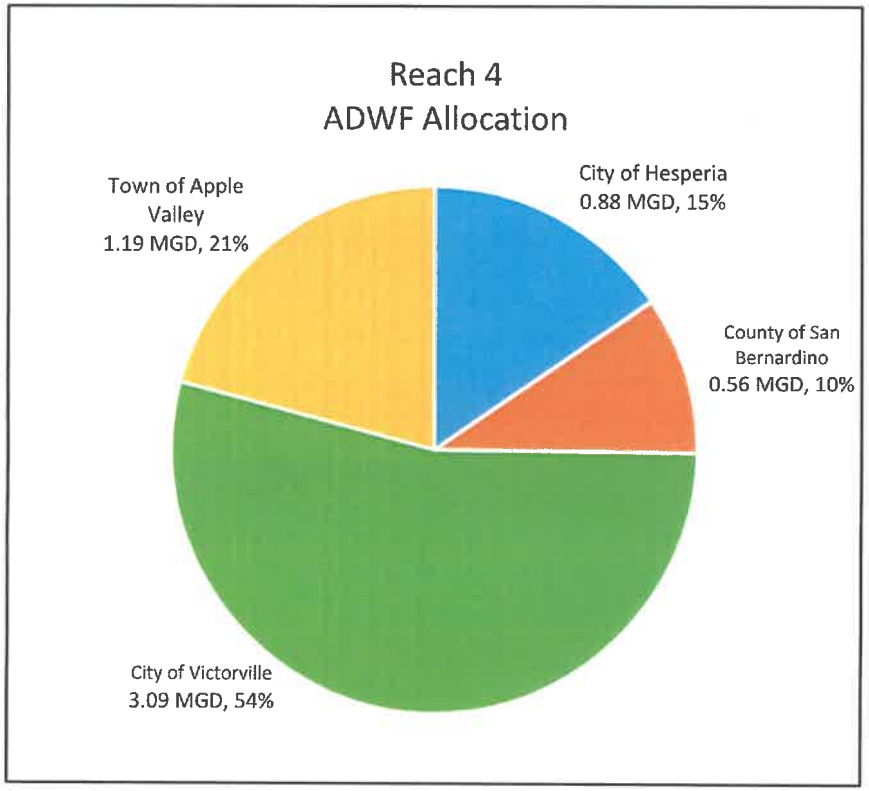
PWWF Hydraulic Profile

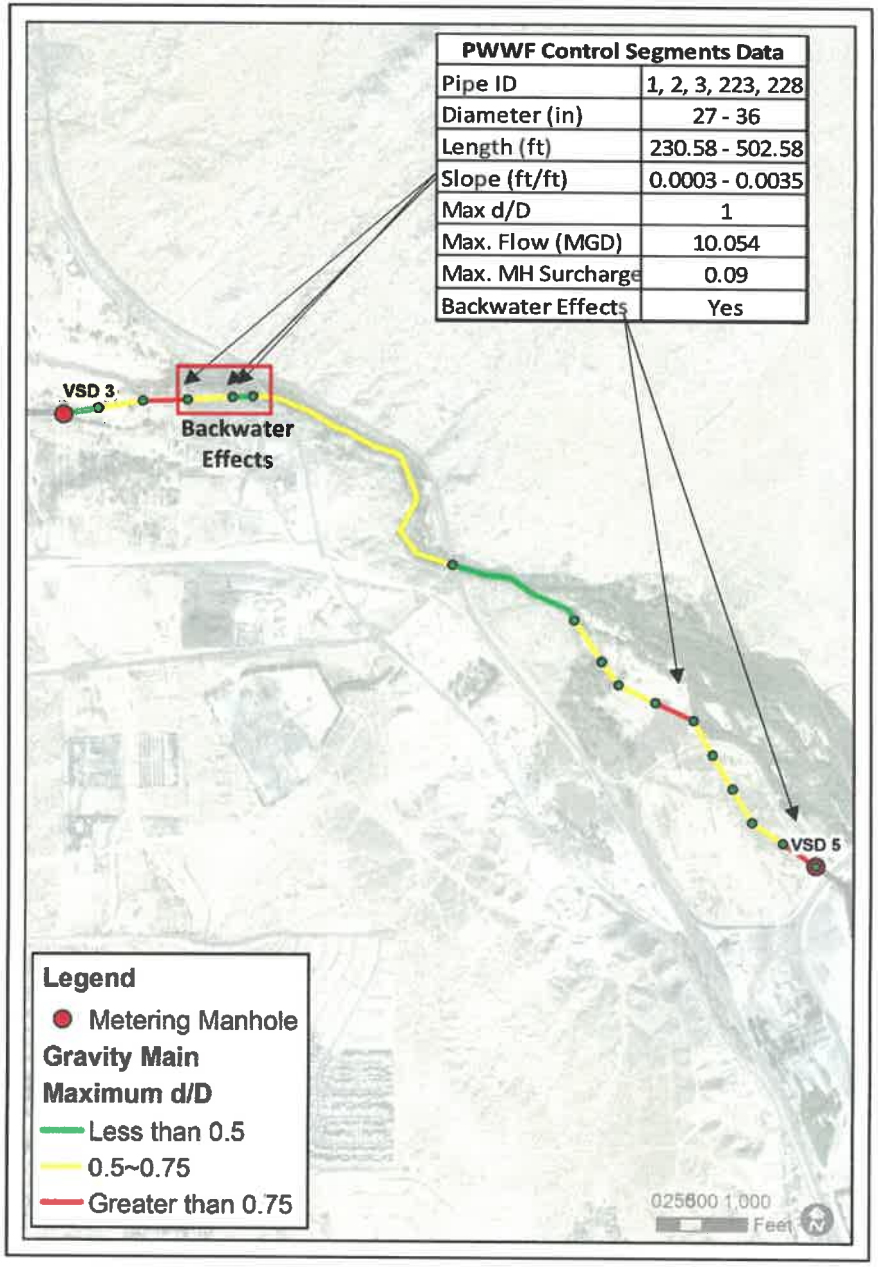


VVWRA Interceptor Reach 4 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	10.1
Average Dry Weather Flow (ADWF) (MGD):	5.7
Total Length (ft):	11,100.1
Slope Range (ft/ft):	0.0003 - 0.0111
Diameter Range (in):	27 - 36
Material(s):	CML&C, VCP

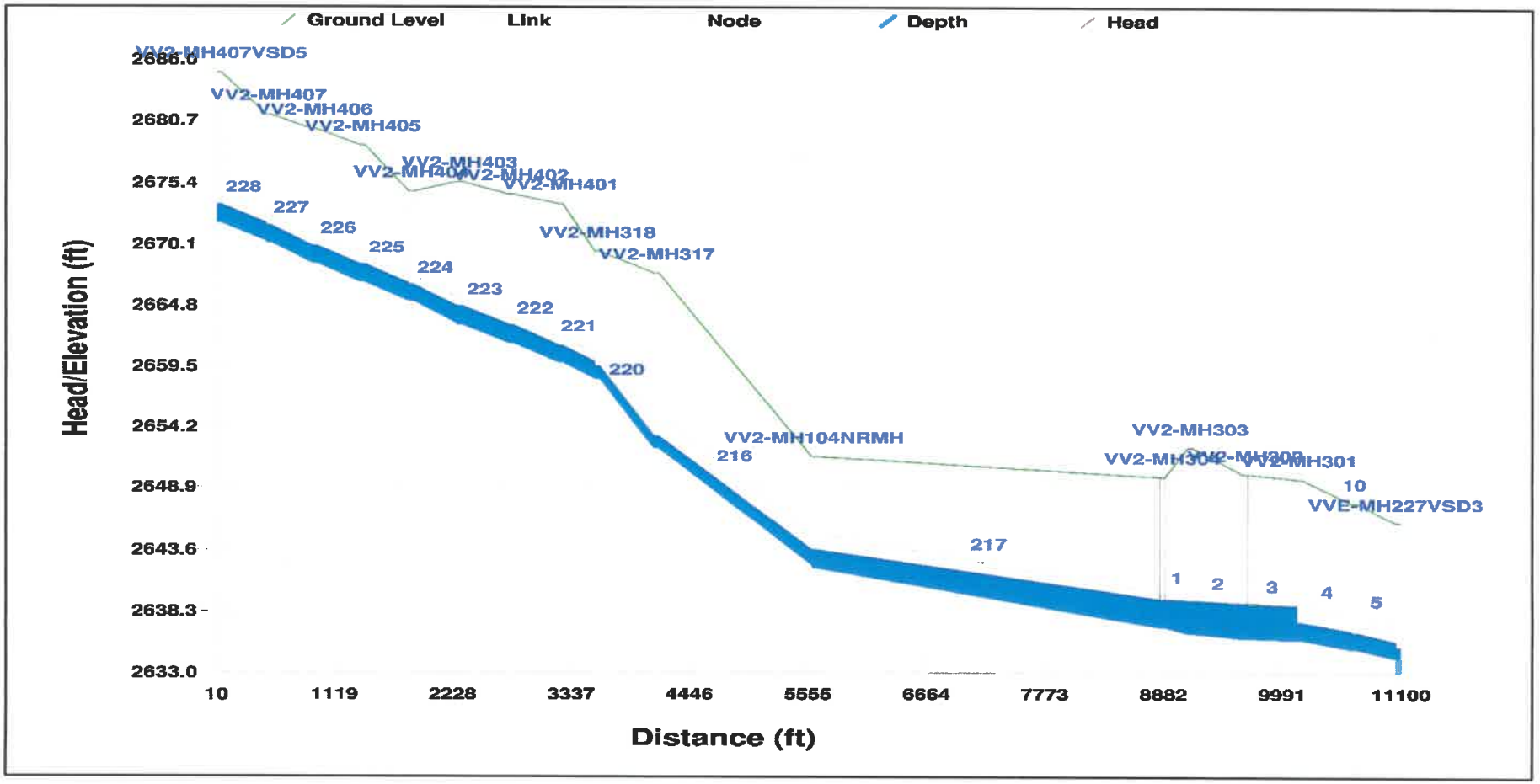
Notes: 5 of 16 pipes in Reach 4 experienced d/D's greater than the design criteria due to slope change. 6 pipes are experiencing backwater effects.





VVWRA Interceptor Reach 4 with Scalping

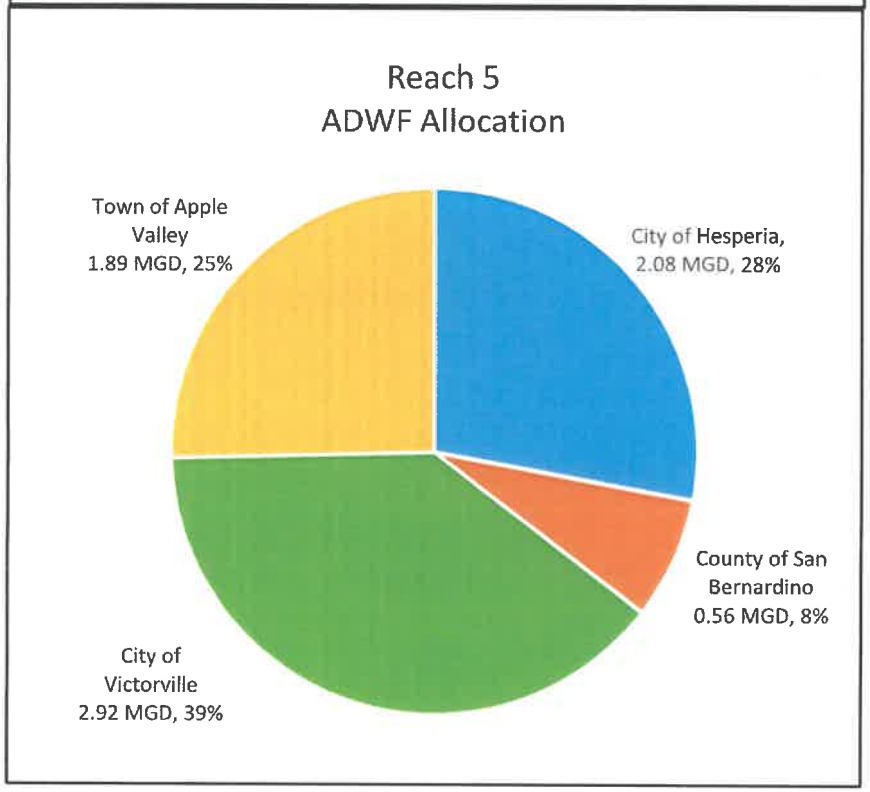
PWWF Hydraulic Profile

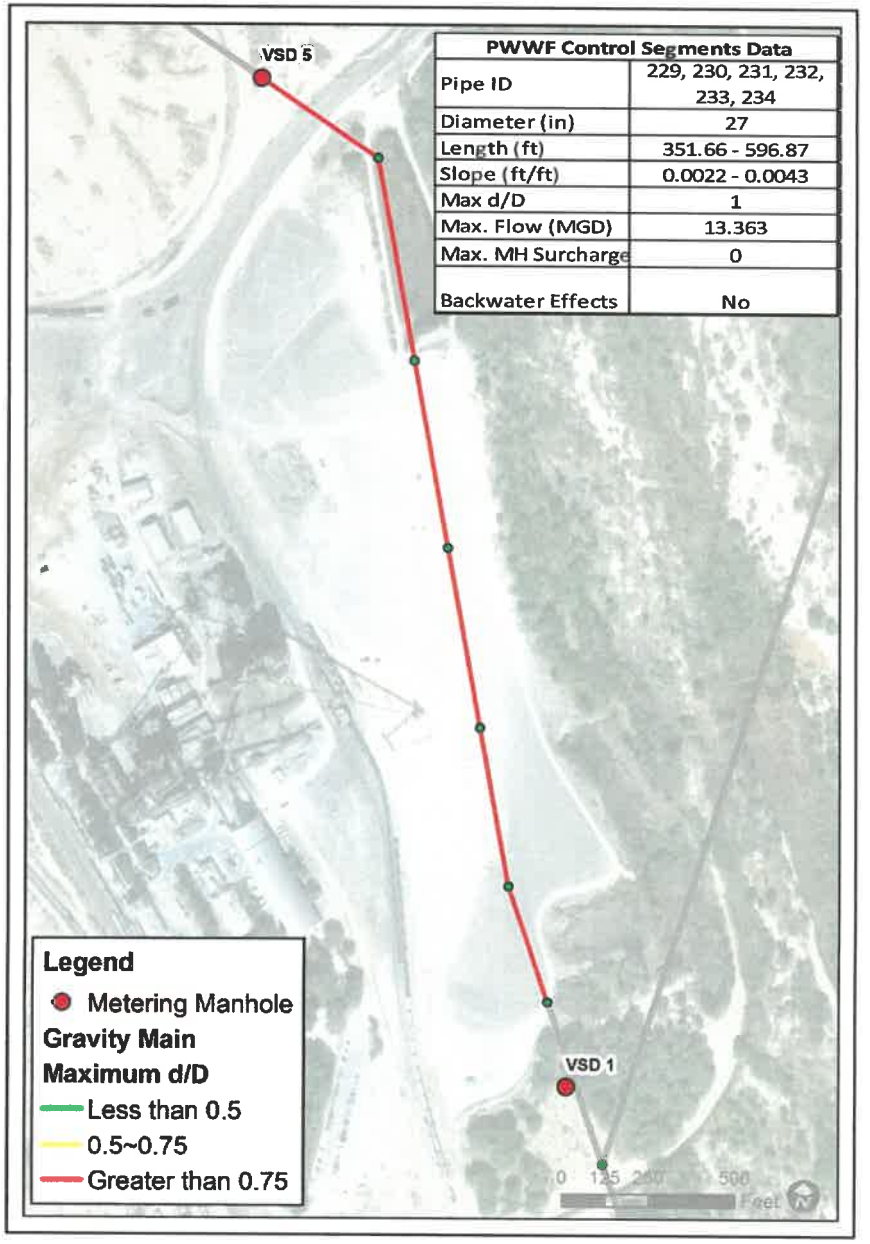


VVWRA Interceptor Reach 5

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	13.4
Average Dry Weather Flow (ADWF) (MGD):	7.5
Total Length (ft):	3,408.0
Slope Range (ft/ft):	0.0022 - 0.0043
Diameter Range (in):	27
Material(s):	VCP

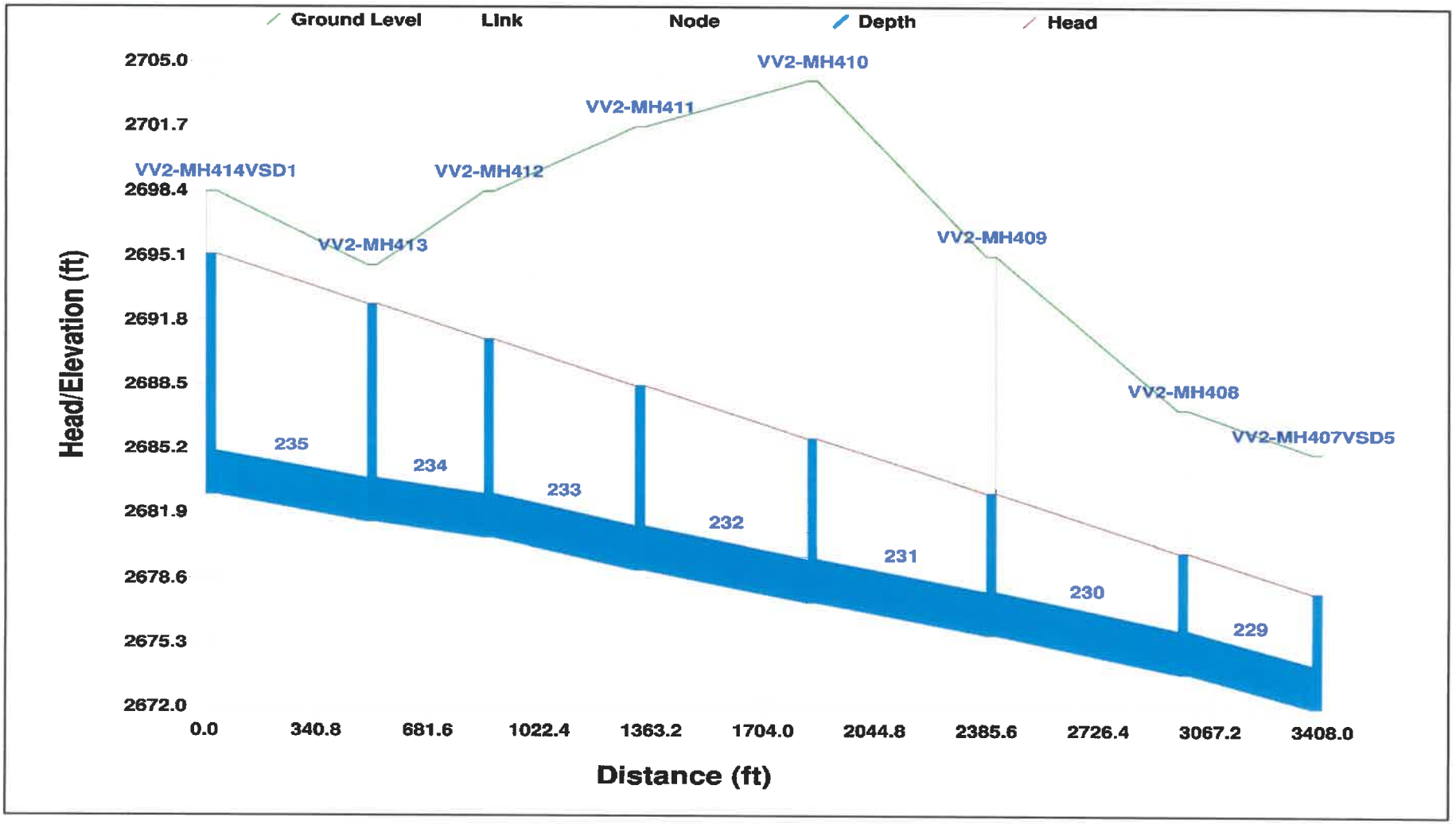
Notes: 6 of 6 pipes in Reach 5 experienced d/D's greater than the design criteria due to inadequate pipeline diameter. The required diameter is 33" for the existing 27" pipe. One pipe is experiencing backwater effects.





VVWRA Interceptor Reach 5

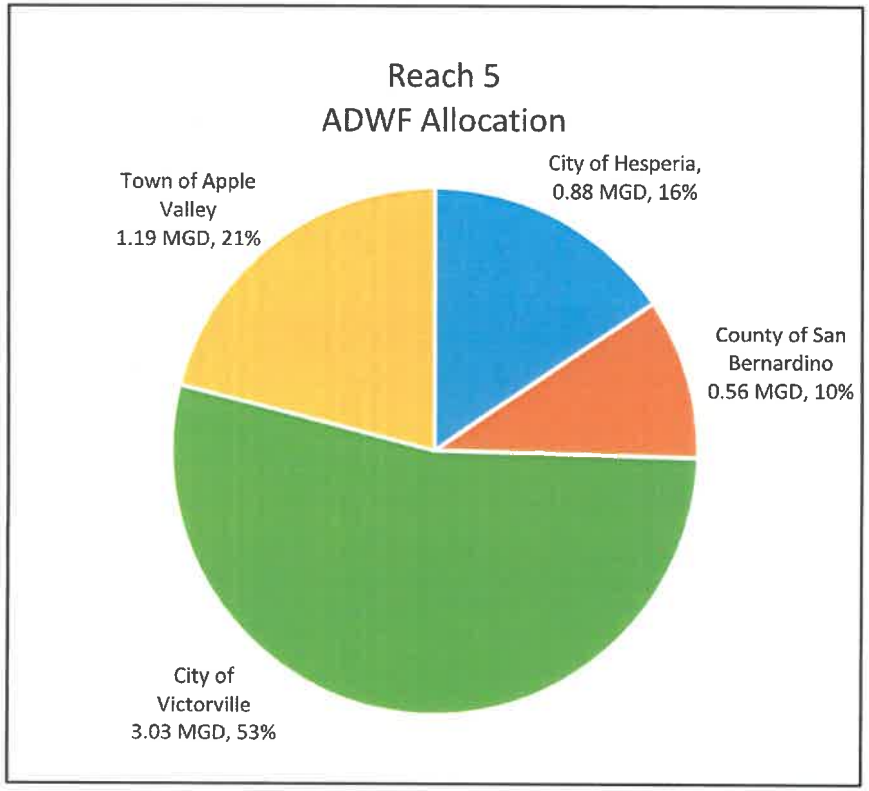
PWWF Hydraulic Profile

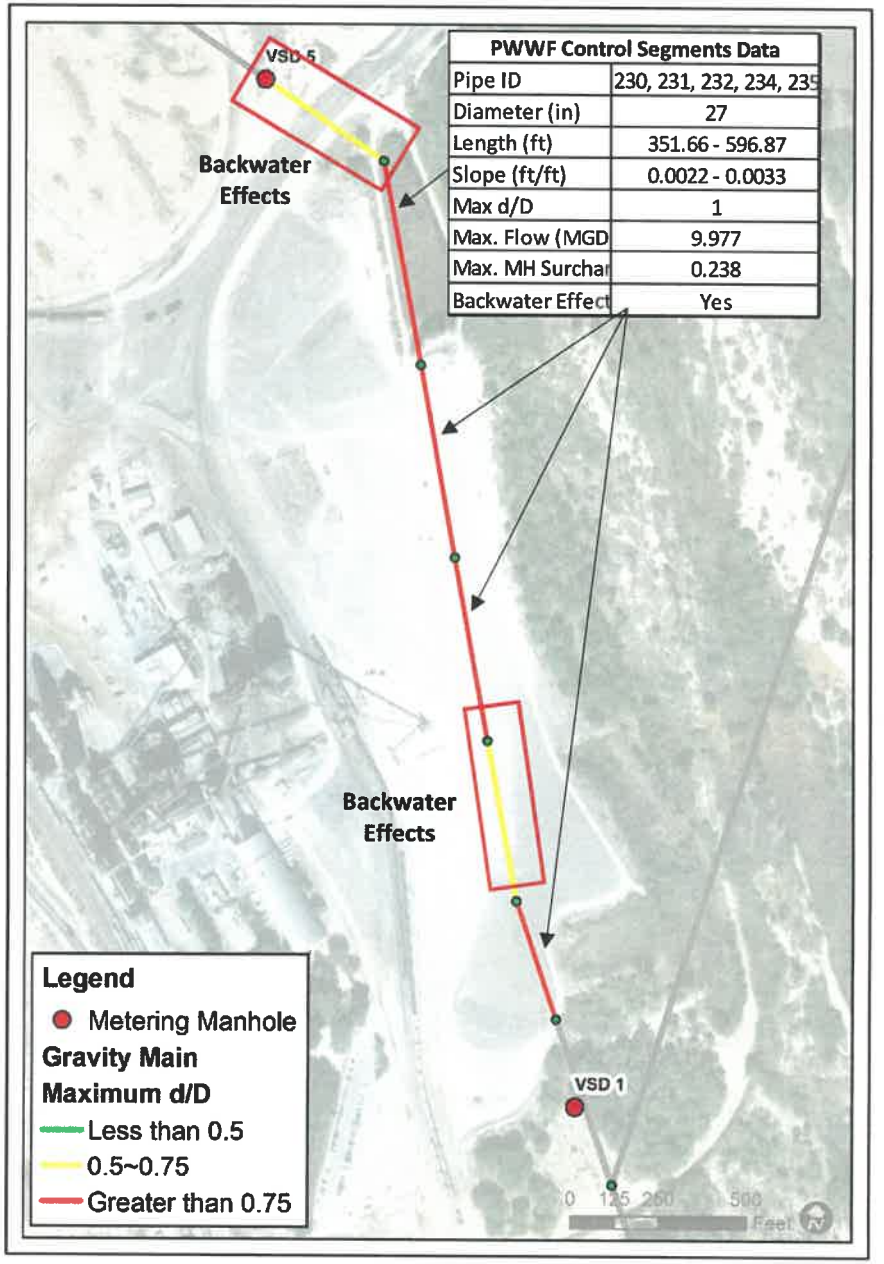


VVWRA Interceptor Reach 5 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	10.0
Average Dry Weather Flow (ADWF) (MGD):	5.7
Total Length (ft):	3,408.0
Slope Range (ft/ft):	0.0022 - 0.0043
Diameter Range (in):	27
Material(s):	VCP

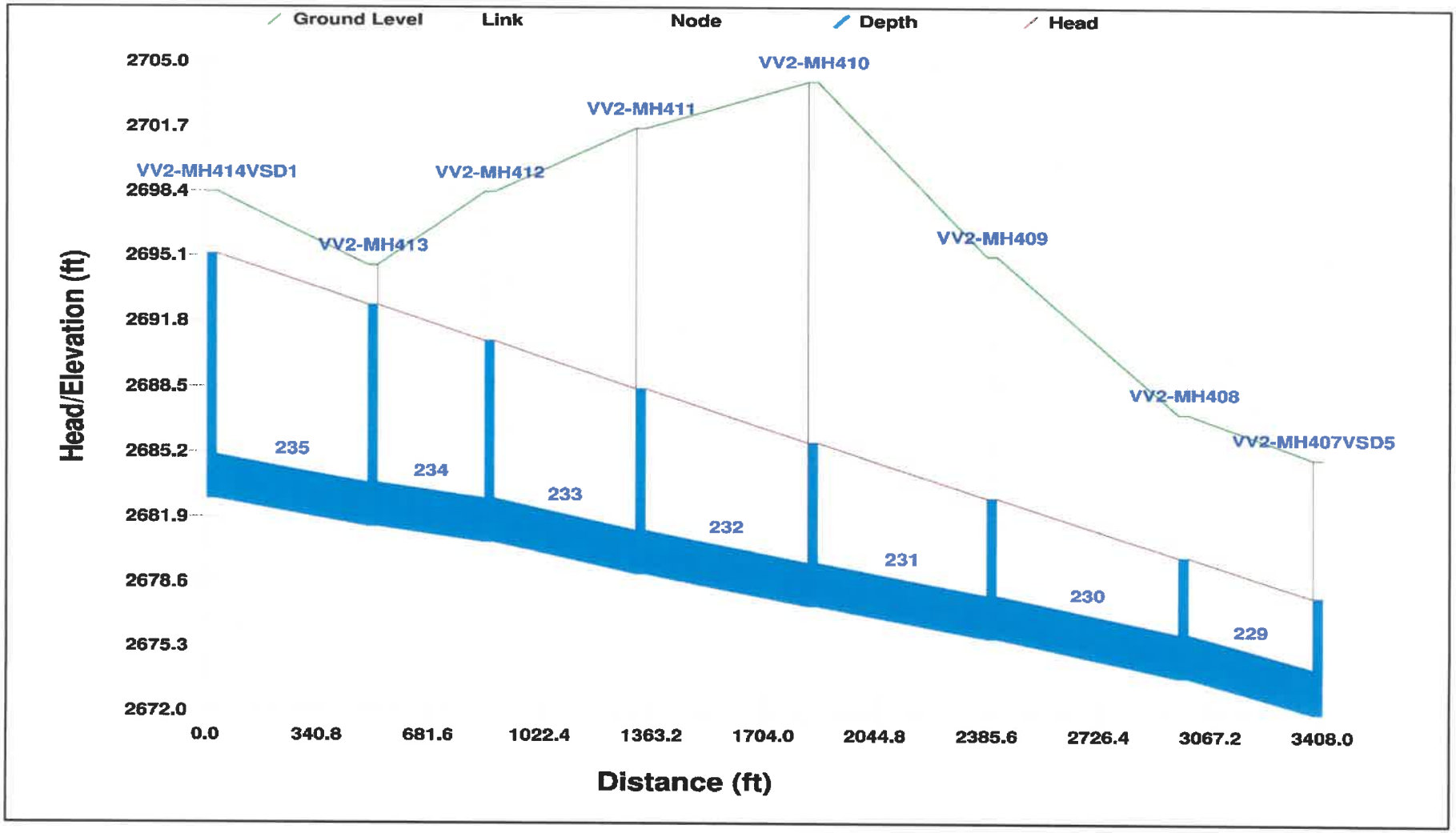
Notes: 6 of 7 pipes in Reach 5 experienced d/D's greater than the design criteria due to inadequate pipeline diameter. Minimum required diameter is 30-in.





VVWRA Interceptor Reach 5 with Scalping

PWWF Hydraulic Profile

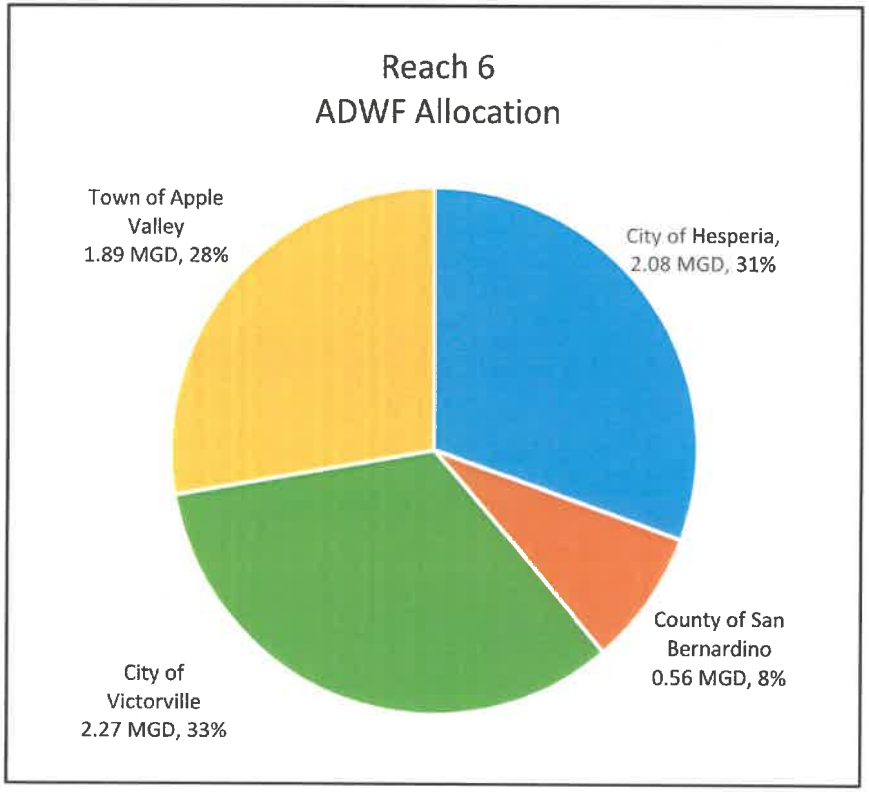


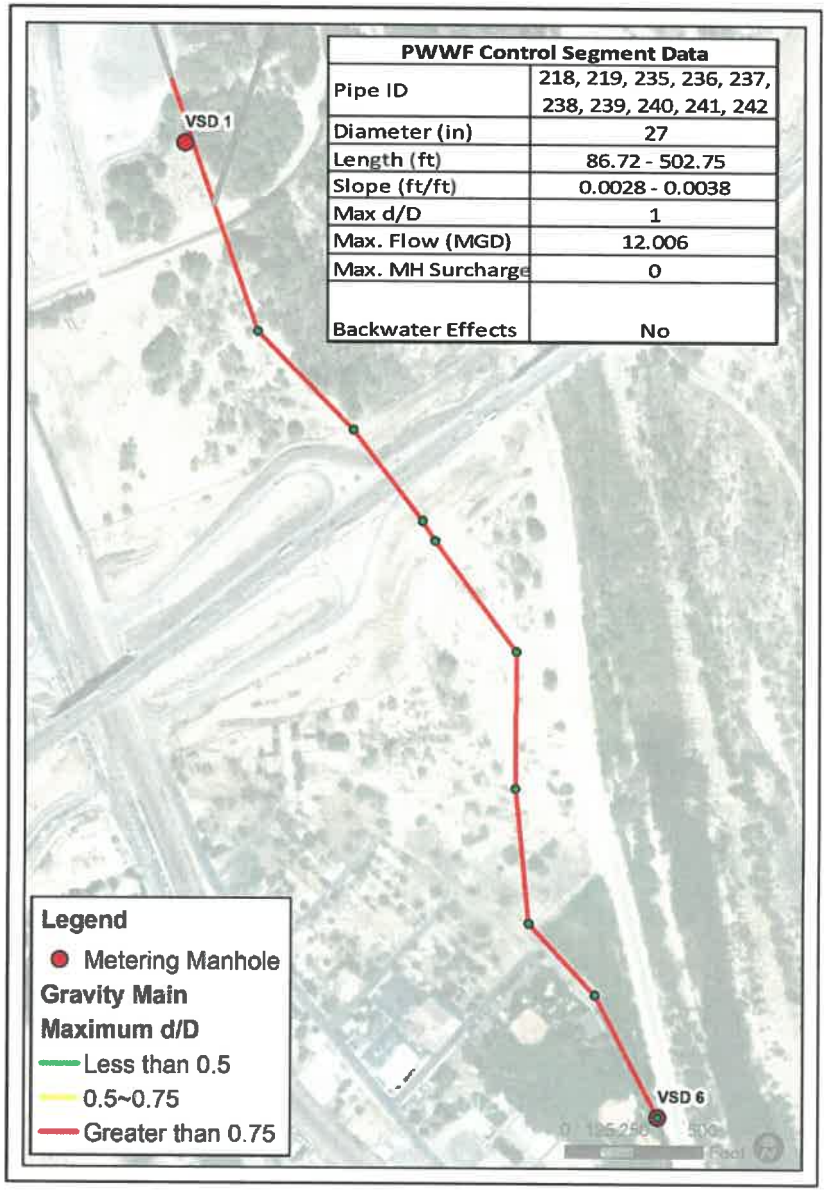
14-51

VVWRA Interceptor Reach 6

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	12.0
Average Dry Weather Flow (ADWF) (MGD):	6.8
Total Length (ft):	3,845.5
Slope Range (ft/ft):	0.0009 - 0.0038
Diameter Range (in):	27
Material(s):	VCP

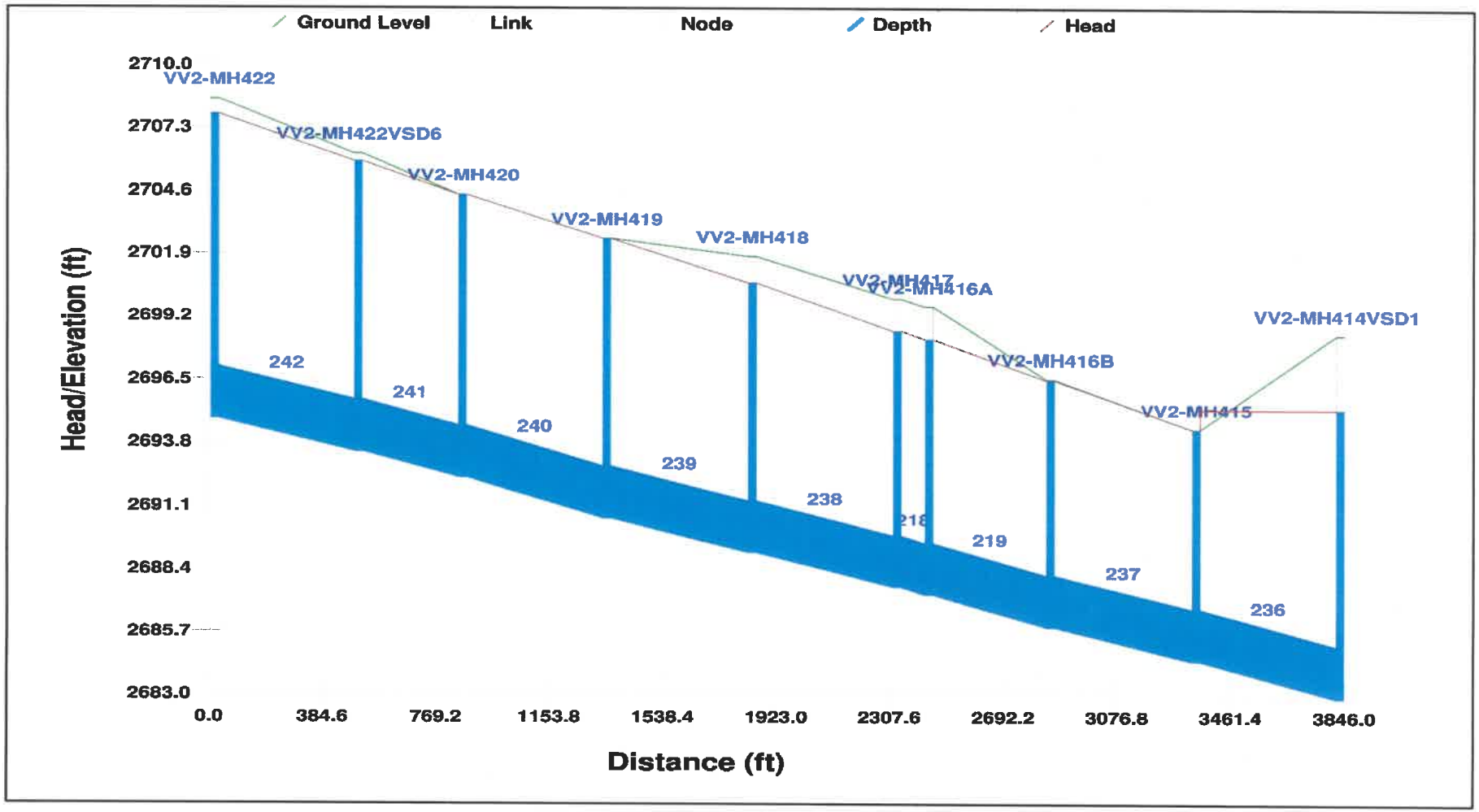
Notes: 9 of 9 pipes in Reach 6 experienced d/D's greater than the design criteria due to inadequate pipeline diameter.





VVWRA Interceptor Reach 6

PWWF Hydraulic Profile

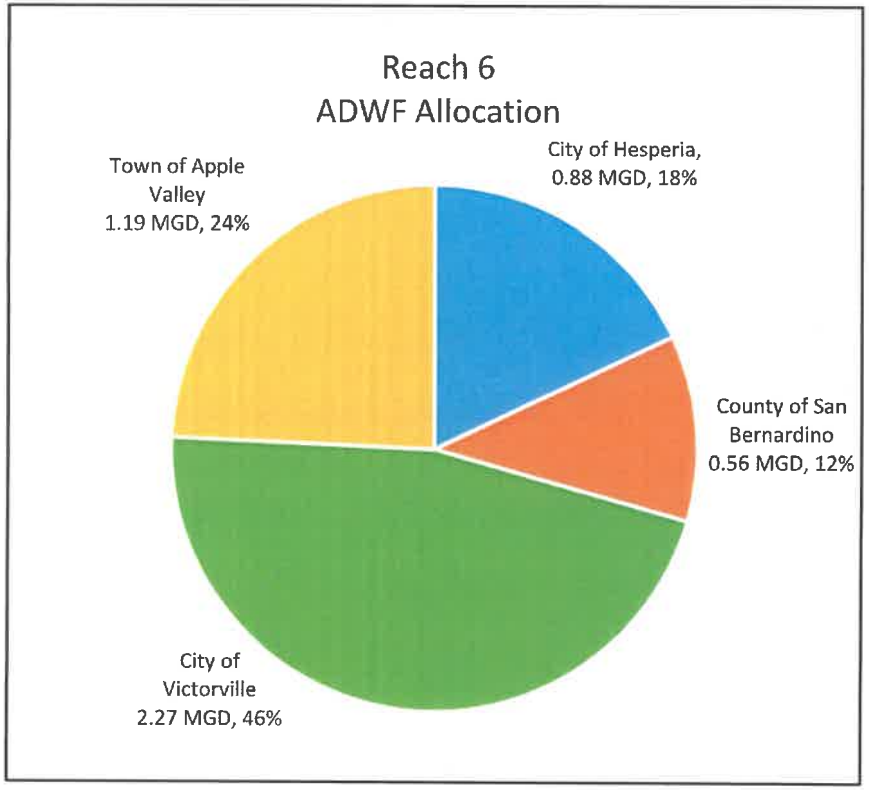


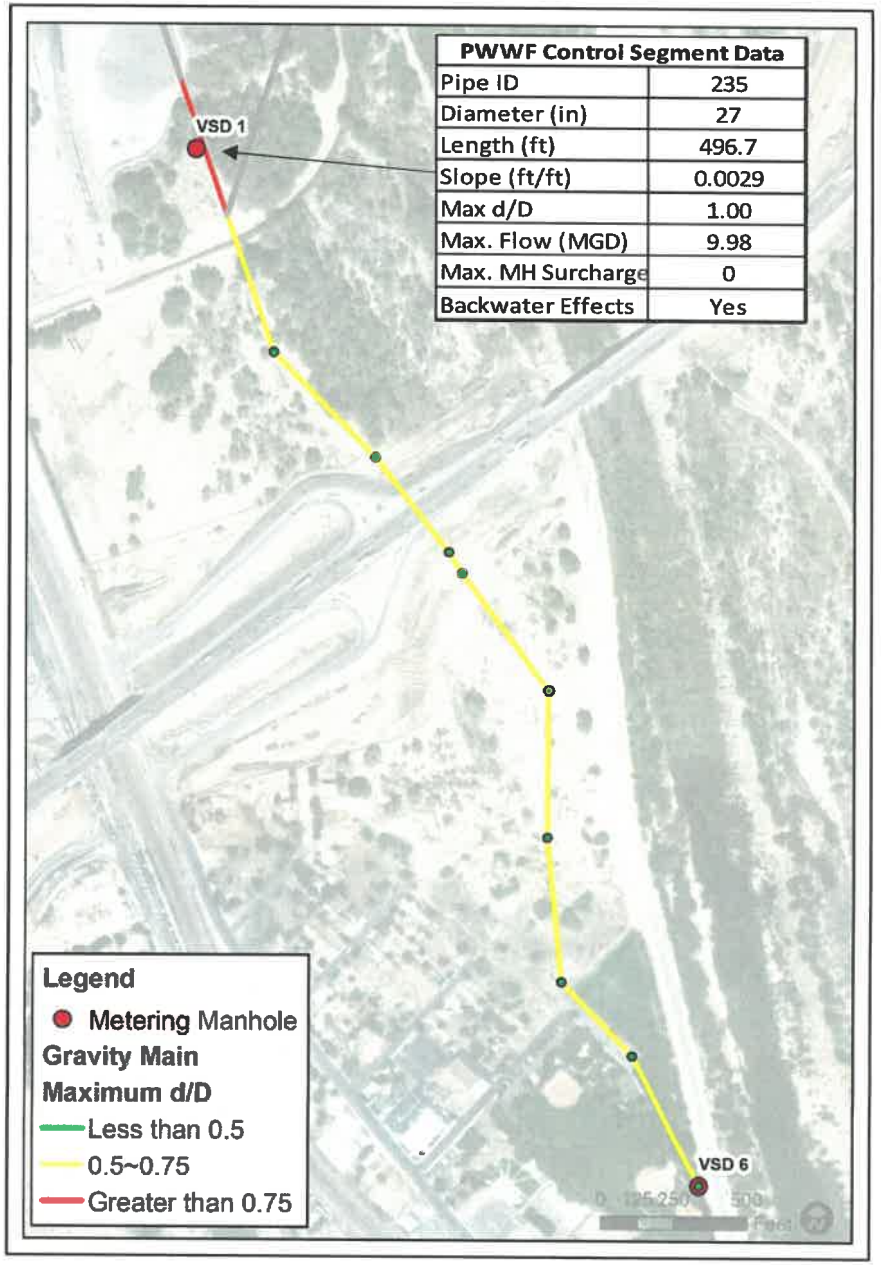
14-53

VVWRA Interceptor Reach 6 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	8.6
Average Dry Weather Flow (ADWF) (MGD):	4.9
Total Length (ft):	3,845.5
Slope Range (ft/ft):	0.0009 - 0.0038
Diameter Range (in):	27
Material(s):	VCP

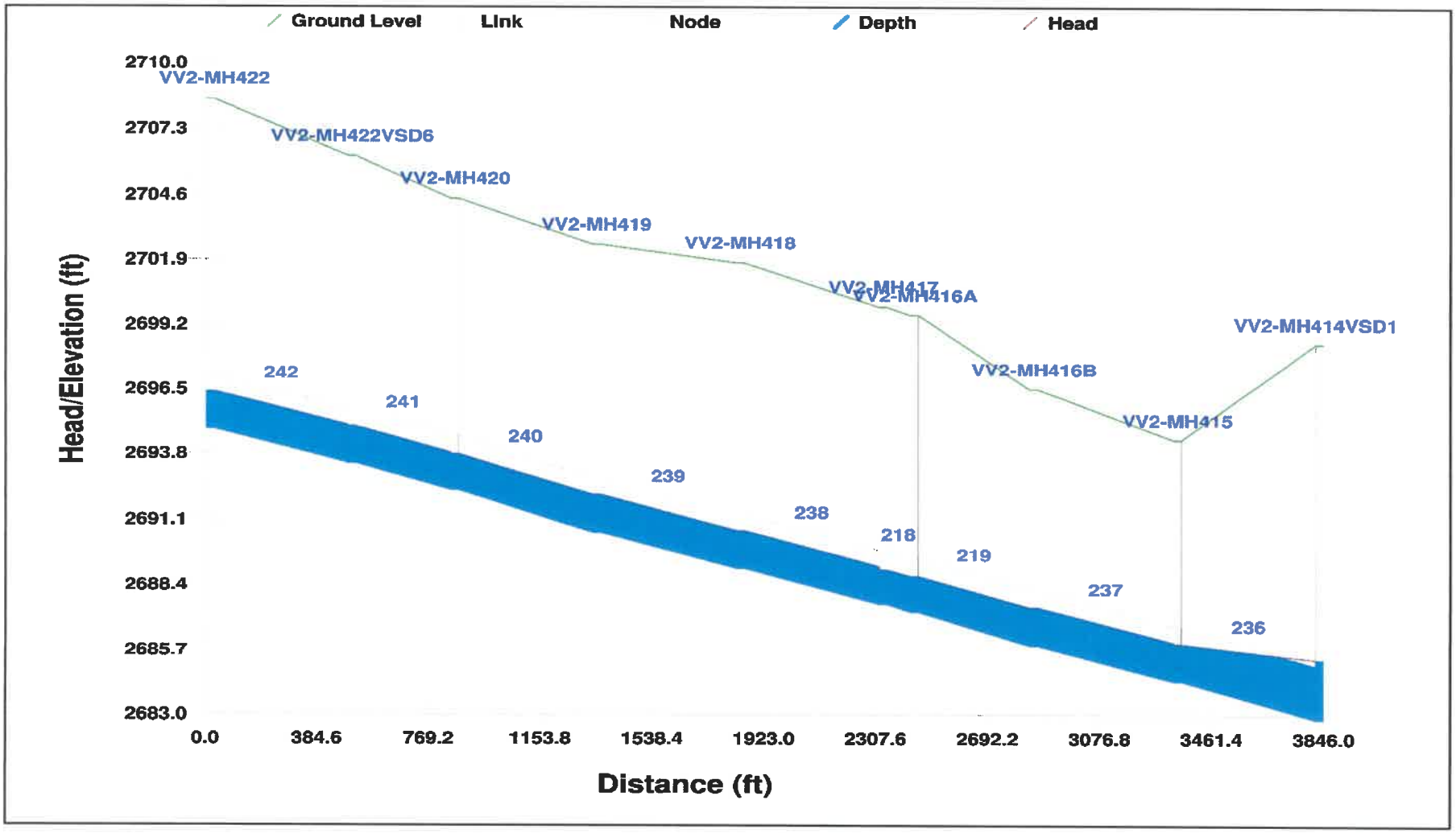
Notes: 1 of 9 pipes in Reach 6 experienced d/D's greater than the design criteria due to insufficient slope.





VVWRA Interceptor Reach 6 with Scalping

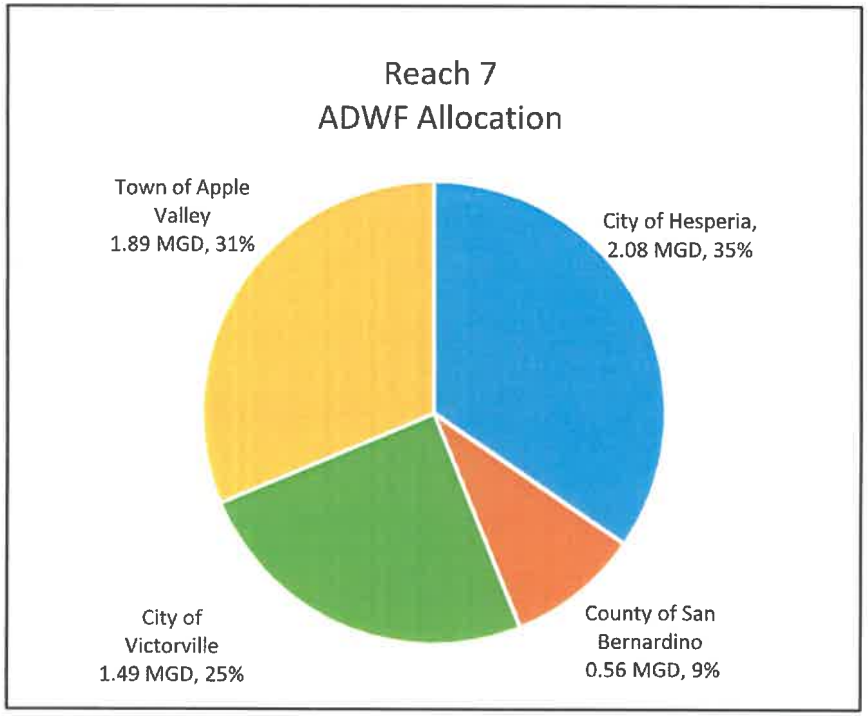
PWWF Hydraulic Profile

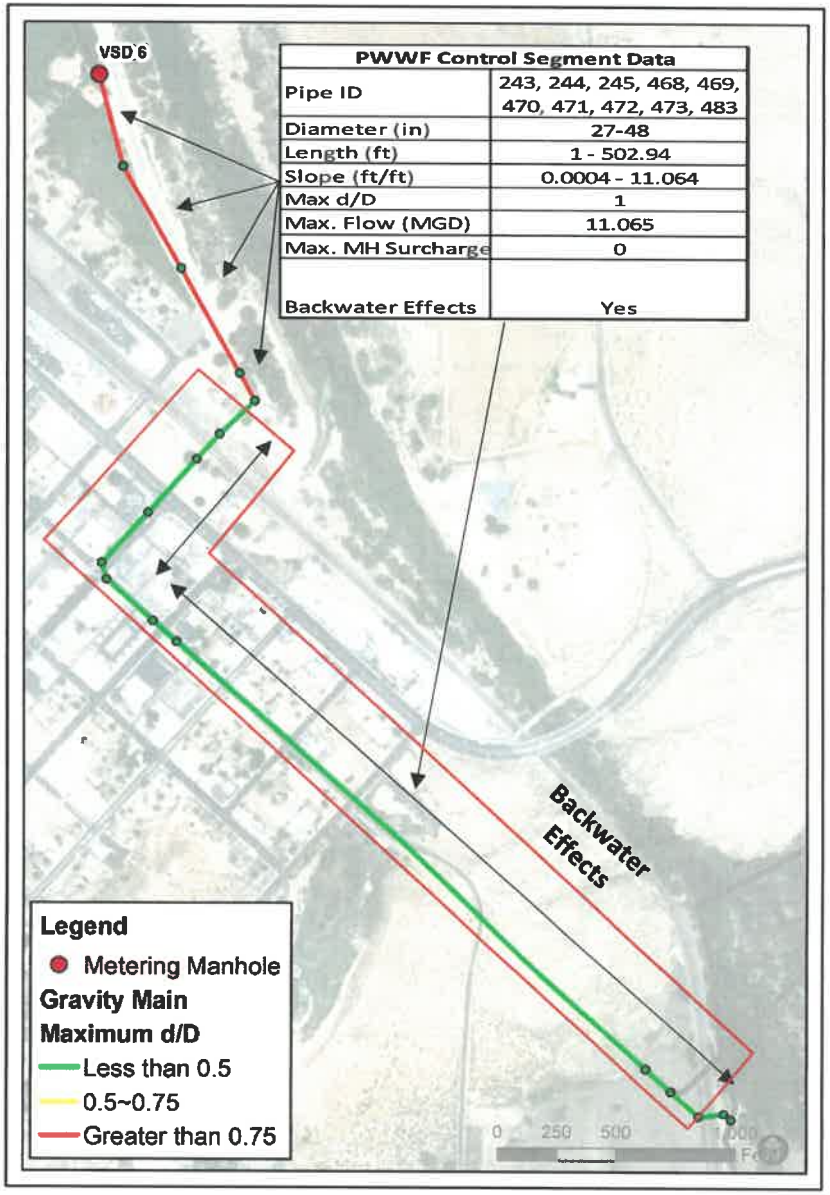


VVWRA Interceptor Reach 7

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	11.1
Average Dry Weather Flow (ADWF) (MGD):	6.0
Total Length (ft):	6,184.4
Slope Range (ft/ft):	0.0001 - 0.1245
Diameter Range (in):	27 - 48
Material(s):	HDPE, VCP

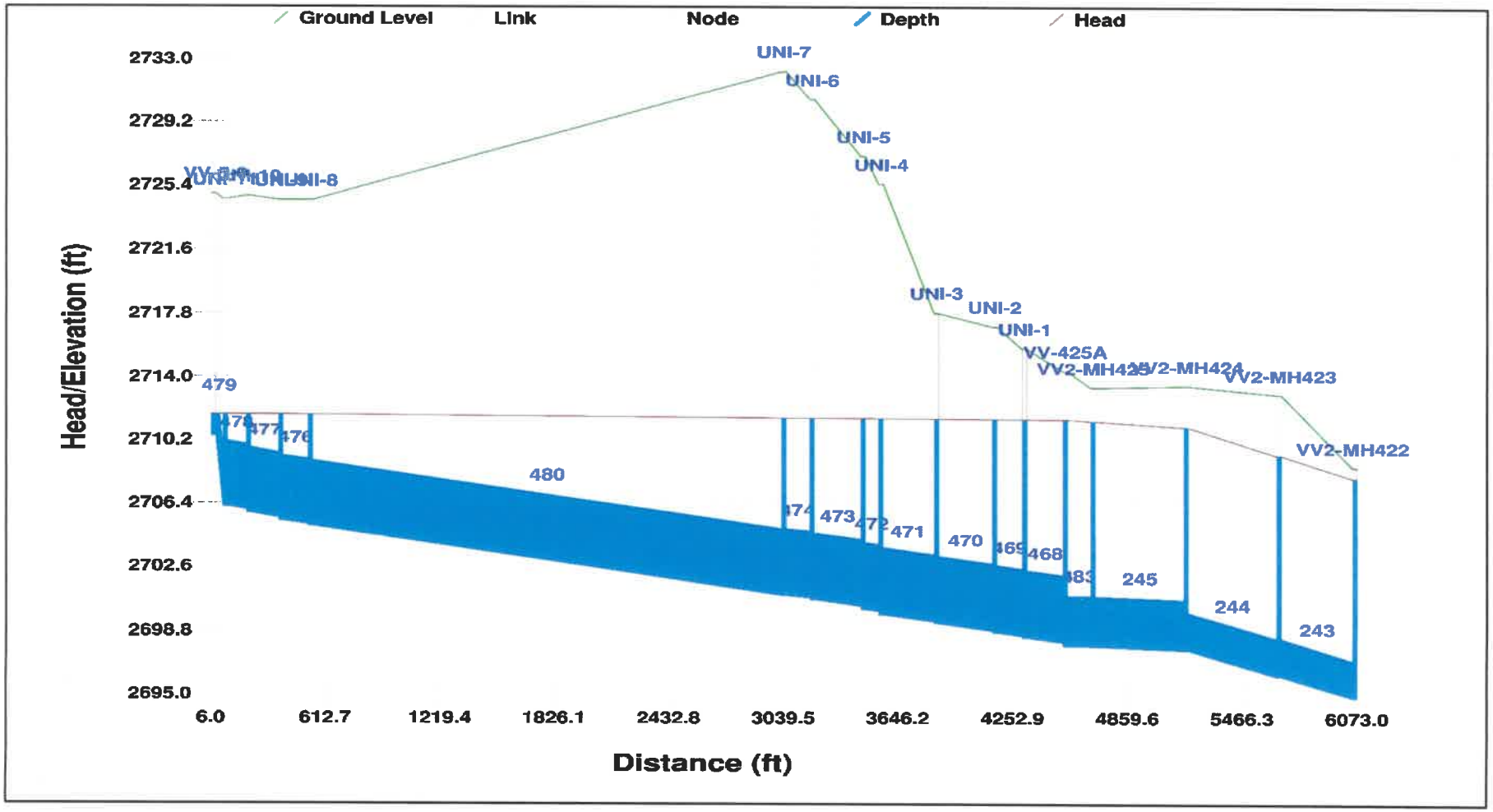
Notes: 16 of 16 pipes in Reach 7 experienced d/D's greater than the design criteria due to inadequate pipeline diameter and backwater effects. The minimum required pipeline diameter is 48". Twelve pipes are experiencing backwater effects.





VVWRA Interceptor Reach 7

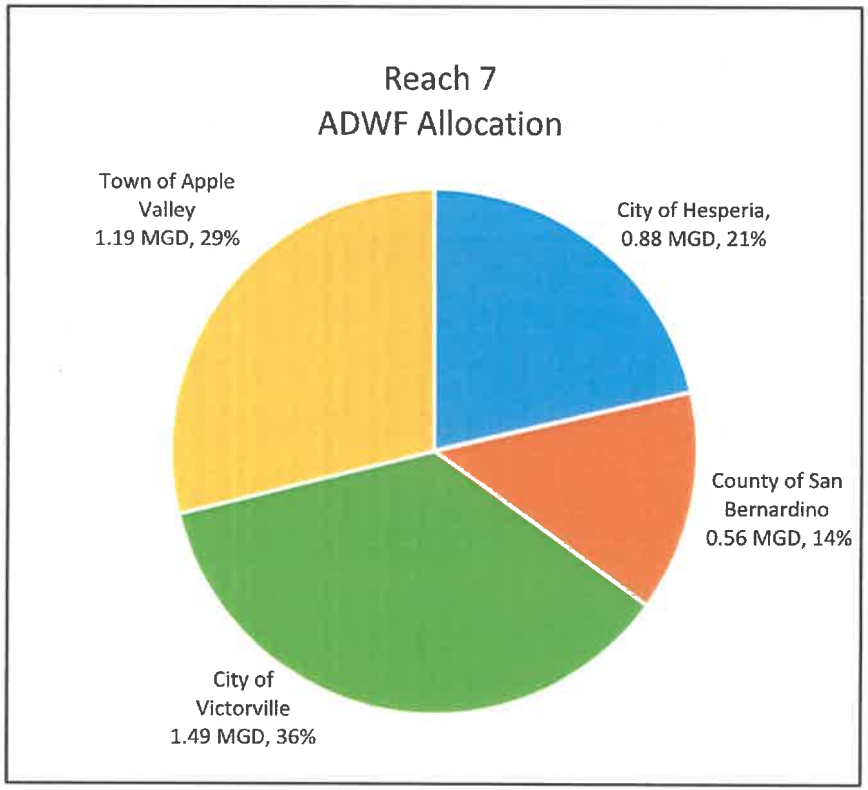
PWWF Hydraulic Profile

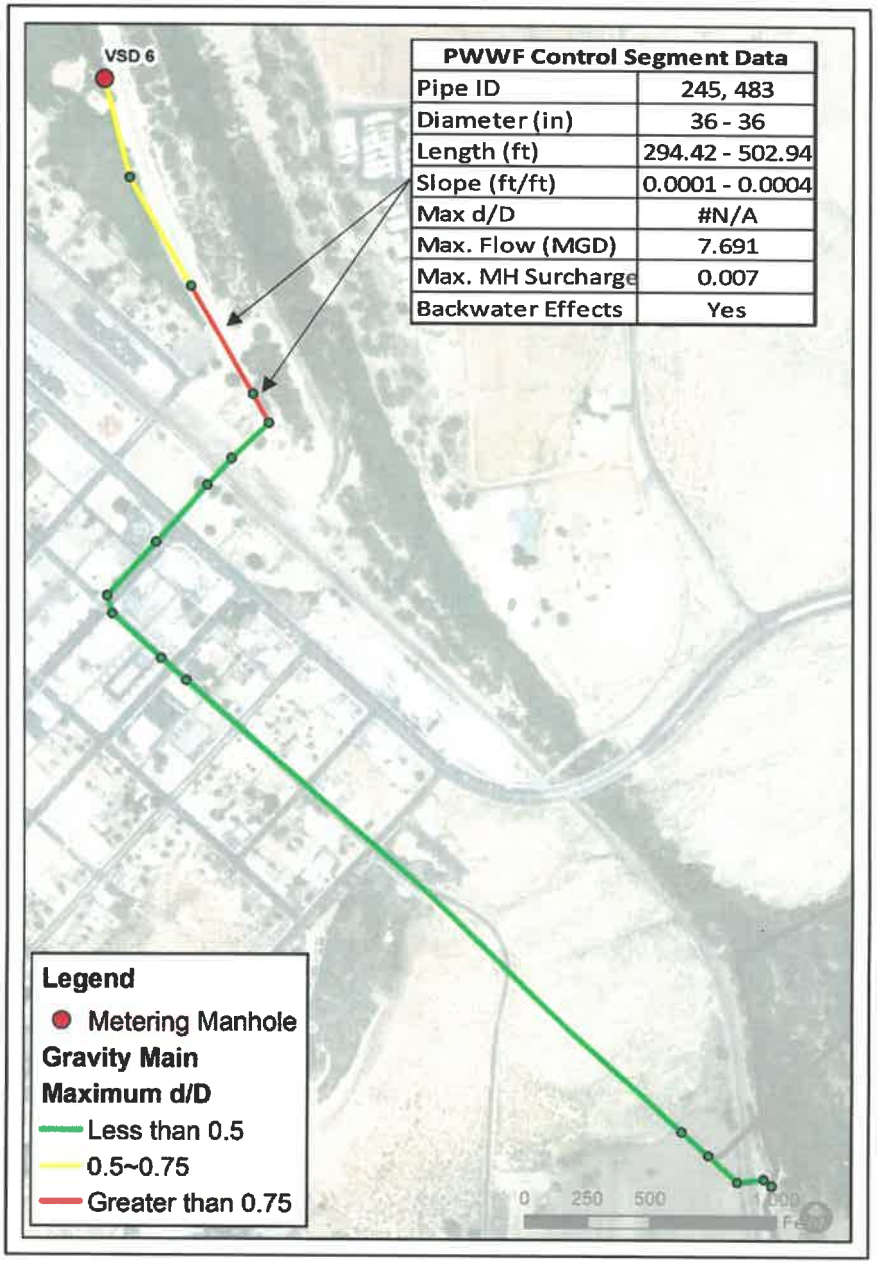


VVWRA Interceptor Reach 7 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	7.7
Average Dry Weather Flow (ADWF) (MGD):	4.1
Total Length (ft):	6,184.4
Slope Range (ft/ft):	0.0001 - 0.1245
Diameter Range (in):	27 - 48
Material(s):	HDPE, VCP

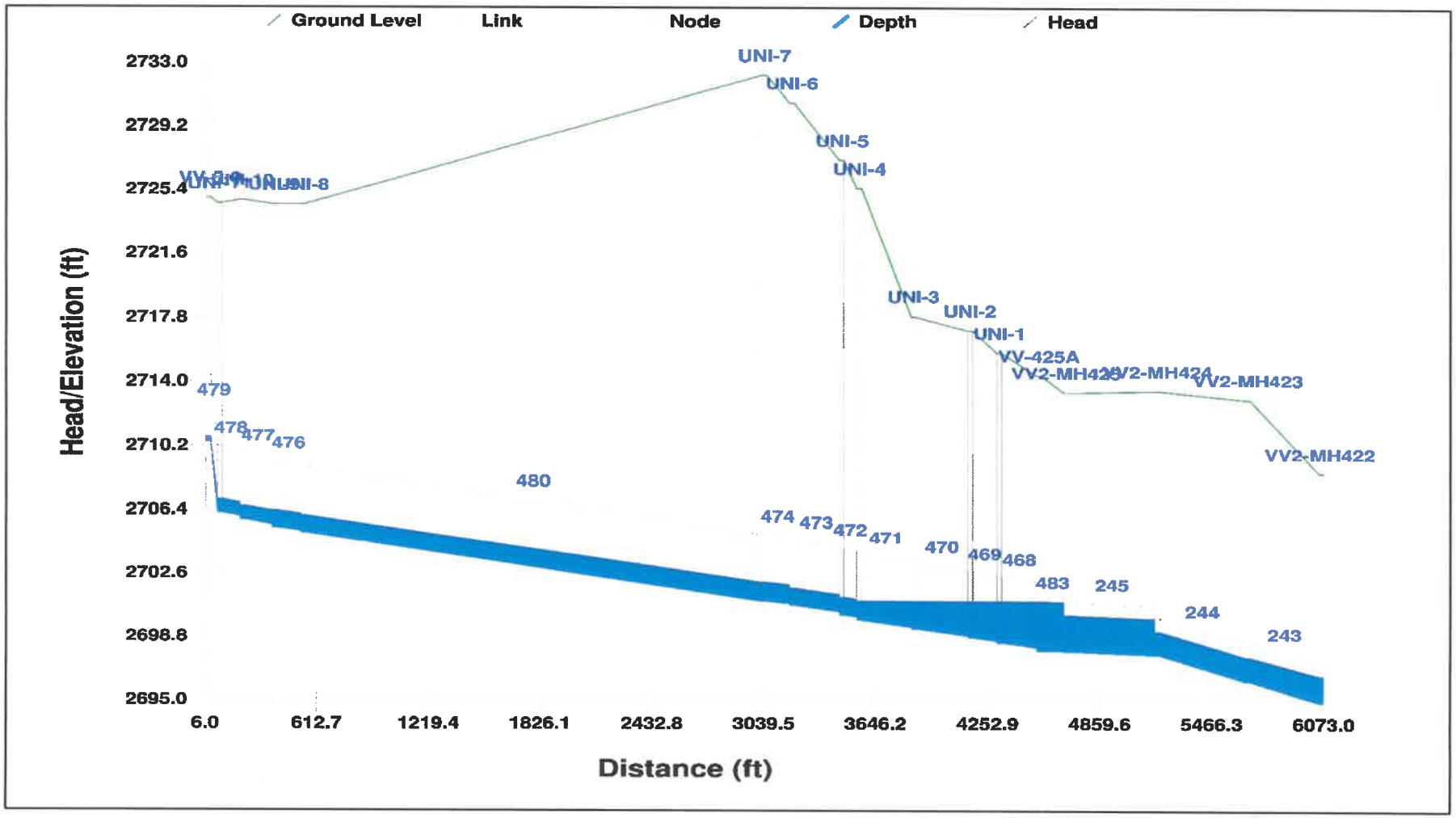
Notes: 2 of 16 pipes in Reach 7 experienced d/D's greater than the design criteria due to inadequate pipeline diameter. Minimum required diameter is 48-in.





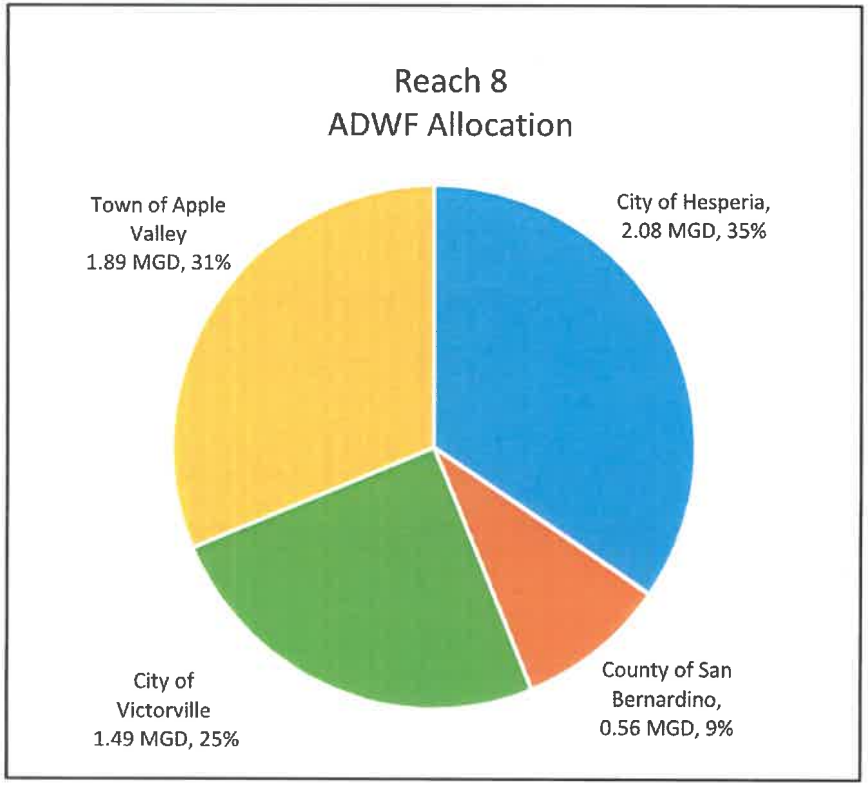
VVWRA Interceptor Reach 7 with Scalping

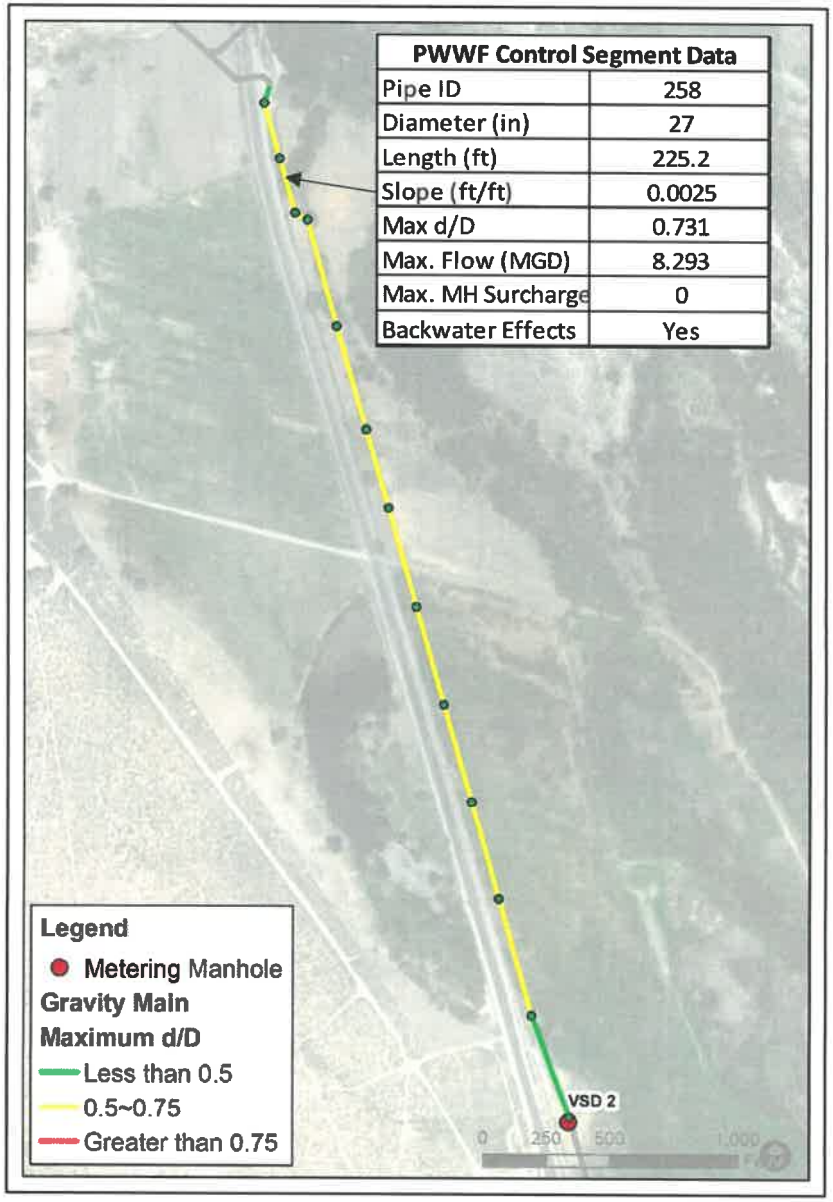
PWWF Hydraulic Profile



VVWRA Interceptor Reach 8

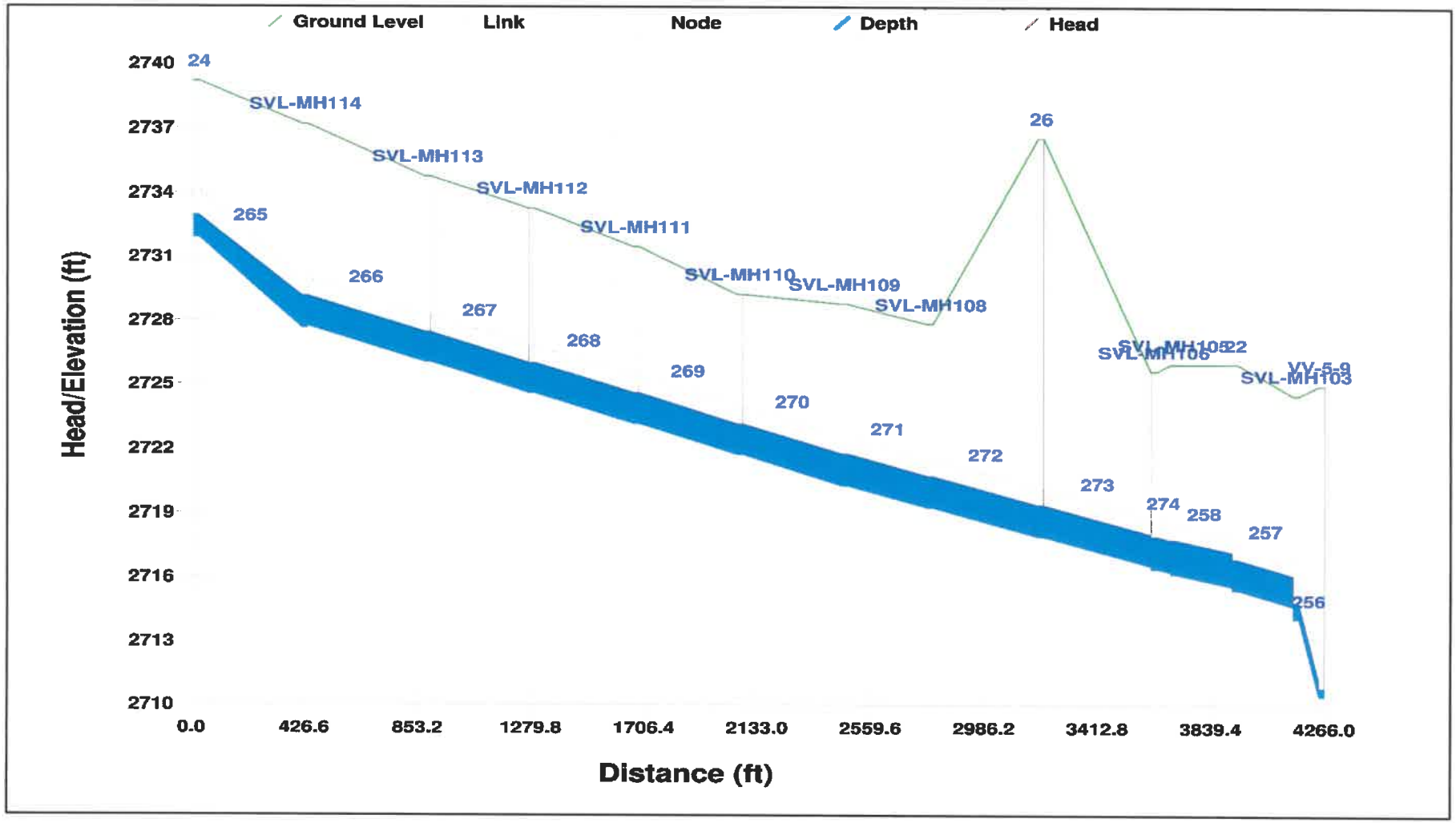
Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	8.3
Average Dry Weather Flow (ADWF) (MGD):	6.0
Total Length (ft):	4,337.5
Slope Range (ft/ft):	0.0025 - 0.0234
Diameter Range (in):	21 - 17
Material(s):	VCP
Notes: 0 of 13 pipes in Reach 8 experienced d/D's greater than the design criteria.	





VVWRA Interceptor Reach 8

PWWF Hydraulic Profile



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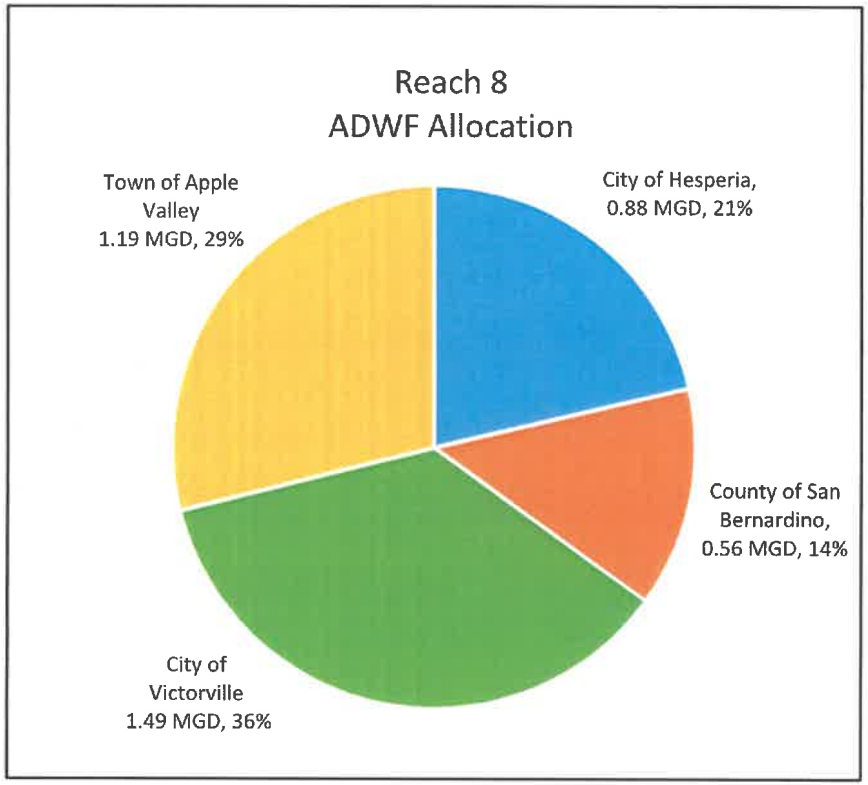
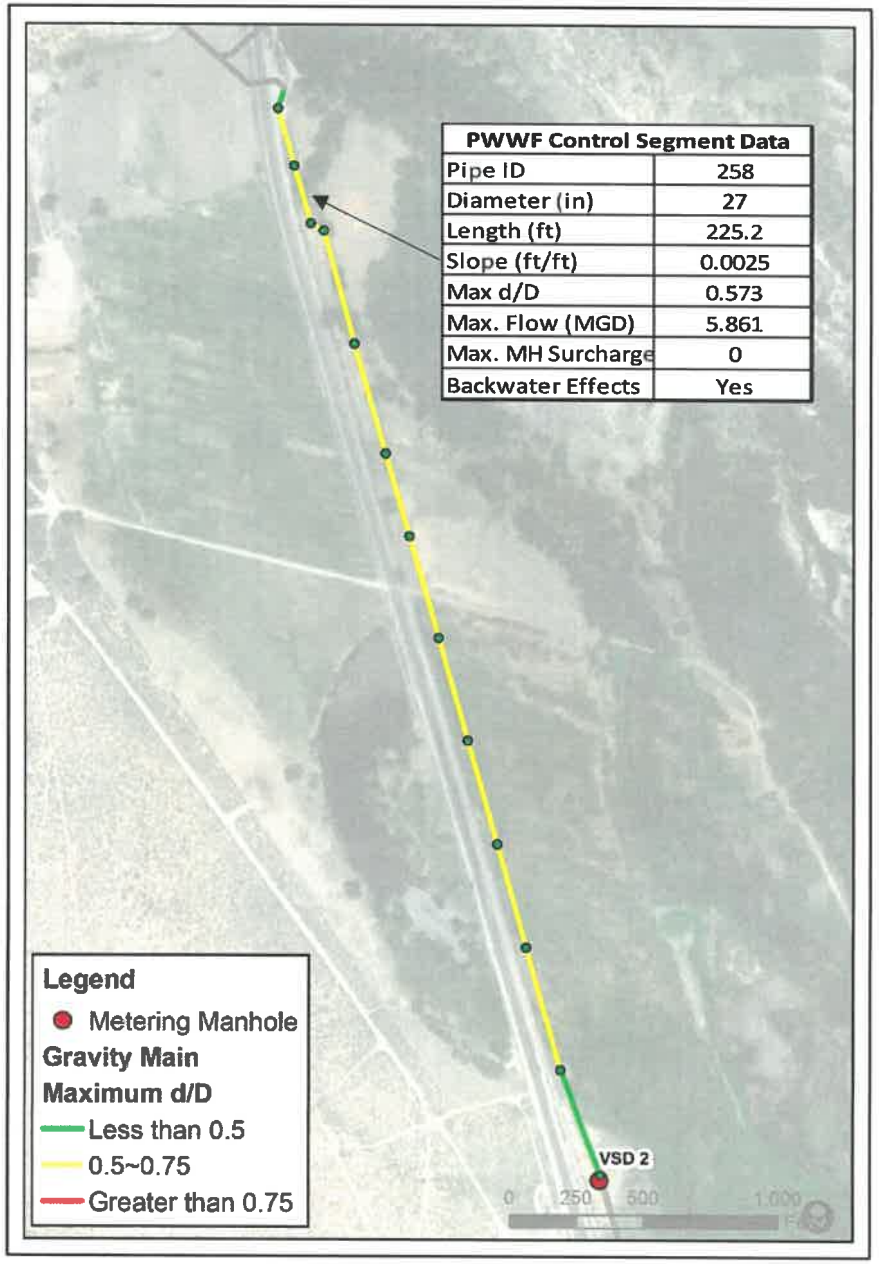
VVWRA Interceptor Reach 8 with Scalping

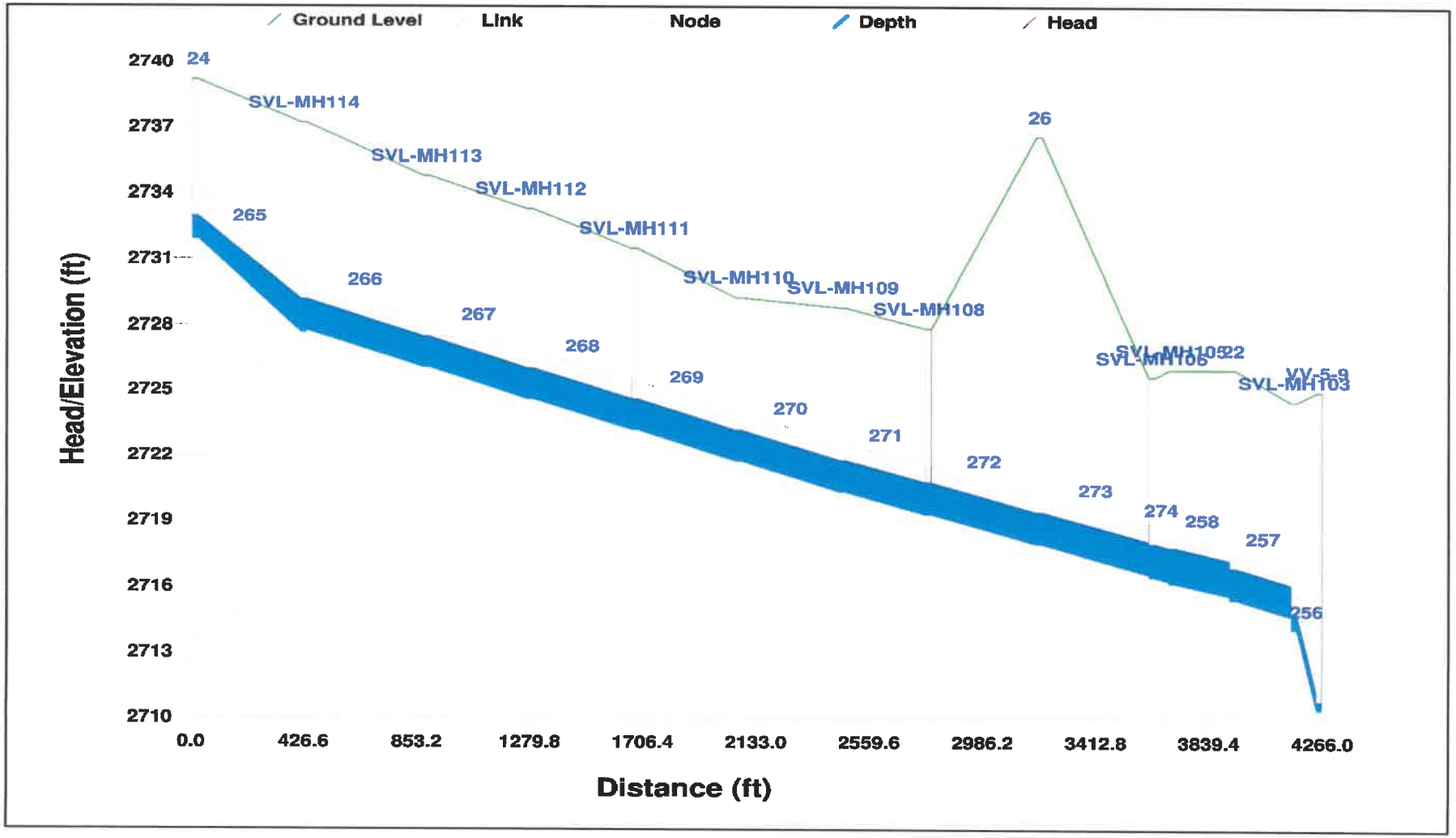
Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	5.9
Average Dry Weather Flow (ADWF) (MGD):	4.1
Total Length (ft):	4,337.5
Slope Range (ft/ft):	0.0025 - 0.0234
Diameter Range (in):	21 - 17
Material(s):	VCP
Notes: 0 of 13 pipes in Reach 8 experienced d/D's greater than the design criteria.	





VVWRA Interceptor Reach 8 with Scalping

PWWF Hydraulic Profile

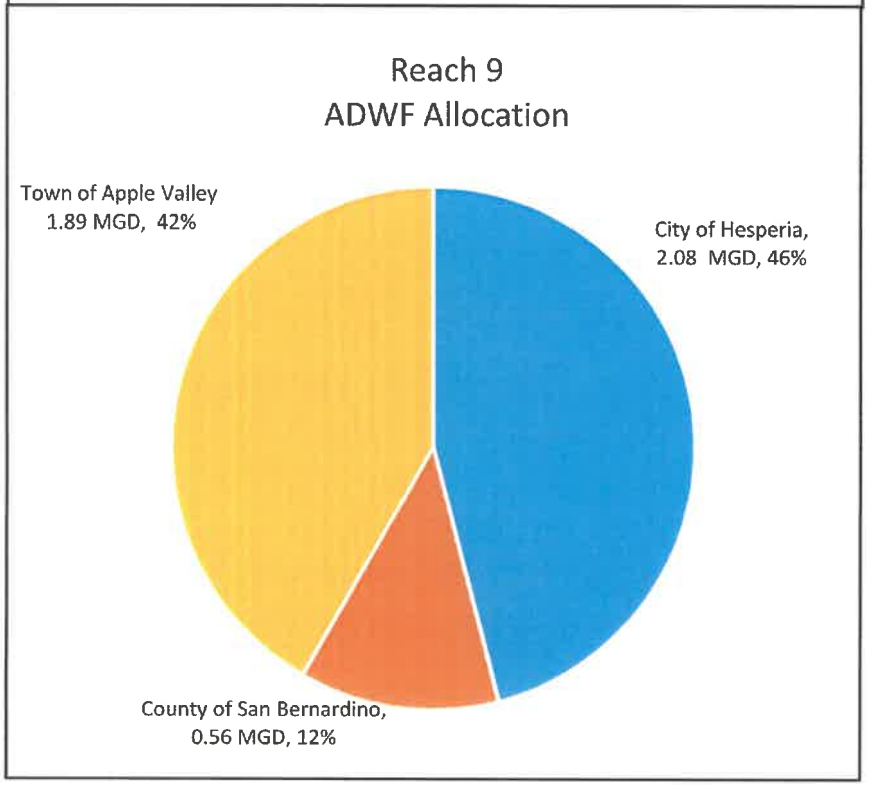


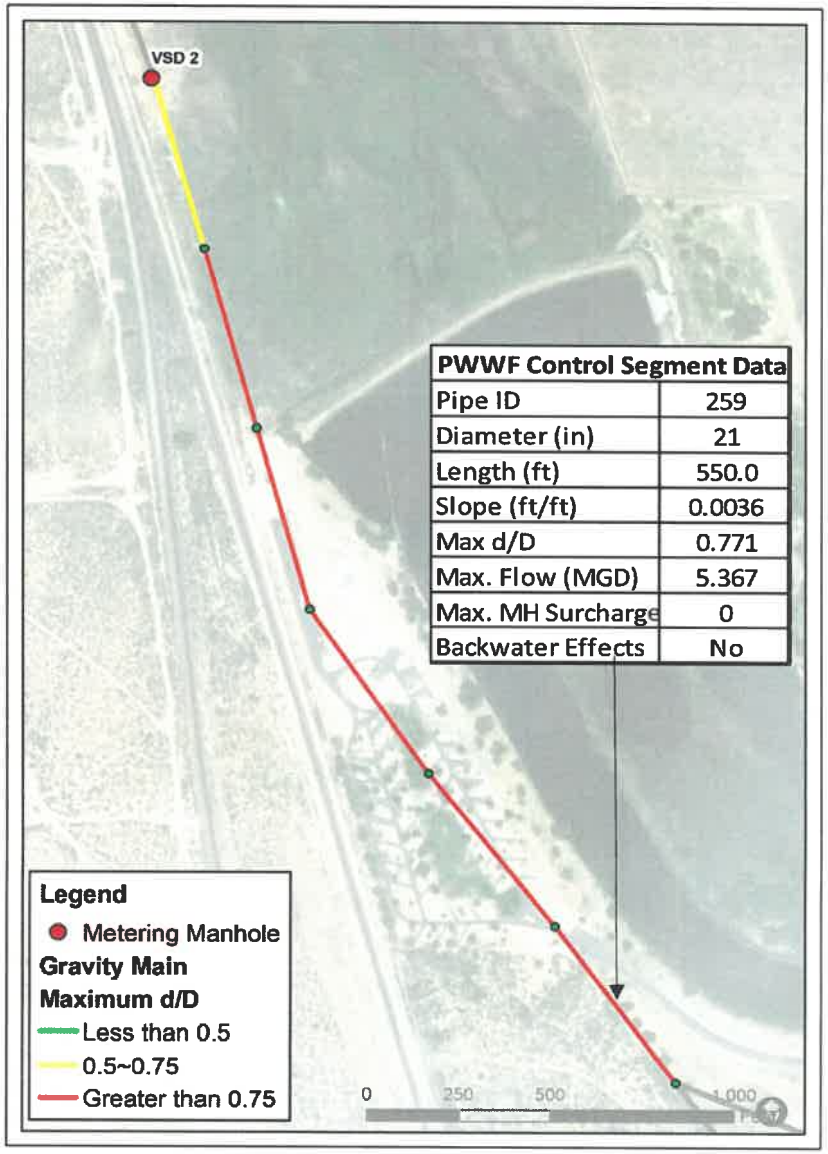
14-63

VVWRA Interceptor Reach 9

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	5.4
Average Dry Weather Flow (ADWF) (MGD):	4.5
Total Length (ft):	3,250.0
Slope Range (ft/ft):	0.0036 - 0.005
Diameter Range (in):	21
Material(s):	VCP

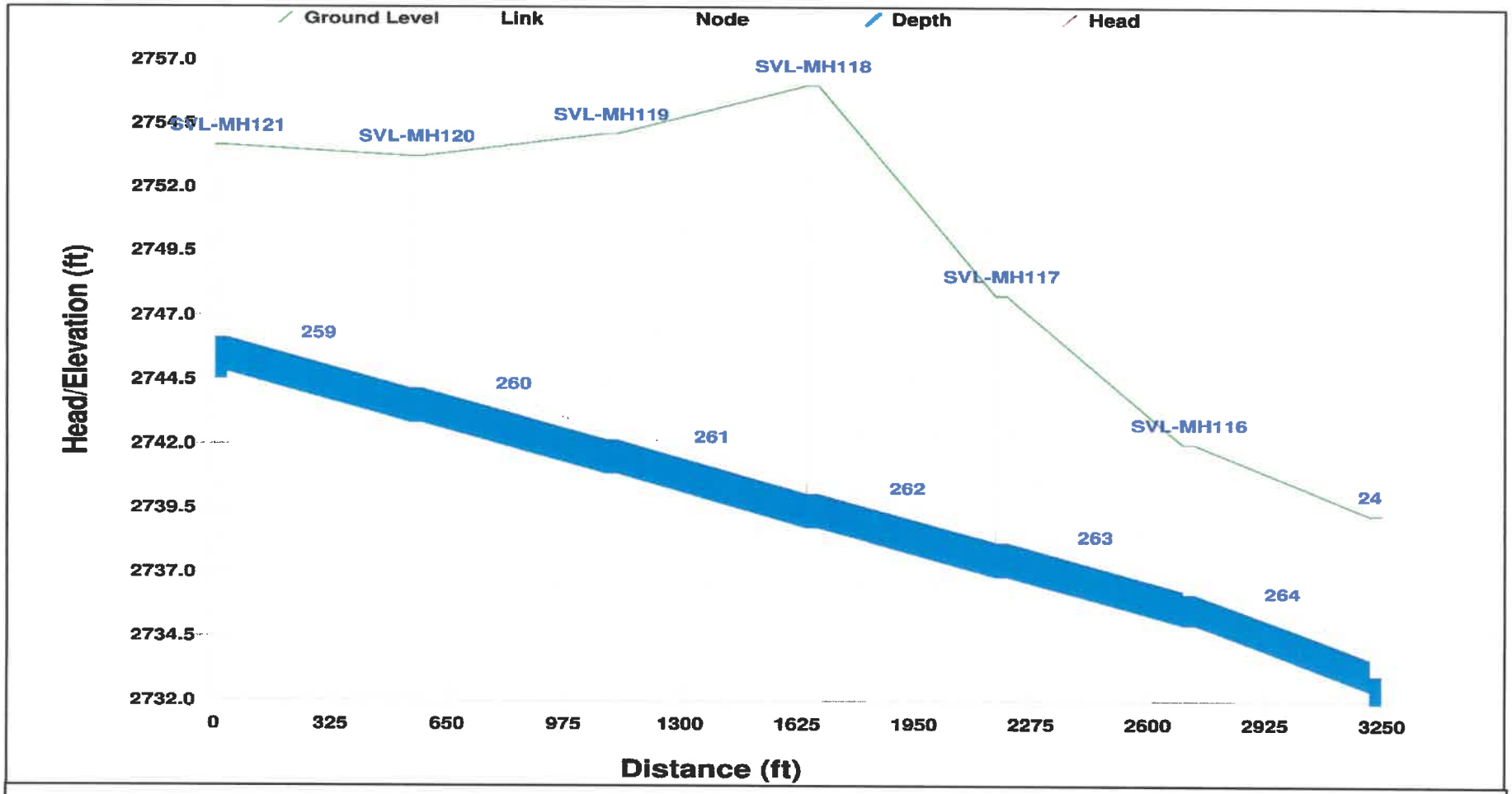
Notes: 5 of 6 pipes in Reach 9 experienced d/D's greater than the design criteria due to inadequate pipeline diameter and backwater effects. The minimum required pipeline diameter is 36".





VVWRA Interceptor Reach 9

PWWF Hydraulic Profile



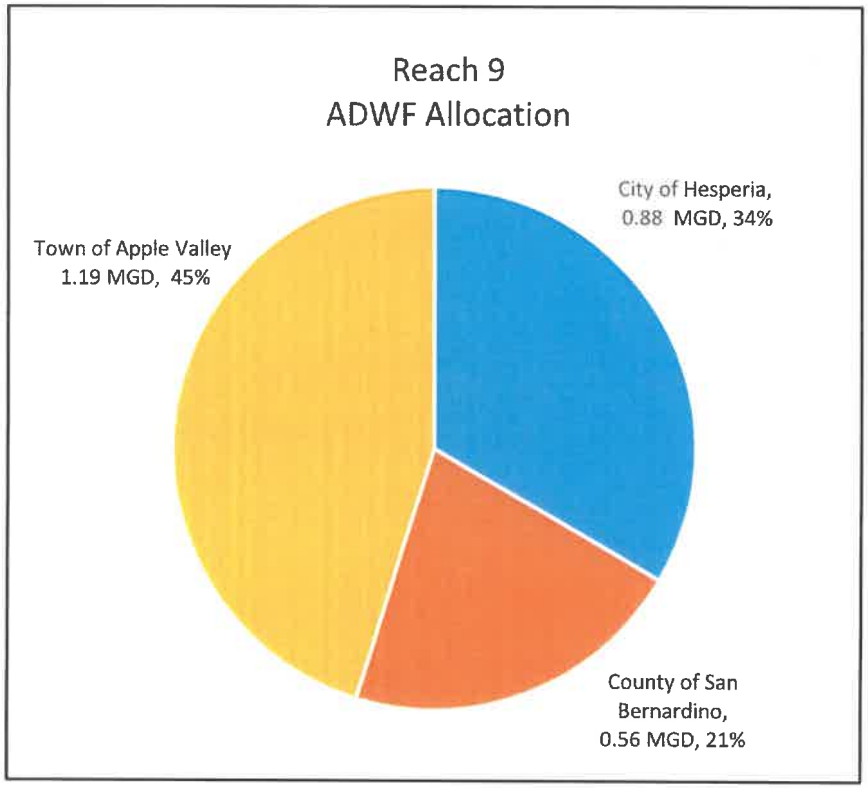
Note: Due to model output limitations the exact time step where d/D's of 1 occur could not be output into profile graphs.

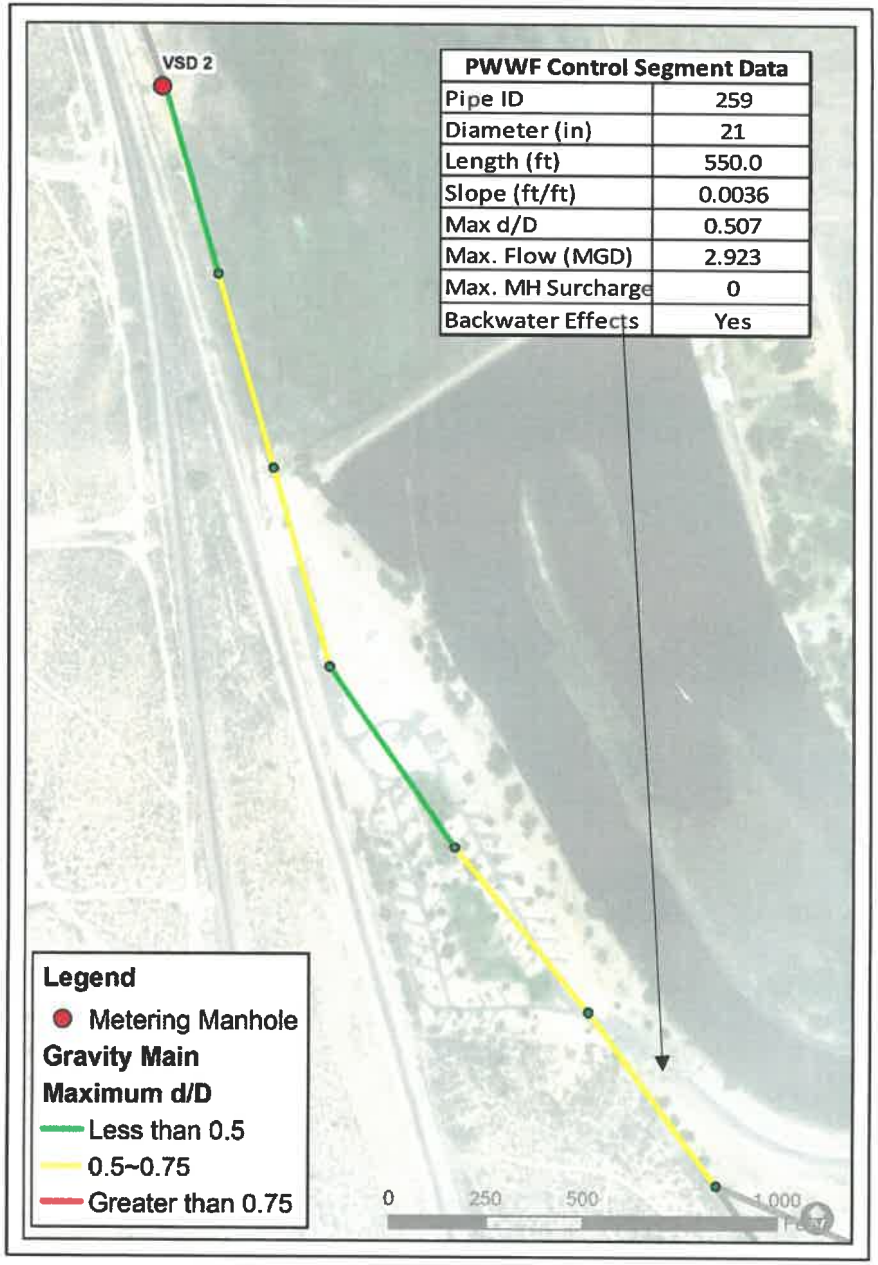
14-65

VVWRA Interceptor Reach 9 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	2.9
Average Dry Weather Flow (ADWF) (MGD):	2.6
Total Length (ft):	3,250.0
Slope Range (ft/ft):	0.0036 - 0.005
Diameter Range (in):	21
Material(s):	VCP

Notes: 0 of 6 pipes in Reach 9 experienced d/D's greater than the design criteria due to insufficient slope.

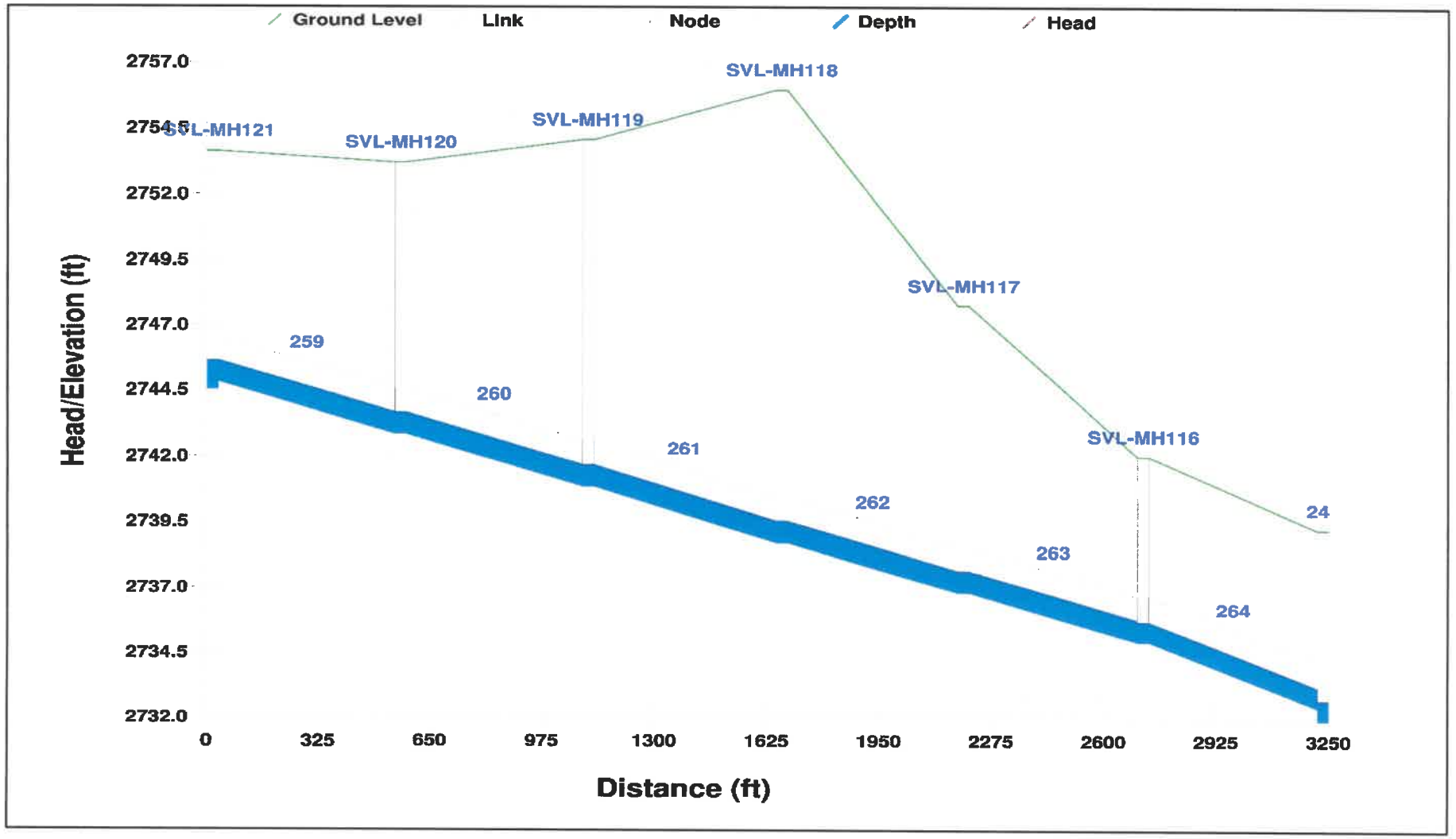




14-66

VVWRA Interceptor Reach 9 with Scalping

PWWF Hydraulic Profile



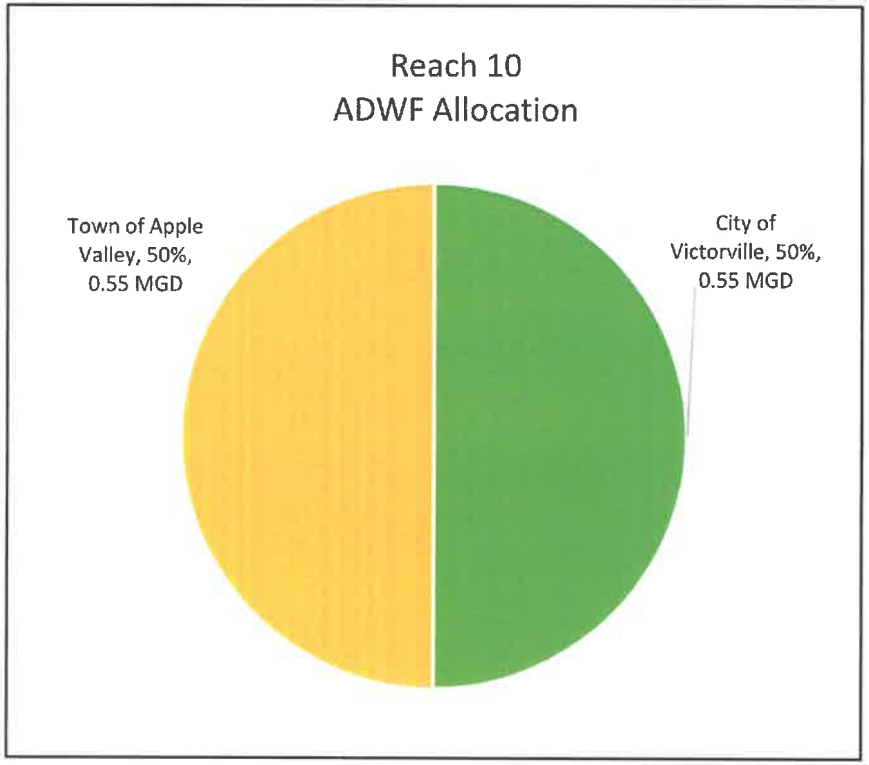
14-67

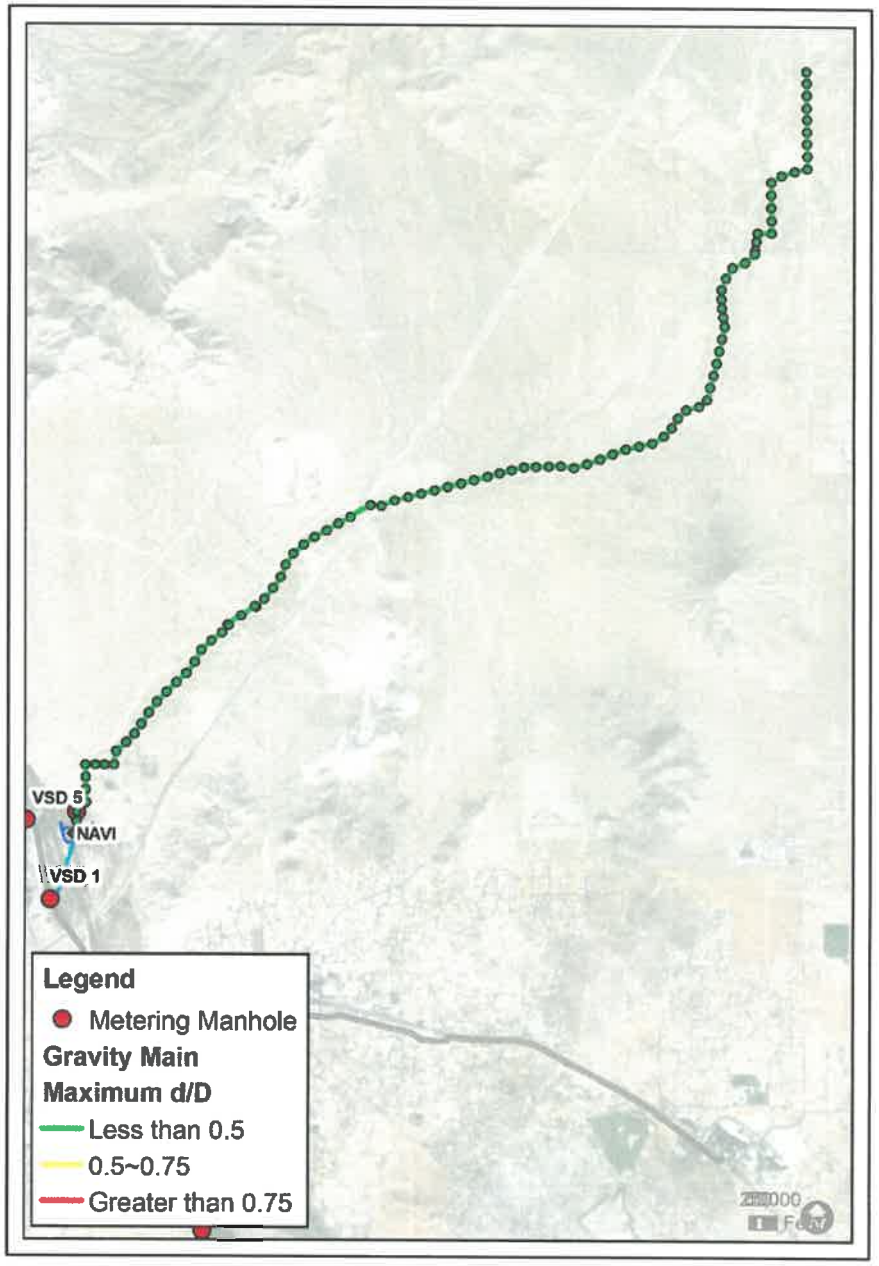
VVWRA Interceptor Reach 10

NOTE: Results for Reaches 10, 11, and 13 are not affected by scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	2.4
Average Dry Weather Flow (ADWF) (MGD):	0.1
Total Length (ft):	45,041.5
Slope Range (ft/ft):	0.0025 - 0.0074
Diameter Range (in):	15 - 24
Material(s):	CML&C

Notes: 0 of 103 pipes in Reach 10 experienced d/D's greater than the design criteria. The entire NAVI load is applied at the most upstream manhole, as the exact loading location is unknown.

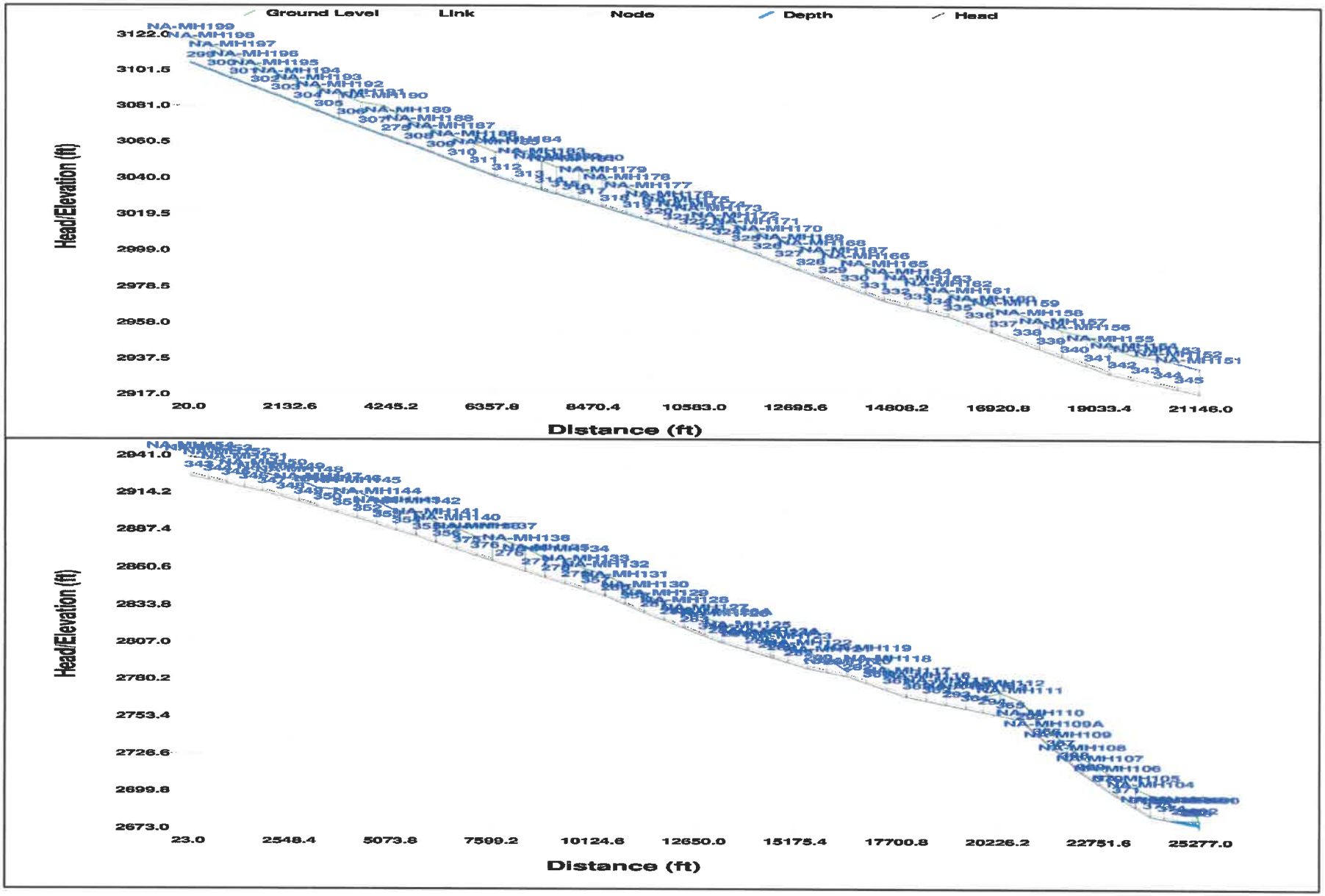




14-68

VVWRA Interceptor Reach 10

PWWF Hydraulic Profile



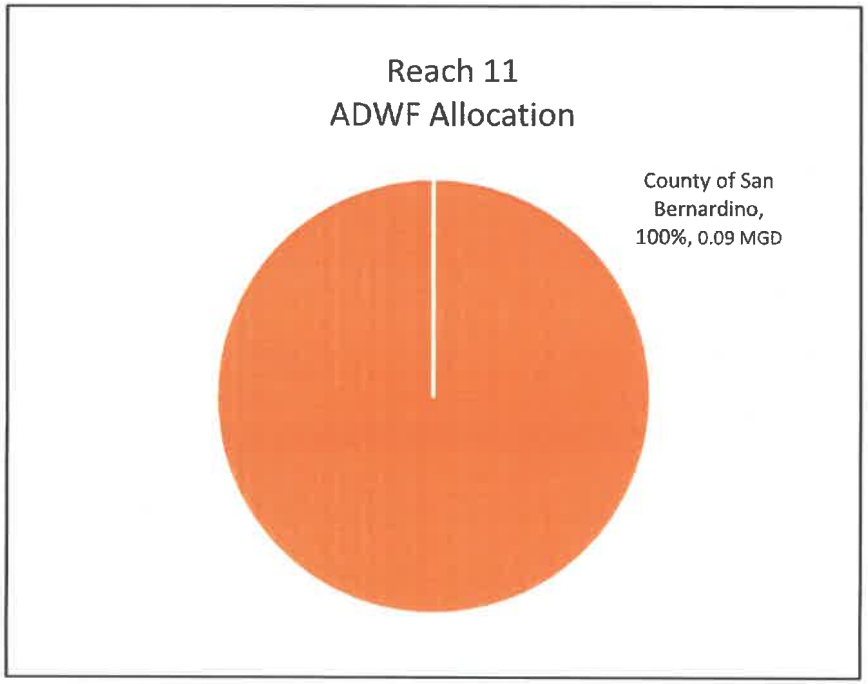
14-69

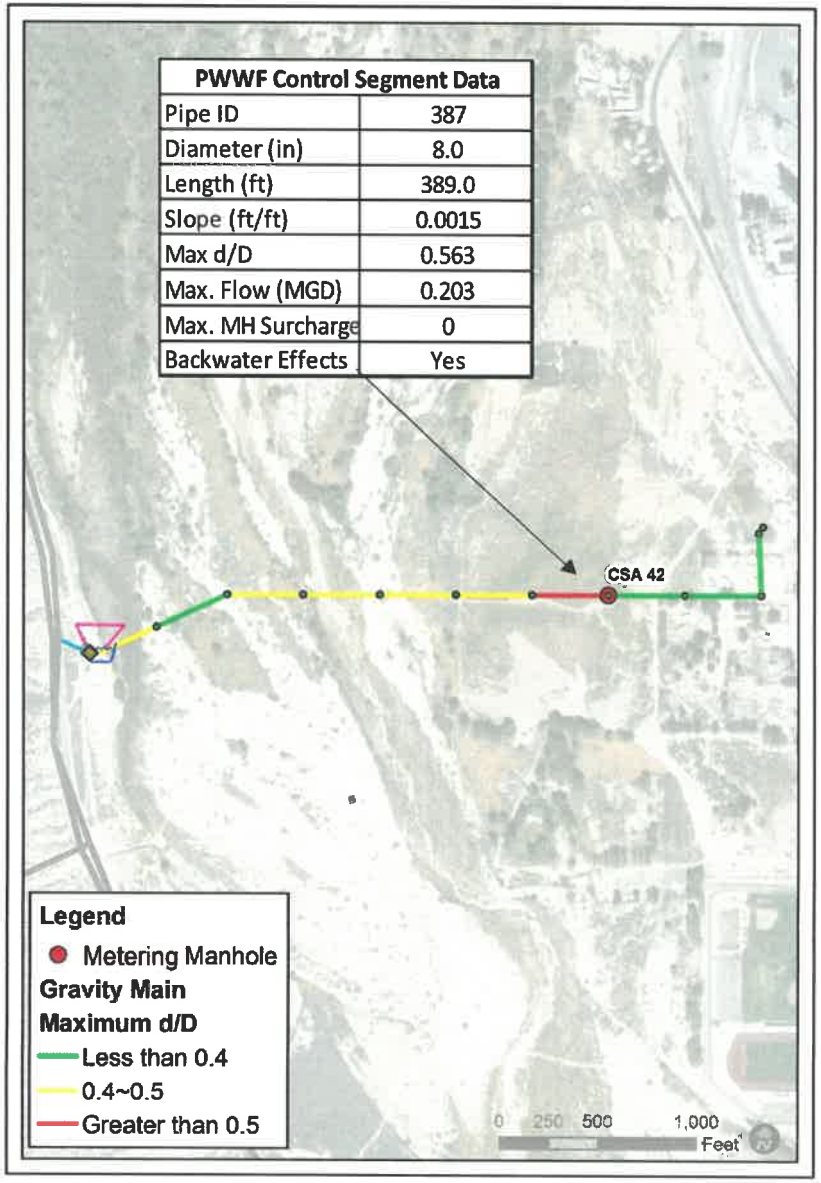
VVWRA Interceptor Reach 11

NOTE: Results for Reaches 10, 11, and 13 are not affected by scalping

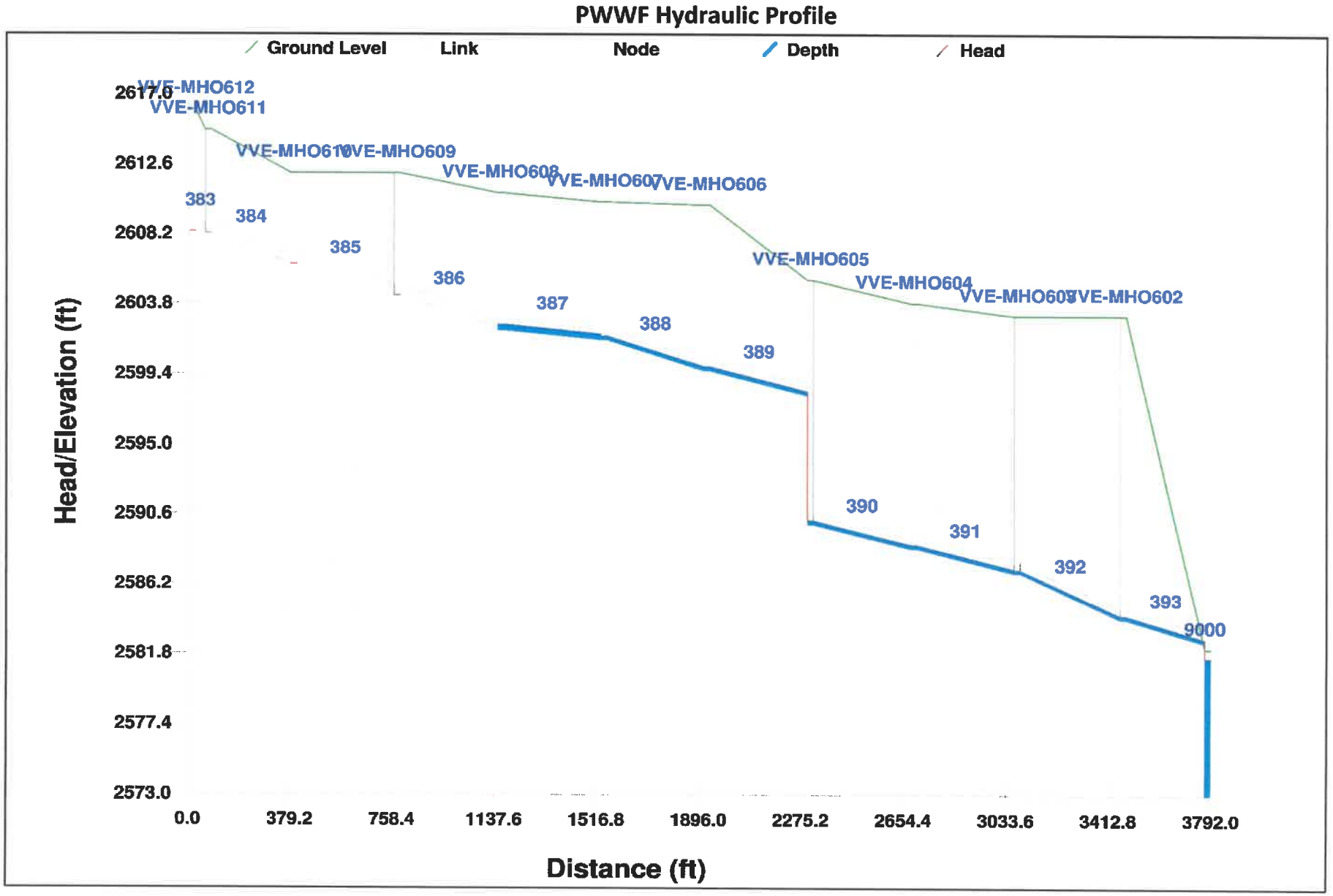
Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	0.2
Average Dry Weather Flow (ADWF) (MGD):	0.1
Total Length (ft):	5,757.5
Slope Range (ft/ft):	0.0017 - 0.025
Diameter Range (in):	8
Material(s):	PVC

Notes: 1 of 12 pipes in Reach 11 experienced d/D's greater than the design criteria due to inadequate pipe diameter. The entire CSA 42 load is applied at the most upstream manhole, as the exact loading location in not known. The entire CSA 42 load is applied at the most upstream manhole, as the exact loading location in not known.





VVWRA Interceptor Reach 11

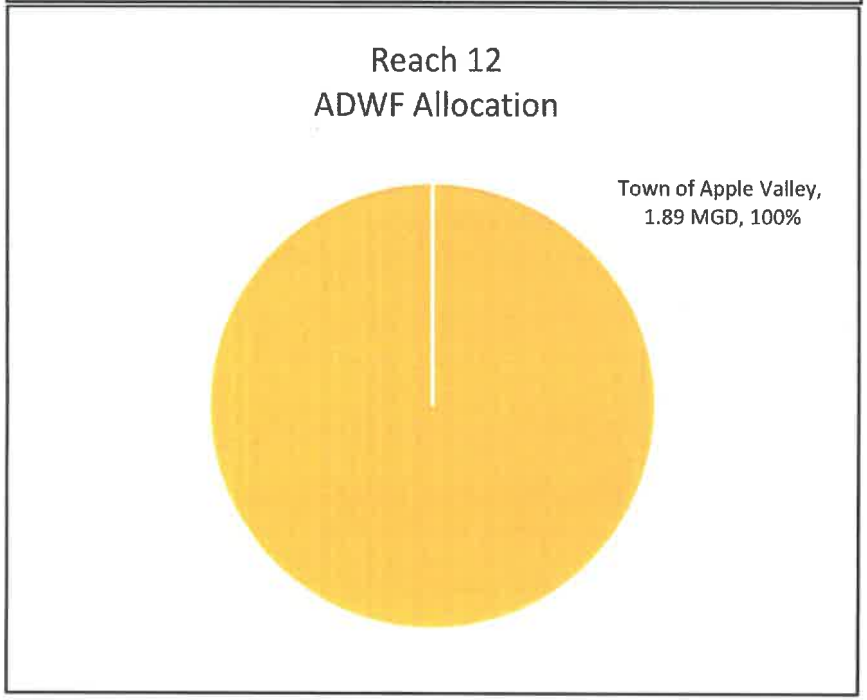


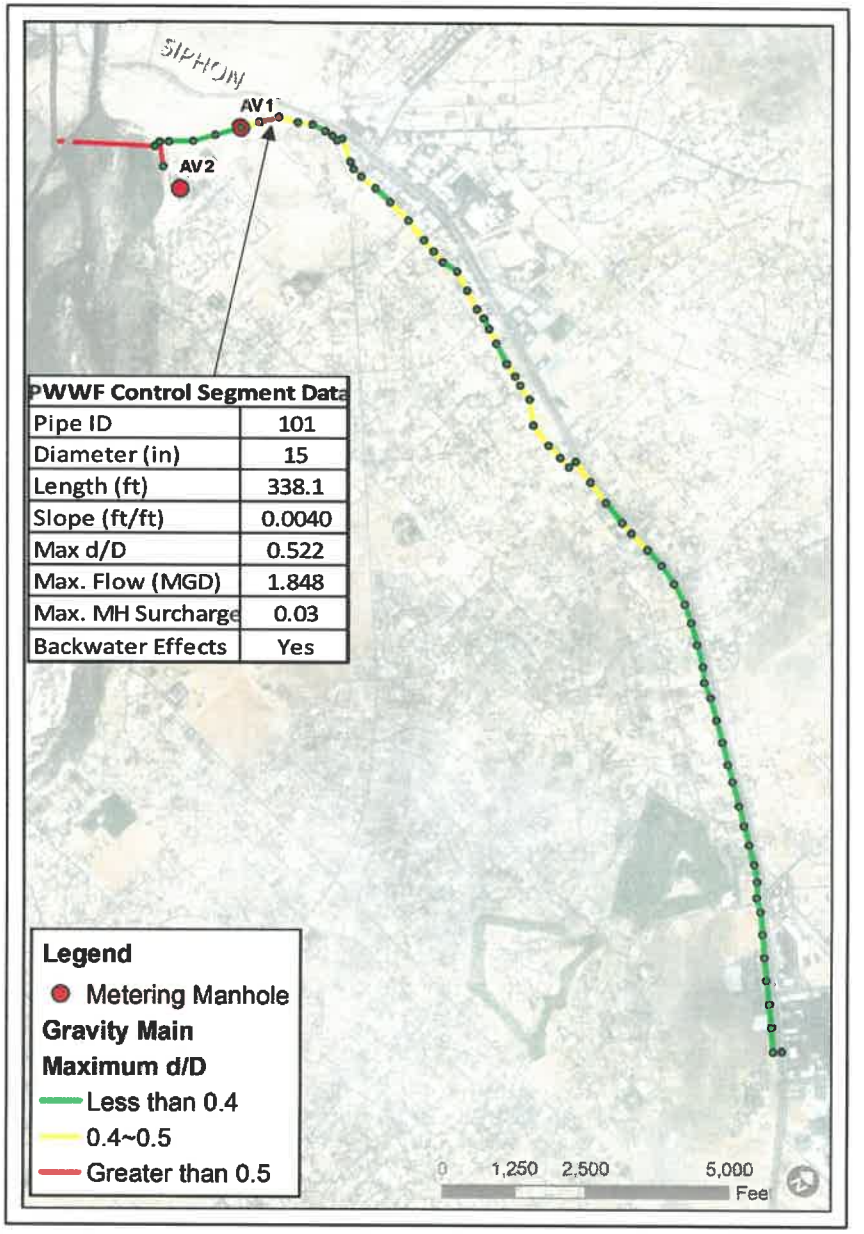
14-71

VVWRA Interceptor Reach 12

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	2.9
Average Dry Weather Flow (ADWF) (MGD):	1.9
Total Length (ft):	23,752.9
Slope Range (ft/ft):	0.011 - 0.0518
Diameter Range (in):	12 - 15
Material(s):	PVC

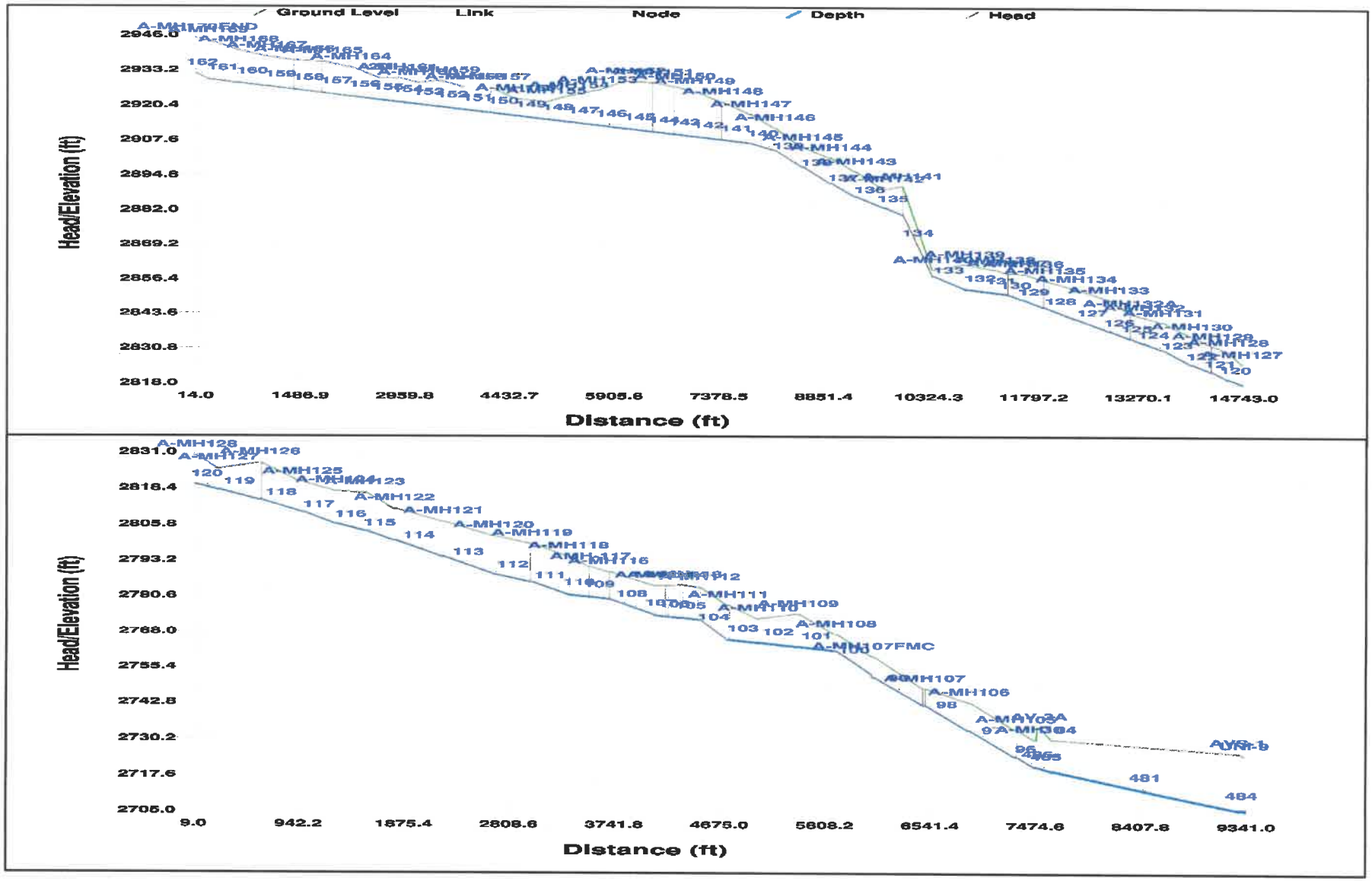
Notes: 4 of 72 pipes in Reach 12 experienced d/D's greater than the design criteria due to inadequate pipe diameters. The entire AVI load is applied at the most upstream manhole, as the exact loading locations are unknown. More accurate allocation is recommended in future analyses. The entire AVI load is applied at the most upstream manhole, as the exact loading locations are unknown. More accurate allocation is recommended in future analyses.





VVWRA Interceptor Reach 12

PWWF Hydraulic Profile

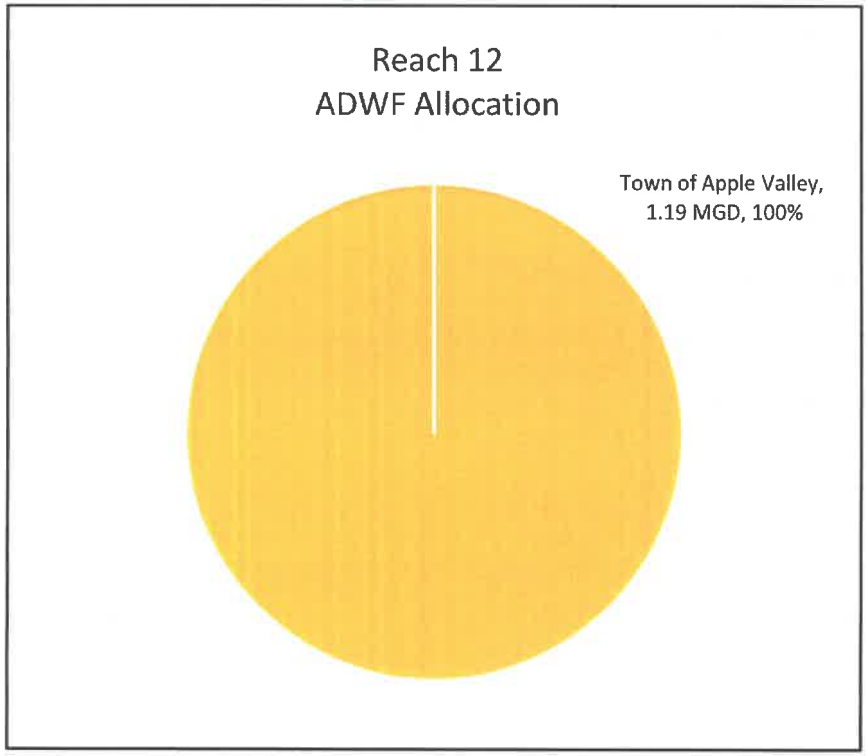


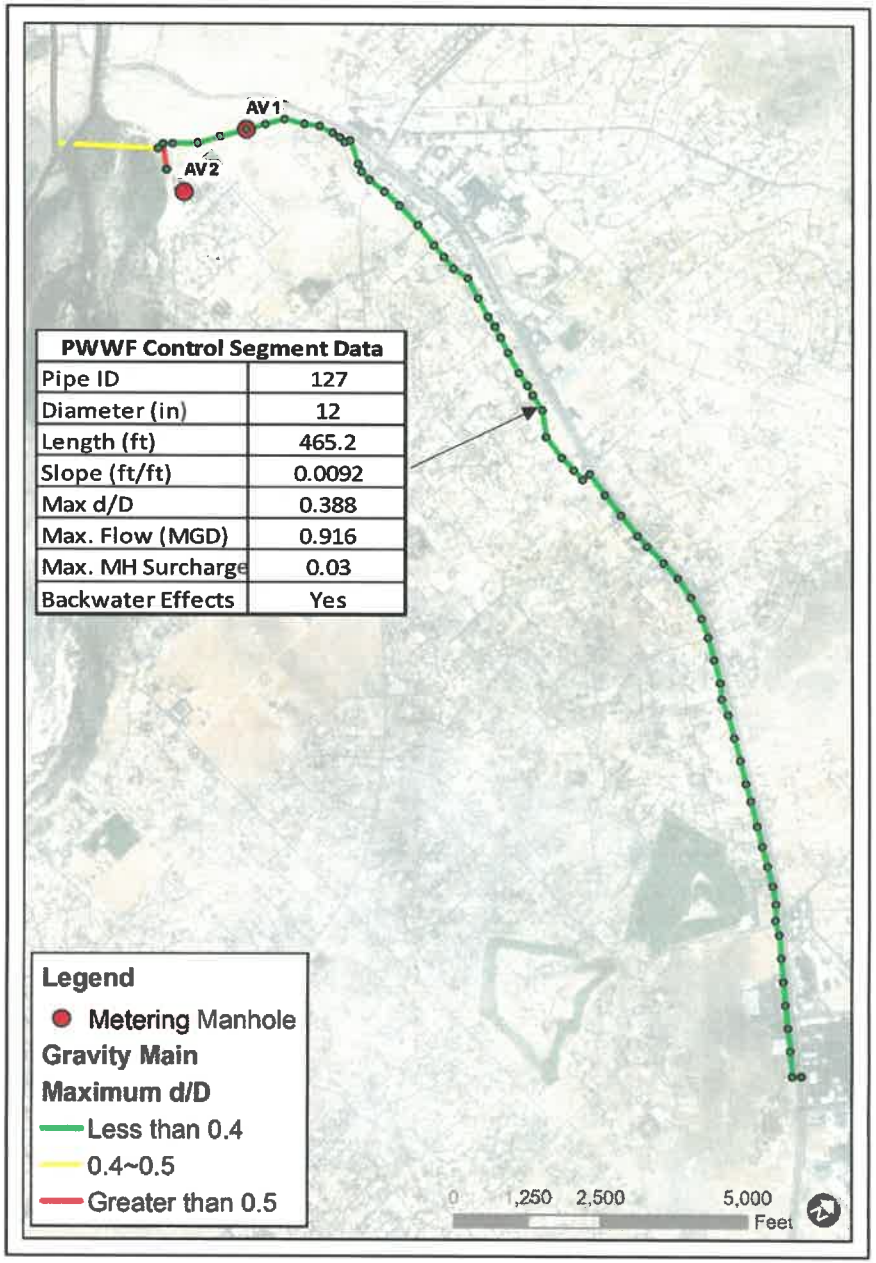
14-73

VVWRA Interceptor Reach 12 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	1.9
Average Dry Weather Flow (ADWF) (MGD):	1.2
Total Length (ft):	23,752.9
Slope Range (ft/ft):	0.011 - 0.0518
Diameter Range (in):	12 - 15
Material(s):	PVC

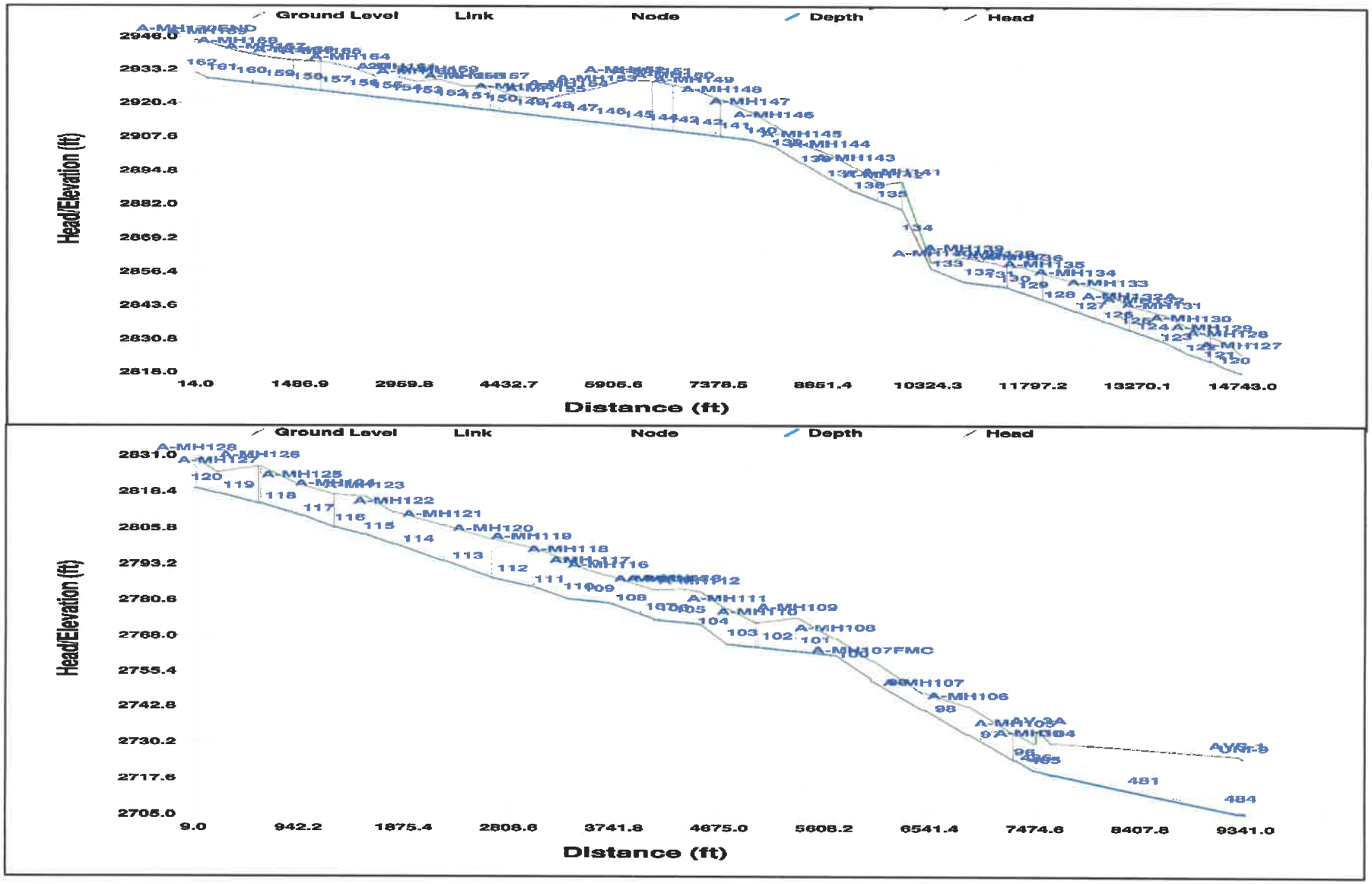
Notes: 0 of 72 pipes in Reach 12 experienced d/D's greater than the design criteria. AV1 load assumed loaded at most upstream end of reach as exact loading location unknown.





VVWRA Interceptor Reach 12 with Scalping

PWWF Hydraulic Profile



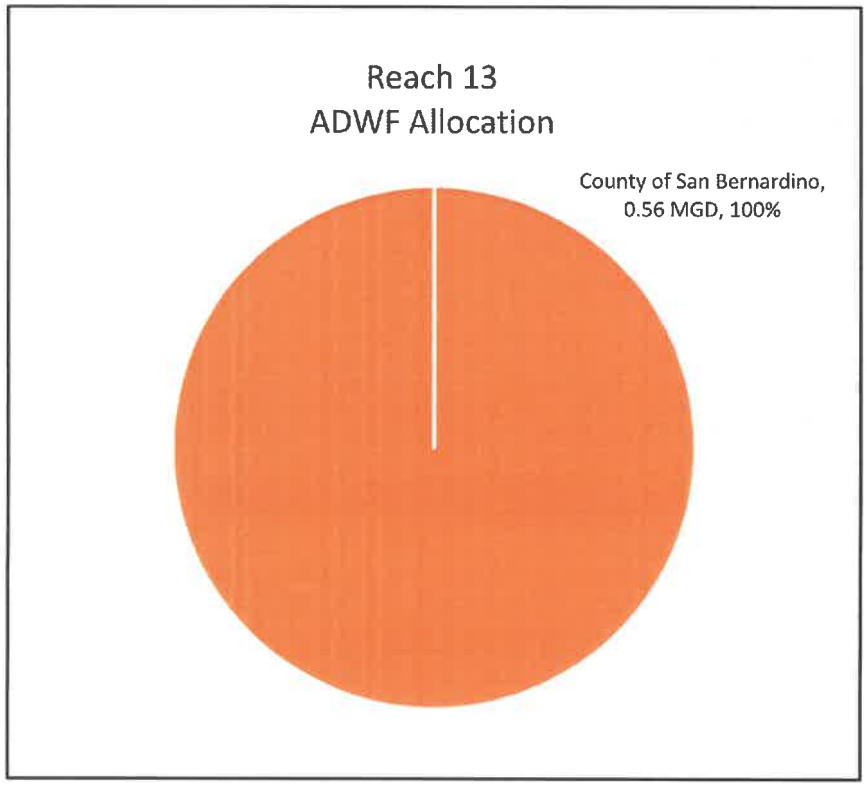
14-75

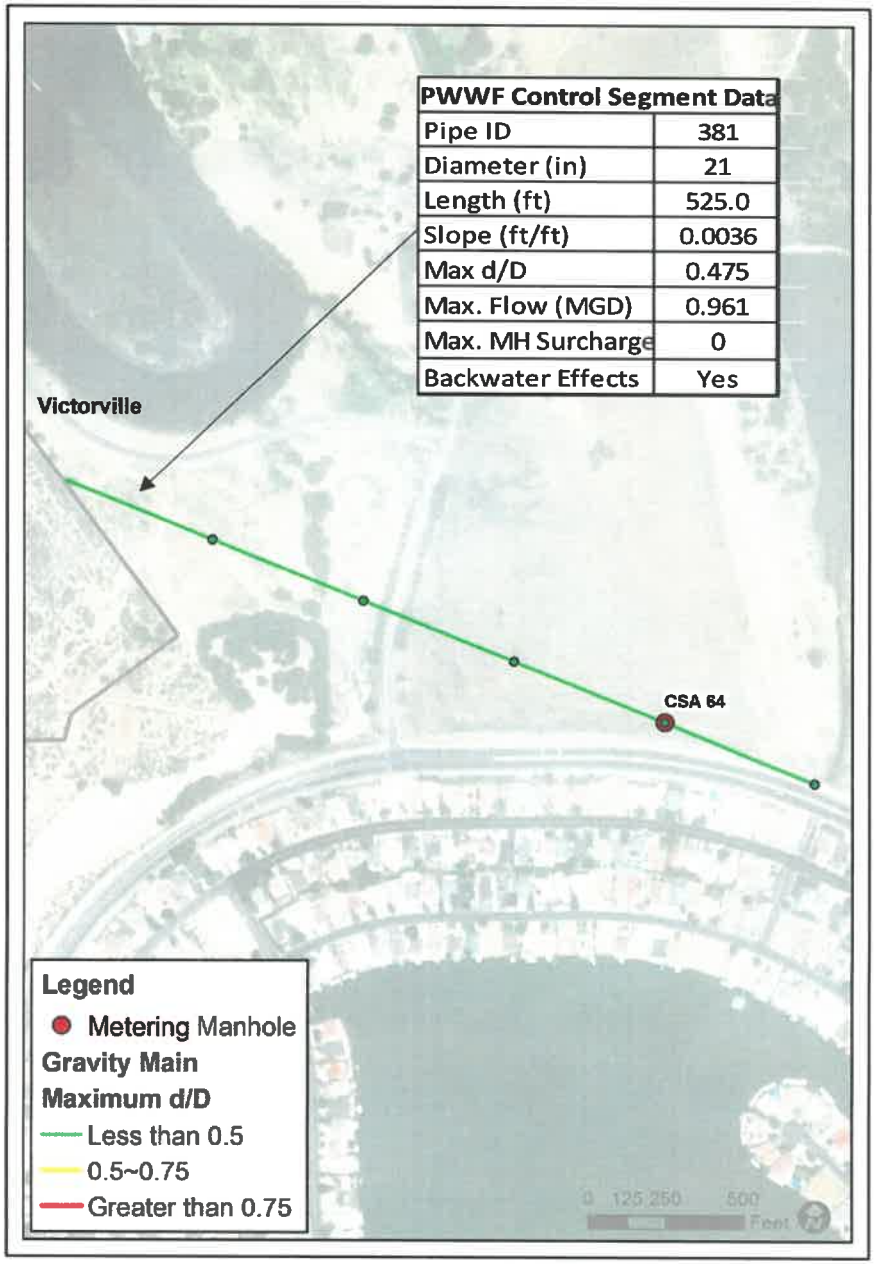
VVWRA Interceptor Reach 13

NOTE: Results for Reaches 10, 11, and 13 are not affected by scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	1.0
Average Dry Weather Flow (ADWF) (MGD):	0.6
Total Length (ft):	2,620.2
Slope Range (ft/ft):	0.0036 - 0.0046
Diameter Range (in):	21
Material(s):	VCP

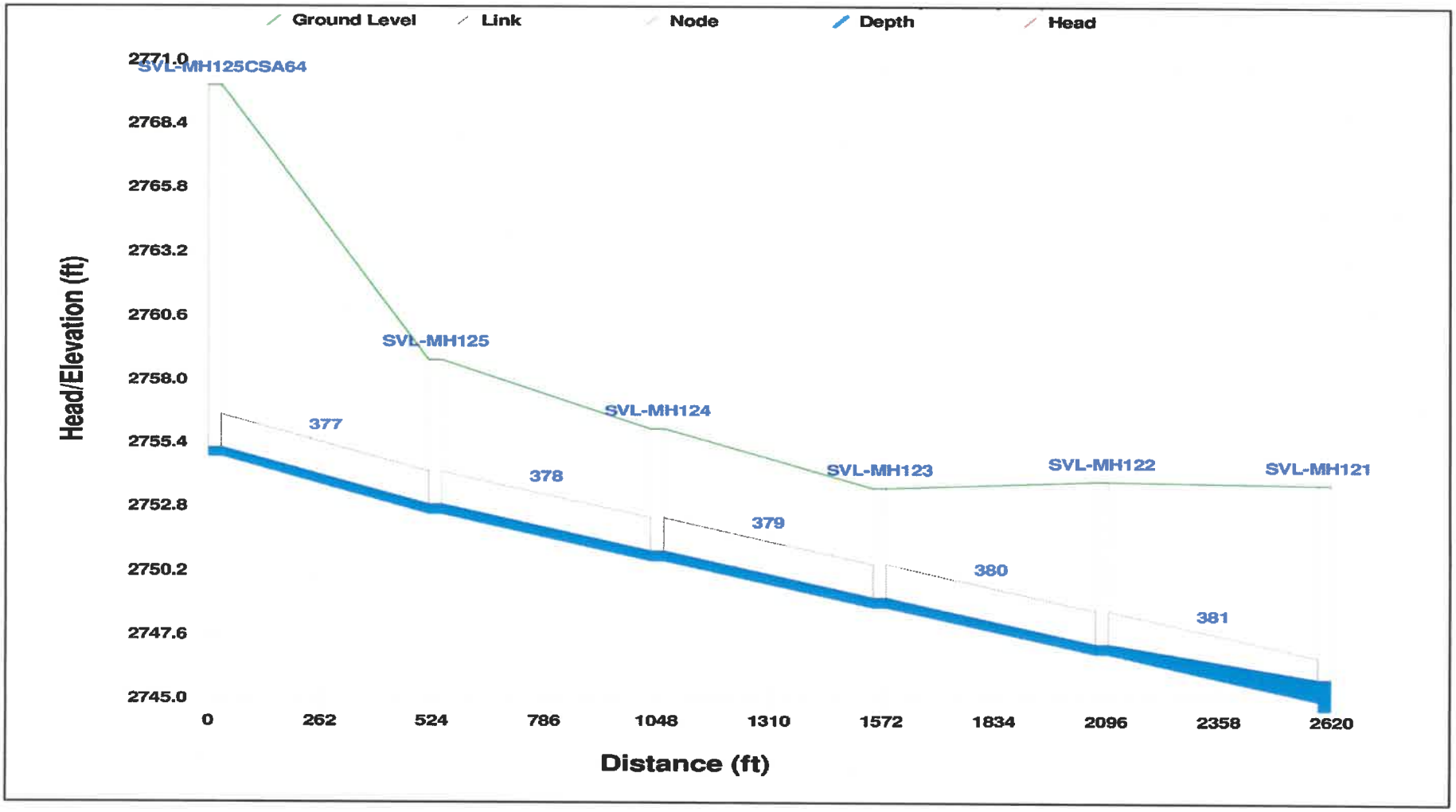
Notes: 0 of 5 pipes in Reach 13 experienced d/D's greater than the design criteria. The entire CSA64 load is applied at the most upstream manhole, as the exact loading locations are unknown.





VVWRA Interceptor Reach 13

PWWF Hydraulic Profile

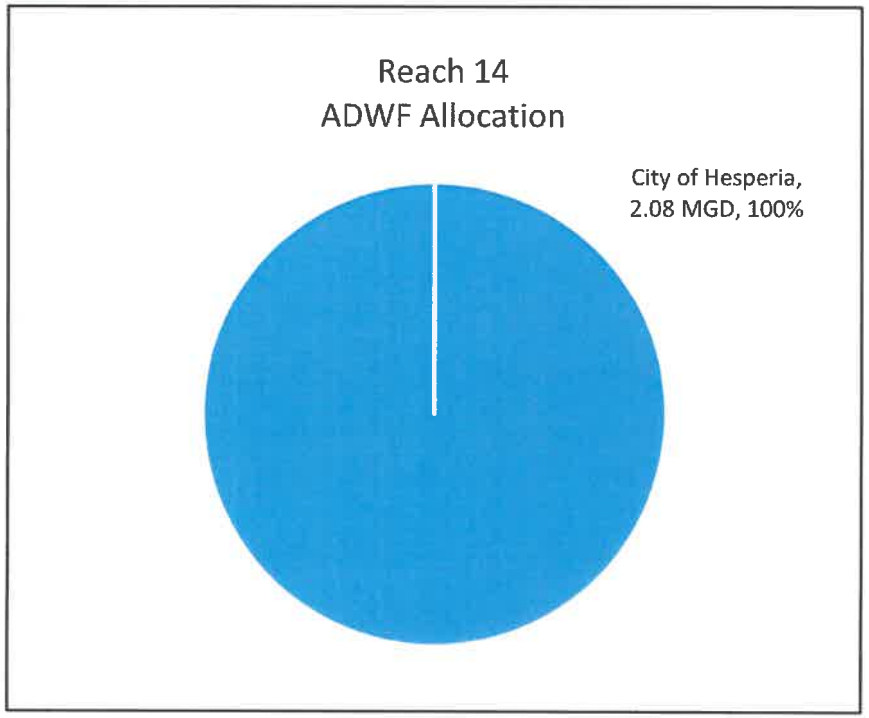


14-77

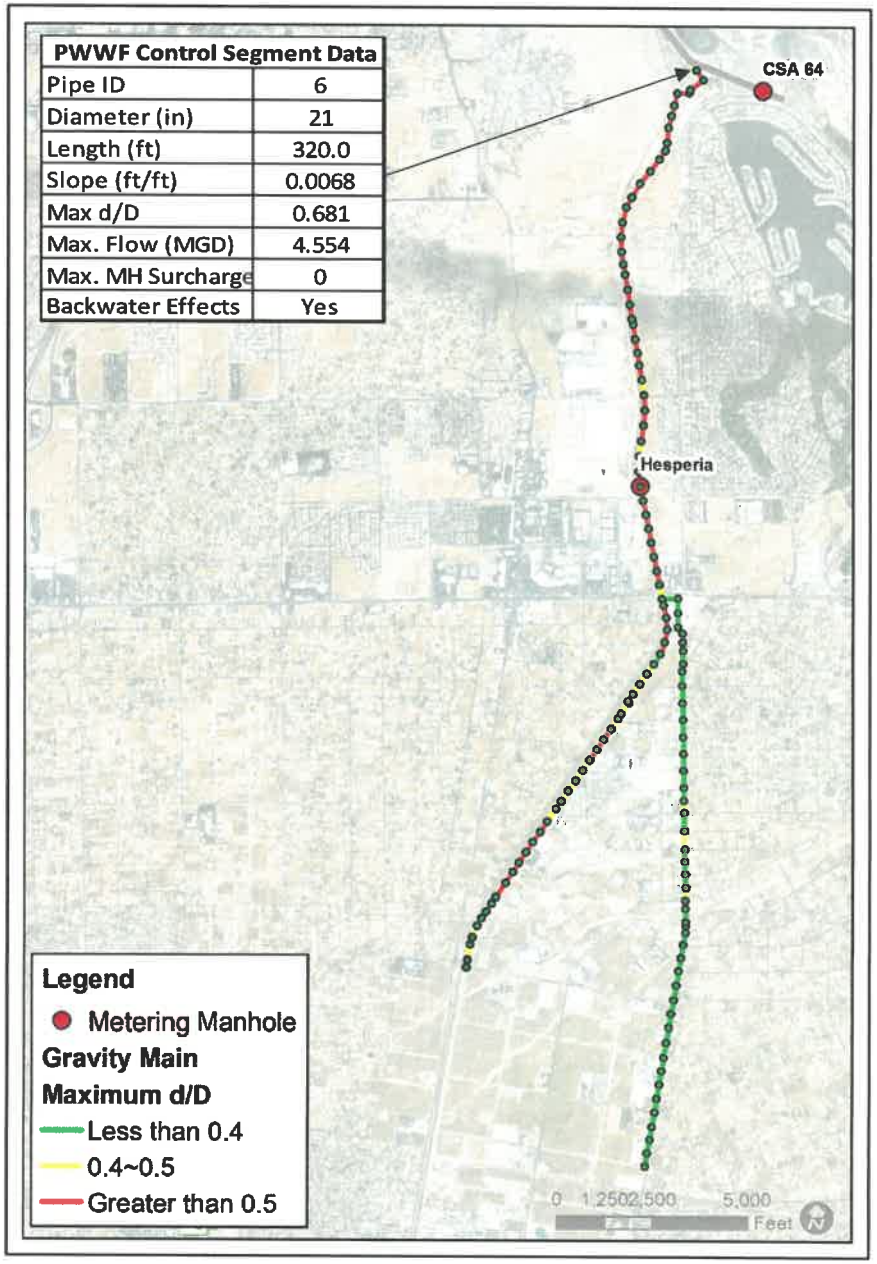
VVWRA Interceptor Reach 14

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	4.6
Average Dry Weather Flow (ADWF) (MGD):	2.1
Total Length (ft):	30,783.3
Slope Range (ft/ft):	0.0014 - 0.0848
Diameter Range (in):	10 - 24
Material(s):	PVC

Notes: 42 of 126 pipes in Reach 14 experienced d/D's greater than the design criteria due to inadequate pipe diameter and low slopes. Loads were allocated to the SAFARI Interceptor and Hesperia Interceptor based on flow monitoring data provided by the District. Loads were allocated to the SAFARI Interceptor and Hesperia Interceptor based on flow monitoring data provided by the District.

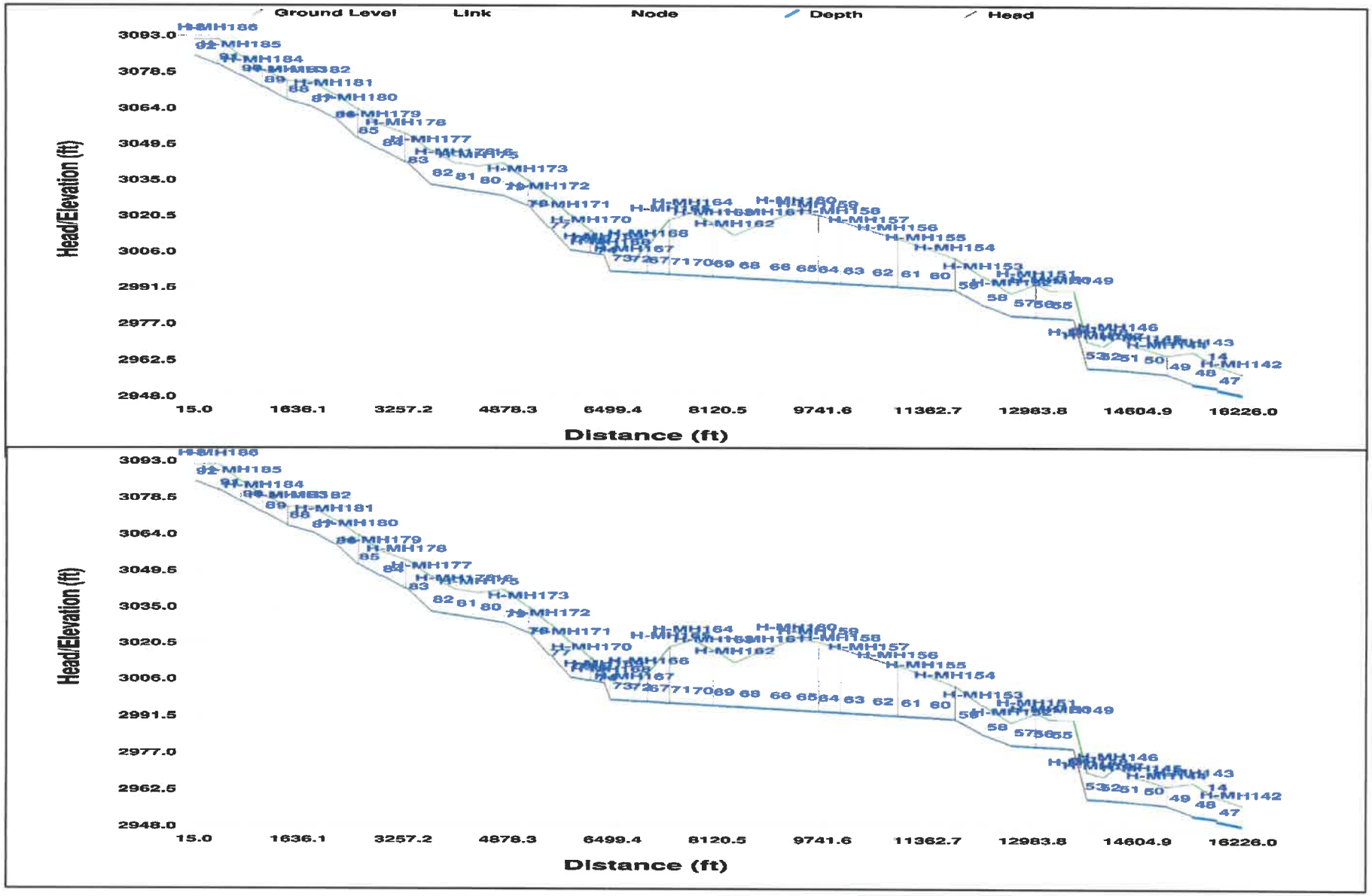


PWWF Control Segment Data	
Pipe ID	6
Diameter (in)	21
Length (ft)	320.0
Slope (ft/ft)	0.0068
Max d/D	0.681
Max. Flow (MGD)	4.554
Max. MH Surcharge	0
Backwater Effects	Yes



VVWRA Interceptor Reach 14

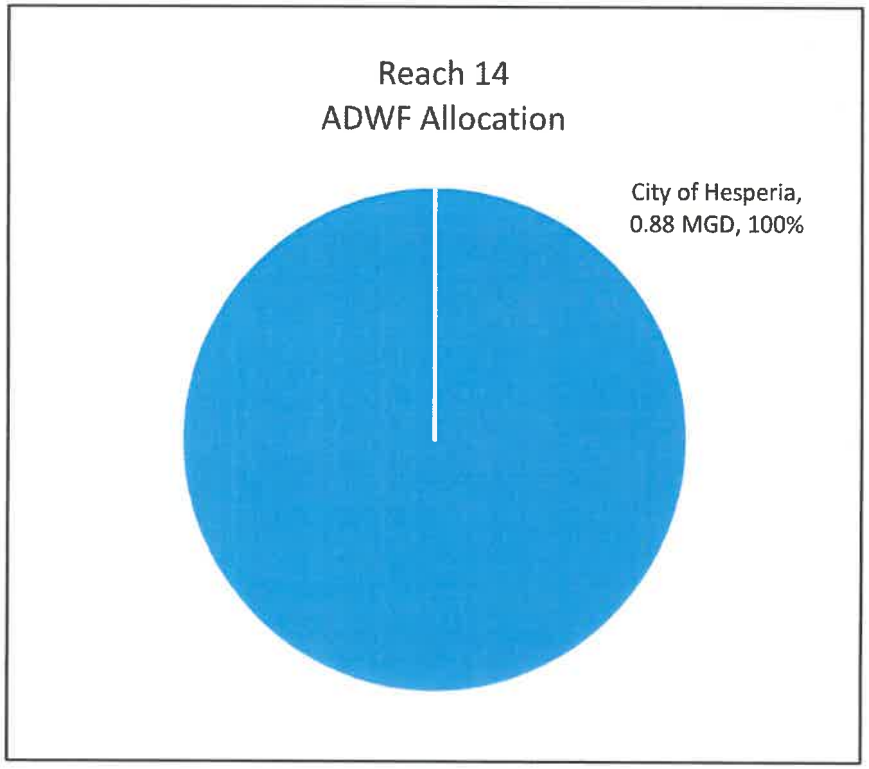
PWWF Hydraulic Profile

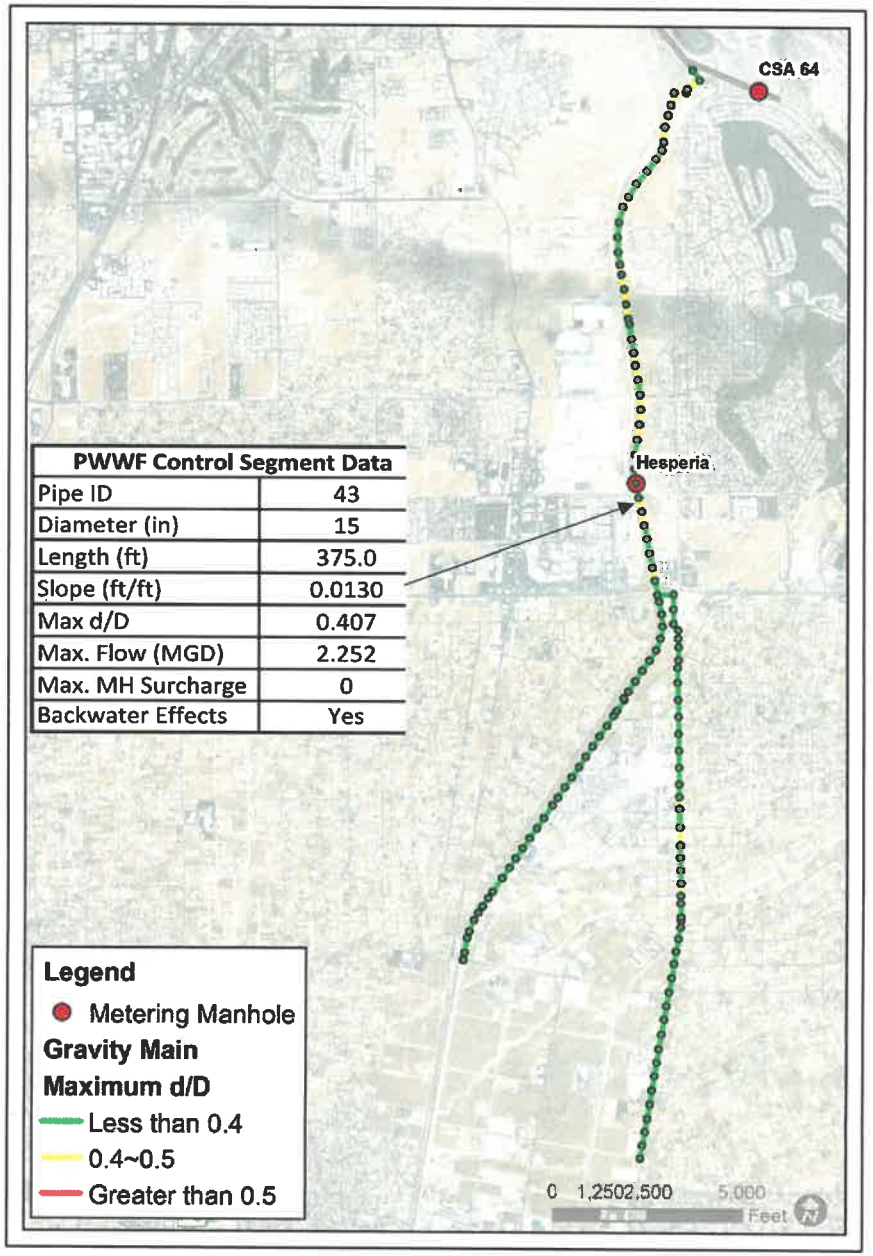


VVWRA Interceptor Reach 14 with Scalping

Reach Characteristics	
Peak Wet Weather Flow (PWWF) (MGD):	2.2
Average Dry Weather Flow (ADWF) (MGD):	0.9
Total Length (ft):	30,783.3
Slope Range (ft/ft):	0.0014 - 0.0848
Diameter Range (in):	10 - 24
Material(s):	PVC

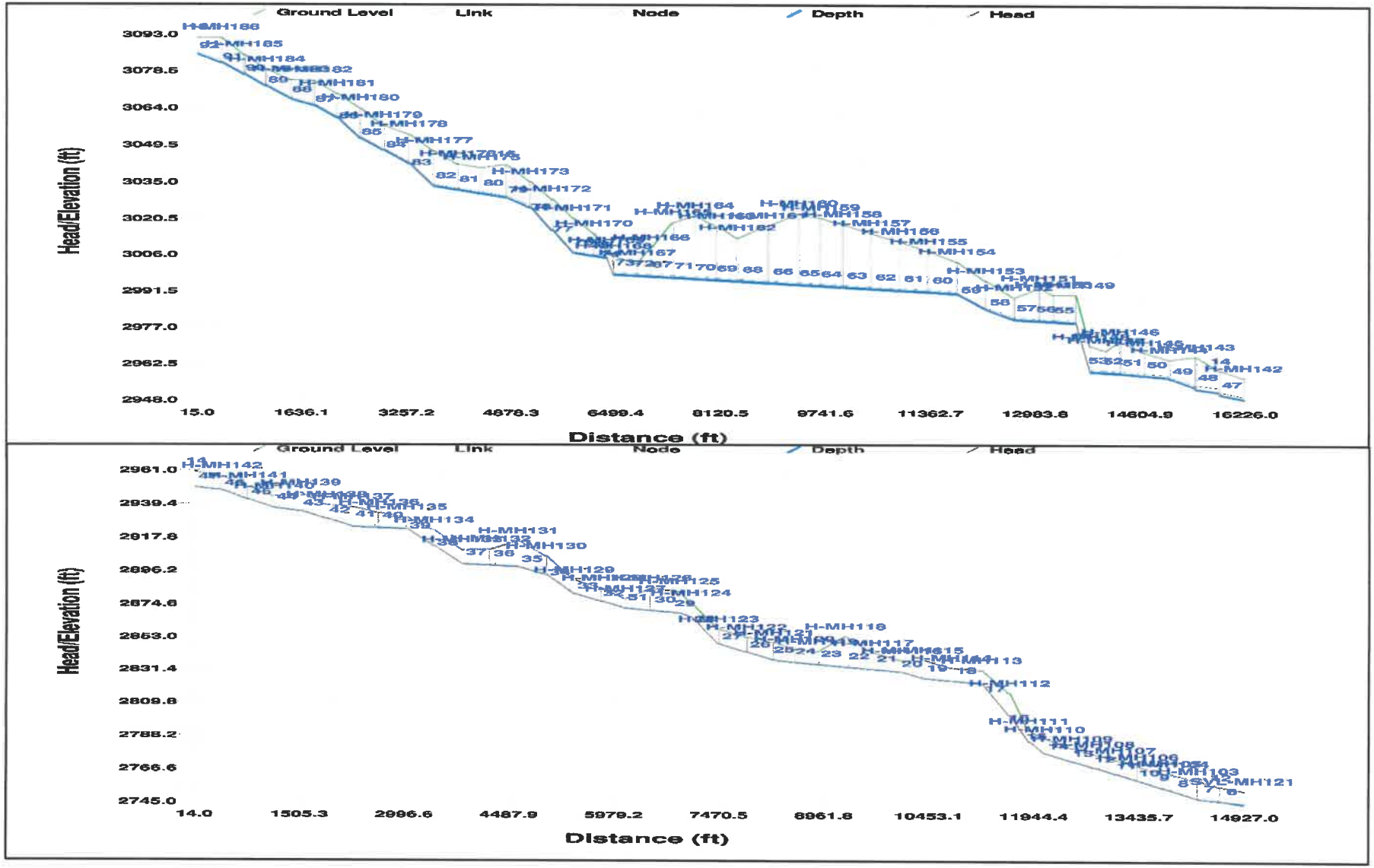
Notes: 0 of 126 pipes in Reach 14 experienced d/D's greater than the design criteria. Loads were allocated to the SAFARI Interceptor and Hesperia Interceptor based on flow monitoring data provided by the District.





VVWRA Interceptor Reach 14 with Scalping

PWWF Hydraulic Profile



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DUDEK

Appendix B

2018 Interceptor Capacity Analysis Approach Memorandum

605 THIRD STREET
ENCINITAS, CALIFORNIA 92024
T 760.942.5147 F 760.632.0164

MEMORANDUM

To:	Logan Olds, VVWRA
From:	Elizabeth Caliva, P.E. and Russ Bergholz, P.E.
Subject:	2018 Interceptor Capacity Analysis Approach
Date:	10/22/18
cc:	–
Attachment(s):	–

The following technical memorandum provides Victor Valley Water Reclamation Authority (VVWRA or Authority) with the following elements:

1. Brief summary of the October 2013 Upper Narrows Pipeline Replacement Hydraulics Background Information letter report prepared by Tetra Tech
2. Evaluation by Dudek of the above referenced letter report
3. Recommendations for evaluating the performance of pipelines associated with the 2018 Interceptor Capacity Study.

1 Design Criteria by Tetra Tech

In October 2013, Tetra Tech prepared a white paper for the Authority to provide general information regarding hydraulics and sewer pipeline design. Based on the title of the white paper, Dudek assumes the white paper was used for the selection of new pipelines associated with the Upper Narrows Pipeline Replacement project. Based on additional graphics provided to Dudek, this criteria also appears to be used to evaluate the Authority's interceptor system.

The 2013 Tetra Tech white paper provided a definition of several sewer flow conditions (average dry weather flow [ADWF], peak dry weather flow [PDWF], peak wet weather flow [PWWF]), several generalized equations for estimating flows, and listing of new pipeline design criteria for City of Anaheim, City of San Diego, LACSD and MNWD. A discussion of odor concerns related to surcharged pipelines and a recommendation to avoid consideration of the collection system as a means of storage for storm surge flows entering the treatment plant is included. Several references to avoiding the use of ADWF for sizing sewer pipelines is stated.

The recommendations for sewer pipeline from the report are stated below:

> *To confirm and comply with industry standard, it is recommended VVWRA observe the national standard of the following:*

- *A maximum* depth over diameter (d/D) ratio *of 0.5 for pipes less than or equal to 15 inches in diameter*
- *A maximum d/D of 0.75 for pipes greater than 15 inches in diameter*
- *Flows based on PWWF.*

2 Dudek Evaluation of White Paper

The following discussion draws attention to several specific observations and/or concerns with the 2013 Tetra Tech White Paper:

- Dudek concurs the recommended ***Pipeline Design Criteria*** be that pipelines 15" or less in diameter must convey PWWF flow at or below d/D of 0.5, and all other pipes convey PWWF flow at or below d/D of 0.75. The white paper documents research and survey results of other neighboring cities and agencies as to the maximum allowable d/D for sewer pipeline design. Dudek reflects our observation in working with these same agencies and numerous other sewer agencies that the above pipeline design criteria is most common among our clients. The application of this criteria, specifically based on projected ultimate peak weather flow has been regularly used for the design of new sewer pipelines, consisting of both extension of collection system infrastructure, or the replacement/upsizing of existing infrastructure to compensate for changes in projected future growth and sewer flows.
- The definitions of ADWF, PDWF and PWWF presented are appropriate in terms of the various flow conditions used in the sewer pipeline design process.
- Two equations for estimating PDWF are provided. The equation from the City of Los Angeles appears to be developed specifically for the City. The equation from the City of San Diego provides a more common approach to this estimation process by incorporating the upstream population into the equation. Generally, the larger the upstream drainage basin, the greater the dampening effect of time reduces the peak hour diurnal flows.
- Peak Wet Weather Flow (PWWF) is defined as PDWF x Wet Weather Peaking Factor (WWPF). The source or equation for WWPF was not provided beyond the coordination with hydraulic modeling engineers. The determination of this factor and its application towards the application of the Pipeline Design Criteria is very important as it is common for the WWPF to be greater than 2x PDWF.

3 2018 Interceptor Capacity Analysis

During the original design of the interceptor system, the design process likely considered the projected future flows of the service area and developed a design average dry weather flow (ADWF) and peak dry weather flow (PDWF). In addition to these values, an estimate of the inflow and infiltration (I&I) was likely included based on either observed flow monitoring data or prior experience with the collection system. The resultant determination of the pipeline design should have included both the pipeline diameter, slope, and estimated friction factor to calculate each pipeline segments capacity at various flow depths. Confirmation that the recommended pipeline design has the capacity to convey the projected sewer flow is standard practice.

Under typical long-term growth and development of the service area, sewer flows will generally increase in parallel with population towards the projected ultimate buildout of the service area. The original pipeline design process sought to project this future condition and resultant sewer flow. Over time, growth patterns, land uses, basin infrastructure, reliability of the collection system to minimize defect flow, and other factors can alter the ADWF, PDWF and PWWF values injected into the interceptor system. Therefore it is a requirement of collection systems, as part of the State mandated Sewer System Management Plan, to provide a capacity assurance plan that consistently evaluates existing and projected sewer flows with the existing infrastructure.

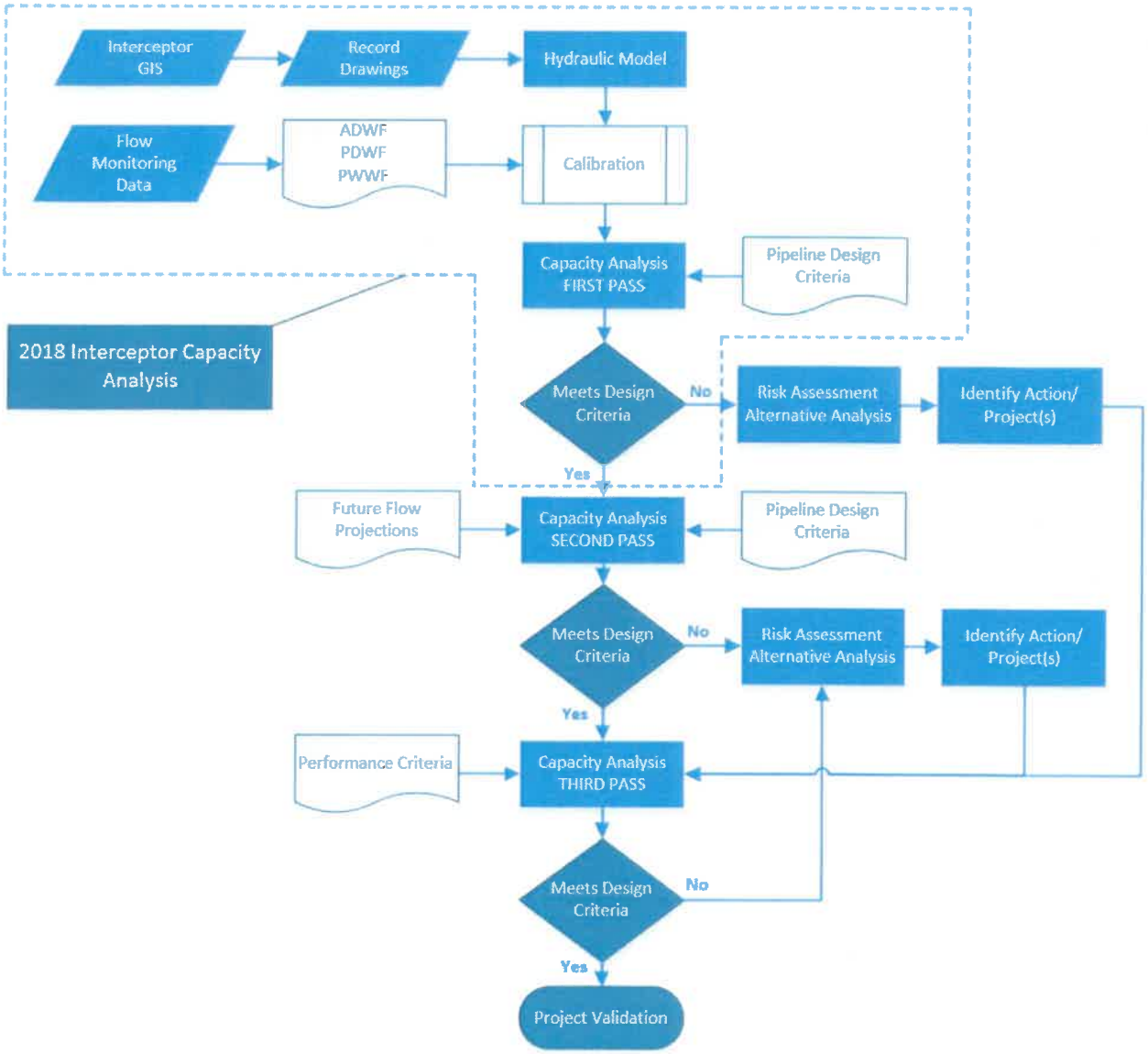
When conducting the capacity assurance analysis, ADWF, PDWF and PWWF values should be updated as necessary. These flow patterns are then input in to a computerized hydraulic model based on the physical infrastructure of the interceptor system to produce an extended period simulation of the collection system.

Once the simulated flow patterns are compared with field measurements, through the calibration process, the first evaluation of capacity performance is to apply the ***Pipeline Design Criteria*** to each reach of pipeline. As this first simulation is based on existing sewer flows and the upstream drainage basins are assumed to not have reached ultimate buildout, the interceptor system should NOT show any segments that exceed pipeline design capacity criteria. Use of evaluation criteria less stringent should only be applied as a secondary means of prioritizing high-risk areas in conjunction with any segments that show to be deficient using pipeline design criteria.

In the event that pipeline segments exceed the design criteria considerably sooner than the anticipated ultimate buildout of the service area, these segments warrant immediate attention as to the circumstances that resulted in the situation. Many factors can be applied during this risk assessment and alternative analysis process to identify the best course of action to mitigate the situation.

The following Figure 1 presents the general approach to completing the first pass of the capacity analysis of the interceptor system. As discussed above, the evaluation metric for meeting capacity will be by application of pipeline design criteria to demonstrate each segment does not exceed the maximum depth of diameter ratio (d/D). The following figure also provides the secondary and tertiary evaluation process used for validation of mitigation projects.

Figure 1: Approach to Capacity Analysis



Appendix C

Project Cost Estimates

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate Summary

Estimate by: J. Scheidel, I. Crano
Checked by: R. Bergholz

Date: 3/15/2019
Job No: 11417

VVWRA Interceptor Capacity Study Preliminary Estimate without Scalping Plant			Combined	Single Entity
Reach	**Description**	**Estimated Project Cost**		
3	1-Segment(s) 500 Linear Feet	$ 823,000	$ 823,000	
4	2-Segment(s) 4,800 Linear Feet	$ 7,959,000	$ 7,959,000	
5	1-Segment(s) 3,500 Linear Feet	$ 5,197,000	$ 5,197,000	
6	1-Segment(s) 3,900 Linear Feet	$ 6,292,000	$ 6,292,000	
7	1-Segment(s) 1,700 Linear Feet	$ 3,074,000	$ 3,074,000	
11	1-Segment(s) 400 Linear Feet	$ 284,000		$ 284,000
12	1-Segment(s) 400 Linear Feet	$ 457,000		$ 457,000
14	1-Segment(s) 14,000 Linear Feet	$ 16,526,000		$ 16,526,000
	Total Project Cost	$ 40,612,000	$ 23,345,000	$ 17,267,000

VVWRA Interceptor Capacity Study Preliminary Estimate with Scalping Plant			Combined	Single Entity
Reach (Project)	**Description**	**Estimated Project Cost**		
4 (R4A)	1-Segment(s) 1,000 Linear Feet	$ 1,677,000	$ 1,677,000	
4 (R4B)	1-Segment(s) 500 Linear Feet	$ 829,000	$ 829,000	
5 (R5)	1-Segment(s) 3,900 Linear Feet	$ 6,520,000	$ 6,520,000	
7 (R7)	1-Segment(s) 650 Linear Feet	$ 1,442,000	$ 1,442,000	
11 (R11)	1-Segment(s) 400 Linear Feet	$ 284,000		$ 284,000
	Total Project Cost	$ 10,752,000	$ 10,468,000	$ 284,000

Refer to following pages for detailed cost breakdowns.

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 3 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 500 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	42-inch PVC Gravity Sewer line	500	LF	$630	$315,000
2	5-foot Diameter Manholes	2	EA	$20,000	$40,000
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	10	Days	$5,000	$50,000
5	Trenchless Installation	0	LF	$500	$0

Total			**$**	**405,000**
Traffic Control		0%	$	-
Contractor General Conditions		10%	$	40,500
Mobilization/Demobilization		5%	$	20,250
Contingency		25%	$	101,250
Construction Total Cost			**$**	**567,000**
Construction Management		10%	$	56,700
Right of Way		5%	$	28,350
Design and Construction Assistance		15%	$	85,050
Environmental (CEQA)		5%	$	28,350
Environmental (Compliance)		10%	$	56,700
Total Planned Project Cost			**$**	**823,000**
Escalation at midpoint (3%/year @ 2 years)	$	49,380	$	872,380

Item Notes

1 May require trenchless installation
2 Single 500-foot section of sewer line
3 Replacing 36-inch sections with 42-inch pipeline
4 Shoring , excavation and backfill cost included in pipeline line item
5 Groundwater anticipated for all excavations due to location within the wash
6 Assumes production rate of 50 linear feet/day
7 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 4 - VVWRA Interceptor Capacity Study Preliminary Estimate				2-Segment(s) 4,800 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	36-inch PVC Gravity Sewer line	3,500	LF	$540	$1,890,000
2	48-inch PVC Gravity Sewer line	1,300	LF	$720	$936,000
3	5-foot Diameter Manholes	16	EA	$20,000	$314,286
4	Pavement Repair	0	LF	$30	$0
5	Dewatering Allowance	96	Days	$5,000	$480,000
6	Trenchless Installation	600	LF	$500	$300,000

Total		**$**	**3,920,286**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	392,029
Mobilization/Demobilization	5%	$	196,014
Contingency	25%	$	980,071
Construction Total Cost		**$**	**5,488,400**
Construction Management	10%	$	548,840
Right of Way	5%	$	274,420
Design and Construction Assistance	15%	$	823,260
Environmental (CEQA)	5%	$	274,420
Environmental (Compliance)	10%	$	548,840
Total Planned Project Cost		**$**	**7,959,000**
Escalation at midpoint (3%/year @ 2 years)	$ 477,540	$	8,436,540

Item Notes

1 Two separate sections combined into one (one 3,500-foot section and one 1,300 foot section)
2 Upsize one section of 27-inch pipe with 36-inch pipeline
3 Upsize one section of 36-inch pipeline with 48-inch pipeline
4 Shoring , excavation and backfill cost included in pipeline line item
5 Groundwater anticipated for all excavations due to location adjacent to river
6 May require railroad crossing
7 Assumes production rate of 50 linear feet/day
8 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 5 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 3,500 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	36-inch PVC Gravity Sewer line	3,500	LF	$540	$1,890,000
2	5-foot Diameter Manholes	11	EA	$20,000	$220,000
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	70	Days	$5,000	$350,000
5	Trenchless Installation	200	LF	$500	$100,000

Total		**$**	**2,560,000**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	256,000
Mobilization/Demobilization	5%	$	128,000
Contingency	25%	$	640,000
Construction Total Cost		**$**	**3,584,000**
Construction Management	10%	$	358,400
Right of Way	5%	$	179,200
Design and Construction Assistance	15%	$	537,600
Environmental (CEQA)	5%	$	179,200
Environmental (Compliance)	10%	$	358,400
Total Planned Project Cost		**$**	**5,197,000**
Escalation at midpoint (3%/year @ 2 years)	$ 311,820	$	5,508,820

Item Notes

1 A single section of pipeline
2 Replacing 27-inch sections with 36-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Requires trenchless railroad crossing
6 Assumes production rate of 50 linear feet/day
7 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 6 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 3,900 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	36-inch PVC Gravity Sewer line	3,900	LF	$540	$2,106,000
2	5-foot Diameter Manholes	12	EA	$20,000	$242,857
3	Pavement Repair	350	LF	$30	$10,500
4	Dewatering Allowance	78	Days	$5,000	$390,000
5	Trenchless Installation	700	LF	$500	$350,000

Total			**$**	**3,099,357**
Traffic Control		0%	$	-
Contractor General Conditions		10%	$	309,936
Mobilization/Demobilization		5%	$	154,968
Contingency		25%	$	774,839
Construction Total Cost			**$**	**4,339,100**
Construction Management		10%	$	433,910
Right of Way		5%	$	216,955
Design and Construction Assistance		15%	$	650,865
Environmental (CEQA)		5%	$	216,955
Environmental (Compliance)		10%	$	433,910
Total Planned Project Cost			**$**	**6,292,000**
Escalation at midpoint (3%/year @ 2 years)	$ 377,520		$	6,669,520

Item Notes

1 A single section of pipeline
2 Replacing 27-inch sections with 36-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Requires trenchless freeway crossing
6 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 7 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 1,700 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	48-inch PVC Gravity Sewer line	1,700	LF	$720	$1,224,000
2	5-foot Diameter Manholes	6	EA	$20,000	$117,143
3	Pavement Repair	100	LF	$30	$3,000
4	Dewatering Allowance	34	Days	$5,000	$170,000
5	Trenchless Installation	0	LF	$500	$0

Total		**$**	**1,514,143**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	151,414
Mobilization/Demobilization	5%	$	75,707
Contingency	25%	$	378,536
Construction Total Cost		**$**	**2,119,800**
Construction Management	10%	$	211,980
Right of Way	5%	$	105,990
Design and Construction Assistance	15%	$	317,970
Environmental (CEQA)	5%	$	105,990
Environmental (Compliance)	10%	$	211,980
Total Planned Project Cost		**$**	**3,074,000**
Escalation at midpoint (3%/year @ 2 years)	$ 184,440	$	3,258,440

Item Notes

1 A single section of pipeline
2 Replacing 27-inch sections with 48-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project 11 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 400 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	12-inch PVC Gravity Sewer line	400	LF	$180	$72,000
2	5-foot Diameter Manholes	2	EA	$20,000	$42,857.14
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	5	Days	$5,000	$25,000
5	Trenchless Installation	0	LF	$500	$0

Total		**$**	**140,000**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	14,000
Mobilization/Demobilization	5%	$	7,000
Contingency	35%	$	49,000
Construction Total Cost		**$**	**210,000**
Construction Management	10%	$	21,000
Right of Way	5%	$	10,500
Design and Construction Assistance	10%	$	21,000
Environmental (CEQA)	10%	$	21,000
Design Cost		**$**	**74,000**
Total Planned Project Cost		**$**	**284,000**
Escalation at midpoint (3%/year @ 2 years)	$ 18,000	$	302,000

Item Notes

1 A single section of pipeline
2 Replacing 8-inch sections with 12-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 12 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 400 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	20-inch PVC Gravity Sewer line	400	LF	$300	$120,000
2	5-foot Diameter Manholes	2	EA	$20,000	$42,857
3	Pavement Repair	400	LF	$30	$12,000
4	Dewatering Allowance	10	Days	$5,000	$50,000

Total		**$**	**224,857**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	22,486
Mobilization/Demobilization	5%	$	11,243
Contingency	25%	$	56,214
Construction Total Cost		**$**	**314,800**
Construction Management	10%	$	31,480
Right of Way	5%	$	15,740
Design and Construction Assistance	15%	$	47,220
Environmental (CEQA)	5%	$	15,740
Environmental (Compliance)	10%	$	31,480
Total Planned Project Cost		**$**	**457,000**
Escalation at midpoint (3%/year @ 2 years)	$ 27,420	$	484,420

Item Notes

1 A single section of pipeline
2 Replacing 16-inch sections with 20-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Reach 14 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 14,000 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	24-inch PVC Gravity Sewer line	14,000	LF	$360	$5,040,000
2	5-foot Diameter Manholes	41	EA	$20,000	$820,000
3	Pavement Repair	17,200	LF	$30	$516,000
4	Dewatering Allowance	280	Days	$5,000	$1,400,000
5	Trenchless Installation	500	LF	$500	$250,000

Total		**$**	**8,026,000**
Traffic Control	2%	$	160,520.00
Contractor General Conditions	10%	$	802,600
Mobilization/Demobilization	5%	$	401,300
Contingency	25%	$	2,006,500
Construction Total Cost		**$**	**11,396,920**
Construction Management	10%	$	1,139,692
Right of Way	5%	$	569,846
Design and Construction Assistance	15%	$	1,709,538
Environmental (CEQA)	5%	$	569,846
Environmental (Compliance)	10%	$	1,139,692
Total Planned Project Cost		**$**	**16,526,000**
Escalation at midpoint (3%/year @ 2 years)	$ 991,560	$	17,517,560

Item Notes

1 A single section of pipeline
2 Replacing 10-inch sections with 24-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project R4A - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 1,000 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	42-inch PVC Gravity Sewer line	1,000	LF	$630	$630,000
2	5-foot Diameter Manholes	5	EA	$20,000	$97,143
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	20	Days	$5,000	$100,000
5	Trenchless Installation	0	LF	$500	$0

		Total	**$**	**828,000**
	Traffic Control	0%	$	-
	Contractor General Conditions	10%	$	82,800
	Mobilization/Demobilization	5%	$	41,400
	Contingency	35%	$	289,800
284000	**Construction Total Cost**		**$**	**1,242,000**
	Construction Management	10%	$	124,200
	Right of Way	5%	$	62,100
	Design and Construction Assistance	10%	$	124,200
	Environmental (CEQA)	10%	$	124,200
	Design Cost		**$**	**435,000**
	Total Planned Project Cost		**$**	**1,677,000**
	Escalation at midpoint (3%/year @ 2 years)	$ 101,000	$	1,778,000

Item Notes

1 Replacing 36-inch sections with 42-inch pipeline
2 Shoring , excavation and backfill cost included in pipeline line item
3 Groundwater anticipated for all excavations due to location adjacent to river
4 Assumes production rate of 50 linear feet/day
5 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project R4B - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 500 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	36-inch PVC Gravity Sewer line	500	LF	$540	$270,000
2	5-foot Diameter Manholes	3	EA	$20,000	$68,571
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	14	Days	$5,000	$70,000
5	Trenchless Installation	0	LF	$500	$0

Total		**$**	**409,000**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	40,900
Mobilization/Demobilization	5%	$	20,450
Contingency	35%	$	143,150
Construction Total Cost		**$**	**614,000**
Construction Management	10%	$	61,400
Right of Way	5%	$	30,700
Design and Construction Assistance	10%	$	61,400
Environmental (CEQA)	10%	$	61,400
Design Cost		**$**	**215,000**
Total Planned Project Cost		**$**	**829,000**
Escalation at midpoint (3%/year) $	75,000	$	904,000

Item Notes

1 Replacing 27-inch sections with 36-inch pipeline
2 Shoring , excavation and backfill cost included in pipeline line item
3 Groundwater anticipated for all excavations due to location adjacent to river
4 Assumes production rate of 50 linear feet/day
5 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project R5 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 3,900 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	36-inch PVC Gravity Sewer line	3,900	LF	$540	$2,106,000
2	5-foot Diameter Manholes	12	EA	$20,000	$242,857
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	78	Days	$5,000	$390,000
5	Trenchless Installation	400	LF	$1,200	$480,000

		Total	**$**	**3,219,000**
	Traffic Control	0%	$	-
	Contractor General Conditions	10%	$	321,900
	Mobilization/Demobilization	5%	$	160,950
	Contingency	35%	$	1,126,650
284000	**Construction Total Cost**		**$**	**4,829,000**
	Construction Management	10%	$	482,900
	Right of Way	5%	$	241,450
	Design and Construction Assistance	10%	$	482,900
	Environmental (CEQA)	10%	$	482,900
	Design Cost		**$**	**1,691,000**
	Total Planned Project Cost		**$**	**6,520,000**
Escalation at midpoint (3%/year @ 2 years)	$ 392,000		$	6,912,000

Item Notes

1 A single section of pipeline
2 Replacing 27-inch sections with 36-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Requires trenchless railroad crossing
6 Assumes production rate of 50 linear feet/day
7 All work performed in the dirt with no pavement repair required

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project R7 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 650 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	54-inch PVC Gravity Sewer line	650	LF	$810	$526,500
2	5-foot Diameter Manholes	3	EA	$20,000	$57,143
3	Pavement Repair	100	LF	$30	$3,000
4	Dewatering Allowance	25	Days	$5,000	$125,000
5	Trenchless Installation	0	LF	$500	$0

Total		**$**	**712,000**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	71,200
Mobilization/Demobilization	5%	$	35,600
Contingency	35%	$	249,200
Construction Total Cost		**$**	**1,068,000**
Construction Management	10%	$	106,800
Right of Way	5%	$	53,400
Design and Construction Assistance	10%	$	106,800
Environmental (CEQA)	10%	$	106,800
Design Cost		**$**	**374,000**
Total Planned Project Cost		**$**	**1,442,000**
Escalation at midpoint (3%/year @ 2 years)	$ 87,000	$	1,529,000

Item Notes

1 A single section of pipeline
2 Replacing 36-inch sections with 48-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Water Reclaimation Authority

Interceptor Capacity Analysis

Project Cost Estimate

Project R11 - VVWRA Interceptor Capacity Study Preliminary Estimate				1-Segment(s) 400 Linear Feet	
Item	Description	Quantity	Unit	Cost/Unit	Extended Cost
1	12-inch PVC Gravity Sewer line	400	LF	$180	$72,000
2	5-foot Diameter Manholes	2	EA	$20,000	$42,857.14
3	Pavement Repair	0	LF	$30	$0
4	Dewatering Allowance	5	Days	$5,000	$25,000
5	Trenchless Installation	0	LF	$500	$0

Total		**$**	**140,000**
Traffic Control	0%	$	-
Contractor General Conditions	10%	$	14,000
Mobilization/Demobilization	5%	$	7,000
Contingency	35%	$	49,000
Construction Total Cost		**$**	**210,000**
Construction Management	10%	$	21,000
Right of Way	5%	$	10,500
Design and Construction Assistance	10%	$	21,000
Environmental (CEQA)	10%	$	21,000
Design Cost		**$**	**74,000**
Total Planned Project Cost		**$**	**284,000**
Escalation at midpoint (3%/year @ 2 years)	$ 18,000	$	302,000

Item Notes

1 A single section of pipeline
2 Replacing 8-inch sections with 12-inch pipeline
3 Shoring , excavation and backfill cost included in pipeline line item
4 Groundwater anticipated for all excavations due to location adjacent to river
5 Assumes production rate of 50 linear feet/day

Victor Valley Wastewater Reclamation Authority

Financial and Cash Report

March 2019

Victor Valley Wastewater Reclamation Authority
CASH AND RESERVE SUMMARY
April 1, 2019

G/L Account	Description	Balance	
1000	DCB Checking Account	$ 1,127,600	
1030	DCB Sweep Account	2,427,385	
1075	Cal TRUST	6,227,367	
1070	LAIF	1,826,050	$65 mil Max
	Total Cash	$ 11,608,402	

Reserves:	Current Balance	Restricted	Assigned	Not Assigned
Targeted Capital Reserve	$ -	$	$	$ -
O&M Reserve: 10% of Prior Year Budgeted Operating Expenses	1,435,970		1,435,970	
R&R Reserve: 1% of Land Improvements/Plants/Interceptors PY CAFR	2,954,450		2,954,450	
Reserve for SRF Payments (P& I) - Operating	2,761,133	2,761,133		
Reserve for SRF Payments (P& I) - Capital	2,386,726	2,386,726		
Available for O&M	2,070,123	-		
Total Cash	$ 11,608,402	$ 5,147,859	$ 4,390,420	$ -

Note 1: ACCUMULATION FOR SRF LOAN PAYMENTS:

	9.5 MGD, 11.0 MGD, NAVI, Phase III-A	Upper Narrows Replacement	Nanticoke Bypass	Sub-Regional Apple Valley	Sub-Regional Hesperia	Total
Reserve for SRF Payments (P& I) - Operating	$ 782,104	257,745	203,725	625,220	892,339	$ 2,761,133
Reserve for SRF Payments (P& I) - Capital	1,348,576	-	67,908	399,731	570,512	2,386,726
	$ 2,130,680	257,745	271,633	1,024,951	1,462,850	$ 5,147,859

Payment Month:	
9.5 MGD	September
11.0 MGD	April
NAVI	February
Phase III-A	June
Upper Narrows Replacement	December
Nanticoke	June
Subregional - AV	February
Subregional - HES	February

Victor Valley Wastewater Reclamation Authority
Flow Study
For the Month Ended February 28, 2019

Measured by ADS	Percentage of Total %	February Monthly MG
VSD 1 (less North Apple Valley)	5.8515%	18.6720
VSD 2	13.8005%	44.0370
VSD 3	25.5100%	81.4014
VSD 4	7.1483%	22.8100
VSD 5	0.4901%	1.5640
VSD 6	6.4028%	20.4310
VSD Total	**59.2032%**	**188.9154**
Apple Valley 01	10.8265%	34.5470
Apple Valley 02	5.9383%	18.9490
Apple Valley North	0.1620%	0.5170
Apple Total	**16.9268%**	**54.0130**
Hesperia	**18.1625%**	**57.9560**
CSA 64 SVL	5.1104%	16.3070
CSA 42 Oro Grande	0.5970%	1.9050
CSA Total	**5.7074%**	**18.2120**
Total Apportioned Flow	**100.0000%**	**319.0964**

Mojave Narrows Regional Park	0.1000
Total Study Flow	**319.1964**

Victor Valley Wastewater Reclamation Authority
Statement of Net Position
March 31, 2019

Assets and Deferred Outflows of Resources		2019
Current assets:		
Cash and cash equivalents	$	11,895,485
Interest receivable		14,401
Accounts receivable		2,671,653
Receivable from FEMA Grants		3,679,746
Accounts receivable - Other		17,659
Allowance for Doubtful Accounts		(89,459)
Materials and supplies inventory		83,104
Prepaid expenses and other deposits		224,320
Total current assets		18,496,909
Fixed assets:		
Capital assets not being depreciated		3,160,415
Capital assets being depreciated		191,822,434
Total capital assets		194,982,849
Total assets		213,479,758
Deferred outflows of resources		
Deferred outflows of resources - pension		1,742,472
Total	$	**215,222,230**

Liabilities, Deferred Inflows of Resources, and Net Position		
Current liabilities:		
Accounts payable and accrued expenses	$	139,059
Accrued interest on long-term debt		275,043
Long-term liabilities - due within one year:		
Compensated absences		48,647
Loans payables		1,849,149
Other payables		6,852
Total current liabilities		2,318,750
Non-current liabilities:		
Long-term liabilities - due in more than one year:		
Compensated absences		239,372
Other post employment benefits payable		2,285,368
Loans payable		83,369,792
Net Pension Liability		5,750,574
Other payables		349,465
Total non-current liabilities:		91,994,571
Total liabilities		94,313,321
Deferred inflows of resources		
Deferred inflows of resources - pension		89,437
Net position:		
Net investment in capital assets		122,731,832
Restricted for SRF loan covenant		5,285,091
Unrestricted		(528,516)
Decrease in net position FY 19		(6,668,935)
Total net position		120,819,472
Total	$	**215,222,230**

Victor Valley Wastewater Reclamation Authority
Revenues and Expenses
Operations and Maintenance
For the Month Ended March 31, 2019

	Actual March 2019	YTD Actual FY 18-19	Approved Budget FY 18-19
REVENUES			
User Charges	$ 1,068,755	$ 10,102,035	$ 13,661,700
Sludge Flow Charge	-	68,316	120,000
High Strength Waste Surcharges	-	17,380	20,000
ADM FOG Tipping Fee Revenue	20,868	204,110	200,000
Septage Receiving Facility Charges	53,599	454,420	550,000
Reclaimed Water Sales	-	4,835	25,000
Potable Well Water Sales	-	414	-
Leased Property Income	-	400	-
Interest	116	1,066	-
Pretreatment Fees	4,900	42,300	50,000
Finance Charge	-	-	-
Grant - FEMA/Cal-EMA	-	-	-
Grant - Proposition 1	-	-	-
Grant- Water Recycling	-	-	-
Grant- CEC Microgrid	-	-	-
Sale of Assets, Scrap, & Misc Income	871	1,705	1,200
Total REVENUES	$ 1,149,109	$ 10,896,981	$ 14,627,900
EXPENSES			
Personnel	$ 322,869	$ 3,373,050	$ 4,080,784
Maintenance	52,381	1,029,770	2,194,767
Operations	152,286	1,974,131	3,151,072
Administrative	37,486	1,383,620	2,183,749
Construction	-	97,118	-
Total EXPENSES	$ 565,022	$ 7,857,689	$ 11,610,372
Revenues over Expenses before Depreciation, Debt Service and Transfers	$ **584,087**	$ **3,039,292**	$ **3,017,528**
Depreciation Expense	(1,035,435)	(9,338,816)	-
FEMA CalOES Retention	$ -	$ -	$ 747,034
DEBT SERVICE			
SRF Principal	$ -	$ -	$ 2,094,805
SRF Interest	-	447,196	762,842
	$ -	$ 447,196	$ 2,857,647
FUND TRANSFERS IN			
Salary/Benefits Charge from Capital	$ 7,646	$ 79,083	$ -
Admin Charge from Capital	2,905	30,051	-
Total FUND TRANSFERS IN	$ 10,551	$ 109,134	$ -
FUND TRANSFERS OUT			
Transfer to Repairs and Replacements Fund	$ -	$ -	$ 2,749,326
Inter-fund loan payment to Capital	-	-	-
Total FUND TRANSFERS OUT	$ -	$ -	$ 2,749,326
Excess Revenues Over Expenses	$ (440,797)	$ (6,637,586)	$ (1,842,411)

Accrual Basis

Victor Valley Wastewater Reclamation Authority
Revenues and Expenditures
Repairs and Replacement
For the Month Ended March 31, 2019

	Actual March 2019	YTD Actual FY 18-19	Approved Budget FY 18-19
REVENUES			
R&R Revenues	$ -	$ -	$ -
Total REVENUES	$ -	$ -	$ -
OTHER FINANCING SOURCES			
SRF Loan Funding	$ -	$ -	$ -
CAPITAL EXPENSES			
Personnel	$ -	$ -	$ -
Maintenance	3,690	338,088	1,204,326
Operations	-	-	25,000
Administrative	820	65,708	150,000
Construction	-	894,609	1,370,000
Total CAPITAL EXPENSES	$ 4,510	$ 1,298,406	$ 2,749,326
Revenues over Expenses before Debt Service and Transfers	$ (4,510)	$ (1,298,406)	$ (2,749,326)
FUND TRANSFERS IN			
Transfer from Operations and Maintenance Fund	$ -	$ -	$ 2,749,326
Interfund Loan Payment from O&M	-	-	-
Total FUND TRANSFERS IN	$ -	$ -	$ 2,749,326
FUND TRANSFERS OUT			
Salary/Benefits Charge to O & M	$ -	$ -	$ -
Admin Charge to O & M	-	-	-
Total FUND TRANSFERS OUT	$ -	$ -	$ -
Excess Revenues Over Expenses	$ (4,510)	$ (1,298,406)	$ -

Accrual Basis

Victor Valley Wastewater Reclamation Authority
Revenues and Expenditures
CAPITAL
For the Month Ended March 31, 2019

	Actual March 2019	YTD Actual FY 18-19	Approved Budget FY 18-19
REVENUES			
Connection Fees	$ 161,200	$ 1,516,793	$ 2,000,000
Title 16 Grant - Subregional	-	-	-
Grant- Water Recycling	-	-	-
Sale of Assets, Scrap, & Misc Income	-	-	-
Interest	16,103	147,296	35,000
Propostion 1 Grant	-	-	-
Propostition 84 Grant	-	-	-
FMV Adjustment	18,518	39,884	-
CEC Microgrid Grant	-	20,828	
Grant - FEMA/Cal-EMA	-	-	3,105,375
Total REVENUES	$ 195,821	$ 1,724,801	$ 5,140,375
CAPITAL EXPENSES			
Personnel	$ -	$ -	$ 378,554
Maintenance	-	-	-
Operations	-	-	170
Administrative	-	(2,054)	-
Construction	-	55,600	430,000
Total CAPITAL EXPENSES	$ -	$ 53,546	$ 808,724
Revenues over Expenses before Debt Service and Transfers	$ 195,821	$ 1,671,255	$ 4,331,651
DEBT SERVICE			
SRF Principal	$ -	$ -	$ 2,002,675
SRF Interest	-	295,063	437,219
	$ -	$ 295,063	$ 2,439,894
FUND TRANSFERS IN			
Capital Recovery - Septage from O&M	$ -	$ -	$ -
Interfund Loan Payment from O&M	-	-	-
Total FUND TRANSFERS IN	$ -	-	$ -
FUND TRANSFERS OUT			
Salary/Benefits Charge to O & M	$ 7,646	$ 79,083	$ -
Admin Charge to O & M	2,905	30,051	-
Total FUND TRANSFERS OUT	$ 10,551	109,134	$ -
Excess Revenues Over Expenses	$ 185,270	$ 1,267,058	$ 1,891,757

Accrual Basis

VICTOR VALLEY WASTEWATER RECLAMATION AUTHORITY

SRF LOAN SUMMARY

March 31, 2019

	Existing 9.5 MGD Capital Improvements	Existing 11 MGD Expansion	Existing North Apple Valley Interceptor	Existing Phase IIIA Regulatory Upgrades	Existing UN Replacement Project	Existing Nanticoke Pump Station Bypass	Existing Apple Valley Sub-Regional	Existing Hesperia Sub-Regional	Total Agreed SRF Loans
SRF LOAN #	**4573**	**4574**	**4658**	**5376**	**7805**	**7833**	**4806**	**4807**	
Original Amount Financed	$ 4,069,859.00	$ 11,430,726.00	$ 4,084,688.00	$ 18,581,561.00	$ 4,286,380.00	$ 4,495,212.79	$ 26,455,228.84	$ 37,758,384.81	$ 111,162,040.44
SRF Interest Rate (fixed)	2.60%	* 0.00%	2.50%	2.70%	1.90%	1.90%	1.00%	1.00%	Varies
Local Match Amount	-	1,905,159.00	-	-	-	-	-	-	1,905,159.00
Principal Forgiveness	n/a	n/a	n/a	**3,000,000.00**	n/a	n/a	n/a	n/a	3,000,000.00
SRF Amount Borrowed	4,069,859.00	9,525,567.00	4,084,688.00	15,717,667.66	4,286,380.00	4,495,212.79	26,455,228.84	37,758,384.81	106,392,988.10
Annual Payment Amount	265,049.56	579,869.96	258,151.05	1,027,609.73	257,745.38	271,632.70	1,024,950.85	1,462,850.30	5,147,859.53
Annual Payment Due Date	September 15	April 3	February 13	June 30	December 31	June 30	February 28	February 28	Varies
Loan Term (years)	20	20	20	20	20	20	30	30	Varies
Years remaining	1	3	6	14	15	19	30	30	Varies
DEBT SERVICE									
Loan Outstanding Balance	**258,332.81**	**1,679,292.56**	**1,421,928.33**	**11,848,942.94**	**2,990,766.22**	**4,298,323.84**	**25,691,197.89**	**36,667,491.56**	**84,856,276.15**
Principal Paid to Date	3,811,526.19	7,846,274.44	2,662,759.67	3,868,724.72	1,295,613.78	196,888.95	764,030.95	1,090,893.25	21,536,711.95
Interest Paid to Date	1,167,477.10	1,844,841.67	951,357.03	2,239,158.53	171,431.28	74,743.75	260,919.90	371,957.05	7,081,886.31
First Payment Date	Sept. 15, 2000	April 3, 2003	Feb. 13, 2005	June 30, 2013	Dec. 31, 2016	Jun 30, 2018	February 28 2019	February 28 2019	Varies
Final Payment Date	Sept. 15, 2019	April 3, 2022	Feb. 13, 2024	June 30, 2032	Dec. 31, 2032	Jun. 30, 2037	February 28, 2048	February 28, 2048	Varies
Effective interest rate	2.544%	1.850%	2.499%	2.700%	1.900%	1.900%	1.00%	1.00%	Varies

* An imputed interest rate is 1.707% per annum.

Victor Valley Wastewater Reclamation Authority

Operations and Maintenance Report

March 2019

Victor Valley Wastewater Reclamation Authority
Operations and Maintenance Report
March 2019

TO: Logan Olds, General Manager

FROM: Operations & Maintenance Staff

SUBJECT: OPERATIONS/MAINTENANCE REPORT

DATE: April 04, 2019

The following information details the operation of the Victor Valley Wastewater Reclamation Authority Facility. Included in this report is pertinent information regarding flows, process control information, process sampling, permit requirements, operations activities, and facility maintenance activities. This report is based on O&M activities for March 2019.

	Total	Average
Effluent to Mojave	122.89	3.96
Effluent to Ponds	208.7446	6.7337

		Limit
Biochemical Oxygen Demand (BOD)		10 mg/l
Effluent to Mojave	<6.18	
Percent Removal	>96.819	

		Limit
Total Suspended Solids (TSS)		10 mg/l
Effluent to Mojave	<2.4	
Percent Removal	>99.401	

		Limit
Turbidity		2.0 ntu
30 Day Average	0.75	

Major Operations Activities

Headworks

The Headworks area operated as intended throughout the months with normal equipment maintenance performed on a weekly basis.

Primary Treatment

Overall removal efficiency of the primary clarifiers was 49.85% removal of influent BOD and 70.97% removal of TSS. Typical operating parameters are 25 to 35 percent removal of BOD and 50 to 60 percent removal of TSS. The primary sludge concentration averaged 2.93% total solids at 74,447 gallons per day.

Primary clarifiers: #1,#2 ,#3, #5, #6 are currently online and continue to treat all incoming flow. Primaries #4 remained offline for the month. With one clarifier off line, the remaining 7 primary clarifiers are capable of treating peak flows up to 20 MGD.

The digester gas conditioning system remains online. The system will prevent premature wear and tear on engines #2 & #3 by removing siloxanes by the addition of ferric chloride. The system increases fuel pressure to the blower gas system, allowing for more output from the blower engine. Digester #4 and 5 gas is mixed and sent to the gas conditioning system. This all but eliminates the use of Natural gas to run engines #2 and #3.

Staff continues to add ADM/ Grease to Daft #3 from Primaries and truck deliveries where it is the then feed it to Digesters #4 and #5. This operation is assisting in additional grease removal from the primary clarifiers and increased gas production in the anaerobic digesters.

Secondary Process

Secondary Clarifiers #1 thru #6 are currently offline, not needed at this time.

Aeration basins #1 thru 12 have been retrofitted with the new Aquarius diffusers and are currently performing very well reducing the RPM's on the Piller blower. Currently basins #1-6 and 7-12 are online.

Piller #1 is supplying air to basins #1-6, mixed liquor channel and aerated grit chamber. Piller #6 is supplying air to AB's #7-12.

Staff continues to monitor the solids under aeration and SVI to compare against the SRT Master Control Program. The SRT Master program is performing well. The secondary process has been performing well as a result of the SRT Master Control Program. Weekly Nitrogen studies performed by VVWRA staff produced results below regulatory requirements.

Thioguard was not used during the month.

Secondary turbidity averaged 2.95 (NTU) during the month of March 2019
The 30 minute settleometer test averaged 191.6mL/L.
The average "pop time" of the MLSS was >83min.

Percolation Ponds

South percolation ponds #7, #8, #10, #11, #12 and #13 were used and rotated during the month.

All Percolation Pond freeboard level requirements have been met during the month. All ponds are being rotated on a daily basis. Percolation Pond #6 remains off line and drained to minimal levels. No flow seepage has been observed. The north percolation ponds were used sparingly during the month.

Tertiary Filters

Aqua Diamond Filters #1 and #2 were utilized for the month of March. Filter Effluent average Turbidity of 0.96 NTU.

Solids

Staff has been operating Digester #4 and #5 at predetermined sludge levels which is controlled by the SCADA system.

VVWRA received 511,046 gallons of ADM (Anaerobically Digestible Material) and FOG (Fats Oil and Grease). Total is comprised of 477,062 gallons of ADM and 54,201 gallons of FOG.

A Total 21,869,805cf/day of gas was created by digesters #4 and 5 for the month of March 2019.
That is an average gas production of 705,478/day.
Digester #4 averaged 364,959cf/day.
Digester #5 averaged 340,519cf/day.
Digester Volatile Acid/Alkalinity averaged 0.0155 for the month.

Ultra Violet Disinfection (UV)
The UV system is currently operating via one channel mode.
Monthly UV intensity probe and flow meter calibration checks were performed.

Permit Continuous Monitoring Requirements and Permit Violations
All permit required, continuous monitoring equipment was on-line, in calibration and working properly during the month.

Date of last reportable incident: March 10, 2015
Days since last reportable incident: 1,482 days

Discharge Sampling
All required samples during the month of March 2019 were collected and processed as scheduled.

Miscellaneous

Maintenance Activities

CMMS Work Order Activity

VVWRA KPI Report

4/4/2019
1:26 PM

3/1/2019 - 3/31/2019

KPI	Count	Percent
Planned Work Total	303	
Planned Work Completed	286	94.39%
Planned Work Completed On-Time	235	77.56%
Planned Work Incomplete	17	5.61%
Planned Work Completed Late	51	16.83%
Total Work Completed	667	
Reactive Work Completed	98	14.69%
PM Work Completed	512	76.76%

Safety

1. Monthly Vehicle Safety Inspections completed.
2. Monthly gas tech monitor inspections completed.
3. Monthly Eyewash safety showers inspected.
4. Monthly SCBA inspections.
5. Hazardous storage area inspection.
6. Spill kit inspections.
7. Confine space awareness refresher training.

Preliminary Process

1. Aqua Guard pre-treatment screen inspected and serviced.
2. Headwork's Conveyor Belt Lube & Inspect.
3. Grit classifier monthly lube.
4. Septage EQ basin quarterly cleaning completed.

5. Septage transfer pump replacement.

Primary Process

1. All PH and conductivity probes cleaned and calibrated.
2. Influent PH and conductivity probe calibrations complete.
3. Primary sludge pump #6 repairs.
4. Primary clarifiers 4 shear pin replacement.

Secondary Process

1. Piller blowers 1 & 6 weekly inspections complete.
2. Service Air compressors inspection and service completed.
3. Waukesha engines inspections.
4. Piller #1and #6 Filters Replacement.
5. Waukesha engine #4 intercooler service completed.

Tertiary

1. Monthly gear box and platform drive wheel service complete
2. Filter #1 & #2 monthly platform gear box PM's comp
3. Monthly festoon inspection.
4. Filter #1 & #2 monthly backwash wasting pumps oil checks complete

5. All PH and conductivity probes cleaned and calibrated.
6. Filter cleaning completed. 3W Service water pump repack completed.
7. 3W Service water pump repack completed.

Ultra Violet Disinfection (UV)

1. PH and conductivity probes cleaned and calibrated
2. UVT probe calibrated
3. UV Compliance sample pumps foot valve cleaning.
4. UV MCC filters cleaning.
5. UV lamp wiper air leaks repair.

Treatment Disposal

1. DAFT #1 and #2 Air Compressors 1&2 PM services complete.
2. DAFT monthly lube.
3. Digester 1-3 ongoing repairs.

Miscellaneous Plant

1. Emergency generator monthly test.
2. Monthly Blower buildings AHU filter replacement.
3. Storm water catch basin cleaning.

G/CHP 1&2

1. Monthly UREA refill completed CHP #1 & #2

2. CHP1&2 differential pressure readings taken within normal range, Gas DP pressure collected within normal range.
3. Monthly gas samples collected.

Gas Conditioning Skid

1. Monthly gas sampling collected.
2. Monthly gas conditioning skid inspection.

OGPS

1. Monthly Generator Test completed.

Hesperia WRP

1. Plant generator test completed.
2. Equipment inspection for startup.

Hesperia LS

1. Plant generator test completed.
2. Wet-well cleaning completed.

AVWRP

1. Plant generator test completed.

AVPS OTOE

1. Monthly Emergency generator test.

OFFROAD EQUIPMENT

1. Brown Bear weekly PM's completed.
2. JCB front loader weekly PM's complete.

FLEET

1. Monthly fleet inspections completed pumps, vehicles, hose reel trailer, light towers.

Victor Valley Wastewater Reclamation Authority

Environmental Compliance Department Report

March 2019

VVWRA Environmental Compliance Department
Industrial Pretreatment Program

I. Interceptors Operation and Maintenance:

1. **Interceptors cleaning & CCTV:**
   - ✓ I Ave, south apple valley and Hesperia Interceptors cleaning and CCTV are ongoing
2. **Interceptors Inspections:**

The following interceptors were visually inspected for signs of damage, vandalism and evidence of sanitary sewer overflows:

- ✓ South Apple Valley & North Apple Valley.
- ✓ Schedule 1, 2, 3 & 4
- ✓ UNE Bypass HDPE pipe
- ✓ Hesperia, I Ave and Santa Fe.
- ✓ CSA 64
- ✓ Adelanto
- ✓ SCLA1

3. **Damage and repair summary:**
   - ✓ No Damage found during inspections and no repair was needed or performed.
4. **Sanitary sewer overflows (SSO) summary:**
   - ✓ Date of last reportable SSO: June 30th, 2019
5. **Interceptors maintenance budget remaining:**
   - ✓ The fiscal year 2018-2019 Interceptor sewer maintenance amount remaining for sewer cleaning and inspection services is $55,387.22
6. **Dig Alert Underground tickets processed:**
   - ✓ A total of One hundred and eighty five (185) USA Tickets were received and processed in March 2019.
7. **Flow monitoring Studies:**
   - ✓ A flow monitoring study by ADS Environmental is continuing.

II. Industrial pretreatment Activities:

1. **New Business Questionnaires and permits applications evaluated:**
   - ✓ Four (4) New Business Questionnaires were processed in the month of March 2019.
   - ✓ One (1) New Business Inspection was conducted in the month of March 2019.
2. **New permits issued:**
   - ✓ Zero (0) New permits were issued in the month of March 2019.
3. **Permit renewals issued:**
   - ✓ Fifteen (15) Class III permit renewals were issued in the month of March 2019.
4. **Work Orders:**
   - ✓ 54 Work Orders were completed in March 2019
5. **Monthly revenues collected, and invoices issued:**
   - ✓ Revenues: $
   - ✓ Invoiced: $4,900.00

III. Industrial Pretreatment Activities (continued)

1. **Current enforcement actions:**

✓ Two (2) Notice of Violation was issued in March 2019.

2. **Current active industrial pretreatment permits:**

✓ The current number of VVWRA's industrial wastewater discharge permits is 429, they are comprised as follows:

1	Class I	Categorical Industrial User
11	Class II	Non-Categorical Significant Industrial User
407	Class III	Non-Significant Industrial User
1	Class IV	Zero Discharge Industrial User
10	Class V	Sanitary Waste Haulers

✓ The permitted establishments include:

17	Automotive Service Facility
13	Bakery
1	Brewery/Winery
20	Car Wash/Truck Wash/Bus Wash
3	Coffee Shop
9	Dry Cleaner
299	FSE
22	Grocery Store
3	Hospital
3	Misc. Food
3	Misc. Industrial
4	Other
1	Photographic
1	Print Shop
1	Prison
1	Retail Establishment
3	School
4	Water Retail
11	Waste Haulers

✓ Permitted businesses are distributed among member entities as follows: 167 in Victorville, 113 in Apple Valley, 123 in Hesperia and 1 in Oro Grande.

Victor Valley Wastewater Reclamation Authority

Environmental Compliance Department

Septage/FOG/ADM Monthly Report

March 2019

1. Septage/FOG/ADM receiving invoices and payments monthly report:

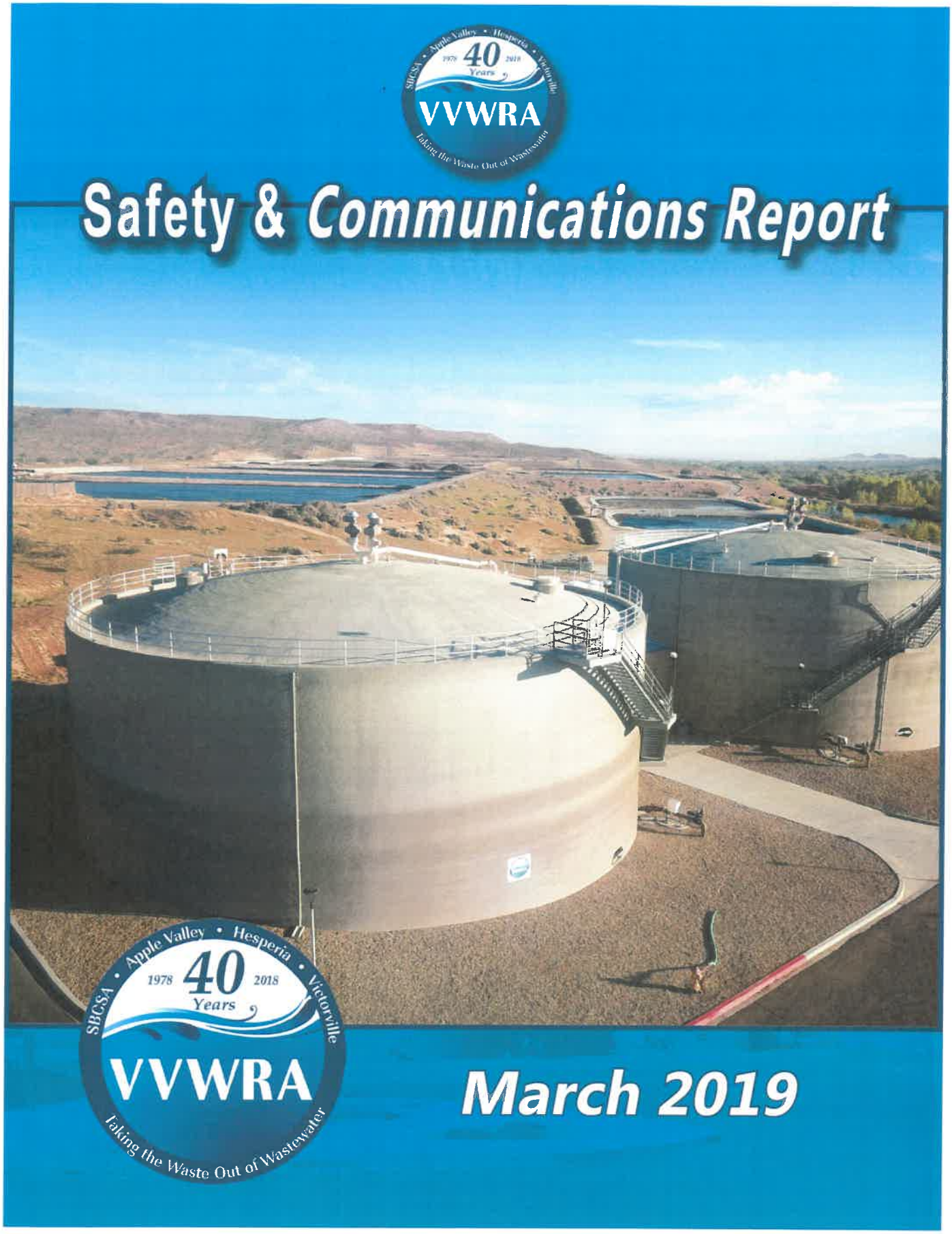
Payments and Invoices period: March 1st thru March 21st – Septage rate per Gallon: $ 0.0936
FOG/ADM rate per Gallon: $ 0.04

Receiving invoices

ID No	Septage Hauler	Invoice Date	Total Gallons	Invoice Amount
ABS000	Absolute Pumping	2/28/2019	45,810	$4,287.82
ALP000	Alpha Omega Septic Service	2/28/2019	167,898	$15,715.25
BUR000	Burns Septic	2/28/2019	72,000	$6,739.20
HIT000	Hitt Plumbing	2/28/2019	0	$0
HON001	Honest Johns Septic Service, Inc	2/28/2019	82,707	$7,741.47
ROT001	T.R. Stewart Corp. dba Roto Rooter	2/28/2019	102,328	$9,577.90
USA000	USA Septic	2/28/2019	101,900	$9,537.84
ALP000	Alpha Omega Septic Service (Nutro)	2/28/2019	72,268	$2,890.72
COW000	Co-West Commodities	2/28/2019	140,000	$5,600.00
LIQ000	Liquid Environmental Solutions of CA	2/28/2019	0	$0
SMC000	SMC Grease Specialist, Inc.	2/28/2019	306,000	$12,240.00
WES004	West Valley MRF, LLC Burrtec Waste Industries, Inc.	2/28/2019	0	$0
HIT000	Hitt Plumbing	2/28/2019	3,435	$137.40
Grand Totals			**1,094,346**	**$74,467.60**

Septage/FOG/ADM receiving payments:

ID No	Business Name	Payments Received
ABS000	Absolute Pumping	$3,144.40
ALP000	Alpha Omega Septic Service	$25,948.26
BUR000	Burns Septic	$0
HON001	Honest Johns Septic Service, Inc	$0
ROT001	T.R. Stewart Corp. dba Roto Rooter	$6,335.50
USA000	USA Septic	$6,598.80
ALP000	Alpha Omega Septic Service (Nutro)	$0
COW000	Co-West Commodities	$4,800.00
LIQ000	Liquid Environmental Solutions of CA	$0
SMC000	SMC Grease Specialist, Inc.	$7,470.00
WES004	West Valley MRF, LLC Burrtec Waste Industries, Inc.	$0
HIT000	Hitt Plumbing	$0
Grand Total		**$54,296.96**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1978 40 2018
Years
VVWRA
Taking the Waste Out of Wastewater
Safety & Communications Report
March 2019

Safety

STAFF SAFETY TAILGATE/ORIENTATION

- March 4--Active shooter

- March 14--Safe driving
- March 21--Filling out LOTO logs

- February 26--Keeping work area clean
- March 28--Snake awareness

Safety

Safety Events/ Training

- Safety tailgates
- Daily, weekly and monthly plant inspections
- Confined space refresher

Unsafe Conditions Reported/Resolved

Date of last reportable accident/injury:
January 22, 2019

Days since last reportable accident/injury:
68 Days

Safety

NEXT MONTH'S SCHEDULE OF STAFF TRAINING/SAFETY EVENTS :

- Safety Tailgates will be conducted at the Thursday weekly staff briefings.
- Safety Tailgates will be conducted at the monthly Administrative staff meetings.
- Hazwoper refresher training scheduled for April 2019.
- Confined space refresher and fall protection refresher scheduled.

Communications

- Continued marking VVWRA's 40th anniversary in social media etc.
- Maintained VVWRA website and social media sites including Facebook & Twitter.

Communications

ACTIVITIES

- Led tour of 42 Sultana High School students