

NOVATO SANITARY DISTRICT

Meeting Date: May 18, 2015

The Wastewater Operations Committee of the Novato Sanitary District will hold a meeting at 2:00 PM, Monday, May 18, 2015 at the District offices, 500 Davidson Street, Novato.

AGENDA

1. AGENDA APPROVAL:

2. PUBLIC COMMENT (PLEASE OBSERVE A THREE-MINUTE TIME LIMIT):

This item is to allow anyone present to comment on any subject not on the agenda, or to request consideration to place an item on a future agenda. Individuals will be limited to a three-minute presentation. No action will be taken by the Committee at this time as a result of any public comments made.

3. CONSIDER APPROVAL OF MINUTES OF THE APRIL 21, 2015 MEETING

4. WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR APRIL 2015:

- a. Treatment Plant Performance Report
- b. Maintenance Report
- c. Safety and training
- d. Odor control, noise, and landscaping report

5. COLLECTION SYSTEM OPERATIONS AND MAINTENANCE REPORT FOR APRIL 2015:

- a. Collection System Maintenance
- b. Pump Station Maintenance
- c. Collection System Performance
- d. Safety and Training

6. RECLAMATION FACILITY REPORT FOR APRIL 2015:

- a. Ranch Operations
- b. Irrigation Parcels
- c. Irrigation Pump Station

7. OTHER ITEMS:

8. ADJOURNMENT:

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the District at (415) 892-1694 at least 24 hours prior to the meeting. Notification prior to the meeting will enable the District to make reasonable accommodation to help ensure accessibility to this meeting.

Materials that are public records and that relate to an open session agenda item will be made available for public inspection at the District office, 500 Davidson Street, Novato, during normal business hours.

April 21, 2015

A regular meeting of the Wastewater Operations Committee of Novato Sanitary District was held at 2:30 p.m., Tuesday, April 21, 2015, at the District Office, 500 Davidson Street, Novato.

MEMBERS PRESENT: Committee Members Jerry Peters and Brant Miller.

STAFF PRESENT: Sandeep Karkal, Manager-Engineer
Steve Krauthem, Field Services Manager
Tim O'Connor, Collections System Superintendent
John Bailey, Project Manager, Veolia
Julie Swoboda, Administrative Secretary

OTHERS PRESENT: Lynda Farmery, Planner, Veolia
John O'Hare, Pretreatment Programs Manager, Veolia

AGENDA APPROVAL: Approved as presented.

PUBLIC COMMENT: None.

APPROVAL OF MEETING MINUTES FOR MARCH 16, 2015: The March 16, 2015 meeting minutes were approved as presented.

WASTEWATER TREATMENT FACILITIES OPERATIONS AND MAINTENANCE REPORT FOR MARCH 2015:

- Treatment Plant Performance Report, Maintenance Report, and Safety & Training:

Manager-Engineer Sandeep Karkal introduced Veolia Project Manager John Bailey, who provided an overview of treatment plant operations for the month of March. He discussed key operations and maintenance events at the Novato facility, the Ignacio Transfer Pump Station, the Recycled Water Plant, and the Sludge Lagoons. He stated that the plant ran very well with no permit violations or exceedances. He stated that no odor notifications were received in March.

The Project Manager discussed training events completed in March and stated that as of March 31st, Veolia employees have been accident free for a total of 1,762 days. He discussed the training and safety meetings Veolia employees participated in during March. He reviewed the operations and maintenance report and stated that 7.34 million gallons of recycled water were produced.

Discussion followed.

- Odor control and landscaping report: The Manager-Engineer discussed odor control related activities in March. He stated that staff continues to perform liquid phase sulfide sampling and analysis, based on recommendations from Dave McEwen of Brown and Caldwell (B&C). He noted that staff continues to monitor the large odor control bed and that it appears to be performing very well. The Manager-Engineer stated that the staff continues to work with the

District's landscaping contractor Cagwin and Dorward on vegetation at the District's fence-line on Lea Drive and at the northeast corner area of the treatment facility.

COLLECTION SYSTEMS OPERATION AND MAINTENANCE REPORT FOR MARCH 2015:

Collections System Superintendent Tim O'Connor presented the Collection Systems Monthly Report for March 2015. He reported that the Collection Systems crew cleaned a total of 74,674 feet of sewer pipeline and that the department completed 397 maintenance work orders which were generated for March. He stated that the District's CCTV van (Closed Circuit TV) televised 9 line segments for 1,795 feet of production and he noted that no areas were identified as needing repairs or further evaluation.

He reported on the current Collection System Projects, and outlined the specialized training that the department completed. He stated that as of March 31, 2015, the Collections Department and the District have worked accident free for a total of 1,477 days.

The Collections System Superintendent stated that staff is developing a Core Competency Checklist to use for tracking/training of employees and will be used for developing Standard Operating Procedures (SOP's). The Collections System Superintendent stated that there were three sanitary sewer overflows in March and he provided an overview of each incident.

RECLAMATION FACILITY REPORT FOR MARCH 2015:

Field Services Manager Steve Krautheim presented the Reclamation Facilities report for March. He stated that the rancher continued to apply weed suppressant around sprinkler heads on Parcels in the pasture areas. He stated that the contractor for the Drainage Pump Station Improvement Project completed the work in March.

The Field Services Manager discussed a leak on the Wildlife Pond Feed Pipeline and noted that staff has begun the process to locate the leak. He noted that there were no irrigation or sludge handling activities this month.

MANAGER'S ANNOUNCEMENTS:

The next WWOC meeting will be held on Monday, May 18th at 2:00 p.m.

ADJOURNMENT: There being no further business to come before the Committee, the meeting adjourned at 3:17 p.m.

Respectfully submitted,

Sandeep Karkal
Manager-Engineer

Julie Swoboda, Recording



May 13, 2015

Mr. Sandeep Karkal
Manager - Engineer
Novato Sanitary District
500 Davidson Street
Novato, CA 94545

Subject: Veolia Water Operations Report – April 2015

Dear Mr. Karkal:

I am pleased to provide the Monthly Operation Report for April 2015.

As always, please give me a call at 707-208-4491 should you have any questions.

Best regards,

A handwritten signature in blue ink that reads "John Bailey". The signature is stylized and cursive.

John Bailey
Project Manager, Veolia



MONTHLY OPERATIONS REPORT
April 2015

Prepared for

NOVATO SANITARY DISTRICT (NSD)
WASTEWATER TREATMENT PLANT
500 Davidson Street
Novato, CA 94545

Prepared by

Veolia Water West Operating Services, Inc. (VWWOS)

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○ Site Visit Aqua Science – Lab Committee Meeting	
○ Inspection of Groundwater Remediation Site	
○ Temporary Backpressure Regulator Manifold – Flare Maintenance	
○ Sludge Line Repair (Replacement of Broken “T”	
○ Clarifier Coating Preparation	
• Laboratory Data	
• Recycled Water Report	
• Annual Performance Graphs	
• Process Control Data / Graphs	
• Customer Notifications (Odor)	

REVISED – MAY 26, 2015 - (page 1 only)

TREATMENT PLANT PERFORMANCE SUMMARY: April 2015:

Parameter	Value		Limit	
	Ave	Max	#1	#2
Flow, MGD (monthly ave/max)	3.88	4.72	N/A	N/A
Max Peak Hour, MGD – 7.5 mgd, April 7 th , 0715	N/A	~ 8	N/A	N/A
Influent				
BOD ₅ , lb/day (month ave/max)	9,328	11,576	N/A	N/A
TSS, lb/day (monthly ave/max)	11,214	14,957	N/A	N/A
Effluent				
BOD ₅ , mg/L (monthly ave/weekly max)	<7	9	30	45
TSS, mg/L (monthly ave/weekly max)	<4	5	30	45
BOD ₅ - % Removal, Minimum	98	N/A	85	N/A
TSS - % Removal, Minimum	99	N/A	85	N/A
Ammonia, mg/L – (monthly ave/daily max)	3.70	3.70	6	21
pH, su (min / max)	6.8	7.0	6.5	8.5
Enterococcus, MPN/100 ml (30 day geo mean)	3.2	N/A	35	N/A
Fecal Coliform, MPN/100 ml (30 day median)	11	N/A	140	N/A
Fecal Coliform, MPN/100 ml (90 th percentile)	13	N/A	430	N/A
Total Coliform, MPN/100 ml (5 Sample Median/Max)	N/A	N/A	240	10,000
Total Permit Exceedances (NPDES)	0			

Title 22 - Recycled Water Production and Quality

Description	Units	Value	Limit
Volume Produced	Million Gallons	10.267	N/A
Average Turbidity	NTU	1.5	2.0
Turbidity > 5 NTU (in 24 hour)	Minutes	0.00	72
Minimum CT (disinfection)	mg-min/L	>450	450
Minimum Dissolved Oxygen (DO)	mg/L	7.8	1.0
Maximum Total Coliform	MPN/100 ml	220	220
Maximum Total Coliform 2 Samples 30 d	MPN/100 ml	220	23
Total Coliform 7 Sample Median	MPN/100 ml	See Below	2.2

Discussion of Violations / Excursions: NPDES – None

Recycled Water: 3

Total Coliform, 4/28 Second Sample Exceeding 23 mpn

Total Coliform, 4/29 & 4/30, Exceeded 7 Sample Median of 2.2 mpn

Total Rainfall. – 1.43 inches

Daily Max 4/7/15 – 0.94 inches

Note: Rainfall data from weather station readings at 500 Davidson St (WWTP)

SAFETY AND TRAINING:

- Monthly plant safety inspections for Novato WWTP and Ignacio Transfer Pump Station completed
- Five Minute Tailgate training is held daily with all staff.
- No safety incidents for the month of April.
- Accident Free: 6/1/10 – 4/30/15: 1,792 days
- Monthly Safety Topics and Training:
 - Lockout/Tagout – Control of Hazardous Energy
 - Confined Space Awareness
 - Cellular Phones: Vehicle Operations
 - Hand Protection
 - Footwear Policy
 - Golf Cart & Utility Vehicle Safety

OPERATIONS & MAINTENANCE STATUS / REVIEW:

Key events for the period:

Only one significant rainfall event. April 7th, 0.94 inches. No impact on operations.

Novato

- Routine rounds, readings and maintenance
- Assisted Contractor in Primary Clarifier #1 recoating project
- Changed out limit switch on Gravity Belt Thickener #1
- Replaced bearing on Gravity Belt Thickener #1
- Repair to anti-siphon valve on top of diesel fuel tank
- Installed flushing line on Influent Sampler
- Repaired Primary Clarifier #1 scum piping

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- Aeration Basin #1 & #2 (not needed at current flows)
- Secondary Clarifier #2 (not needed at current flows)
- Primary Clarifier #1 (District Coating Project)

Ignacio Transfer Pump Station

- Routine rounds, readings and maintenance
- Repaired/rebuilt odor bed fan #2

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Recycled Water Plant (RWP)

- Performed plant rounds and maintenance

Equipment Out of Service – Due to Planned Servicing, Maintenance, or Replacement

- None

Sludge Lagoons

- Performed routine rounds and inspection
- Inspected Decant line

LABORATORY ACTIVITIES SUMMARY:

Monitoring Wells

Sampling of the NSD groundwater monitoring wells was conducted on April 14, 2015. See attached pictures.

PCBs Quarterly Testing

Effluent samples were collected for EPA method 1668C PCB on April 9, 2015.

Pretreatment Activities:

Visits were made to the South Novato Shell gas station which has a Temporary Discharge Permit (Groundwater). Collaboration between NSD Staff, Kevin Craig, and Veolia staff made for a safe and successful almost month long discharge event of the remediated groundwater. See attached pictures.

ADMINISTRATION:

- March Electronic Self Monitoring Report submitted on April 30, 2015
- March Electronic DMR Report submitted on April 30, 2015

ODORS:

- Jerome Meter (H2S) readings performed in neighborhood and within treatment plant.
- One odor contact in April, described as dead animal smell.

MISCELLANEOUS

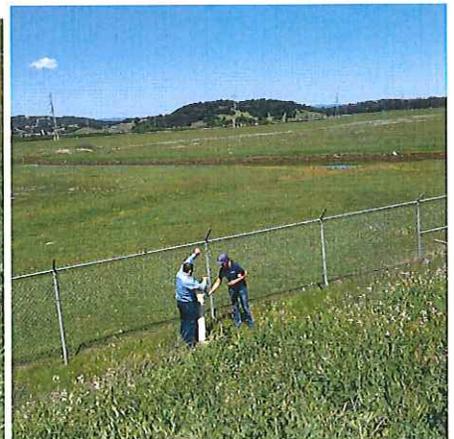
- Process Control Management Plan (PCMP) meetings held weekly.
- Teamsters Managed Trust Audit – 1 full day on site.
- Recruitment open for Operator III.

Veolia Support Staff On/Off Site (Various Times)

John O'Hare	Technical Support
Dave Coffman	Asset Management

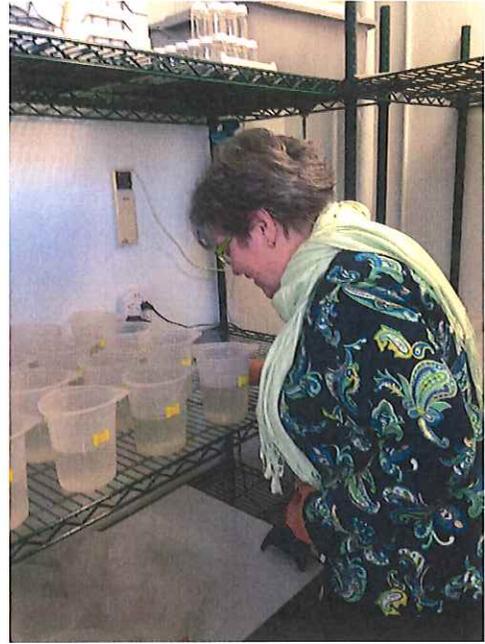
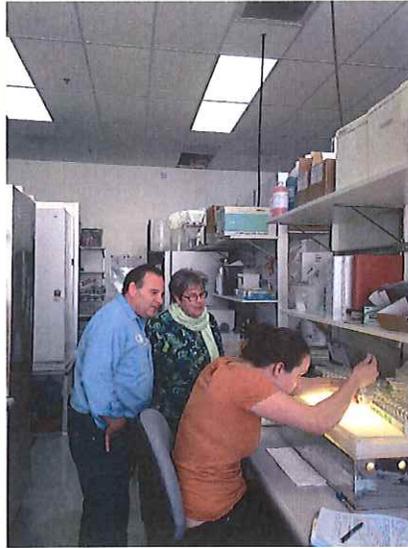


Monitoring Wells





Visit to Aqua Science in Davis, California



Pretreatment Activities



Kevin Craig

Before additional carbon filter and flow meter were added and after with Kurt Hawkyard.

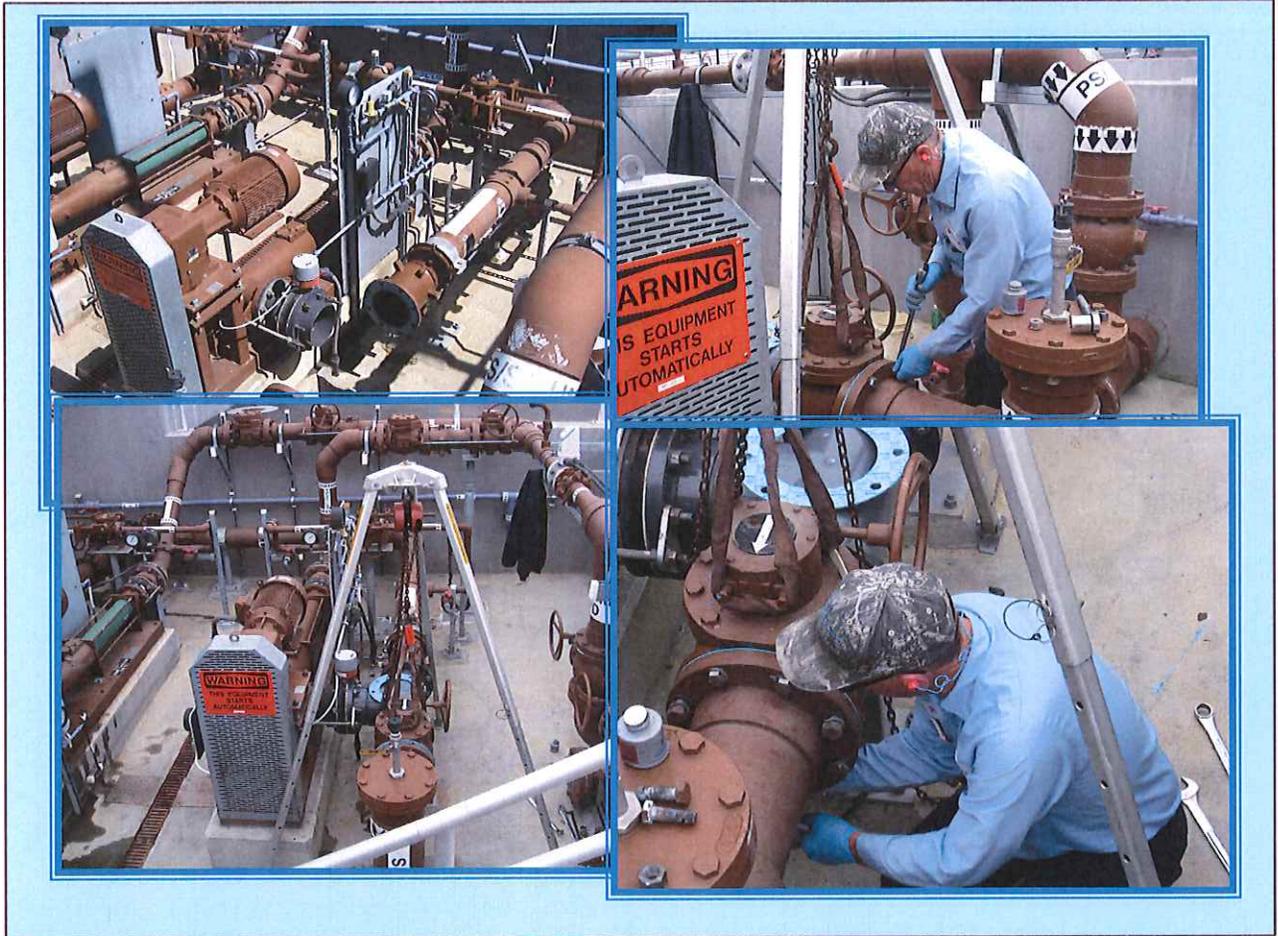
REPAIRS AND MAINTENANCE
TEMPORARY BACK PRESSURE REGULATOR
ULTRA VIOLET DISINFECTION

April 2015



Top Left & Right – Testing Backpressure Regulator for Biogas Scrubber, Flare Maintenance Project
Bottom Left – Preston Ingram Confirms Operation of Backpressure Regulator
Bottom Right – Brian Exberger Trouble Shooting Disinfection System

REMOVAL AND INSTALLATION
BROKEN "T" IN PRIMARY SLUDGE LINE
April 2015



Preston Ingram Replacing Broken Sludge Line

PRIMARY CLARIFIER COATING PROJECT
(District Project by Outside Contractor)
April 2015



Top Left & Right – Clarifier Surface After Water Blasting, Prior to Skim Coating
Bottom Left – Skim Coating
Bottom Right – Skim Coating Surface Prepared for Priming and Corrosion Resistant Coating

PRIMARY CLARIFIER COATING PROJECT
NSD STAFF CLEANING EFFLUENT BOX
April 2015



NSD Staff Uses Vector to Clean Out Final Debris in Primary Clarifier #1 Effluent Box.

Novato Sanitary District
BOD/TSS Report



April, 2015

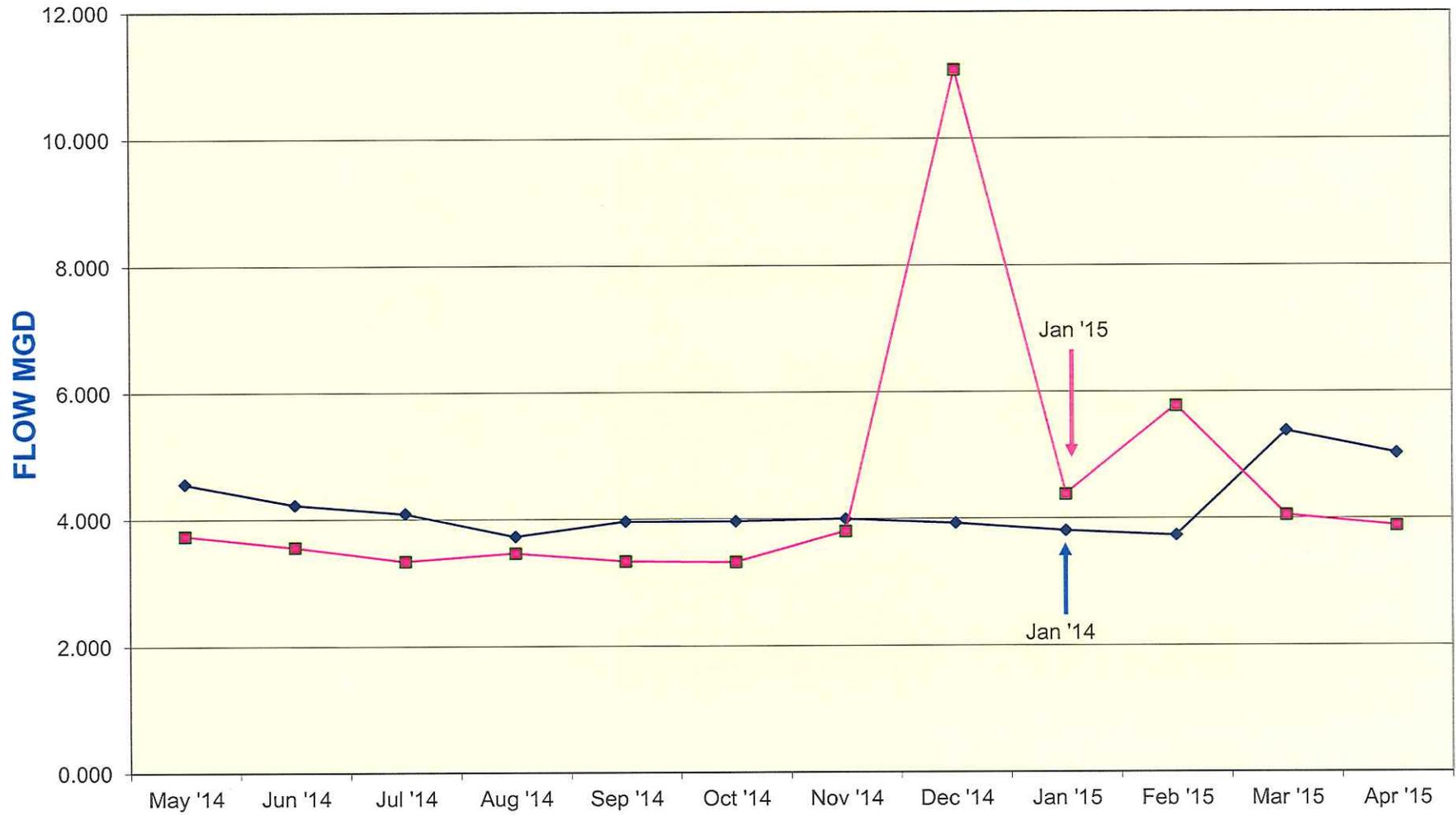
Date	Flow MGD	Influent				Effluent				BOD % Removal	TSS % Removal
		BOD		TSS		BOD		TSS			
		mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	mg/l	lb/d	PERCENT	PERCENT
04/01/15	4.00	347	11,576	364	12,143	6	200	<3	<100	98.3	99.2
04/02/15	3.68	307	9,422	338	10,374	5	153	4	123	98.4	98.8
04/03/15	3.74	278	8,671	309	9,638	7	218	4	125	97.5	98.7
04/04/15	3.95										
04/05/15	4.07										
04/06/15	4.28	324	11,565	317	11,315	6	214	5	178	98.1	98.4
04/07/15	4.72										
04/08/15	4.03	225	7,562	235	7,898	<5	<168	<3	<101	97.8	98.7
04/09/15	3.88	209	6,763	302	9,772	8	259	3	97	96.2	99.0
04/10/15	3.71										
04/11/15	3.79										
04/12/15	3.63										
04/13/15	3.92	321	10,494	440	14,385	11	360	8	262	96.6	98.2
04/14/15	3.83										
04/15/15	3.73										
04/16/15	3.76	301	9,439	419	13,139	6	188	<3	<94	98.0	99.3
04/17/15	3.70	308	9,504	307	9,473	8	247	<3	<93	97.4	99.0
04/18/15	3.90										
04/19/15	4.08	274	9,323	258	8,779	<5	<170	<3	<102	98.2	98.8
04/20/15	3.57										
04/21/15	3.66			340	10,378	<5	<153	5	153		98.5
04/22/15	3.51	283	8,284	508	14,871	7	205	8	234	97.5	98.4
04/23/15	3.49										
04/24/15	3.83										
04/25/15	3.96										
04/26/15	3.93										
04/27/15	3.89										
04/28/15	4.03	272	9,142	445	14,957	11	370	5	168	96.0	98.9
04/29/15	4.06	269	9,108	297	10,057	6	203	<3	<102	97.8	99.0
04/30/15	4.08	284	9,664	324	11,025	6	204	<3	<102	97.9	99.1
Weekly Averages											
04/04/15	Week 1	311	9,890	337	10,718	6	191	4	116		
04/11/15	Week 2	253	8,630	285	9,662	6	214	4	125		
04/18/15	Week 3	310	9,813	389	12,332	8	265	5	149		
04/25/15	Week 4	279	8,804	369	11,343	6	176	5	163		
	Week 5										
Monthly											
Minimum	3.49	209	6,763	235	7,898	<5	<153	<3	<93	96	98
Maximum	4.72	347	11,576	508	14,957	11	370	8	262	98	99
Total	116.41										
Average	3.88	286	9,323	347	11,214	<7	<221	<4	<136	98	99

NOVATO SANITARY DISTRICT RECYCLED WATER COMPLIANCE SUMMARY REPORT

Date	Filter Influent Flow	Recycled Water Flow to Plum St.	Recycled Water Banked	Banked Water To Plum Street Tank	Potable Water To Plum St Tank	Recycled Water Influent Turbidity Max	Recycled Water Influent Turbidity Ave.	Minutes Over 5 NTU	Filter Effluent 24 Hr Average Turbidity	Recycled Water Inf Chlorine Dose	Filter Effluent Dissolved Oxygen	Filter Effluent Total Coliform	Chlorint Contact Time
	MGD	MGD	MG	MGD	NTU	NTU	(m)	NTU	(mg/l)	(mg/l)	MPN/100m	Minutes	
4/1/2015	1.260			0.081				0	1.6				>450.000
4/2/2015	0.840	0.193						0	2.0				>450.000
4/3/2015				0.250									
4/4/2015				0.176							8.6		
4/5/2015													
4/6/2015													
4/7/2015	0.280							0	1.5				>450.000
4/8/2015	0.990	0.630						3.0	0	1.3	7.8		>450.000
4/9/2015	0.480	0.203						3.6	0	1.2	8.3		>450.000
4/10/2015				0.087									
4/11/2015				0.012									
4/12/2015				0.167									
4/13/2015	0.610			0.619				0	1.4		9.2		>450.000
4/14/2015	0.680	0.307						1.7	0	1.5	8.1		>450.000
4/15/2015	0.940	0.829						3.4	0	2.3	8.3		>450.000
4/16/2015	0.790	0.478						3.5	0	1.8			>450.000
4/17/2015	0.950	0.700						3.6	0	1.9			>450.000
4/18/2015	0.940	0.656						3.6	0	1.9			>450.000
4/19/2015	0.980	0.607						3.6	0	1.7	8.7		>450.000
4/20/2015	0.910	0.497						2.7	0	1.5	8.7		>450.000
4/21/2015	0.930	0.674						2.6	0	1.2	8.5		>450.000
4/22/2015	0.880	0.565						2.3	0	1.3	8.6		>450.000
4/23/2015	0.800	0.635						2.4	0	1.3			>450.000
4/24/2015	1.520	0.140						2.4	0	1.2			>450.000
4/25/2015				0.018				0	1.3				
4/26/2015													
4/27/2015				0.191							8.8		
4/28/2015	0.660	0.119						2.2	0	1.1	8.7		>450.000
4/29/2015				0.600							9.3		
4/30/2015	1.000	0.657						1.8	0	1.0			>450.000
Total	16.440	7.890		2.201				42.4	0	30.0	111.6		>8,550.0
Minimum	0.280	0.119		0.012				1.7	0	1.0	7.8		>450.0
Maximum	1.520	0.829		0.619				3.6	0	2.3	9.3		>450.0
Average	0.865	0.493		0.220				2.8	0	1.5	8.6		>450.0
Average	0.865	0.493		0.220				2.8	0	1.5	8.6		>450.0

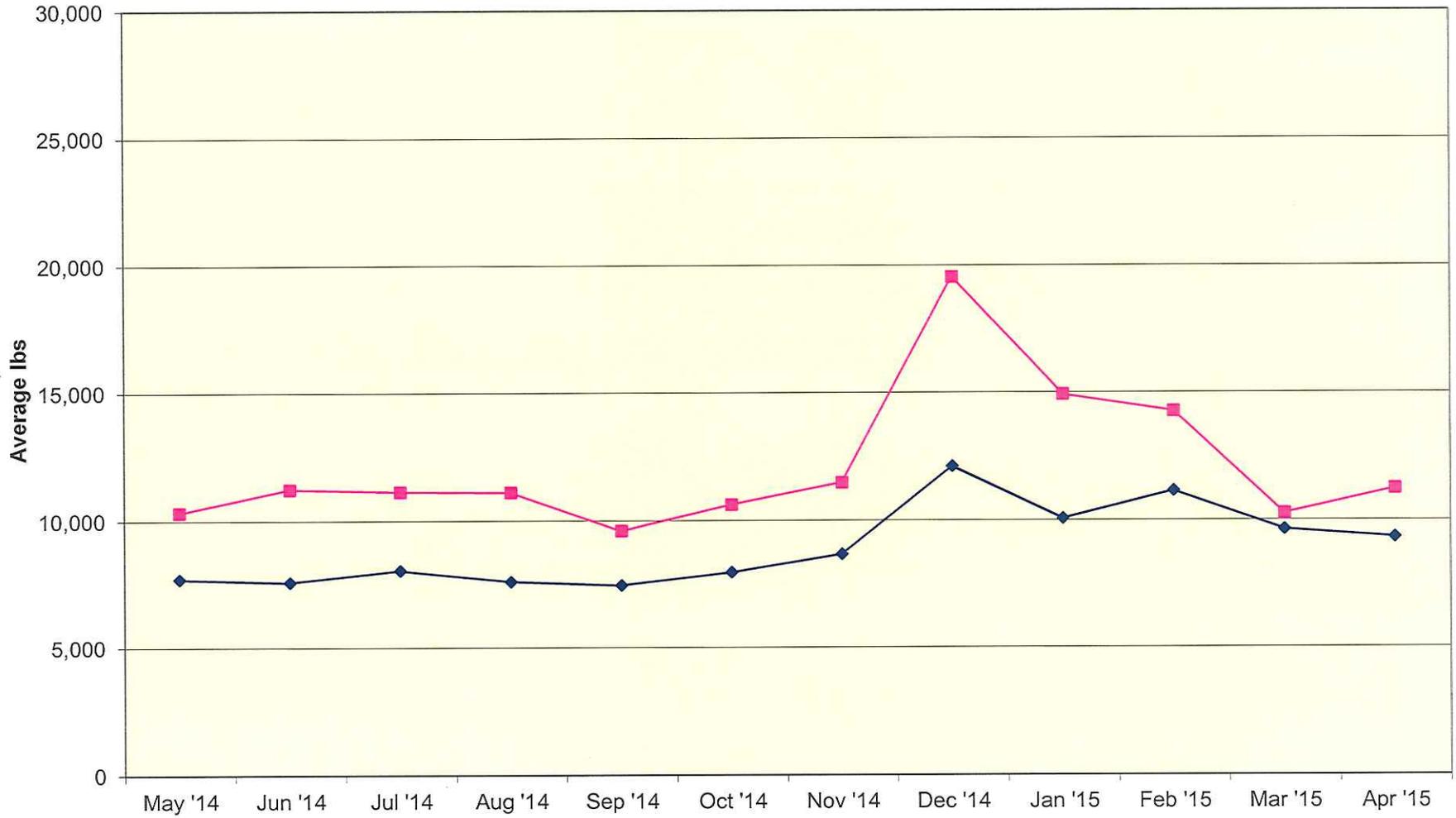
FLOW COMPARISON

—◆— 2013 / 14 —■— 2014 / 15



Influent Load BOD / TSS lbs

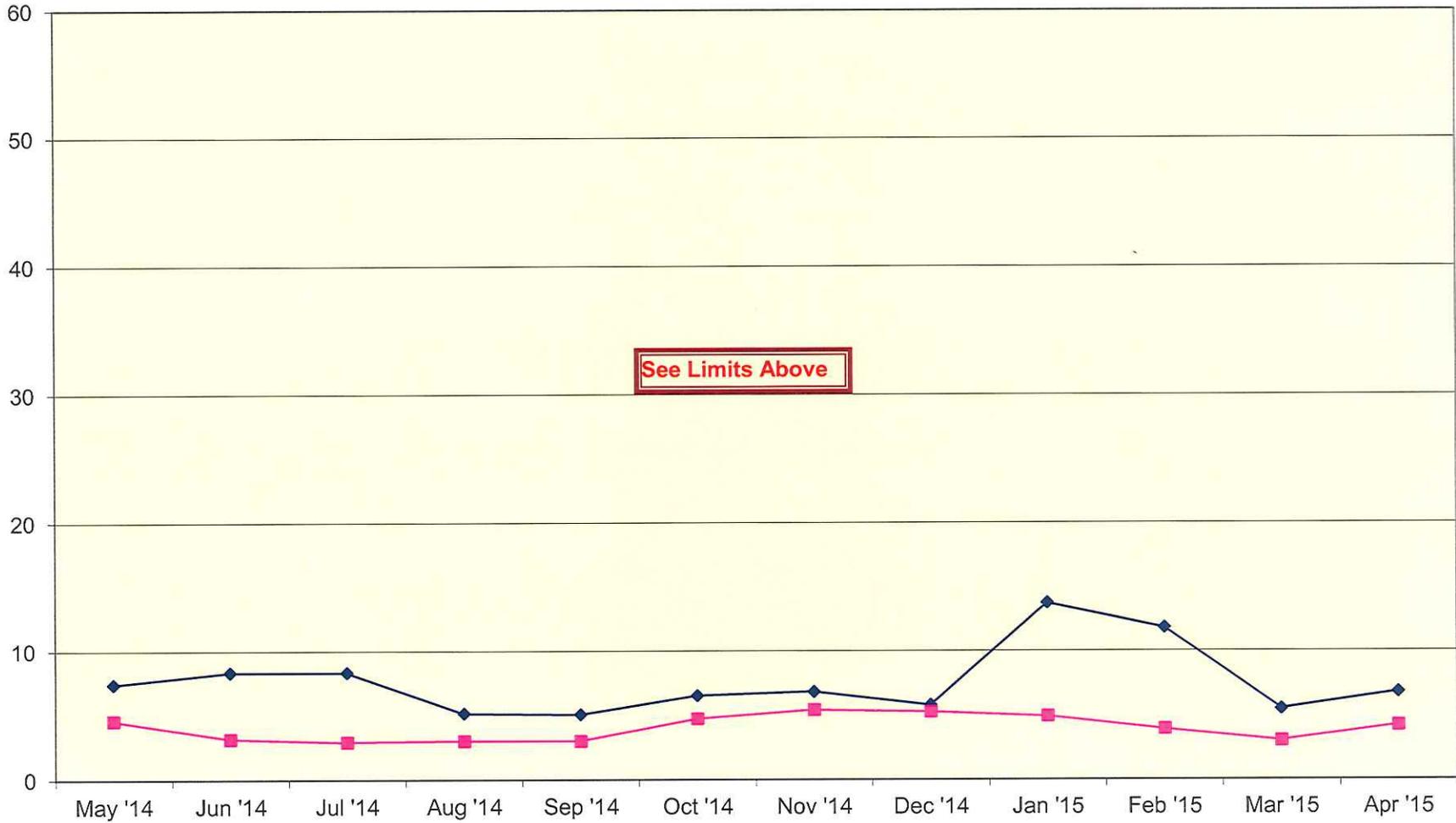
◆ BOD lbs ■ TSS lbs



Effluent BOD / TSS Concentration

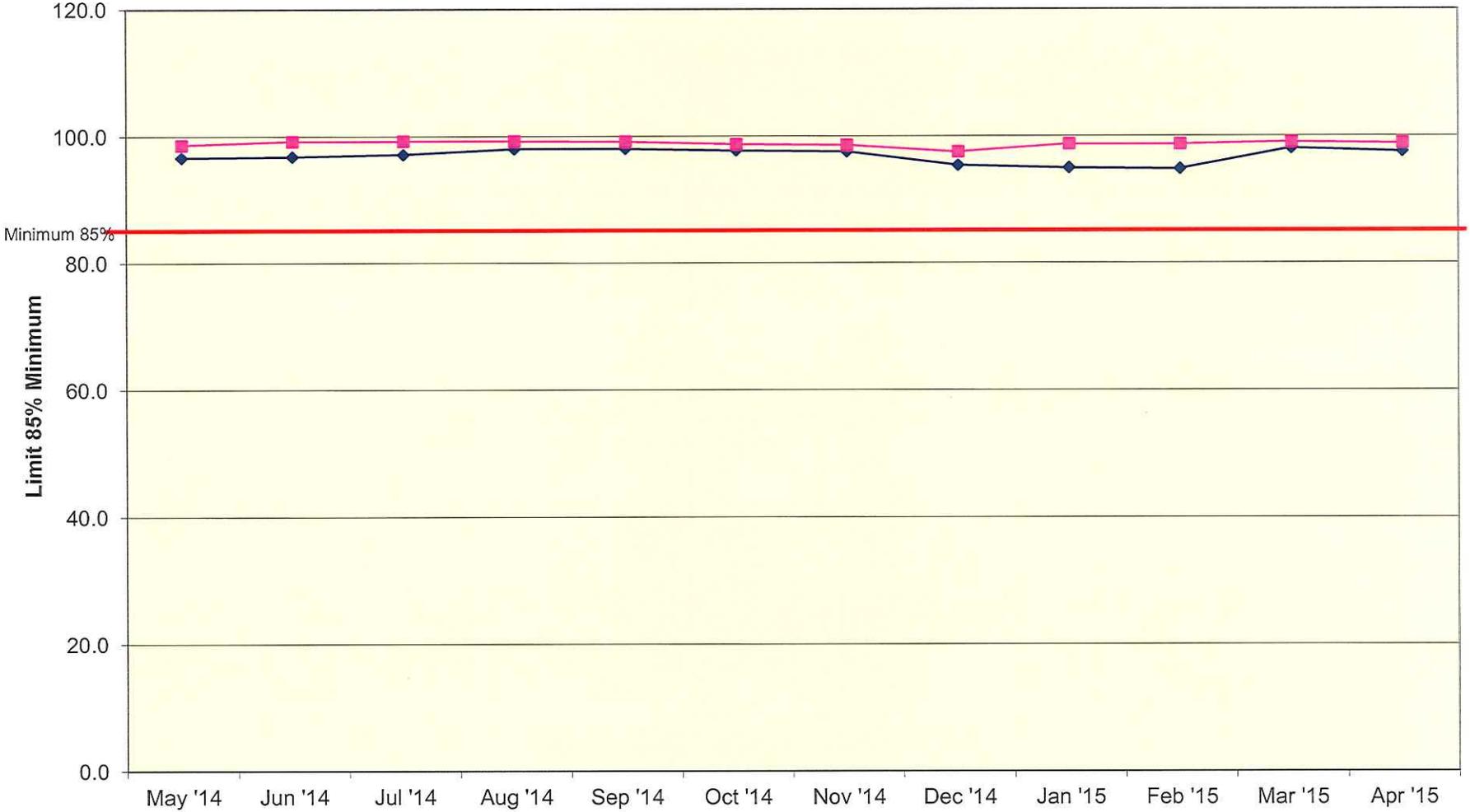
NPDES LIMITS WET SEASON
BOD & TSS - 30 mg/L Monthly Ave, 45 mg/L Weekly Ave
NPDES LIMITS DRY SEASON
BOD - 15 mg/L Monthly Ave, 30 mg/L Weekly Ave
TSS - 10 mg/L Monthly Ave, 20 mg/L Weekly Ave
WDR (Waste Discharge Requirements) RECLAMATION
BOD - 40 mg/L

◆ BOD ■ TSS



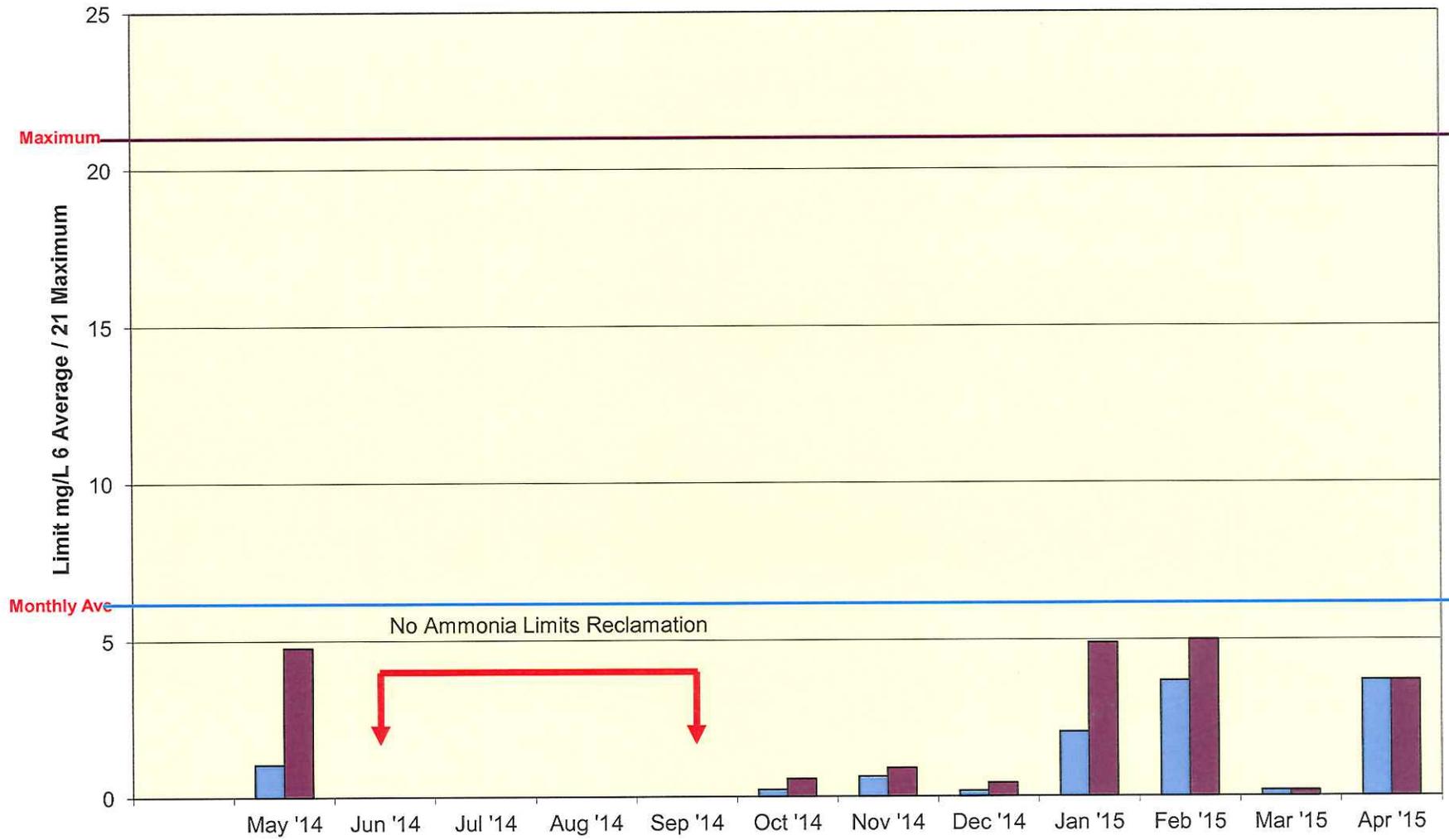
BOD / TSS Percent Removal

—◆— BOD —■— TSS



Effluent Ammonia

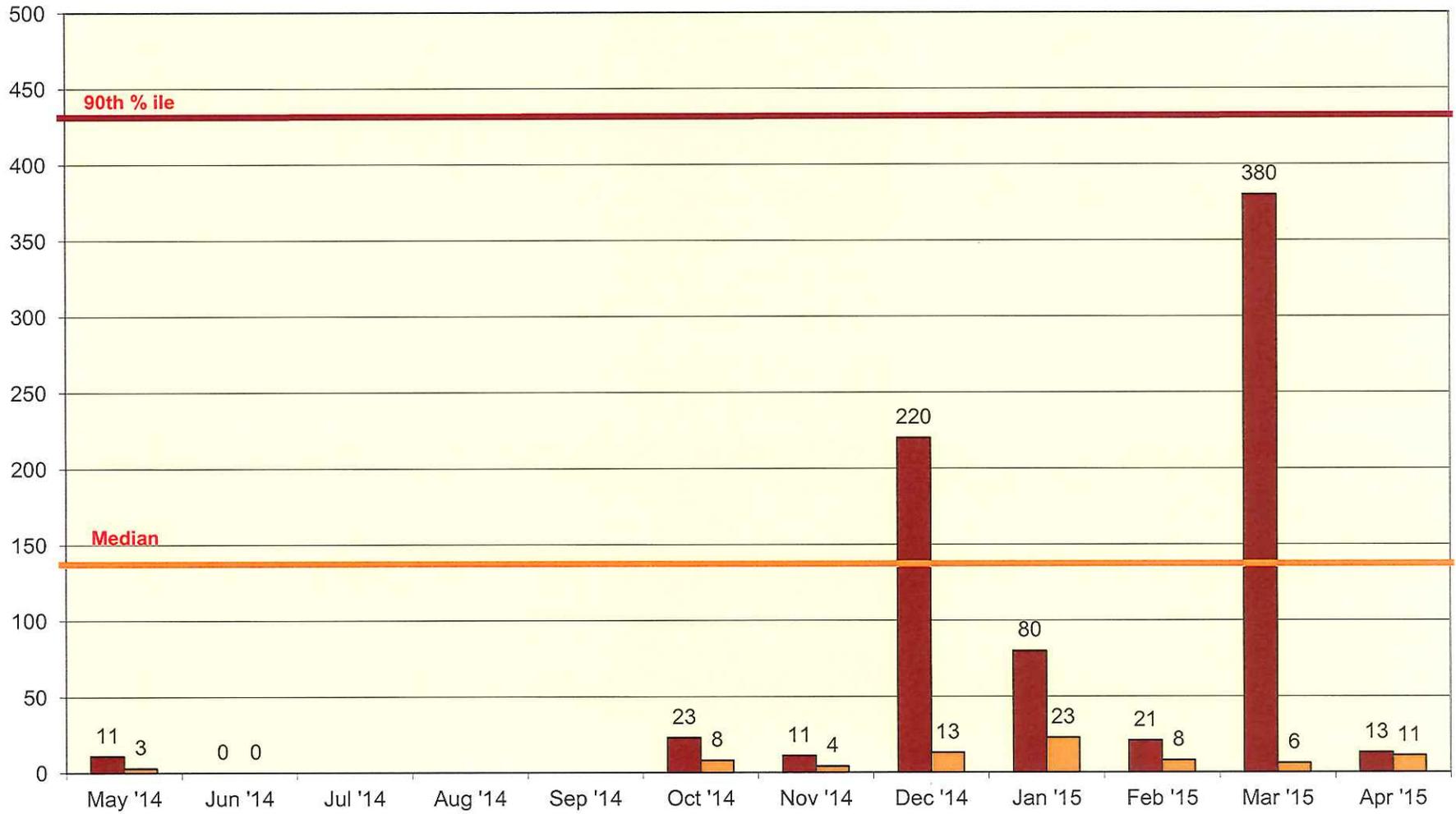
Average Maximum



Disinfection - Fecal Coliform

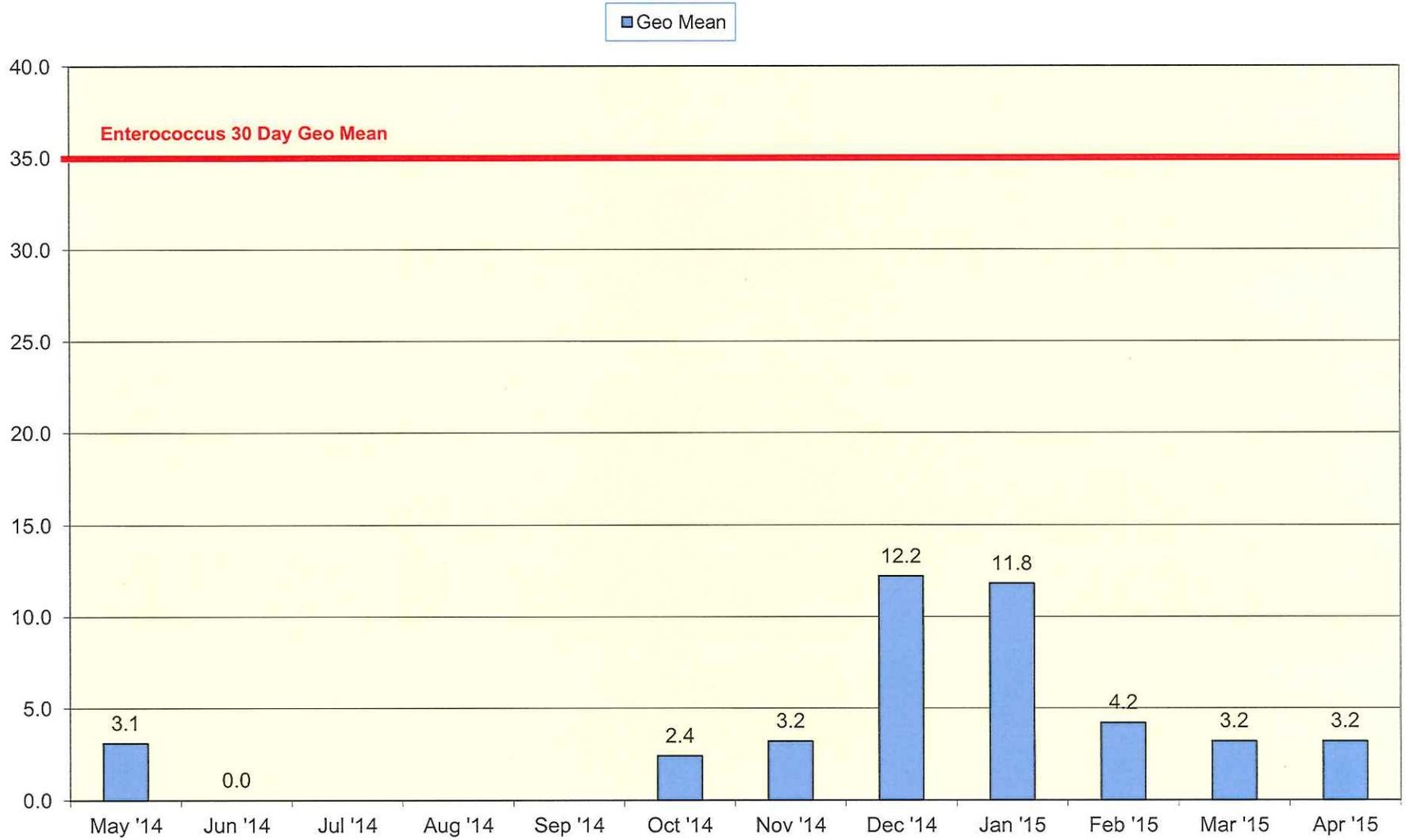
LIMITS - NPDES
Fecal 140 mpn monthly median
Fecal 430 mpn 90th percentile 30 day

90th % ile 30 day med



Disinfection - Enterococcus

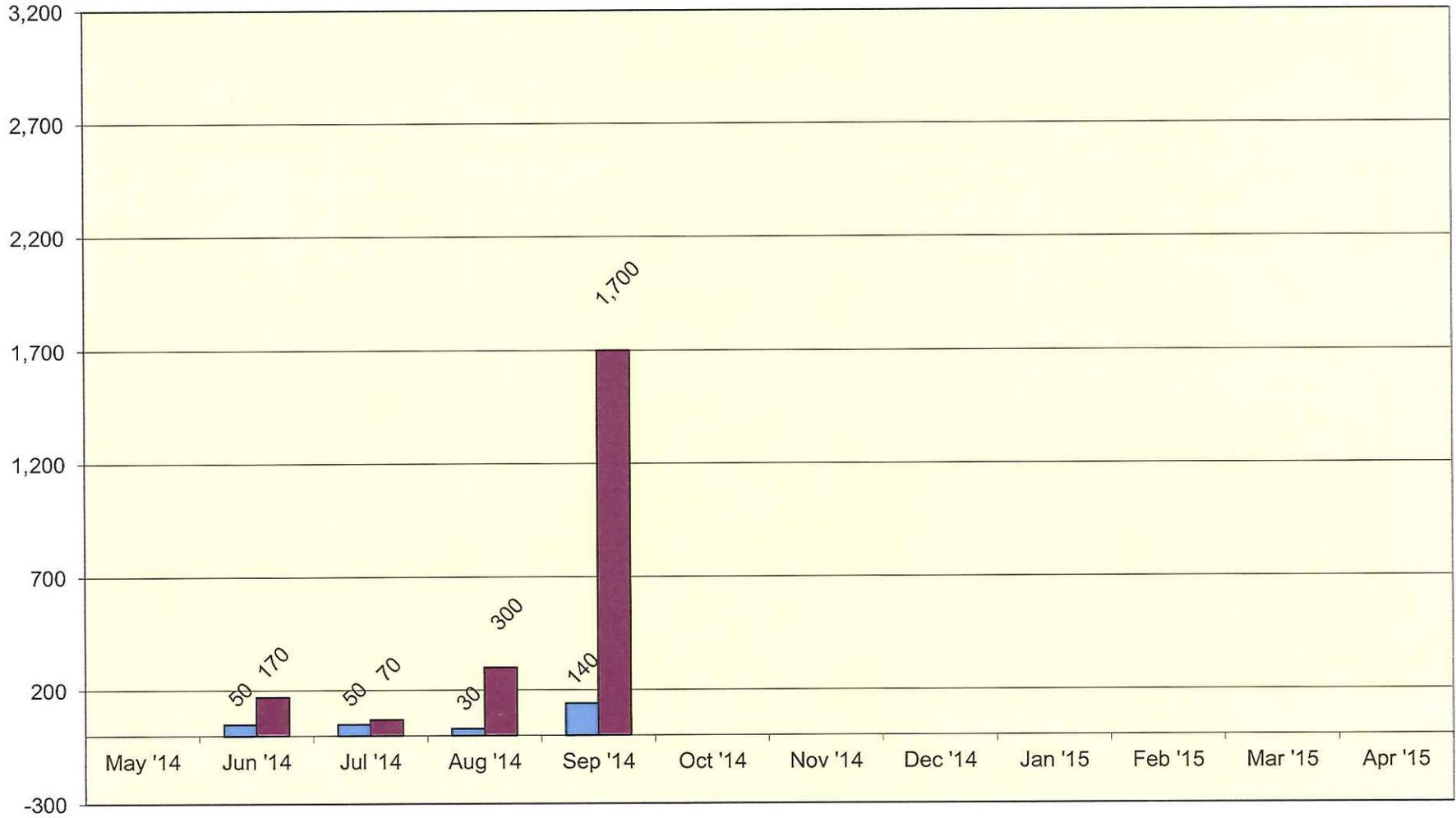
LIMITS - NPDES
Entero 30 day geo mean 35 mpn /100ml



Disinfection - Total Coliform

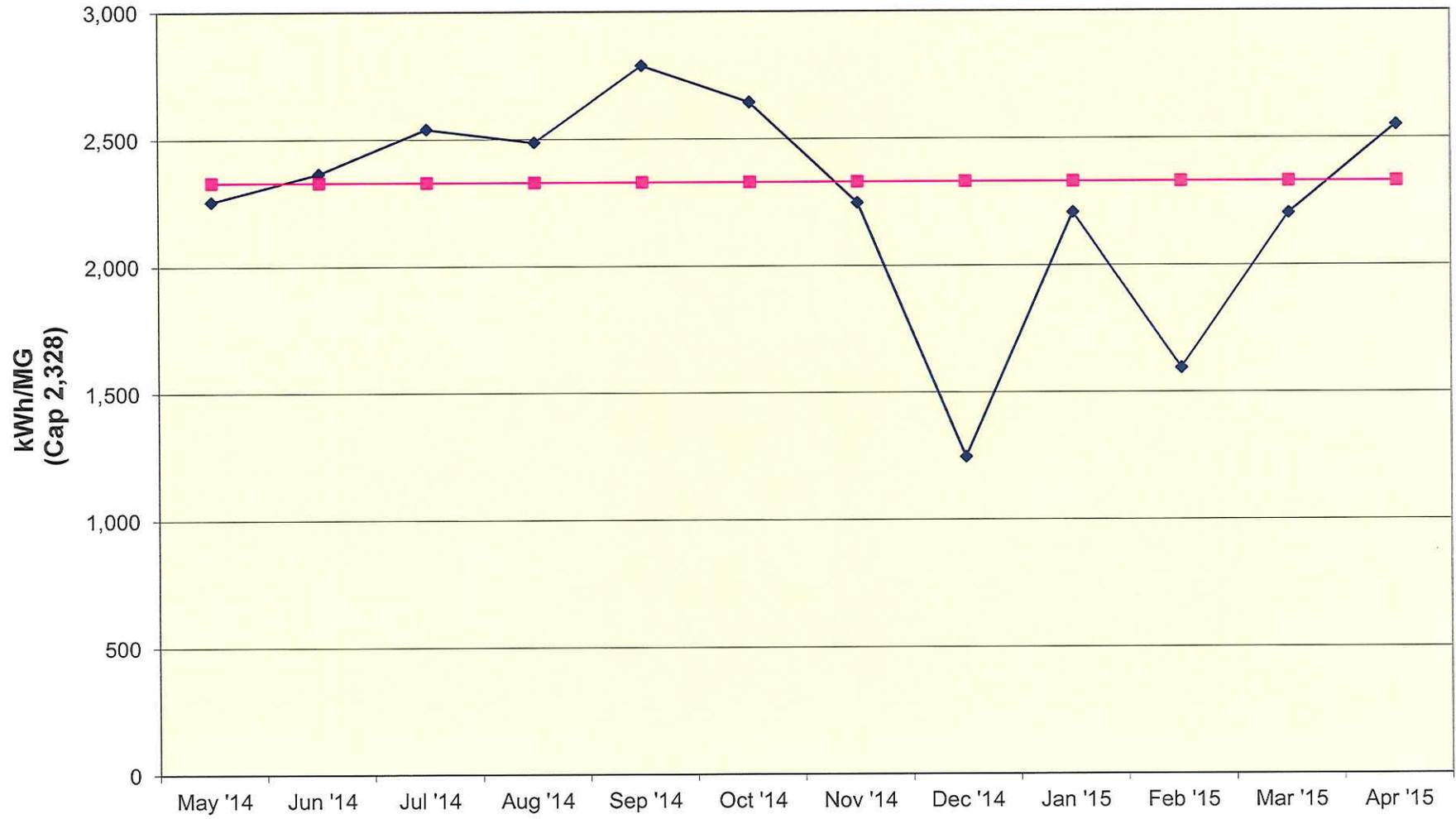
TOTAL COLIFORM LIMITS - WDR
5 Sample Median - 240 mpn /100 ml
Maximum - 10,000 mpn/100 ml

■ 5 Sampl Med ■ Monthly Max



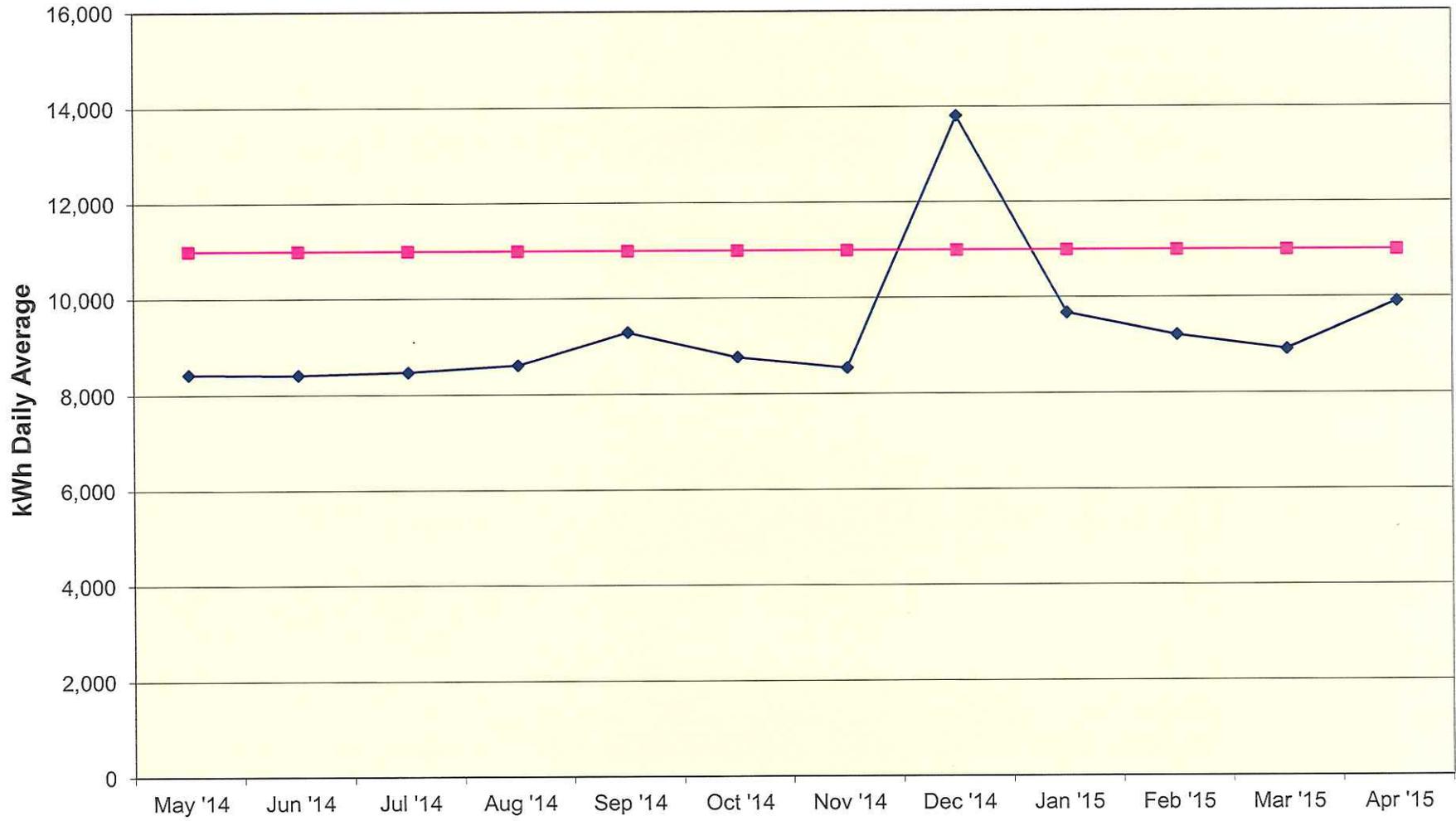
Energy kWh/MG

◆ kW/MG ■ Cap



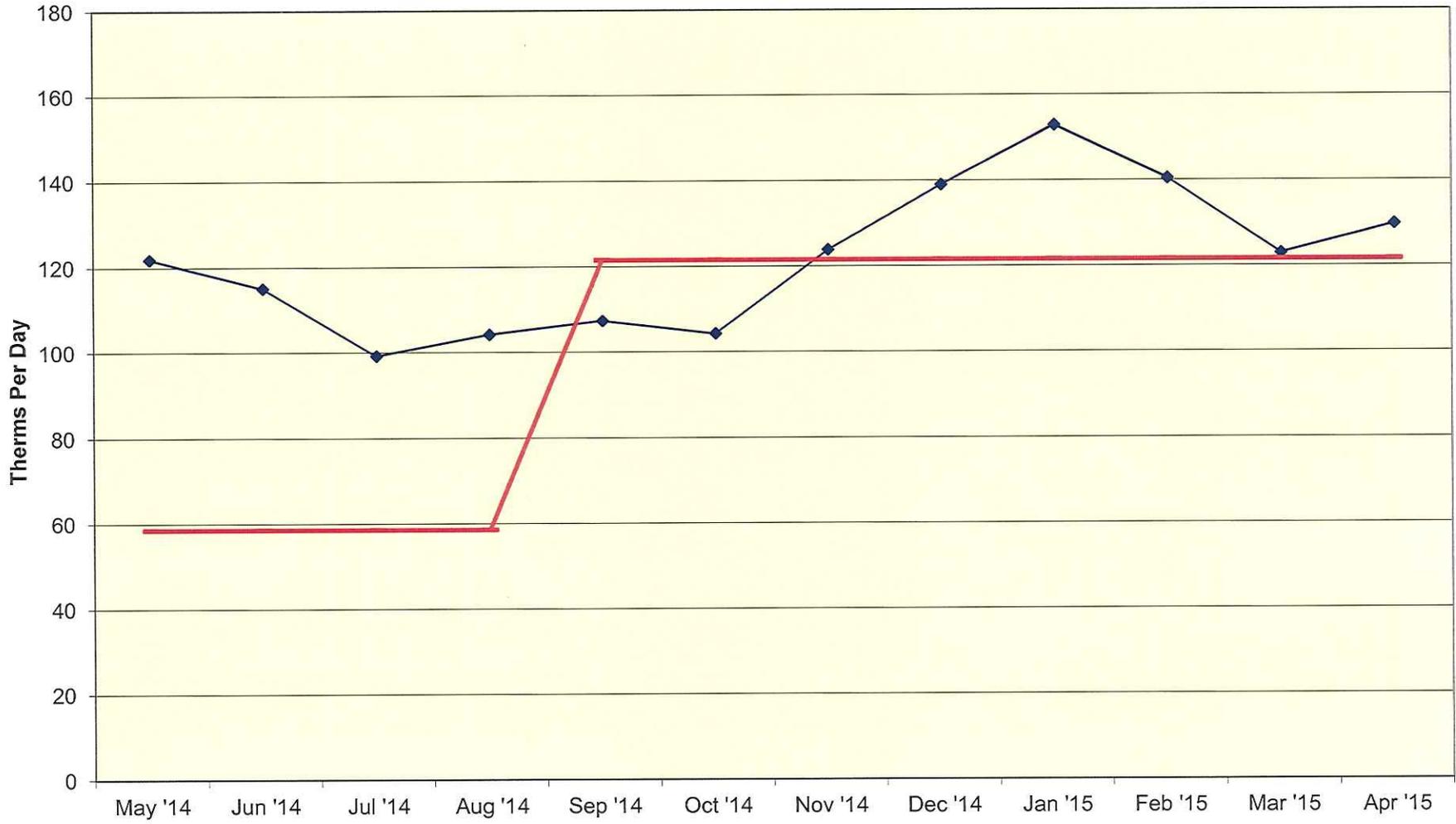
Energy kWh

◆ kWh ■ Cap

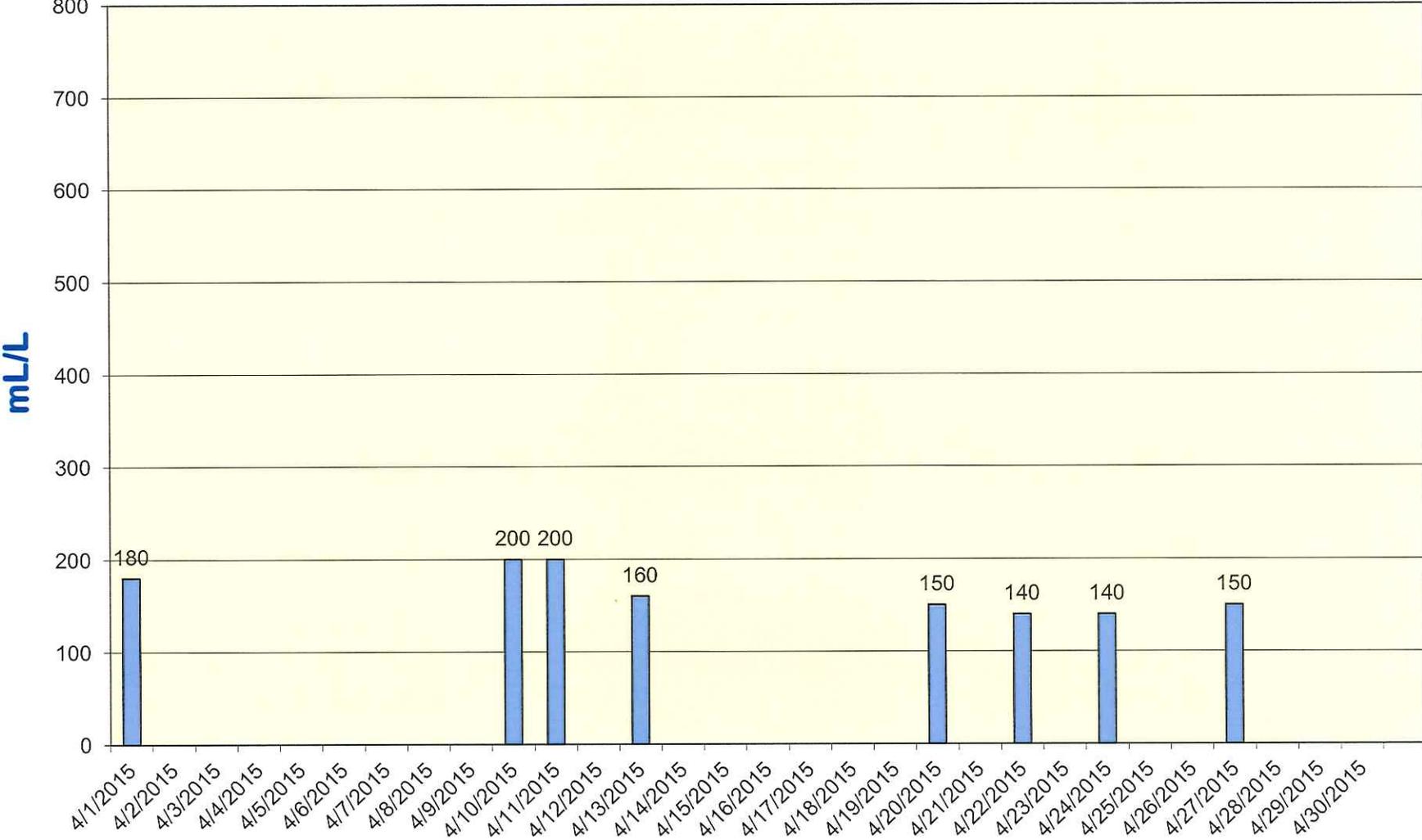


Natural Gas Use

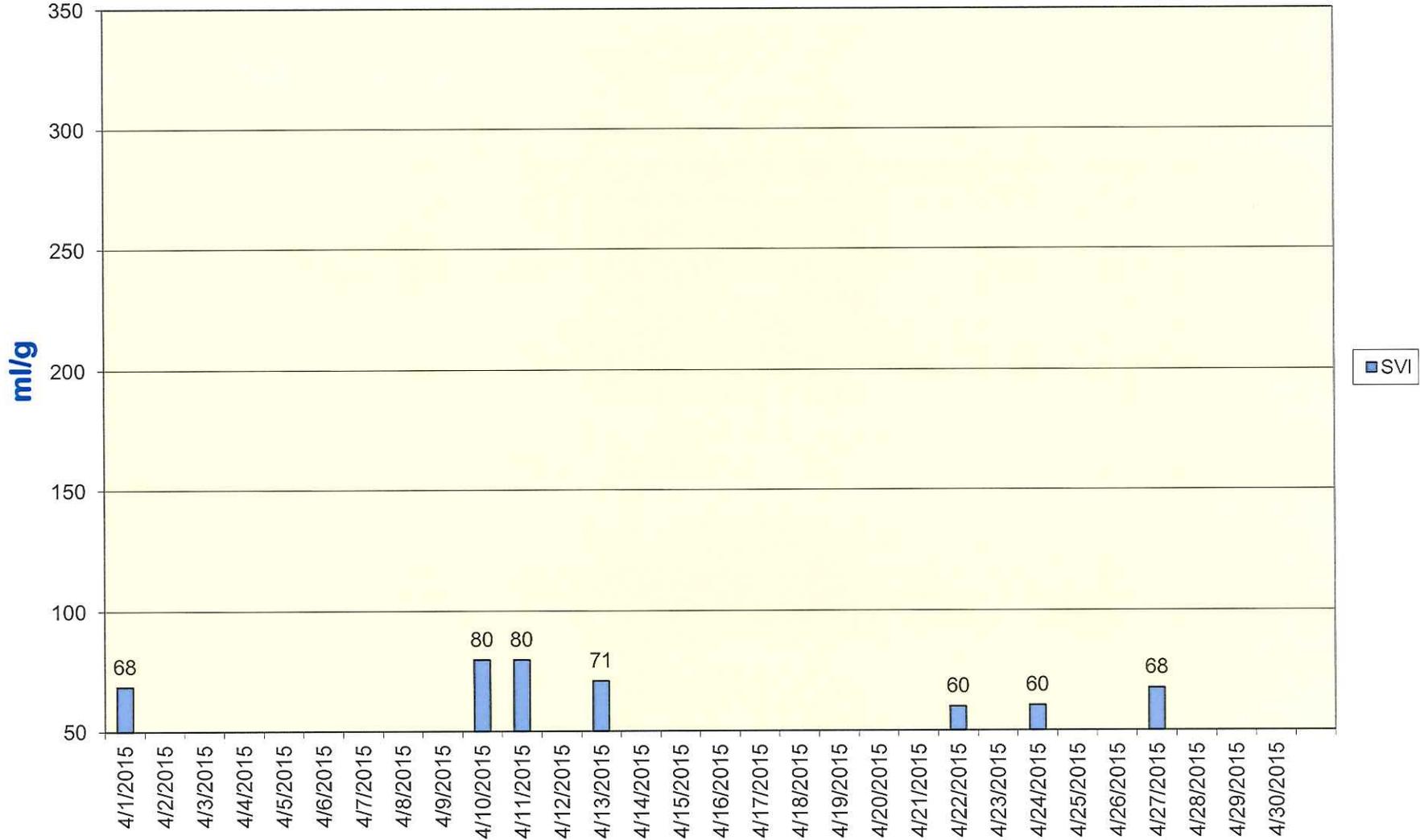
◆ Natural Gas — Cap



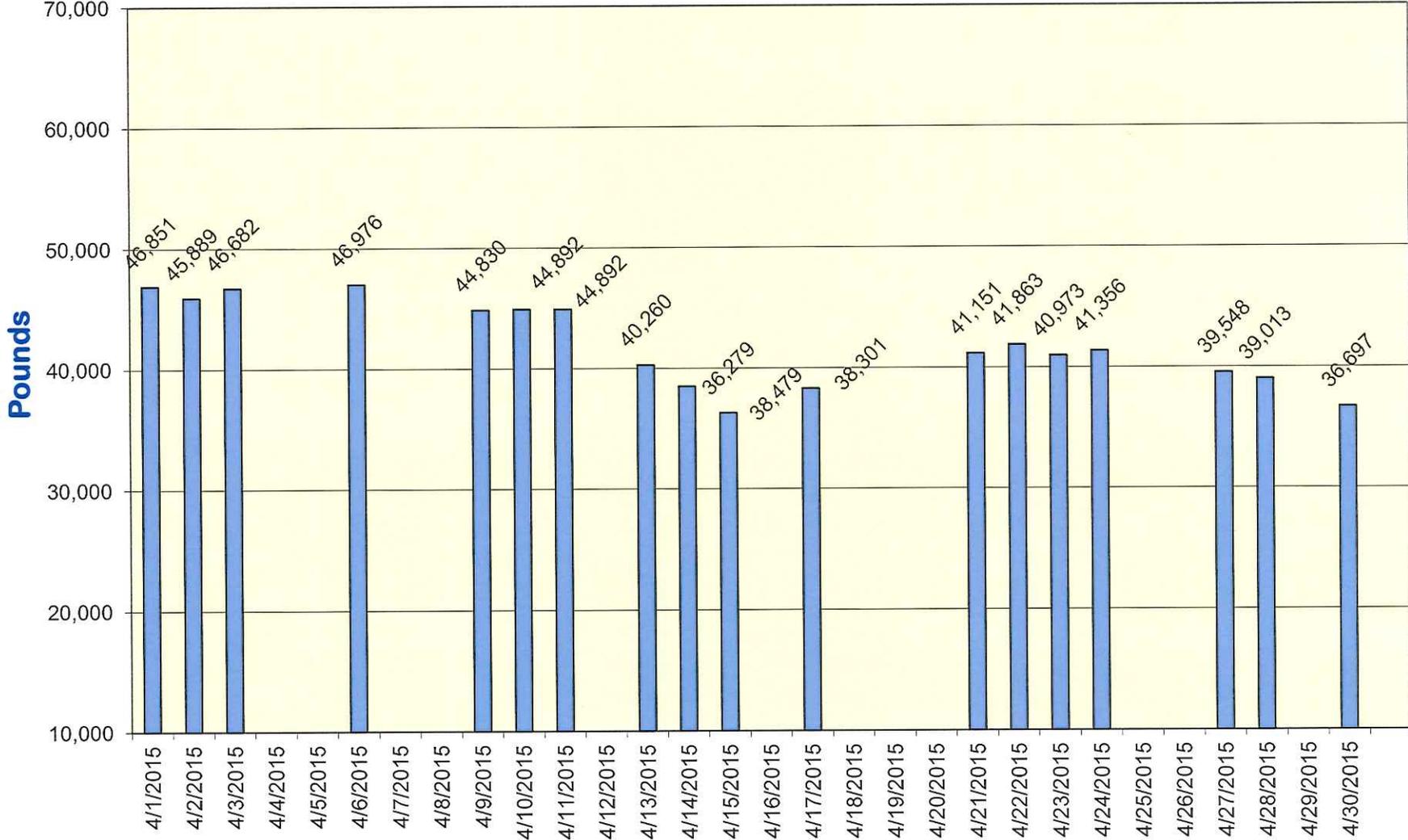
Settleability



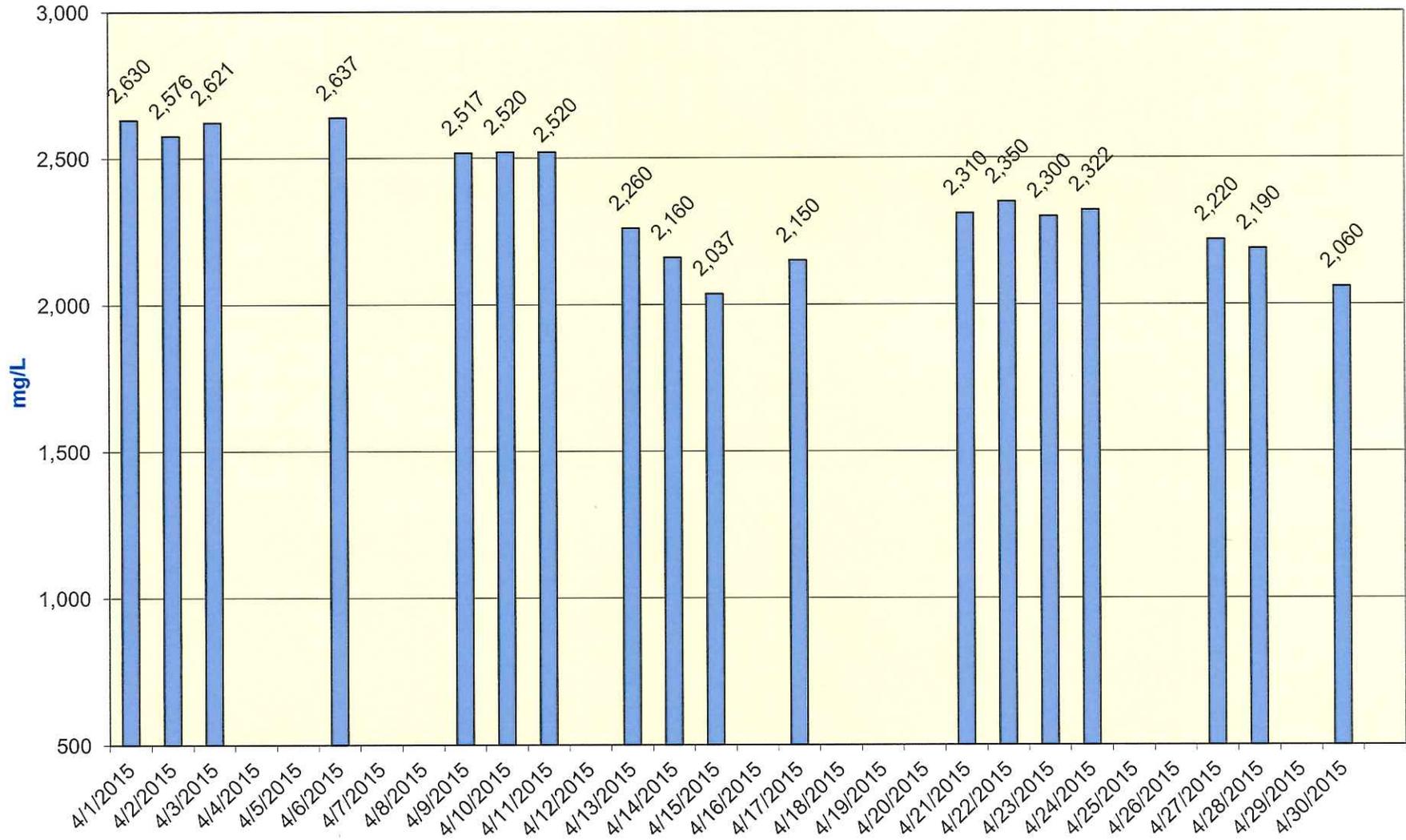
Sludge Volume Index



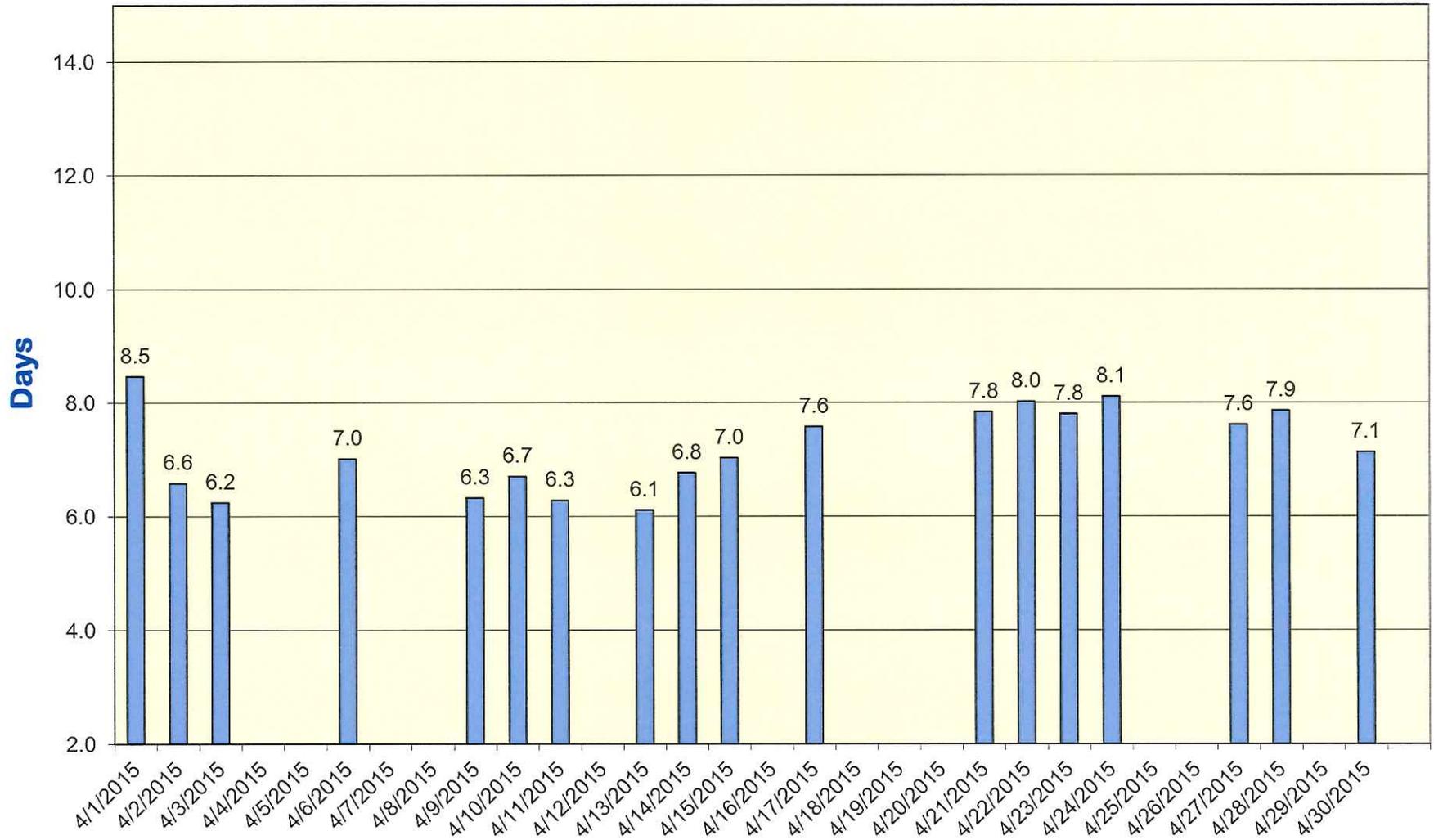
MLSS Inventory



MLSS Concentration



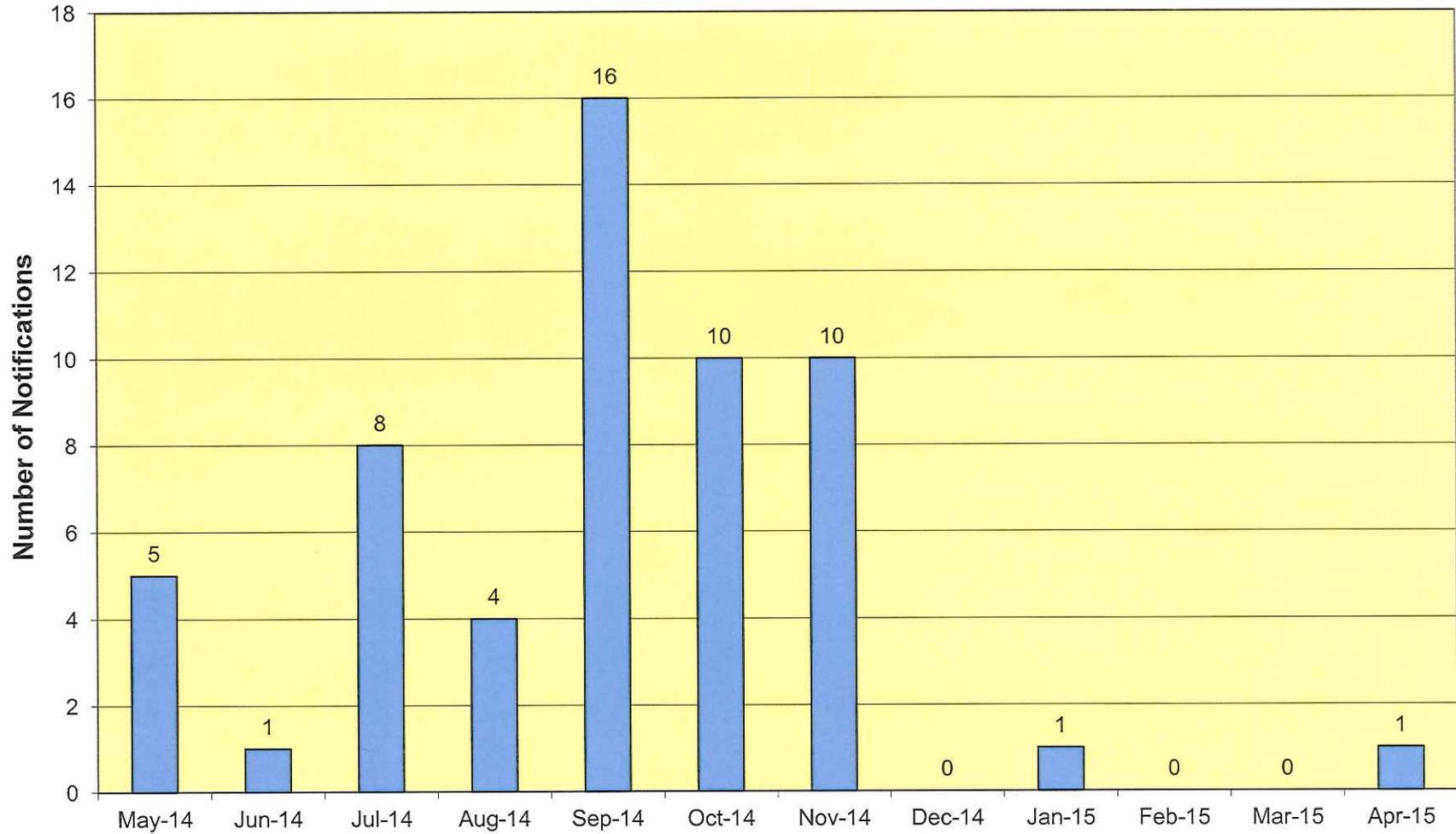
Mean Cell Residence Time



Process Control Data

	Influent Flow	Settleability	MLSS Concentration	MLSS Inventory	F:M Ratio	MCRT	SVI
4/1/2015	4.00	180	2,630	46,851	0.17	8.5	68
4/2/2015	3.68		2,576	45,889		6.6	
4/3/2015	3.74		2,621	46,682		6.2	
4/4/2015	3.95						
4/5/2015	4.07						
4/6/2015	4.28		2,637	46,976	0.21	7.0	
4/7/2015	4.72						
4/8/2015	4.03						
4/9/2015	3.88		2,517	44,830		6.3	
4/10/2015	3.71	200	2,520	44,892		6.7	80
4/11/2015	3.79	200	2,520	44,892		6.3	80
4/12/2015	3.63						
4/13/2015	3.92	160	2,260	40,260	0.23	6.1	71
4/14/2015	3.83		2,160	38,479		6.8	
4/15/2015	3.73		2,037	36,279		7.0	
4/16/2015	3.76						
4/17/2015	3.70		2,150	38,301		7.6	
4/18/2015	3.90						
4/19/2015	4.08						
4/20/2015	3.57	150					
4/21/2015	3.66		2,310	41,151	0.17	7.8	
4/22/2015	3.51	140	2,350	41,863		8.0	60
4/23/2015	3.49		2,300	40,973		7.8	
4/24/2015	3.83	140	2,322	41,356		8.1	60
4/25/2015	3.96						
4/26/2015	3.93						
4/27/2015	3.89	150	2,220	39,548		7.6	68
4/28/2015	4.03		2,190	39,013		7.9	
4/29/2015	4.06						
4/30/2015	4.08		2,060	36,697		7.1	
Minimum	3.49	140.00	2,036.50	36,279	0.17	6.1	60
Maximum	4.72	200	2,637	46,976	0.23	8.5	80
Total	112.33	1,320	40,318	718,235	0.78	122.3	486
Average	3.87	165	2,372	42,249	0.19	7.2	69

Complaints / Contacts Received



WORK ORDER STATISTICS

April 1, 2015 - April 30, 2015

	Open Work Orders Due Prior to 4/1/15	Open Work Orders 4/1/15 - 4/30/15	Total Open Work Orders
Preventative	7	336	343
Corrective	1	22	23
Total	8	358	366
	Closed Work Orders 4/1/15 - 4/30/15		
Preventative	333		
Corrective	11		
Total	344		
Total Outstanding Work Orders as of May 1, 2015	22		

NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Odor Control and Landscaping Report
April 2015

1.0 Background

Ongoing work continues on odor control and landscaping, especially at the fence-line area next to the Lea Drive neighborhood, and at the northeast portion of the Novato Treatment Plant (NTP) site. As mentioned before, the District has already invested significant amounts beyond the substantial initial investment for odor control and landscaping from the original WWTP Upgrade Project. These additional costs have included operational changes, measures related to further odor control measures, noise abatement, visual screening, wind shielding, and daily monitoring.

2.0 Odor control

Odor control related activities in April included:

- Liquid phase sulfide sampling and analysis continued as per recommendations by Dave McEwen of Brown and Caldwell (B&C), the District's odor consultant. An update by Mr. McEwen is planned for the May 11, 2015 Board meeting.
- As-needed use of the new Aqua-Fog system which utilizes an odor counteractant technique to broadcast a water based non-toxic odor neutralizer in the vicinity of the aeration basins.
- Monitoring the media in the large odor control bed between primary clarifiers #1 & #2 which appears to be performing very well.
- Pre-chlorination: Sodium hypochlorite continues to be added as an oxidizer on an as-needed basis to the influent flow, with staff monitoring performance.

3.0 Landscaping

The District's landscaping contractor Cagwin and Dorward (C&D) continues to work on an as-needed on vegetation at the District's fence-line on Lea Drive and at the northeast corner area of the NTP. The redwood trees replanted to the northeast corner of the plant site in late February/early March, appear to be thriving. Staff will continue to monitor the landscaping, and evaluate the potential for additional tree plantings, in this area of the plant site.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
April 2015**

1.0 General:

The breakdown of Collection System department staff time for April 2015, in terms of equivalent full-time employee (FTE) hours utilized, works out approximately as follows:

- 2.2 FTE field workers for Sewer Maintenance (main line cleaning)
- 1.2 FTE field workers for Pump Station Maintenance
- 0.0 FTE field workers for Closed Circuit Television (CCTV) work
- 2.0 FTE field workers for time spent on data input, training, service calls, overflow response, or any other activity that does not directly relate to main line cleaning, CCTV work or pump station maintenance, and
- 1.6 FTE field workers Vacation/Sick Leave/Holiday

2.0 Collection System Maintenance:

Performance metrics for the department are presented in the attached graphs showing the length of line cleaned/month, footage cleaned/hour worked, overflows/month, and the CCTV footage achieved. A brief discussion is also provided below.

Line Cleaning Performance:

A total of 566 work orders were generated for April by the ICOM3 Computerized Maintenance Management System (CMMS). Staff completed 551 work orders leaving 15 work orders outstanding. The 551 maintenance work orders completed in April resulted in 107,261 feet of sewer pipelines cleaned by staff. A substantial amount of the line segments cleaned were in preparation for root treatment in June, 2015. The 15 outstanding work orders are all work orders for hydro-flushing which will be completed in May. Outside contractors cleaned two (2) sections of trunk sewer main lines during the month totaling one hundred and twenty-seven (127) feet.

CCTV Performance:

The District's CCTV van was in the field for approximately two (2) hours over a one (1) day period inspecting 1 line segment totaling 303 feet. Staff did not televise any line segments using the Push Cam. Outside contractors televised two (2) sections of trunk sewer main lines during the month totaling one hundred and twenty-seven (127) feet.

CCTV production was low this month due to staff availability for this activity and the necessity for preparing line segments for root treatment.

CCTV Findings:

- Infrastructure related: The April CCTV work did not find any line segments that will require repair.

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
April 2015**

- O&M related: The April CCTV work did not identify any areas that require a change in sewer line operations.

3.0 Pump Station Maintenance:

The Collection System Department conducted 246 lift station inspections this month. 144 of the inspection visits were generated through the District's JobsCal Plus CMMS system. There are 18 outstanding work orders for the month that will be completed in May.

A Collection Systems (Pump Stations) Work Order Statistics summary is attached.

4.0 Air Relief/Vacuum Valves (ARVs):

Staff completed maintenance inspections on nine (9) air relief/vacuum valves.

5.0 Safety and Training:

General:

Collection System staff attended three safety tailgate meetings.

Specialized training:

Collection System staff attended Body Mechanics Training in April.

Safety performance:

There were no lost time accidents this month for a total of 1,507 accident free days since the last lost time accident.

6.0 Minor Projects:

The District completed repair projects under the informal contract provisions of the Uniform Public Construction Cost Accounting Act (UPCCAA) as follows:

a. Olive Pump Station:

The existing roof was replaced at the Olive Pump Station. The existing roof was flat and would collect rainwater and leak. A roof access ladder was installed as part of the work.

b. Hamilton Wet Weather Force Main:

The Hamilton wet weather force main was repaired after City forces reported a sink hole in Hamilton Parkway. Originally it was thought that the sink hole was due to



Figure 1- Olive P.S. Roof Replacement

**Novato Sanitary District
Wastewater Operations Committee meeting
Collection System Operations Report
April 2015**

poor compaction around a recycled water main but later it was determined to be the leaking force main. Evidently, during the construction of the recycled water line two years ago the North Marin Water District's contractor damaged the force main while completing the work. None of the leaking sewage reached the surface but collected in the trench. The Water District has taken responsibility for the work.



Figure 2 - Hamilton Force Main Repair

c. Hamilton Pump Station:

The District replaced the air relief valves at the East Hamilton Pump Station, one on the dry weather force main, and one on the wet weather force main.

d. Rowland Plaza Pump Station:

Two leaking check valves and an inoperable plug valve were replaced.

7.0 Standard Operating Procedures (SOPs):

Department staff did not generate any SOPs during the month of April. Staff recently completed a draft of a Core Competency Checklist to use to track training of Collections Department employees. The draft checklist is being used to track the initial training of a recently hired employee, and lessons learned will be incorporated in the final version. Staff will now develop a similar draft checklist to use for tracking annual checks of Collections Department employees to determine where annual training is necessary.

8.0 Sanitary Sewer Overflows (SSOs):

There were zero (0) SSO's in April.

Novato Sanitary District
Collection System Monthly Report For April 2015 (as of April 30, 2015)

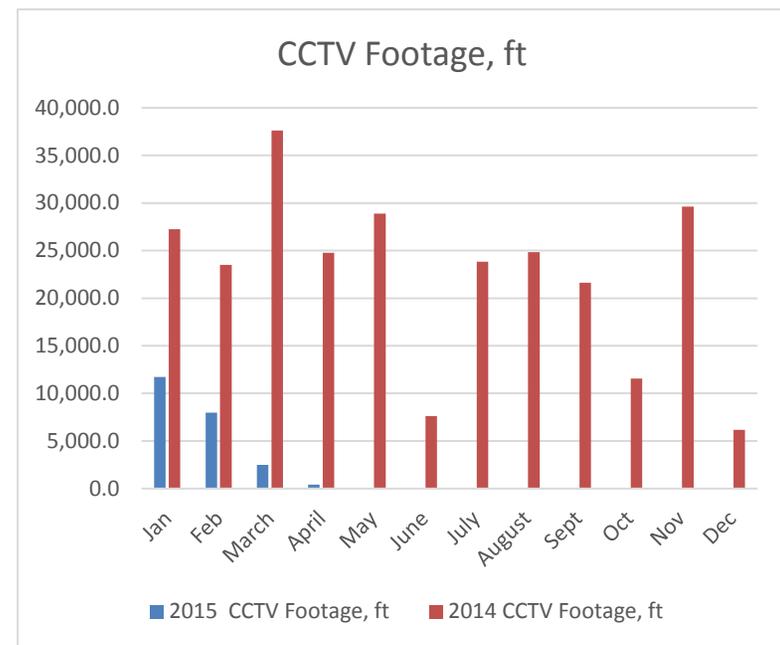
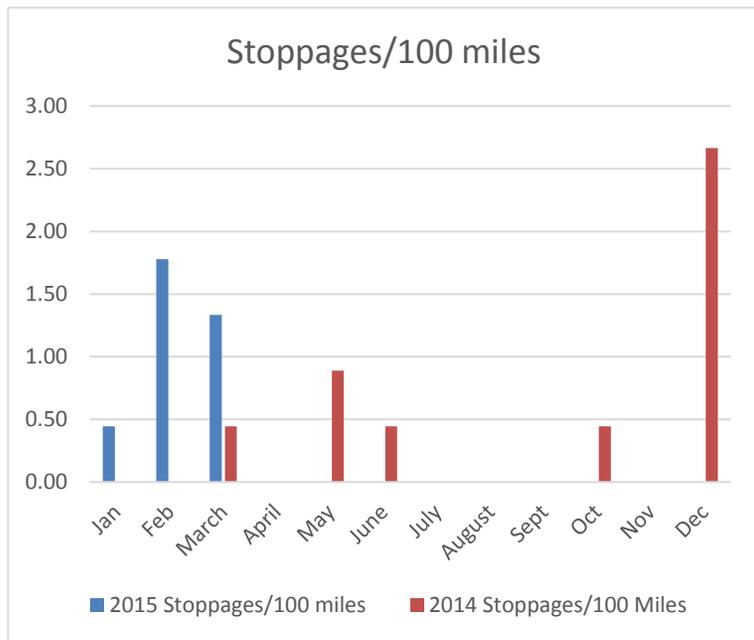
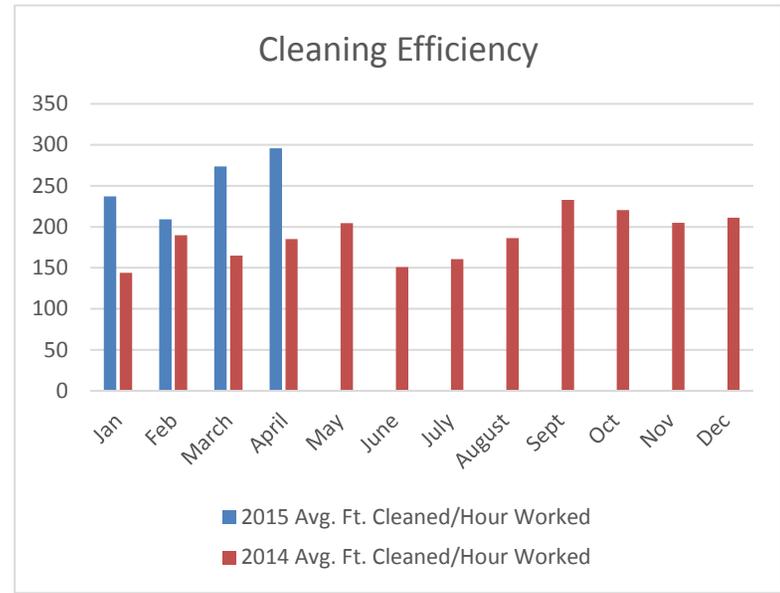
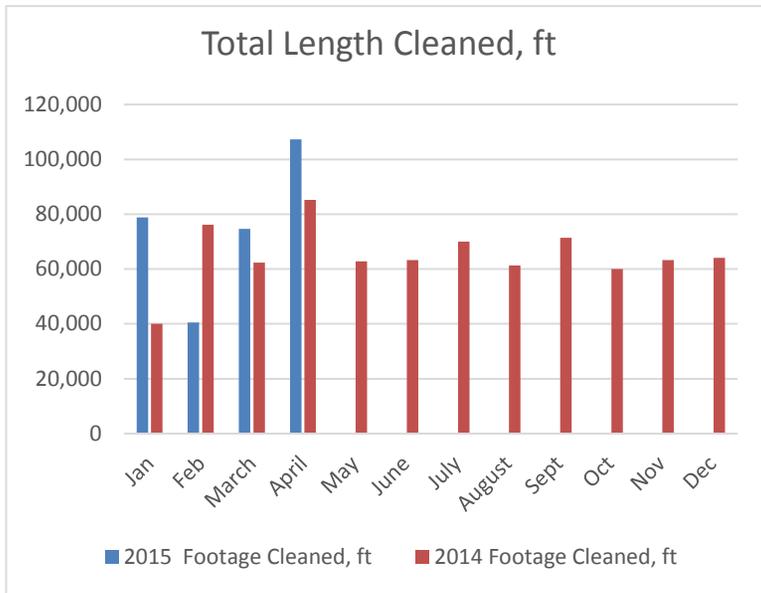
	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Total Year to Date	Average Year to Date
A. Employee Hours Worked														
Number of FTEs (main line cleaning), hrs.	1.9	1.2	1.5	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.6
Number of FTEs (other)	1.6	2.1	1.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.6
Number of FTEs (CCTV)	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0
Total, FTEs	3.6	3.5	3.4	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	1.2
Regular Time Worked, (main line cleaning), hrs	333	194	273	363										
Regular Time Worked on Other, hrs (1)	281	329	320	341										
Regular Time Worked on CCTV (2)	15	36	4	0										
Total Regular time, worked, hrs	628	559	597	703	0	0	0	0	0	0	0	0	2,486	207
Total Vacation/Sick Leave/Holiday, hrs	403	356	271	277									1,306	326
Vacation/Sick Leave/Holiday, FTEs	2.3	2.2	1.5	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.6
Overtime Worked on Coll. Sys., hrs	3	0	16	3									21	5
Overtime Worked on Other, hrs (1)	14	45	31	19									109	27
Overtime Worked on CCTV (2)	0	0	0	0									0	0
Total Overtime, hrs	17	45	46	22	NA	NA	NA	NA	NA	NA	NA	NA	130	32
B. Productivity														
1. Line Cleaning														
Rodder Work Orders generated	90	31	42	23									186	47
Rodder 3208 ft. cleaned	15,611	6,776	7,657	3,885									33,929	8,482
Rodder - outside services, ft cleaned	0	0	0	0									0	0
Flusher Work Orders generated	340	183	388	543									1,454	364
Truck 3205V ft. cleaned	107	4,165	2,352	22,584									29,208	7,302
Truck 3206V ft. cleaned	63,145	29,612	64,665	80,792									238,214	59,554
Flusher - outside services, ft. cleaned	1,349	553	0	127									2,029	
Total Footage cleaned(3)	78,863	40,553	74,674	107,261	NA	NA	NA	NA	NA	NA	NA	NA	301,351	75,338
Work Orders completed	416	198	397	551									1,562	391
Work Orders backlog	14	16	33	15	NA	NA	NA	NA	NA	NA	NA	NA	78	20
2. Closed Circuit Television (CCTV)														
Camera Work Orders generated	0	0	0	0									0	
CCTV Truck 3126T, ft. videoed	3,998	6,622	1,795	303									12,718	3,180
CCTV (hand cam), ft. videoed	6,378	806	706	0									7,890	
CCTV Inspection - outside services, ft. videoed	1,349	553	0	127									2,029	
Total CCTV footage(3)	11,725	7,981	2,501	430	NA	NA	NA	NA	NA	NA	NA	NA	22,637	
C. Sanitary Sewer Overflows (SSOs)														
Minor (Category III)	1	4	3	0									8	NA
Major (Category III)	1	1	1	0									3	NA
Major (Category II)	0	0	0	0									0	NA
Major (Category I)	0	3	2	0									5	NA
Overflow Gallons	126	2,419	1,603	0									4,148	NA
Volume Recovered	0	0	98	0									98	NA
Percent Recovered	0%	0%	6%	NA	NA	NA	NA	NA	NA	NA	NA	NA	2%	NA
D. Service Calls (non-SSO related)														
Service calls, normal hours, #	10	11	7	2									30	8
Normal hours S.C. response time, mins (avg.)	22	20	15	10									67	17
Service Callouts, after hours, #	1	1	1	1									4	1
After Hours S.C. response time, mins (avg.)	33	35	40	7									115	29
E. Benchmarks														
Average Ft. Cleaned/Hour Worked	237	209	274	296	NA	NA	NA	NA	NA	NA	NA	NA	NA	254
Total Stoppages/100 Miles	0.4	1.8	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	NA
Average spill response time (mins)	28	5	22	0									NA	14
Callouts/100 Miles	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.1
Overtime hours/100 Miles	1	0	7	1	0	0	0	0	0	0	0	0	9.33	1
Overflow Gallons/100 Miles	55	1052	697	0	0	0	0	0	0	0	0	-	1,803	150

(1) This category includes time spent on: Data input, Training, Service Calls, Overflow Response, as well as any other activity that does not directly relate to main line cleaning or CCTV work.

(2) This category separates time spent on CCTV from other Collection System maintenance activities.

(3) Does not include outside services (tracked separately)

Collection System 2014-15 Graphs



**COLLECTION SYSTEM (Pump Stations)
WORK ORDER STATISTICS
April 1, 2015 - April 30, 2015**

	Open Work Orders Due Prior to 4/1/2015	Open Work Orders 4/1/2015 - 4/30/2015	Total Open Work Orders
Preventive	8	134	134
Corrective	10	10	10
Total	18	144	144

	Closed Work Orders 4/1/2015 - 4/30/2015
Preventive	126
Corrective	0
Total	126

Total Outstanding Work Orders as of 4/30/2015	18
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**NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Reclamation Facilities Report
April 2015**

1.0 Summary:

The rancher began harvesting pasture grass this month. Pump No. 2 at Drainage Pump Station No. 7 was installed. Accumulated silt around the two Drainage Pump Stations was removed. Staff continues to work to locate the leak on the Wildlife Pond Feed Pipeline. Thermal imaging was performed on the switchgear at the Irrigation Pump Station. Staff found a seal failure on the Wildlife Pond Drain Pump, and a seized-up Wash-down Water Pump. There were no sludge handling activities this month.

2.0 Ranch Operations:

The rancher's hay farmer began cutting hay on Site 7 on April 16th and completed cutting all of the hay on Site 7 by April 24th. The hay cutter moved to Site 3 and completed cutting hay on Parcels 31, 32, 33, 34, 35, 36 and a portion of Parcel 37 by the end of the month. The hay farmer baled hay on Parcel 78 and a portion of Parcel 76 & 74 by the end of the month (see photo at right). Bales on Parcel 78 were removed and stacked in the hay storage yard as well. The rancher removed sprinklers in Parcel 77 in preparation for flushing after the hay is baled and removed. The control system in Site 7 has a short in the system and staff will troubleshoot it in early May.



3.0 Irrigation Parcels:

The District issued a Work Order to remove accumulated silt from around the Drainage Pump Stations that was discovered during the completion of the Drainage Pump Station Improvement Project, and work was completed this month (see photo at left).



Drainage Pump No. 2 was installed at Drainage Pump Station No. 7 after the accumulated silt around the pump wells was removed. The pump was not put into service because the anchor bolt holes for anchoring the pump to the floor of the pump station did not match up exactly so the contractor has to return to the site and re-auger the holes for the bolts.

The Drainage Pump Stations pumped approximately 4.66 MG of rainwater in April.

**NOVATO SANITARY DISTRICT
Wastewater Operations Committee Meeting
Reclamation Facilities Report
April 2015**

4.0 Irrigation Pump Station:

There was no irrigation activity this month. Staff issued a purchase order to have the switchgear in the Irrigation Pump Station inspected by a thermo-imaging camera while equipment was running, looking for hotspots. The contractor identified a couple of hotspots that were corrected while the contractor was on site. During this work the contractor discovered that the seal failed on the Wildlife Pond Drain Pump and the Washdown Water Pump was seized. Later in the month the seal was removed for repair and the Washdown Water Pump was removed and taken to the repair shop (see photo at right).



As previously reported, the feed line for the Wildlife Pond generated a leak. Staff issued a purchase order for a leak detection company to come to the site and try to locate the leak. The leak could not be located with their equipment, most likely due to the depth of the leak. Staff issued a Work Order to install a valve near the end of the pipeline at the Wildlife Pond so the line can be pressurized with gas or air which will make a louder sound when the gas or air leaves the pipe through the leak in the pipeline. This work has not commenced.

5.0 Sludge Handling & Disposal:

There was no sludge handling activity this month.

NOVATO SANITARY DISTRICT
Reclamation Facility - Monthly Statistics for Calendar Year 2015, as of April, 2015

	January	February	March	April	May	June	July	August	September	October	November	December	Total Year to Date	Annualized Monthly Average
Irrigation Pump Station														
Plant flow to ponds (MG)		0	0	0	0								-	0.00
Irrigation (MG)		0	0	0.0	0.09								0.1	0.01
Irrigation Pump 1 Hours				0.3									0.3	0.03
Irrigation Pump 2 Hours				0.1									0.1	0.01
Irrigation Pump 3 Hours				0.1									0.1	0.01
Washdown Water Pump Hours				0									-	0.00
Wildlife Feed Pump Hours			331.5	51.6									383.1	31.93
Water Circulated through Wildlife Pond (MG)	0	0	20.88	3.25	0	0	0	0	0	0	0	0	24.1	2.01
Strainer No. 1 Hours				0.2									0.2	0.02
Strainer No. 2 Hours				0									-	0.00
Pond 1 Gauge @ Beginning of Month	5.4	5.4	5.6	5.4										
Pond 1 Gauge @ End of Month	5.4	5.6	5.4	5.4										
Pond 1 Gallons Stored @ End of Month(MG)	39.2	41	39.2	39.2										
Pond 2 Gauge @ Beginning of Month	5.5	5.5	5.7	5.5										
Pond 2 Gauge @ End of Month	5.5	5.7	5.5	5.5										
Pond 2 Gallons Stored @ End of Month(MG)	52	54	52	52										
Total Irrigation Water Stored	91.2	95	91.2	91.2	0	0	0	0	0	0	0	0		
Drainage Pump Station No. 3														
Drainage Pump No. 1 Hours	0	133.1	2.4	1.2										
Drainage Pump No. 2 Hours	0	0	2.1	0.1										
Drainage Pump No. 3 Hours	100.3	127.1	0.6	2.7										
Total Gallons Stormwater Pumped (MG)	30.09	78.06	1.53	1.2	0	0	0	0	0	0	0	0	110.88	9.24
Drainage Pump Station No. 7														
Drainage Pump No. 1 Hours	331.6	46.2	13.3	0.2										
Drainage Pump No. 2 Hours	0	0	0	0										
Drainage Pump No. 3 Hours	0	1.5	2.7	7.5										
Total Gallons Stormwater Pumped (MG)	149.22	21	7	3.47	0	0	0	0	0	0	0	0	181.35	15.11