Plant Operations Branch

Mr. William Arguto, Chief
Drinking Water Branch (3WP21)
EPA Region III
1650 Arch Street
Philadelphia, PA 19103-2029

Dear Mr. Arguto:

Enclosed are the Washington Aqueduct's water quality data for the month of January 2013. All results were within acceptable limits.

If you require any additional information, please contact Mr. Lloyd D. Stowe at (202) 764-2702.

Sincerely,

Thomas P. Jacobus
General Manager

Enclosure: Washington Aqueduct Water Quality Data

U.S. Army Corps of Engineers
Washington Aqueduct
5900 MacArthur Blvd., NW
Washington, DC 20016-2514

January 2013

Water Quality Data

Washington Aqueduct Laboratory Analytical Data

01 January 2013 To: 31 January 2013

Parameter	Raw Water			Dalecarlia Finished			McMillan Finished		
	MAX	MIN	AVG	MAX	MIN	AVG	MAX	MIN	AVG
Alkalinity as $CaCO_3$	81	57	70	76	52	66	67	47	56
Ammonia, Total	0.1	0.03	0.05	0.85	0.69	0.76	0.92	0.70	0.81
Calcium	37	23	32	40	28	35	35	27	32
Conductivity	321	306	314	359	350	355	340	315	328
Fluoride	0.11	ND	0.07	0.67	0.55	0.61	0.74	0.48	0.61
Magnesium	8	2	5	8	3	5	9	4	6
Temperature (^oF)	51	43	46	50	38	44	51	44	46
Total Hardness as $CaCO_3$	125	67	103	128	83	109	119	86	104

Parameter	Date	EPA Limit	Raw Water	Dalecarlia Finished	McMillan Finished
Dissolved Solids	1/14/13		148	168	163
Suspended Solids	1/14/13		< 1	< 1	< 1
Total Solids	1/14/13		148	168	163
Bromide	1/8/13		0.04	ND	ND
Chloride	1/8/13		30	33	39
Nitrate as N	1/8/13	10	2.5	2.5	2.1
Nitrite as N	1/8/13	1	ND	ND	ND
Orthophosphate as PO_4	1/8/13		0.10	See plant orthophosphate page	
Perchlorate*	1/9/13		0.39**	0.40	0.35
Sulfate	1/8/13		28	43	45

All results are in mg/L except perchlorate. Perchlorate results are in ug/L.
ND = Non-detect
* NOTE: Perchlorate results are based on the IC/MS method (EPA 332.0) with a reporting limit of 0.2 ug/L.
** Raw water was sampled on 1/7/13.

Weekly Sodium

Date Collected	Dalecarlia Finished (mg/L)	McMillan Finished (mg/L)
1/2/13	24.4	24.2
1/8/13	19.5	26.1
1/15/13	19.5	22.9
1/22/13	15.2	19.3
1/29/13	19.8	16.7

Washington Aqueduct Laboratory Analytical Data

01 January 2013 To: 31 January 2013

Summary for TOC

	1/7/13	1/14/13	1/21/13	1/28/13	
Raw Water Alkalinity	76	90	59	77	
Raw Water Intake TOC	2.04	2.00	2.73	1.68	
% Required Removal	25.0	25.0	35.0	0.0	
#12 Dalecarlia Settled TOC	1.41	1.57	1.61	1.29	
#15 Dalecarlia Filtered TOC	1.37	1.44	1.56	1.25	
% Dalecarlia Removal	32.8	28.0	42.9	25.6	
Removal Ratio	1.31	1.12	1.22	1.00	
F McMillan Settled TOC	1.41	1.61	1.63	1.46	
G McMillan Filtered TOC	1.29	1.53	1.62	1.36	
% McMillan Removal	36.8	23.5	40.7	19.0	
Removal Ratio	1.47	0.94	1.16	1.00	

All results are in mg/L unless otherwise noted

NOTE: Little Falls was not in service during days of source water sample collection.

TOC removals are calculated as follows:
Dalecarlia removals are based on samples collected 2 days after Great Falls sample collection.
McMillan removals are based on samples collected 7 days after Great Falls sample collection.

TOC Removal Compliance Calculations. Compliance is achieved when removal ratio $\geq$ 1

2013 Dalecarlia Month	Removal Ratio	Quarterly Avg. Ratio	RAA Ratio
January	1.16		
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

2013 McMillan Month	Removal Ratio	Quarterly Avg. Ratio	RAA Ratio
January	1.14		
February			
March			
April			
May			
June			
July			
August			
September			
October			
November			
December			

Washington Aqueduct Laboratory Analytical Data
01 January 2013 To: 31 January 2013

Trihalomethane Data by EPA Method 524.2

Sample Location	Dalecarlia Finished	McMillan Finished
Sample Date	1/9/2013	1/9/2013
Analysis Date	1/10/2013	1/11/2013
Units	ug/L	ug/L
Chloroform	6.2	8.9
Bromodichloromethane	4.7	5.0
Chlorodibromomethane	1.5	1.1
Bromoform	ND	ND
Total THMs	12	15

Reporting limit is 0.5 ug/L

2012 Washington Aqueduct Yearly Trihalomethane Data

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	LRA*
Dalecarlia Finished	12												34
McMillan Finished	15												39

*LRA = Annual Location Running Average

Washington Aqueduct Laboratory Analytical Data
01 January 2013 To: 31 January 2013

Volatile Organic Compounds (VOCs) Data by EPA Method 524.2

Sample Location	Reporting Limit	Dalecarlia Finished	McMillan Finished
Sample Date		1/9/2013	1/9/2013
Analysis Date		1/10/2013	1/11/2013
Units	ug/L	ug/L	ug/L
Benzene	0.5	ND	ND
Bromobenzene	0.5	ND	ND
Bromochloromethane	0.5	ND	ND
Bromodichloromethane	0.5	4.7	5.0
Bromoform	0.5	ND	ND
Bromomethane	2.0	ND	ND
tert-Butylbenzene	0.5	ND	ND
sec-Butylbenzene	0.5	ND	ND
n-Butylbenzene	0.5	ND	ND
Carbon tetrachloride	0.5	ND	ND
Chlorobenzene	0.5	ND	ND
Chloroethane	2.0	ND	ND
Chloroform	0.5	6.2	8.9
Chloromethane	0.5	ND	ND
2-Chlorotoluene	0.5	ND	ND
4-Chlorotoluene	0.5	ND	ND
1,2-DiBr-3-Clpropane (DBCP)	0.5	ND	ND
Dibromochloromethane	0.5	1.5	1.1
1,2-Dibromoethane (EDB)	0.5	ND	ND
Dibromomethane	0.5	ND	ND
1,3-Dichlorobenzene	0.5	ND	ND
1,4-Dichlorobenzene	0.5	ND	ND
1,2-Dichlorobenzene	0.5	ND	ND
Dichlorodifluoromethane	0.5	ND	ND
1,1-Dichloroethane	0.5	ND	ND
1,2-Dichloroethane	0.5	ND	ND
trans-1,2-Dichloroethylene	0.5	ND	ND
cis-1,2-Dichloroethylene	0.5	ND	ND
1,1-Dichloroethylene	0.5	ND	ND
1,3-Dichloropropane	0.5	ND	ND
2,2-Dichloropropane	0.5	ND	ND
1,2-Dichloropropane	0.5	ND	ND
trans-1,3-Dichloropropene	0.5	ND	ND
cis-1,3-Dichloropropen	0.5	ND	ND
1,1-Dichloropropene	0.5	ND	ND
Ethylbenzene	0.5	ND	ND
Hexachlorobutadiene	0.5	ND	ND
Isopropylbenzene	0.5	ND	ND
p-Isopropyltoluene	0.5	ND	ND
Naphthalene	0.5	ND	ND
n-Propylbenzene	0.5	ND	ND
Styrene	0.5	ND	ND
1,1,1,2-Tetrachloroethane	0.5	ND	ND
1,1,2,2-Tetrachloroethane	0.5	ND	ND
Tetrachloroethylene	0.5	ND	ND
Toluene	0.5	ND	ND
1,2,3-Trichlorobenzene	0.5	ND	ND
1,2,4-Trichlorobenzene	0.5	ND	ND

Washington Aqueduct Laboratory Analytical Data
01 January 2013 To: 31 January 2013

Volatile Organic Compounds (VOCs) Data by EPA Method 524.2 continued

Sample Location	Reporting Limit	Dalecarlia Finished	McMillan Finished
Sample Date		1/9/2013	1/9/2013
Analysis Date		1/10/2013	1/11/2013
Units	ug/L	ug/L	ug/L
1,1,1-Trichloroethane	0.5	ND	ND
1,1,2-Trichloroethane	0.5	ND	ND
Trichloroethylene	0.5	ND	ND
Trichlorofluoromethane	0.5	ND	ND
1,2,3-Trichloropropane	0.5	ND	ND
1,2,4-Trimethylbenzene	0.5	ND	ND
1,3,5-Trimethylbenzene	0.5	ND	ND
Vinyl chloride	0.5	ND	ND
m & p-Xylene	0.5	ND	ND
o-Xylene	0.5	ND	ND
Total THMs	0.5	12	15
Methylene Chloride	0.5	ND	ND

ND= Non-detect or < Reporting Limit
NA = Not Available

Washington Aqueduct Laboratory Analytical Data

01 January 2013 To: 31 January 2013

Summary for Metals Analysis by Method EPA 200.8

Parameter (all results are in mg/L)	EPA Limit	Reporting Limit	Raw	Dalecarlia Finished	McMillan Finished
Aluminum		0.01	0.415	0.033	0.055
Antimony	0.006	0.0005	ND	ND	ND
Arsenic	0.01	0.0005	0.0006	ND	ND
Barium	2	0.0005	0.035	0.030	0.030
Beryllium	0.004	0.0005	ND	ND	ND
Cadmium	0.005	0.0005	ND	ND	ND
Chromium	0.1	0.0005	0.0006	ND	ND
Copper		0.0005	0.001	0.0008	0.003
Lead		0.0005	0.0008	ND	0.0006
Lithium		0.0005	0.002	0.001	0.002
Manganese		0.0005	0.029	0.001	ND
Mercury	0.002	0.0002	ND	ND	ND
Nickel		0.0005	0.002	0.002	0.002
Selenium	0.05	0.0005	0.0007	ND	ND
Silver		0.01	ND	ND	ND
Strontium		0.0005	0.153	0.142	0.108
Thallium	0.002	0.0005	ND	ND	ND
Uranium	0.03	0.0005	ND	ND	ND
Zinc		0.01	0.002	0.0009	0.001

ND = Non-detect or < Reporting Limit

Analytical Services, Inc.

Microbiological Testing, Research and Consulting

130 Allen Brook Ln., Williston, VT 05495 USA
1.800.723.4432 / 802.878.5138 Fax: 802.878.6765
www.analyticalservices.com

USEPA Method 1623 Analytical Report

Washington Aqueduct
Mike Chicoine
US Army Corps of Engineers
5900 MacArthur Blvd., N.W.
Washington, D.C. 20016-2514

Analysis Start: 01/11/2013 5:45
Analysis End: 01/15/2013 10:07
Analyst: Carolyn Fogg

ASI Sample ID No.: 46607-01

Method 1623 Batch No.: 896-1 HV
Cryptosporidium QC ID No.: 2452
Giardia QC ID No.: 2453

Sample Information	
PWS or Client Name:	U.S. Army Corps of Engineers
PWS ID:	DC 0000001
Facility Name:	Washington Aqueduct
Facility ID:	no data
Sample Collection Point Name:	Potomac River
Sample Collection Point ID:	Great Falls Intake
Matrix:	Water-Raw Surface
Method:	EPA Method 1623
Analysis Type:	Field
Date / Time Collected:	01/08/2013 9:53
Turbidity (NTU):	3.3

Volume and Filtration Information	
Filter Type:	Gelman HV
No of Filters Used:	1
Volume Filtered (L):	20.80
Packed Pellet Volume (mL):	0.30
Total Resuspended Concentrate Volume (mL):	5.0
Total Resuspended Concentrate Volume to IMS (mL):	5.0
Number of Sub-samples:	1
Total Sample Volume Examined (L):	20.80

Analytical Results		Matrix Spike Results		
Analyte	**Total (Oo) cysts/L**	**Recovered (Oo) cysts/L**	**Spike Dose (Oo) cysts/L**	**Percent Recovery**
Giardia	**0.00**	**N/A**	**N/A**	**N/A**
Cryptosporidium	**0.00**	**N/A**	**N/A**	**N/A**

Method: Samples processed, stained and examined using USEPA Method 1623: Cryptosporidium and Giardia in Water by Filtration, Immunomagnetic separation (IMS), and Immunofluorescence Assay (IFA) Microscopy (USEPA Dec. 2005: EPA 815-R-05-002) (ASI SOP 224).

Washington Aqueduct Daily Orthophosphate Data
01 January, 2013 To: 31 January, 2013

Date	Dalecarlia PO4 Dose mg/L	18 PO4 Residual mg/L	McMillan PO4 Dose mg/L	J PO4 Residual mg/L
01/01/13	2.7	2.2	3.3	2.2
01/02/13	2.7	2.1	3.3	2.1
01/03/13	2.7	2.2	3.3	2.2
01/04/13	2.7	2.2	3.3	2.2
01/05/13	2.7	2.2	3.3	2.2
01/06/13	2.7	2.2	3.3	2.2
01/07/13	2.6	2.2	3.3	2.2
01/08/13	2.7	2.3	3.3	2.3
01/09/13	2.7	no data[1]	3.3	no data[1]
01/10/13	2.7	no data[1]	3.3	no data[1]
01/11/13	2.7	no data[1]	3.3	no data[1]
01/12/13	2.7	2.2	3.3	2.3
01/13/13	2.7	2.3	3.3	2.3
01/14/13	2.7	2.3	3.3	2.4
01/15/13	2.7	2.3	3.3	2.3
01/16/13	2.7	2.3	3.2	2.3
01/17/13	2.7	2.3	3.3	2.3
01/18/13	2.7	2.3	3.3	2.3
01/19/13	2.7	no data[2]	3.3	no data[2]
01/20/13	2.7	2.2	3.3	2.3
01/21/13	2.7	2.3	3.3	2.3
01/22/13	2.7	2.2	3.2	2.4
01/23/13	2.7	2.2	3.1	2.4
01/24/13	2.7	2.3	3.1	2.3
01/25/13	2.7	2.3	3.1	2.3
01/26/13	2.7	2.2	3.1	2.3
01/27/13	2.7	2.3	3.1	no data[1]
01/28/13	2.7	2.3	3.1	no data[1]
01/29/13	2.7	2.5	3.1	2.4
01/30/13	2.7	2.3	3.1	2.3
01/31/13	2.7	2.3	3.1	2.4
Average	2.7	2.3	3.2	2.3
Maximum	2.7	2.5	3.3	2.4
Minimum	2.6	2.1	3.1	2.1

no data[1] = no data available due to instrumentation issues.
no data[2]= analysis not scheduled due to holiday.

Finished water residuals (entry point to distribution system) are from daily grab samples analyzed for total orthophosphate by Washington Aqueduct Laboratory.

Washington Aqueduct Daily Turbidity, pH and Chlorine Data

01 January, 2013 To: 31 January, 2013

Date	#1 Avg. Turbidity	#15 Avg. Turbidity	#15 Max. Turbidity	#18 Avg. Turbidity	G Avg. Turbidity	G Max. Turbidity	J Avg. Turbidity	#18 Avg. pH	J Avg. pH	#18 Avg. Cl2	J Avg. Cl2
01/01/13	8	0.03	0.03	0.05	0.02	0.02	0.08	7.71	7.67	3.74	3.79
01/02/13	5	0.03	0.03	0.06	0.03	0.03	0.09	7.68	7.67	3.71	3.80
01/03/13	4	0.02	0.03	0.06	0.03	0.04	0.10	7.72	7.68	3.81	3.72
01/04/13	4	0.02	0.02	0.06	0.02	0.04	0.10	7.78	7.67	3.76	3.75
01/05/13	4	0.02	0.02	0.06	0.04	0.05	0.11	7.75	7.68	3.77	3.64
01/06/13	4	0.02	0.03	0.06	0.03	0.04	0.11	7.80	7.68	3.75	3.60
01/07/13	3	0.02	0.03	0.07	0.03	0.03	0.11	7.70	7.73	3.79	3.72
01/08/13	3	0.02	0.02	0.08	0.03	0.03	0.10	7.76	7.71	3.67	3.75
01/09/13	3	0.02	0.03	0.08	0.02	0.03	0.10	7.68	7.71	3.71	3.73
01/10/13	3	0.02	0.02	0.06	0.02	0.03	0.09	7.71	7.71	3.77	3.71
01/11/13	3	0.02	0.03	0.06	0.02	0.02	0.09	7.72	7.71	3.77	3.72
01/12/13	3	0.02	0.03	0.05	0.02	0.02	0.09	7.72	7.72	3.78	3.68
01/13/13	3	0.02	0.02	0.04	0.02	0.02	0.08	7.70	7.74	3.77	3.69
01/14/13	4	0.03	0.03	0.05	0.02	0.02	0.08	7.69	7.73	3.75	3.65
01/15/13	4	0.03	0.03	0.07	0.02	0.02	0.07	7.73	7.74	3.76	3.69
01/16/13	5	0.04	0.04	0.06	0.02	0.02	0.06	7.67	7.74	3.81	3.70
01/17/13	9	0.03	0.03	0.06	0.02	0.02	0.06	7.63	7.73	3.79	3.74
01/18/13	21	0.03	0.03	0.06	0.02	0.02	0.06	7.64	7.73	3.69	3.73
01/19/13	19	0.03	0.03	0.06	0.01	0.01	0.06	7.63	7.71	3.77	3.76
01/20/13	16	0.03	0.03	0.06	0.02	0.02	0.08	7.66	7.73	3.75	3.73
01/21/13	12	0.03	0.03	0.06	0.02	0.02	0.06	7.65	7.74	3.67	3.72
01/22/13	8	0.02	0.03	0.06	0.02	0.02	0.06	7.67	7.72	3.79	3.78
01/23/13	5	0.02	0.02	0.06	0.02	0.02	0.06	7.74	7.76	3.73	3.78
01/24/13	5	0.02	0.02	0.06	0.02	0.02	0.06	7.70	7.74	3.83	3.73
01/25/13	5	0.02	0.02	0.04	0.02	0.02	0.06	7.69	7.77	3.79	3.80
01/26/13	4	0.02	0.02	0.04	0.02	0.02	0.06	7.74	7.65	3.79	3.68
01/27/13	4	0.02	0.02	0.05	0.02	0.02	0.06	7.71	7.71	3.82	3.73
01/28/13	4	0.02	0.02	0.05	0.02	0.02	0.06	7.71	7.67	3.82	3.74
01/29/13	4	0.02	0.03	0.05	0.02	0.02	0.06	7.75	7.63	3.80	3.77
01/30/13	4	0.02	0.02	0.05	0.02	0.02	0.06	7.70	7.69	3.76	3.67
01/31/13	6	0.02	0.02	0.07	0.02	0.02	0.06	7.74	7.75	3.75	3.71
Average	6	0.02	0.03	0.06	0.02	0.02	0.08	7.71	7.71	3.76	3.72
Maximum	21	0.04	0.04	0.08	0.04	0.05	0.11	7.80	7.77	3.83	3.80
Minimum	3	0.02	0.02	0.04	0.01	0.01	0.06	7.63	7.63	3.67	3.60

Data are from on-line analyzers except for pH. pH data are from grab samples analyzed a minumum of every 4 hours.

1=Raw water, 15= Dalecarlia Filtered, 18= Dalecarlia Finished, G=McMillan Filtered, J=McMillan Finished

Units: Turbidity (NTU), Cl2 - Chlorine Residual (mg/L)

Average turbidity is calculated from the hourly turbidity readings for each day.

Maximum turbidity is the maximum of the hourly turbidimeter readings for each day.

Optimal Corrosion Control Treatment

Point-of-Entry pH Requirements

Month	Required pH	Dalecarlia Days Out of Range	McMillan Days Out of Range	Total # of Days with Excursions
Jan-13	7.7 ± 0.3	0	0	0
Feb-13	7.7 ± 0.3			
Mar-13	7.7 ± 0.3			
Apr-13	7.7 ± 0.3			
May-13	7.7 ± 0.3			
Jun-13	7.7 ± 0.3			
Compliance Period Totals				

Month	Required pH	Dalecarlia Days Out of Range	McMillan Days Out of Range	Total # of Days with Excursions
Jul-13	7.7 ± 0.3			
Aug-13	7.7 ± 0.3			
Sep-13	7.7 ± 0.3			
Oct-13	7.7 ± 0.3			
Nov-13	7.7 ± 0.3			
Dec-13	7.7 ± 0.3			
Compliance Period Totals				

Point-of-Entry Orthophosphate Requirements

Month	Required orthophosphate	Dalecarlia Days Out of Range	McMillan Days Out of Range	Total # of Days with Excursions
Jan-13	0.5 - 5.0 mg/L	0	0	0
Feb-13	0.5 - 5.0 mg/L			
Mar-13	0.5 - 5.0 mg/L			
Apr-13	0.5 - 5.0 mg/L			
May-13	0.5 - 5.0 mg/L			
Jun-13	0.5 - 5.0 mg/L			
Compliance Period Totals				

Month	Required orthophosphate	Dalecarlia Days Out of Range	McMillan Days Out of Range	Total # of Days with Excursions
Jul-13	0.5 - 5.0 mg/L			
Aug-13	0.5 - 5.0 mg/L			
Sep-13	0.5 - 5.0 mg/L			
Oct-13	0.5 - 5.0 mg/L			
Nov-13	0.5 - 5.0 mg/L			
Dec-13	0.5 - 5.0 mg/L			
Compliance Period Totals				

Treatment Techniques for Acrylamide and Epichlorohydrin

Washington Aqueduct certifies that when acrylamide and/or epichlorohydrin are used in drinking water treatment, the combination (or product) of dose and monomer level does not exceed the levels specified in 40 CFR 141.111.

Monthly Report to Primacy Agency for Compliance Determination - Filtered Systems
01 January 2013 To: 31 January 2013

System/Treatment Plant: Washington Aqueduct - Dalecarlia
Type of Filtration: Conventional Treatment
Turbidity Limit: 0.3 NTU
PWSID: DC0000001

Combined Filter Effluent (CFE) Turbidity Performance Criteria:
A.Combined filter effluent monitoring has been conducted in accordance with the IESWTR except as noted:
No Exceptions

B. Minimum number of CFE turbidity measurements required for compliance (6 per day x no. days in operation):	186
Number of Hours in Month	744
Number of Hours in Month that WTP is Off Line *	0
Total number of CFE turbidity measurements used for compliance:	744
Total number of CFE turbidity measurements that are less than or equal to 0.3 NTU:	744
Percentage of turbidity measurements meeting the specified limits:	100

C. Record the date and turbidity value for any CFE turbidity measurement exceeding 1 NTU:

Date	Turbidity, NTU

Individual Filter Effluent (IFE) Turbidity Performance Criteria
A. Individual filter effluent monitoring has been conducted in accordance with the IESWTR except as noted:
No Exceptions

B. Report the date, filter number, and turbidity value for any measurement exceeding 0.5 NTU for two consecutive 15 minute measurements after the first four hours after backwash:

Filter No.	Date	Time	Turbidity, NTU

C. Report the date, filter number, and turbidity value for any measurement exceeding 1.0 NTU for two consecutive 15 minute measurements:

Filter No.	Date	Time	Turbidity, NTU

D. Report the date of any failure to collect grab samples if continuous turbidity monitoring equipment is out of service more than 4 hours

E. Report the date of any failure to resume continuous turbidity monitoring more than 5 days after equipment failure

Additional Voluntary Information

Date	*Time*	*Duration*

Monthly Report to Primacy Agency for Compliance Determination - Filtered Systems
01 January 2013 To: 31 January 2013

System/Treatment Plant: Washington Aqueduct - Dalecarlia
Type of Filtration: Conventional Treatment
PWSID: DC0000001

Disinfection Performance Criteria

A. Point-of-Entry Minimum Disinfectant Residual Criteria *

Date	Residual (mg/L)	Date	Residual (mg/L)	Date	Residual (mg/L)
1/1/13	3.63	1/12/13	3.73	1/23/13	3.62
1/2/13	3.58	1/13/13	3.72	1/24/13	3.75
1/3/13	3.65	1/14/13	3.67	1/25/13	3.75
1/4/13	3.67	1/15/13	3.66	1/26/13	3.70
1/5/13	3.70	1/16/13	3.70	1/27/13	3.72
1/6/13	3.65	1/17/13	3.69	1/28/13	3.74
1/7/13	3.67	1/18/13	3.60	1/29/13	3.74
1/8/13	3.54	1/19/13	3.66	1/30/13	3.67
1/9/13	3.65	1/20/13	3.59	1/31/13	3.73
1/10/13	3.66	1/21/13	3.62		
1/11/13	3.71	1/22/13	3.69		

Days the Residual was < 0.2 mg/L: None

Date	Duration of Low Residual	Date Reported to Primacy Agency

B. Distribution System Disinfectant Residual Criteria

The value of a, b, c, d and e are from Table 6-5, as specified in 40 CFR 141.75 (b)(2)(iii)(a)-(e)

a= 0 b=0 c=0 d=0 e=0

V=[(c+d+e)/(a+b)]x100= 0%

For the previous month, V= 0%

Monthly Report to Primacy Agency for Compliance Determination - Filtered Systems
01 January 2013 To: 31 January 2013

System/Treatment Plant: Washington Aqueduct - McMillan
Type of Filtration: Conventional Treatment
Turbidity Limit: 0.3 NTU
PWSID: DC0000001

Combined Filter Effluent (CFE) Turbidity Performance Criteria:
A.Combined filter effluent monitoring has been conducted in accordance with the IESWTR except as noted:
No Exceptions

B. Minimum number of CFE turbidity measurements required for compliance (6 per day x no. days in operation):	186
Number of Hours in Month	744
Number of Hours in Month that WTP is Off Line	0
Total number of CFE turbidity measurements used for compliance:	744
Total number of CFE turbidity measurements that are less than or equal to 0.3 NTU:	744
Percentage of turbidity measurements meeting the specified limits:	100

C. Record the date and turbidity value for any CFE turbidity measurement exceeding 1 NTU:

Date	Turbidity, NTU

Individual Filter Effluent (IFE) Turbidity Performance Criteria
A. Individual filter effluent monitoring has been conducted in accordance with the IESWTR except as noted:
No Exceptions

B. Report the date, filter number, and turbidity value for any measurement exceeding 0.5 NTU for two consecutive 15 minute measurements after the first four hours after backwash:

Filter No.	Date	Time	Turbidity, NTU

C. Report the date, filter number, and turbidity value for any measurement exceeding 1.0 NTU for two consecutive 15 minute measurements:

Filter No.	Date	Time	Turbidity, NTU

D. Report the date of any failure to collect grab samples if continuous turbidity monitoring equipment is out of service more than 4 hours

E. Report the date of any failure to resume continuous turbidity monitoring more than 5 days after equipment failure

Additional Voluntary Information

Date	*Time*	*Duration*

Monthly Report to Primacy Agency for Compliance Determination - Filtered Systems
01 January 2013 To: 31 January 2013

System/Treatment Plant: Washington Aqueduct - McMillan
Type of Filtration: Conventional Treatment
PWSID: DC0000001

Disinfection Performance Criteria

A. Point-of-Entry Minimum Disinfectant Residual Criteria

Date	Residual (mg/L)	Date	Residual (mg/L)	Date	Residual (mg/L)
1/1/13	3.75	1/12/13	3.65	1/23/13	3.74
1/2/13	3.75	1/13/13	3.66	1/24/13	3.69
1/3/13	3.61	1/14/13	3.62	1/25/13	3.69
1/4/13	3.67	1/15/13	3.65	1/26/13	3.60
1/5/13	3.60	1/16/13	3.68	1/27/13	3.68
1/6/13	3.59	1/17/13	3.69	1/28/13	3.68
1/7/13	3.58	1/18/13	3.70	1/29/13	3.66
1/8/13	3.71	1/19/13	3.71	1/30/13	3.60
1/9/13	3.68	1/20/13	3.67	1/31/13	3.62
1/10/13	3.66	1/21/13	3.65		
1/11/13	3.66	1/22/13	3.74		

Days the Residual was < 0.2 mg/L: None

Date	Duration of Low Residual	Date Reported to Primacy Agency

B. Distribution System Disinfectant Residual Criteria

The value of a, b, c, d and e are from Table 6-5, as specified in 40 CFR 141.75 (b)(2)(iii)(a)-(e)

a= 0 b=0 c=0 d=0 e=0

V=[(c+d+e)/(a+b)]x100= 0%

For the previous month, V= 0%

Washington Aqueduct
McMillan Water Treatment Plant

Summary of Routine Monthly Monitoring Tests Results for January 2013

Optimization Assessment Software (OAS) Results

Settled Water Turbidity:

The settled water turbidity goal was met for the month; therefore, a requirement for Tier-2 monitoring was not triggered.

Individual Filter Turbidity:

The individual filter turbidity optimization goal was not met for all filters. We experienced operational problems between Jan 2-10 which resulted in higher than normal filtered water turbidities. Because this event was not related to incoming settled water turbidity, a requirement for Tier 2 monitoring was not triggered.

Monthly Tier-1 Sample Test Results

The results of the Tier-1 monitoring samples collected on January 8 are attached and show no abnormality. Therefore, a requirement for Tier-2 monitoring was not triggered.

McMillan Filter Backwash Rule
Tier-1 Monitoring Report

Collection Date: 1/8/2013

	Location E	Location F	Location G	1st Low Rate Backwash	2nd Low Rate Back Wash	High Rate Backwash
Collect Time	00:00	06:00	06:30	09:00	09:30	09:15
pH	7.14	6.89	6.93			
TOC (mg/L)	3.01	1.63	1.51	10.60	1.47	1.56
Turbidity (NTU)	0.65	0.40	0.03	5.30	0.30	0.70
Aluminum (mg/L)	0.270	0.149	0.049	7.99	0.37	0.68
Copper (mg/L)	0.001	0.003	0.002	0.04	0.01	0.01
Manganese (mg/L)	0.020	0.024	ND	0.30	0.02	0.07

	Location E	Location F	Location G
Collect Time	07:45	14:00	14:30
pH	7.08	6.86	6.91
TOC (mg/L)	1.45	1.53	1.43
Turbidity (NTU)	0.65	0.40	0.03
Aluminum (mg/L)	0.290	0.154	0.054
Copper (mg/L)	0.001	0.003	0.002
Manganese (mg/L)	0.020	0.025	ND

	Location E	Location F	Location G
Collect Time	16:00	22:00	22:30
pH	7.14	6.96	6.93
TOC (mg/L)	1.49	1.49	1.37
Turbidity (NTU)	0.65	0.40	0.04
Aluminum (mg/L)	0.279	0.156	0.039
Copper (mg/L)	0.001	0.003	0.002
Manganese (mg/L)	0.021	0.022	ND

Washington Aqueduct

McMillan Water Treatment Plant

95th Percentile of Monthly Turbidity Data*

Filter -->	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	Combined
Jan-13	**0.047**	**0.044**	**0.054**	**0.041**	**0.048**	**0.043**	**0.041**	**0.040**	**0.046**	**0.044**	**0.048**	**0.033**	**0.035**
Dec-12	0.023	0.019	0.021	0.018	0.018	0.018	0.024	0.018	0.017	0.016	0.017	0.017	0.020
Nov-12	0.047	0.049	0.047	0.051	0.045	0.044	0.049	0.045	0.045	0.042	0.042	0.040	0.047
Oct-12	0.052	0.074	0.064	0.075	0.061	0.069	0.065	0.068	0.061	0.066	0.059	0.066	0.068
Sep-12	0.044	0.067	0.057	0.066	0.055	0.059	0.056	0.060	0.056	0.060	0.051	0.062	0.060
Aug-12	0.060	0.077	0.070	0.082	0.077	0.071	0.073	0.071	0.067	0.060	0.068	0.072	0.070
Jul-12	0.072	0.079	0.073	0.083	0.077	0.079	0.073	0.082	0.069	0.074	0.074	0.083	0.073
Jun-12	0.053	0.064	0.059	0.073	0.057	0.068	0.056	0.069	0.054	0.064	0.053	0.059	0.054
May-12	0.081	0.083	0.060	0.076	0.060	0.073	0.068	0.081	0.053	0.082	0.062	0.063	0.063
Apr-12	0.039	0.053	0.046	0.048	0.039	0.052	0.039	0.047	0.039	0.050	0.038	0.045	0.042
Mar-12	0.041	0.048	0.047	0.044	0.035	0.046	0.045	0.048	0.037	0.056	0.041	0.042	0.042
Feb-12	0.025	0.025	0.022	0.024	0.020	0.024	0.020	0.023	0.020	0.024	0.025	0.026	0.022
Jan-12	0.018	0.015	0.017	0.016	0.016	0.015	0.016	0.016	0.015	0.013	0.026	0.016	0.015
Dec-11	0.018	0.012	0.016	0.014	0.015	0.013	0.015	0.016	0.014	0.011	0.015	0.016	0.014

** Above 95th Percentile numbers were computed using all 15 minute turbidity data of the month.*

Plant Name	**Washington Aqueduct - McMillan WTP**
PWS #	
Max. settled water turbidity goal	**2.0**
Filtered water turbidity optimization goal	**0.10**
Filtered water turbidity regulation	**0.30**

Click on this Button to **CLEAR** the Database

Instruction to users: Input plant name and turbidity goals above. Input start date and turbidity data below. The database will hold 366 days of data. The turbidity data entry cells will turn yellow if the value exceeds the process goal. Following data input, develop the reports by clicking the UPDATE button.

Click on this Button to **UPDATE** the Reports

Data Entry Area

	Raw	Sed 1	Sed 2	Sed 3	Sed 4	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8	Filter 9	Filter 10	Filter 11	Filter 12	Combined
1/1/2013	14				0.38	0.04	0.03	0.03	0.05	0.06	0.04	0.06	0.02	0.05	0.04	0.03	0.02	0.03
1/2/2013	7				0.42	0.16	0.07	0.07	0.06	0.06	0.08	0.09	0.06	0.06	0.06	0.08	0.04	0.05
1/3/2013	8				0.40	0.07	0.09	0.09	0.06	0.09	0.07	0.07	0.06	0.08	0.11	0.09	0.13	0.05
1/4/2013	6				0.46	0.05	0.09	0.07	0.04	0.07	0.09	0.07	0.09	0.06	0.05	0.06	0.04	0.06
1/5/2013	5				0.51	0.12	0.17	0.08	0.09	0.14	0.11	0.09	0.11	0.08	0.11	0.08	0.09	0.06
1/6/2013	6				0.36	0.09	0.08	0.09	0.09	0.09	0.09	0.06	0.09	0.10	0.15	0.07	0.05	0.05
1/7/2013	3				0.42	0.08	0.07	0.08	0.08	0.09	0.09	0.08	0.07	0.09	0.07	0.08	0.07	0.04
1/8/2013	4				0.36	0.07	0.11	0.08	0.08	0.09	0.07	0.07	0.09	0.09	0.06	0.08	0.05	0.05
1/9/2013	4				0.38	0.07	0.07	0.08	0.04	0.09	0.09	0.09	0.09	0.07	0.06	0.05	0.08	0.04
1/10/2013	3				0.53	0.06	0.12	0.07	0.04	0.04	0.06	0.10	0.05	0.08	0.07	0.08	0.06	0.03
1/11/2013	3				0.37	0.09	0.02	0.05	0.09	0.06	0.05	0.02	0.04	0.02	0.07	0.09	0.02	0.03
1/12/2013	3				0.39	0.03	0.06	0.07	0.02	0.07	0.02	0.06	0.06	0.06	0.04	0.02	0.03	0.03
1/13/2013	7				0.34	0.05	0.02	0.09	0.02	0.02	0.06	0.02	0.02	0.02	0.08	0.06	0.01	0.03
1/14/2013	7				0.39	0.03	0.05	0.02	0.02	0.06	0.01	0.02	0.02	0.05	0.02	0.01	0.03	0.02
1/15/2013	14				0.40	0.04	0.02	0.04	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1/16/2013	27				0.34	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.01	0.01	0.02	0.02
1/17/2013	118				0.43	0.02	0.02	0.02	0.01	0.02	0.01	0.03	0.02	0.01	0.01	0.01	0.01	0.02
1/18/2013	93				0.49	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.03	0.02
1/19/2013	70				0.49	0.02	0.02	0.02	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.02
1/20/2013	42				0.48	0.02	0.02	0.02	0.02	0.01	0.02	0.02	0.02	0.02	0.01	0.01	0.03	0.02
1/21/2013	31				0.48	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.03	0.02	0.02
1/22/2013	16				0.82	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.04	0.02
1/23/2013	16				0.66	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1/24/2013	11				0.59	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.01	0.02
1/25/2013	8				0.54	0.03	0.02	0.02	0.03	0.06	0.03	0.03	0.03	0.07	0.02	0.02	0.05	0.03
1/26/2013	6				0.45	0.03	0.02	0.05	0.02	0.08	0.02	0.04	0.02	0.02	0.06	0.02	0.02	0.02
1/27/2013	5				0.42	0.02	0.02	0.02	0.03	0.02	0.04	0.02	0.02	0.02	0.02	0.02	0.02	0.02
1/28/2013	5				0.49	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.01	0.01	0.03	0.02
1/29/2013	4				0.53	0.03	0.02	0.03	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.06	0.02	0.02
1/30/2013	4				0.49	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.03	0.02	0.01	0.01	0.02	0.04
1/31/2013	495				0.88	0.02	0.03	0.03	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02
2/1/2013																		
2/2/2013																		
2/3/2013																		
2/4/2013																		
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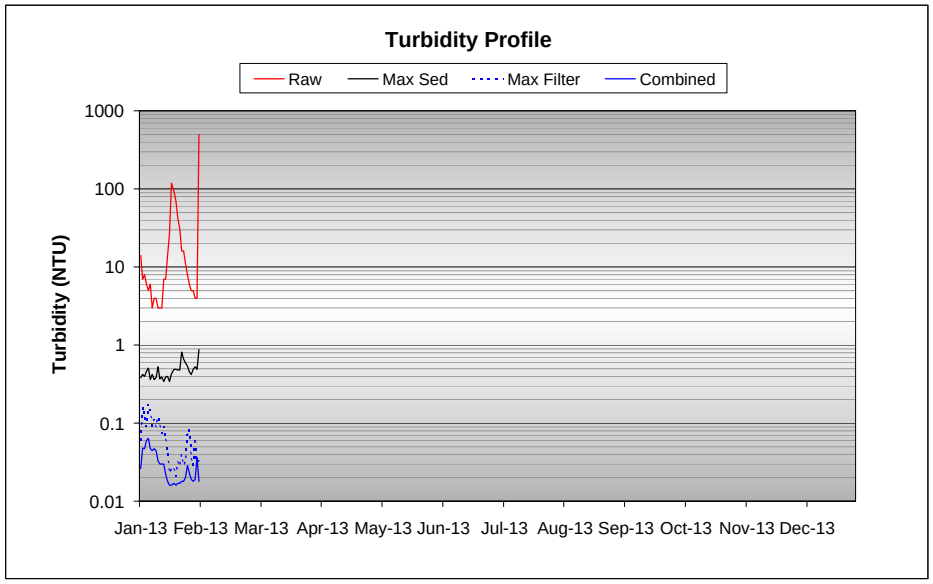
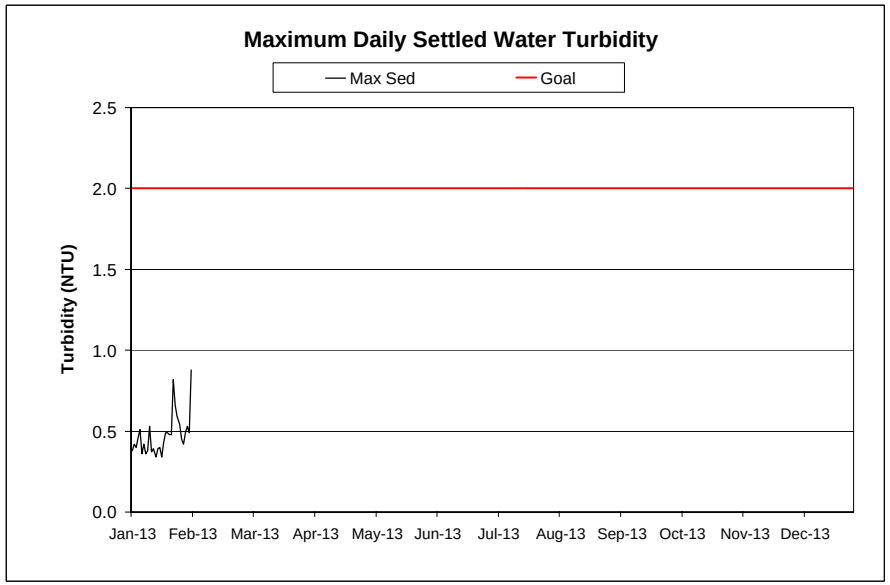
2/7/2013																		
2/8/2013																		
2/9/2013																		





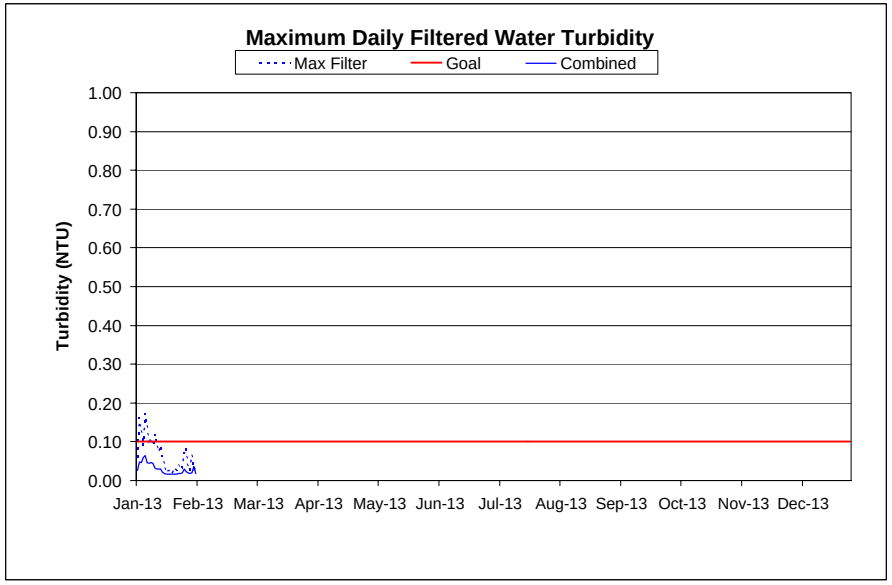
ANNUAL DATA	Avg	Min	Max	RSQ	95%	Opt. Goal	Reg.
	NTU	NTU	NTU		NTU	% Values	% Values
Raw Turbidity	33.7	3.0	495.0	n/a	105.5	n/a	n/a
Max. Settled Turbidity	0.5	0.3	0.9	0.35	0.7	100.0	n/a
Max. Filtered Turbidity	0.07	0.02	0.17	0.10	0.15	80.6	n/a
Combined Filtered Turbidity	0.03	0.02	0.06	0.09	0.05	100.0	100.0

RSQ = Correlation Coefficient for two selected data sets

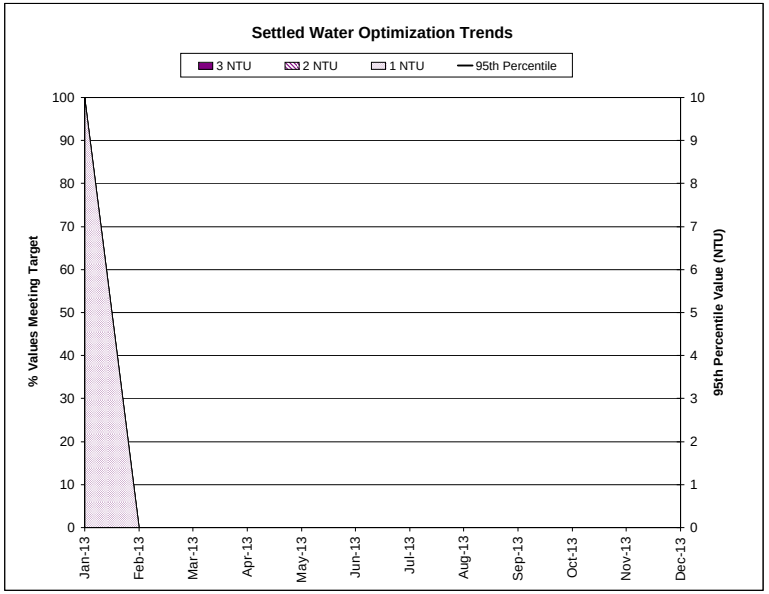
95% = 95th Percentile value for data set

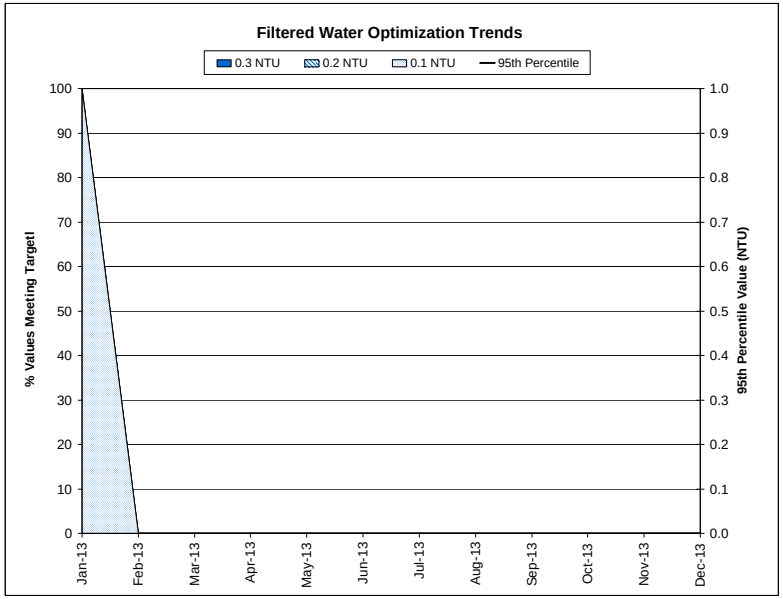
Opt. Goal = % of values in data set that are less than or equal to the selected optimization turbidity goal

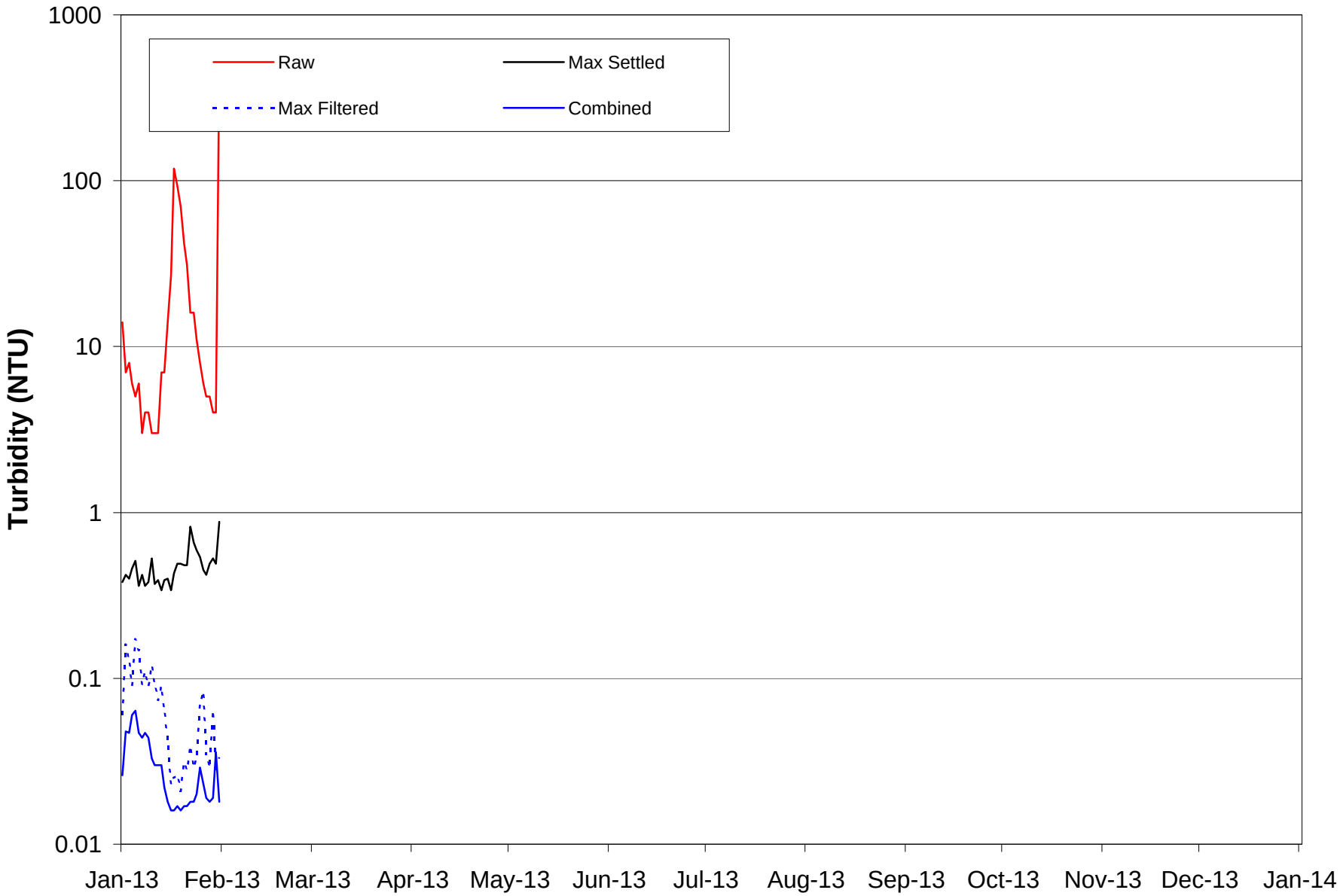
Reg. = % of values in data set that are less than or equal to the regulated turbidity requirement

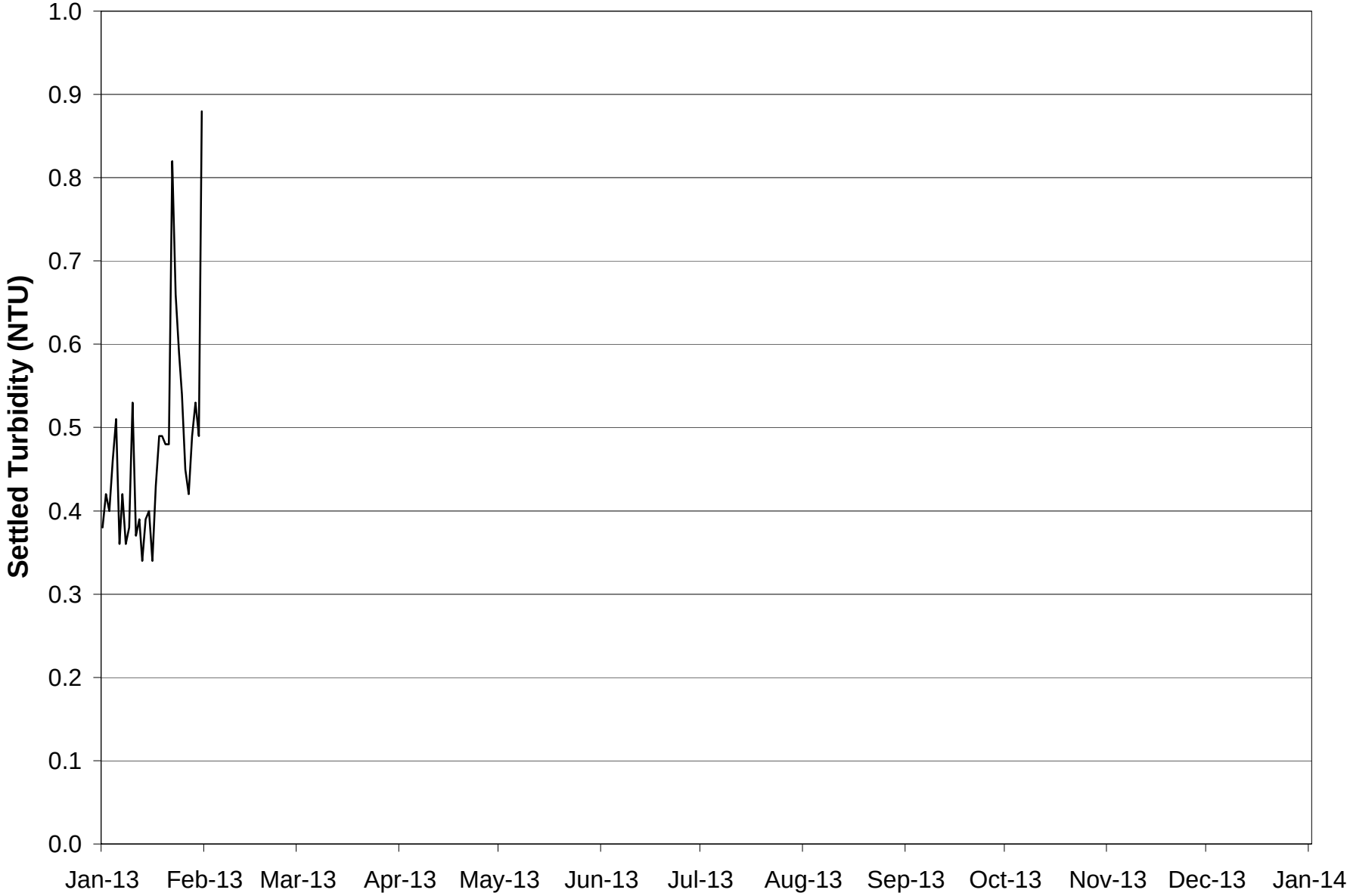


	Settled Water Turbidity							Filtered Water Turbidity															
	95th Percentile Values (NTU)				% Values Meeting Goal			95th Percentile Values (NTU)													% Values Meeting Goal		
	Sed 1	Sed 2	Sed 3	Sed 4	3 NTU	2 NTU	1 NTU	Filter 1	Filter 2	Filter 3	Filter 4	Filter 5	Filter 6	Filter 7	Filter 8	Filter 9	Filter 10	Filter 11	Filter 12	Combined	0.3	0.2	0.1
Jan-13				0.74	100.00	100.00	100.0	0.10	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.09	0.08	0.05	100.00	100.00	100.0
Feb-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Mar-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Apr-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
May-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Jun-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Jul-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Aug-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Sep-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Oct-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Nov-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Dec-13					#N/A	#N/A	#N/A														#N/A	#N/A	#N/A
Yr. 95%				0.74				0.10	0.11	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.11	0.09	0.08	0.05			
Yr. Goal				100.0%				93.5%	90.3%	100.0%	100.0%	96.8%	96.8%	96.8%	96.8%	100.0%	90.3%	100.0%	96.8%	100.0%			

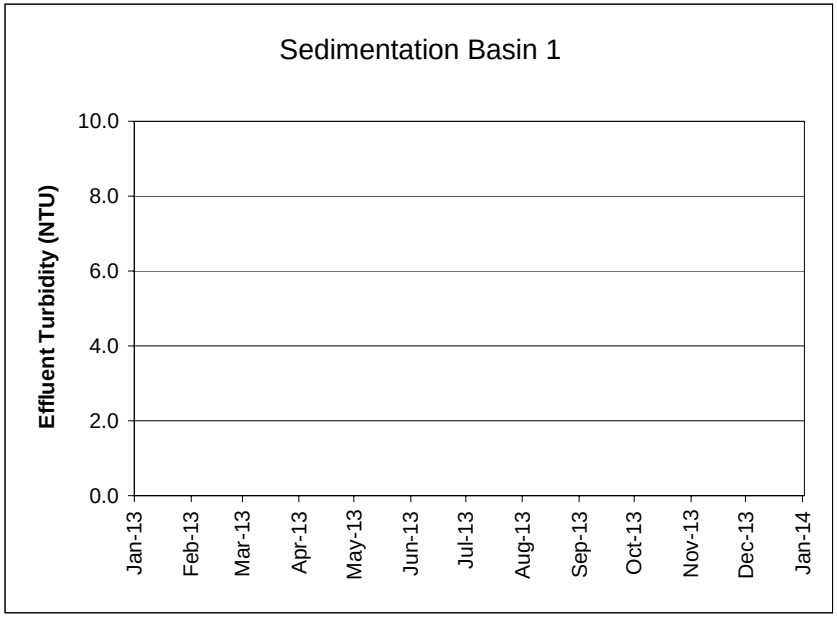


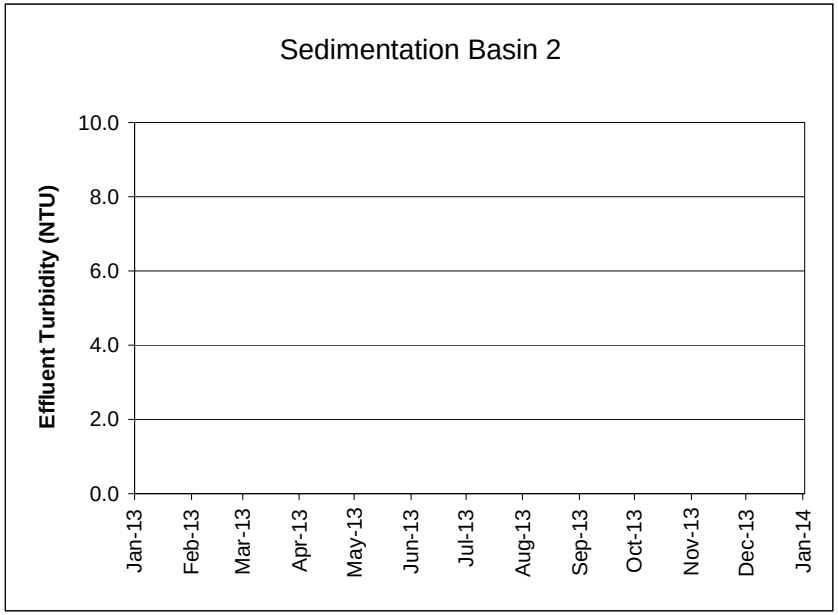


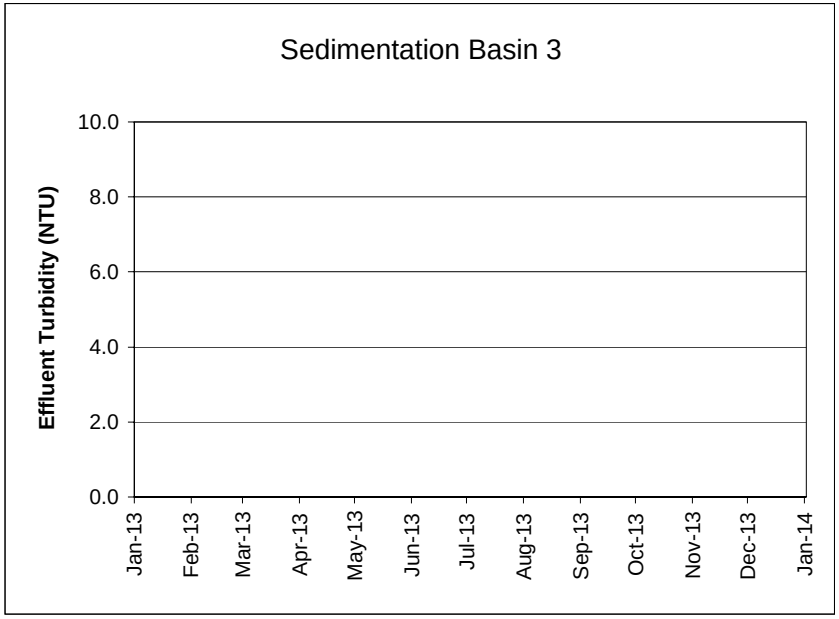

Raw
Max Settled
Max Filtered
Combined
Turbidity (NTU)
1000
100
10
1
0.1
0.01
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13
Oct-13
Nov-13
Dec-13
Jan-14

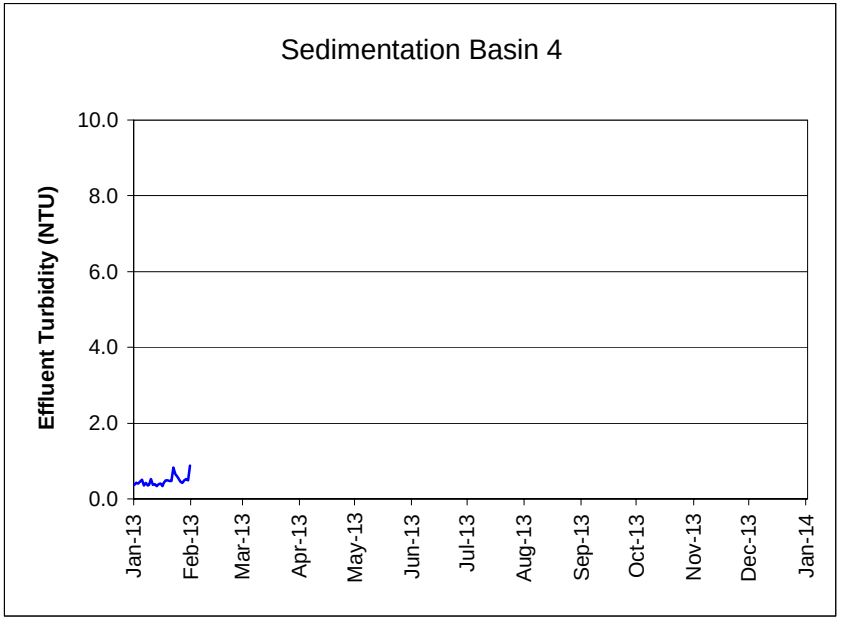

Settled Turbidity (NTU)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13
Oct-13
Nov-13
Dec-13
Jan-14

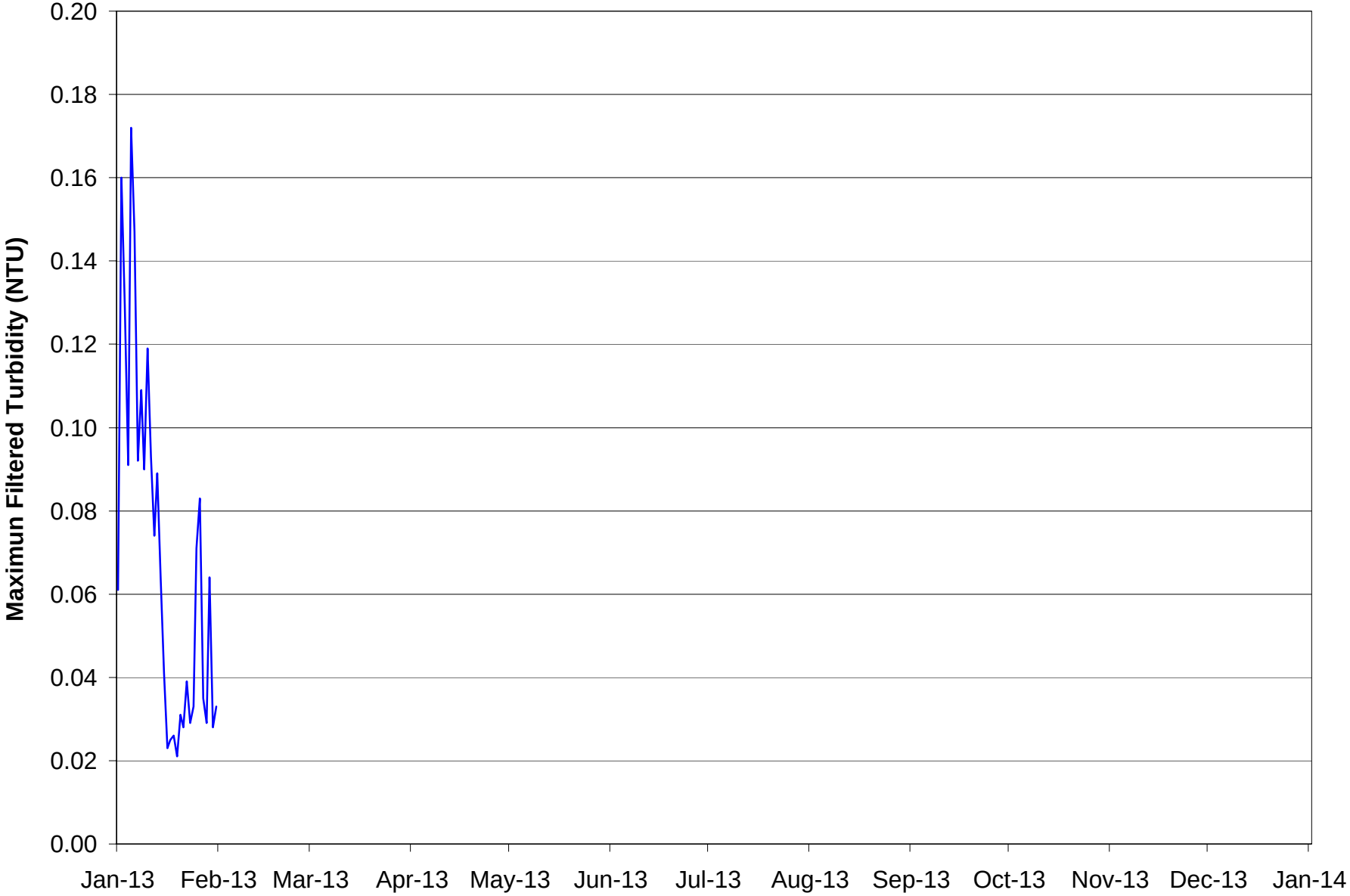
Sedimentation Performance Summary



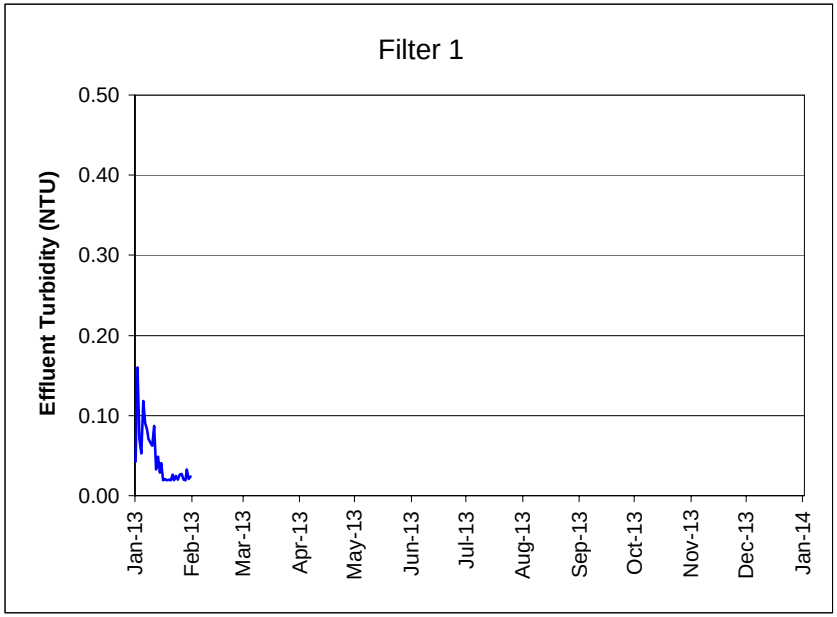


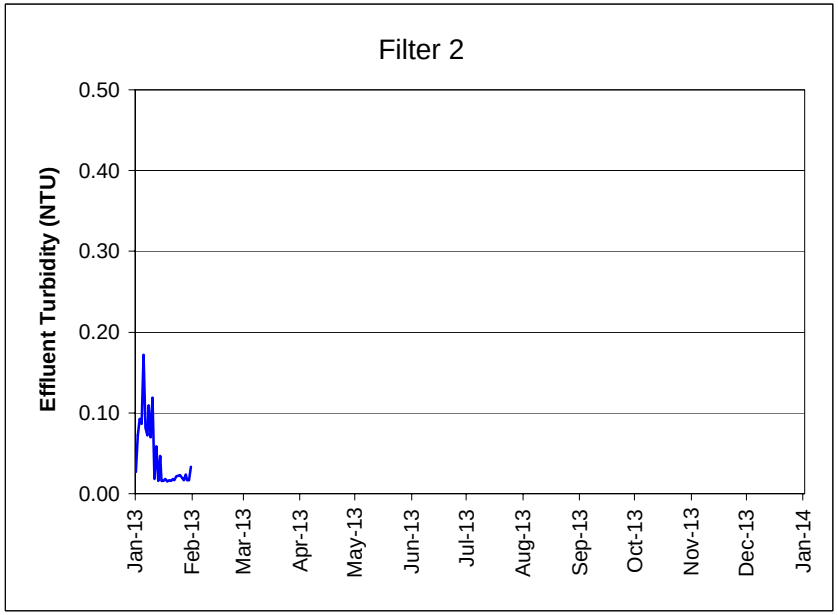


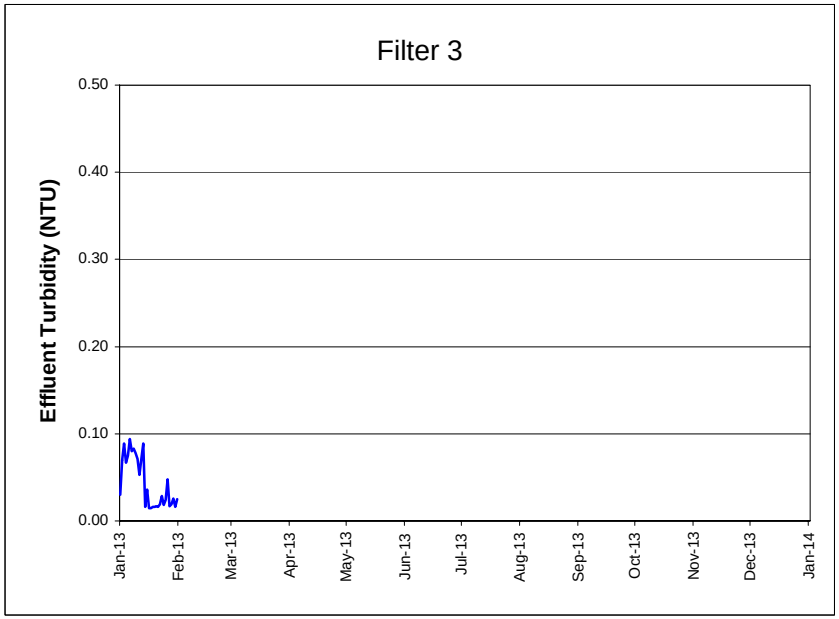


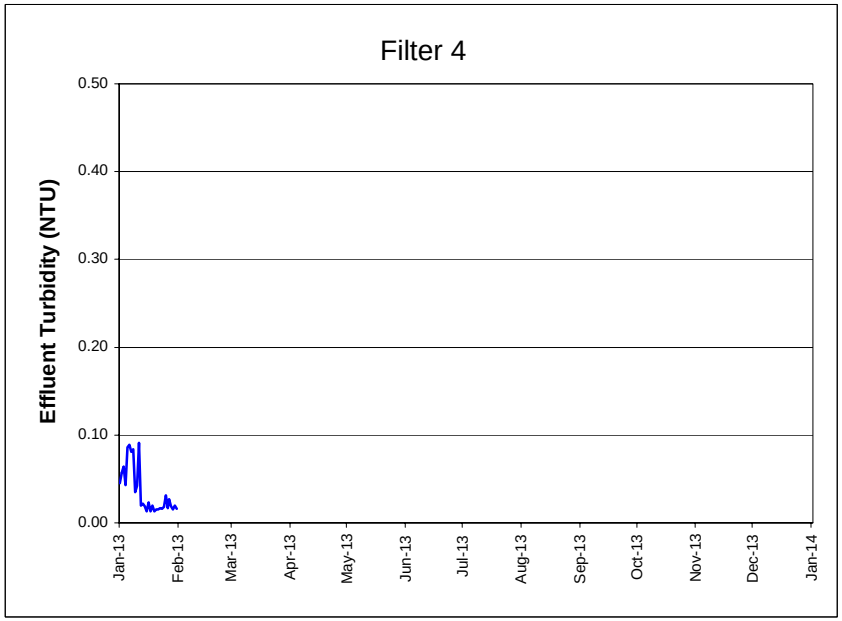

Maximun Filtered Turbidity (NTU)
0.20
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
Jan-13
Feb-13
Mar-13
Apr-13
May-13
Jun-13
Jul-13
Aug-13
Sep-13
Oct-13
Nov-13
Dec-13
Jan-14

Filtration Performance Summary (Filters 1 - 4)

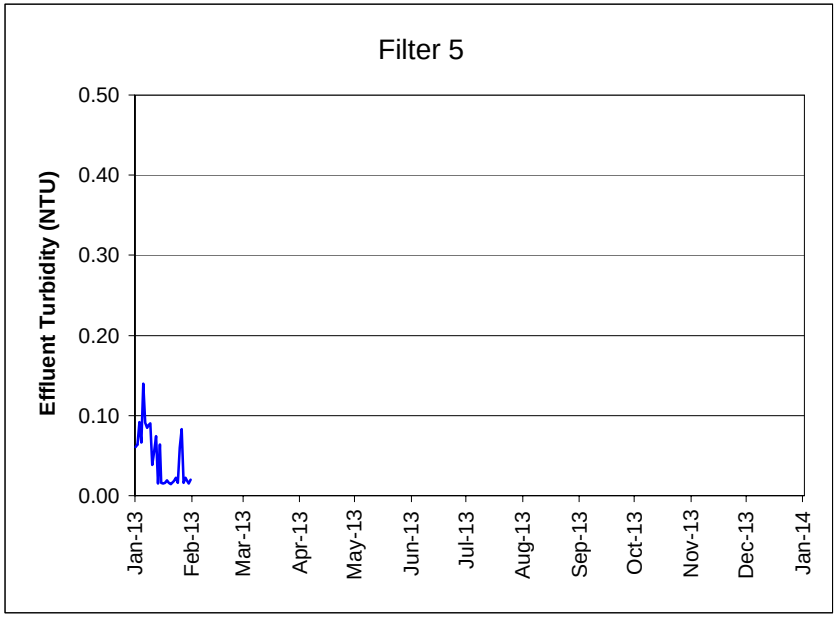


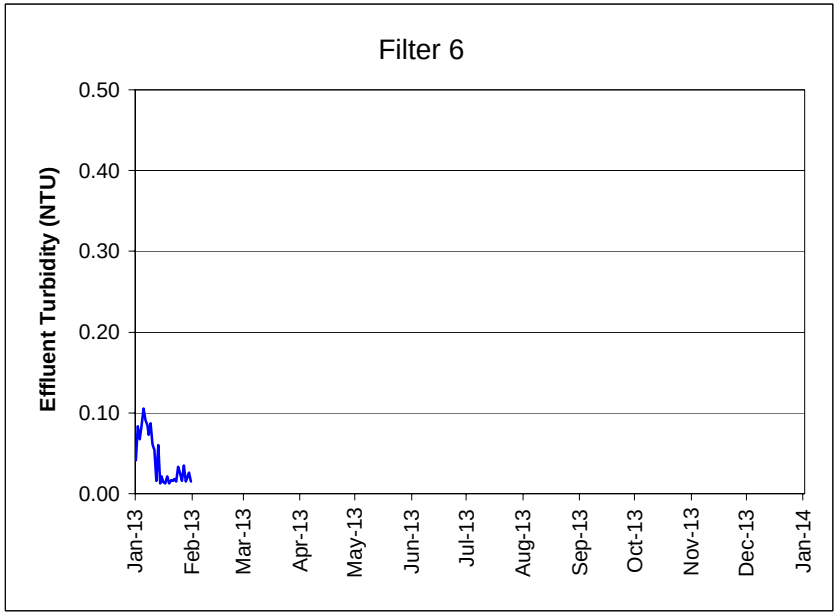


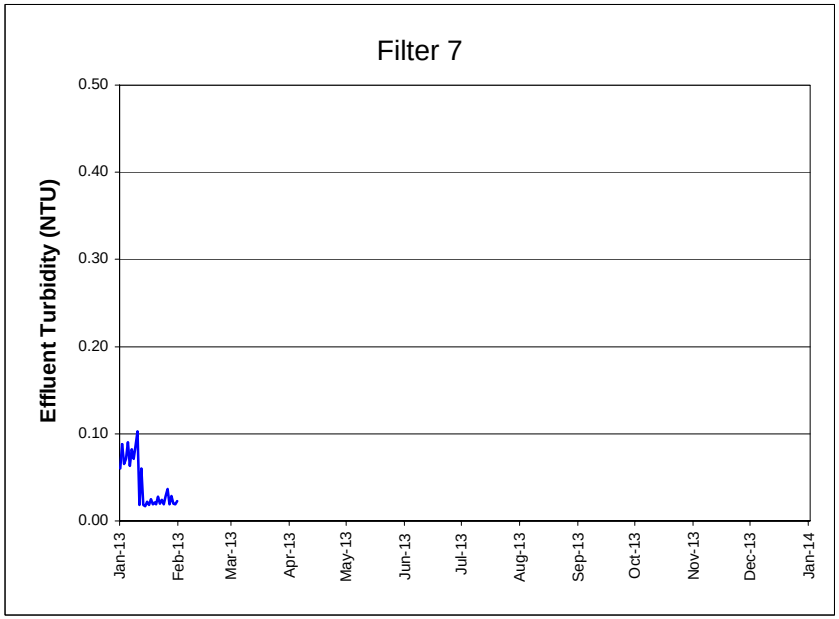


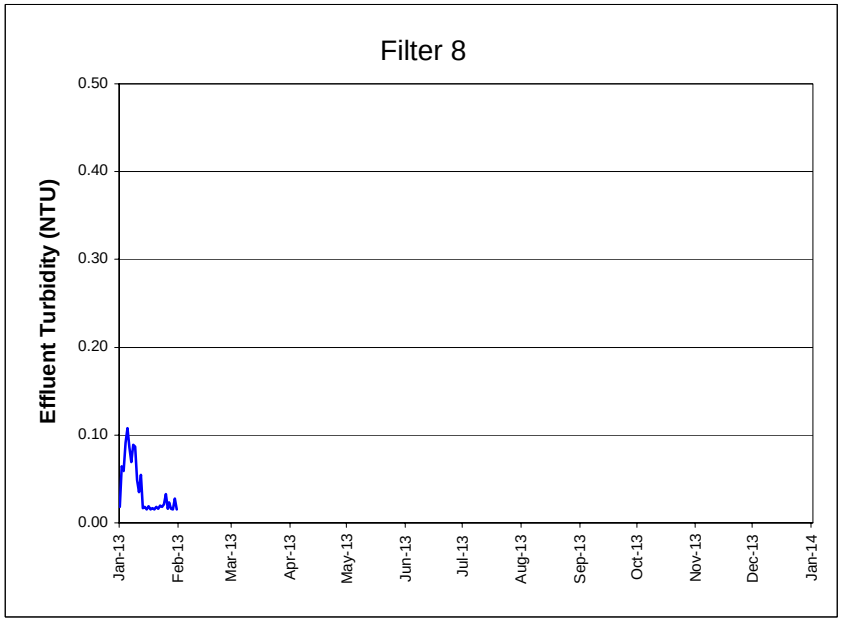


Filtration Performance Summary (Filters 5 - 8)

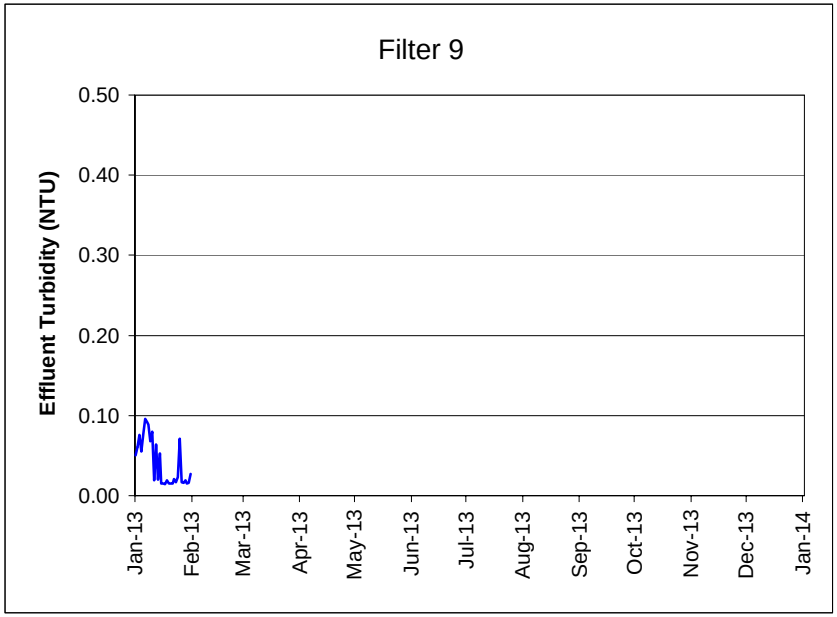


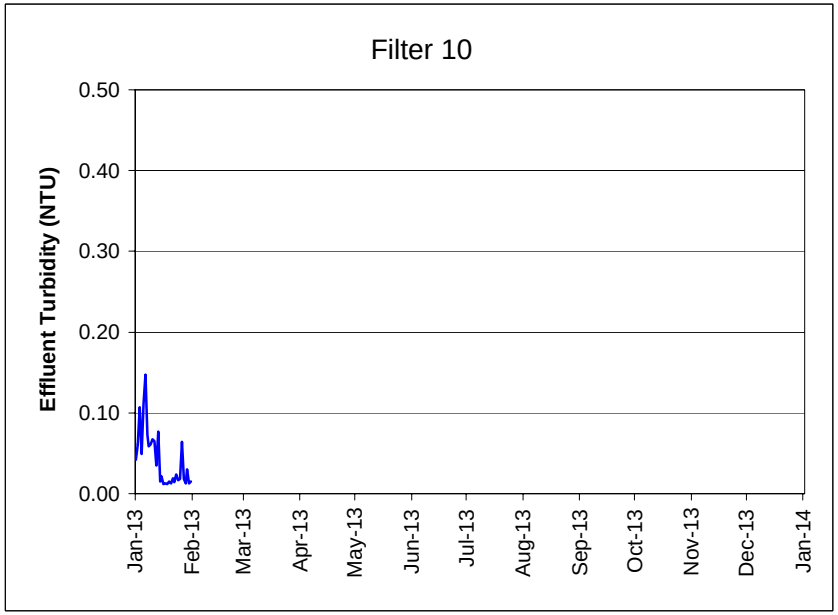


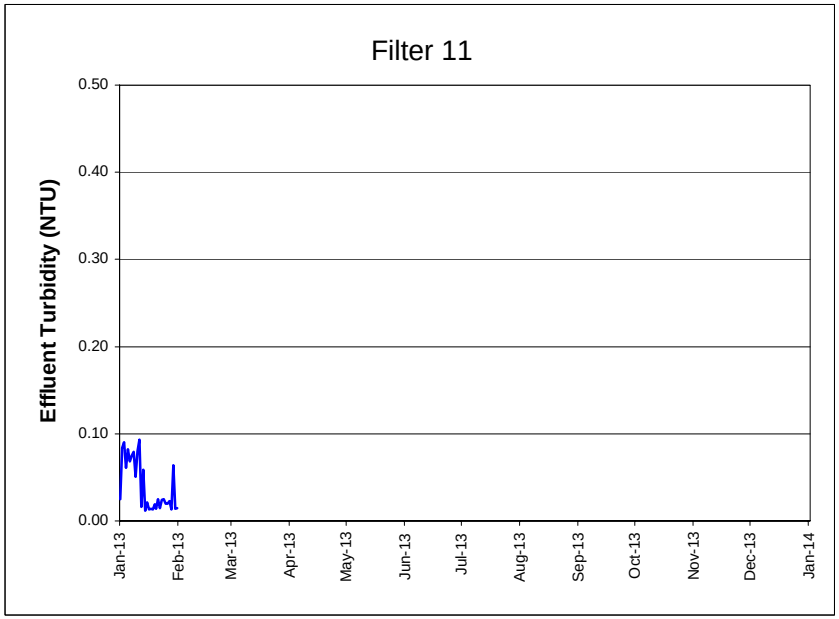


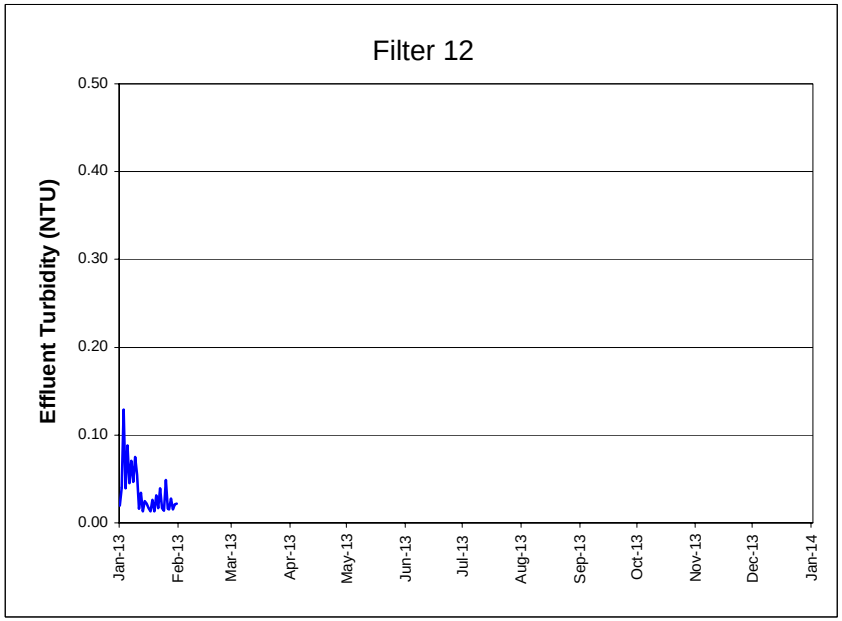


Filtration Performance Summary (Filters 9 - 12)









	Settled Water				Combined Filtered Water			
	95th %	% Values Meeting Goal			95th %	% Values Meeting Goal		
Month/Yr	Sed 1	3 NTU	2 NTU	1 NTU		0.3 NTU	0.2 NTU	0.1 NTU
Jan-13		100.0	100.0	100.0	0.05	100.0	100.0	100.0
Feb-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Mar-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Apr-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
May-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Jun-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Jul-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Aug-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Sep-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Oct-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Nov-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A
Dec-13		#N/A	#N/A	#N/A		#N/A	#N/A	#N/A

The area in blue can be copied to the long-term trend spreadsheet (LT_trend.xls) to develop up to three years of performance trends.