



Town of Friday Harbor Water, Wastewater, and Solid Waste Utilities Summary Reports

www.fridayharbor.org

Period ending: September 2019

Data provided by
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Water Utility, Mike Deegan, Water System Mgr.
Frank Byrne, Water Treatment Plant Operator
Wastewater Utility, Don Reitan, Leadman
Solid Waste Utility, Dave Smith, Leadman

Analysis & Reports prepared by
Mike Greene, System Administrator

Water - use MTDsourceDate
9 / 2019

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

Water Class	Accounts	Gallons
Spe	4	127,141
Sfr	987	4,169,510
PA	76	2,155,220
Mfr	124	2,160,460
Ind	14	235,700
Com	222	2,774,070
TOTAL	1,427	11,622,101

Water use MTD - accounts with sewersourceDate
9 / 2019

Sewer Class	Accounts	Gallons
Location: IN		
Mfr In/low Strength	58	635,670
Com In/lo Strength	162	1,450,420
Dot In/lo Strength	3	67,860
Ind In/hi Strength	1	64,660
Ind In/lo Strength	10	162,350
Lmf In/lo Strength	1	2,640
Com In/hi Strength	44	1,110,270
Mfr In/lo Strength	56	800,990
Mhp In/lo Strength	2	412,700
PA In/hi Strength	3	138,100
PA In/lo Strength	42	1,159,860
Sfr IN Town	617	2,529,670
Low Rate / IN Town	4	5,520
	<hr/> 1003	<hr/> 8,540,710
Location: Out		
UW Out/hi Strength	1	510,600
Mfr Out/lo Strength	1	4,860
Sfr Out of Town	4	12,900
	<hr/> 6	<hr/> 528,360
TOTAL	1009	9,069,070

Water - use MTD by LocationsourceDate
9 / 2019

Spe=Special, Sfr=Single Family Residential, P.A= Public Authority, Mfr=Multi-family, Ind=Industrial, Com=Commerc

Water Class	Accounts	Gallons
Location: IN		
Spe	3	123,761
Sfr	635	2,561,420
PA	68	1,582,460
Mfr	119	1,929,360
Ind	13	235,700
Com	218	2,698,100
	<hr/>	
	1,056	9,130,801
Location: Out		
Spe	1	3,380
Sfr	352	1,608,090
PA	8	572,760
Mfr	5	231,100
Ind	1	0
Com	4	75,970
	<hr/>	
	371	2,491,300
TOTAL	1,427	11,622,101

Refuse - pickups by ClasssourceDate
9 / 2019

Location	Class	Pickups
IN	Sfr	1,889.0
	RefuseOnly	368.5
	PA	236.0
	Mfr	516.0
	Ind	19.0
	Com	2,593.0
		<hr/> 5,621.5
Out	Mfr	8.5
		<hr/> 8.5
	TOTAL	5,630.0

Refuse - active accountssourceDate
9 / 2019

Location	Refuse Type	Accounts
IN		
	Small Dumpster	47
	PA	39
	Medium Dumpste	54
	Large Dumpster	62
	Compactors	3
	Cans Low Rate	4
	Cans	828
		<hr/>
		1,037
Out		
	Large Dumpster	1
		<hr/>
		1
		<hr/>
	TOTAL	1,038

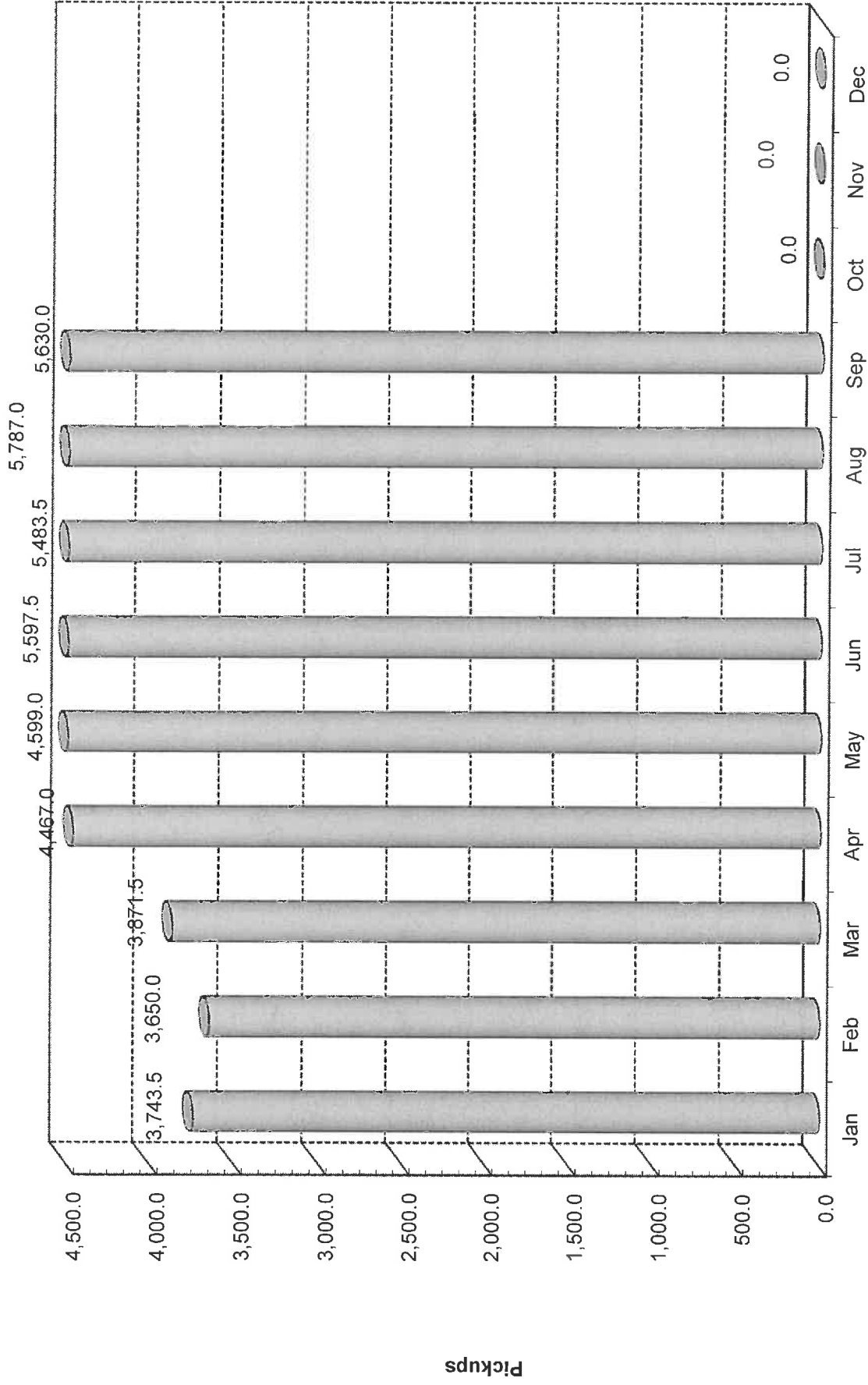
Recycle - pickups by ClasssourceDate
9 / 2019

Location	Class	Pickups
IN	Sfr	750
	RefuseOnly	24
	PA	0
	Mfr	65
	Ind	5
	Com	11
		<hr/> 855
Out	Mfr	0
		<hr/> 0
	TOTAL	<hr/> 855

Refuse Pickups - 2019 YTD

Account Type	SFR	Refuse Only	P.A	MFR	IND	COM	Other	Total
Jan	1,327.5	196.5	148.5	353.5	18.0	1,699.5		3,743.5
Feb	1,387.0	182.5	152.0	367.0	21.5	1,535.5	4.5	3,650.0
Mar	1,324.0	221.0	170.0	367.0	18.0	1,767.5	4.0	3,871.5
Apr	1,617.0	271.0	180.5	426.5	21.0	1,947.0	4.0	4,467.0
May	1,486.0	292.5	205.5	412.0	19.0	2,178.0	6.0	4,599.0
Jun	2,033.0	397.5	227.5	502.5	16.5	2,413.5	7.0	5,597.5
Jul	1,827.0	420.0	192.0	454.0	16.0	2,565.5	9.0	5,483.5
Aug	1,830.0	423.5	220.5	474.5	16.5	2,812.0	10.0	5,787.0
Sep	1,889.0	368.5	236.0	516.0	19.0	2,593.0	8.5	5,630.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	14,720.5	2,773.0	1,732.5	3,873.0	165.5	19,511.5	53.0	42,829.0

Refuse Pickups by Month - 2019



Finish Water Flow to Town
source: Water Treatment Facility Monthly Report

Revised reporting period: per K. Anderson 03/06/17
to reflect meter reading dates (?).
Start/End dates may change monthly.

32 :count of days in reporting period.

	August 15, 2019 day flow (total flow)	September 15, 2019 day flow (total flow)	
	15 497	1 340	
	16 471	2 357	
	17 402	3 463	
	18 529	4 482	
	19 433	5 410	
	20 515	6 405	
	21 356	7 427	
	22 440	8 344	
	23 426	9 284	
	24 354	10 265	
	25 448	11 232	
	26 389	12 322	
	27 393	13 337	
	28 432	14 325	
	29 438	15 355	
	30 433	16	
	31 419		
	days 7375	days 5348	
	TOTAL DAYS	32	
	TOTAL FLOW	12723	
		1,000's gallons	

TOWN OF FRIDAY HARBOR

Flow to Town (Gross Water Production) 2019

Revised reporting period: per K. Anderson 03/06/17
to reflect meter reading dates (?).

Reporting (meter reading) period			days in period	Gross flow to Town	Flow to Town (millions)
<i>from WTP Chem. Wts. & Finish Flow to Town Report</i>					
17-Dec	to	14-Jan	29	6,982,000	6,982
15-Jan	to	14-Feb	31	7,865,000	7,865
15-Feb	to	14-Mar	28	7,468,000	7,468
15-Mar	to	14-Apr	31	8,604,000	8,604
15-Apr	to	14-May	30	9,522,000	9,522
15-May	to	16-Jun	33	12,495,000	12,495
17-Jun	to	14-Jul	28	12,159,000	12,159
15-Jul	to	14-Aug	31	13,977,000	13,977
15-Aug	to	15-Sep	32	12,723,000	12,723
	to		0	0	
	to		0	0	
	to		0	0	
			273	91,795,000	91795.0

Net Water Production - 2019

amounts in gallons

	Jan	Feb	Mar	Apr	May	Jun
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	6,982,000	7,865,000	7,468,000	8,604,000	9,522,000	12,495,000
3% meter loss	164,951	197,550	159,994	208,847	234,165	334,827
Flushing	308,800	309,700	341,200	245,100	183,500	144,000
SJC#3 FD use	5,000	5,000	5,000	5,000	5,000	35,900
Leaks	216,000	316,000	226,000	432,000	432,000	352,400
notes						
other non-metered use						
notes						
Additional water in storage						
notes						
Total other uses	-694,751	-828,250	-732,194	-890,947	-854,665	-867,127
Net production	6,287,249	7,036,750	6,735,806	7,713,053	8,667,335	11,627,873
	Jul	Aug	Sep	Oct	Nov	Dec
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	12,159,000	13,977,000	12,723,000	0	0	0
3% meter loss	340,444	395,959	348,663	0	0	0
Flushing	201,600	180,000	108,000			
SJC#3 FD use	5,000	5,000	5,000			
Leaks	226,800	86,400	86,400			
notes						
other non-metered use						
notes						
Total other uses	-773,844	-667,359	-548,063	0	0	0
Net production	11,385,156	13,309,641	12,174,937	0	0	0

Water Consumption & Production

Revised meter loss reporting begin 07/09 (per Robert Krebs, Evergreen Rural Water Assoc.)

Period	USE (consumption)	Cumulative Use YTD	Flow (production)	Unaccounted over / (under)	Cumulative Flow YTD	Average Daily Flow	
2017	Jan-17	8,403,985	8,484,000	-80,015		273,677	
<i>gallons</i>	Feb-17	6,321,628	14,725,613	-770,372	15,576,000	253,286	
	Mar-17	6,110,787	20,836,401	-688,213	22,375,000	219,323	
	Apr-17	8,344,725	29,181,126	-1,394,275	32,114,000	324,633	
	May-17	7,085,245	36,266,371	672,245	38,527,000	206,871	
	Jun-17	10,048,456	46,314,827	-256,544	48,832,000	343,500	
	Jul-17	14,681,313	60,996,140	-353,687	63,867,000	485,000	YTD
	Aug-17	13,661,250	74,657,390	-1,147,750	78,676,000	477,710	Unaccounted
	Sep-17	14,093,015	88,750,405	-874,985	93,644,000	498,933	as % of Flow
Average	Oct-17	7,823,149	96,573,554	-216,851	101,684,000	259,355	5.10%
Monthly Use	Nov-17	6,680,806	103,254,360	-592,194	108,957,000	242,433	
9,176,124	Dec-17	6,859,133	110,113,492	-211,867	116,028,000	228,097	-5,914,508
YEAR TOTAL:	12	110,628,322	Cumulative Metered/Other Use YTD	116,028,000	-5,914,508	Cumulative 3% meter loss	317,735 2,915,731
2018	Jan-18	6,473,834	7,347,000	-873,166		237,000	
<i>gallons</i>	Feb-18	6,318,823	12,792,658	-735,177	14,401,000	251,929	
	Mar-18	5,860,732	18,653,389	-705,268	20,967,000	211,806	
	Apr-18	7,416,815	26,070,204	-839,185	29,223,000	275,200	
	May-18	7,687,108	33,757,312	-244,892	37,155,000	255,871	
	Jun-18	11,419,190	45,176,502	-519,810	49,094,000	397,967	
	Jul-18	13,151,864	58,328,366	-1,029,136	63,275,000	457,452	YTD
	Aug-18	14,508,241	72,836,607	-855,759	78,639,000	495,613	Unaccounted
	Sep-18	12,454,526	85,291,133	-1,314,474	92,408,000	458,967	as % of Flow
Average	Oct-18	8,624,468	93,915,601	-551,532	101,584,000	296,000	8.25%
Monthly Use	Nov-18	7,401,706	101,317,307	-920,294	109,906,000	277,400	
9,031,729	Dec-18	7,063,439	108,380,746	-1,161,561	118,131,000	265,323	-9,750,254
YEAR TOTAL:	12	108,380,746	Cumulative Metered/Other Use YTD	118,131,000	-9,750,254	Cumulative 3% meter loss	323,377 2,989,222
2019	Jan-19	6,193,133	6,982,000	-788,867		225,226	
<i>gallons</i>	Feb-19	7,413,239	13,606,372	-451,761	14,847,000	280,893	
	Mar-19	6,065,311	19,671,683	-1,402,689	22,315,000	240,903	
	Apr-19	7,852,517	27,524,200	-751,483	30,919,000	286,800	
	May-19	8,660,158	36,184,358	-861,842	40,441,000	307,161	
	Jun-19	12,028,022	48,212,379	-466,978	52,936,000	416,500	
	Jul-19	12,121,969	60,334,348	-37,031	65,095,000	392,226	YTD
	Aug-19	13,865,988	74,200,336	-111,012	79,072,000	450,871	Unaccounted
	Sep-19	12,170,164	86,370,500	-552,836	91,795,000	424,100	as % of Flow
Average	Oct-19	0	86,370,500	0	91,795,000	0	5.91%
Monthly Use	Nov-19	0	86,370,500	0	91,795,000	0	
9,596,722	Dec-19	0	86,370,500	0	91,795,000	0	-5,424,500
YEAR TOTAL:	9	86,370,500	Cumulative Metered/Other Use YTD	91,795,000	-5,424,500	Cumulative 3% meter loss	336,076 2,385,399

3 YEAR AVERAGES:	Use	Flow	Daily Flow	3 Year Loss as % of Flow
	5,969,661 :gal/month	9,877,394 :gal/month	219,818	6.47%

source: Monthly Water Treatment Plant Report & utility.mdb's
 3 yr cumulative flow 325,954,000
 3 yr unaccounted -21,089,261

Utilization of Sustainable Annual Water System Capacity

Period start: Oct-18

Period end: Sep-19

Sustainable Annual Yield (TFH
Comprehensive Water System Plan
Update, June, 2013, page 3-6)

205 million gallons

Annual use - 12 month period
percent of Sustainable Annual Yield

117.5 million gallons
57.3%

exceeds Sustainable Yield?

No

Trout Lake Reservoir Level

Months with positive levels may reflect that a removable 7.25 inch riser has been added to the top of the original spillway.

end of	Inches above/(below) original spillway	end of	Inches above/(below) original spillway	end of	Inches above/(below) original spillway
Jan-12	-1.75	Jan-15	0.00	Jan-18	0.00
Feb-12	0.00	Feb-15	0.00	Feb-18	0.00
Mar-12	0.00	Mar-15	0.00	Mar-18	8.75
Apr-12	8.00	Apr-15	6.50	Apr-18	8.25
May-12	0.00	May-15	0.00	May-18	1.50
Jun-12	7.00	Jun-15	-13.00	Jun-18	-10.50
Jul-12	-19.00	Jul-15	-29.50	Jul-18	-29.50
Aug-12	-32.75	Aug-15	-42.25	Aug-18	-42.00
Sep-12	-45.00	Sep-15	-49.50	Sep-18	-50.00
Oct-12	-48.00	Oct-15	-54.50	Oct-18	-54.50
Nov-12	-24.25	Nov-15	-17.25	Nov-18	-55.50
Dec-12	0.00	Dec-15	0.00	Dec-18	-26.00
Jan-13	0.00	Jan-16	0.00	Jan-19	0.00
Feb-13	0.00	Feb-16	0.00	Feb-19	0.00
Mar-13	0.00	Mar-16	0.00	Mar-19	2.75
Apr-13	8.50	Apr-16	6.00	Apr-19	2.75
May-13	3.75	May-16	-2.50	May-19	-0.75
Jun-13	-3.75	Jun-16	-11.00	Jun-19	-16.00
Jul-13	-21.00	Jul-16	-21.00	Jul-19	-26.25
Aug-13	-34.25	Aug-16	-36.50	Aug-19	-40.00
Sep-13	-39.25	Sep-16	-49.50	Sep-19	-46.25
Oct-13	-43.50	Oct-16	-51.00	Oct-19	
Nov-13	-44.75	Nov-16	-45.50	Nov-19	
Dec-13	-26.00	Dec-16	-10.35	Dec-19	
Jan-14	0.00	Jan-17	0.00	Jan-20	
Feb-14	0.00	Feb-17	0.00	Feb-20	
Mar-14	0.00	Mar-17	2.75	Mar-20	
Apr-14	8.25	Apr-17	9.00	Apr-20	
May-14	5.00	May-17	4.75	May-20	
Jun-14	7.00	Jun-17	-4.00	Jun-20	
Jul-14	-20.50	Jul-17	-19.00	Jul-20	
Aug-14	-30.25	Aug-17	-32.00	Aug-20	
Sep-14	-42.75	Sep-17	-43.00	Sep-20	
Oct-14	-45.25	Oct-17	-50.50	Oct-20	
Nov-14	-46.50	Nov-17	-48.00	Nov-20	
Dec-14	0.00	Dec-17	-11.50	Dec-20	

Rainfall - Trout Lake Water Treatment Facility

source: Water Treatment Plant Weather Reports

all figures in inches

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	average (2005-14)
JAN	5.49	6.87	6.51	2.34	3.82	4.73	5.90	3.46	4.14	2.86	4.61
FEB	1.01	1.61	2.83	1.78	1.50	1.24	2.74	3.38	1.32	4.22	2.16
MAR	2.33	0.91	3.70	1.99	2.05	3.30	3.37	3.09	3.63	3.88	2.83
APR	1.37	2.23	1.49	1.32	2.07	1.47	2.96	1.91	2.70	1.94	1.95
MAY	1.08	1.24	0.78	1.26	1.69	2.09	3.07	1.09	2.20	1.05	1.56
JUN	1.63	0.56	1.03	1.16	0.35	1.10	0.68	2.60	0.83	0.52	1.05
JUL	0.70	0.26	1.56	0.21	0.45	0.11	0.84	1.04	0.00	0.36	0.55
AUG	1.60	0.03	0.64	1.88	0.81	0.72	0.29	0.00	0.95	0.49	0.74
SEP	0.94	1.15	0.54	0.84	1.58	4.35	0.72	0.12	5.08	1.34	1.67
OCT	3.50	1.89	2.12	1.83	5.24	1.38	2.29	6.40	1.42	4.00	3.01
NOV	4.28	10.43	2.32	5.15	6.76	2.94	4.50	3.32	2.49	4.00	4.62
DEC	2.89	3.74	4.59	3.70	1.80	6.55	1.88	4.79	2.28	3.37	3.56
Total	26.82	30.92	28.11	23.46	28.12	29.98	29.24	31.20	27.04	28.03	28.29

Cumulative thru

DEC	26.82	30.92	28.11	23.46	28.12	29.98	29.24	31.20	27.04	28.03
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all figures in inches

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
JAN	3.97	2.17	1.60	5.10	3.87					
FEB	2.95	4.83	2.99	3.80	1.76					
MAR	3.62	2.88	3.27	1.48	0.87					
APR	0.51	0.75	2.20	3.10	1.61					
MAY	0.30	0.48	1.61	0.07	1.29					
JUN	0.14	1.22	0.75	0.72	0.61					
JUL	0.36	0.32	0.15	0.18	0.75					
AUG	0.94	0.11	0.11	0.01	0.84					
SEP	1.28	1.40	0.71	1.27	2.74					
OCT	3.53	4.80	4.28	2.23						
NOV	6.19	3.47	4.32	4.32						
DEC	5.26	4.02	3.83	4.26						
Total	29.05	26.45	25.82	26.54	14.34	0.00	0.00	0.00	0.00	0.00

Cumulative thru

DEC	29.05	26.45	25.82	26.54	14.34	0.00	0.00	0.00	0.00	0.00
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Prevention of Wastewater Facility Overloading

Period start: Sep-18
 Period end: Aug-19

INFLUENT BOD LOADING (pounds per day)	AVG. EFFLUENT FLOW (millions of gallons per day)	SUSPENDED SOLIDS LOADING (pounds per day)
Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,600 85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 1,360	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 0.69000 85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 0.58650	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 1,110 85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 944
Month with highest average loading in period Jan-19	Month with highest average flow in period Sep-19	Month with highest average loading in period Jan-19
Highest average monthly loading in period (pounds per day) 559	Highest average monthly flow in period (millions of gallons per day) 0.4088414	Highest average monthly loading in period (pounds per day) 488
% of Design Criteria 35%	% of Design Criteria 59%	% of Design Criteria 44%
exceeds Design Criteria? No	exceeds Design Criteria? No	exceeds Design Criteria? No
Previous month's loading 509	Previous month's flow 0.2541	Previous month's loading 319
Following month's loading 524	Following month's flow 0.2799	Following month's loading 245
exceeds Planning Threshold for 3 consecutive months? No	exceeds Planning Threshold for 3 consecutive months? No	exceeds Planning Threshold for 3 consecutive months? No