



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

[www.fridayharbor.org](http://www.fridayharbor.org)

**Period ending: April 2019**

Data provided by  
Wayne Haefele, PE, Public Works Director  
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

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**Water - use MTD**sourceDate  
4 / 2019

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

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
Spe	4	8,070
Sfr	986	2,433,950
PA	75	1,095,020
Mfr	122	1,658,130
Ind	15	82,120
Com	220	1,684,280
<b>TOTAL</b>	<b>1,422</b>	<b>6,961,570</b>

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**Water use MTD - accounts with sewer**sourceDate  
4 / 2019

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<b>Sewer Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Mfr In/low Strength	62	637,980
Com In/lo Strength	160	878,690
Dot In/lo Strength	3	46,320
Ind In/hi Strength	1	22,920
Ind In/lo Strength	10	53,720
Lmf In/lo Strength	1	2,780
Com In/hi Strength	44	648,400
Mfr In/lo Strength	49	453,860
Mhp In/lo Strength	2	422,500
PA In/hi Strength	3	68,880
PA In/lo Strength	42	399,640
Sfr IN Town	613	1,635,050
Low Rate / IN Town	6	8,820
	<hr/> 996	<hr/> 5,279,560
<b>Location: Out</b>		
UW Out/hi Strength	1	446,800
Mfr Out/lo Strength	1	4,700
Sfr Out of Town	4	5,280
	<hr/> 6	<hr/> 456,780
<b>TOTAL</b>	<b>1002</b>	<b>5,736,340</b>

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**Water - use MTD by Location**sourceDate  
4 / 2019

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

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<b>Water Class</b>	<b>Accounts</b>	<b>Gallons</b>
<b>Location: IN</b>		
Spe	3	20
Sfr	633	1,651,200
PA	68	595,370
Mfr	117	1,572,690
Ind	13	82,060
Com	216	1,584,620
	<hr/>	
	1,050	5,485,960
<b>Location: Out</b>		
Spe	1	8,050
Sfr	353	782,750
PA	7	499,650
Mfr	5	85,440
Ind	2	60
Com	4	99,660
	<hr/>	
	372	1,475,610
<b>TOTAL</b>	<b>1,422</b>	<b>6,961,570</b>

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**Refuse - pickups by Class**sourceDate  
4 / 2019

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<b>Location</b>	<b>Class</b>	<b>Pickups</b>
IN	Sfr	1,617.0
	RefuseOnly	271.0
	PA	180.5
	Mfr	426.5
	Ind	21.0
	Com	1,947.0
		<hr/> 4,463.0
Out	Sfr	0.0
	Mfr	4.0
		<hr/> 4.0
	<b>TOTAL</b>	<b>4,467.0</b>

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**Refuse - active accounts**sourceDate  
4 / 2019

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<b>Location</b>	<b>Refuse Type</b>	<b>Accounts</b>
IN		
	Small Dumpster	48
	PA	39
	Medium Dumpste	51
	Large Dumpster	61
	Compactors	3
	Cans Low Rate	6
	Cans	823
		<hr/>
		1,031
Out		
	Large Dumpster	1
	Cans	1
		<hr/>
		2
		<hr/>
	<b>TOTAL</b>	<b>1,033</b>

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**Recycle - pickups by Class**sourceDate  
4 / 2019

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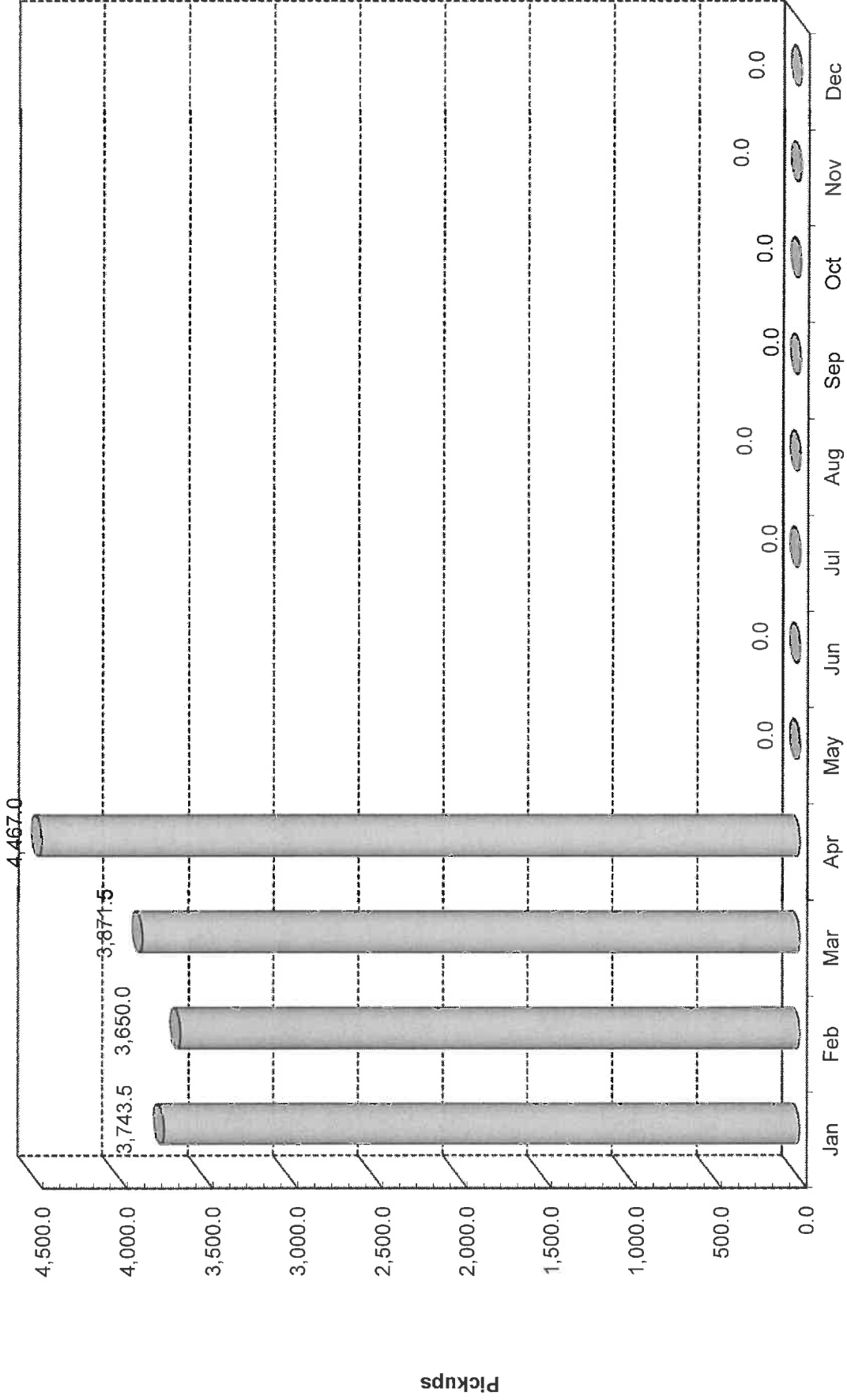
Location	Class	Pickups
IN	Sfr	670
	RefuseOnly	17
	PA	0
	Mfr	73
	Ind	1
	Com	8
		<hr/> 769
Out	Sfr	0
	Mfr	0
		<hr/> 0
<b>TOTAL</b>		<b>769</b>

## 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								0.0
Jun								0.0
Jul								0.0
Aug								0.0
Sep								0.0
Oct								0.0
Nov								0.0
Dec								0.0
YTD	5,655.5	871.0	651.0	1,514.0	78.5	6,949.5	12.5	15,732.0



# 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.

31 :count of days in reporting period.

March 15, 2019		April 14, 2019	
day	flow (total flow)	day	flow (total flow)
15	243	1	311
16	315	2	302
17	229	3	224
18	282	4	358
19	214	5	234
20	286	6	361
21	269	7	230
22	250	8	294
23	346	9	250
24	240	10	294
25	259	11	249
26	264	12	255
27	292	13	349
28	309	14	308
29	215	15	
30	324	16	
31	248		

days	
17	4585

days	
14	4019

TOTAL DAYS

31

TOTAL FLOW

8604

1,000's gallons



## 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	0	0
3% meter loss	164,951	197,550	159,994	208,847	0	0
Flushing	308,800	309,700	341,200	245,100	0	0
SJC#3 FD use	5,000	5,000	5,000	5,000	0	0
Leaks	216,000	316,000	226,000	432,000	0	0
<i>notes</i>						
other non-metered use						
<i>notes</i>						
Additional water in storage						
<i>notes</i>						
<b>Total other uses</b>	<b>-694,751</b>	<b>-828,250</b>	<b>-732,194</b>	<b>-890,947</b>	<b>0</b>	<b>0</b>
<b>Net production</b>	<b>6,287,249</b>	<b>7,036,750</b>	<b>6,735,806</b>	<b>7,713,053</b>	<b>0</b>	<b>0</b>

	Jul	Aug	Sep	Oct	Nov	Dec
Gross Production for billing period from WTP Chemical Weights & Finish Flow to Town Report	0	0	0	0	0	0
3% meter loss						
Flushing						
SJC#3 FD use						
Leaks						
<i>notes</i>						
other non-metered use						
<i>notes</i>						
<i>notes</i>						
<b>Total other uses</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Net production</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

TOWN OF FRIDAY HARBOR

**WATER CONSUMPTION (Use) BY CUSTOMER CLASS**

source: utilTry08 & 13.mdb

2018

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg. Daily Use
JAN	1,312,140	61,070	1,614,762	626,860	2,424,228	18,020	416,754	6,473,834	6.0%	208,833
FEB	1,236,460	75,920	1,683,748	602,090	2,294,360	16,927	409,718	6,318,823	5.8%	217,890
MAR	1,154,050	65,030	1,497,650	428,330	2,161,960	28,836	524,876	5,860,732	5.4%	189,056
APR	1,670,940	100,680	1,702,730	749,850	2,426,860	18,042	747,713	7,416,815	6.8%	247,227
MAY	1,687,460	116,990	1,615,500	967,770	2,720,851	51,359	527,178	7,687,108	7.1%	247,971
JUN	2,455,402	283,510	2,064,240	1,538,400	4,436,044	104,540	537,054	11,419,190	10.5%	380,640
JUL	2,787,218	298,920	2,032,360	2,420,850	4,846,845	307,361	458,310	13,151,864	12.1%	424,254
AUG	3,089,539	316,650	2,133,950	2,668,710	5,545,970	348,102	405,320	14,508,241	13.4%	468,008
SEP	2,904,901	310,320	2,073,900	2,052,880	4,579,190	163,934	369,401	12,454,526	11.5%	415,151
OCT	1,895,490	113,160	1,478,860	1,131,560	3,550,430	56,688	388,280	8,624,468	8.0%	278,209
NOV	1,674,600	82,860	1,517,110	995,910	2,552,950	43,275	535,001	7,401,706	6.8%	246,724
DEC	1,524,720	77,270	1,547,240	984,510	2,557,150	24,649	347,900	7,063,439	6.5%	227,853
<b>TOTAL</b>	<b>23,392,920</b>	<b>1,901,980</b>	<b>20,962,050</b>	<b>15,167,720</b>	<b>40,096,838</b>	<b>1,191,733</b>	<b>5,667,505</b>	<b>108,380,746</b>	<b>100.0%</b>	<b>296,122</b>
<b>AVERAGE</b>	<b>1,949,410</b>	<b>158,498</b>	<b>1,746,838</b>	<b>1,263,977</b>	<b>3,341,403</b>	<b>99,311</b>	<b>472,292</b>	<b>9,031,729</b>	<b>-9,750,254</b>	<b>:LOSS for Year</b>

% of USE  
% of FLOW

:FLOW (Use+Loss)  
Loss as % of Flow

2019

CLASS:	COM	IND	MFR	P.A	SFR	Special	other uses	TOTAL	% of Use	Avg. Daily Use
JAN	1,250,270	69,660	1,349,580	607,870	2,203,780	17,222	694,751	6,193,133	22.5%	199,778
FEB	1,500,170	71,310	1,618,790	688,000	2,665,520	41,199	828,250	7,413,239	26.9%	255,629
MAR	1,241,570	75,040	1,397,840	559,420	2,041,730	17,517	732,194	6,065,311	22.0%	195,655
APR	1,684,280	82,120	1,658,130	1,095,020	2,433,950	8,070	890,947	7,852,517	28.5%	261,751
MAY							0	0	0.0%	0
JUN							0	0	0.0%	0
JUL							0	0	0.0%	0
AUG							0	0	0.0%	0
SEP							0	0	0.0%	0
OCT							0	0	0.0%	0
NOV							0	0	0.0%	0
DEC							0	0	0.0%	0
<b>TOTAL</b>	<b>5,676,290</b>	<b>298,130</b>	<b>6,024,340</b>	<b>2,950,310</b>	<b>9,344,980</b>	<b>84,008</b>	<b>3,146,142</b>	<b>27,524,200</b>	<b>100.0%</b>	<b>227,473</b>
<b>AVERAGE</b>	<b>1,419,073</b>	<b>74,533</b>	<b>1,506,085</b>	<b>737,578</b>	<b>2,336,245</b>	<b>21,002</b>	<b>262,178</b>	<b>2,293,683</b>	<b>-3,394,800</b>	<b>:LOSS for Year</b>

:FLOW (Use+Loss)  
Loss as % of Flow

100.0%  
89.0%

# Utilization of Sustainable Annual Water System Capacity

Period start: May-18

Period end: Apr-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

119.8 million gallons  
58.5%

exceeds Sustainable Yield?

**No**

TOWN OF FRIDAY HARBOR

**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	
Jun-13	-3.75	Jun-16	-11.00	Jun-19	
Jul-13	-21.00	Jul-16	-21.00	Jul-19	
Aug-13	-34.25	Aug-16	-36.50	Aug-19	
Sep-13	-39.25	Sep-16	-49.50	Sep-19	
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						
JUN	0.14	1.22	0.75	0.72						
JUL	0.36	0.32	0.15	0.18						
AUG	0.94	0.11	0.11	0.01						
SEP	1.28	1.40	0.71	1.27						
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	8.11	0.00	0.00	0.00	0.00	0.00

Cumulative thru

DEC	29.05	26.45	25.82	26.54	8.11	0.00	0.00	0.00	0.00	0.00
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# Prevention of Wastewater Facility Overloading

Period start: Apr-18  
 Period end: Mar-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	Design Criteria (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.A) max.month 0.69000	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) 1,360	85% Capacity Planning Threshold (06/06 NPDES Permit #WA-002358-2, pg 12, paragraph S4.B.1) 0.58650	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 Jan-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 <b>35%</b>	% of Design Criteria <b>59%</b>	% of Design Criteria <b>44%</b>
exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>	exceeds Design Criteria? <b>No</b>
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? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>	exceeds Planning Threshold for 3 consecutive months? <b>No</b>