APPENDIX 4C

ISS PUMPOUT ANALYSIS



					Average Total ISS
		Average li	ndividual Pumpout Per St	orm Event	Pumpout ²
No.	Storm Event ¹	Pump 1	Pump 2	Pump 3	(MGD)
1	8/4/1998	30.45	20.96	37.94	79.23
2	6/1/1999	2.00	30.40	29.90	62.30
3	6/6/1999	0.00	27.80	37.30	65.10
4	6/13/1999	18.56	46.85	45.24	110.60
5	7/21/1999	30.40	37.30	39.20	106.90
6	9/27/1999	21.70	32.90	2.60	57.20
7	4/19/2000	21.20	38.80	14.70	74.70
8	5/17/2000	30.30	36.40	37.50	104.20
9	5/31/2000	30.43	34.90	39.91	105.24
10	6/12/2000	10.03	23.93	24.22	58.18
11	7/2/2000	30.29	34.89	34.06	99.24
12	8/5/2000	23.37	25.07	23.96	72.40
13	9/11/2000	25.60	29.72	37.77	93.09
14	2/8/2001	4.30	15.50	23.60	43.30
15	6/11/2001	14.20	30.62	39.36	84.18
16	8/25/2001	17.97	35.33	21.98	75.27
17	4/7/2002	16.50	29.60	39.90	86.00
18	8/12/2002	20.30	40.20	39.00	99.50
19	5/10/2004 ³	6.85	21.48	33.96	62.29
	Average ⁴	18.66	31.19	31.69	82.04

Notes

1) Data taken from the Storm Event Summary Reports generated for the storms listed, except for 8/4/98 storm data which was developed from metered data. All data is included in Appendix 4B, *Storm Event Summary Data.*

2) The Average Total ISS Pumpout for an event was determined by determining the average total hourly pumpout of all 3 pumps for the storm event. The total of the average of each of the three pumps does NOT necessarily equal the average total pumpout.

3) ISS Pump Station Construction - Down to 2 pumps operating at one time for most of event.

4) Due to limited capacity for 5/10/04 storm indicated under Note 3, the information provided for that storm was not included in the average.



TABLE 4C-1AVERAGE ISS PUMPOUTANALYSIS2020 TREATMENT REPORT6/01/07TR_4-A.T4C01.07.06.01.cdr

		Maximum	ndividual Pumpout Per S	torm Event	Maximum Total ISS Pumpout2	
No.	Storm Event ¹	Pump 1	Pump 2	Pump 3	(MGD)	
1	8/4/1998	42.00	59.55	62.57	162.15	
2	6/1/1999	31.62	45.09	42.28	73.80	
3	6/6/1999	0.00	29.94	40.18	70.00	Questionable
4	6/13/1999	49.92	58.64	56.42	149.66	data dropped
5	7/21/1999	64.33	69.82	94.28	147.80	from analysis
6	9/27/1999	37.63	44.51	34.32	105.60	in official analysis
7	4/19/2000	39.32	45.11	44.41	102.00	
8	5/17/2000	43.97	51.63	54.35	148.50	
9	5/31/2000	38.45	44.09	44.15	126.50	
10	6/12/2000	30.89	41.10	43.17	114.00	
11	7/2/2000	39.55	44.11	46.24	129.30	
12	8/5/2000	37.56	45.07	44.32	124.80	
13	9/11/2000	45.28	53.28	55.31	153.50	
14	2/8/2001	43.08	53.24	52.96	149.30	
15	6/11/2001	36.45	42.43	44.27	122.30	
16	8/25/2001	35.88	38.49	38.52	108.58	
17	4/7/2002	37.46	44.35	49.33	129.60	
18	8/12/2002	34.25	44.34	45.30	122.70	
19	5/10/2004 ³	48.37	43.14	42.00	90.40	
Ave	erage Maximum ⁴	38.20	47.49	46.95	124.45	
	Maximum ⁴	64.33	69.82	62.57	162.15	

Notes

1) Data taken from the Storm Event Summary Reports generated for the storms listed, except for 8/4/98 storm data which was developed from metered data. All data is included in Appendix 4B, Storm Event Summary Data

2) The Maximum Total ISS Pumpout for an event was determined by determining the maximum total hourly pumpout of all 3 pumps for the storm event. The total of the three pumps does NOT necessarily equal the total pumpout since the max for each pump could have occurred at different times during the event.

3) ISS Pump Station Construction - Down to 2 pumps operating at one time for most of event

4) Due to limited capacity for 5/10/04 storm indicated under Note 3, the information provided for that storm was not included in the average



TABLE 4C-2MAXIMUM ISS PUMPOUTANALYSIS2020 TREATMENT REPORT6/01/07TR_4-A.T4C02.07.06.01.cdr



Maximum ISS Pumpout Trend Analysis



		Total #	Pur	mp 1	Pur	np 2	Pur	np 3	All 3 Pum	os Running
		Hours Per	#		#		#		#	
No.	Storm Event ¹	Storm ²	Hrs/Storm	% Total Hrs						
1	8/4/1998	264	86	32.6%	216	81.8%	264	100.0%	78	29.5%
2	6/1/1999	16	1	6.3%	15	93.8%	12	75.0%	0	0.0%
3	6/6/1999	9	0	0.0%	9	100.0%	9	100.0%	0	0.0%
4	6/13/1999	47	22	46.8%	46	97.9%	47	100.0%	22	46.8%
5	7/21/1999	159	134	84.3%	142	89.3%	152	95.6%	125	78.6%
6	9/27/1999	184	132	71.7%	164	89.1%	16	8.7%	9	4.9%
7	4/19/2000	107	64	59.8%	105	98.1%	38	35.5%	5	4.7%
8	5/17/2000	157	134	85.4%	139	88.5%	145	92.4%	126	80.3%
9	5/31/2000	137	124	90.5%	119	86.9%	136	99.3%	118	86.1%
10	6/12/2000	33	18	54.5%	32	97.0%	32	97.0%	17	51.5%
11	7/2/2000	153	145	94.8%	147	96.1%	142	92.8%	132	86.3%
12	8/5/2000	121	116	95.9%	104	86.0%	97	80.2%	84	69.4%
13	9/11/2000	203	164	80.8%	162	79.8%	201	99.0%	148	72.9%
14	2/8/2001	358	67	18.7%	214	59.8%	303	84.6%	62	17.3%
15	6/11/2001	203	90	44.3%	170	83.7%	203	100.0%	90	44.3%
16	8/25/2001 ³	47.75	26.92	56.4%	46.83	98.1%	28.83	60.4%	23.5	49.2%
17	4/7/2002	157	91	58.0%	138	87.9%	157	100.0%	91	58.0%
18	8/12/2002	114	78	68.4%	114	100.0%	111	97.4%	77	67.5%
19	5/10/2004 4	381	74	19.4%	226	59.3%	325	85.3%	3	0.8%
	Average ⁵			58.3%		89.6%		84.3%		47.1%

Notes

1) Data taken from the Storm Event Summary Reports generated for the storms listed, except for 8/4/98 storm data which was developed from metered data. All data is included in Appendix 4B, Storm Event Summary Data

2) The Total # of Hours Per Storm is the total number of hours that at least one pump operated as taken from Appendix 4B, Storm Event Summary Data

3) Data was provided in 8/12/02 storm in 5 minute intervals so hourly operation shown as a fraction

4) ISS Pump Station Construction - Down to 2 pumps operating at one time for most of event

5) Due to limited capacity for 5/10/04 storm indicated under Note 4, the information provided for that storm was not included in the average



TABLE 4C-4INDIVIDUAL ISS PUMPUSAGE ANALYSIS2020 TREATMENT REPORT6/01/07TR_4-A.T4C04.07.06.01.cdr

APPENDIX 4D

MMSD/UWS IN-PLANT DIVERSION RECORDS



	Date	Time	Date	Time	Plant	Blending	MGD Blending	Estimated Blending	Reported Blending	Estimated Blending	
Plant	Start	Start (1)(3)	Stop(1)(3)	Stop(1)(3)	Flow(1)(3)	Type (6)	Rate(1)(3)	Volume(1)(3)	Volume(3)(4)	Volume(2)	Additional Com
JIWWTP	2/21/1997					ISS				22	
SSWWTP(8)	2/21/1997					PE				60	
SSWWTP(8)	2/22/1997					PE				50	
JIWWTP	6/16/1997					ISS				4	
JIWWTP	6/21/1997					ISS				17	
SSWWTP(8)	6/21/1997					PE				50	
SSWWTP(8)	6/22/1997					PE				NA (7)	
SSWWTP(8)	8/24/1997					PE				NA	
SSWWTP(8)	8/24/1997					PE				NA	
JIWWTP	9/16/1997					ISS				2	
JIWWTP	9/17/1997					ISS				11	
SSWWTP(8)	3/31/1998	3:45 PM	4/1/1998	7:30 AM		PE		10		10	
JIWWTP	8/8/1998					ISS		21		21	
JIWWTP	11/10/1998					ISS		33		33	
JIWWTP	1/22/1999	3:30 AM	1/22/1999	9:30 AM	333	ISS	40	10	16	5	
JIWWTP	1/23/1999	8:10 AM	1/23/1999	8:54 PM	340	ISS	40	21.2	34	10	
JIWWTP	1/23/1999					PE				10	
JIWWTP	4/9/1999	3:40 AM	4/10/2000	12:00 AM		ISS	87	74	58	58	
JIWWTP	4/10/1999	12:00 AM	4/10/1999	2:30 AM		ISS	87	9	12	12	
JIWWTP	4/22/1999	1:15 AM	4/22/1999	2:10 AM	291	ISS	40	1.53	6	52	
JIWWTP	4/22/1999	11:30 PM	4/23/1999	10:30 PM	???	ISS	40	38.33	46		Assumed this div
JIWWTP	4/23/1999	11:40 PM			348	ISS	40	0.00	4	+	4/23/2006 since
JIWWTP	5/12/1999	2:35 AM	5/17/1999	4:45 AM	310	ISS	40	2.1		8 8	
JIWWTP	5/17/1999	2:35	5/17/1999	4:45	310	ISS	40	3.6	13.0	13	
JIWWTP	5/17/1999	6:10	5/17/1999	8:35 AM	250	PE	40	4.0	0.0	4.03	
JIWWTP	5/18/1999	1:45 PM	5/18/1999	6:37 PM	298	ISS	40	8.1	6.0	6	
JIWWTP	5/18/1999	13:45	5/18/1999	18:37	298	PE	33	6.7		6.6	
JIWWTP	5/22/1999									2	
JIWWTP	6/12/1999	22:30	6/13/1999	0:00	330-275	ISS	40	2.5	4.2	. 79	Tot Reported Vo
JIWWTP	6/13/1999	0:00	6/14/1999	0:00		ISS	40	40.0	67.7		Contraction Provident Action
JIWWTP	6/14/1999	0:00	6/14/1999	2:30		ISS	40	4.2	7.1		
JIWWTP	7/7/1999	1:50	7/7/1999	3:30	335	ISS	40	2.8	0.0)	(2) stated 7/9 - dates
JIWWTP	7/21/1999	12:15	7/21/1999	12:30	280	ISS	40	0.4	13.0	13	
JIWWTP	7/22/1999	12:45 PM	7/22/1999	1:05 PM	280	ISS	40	0.6	0.0	0.56	
JIWWTP	7/23/1999	2:05 PM	7/23/1999	3:40 PM	280	ISS	40	2.6	0.0	2.64	
JIWWTP	2/22/2000	14:10	2/22/2000	17:00	220	PE	22	2.6	0.0	2.56	
JIWWTP	4/20/2000	2:40	4/20/2000	9:30	290	PE	30	8.5	24.0	8.54	
JIWWTP	4/20/2000	7:30	4/20/2000	13:30	280	ISS	40	10.0	↓ I		
JIWWTP	4/20/2000	18:55	4/21/2000	0:00	280	ISS	40	8.5	16.0	40	
JIWWTP	4/21/2000	0:00	4/21/2000	19:30	280	ISS	40	32.5	↓		
JIWWTP	4/23/2000	5:30	4/23/2000	9:30	310-213	ISS	40	6.7		6.67	
JIWWTP	5/9/2000	17:45	5/9/2000	19:55	264-194	ISS	41	3.7	4.0) 4	
JIWWTP	5/17/2000	23:15	5/18/2000	0:00	320	ISS	60	1.9	2.5	5 100	Tot Reported Vo
JIWWTP	5/18/2000	0:00	5/19/2000	0:00		ISS	60	60.0	81.4		•
JIWWTP	5/19/2000	0:00	5/19/2000	4:45		ISS	60	11.9	16.1	5	
JIWWTP	6/1/2000	1:30	6/1/2000	7:30	310	ISS	40	10.0	29.0	29	
JIWWTP	6/1/2000	20:00	6/2/2000	0:00	320-275	ISS	50	8.3	8.0) 14	Tot Reported Vo
JIWWTP	6/2/2000	0:00	6/2/2000	3:00	320-275	ISS	50	6.3	6.0)	
JIWWTP	6/12/2000	13:30	6/12/2000	18:45	236-310	PE	33	7.2	10.0	7.22	
JIWWTP	6/12/2000	16:00	6/12/2000	21:00	310-220	ISS	45	9.4	+	10	
JIWWTP	7/2/2000	21:45	7/3/2000	0:00	304	ISS	45	4.2	4.4	7	Tot Reported Vo
JIWWTP	7/3/2000	0:00	7/3/2000	1:20	304	ISS	45	2.5	2.6	i ↓	and an an an and the second state of the secon



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/ TABLE 4D-1
// TABLE 4D-1
// IN-PLANT
// FVENTS://

 TABLE 4D-1 SHEET 1 OF 2

 IN-PLANT DIVERSION

 EVENTS: 1997 – JUNE 2004

 2020 TREATMENT REPORT

 6/01/07

	-		-	_			MGD	Estimated	Reported	Estimated	
	Date	Time	Date	Time	Plant	Blending	Blending	Blending	Blending	Blending	
Plant	Start	Start (1)(3)	Stop(1)(3)	Stop(1)(3)	Flow(1)(3)	Type (6)	Rate(1)(3)	Volume(1)(3)	Volume(3)(4) Volume(2)	Additional Con
JIWWIP	9/11/2000	19:45	9/12/2000	0:00	313	ISS	58	10.3	1	.5 36	Tot Reported Vo
JIWWTP	9/12/2000	0:00	9/12/2000	16:05	313	ISS	58	38.9	28	.5 🔸	
JIWWIP	9/14/2000	4:45	9/14/2000	5:15	331	ISS	43	0.9	- T-	1 1	
JIWWTP	9/14/2000	8:15	9/14/2000	9:15	317	ISS	25	1.0	+	(1724) (1725)	
JIWWTP	9/23/2000	0:20	9/23/2000	20:00	310-202	ISS	45	36.9	30	.0 30	
JIWWTP	2/9/2001	0:15	2/10/2001	0:00	305	ISS	40	39.6	22	4 54	
JIWWTP	2/10/2001	0:00	2/10/2001	9:51		ISS	40	55.7	31	.6	
JIWWTP	4/9/2001	4:25			330	ISS	80				
JIWWTP	4/9/2001	7:27	4/9/2001	13:15	275	PE	45	14.7			
JIWWTP	4/20/2001	8:15	4/20/2001	14:00	285	PE	50	14.4			
JIWWTP	4/21/2001	4:30	4/21/2001	9:35	295	PE	60	17.5			
JIWWTP	4/8/2002	16:55	4/9/2002	0:00	250	PE	30	8.9	17	.5	Tot Reported Vo
JIWWTP	4/9/2002	0:00	4/9/2002	4:25	250	PE	30	5.5	10	.9	
JIWWTP	4/9/2002	5:50	4/10/2002	0:00	310	PE	50	37.8	44	.8	
JIWWTP	4/10/2002	0:00	4/10/2002	6:00	310	PE	50	12.5	14	.8	
JIWWTP	4/8/2002	16:55	4/9/2002	0:00	255	ISS			1	.3	
JIWWTP	4/9/2002	0:00	4/10/2002	0:00	310	ISS			4	.5	Not included in
JIWWTP	4/10/2002	0:00	4/10/2002	6:00	310	ISS			1	.1	
JIWWTP	6/4/2002	6:30	6/4/2002	16:30	311	ISS	50	23.0	23	.0	
JIWWTP	8/12/2002	23:20	8/13/2002	0:00	276	ISS	40	1.11	1	.0	
JIWWTP	8/13/2002	0:00	8/13/2002	6:35		ISS	40	10.97	9	.9	
JIWWTP	8/13/2002	16:20	8/14/2002	0:00	345	ISS	35	11.18	19	.4	
JIWWTP	8/14/2002	0:00	8/14/2002	4:45		ISS	35	6.93	12	0	
SSWWTP	8/13/2002	2:30	8/13/2002	12:00	225	PE	75	29.7	34	.0 34.0	Construction o
JIWWTP	10/15/2002	22:30	10/16/2002	0:15	85	ISS	35	2.6			
JIWWTP	5/1/2003	2:00	5/1/2003	6:50	285	PE	85	17.1			
JIWWTP	5/30/2003	23:00	5/30/2003	23:45	265	PE	20	0.6			
JIWWTP	12/10/2003	0:01	12/10/2003	17:24	230	PE	25	18.1			
JIWWTP	3/26/2004	3:15	3/26/2004	7:10	154	PE			9	.4	
JIWWTP	3/28/2004	17:35	3/28/2004	18:50		HL			1	.4	
JIWWTP	5/14/2004	15:00	5/14/2004	23:15	274	PE			16	.2	
JIWWTP	6/19/2004	8:49	6/19/2004	9:25		HL			11	.3	
JIWWTP	6/21/2004	11:04	6/21/2004	11:09		HL			0.	05	

NOTES:

1) Data shown is from different files provided by the MMSD. Original information built from data in Table 4D-3, Diversions Spreadsheet: 1999-2003 In-plant Reports Data, and added to where noted. 2) Additional date provided as shown in Table 4D-4, MMSD Record of In-plant Diversions: 1994-2001.

3) Additional data provided in Table 4D-5, Diversion Events: 1998-2001.

HL

If information from Table 4D-5, Diversion Events: 1998-2001 did not match the data from Table 4D-3, Diversions Spreadsheet: 1999-2003 In-plant Reports Data

listed in Note (1) above or only given in in Table 4D-5, Diversion Events: 1998-2001, information is shown in a blue cell and is the information listed in Table 4D-5, Diversion Events: 1998-2001.

4) Additional information provided from Contract Compliance Office monthly reports. Additional note: 2004 HL diversions were unintentional and steps have been taken to prevent these overflows. 5) All values that were calculated in this spreadsheet, rather than taken from other documents, are shown in yellow.

6) In-Plant Diversion Type Definitions:

PE	Primary Effluent diversion around secondary treatment and combined with influent to the chlorine contact basins - allowed for blending
ISS	Diversion from pumpout from the ISS Pump Station which is combined with the influent flow to the chlorine contact basins - allowed for the
	at JIWWTP

Diversion from the High-Level screw pumps wet well directly to the chlorine contact basins at Jones Island

An in-plant diversion is any diversion through one of the plant diversion structures. Blending is a wet weather diversion, only allowed through either the PE or ISS in-plant diversion. 7) NA: Volume estimates not available.

8) PER MMSD Information: For diversions during 1994-98, contemporaneous records of diversions could not be located. Therefore, operator logs were searched for dates when flows were high (>200 MGD), i.e., dates on which diversions after primary treatment would be more likely to occur. The table above lists the dates on which diversions were confirmed. Flow estimates were then made by United Water Services on the basis of duration of the diversion and the diversion channel capacity. Thus, these volume estimates are gross.





lending



	JONES	ISLAND	SOUTH SHORE
YEAR	ISS	PE	PE
	(MG)	(MG)	(MG)
1994	185	123	110
1995	7	0	0
1996	6	0	120
1997	17	0	50
1998	54	0	0
1999	267	0	0
2000	186	0	0
2001	54	50	0
2002	75	88	34
2003 ¹	0	36	0
2004 ^{1, 2}	0	26	0
TOTAL	851	323	314
TOTAL	653	200	84
1997-2004			

NOTES

 Original information, which is provided in Table 4-D-3, MMSD Provided Data, Diversion Spreadsheet: 1999-2003 In-Plant Reports Data, was through the year 2002. Data from 2003 and 2004 was added from information included in MMSD Contract Compliance Office monthly reports

2) Data provided for 2004 only includes blending events through June 2004



TABLE 4D-2 ESTIMATED TOTAL WWTP IN-PLANT DIVERSIONS BY YEAR 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4D02.07.06.01.cdr

								Estimated
	Date	Time	Date	Time	Plant	Blending	Blending	Blending
Plant	Start	Start	Stop	Stop	Flow	Туре	Rate	Volume
					(MGD)		(MGD)	(MG)
JI	4/9/1999	3:40	4/10/1999	2:30	289	PE	87	82.8
JI	4/22/1999	1:15	4/22/1999	2:10	291	ISS	42	1.6
JI	4/23/1999	23:40			348	ISS	55	
JI	5/12/1999	5:00	5/12/1999	6:15	290	ISS	25	1.3
JI	5/17/1999	2:35	5/17/1999	4:45	303	ISS	25	2.3
JI	5/17/1999	6:10			204	PE	15	
JI	5/18/1999	13:45	5/18/1999	18:37	298	PE	35	7.1
JI	6/12/1999	10:30	6/14/1999	2:30	330-275	ISS	28-100	
JI	7/9/1999	1:50	7/9/1999	3:30	335	ISS	40	2.8
JI	7/21/1999	12:15	7/21/1999	15:40	340-280	ISS	40	5.7
JI	2/22/2000	14:10	2/22/2000	17:00	220	PE	22	2.6
JI	4/20/2000	2:40	4/20/2000	9:30	290	PE	30	8.5
JI	4/20/2000	11:30	4/20/2000	13:30	280	ISS	30	2.5
JI	4/20/2000	18:55	4/21/2000	13:20	280	ISS	40-80	
JI	4/23/2000	5:30	4/23/2000	9:30	310-213	ISS	40	6.7
JI	5/9/2000	5:45	5/9/2000	19:55	264-194	ISS	41	24.2
JI	5/17/2000	23:15	5/19/2000	4:45	320	ISS	60	73.7
JI	6/1/2000	1:30	6/1/2000	7:30	310	ISS	40	10.0
JI	6/1/2000	20:00	6/2/2000	3:00	320-275	ISS	50	14.6
JI	6/12/2000	13:30	6/12/2000	18:45	236-310	PE	33	7.2
JI	6/12/2000	16:00	6/12/2000	21:00	310-220	ISS	45	9.4
JI	7/2/2000	20:20	7/3/2000	1:20	304	ISS	53	11.0
JI	9/11/2000	19:45	9/12/2000	16:05	313	ISS	58	49.1
JI	9/14/2000	4:45	9/14/2000	5:15	331	ISS	43	0.9
JI	9/14/2000	8:15	9/14/2000	9:15	317	ISS	25	1.0
JI	9/23/2000	0:20	9/23/2000	20:00	310-202	ISS	45	36.9
JI	2/9/2001	0:15			305	ISS	40	
JI	4/9/2001	4:25			330	ISS	80	
JI	4/9/2001	7:27	4/9/2001	13:15	275	PE	45	14.7
JI	4/20/2001	8:15	4/20/2001	14:00	285	PE	50	14.4
JI	4/21/2001	4:30	4/21/2001	9:35	295	PE	60	17.5
JI	4/8/2002	16:55	4/9/2002	4:25	250	PE	30	
JI	4/9/2002	5:50	4/10/2002	6:00	310	PE	50	88.0
JI	6/4/2002	6:30	6/4/2002	16:30	311	ISS	50	23.0
JI	8/12/2002	23:20	8/13/2002	6:35	276	ISS	40	10.9
JI	8/13/2002	16:20	8/14/2002	4:45	345	ISS	35	
SS	8/13/2002	2:30	8/13/2002	12:00	225	PE	75	31.4
JI	10/15/2002	22:30	10/16/2002	0:15	85	ISS	35	2.6
JI	5/1/2003	2:00	5/1/2003	6:50	285	PE	85	17.1
JI	5/30/2003	23:00	5/30/2003	23:45	265	PE	20	0.6
JI	12/10/2003	0:01	12/10/2003	17:24	230	PE	25	18.1

Notes

1) Estimated Blending for 1999 - Feb 9, 2001 is an unverified calculation

2) Estimated Blending for Apr 9, 2001 through present is as reported in the UW monthly report

Source: MMSD



TABLE 4D-3 SHEET 1 OF 2 DIVERSIONS SPREADSHEET: 1999-2003 IN-PLANT REPORTS DATA 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4D01.07.06.01.cdr

WASTEWATER TREATMENT PLANT FLOW DIVERSIONS

	JONES	ISLAND	SOUTH SHORE
YEAR	ISS	PE	PE
-	(MG)	(MG)	(MG)
1994	185	123	110
1995	7	0	0
1996	6	0	120
1997	17	0	50
1998	54	0	0
1999	267	0	0
2000	186	0	0
2001	54	50	0
2002	75	88	34
TOTAL	851	261	314

Source: MMSD



TABLE 4D-3 SHEET 2 OF 2 DIVERSIONS SPREADSHEET: 1999-2003 IN-PLANT REPORTS DATA 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4D01.07.06.01.cdr

Date	Estimated Volumes of ISS Diversion To Disinfection Volumes in MG (1)	Estimated Volumes of PE Diversion To Disinfection in MG (2)	Estimated TOTAL Volumes of Diversions To Disinfection in MG
2/18/1994	10	36	46
2/19/1994	68	61	129
2/20/1994	94	26	120
2/21/1994	6	0	6
2/22/1994	6	0	6
2/23/1994	<1	0	0
6/24/1994	27	0	27
7/14/1994	12	0	12
8/3/1994	11	0	11
8/4/1994	9	0	9
8/28/1995	7	0	7
10/6/95 (3)	8	0	8
5/10/96 (3)	1	0	1
6/17/1996	6	0	6
9/26/1996	2	0	2
2/21/97 (3)	22	0	22
6/16/1997	4	0	4
6/21/1997	17	0	17
9/16/1997	2	0	2
9/17/1997	11	0	11
8/8/1998	21	0	21
11/10/1998	33	0	33
1/22/1999	NA	NA	0
1/23/1999	10	10	20
4/9/1999	58	0	58

ISS and Primary Effluent Diversions to Disinfection 1994- February 2001 At Jones Island Wastewater Treatment Plant



Date	Estimated Volumes of ISS Diversion To Disinfection Volumes in MG (1)	Estimated Volumes of PE Diversion To Disinfection in MG (2)	Estimated TOTAL Volumes of Diversions To Disinfection in MG
4/10/1999	12	0	12
4/22-23/99	52	0	52
5/12/1999	8	0	8
5/17/1999	13	4.03	17.03
5/18/1999	6	6.6	12.6
5/22/99 (3)	2	0	2
6/12/1999	79	0	79
7/7/1999	0	0	0
7/21/1999	13	0	13
7/22/1999	0.56	0	0.56
7/23/1999	2.64	0	2.64
2/22/2000	0	2.59	2.59
4/20-21/00	40	8.54	48.54
4/23/2000	6.67	0	6.67
5/9/2000	4	0	4
5/17/2000	100	0	100
6/1/2000	29	0	29
6/1-2/00	14	0	14
6/12/2000	10	7.22	17.22
7/2/2000	7	0	7
9/11/2000	36	0	36
9/14/2000	1	0	1
9/23/2000	30	0	30
2/9/2001	54	0	54

Notes:

(1) ISS Diversion: A diversion from the Inline Storage System to Disinfection

(2) PE Diversion: A diversion of the Primary Effluent to Disinfection

(3) Additional data.

Source: For 1994-1997, estimated diversion volumes were taken from the monthly report submitted with the Jones Island DMR for that month. For 1998 through February 2001, data on diversions was provided by United Water Services.



Date	Estimated PE Diversion To Disinfection in MG (1)			
2/19/1994	30			
2/20/1994	80			
2/21/1994	(2) NA			
4/27/1995	60			
4/28/1995	40			
4/15/1996	30			
4/16/1996	50			
5/10/1996	NA			
6/8/1996	NA			
6/17/1996	50			
6/18/1996	50			
6/19/1996	20			
6/21/1996	NA			
6/22/1996	NA			
2/21/1997	60			
2/22/1997	50			
6/21/1997	50			
6/22/1997	NA			
8/24/1997	NA			
8/25/1997	NA			
3/31/1998	10			

Primary Treatment Diversions to Disinfection From 1994- February 2001 At South Shore Wastewater Treatment Plant (3)

Notes:

1) PE Diversion: Primary Effluent diverted to Disinfection; all diverted primary effluent receives disinfection before discharge.

2) NA: Volume estimates not available.

3) No diversions were reported by United Water Services for 1999-2000.

Source [per MMSD]: For diversions during 1994-98, contemporaneous records of diversions could not be located. Therefore, operator logs were searched for dates when flows were high (>200 MGD), i.e., dates on which diversions after primary treatment would be more likely to occur. The table above lists the dates on which diversions were confirmed. Flow estimates were then made by United Water Services on the basis of duration of the diversion and the diversion channel capacity. Thus, these volume estimates are gross. UWS has reported that no diversions have occurred after March 31, 1998.



 TABLE 4D-4 SHEET 3 OF 3

 MMSD RECORD OF IN-PLANT DIVERSIONS: 1994-2001

 2020 TREATMENT REPORT

 6/01/07
 TR_4-A.T4D04.07.06.01.cdr

Diversions, Year: 1998

Diversion			Start					BOD,	Amount of diversion	Plant flow at time of diversion	
Number	Plant	Start Date	Time	End Time	End Date	Туре	TSS, mg/l	mg/l	MG	(MGD)	Criteria for d
1	SS	3/31/1998	3:45 PM	7:30 AM	4/1/1998	secondary			10		overloaded so
2	JI	8/8/1998	Unknown			-	10	4	21		broken gate
3	JI	11/10/1998				ISS	14	14	33		_

Source: MMSD



diversion

secondary clarifiers

 TABLE 4D-5 SHEET 1 OF 4

 DIVERSION EVENTS:

 1998-2001

 2020 TREATMENT REPORT

 6/01/07
 TR_4-A.T4D05.07.06.01.cdr

Diversion	o, roan	1000								ISS Quantity			Plant flow
Event Number	Plant	Start Date	Start Time	End Time	End Date	Туре	Diversion Flow (MGD)	Duration (Hours)	Calculated Quantity (MG)	12 page report (MG)	Effluent TSS mg/l	Effluen t BOD mg/l	at time of diversion (MGD)
1	JI	1/22/1999	3:30 AM	9:30 AM	1/22/1999	ISS	40	6.00	10.00	16	66*	41	333
	JI JI JI	1/23/1999 4/9/1999 4/10/1999	8:10 AM 3:40 AM	8:54 PM 2:30 AM	1/23/1999 4/9/1999 4/10/1999	ISS ISS ISS	40 87	12.73 22.70	21.22 82.29	34 58 12	30	20	340
2	JI	4/22/1999	1:15 AM	2:10 AM	4/22/1999	ISS	40	0.92	1.53	6	44	22	291
	JI	4/22/1999	11:30 PM	10:30 PM	4/23/1999	ISS	40	23.00	38.33	46			
3	JI	4/23/1999	11:40 PM			ISS	40		0.00		74*	30	348
4	JI	5/12/1999	5:00 AM	6:15 AM	5/12/1999	ISS	40	1.25	2.08	8	28	13	280
5	JI	5/17/1999	2:35 AM	4:45 AM	5/17/1999	ISS	40	2.17	3.61	13	74*	33	310
	JI	5/17/1999	6:10 AM	8:35 AM	5/17/1999	PE	40	2.42	4.03	0			250
	JI	5/18/1999	1:45 PM	6:37 PM	5/18/1999	ISS/PE**	40	4.87	8.11	6	61*	35	298
6	JI	6/12/1999	10:30 AM	2:30 AM	6/14/1999	ISS	40	40.00	66.67	79	10	6	275
7	JI	7/7/1999	1:50 AM	3:30 AM	7/799	ISS	40	1.67	2.78	0	8	5	335
8	JI	7/21/1999	12:15 PM	12:30 PM	7/21/1999	ISS	40	0.25	0.42	13	17	9	280
	JI	7/22/1999	12:45 PM	1:05 PM	7/22/1999	ISS	40	0.33	0.56	0	11	5	280
	JI	7/23/1999	2:05 PM	3:40 PM	7/23/1999	ISS	40	1.58	2.64 244.26	<u>0</u> 291.00	5	12	280

Notes [per MMSD]:

*Earlier and larger diversion could have improved effluent that was degraded by overloaded secondaries

** PE flow estimated at 33 MGD for 4.87 hours, ot a total of 6.6 MGD.

ISS diversion quantity is total of ISS pumps metered flow to JI minus the composite ISS flow meter to JI downstream of ISS diversion.

Low diversion rates would not be captured as there is a small difference in these meters totals on a daily basis.

Source: MMSD



Criteria for diversion

At maximum capacity of primary and secondary plant At maximum capacity of primary and secondary plant

At maximum capacity of primary plant

At maximum capacity of primary plant

At maximum capacity of primary and secondary plant

At maximum capacity of primary plant

At maximum capacity of primary and secondary plant

At maximum capacity of secondary plant

At maximum capacity of primary and secondary plant

At maximum capacity of primary plant

At maximum capacity of primary and secondary plant

At maximum capacity of primary plant

At maximum capacity of primary plant

At maximum capacity of primary plant

 TABLE 4D-5 SHEET 2 OF 4

 DIVERSION EVENTS: 1998-2001

 2020 TREATMENT REPORT

 6/01/07
 TR_4-A.T4D05.07.06.01.cdr

									Est			ISS	Plant flow	
								Efflue	diversion		Calculated	Quantity 12	at time of	
Event	_		Start			_	Effluent	nt	flow rate	Duration	Quantity	page report	diversion	
Number	Plant	Start Date	Time	End Time	End Date	Туре	TSS	BOD	(MGD)	(hrs)	(MG)	(MG)	(MGD)	A 1
1	JI	2/22/2000	2:10 PM	5:00 PM	2/22/2000	PE	19	12	22	2.83	2.59	0	220 MGD	Se At
2	JI	4/20/2000	2:40 AM	9:30 AM	4/20/2000	PE	30	8	30	6.83	8.54	24	290 MGD	se At
	JI		7:30 AM	1:30 PM	4/20/2000	ISS			40	6.00	10.00		280 MGD	se At
3	JI	4/20/2000	6:55 PM	7:30 PM	4/21/2000	ISS			40	24.58	40.97	16	280 MGD	se At
4	JI	4/23/2000	5:30 AM	9:30 AM	4/23/2000	ISS	8	9	40	4.00	6.67	0	310 MGD	ar At
5	JI	5/9/2000	5:45 PM	7:55 PM	5/9/2000	ISS	74*	24	41	2.17	3.70	4	264 MGD	se At
6	JI	6/1/2000	11:15 PM	4:45 AM	6/1/2000	155	16	10	60	29.50	13.15	100	320 MGD	ar At
7 8	JI	0/1/2000	8.00 PM	7.30 AW	6/2/2000	155	20	13	40 50	7.00	14 58	29	320 MGD	At ar
9	JI	6/12/2000	1:30 PM	6:45 PM	6/12/2000	PE	44	28	33	5.25	7.22	10	236 MGD	At
·	JI		4:00 PM	9:00 PM	6/12/2000	ISS			45	5.00	9.38		310 MGD	At ar
10	JI	7/2/2000	9:45 PM	1:20 AM	7/3/2000	ISS	59*	31	45	3.58	6.72	7	304 MGD	At ar
11	JI	9/11/2000	7:45 PM	4:05 PM	9/12/2000	ISS	22	9	58	20.33	49.13	36	313 MGD	ar At
12	JI	9/14/2000	4:45 AM	5:15 AM	9/14/2000	ISS	12	7	43	0.50	0.90	1	331 MGD	ar At
	JI	9/14/2000	8:15 AM	9:15 AM	9/14/2000	ISS			25	1.00	1.04		317 MGD	ar At
13	JI	9/23/2000	12:20 AM	8:00 PM	9/23/2000	ISS	35	11	45	19.33	36.25 281.43	<u>30</u> 271	310 MGD	ar

Notes [per MMSD]:

*Earlier and larger diversion could have improved effluent that was degraded by overloaded secondaries

ISS diversion quantity on 12 page report is total of ISS pumps metered flow to JI minus the composite ISS flow meter to JI downstream of ISS diversion. Low diversion rates would not be captured as there is a small difference in these meters totals on a daily basis.

Source: MMSD



Criteria for diversion

maximum capacity of econdary plant maximum capacity of econdary plant and nearing maximum capacity of econdary plant and nearing maximum capacity of econdary plant and nearing maximum capacity of primary nd secondary plant maximum capacity of econdary plant t maximum capacity of primary nd secondary plant t maximum capacity of primary nd secondary plant maximum capacity of primary nd secondary plant maximum capacity of econdary plant t maximum capacity of primary nd secondary plant maximum capacity of primary nd secondary plant maximum capacity of primary nd secondary plant

TABLE 4D-5 SHEET 3 OF 4 DIVERSION EVENTS: 1998-2001 2020 TREATMENT REPORT

2020 TREATMENT REPORT 6/01/07 TR_4-A.T4D05.07.06.01.cdr Diversions, Year: 2001

									Est		Calculate	Quantity	Plant flow
									diversion		d	12 page	at time of
Event			Start				Effluent	Effluent	flow rate	Duration	Quantity	report	diversion
Number	Plant 3	Start Date	Time	End Time	End Date	Туре	TSS	BOD	(MGD)	(hrs)	(MG)	(MG)	(MGD)
1	JI												

Source: MMSD



Criteria for diversion

 TABLE 4D-5 SHEET 4 OF 4

 DIVERSION EVENTS:

 1998-2001

 2020 TREATMENT REPORT

 6/01/07
 TR_4-A.T4D05.07.06.01.cdr

APPENDIX 4E

JIWWTP AND SSWWTP WET WEATHER PEAK HOURLY FLOW ANALYSIS



Hourly WWTP Flow Data Available For the Following Storms:

То	From
8/5/1998	8/15/1998
6/1/1999	6/2/1999
6/6/1999	6/7/1999
6/13/1999	6/14/1999
7/20/1999	7/27/1999
9/27/1999	10/5/1999
4/19/2000	4/23/2000
5/17/2000	5/24/2000
5/31/2000	6/6/2000
6/12/2000	6/14/2000
7/2/2000	7/9/2000
8/5/2000	8/12/2000
9/11/2000	9/20/2000
2/7/2001	2/26/2001
6/11/2001	6/20/2001
8/25/2001	8/26/2001
4/7/2002	4/14/2002
8/12/2002	8/17/2002
5/10/2004	5/25/2004

Total Number of Hours of Flow Data Available: 3105

Note:

All data taken from Storm Event Reports presented in Appendix 4B, Storm Event Summary Data



Data	Time	JIWWTP Influent Flow	Blending ¹	Full Treatment	Number of Times JIWWTP Inf	Number of Times JIWWTP Full Treat Flow
2/9/2001	11:00	(NGD)	(100)	376.4	1	-330
2/9/2001	10.00	405.4	40.0	365.4	1	1
2/9/2001	12.00	404.6	40.0	364.6	1	1
5/18/2000	18.00	400.8	60.0	340.8	1	1
5/18/2000	13.00	400.2	60.0	340.2	1	1
5/18/2000	19:00	393.9	60.0	333.9	1	1
5/18/2000	14:00	391.3	60.0	331.3	1	1
5/18/2000	20:00	390.5	60.0	330.5	1	1
5/18/2000	17:00	381.8	60.0	321.8	1	0
2/9/2001	13:00	380.9	40.0	340.9	1	1
5/18/2000	16:00	377.8	60.0	317.8	1	0
5/18/2000	15:00	374.4	60.0	314.4	1	0
5/18/2000	23:00	373.9	60.0	313.9	1	0
5/18/2000	12:00	371.3	60.0	311.3	1	0
5/19/2000	0:00	367.1	60.0	307.1	1	0
5/18/2000	11:00	365.8	60.0	305.8	1	0
6/1/1900	20:00	363.7	50.0	313.7	1	0
2/9/2001	14:00	360.4	40.0	320.4	1	0
6/13/1999	13:00	359.6	40.0	319.6	1	0
6/13/1999	12:00	359.5	40.0	319.5	1	0
6/13/1999	15:00	358.2	40.0	318.2	1	0
6/13/1999	14:00	355.0	40.0	315.0	1	0
6/13/1999	16:00	354.8	40.0	314.8	1	0
5/19/2000	1:00	353.1	60.0	293.1	1	0
5/18/2000	5:00	353.0	60.0	293.0	1	0
9/12/2000	0:00	352.8	58.0	294.8	1	0
5/18/2000	6:00	352.5	60.0	292.5	1	0
9/12/2000	2:00	352.3	58.0	294.3	1	0
9/12/2000	1:00	352.0	58.0	294.0	1	0
6/13/1999	10:00	351.8	40.0	311.8	1	0
6/13/1999	10:00	351.1	40.0	311.1		0
0/13/1999	17.00	349.4	40.0	309.4	1	0
9/11/2000	23.00	349.0	58.0	291.0	1	0
9/12/2000	3.00	340.9	50.0	290.9		0
8/6/1998	19:00	348.4	60.0	200.4	1	0
2/9/2001	15:00	347.5	40.0	307.5	1	0
0/10/2000	2.00	347.1	50.0	287.1	1	0
9/12/2000	6:00	342.0	58.0	204.0	1	0
9/12/2000	20.00	341.9	56.0	203.9	1	0
5/18/2000	20.00	3/1.9	60.0	201.9	1	0
2/9/2001	9.00	341.0	40.0	301.3	1	0
2012001	0.00	041.0	40.0	001.0		0



TABLE 4E-2 SHEET 1 OF 4 JIWWTP PEAK HOURLY FLOWS FROM AVAILABLE **STORM EVENT DATA** 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4E02.07.06.01.cdr

Influent Flow Blending ¹ Treatment JIWWTP Inf	JIWWTP Full Treat Flow
Date Time (MGD) (MGD) (MGD) Flow >330	>330
9/12/2000 9:00 340.5 58.0 282.5 1	0
6/13/1999 9:00 340.2 40.0 300.2 1	0
<u>9/12/2000 5:00 339.8 58.0 281.8 1</u>	0
9/12/2000 7:00 339.7 58.0 281.7 1	0
8/6/1998 21:00 339.5 60.0 279.5 1	0
8/13/2002 20:00 338.2 35.0 303.2 1	0
6/13/1999 18:00 338.1 40.0 298.1 1	0
9/11/2000 20:00 337.7 58.0 279.7 1	0
9/11/2000 22:00 337.4 58.0 279.4 1	0
9/11/2000 21:00 337.4 58.0 279.4 1	0
5/19/2000 2:00 337.0 60.0 277.0 1	0
9/12/2000 4:00 336.4 58.0 278.4 1	0
8/13/2002 21:00 335.7 35.0 300.7 1	0
6/13/1999 8:00 334.7 40.0 294.7 1	0
9/12/2000 10:00 334.5 58.0 276.5 1	0
5/18/2000 1:00 333.6 60.0 273.6 1	0
2/9/2001 16:00 330.7 40.0 290.7 1	0
8/6/1998 18:00 330.3 60.0 270.3 1	0
8/13/2002 16:00 329.4 35.0 294.4 0	0
2/9/2001 4:00 329.3 40.0 289.3 0	0
7/21/1999 8:00 328.8 0.0 328.8 0	0
5/18/2000 8:00 328.0 60.0 268.0 0	0
8/6/1998 22:00 327.5 60.0 267.5 0	0
9/12/2000 11:00 327.4 58.0 269.4 0	0
5/18/2000 3:00 326.7 60.0 266.7 0	0
5/18/2000 21:00 326.6 60.0 266.6 0	0
6/13/1999 19:00 325.9 40.0 285.9 0	0
8/6/1998 13:00 325.6 60.0 265.6 0	0
5/19/2000 3:00 325.1 60.0 265.1 0	0
2/9/2001 5:00 324.8 40.0 284.8 0	0
2/9/2001 6:00 324.8 40.0 284.8 0	õ
4/9/2002 4:00 324.6 50.0 274.6 0	0
6/13/1999 20:00 323.8 40.0 283.8 0	Ő
5/18/2000 22:00 323.0 60.0 263.0 0	0
6/1/1900 23:00 322.0 50.0 272.0 0	0
2/24/2001 20:00 321.6 0.0 321.6 0	0
9/12/2000 12:00 321.4 58.0 263.4 0	0
6/13/1999 5:00 321.2 40.0 281.2 0	0
<u>4/9/2002 2:00 321.0 0.0 321.0 0</u>	0
5/18/2000 0:00 321.0 60.0 261.0 0	0
<u>4/9/2002 3:00 320.9 0.0 320.9 0</u>	0
8/6/1998 23·00 319.8 60.0 259.8 0	0
5/14/2004 08:00 317.6 0.0 317.6 0	0
9/11/2000 10:00 316.1 58.0 258.1 0	0
9/12/2000 13:00 315.7 58.0 257.7 0	0
7/2/2000 21:00 315.4 45.0 270.4 0	0
5/19/2000 4:00 315.2 60.0 255.2 0	0



TABLE 4E-2 SHEET 2 OF 4JIWWTP PEAK HOURLYFLOWS FROM AVAILABLESTORM EVENT DATA2020 TREATMENT REPORT6/01/07TR_4-A.T4E02.07.06.01.cdr

$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Date	Time	JIWWTP Influent Flow (MGD)	Blending ¹ (MGD)	Full Treatment (MGD)	Number of Times JIWWTP Inf Flow >330	Number of Times JIWWTP Full Treat Flow >330
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	4/9/2002	5:00	315.0	50.0	265.0	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7/21/1999	12:00	314.9	40.0	274.9	0	0
	5/17/2000	23:00	314.5	60.0	254.5	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5/18/2000	4:00	314.5	0.0	314.5	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2/9/2001	17:00	314.2	40.0	274.2	0	0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	7/3/2000	0:00	314.2	45.0	269.2	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8/13/2002	22:00	313.4	35.0	278.4	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	7/21/1999	9:00	313.1	0.0	313.1	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6/1/1900	2:00	312.9	40.0	272.9	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5/14/2004	10:00	312.8	0.0	312.8	0	0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	7/2/2000	23:00	311.7	45.0	266.7	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6/1/1900	22:00	311.5	50.0	261.5	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	5/19/2000	15:00	311.5	0.0	311.5	0	0
31,32002 $10,00$ 310.9 50.0 260.9 0 0 $4/9/2002$ $9:00$ 310.8 60.0 250.8 0 0 $4/9/2002$ $9:00$ 310.6 50.0 260.6 0 0 $9/14/2000$ $5:00$ 309.9 58.0 251.9 0 0 $9/14/2000$ $5:00$ 309.4 0.0 309.4 0 0 $5/19/2000$ $12:00$ 309.4 0.0 309.4 0 0 $4//21/2000$ $0:00$ 309.2 40.0 269.2 0 0 $4/9/2002$ $11:00$ 308.1 50.0 268.5 0 0 $2/9/2001$ $3:00$ 308.4 0.0 308.4 0 0 $6/17/2001$ $13:00$ 308.2 0 0 0 $7/2/2000$ $22:00$ 307.8 45.0 262.8 0 0 0 5	6/12/2000	16:00	311.4	45.0	266.4	0	0
815/1998 11:00 310.8 60.0 250.8 0 0 $4/9/2002$ 9:00 310.6 50.0 260.6 0 0 $9/14/2000$ 5:00 309.5 43.0 266.5 0 0 $9/14/2000$ 5:00 309.4 0.0 309.4 0 0 $5/14/2004$ 09:00 309.4 0.0 309.4 0 0 $4/21/2000$ 0:00 309.2 40.0 269.2 0 0 $4/9/2002$ 11:00 309.1 50.0 259.1 0 0 $2/9/2001$ 3:00 308.5 40.0 268.5 0 0 $6/17/2000$ 5:00 308.4 50.0 258.4 0 0 $6/17/900$ 0:00 307.8 40.0 267.8 0 0 $6/11/1900$ 5:00 307.4 60.0 247.4 0 0 $6/12/2000$ 14:00 307.7 45.0	4/9/2002	10.00	310.9	50.0	260.9	0	0
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	8/5/1998	11:00	310.8	60.0	250.8	0	Ő
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	4/9/2002	9.00	310.6	50.0	260.6	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	9/12/2000	14.00	309.9	58.0	251.9	0	õ
5/19/2000 $12:00$ 309.4 0.0 309.4 0 0 $4/21/2000$ $0:00$ 309.4 0.0 309.4 0 0 $4/21/2000$ $0:00$ 309.2 40.0 269.2 0 0 $4/21/2000$ $1:00$ 309.1 50.0 259.1 0 0 $2/9/2001$ $3:00$ 308.5 40.0 268.5 0 0 $5/19/2000$ $5:00$ 308.4 0.0 308.4 0 0 $6/2/1900$ $0:00$ 308.4 50.0 258.4 0 0 $6/1/5/2001$ $13:00$ 308.2 0.0 308.2 0 0 $7/2/2000$ $22:00$ 307.8 45.0 262.8 0 0 $6/1/1900$ $5:00$ 307.5 0.0 307.6 0 0 $5/19/2000$ $16:00$ 307.5 0.0 307.5 0 0 $8/5/1998$ $12:00$ 306.7 43.0 263.7 <td>9/14/2000</td> <td>5:00</td> <td>309.5</td> <td>43.0</td> <td>266.5</td> <td>Ő</td> <td>õ</td>	9/14/2000	5:00	309.5	43.0	266.5	Ő	õ
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5/19/2000	12.00	309.4	0.0	309.4	Ő	õ
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30202 1130 303.1 30.0 268.5 0 $2/9/2001$ $3:00$ 308.5 40.0 268.5 0 0 $5/19/2000$ $5:00$ 308.4 0.0 308.4 0 0 $6/2/1900$ $0:00$ 308.4 50.0 258.4 0 0 $6/15/2001$ $13:00$ 308.2 0.0 308.2 0 0 $8/7/1998$ $0:00$ 307.9 60.0 247.9 0 0 $7/2/2000$ $22:00$ 307.8 45.0 262.8 0 0 $6/11/1900$ $5:00$ 307.6 0.0 307.6 0 0 $5/19/2000$ $14:00$ 307.6 0.0 307.5 0 0 $5/19/2000$ $16:00$ 307.4 60.0 247.4 0 0 $8/5/1998$ $12:00$ 307.4 60.0 247.4 0 0 $8/13/2002$ $23:00$ 306.9 35.0 271.9 0 0 $9/14/2000$ $7:00$ 306.6 0.0 0 0 $5/19/2000$ $11:00$ 306.1 0.0 306.6 0 0 $5/14/2004$ $13:00$ 305.9 0.0 306.0 0 0 $5/14/2004$ $07:00$ 305.1 0.0 304.9 0 0 $5/19/2000$ $17:00$ 305.1 0.0 304.9 0 0 $5/14/2004$ $07:00$ 304.7 0.0 304.7 0 0 <tr< td=""><td>4/9/2002</td><td>11.00</td><td>309.1</td><td>50.0</td><td>250.2</td><td>0</td><td>0</td></tr<>	4/9/2002	11.00	309.1	50.0	250.2	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	2/9/2002	3.00	308.5	40.0	268.5	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5/19/2000	5:00	308.4	0.0	308 4	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	6/2/1900	0.00	308.4	50.0	258.4	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	6/15/2001	13.00	308.2	0.0	308.2	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	8/7/1998	0.00	307.9	60.0	247 9	0	0
1/2/2000 22.00 307.8 40.0 202.0 0 0 $6/1/1900$ $5:00$ 307.8 40.0 267.8 0 0 $5/19/2000$ $14:00$ 307.6 0.0 307.6 0 0 $5/19/2000$ $16:00$ 307.5 0.0 307.5 0 0 $8/5/1998$ $12:00$ 307.4 60.0 247.4 0 0 $6/12/2000$ $17:00$ 307.2 45.0 262.2 0 0 $8/13/2002$ $23:00$ 306.9 35.0 271.9 0 0 $9/14/2000$ $4:00$ 306.7 43.0 263.7 0 0 $9/14/2000$ $7:00$ 306.6 0.0 306.6 0 0 $5/19/2000$ $11:00$ 306.1 0.0 306.1 0 0 $6/11/1999$ $23:00$ 306.0 0.0 306.0 0 0 $5/14/2004$ $13:00$ 305.9 0.0 305.9 0 0 $4/23/2000$ $5:00$ 305.1 0.0 305.1 0 0 $5/14/2004$ $07:00$ 305.1 0.0 304.8 0 0 $5/19/2000$ $17:00$ 304.7 0.0 304.7 0 0 $8/13/2002$ $17:00$ 304.7 0.0 304.7 0 0 $8/13/2002$ $17:00$ 304.6 0.0 304.6 0 0	7/2/2000	22.00	307.8	45.0	262.8	0	0
5/19/2000 14:00 307.6 0.0 307.6 0 0 $5/19/2000$ 16:00 307.5 0.0 307.5 0 0 $5/19/2000$ 16:00 307.5 0.0 307.5 0 0 $8/5/1998$ 12:00 307.4 60.0 247.4 0 0 $6/12/2000$ 17:00 307.2 45.0 262.2 0 0 $8/13/2002$ 23:00 306.9 35.0 271.9 0 0 $9/14/2000$ 4:00 306.7 43.0 263.7 0 0 $9/14/2000$ 7:00 306.6 0.0 306.1 0 0 $5/19/2000$ 11:00 306.1 0.0 306.0 0 0 $5/14/2004$ 13:00 305.9 0.0 305.9 0 0 $4/23/2000$ 5:00 305.8 40.0 265.8 0 0 $5/19/2004$ 07:00 304.8 0.0	6/1/1900	5.00	307.8	40.0	267.8	0	0
5/13/2000 14.00 307.5 0.0 307.5 0 0 $5/19/2000$ $16:00$ 307.5 0.0 307.5 0 0 $8/5/1998$ $12:00$ 307.4 60.0 247.4 0 0 $6/12/2000$ $17:00$ 307.2 45.0 262.2 0 0 $8/13/2002$ $23:00$ 306.9 35.0 271.9 0 0 $9/14/2000$ $4:00$ 306.7 43.0 263.7 0 0 $9/14/2000$ $7:00$ 306.6 0.0 306.1 0 0 $5/19/2000$ $11:00$ 306.1 0.0 306.1 0 0 $5/14/2004$ $13:00$ 305.9 0.0 305.9 0 0 $4/23/2000$ $5:00$ 305.1 0.0 304.9 0 0 $5/14/2004$ $07:00$ 305.1 0.0 304.8 0.0	5/19/2000	14.00	307.6	40.0	307.6	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5/19/2000	16:00	307.5	0.0	307.5	0	0
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6/12/2000 17.00 307.2 43.0 202.2 0 0 $8/13/2002$ $23:00$ 306.9 35.0 271.9 0 0 $9/14/2000$ $4:00$ 306.7 43.0 263.7 0 0 $9/14/2000$ $7:00$ 306.6 0.0 306.6 0 0 $9/14/2000$ $7:00$ 306.6 0.0 306.6 0 0 $5/19/2000$ $11:00$ 306.1 0.0 306.1 0 0 $6/1/1999$ $23:00$ 306.0 0.0 306.0 0 0 $5/14/2004$ $13:00$ 305.9 0.0 305.9 0 0 $4/23/2000$ $5:00$ 305.8 40.0 265.8 0 0 $5/14/2004$ $07:00$ 305.1 0.0 304.9 0 0 $5/23/2004$ $03:00$ 304.9 0.0 304.8 0 0 $5/19/2000$ $17:00$ 304.7 0.0 304.7 0 0 $8/13/2002$ $17:00$ 304.7 35.0 269.7 0 0 $6/12/2001$ $6:00$ 304.6 0.0 304.6 0 0	6/12/2000	17:00	307.2	45.0	262.2	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	8/13/2002	23.00	306.9	35.0	271 9	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	9/14/2000	4:00	306.7	43.0	263.7	0	0
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	9/14/2000	7:00	306.6	0.0	306.6	0	0
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	5/19/2000	11.00	306.1	0.0	306.1	0	0
5/14/2004 13:00 305.9 0.0 305.9 0 0 4/23/2000 5:00 305.8 40.0 265.8 0 0 5/14/2004 07:00 305.1 0.0 305.1 0 0 5/23/2004 03:00 304.9 0.0 304.8 0 0 5/19/2000 17:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.7 35.0 269.7 0 0 6/12/2001 6:00 304.6 0.0 304.6 0 0	6/1/1000	23.00	306.0	0.0	306.0	0	0
4/23/2000 5:00 305.8 40.0 265.8 0 0 5/14/2004 07:00 305.1 0.0 305.1 0 0 5/23/2004 03:00 304.9 0.0 304.9 0 0 5/19/2000 17:00 304.8 0.0 304.8 0 0 Note: 7:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.6 0.0 304.6 0 0	5/14/2004	13.00	305.9	0.0	305.0	0	0
1120/2000 0.00 000.0 10.0 200.0 0 0 5/14/2004 07:00 305.1 0.0 305.1 0 0 0 5/23/2004 03:00 304.9 0.0 304.9 0 0 0 5/19/2000 17:00 304.8 0.0 304.8 0 0 Note: 7:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.6 0.0 304.6 0 0	4/23/2000	5.00	305.8	40.0	265.8	0	0
5/23/2004 03:00 304.9 0.0 304.9 0 0 5/19/2000 17:00 304.8 0.0 304.8 0 0 Note: 7:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.6 0.0 304.6 0 0	5/14/2004	07:00	305.0	0.0	305.1	0	0
5/19/2000 17:00 304.8 0.0 304.8 0 0 5/19/2000 17:00 304.8 0.0 304.8 0 0 Note: 7:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.6 0.0 304.6 0 0	5/23/2004	03.00	304 9	0.0	304.0	0	0
Note: 7:00 304.7 0.0 304.7 0 0 8/13/2002 17:00 304.7 35.0 269.7 0 0 6/12/2001 6:00 304.6 0.0 304.6 0 0	5/19/2004	17.00	304.5	0.0	304.9	0	0
8/13/2002 17:00 304.7 35.0 269.7 0 0 6/12/2001 6:00 304.6 0.0 304.6 0 0	Note:	7.00	304.0	0.0	304.0	0	0
<u>6/12/2001 6:00 304.6 0.0 304.6 0 0</u>	8/13/2002	17.00	304.7	35.0	260.7	0	0
	6/12/2001	6:00	304.6	0.0	304.6	0	0



TABLE 4E-2 SHEET 3 OF 4JIWWTP PEAK HOURLYFLOWS FROM AVAILABLESTORM EVENT DATA2020 TREATMENT REPORT6/01/07TR_4-A.T4E02.07.06.01.cdr

Date	Time	JIWWTP Influent Flow (MGD)	Blending ¹ (MGD)	Full Treatment (MGD)	Number of Times JIWWTP Inf Flow >330	Times JIWWTP Full Treat Flow >330
9/14/2000	6:00	304.6	0.0	304.6	0	0
5/19/2000	13:00	304.6	0.0	304.6	0	0
4/20/2000	23:00	304.5	40.0	264.5	0	0
5/19/2000	6:00	304.4	0.0	304.4	0	0
9/11/2000	17:00	304.3	0.0	304.3	0	0
5/19/2000	8:00	303.6	0.0	303.6	0	0
4/9/2002	8:00	303.6	50.0	253.6	0	0
7/23/1999	17:00	303.4	0.0	303.4	0	0
9/14/2000	8:00	303.3	25.0	278.3	0	0
6/12/2001	7:00	302.5	0.0	302.5	0	0
4/9/2002	12:00	302.5	50.0	252.5	0	0
6/5/1900	4:00	302.2	0.0	302.2	0	0
6/1/1900	21:00	302.1	50.0	252.1	0	0
7/21/1999	14:00	301.9	0.0	301.9	0	0
5/19/2000	18:00	301.7	0.0	301.7	0	0
2/9/2001	18:00	301.3	40.0	261.3	0	0
5/14/2004	14:00	301.0	0.0	301.0	0	0
5/19/2000	19:00	300.5	0.0	300.5	0	0
6/1/1900	1:00	300.4	40.0	260.4	0	0
9/12/2000	15:00	300.1	58.0	242.1	0	0
			Average	290.5		

Totals For Analysis609% of Available Storm Event Hourly Data1.93%0.29%

NOTES:

1) Blending data from Appendix 4D, MMSD/UWS In-Plant Diversion Records

2) 60 MGD on 8/5/98-8/7/98 - In-Plant Diversion Data indicates that event occurred 8/8/98 but MMSD Contract

Compliance Office August 1998 monthly report indicates 8/6 which appears more reasonable.

No data available regarding in-plant diversion flow rate for event so assumed 60 MGD.



		SSWWTP		Full	Number of Times SSWWTP Full
		Influent Flow	Blending ¹	Treatment	Treat Flow
Date	Time	(MGD)	(MGD)	(MGD)	>300
7/2/2000	23:00	329.8	0.0	329.8	1
7/3/2000	0:00	329.5	0.0	329.5	1
7/3/2000	4:00	328.6	0.0	328.6	1
7/3/2000	3:00	328.0	0.0	328.0	1
7/3/2000	5:00	326.9	0.0	326.9	1
7/3/2000	1:00	319.9	0.0	319.9	1
7/3/2000	6:00	318.6	0.0	318.6	1
5/23/2004	05:00	316.5	0.0	316.5	1
5/23/2004	09:00	316.1	0.0	316.1	1
7/3/2000	2:00	315.7	0.0	315.7	1
5/25/2004	13:00	313.6	0.0	313.6	1
5/24/2004	13:00	313.6	0.0	313.6	1
5/24/2004	12:00	313.4	0.0	313.4	1
5/24/2004	14:00	313.4	0.0	313.4	1
5/23/2004	04:00	313.2	0.0	313.2	1
5/25/2004	14:00	313.0	0.0	313.0	1
5/24/2004	15:00	312.5	0.0	312.5	1
5/23/2004	08:00	311.9	0.0	311.9	1
5/23/2004	06:00	311.9	0.0	311.9	1
6/13/1999	13:00	311.5	0.0	311.5	1
5/23/2004	03:00	311.4	0.0	311.4	1
5/21/2004	23:00	310.5	0.0	310.5	1
5/23/2004	10:00	310.2	0.0	310.2	1
5/24/2004	11:00	309.9	0.0	309.9	1
5/14/2004	16:00	309.2	0.0	309.2	1
5/22/2004	22:00	309.0	0.0	309.0	1
5/25/2004	15:00	308.9	0.0	308.9	1
5/23/2004	07:00	308.6	0.0	308.6	1
5/14/2004	15:00	308.5	0.0	308.5	1
5/23/2004	00:00	308.3	0.0	308.3	1
5/22/2004	01:00	308.2	0.0	308.2	1
5/23/2004	13:00	308.1	0.0	308.1	1
5/23/2004	11:00	308.0	0.0	308.0	1
09/28/99	21:00	308.0	0.0	308.0	1
5/23/2004	12:00	307.8	0.0	307.8	1
8/6/98	23:00	307.6	0.0	307.6	1
5/23/2004	20:00	307.5	0.0	307.5	1
5/23/2004	14:00	307.4	0.0	307.4	1
09/28/99	22:00	307.0	0.0	307.0	1
5/23/2004	01:00	307.0	0.0	307.0	1
5/23/2004	21:00	306.8	0.0	306.8	1
09/28/99	23:00	306.7	0.0	306.7	1



TABLE 4E-3 SHEET 1 OF 3SSWWTP PEAK HOURLYFLOWS FROM AVAILABLESTORM EVENT DATA2020 TREATMENT REPORT6/01/07TR_4-A.T4E03.07.06.01.cdr

					Number of Times
		SSWWTP		Full	SSWWTP Full
Data	Timo	Influent Flow	Blending ¹	Treatment	Treat Flow
5/22/2004	00:00	206.0		206.0	-300
5/22/2004	22:00	205.0	0.0	205.0	1
00/22/2004	23.00	305.9	0.0	305.9	1
5/22/2004	20.00	305.7	0.0	305.7	1
6/1/1000	10:00	305.7	0.0	305.7	1
8/6/08	22:00	305.4	0.0	305.4	1
6/1/1000	22.00	305.5	0.0	305.3	1
5/24/2004	9.00	303.1	0.0	303.1	1
5/24/2004	12:00	204.0	0.0	304.0	1
6/1/1000	12.00	304.5	0.0	304.5	1
5/22/2004	0.00	304.5	0.0	304.5	1
5/22/2004	07.00	304.4	0.0	304.4	1
5/23/2004	22:00	304.3	0.0	304.3	1
5/22/2004	16:00	304.3	0.0	304.3	1
5/23/2004	17:00	304.3	0.0	304.3	
5/25/2004	16:00	304.0	0.0	304.0	
09/29/99	0:00	304.0	0.0	304.0	
5/24/2004	17:00	303.8	0.0	303.8	1
5/24/2004	08:00	303.7	0.0	303.7	1
5/23/2004	16:00	303.7	0.0	303.7	1
5/24/2004	00:00	303.6	0.0	303.6	1
8/7/98	1:00	303.5	0.0	303.5	1
5/23/2004	15:00	303.4	0.0	303.4	1
6/2/1900	11:00	303.3	0.0	303.3	1
6/2/1900	12:00	303.3	0.0	303.3	1
6/1/1900	7:00	303.2	0.0	303.2	1
6/1/1900	11:00	303.2	0.0	303.2	1
5/22/2004	15:00	303.0	0.0	303.0	1
5/22/2004	02:00	302.8	0.0	302.8	1
5/22/2004	08:00	302.8	0.0	302.8	1
5/22/2004	21:00	302.7	0.0	302.7	1
6/2/1900	0:00	302.5	0.0	302.5	1
6/1/1900	13:00	302.5	0.0	302.5	1
07/21/99	6:00	302.4	0.0	302.4	1
6/2/1900	10:00	302.1	0.0	302.1	1
6/1/1900	23:00	302.0	0.0	302.0	1
6/1/1900	22:00	302.0	0.0	302.0	1
5/22/2004	04:00	302.0	0.0	302.0	1
04/20/00	10:00	301.9	0.0	301.9	1
04/21/00	14:00	301.9	0.0	301.9	1
5/22/2004	13:00	301.9	0.0	301.9	1
6/2/1900	13:00	301.8	0.0	301.8	1
5/22/2004	12:00	301.8	0.0	301.8	1
6/2/1900	2:00	301.8	0.0	301.8	1
6/2/1900	1:00	301.8	0.0	301.8	1
6/1/1900	6:00	301.8	0.0	301.8	1
6/2/1900	17:00	301.7	0.0	301.7	1
5/24/2004	10:00	301.7	0.0	301.7	1



TABLE 4E-3 SHEET 2 OF 3 SSWWTP PEAK HOURLY FLOWS FROM AVAILABLE **STORM EVENT DATA** 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4E03.07.06.01.cdr

		SSWWTP		Full	Number of Times SSWWTP Full
		Influent Flow	Blending ¹	Treatment	Treat Flow
Date	Time	(MGD)	(MGD)	(MGD)	>300
5/24/2004	03:00	301.6	0.0	301.6	1
6/1/1900	12:00	301.5	0.0	301.5	1
04/20/00	13:00	301.5	0.0	301.5	1
05/18/00	19:00	301.5	0.0	301.5	1
6/2/1900	3:00	301.4	0.0	301.4	1
6/1/1900	15:00	301.4	0.0	301.4	1
6/1/1900	14:00	301.2	0.0	301.2	1
6/2/1900	16:00	301.2	0.0	301.2	1
5/23/2004	19:00	301.2	0.0	301.2	1
6/2/1900	15:00	301.1	0.0	301.1	1
6/13/1999	9:00	301.1	0.0	301.1	1
6/2/1900	14:00	301.1	0.0	301.1	1
6/2/1900	6:00	301.0	0.0	301.0	1
6/1/1900	20:00	300.9	0.0	300.9	1
6/1/1900	18:00	300.9	0.0	300.9	1
6/1/1900	19:00	300.9	0.0	300.9	1
09/28/99	19:00	300.8	0.0	300.8	1
5/14/2004	14:00	300.7	0.0	300.7	1
6/13/1999	11:00	300.7	0.0	300.7	1
6/2/1900	4:00	300.7	0.0	300.7	1
6/2/1900	19:00	300.7	0.0	300.7	1
5/24/2004	18:00	300.6	0.0	300.6	1
5/22/2004	20:00	300.6	0.0	300.6	1
5/25/2004	17:00	300.6	0.0	300.6	1
6/13/1999	10:00	300.6	0.0	300.6	1
5/22/2004	09:00	300.6	0.0	300.6	1
09/28/99	10:00	300.5	0.0	300.5	1
04/21/00	13:00	300.5	0.0	300.5	1
04/21/00	15:00	300.4	0.0	300.4	1
6/2/1900	8:00	300.4	0.0	300.4	1
6/2/1900	18:00	300.3	0.0	300.3	1
5/22/2004	14:00	300.3	0.0	300.3	1
6/2/1900	9:00	300.3	0.0	300.3	1
6/1/1900	16:00	300.3	0.0	300.3	1
5/24/2004	01:00	300.2	0.0	300.2	1
05/18/00	18:00	300.2	0.0	300.2	1
6/2/1900	5:00	300.2	0.0	300.2	1
5/22/2004	11:00	300.1	0.0	300.1	1
			Average	305.7	8

Totals For Analysis	127
% of Available Storm Event Hourly Data	4.09%

Notes:

- 1) Blending data from Appendix 4D, MMSD/UWS In-Plant Diversion Records
- 2) Blending is not allowed at SSWWTP per the current WPDES permit, effective
 - as of April 1, 2003



TABLE 4E-3 SHEET 3 OF 3 SSWWTP PEAK HOURLY FLOWS FROM AVAILABLE STORM EVENT DATA 2020 TREATMENT REPORT 6/01/07 TR_4-A.T4E03.07.06.01.cdr