

Appendix C
Combined Sewer Overflow Sample Data

Lancaster CSO

CSO Sampling CBOD Results (mg/l)

CSO Location	1019 4/1/96	1019 4/15/96	1013 4/22/96	1013 4/26/96	1013 4/28/96	1013 4/29/96	1012 4/29/96	1014 5/4/96	1033 5/4/96	1014 5/8/96
Date										
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.00	1.00	0.75
Rain Start	2:30	15:08	19:00	13:40	16:30	18:05	18:05	1:45	1:45	20:30
CSO Start	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	5:30	5:30	21:25
Bottle 1	171	55		111	259			17	34	24
Bottle 2	62	52	310	122	144	41	26	12	28	16
Bottle 3	41	35	61	127	110			12	30	7
Bottle 4	28	18	40	68	45			12	20	18
Bottle 5		16	32		31			12	15	
Bottle 6								12	15	
Bottle 7	40			45				12	12	
Bottle 8			13	27				12	20	
Bottle 9		18	37	36	33					
Bottle 10	40		22							
Bottle 11										
Bottle 12										
Bottle 13					74					
Bottle 14	30	32								
Bottle 15										
Bottle 16										
Bottle 17										
Bottle 18	43									
Bottle 19										
Bottle 20										
Bottle 21		53								
Bottle 22										
Bottle 23										
Bottle 24										

Notes:

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO

CSO Sampling CBOD Results (mg/l)

CSO Location		1033	1031	1031	1029	1029	1004	1026	1027	1027	1027
Date	Elapsed	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96
Rainfall (in)	Time	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50
Rain Start	(min)	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00
CSO Start		21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45
Bottle 1	0	110	55	36	51	133	3	180			125
Bottle 2	15	24	41	59	45	70					54
Bottle 3	30	27	29	21		68					
Bottle 4	45	30	20	12		129	76				
Bottle 5	60	22		14			83				
Bottle 6	75						80				
Bottle 7	90										
Bottle 8	105										
Bottle 9	120						55				
Bottle 10	135						41				
Bottle 11	150		12				37				
Bottle 12	165		14				45				
Bottle 13	180						68				
Bottle 14	195										
Bottle 15	210										
Bottle 16	225										
Bottle 17	240										
Bottle 18	255										
Bottle 19	270										
Bottle 20	285										
Bottle 21	300										
Bottle 22	315										
Bottle 23	330										
Bottle 24	345										

Lancaster CSO

CSO Sampling Suspended Solids Results (mg/l)

CSO Location	1019	1019	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/8/96
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.50	1.50	1.50	1.00	1.00	0.75
Rain Start Time	2:30	15:08	19:00	13:40	16:30	18:05	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start (min)	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	302	1768	712	362	1550						114	256	332
Bottle 2	364	1088	340	240	476	1240	450				92	173	246
Bottle 3	92	512	200	385	321						59	171	144
Bottle 4	96	346	232	123	169						51	179	346
Bottle 5		210			102						101	134	
Bottle 6											76	94	
Bottle 7	122			66							62	74	
Bottle 8			160	96								57	
Bottle 9		99			48								
Bottle 10	218		85										
Bottle 11													
Bottle 12													
Bottle 13	92	70			63								
Bottle 14													
Bottle 15													
Bottle 16													
Bottle 17	121												
Bottle 18													
Bottle 19													
Bottle 20													
Bottle 21	61												
Bottle 22													
Bottle 23													
Bottle 24													

Notes:

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO

CSO Sampling Suspended Solids Results (mg/l)

CSO Location	1033	1031	1031	1029	1029	1004	1026	1027	1027	1027
Date	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96
Rainfall (in)	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50
Rain Start Time (min)	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00
CSO Start	21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45
Bottle 1	242	344	314	729	632	7020	720			1400
Bottle 2	320	280	137	535	548					310
Bottle 3	332	212	109		512					
Bottle 4		136	178		492					
Bottle 5	208		56			350				
Bottle 6						308				
Bottle 7						260				
Bottle 8										
Bottle 9						208				
Bottle 10						198				
Bottle 11		54				118				
Bottle 12		64				194				
Bottle 13						204				
Bottle 14										
Bottle 15										
Bottle 16										
Bottle 17										
Bottle 18										
Bottle 19										
Bottle 20										
Bottle 21										
Bottle 22										
Bottle 23										
Bottle 24										

Lancaster CSO

CSO Sampling Total Kjeldahl Nitrogen (mg/l)

CSO Location	1019	1019	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/4/96
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.50	1.50	1.50	1.00	1.00	1.00
Rain Start Time	2:30	15:08	19:00	13:40	16:30	18:05	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start (min)	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	40.9	21.4		20.6	503	10.9					3.6		
Bottle 2	15	149	38.1	18.4	27.4				6.3				
Bottle 3	9.9	6.7	14.8	20.2	15.4								
Bottle 4	8.1	5.6	8.7	8.1	9								
Bottle 5		3.1	6.2		5								
Bottle 6													
Bottle 7	8.1			3.4									
Bottle 8			5.8	3.1									
Bottle 9		3.1			7.7								
Bottle 10	6.6		7.1										
Bottle 11													
Bottle 12													
Bottle 13	6.7	4.9						13.9					
Bottle 14													
Bottle 15													
Bottle 16													
Bottle 17	7.6												
Bottle 18													
Bottle 19													
Bottle 20													
Bottle 21	10.1												
Bottle 22													
Bottle 23													
Bottle 24													

Notes:

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO
CSO Sampling Total Kjeldahl Nitrogen (mg/l)

CSO Location	1033	1031	1031	1031	1029	1029	1004	1026	1027	1027	1027
Date	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96	
Rainfall (in)	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50	
Rain Start Time	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00	
CSO Start (min)	21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45	
Bottle 1	18.4	16.4	7.8	17	32.2	12.4	35.5			21.1	
Bottle 2	11.6	11.9	10.4	17.9	32					12.6	
Bottle 3	10.9	9.5	6		26.5						
Bottle 4		7.2	5		25.1						
Bottle 5	8.5		3.8			14.9					
Bottle 6						15.8					
Bottle 7						13.7					
Bottle 8											
Bottle 9						9.54					
Bottle 10						12.2					
Bottle 11		4.9				9					
Bottle 12		6.7				12.2					
Bottle 13						13					
Bottle 14											
Bottle 15											
Bottle 16											
Bottle 17											
Bottle 18											
Bottle 19											
Bottle 20											
Bottle 21											
Bottle 22											
Bottle 23											
Bottle 24											

Lancaster CSO
CSO Sampling Cadmium (ug/l)

CSO Location	1019	1019	1013	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/8/96
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.50	1.50	1.50	1.50	1.00	1.00	0.75
Rain Start Time	2:30	15:08	19:00	13:40	16:30	18:05	18:05	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start (min)	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	0	0.96	10:00	20	11.45	29.2						0.61	2.75	2.55
Bottle 2	15	0.97	10	10	1.74							1	0.88	2.02
Bottle 3	30	1.52	10	40	1.51							0.55	1.06	1.39
Bottle 4	45	0.97	10	10	1.31							0.82	0.64	1.81
Bottle 5	60		10		0.94							0.82	0.62	
Bottle 6	75											0.88	0.51	
Bottle 7	90	1.6	10	20								1.3	0.43	
Bottle 8	105		10	10	0.62									
Bottle 9	120		10											
Bottle 10	135	0.92												
Bottle 11	150													
Bottle 12	165													
Bottle 13	180	0.66	10		0.64									
Bottle 14	195													
Bottle 15	210													
Bottle 16	225													
Bottle 17	240	1.15												
Bottle 18	255													
Bottle 19	270													
Bottle 20	285													
Bottle 21	300	0.62												
Bottle 22	315													
Bottle 23	330													
Bottle 24	345													

Notes:

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO
CSO Sampling Cadmium (ug/l)

CSO Location	1033	1031	1031	1029	1029	1029	1026	1027	1027	1027	1027
Date	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	9/27/96	10/9/96
Rainfall (in)	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50	
Rain Start	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00	
CSO Start	21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45	
Bottle 1	1.17	2.5	3	3	3	77	3.00	12	6	12	
Bottle 2	2.11	5	3		3			8	6	2.5	
Bottle 3		2.5	3		3				6		
Bottle 4		2.5	3		3						
Bottle 5	0.87		3			3					
Bottle 6						3					
Bottle 7						3					
Bottle 8						3					
Bottle 9						3					
Bottle 10						3					
Bottle 11		2.5				3					
Bottle 12		2.5				3					
Bottle 13						3			9		
Bottle 14									9		
Bottle 15											
Bottle 16										5	
Bottle 17										5	
Bottle 18										5	
Bottle 19										5	
Bottle 20										5	
Bottle 21										5	
Bottle 22										5	
Bottle 23										5	
Bottle 24										5	

Lancaster CSO
CSO Sampling Lead (ug/l)

CSO Location	1019	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/8/96
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.50	1.50	1.00	1.00	0.75
Rain Start Time	2:30	15:08	19:00	13:40	16:30	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start (min)	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	65.8	2420		108	144	585				39.3	75.9	109
Bottle 2	468	713	95	54	82.1					56.7	60.5	128
Bottle 3	68.8	10100	60	216	125					34.9	43.4	91
Bottle 4	65.8	180	54	54	92					33.2	38.9	201
Bottle 5	158	158	63		95.6					63.1	60.6	
Bottle 6	81.5									41.4	41.8	
Bottle 7										78.9	33.1	
Bottle 8				108								
Bottle 9		54	54	54								
Bottle 10	63.2				20.8							
Bottle 11												
Bottle 12												
Bottle 13	41	54			17.9							
Bottle 14												
Bottle 15												
Bottle 16												
Bottle 17	65.2											
Bottle 18												
Bottle 19												
Bottle 20												
Bottle 21	29.8											
Bottle 22												
Bottle 23												
Bottle 24												

Notes: This value considered an "outlier", not used in calculations.

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO
CSO Sampling Lead (ug/l)

CSO Location	1033	1031	1031	1029	1029	1029	1004	1026	1027	1027	1027
Date	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96
Rainfall (in)	0.75	0.34	0.36	1.45	0.09	0.85	0.85	0.20	0.09	0.17	0.50
Rain Start Time	20:30	18:00	17:50	14:00	17:55	12:00	12:00	4:00	10:45	18:15	5:00
CSO Start (min)	21:25	19:16	18:29	15:30	19:41	13:15	13:15	6:45	11:08	23:37	5:45
Bottle 1	0	135	75	213	79	447	447	116	336	214	1400
Bottle 2	15	129	54		76				465	214	263
Bottle 3	30	106	54		54					214	
Bottle 4	45	96	54		54						
Bottle 5	60		54								
Bottle 6	75		54								
Bottle 7	90										
Bottle 8	105										
Bottle 9	120						382				
Bottle 10	135						173				
Bottle 11	150	74					89				
Bottle 12	165	72					64				
Bottle 13	180						54				
Bottle 14	195						54				
Bottle 15	210						57				
Bottle 16	225						61			142	
Bottle 17	240									142	
Bottle 18	255										
Bottle 19	270										
Bottle 20	285										
Bottle 21	300									139	
Bottle 22	315									139	
Bottle 23	330									139	
Bottle 24	345									139	
										77	
										77	
										77	

Lancaster CSO
CSO Sampling Copper (ug/l)

CSO Location	1019	1019	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/29/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/4/96
Rainfall (in)	0.50	0.60	0.30	0.20	1.50	0.25	1.50	1.50	1.50	1.50	1.00	1.00	1.00
Rain Start Time (min)	2:30	15:08	19:00	13:40	18:05	16:30	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start	10:30?	15:37	19:30	15:15	18:15	17:30	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	108	852		68	126	346					19	119	74
Bottle 2	199	405	293	64		198					32	81	50
Bottle 3	87	165	101	108		104					25	66	43
Bottle 4	47	100	53	57		41					26	41	72
Bottle 5		53	46			26					46	37	
Bottle 6											29	35	
Bottle 7	48										27	20	
Bottle 8			23										
Bottle 9		22											
Bottle 10	48		38										
Bottle 11													
Bottle 12													
Bottle 13													
Bottle 14	30	24				38							
Bottle 15													
Bottle 16													
Bottle 17	44												
Bottle 18													
Bottle 19													
Bottle 20													
Bottle 21	37												
Bottle 22													
Bottle 23													
Bottle 24													

Notes:

1. Samples collected at intervals shown.
2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO
CSO Sampling Copper (ug/l)

CSO Location	1033	1031	1031	1029	1029	1004	1026	1027	1027	1027
Date	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96
Rainfall (in)	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50
Rain Start Time	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00
CSO Start (min)	21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45
Bottle 1	92	146	78	117	232	372	373	271	101	381
Bottle 2	83	64	31		148			101	101	101
Bottle 3		50	26		135				101	
Bottle 4		36	21		108					
Bottle 5	40		28			194				
Bottle 6						183				
Bottle 7						113				
Bottle 8										
Bottle 9						103				
Bottle 10						78				
Bottle 11		45				71				
Bottle 12		25				97				
Bottle 13						93			49	
Bottle 14									49	
Bottle 15										
Bottle 16										
Bottle 17										
Bottle 18										
Bottle 19										
Bottle 20										
Bottle 21										
Bottle 22										
Bottle 23										
Bottle 24										

Lancaster CSO
CSO Sampling Zinc (ug/l)

CSO	1019	1019	1013	1013	1013	1013	1013	1013	1013	1013	1012	1014	1033	1014
Date	4/1/96	4/15/96	4/22/96	4/26/96	4/28/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	4/29/96	5/4/96	5/4/96	5/8/96
Rainfall (in)	0.50	0.60	0.30	0.20	0.25	1.50	1.50	1.50	1.50	1.50	1.50	1.00	1.00	0.75
Rain Start Time (min)	2:30	15:08	19:00	13:40	16:30	18:05	18:05	18:05	18:05	18:05	18:05	1:45	1:45	20:30
CSO Start	10:30?	15:37	19:30	15:15	17:30	18:15	18:15	18:15	18:15	18:15	18:15	5:30	5:30	21:25
Bottle 1	235	3160		204	591	843						201	216	333
Bottle 2	528	1820	545	101	339							201	220	251
Bottle 3	211	1140	249	804	259							201	201	161
Bottle 4	188	642	201	107	201							201	201	297
Bottle 5		404	201		201							201	201	
Bottle 6												201	201	
Bottle 7												201	201	
Bottle 8	373		201	402								201	201	
Bottle 9		201	201	101								201	201	
Bottle 10	172		201											
Bottle 11														
Bottle 12														
Bottle 13	110	201			201									
Bottle 14														
Bottle 15														
Bottle 16														
Bottle 17	164													
Bottle 18														
Bottle 19														
Bottle 20														
Bottle 21	102													
Bottle 22														
Bottle 23														
Bottle 24														

- Notes:
1. Samples collected at intervals shown.
 2. Blank spaces indicate that no sample was collected or there was not enough sample to analyze.
 3. Shaded values indicate that the lab value was reported as "less than" the value shown. The value shown was used in calculating averages.
 4. Outlined values indicate that bottles were composited in the field to provide adequate sample volume.

Lancaster CSO
CSO Sampling Zinc (ug/l)

CSO		1033	1031	1031	1029	1029	1004	1026	1027	1027	1027
Date	Elapsed	5/8/96	6/3/96	6/7/96	6/14/96	6/18/96	7/30/96	8/24/96	9/26/96	9/27/96	10/9/96
Rainfall (in)	Time	0.75	0.34	0.36	1.45	0.09	0.85	0.20	0.09	0.17	0.50
Rain Start	(min)	20:30	18:00	17:50	14:00	17:55	12:00	4:00	10:45	18:15	5:00
CSO Start		21:25	19:16	18:29	15:30	19:41	13:15	6:45	11:08	23:37	5:45
Bottle 1	0	256	262	169	475	449	2140	669	888	562	3320
Bottle 2	15	315	222	111		422			119	562	930
Bottle 3	30		201	90		422				562	
Bottle 4	45		201	79		313					
Bottle 5	60	158		67			788				
Bottle 6	75						624				
Bottle 7	90						432				
Bottle 8	105										
Bottle 9	120						489				
Bottle 10	135						285				
Bottle 11	150		201				302				
Bottle 12	165		201				402				
Bottle 13	180						362			306	
Bottle 14	195									306	
Bottle 15	210										
Bottle 16	225									282	
Bottle 17	240									282	
Bottle 18	255									282	
Bottle 19	270									282	
Bottle 20	285									282	
Bottle 21	300									194	
Bottle 22	315									194	
Bottle 23	330										
Bottle 24	345									194	