CITY OF SANTA CRUZ WASTEWATER TREATMENT FACILITY

CITY OF
SANTA CRUZ

2008

Wastewater Treatment Facility
ANNUAL REPORT

CITY OF
SANTA CRUZ

CITY OF SANTA CRUZ POTW ANNUAL REPORT

2008

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Section I. Introduction

This document is the Annual Report of the water pollution control activities of the City of Santa Cruz Wastewater Treatment Facility for 2008. It is submitted in accordance with the Standard Provisions and Reporting Requirements of the National Pollutant Discharge Elimination System Permits (NPDES), General Reporting Requirements, § 16.C.

The City of Santa Cruz treats sewage from domestic and industrial sources at the Wastewater Treatment Facility near Neary Lagoon and discharges its effluent into the Pacific Ocean under the NPDES permit No CA0048194. The area served includes the Cities of Santa Cruz and Capitola, the areas of Live Oak, Soquel, and Aptos, and the University of California at Santa Cruz. The City also provides capacity for the City of Scotts Valley to discharge its wastewater treatment system's effluent into the Pacific Ocean. However all data contained within this report relate only to the effluent of the City's wastewater treatment plant.

The estimated population served is approximately 125,000 people.

Although the City continuously upgrades the treatment facility to accommodate population growth, and to respond to regulatory and environmental challenges, the most recent structural upgrades were the addition of a trickling filter/solids contact secondary plant in 1998, the rebuilding of the primary treatment plant completed in 1991, and the commissioning of a new ocean outfall in 1989.

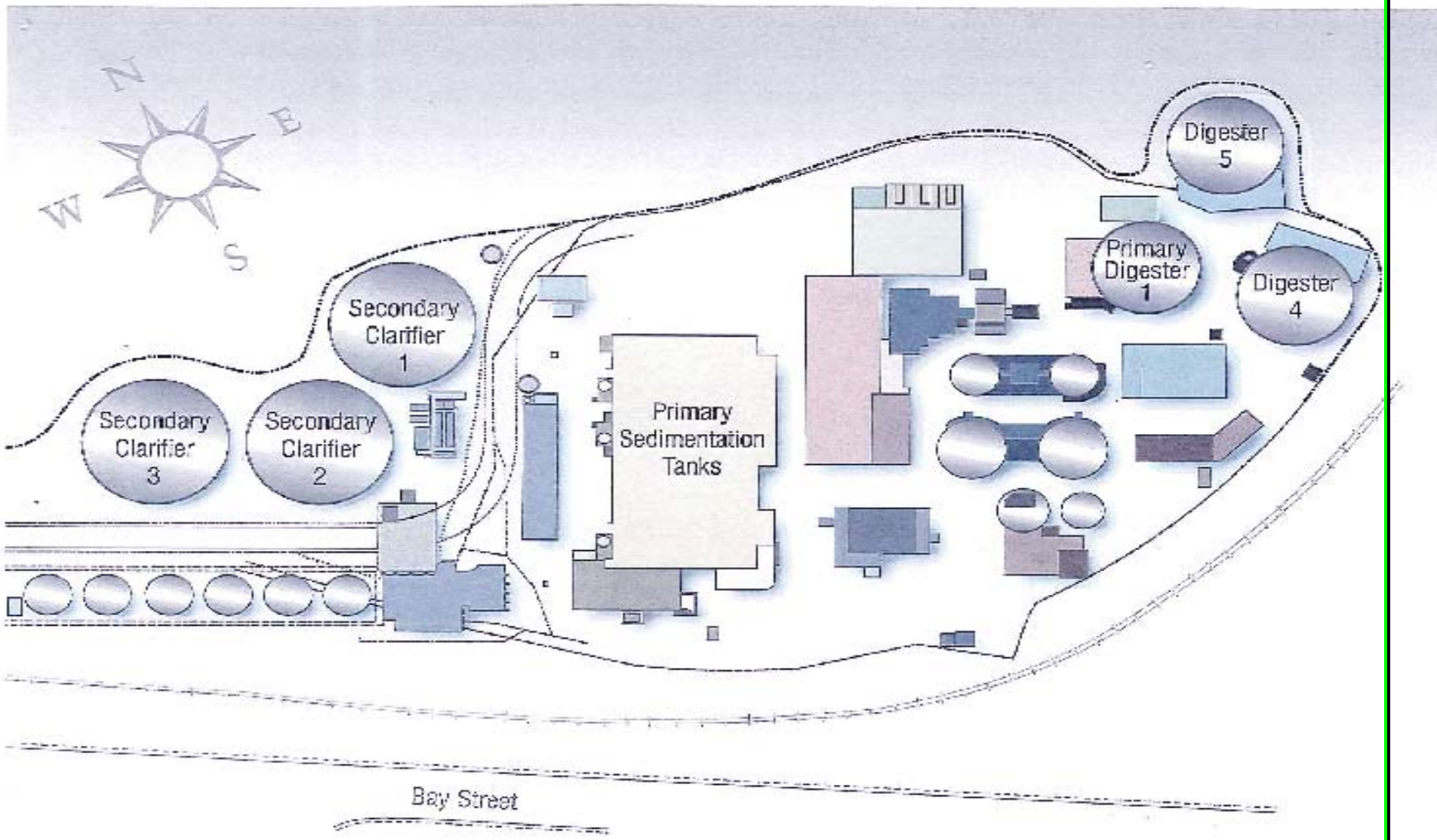
The design treatment capacity of the Plant is 81 million gallons per pay (MGD). The NPDES mandatory limit for the average dry weather (ADW) flow is 17 MGD.

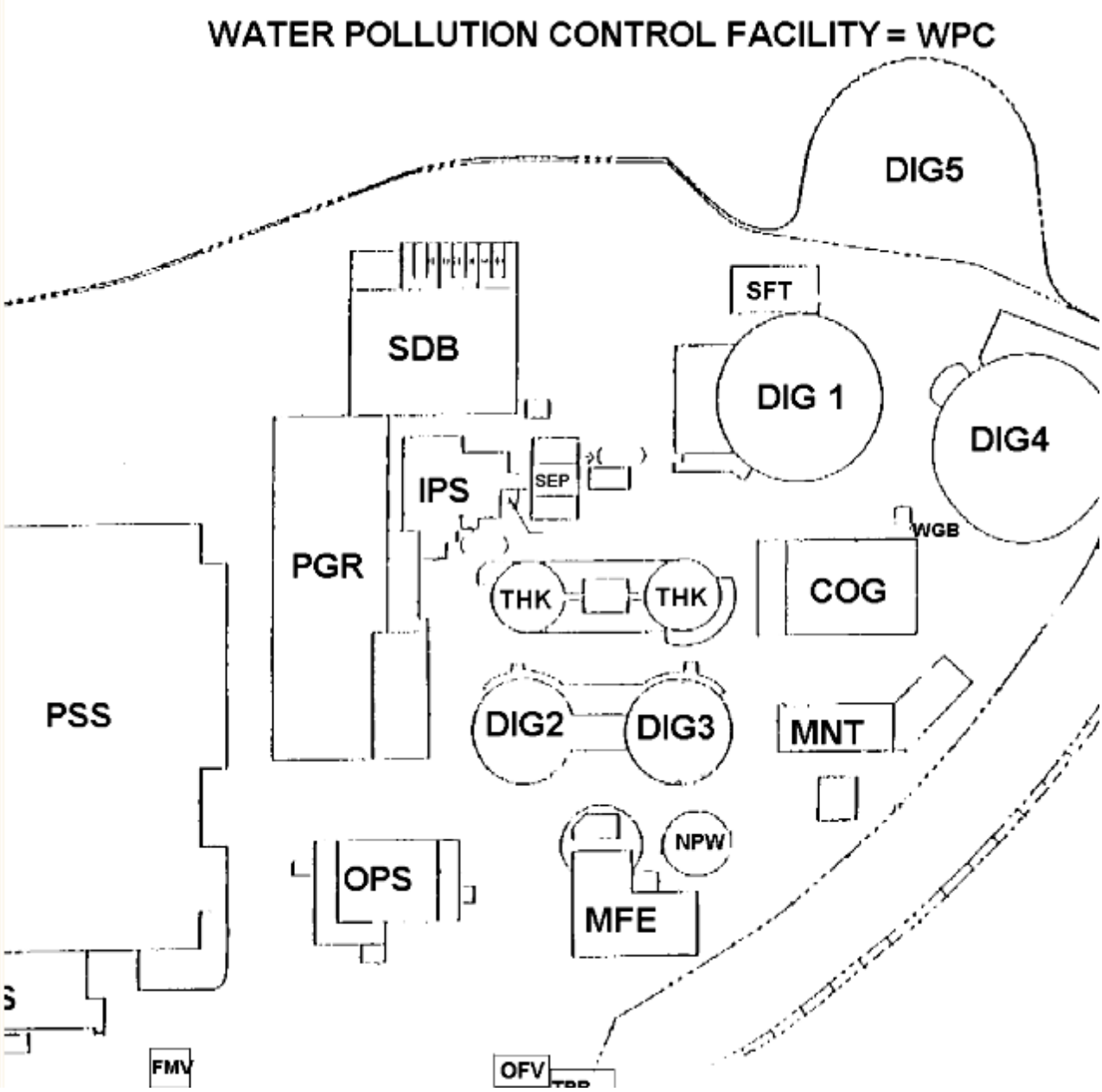
Plant performance highlights and removal efficiencies for conventional pollutants for 2008 were as follows:

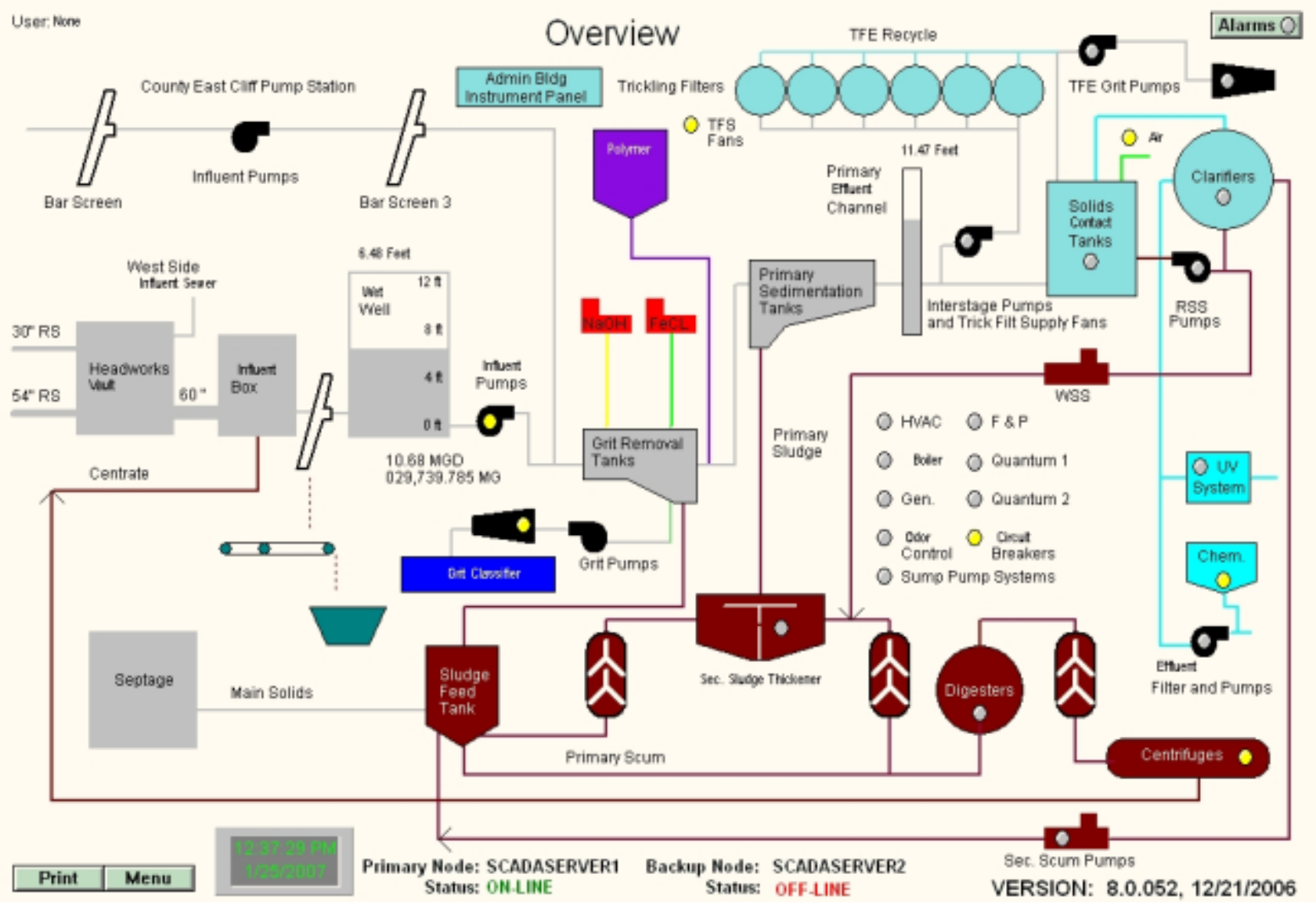
- More than three billion gallons of treated wastewater effluent was discharged from the Plant at an average daily rate of 8.7 MGD; Average Dry Weather Flow was 7.7 MGD (mid-April through mid-October, 2008);
- TSS removal averaged 98.4**%** throughout the year;
- TOC (Total Organic Carbon) removal averaged 87.1**%** throughout the year, equivalent to the removal of Biochemical Oxygen Demand (BOD) removal at an average rate of 91.2%;
- Commonly Analyzed Metals (CAM) removal varied from a high of approximately 87% for Iron to 0% for Boron removal; and
- Compounds of emerging concern (CEC) included in the California Ocean Plan Table B in the influent and effluent as measured by integrative sampling techniques, were too low and could not be assessed for removal efficiency in 2008.

Following this page are:

1. An aerial view of the current facility and its major treatment processes;
2. A schematic of the Primary treatment processes of the facility; and
3. A screenshot of the Supervisory Control And Data Acquisition **(**SCADA) view of the treatment processes.


N
E
W
S
Secondary Clarifier 1
Secondary Clarifier 3
Secondary Clarifier 2
Primary Sedimentation Tanks
Digester 5
Primary Digester 1
Digester 4
Bay Street


WATER POLLUTION CONTROL FACILITY = WPC
DIG5
SFT
SDB
DIG 1
DIG4
IPS
SEP
WGB
PGR
THK
THK
COG
PSS
DIG2
DIG3
MNT
NPW
OPS
MFE
FMV
OFV


User: None
Overview
Alarms
TFE Recycle
County East Cliff Pump Station
Admin Bldg Instrument Panel
Trickling Filters
TFE Grit Pumps
TFS Fans
Polymer
Air
Clarifiers
Bar Screen
Influent Pumps
Bar Screen 3
11.47 Feet
Primary Effluent Channel
Solids Contact Tanks
West Side Influent Sewer
6.48 Feet
Wet Well
12 ft
8 ft
4 ft
0 ft
Primary Sedimentation Tanks
Interstage Pumps and Trick Filt Supply Fans
RSS Pumps
30" RS
54" RS
Headworks Vault
60"
Influent Box
Influent Pumps
NaOH
FeCL
WSS
Grit Removal Tanks
Primary Sludge
HVAC
F & P
Boiler
Quantum 1
Gen.
Quantum 2
Odor Control
Circuit Breakers
Sump Pump Systems
UV System
Centrate
10.68 MGD
029,739.785 MG
Grit Classifier
Grit Pumps
Chem.
Septage
Main Solids
Sludge Feed Tank
Sec. Sludge Thickener
Digesters
Effluent Filter and Pumps
Primary Scum
Centrifuges
Sec. Scum Pumps
Print
Menu
12:37:29 PM
1/25/2007
Primary Node: SCADASERVER1
Status: ON-LINE
Backup Node: SCADASERVER2
Status: OFF-LINE
VERSION: 8.0.052, 12/21/2006

Section II. Summary of Monitoring Data – Tables

This section contains summary tables of compliance monitoring data compiled by the City's laboratory, contract laboratories, and treatment staff for compliance monitoring purposes in 2008.

Outlined below is the sequence of the presentation:

1. Monthly averages for Plant performance data on conventional and priority pollutants;

2. Averages for Plant performance data on priority pollutants, metals and trace organics derived from Semi-Annual Effluent and Annual Influent requirements of the NPDES permit CA0048194;

3. Biosolids monitoring data for metals and select pollutants; and

4. Nearshore bacteria monitoring at 30 foot contour depth.

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Influent Flow	Influent Instantaneous Maximum Flow	City Influent Flow	County Influent Flow	Effluent Flow	Effluent Instantaneous Maximum Flow
	MGD	MG	MG	MG	MGD	MG
January	14.7	29.4	8.7	6.0	14.4	29.5
February	13.0	25.2	7.7	5.3	12.6	25.3
March	9.4	22.8	5.0	4.3	8.3	16.9
April	9.1	23.7	4.8	4.3	7.8	17.1
May	9.3	22.3	5.1	4.2	7.8	17.3
June	8.8	20.9	4.5	4.3	7.5	16.3
July	8.8	20.7	4.4	4.4	7.6	15.0
August	8.8	19.7	4.5	4.3	7.5	13.8
September	8.6	19.2	4.4	4.2	7.7	14.0
October	9.1	20.6	5.0	4.2	8.3	16.7
November	8.8	21.2	4.6	4.3	7.6	17.3
December	8.4	22.1	4.1	4.3	7.0	16.6
Average	**9.7**	**22.3**	**5.2**	**4.5**	**8.7**	**18.0**
Minimum	**8.4**	**19.2**	**4.1**	**4.2**	**7.0**	**13.8**
Maximum	**14.7**	**29.4**	**8.7**	**6.0**	**14.4**	**29.5**
NPDES (Dry Weather Flow Limit)					**≤ 17.0**	

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Influent TSS	Effluent TSS	Effluent TSS	Effluent TSS	TSS Removal
	mg/l	mg/l	lb/day	kg/day	%
January	210.6	6.5	906.5	411.2	96.2%
February	268.0	6.0	675.6	306.4	97.1%
March	323.3	5.5	384.6	174.5	98.2%
April	377.9	3.9	254.8	115.6	98.9%
May	391.4	4.2	280.1	127.0	98.9%
June	395.5	4.0	247.8	112.4	99.0%
July	400.6	3.6	231.4	105.0	99.1%
August	368.6	3.8	240.6	109.1	99.0%
September	425.5	4.4	285.5	129.5	99.0%
October	450.1	4.9	343.1	155.6	98.9%
November	335.3	5.9	370.0	167.8	98.2%
December	316.4	5.8	336.6	152.7	98.2%
Average	**355.3**	**4.9**	**379.7**	**172.2**	**98.4%**
Minimum	**210.6**	**3.6**	**231.4**	**105.0**	**96.2%**
Maximum	**450.1**	**6.5**	**906.5**	**411.2**	**99.1%**
NPDES Limit 1 (Monthly Average)		**≤ 30**			**≥ 85%**
NPDES Limit 2 (Weekly Average)		**≤ 45**			

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Influent TOC	Effluent TOC	WWTF TOC Removal
	mg/l	mg/l	%
January	74.5	12.6	78.8%
February	80.3	13.5	82.7%
March	116.1	13.6	88.1%
April	98.5	12.4	87.6%
May	104.4	12.8	87.6%
June	110.3	12.9	87.6%
July	109.9	13.0	87.9%
August	113.9	12.3	88.7%
September	109.8	12.7	88.4%
October	135.8	13.4	90.2%
November	123.1	12.9	89.5%
December	116.7	13.3	87.9%
Average	**107.8**	**13.0**	**87.1%**
Minimum	**74.5**	**12.3**	**78.8%**
Maximum	**135.8**	**13.6**	**90.2%**
NPDES Effluent TOC Monthly Average Limit		**≤ 15.5**	
NPDES Effluent TOC Weekly Average Limit		**≤ 25**	
NPDES (Monthly TOC Removal Efficiency %)			**≥ 70%**

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Influent BOD (Calculated)	Effluent BOD (Calculated)	Calculated BOD% Removal
	mg/1	mg/1	%
January	169.2	19.7	85.9%
February	183.3	22.0	87.8%
March	269.8	22.3	91.7%
April	227.3	19.4	91.8%
May	241.5	20.2	91.5%
June	255.6	20.7	91.4%
July	254.7	20.7	91.7%
August	264.3	19.1	92.4%
September	254.4	20.0	92.2%
October	317.4	21.7	93.3%
November	286.6	20.5	92.8%
December	271.3	21.6	91.4%
Average	**249.6**	**20.7**	**91.2%**
Minimum	**169.2**	**19.1**	**85.9%**
Maximum	**317.4**	**22.3**	**93.3%**
NPDES Limit 1 (30-Day Average)		25	85%
NPDES Limit 2 (Weekly Average)		40	

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Effluent Acute Toxicity (Quarterly)	Effluent Chronic Toxicity (Quarterly)
	TUa	TUc
January		
February		
March	1.3	2.0
April		
May	3.0	16.0
June		
July		
August		
September	1.3	4.0
October		
November		
December	1.4	8.0
Average	**1.8**	**7.5**
Minimum	**1.3**	**2.0**
Maximum	**3.0**	**16.0**
NPDES Effluent Toxicity Maximum Limits	**4.47**	**140**

Section II: Tables of Plant performance on Priority Pollutants

Months	Influent pH	Effluent pH	Influent Settleable Solids	Effluent Settleable Solids	Influent Oil and Grease Monthly	Effluent Oil and Grease Monthly
	SI	SI	ml/l	ml/l	mg/l	mg/l
January	7.2	7.0	10.2	<0.05	26.0	<5
February	7.2	7.0	10.8	<0.05	28.9	<5
March	7.3	7.1	14.4	<0.05	46.2	<5
April	7.4	7.2	19.0	<0.05	26.6	<5
May	7.3	7.2	16.9	<0.05	44.7	<5
June	7.3	7.1	18.3	<0.05	34.4	<5
July	7.3	7.1	14.8	<0.05	38.3	<5
August	7.3	7.1	18.5	<0.05	46.3	<5
September	7.3	7.1	17.8	<0.1	40.0	<5
October	7.3	7.1	19.0	0.07	35.3	<5
November	7.4	7.0	18.9	0.06	43.5	<5
December	7.4	7.0	14.9	<0.05	44.0	<5
Average	**7.3**	**7.1**	**16.1**	**<0.06**	**37.9**	**<5**
Minimum	**7.2**	**7.0**	**10.2**	**<0.05**	**26.0**	**<5**
Maximum	**7.4**	**7.2**	**19.0**	**0.07**	**46.3**	**<5**
NPDES Limit 1		**6.0**		**1.0**		**25**
NPDES Limit 2		**9.0**		**1.5**		**40**
NPDES Limit 3				**3.0**		**75**

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Daily Maximum Chlorine Residual	Instantaneous Maximum Chlorine Residual	Effluent Turbidity (Monthly)	Effluent Temperature
	ug/1	ug/1	NTU	°C
January	47.3	378.2	3.7	17.6
February	15.2	84.1	3.7	17.8
March	0.00	0.33	3.7	20.1
April	8.6	102.7	4.1	21.2
May	26.6	139.4	3.9	22.7
June	2.4	141.3	3.6	24.2
July	12.5	195.5	2.1	25.1
August	0.00	21.8	2.1	25.4
September	4.5	95.8	2.7	24.4
October	14.9	140.9	2.8	24.0
November	2.5	53.1	3.7	22.4
December	1.5	7.9	3.1	20.4
Average	**11.3**	**113.4**	**3.3**	**22.1**
Minimum	**0.0**	**0.3**	**2.1**	**17.6**
Maximum	**47.3**	**378.2**	**4.1**	**25.4**
NPDES Monthly Average Limit	280	8,400	75	
NPDES Weekly Average Limit	8,400		100	
NPDES Daily Maximum Limit	1,120		225	

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Sludge Quantity	Sludge Reuse	Sludge Disposed	Effluent Nitrate	Effluent Silicate
	Tons	Tons	mg/1	mg/1	mg/1
January	34.6	34.6	0.0	4.4	28.0
February	36.2	36.2	0.0	1.1	33.0
March	35.0	35.0	0.0	5.2	33.0
April	37.1	37.1	0.0	5.5	33.0
May	38.6	38.6	0.0	0.3	32.0
June	43.3	43.3	0.0	1.2	35.0
July	40.5	40.5	0.0	1.7	37.0
August	39.7	39.7	0.0	5.0	35.0
September	39.0	39.0	0.0	11.0	35.0
October	43.6	43.6	0.0	1.0	36.0
November	38.9	38.9	0.0	4.8	0.2
December	37.8	37.8	0.0	8.6	33.0
Average	**38.7**	**38.7**	**0.0**	**4.1**	**30.9**
Minimum	**34.6**	**34.6**	**0.0**	**0.3**	**0.2**
Maximum	**43.6**	**43.6**	**0.0**	**11.0**	**37.0**

Section II: Tables of Plant performance on Priority Pollutants

Monthly Averages	Effluent Ammonia (NH3-N)	Effluent Phenols (Quarterly)	Urea	Effluent Total Sulfides (Quarterly)
	ug/1	mg/1	mg/1	mg/1
January	39,600.0	<0.2	0.11	<1.0
February	24,900.0	<0.001	0.08	<0.01
March	28,477.8		0.10	
April	32,660.0	<0.001	0.10	<0.1
May	34,533.3		0.13	
June	28,800.0		0.10	
July	30,033.3	<0.1	0.08	<0.1
August	26,242.9		0.10	
September	8,250.0		0.13	
October	41,200.0	<1.0	0.21	0.5
November	23,200.0		0.09	
December	21,480.0		0.11	
Average	**28,281.4**	**<0.1**	**0.11**	**<0.1**
Minimum	**8,250.0**	**<0.001**	**0.08**	**<0.01**
Maximum	**41,200.0**	**<0.2**	**0.21**	**0.5**
Ocean Plan Limit 1	**84,000.0**	**4,200**		
Ocean Plan Limit 2	**336,000.0**	**16,800**		
Ocean Plan Limit 3	**840,000.0**	**420,000**		

Sample Composite date:	09/09/08
Pollutants	Effluent (ug/L)
Acenaphthene	<2.0
Acenaphthylene	<2.0
Anthracene	<2.0
Benzo(a)anthracene	<2.0
Benzo(b)fluoranthene	<2.0
Benzo(k)fluoranthene	<2.0
Benzo(g,h,i)perylene	<2.0
Benzo(a)pyrene	<2.0
Chrysene	<2.0
Dibenzo(a,h)anthracene	<2.0
Fluoranthene	<2.0
Fluorene	<2.0
Indeno (1,2,3-cd) pyrene	<2.0
1-Methylnaphthalene	0.011
2-Methylnaphthalene	0.025
Naphthalene	<0.10
Phenanthrene	0.06
Pyrene	0.16

Pesticides and PBDEs from Integrative High Volume Water Sampling				
	Day Zero/Dialysis Blank	Net Influent	Net Effluent	Percent Removal
	ng/ml (ppb in solution)	ng/ml (ppb in solution)	ng/ml (ppb in solution)	%
Aldrin	ND	ND	ND	
Chlordane, cis	ND	4.61	8.89	
Chlordane, trans	ND	4.2	10.4	
Chlorpyrifos	ND	14.4	64.1	
Dacthal	ND	ND	ND	
DDD, o,p'	ND	0.587	0.243	59%
DDD, p,p'	ND	0.629	0.551	12%
DDE, o,p'	ND	ND	0.168	
DDE, p,p'	ND	3.05	1.15	62%
DDMU, p,p'	0.001	ND	ND	
DDT, o,p'	ND	ND	ND	
DDT, p,p'	0.062	0.913	1.575	
Diazinon	ND	ND	ND	
Dieldrin	ND	5.44	5.36	1%
Endosulfan I	ND	ND	ND	

Endosulfan II	ND	ND	ND	
Endosulfan sulfate	ND	ND	ND	
Endrin	ND	ND	ND	
HCH, alpha	0.132	0.295	ND	
HCH, beta	0.22	ND	ND	
HCH, gamma	1.11	ND	ND	
Heptachlor	0.031	0.473	1.196	
Heptachlor epoxide	1.02	ND	1.1	
Hexachlorobenzene	0.293	0.837	0.58	31%
Methoxychlor	ND	1.52	6.9	
Mirex	ND	ND	ND	
Nonachlor, cis	ND	ND	1.49	
nonachlor, trans	ND	2.63	7.57	
Oxadiazon	ND	ND	ND	
Oxychlordane	ND	ND	2.13	
Parathion, ethyl	ND	ND	ND	
Parathion, methyl	ND	ND	ND	
Tedion	ND	ND	ND	
PBDE 17	ND	1.26	5.58	

PBDE 28	0.268	4.002	15.43	
PBDE 47	**2.52**	118.48	134	
PBDE 66	0.506	1.904	2.24	
PBDE 85	0.888	2.132	0.44	79%
PBDE 99	1.18	63.52	22.2	65%
PBDE 100	0.68	11.42	3.7	68%
Key: ND= Not Detected				

Section II: Plant performance data – Trace Organics; CECs; Metals and Biosolids

Metals/Inorganics	Influent	Effluent	Removal Efficiency (%)
Aluminum (ug/L)	2,700	<50	>98% (estimate)
Antimony (ug/L)	1.1	<0.5	>55% (estimate)
Arsenic (ug/L)	2.6	1.6	38%
Beryllium (ug/L)	ND	ND	
Boron (ug/L)	310	310	0.0%
Cadmium (ug/L)	<10	<10	
Chromium (ug/L)	40	32	20%
Copper (ug/L)	55	<10	>84% (estimate)
Iron (ug/L)	1,030	132	87%
Lead (ug/L)	36	30	17%
Mercury (ug/L)	0.048	0.016	67%
Molybdenum (ug/L)	3.0	3.8	
Nickel (ug/L)	<20	2.7	
Potassium (ug/L)	21,000	28,000	
Selenium (ug/L)	1.2	<0.5	>59% (estimate)
Silver (ug/L)	<4	<4	
Thallium (ug/L)	ND	ND	
Vanadium (ug/L)	2.5	1.2	52%
Zinc (ug/L)	173	30	83%
Total Phosphorus (mg/L)	6.1	2.6	57%
Kjeldahl Nitrogen (TKN) (mg/L)	43	22	49%
Nitrate (mg/L)	<1.0	5.0	
Phenol (mg/L)	0.021	<0.001	>99 (estimate)
Silicates (mg/L)	40	35	21.3

Dry Weather Semi-Annual Effluent –TCDD and equivalents Sample Composite dates: 08-19-2008 through 09-19-2008			
Compound	**Influent (pg/L)**	**Effluent (pg/L)**	**Method Detection Limit (pg/L)**
2,3,7,8-TCDD	< 0.87	< 0.87	0.383
1,2,3,7,8-PeCDD	< 2.47	< 2.39	1.89
1,2,3,4,7,8-HxCDD	< 2.36	< 1.51	1.27
1,2,3,6,7,8-HxCDD	< 3.33	< 2.19	1.59
1,2,3,7,8,9-HxCDD	< 3.16	< 2.04	1.65
1,2,3,4,6,7,8-HpCDD	7.30	7.89	2.05
OCDD	26.0	35.6	2.39
2,3,7,8-TCDF	< 1.19	< 1.43	0.644
1,2,3,7,8-PeCDF	< 1.33	< 1.22	0.731
2,3,4,7,8-PeCDF	< 1.78	< 1.48	0.681
1,2,3,4,7,8-HxCDF	< 0.33	< 0.54	1.28
1,2,3,6,7,8-HxCDF	< 0.354	< 0.59	1.22
2,3,4,6,7,8-HxCDF	< 0.321	< 0.53	1.49
1,2,3J,8,9-HxCDF	< 0.486	< 0.32	1.48
1,2,3,4,6,7,8-HpCDF	2.63	3.37	1.17
1,2,3,4,7,8,9:HpCDF	< 0.46	< 0.53	1.06
OCDF	3.81	6.43	2.85

Section II: Plant performance data – Trace Organics; CECs; Metals and Biosolids

Biosolids Quality Monitoring Program 2008							
Analyte	**8-Feb-08**	**15-Apr-08**	**2-Jun-08**	**18-Aug-08**	**6-Oct-08**	**2-Dec-08**	**Average**
Antimony (mg/kg)	0.8	0.9	0.6	2.4	0.6	0.5	1.0
Arsenic (mg/kg)	3.3	3.8	2.5	10.0	3.3	2.8	4.3
Asbestos (mg/kg)	<1%	<1%	<1%	<1%	<1%	<1%	<1%
Barium (mg/kg)	120	140	90	360	92	82	147
Beryllium (mg/kg)	<0.5	<0.5	<0.5	<2.2	<0.5	<0.5	<0.5
Cadmium (mg/kg)	0.7	0.87	0.6	2.4	0.6	0.5	0.9
Chromium (mg/kg)	8.8	9.1	6.7	30.0	9.1	6.7	11.7
Cobalt (mg/kg)	1.3	1.6	1.1	3.4	2.1	1.6	1.9
Copper (mg/kg)	140	180	150	580	140	130	220
Fluoride (mg/kg)	<1.0	9.5	11.0	29.0	<5.0	17	17
Lead (mg/kg)	6.1	7.4	4.7	21.0	5.1	4.2	8.1
Mercury (mg/kg)	0.26	0.34	0.26	1.30	0.22	0.2	0.4
Moisture (%)	75.7%	76.2%	76.8%	77.3%	76.9%	77.5%	76.7%
Molybdenum (mg/kg)	2.6	3.0	2.4	9.5	2.5	2.2	3.7
Nickel (mg/kg)	5.9	3.0	3.9	16.0	4.4	4.2	6.2
Nitrate-N (mg/kg)	<2.0	4.6	<2.0	<2.0	<2.0	<2	4.6
Nitrogen-Organic (mg/kg)	9,600	9,300	9,100	8,900	8,700	8,500	9,017
Nitrogen-Total Kjeldahl (mg/kg)	12,000	12,000	11,000	11,000	11,000	11,000	11,333
Nitrogen-Ammonia (mg/kg)	2,100	2,400	2,300	2,200	2,200	2,300	2,250
Selenium (mg/kg)	2.1	2.2	1.7	6.4	1.7	1.5	2.6
Silver (mg/kg)	5.1	5.5	4.4	15.0	2.8	2.7	5.9
Thallium (mg/kg)	<0.5	<0.5	<0.5	<2.2	<0.5	<0.5	<0.5
Vanadium (mg/kg)	6.9	5.9	3.7	18.0	5	4	7
Zinc (mg/kg)	320	390	260	1,100	280	220	428

Sampling Month: January

DATE: 01-09-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	9:05	N 36°56'48.4" W 122°01'44.4"	29	21	50
Sea State	NW swell 4-8 ft	RW(C)-30'	9:10	N 36°56'58.0" W 122°02'25.9"	29	15	83
Weather	rain likely	RW(E)-30'	9:15	N 36°56'48.9" W 122°02'49.5"	22	3	39
Wind	S @ 3 kts	RW(F)-30'	9:20	N 36°56'46.5" W 122°03'31.3"	38	20	56
Water Temp.	51.9°F	RW(G)-30'	9:25	N 36°56'44.1" W 122°03'57.2"	37	16	56
Low Tide	3.25 ft @ 04:05	RW(H)-30'	9:35	N 36°56'55.1" W 122°04'58.1"	24	26	52
High Tide	5.76 ft @ 09:59	RW(I)-30'	9:40	N 36°56'58.3" W 122°05'17.2"	33	11	47
Rain in past 24 hr	7.40 inches	RW(Leak)@70'	10:00	N 36°56'20.3" W 122°03'35.0"	38	8	54

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 01-15-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	8:55	N 36°56'48.6" W 122°01'44.9"	8	1	2
Sea State	W swell 1-4 ft	RW(C)-30'	9:00	N 36°56'57.8" W 122°02'24.8"	6	<1	2
Weather	clear	RW(E)-30'	9:05	N 36°56'49.0" W 122°02'49.7"	5	1	3
Wind	calm	RW(F)-30'	9:10	N 36°56'46.5" W 122°03'31.8"	17	4	18
Water Temp.	52.6°F	RW(G)-30'	9:15	N 36°56'44.3" W 122°03'57.0"	10	4	15
Low Tide	1.31 ft @ 09:55	RW(H)-30'	9:30	N 36°56'55.4" W 122°05'00.7"	18	10	31
High Tide	5.36 ft @ 03:07	RW(I)-30'	9:35	N 36°56'58.2" W 122°05'17.1"	22	18	21
Rain in past 24 hr	1.57 inches	RW(Leak)@70'	9:50	N 36°56'19.8" W 122°03'35.0"	2	1	2

Sampling Month: February

DATE: 02-05-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	8:55	N 36°56'48.4" W 122°01'45.1"	52	19	18
Sea State	NW swell 8-12 ft	RW(C)-30'	9:00	N 36°56'58.0" W 122°02'25.1"	31	11	4
Weather	clear and cold	RW(E)-30'	9:05	N 36°56'49.4" W 122°02'49.0"	14	1	5
Wind	SE @ 5 kts	RW(F)-30'	9:10	N 36°56'46.2" W 122°03'31.9"	13	6	6
Water Temp.	50.8°F	RW(G)-30'	9:15	N 36°56'44.4" W 122°03'57.4"	22	6	7
Low Tide	-0.67 ft @ 15;37	RW(H)-30'	9:30	N 36°56'55.5" W 122°04'59.8"	24	6	4
High Tide	5.69 ft @ 08:27	RW(I)-30'	9:35	N 36°56'58.0" W 122°05'17.0"	36	9	9
Rain in past 24 hr	1.73 inches	RW(Leak)@70'	9:55	N 36°56'20.3" W 122°03'34.9"	32	1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 02-12-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	9:00	N 36°56'48.3" W 122°01'45.4"	13	5	3
Sea State	NW swell 3-6 ft	RW(C)-30'	9:05	N 36°56'57.9" W 122°02'25.3"	13	2	10
Weather	clear	RW(E)-30'	9:10	N 36°56'48.9" W 122°02'48.4"	11	9	4
Wind	SW @ 5 kts	RW(F)-30'	9:15	N 36°56'46.4" W 122°03'31.9"	8	3	4
Water Temp.	52.5°F	RW(G)-30'	9:20	N 36°56'44.2" W 122°03'57.3"	7	1	3
Low Tide	0.84 ft @ 08;08	RW(H)-30'	9:40	N 36°56'55.5" W 122°04'59.6"	11	4	5
High Tide	3.44 ft @ 14:29	RW(I)-30'	9:45	N 36°56'58.3" W 122°05'16.8"	2	1	2
Rain in past 24 hr	0.0 inches	RW(Leak)@70'	10:05	N 36°56'19.6" W 122°03'34.2"	11	<1	4

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 02-19-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	10:05	N 36°56'48.9" W 122°01'46.2"	21	9	4
Sea State	NW swell 2-5 ft	RW(C)-30'	10:00	N 36°56'57.8" W 122°02'26.3"	11	2	4
Weather	raining	RW(E)-30'	9:55	N 36°56'49.9" W 122°02'49.9"	13	5	<1
Wind	E @ 2 kts	RW(F)-30'	9:50	N 36°56'46.7" W 122°03'31.5"	5	3	1
Water Temp.	51.1°F	RW(G)-30'	9:45	N 36°56'44.6" W 122°03'58.2"	11	2	2
Low Tide	-0.91 ft @ 15:27	RW(H)-30'	9:35	N 36°56'55.4" W 122°04'59.4"	27	11	13
High Tide	5.86 ft @ 08:25	RW(I)-30'	9:30	N 36°56'58.1" W 122°05'16.8"	25	13	16
Rain in past 24 hr	0.76 inches	RW(Leak)@70'	9:15	N 36°56'18.9" W 122°03'35.1"	5	6	1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 02-26-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	8:55	N 36°56'48.6" W 122°01'44.5"	34	5	7
Sea State	W swell 3-6 ft	RW(C)-30'	9:00	N 36°56'58.3" W 122°02'25.3"	22	7	6
Weather	partly cloudy	RW(E)-30'	9:05	N 36°56'48.9" W 122°02'51.8"	22	6	8
Wind	NE @ 10 kts	RW(F)-30'	9:10	N 36°56'46.4" W 122°03'31.5"	24	27	53
Water Temp.	52.7°F	RW(G)-30'	9:15	N 36°56'44.1" W 122°03'57.7"	69	30	63
Low Tide	1.11 ft @ 07:52	RW(H)-30'	9:25	N 36°56'55.7" W 122°04'59.7"	16	6	2
High Tide	3.14 ft @ 14:16	RW(I)-30'	9:30	N 36°56'58.1" W 122°05'18.1"	15	2	4
Rain in past 24 hr	2.7 inches	RW(Leak)@70'	9:45	N 36°56'20.1" W 122°03'34.8"	42	4	11

Sampling Month: March.

DATE: 03-04-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	8:55	N 36°56'48.5" W 122°01'45.0"	18	<1	1
Sea State	W swell 3-7 ft	RW(C)-30'	9:00	N 36°56'58.1" W 122°02'25.6"	9	2	1
Weather	clear	RW(E)-30'	9:05	N 36°56'49.3" W 122°02'49.2"	10	<1	<1
Wind	S @ 8 kts	RW(F)-30'	9:10	N 36°56'46.4" W 122°03'31.8"	12	<1	3
Water Temp.	51.7°F	RW(G)-30'	9:15	N 36°56'44.0" W 122°03'58.0"	3	<1	<1
Low Tide	-0.34 ft @ 14:29	RW(H)-30'	9:30	N 36°56'55.7" W 122°04'59.8"	2	<1	1
High Tide	5.12 ft @ 07:21	RW(I)-30'	9:35	N 36°56'58.0" W 122°05'17.2"	6	<1	<1
Rain in past 24 hr	0.06 inches	RW(Leak)@70'	9:55	N 36°56'20.0" W 122°03'35.5"	8	1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 03-11-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:00	N 36°56'48.3" W 122°01'45.4"	3	3	1
Sea State	N swell 4-7 ft	RW(C)-30'	9:05	N 36°56'57.9" W 122°02'25.4"	4	<1	<1
Weather	partly cloudy	RW(E)-30'	9:10	N 36°56'49.2" W 122°02'49.3"	3	<1	<1
Wind	variable and light ~2 kts	RW(F)-30'	9:15	N 36°56'46.5" W 122°03'32.0"	8	1	<1
Water Temp.	54.2°F	RW(G)-30'	9:20	N 36°56'44.3" W 122°03'57.6"	3	3	<1
Low Tide	-0.12 ft @ 07:44	RW(H)-30'	9:30	N 36°56'55.8" W 122°04'59.7"	7	3	1
High Tide	3.77 ft @ 14:33	RW(I)-30'	9:35	N 36°56'57.7" W 122°05'17.2"	8	3	6
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:55	N 36°56'19.9" W 122°03'35.2"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 03-18-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:10	N 36°56'48.2" W 122°01'45.4"	5	<1	1
Sea State	NW swell 5-9 ft	RW(C)-30'	9:15	N 36°56'58.0" W 122°02'25.4"	11	1	1
Weather	foggy	RW(E)-30'	9:20	N 36°56'49.2" W 122°02'49.5"	<1	<1	<1
Wind	WSW @ 5 kts	RW(F)-30'	9:25	N 36°56'46.3" W 122°03'32.0"	8	3	1
Water Temp.	51.8°F	RW(G)-30'	9:30	N 36°56'43.4" W 122°03'59.4"	8	3	2
Low Tide	-0.40 ft @ 15:21	RW(H)-30'	9:45	N 36°56'55.7" W 122°04'59.9"	2	3	<1
High Tide	5.09 ft @ 08:39	RW(I)-30'	9:50	N 36°56'58.1" W 122°05'17.4"	2	<1	1
Rain in past 24 hr	0.25 inches	RW(Leak)@ 70'	10:10	N 36°56'20.2" W 122°03'34.9"	7	1	2

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 03-25-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:00	N 36°56'48.3" W 122°01'45.4"	16	4	<1
Sea State	NW swell 4-7 ft	RW(C)-30'	9:05	N 36°56'57.8" W 122°02'25.9"	5	<1	<1
Weather	patchy fog	RW(E)-30'	9:10	N 36°56'49.2" W 122°02'49.3"	5	<1	<1
Wind	E @ 4 kts	RW(F)-30'	9:15	N 36°56'46.1" W 122°03'31.7"	2	1	<1
Water Temp.	54.0°F	RW(G)-30'	9:20	N 36°56'44.0" W 122°03'56.9"	4	<1	1
Low Tide	0.31 ft @ 07:20	RW(H)-30'	9:40	N 36°56'55.0" W 122°04'59.5"	14	1	1
High Tide	3.40 ft @ 14:19	RW(I)-30'	9:45	N 36°56'57.9" W 122°05'17.4"	22	4	1
Rain in past 24 hr	0.25 inches	RW(Leak)@ 70'	10:05	N 36°56'19.4" W 122°03'33.4"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

Sampling Month: April

	Sampling			Sampling Time (AM)	GPS
LOCATIONS	**OBSERVATIONS**	**Total Coliform**	**Fecal Coliform**	Enterococcus	
Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	
		CFU / 100-ml			
OBSERVATIONS	Total Coliform	Fecal Coliform	Enterococcus		
Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	Weather and small crafts advisories prevented sampling this week	

Section II: Monitoring Data – Nearshore bacterial monitoring data

GPS		CFU / 100-ml		
OBSERVATIONS	Total Coliform	Fecal Coliform	Enterococcus	
36o56'48.6" W 122o01'45.3"	kelp; seals on rock	13	<1	<1
36o56'57.9" W 122o02'25.3"	no comments	7	<1	<1
36o56'49.4" W 122o02'48.7"	no comments	8	<1	<1
36o56'45.8" W 122o03'33.1"	kelp & otters; 1 boat	2	<1	<1
36o56'44.4" W 122o03'56.8"	in kelp	7	<1	1
36o56'55.9" W 122o04'59.7"	in kelp	3	<1	<1
36o56'58.0" W 122o05'17.4"	kelp with birds	6	<1	1
36o56'20.0" W 122o03'34.0"	some birds in area	10	<1	<1

GPS		CFU / 100-ml		
OBSERVATIONS	Total Coliform	Fecal Coliform	Enterococcus	
36o56'48.5" W 122o01'44.3"	boat,dolphin,birds,seals	21	<1	<1
36o56'57.9" W 122o02'25.5"	kelp	19	<1	1
36o56'49.4" W 122o02'48.9"	in kelp w/group of whales	10	<1	1
36o56'46.2" W 122o03'31.5"	kelp, some whales	9	<1	1
36o56'44.4" W 122o03'57.1"	kelp, some whales	4	<1	<1
36o56'55.4" W 122o04'59.9"	kelp, whales, 1 seal	3	<1	1

Section II: Monitoring Data – Nearshore bacterial monitoring data

36o56'58.0" W 122o05'17.1"	some whales & birds	7	<1	1
36o56'20.0" W 122o03'34.2"	no comments	52	1	<1

Sampling Month: May

DATE: 05-06-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:05	N 36°56'48.5" W 122°01'45.0"	10	1	<1
Sea State	NW swell 4-7 ft	RW(C)-30'	9:10	N 36°56'58.1" W 122°02'25.3"	7	2	5
Weather	overcast	RW(E)-30'	9:15	N 36°56'49.3" W 122°02'49.0"	1	1	<1
Wind	WSW @ 4 kts	RW(F)-30'	9:20	N 36°56'46.3" W 122°03'32.4"	21	3	<1
Water Temp.	53.8°F	RW(G)-30'	9:25	N 36°56'43.7" W 122°03'58.6"	10	4	<1
Low Tide	-1.77 ft @ 05:35	RW(H)-30'	9:40	N 36°56'54.8" W 122°04'56.6"	5	4	<1
High Tide	4.41 ft @ 12:59	RW(I)-30'	9:45	N 36°56'58.0" W 122°05'17.4"	5	2	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.9" W 122°03'34.9"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 05-13-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:05	N 36°56'48.6" W 122°01'44.7"	7	2	<1
Sea State	NW swell 4-8 ft	RW(C)-30'	9:10	N 36°56'57.9" W 122°02'25.1"	2	1	<1
Weather	clear	RW(E)-30'	9:15	N 36°56'49.4" W 122°02'48.8"	2	1	<1
Wind	SW @ 4 kts	RW(F)-30'	9:20	N 36°56'45.8" W 122°03'30.7"	1	1	<1
Water Temp.	53.1°F	RW(G)-30'	9:25	N 36°56'42.0" W 122°03'58.8"	<1	<1	<1
Low Tide	0.37 ft @ 12:21	RW(H)-30'	9:40	N 36°56'53.7" W 122°04'53.8"	1	<1	<1
High Tide	3.70 ft @ 05:55	RW(I)-30'	9:45	N 36°56'58.3" W 122°05'16.8"	2	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.8" W 122°03'34.3"	2	1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 05-20-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:20	N 36°56'48.6" W 122°01'44.9"	2	<1	<1
Sea State	mixed swell 2-3 ft	RW(C)-30'	9:25	N 36°56'58.1" W 122°02'25.4"	10	3	<1
Weather	cloudy	RW(E)-30'	9:30	N 36°56'49.0" W 122°02'49.3"	11	<1	<1
Wind	SE @ 4 kts	RW(F)-30'	9:35	N 36°56'46.3" W 122°03'32.6"	8	1	<1
Water Temp.	55.6°F	RW(G)-30'	9:40	N 36°56'45.3" W 122°03'59.8"	2	1	<1
Low Tide	-0.71 ft @ 05:28	RW(H)-30'	9:55	N 36°56'54.9" W 122°04'52.9"	3	<1	<1
High Tide	3.76 ft @ 13:18	RW(I)-30'	10:00	N 36°56'58.5" W 122°05'18.9"	4	1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:20	N 36°56'20.2" W 122°03'34.2"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 05-28-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	10:00	N 36°56'48.4" W 122°01'45.1"	3	2	<1
Sea State	mixed swell 2-3 ft	RW(C)-30'	9:55	N 36°56'57.8" W 122°02'25.1"	<1	<1	<1
Weather	partly cloudy	RW(E)-30'	9:50	N 36°56'49.5" W 122°02'48.6"	<1	<1	<1
Wind	SW @ 4 kts	RW(F)-30'	9:45	N 36°56'46.1" W 122°03'30.9"	1	1	<1
Water Temp.	53.1°F	RW(G)-30'	9:40	N 36°56'44.5" W 122°03'58.6"	1	<1	<1
Low Tide	0.19 ft @ 10:04	RW(H)-30'	9:30	N 36°56'54.7" W 122°04'56.5"	1	<1	<1
High Tide	3.86 ft @ 03:08	RW(I)-30'	9:25	N 36°56'58.2" W 122°05'16.9"	<1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:10	N 36°56'19.9" W 122°03'35.5"	<1	<1	<1

Sampling Month: June

DATE: 06-03-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	9:10	N 36°56'48.6" W 122°01'44.9"	15	1	<1
Sea State	NW swell @ 3-4 ft	RW(C)-30'	9:15	N 36°56'57.7" W 122°02'24.9"	3	3	<1
Weather	cloudy	RW(E)-30'	9:20	N 36°56'49.1" W 122°02'49.0"	<1	<1	<1
Wind	SW @ 5 kts	RW(F)-30'	9:25	N 36°56'45.6" W 122°03'31.3"	4	<1	<1
Water Temp.	53.1°F	RW(G)-30'	9:30	N 36°56'44.7" W 122°03'44.2"	2	1	<1
Low Tide	-1.88 ft @ 04:37	RW(H)-30'	9:40	N 36°56'54.0" W 122°04'55.9"	8	<1	<1
High Tide	4.16 ft @ 12:11	RW(I)-30'	9:45	N 36°56'58.1" W 122°05'18.2"	<1	1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'19.5" W 122°03'33.9"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 06-10-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:40	N 36°56'48.6" W 122°01'45.4"	<1	<1	<1
Sea State	NW swell @ 3-4 ft	RW(C)-30'	9:35	N 36°56'58.0" W 122°02'25.2"	5	3	1
Weather	cloudy	RW(E)-30'	9:30	N 36°56'49.1" W 122°02'49.0"	1	1	<1
Wind	SW @ 5 kts	RW(F)-30'	9:25	N 36°56'46.4" W 122°03'29.9"	1	<1	<1
Water Temp.	53.1°F	RW(G)-30'	9:20	N 36°56'44.3" W 122°03'57.5"	1	<1	<1
Low Tide	-1.88 ft @ 04:37	RW(H)-30'	9:10	N 36°56'55.7" W 122°04'59.3"	<1	<1	<1
High Tide	4.16 ft @ 12:11	RW(I)-30'	9:05	N 36°56'58.3" W 122°05'16.8"	<1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	8:50	N 36°56'20.5" W 122°03'35.3"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 06-17-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N ----> S	RW(A)-30'	9:10	N 36°56'48.3" W 122°01'43.9"	3	5	1
Sea State	NW swell 4-7 ft	RW(C)-30'	9:15	N 36°56'57.9" W 122°02'24.9"	8	1	<1
Weather	foggy	RW(E)-30'	9:20	N 36°56'48.2" W 122°02'49.7"	4	<1	<1
Wind	SW @ 5 kts	RW(F)-30'	9:25	N 36°56'45.9" W 122°03'31.7"	12	<1	<1
Water Temp.	55.6°F	RW(G)-30'	9:30	N 36°56'44.2" W 122°04'02.4"	13	1	<1
Low Tide	-0.66 ft @ 04:41	RW(H)-30'	9:40	N 36°56'53.6" W 122°04'54.7"	5	<1	<1
High Tide	3.95 ft @ 12:36	RW(I)-30'	9:45	N 36°56'58.0" W 122°05'17.6"	2	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'19.6" W 122°03'34.7"	1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 06-24-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N ----> S	RW(A)-30'	9:00	N 36°56'48.4" W 122°01'45.2"	5	2	<1
Sea State	NW swell 5-6 feet	RW(C)-30'	9:05	N 36°56'57.8" W 122°02'25.2"	6	3	<1
Weather	foggy	RW(E)-30'	9:10	N 36°56'49.1" W 122°02'49.4"	4	<1	<1
Wind	SE @ 4 knots	RW(F)-30'	9:15	N 36°56'46.0" W 122°03'32.1"	2	1	<1
Water Temp.	55.6°F	RW(G)-30'	9:20	N 36°56'43.3" W 122°03'52.3"	2	<1	<1
Low Tide	0.04 ft @ 08:29	RW(H)-30'	9:35	N 36°56'53.4" W 122°04'55.5"	4	<1	<1
High Tide	4.41 ft @ 15:59	RW(I)-30'	9:40	N 36°56'58.2" W 122°05'17.3"	1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:55	N 36°56'19.8" W 122°03'34.6"	1	<1	<1

Sampling Month: July

DATE: 07-01-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.4" W 122°01'45.0"	4	<1	<1
Sea State	NW swell @ 2 ft	RW(C)-30'	9:15	N 36°56'57.9" W 122°02'25.1"	12	2	<1
Weather	wet fog	RW(E)-30'	9:20	N 36°56'49.1" W 122°02'49.0"	1	<1	<1
Wind	SE @ 4 kts	RW(F)-30'	9:25	N 36°56'46.1" W 122°03'32.2"	41	1	<1
Water Temp.	55.8°F	RW(G)-30'	9:30	N 36°56'42.1" W 122°03'56.6"	1	<1	<1
Low Tide	-1.49 ft @ 03:40	RW(H)-30'	9:40	N 36°56'54.1" W 122°04'55.5"	2	<1	<1
High Tide	4.14 ft @ 11:20	RW(I)-30'	9:45	N 36°56'58.1" W 122°05'17.2"	1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'19.8" W 122°03'34.4"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 07-08-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.5" W 122°01'44.9"	4	<1	<1
Sea State	NW swell 3-8 ft	RW(C)-30'	9:10	N 36°56'58.1" W 122°02'25.3"	<1	<1	<1
Weather	hazy sun	RW(E)-30'	9:15	N 36°56'49.2" W 122°02'48.9"	2	<1	<1
Wind	S/SE @ 2 kts	RW(F)-30'	9:20	N 36°56'46.6" W 122°03'33.8"	5	<1	<1
Water Temp.	57.6°F	RW(G)-30'	9:25	N 36°56'42.8" W 122°03'53.3"	2	<1	<1
Low Tide	0.47 ft @ 08:56	RW(H)-30'	9:35	N 36°56'56.5" W 122°05'01.3"	<1	<1	<1
High Tide	4.87 ft @ 16:05	RW(I)-30'	9:40	N 36°56'58.8" W 122°05'18.0"	<1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:55	N 36°56'20.2" W 122°03'35.1"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 07-14-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.0" W 122°01'44.6"	12	<1	1
Sea State	mixed swell: NW & S @ 2 ft	RW(C)-30'	9:10	N 36°56'57.8" W 122°02'25.1"	98	41	<1
Weather	foggy	RW(E)-30'	9:15	N 36°56'49.4" W 122°02'49.4"	22	15	<1
Wind	SW @ 2 kts	RW(F)-30'	9:20	N 36°56'45.7" W 122°03'31.5"	8	<1	<1
Water Temp.	58.3°F	RW(G)-30'	9:25	N 36°56'42.9" W 122°03'52.5"	2	1	<1
Low Tide	-0.06 ft @ 03:10	RW(H)-30'	9:35	N 36°56'56.0" W 122°05'00.9"	4	2	<1
High Tide	3.96 ft @ 11:08	RW(I)-30'	9:40	N 36°56'58.1" W 122°05'17.3"	2	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:55	N 36°56'19.6" W 122°03'35.0"	2	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 07-22-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.3" W 122°01'44.9"	2	<1	<1
Sea State	mixed swell NW & SW @ 2-3 ft	RW(C)-30'	9:10	N 36°56'57.9" W 122°02'25.3"	8	1	<1
Weather	foggy	RW(E)-30'	9:15	N 36°56'49.2" W 122°02'49.1"	3	<1	<1
Wind	SW @ 4 kts	RW(F)-30'	9:20	N 36°56'46.2" W 122°03'32.2"	1	<1	<1
Water Temp.	58.6°F	RW(G)-30'	9:25	N 36°56'44.5" W 122°03'59.0"	5	2	<1
Low Tide	0.08 ft @ 07:15	RW(H)-30'	9:35	N 36°56'57.1" W 122°04'59.1"	4	1	<1
High Tide	4.66 ft @ 14:27	RW(I)-30'	9:40	N 36°56'58.4" W 122°05'17.1"	4	1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:55	N 36°56'20.0" W 122°03'34.9"	1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 07-29-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.6" W 122°01'44.9"	4	<1	<1
Sea State	NW swell 1-4 ft	RW(C)-30'	9:15	N 36°56'58.1" W 122°02'25.3"	5	1	<1
Weather	foggy	RW(E)-30'	9:20	N 36°56'49.0" W 122°02'49.1"	4	1	<1
Wind	SW @ 3 kts	RW(F)-30'	9:25	N 36°56'46.3" W 122°03'32.0"	4	<1	<1
Water Temp.	59.0°F	RW(G)-30'	9:30	N 36°56'44.4" W 122°03'57.2"	5	<1	<1
Low Tide	-0.85 ft @ 02:40	RW(H)-30'	9:40	N 36°56'57.0" W 122°05'00.3"	4	2	<1
High Tide	4.14 ft @ 10:24	RW(I)-30'	9:45	N 36°56'58.2" W 122°05'17.1"	1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'20.3" W 122°03'33.9"	3	<1	<1

Sampling Month: August

DATE: 08-05-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:30	N 36°56'48.6" W 122°01'44.8"	6	<1	<1
Sea State	NW swell 2 ft	RW(C)-30'	9:35	N 36°56'58.3" W 122°02'25.3"	4	<1	<1
Weather	foggy	RW(E)-30'	9:40	N 36°56'49.4" W 122°02'49.0"	3	<1	<1
Wind	W @ 5 kts	RW(F)-30'	9:45	N 36°56'45.8" W 122°03'30.6"	4	<1	<1
Water Temp.	57.4°F	RW(G)-30'	9:50	N 36°56'44.2" W 122°03'56.8"	<1	<1	1
Low Tide	0.59 ft @ 07:31	RW(H)-30'	10:00	N 36°56'56.2" W 122°05'01.0"	2	<1	<1
High Tide	4.92 ft @ 14:24	RW(I)-30'	10:05	N 36°56'58.0" W 122°05'17.0"	2	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:25	N 36°56'19.9" W 122°03'35.3"	1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 08-12-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.5" W 122°01'45.1"	<1	<1	<1
Sea State	NW swell 2-6 ft	RW(C)-30'	9:15	N 36°56'57.8" W 122°02'25.0"	4	1	1
Weather	foggy	RW(E)-30'	9:20	N 36°56'49.0" W 122°02'49.6"	3	<1	<1
Wind	S / SW @ 2 knots	RW(F)-30'	9:25	N 36°56'46.1" W 122°03'31.9"	6	4	1
Water Temp.	58.5°F	RW(G)-30'	9:30	N 36°56'44.3" W 122°03'56.6"	2	2	<1
Low Tide	0.26 ft @ 02:41	RW(H)-30'	9:40	N 36°56'54.9" W 122°04'57.7"	<1	4	12
High Tide	4.11 ft @ 10:39	RW(I)-30'	9:45	N 36°56'58.2" W 122°05'16.8"	7	1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'20.1" W 122°03'35.6"	4	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 08-19-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.4" W 122°01'45.2"	<1	<1	<1
Sea State	NW swell @ 2-4 ft	RW(C)-30'	9:15	N 36°56'57.9" W 122°02'25.0"	1	<1	<1
Weather	foggy	RW(E)-30'	9:20	N 36°56'49.5" W 122°02'47.9"	13	2	<1
Wind	calm	RW(F)-30'	9:25	N 36°56'45.8" W 122°03'31.0"	3	2	<1
Water Temp.	58.5°F	RW(G)-30'	9:30	N 36°56'42.2" W 122°03'55.9"	<1	<1	<1
Low Tide	0.34 ft @ 06:10	RW(H)-30'	9:40	N 36°56'56.2" W 122°05'01.8"	16	14	10
High Tide	4.90 ft @ 13:01	RW(I)-30'	9:45	N 36°56'58.4" W 122°05'17.0"	<1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.2" W 122°03'34.3"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 08-25-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.3" W 122°01'45.0"	1	<1	<1
Sea State	NW swell 2-4 ft	RW(C)-30'	9:15	N 36°56'58.1" W 122°02'25.3"	5	<1	<1
Weather	foggy	RW(E)-30'	9:20	N 36°56'49.1" W 122°02'49.1"	<1	<1	<1
Wind	calm	RW(F)-30'	9:25	N 36°56'46.7" W 122°03'32.5"	2	<1	<1
Water Temp.	60.8°F	RW(G)-30'	9:30	N 36°56'44.3" W 122°03'57.1"	2	<1	<1
Low Tide	3.52 ft @ 11:41	RW(H)-30'	9:40	N 36°56'56.9" W 122°05'00.3"	<1	<1	<1
High Tide	3.85 ft @ 08:35	RW(I)-30'	9:45	N 36°56'58.2" W 122°05'17.4"	2	1	1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.6" W 122°03'35.2"	2	<1	<1

Sampling Month: September

DATE: 09-02-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.4" W 122°01'45.1"	7	1	1
Sea State	NW swell 3-5 ft	RW(C)-30'	9:15	N 36°56'57.9" W 122°02'25.3"	9	<1	<1
Weather	clear	RW(E)-30'	9:20	N 36°56'49.2" W 122°02'48.9"	6	2	<1
Wind	WSW @ 5 knots	RW(F)-30'	9:25	N 36°56'46.1" W 122°03'31.9"	5	<1	<1
Water Temp.	59.4°F	RW(G)-30'	9:30	N 36°56'42.2" W 122°03'57.6"	<1	<1	<1
Low Tide	0.92 ft @ 06:17	RW(H)-30'	9:40	N 36°56'54.9" W 122°04'56.8"	1	<1	<1
High Tide	5.02 ft @ 12:52	RW(I)-30'	9:45	N 36°56'58.1" W 122°05'17.0"	1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.9" W 122°03'34.3"	2	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 09-09-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	10:15	N 36°56'48.2" W 122°01'44.1"	9	2	1
Sea State	NW swell 2-4 ft	RW(C)-30'	10:10	N 36°56'58.0" W 122°02'24.2"	17	1	3
Weather	foggy	RW(E)-30'	10:05	N 36°56'49.6" W 122°02'47.9"	14	5	1
Wind	SW @ 3 kts	RW(F)-30'	10:00	N 36°56'46.8" W 122°03'30.2"	15	1	<1
Water Temp.	60.3°F	RW(G)-30'	9:55	N 36°56'44.3" W 122°03'56.8"	8	3	3
Low Tide	3.50 ft @ 13:15	RW(H)-30'	9:45	N 36°56'55.9" W 122°04'58.8"	2	1	<1
High Tide	4.08 ft @ 09:34	RW(I)-30'	9:40	N 36°56'58.1" W 122°05'17.9"	3	1	1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:25	N 36°56'21.0" W 122°03'34.0"	1	<1	1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 09-16-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:50	N 36°56'48.2" W 122°01'44.4"	2	<1	2
Sea State	W swell 2-3 feet	RW(C)-30'	9:45	N 36°56'58.5" W 122°02'24.8"	<1	1	<1
Weather	fog	RW(E)-30'	9:40	N 36°56'49.5" W 122°02'48.5"	<1	<1	<1
Wind	W @ 5 knots	RW(F)-30'	9:35	N 36°56'46.8" W 122°03'31.3"	10	7	<1
Water Temp.	59.0°F	RW(G)-30'	9:30	N 36°56'44.5" W 122°03'58.3"	9	8	<1
Low Tide	0.76 ft @ 05:04	RW(H)-30'	9:20	N 36°56'56.0" W 122°04'58.2"	3	<1	<1
High Tide	5.19 ft @ 11:39	RW(I)-30'	9:15	N 36°56'57.8" W 122°05'17.2"	45	12	7
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:00	N 36°56'20.4" W 122°03'33.1"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 09-23-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.5" W 122°01'44.8"	1	<1	<1
Sea State	NW swell 2-5 feet	RW(C)-30'	9:10	N 36°56'58.0" W 122°02'25.1"	4	<1	<1
Weather	clear	RW(E)-30'	9:15	N 36°56'49.1" W 122°02'49.2"	4	<1	<1
Wind	calm	RW(F)-30'	9:20	N 36°56'46.3" W 122°03'31.9"	1	1	<1
Water Temp.	59.6°F	RW(G)-30'	9:25	N 36°56'44.2" W 122°03'57.4"	3	<1	1
Low Tide	3.35 ft @ 12:10	RW(H)-30'	9:35	N 36°56'55.9" W 122°05'01.5"	1	<1	<1
High Tide	4.24 ft @ 08:01	RW(I)-30'	9:40	N 36°56'57.9" W 122°05'17.0"	3	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'20.9" W 122°03'34.9"	2	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 09-30-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.5" W 122°01'45.4"	4	<1	<1
Sea State	W swell 2 feet	RW(C)-30'	9:10	N 36°56'58.2" W 122°02'25.3"	1	<1	<1
Weather	foggy	RW(E)-30'	9:15	N 36°56'49.0" W 122°02'50.0"	1	<1	<1
Wind	SE @ 3 knots	RW(F)-30'	9:20	N 36°56'45.7" W 122°03'31.2"	7	1	<1
Water Temp.	59.0°F	RW(G)-30'	9:25	N 36°56'44.1" W 122°03'57.4"	1	2	<1
Low Tide	1.40 ft @ 05:09	RW(H)-30'	9:35	N 36°56'55.9" W 122°04'58.7"	2	<1	1
High Tide	5.19 ft @ 11:31	RW(I)-30'	9:40	N 36°56'58.2" W 122°05'18.2"	6	<1	1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:00	N 36°56'19.7" W 122°03'34.8"	<1	<1	<1

Sampling Month: October

DATE: 10-07-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	10:20	N 36°56'48.7" W 122°01'45.4"	10	5	<1
Sea State	mixed swell: SW @ 2 ft & NW @ 4 ft	RW(C)-30'	10:15	N 36°56'56.2" W 122°02'27.2"	<1	<1	<1
Weather	clear	RW(E)-30'	10:10	N 36°56'48.3" W 122°02'50.6"	3	3	<1
Wind	S @ 2 knots	RW(F)-30'	10:05	N 36°56'45.5" W 122°03'33.4"	5	<1	<1
Water Temp.	57.1°F	RW(G)-30'	10:00	N 36°56'43.7" W 122°03'59.7"	5	<1	1
Low Tide	3.90 ft @ 10:15	RW(H)-30'	9:45	N 36°56'57.1" W 122°05'02.4"	17	5	<1
High Tide	3.93 ft @ 08:33	RW(I)-30'	9:40	N 36°56'57.8" W 122°05'15.9"	10	2	<1
Rain in past 24 hr	0.23 inches	RW(Leak)@ 70'	9:20	N 36°56'22.4" W 122°03'34.7"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 10-14-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.4" W 122°01'44.9"	61	2	<1
Sea State	W swell 3-5 feet	RW(C)-30'	9:15	N 36°56'58.4" W 122°02'26.0"	21	13	10
Weather	clear	RW(E)-30'	9:20	N 36°56'49.0" W 122°02'50.0"	11	1	<1
Wind	E @ 5 knots	RW(F)-30'	9:25	N 36°56'45.9" W 122°03'31.5"	1	<1	<1
Water Temp.	53.6°F	RW(G)-30'	9:30	N 36°56'44.4" W 122°03'57.5"	11	<1	<1
Low Tide	1.29 feet @ 03:54	RW(H)-30'	9:45	N 36°56'56.3" W 122°05'01.2"	9	<1	1
High Tide	5.51 feet @ 10;18	RW(I)-30'	9:50	N 36°56'58.1" W 122°05'17.8"	6	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'20.3" W 122°03'35.4"	1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 10-21-2008					CFU / 100-ml		
CONDITIONS		Sampling Point	Sampling Time AM	GPS LOCATIONS	Total Coliform	Fecal Coliform	Enterococcus
Current	N --> S	RW(A)-30'	9:15	N 36°56'48.5" W 122°01'44.7"	1	<1	1
Sea State	NW swell 1-4 feet	RW(C)-30'	9:20	N 36°56'58.0" W 122°02'24.9"	11	<1	1
Weather	clear	RW(E)-30'	9:25	N 36°56'49.5" W 122°02'47.5"	7	<1	<1
Wind	SSW @ 3 knots	RW(F)-30'	9:30	N 36°56'45.8" W 122°03'30.6"	3	1	<1
Water Temp.	55.3°F	RW(G)-30'	9:40	N 36°56'44.3" W 122°03'57.2"	1	1	<1
Low Tide	3.39 feet @ 10:51	RW(H)-30'	9:55	N 36°56'55.9" W 122°05'59.3"	12	1	1
High Tide	4.33 feet @ 06:23	RW(I)-30'	10:00	N 36°56'58.1" W 122°05'17.6"	12	2	1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:20	N 36°56'18.5" W 122°03'35.1"	<1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 10-28-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.5" W 122°01'45.1"	5	1	<1
Sea State	W swell 2-4 feet	RW(C)-30'	9:15	N 36°56'58.2" W 122°02'25.7"	4	1	<1
Weather	dense fog	RW(E)-30'	9:20	N 36°56'49.2" W 122°02'49.5"	2	1	<1
Wind	SE @ 4 knots	RW(F)-30'	9:25	N 36°56'46.7" W 122°03'32.2"	2	<1	<1
Water Temp.	56.3°F	RW(G)-30'	9:30	N 36°56'44.2" W 122°03'57.7"	3	<1	1
Low Tide	1.96 feet @ 04:04	RW(H)-30'	9:40	N 36°56'56.8" W 122°04'59.9"	<1	<1	1
High Tide	5.43 feet @ 10:18	RW(I)-30'	9:45	N 36°56'58.2" W 122°05'17.1"	<1	<1	<1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:05	N 36°56'19.8" W 122°03'35.1"	<1	<1	1

Sampling Month: November

DATE: 11-04-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.2" W 122°01'45.6"	108	44	48
Sea State	W swell 2-6 feet	RW(C)-30'	9:15	N 36°56'57.9" W 122°02'24.7"	77	18	22
Weather	partly cloudy	RW(E)-30'	9:20	N 36°56'49.0" W 122°02'49.3"	106	49	46
Wind	variable @ 4 knots	RW(F)-30'	9:25	N 36°56'45.7" W 122°03'31.9"	10	3	2
Water Temp.	55.9°F	RW(G)-30'	9:30	N 36°56'45.5" W 122°03'58.4"	17	4	1
Low Tide	3.88 feet @ 08:27	RW(H)-30'	9:45	N 36°56'55.4" W 122°04'59.3"	4	<1	<1
High Tide	4.53 feet @ 13:16	RW(I)-30'	9:55	N 36°56'58.7" W 122°05'16.4"	7	2	2
Rain in past 24 hr	1.08 inches	RW(Leak)@ 70'	10:10	N 36°56'19.9" W 122°03'35.2"	6	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 11-09-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.4" W 122°01'45.3"	26	11	3
Sea State	W swell 4-9 feet	RW(C)-30'	9:10	N 36°56'57.9" W 122°02'25.5"	<1	<1	<1
Weather	cloudy	RW(E)-30'	9:15	N 36°56'49.1" W 122°02'49.2"	<1	1	<1
Wind	SW @ 3 knots	RW(F)-30'	9:20	N 36°56'46.4" W 122°03'31.6"	10	1	<1
Water Temp.	56.3°F	RW(G)-30'	9:25	N 36°56'43.9" W 122°03'57.3"	18	<1	<1
Low Tide	0.10 feet @ 14:05	RW(H)-30'	9:35	N 36°56'55.9" W 122°04'59.1"	8	<1	1
High Tide	5.39 feet @ 07:27	RW(I)-30'	9:40	N 36°56'57.9" W 122°05'17.3"	2	<1	<1
Rain in past 24 hr	0.17 inches	RW(Leak)@ 70'	10:00	N 36°56'19.6" W 122°03'34.8"	<1	1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 11-18-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:20	N 36°56'49.1" W 122°01'45.9"	30	9	2
Sea State	W swell 2-3 feet	RW(C)-30'	9:25	N 36°56'58.1" W 122°02'25.3"	22	2	<1
Weather	clear	RW(E)-30'	9:30	N 36°56'49.0" W 122°02'48.9"	16	2	1
Wind	W @ 5 knots	RW(F)-30'	9:35	N 36°56'46.6" W 122°03'31.8"	5	5	1
Water Temp.	55.1°F	RW(G)-30'	9:40	N 36°56'44.3" W 122°03'57.5"	12	3	3
Low Tide	3.44 ft @ 06:37	RW(H)-30'	10:00	N 36°56'55.7" W 122°04'59.3"	15	9	5
High Tide	5.78 feet @ 12:31	RW(I)-30'	10:05	N 36°56'57.9" W 122°05'17.3"	10	6	1
Rain in past 24 hr	0.02 inches	RW(Leak)@ 70'	10:20	N 36°56'19.9" W 122°03'34.6"	2	3	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 11-25-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:00	N 36°56'49.4" W 122°01'45.2"	23	5	2
Sea State	W swell 5-8 feet	RW(C)-30'	9:05	N 36°56'58.2" W 122°02'25.5"	10	1	<1
Weather	cloudy	RW(E)-30'	9:10	N 36°56'49.1" W 122°02'49.5"	9	1	<1
Wind	E @ 5 knots	RW(F)-30'	9:15	N 36°56'46.6" W 122°03'31.5"	21	2	9
Water Temp.	54.6°F	RW(G)-30'	9:20	N 36°56'44.2" W 122°03'57.3"	4	1	1
Low Tide	-0.42 ft @ 15:11	RW(H)-30'	9:30	N 36°56'55.6" W 122°04'59.4"	5	3	<1
High Tide	5.62 feet @ 08:09	RW(I)-30'	9:35	N 36°56'57.9" W 122°05'17.4"	2	1	1
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	9:50	N 36°56'19.9" W 122°03'35.0"	3	<1	<1

Sampling Month: December.

DATE: 12-02-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:05	N 36°56'48.2" W 122°01'45.8"	11	3	1
Sea State	W swell 4-7 feet	RW(C)-30'	9:10	N 36°56'58.0" W 122°02'25.5"	14	1	4
Weather	cloudy	RW(E)-30'	9:15	N 36°56'49.0" W 122°02'49.6"	18	1	1
Wind	E @ 2 knots	RW(F)-30'	9:20	N 36°56'46.6" W 122°03'33.1"	19	4	1
Water Temp.	54.8°F	RW(G)-30'	9:25	N 36°56'44.2" W 122°03'57.3"	11	2	3
Low Tide	3.71 ft @ 06:13	RW(H)-30'	9:35	N 36°56'55.7" W 122°04'59.6"	13	5	5
High Tide	4.88 ft @ 11:55	RW(I)-30'	9:40	N 36°56'58.0" W 122°05'17.5"	28	8	9
Rain in past 24 hr	0.53 inches	RW(Leak)@ 70'	10:00	N 36°56'19.8" W 122°03'35.0"	5	3	4

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 12-09-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:10	N 36°56'48.7" W 122°01'45.2"	5	1	2
Sea State	W swell 2-4 feet	RW(C)-30'	9:15	N 36°56'58.0" W 122°02'25.7"	5	1	<1
Weather	clear and cold	RW(E)-30'	9:20	N 36°56'49.0" W 122°02'49.4"	2	1	<1
Wind	E @ 4 knots	RW(F)-30'	9:25	N 36°56'46.5" W 122°03'32.3"	13	10	<1
Water Temp.	53.3°F	RW(G)-30'	9:30	N 36°56'44.3" W 122°03'57.6"	5	1	<1
Low Tide	-0.37 ft 2 13:44	RW(H)-30'	9:45	N 36°56'54.8" W 122°05'00.3"	11	3	1
High Tide	5.91 feet 2 06:36	RW(I)-30'	9:50	N 36°56'58.3" W 122°05'17.9"	19	8	5
Rain in past 24 hr	0.0 inches	RW(Leak)@ 70'	10:10	N 36°56'19.7" W 122°03'35.1"	1	<1	<1

Section II: Monitoring Data – Nearshore bacterial monitoring data

DATE: 12-17-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:15	N 36°56'48.0" W 122°01'45.9"	40	7	7
Sea State	NW swell 2-4 ft	RW(C)-30'	9:20	N 36°56'57.9" W 122°02'25.5"	8	1	3
Weather	clear and cold	RW(E)-30'	9:25	N 36°56'48.8" W 122°02'48.6"	24	1	5
Wind	NE @ 15 knots	RW(F)-30'	9:30	N 36°56'45.8" W 122°03'31.8"	18	12	5
Water Temp.	52.8°F	RW(G)-30'	9:35	N 36°56'43.5" W 122°03'58.0"	28	2	11
Low Tide	2.71 ft @ 07:56	RW(H)-30'	9:50	N 36°56'55.5" W 122°04'59.2"	26	5	8
High Tide	4.85 ft @ 13:21	RW(I)-30'	9:55	N 36°56'58.1" W 122°05'17.2"	33	9	8
Rain in past 24 hr	2.67 inches	RW(Leak)@ 70'	10:15	N 36°56'19.7" W 122°03'35.4"	28	10	9

Section II: Monitoring Data – Nearshore bacterial monitoring data

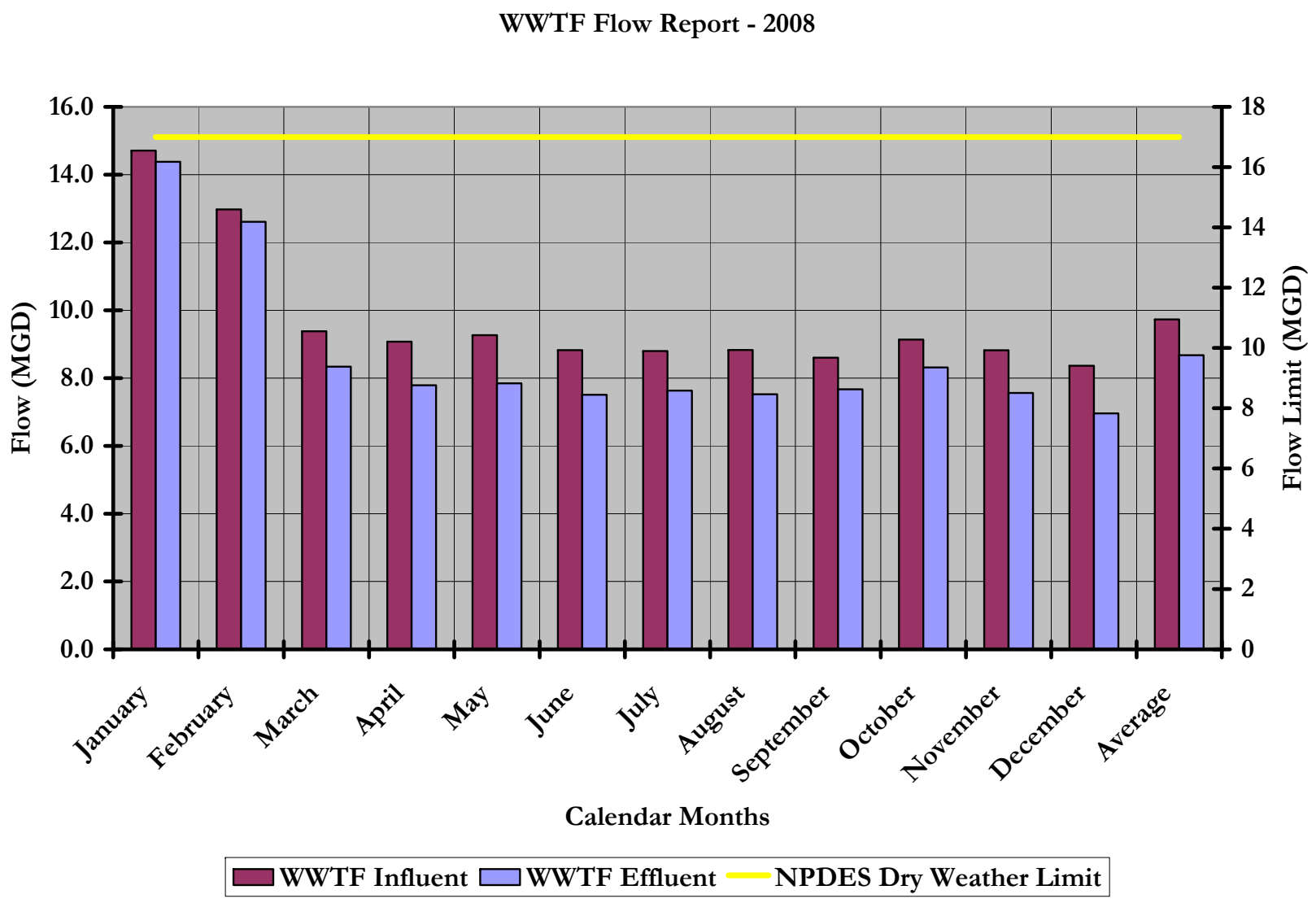
DATE: 12-23-2008					CFU / 100-ml		
CONDITIONS		**Sampling Point**	**Sampling Time AM**	**GPS LOCATIONS**	**Total Coliform**	**Fecal Coliform**	**Enterococcus**
Current	N --> S	RW(A)-30'	9:25	N 36°56'48.6" W 122°01'45.1"	29	5	4
Sea State	W swell 4-8 ft	RW(C)-30'	9:30	N 36°56'58.0" W 122°02'25.4"	TNTC (Confluent Growth)	129	77
Weather	partly cloudy/chance of showers	RW(E)-30'	9:35	N 36°56'49.1" W 122°02'49.4"	8	3	10
Wind	N @ 10 knots	RW(F)-30'	9:40	N 36°56'46.4" W 122°03'31.9"	19	2	5
Water Temp.	52.8°F	RW(G)-30'	9:45	N 36°56'44.0" W 122°03'57.4"	20	3	1
Low Tide	-0.16 ft @ 1421	RW(H)-30'	10:00	N 36°56'55.9" W 122°04'59.9"	17	5	4
High Tide	5.61 ft @ 0656	RW(I)-30'	10:05	N 36°56'58.1" W 122°05'17.2"	10	1	2
Rain in past 24 hr	1.5 inches	RW(Leak) @70'	10:25	N 36°56'20.0" W 122°03'35.0"	3	<1	1

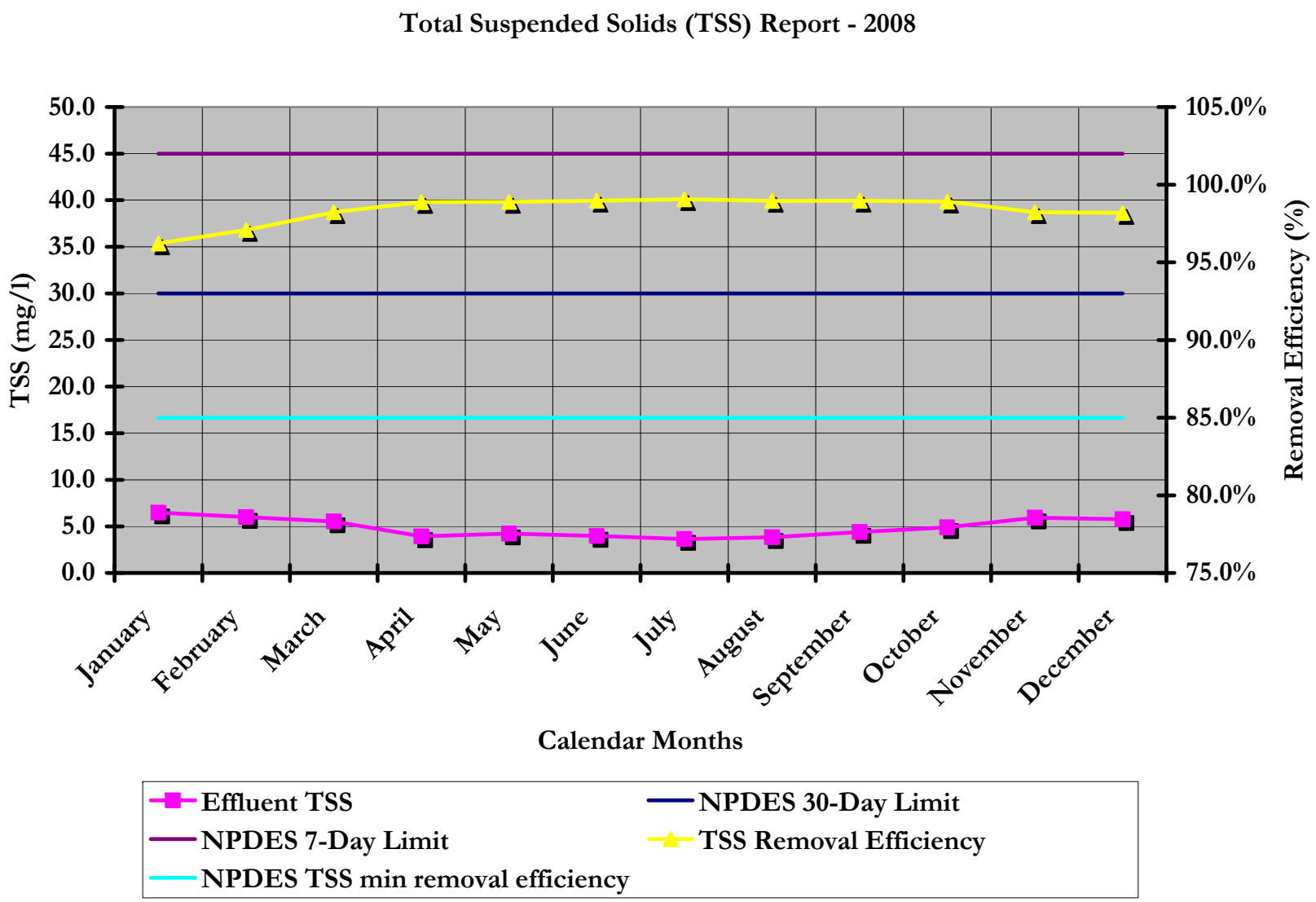
Section III. Summary of Monitoring Data – Graphs

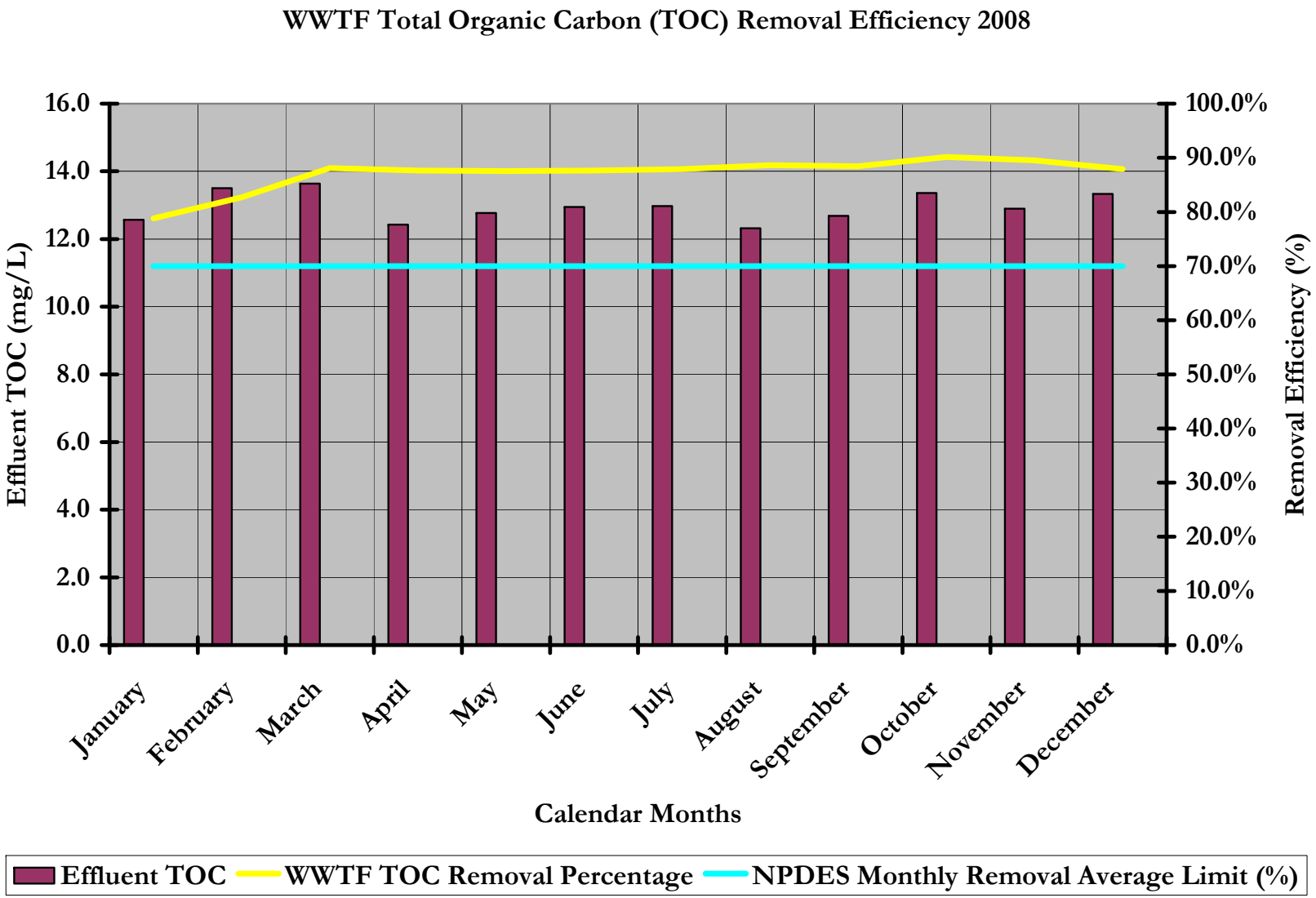
III. Summary of Monitoring Data- Graphs

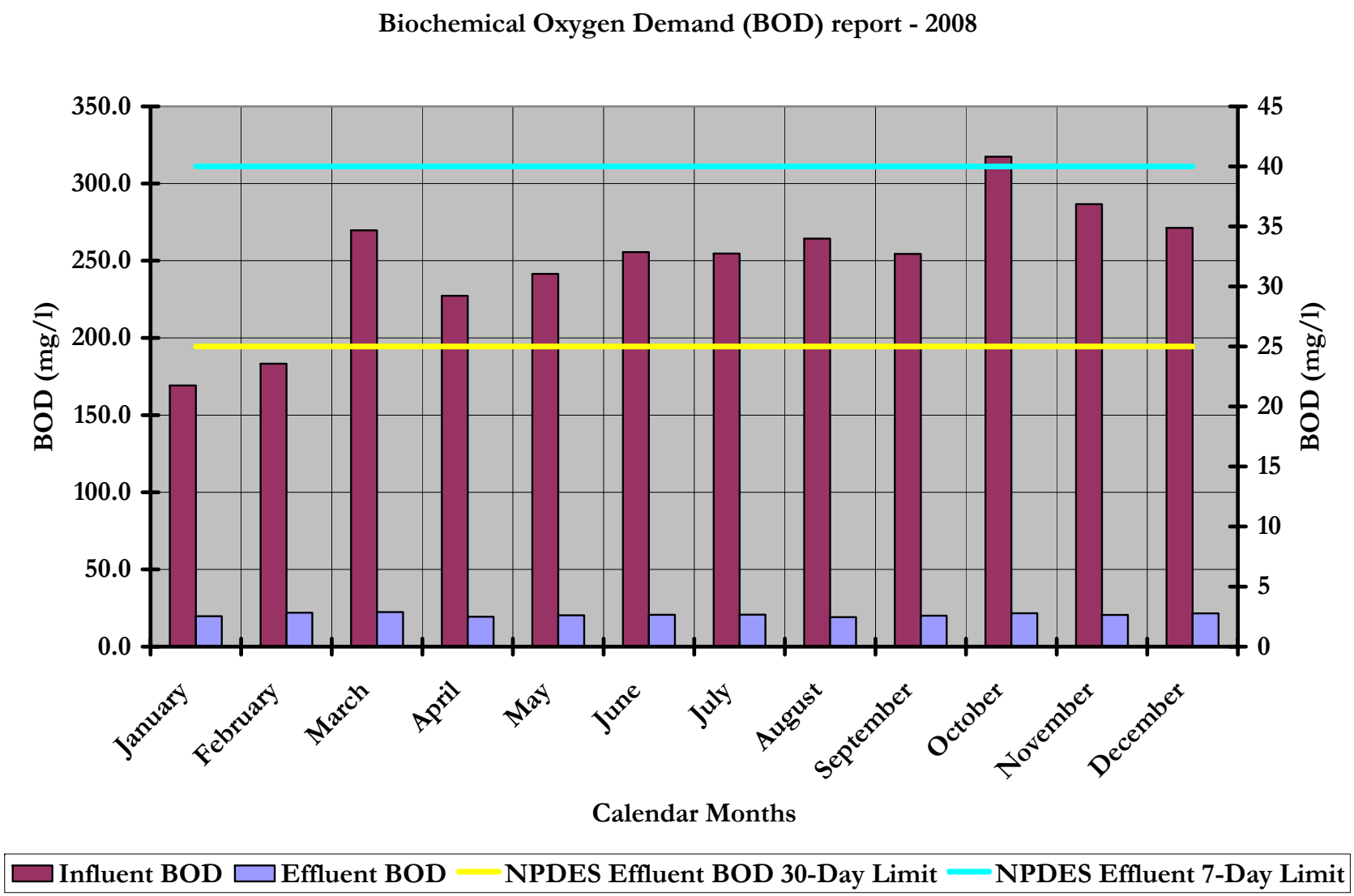
The following pages contain a sequence of graphs with a narrative arranged in the following order:

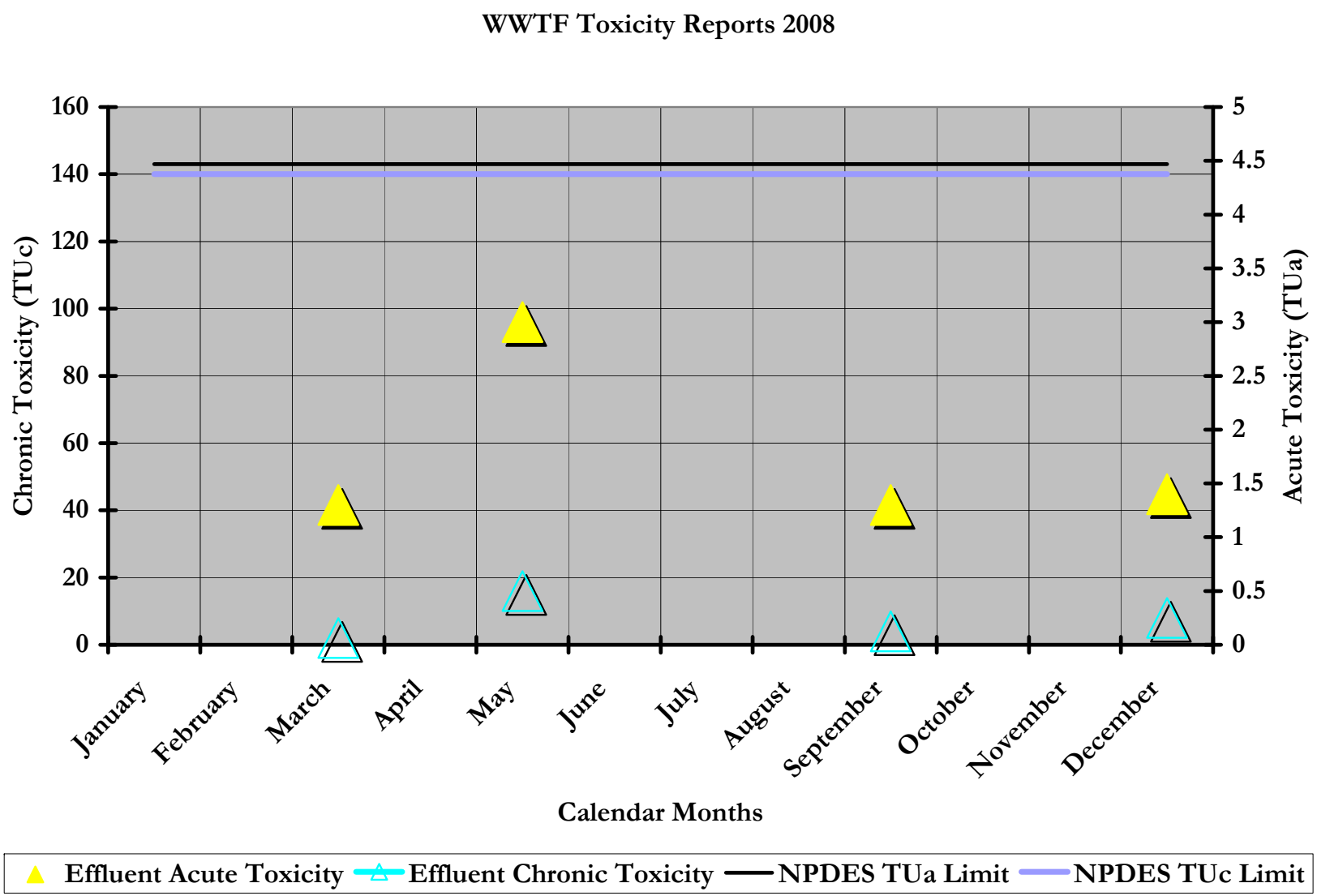
1. WWTF Flow report.
2. Total Suspended Solids (TSS) report.
3. Total Organic Carbon (TOC) removal efficiency report.
4. Biochemical Oxygen Demand (BOD) report.
5. WWTF Toxicity report. And
6. Biosolids Monitoring and Report.


WWTF Flow Report - 2008
Flow (MGD)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Flow Limit (MGD)
18
16
14
12
10
8
6
4
2
0
January
February
March
April
May
June
July
August
September
October
November
December
Average
Calendar Months
WWTF Influent
WWTF Effluent
NPDES Dry Weather Limit


Total Suspended Solids (TSS) Report - 2008
TSS (mg/l)
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
105.0%
100.0%
95.0%
90.0%
85.0%
80.0%
75.0%
Removal Efficiency (%)
January
February
March
April
May
June
July
August
September
October
November
December
Calendar Months
Effluent TSS
NPDES 30-Day Limit
NPDES 7-Day Limit
TSS Removal Efficiency
NPDES TSS min removal efficiency


WWTF Total Organic Carbon (TOC) Removal Efficiency 2008
Effluent TOC (mg/L)
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Removal Efficiency (%)
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
January
February
March
April
May
June
July
August
September
October
November
December
Calendar Months
Effluent TOC
WWTF TOC Removal Percentage
NPDES Monthly Removal Average Limit (%)


Biochemical Oxygen Demand (BOD) report - 2008
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
BOD (mg/l)
45
40
35
30
25
20
15
10
5
0
BOD (mg/l)
January
February
March
April
May
June
July
August
September
October
November
December
Calendar Months
Influent BOD
Effluent BOD
NPDES Effluent BOD 30-Day Limit
NPDES Effluent 7-Day Limit

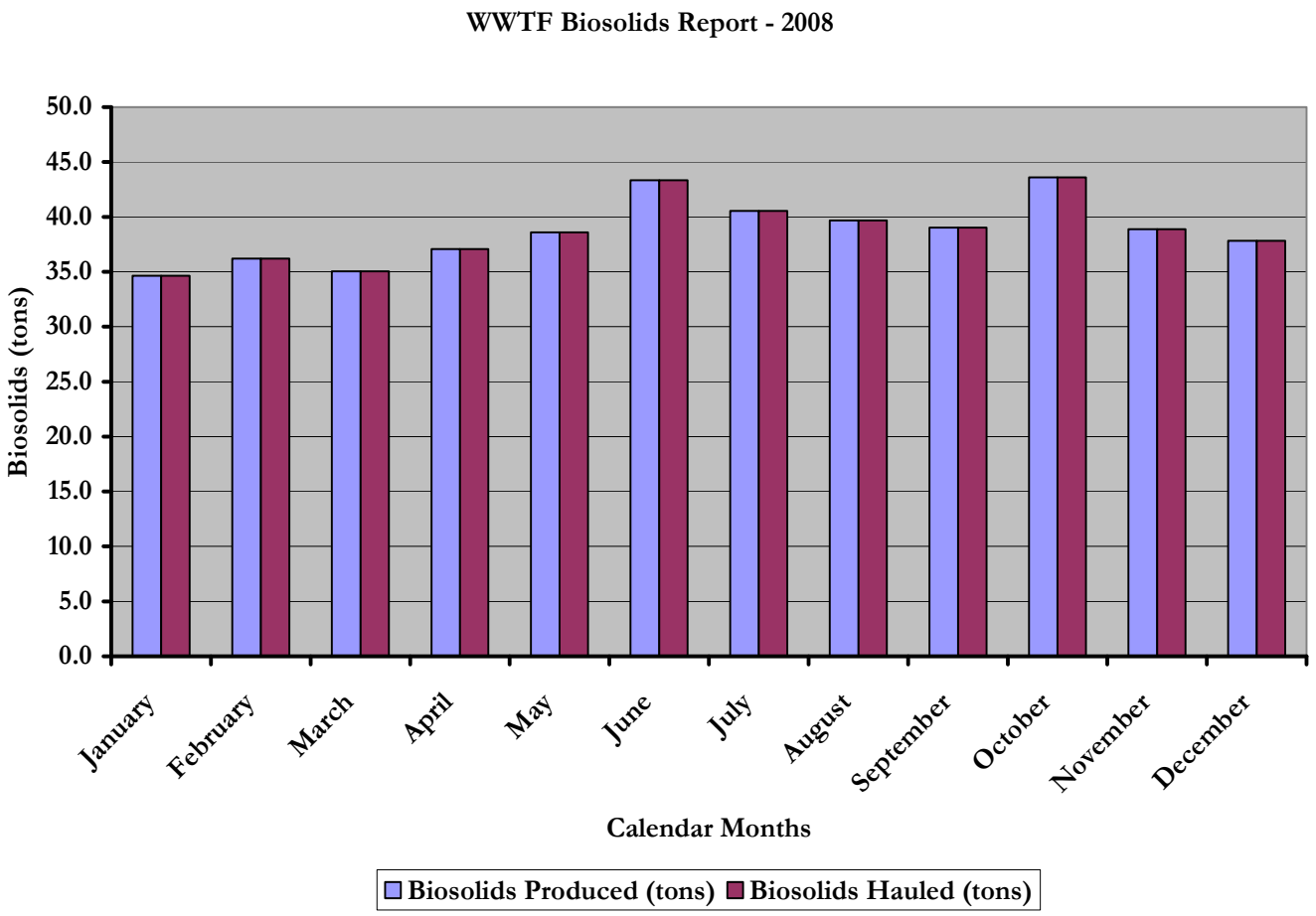

WWTF Toxicity Reports 2008
Chronic Toxicity (TUc)
Acute Toxicity (TUa)
160
140
120
100
80
60
40
20
0
5
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
January
February
March
April
May
June
July
August
September
October
November
December
Calendar Months
Effluent Acute Toxicity
Effluent Chronic Toxicity
NPDES TUa Limit
NPDES TUc Limit

Biosolids Monitoring and Reporting

Representative sampling and analyses of sludge biosolids from the last handling point at the facility, are performed on a bi-monthly basis to monitor the process and product quality. The Biosolids product is hauled to a third party site with contracts and facility for reuse of the commodity.
The data indicates that the process and product are both stable, and predictable. The data on biosolids quality from analyses of the composites is included in the Section II of this annual report.
Following are a tables and a graph of the biosolids product.

Table: Biosolids Production and Disposal/Reuse

Calendar Months	Biosolids Produced
	Tons
January	34.6
February	36.2
March	35.0
April	37.1
May	38.6
June	43.3
July	40.5
August	39.7
September	39.0
October	43.6
November	38.9
December	37.8
Average	**38.7**
Maximum	**43.6**
Minimum	**34.6**


WWTF Biosolids Report - 2008
Biosolids (tons)
50.0
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
January
February
March
April
May
June
July
August
September
October
November
December
Calendar Months
Biosolids Produced (tons)
Biosolids Hauled (tons)

Section IV. The Compliance Record and Corrective Actions

Section IV. The Compliance Record and Corrective Actions

This section contains narratives and figures relating to the compliance record in 2008 and all associated corrective actions with identifiable violations.

There was no incident of performance failure in 2008.
As indicated by the data and summarized bullets in the introduction, there were no numerical basis to assess plant removal efficiencies for trace organic compounds in 2008. This may be attributable in significant measure to the success of the pretreatment efforts to divert pharmaceutical compounds from the sewer system as well as the continued competency of operations at the facility. All of the activities and results were consistent with the aims and requirements of the NPDES permit.
The compliance record provides several highlights of an improved monitoring program including the following highlights in 2008:

1. The annual outfall report including a dye test and a dive inspection were concluded in October 2008. The results of the inspection are contained in this section.

2. The City successfully initiated the safe and responsible disposal of unwanted pharmaceuticals to divert their continued introduction into the sewer system. The program was initiated by the City in 2007, and was broadened through a State grant to include the rest of the County by December 2007.

3. Bacterial monitoring at the 30 foot contour was sustained throughout 2008, with data indicating compliance with all beneficial use standards throughout the year. And

4. The City expanded its integrative sampling and monitoring for compounds in the California Ocean Plan Table B list, by implementing the same at the facility's influent. The data will allow the City and the Regional Board to develop monitoring and management strategies for these compounds, and to update the Local Limits for industrial users.

The monthly average BOD removal efficiency in 2008 was 91.2% 2008. The secondary standard for BOD removal; and the erstwhile limit for the facility was 85% BOD removal. The City's performance for the removal of wasteload is now measured in Total Organic Carbon (TOC) and Total Suspended Solids (TSS). The equivalent secondary standard for TOC removal is 70%, while plant performance for 2008 was 87.1%. Plant performance for TSS removal averaged 98.4% for 2008.

The Water Boards instructed dischargers including the City of Santa Cruz to submit all self monitoring reports (SMR) exclusively by electronic means during 2008. Although the CIWQS (California Integrated Water Quality System) and USEPA's electronic systems are still being optimized for these activities, the City continues to support the State's efforts with streamlining the reporting system, including CIWQS.

In conclusion, the data indicate that compliance with the WDR and MRP requirements has been good, and no problems are anticipated for 2009.

The remainder of this section beginning on the next page contains narratives, tables, and a photograph of the annual outfall monitoring exercise.

ANNUAL OUTFALL MONITORING REPORT

The City conducted its annual Outfall and Diffuser Monitoring as required by MRP No.R3-2005-0003 of May 13, 2005. This year's monitoring consisted of a dye test with an over flight along the entire outfall (attached) and an underwater video survey conducted by a live diver along the diffuser section (attached). The dive inspection was conducted on October 17, 2008 by North Coast Divers, Inc. The dye study was conducted by Full Tilt Design on October 3, 2008.

The monitoring effort showed that the open diffuser ports are unobstructed and flowing as designed and originally constructed. The dye test did detect the intermittent leak that was previously detected in 1992, 1994, 2002 and 2004.

That leak that had been previously detected at an approximate depth of 70 feet below sea level and 7000 feet from the beach vault as measured along the outfall. The diffuser section of the City's outfall starts at a depth of 90 feet below sea level and 10,000 feet from the beach vault. The intermittent nature of observing the leak is probably due to the small size of the leak as described below.

Kinnetic Laboratories did an extensive investigation of the leak in 1994 and concluded that the leak was small in volume and had an initial dilution exceeding 1000:1 and that the risks and cost to fix such a leak outweighed the benefits. The precise location of the leak was not determined due to the small size of the leak and the fact that the outfall is in a trench covered with ballast rock.

Beginning in 2005, weekly grab samples are taken from the GIS location identified as the leak at the 70 foot contour, along with the monitoring of the near shore bacteria at 30 foot contour depth. Previous grab samples were taken quarterly at the leak site from 1995 through 1998. In April 1997, elevated bacteria levels indicated that the intermittent leak was still active at times. All samples were tested, and continue to be tested for total coliform, fecal coliform and enterococci. Bacteria data from the site has shown intermittent levels of elevated indicators. This is consistent with the limited and intermittent nature of the leak. No additional impact from the leak has been documented. Details of all the test data have been included in both the annual and quarterly Ocean Outfall reports submitted to the RWCQB from 1995 through 1998. Following this page is the dye study report.

Steve Wolfman, P.E.
Associate Civil Engineer
City of Santa Cruz

Dye Study Report - Wastewater Treatment Effluent Ocean Outfall Overflight

On Tuesday October 7, 2008 the City of Santa Cruz conducted a dye test of the Wastewater Treatment effluent ocean outfall to visually search for leaks. An overflight and boat inspection was performed between 9:15am and 10:00am using the aerial survey services of pilot Aaron Becker and marine support of Rick Heaslet of North Coast Divers. An on-board differential-ready GPS (which simultaneously tracks and uses up to 12 satellites) with an accuracy of 1-5 meters (3-15 feet) was used for navigation and positioning.

At 9:20 am 90 gallons of yellow liquid dye were added at the at the Wastewater Treatment facility. The weather was clear and the sea surface was calm. At around 9:40 am a dye plume was observed and photographed with a digital camera in the diffuser section area. The dye plume was very visible from the air, and appeared similar to previous years' observations.

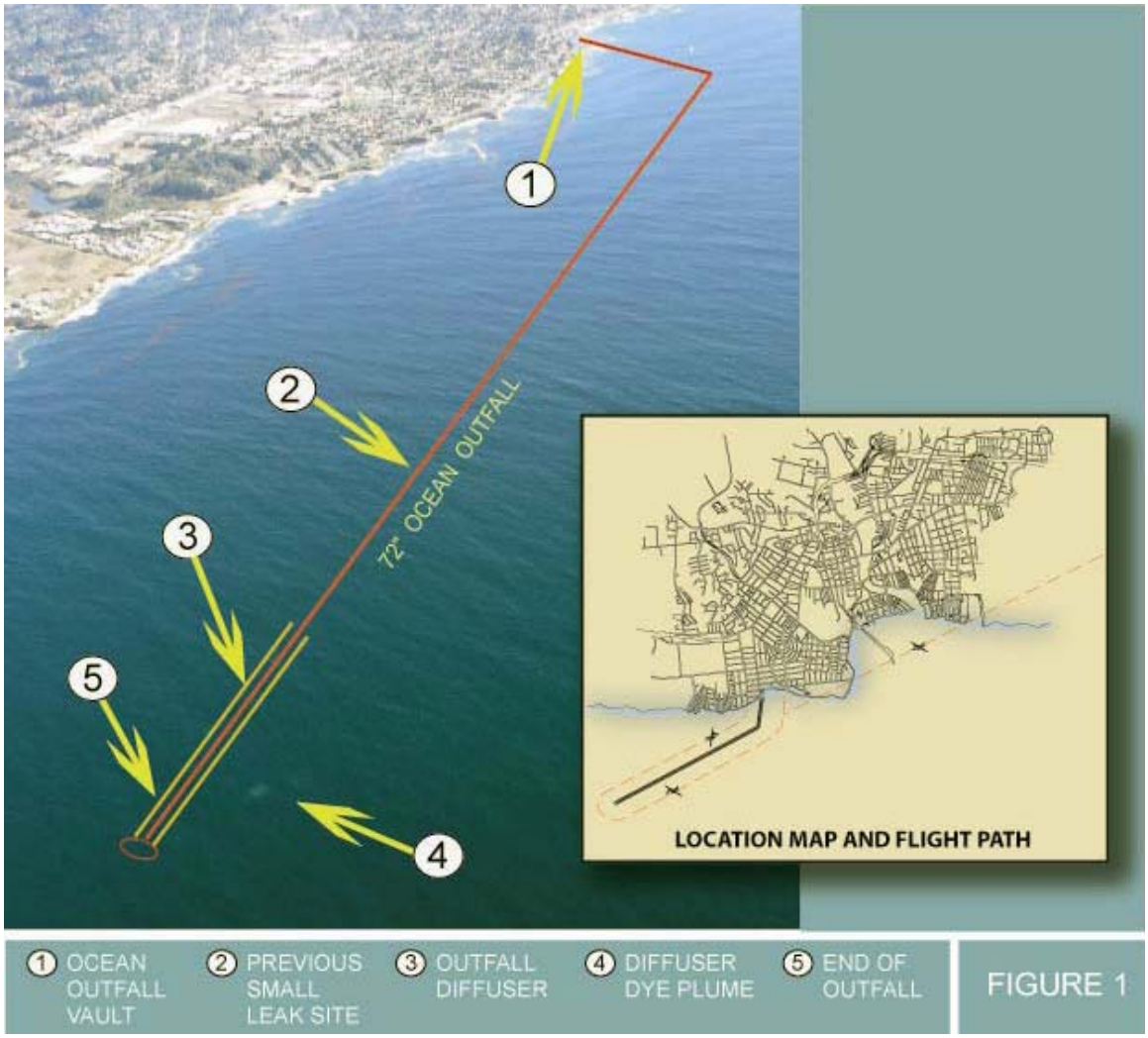


Figure 1 shows the location of the previous small leak site (**2**) located roughly 7,000 L.F. along the pipeline from the beach outfall vault. No dye was seen at this location. Along the diffuser section (**3**) four or five small plumes (**4**) were visually located before the end of the pipeline (**5**).

After the dye plume was sighted, further inspection of the entire ocean outfall revealed that the surrounding ocean surface remained unchanged. No leaks or visual dye plumes were evident. The overflight of the ocean outfall concluded at 10:00am.

Aaron Becker

Section V. The Operating Staff

V. The Operating Staff.

The following section summarizes the credentials and designations of staff employed at the Wastewater Treatment facility and the City's compliance with the California Water Code, the California Code of Regulations, in maintaining appropriate staffing.

The Waste Discharge Requirements, and the NPDES Permit require operators and their supervisors at municipal wastewater treatment plants to be certified at specific minimum levels of certification based upon the wastewater treatment plant processes and design flows. All of the operations personnel of the City of Santa Cruz Wastewater Treatment Facility are certified by the California State Water Resources Control Board at or above the required levels. In addition, the Superintendent of the facility maintains a wastewater operators certificate at the level of the plant rating.

The Operations and Maintenance division of the facility is staffed as follows:

- 1 (one) Wastewater Treatment Facility Operations Manager;
- 5 (five) Senior Wastewater Plant Operators;
- 8 (eight) Wastewater Plant Operators

The maintenance unit consists of seven mechanics and three electricians as follows:

- 1 (one) Senior Plant Mechanic;
- 1 (one) Senior Electrician;
- 4 (four) Plant Maintenance Mechanics II;
- 2 (two) Plant Maintenance Mechanics I; and
- 3 (three) Electrical Technicians.

Additional management, engineering, consultative, clerical and analytical support services are provided by:

- The Director of Public Works;
- 1 Associate Civil Engineer; and 1 Civil Engineering Associate
- 1 Laboratory/Pretreatment Manager; 3 Laboratory Chemists; and 3 Environmental Compliance Inspectors;
- 1 Administrative Assistant and
- 1 Network Administrator.

Section V. The Operating Staff

Following are tables of all personnel involved in the daily operation and maintenance of the Wastewater treatment facility, their credentials, classifications and certification levels.

MANAGEMENT/ADMINISTRATION		
NAME	**DESIGNATION**	**CREDENTIALS: GRADE CERT; & EXPIRY DATE**
Seidel, Dan	Superintendent of Wastewater Collection and Treatment Facility	**WW Operator IV 4055**; 6/30/09
Warren, Filipina	Administrative Assistant II	**AAII** BA (Psychology)
Savadkohi, Shawn	Network Administrator	BA (Physics)
Babatola, Akin	Laboratory/Industrial Waste Manager	MS (Mol. Biol); BS (Micro)
Sanders, Michael	Wastewater Treatment Facility Operations Manager	**WW Operator IV 4753**; 12/31/08

OPERATIONS			
NAME	**DESIGNATION**	**CREDENTIALS /GRADE CERTIFICATE**	**EXPIRY DATE**
Sanders, Michael	Wastewater Treatment Facility Operations Manager	**WW Operator IV 4753**	12/31/10
Gorton, Gerald	Senior WW Operator	**WW Operator IV 6344**	06/30/09
Culbertson, Michael	Senior WW Operator	**WW Operator III 532**	12/31/10
Lorenson, Arthur	Senior WW Operator	**WW Operator III 4867**	12/31/09
Meyers, David	Senior WW Operator	**WW Operator III 10986**	6/30/09
Sandretti, Mark	Senior WW Operator	**WW Operator III 4409**	6/30/10
Blume, Robert	WW Operator III	**WW Operator V 4776**	6/30/10
Gilbert, John	WW Operator III	**WW Operator III 28079**	6/30/10
Seifert, Brian	WW Operator III	**WW Operator III 28071**	6/30/10
Frazier, Ron	WW Operator III	**WW Operator III 7436**	6/30/10

Brown, Bob	WW Operator II	**WW Operator II 7217**	6/30/09
Lineham, Grant	WW Operator II	**WW Operator II 8320**	12/31/09
Quintana, Everest	WW Operator II	**WW Operator II 4837**	6/30/10
Barnes, John	WW Operator II	**WW Operator II 5734**	6/30/09
MAINTENANCE			
NAME	**DESIGNATION**	**CREDENTIALS/ GRADE CERTIFICATE**	**EXPIRY DATE**
Wisler, Larry	Senior Mechanic	**CWEA Mechanical Tech II #358**	1/31/10
Stevens, Fred	Maintenance Mechanic II	**CWEA Mechanical Tech II #76242**	6/31/09
Locatelli, Albert	Maintenance Mechanic II		
Pretzer, Tom	Maintenance Mechanic II	**CWEA Mechanical Tech II #599**	6/31/10
Locatelli, Forrest	Maintenance Mechanic II		
Carlson, Ron	Maintenance Mechanic I		
Fambrini, Steve	Maintenance Mechanic I		
ELECTRICAL			
NAME	**DESIGNATION**	**CREDENTIALS/GRADE CERTIFICATE**	**EXPIRY DATE**
Gorny, Ken	Senior Electrician	**CWEA Elect/Inst #80173003**	1-31-10
Sturdivant, Jim	Electrical Technician	**CWEA Elect/Inst #80772002**	7-31-09
Miller, Ralph	Electrical Technician	**CWEA Elect/Inst #80172006**	1-31-09
Karo, Marc	Electrical Technician		

Section V. The Operating Staff

LABORATORY/ENVIRONMENTAL COMPLIANCE		
NAME	**TITLE**	**CREDENTIALS**
Babatola, Akin	Laboratory/Industrial Waste Manager	MS (Mol. Biol); BS (Microbiology)
Xu, Tianfei	Chemist II/Principal Analyst	Graduate Degree (Chemistry) [Fudhan, China] **CWEA Lab Analyst II 378**; 7/31/10
Birch, Anne	Chemist II/Principal Analyst	BA (Biology) BA (Cultural Anthropology) **Lab Analyst I 342;** 1/31/10
Tantingco, Erlinda	Lab Chemist	BS (Chem. Eng)
Sasscer, David	Environmental Compliance Inspector	BS (Micro) **Ind. Waste Insp. III 114;** 1/31/08
Tomlinson, Monica	Environmental Compliance Inspector	BS (Env. Science) **Ind. Waste Insp. I 381;** 7/31/10 **Lab Analyst I 1017**; 1/31/11
Baker, Fred	Environmental Compliance Inspector	**Ind. Waste Insp. I 314;** 7/31/10

Section VI. The Operation & Maintenance Manual and Contingency Plans

VI. The Operation & Maintenance Manual and Contingency Plans.

The operation and maintenance manual was last reviewed in November 2000 and found to be complete and valid for the current facility. The facility's written Standard Operating Procedures are periodically reviewed and frequently updated to maintain documentation and direction on the operation of the facility.

The maintenance division provides routine preventative maintenance for all plant equipment. This ensures that equipment receives routine lubrication and relevant maintenance, and that standby equipment is ready for service.

Safeguards to minimize accidental discharge from the wastewater treatment plant are built into the design and operation of facility and equipment. These are also tested periodically to ensure their integrity. Scenarios for accidental discharge have been reviewed and concluded to be minimal. However, the location most vulnerable to an accidental discharge was identified as the Bar Screening room. This room is located proximate to the Pump house. A long-term power outage at peak flow may cause an overflow into the Pump house if the main sewage pumps were disabled. However, the two engines capable of driving all six main sewage pumps are diesel driven, and would provide power in case of such an outage. These diesel engines are tested for performance on a monthly schedule, and for a minimum of 1 hour each time. These engines and all equipment in the pump house are maintained with the highest priority.

Additional standby equipment has also been installed with the Plant upgrade to advanced secondary in 1998. These include power to the Sodium Hypochlorite disinfection system, which is the back up to the UV disinfection system.

Section VII. Laboratories used to Monitor Compliance

Section VII. Laboratories used to Monitor Compliance

The following section contains current information on all analytical laboratories whose services were required to maintain the compliance monitoring effort in 2008.

During the year 2008, the City of Santa Cruz operated the Wastewater Treatment Facility Laboratory certified under the CA Department of Health Services ELAP (Environmental Laboratory Accreditation Program). The Laboratory certificate number is CA 1176. A copy of the Laboratory certificate and the approved Fields of Testing are attached herewith.
The Laboratory updated its QAPP (Quality Assurance Performance Plan), and received final approval for monitoring Total Organic Carbon (TOC) in wastewater for compliance monitoring programs in 2008.
The laboratory discontinued the exploration of interlaboratory quality control (qc) and analytical arrangements (ILAs) with Federal, municipal and other certified laboratories, due to budgetary and other constraints. The intent of the ILAs was to improve the quality of monitoring and analyses reported from the facility, while increasing the range of services for effective compliance monitoring.
Most analytical determinations performed for Plant treatment and the NPDES permit were accomplished through the Laboratory. Staffing at the WWTF Laboratory includes:

- 1 Laboratory/Pretreatment Manager; and
- 3 (three) Laboratory Chemists, two of whom also function as Principal Analysts in accordance with CCR Title 22.

The following contract laboratories provided other analytical services:

1. **McCampbell Analytical Inc**.
   110 2nd Avenue South, #D7
   Pacheco, CA 94553-1622

2. **Alpha Analytical Laboratories Inc.**
   860 Waugh Lane, H-1,
   Ukiah, CA 95482

3. **Frontier Analytical Laboratory**
   5172 Hillsdale Circle
   El Dorado Hills, CA 95762

4. **City of Watsonville Utilities Department Laboratory**
P O Box 50000
Watsonville, CA 95077

5. **ES Babcock & Sons, Inc.** (sub-contractors to **Alpha Analytical**)
6100 Quail Valley Court Riverside
CA 92507-0704

6. **Toxscan Inc.**
42 Hanger Way
Watsonville, CA 95076

7. **Department of Fish and Game WPC Laboratory**
2005 Nimbus Road
Rancho Cordova, CA 95670

All the laboratories are required to maintain current NELAC/ELAP, and these are verified by the WWTF Laboratory Manager during the monitoring period.

Additional specialized extraction and GPC clean up of integratively sampled effluents and influents were processed through:

Environmental Sampling Technologies (EST)
502 S. Fifth Street
St. Joseph, MO. 64501

Section VIII. Summary of Performance Relative to Section B, General Monitoring Requirements

VIII. Summary of Performance Relative To Section B, General Monitoring Requirements.

1. Monitoring location, minimum sampling frequency and sampling methods for each parameter complies with the Monitoring and Reporting program of the NPDES permit as stipulated in the MRP No 00-044, and as superseded by Board order R3-2005-0003.

2. Although occasionally, due to errors or equipment failure, a monitoring and analytical event may be misread, or missed entirely, these were documented with the regional board and did not interfere with the integrity of the monitoring program. Those include pH and temperature measurements of the following dates:
01/26/08 02/07/08 02/08/08 05/27/08 10/29/08
10/30/08 12/03/08 and 12/21/08.
All of these measurements were documented with the Regional Board by the Operations Manager during 2008. These were infrequent and did not significantly affect the weekly or monthly averages of the temperature and pH readings of the effluent. All compliance testing procedures used are those approved at 40 CFR 136 and by RWQCBoard order number R3-2005-0003.

3. Monitoring frequency may be increased as needed to verify apparent noncompliance. Additional monitoring to optimize plant performance or validate performance and/or analytical questions is performed routinely.

4. Laboratories used for the monitoring of compliance with the permit meet the standard of accreditation by the California State Department of Health Services. (See Section VI of this report for more information on the laboratories.) Bioassays are conducted in accordance with the guidelines approved by the State Department of Fish and Game and the State Water Resources Control Board.

5. Samples and measurements taken for the purpose of monitoring are collected consistent with the activity and performance being evaluated. Grab samples are collected at peak loading times. Influent samples include all incoming waste streams and exclude recycle flows. Effluent samples are collected downstream of the last treatment process and upstream of the receiving waters. Integrative samples are collected during the specified monitoring periods, and with validated sampling technologies.

Section VIII. Summary of Performance Relative to Section B, General Monitoring Requirements

6. When the pollutants are monitored more frequently than required under the permit, the data is reported with the monthly monitoring reports and is included in appropriate calculations.

7. Monitoring instruments and devices used to fulfill requirements of the monitoring program are maintained and calibrated. Documentation of the maintenance and calibration is maintained.

8. Records of all monitoring information are maintained for at least three years.

Section IX. Lift Station and Collection System Overflow Report

The City's Infiltration/Inflow and Spill Prevention Program continues to address the objectives set out in WDR No. 00-044. The City has completed major improvements to its collection system over the last several years and has not had a sanitary sewer overflow caused by infiltration/inflow since January 2, 2002.

In 2002 the City line approximately 7000 feet of large diameter sanitary (16 to 24 inch) located along the San Lorenzo River. In 2003 two major improvements completed was the Grant Street Sewer project and the Clean Beach Sewer project. These projects cost approximately $200,000 and $800,000 respectively and improved over 6,000 linear feet of sewer pipe and reconstructed over 100 service laterals. The City also completed the cleaning of three sewer siphons at a cost of over $100,000. In 2004 the City televised the three sewer siphons and found that one had a separated joint that allowed continuous infiltration into the pipe at a rate of 50 gallons per minute. The leak has been sealed. The cost for this work was over $100,000. In 2005 the City cleaned and televised approximately 3,000 feet of 30 inch and 3,000 feet of 54 inch sewer main. This work restored full capacity in the trunk pipelines and showed that the 30 inch should be rehabilitated. This work is currently budgeted for $600,000.

The table below lists the projects that specifically address known overflow locations.

Table 1: Overflows caused by rain events in 2002 or before where overflow has not occurred since City project was completed

	Location Address		Pipe Size	Project completed	Project Cost	Schedule & comments
1	Cleveland Ave.	315	6	Reduced I/I by repairing 5000 feet of main & fixing 102 private lower laterals.	$425,000	Construction complete. No overflow since project completed in 2001.
2	Forest Avenue	158	6	Manhole at overflow location has been eliminated by replacing with pipe.	$5,000	No overflows during 2001 or 2002. Still monitoring flow.
3a	California Street	Near Walnut	8	California Street sewer capacity has been increased. Project #1 above also reduced flow to this area.	$750,000	Project was completed 12/01. There have been no overflows since project was completed.
3b	Walti St.	Laurel	6			
4c	Felix St.	Laurel	6			
5a	Carl Avenue	109 & 147	6	Increase size of Parkway pipe from 6 & 8 inch to 10 & 12 inch	$300,000	Construction completed 8/00. No overflows since.
5b	Parkway	358	6			
6	San Lorenzo Blvd.	At Jessie Street	18	Completed lining of parallel pipelines in 1/03. Siphon repaired in 8/04.	$600,000	No overflows in 2003 or 2004. Reduce additional upstream I/I next year.
7	Broadway	133	18	Lateral hooked up to main near River siphon.	$100,000	Cleaning and repair of downstream siphon and has been completed.
8	1129 Mission	At Laurel	6	Cleared blockage. Upgraded pipe to 8 inch	$60,000	Project completed 2/02 No overflows since.
9	Morrissey Blvd.	723	6, 8 & 10	Upgraded over 3500 feet of pipe in 2005	$500,000	No overflows since project completed.

Table 2: Overflows caused by rain events in 2002 or before, that have not reoccurred but the City has not completed improvement.

	Address	Location	Pipe Diameter (inches)	Project Completed	Project Cost	Schedule and Comments
1	High Street	High-land	6	Determine need for increased pipe size.		TV crossing under freeway.
2	Mott Avenue	At East Cliff and Logan	10 & 12	Investigate downstream 12-inch liner pipe for upgrade.	Unknown	New overflow. Still unclear of cause. TV 2005.
3	322 Highland		6	Modify Manhole and TV		Overflow locations that only occurred on 1/2/2002
4	401 Dufour		6	Unknown. May need backflow devise for house.		Overflow locations that only occurred on 1/2/2002

A summary of the last 12 months of sewage spills is attached for your information.
The City of Santa Cruz has implemented an improved spill response as detailed in the "Sewer System Management Plan". This response includes vacuuming up the spill and collecting all the wash down water used to clean the spill area. In most cases the spill has no contact with a waterway. The City has also updated the report form and the handout given to home owners who have lateral overflows. The new reporting form and handout are attached.
The Sewer System Management Plan has been updated and forwarded to the RWQCB.

Table 3: Summary of Sewage Spills within Santa Cruz city in 2008.

House Number	Street	Date:	City Main Spill (gallons)	Private Lateral Spill (gallons)	Weather
322	Woodrow Avenue	1/26/08	25		Clear
268	Calvin Place	2/20/08	100		Clear
137	Los Altos Court	2/23/08	100		Clear
708	Laurent Street	2/24/08	100		Clear
1114	Water Street	2/26/08		25	Clear
129	Felker Street	4/5/08		75	Clear
125	Pearl Street	4/8/08		20	Clear
133	Peyton Street	4/8/08		10	Clear
158	Forrest Ave	4/9/08	50		Clear
1717	Soquel Avenue	4/13/08		50	Clear
405	Ocean Street	4/13/08		30	Clear
NA	Ocean Under Municipal Wharf	5/20/08	50		Clear
632	Water Street	5/23/08	500		Clear
209	Vista Bella Ave	5/27/08	75		Clear
155	Surfside Street	6/9/08	250		Clear
591	Market Street	6/18/08	150		Clear
344	Ocean St	10/29/08		200	Clear
1154	Prospect Heights	11/7/08	50		Clear
Total Spills: 18	**Main Lateral Spills: 1450 gallons**			**Private Lateral Spills: 410 gallons**	

THIS IS THE END PAGE OF THE 2008 ANNUAL REPORT.