FINAL REPORT
FOR THE
ALIPAZ STORM DRAIN TREATMENT
AND LOW FLOW DIVERSION PROJECT

March 2004

Prepared for

State Water Resources Control Board
Agreement Number: 01-068-550-0

Prepared By

The City of Dana Point

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Task		Product	Completion Date
1.0		**Project Management and Administration**	
	1.1	Quarterly Reports/Subcontract Documentation Permits, and Project Survey Form	September 2001 to Project Completion
2.0		**Federal, State, and Local Permitting**	
	2.2	Agreement with the CSJC	Complete
	2.3	Agreement with the SOCWA	Complete
3.0		**Quality Assurance Project Plan**	
	3.1	QAPP	October 2002
4.0		**Final Project Engineering**	
	4.1	100% Project Design	December 2001
	4.2	Contract Documents	December 2001
	4.3	Award of Contract	March 2002
5.0		**Project Implementation**	
	5.1	Construction Management Contract	March 2002
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	5.3	Specialty Services Contract	March 2002
	5.4	Construction	November 2002
6.0		**Reporting**	
	6.1	Monitoring and Reporting Plan	October 2002
	6.2	Draft Final Report	September 2003

1. INTRODUCTION

1.1 Problem Statement

Doheny State Beach, located in the City of Dana Point, is one of the most highly used beaches in the State of California; it has an average of greater than 850,000 visitors annually. In 2000, 140.3 beach mile days (BMD) were impacted by bacteria pollution. In 2001, 148.4 BMD were impacted, and in 2002, 142.5 BMD were impacted. A BMD is determined by multiplying the number of days of a closure or a warning sign posting by the number of miles of beach closed or posted (Orange County Health Care Agency, 2002). One significant source of bacteria is urban runoff flowing into storm drains that empty into San Juan Creek that eventually discharges to Doheny State Beach.

To reduce bacteria loading to San Juan Creek the City of Dana Point has constructed a treatment and low flow diversion project that provides some treatment of runoff flows and diverts 100% of the dry weather flows from the Alipaz storm drain to a sanitary sewer system. The treatment for urban runoff consists of a solids removal unit manufactured by CDS. During periods of low flow (usually occurring from April to October), nuisance flow in the drainage basin that empties into San Juan Creek is now diverted into the solids removal unit which filters the runoff through a screening process. After entering the solids removal unit, the runoff flows into a screen chamber where it is filtered for debris and sediment. Captured solids are permanently retained within the screen and sump. Floating solids are kept in continuous motion on the water surface within the screen while heavier materials settle into the sump. After this treatment process, the filtered runoff is then directed to the sanitary sewer system. During periods of storm flow the first flush of runoff will be treated and then discharged to San Juan Creek. Construction of the project was completed in November 2002 and the diversion was activated on April 25, 2003.

1.2 Water Sampling Requirements

Water sampling for the Alipaz Storm Drain Project occurred at the initial activation of the diversion and on a monthly basis thereafter. Pursuant to Special Wastewater Discharge Permit CSJC-N4-001 and to the Quality Assurance Project Plan, urban runoff was sampled for the constituents shown in Table 1.1 and Table 1.2. The sampling included values for flow, pH, oil and grease, various metals and pollutants, Total Suspended Solids, Suspended Solids, and Total Volatile Suspended Solids. Additional bacteria sampling per the Quality Assurance Project Plan included Total Coliform, Fecal Coliform, and Enterococcus.

Table 1.2.1 Special Waste Discharge Permit SCJC-N4-001 Requirements

Pollutant	*Local Limits*	*Units*
Flow	72,000	GPD
pH	5.0-11.0	Units
Oil & Grease	300	mg/L
Cadmium (T)	0.93	mg/L
Chromium (T)	4.9	mg/L
Copper (T)	7.2	mg/L
Lead (T)	4.9	mg/L
Mercury (T)	0.19	mg/L
Nickel (T)	9.5	mg/L
Silver (T)	2.8	mg/L
Zinc (T)	7.9	mg/L
Molybdenum	No Local Limits	mg/L
Manganese	No Local Limits	mg/L
Tributyl Tin	No Local Limits	µg/L
Sulfate	No Local Limits	mg/L
cBOD	No Local Limits	mg/L
MBAS	No Local Limits	mg/L
SS	No Local Limits	mL/L
TDS	No Local Limits	mg/L
TSS	No Local Limits	mg/L
TVSS	No Local Limits	mg/L

Table 1.2.2 Quality Assurance Project Plan Bacteria Sampling Requirements

Bacteria	*Method*	*Units*
Total Coliform	9222	CFU/100mL
Fecal Coliform	9222	CFU/100mL
Enterococcus	9230	CFU/100mL

2. RESULTS

2.1 Cleaning Results

Since the activation of the diversion, two cleanings of the unit have occurred. Each time, the waste from the CDS unit was removed, using an Industrial Vacuum Truck. A trained crew from United Storm Water, Inc. removed all the solid waste from the CDS unit, following all proper procedures. The water was then de-canted back into each CDS unit through a Drainpac filter. The storm drain waste from each CDS unit was then weighed, and off loaded into sealed roll-off bins.

The amount of trash and sediment removed from the sump during these cleanings totals over 40 tons. By removing this large amount of trash and sediment, the Alipaz Storm Drain Project helps to prevent sediment build-up in San Juan Creek which would lead to standing water and increased levels of bacteria. Additionally, noticeable trash which was removed during the cleanings includes plastics, aluminum cans, paper debris, glass, and assorted Styrofoam supplies. The Alipaz Storm Drain Project is responsible for removing all of these environmentally hazardous items from the San Juan Creek outlet.

2.2 Compliance with Permit CSJC-N4-001

The purpose of the solids removal unit is to filter urban runoff for debris, sediment, and pollutants prior to its diversion to the sanitary sewer system. Monthly sampling data shows compliance with Special Wastewater Discharge Permit CSJC-N4-001 for all pollutants including metals and all forms of Suspended Solids. This illustrates that the solids removal unit is operating as expected.

2.3 *Bacteria Monitoring Results*

Improving the overall water quality of San Juan Creek and Doheny State Beach is another goal of the Alipaz Storm Drain Project. To obtain water quality data, the City performed bi-weekly bacteria monitoring of the water entering and exiting the solids removal unit. The sampling was done in conjunction with surf zone monitoring at the San Juan Creek Outlet which was performed by South Orange County Wastewater Authority and the Orange County Health Care Agency. The results of the bacteria monitoring for the urban runoff being diverted out of San Juan Creek are shown in Table 2.3.2,Table 2.3.3 and Table 2.3.4 on the following pages:

According to the California Code of Regulations – Title 17 and the California Health and Safety Code, the standards for bacteria are listed below:

Table 2.3.1 Single Sample Standards per Title 17 of the CCR

Total Coliforms	10,000 organisms/100 milliliters of sample
Fecal Coliforms (E. Coli)	400 organisms/100 milliliters of sample
Enterococci	104 organisms/100 milliliters of sample

Table 2.3.2 Total Coliform by Method 9222

Date Sampled	***Units***	***Upstream of CDS Unit***	***At Diversion to Sanitary Sewer***
6/26/2003	CFU/100 mL	312	274
7/1/2003	CFU/100 mL	184	114
7/10/2003	CFU/100 mL	944	1,294
7/15/2003	CFU/100 mL	72	114
7/24/2003	CFU/100 mL	121	234
7/29/2003	CFU/100 mL	58	36
8/7/2003	CFU/100 mL	319	131
8/12/2003	CFU/100 mL	1,740	1,590
8/21/2003	CFU/100 mL	1,150	890
8/26/2003	CFU/100 mL	390	130
9/4/2003	CFU/100 mL	260	470
9/9/2003	CFU/100 mL	610	310
9/18/2003	CFU/100 mL	360	490
9/23/2003	CFU/100 mL	2,220	15,500
10/3/2003	CFU/100 mL	610	8,000
10/7/2003	CFU/100 mL	3,800	13,900
10/16/2003	CFU/100 mL	5,650	3,150
10/21/2003	CFU/100 mL	6,050	1,380
10/30/2003	CFU/100 mL	8,900	14,650
12/4/2003	CFU/100 mL	870	1,850
12/11/2003	CFU/100 mL	890	5,700
12/23/2003	CFU/100 mL	850	1,060

Table 2.3.3 Fecal Coliform by Method 9222

Date Sampled	*Units*	*Upstream of CDS Unit*	*At Diversion to Sanitary Sewer*
6/26/2003	CFU/100 mL	34	22
7/1/2003	CFU/100 mL	73	55
7/10/2003	CFU/100 mL	43	56
7/15/2003	CFU/100 mL	22	37
7/24/2003	CFU/100 mL	19	36
7/29/2003	CFU/100 mL	26	13
8/7/2003	CFU/100 mL	74	41
8/12/2003	CFU/100 mL	610	710
8/21/2003	CFU/100 mL	760	230
8/26/2003	CFU/100 mL	180	60
9/4/2003	CFU/100 mL	90	310
9/9/2003	CFU/100 mL	170	90
9/18/2003	CFU/100 mL	120	210
9/23/2003	CFU/100 mL	1,000	9,100
10/3/2003	CFU/100 mL	210	3,300
10/7/2003	CFU/100 mL	1,630	3,200
10/16/2003	CFU/100 mL	4,650	1,250
10/21/2003	CFU/100 mL	3,050	840
10/30/2003	CFU/100 mL	2,550	6,650
12/4/2003	CFU/100 mL	410	330
12/11/2003	CFU/100 mL	370	3,300
12/23/2003	CFU/100 mL	190	460

Table 2.3.4 Enterococcus by Method 9230

Date Sampled	Units	Upstream of CDS Unit	At Diversion to Sanitary Sewer
6/26/2003	CFU/100 mL	2,814	163
7/1/2003	CFU/100 mL	460	304
7/10/2003	CFU/100 mL	113	174
7/15/2003	CFU/100 mL	1,416	476
7/24/2003	CFU/100 mL	1,594	1,870
7/29/2003	CFU/100 mL	336	304
8/7/2003	CFU/100 mL	621	1,166
8/12/2003	CFU/100 mL	1,110	850
8/21/2003	CFU/100 mL	920	1,230
8/26/2003	CFU/100 mL	1,460	1,750
9/4/2003	CFU/100 mL	970	570
9/9/2003	CFU/100 mL	620	250
9/18/2003	CFU/100 mL	580	970
9/23/2003	CFU/100 mL	2,100	19,800
10/3/2003	CFU/100 mL	910	4,300
10/7/2003	CFU/100 mL	570	2,700
10/16/2003	CFU/100 mL	1,070	5,550
10/21/2003	CFU/100 mL	1,860	1,850
10/30/2003	CFU/100 mL	1,160	4,500
12/4/2003	CFU/100 mL	190	320
12/11/2003	CFU/100 mL	340	1,790
12/23/2003	CFU/100 mL	1,400	2,600
6/26/2003	CFU/100 mL	2,814	163
7/1/2003	CFU/100 mL	460	304
7/10/2003	CFU/100 mL	113	174
7/15/2003	CFU/100 mL	1,416	476
7/24/2003	CFU/100 mL	1,594	1,870
7/29/2003	CFU/100 mL	336	304
8/7/2003	CFU/100 mL	621	1,166
8/12/2003	CFU/100 mL	1,110	850

It is important to note that every sampling for enterococcus exceeded State standards, which may result in a closure of the corresponding beach area. According to the 2002 Annual Ocean and Bay Water Quality Report published in June 2003 by the Orange County Health Care Agency:

> *"Violations of the single sample enterococcus standard accounted for a majority (60.9%) of the ocean and bay water postings that occurred in Orange County between April 1 and October 31 for 2000 – 2002.*

Had the low flow diversion not been in place, Doheny State Beach would require closures based on Alipaz's urban runoff alone. Moreover, looking at the sampling results for total and fecal coliforms, it is clear that although State standards were not exceeded in any one sampling, the urban runoff from Alipaz contributes significantly to the high bacteria levels in San Juan Creek and Doheny State Beach. It is evident that by filtering this urban runoff through the solids removal unit and then diverting it to the sanitary sewer system, the Alipaz Storm Drain Project is preventing large amounts of harmful bacteria, debris, sediment, and trash from reaching the surf zone.

2.4 Beach Closure Results

The Monitoring and Reporting Plan for the Alipaz Storm Drain Project called for comparison of beach closures measured in Beach Mile Days. The term "Beach Mile Days" is used to present the measurement of the number of days and the area of ocean or bay waters that are closed due to a sewage spill or posted for a violation of the AB 411 Ocean Water-Contact Sports Standards.

Beach Mile Days (BMDs) are calculated by multiplying the number of days of a closure or posting by the number of miles of beach closed or posted:

(Number of Days) x (Miles of beach closed or posted) = Beach Mile Days

For example, if a sewage spill resulted in the closure of ½ mile of beach for 7 days then:

(7 days) x (0.5 mile) = 3.5 Beach Mile Days of closure

Using BMDs is a more meaningful measurement of ocean and bay water impairment than using the number of incidences or the number of days since BMDs take into account both the amount of beach and the length of time of a closure or posting. The California State Water Resources Control Board and all California coastal counties

use BMDs for reporting closures and postings which provides a standardized measure allowing comparison of different areas (beach to beach or county to county) or assessing trends over time.

In 2002, the total number of Beach Mile Days posted due to AB 411 standards violations for Doheny State Beach during the AB411 season (April through October) was 142.5 (see Figure 2.4.1 on next page):

• DOHENY STATE BEACH

Sampling Agency:	South Orange County Wastewater Authority, Orange County Environmental Health
Sampling Frequency:	1-2 samples per week (agency and season dependent)
Sampling Stations:	8
Sampling Locations:	North Beach, 250' North of San Juan Creek, San Juan Creek/Ocean Interface, 250' South of San Juan Creek, 1000' South of Outfall, 2000' South of Outfall, 3000' South of Outfall, 4000' South of Outfall
Beach Miles:	1.1 miles of coastal beach
Available AB411 BMDs:	235.4 BMDs
Available Yearly BMDs:	401.5 BMDs

AB 411 PERIOD (APRIL – OCTOBER)

Year	Postings	Days	Beach Mile Days
2000	9	165	140.3
2001	5	191	148.4
2002	7	216	142.5

CALENDAR YEAR

Year	Postings	Days	Beach Mile Days
2000	11	319	293.0
2001	6	368	281.7
2002	7	367	311.8

Figure 2.4.1

The total number of Beach Mile Days posted due to AB 411 standards violations between April 1 and October 31 for Doheny State Beach in 2003 is 116.5. This significant decrease in postings can be partially attributed to the Alipaz Storm Drain Project. The project is diverting a significant amount of urban runoff containing high amounts of bacteria away from San Juan Creek. Data quantifying the flow being diverted is listed below in Table 2.4.5:

Table 2.4.5: Monthly Flow Data

Month	***Results (Gallons)***
April	310,020
May	631,218
June	1,194,742
July	1,317,934
August	1,317,171
September	1,173,247
October	1,005,951
November	371,522

From this data, it is obvious that millions of gallons of contaminated water are being diverted from San Juan Creek and ultimately from Doheny State Beach.

3. Other Benefits

Another positive aspect of the Alipaz Storm Drain Project is that it has the ability to capture and divert environmentally harmful sewage and waste spills. The City of Dana Point now has a buffer to protect the San Juan Creek from unexpected sewage spills from the Alipaz tributary area. The low flow diversion will capture and divert harmful spills to the sanitary sewer system before it reaches the creek. Additionally, this can be applied to construction runoff as well. Sediment, trash, construction debris and environmentally hazardous chemicals from negligent contractors or even residents which flow to the tributary area will all be filtered for solids and then diverted into the sanitary sewer. With the large, 372 acre tributary area for the Alipaz outlet, this is certain to play a large role in keeping the watershed clean.

The Alipaz Storm Drain Project, due to the flow meter that was installed, can be used to monitor excess flows entering the watershed. The digital flow meter at the diversion records flow data every ten minutes. This allows the City to detect spikes in daily flow patterns and then systematically search the watershed for contributors of urban runoff from over watering, waterline breaks, and sewer line breaks. By reviewing the watering schedules from local homeowners associations, the City may be able to pinpoint sources of over watering. Not only would this help to reduce urban runoff, but it would also aid in water conservation. Additionally, the flow meter will

provide accurate data in the event of a water or sewer line break that drains into the watershed. This flow data can then be forwarded to the appropriate agency for their formal report to the County and/or State.

4. Conclusions

The monitoring data for the Alipaz Storm Drain Project illustrates that the project has achieved the goals and standards set prior to its implementation. The diversion is successfully removing significant amounts of bacteria from San Juan Creek and Doheny State Beach. As a result, beach Mile Days postings are being reduced and the ocean water is becoming safer for the public to use. The Alipaz Storm Drain Project is also offering additional benefits to the City which were not originally foreseen, such as the diversion of sewage spills and construction runoff, and providing a vehicle to pinpoint sources of over watering. The Alipaz Storm Drain Project is undoubtedly a valuable addition in the effort to improve the water quality in local watersheds.

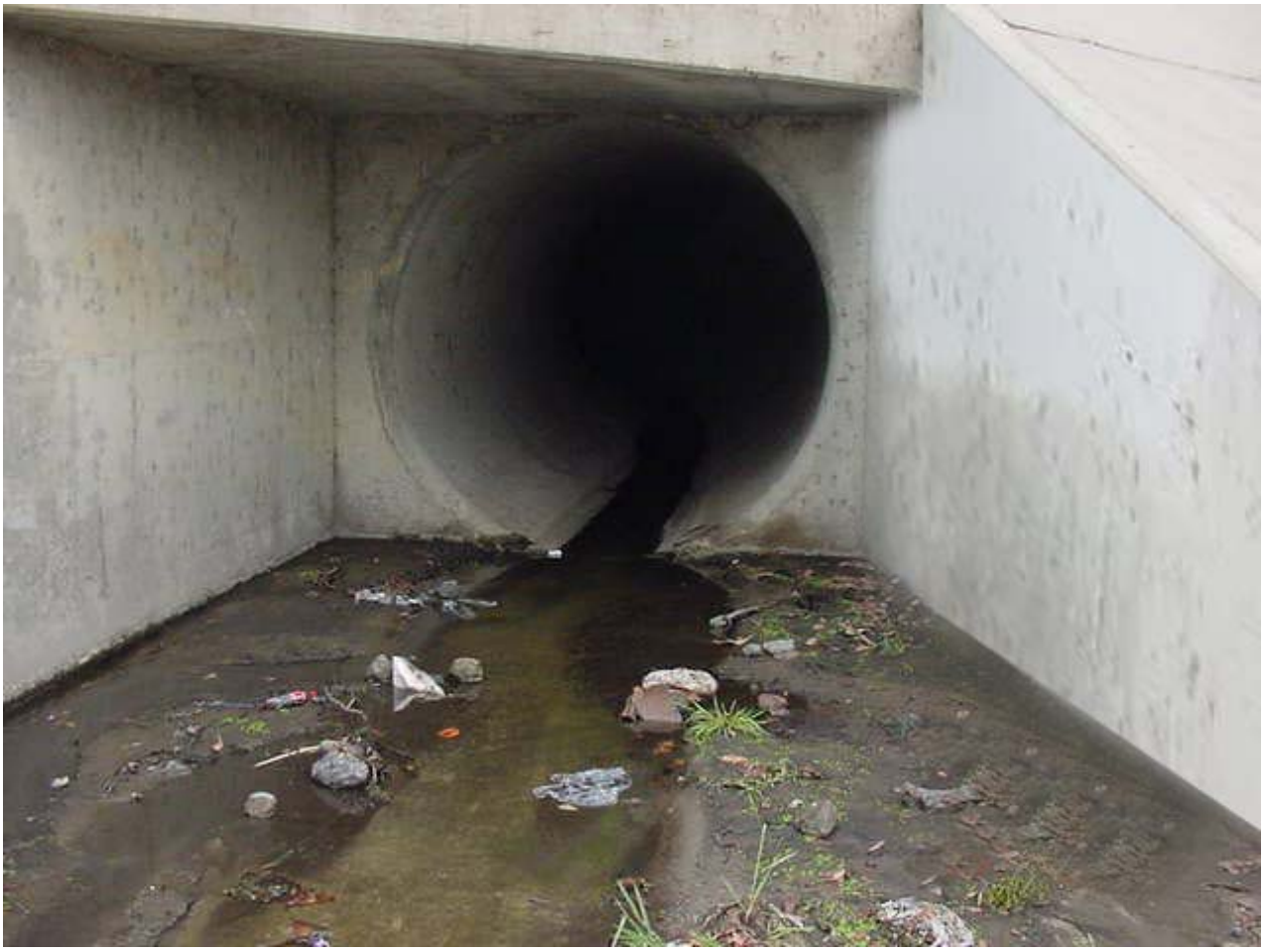

Figure 4.1 – Storm Drain Outlet Before Project Completion

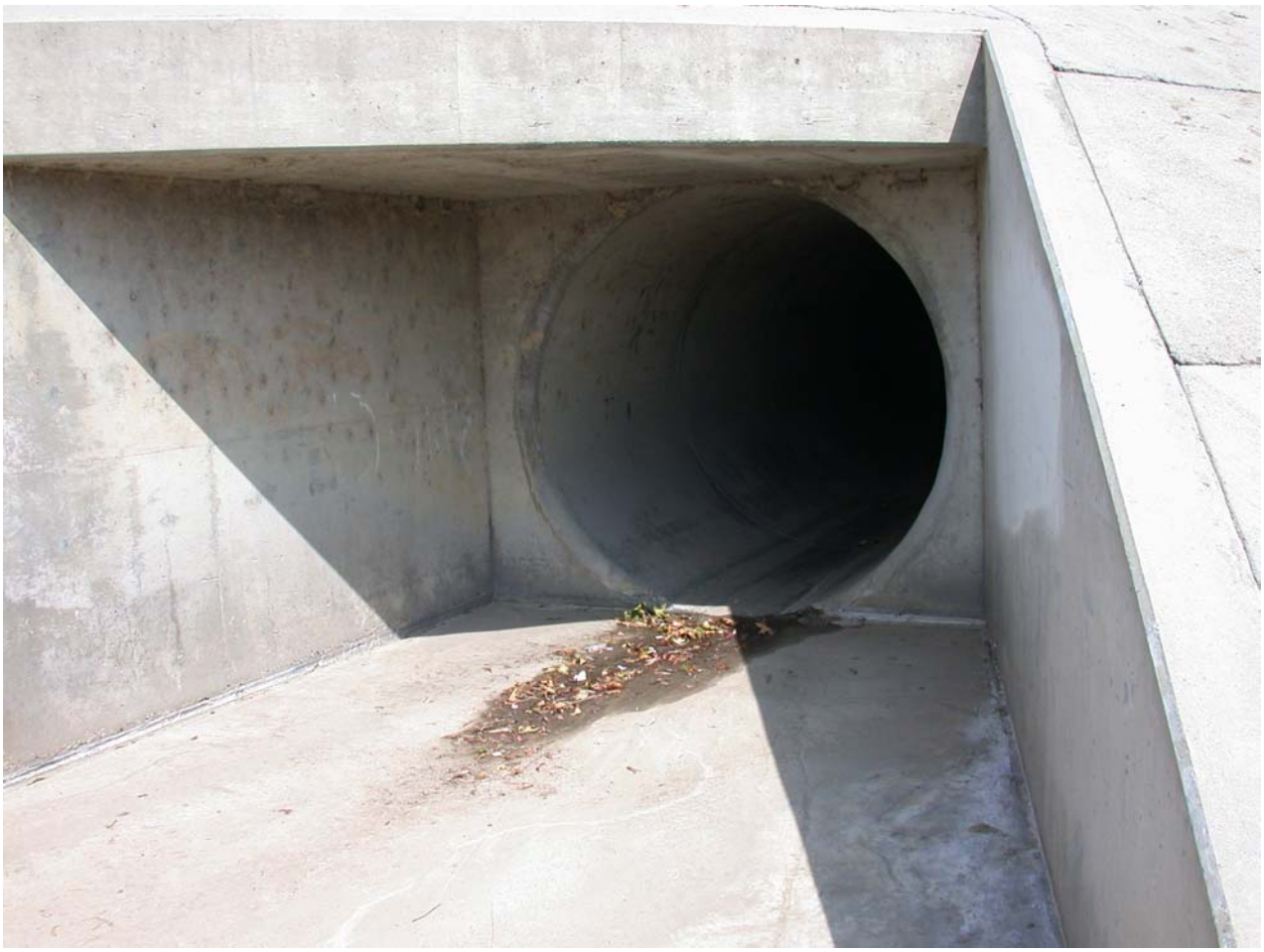

Figure 4.2 - Storm Drain Outlet After Project Completion

Figure 4.3 – First Cleaning of the Alipaz Storm Drain CDS Unit

Figure 4.4 – Inside the CDS Unit Prior to Cleaning

REFERENCES

Associated Laboratories, 2003. City of Dana Point – Alipaz Storm Drain, April 2003, Orange, CA..

Associated Laboratories, 2003. City of Dana Point – Alipaz Storm Drain, May 2003, Orange, CA..

Associated Laboratories, 2003. City of Dana Point – Alipaz Storm Drain, June 2003, Orange, CA..

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Mazur, M., 2003. Orange County Health Care Agency Supervising Environmental Health Specialist II. Personal Communications.

Orange County Health Care Agency, 2003. *2002 Annual Ocean and Bay Water Quality Report.* Orange County Health Care Agency, http://www.oc.ca.gov/hca/regulatory/ocean/downloads.htm

APPENDIX A

WATER SAMPLING DATA

WATER SAMPLING DATA
APRIL 2003

MAY-19-2003 15:29 ASSOCIATED LAB P.04

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: April 29, 2003 Sample Time: 1000hrs Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	64,200	YES	N/A
pH	5.0-11.0	units	8.00	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Cadium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.011	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	ND<0.015	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	ND<0.01	YES	N/A
Molybdenum	*	mg/L	ND<0.01	YES	N/A
Manganese	*	mg/L	0.035	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,020	YES	N/A
cBOD	*	mg/L	4	YES	N/A
MBAS	*	mg/L	0.08	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,470	YES	N/A
TSS	*	mg/L	11	YES	N/A
TVS	*	mg/L	520	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

5/19/03
Date

TOTAL P.04

WATER SAMPLING DATA
MAY 2003

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: May 21, 2003 Sample Time: 1000hrs Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	50,673	YES	N/A
pH	5.0-11.0	units	7.80	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	ND<0.01	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	ND<0.015	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.019	YES	N/A
Molybdenum	*	mg/L	ND<0.01	YES	N/A
Manganese	*	mg/L	0.027	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,090	YES	N/A
cBOD	*	mg/L	ND<3.0	YES	N/A
MBAS	*	mg/L	0.05	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,360	YES	N/A
TSS	*	mg/L	ND<5.0	YES	N/A
TVS	*	mg/L	1,024	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

6/11/03
Date

WATER SAMPLING DATA
JUNE 2003

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: June 12, 2003 Sample Time: 0820hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	31,500	YES	N/A
pH	5.0-11.0	units	7.50	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
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Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
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Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	ND<0.015	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.020	YES	N/A
Molybdenum	*	mg/L	0.119	YES	N/A
Manganese	*	mg/L	0.052	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,110	YES	N/A
cBOD	*	mg/L	4	YES	N/A
MBAS	*	mg/L	0.1	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,950	YES	N/A
TSS	*	mg/L	11	YES	N/A
TVSS	*	mg/L	ND<5.0	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

7/9/03
Date

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN

June 2003

Prepared for:

State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 06/26/03			
Total Coliform	CFU/100 ml	312	274
Fecal Coliform	CFU/100 ml	34	22
Enterococcus	CFU/100 ml	2814	163
DATE SAMPLED: 00/00/00			
Total Coliform	CFU/100 ml		
Fecal Coliform	CFU/100 ml		
Enterococcus	CFU/100 ml		
DATE SAMPLED: 00/00/00			
Total Coliform	CFU/100 ml		
Fecal Coliform	CFU/100 ml		
Enterococcus	CFU/100 ml		
DATE SAMPLED: 00/00/00			
Total Coliform	CFU/100 ml		
Fecal Coliform	CFU/100 ml		
Enterococcus	CFU/100 ml		

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
JULY 2003

AUG-11-2003 11:15 ASSOCIATED LAB P.09

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: July 14,2003 Sample Time: 0830hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	N/A	YES	N/A
pH	5.0-11.0	units	7.50	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.009	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.005	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.030	YES	N/A
Molybdenum	*	mg/L	0.030	YES	N/A
Manganese	*	mg/L	0.060	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,021	YES	N/A
cBOD	*	mg/L	3	YES	N/A
MBAS	*	mg/L	0.09	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,500	YES	N/A
TSS	*	mg/L	15	YES	N/A
TVSS	*	mg/L	ND<5.0	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Robert A. Webber (pt) 8/11/03

Associated Laboratories by: Date
Robert A. Webber, Vice President

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN
July 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 07/01/03			
Total Coliform	CFU/100 ml	184	114
Fecal Coliform	CFU/100 ml	73	55
Enterococcus	CFU/100 ml	460	304
DATE SAMPLED: 07/10/03			
Total Coliform	CFU/100 ml	944	1,294
Fecal Coliform	CFU/100 ml	43	56
Enterococcus	CFU/100 ml	113	174
DATE SAMPLED: 0715/03			
Total Coliform	CFU/100 ml	72	114
Fecal Coliform	CFU/100 ml	22	37
Enterococcus	CFU/100 ml	1416	476
DATE SAMPLED: 07/24/03			
Total Coliform	CFU/100 ml	121	234
Fecal Coliform	CFU/100 ml	19	36
Enterococcus	CFU/100 ml	1594	1,870
DATE SAMPLED: 07/29/03			
Total Coliform	CFU/100 ml	58	36
Fecal Coliform	CFU/100 ml	26	13
Enterococcus	CFU/100 ml	336	304

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
AUGUST 2003

SEP-08-2003 09:43 ASSOCIATED LAB P.09

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: Aug. 14, 2003 Sample Time: 0800hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	N/A	YES	N/A
pH	5.0-11.0	units	7.80	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	ND<0.005	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.006	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.037	YES	N/A
Molybdenum	*	mg/L	0.144	YES	N/A
Manganese	*	mg/L	0.043	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	808	YES	N/A
cBOD	*	mg/L	ND<3.0	YES	N/A
MBAS	*	mg/L	0.13	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	2,700	YES	N/A
TSS	*	mg/L	6	YES	N/A
TVSS	*	mg/L	3	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

9/8/03
Date

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT_

QUALITY ASSURANCE PROJECT PLAN
August 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 08/07/03			
Total Coliform	CFU/100 ml	319	131
Fecal Coliform	CFU/100 ml	74	41
Enterococcus	CFU/100 ml	621	1,166
DATE SAMPLED: 08/12/03			
Total Coliform	CFU/100 ml	1,740	1,590
Fecal Coliform	CFU/100 ml	610	710
Enterococcus	CFU/100 ml	1,110	850
DATE SAMPLED: 08/21/03			
Total Coliform	CFU/100 ml	1,150	890
Fecal Coliform	CFU/100 ml	760	230
Enterococcus	CFU/100 ml	920	1,230
DATE SAMPLED: 08/26/03			
Total Coliform	CFU/100 ml	390	130
Fecal Coliform	CFU/100 ml	180	60
Enterococcus	CFU/100 ml	1,460	1,750

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
SEPTEMBER 2003

OCT-10-2003 11:26 ASSOCIATED LAB P.01

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: Sept.17, 2003 Sample Time: 1030hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	43,000	YES	N/A
pH	5.0-11.0	units	7.15	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Arsenic (T)	3.4	mg/l	0.002	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.008	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.006	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.024	YES	N/A
Molybdenum	*	mg/L	0.014	YES	N/A
Manganese	*	mg/L	0.074	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,080	YES	N/A
cBOD	*	mg/L	ND<3.0	YES	N/A
MBAS	*	mg/L	0.05	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,740	YES	N/A
TSS	*	mg/L	5	YES	N/A
TVSS	*	mg/L	2	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

10/10/03
Date

OCT-10-2003 11:26 ASSOCIATED LAB P.02

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN
September 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 09/04/03			
Total Coliform	CFU/100 ml	260	470
Fecal Coliform	CFU/100 ml	90	310
Enterococcus	CFU/100 ml	970	570
DATE SAMPLED: 09/09/03			
Total Coliform	CFU/100 ml	610	310
Fecal Coliform	CFU/100 ml	170	90
Enterococcus	CFU/100 ml	620	250
DATE SAMPLED: 09/18/03			
Total Coliform	CFU/100 ml	360	490
Fecal Coliform	CFU/100 ml	120	210
Enterococcus	CFU/100 ml	580	970
DATE SAMPLED: 09/23/03			
Total Coliform	CFU/100 ml	2,220	15,500
Fecal Coliform	CFU/100 ml	1,000	9,100
Enterococcus	CFU/100 ml	2,100	19,800

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
OCTOBER 2003

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: Oct.14, 2003 Sample Time: 0750hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	29,000	YES	N/A
pH	5.0-11.0	units	8.20	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Arsenic (T)	3.4	mg/l	0.023	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.008	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.030	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.075	YES	N/A
Molybdenum	*	mg/L	0.012	YES	N/A
Manganese	*	mg/L	0.067	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,171	YES	N/A
cBOD	*	mg/L	9	YES	N/A
MBAS	*	mg/L	ND<0.04	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	3,854	YES	N/A
TSS	*	mg/L	8	YES	N/A
TVSS	*	mg/L	5	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

10/31/03
Date

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN
October 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 10/03/03			
Total Coliform	CFU/100 ml	610	8,000
Fecal Coliform	CFU/100 ml	210	3,300
Enterococcus	CFU/100 ml	910	4,300
DATE SAMPLED: 10/07/03			
Total Coliform	CFU/100 ml	3,800	13,900
Fecal Coliform	CFU/100 ml	1,630	3,200
Enterococcus	CFU/100 ml	570	2,700
DATE SAMPLED: 10/16/03			
Total Coliform	CFU/100 ml	5,650	3,150
Fecal Coliform	CFU/100 ml	4,650	1,250
Enterococcus	CFU/100 ml	1,070	5,550
DATE SAMPLED: 10/21/03			
Total Coliform	CFU/100 ml	6,050	1,380
Fecal Coliform	CFU/100 ml	3,050	840
Enterococcus	CFU/100 ml	1,860	1,850
DATE SAMPLED: 10/30/03			
Total Coliform	CFU/100 ml	8,900	14,650
Fecal Coliform	CFU/100 ml	2,550	6,650
Enterococcus	CFU/100 ml	1,160	4,500

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
NOVEMBER 2003

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: Nov. 18, 2003 Sample Time: 0830hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	20,870	YES	N/A
pH	5.0-11.0	units	8.85	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Arsenic (T)	3.4	mg/l	ND<0.005	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.007	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.012	YES	N/A
Silver (T)	2.8	mg/L	0.004	YES	N/A
Zinc (T)	7.9	mg/L	0.076	YES	N/A
Molybdenum	*	mg/L	0.006	YES	N/A
Manganese	*	mg/L	0.068	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,080	YES	N/A
cBOD	*	mg/L	ND<3.0	YES	N/A
MBAS	*	mg/L	0.06	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	4,090	YES	N/A
TSS	*	mg/L	6	YES	N/A
TVSS	*	mg/L	4	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

12/3/03
Date

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN
October 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 11/04/03			
Total Coliform	CFU/100 ml	4,850	23,000
Fecal Coliform	CFU/100 ml	590	3,800
Enterococcus	CFU/100 ml	1,110	4,100
DATE SAMPLED: 11/14/03			
Total Coliform	CFU/100 ml	5,650	23,000
Fecal Coliform	CFU/100 ml	560	1,780
Enterococcus	CFU/100 ml	320	1,380
DATE SAMPLED: 11/18/03			
Total Coliform	CFU/100 ml	690	6,500
Fecal Coliform	CFU/100 ml	220	5,200
Enterococcus	CFU/100 ml	330	1,170
DATE SAMPLED: 11/25/03			
Total Coliform	CFU/100 ml	47,000	39,000
Fecal Coliform	CFU/100 ml	21,000	8,700
Enterococcus	CFU/100 ml	1,190	2,600
DATE SAMPLED: 00/00/03			
Total Coliform	CFU/100 ml		
Fecal Coliform	CFU/100 ml		
Enterococcus	CFU/100 ml		

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

WATER SAMPLING DATA
DECEMBER 2003

ASSOCIATED LABORATORIES
806 North Batavia Orange, Ca. 92868

SPECIAL WASTE DISCHARGE Permit - CSJC-N4-001

SELF-MONITORING REPORT FORM

USER: City of Dana Point
Alipaz Street Storm Water Treatment Device

Sample Information: Person Collecting Sample: Maximo Montiel
Sample Date: DEC. 18, 2003 Sample Time: 0830hrs. Sample Location: Metering Manhole
Type of Sample (s) [ ] Continuous/Daily [x] 24hr flow Composite [x] Grab

Pollutant	Local Limits	Units	Results	Compliance yes or no	Resample Date (if required)
Flow	72,000	GPD	19,650	YES	N/A
pH	5.0-11.0	units	9.10	YES	N/A
Oil & Grease	300	mg/L	ND<5.0	YES	N/A
TRPH	*	mg/L	ND<1.0	YES	N/A
Arsenic (T)	3.4	mg/l	ND<0.005	YES	N/A
Cadmium (T)	0.93	mg/L	ND<0.005	YES	N/A
Chromium (T)	4.9	mg/L	ND<0.01	YES	N/A
Copper (T)	7.2	mg/L	0.01	YES	N/A
Lead (T)	4.9	mg/L	ND<0.005	YES	N/A
Mercury (T)	0.19	mg/L	ND<0.0004	YES	N/A
Nickel (T)	9.5	mg/L	0.012	YES	N/A
Silver (T)	2.8	mg/L	ND<0.005	YES	N/A
Zinc (T)	7.9	mg/L	0.081	YES	N/A
Molybdenum	*	mg/L	ND<0.010	YES	N/A
Manganese	*	mg/L	0.056	YES	N/A
Tributyl Tin	*	ug/L	ND<0.12	YES	N/A
Sulfate	*	mg/L	1,350	YES	N/A
cBOD	*	mg/L	12	YES	N/A
MBAS	*	mg/L	0.12	YES	N/A
SS	*	ml/L	ND<0.1	YES	N/A
TDS	*	mg/L	4,410	YES	N/A
TSS	*	mg/L	9	YES	N/A
TVSS	*	mg/L	5	YES	N/A

T = Total
**No Local Limits*
N/A = None Applicable

Associated Laboratories by:
Robert A. Webber, Vice President

1/2/04
Date

CITY OF DANA POINT
BACTERIOLOGICAL MONITORING
OF THE ALIPAZ STORM DRAIN
TREATMENT AND LOW FLOW DIVERSION PROJECT

QUALITY ASSURANCE PROJECT PLAN
December 2003
Prepared for:
State Water Resources Control Board
Agreement Number: 01-068-550-0

SAMPLE LOCATIONS:	UNITS	UPSTREAM	DOWNSTREAM
DATE SAMPLED: 12/04/03			
Total Coliform	CFU/100 ml	870	1,850
Fecal Coliform	CFU/100 ml	410	330
Enterococcus	CFU/100 ml	190	320
DATE SAMPLED: 00/00/03			
Total Coliform	CFU/100 ml	*	*
Fecal Coliform	CFU/100 ml	*	*
Enterococcus	CFU/100 ml	*	*
DATE SAMPLED: 12/18/03			
Total Coliform	CFU/100 ml	890	5,700
Fecal Coliform	CFU/100 ml	370	3,300
Enterococcus	CFU/100 ml	340	1,790
DATE SAMPLED: 12/23/03			
Total Coliform	CFU/100 ml	850	1,060
Fecal Coliform	CFU/100 ml	190	460
Enterococcus	CFU/100 ml	1,400	2,600
DATE SAMPLED: 00/00/03			
Total Coliform	CFU/100 ml	**	**
Fecal Coliform	CFU/100 ml	**	**
Enterococcus	CFU/100 ml	**	**

METHODS: Total & Fecal Coliform by Method 9222
Enterococcus by Method 9230

* No sample due to rain
** No sample holiday

APPENDIX B

FLOW LOGS

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month April Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	3406.9
10.	N/A	26.	27470.2
11.	N/A	27.	45036.1
12.	N/A	28.	51964.8
13.	N/A	29.	56489.5
14.	35156.0	30.	64153.6
15.	36105.1		
16.	35743.1		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month May Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	61498.8	17.	43792.8
2.	59270.7	18.	36662.4
3.	49722.7	19.	35368.1
4.	5034.0	20.	39565.8
5.	34734.4	21.	46793.8
6.	65605.0	22.	46672.5
7.	43433.9	23.	50672.6
8.	58556.4	24.	35155.4
9.	68484.5	25.	34919.9
10.	32044.4	26.	29628.8
11.	39932.6	27.	40621.2
12.	43001.9	28.	40488.5
13.	42197.1	29.	39063.7
14.	51904.3	30.	39043.9
15.	82742.7	31.	29546.2
16.	56841.8		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month June Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	32872.1	17.	37605.9
2.	34016.7	18.	38820.5
3.	41901.2	19.	35945.2
4.	40188.5	20.	36720.0
5.	40810.2	21.	31540.3
6.	53465.2	22.	30768.7
7.	32702.5	23.	32468.0
8.	37406.2	24.	37507.0
9.	3224.9	25.	36741.2
10.	56137.7	26.	46088.1
11.	94079.5	27.	46164.9
12.	31503.0	28.	39082.6
13.	38679.1	29.	39899.2
14.	35156.0	30.	32399.0
15.	36105.1		
16.	35743.1		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month July Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	40484.2	17.	45117.7
2.	39618.5	18.	50716.2
3.	47581.0	19.	44653.0
4.	44451.5	20.	40569.3
5.	36771.3	21.	37736.5
6.	37895.0	22.	45738.3
7.	36273.7	23.	48020.4
8.	35310.5	24.	46886.9
9.	37055.2	25.	45961.2
10.	35509.2	26.	42655.9
11.	39308.8	27.	45607.0
12.	36548.6	28.	35680.0
13.	36171.2	29.	42986.3
14.	36750.8	30.	72878.1
15.	43068.7	31.	46510.9
16.	43418.0		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month August Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	52579.6	17.	31476.9
2.	355532.2	18.	27638.8
3.	57125.3	19.	38816.9
4.	30512.0	20.	57179.3
5.	37520.4	21.	42079.0
6.	42075.8	22.	54665.9
7.	38931.3	23.	40246.6
8.	37728.2	24.	36081.0
9.	41047.2	25.	43037.1
10.	37912.3	26.	43115.1
11.	38177.5	27.	44984.0
12.	37872.6	28.	46132.5
13.	50551.7	29.	51489.1
14.	38519.9	30.	36708.2
15.	76921.2	31.	32399.5
16.	38024.5		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month September Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	29154.7	17.	47390.8
2.	41827.8	18.	39986.1
3.	43135.1	19.	38155.5
4.	43494.7	20.	44318.2
5.	48937.9	21.	34034.3
6.	42286.3	22.	29806.7
7.	32478.3	23.	48384.5
8.	31959.5	24.	48326.4
9.	40824.5	25.	41357.1
10.	43341.5	26.	40046.8
11.	35456.0	27.	36168.8
12.	40918.8	28.	37624.7
13.	36151.0	29.	31877.7
14.	36317.7	30.	42389.8
15.	30254.0	Total	1,173,247 gallons
16.	37561.3		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month October Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	42907.20	17.	26223.80
2.	40820.10	18.	26342.30
3.	38324.80	19.	23196.20
4.	38867.30	20.	26845.60
5.	28456.20	21.	39316.20
6.	27482.10	22.	30535.70
7.	40241.50	23.	26507.10
8.	50679.00	24.	30493.40
9.	37061.50	25.	30595.20
10.	38547.30	26.	30573.80
11.	33144.30	27.	31125.50
12.	27392.50	28.	35808.20
13.	24259.10	29.	34105.00
14.	32100.80	30.	33836.10
15.	32537.20	31.	19161.70
16.	28464.40	Total:	1005951

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month November Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	0.00	17.	0.00
2.	0.00	18.	0.00
3.	0.00	19.	13294.00
4.	0.00	20.	23258.20
5.	11886.40	21.	22656.70
6.	17844.70	22.	22665.10
7.	19487.50	23.	22000.80
8.	24409.20	24.	17262.50
9.	22092.60	25.	20023.70
10.	21242.90	26.	22738.90
11.	23952.80	27.	9382.40
12.	13489.70	28.	288.30
13.	0.00	29.	200.80
14.	6012.00	30.	140.10
15.	23925.00	31.	N/A
16.	13267.60	Total:	371,522

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
FLOW LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month December Year 2003

Day	Total Daily Flow (gpd)	Day	Total Daily Flow (gpd)
1.	121.50	17.	0.00
2.	29806.50	18.	11346.90
3.	23078.70	19.	24546.00
4.	22035.30	20.	26263.50
5.	18225.70	21.	21652.30
6.	532.10	22.	24482.00
7.	532.10	23.	32029.30
8.	532.10	24.	19558.70
9.	561.30	25.	107.20
10.	183.50	26.	107.40
11.	94.50	27.	0.00
12.	30.50	28.	0.00
13.	0.00	29.	0.00
14.	0.00	30.	0.00
15.	0.00	31.	0.00
16.	0.00	Total:	255826

APPENDIX C

PH LOGS

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month April Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	N/A	28.	N/A
13.	N/A	29.	8.00
14.	N/A	30.	N/A
15.	N/A		
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month May Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	7.8
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	N/A	28.	N/A
13.	N/A	29.	N/A
14.	N/A	30.	N/A
15.	N/A		
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month June Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	7.5	28.	N/A
13.	N/A	29.	N/A
14.	N/A	30.	N/A
15.	N/A		
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month July Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	N/A	28.	N/A
13.	N/A	29.	N/A
14.	7.5	30.	N/A
15.	N/A	31.	N/A
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month August Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	N/A
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	N/A	28.	N/A
13.	N/A	29.	N/A
14.	7.8	30.	N/A
15.	N/A	31.	N/A
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month September Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	7.15
2.	N/A	18.	N/A
3.	N/A	19.	N/A
4.	N/A	20.	N/A
5.	N/A	21.	N/A
6.	N/A	22.	N/A
7.	N/A	23.	N/A
8.	N/A	24.	N/A
9.	N/A	25.	N/A
10.	N/A	26.	N/A
11.	N/A	27.	N/A
12.	N/A	28.	N/A
13.	N/A	29.	N/A
14.	N/A	30.	N/A
15.	N/A	31.	N/A
16.	N/A		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month October Year 2003

Day	pH (SU)	Day	pH (SU)
1.	N/A	17.	8.9
2.	N/A	18.	8.9
3.	N/A	19.	8.9
4.	N/A	20.	8.9
5.	N/A	21.	8.8
6.	N/A	22.	8.8
7.	N/A	23.	8.8
8.	N/A	24.	8.8
9.	7.8	25.	8.8
10.	8.9	26.	8.8
11.	8.9	27.	8.8
12.	8.9	28.	8.8
13.	8.9	29.	8.8
14.	8.9	30.	8.9
15.	8.9	31.	8.7
16.	8.9		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month November Year 2003

Day	pH (SU)	Day	pH (SU)
1.	8.5	17.	8.2
2.	8.5	18.	8.1
3.	8.6	19.	8.5
4.	8.4	20.	8.9
5.	8.7	21.	8.9
6.	8.9	22.	8.9
7.	9.0	23.	8.9
8.	8.9	24.	8.9
9.	8.9	25.	8.9
10.	8.9	26.	8.9
11.	8.9	27.	8.9
12.	8.8	28.	8.9
13.	8.8	29.	8.8
14.	8.7	30.	8.8
15.	8.9	31.	N/A
16.	8.7		

Nuisance Water-SWD Permit No. CSJC-N4-001

SELF-MONITORING REPORT FORM
pH LOG

USER: **City of Dana Point**
Alipaz Nuisance Water Treatment Device

Month December Year 2003

Day	pH (SU)	Day	pH (SU)
1.	8.8	17.	8.7
2.	8.9	18.	9.0
3.	9.0	19.	9.1
4.	8.9	20.	9.1
5.	8.9	21.	9.1
6.	8.8	22.	9.1
7.	8.8	23.	9.1
8.	8.8	24.	9.0
9.	8.8	25.	8.8
10.	8.8	26.	8.2
11.	8.9	27.	8.1
12.	8.8	28.	8.1
13.	8.9	29.	8.3
14.	8.9	30.	8.7
15.	8.8	31.	9.0
16.	8.7		