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Our Community. Our Commitment.

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September 3, 2013

Joanne Schneider
Santa Ana Regional Water Quality Control Board
3737 Main Street, Suite 500
Riverside, CA 92501-3339

SUBJECT: Newport Bay Fecal Coliform TMDL Annual Data Report

Dear Ms. Schneider:

OC Public Works is pleased to submit the 2013 Newport Bay Fecal Coliform TMDL Annual Data Report. The attached information addresses the requirements of the fecal coliform TMDL and the January 7, 2000, Water Code Section 13267 letter from the Santa Ana Regional Water Quality Control Board. The Report represents the collective response of the County of Orange and the Cities of Costa Mesa, Irvine, Lake Forest, Laguna Hills, Laguna Woods, Newport Beach, Orange, Santa Ana and Tustin. The data analyzed in the report were provided by the Orange County Health Care Agency.

If you have any questions or comments regarding this report, please call Suzan Given at (714) 955-0654.

Very truly yours,

Chris Crompton, Manager
Water Quality Compliance

Attachment: Newport Bay Fecal Coliform Annual Data Report, 2013

cc: Newport Bay TMDL Funding Partners

NEWPORT BAY
FECAL COLIFORM TMDL

2013 ANNUAL DATA REPORT

Prepared for:
Santa Ana Regional Water Quality Control Board

Prepared and submitted by:

County of Orange
OC Public Works / OC Watersheds

Submitted on behalf of the:
County of Orange
Orange County Flood Control District
City of Costa Mesa
City of Irvine
City of Lake Forest
City of Newport Beach
City of Orange
City of Santa Ana
City of Tustin

PREPARED UNDER THE DIRECTION OF:

Chris Crompton, Manager, Water Quality Compliance

Water Quality Planning:

Stuart Goong, Environmental Resources Specialist
Suzan Given, Environmental Resources Specialist

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1.0 INTRODUCTION

The fecal coliform Total Maximum Daily Load (TMDL) for Newport Bay was established by the Santa Ana Regional Water Quality Control Board (Regional Board) on April 9, 1999. The TMDL and the January 7, 2000 Water Code Section 13267 letter from the Regional Board (**Appendix A**) require the County of Orange and the cities of Costa Mesa, Irvine, Lake Forest, Newport Beach, Orange, Santa Ana and Tustin (watershed cities) to develop a routine monitoring program for Newport Bay and to submit an annual report by September 1 of each year that summarizes bacteriological data collected in Newport Bay from April 1 through March 31 and evaluates attainment of the contact recreational use (REC-1) bacterial water quality objectives in the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan). This report includes data from April 1, 2012 through March 31, 2013.

1.1 Water Quality Objective (WQO) Attainment Overview

The Basin Plan includes fecal coliform WQOs for REC-1 use of Bays and Estuaries as follows:

> *Fecal coliform concentration: log mean less than 200 organisms/100 mL, based on five or more samples/30 day period, and not more than 10% of the samples exceed 400 organisms/100 mL for any 30-day period.*

Figure 1 describes attainment of the fecal coliform water quality objectives from 2001-2013 for samples collected from the Newport Bay for dry and wet seasons.

Figure 2 shows the percentage of sites sampled for 2012-13 attaining water quality objectives at Upper and Lower Newport Bay for wet and dry season. The remainder of the report provides additional details for methods, data analysis, and TMDL task status.

2.0 ROUTINE MONITORING PROGRAM (TMDL Section 3.a.ii.a)

2.1 Data Collection

The TMDL requires the County and watershed cities to implement a routine monitoring program to determine attainment of bacterial quality objectives in the Bay. Routine monitoring includes the collection of at least five samples per 30-day period from each of 35 stations, as identified in **Figure 3**, and analysis of the samples for total coliform, fecal coliform, and *Enterococcus* indicator bacteria. The current monitoring program implemented by the Orange County Health Care Agency (HCA) satisfies the requirements of the routine monitoring program.

2.2 Data Analysis

Table 1 presents the data from HCA's bacteriological monitoring program[1] by station name and number. Grey shading indicates results possibly influenced by rainfall. See **Appendix B** for annual rainfall totals from the Costa Mesa (OCPW #165) and the Corona del Mar (OCPW #169) rain gauges for 2001-2013.

[1] Data available on-line at Orange County Health Care Agency, Ocean Water Protection Program: www.ocbeachinfo.com.

Concentrations of total coliform, fecal coliform, and *Enterococcus* indicator bacteria are listed for the Lower Bay, the Upper Bay, and tributary stations with corresponding sampling dates. Sites in close proximity are presented together on each page.

Table 2 presents an evaluation of data in **Table 1** with respect to the attainment of REC-1 fecal coliform WQOs in the Basin Plan (see definition in **Section 1.1**). In determining if a single date met objectives for a 30-day period, a "yes" determination required both log mean (geometric mean) and single sample criteria to be met. A "no" determination resulted from either:

- A geometric mean was greater than 200 CFU/100 ml; or
- A single day exceedance of 400 CFU/100 ml within the thirty day period of the date sampled[2].

2.2.1 2012-13 Data

Calculation of the geometric mean requires five or more samples in a thirty day period. In conducting this analysis, the following should be noted:

- Calculation of the geometric mean for the first four sampling events in April required the use of March 2012 data from the previous sampling year (see the September 2012 Report).

- Santa Ana-Delhi Channel, Back Bay Drive Drain, and Big Canyon Wash tributary stations are not assigned REC-1 beneficial uses. As a result, these data were not evaluated with respect to the REC-1 fecal coliform objectives.

Figures 4 and **5** show the percentage of time each station met REC-1 fecal coliform objectives for the dry and wet seasons, respectively. **Tables 3a-b and 4a-b** highlight the stations meeting the bacteria water quality objectives at least 75% of the time and stations meeting standards less than 45% of the time during the years 2001-12 and 2001-13 for the dry and wet seasons, respectively. Most stations achieved water quality objectives more frequently during the dry period and less frequently during the wet period.

Three stations often could not be sampled due to either: 1) Low tide (Vaughn's Launch (23) and Ski Zone (24)), or 2) Lack of accessible roads (Vaughn's Launch and Ski Zone), or 3) No water present due to diversion practices (Back Bay Drive Drain). The inability to regularly sample these locations is the primary reason log means could not be calculated, as shown in **Table 2**. For the entire 2012-13 sampling period, a running geometric mean at Ski Zone and Vaughn's Launch could not be calculated due to having less than five samples in any 30 day period.

During the dry season (April 15 – October 15), as depicted in **Figure 2**, most stations (twenty-two of thirty-two) met the REC-1 objectives at least 75% of the time (See **Table 3a** and **5**).

Three stations met the REC-1 objectives less than 45% of the time during the dry season (See **Tables 3b** and **5**):

[2] Due to the weekly sampling schedule, a single day exceedence of 400 CFU/100 mL results in a greater than 10% exceedance within the thirty-day period.

- Garnet Avenue Beach (28)
- Bayside Drive Beach (30)
- Newport Blvd Bridge (32)

During the wet season (October 16 – April 14), eighteen stations met the REC-1 fecal coliform objectives at least 75% of the time, as depicted in **Figure 5** (Also see **Tables 4a** and **5**). Five stations met objectives less than 45% of the time (See **Tables 4b** and **5**):

- Newport Dunes East (18)
- Newport Dunes Middle (19)
- Newport Dunes West(20)
- Newport Blvd Bridge (32)
- San Diego Creek at Campus Drive (35)

Figures 6a-6ff illustrate the magnitude of sample and log mean concentrations relative to water quality objectives for the current reporting year. Ratios of the sample result to the single sample water quality objective and of calculated geometric mean to the geometric mean water quality objective were calculated and plotted on a log scale. Values greater than one indicate an exceedence of water quality objectives. Samples possibly influenced by greater than 0.1" of rainfall within 72 hours are shown as unfilled blue symbols.

Exceedances were seen for samples possibly influenced by storm runoff at the following sites: 38th Street Beach (7), 33rd Street Channel (8), Lido Yacht Club Beach (29), 10th St. Beach (12), Alvarado/Bay Isle Reach (13), Bayshore Beach (4), DeAnza Launch (27), Newport Dunes West (20), Newport Dunes Middle (19), Newport Dunes East (18), Newport Dunes North (21), North Star Beach (25), Ski Zone (24), and San Diego Creek at Campus (35).

2.2.2 2001-13 Long Term Data

Figures 7 and **8** show the percentage of time that fecal coliform samples at each station met REC-1 fecal coliform objectives for data from April 15-October 15, 2001-2012 and October 16-April 14, 2001-2013 during the dry and wet seasons, respectively.

During the 2001-12 dry season (April 15 – October 15), as depicted in **Figure** 7 and **Tables 3a** and **5**, eighteen of thirty-two stations met the REC-1 objectives at least 75% of the time. The following three stations met the objectives less than 45% of the time (See **Tables 3b** and **5**):

- Newport Boulevard Bridge (32)
- Vaughn's Launch (23)
- Ski Zone (24)

During the 2001-13 wet season (October 16 – April 14), as depicted in **Figure 8** and **Tables 4a** and **5**, four of thirty-two stations (Promontory Point Channel (26), N St Beach (16), Abalone Ave Beach (15), and Rocky Point Beach (17)) met the REC-1 fecal coliform objectives at least 75% of the time.

The following nine stations met the objectives less than 45% of the time (See **Tables 4b** and **5**):

- North Star Beach (25)
- Newport Dunes North (21)
- Newport Dunes Middle (19)
- Newport Dunes East (18)
- Newport Dunes West (20)
- Newport Blvd Bridge (32)
- Vaughn's Launch (23)
- Ski Zone (24)
- San Diego Creek at Campus Drive (35)

Figures 9a-9ii show the running geometric mean and single sample concentrations for all fecal coliform data collected since 2001, relative to water quality objectives. These data are also summarized in **Table 2** from each Annual Data Report. Insufficient data to calculate the log mean is represented by a break in the running log mean line. A visual inspection of the plots reveals the following patterns:

- Many exceedances at Upper Bay sites were influenced by precipitation.
- Exceedances in the Lower Bay have decreased since 2007 (eg the estimated exceedance frequency for samples collected at the Lower Bay sites from April 2001 to March 2007 was approximately 9%, and the exceedance frequency from April 2008 to March 2013 was approximately 3%).
- There are seasonal patterns for the running geometric mean observed at most sites.
- At both Upper Bay and Lower Bay sites, many precipitation influenced samples did not exceed the WQO. For example, at Via Genoa Beach, approximately 78% of precipitation influenced (>0.1") samples met the water quality objective; at North Star Beach, approximately 56% of precipitation influenced samples met the WQO.

3.0 TMDL TASK STATUS

The implementation plan for the Newport Bay Fecal Coliform TMDL includes ten tasks to complete specific monitoring, investigations, and analyses. Subsequent phases of TMDL implementation will take into account the results of the monitoring and assessment efforts described below and any other relevant studies. Each task required by the TMDL is presented below in further detail, followed by a description of the current task status. The TMDL Tasks and Status are summarized in **Table 6**.

<u>TMDL Section 3.a.ii.a - Routine Monitoring (Task 1)</u>
By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay. At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1 and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by

September 1 of each year. The monitoring plan(s) shall be implemented upon Regional Board approval.

The proposed plan was submitted in January 2000 and was approved by the Regional Board on November 17th, 2000 under Resolution 00-100. Annual reports summarizing data collected for the year and evaluating attainment of water quality objectives have been submitted every year since.

TMDL Section 3.a.ii.b -Water Quality Model for Bacterial Indicators (Task 2)
By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay.

The proposed plan was submitted in January 2000. The Regional Board approved the plan on November 17, 2000 under Resolution 00-100. The calibrated model and model documentation were submitted in September 2001. Regional Board peer review of this task is pending.

TMDL Section 3.a.ii.c – Beneficial Use Assessment (Task 3 and 4)
By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment.

By March 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates.

The REC-1 Beneficial Use Assessment (BUA) plan was submitted in January 2000. The Regional Board approved the plan on November 17, 2000 under Resolution 00-100. The REC-1 BUA report was submitted in September 2001. Regional Board peer review of this task is pending.

The SHELL BUA plan was submitted in March 2001. The Regional Board approved the plan on June 1, 2001 under Resolution 01-59. The SHELL BUA Report was submitted in August 2004.

TMDL Section 3.a.ii.d – Source Identification and Characterization (Tasks 5 and 6)
By March 1, 2000, the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By March 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by March 1, 2000 and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000, and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

The plan for fecal coliform source identification and characterization for the Dunes Resort and evaluation of urban runoff and natural sources was submitted in March 2000. The Plan for fecal coliform source identification and characterization for agricultural sources was submitted in April 2000. The Regional Board approved the plans for the Dunes Resort and agricultural source identification and characterization on November 17, 2000. After multiple unsuccessful grant applications, a Proposition 13 Grant was awarded in 2005 for the urban runoff and natural sources evaluation plan developed by the County of Orange and Regional Board staff. Field investigation activities began in January 2006 and were completed in February 2007. The final report was submitted on November 30, 2009. A report entitled *Swimmer Shedding Study in*

Newport Dunes, California was prepared for the City of Newport Beach and the Regional Board[3]. The final report for the agricultural sources evaluation was completed in September 2003 by the University of California, Cooperative Extension[4].

TMDL Section 3.a.ii.e – Evaluation of Vessel Waste Control Program (Task 7)

By April 1, 2000, the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board.

The vessel waste control program evaluation plan was submitted April 2000 and approved by the Regional Board on November 17, 2000 under Resolution 00-100. A report entitled *Public Health Risk Assessment for the Newport Bay Watershed: Recreational Contact and Microbiological Risk* was submitted in September 2001 and a related journal article was published in 2006[5]. An additional report by University of California, Irvine researchers was prepared in 2004 for the City of Newport Beach and the Regional Board, entitled *The Contribution of Marinas to Fecal Indicator Bacteria Impairment in Lower Newport Bay, Southern California*[6]. Additionally, a related journal article was published in the journal *Environmental Science and Technology* in 2005[7].

TMDL Section 3.a.ii.f – TMDL, WLA and LA Evaluation and Source Monitoring Program (Task 8)

By 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be

[3] The report is on-line at http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/fecal_tmdl.shtml.
[4] Kabashima, J., D. Haver. Monitoring of Total and Fecal Coliform in Surface Runoff from Agricultural Operations in the Newport Bay/San Diego Creek Watershed. SWRCB Agreement Number: 0-081-258-0. September 1, 2002-September 1, 2003.
[5] Soller, JA., JNS Eisenberg, JF DeGeorge, RC Cooper, G Tchobanoglous, AW Olivieri. A public health evaluation of of recreational water impairment. Journal of Water and Health, 04(1): 2006.
[6] The report is on-line at http://www.waterboards.ca.gov/santaana/water_issues/programs/tmdl/fecal_tmdl.shtml
[7] Jeong Y, SB Grant, S Ritter, A Pednekar, L Candelaria, C Winant,. Identifying pollutant sources in tidally mixed systems: case study of fecal indicator bacteria from marinas in Newport Bay, southern California. *Environmental Science and Technology*, **39**(23): 9083-93, 2005**.**

submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.

The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval.

Work related to this task is ongoing in conjunction with Task 9.

TMDL Section 3.a.ii.g – Updated TMDL Report (Task 9)
The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules

The final draft of the report *Recommended Revisions to the Newport Bay Fecal Coliform TMDL* is expected to be provided to the Santa Ana Regional Board during the 2013-14 reporting period.

TMDL Section 3.a.ii.h – Adjust TMDL; Adopt Interim WLA, LAs and Compliance Dates (Task 10)
Based on the results of the studies required by Table 5-9g and recommendations made in the Updated TMDL Reports, changes to the TMDL for fecal coliform may be warranted. Such changes would be considered through the Basin Plan Amendment process. Upon completion and consideration of the studies and any appropriate Basin Plan amendments, interim WLAs and LAs that lead to ultimate compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, will be established with interim compliance dates. Schedules will also be established for submittal of implementation plans for control measures to achieve compliance with these WLAs, LAs and compliance dates.

Work related to this task is ongoing and depends on the completion and evaluation of Tasks 1-9.

FIGURES

Figure 1. Percentage of Sites Attaining WQOs for at least 75% of the samples (2001-13).

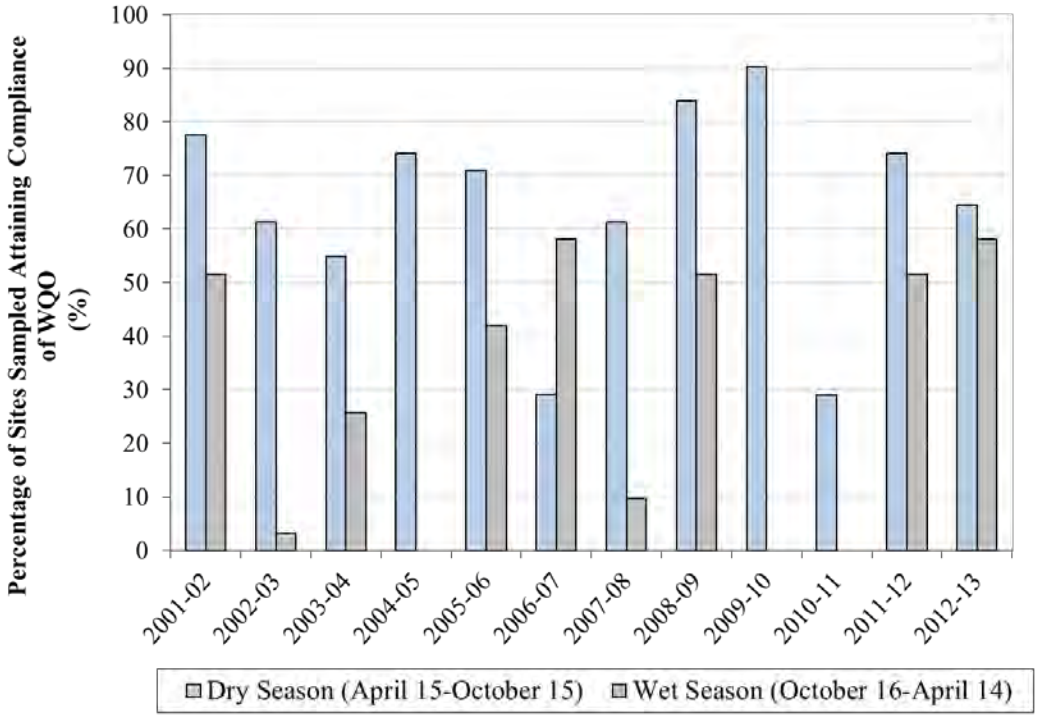
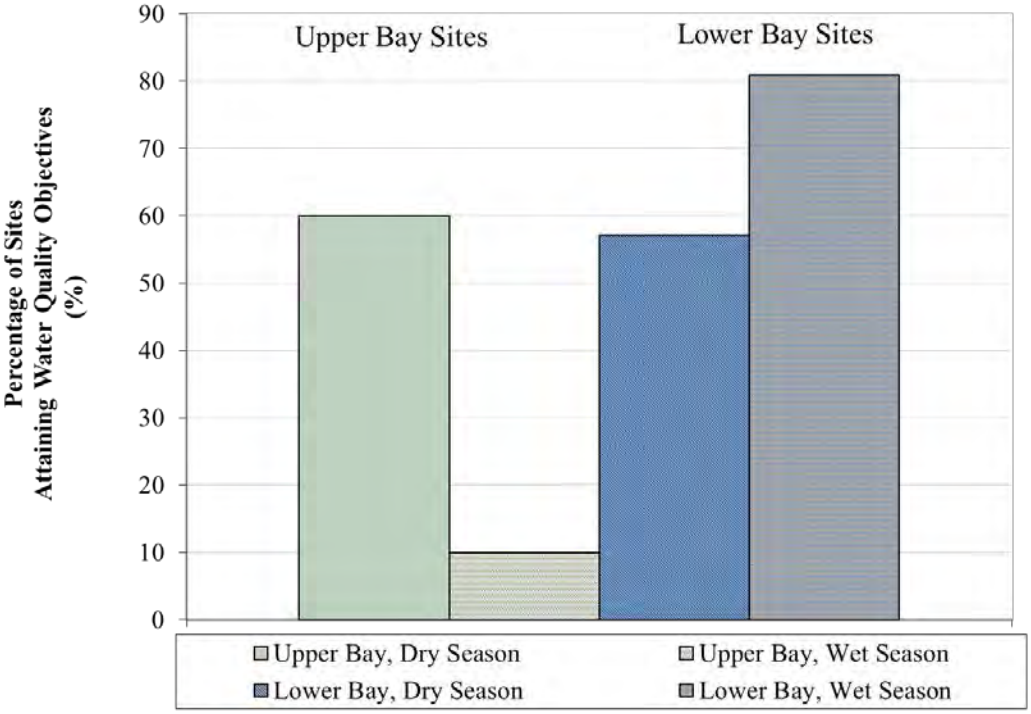
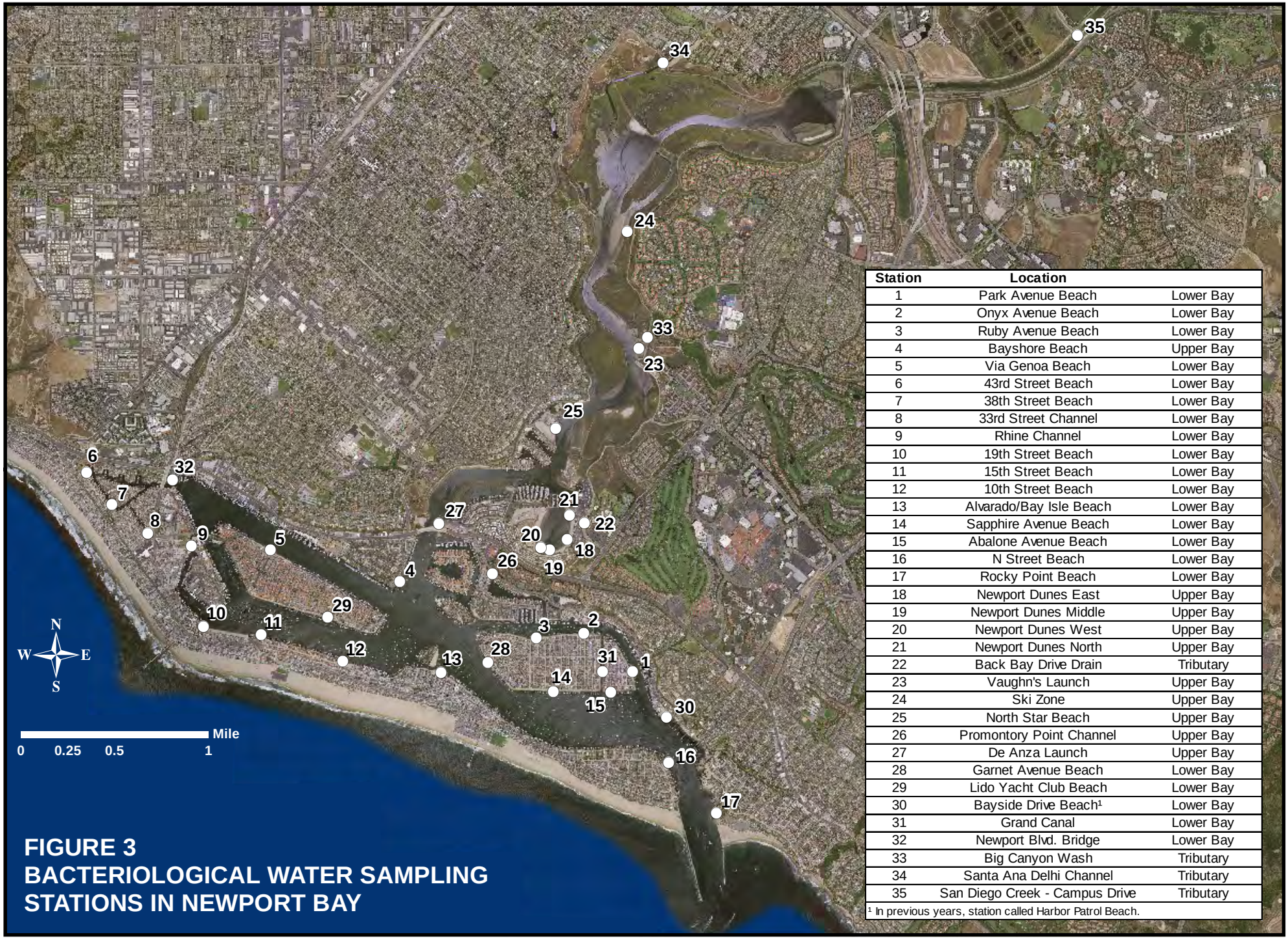


Figure 2. Percentage of Sites Attaining WQOs by Area and Season for 2012-13.





Station	Location	
1	Park Avenue Beach	Lower Bay
2	Onyx Avenue Beach	Lower Bay
3	Ruby Avenue Beach	Lower Bay
4	Bayshore Beach	Upper Bay
5	Via Genoa Beach	Lower Bay
6	43rd Street Beach	Lower Bay
7	38th Street Beach	Lower Bay
8	33rd Street Channel	Lower Bay
9	Rhine Channel	Lower Bay
10	19th Street Beach	Lower Bay
11	15th Street Beach	Lower Bay
12	10th Street Beach	Lower Bay
13	Alvarado/Bay Isle Beach	Lower Bay
14	Sapphire Avenue Beach	Lower Bay
15	Abalone Avenue Beach	Lower Bay
16	N Street Beach	Lower Bay
17	Rocky Point Beach	Lower Bay
18	Newport Dunes East	Upper Bay
19	Newport Dunes Middle	Upper Bay
20	Newport Dunes West	Upper Bay
21	Newport Dunes North	Upper Bay
22	Back Bay Drive Drain	Tributary
23	Vaughn's Launch	Upper Bay
24	Ski Zone	Upper Bay
25	North Star Beach	Upper Bay
26	Promontory Point Channel	Upper Bay
27	De Anza Launch	Upper Bay
28	Garnet Avenue Beach	Lower Bay
29	Lido Yacht Club Beach	Lower Bay
30	Bayside Drive Beach[1]	Lower Bay
31	Grand Canal	Lower Bay
32	Newport Blvd. Bridge	Lower Bay
33	Big Canyon Wash	Tributary
34	Santa Ana Delhi Channel	Tributary
35	San Diego Creek - Campus Drive	Tributary

[1] In previous years, station called Harbor Patrol Beach.

FIGURE 3
BACTERIOLOGICAL WATER SAMPLING STATIONS IN NEWPORT BAY

Figure 4. Percentage of time REC-1 fecal coliform objective was met for 2012 dry season (April 15 - October 15)

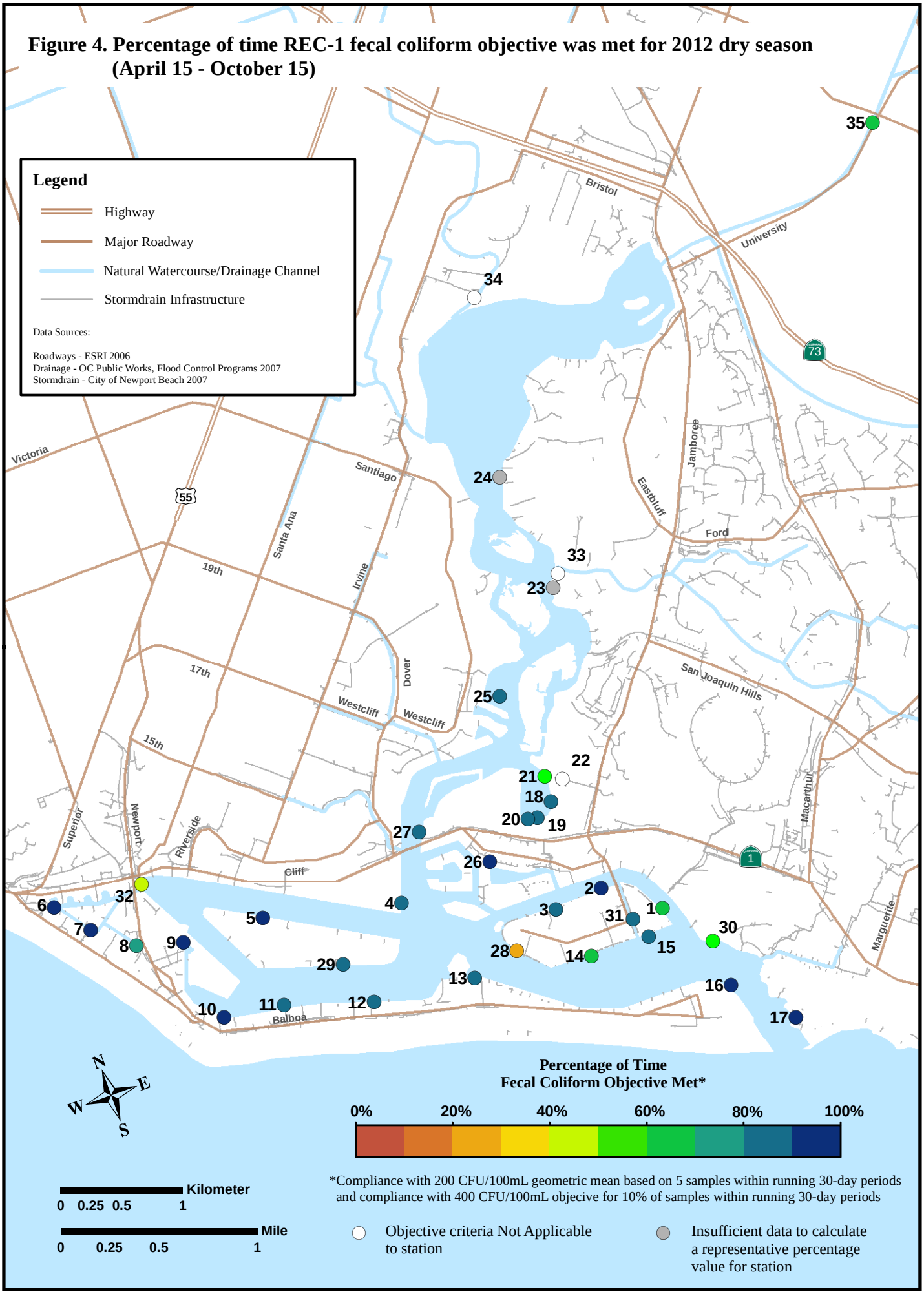
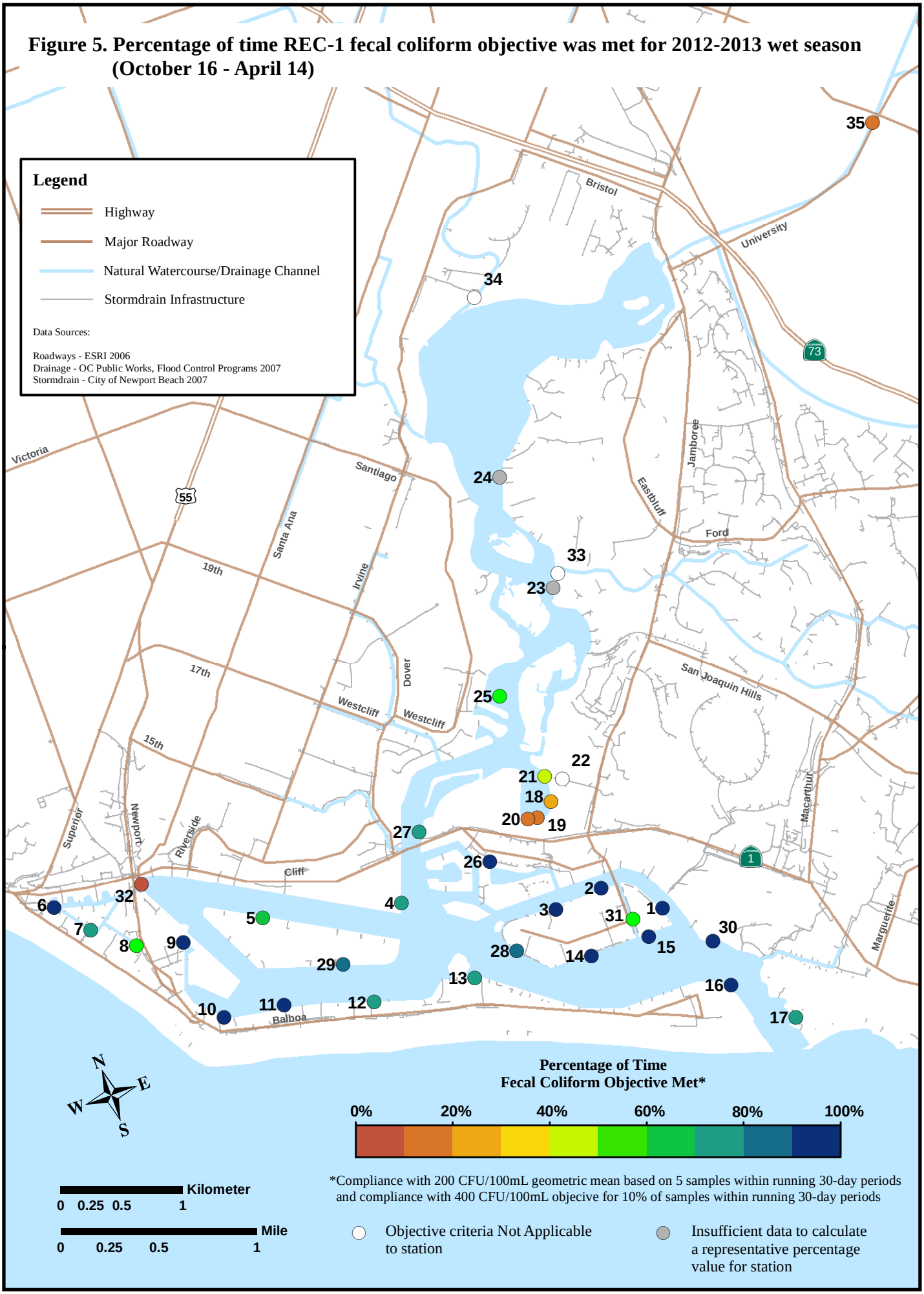


Figure 5. Percentage of time REC-1 fecal coliform objective was met for 2012-2013 wet season (October 16 - April 14)



8/28/2013

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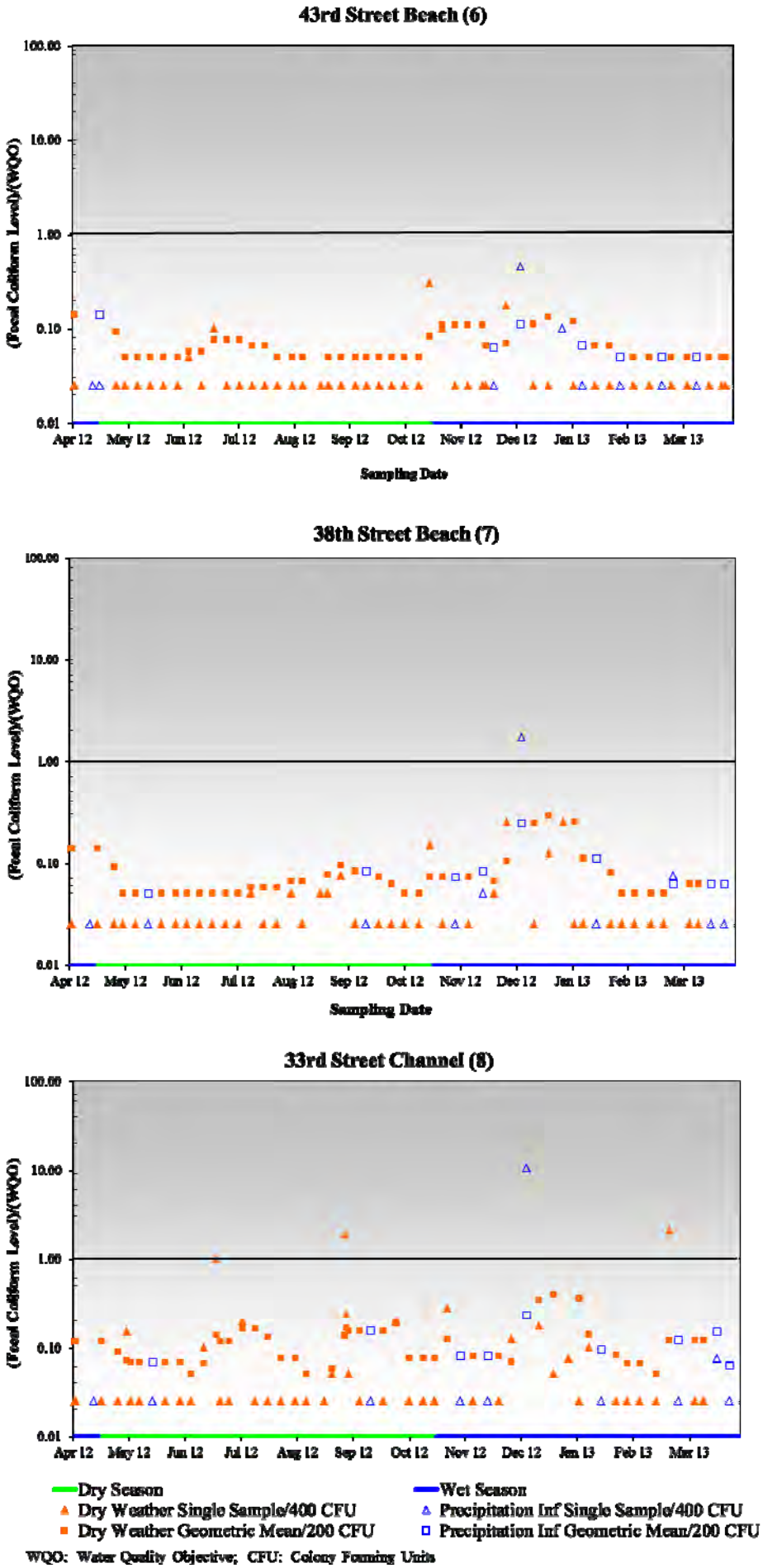
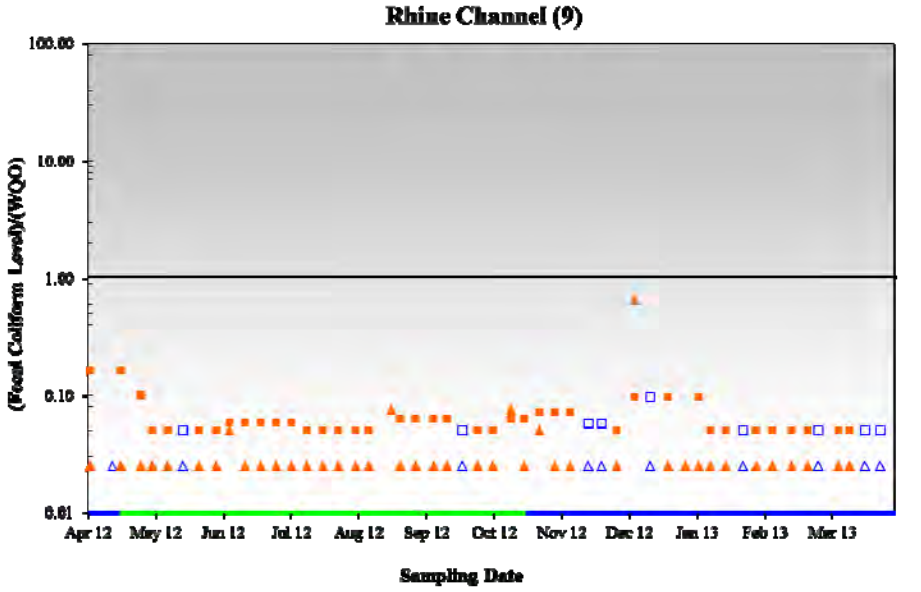
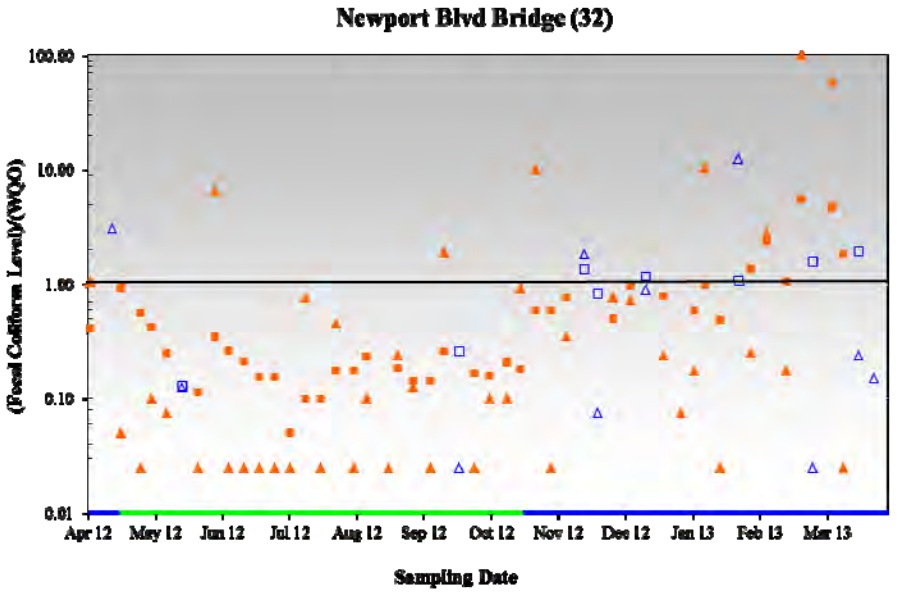
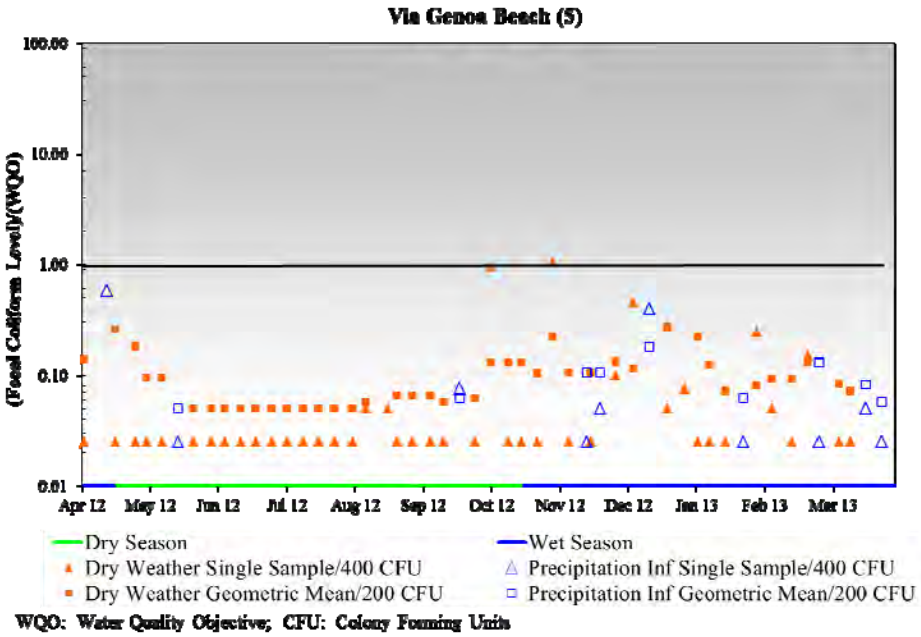
Figures 6a-6c. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.



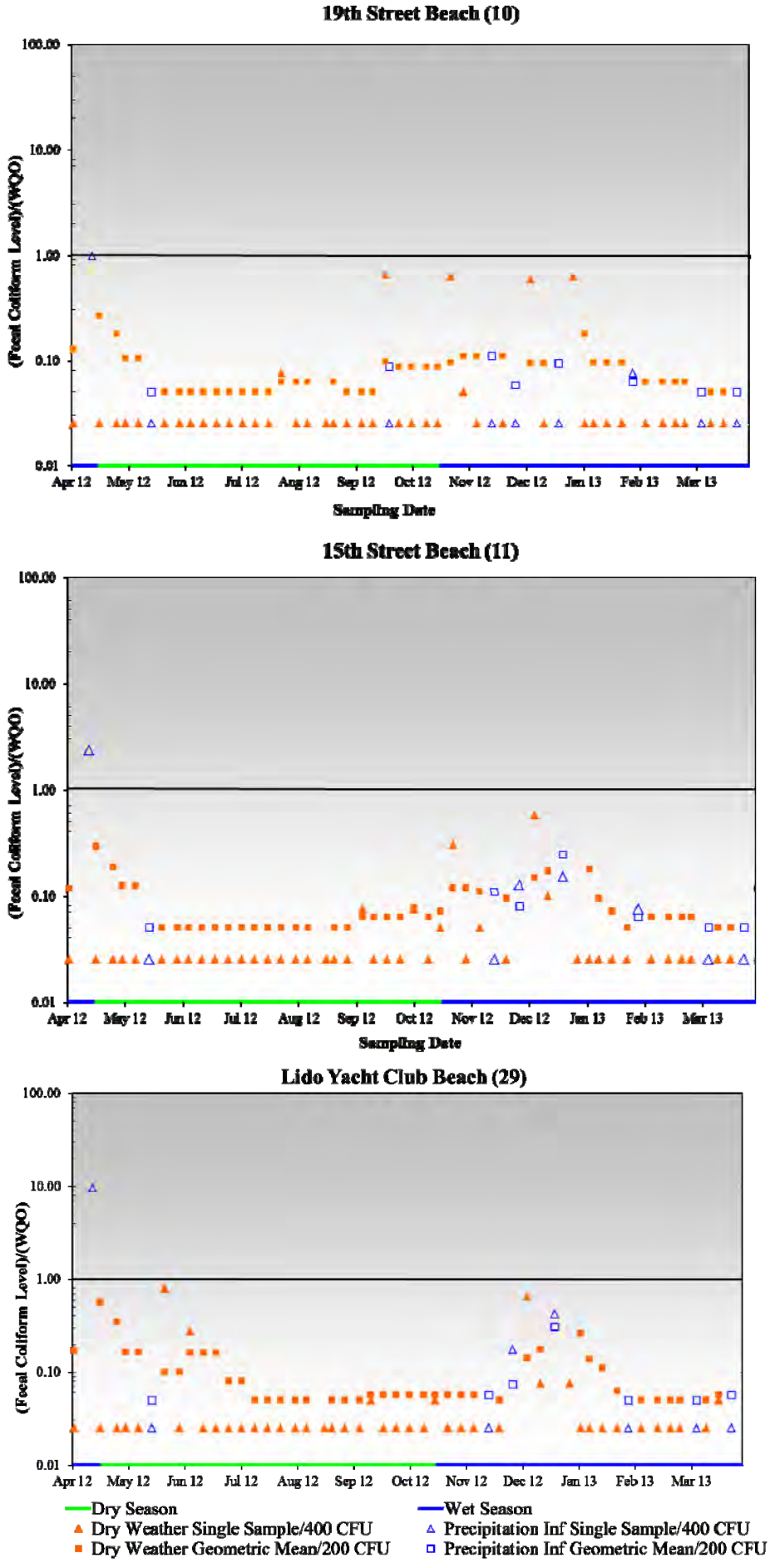
Figures 6d-6f. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.



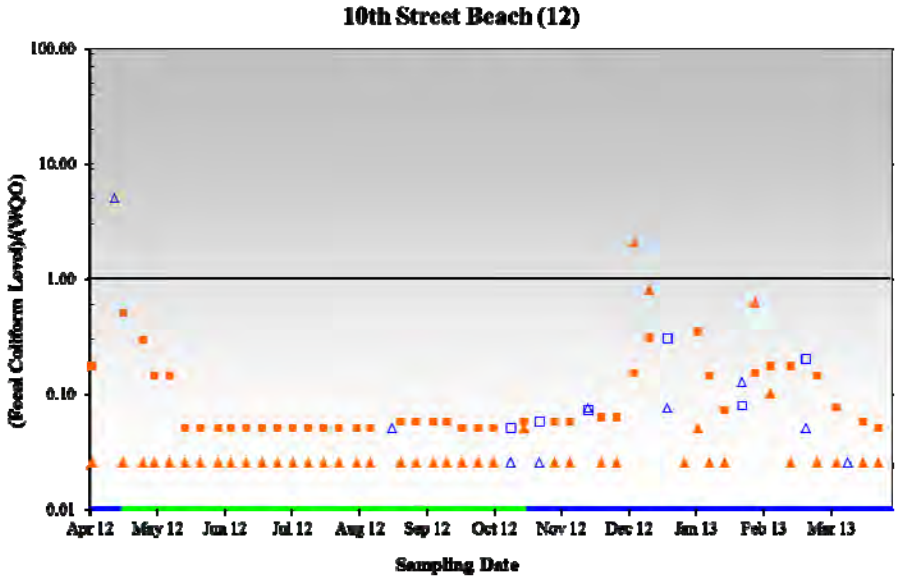


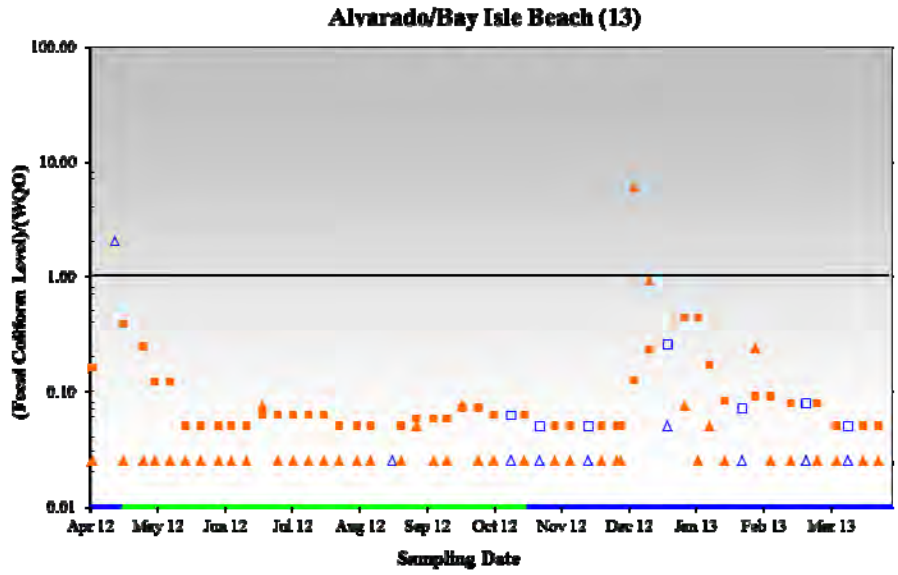


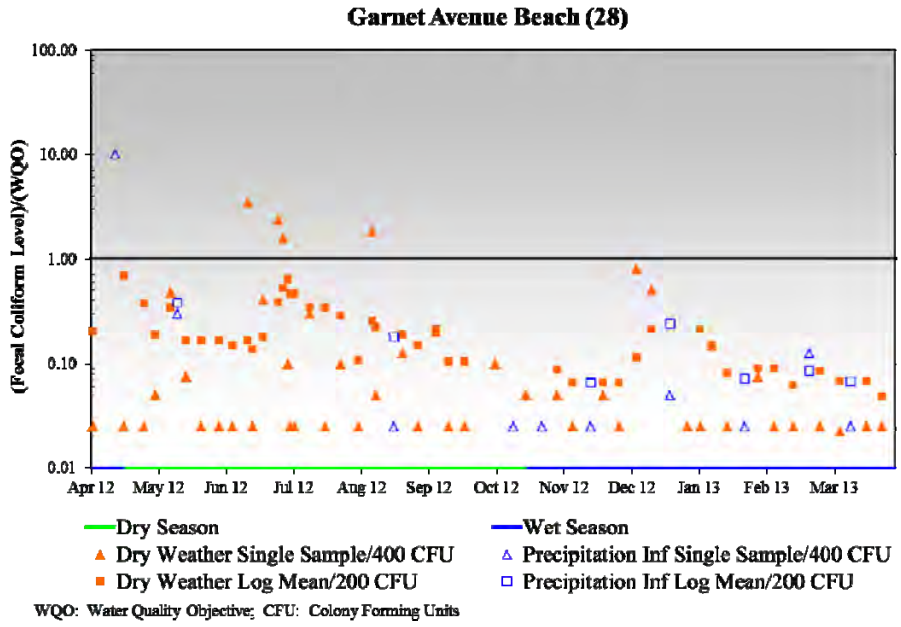
Figures 6g-6i. Magnitude of Fecal Coliform Water Quality Objective Exceedances, Lower Bay Stations.



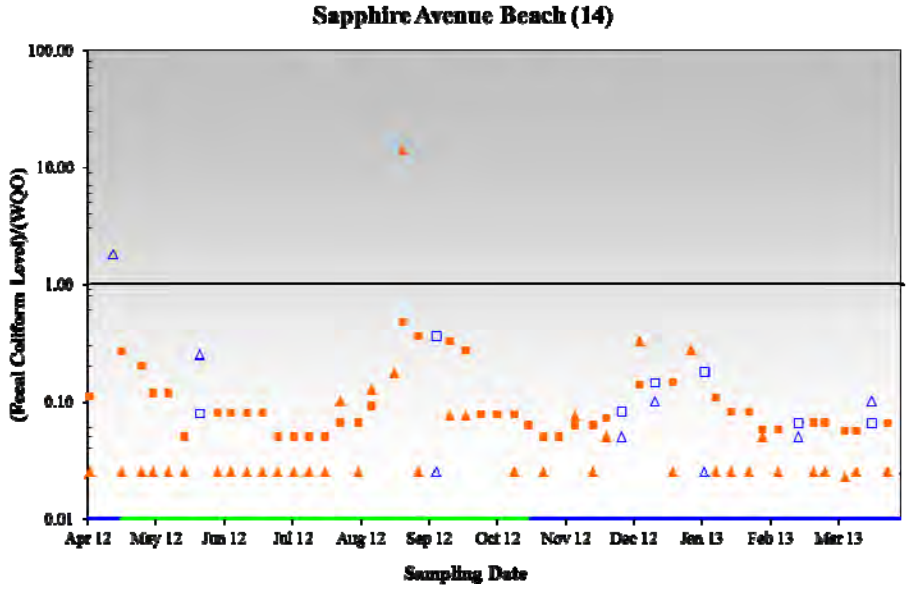
Figures 6j-6l. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.

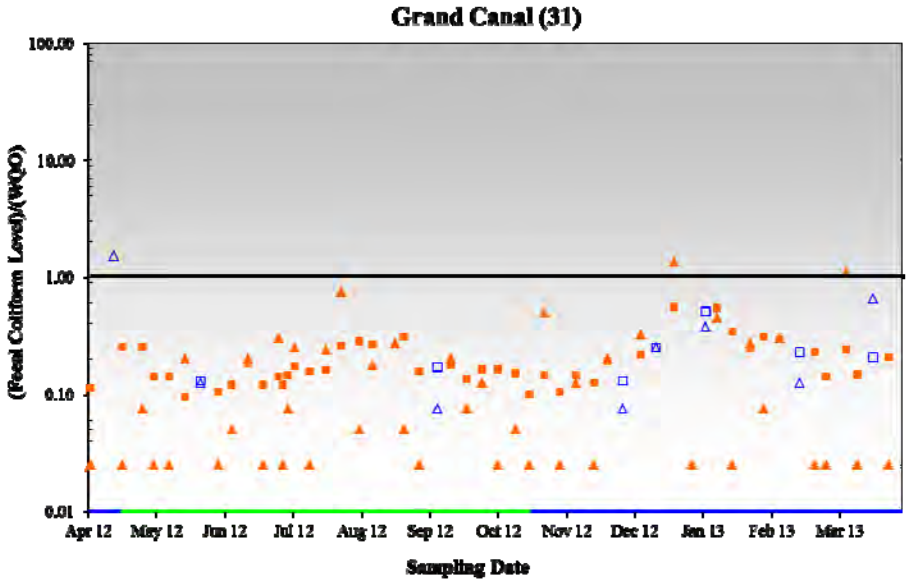


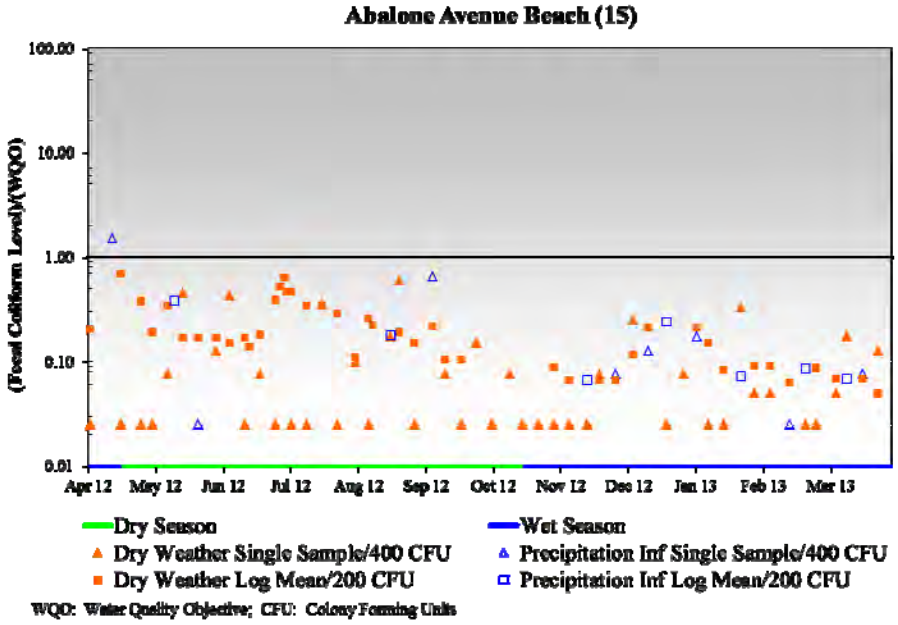




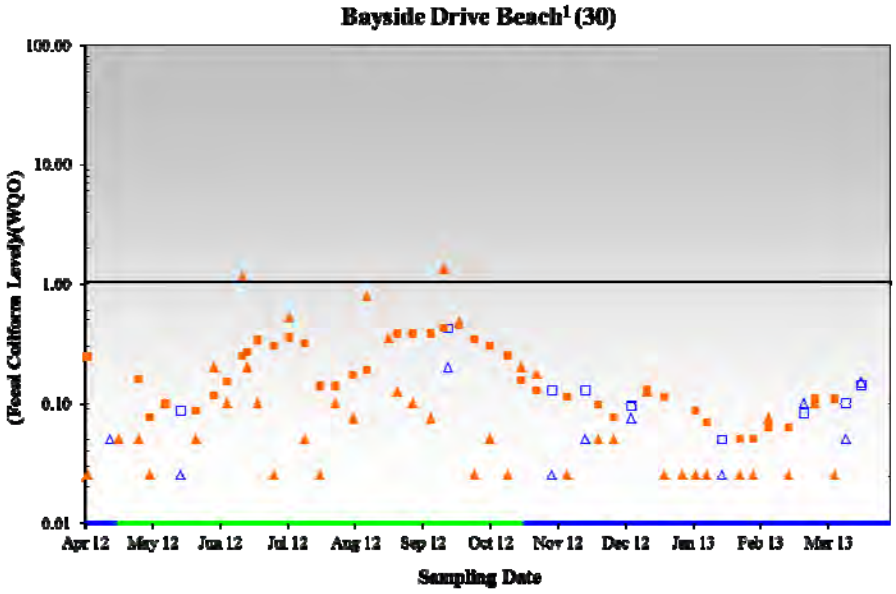
Figures 6m-6o. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.



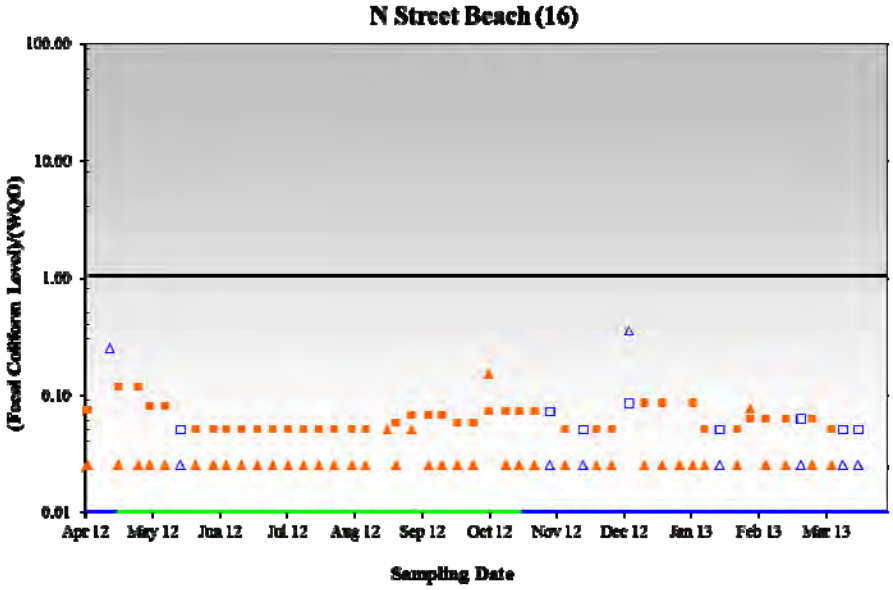


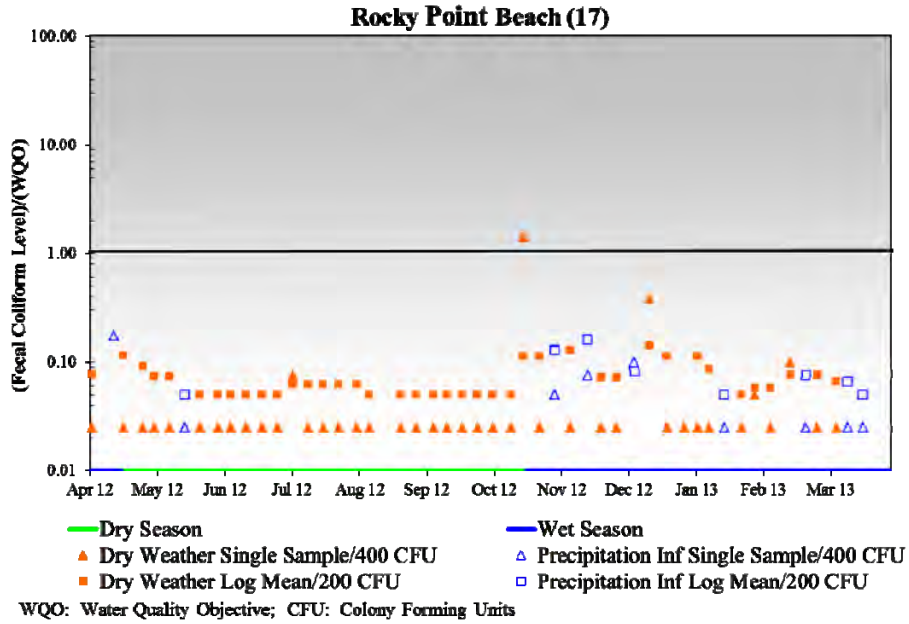


Figures 6p-6r. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.



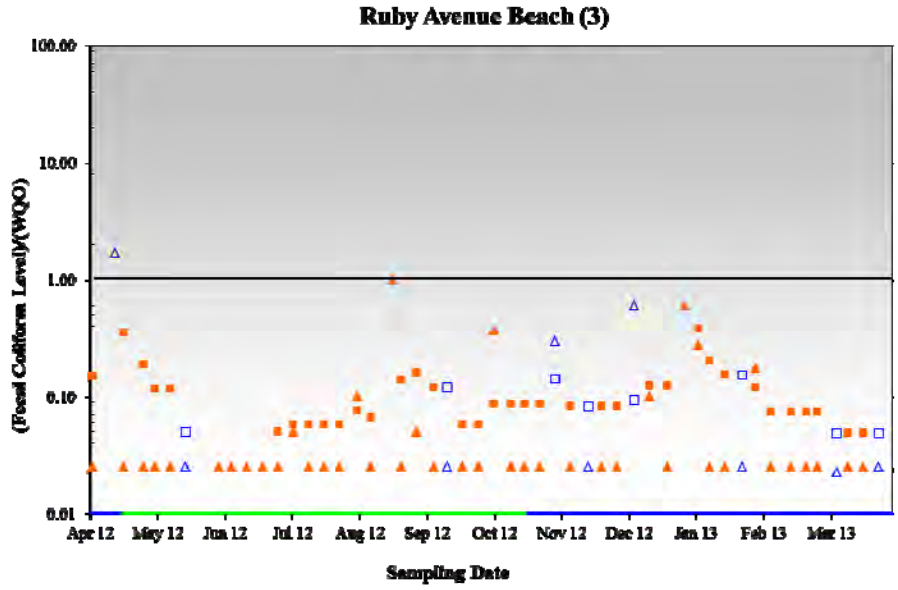
[1]In previous years, site called Harbor Patrol Beach.

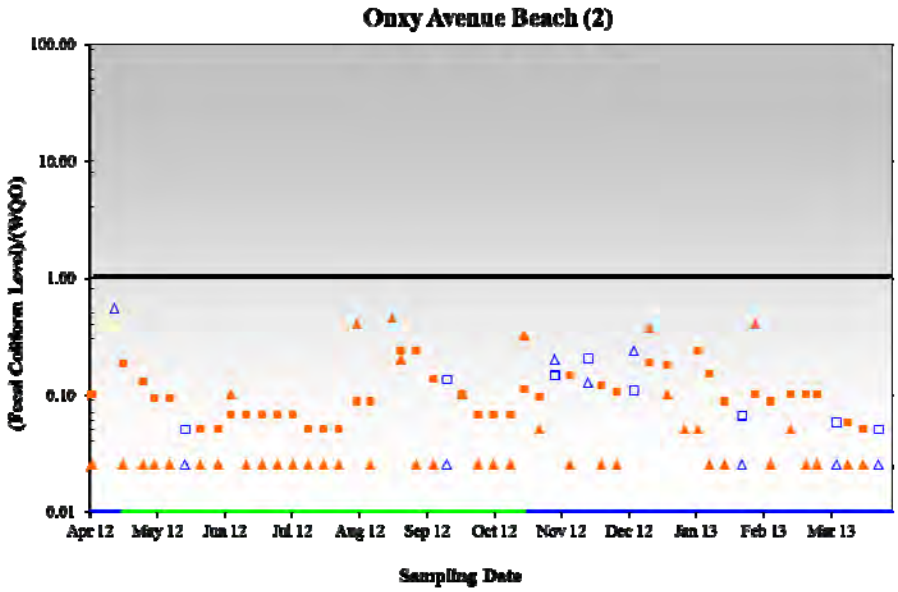


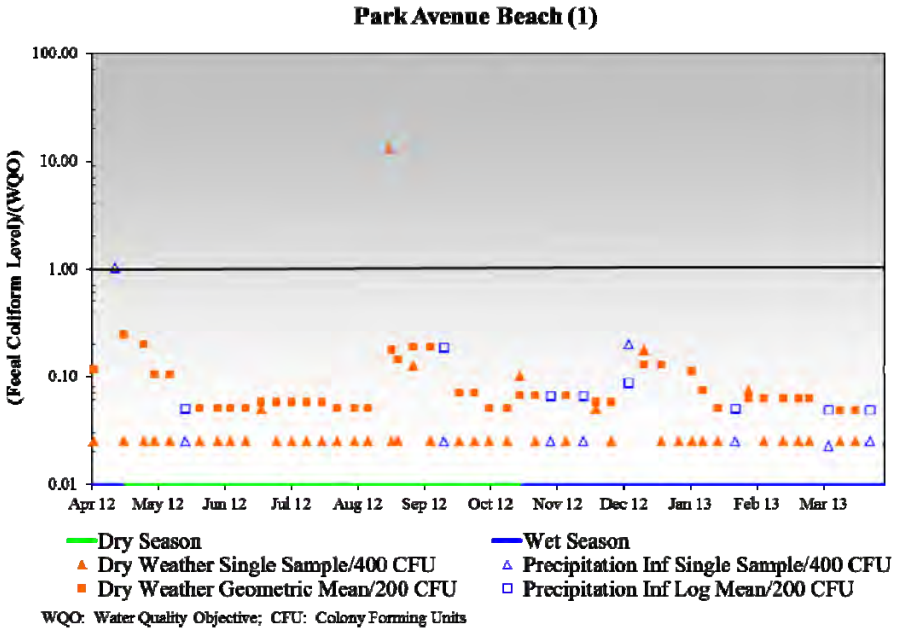


WQO: Water Quality Objective; CFU: Colony Forming Units

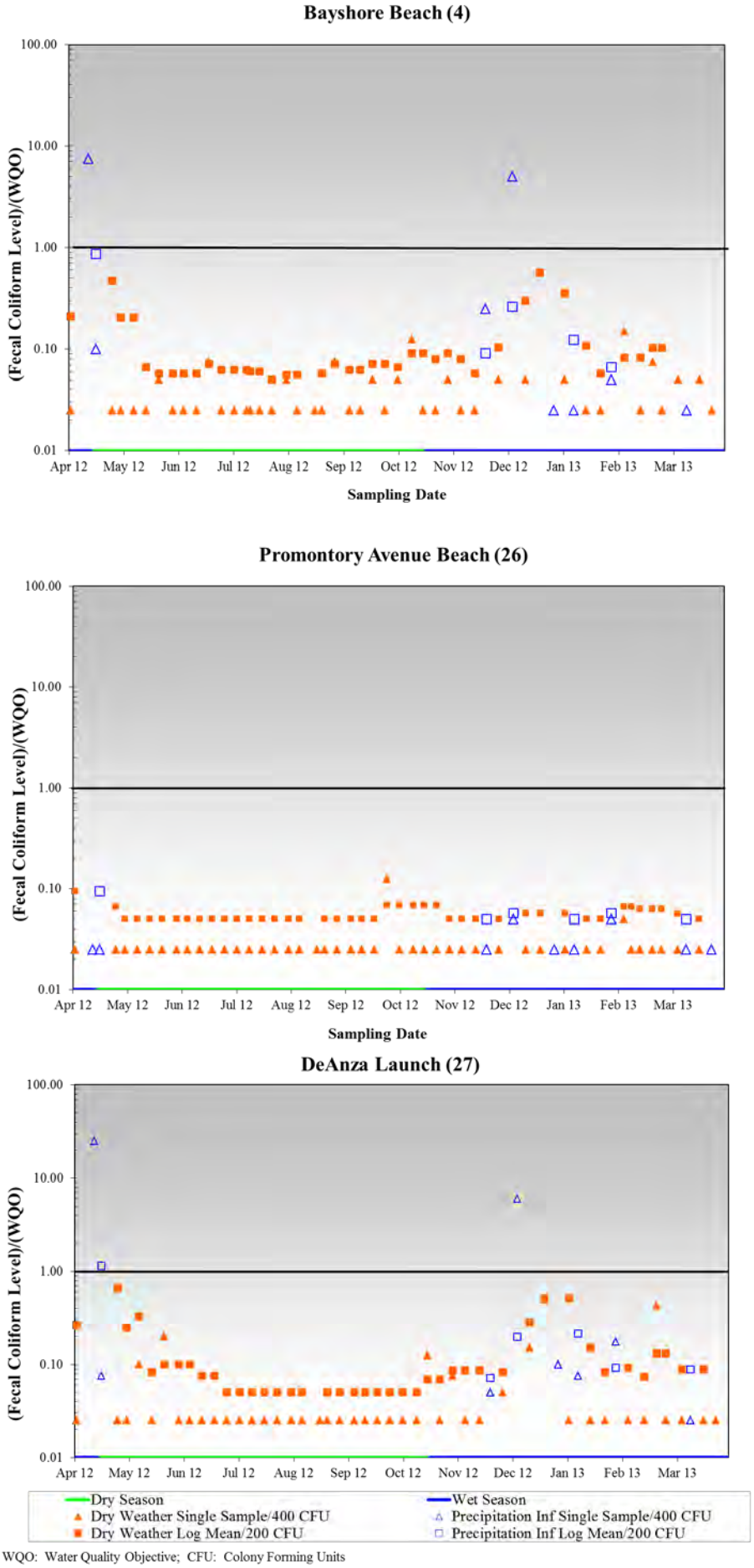
Figures 6s-6u. Magnitude of fecal coliform water quality objective exceedances, Lower Bay stations.





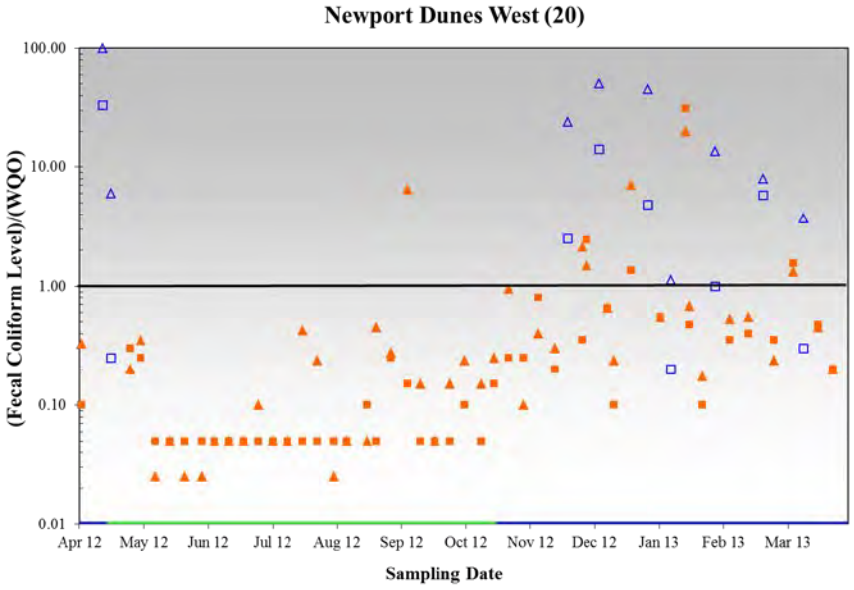


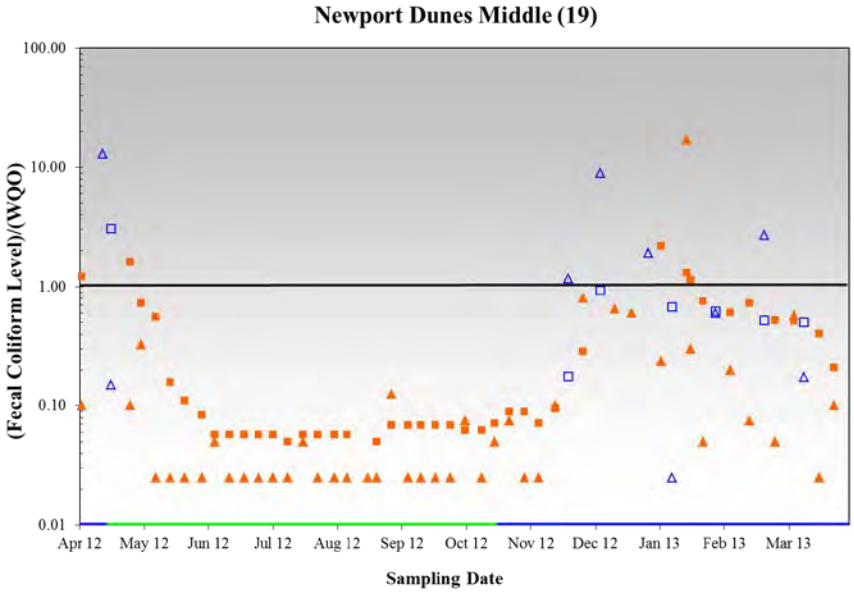
Figures 6v-6x. Magnitude of fecal coliform water quality objective exceedances, Upper Bay stations.

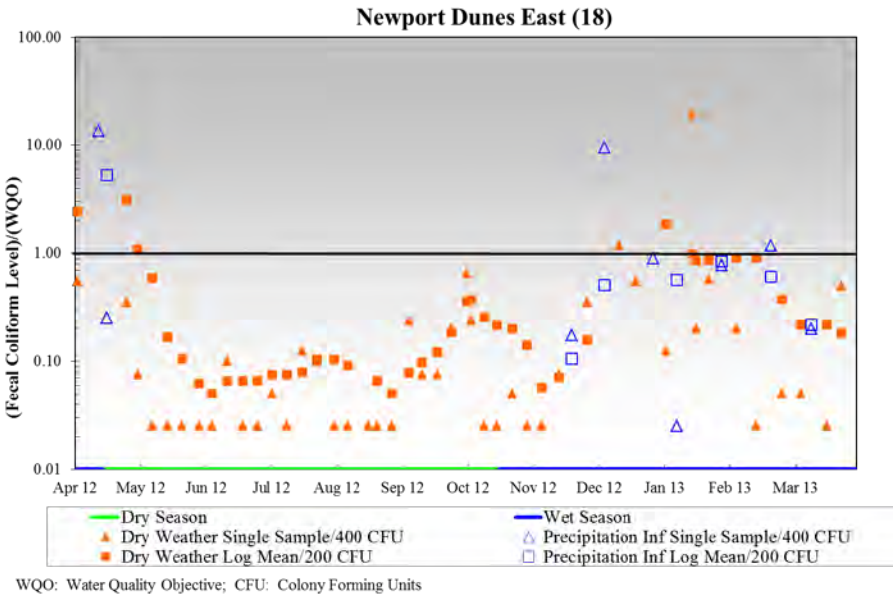


WQO: Water Quality Objective; CFU: Colony Forming Units

Figures 6y-6aa. Magnitude of fecal coliform water quality objective exceedances, Upper Bay stations.

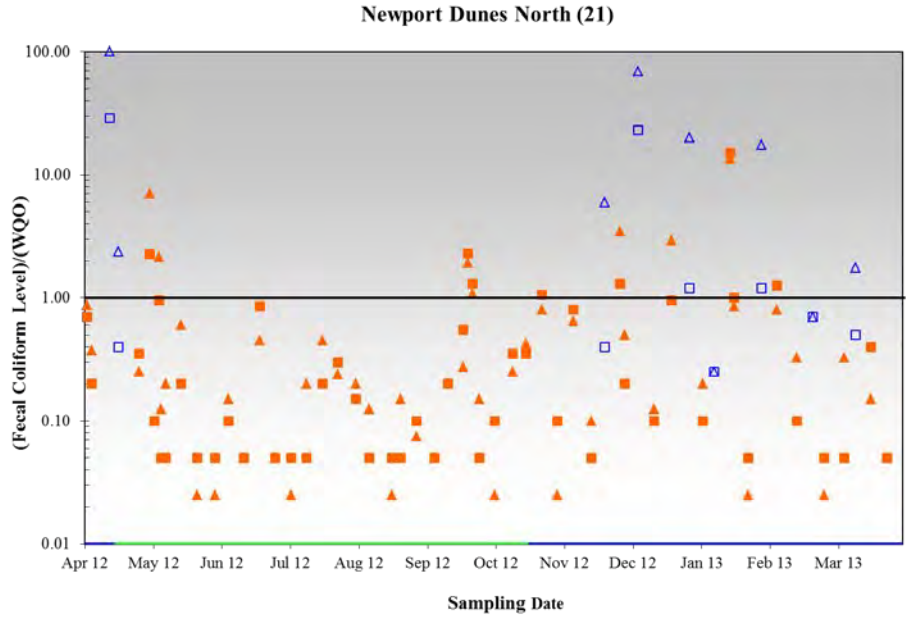


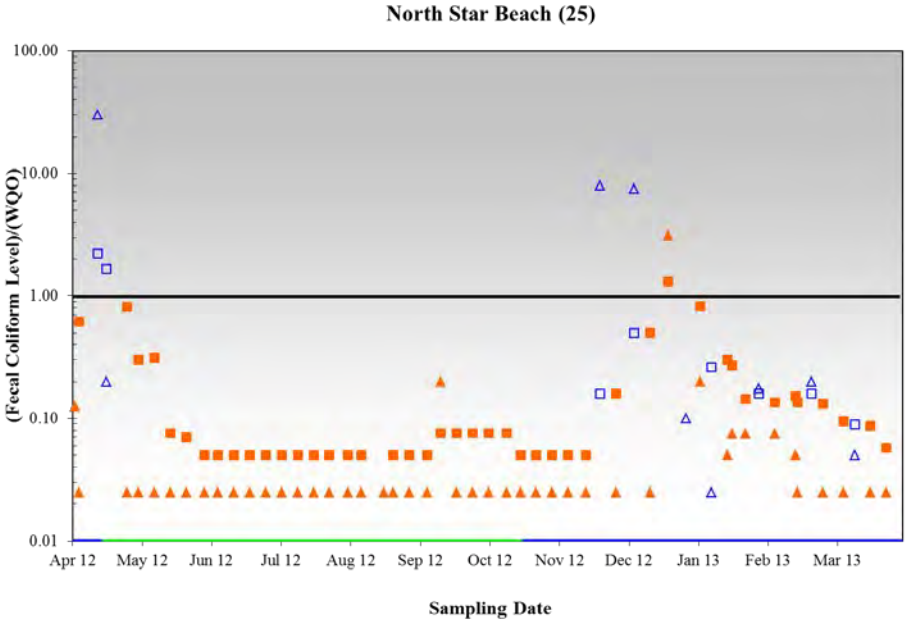


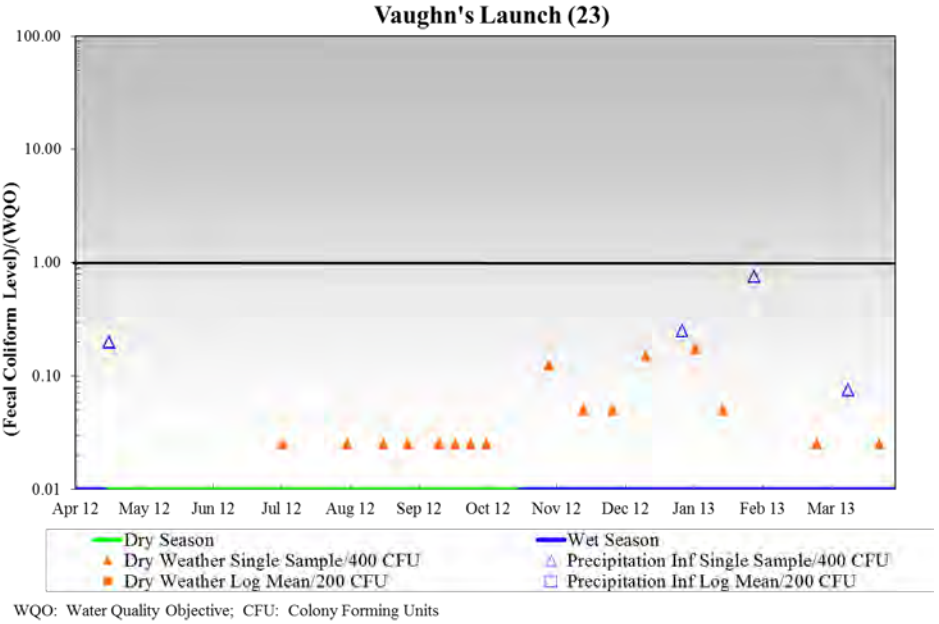


WQO: Water Quality Objective; CFU: Colony Forming Units

Figures 6bb-6dd. Magnitude of fecal coliform water quality objective exceedances, Upper Bay stations.

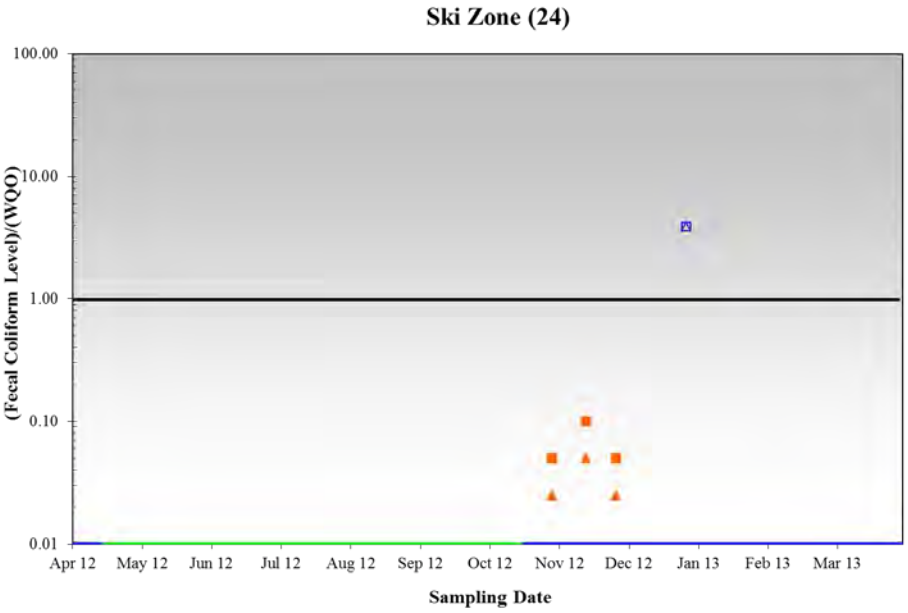






WQO: Water Quality Objective; CFU: Colony Forming Units

Figures 6ee-6ff. Magnitude of fecal coliform water quality objective exceedances, Upper Bay stations.



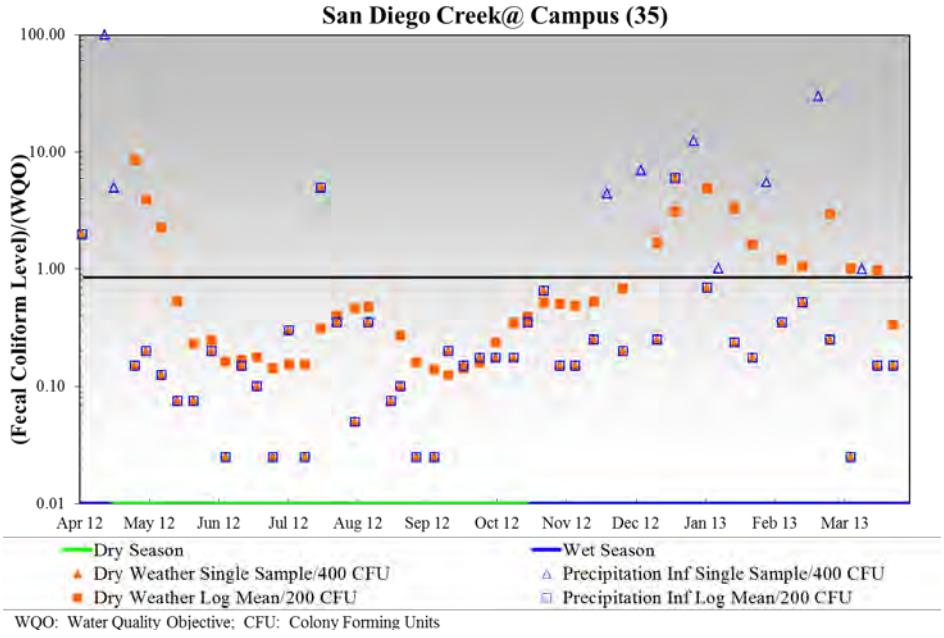
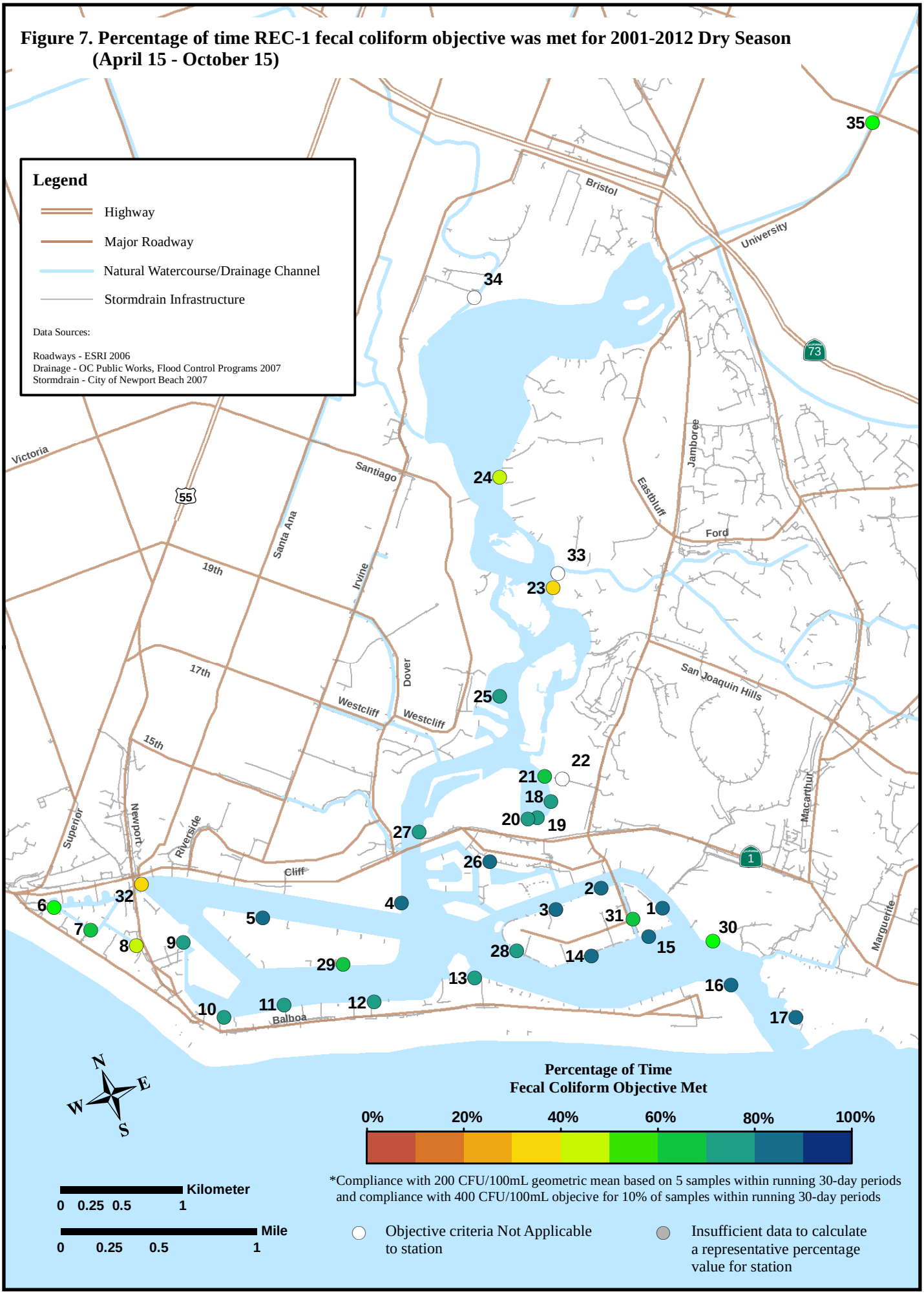


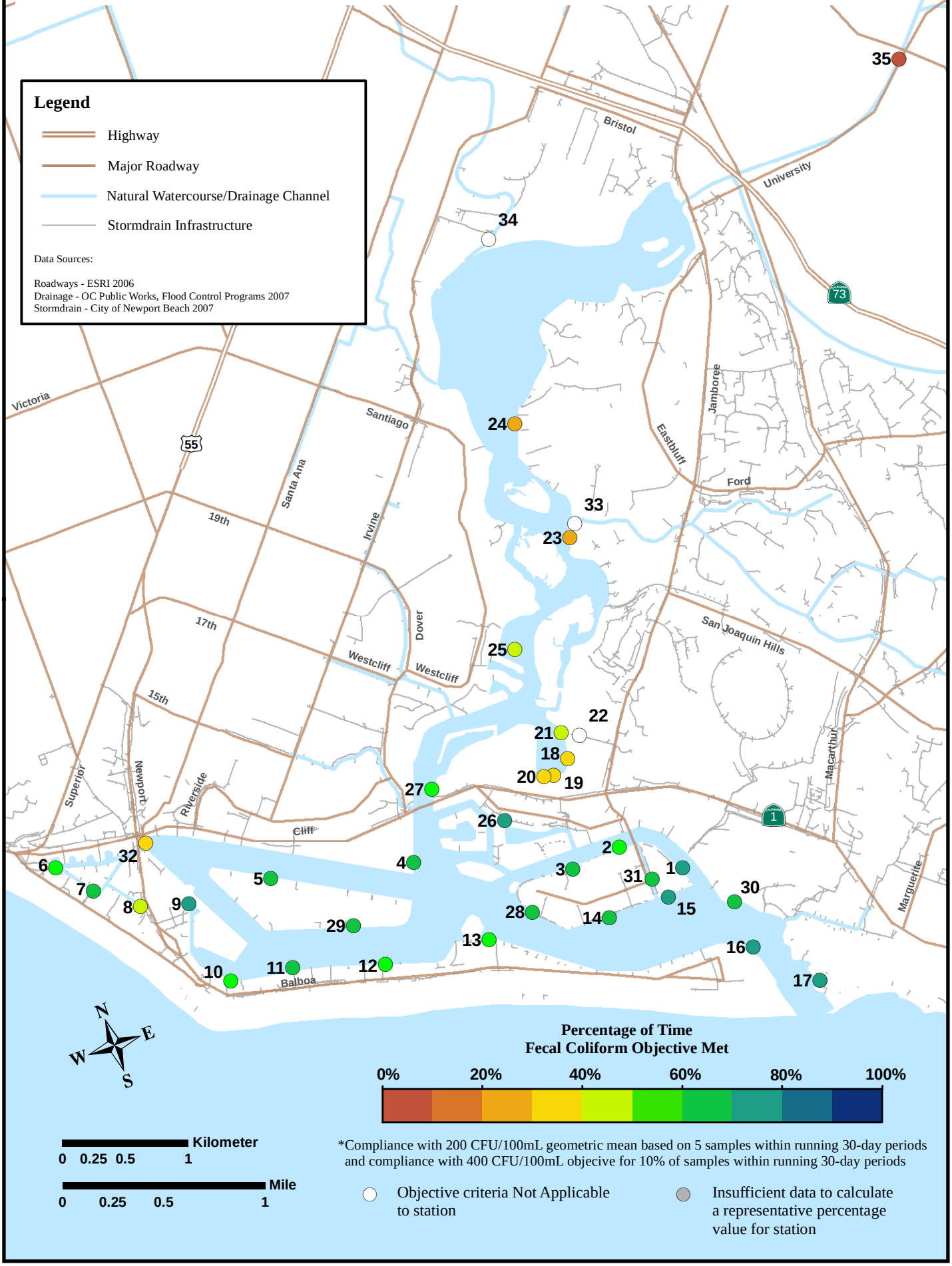
Figure 7. Percentage of time REC-1 fecal coliform objective was met for 2001-2012 Dry Season (April 15 - October 15)



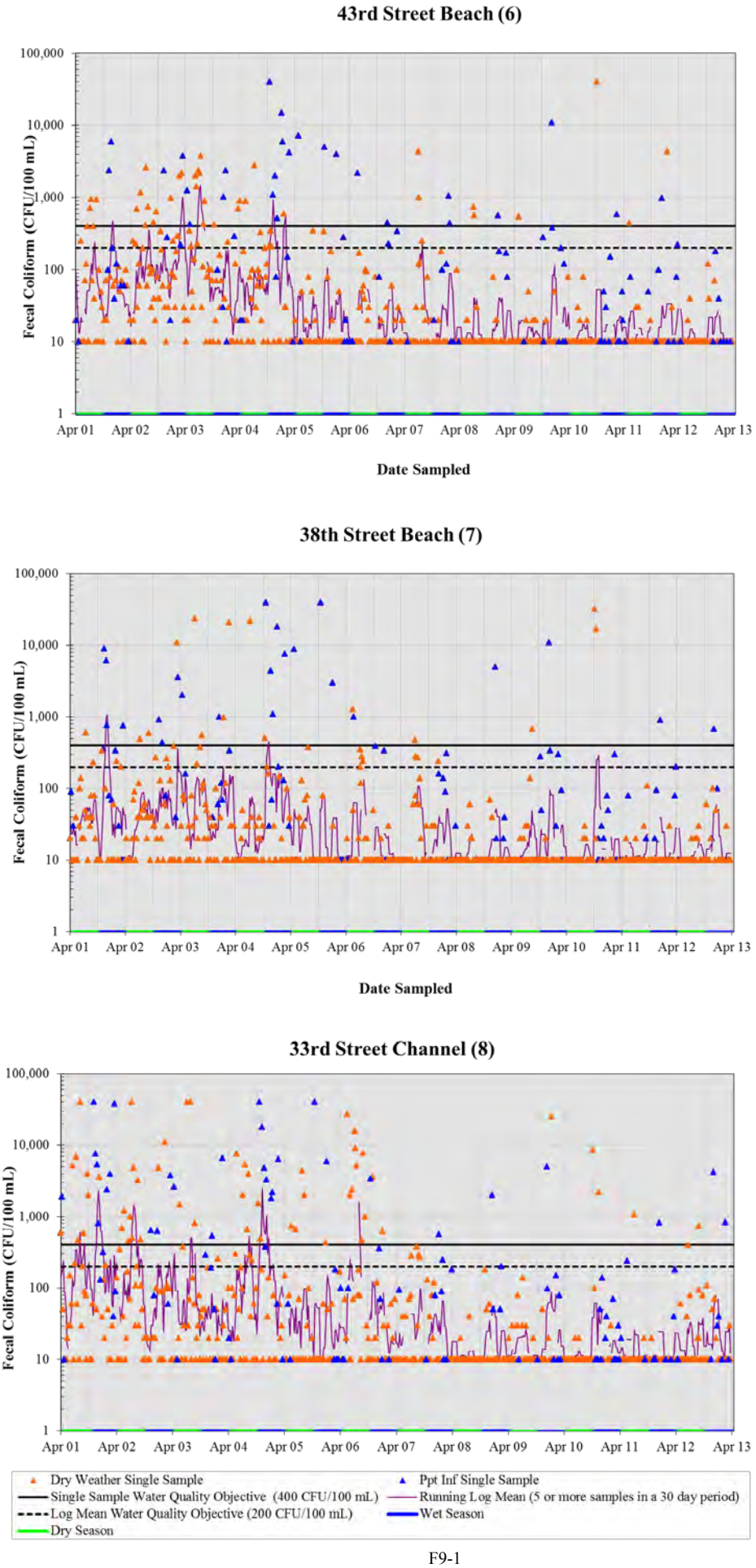
8/28/2013

S:\GIS\mxds2\Newport_Bay\TMDL_FC_Report\2012-2013\Newport_Bay_Fecal_Coliform_DRY_2001-2012-Draft.mxd

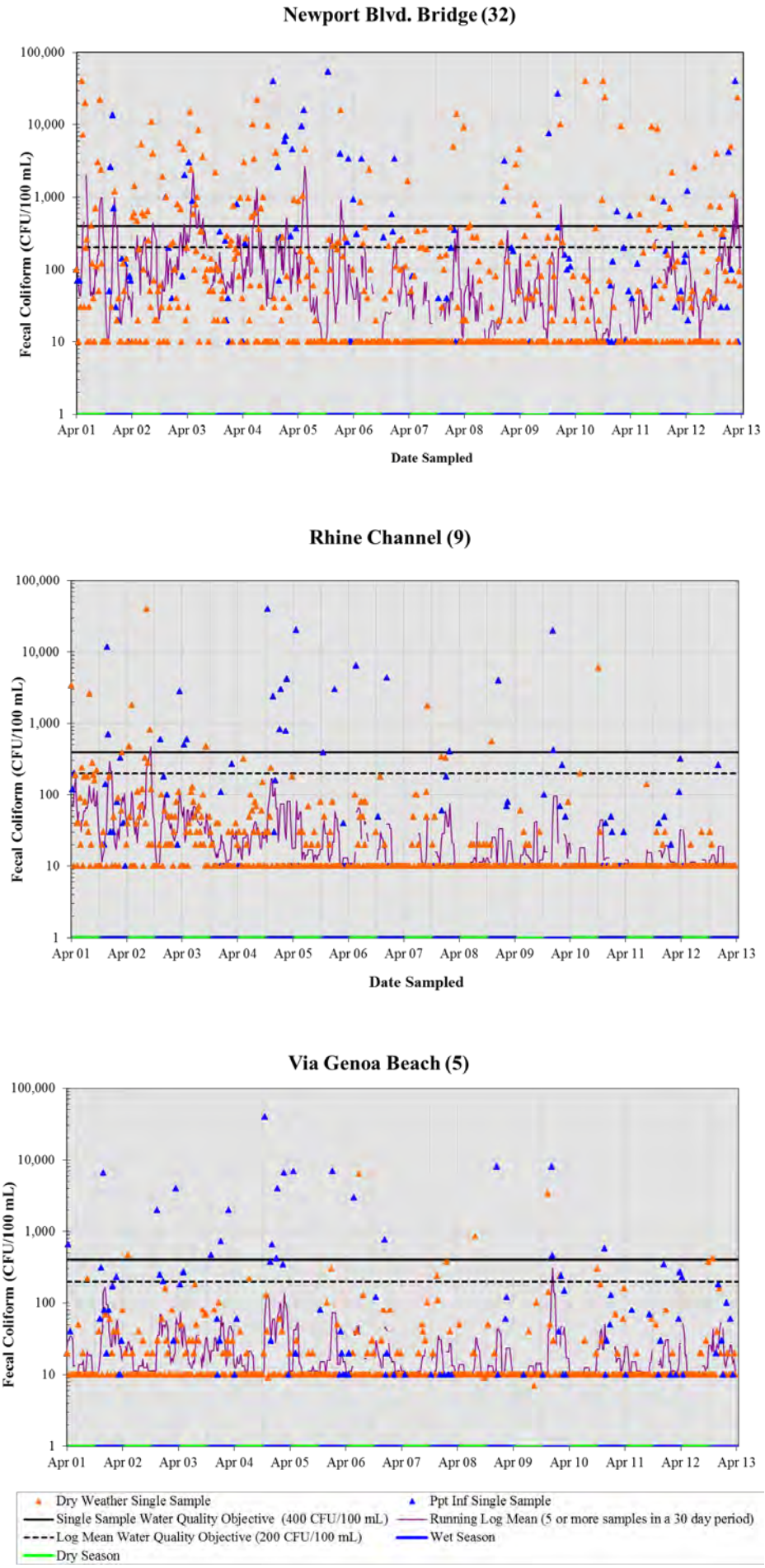
Figure 8. Percentage of time REC-1 fecal coliform objective was met for 2001-2013 Wet Season (October 16 - April 14)



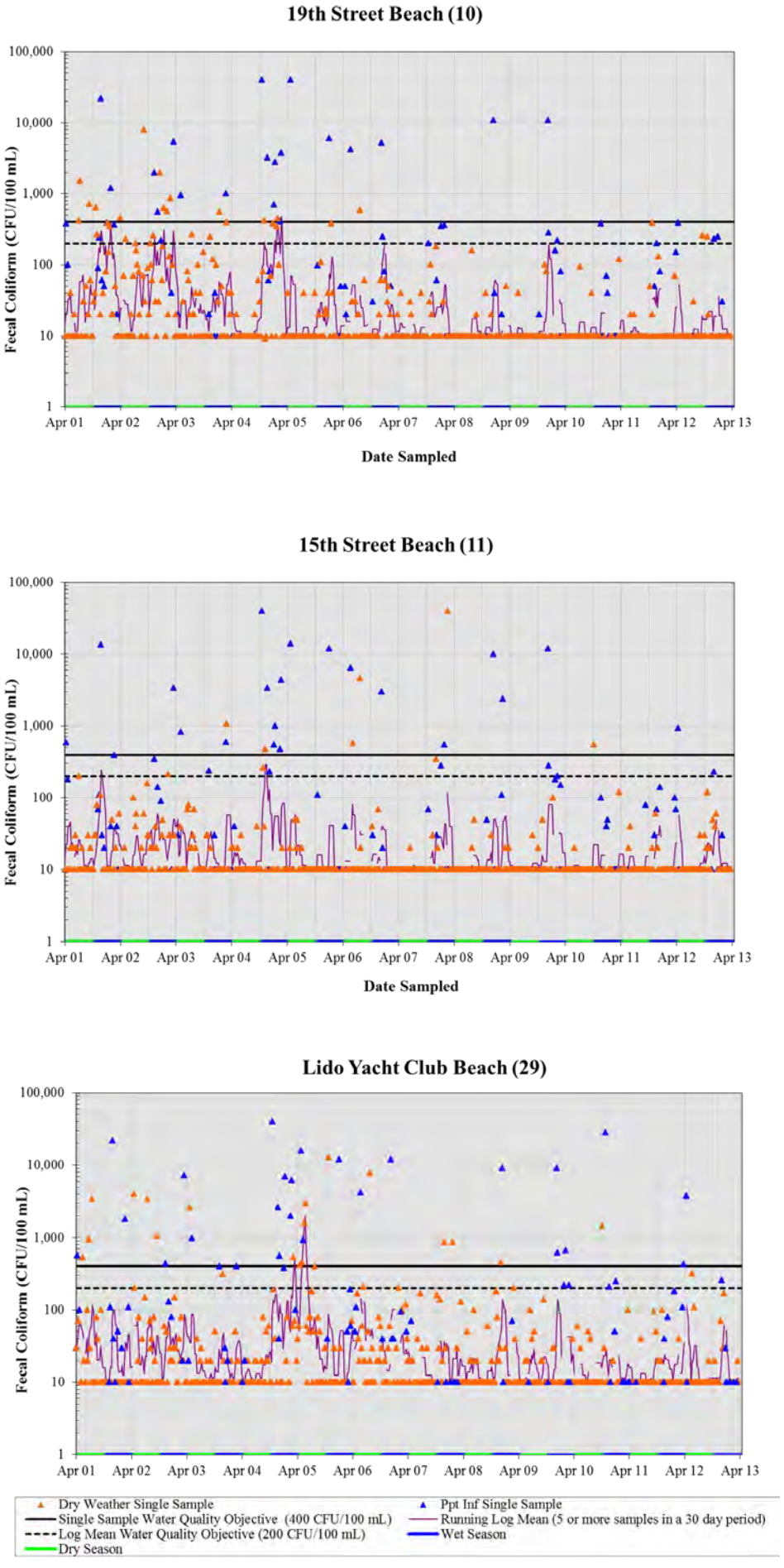
Figures 9a-9c. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



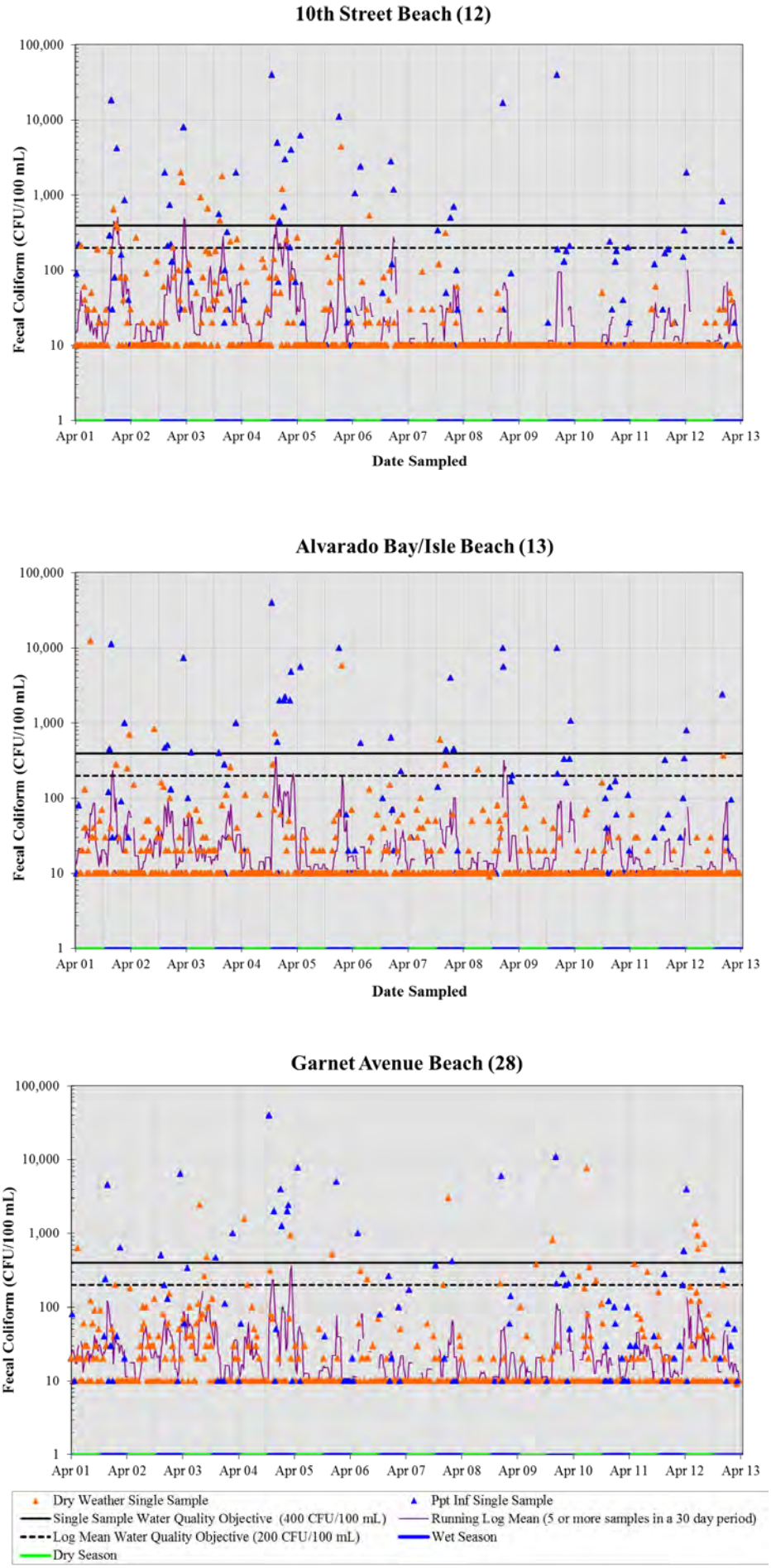
Figures 9d-9f. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



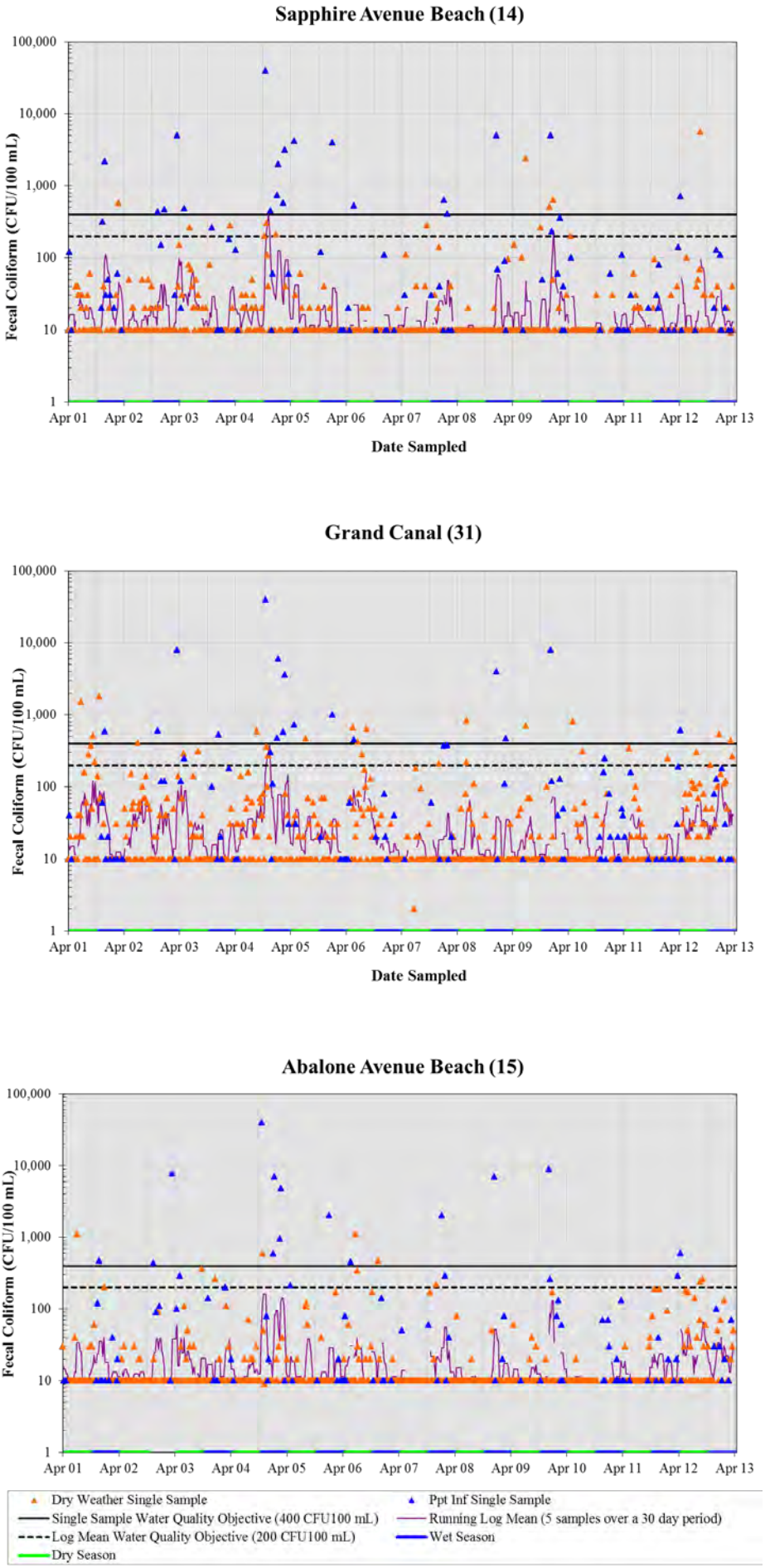
Figures 9g-9i. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



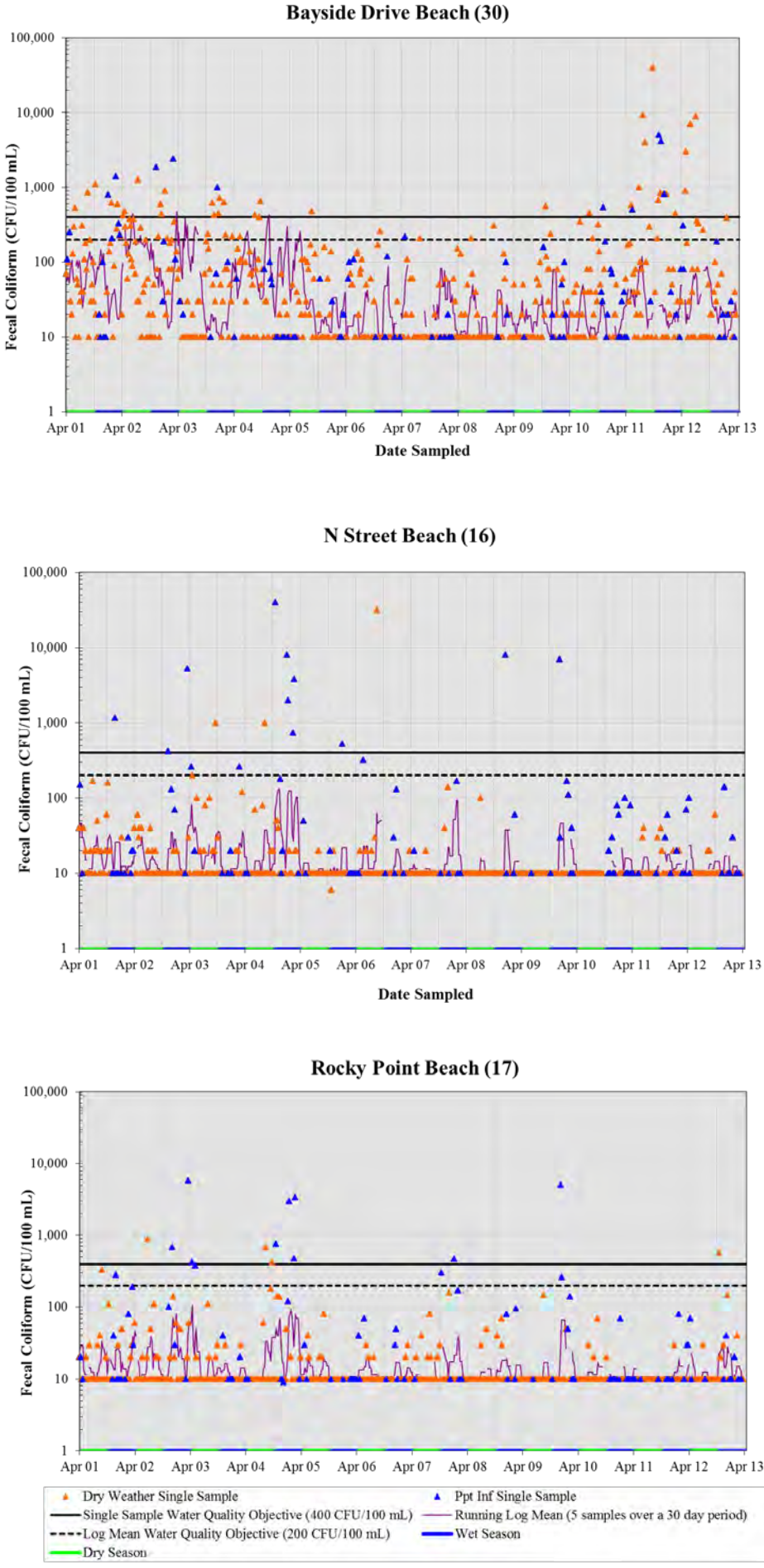
Figures 9j-9l. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



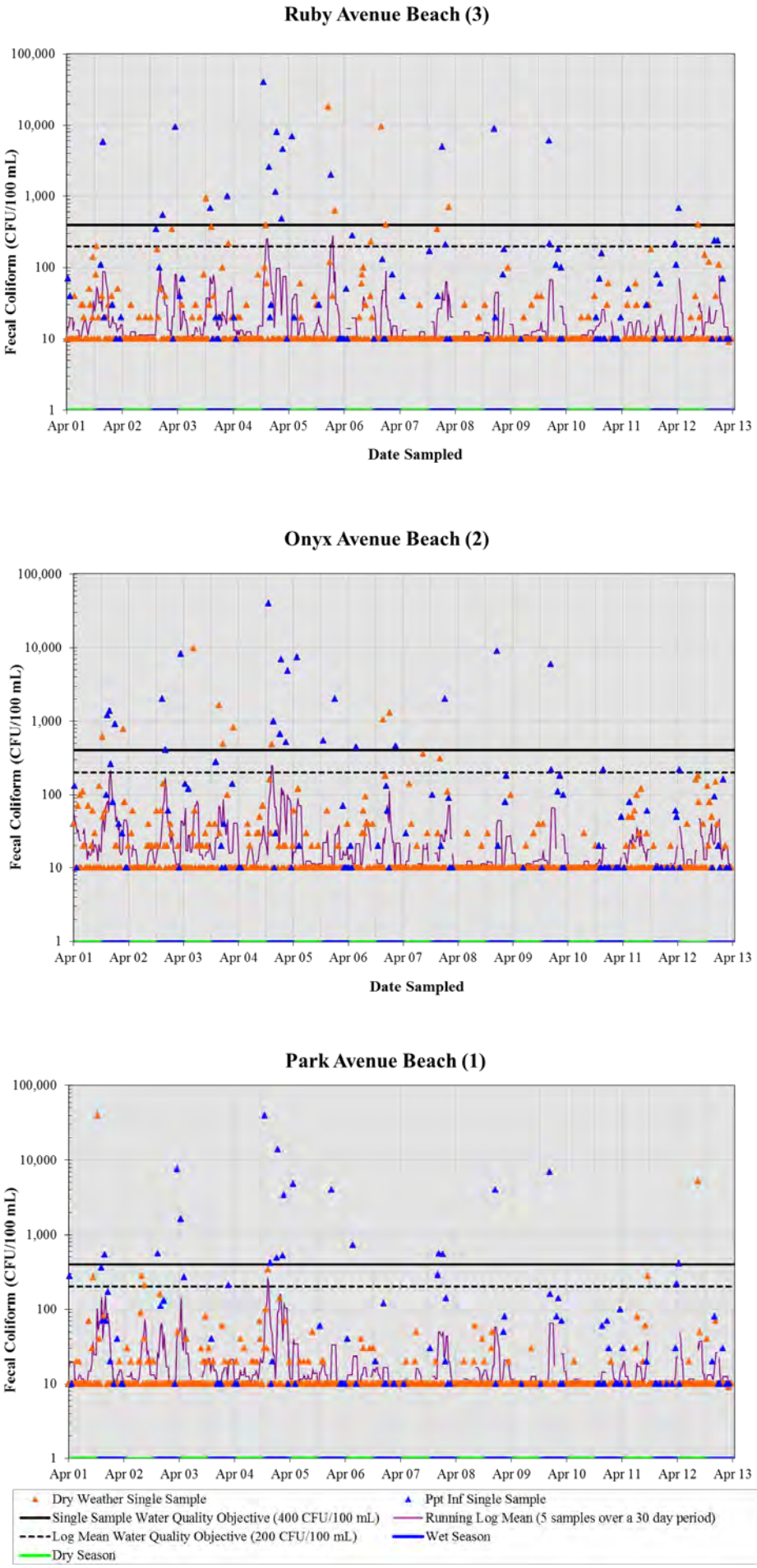
Figures 9m-9o. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



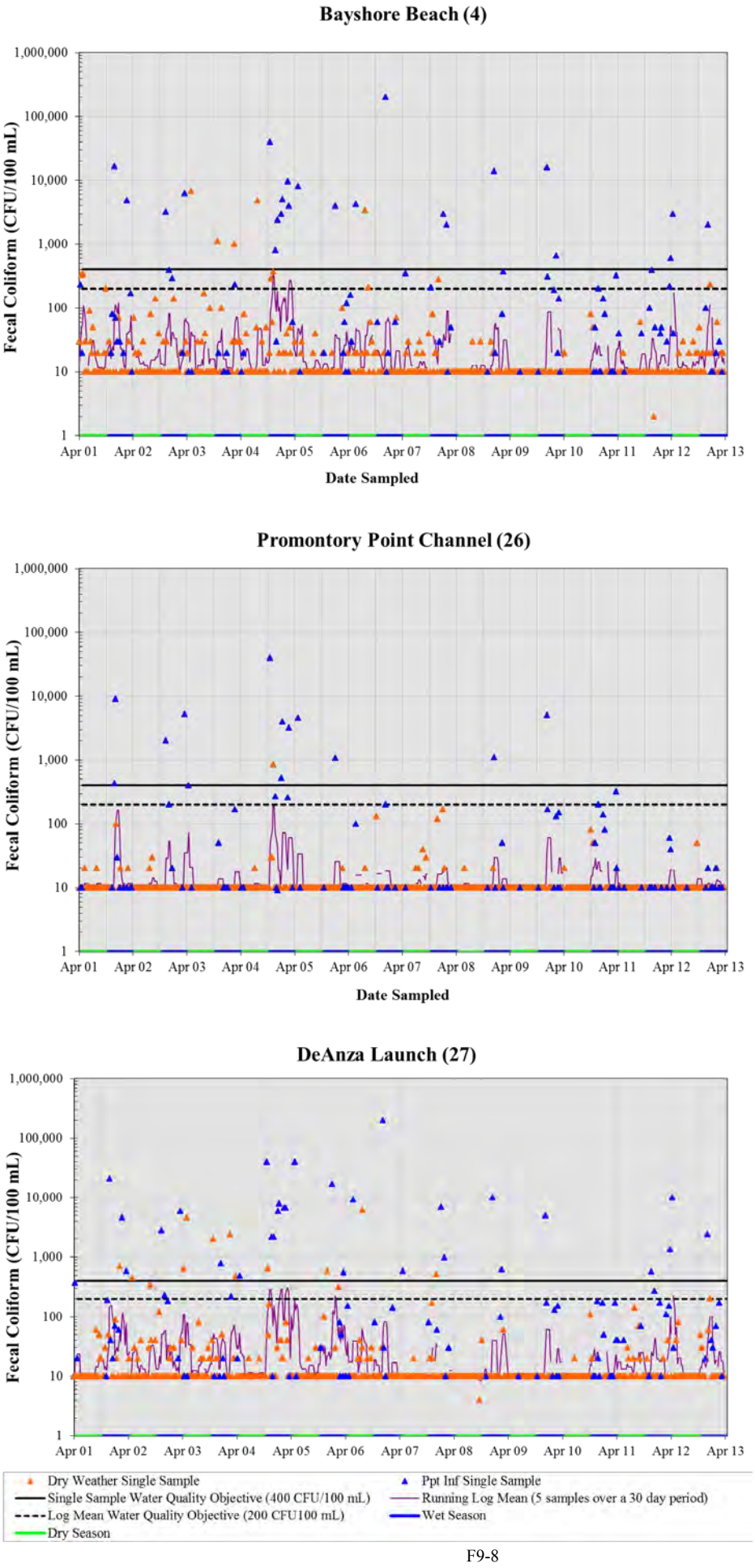
Figures 9p-9r. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



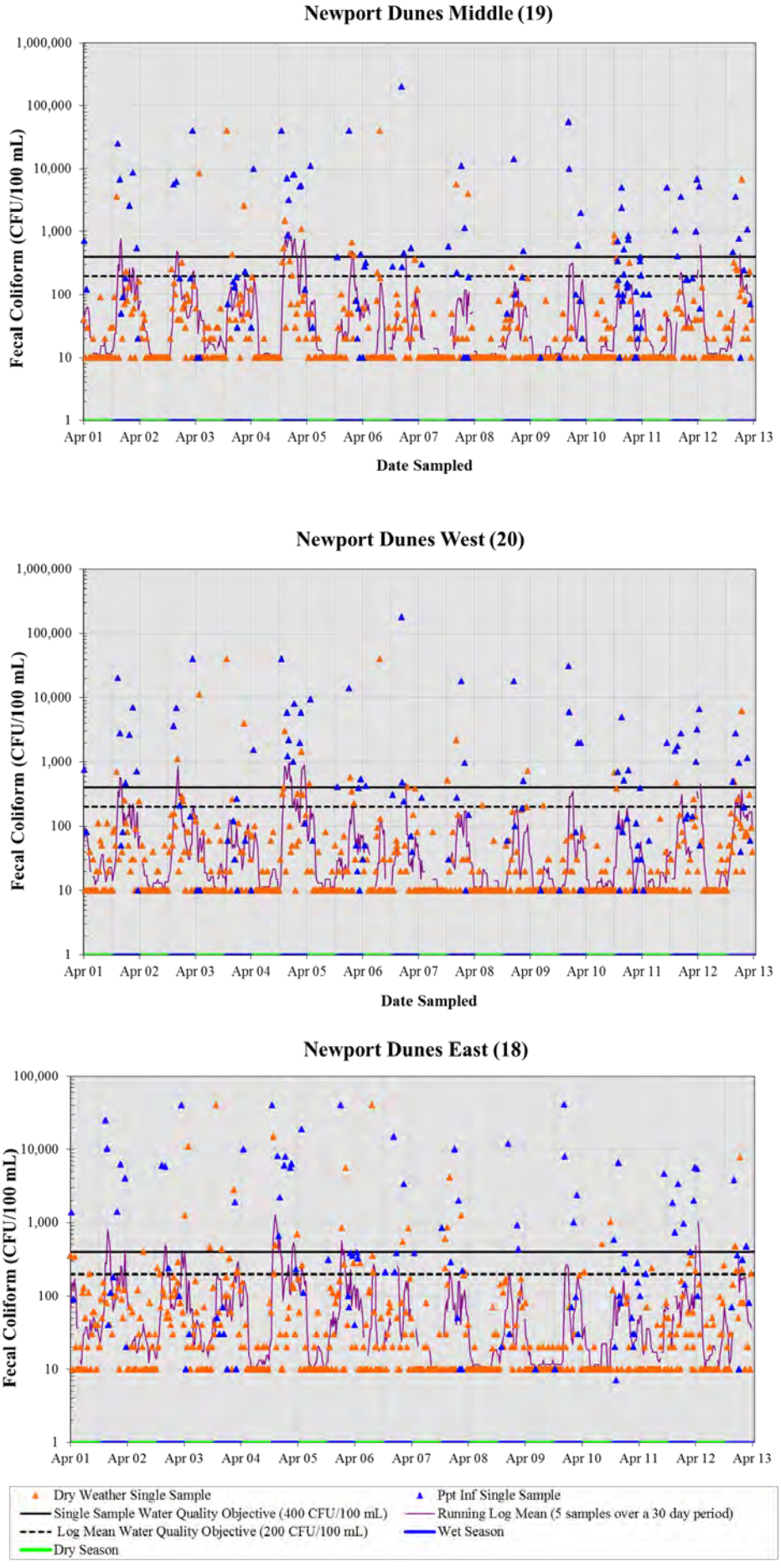
Figures 9s-9u. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Lower Bay stations.



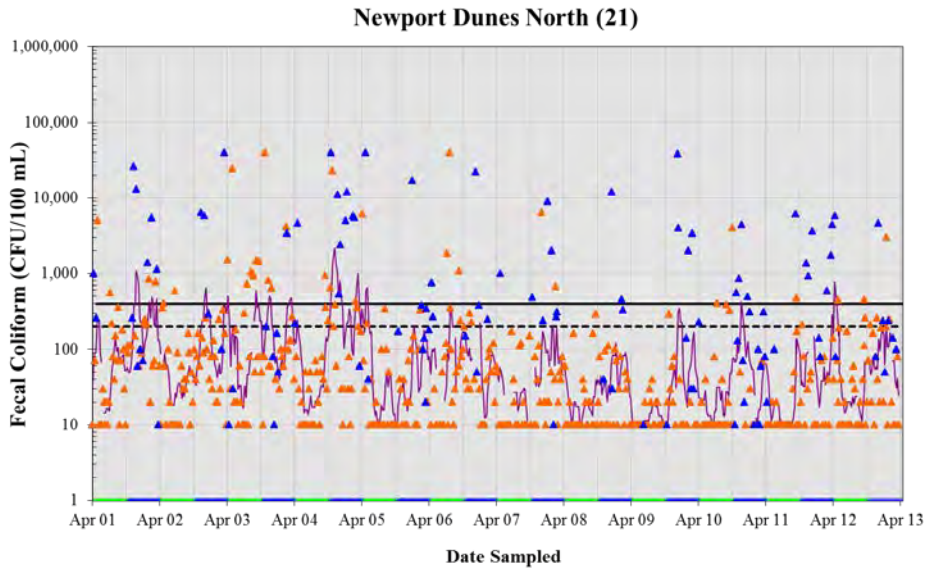
Figures 9v-9x. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Upper Bay stations.

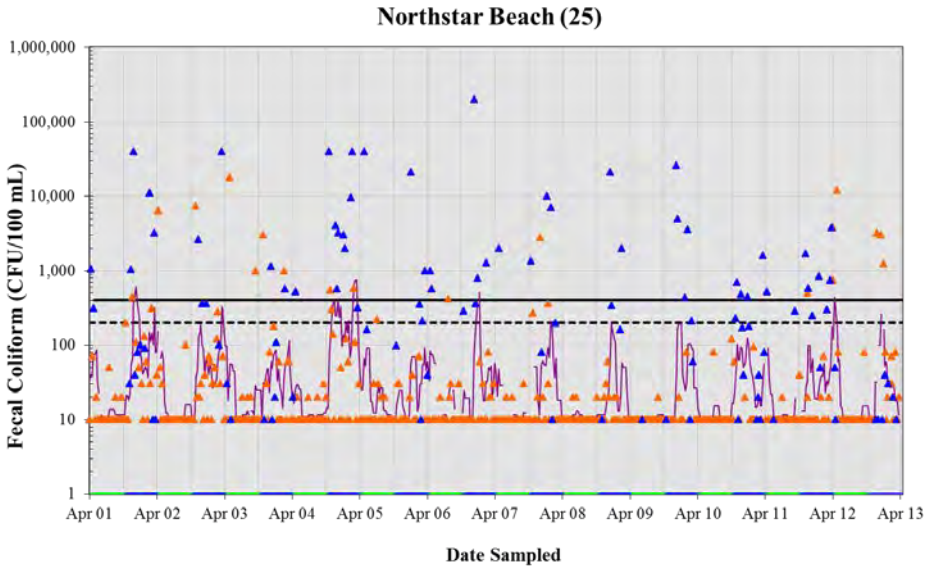


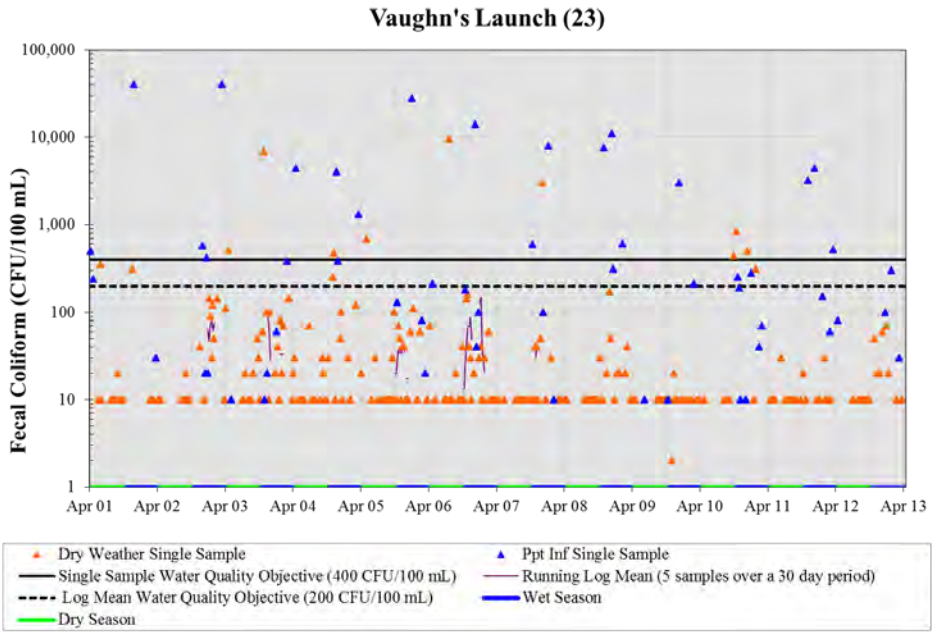
Figures 9y-9aa. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Upper Bay stations.



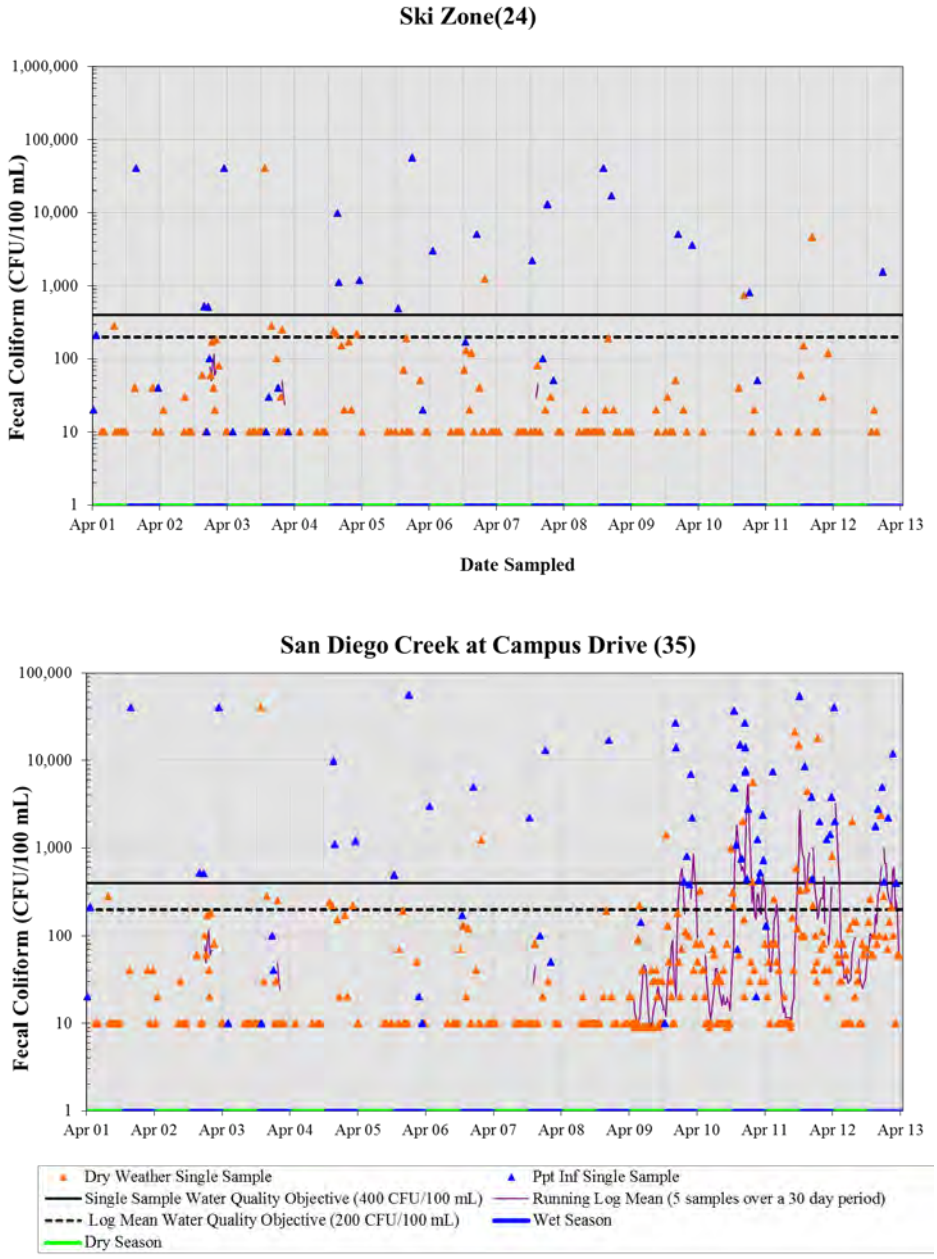
Figures 9bb-9dd. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Upper Bay stations.







Figures 9ee-9ff. Running geometric mean and single sample fecal coliform concentrations (2001-2013), Upper Bay stations.



TABLES

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	43rd Street Beach (6)			38th Street Beach (7)			33rd Street Channel (8)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	80	< 10	2	< 10	< 10	< 2	50	< 10	24
4/12/2012	60	< 10	10	10	< 10	< 2	80	10	160
4/16/2012	30	< 10	2	960	10	28	>= 580	< 10	120
4/25/2012	10	< 10	2	10	< 10	< 2	< 10	< 10	< 2
4/30/2012	20	< 10	4	70	< 10	8	190	60	190
5/2/2012	NS	NS	NS	NS	NS	NS	20	< 10	6
5/7/2012	220	10	4	50	10	10	30	10	10
5/14/2012	80	< 10	< 2	80	< 10	6	30	< 10	2
5/21/2012	40	10	< 2	30	< 10	2	10	< 10	< 2
5/29/2012	30	< 10	2	>= 560	< 10	10	>= 340	< 10	40
6/4/2012	80	20	6	40	< 10	24	10	< 10	4
6/11/2012	10	< 10	4	>= 30	< 10	2	190	40	< 2
6/18/2012	110	40	8	>= 50	< 10	8	2,800	400	279
6/20/2012	NS	NS	NS	NS	NS	NS	10	< 10	< 2
6/25/2012	>= 310	10	< 2	100	< 10	< 2	200	< 10	2
7/2/2012	130	10	2	95	< 10	20	310	80	4
7/9/2012	10	< 10	6	10	20	2	>= 670	< 10	4
7/16/2012	180	< 10	22	< 10	< 10	8	50	< 10	6
7/23/2012	>= 30	10	8	60	< 10	8	< 10	< 10	< 2
7/31/2012	240	< 10	< 2	>= 370	20	82	>= 380	< 10	< 2
8/6/2012	10	< 10	< 2	20	< 10	< 2	>= 40	< 10	2
8/16/2012	< 10	< 10	< 2	>= 80	20	66	>= 170	< 10	4
8/20/2012	< 10	< 10	< 2	50	20	< 2	>= 60	20	2
8/27/2012	50	10	< 2	>= 150	30	28	>= 5,000	740	6
8/28/2012	NS	NS	NS	NS	NS	NS	>= 340	95	200
8/29/2012	NS	NS	NS	NS	NS	NS	>= 240	20	< 2
9/4/2012	40	< 10	6	>= 95	< 10	2	20	< 10	< 2
9/10/2012	< 10	< 10	6	10	< 10	10	< 10	< 10	2
9/17/2012	50	10	2	50	10	4	60	< 10	< 2
9/24/2012	>= 170	< 10	2	70	< 10	< 2	>= 680	80	34
10/1/2012	95	< 10	8	60	< 10	10	20	< 10	< 2
10/9/2012	30	10	8	110	10	42	>= 140	< 10	24
10/15/2012	170	120	< 2	100	60	10	140	< 10	< 2
10/22/2012	>= 3,400	40	4	>= 160	< 10	< 2	8,000	110	22
10/29/2012	70	< 10	4	< 10	< 10	< 2	100	< 10	10
11/5/2012	40	< 10	2	< 10	< 10	2	< 10	< 10	< 2
11/13/2012	370	< 10	356	40	20	10	>= 40	< 10	20
11/15/2012	30	< 10	22	NS	NS	NS	NS	NS	NS
11/19/2012	60	< 10	< 2	70	20	8	30	< 10	4
11/26/2012	>= 620	70	54	240	100	< 2	>= 310	50	34
12/4/2012	>= 870	180	28	4,400	680	70	>= 21,400	4,200	76
12/11/2012	110	10	8	95	< 10	20	790	70	40
12/19/2012	70	10	4	290	50	22	420	20	42
12/27/2012	>= 830	40	72	490	100	285	240	30	76
1/2/2013	50	< 10	20	50	< 10	4	20	< 10	10
1/7/2013	< 10	< 10	4	230	10	52	4,200	40	72
1/14/2013	< 10	< 10	< 2	20	< 10	4	360	< 10	10
1/22/2013	10	< 10	2	30	10	10	100	10	20
1/28/2013	>= 70	10	< 2	80	10	6	100	< 10	< 2
2/4/2013	50	< 10	< 2	< 10	< 10	10	20	< 10	4
2/13/2013	30	< 10	2	10	< 10	8	20	10	8
2/20/2013	50	10	10	50	< 10	2	28,000	840	350
2/25/2013	40	< 10	4	80	30	44	50	< 10	6
3/6/2013	< 10	< 10	< 2	60	< 10	38	30	< 10	4
3/11/2013	70	10	< 2	30	< 10	6	20	< 10	< 2
3/18/2013	20	10	< 2	< 10	< 10	2	80	30	20
3/25/2013	70	< 10	218	10	< 10	2	100	< 10	8
3/27/2013	30	< 10	10	NS	NS	NS	NS	NS	NS

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci

CG = Confluent Growth
NS = Not Sampled

Data Source: Orange County Health Care Agency (www.ocbeachinfo.com)

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	Newport Blvd. Bridge (32)			Rhine Channel (9)			Via Genoa Beach (5)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	>= 14,000	420	400	20	< 10	6	10	< 10	< 2
4/12/2012	>= 37,600	1,220	600	20	< 10	< 2	>= 26,200	230	98
4/16/2012	70	20	6	< 10	< 10	< 2	10	< 10	10
4/25/2012	20	< 10	10	40	< 10	< 2	< 10	< 10	2
4/30/2012	20,400	40	76	50	< 10	< 2	< 10	< 10	10
5/7/2012	210	30	36	8	10	2	20	10	2
5/14/2012	5,000	50	36	40	10	2	10	< 10	10
5/21/2012	20	< 10	< 2	20	< 10	< 2	< 10	< 10	< 2
5/29/2012	>= 40,000	2,600	50	70	< 10	< 2	>= 10	< 10	2
6/4/2012	>= 40	10	< 2	610	20	10	10	< 10	2
6/11/2012	140	< 10	< 2	10	< 10	< 2	< 10	< 10	< 2
6/18/2012	180	10	2	50	< 10	2	< 10	< 10	< 2
6/25/2012	320	10	< 2	< 10	< 10	< 2	< 10	< 10	< 2
7/2/2012	80	< 10	8	50	< 10	6	10	10	2
7/9/2012	370	310	< 2	< 10	< 10	< 2	< 10	< 10	< 2
7/16/2012	95	< 10	20	80	10	2	10	< 10	2
7/23/2012	9,800	180	< 2	80	< 10	10	< 10	< 10	6
7/31/2012	70	10	< 2	60	< 10	2	20	10	< 2
8/6/2012	>= 520	40	2	20	< 10	< 2	20	20	34
8/16/2012	330	10	38	80	30	20	300	20	2
8/20/2012	>= 520	95	30	< 10	< 10	< 2	< 10	< 10	2
8/27/2012	380	50	2	< 10	< 10	< 2	>= 20	< 10	4
9/4/2012	>= 160	< 10	2	>= 410	< 10	< 2	>= 40	< 10	10
9/10/2012	>= 2,600	760	110	95	< 10	10	10	< 10	6
9/17/2012	< 10	< 10	< 2	30	< 10	2	30	30	4
9/24/2012	10	< 10	< 2	110	< 10	< 2	< 10	< 10	< 2
10/1/2012	>= 1,360	40	10	70	< 10	< 2	>= 410	380	800
10/9/2012	20	40	2	190	30	4	10	10	2
10/15/2012	4,400	>= 370	600	70	10	< 2	20	< 10	66
10/22/2012	>= 40,000	4,000	600	>= 670	20	20	10	< 10	2
10/29/2012	60	< 10	2	< 10	< 10	< 2	480	420	8
11/5/2012	480	140	202	20	< 10	< 2	< 10	< 10	2
11/13/2012	15,000	730	1,000	< 10	< 10	< 2	210	< 10	120
11/15/2012	NS	NS	NS	NS	NS	NS	40	< 10	< 2
11/19/2012	280	30	34	10	< 10	4	150	20	6
11/26/2012	3,600	310	1,000	40	< 10	6	60	40	< 2
12/4/2012	2,800	290	66	3,600	260	120	>= 1,100	180	36
12/11/2012	>= 31,000	>= 360	3,000	80	< 10	2	200	160	34
12/19/2012	920	95	140	50	10	8	80	20	10
12/27/2012	670	30	62	100	< 10	2	120	30	24
1/2/2013	170	70	56	80	< 10	4	10	10	4
1/7/2013	9,600	4,200	1,000	40	< 10	< 2	< 10	< 10	2
1/14/2013	330	< 10	78	20	< 10	< 2	10	< 10	4
1/22/2013	>= 19,000	5,000	3,800	210	< 10	< 2	< 10	10	6
1/28/2013	>= 1,390	100	>= 180	>= 250	10	2	>= 710	100	10
2/4/2013	>= 40,000	1,100	1,000	20	< 10	< 2	30	20	2
2/13/2013	340	70	10	20	< 10	2	10	10	< 2
2/20/2013	>= 40,000	>= 40,000	23,800	120	< 10	< 2	250	60	60
2/25/2013	< 10	< 10	< 2	< 10	< 10	< 2	< 10	< 10	6
3/6/2013	40,000	23,600	6,200	< 10	< 10	< 10	< 10	< 10	< 2
3/11/2013	120	< 10	2	30	< 10	2	20	10	2
3/18/2013	>= 40,000	95	150	70	10	< 2	70	20	20
3/25/2013	170	60	20	< 10	< 10	< 2	< 10	< 10	4

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

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FC = Fecal Coliforms
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NS = Not Sampled

Data Source: Orange County Health Care Agency (www.ocbeachinfo.com)

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	19th Street Beach (10)			15th Street Beach (11)			Lido Yacht Club Beach (29)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	10	< 10	< 2	30	< 10	< 2	10	< 10	< 2
4/12/2012	>= 27,000	390	< 2	>= 40,000	940	60	>= 40,000	3,800	20
4/16/2012	50	< 10	6	140	< 10	4	80	10	2
4/25/2012	< 10	< 10	< 2	20	< 10	< 2	20	< 10	4
4/30/2012	20	< 10	< 2	20	< 10	< 2	>= 130	< 10	10
5/7/2012	30	< 10	4	20	< 10	4	20	< 10	2
5/14/2012	10	10	< 2	20	< 10	< 2	50	10	4
5/21/2012	< 10	< 10	8	>= 100	< 10	6	360	320	2
5/29/2012	10	< 10	< 2	< 10	< 10	< 2	< 10	< 10	2
6/4/2012	< 10	< 10	< 2	10	10	2	430	110	36
6/11/2012	< 10	< 10	< 2	< 10	< 10	< 2	>= 80	< 10	10
6/18/2012	80	< 10	2	10	10	6	20	10	< 2
6/25/2012	< 10	< 10	< 2	10	< 10	< 2	10	< 10	< 2
7/2/2012	40	< 10	2	40	< 10	< 2	20	< 10	< 2
7/9/2012	< 10	< 10	< 2	< 10	< 10	< 2	10	< 10	8
7/16/2012	< 10	< 10	< 2	< 10	< 10	< 2	20	10	32
7/23/2012	60	30	< 2	10	< 10	< 2	< 10	< 10	< 2
7/31/2012	80	< 10	4	20	< 10	< 2	20	< 10	< 2
8/6/2012	< 10	< 10	< 2	< 10	< 10	< 2	20	< 10	< 2
8/16/2012	20	< 10	6	10	< 10	2	30	< 10	4
8/20/2012	< 10	< 10	< 2	< 10	< 10	< 2	< 200	< 10	< 2
8/27/2012	< 10	< 10	2	< 10	10	< 2	>= 10	< 10	< 2
9/4/2012	< 10	< 10	2	70	30	< 2	>= 10	< 10	< 2
9/10/2012	20	< 10	< 2	< 10	< 10	< 2	40	20	< 2
9/17/2012	>= 430	260	160	120	< 10	2	>= 10	< 10	20
9/19/2012	10	< 10	< 2	NS	NS	NS	NS	NS	NS
9/24/2012	130	< 10	< 2	50	< 10	2	10	10	< 2
10/1/2012	< 10	< 10	< 2	470	30	50	< 10	10	< 2
10/9/2012	10	< 10	< 2	10	< 10	2	10	< 10	< 2
10/15/2012	30	10	44	40	20	8	30	20	58
10/22/2012	250	250	2	3,000	120	66	30	10	10
10/29/2012	10	20	2	< 10	< 10	2	< 10	10	2
11/5/2012	10	< 10	< 2	10	20	2	< 10	< 10	2
11/13/2012	< 10	< 10	2	40	< 10	48	50	10	2
11/19/2012	60	10	< 2	170	< 10	10	190	< 10	< 2
11/26/2012	< 10	< 10	< 2	30	50	20	80	70	< 2
12/4/2012	3,400	230	62	3,400	230	78	2,800	260	56
12/11/2012	70	< 10	< 2	100	40	10	80	30	22
12/19/2012	30	< 10	6	30	60	8	340	170	4
12/27/2012	>= 620	250	30	>= 310	< 10	2	210	30	8
1/2/2013	50	10	2	< 10	< 10	2	10	10	4
1/7/2013	60	10	20	20	< 10	4	10	< 10	10
1/14/2013	20	10	24	30	< 10	2	< 10	10	< 2
1/22/2013	< 10	< 10	4	20	< 10	6	< 10	< 10	90
1/28/2013	>= 640	30	4	>= 320	30	2	>= 490	< 10	4
2/4/2013	30	< 10	4	< 10	< 10	< 2	80	10	2
2/13/2013	70	< 10	8	< 10	< 10	< 2	< 10	< 10	6
2/20/2013	< 10	< 10	2	100	< 10	10	20	< 10	2
2/25/2013	< 10	< 10	< 2	10	< 10	< 2	40	10	100
3/6/2013	< 10	< 10	< 2	10	< 10	2	10	< 10	< 2
3/11/2013	>= 110	10	< 2	20	< 10	2	50	< 10	< 2
3/18/2013	< 10	< 10	2	< 10	< 10	140	10	20	2
3/25/2013	10	< 10	< 2	< 10	< 10	< 2	< 10	< 10	< 2

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

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FC = Fecal Coliforms
ENT = Enterococci
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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	10th Street Beach (12)			Alvarado/ Bay Isle Beach (13)			Garnet Avenue Beach (28)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	< 10	< 10	< 2	30	< 10	6	40	10	4
4/12/2012	>= 40,000	2,000	110	>= 40,000	800	30	>= 40,000	4,000	80
4/16/2012	70	< 10	6	100	10	< 2	180	< 10	2
4/25/2012	< 10	< 10	< 2	10	< 10	2	80	< 10	4
4/30/2012	< 10	< 10	2	40	< 10	2	40	20	4
5/7/2012	4,000	< 10	< 2	30	< 10	4	480	190	800
5/14/2012	< 10	< 10	10	20	< 10	100	>= 100	30	52
5/21/2012	< 10	< 10	2	20	< 10	78	30	< 10	66
5/29/2012	20	< 10	< 2	< 10	< 10	6	>= 50	< 10	8
6/4/2012	10	10	2	10	< 10	< 2	170	10	26
6/11/2012	< 10	< 10	26	< 10	< 10	2	>= 1,560	1,370	400
6/13/2012	NS	NS	NS	NS	NS	NS	>= 60	< 10	6
6/18/2012	30	10	2	80	30	10	170	160	72
6/25/2012	10	< 10	< 2	10	< 10	4	1,660	940	250
6/27/2012	NS	NS	NS	NS	NS	NS	690	620	10
6/29/2012	NS	NS	NS	NS	NS	NS	30	40	2
6/30/2012	NS	NS	NS	NS	NS	NS	30	< 10	22
7/2/2012	20	< 10	56	20	< 10	6	50	10	4
7/9/2012	10	< 10	< 2	< 10	< 10	< 2	200	120	50
7/16/2012	< 10	< 10	< 2	< 10	< 10	< 2	40	< 10	6
7/23/2012	< 10	< 10	2	< 10	< 10	4	20	40	6
7/31/2012	40	< 10	< 2	30	< 10	4	50	10	2
8/6/2012	40	< 10	2	80	10	2	1,070	730	8
8/8/2012	NS	NS	NS	NS	NS	NS	20	20	4
8/16/2012	>= 310	20	10	10	< 10	4	70	< 10	10
8/20/2012	< 10	< 10	4	40	< 10	< 2	50	50	20
8/27/2012	20	< 10	< 2	>= 30	20	< 2	>= 20	10	< 2
9/4/2012	20	< 10	< 2	30	< 10	4	>= 30	80	< 2
9/10/2012	10	< 10	< 2	10	< 10	< 2	30	10	10
9/17/2012	10	10	4	80	30	2	60	10	10
9/24/2012	20	< 10	4	10	10	4	NS	NS	NS
10/1/2012	10	< 10	2	100	10	10	>= 20	40	10
10/9/2012	10	< 10	2	< 10	< 10	2	20	< 10	32
10/15/2012	80	20	< 2	50	10	< 2	10	20	2
10/22/2012	50	10	8	< 10	< 10	4	20	10	10
10/29/2012	20	10	< 2	< 10	< 10	6	100	20	32
11/5/2012	20	< 10	< 2	< 10	< 10	4	30	< 10	6
11/13/2012	60	30	4	10	10	4	20	< 10	< 2
11/19/2012	140	< 10	2	95	< 10	< 2	200	20	4
11/26/2012	< 10	< 10	< 2	10	10	160	40	10	4
11/28/2012	NS	NS	NS	20	< 10	2	NS	NS	NS
12/4/2012	5,600	830	180	14,000	2,400	800	5,600	320	180
12/11/2012	340	320	8	390	370	140	200	200	2
12/19/2012	160	30	2	100	20	4	70	20	26
12/27/2012	>= 660	< 10	28	>= 410	30	10	>= 340	10	< 2
1/2/2013	20	20	< 2	20	< 10	< 2	80	< 10	4
1/7/2013	20	< 10	< 2	100	20	88	50	60	24
1/14/2013	< 10	10	10	20	< 10	6	10	< 10	2
1/22/2013	120	50	6	100	10	1,000	40	10	2
1/28/2013	>= 430	250	236	>= 920	95	6	>= 880	30	8
2/4/2013	95	40	6	10	10	4	80	< 10	6
2/13/2013	< 10	< 10	10	30	< 10	10	< 10	10	8
2/20/2013	40	20	10	20	< 10	78	50	50	100
2/25/2013	< 10	< 10	< 2	20	10	8	30	< 10	< 2
3/6/2013	< 10	< 10	< 2	70	10	329	40	< 9	3
3/11/2013	50	< 10	4	110	< 10	2	180	< 10	2
3/18/2013	10	< 10	< 2	10	< 10	< 2	10	< 10	20
3/25/2013	< 10	< 10	< 2	10	10	< 2	10	10	< 2

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	Sapphire Avenue Beach (14)			Grand Canal (31)			Abalone Avenue Beach (15)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	30	< 10	< 2	40	< 10	< 2	10	< 10	< 2
4/12/2012	>= 40,000	720	28	770	610	10	>= 40,000	600	36
4/16/2012	50	< 10	2	8	< 10	10	70	10	54
4/25/2012	20	< 10	2	30	30	8	150	10	10
4/30/2012	10	10	2	30	10	10	20	10	2
5/7/2012	< 10	< 10	36	10	10	68	>= 240	30	22
5/14/2012	10	10	2	130	80	10	280	180	4
5/21/2012	930	100	50	110	50	46	< 10	10	< 2
5/29/2012	< 10	< 10	< 2	>= 30	< 10	2	>= 200	50	90
6/4/2012	< 10	< 10	2	60	20	22	>= 290	170	70
6/11/2012	10	< 10	< 2	360	80	28	< 10	< 10	2
6/18/2012	10	< 10	2	80	10	8	50	30	10
6/25/2012	10	< 10	< 2	180	120	110	< 10	< 10	10
6/27/2012	NS	NS	NS	> 50	10	202	NS	NS	NS
6/29/2012	NS	NS	NS	70	30	60	NS	NS	NS
7/2/2012	20	< 10	4	340	100	8	< 10	< 10	< 2
7/9/2012	< 10	< 10	< 2	60	10	< 2	20	< 10	4
7/16/2012	40	10	34	680	95	30	310	140	6
7/23/2012	40	40	20	330	300	8	10	10	6
7/31/2012	30	10	6	70	20	< 2	>= 20	40	22
8/6/2012	20	50	20	100	70	30	< 10	< 10	< 2
8/16/2012	>= 70	70	2	230	110	88	>= 100	70	6
8/20/2012	6,200	5,600	10	30	20	64	280	240	8
8/27/2012	>= 10	< 10	< 2	>= 50	< 10	< 2	>= 20	< 10	4
9/4/2012	>= 20	< 10	< 2	>= 70	30	10	>= 1,220	260	20
9/10/2012	10	30	30	>= 200	80	10	30	30	2
9/17/2012	>= 110	30	8	10	30	4	10	10	20
9/24/2012	20	10	4	60	50	4	50	60	< 2
10/1/2012	>= 20	< 10	6	70	10	6	>= 30	< 10	2
10/9/2012	20	< 10	< 2	100	20	< 2	50	30	10
10/15/2012	30	< 10	4	70	10	< 2	20	< 10	2
10/22/2012	150	10	20	>= 820	200	8	>= 360	10	4
10/29/2012	60	< 10	4	10	10	< 2	>= 20	< 10	10
11/5/2012	140	30	8	150	50	10	10	< 10	2
11/13/2012	60	10	26	70	10	4	< 10	< 10	8
11/19/2012	270	20	34	80	80	10	60	30	10
11/26/2012	20	20	< 2	30	30	8	20	30	6
12/4/2012	>= 690	130	28	410	130	30	410	100	44
12/11/2012	10	40	< 2	100	100	26	95	50	74
12/19/2012	20	< 10	8	710	540	10	50	10	2
12/27/2012	>= 180	110	6	>= 320	< 10	8	120	30	10
1/2/2013	70	< 10	2	280	150	22	100	70	8
1/7/2013	20	< 10	< 2	190	180	22	30	< 10	< 2
1/14/2013	10	< 10	2	20	< 10	2	< 10	< 10	2
1/22/2013	20	< 10	< 2	95	110	< 2	150	130	10
1/28/2013	>= 460	20	4	>= 560	30	< 2	>= 300	20	6
2/4/2013	30	10	4	130	120	68	10	20	2
2/13/2013	20	20	2	60	50	20	30	< 10	10
2/20/2013	20	< 10	< 2	860	< 10	42	80	< 10	10
2/25/2013	< 10	< 10	< 2	< 10	< 10	< 2	< 10	< 10	< 2
3/6/2013	9	9	< 2	990	440	226	90	20	10
3/11/2013	10	< 10	4	20	10	< 2	160	70	4
3/18/2013	40	40	< 2	380	260	20	30	30	< 2
3/25/2013	10	10	4	< 10	< 10	2	80	50	10

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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	Bayside Drive Beach[1] (30)			N Street Beach (16)			Rocky Point Beach (17)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	40	< 10	10	10	10	2	20	< 10	2
4/12/2012	>= 400	20	28	22,800	100	6	7,400	70	20
4/16/2012	230	20	< 2	80	< 10	2	30	10	< 2
4/25/2012	60	20	10	< 10	< 10	< 2	10	< 10	< 2
4/30/2012	20	< 10	6	110	< 10	4	< 10	< 10	< 2
5/7/2012	60	40	20	10	< 10	2	10	10	2
5/14/2012	20	10	10	20	10	< 2	30	< 10	2
5/21/2012	>= 220	20	10	< 10	< 10	2	40	< 10	6
5/29/2012	>= 250	80	8	< 10	< 10	< 2	< 10	< 10	< 2
6/4/2012	>= 650	40	120	10	< 10	2	< 10	10	56
6/11/2012	680	460	24	20	10	6	< 10	< 10	< 2
6/13/2012	>= 280	80	52	NS	NS	NS	NS	NS	NS
6/18/2012	60	40	4	< 10	< 10	< 2	< 10	< 10	2
6/25/2012	80	10	6	< 10	< 10	< 2	10	< 10	< 2
7/2/2012	280	210	24	< 10	< 10	2	>= 10	30	76
7/9/2012	30	20	4	< 10	< 10	< 2	30	< 10	< 2
7/16/2012	>= 210	< 10	56	10	< 10	< 2	50	< 10	2
7/23/2012	50	40	30	< 10	< 10	< 2	110	< 10	62
7/31/2012	>= 170	30	20	10	10	< 2	< 10	10	10
8/6/2012	>= 780	320	54	< 10	< 10	< 2	10	< 10	< 2
8/16/2012	330	140	30	20	20	< 2	30	< 10	< 2
8/20/2012	30	50	22	< 10	< 10	< 2	10	< 10	4
8/27/2012	>= 30	40	< 2	< 10	20	< 2	>= 50	< 10	< 2
9/4/2012	>= 30	30	2	10	< 10	< 2	20	10	2
9/10/2012	>= 670	540	56	10	< 10	< 2	10	< 10	< 2
9/12/2012	>= 50	80	6	NS	NS	NS	NS	NS	NS
9/17/2012	>= 260	190	76	< 10	< 10	< 2	30	< 10	8
9/24/2012	50	< 10	6	30	< 10	< 2	20	10	4
10/1/2012	240	20	20	60	60	6	20	10	2
10/9/2012	< 10	< 10	56	20	< 10	< 2	< 10	< 10	2
10/15/2012	>= 250	80	60	< 10	< 10	< 2	>= 1,180	570	200
10/22/2012	>= 720	70	76	10	< 10	< 2	20	< 10	8
10/29/2012	>= 130	10	24	< 10	< 10	< 2	40	20	20
11/5/2012	30	< 10	4	10	10	< 2	< 10	< 10	6
11/13/2012	20	20	28	10	< 10	2	40	30	20
11/19/2012	30	20	6	50	10	2	10	< 10	2
11/26/2012	95	20	20	30	< 10	2	10	10	< 2
12/4/2012	250	30	40	410	140	50	180	40	42
12/11/2012	>= 70	50	30	40	10	2	4,600	150	400
12/19/2012	120	10	6	10	10	< 2	30	< 10	4
12/27/2012	30	< 10	4	>= 200	10	6	20	< 10	4
1/2/2013	10	< 10	< 2	10	< 10	< 2	70	10	< 2
1/7/2013	< 10	< 10	< 2	10	< 10	4	< 10	< 10	< 2
1/14/2013	60	< 10	6	10	< 10	< 2	10	< 10	< 2
1/22/2013	30	< 10	2	< 10	< 10	< 2	< 10	< 10	4
1/28/2013	100	< 10	< 2	250	30	< 2	30	20	2
2/4/2013	>= 100	30	4	30	10	4	< 10	10	< 2
2/13/2013	10	< 10	6	< 10	10	< 2	110	40	6
2/20/2013	130	40	6	10	< 10	4	60	< 10	10
2/25/2013	60	40	2	< 10	< 10	< 2	< 10	< 10	< 2
3/6/2013	30	< 10	2	10	< 10	6	< 10	< 10	< 2
3/11/2013	20	20	< 2	< 10	< 10	< 2	< 10	< 10	< 2
3/18/2013	150	60	20	< 10	10	< 2	< 10	< 10	< 2
3/25/2013	30	< 10	< 2	< 10	< 10	< 2	< 10	< 10	< 2

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TABLE 1

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April 1, 2012-March 31, 2013
LOWER BAY STATIONS
(Concentrations in CFU/100 mL)

	Ruby Avenue Beach (3)			Onyx Avenue Beach (2)			Park Avenue Beach (1)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	20	< 10	< 2	30	10	2	100	< 10	< 2
4/12/2012	>= 31,000	680	22	9,800	220	4	>= 40,000	410	36
4/16/2012	20	10	< 2	80	< 10	20	60	< 10	4
4/25/2012	10	< 10	< 2	80	< 10	8	60	< 10	< 2
4/30/2012	10	10	2	< 10	10	24	10	< 10	4
5/7/2012	30	10	8	20	10	6	30	< 10	2
5/14/2012	20	10	< 2	80	10	28	< 10	< 10	4
5/21/2012	< 10	< 10	2	10	< 10	10	10	10	< 2
5/29/2012	10	< 10	< 2	10	< 10	2	10	< 10	2
6/4/2012	30	< 10	8	50	40	34	10	< 10	< 2
6/11/2012	10	10	< 2	< 10	< 10	40	20	< 10	< 2
6/18/2012	70	10	2	50	< 10	< 2	160	20	2
6/25/2012	10	< 10	6	10	< 10	2	10	< 10	4
7/2/2012	60	20	4	50	10	6	100	< 10	< 2
7/9/2012	< 10	< 10	6	50	< 10	10	20	< 10	6
7/16/2012	20	10	4	40	< 10	2	80	10	2
7/23/2012	< 10	10	< 2	40	10	2	30	< 10	2
7/31/2012	70	40	8	260	160	36	80	< 10	8
8/6/2012	10	10	6	20	< 10	10	10	< 10	2
8/16/2012	>= 1,660	400	38	1,040	180	32	12,000	5,200	360
8/17/2012	NS	NS	NS	NS	NS	NS	30	< 10	2
8/20/2012	40	10	< 2	170	80	4	10	10	< 2
8/27/2012	>= 30	20	< 2	>= 30	10	2	>= 400	50	8
9/4/2012	>= 10	< 10	6	>= 30	10	2	30	< 10	< 2
9/10/2012	< 10	< 10	2	10	< 10	2	10	< 10	< 2
9/17/2012	40	10	2	1,050	40	4	< 10	< 10	< 2
9/24/2012	< 10	< 10	< 2	40	10	< 2	130	10	2
10/1/2012	>= 120	150	208	40	10	6	80	10	2
10/9/2012	40	< 10	4	10	< 10	< 2	20	< 10	2
10/15/2012	60	< 10	< 2	2,200	130	400	40	40	24
10/22/2012	60	< 10	2	>= 400	20	4	>= 340	10	4
10/29/2012	250	120	20	100	80	2	50	< 10	2
11/5/2012	< 10	< 10	8	40	< 10	2	< 10	< 10	2
11/13/2012	30	10	46	80	50	38	30	10	< 2
11/19/2012	70	< 10	6	80	10	2	140	20	2
11/26/2012	30	< 10	6	80	10	20	70	< 10	6
12/4/2012	4,400	240	54	>= 920	95	28	360	80	28
12/11/2012	210	40	26	310	150	94	130	70	28
12/19/2012	< 10	< 10	4	50	40	10	< 10	< 10	< 2
12/27/2012	>= 520	240	>= 74	>= 270	20	26	>= 350	< 10	6
1/2/2013	230	110	6	50	20	22	130	10	< 2
1/7/2013	10	10	4	130	10	10	10	10	2
1/14/2013	< 10	< 10	< 2	10	10	4	20	< 10	< 2
1/22/2013	< 10	< 10	< 2	80	< 10	20	< 10	< 10	2
1/28/2013	>= 580	70	190	>= 850	160	22	>= 690	30	< 2
2/4/2013	50	< 10	< 2	< 10	< 10	2	40	< 10	2
2/13/2013	10	10	10	40	20	4	< 10	10	2
2/20/2013	10	< 10	10	10	10	20	70	< 10	8
2/25/2013	< 10	< 10	2	40	< 10	6	130	< 10	< 2
3/6/2013	9	9	2	< 10	< 10	2	9	< 9	3
3/11/2013	100	< 10	6	190	10	6	50	< 10	< 2
3/18/2013	< 10	10	< 2	10	< 10	< 2	20	< 10	< 2
3/25/2013	10	< 10	2	< 10	< 10	4	40	10	< 2

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

TC = Total Coliforms
FC = Fecal Coliforms
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CG = Confluent Growth
NS = Not Sampled

Data Source: Orange County Health Care Agency (www.ocbeachinfo.com)

TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS
(Concentrations in CFU/100 mL)

	Bayshore Beach (4)			Promontory Point (26)			De Anza Launch (27)		
	TC	**FC**	**ENT**	**TC**	**FC**	**ENT**	**TC**	**FC**	**ENT**
4/2/2012	190	< 10	4	< 10	< 10	< 2	520	10	2
4/12/2012	>= 40,000	3,000	396	< 10	< 10	< 2	>= 40,000	10,000	400
4/16/2012	480	40	2	80	< 10	2	410	30	2
4/25/2012	30	< 10	2	< 10	< 10	2	30	10	< 2
4/30/2012	350	10	20	< 10	< 10	< 2	70	< 10	< 2
5/7/2012	< 10	< 10	< 2	60	< 10	< 2	30	< 10	50
5/14/2012	30	< 10	2	< 10	< 10	< 2	10	10	< 2
5/21/2012	30	20	4	10	< 10	< 2	>= 80	80	50
5/29/2012	>= 70	< 10	10	40	< 10	2	10	< 10	< 2
6/4/2012	20	< 10	2	10	< 10	2	10	< 10	2
6/11/2012	30	< 10	2	< 10	< 10	2	< 10	< 10	< 2
6/18/2012	20	30	6	30	< 10	< 2	10	10	6
6/25/2012	30	< 10	< 2	< 10	< 10	< 2	10	< 10	2
7/2/12	30	10	4	< 10	< 10	< 2	10	< 10	2
7/9/12	960	10	337	< 10	< 10	4	50	< 10	2
7/11/12	70	< 10	4	NS	NS	NS	NS	NS	NS
7/16/12	40	10	2	70	< 10	< 2	60	10	2
7/23/12	50	< 10	< 2	< 10	< 10	< 2	30	< 10	6
7/31/12	40	20	10	< 10	< 10	< 2	10	< 10	4
8/6/12	< 10	< 10	< 2	< 10	< 10	< 2	10	< 10	< 2
8/16/12	100	< 10	10	< 10	< 10	< 2	30	< 10	< 2
8/20/12	80	< 10	2	< 10	< 10	< 2	10	< 10	< 2
8/27/12	20	30	2	< 10	< 10	< 2	10	10	< 2
9/4/12	10	< 10	4	< 10	< 10	< 2	10	< 10	< 2
9/10/12	50	< 10	< 2	50	< 10	< 2	20	< 10	< 2
9/17/12	60	20	4	20	< 10	< 2	10	< 10	4
9/24/12	20	< 10	< 2	>= 1,000	50	24	10	< 10	< 2
10/1/12	70	20	4	10	< 10	< 2	10	< 10	20
10/9/12	70	50	6	< 10	< 10	< 2	10	< 10	2
10/15/12	60	< 10	6	30	< 10	2	100	50	120
10/22/12	40	< 10	< 2	< 10	< 10	2	20	< 10	10
10/29/12	20	20	2	10	< 10	2	70	30	2
11/5/12	< 10	< 10	< 2	< 10	< 10	< 2	10	10	< 2
11/13/12	10	< 10	< 2	10	< 10	< 2	60	10	26
11/19/12	480	100	96	< 10	< 10	< 2	720	20	10
11/26/12	70	20	2	30	< 10	< 2	10	20	4
12/4/12	7,400	2,000	800	100	20	2	>= 14,000	2,400	2,000
12/11/12	< 10	20	4	20	< 10	6	95	60	10
12/19/12	4,000	230	70	10	< 10	4	7,800	200	120
12/27/12	>= 240	< 10	6	>= 210	10	2	>= 460	40	20
1/2/13	110	= 20	2	10	< 10	2	130	10	26
1/7/13	110	< 10	4	< 10	< 10	< 2	160	30	< 2
1/14/13	60	< 10	2	20	< 10	< 2	50	< 10	4
1/22/13	10	10	2	< 10	< 10	< 2	10	< 10	6
1/28/13	>= 790	20	10	>= 670	20	20	>= 840	70	20
2/4/13	180	60	32	>= 40,000	20	< 2	320	10	44
2/8/13	NS	NS	NS	20	< 10	< 2	NS	NS	NS
2/13/13	10	< 10	20	< 10	< 10	2	50	10	36
2/20/13	620	30	50	20	< 10	2	13,000	170	600
2/25/13	20	10	< 2	< 10	< 10	< 2	10	< 10	6
3/6/13	60	20	42	< 10	< 10	< 2	50	< 10	36
3/11/13	70	10	4	20	< 10	< 2	260	< 10	< 2
3/18/13	80	20	38	10	< 10	< 2	60	< 10	30
3/25/13	20	< 10	2	< 10	< 10	< 2	10	< 10	< 2

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

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FC = Fecal Coliforms
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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS
(Concentrations in CFU/100 mL)

	Newport Dunes - West (20)			Newport Dunes - Middle (19)			Newport Dunes - East (18)		
	TC	**FC**	**ENT**	**TC**	**FC**	**ENT**	**TC**	**FC**	**ENT**
4/2/2012	130	20	28	110	40	30	>= 410	220	74
4/12/2012	>= 40,000	6,600	600	>= 40,000	5,200	200	>= 40,000	5,400	600
4/16/2012	2,400	50	30	4,400	60	32	4,600	100	36
4/25/2012	80	60	4	130	40	10	260	140	26
4/30/2012	>= 140	50	36	200	130	120	120	30	46
5/2/2012	NS	NS	NS	10	10	10	NS	NS	NS
5/7/2012	10	10	< 2	70	< 10	10	< 10	< 10	2
5/14/2012	>= 20	10	6	>= 40	10	62	10	< 10	6
5/21/2012	10	< 10	< 2	< 10	< 10	4	40	< 10	4
5/29/2012	< 10	< 10	< 2	< 10	< 10	< 2	>= 10	< 10	2
6/4/2012	20	10	10	30	20	28	10	< 10	20
6/11/2012	20	< 10	4	10	< 10	4	40	40	< 2
6/18/2012	20	< 10	2	30	< 10	2	10	10	4
6/25/2012	40	< 10	2	10	< 10	< 2	< 10	< 10	< 2
7/2/2012	20	< 10	2	< 10	10	4	30	20	< 2
7/9/2012	20	< 10	4	70	< 10	< 2	< 10	10	2
7/16/2012	170	10	2	170	20	< 2	180	50	< 2
7/23/2012	95	< 10	< 2	80	< 10	2	50	40	4
7/31/2012	< 10	< 10	< 2	< 10	< 10	< 2	< 10	< 10	< 2
8/6/2012	20	10	2	< 10	< 10	2	< 10	< 10	2
8/16/2012	20	20	< 2	< 10	< 10	< 2	< 10	< 10	2
8/20/2012	180	10	< 2	< 10	< 10	2	20	10	6
8/27/2012	>= 110	50	8	>= 40	50	4	>= 40	10	4
9/4/2012	2,600	30	< 2	>= 70	< 10	< 2	>= 70	95	< 2
9/10/2012	60	< 10	< 2	>= 30	10	2	>= 70	30	4
9/17/2012	20	10	2	20	< 10	< 2	80	30	72
9/24/2012	60	< 10	< 2	70	< 10	2	80	80	34
10/1/2012	95	20	4	10	30	4	>= 260	260	120
10/3/2012	NS	NS	NS	NS	NS	NS	>= 120	95	20
10/9/2012	60	< 10	< 2	50	10	6	< 10	< 10	< 2
10/15/2012	100	30	4	50	20	2	< 10	10	10
10/22/2012	>= 380	50	32	>= 300	30	48	>= 210	20	42
10/29/2012	40	50	2	50	10	10	< 10	< 10	< 2
11/5/2012	160	160	20	40	< 10	20	30	< 10	< 2
11/13/2012	120	40	30	70	40	10	70	30	6
11/19/2012	9,600	500	24	12,000	470	24	3,200	70	22
11/26/2012	>= 860	70	350	>= 1,360	320	98	>= 1,190	140	82
11/28/2012	600	490	74	NS	NS	NS	NS	NS	NS
12/4/2012	>= 20,000	2,800	2,400	>= 31,000	3,600	3,600	>= 26,000	3,800	5,200
12/8/2012	260	130	88	NS	NS	NS	NS	NS	NS
12/11/2012	95	20	34	470	260	76	>= 730	470	120
12/19/2012	2,800	270	170	3,200	240	160	>= 1,370	220	130
12/27/2012	18,000	960	160	>= 19,000	770	259	>= 14,000	360	232
1/2/2013	220	110	36	190	95	30	100	50	10
1/7/2013	450	40	24	130	10	22	10	10	4
1/14/2013	8,000	6,200	327	10,000	6,800	96	12,000	7,800	42
1/16/2013	270	95	8	390	120	10	430	80	4
1/22/2013	70	20	2	40	20	2	300	230	20
1/28/2013	>= 5,400	200	70	>= 5,400	240	68	>= 4,800	310	62
2/4/2013	210	70	24	95	80	10	130	80	10
2/13/2013	220	80	32	50	30	24	180	10	10
2/20/2013	3,200	1,160	2,400	1,610	1,080	600	630	470	7,600
2/25/2013	95	70	20	20	20	10	50	20	10
3/6/2013	530	310	224	200	230	34	40	20	8
3/11/2013	>= 1,480	60	20	>= 1,220	70	24	>= 840	80	20
3/18/2013	>= 180	95	62	70	10	6	40	10	30
3/25/2013	80	40	4	80	40	4	290	200	38

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Additional sampling day due to a water quality objective exceedance.

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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS
(Concentrations in CFU/100 mL)

	Newport Dunes - North (21)			North Star Beach (25)			Vaughn's Launch (23)			Ski Zone (24)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	350	140	190	4,400	50	6	NS	NS	NS	NS	NS	NS
4/4/2012	150	40	8	20	< 10	4	NS	NS	NS	NS	NS	NS
4/12/2012	>= 40,000	5,800	600	>= 40,000	12,000	1,000	NS	NS	NS	NS	NS	NS
4/16/2012	>= 950	80	46	8,400	80	8	5,200	80	400	NS	NS	NS
4/25/2012	100	70	24	40	< 10	6	NS	NS	NS	NS	NS	NS
4/30/2012	2,800	450	1,000	100	< 10	6	NS	NS	NS	NS	NS	NS
5/2/2012	40	20	8	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/4/2012	>= 860	190	140	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/5/2012	50	10	6	NS	NS	NS	NS	NS	NS	NS	NS	NS
5/7/2012	>= 80	< 10	4	20	< 10	2	NS	NS	NS	NS	NS	NS
5/14/2012	>= 240	40	10	< 10	< 10	< 2	NS	NS	NS	NS	NS	NS
5/21/2012	< 10	< 10	4	10	< 10	4	NS	NS	NS	NS	NS	NS
5/29/2012	>= 10	< 10	< 2	20	< 10	< 2	NS	NS	NS	NS	NS	NS
6/4/2012	60	20	36	< 10	10	6	NS	NS	NS	NS	NS	NS
6/11/2012	20	< 10	< 2	80	10	4	NS	NS	NS	NS	NS	NS
6/18/2012	180	170	10	< 10	< 10	2	NS	NS	NS	NS	NS	NS
6/25/2012	20	< 10	10	10	< 10	< 2	NS	NS	NS	NS	NS	NS
7/2/2012	10	< 10	4	10	< 10	< 2	CG	< 10	20	NS	NS	NS
7/9/2012	80	< 10	10	< 10	< 10	< 2	NS	NS	NS	NS	NS	NS
7/16/2012	180	40	8	80	< 10	4	NS	NS	NS	NS	NS	NS
7/23/2012	95	60	36	20	< 10	4	NS	NS	NS	NS	NS	NS
7/31/2012	>= 80	30	< 2	< 10	< 10	4	< 10	< 10	< 2	NS	NS	NS
8/6/2012	50	10	2	>= 20	< 10	< 2	NS	NS	NS	NS	NS	NS
8/16/2012	10	10	2	< 10	< 10	< 2	>= 10	10	< 2	NS	NS	NS
8/20/2012	60	< 10	< 2	50	< 10	4	NS	NS	NS	NS	NS	NS
8/27/2012	30	20	< 2	< 10	< 10	< 2	>= 10	< 10	2	NS	NS	NS
9/4/2012	20	< 10	2	20	< 10	< 2	NS	NS	NS	NS	NS	NS
9/10/2012	>= 80	40	8	60	80	8	>= 30	< 10	6	NS	NS	NS
9/17/2012	110	110	>= 396	40	< 10	< 2	= 200	< 10	10	NS	NS	NS
9/19/2012	>= 770	460	48	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/21/2012	430	260	38	NS	NS	NS	NS	NS	NS	NS	NS	NS
9/24/2012	60	< 10	8	20	< 10	4	>= 20	< 10	2	NS	NS	NS
10/1/2012	10	20	10	30	< 10	< 2	< 10	< 10	4	NS	NS	NS
10/9/2012	100	70	8	10	< 10	< 2	NS	NS	NS	NS	NS	NS
10/15/2012	170	70	10	95	10	8	NS	NS	NS	NS	NS	NS
10/22/2012	>= 320	210	64	>= 40	< 10	< 2	NS	NS	NS	NS	NS	NS
10/29/2012	10	20	4	70	< 10	6	40	50	< 2	>= 50	< 10	76
11/5/2012	260	160	6	20	10	< 2	NS	NS	NS	NS	NS	NS
11/13/2012	40	10	8	< 10	10	10	150	20	10	70	20	6
11/19/2012	2,400	80	24	>= 21,000	3,200	34	NS	NS	NS	NS	NS	NS
11/26/2012	>= 1,380	260	110	40	10	6	>= 80	20	74	>= 30	< 10	34
11/28/2012	>= 200	40	20	NS	NS	NS	NS	NS	NS	NS	NS	NS
12/4/2012	>= 27,800	4,600	4,400	>= 25,400	3,000	3,400	NS	NS	NS	NS	NS	NS
12/11/2012	50	20	10	60	10	10	>= 160	60	50	NS	NS	NS
12/19/2012	>= 1,170	190	150	>= 20,400	1,240	600	NS	NS	NS	NS	NS	NS
12/27/2012	>= 8,000	240	110	>= 980	40	22	5,600	100	150	>= 40,000	1,550	1,000
1/2/2013	80	20	4	>= 480	80	28	>= 790	70	20	NS	NS	NS
1/7/2013	100	50	50	180	10	2	NS	NS	NS	NS	NS	NS
1/14/2013	5,400	3,000	34	30	20	400	110	20	8	NS	NS	NS
1/16/2013	340	200	4	20	30	10	NS	NS	NS	NS	NS	NS
1/22/2013	>= 10	< 10	8	30	30	38	NS	NS	NS	NS	NS	NS
1/28/2013	>= 7,000	240	98	>= 1,240	70	26	>= 7,200	300	80	NS	NS	NS
2/4/2013	>= 320	250	20	>= 450	30	54	NS	NS	NS	NS	NS	NS
2/13/2013	130	20	10	>= 340	20	150	NS	NS	NS	NS	NS	NS
2/14/2013	NS	NS	NS	10	< 10	2	NS	NS	NS	NS	NS	NS
2/20/2013	280	140	56	1,660	80	96	NS	NS	NS	NS	NS	NS
2/25/2013	10	< 10	< 2	< 10	< 10	10	10	< 10	6	NS	NS	NS
3/6/2013	130	10	32	160	10	38	NS	NS	NS	NS	NS	NS
3/11/2013	>= 700	100	4	>= 500	20	8	>= 380	30	6	NS	NS	NS
3/18/2013	>= 60	80	6	60	< 10	28	NS	NS	NS	NS	NS	NS
3/25/2013	20	10	10	10	< 10	8	20	10	10	NS	NS	NS

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TABLE 1

BACTERIOLOGICAL SAMPLING RESULTS, NEWPORT BAY
April 1, 2012-March 31, 2013
TRIBUTARY STATIONS
(Concentrations in CFU/100 mL)

	San Diego Ck-Campus Dr.(35)			Santa Ana Delhi Channel (34)			Big Canyon Wash (33)			Back Bay Dr. Drain (22)		
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT
4/2/2012	>= 55,000	= 800	202	>= 57,000	310	800	>= 580	100	78	>= 770	150	305
4/12/2012	>= 200,000	>= 40,000	3,400	>= 148,000	1,460	1,000	4,000	830	4,000	>= 1,100	130	84
4/16/2012	>= 88,000	2,000	1,000	>= 3,100	210	200	>= 520	20	110	>= 310	50	20
4/25/2012	>= 2,700	60	68	>= 2,300	130	70	>= 470	40	160	>= 450	330	2,000
4/30/2012	>= 3,200	80	20	>= 2,100	160	1,000	>= 420	10	34	4,400	180	800
5/7/2012	>= 480	50	22	>= 940	80	44	>= 380	< 10	36	>= 470	50	100
5/14/2012	>= 380	30	28	>= 590	120	64	>= 520	10	150	>= 570	30	600
5/21/2012	>= 140	30	10	4,500	80	22	>= 980	20	88	NS	NS	NS
5/29/2012	>= 400	80	60	>= 760	150	72	NS	NS	NS	NS	NS	NS
6/4/2012	>= 100	10	36	>= 2,600	120	331	>= 410	70	214	NS	NS	NS
6/11/2012	>= 210	60	>= 66	>= 5,300	310	257	>= 1,080	130	130	NS	NS	NS
6/18/2012	>= 90	40	76	>= 780	240	362	580	170	30	NS	NS	NS
6/25/2012	>= 150	10	24	>= 770	190	120	>= 540	40	38	NS	NS	NS
7/2/2012	>= 170	120	54	>= 3,100	2,000	12,000	>= 280	70	52	NS	NS	NS
7/9/2012	>= 90	< 10	10	>= 370	80	20	>= 750	30	60	NS	NS	NS
7/16/2012	18,000	2,000	76	>= 48,000	5,400	2,200	>= 380	60	68	NS	NS	NS
7/23/2012	1,300	140	26	>= 4,500	860	289	>= 200	70	64	NS	NS	NS
7/31/2012	>= 440	20	10	>= 2,200	230	58	>= 660	30	46	NS	NS	NS
8/6/2012	>= 410	140	10	>= 2,800	240	96	>= 920	110	64	NS	NS	NS
8/16/2012	>= 40	30	6	>= 590	210	26	>= 1,350	40	60	NS	NS	NS
8/20/2012	>= 150	40	8	>= 2,200	180	66	>= 660	20	78	NS	NS	NS
8/27/2012	>= 290	10	10	>= 740	130	150	>= 1,260	10	92	NS	NS	NS
9/4/2012	>= 120	< 10	28	>= 2,000	110	200	>= 1,300	100	150	NS	NS	NS
9/10/2012	>= 500	80	68	>= 2,500	340	180	= 4,800	20	110	NS	NS	NS
9/17/2012	>= 240	60	36	>= 38,000	2,800	1,000	>= 15,000	50	180	>= 720	320	1,000
9/24/2012	>= 200	70	62	>= 2,700	410	600	>= 680	10	110	NS	NS	NS
10/1/2012	>= 160	70	22	>= 1,220	480	257	>= 970	20	120	NS	NS	NS
10/9/2012	>= 150	70	38	>= 4,500	550	267	NS	NS	NS	>= 530	30	100
10/15/2012	>= 2,500	140	32	29,000	860	216	NS	NS	NS	>= 1,260	70	400
10/22/2012	>= 2,500	260	86	4,100	390	180	NS	NS	NS	>= 900	60	170
10/29/2012	>= 260	60	28	>= 2,400	330	76	>= 510	180	120	>= 11,000	970	96
11/5/2012	>= 1,900	60	32	>= 1,000	140	32	>= 480	100	96	= 4,800	380	2,000
11/13/2012	>= 2,900	100	20	6,100	230	190	>= 1,910	270	402	>= 590	60	46
11/19/2012	>= 45,000	1,760	52	>= 68,000	>= 1,540	2,000	= 850	150	130	>= 730	50	190
11/26/2012	>= 2,000	>= 80	38	>= 9,600	>= 1,030	200	>= 490	100	150	>= 1,550	80	400
12/4/2012	12,000	2,800	2,800	17,000	= 3,000	2,000	>= 910	210	1,000	220	30	36
12/11/2012	>= 1,400	100	70	>= 20,000	>= 880	600	>= 470	170	226	>= 290	240	2,800
12/19/2012	46,000	2,400	7,400	>= 127,000	6,200	3,600	>= 440	360	1,000	440	240	2,000
12/27/2012	41,000	5,000	6,000	>= 187,000	6,200	2,000	>= 860	240	313	>= 460	130	48
1/2/2013	31,000	280	190	3,400	140	206	>= 190	80	130	>= 380	120	30
1/7/2013	>= 29,600	410	1,000	>= 18,000	370	216	>= 280	140	800	>= 160	70	82
1/14/2013	>= 630	95	64	100	< 10	100	>= 340	80	230	>= 640	220	48
1/22/2013	>= 660	70	58	>= 3,300	60	100	>= 230	80	190	= 5,000	960	>= 396
1/28/2013	>= 58,000	2,200	600	>= 35,000	480	150	>= 510	270	120	>= 9,000	330	86
2/4/2013	>= 3,400	140	120	>= 6,200	360	150	>= 430	380	120	>= 6,000	4,000	42
2/13/2013	>= 3,700	210	150	>= 2,800	450	412	420	100	130	16,000	4,200	406
2/20/2013	>= 103,000	12,000	20,000	>= 200,000	15,000	30,000	4,000	1,640	2,200	>= 250	50	160
2/25/2013	2,600	100	20	5,100	100	40	210	60	140	370	95	28
3/6/2013	>= 700	10	20	>= 3,900	260	150	>= 350	40	140	>= 440	20	36
3/11/2013	>= 17,000	400	10	>= 11,000	380	378	>= 440	80	58	>= 1,380	60	120
3/18/2013	>= 2,400	60	48	>= 1,170	80	100	>= 520	70	150	>= 750	10	40
3/25/2013	>= 680	60	26	>= 4,100	360	150	>= 490	80	60	>= 910	70	120

Sampling results possibly influenced by rainfall (within 72 hours of 0.1 inch of rain).

Additional sampling day due to a water quality objective exceedance.

TC = Total Coliforms
FC = Fecal Coliforms
ENT = Enterococci

CG = Confluent Growth
NS = Not Sampled

Data source: Orange County Health Agency, www.ocbeachinfo.com

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	43rd St. Beach (6)			38th St. Beach (7)			33rd St. Channel (8)		
	FC	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***
4/2/2012	< 10	28	yes	< 10	28	yes	< 10	24	yes
4/12/2012	< 10	ID	ID	< 10	ID	ID	10	ID	ID
4/16/2012	< 10	28	yes	10	28	yes	< 10	24	yes
4/25/2012	< 10	19	yes	< 10	18	yes	< 10	18	yes
4/30/2012	< 10	10	yes	< 10	10	yes	60	14	yes
5/2/2012	NS	NS	NS	NS	NS	NS	< 10	13	yes
5/7/2012	10	10	yes	10	10	yes	10	13	yes
5/14/2012	< 10	10	yes	< 10	10	yes	< 10	13	yes
5/21/2012	10	10	yes	< 10	10	yes	< 10	13	yes
5/29/2012	< 10	10	yes	< 10	10	yes	< 10	13	yes
6/4/2012	20	11	yes	< 10	10	yes	< 10	10	yes
6/11/2012	< 10	11	yes	< 10	10	yes	40	13	yes
6/18/2012	40	15	yes	< 10	10	yes	400	28	yes
6/20/2012	NS	NS	NS	NS	NS	NS	< 10	23	yes
6/25/2012	10	15	yes	< 10	10	yes	< 10	23	yes
7/2/2012	10	15	yes	< 10	10	yes	80	33	yes
7/9/2012	< 10	13	yes	20	11	yes	< 10	33	yes
7/16/2012	< 10	13	yes	< 10	11	yes	< 10	26	yes
7/23/2012	10	10	yes	< 10	11	yes	< 10	15	yes
7/31/2012	< 10	10	yes	20	13	yes	< 10	15	yes
8/6/2012	< 10	10	yes	< 10	13	yes	< 10	10	yes
8/16/2012	< 10	ID	ID	20	ID	ID	< 10	ID	ID
8/20/2012	< 10	10	yes	20	15	yes	20	11	yes
8/27/2012	10	10	yes	30	19	yes	740	27	no
8/28/2012	NS	NS	NS	NS	NS	NS	95	33	no
8/29/2012	NS	NS	NS	NS	NS	NS	20	31	no
9/4/2012	< 10	10	yes	< 10	16	yes	< 10	31	no
9/10/2012	< 10	10	yes	< 10	16	yes	< 10	31	no
9/17/2012	10	10	yes	10	14	yes	< 10	31	no
9/24/2012	< 10	10	yes	< 10	12	yes	80	38	no
10/1/2012	< 10	10	yes	< 10	10	yes	< 10	15	yes
10/9/2012	10	10	yes	10	10	yes	< 10	15	yes
10/15/2012	120	16	yes	60	14	yes	< 10	15	yes
10/22/2012	40	22	yes	< 10	14	yes	110	24	yes
10/29/2012	< 10	22	yes	< 10	14	yes	< 10	16	yes
11/5/2012	< 10	22	yes	< 10	14	yes	< 10	16	yes
11/13/2012	< 10	22	yes	20	16	yes	< 10	16	yes
11/15/2012	< 10	13	yes	NS	NS	NS	NS	NS	NS
11/19/2012	< 10	13	yes	20	13	yes	< 10	16	yes
11/26/2012	70	14	yes	100	21	yes	50	14	yes
12/4/2012	180	22	yes	680	49	no	4,200	46	no
12/11/2012	10	22	yes	< 10	49	no	70	68	no
12/19/2012	10	26	yes	50	58	no	20	78	no
12/27/2012	40	ID	ID	100	ID	no	30	ID	no
1/2/2013	< 10	24	yes	< 10	51	no	< 10	71	no
1/7/2013	< 10	13	yes	10	22	yes	40	28	yes
1/14/2013	< 10	13	yes	< 10	22	yes	< 10	19	yes
1/22/2013	< 10	13	yes	10	16	yes	10	16	yes
1/28/2013	10	10	yes	10	10	yes	< 10	13	yes
2/4/2013	< 10	10	yes	< 10	10	yes	< 10	13	yes
2/13/2013	< 10	10	yes	< 10	10	yes	10	10	yes
2/20/2013	10	10	yes	< 10	10	yes	840	24	no
2/25/2013	< 10	10	yes	30	12	yes	< 10	24	no
3/6/2013	< 10	10	yes	< 10	12	yes	< 10	24	no
3/11/2013	10	10	yes	< 10	12	yes	< 10	24	no
3/18/2013	10	10	yes	< 10	12	yes	30	30	no
3/25/2013	< 10	10	yes	< 10	12	yes	< 10	12	yes
3/27/2013	< 10	10	yes	NS	NS	NS	NS	NS	NS

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	Newport Blvd. Bridge (32)			Rhine Channel (9)			Via Genoa Beach (5)		
	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*
4/2/2012	420	81	no	< 10	32	yes	< 10	28	yes
4/12/2012	1,220	ID	no	< 10	ID	ID	230	ID	ID
4/16/2012	20	184	no	< 10	32	yes	10	52	yes
4/25/2012	< 10	110	no	< 10	20	yes	< 10	36	yes
4/30/2012	40	84	no	< 10	10	yes	< 10	19	yes
5/7/2012	30	49	no	10	10	yes	10	19	yes
5/14/2012	50	26	yes	10	10	yes	< 10	10	yes
5/21/2012	10	23	yes	< 10	10	yes	< 10	10	yes
5/29/2012	2,600	69	no	< 10	10	yes	< 10	10	yes
6/4/2012	10	52	no	20	11	yes	< 10	10	yes
6/11/2012	< 10	42	no	< 10	11	yes	< 10	10	yes
6/18/2012	10	30	no	< 10	11	yes	< 10	10	yes
6/25/2012	10	30	no	< 10	11	yes	< 10	10	yes
7/2/2012	< 10	10	yes	< 10	11	yes	10	10	yes
7/9/2012	310	20	yes	< 10	10	yes	< 10	10	yes
7/16/2012	< 10	20	yes	10	10	yes	< 10	10	yes
7/23/2012	180	35	yes	< 10	10	yes	< 10	10	yes
7/31/2012	10	35	yes	< 10	10	yes	10	10	yes
8/6/2012	40	47	yes	< 10	10	yes	20	11	yes
8/16/2012	10	ID	ID	30	ID	ID	20	ID	ID
8/20/2012	95	37	yes	< 10	12	yes	< 10	13	yes
8/27/2012	50	29	yes	< 10	12	yes	< 10	13	yes
9/4/2012	< 10	29	yes	< 10	12	yes	< 10	13	yes
9/10/2012	760	51	no	< 10	12	yes	< 10	11	yes
9/17/2012	< 10	51	no	< 10	10	yes	30	12	yes
9/24/2012	< 10	33	no	< 10	10	yes	< 10	12	yes
10/1/2012	40	31	no	< 10	10	yes	380	26	yes
10/9/2012	40	41	no	30	12	yes	10	26	yes
10/15/2012	370	36	yes	10	12	yes	< 10	26	yes
10/22/2012	4,000	119	no	20	14	yes	< 10	21	yes
10/29/2012	< 10	119	no	< 10	14	yes	420	44	no
11/5/2012	140	153	no	< 10	14	yes	< 10	21	no
11/13/2012	730	273	no	10	11	yes	< 10	21	no
11/15/2012	NS	NS	NS	NS	NS	NS	< 10	21	no
11/19/2012	30	165	no	< 10	11	yes	20	21	no
11/26/2012	310	99	no	< 10	10	yes	40	26	no
12/4/2012	290	194	no	260	19	yes	180	23	yes
12/11/2012	360	234	no	< 10	19	yes	160	36	yes
12/19/2012	95	156	yes	10	19	yes	20	54	yes
12/27/2012	30	ID	ID	< 10	ID	ID	30	ID	ID
1/2/2013	70	116	yes	< 10	19	yes	10	44	yes
1/7/2013	4,200	198	no	< 10	10	yes	< 10	25	yes
1/14/2013	< 10	97	no	< 10	10	yes	< 10	14	yes
1/22/2013	5,000	213	no	< 10	10	yes	10	12	yes
1/28/2013	100	271	no	10	10	yes	100	16	yes
2/4/2013	1,100	471	no	< 10	10	yes	20	18	yes
2/13/2013	70	208	no	< 10	10	yes	10	18	yes
2/20/2013	>= 40,000	1,090	no	< 10	10	yes	60	26	yes
2/25/2013	10	315	no	< 10	10	yes	< 10	26	yes
3/6/2013	23,600	938	no	< 10	10	yes	< 10	16	yes
3/11/2013	< 10	366	no	< 10	10	yes	10	14	yes
3/18/2013	95	390	no	10	10	yes	20	16	yes
3/25/2013	60	106	no	< 10	10	yes	< 10	11	yes

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Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

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TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	19th St. Beach (10)			15th St. Beach (11)			Lido Yacht Club (29)		
	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*
4/2/2012	< 10	25	yes	< 10	23	yes	< 10	34	no
4/12/2012	390	ID	ID	940	ID	no	3,800	ID	no
4/16/2012	< 10	53	yes	< 10	58	no	10	112	no
4/25/2012	< 10	36	yes	< 10	37	no	< 10	70	no
4/30/2012	< 10	21	yes	< 10	25	no	< 10	33	no
5/7/2012	< 10	21	yes	< 10	25	no	< 10	33	no
5/14/2012	10	10	yes	< 10	10	yes	10	10	yes
5/21/2012	< 10	10	yes	< 10	10	yes	320	20	yes
5/29/2012	< 10	10	yes	< 10	10	yes	< 10	20	yes
6/4/2012	< 10	10	yes	10	10	yes	110	32	yes
6/11/2012	< 10	10	yes	< 10	10	yes	< 10	32	yes
6/18/2012	< 10	10	yes	10	10	yes	10	32	yes
6/25/2012	< 10	10	yes	< 10	10	yes	< 10	16	yes
7/2/2012	< 10	10	yes	< 10	10	yes	< 10	16	yes
7/9/2012	< 10	10	yes	< 10	10	yes	< 10	10	yes
7/16/2012	< 10	10	yes	< 10	10	yes	10	10	yes
7/23/2012	30	12	yes	< 10	10	yes	< 10	10	yes
7/31/2012	< 10	12	yes	< 10	10	yes	< 10	10	yes
8/6/2012	< 10	12	yes	< 10	10	yes	< 10	10	yes
8/16/2012	< 10	ID	ID	< 10	ID	ID	< 10	ID	ID
8/20/2012	< 10	12	yes	< 10	10	yes	< 10	10	yes
8/27/2012	< 10	10	yes	10	10	yes	< 10	10	yes
9/4/2012	< 10	10	yes	30	12	yes	< 10	10	yes
9/10/2012	< 10	10	yes	< 10	12	yes	20	11	yes
9/17/2012	260	19	yes	< 10	12	yes	< 10	11	yes
9/19/2012	< 10	17	yes	NS	NS	NS	NS	NS	NS
9/24/2012	< 10	17	yes	< 10	12	yes	10	11	yes
10/1/2012	< 10	17	yes	30	16	yes	10	11	yes
10/9/2012	< 10	17	yes	< 10	12	yes	< 10	11	yes
10/15/2012	10	17	yes	20	14	yes	20	11	yes
10/22/2012	250	19	yes	120	24	yes	10	11	yes
10/29/2012	20	22	yes	< 10	24	yes	10	11	yes
11/5/2012	< 10	22	yes	20	22	yes	< 10	11	yes
11/13/2012	< 10	22	yes	< 10	22	yes	10	11	yes
11/19/2012	10	22	yes	< 10	19	yes	< 10	10	yes
11/26/2012	< 10	11	yes	50	16	yes	70	15	yes
12/4/2012	230	19	yes	230	30	yes	260	28	yes
12/11/2012	< 10	19	yes	40	34	yes	30	35	yes
12/19/2012	< 10	19	yes	60	49	yes	170	62	yes
12/27/2012	250	ID	ID	< 10	ID	ID	30	ID	ID
1/2/2013	10	36	yes	< 10	35	yes	10	52	yes
1/7/2013	10	19	yes	< 10	19	yes	< 10	27	yes
1/14/2013	10	19	yes	< 10	14	yes	10	22	yes
1/22/2013	< 10	19	yes	< 10	10	yes	< 10	12	yes
1/28/2013	30	12	yes	30	12	yes	< 10	10	yes
2/4/2013	< 10	12	yes	< 10	12	yes	10	10	yes
2/13/2013	< 10	12	yes	< 10	12	yes	< 10	10	yes
2/20/2013	< 10	12	yes	< 10	12	yes	< 10	10	yes
2/25/2013	< 10	12	yes	< 10	12	yes	10	10	yes
3/6/2013	< 10	10	yes	< 10	10	yes	< 10	10	yes
3/11/2013	10	10	yes	< 10	10	yes	< 10	10	yes
3/18/2013	< 10	10	yes	< 10	10	yes	20	11	yes
3/25/2013	< 10	10	yes	< 10	10	yes	< 10	11	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

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TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	10th St. Beach (12)			Alvarado/Bay Isle Reach (13)			Garnet Avenue Beach (28)		
	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*
4/2/2012	< 10	35	yes	< 10	32	yes	10	41	no
4/12/2012	2,000	ID	no	800	ID	no	4,000	ID	no
4/16/2012	< 10	100	no	10	77	no	< 10	136	no
4/25/2012	< 10	58	no	< 10	49	no	< 10	75	no
4/30/2012	< 10	29	no	< 10	24	no	20	38	no
5/7/2012	< 10	29	no	< 10	24	no	190	69	no
5/10/2012	NS	NS	NS	NS	NS	NS	120	75	no
5/14/2012	< 10	10	yes	< 10	10	yes	30	33	yes
5/21/2012	< 10	10	yes	< 10	10	yes	< 10	33	yes
5/29/2012	< 10	10	yes	< 10	10	yes	< 10	33	yes
6/4/2012	10	10	yes	< 10	10	yes	10	30	yes
6/11/2012	< 10	10	yes	< 10	10	yes	1,370	33	no
6/13/2012	NS	NS	NS	NS	NS	NS	< 10	27	no
6/18/2012	10	10	yes	30	12	yes	160	36	no
6/25/2012	< 10	10	yes	< 10	12	yes	940	77	no
6/27/2012	NS	NS	NS	NS	NS	NS	620	104	no
6/29/2012	NS	NS	NS	NS	NS	NS	40	126	no
6/30/2012	NS	NS	NS	NS	NS	NS	< 10	92	no
7/2/2012	< 10	10	yes	10	12	yes	10	92	no
7/9/2012	< 10	10	yes	< 10	12	yes	120	68	no
7/16/2012	< 10	10	yes	< 10	12	yes	< 10	68	no
7/23/2012	< 10	10	yes	< 10	10	yes	40	57	no
7/31/2012	< 10	10	yes	< 10	10	yes	10	22	yes
8/6/2012	< 10	10	yes	10	10	yes	730	51	no
8/8/2012	NS	NS	NS	NS	NS	NS	20	44	no
8/16/2012	20	ID	ID	< 10	ID	ID	< 10	36	no
8/20/2012	< 10	11	yes	< 10	10	yes	50	38	no
8/27/2012	< 10	11	yes	20	11	yes	10	30	no
9/4/2012	< 10	11	yes	< 10	11	yes	80	42	no
9/10/2012	< 10	11	yes	< 10	11	yes	10	21	yes
9/17/2012	10	10	yes	30	14	yes	10	21	yes
9/24/2012	< 10	10	yes	10	14	yes	NS	NS	NS
10/1/2012	< 10	10	yes	10	12	yes	40	ID	ID
10/9/2012	< 10	10	yes	< 10	12	yes	< 10	ID	ID
10/15/2012	20	11	yes	10	12	yes	20	ID	ID
10/22/2012	10	11	yes	< 10	10	yes	10	ID	ID
10/29/2012	10	11	yes	< 10	10	yes	20	17	yes
11/5/2012	< 10	11	yes	< 10	10	yes	< 10	13	yes
11/13/2012	30	14	yes	10	10	yes	< 10	13	yes
11/19/2012	< 10	12	yes	< 10	10	yes	20	13	yes
11/26/2012	< 10	12	yes	10	10	yes	10	13	yes
11/28/2012	NS	NS	NS	< 10	10	yes	NS	NS	NS
12/4/2012	830	30	no	2,400	25	no	320	23	yes
12/11/2012	320	60	no	370	46	no	200	42	yes
12/19/2012	30	60	no	20	51	no	20	48	yes
12/27/2012	10	ID	no	30	88	no	10	ID	ID
1/2/2013	20	69	no	< 10	88	no	< 10	42	yes
1/7/2013	< 10	29	yes	20	34	yes	60	30	yes
1/14/2013	10	14	yes	< 10	16	yes	< 10	16	yes
1/22/2013	50	16	yes	10	14	yes	10	14	yes
1/28/2013	250	30	yes	95	18	yes	30	18	yes
2/4/2013	40	35	yes	10	18	yes	< 10	18	yes
2/13/2013	< 10	35	yes	< 10	16	yes	10	12	yes
2/20/2013	20	40	yes	< 10	16	yes	50	17	yes
2/25/2013	< 10	29	yes	10	16	yes	< 10	17	yes
3/6/2013	< 10	15	yes	10	10	yes	< 9	14	yes
3/11/2013	< 10	11	yes	< 10	10	yes	< 10	14	yes
3/18/2013	< 10	11	yes	< 10	10	yes	< 10	14	yes
3/25/2013	< 10	10	yes	10	10	yes	10	10	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	Sapphire Avenue Beach (14)			Grand Canal (31)			Abalone Avenue Beach (15)		
	FC	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***
4/2/2012	< 10	22	yes	< 10	22	yes	< 10	23	yes
4/12/2012	720	ID	no	610	ID	no	600	ID	no
4/16/2012	< 10	53	no	< 10	51	no	10	51	no
4/25/2012	< 10	40	no	30	51	no	10	44	no
4/30/2012	10	24	no	10	28	no	10	23	no
5/7/2012	< 10	24	no	10	28	no	30	28	no
5/14/2012	10	10	yes	80	19	yes	180	22	yes
5/21/2012	100	16	yes	50	26	yes	10	22	yes
5/29/2012	< 10	16	yes	< 10	21	yes	50	31	yes
6/4/2012	< 10	16	yes	20	24	yes	170	54	yes
6/11/2012	< 10	16	yes	80	36	yes	< 10	43	yes
6/18/2012	< 10	16	yes	10	24	yes	30	30	yes
6/25/2012	< 10	10	yes	120	29	yes	< 10	30	yes
6/27/2012	NS	NS	NS	10	24	yes	NS	NS	NS
6/29/2012	NS	NS	NS	30	29	yes	NS	NS	NS
7/2/2012	< 10	10	yes	100	34	yes	< 10	22	yes
7/9/2012	< 10	10	yes	10	31	yes	< 10	12	yes
7/16/2012	10	10	yes	95	32	yes	140	21	yes
7/23/2012	40	13	yes	300	52	yes	10	17	yes
7/31/2012	10	13	yes	20	56	yes	40	22	yes
8/6/2012	50	18	yes	70	53	yes	< 10	22	yes
8/16/2012	70	ID	ID	110	ID	ID	70	ID	ID
8/20/2012	5,600	95	no	20	62	yes	240	37	yes
8/27/2012	< 10	72	no	< 10	31	yes	< 10	37	yes
9/4/2012	< 10	72	no	30	34	yes	260	53	yes
9/10/2012	30	65	no	80	35	yes	30	67	yes
9/17/2012	30	55	no	30	27	yes	10	45	yes
9/24/2012	10	16	yes	50	32	yes	60	34	yes
10/1/2012	< 10	16	yes	10	32	yes	< 10	34	yes
10/9/2012	< 10	16	yes	20	30	yes	30	22	yes
10/15/2012	< 10	12	yes	10	20	yes	< 10	18	yes
10/22/2012	10	10	yes	200	29	yes	10	18	yes
10/29/2012	< 10	10	yes	10	21	yes	< 10	12	yes
11/5/2012	30	12	yes	50	29	yes	< 10	12	yes
11/13/2012	10	12	yes	10	25	yes	< 10	10	yes
11/19/2012	20	14	yes	80	38	yes	30	12	yes
11/26/2012	20	16	yes	30	26	yes	30	16	yes
12/4/2012	130	27	yes	130	44	yes	100	25	yes
12/11/2012	40	29	yes	100	50	yes	50	34	yes
12/19/2012	< 10	29	yes	540	111	no	10	34	yes
12/27/2012	110	ID	ID	< 10	ID	no	30	ID	ID
1/2/2013	< 10	36	yes	150	101	no	70	40	yes
1/7/2013	< 10	21	yes	180	108	no	< 10	25	yes
1/14/2013	< 10	16	yes	10	68	no	< 10	18	yes
1/22/2013	< 10	16	yes	110	49	yes	130	31	yes
1/28/2013	20	11	yes	30	62	yes	20	28	yes
2/4/2013	10	11	yes	120	59	yes	20	22	yes
2/13/2013	20	13	yes	50	46	yes	< 10	22	yes
2/20/2013	< 10	13	yes	< 10	46	yes	< 10	22	yes
2/25/2013	< 10	13	yes	< 10	28	yes	< 10	13	yes
3/6/2013	9	11	yes	440	48	no	20	13	yes
3/11/2013	< 10	11	yes	10	29	no	70	17	yes
3/18/2013	40	13	yes	260	41	no	30	21	yes
3/25/2013	10	13	yes	< 10	41	no	50	29	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	Bayside Drive Beach[1] (30)			N St. Beach (16)			Rocky Point Beach (17)		
	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*	FC	GM *	30-day period met objective*
4/2/2012	< 10	49	yes	10	15	yes	< 10	16	yes
4/12/2012	20	ID	ID	100	ID	ID	70	ID	ID
4/16/2012	20	ID	ID	< 10	23	yes	10	23	yes
4/25/2012	20	32	yes	< 10	23	yes	< 10	18	yes
4/30/2012	< 10	15	yes	< 10	16	yes	< 10	15	yes
5/7/2012	40	20	yes	< 10	16	yes	< 10	15	yes
5/14/2012	10	17	yes	10	10	yes	< 10	10	yes
5/21/2012	20	17	yes	< 10	10	yes	< 10	10	yes
5/29/2012	80	23	yes	< 10	10	yes	< 10	10	yes
6/4/2012	40	30	yes	< 10	10	yes	10	10	yes
6/11/2012	460	49	no	10	10	yes	< 10	10	yes
6/13/2012	80	54	no	NS	NS	NS	NS	NS	NS
6/18/2012	40	67	no	< 10	10	yes	< 10	10	yes
6/25/2012	10	60	no	< 10	10	yes	< 10	10	yes
7/2/2012	210	71	no	< 10	10	yes	30	12	yes
7/9/2012	20	63	no	< 10	10	yes	< 10	12	yes
7/16/2012	< 10	28	yes	< 10	10	yes	< 10	12	yes
7/23/2012	40	28	yes	< 10	10	yes	< 10	12	yes
7/31/2012	30	35	yes	10	10	yes	10	12	yes
8/6/2012	320	38	yes	< 10	10	yes	< 10	10	yes
8/16/2012	140	ID	ID	20	ID	ID	ID	ID	ID
8/20/2012	50	77	yes	< 10	11	yes	< 10	10	yes
8/27/2012	40	77	yes	20	13	yes	< 10	10	yes
9/4/2012	30	77	yes	< 10	13	yes	10	10	yes
9/10/2012	540	85	no	< 10	13	yes	< 10	10	yes
9/12/2012	80	84	no	NS	NS	NS	NS	NS	NS
9/17/2012	190	89	no	< 10	11	yes	< 10	10	yes
9/24/2012	< 10	68	no	< 10	11	yes	10	10	yes
10/1/2012	20	61	no	60	14	yes	10	10	yes
10/9/2012	< 10	50	no	< 10	14	yes	< 10	10	yes
10/15/2012	80	31	yes	< 10	14	yes	570	22	no
10/22/2012	70	26	yes	< 10	14	yes	< 10	22	no
10/29/2012	10	26	yes	< 10	14	yes	20	26	no
11/5/2012	< 10	22	yes	10	10	yes	< 10	26	no
11/13/2012	20	26	yes	< 10	10	yes	30	32	no
11/19/2012	20	19	yes	10	10	yes	< 10	14	yes
11/26/2012	20	15	yes	< 10	10	yes	10	14	yes
12/4/2012	30	19	yes	140	17	yes	40	16	yes
12/11/2012	50	26	yes	10	17	yes	150	28	yes
12/19/2012	10	23	yes	10	17	yes	< 10	23	yes
12/27/2012	< 10	ID	ID	10	ID	ID	< 10	ID	ID
1/2/2013	< 10	17	yes	< 10	17	yes	10	23	yes
1/7/2013	< 10	14	yes	< 10	10	yes	< 10	17	yes
1/14/2013	< 10	10	yes	< 10	10	yes	< 10	10	yes
1/22/2013	< 10	10	yes	< 10	10	yes	< 10	10	yes
1/28/2013	< 10	10	yes	30	12	yes	20	11	yes
2/4/2013	30	12	yes	10	12	yes	10	11	yes
2/13/2013	< 10	12	yes	10	12	yes	40	15	yes
2/20/2013	40	16	yes	< 10	12	yes	< 10	15	yes
2/25/2013	40	22	yes	< 10	12	yes	< 10	15	yes
3/6/2013	< 10	22	yes	< 10	10	yes	< 10	13	yes
3/11/2013	20	20	yes	< 10	10	yes	< 10	13	yes
3/18/2013	60	29	yes	10	10	yes	< 10	10	yes
3/25/2013	< 10	22	yes	< 10	10	yes	< 10	10	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

[1] *In previous years, station name was Harbor Patrol Beach.*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

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ID = Insufficient data to compare objective

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TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013

LOWER BAY STATIONS

	Ruby Avenue Beach (3)			Onyx Avenue Beach (2)			Park Avenue Beach (1)		
	FC	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***	**FC**	**GM ***	**30-day period met objective***
4/2/2012	< 10	30	yes	10	20	yes	< 10	23	yes
4/12/2012	680	ID	no	220	ID	ID	410	ID	no
4/16/2012	10	70	no	< 10	37	ID	< 10	49	no
4/25/2012	< 10	38	no	< 10	26	yes	< 10	39	no
4/30/2012	10	23	no	10	19	yes	< 10	21	no
5/7/2012	10	23	no	10	19	yes	< 10	21	no
5/14/2012	10	10	yes	10	10	yes	< 10	10	yes
5/21/2012	< 10	10	yes	< 10	10	yes	10	10	yes
5/29/2012	< 10	10	yes	< 10	10	yes	< 10	10	yes
6/4/2012	< 10	10	yes	40	13	yes	< 10	10	yes
6/11/2012	10	10	yes	< 10	13	yes	< 10	10	yes
6/18/2012	10	10	yes	< 10	13	yes	20	11	yes
6/25/2012	< 10	10	yes	< 10	13	yes	< 10	11	yes
7/2/2012	20	11	yes	10	13	yes	< 10	11	yes
7/9/2012	< 10	11	yes	< 10	10	yes	< 10	11	yes
7/16/2012	10	11	yes	< 10	10	yes	10	11	yes
7/23/2012	10	11	yes	10	10	yes	< 10	10	yes
7/31/2012	40	15	yes	160	17	yes	< 10	10	yes
8/6/2012	10	13	yes	< 10	17	yes	< 10	10	yes
8/16/2012	400	ID	ID	180	ID	ID	5,200	ID	no
8/17/2012	NS	NS	NS	NS	NS	NS	< 10	35	no
8/20/2012	10	28	yes	80	47	yes	10	28	no
8/27/2012	20	32	yes	10	47	yes	50	37	no
9/4/2012	< 10	24	yes	10	27	yes	< 10	37	no
9/10/2012	< 10	24	yes	< 10	27	yes	< 10	37	no
9/17/2012	10	11	yes	40	20	yes	< 10	14	yes
9/24/2012	< 10	11	yes	10	13	yes	10	14	yes
10/1/2012	150	17	yes	10	13	yes	10	10	yes
10/9/2012	< 10	17	yes	< 10	13	yes	< 10	10	yes
10/15/2012	< 10	17	yes	130	22	yes	40	13	yes
10/22/2012	< 10	17	yes	20	19	yes	10	13	yes
10/29/2012	120	28	yes	80	29	yes	< 10	13	yes
11/5/2012	< 10	16	yes	< 10	29	yes	< 10	13	yes
11/13/2012	10	16	yes	50	40	yes	10	13	yes
11/19/2012	< 10	16	yes	10	24	yes	20	11	yes
11/26/2012	< 10	16	yes	10	21	yes	< 10	11	yes
12/4/2012	240	19	yes	95	22	yes	80	17	yes
12/11/2012	40	25	yes	150	37	yes	70	26	yes
12/19/2012	< 10	25	yes	40	36	yes	< 10	26	yes
12/27/2012	240	ID	ID	20	ID	ID	< 10	ID	ID
1/2/2013	110	76	yes	20	47	yes	10	22	yes
1/7/2013	10	40	yes	10	30	yes	10	15	yes
1/14/2013	< 10	31	yes	10	17	yes	< 10	10	yes
1/22/2013	< 10	31	yes	< 10	13	yes	10	10	yes
1/28/2013	70	24	yes	160	20	yes	30	12	yes
2/4/2013	< 10	15	yes	< 10	17	yes	< 10	12	yes
2/13/2013	10	15	yes	20	20	yes	10	12	yes
2/20/2013	< 10	15	yes	10	20	yes	< 10	12	yes
2/25/2013	< 10	15	yes	< 10	20	yes	< 10	12	yes
3/6/2013	9	10	yes	< 10	11	yes	< 9	10	yes
3/11/2013	< 10	10	yes	10	11	yes	< 10	10	yes
3/18/2013	10	10	yes	< 10	10	yes	< 10	10	yes
3/25/2013	< 10	10	yes	< 10	10	yes	10	10	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

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TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS

	Bayshore Beach (4)			Promontory Point (26)			De Anza Launch (27)		
	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *
4/2/2012	< 10	42	no	< 10	19	yes	10	53	no
4/12/2012	3,000	ID	no	< 10	ID	ID	10,000	ID	no
4/16/2012	40	174	no	< 10	19	yes	30	228	no
4/25/2012	< 10	94	no	< 10	13	yes	10	132	no
4/30/2012	10	41	no	< 10	10	yes	< 10	50	no
5/7/2012	10	41	no	< 10	10	yes	40	65	no
5/14/2012	< 10	13	yes	< 10	10	yes	10	16	yes
5/21/2012	20	11	yes	< 10	10	yes	80	20	yes
5/29/2012	< 10	11	yes	< 10	10	yes	< 10	20	yes
6/4/2012	< 10	11	yes	< 10	10	yes	< 10	20	yes
6/11/2012	< 10	11	yes	< 10	10	yes	< 10	15	yes
6/18/2012	30	14	yes	< 10	10	yes	10	15	yes
6/25/2012	< 10	12	yes	< 10	10	yes	< 10	10	yes
7/2/12	10	12	yes	< 10	10	yes	< 10	10	yes
7/9/12	10	12	yes	< 10	10	yes	< 10	10	yes
7/11/12	< 10	12	yes	NS	NS	NS	NS	NS	NS
7/16/12	10	12	yes	< 10	10	yes	10	10	yes
7/23/12	< 10	10	yes	< 10	10	yes	< 10	10	yes
7/31/12	20	11	yes	< 10	10	yes	< 10	10	yes
8/6/12	< 10	11	yes	< 10	10	yes	< 10	10	yes
8/16/12	< 10	ID	ID	< 10	ID	ID	< 10	ID	ID
8/20/12	< 10	11	yes	< 10	10	yes	< 10	10	yes
8/27/12	30	14	yes	< 10	10	yes	10	10	yes
9/4/12	< 10	12	yes	< 10	10	yes	< 10	10	yes
9/10/12	< 10	12	yes	< 10	10	yes	< 10	10	yes
9/17/12	20	14	yes	< 10	10	yes	< 10	10	yes
9/24/12	< 10	14	yes	50	14	yes	< 10	10	yes
10/1/12	20	13	yes	< 10	14	yes	< 10	10	yes
10/9/12	50	18	yes	< 10	14	yes	< 10	10	yes
10/15/12	< 10	18	yes	< 10	14	yes	50	14	yes
10/22/12	< 10	16	yes	< 10	14	yes	< 10	14	yes
10/29/12	20	18	yes	< 10	10	yes	30	17	yes
11/5/12	< 10	16	yes	< 10	10	yes	10	17	yes
11/13/12	< 10	11	yes	< 10	10	yes	10	17	yes
11/19/12	100	18	yes	< 10	10	yes	20	14	yes
11/26/12	20	21	yes	< 10	10	yes	20	16	yes
12/4/12	2,000	53	no	20	11	yes	2,400	39	no
12/11/12	20	60	no	< 10	11	yes	60	57	no
12/19/12	230	113	no	< 10	11	yes	200	103	no
12/27/12	< 10	ID	no	10	ID	ID	40	ID	no
1/2/13	20	71	no	< 10	11	yes	10	103	no
1/7/13	< 10	25	yes	< 10	10	yes	30	43	yes
1/14/13	< 10	22	yes	< 10	10	yes	< 10	30	yes
1/22/13	10	11	yes	< 10	10	yes	< 10	16	yes
1/28/13	20	13	yes	20	11	yes	70	18	yes
2/4/13	60	16	yes	20	13	yes	10	18	yes
2/8/13	NS	NS	NS	< 10	13	yes	NS	NS	NS
2/13/13	< 10	16	yes	< 10	13	yes	10	15	yes
2/20/13	30	20	yes	< 10	13	yes	170	26	yes
2/25/13	10	20	yes	< 10	13	yes	< 10	26	yes
3/6/13	20	20	yes	< 10	11	yes	< 10	18	yes
3/11/13	10	14	yes	< 10	10	yes	< 10	18	yes
3/18/13	20	16	yes	< 10	10	yes	< 10	18	yes
3/25/13	< 10	13	yes	< 10	10	yes	< 10	10	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

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TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS

	Newport Dunes West (20)			Newport Dunes Middle (19)			Newport Dunes East (18)		
	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *
4/2/2012	20	278	no	40	244	no	220	484	no
4/12/2012	6,600	ID	no	5,200	ID	no	5,400	ID	no
4/16/2012	50	462	no	60	611	no	100	1,059	no
4/25/2012	60	263	no	40	321	no	140	622	no
4/30/2012	50	115	no	130	145	no	30	219	no
5/7/2012	10	100	no	< 10	110	no	< 10	118	no
5/14/2012	10	27	yes	10	32	yes	< 10	33	yes
5/21/2012	< 10	20	yes	< 10	22	yes	< 10	21	yes
5/29/2012	< 10	14	yes	< 10	17	yes	< 10	12	yes
6/4/2012	10	10	yes	20	11	yes	< 10	10	yes
6/11/2012	< 10	10	yes	< 10	11	yes	40	13	yes
6/18/2012	< 10	10	yes	< 10	11	yes	10	13	yes
6/25/2012	< 10	10	yes	< 10	11	yes	< 10	13	yes
7/2/2012	< 10	10	yes	10	11	yes	20	15	yes
7/9/2012	< 10	10	yes	< 10	10	yes	10	15	yes
7/16/2012	10	10	yes	20	11	yes	50	16	yes
7/23/2012	< 10	10	yes	< 10	11	yes	40	21	yes
7/31/2012	< 10	10	yes	< 10	11	yes	< 10	21	yes
8/6/2012	10	10	yes	< 10	11	yes	< 10	18	yes
8/16/2012	20	ID	ID	< 10	ID	ID	< 10	ID	ID
8/20/2012	10	11	yes	< 10	10	yes	10	13	yes
8/27/2012	50	16	yes	50	14	yes	10	10	yes
9/4/2012	30	20	yes	< 10	14	yes	95	16	yes
9/10/2012	< 10	20	yes	10	14	yes	30	20	yes
9/17/2012	10	17	yes	< 10	14	yes	30	24	yes
9/24/2012	< 10	17	yes	< 10	14	yes	80	37	yes
10/1/2012	20	14	yes	30	12	yes	260	71	yes
10/3/2012	NS	NS	NS	NS	NS	NS	95	74	yes
10/9/2012	< 10	11	yes	10	12	yes	10	51	yes
10/15/2012	30	14	yes	20	14	yes	10	43	yes
10/22/2012	50	20	yes	30	18	yes	20	40	yes
10/29/2012	50	27	yes	10	18	yes	< 10	28	yes
11/5/2012	160	41	yes	< 10	14	yes	< 10	11	yes
11/13/2012	40	54	yes	40	19	yes	30	14	yes
11/19/2012	500	96	no	470	36	no	70	21	yes
11/26/2012	70	102	no	320	57	no	140	31	yes
11/28/2012	490	133	no	NS	NS	NS	NS	NS	NS
12/4/2012	2,800	260	no	3,600	185	no	3,800	102	no
12/8/2012	130	251	no	NS	NS	NS	NS	NS	NS
12/11/2012	20	224	no	260	ID	no	470	ID	no
12/19/2012	270	202	no	240	ID	no	220	ID	no
12/27/2012	960	312	no	770	ID	no	360	ID	no
1/2/2013	110	243	no	95	440	no	50	371	no
1/7/2013	40	120	no	10	135	no	10	113	no
1/14/2013	6,200	371	no	6,800	260	no	7,800	199	no
1/16/2013	95	296	no	120	229	no	80	171	no
1/22/2013	20	192	no	20	151	no	230	172	no
1/28/2013	200	148	no	240	124	no	310	168	no
2/4/2013	70	137	no	80	121	no	80	181	no
2/13/2013	80	154	no	30	145	no	10	181	no
2/20/2013	1,160	121	no	1,080	104	no	470	122	no
2/25/2013	70	156	no	20	104	no	20	75	no
3/6/2013	310	170	no	230	104	no	20	43	no
3/11/2013	60	165	no	70	101	no	80	43	no
3/18/2013	95	170	no	10	81	no	10	43	no
3/25/2013	40	87	yes	40	42	yes	200	36	yes

** GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS

	Newport Dunes North (21)			North Star Beach (25)			Vaughn's Launch (23)		
	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective *
4/2/2012	140	212	no	50	ID	no	NS	NS	NS
4/4/2012	40	161	no	10	123	no	NS	NS	NS
4/12/2012	5,800	758	no	12,000	443	no	NS	NS	NS
4/16/2012	80	521	no	80	333	no	80	ID	no
4/25/2012	70	305	no	< 10	162	no	NS	NS	NS
4/30/2012	450	208	no	< 10	60	no	NS	NS	NS
5/2/2012	20	151	no	NS	NS	NS	NS	NS	NS
5/4/2012	190	195	no	NS	NS	NS	NS	NS	NS
5/5/2012	10	68	no	NS	NS	NS	NS	NS	NS
5/7/2012	< 10	48	no	< 10	63	no	NS	NS	NS
5/14/2012	40	44	no	< 10	15	yes	NS	NS	NS
5/21/2012	< 10	23	yes	< 10	14	yes	NS	NS	NS
5/29/2012	< 10	21	yes	< 10	10	yes	NS	NS	NS
6/4/2012	20	14	yes	10	10	yes	NS	NS	NS
6/11/2012	< 10	15	yes	10	10	yes	NS	NS	NS
6/18/2012	170	20	yes	< 10	10	yes	NS	NS	NS
6/25/2012	< 10	20	yes	< 10	10	yes	NS	NS	NS
7/2/2012	< 10	20	yes	< 10	10	yes	< 10	ID	ID
7/9/2012	< 10	18	yes	< 10	10	yes	NS	NS	NS
7/16/2012	40	23	yes	< 10	10	yes	NS	NS	NS
7/23/2012	60	19	yes	< 10	10	yes	NS	NS	NS
7/31/2012	30	24	yes	< 10	10	yes	< 10	ID	ID
8/6/2012	10	24	yes	< 10	10	yes	NS	NS	NS
8/16/2012	10	ID	ID	< 10	ID	ID	10	ID	ID
8/20/2012	< 10	18	yes	< 10	10	yes	NS	NS	NS
8/27/2012	20	14	yes	< 10	10	yes	10	ID	ID
9/4/2012	< 10	11	yes	< 10	10	yes	NS	NS	NS
9/10/2012	40	15	yes	80	15	yes	< 10	ID	ID
9/17/2012	110	24	yes	< 10	15	yes	< 10	ID	ID
9/19/2012	460	40	no	NS	NS	NS	NS	NS	NS
9/21/2012	260	69	no	NS	NS	NS	NS	NS	NS
9/24/2012	10	61	no	< 10	15	yes	< 10	ID	ID
10/1/2012	20	69	no	< 10	15	yes	< 10	ID	ID
10/9/2012	70	75	no	< 10	15	yes	NS	NS	NS
10/15/2012	70	70	no	10	10	yes	NS	NS	NS
10/22/2012	210	46	yes	< 10	10	yes	NS	NS	NS
10/29/2012	20	53	yes	< 10	10	yes	50	ID	ID
11/5/2012	160	80	yes	10	10	yes	NS	NS	NS
11/13/2012	10	54	yes	10	10	yes	20	ID	ID
11/19/2012	80	56	yes	3,200	32	no	NS	NS	NS
11/26/2012	260	58	yes	10	32	no	20	ID	ID
11/28/2012	40	55	yes	NS	NS	NS	NS	NS	NS
12/4/2012	4,600	135	no	3,000	99	no	NS	NS	NS
12/11/2012	20	96	no	10	99	no	60	ID	ID
12/19/2012	190	156	no	1,240	260	no	NS	NS	NS
12/27/2012	240	176	no	40	ID	no	100	ID	ID
1/2/2013	20	153	no	80	164	no	70	ID	ID
1/7/2013	50	62	yes	10	52	no	NS	NS	NS
1/14/2013	3,000	169	no	20	60	no	20	ID	ID
1/16/2013	200	174	no	30	54	no	NS	NS	NS
1/22/2013	10	106	no	30	29	yes	NS	NS	NS
1/28/2013	240	106	no	70	32	yes	300	ID	ID
2/4/2013	250	162	no	30	27	yes	NS	NS	NS
2/13/2013	20	139	no	20	30	yes	NS	NS	NS
2/14/2013	NS	NS	NS	10	27	yes	NS	NS	NS
2/20/2013	140	70	yes	80	32	yes	NS	NS	NS
2/25/2013	< 10	70	yes	< 10	26	yes	< 10	ID	ID
3/6/2013	10	37	yes	10	19	yes	NS	NS	NS
3/11/2013	100	31	yes	20	18	yes	30	ID	ID
3/18/2013	80	41	yes	< 10	17	yes	NS	NS	NS
3/25/2013	10	24	yes	< 10	11	yes	10	ID	ID

**GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

TABLE 2

COMPLIANCE EVALUATION OF FECAL COLIFORM (CFU/100 mL) FOR NEWPORT BAY
April 1, 2012-March 31, 2013
UPPER BAY STATIONS

	Ski Zone (24)			San Diego Creek - Campus Drive (35)		
	FC	GM *	30-day period met objective *	FC	GM *	30-day period met objective*
4/2/2012	NS	NS	NS	800	ID	no
4/12/2012	NS	NS	NS	40,000	ID	no
4/16/2012	NS	NS	NS	2,000	3,223	no
4/25/2012	NS	NS	NS	60	1,709	no
4/30/2012	NS	NS	NS	80	790	no
5/7/2012	NS	NS	NS	50	454	no
5/14/2012	NS	NS	NS	30	108	no
5/21/2012	NS	NS	NS	30	46	yes
5/29/2012	NS	NS	NS	80	49	yes
6/4/2012	NS	NS	NS	10	32	yes
6/11/2012	NS	NS	NS	60	34	yes
6/18/2012	NS	NS	NS	40	36	yes
6/25/2012	NS	NS	NS	10	29	yes
7/2/2012	NS	NS	NS	120	31	yes
7/9/2012	NS	NS	NS	< 10	31	yes
7/16/2012	NS	NS	NS	2,000	63	no
7/23/2012	NS	NS	NS	140	80	no
7/31/2012	NS	NS	NS	20	92	no
8/6/2012	NS	NS	NS	140	95	no
8/16/2012	NS	NS	NS	30	ID	ID
8/20/2012	NS	NS	NS	40	54	yes
8/27/2012	NS	NS	NS	10	32	yes
9/4/2012	NS	NS	NS	< 10	28	yes
9/10/2012	NS	NS	NS	80	25	yes
9/17/2012	NS	NS	NS	60	29	yes
9/24/2012	NS	NS	NS	70	32	yes
10/1/2012	NS	NS	NS	70	47	yes
10/9/2012	NS	NS	NS	70	70	yes
10/15/2012	NS	NS	NS	140	78	yes
10/22/2012	NS	NS	NS	260	105	yes
10/29/2012	10	ID	ID	60	101	yes
11/5/2012	NS	NS	NS	60	98	yes
11/13/2012	20	ID	ID	100	106	yes
11/19/2012	NS	NS	NS	1,760	175	no
11/26/2012	< 10	ID	ID	>= 80	138	no
12/4/2012	NS	NS	NS	2,800	298	no
12/11/2012	NS	NS	NS	100	330	no
12/19/2012	NS	NS	NS	2,400	624	no
12/27/2012	1,550	ID	no	5,000	ID	no
1/2/2013	NS	NS	NS	280	988	no
1/7/2013	NS	NS	NS	410	673	no
1/14/2013	NS	NS	NS	95	666	no
1/22/2013	NS	NS	NS	70	328	no
1/28/2013	NS	NS	NS	2,200	279	no
2/4/2013	NS	NS	NS	140	243	no
2/13/2013	NS	NS	NS	210	212	no
2/20/2013	NS	NS	NS	12,000	558	no
2/25/2013	NS	NS	NS	100	600	no
3/6/2013	NS	NS	NS	10	204	no
3/11/2013	NS	NS	NS	400	252	no
3/18/2013	NS	NS	NS	60	196	no
3/25/2013	NS	NS	NS	60	68	yes

**GM and 30-day objective are based on 5 samples from the preceding 30-day period*

Sampling results on these dates may have been influenced by rainfall (within 72 hours of 0.1 inch of precipitation)

Running 30-day LM > 200 organisms/100 mL based on 5 or more samples per 30-day period or FC sample > 400 organisms/100mL

Both criteria of the Fecal Coliform TMDL met

Log mean unable to be calculated since less than 5 samples taken from the preceding 30-day period

FC = Fecal Coliform

ID = Insufficient data to compare objective

GM = 30-day geometric mean

NS = Not sampled

Table 3a. Summary of REC-1 Fecal Coliform Objective Attainment - Dry Season

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of Sampling Dates Possibly Influenced by Rain[1]		2	0	2	1	2	4	1	0	2	0	2	1
Number of Stations Meeting Standards ≥75% of the time		21	21	17	23	18	8	1	28	29	24	24	22
	Site (See Fig. 1)												
Stations Meeting Standard ≥75% of the time	1	√	√	√	√		√		√	√	√	√	
	2	√	√	√	√		√		√	√	√	√	√
	3	√	√	√	√	√	√		√	√	√	√	√
	4	√	√	√	√			√	√	√	√	√	√
	5	√	√	√	√	√			√	√	√	√	√
	6					√			√	√	√		√
	7	√			√	√			√	√	√	√	√
	8								√	√	√		
	9				√	√	√		√	√	√	√	√
	10			√	√	√			√	√	√	√	√
	11	√	√	√	√	√			√	√		√	√
	12	√	√		√	√			√	√	√	√	√
	13	√	√	√	√	√	√		√	√	√	√	√
	14	√	√	√	√	√			√	√	√	√	
	15	√	√	√	√	√			√	√	√	√	√
	16	√	√	√	√	√	√		√	√		√	√
	17	√	√	√		√	√		√	√	√	√	√
	18	√	√		√				√	√		√	√
	19	√	√	√	√	√			√	√	√	√	√
	20	√	√	√	√				√	√	√	√	√
	21		√						√	√	√	√	
	23									ID	ID	ID	ID
	24									ID	ID	ID	ID
	25	√	√		√	√			√	√	√		
	26	√	√	√	√	√	√		√	√	√	√	√
	27	√	√	√	√	√			√	√	√	√	√
	28	√	√		√	√			√	√		√	√
	29				√				√	√	√	√	√
	30								√	√	√		
	31		√	√	√					√		√	√
	32												
	35[2]	√							√	√	√		

√ indicates site met standards 100% of the time

ID indicates insufficient data (too few samples) to determine compliance

√ indicates standards met at least 75% of the time

[1] Sampling conducted within 72 hours of 0.1 inch of precipitation.

[2] While San Diego Creek is not included within the TMDL, data has been collected and evaluated as it is tributary to Newport Bay.

Table 3b. Summary of REC-1 Fecal Coliform Objective Attainment - Dry Season

		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Number of Sampling Dates Possibly Influenced by Rain[1]		2	0	2	1	2	4	1	0	2	0	2	1
Number of Stations Meeting Standards ≤45% of the time		2	3	5	2	1	7	0	0	0	0	1	3
	Station (See Fig. 1)												
Stations Meeting Standard ≤45% of the time	1												
	2												
	3												
	4												
	5												
	6		√	√									
	7												
	8	√	√	√	√	√	√						
	9												
	10												
	11						√						
	12						√						
	13												
	14												
	15												
	16												
	17												
	18												
	19												
	20						√						
	21			√			√						
	23									ID	ID	ID	ID
	24								√	ID	ID	ID	ID
	25						√						
	26												
	27												
	28												√
	29												
	30			√	√								√
	31						√						
	32	√	√	√								√	√
	35[2]												

Table 4a. Summary of REC-1 Fecal Coliform Objective Attainment - Wet Season

		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Number of Sampling Dates Possibly Influenced by Rain[1]		9	6	7	13	6	4	9	4	7	14	8	8
Number of Stations Meeting Standards ≥75% of the time		7	1	8	0	13	19	11	15	0	12	16	18
	Site (See Fig. 1)												
Stations Meeting Standard ≥75% of the time	1			√		√	√	√			√	√	√
	2							√			√	√	√
	3	√					√		√		√	√	√
	4					√	√				√	√	
	5	√				√	√	√				√	
	6						√		√				√
	7						√	√	√				√
	8							√	√				
	9			√		√	√	√				√	√
	10					√	√	√					√
	11	√	√			√	√						√
	12											√	√
	13						√		√		√	√	√
	14			√		√	√					√	√
	15	√		√		√	√	√			√	√	√
	16	√		√		√	√	√	√		√	√	√
	17	√		√		√	√		√		√	√	√
	18												
	19												
	20												
	21												
	23								√	ID	ID	ID	ID
	24									ID	ID	ID	ID
	25								√				
	26	√		√		√	√	√	√			√	√
	27								√				
	28						√		√		√	√	√
	29						√		√			√	√
	30			√		√	√		√		√	√	√
	31					√	√	√			√		
	32												
	35[2]								√				

Table 4b. Summary of REC-1 Fecal Coliform Objective Attainment - Wet Season

		2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13
Number of Sampling Dates Possibly Influenced by Rain[1]		9	6	7	13	6	4	8	4	7	14	8	8
Number of Stations Meeting Standards ≤45% of the time		10	6	10	29	3	4	7	4	10	7	7	5
	Site (See Fig. 1)												
Stations Meeting Standard <=45% of the time	1				√								
	2	√		√	√		√						
	3				√								
	4				√					√			
	5			√	√								
	6		√	√	√								
	7			√	√								
	8	√	√		√								
	9				√								
	10	√			√								
	11				√								
	12	√	√	√	√								
	13				√			√					
	14				√								
	15				√								
	16				√								
	17				√								
	18	√		√	√		√	√		√		√	√
	19	√		√	√		√	√		√			√
	20	√			√		√	√		√	√		√
	21	√		√	√			√		√	√	√	
	23									√	√	√	ID
	24									ID	√	√	ID
	25	√		√	√	√		√	√	√	√	√	
	26				√				√	√			
	27			√	√			√		√			
	28				√								
	29				√								
	30		√		√								
	31				√								
	32		√		√	√			√	√	√	√	√
	35[2]	√	√			√			√	√	√	√	√

√ indicates site met standards <30% of the time

ID indicates insufficient data (too few samples) to determine compliance

√ indicates standards met under 45% of the time.

[1] Sampling conducted within 72 hours of 0.1 inch of precipitation.

[2] While San Diego Creek is not included within the TMDL, data has been collected and evaluated as it is tributary to Newport Bay.

Station	Site	2001-12 (D), 2001-13 (W)					2012-13					2011-12					2010-11					2009-10					2008-09					2007-08				
		<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%	<15%	16%-30%	31%-45%	46%-74%	>75%
1	Park Avenue Beach				D, W					D	W					D, W					D, W				W	D					D, W				D	W
2	Onyx Avenue Beach				W	D					D, W					D, W					D, W				W	D					D, W				D	W
3	Ruby Avenue Beach				W	D					D, W					D, W					D, W				W	D					D, W				D, W	
4	Bayshore Beach				W	D					D, W					D, W					D, W			W		D					D, W					D
5	Via Genoa Beach				W	D				W	D					D, W				W	D					W	D				D, W				D	W
6	43rd Street Beach				D, W						D, W				D, W					W	D					W	D				D, W				D, W	
7	38th Street Beach				D, W						D, W				W	D				W	D					W	D				D, W				D	W
8	33rd Street Beach				D, W					D	W				D, W					W	D					W	D				D, W				D	W
9	Rhine Channel				D, W						D, W					D, W				W	D					W	D				D, W				D	W
10	19th Street Beach				D, W						D, W				W	D				W	D					W	D				D, W				D	W
11	15th Street Beach				W	D					D, W				W	D				D, W						W	D				D, W				D, W	
12	10th Street Beach				W	D					D, W					D, W				W	D					W	D				D, W				D, W	
13	Alvarado/Bay Isle Beach				W	D					D, W					D, W					D, W					W	D				D, W		W		D	
14	Sapphire Avenue Beach				W	D				D	W					D, W				W	D					W	D				D, W				D, W	
15	Abalone Avenue Beach					D, W					D, W					D, W					D, W					W	D				D, W				D	W
16	N Street Beach					D, W					D, W					D, W				W	D					W	D				D, W				D	W
17	Rocky Point Beach					D, W					D, W					D, W					D, W					W	D				D, W				D, W	
18	Newport Dunes East			W		D		W			D			W		D				D, W				W		D				W	D	W			D	
19	Newport Dunes Middle			W		D		W			D				W	D				W	D			W		D				W	D		W		D	
20	Newport Dunes West			W		D		W			D				W	D			W		D		W			D				W	D			W	D	
21	Newport Dunes North			W	D					D, W				W		D			W		D				W	D				W	D		W		D	
23	Vaughn's Launch		W	D								W					W						W							D						
24	Ski Zone		W	D			W					W					W													W						
25	North Star Beach			W	D					W	D			W	D				W		D				W		D					D, W			W	D	
26	Promontory Point Channel					D, W					D, W					D, W					D, W			W		D				W	D				D	W
27	De Anza Launch				W	D					D, W				W	D					D, W			W		D					D, W				D, W	
28	Garnet Avenue Beach				D, W			D			W					D, W				W	D				W	D					D, W				D, W	
29	Lido Yacht Club Beach				D, W						D, W					D, W				W	D					W	D			W	D				D, W	
30	Bayside Drive Beach[1]				D, W				D		W				D	W					D, W					W	D				D, W				D, W	
31	Grand Canal				D, W					W	D				W	D				D, W						W	D			D, W					D	W
32	Newport Blvd. Bridge			D, W			W		D					D, W					W	D				W	D				W	D				D, W	
35	San Diego Creek	W			D			W		D		W			D		W				D		W			D		W			D	W				D	

D: Dry Weather (April 15 - October 15); W: Wet Weather (October 16 - April 14)

Station	Site	2006-07				2005-06				2004-05				2003-04				2002-03				2001-02			
		<15%	16%-30%	31%-45%	>75%	<15%	16%-30%	31%-45%	>75%	<15%	16%-30%	31%-45%	>75%	<15%	16%-30%	31%-45%	>75%	<15%	16%-30%	31%-45%	>75%	<15%	16%-30%	31%-45%	>75%
1	Park Avenue Beach				D, W				D, W	W			D				D, W				D				D
2	Onyx Avenue Beach			W	D				D	W			D			W	D				D		W		D
3	Ruby Avenue Beach				D, W				D	W			D				D				D				D
4	Bayshore Beach				W				D, W	W			D				D				D				D, W
5	Via Genoa Beach				W				D, W		W		D			W	D				D				D, W
6	43rd Street Beach				W				D	W					D	W		D		W					
7	38th Street Beach				W				D		W		D			W									D
8	33rd Street Beach		D				D				W	D			D			D	W			W	D		
9	Rhine Channel				W				D, W	W			D				W			D					
10	19th Street Beach				W				D, W	W			D				W	W		D					
11	15th Street Beach			D	W				D, W	W			D				D				D, W				D, W
12	10th Street Beach		D						D	W			D			W				W	D			W	D, W
13	Alvarado/Bay Isle Beach				D, W				D		W		D				D				D				D
14	Sapphire Avenue Beach				W				D, W	W			D				D, W				D				D
15	Abalone Avenue Beach				W				D, W			W	D				D, W				D				D, W
16	N Street Beach				D, W				D, W			W	D				D, W				D				D, W
17	Rocky Point Beach				D, W				D, W			W					D, W				D				D, W
18	Newport Dunes East			D						W			D								D		W	D	
19	Newport Dunes Middle			W					D	W			D			W	D				D		W		D
20	Newport Dunes West			D, W						W			D				D				D	W			D
21	Newport Dunes North	D			W		W		D	W					D, W						D			W	
23	Vaughn's Launch		D						D																
24	Ski Zone																								
25	North Star Beach			D					D	W			D			W					D			W	D
26	Promontory Point Channel				D, W				D, W		W		D				D, W				D				D, W
27	De Anza Launch			D					D	W			D		W		D				D				D
28	Garnet Avenue Beach				D, W				D	W			D				D				D				D
29	Lido Yacht Club Beach				W					W			D											D	
30	Bayside Drive Beach[1]				W				W			D, W				D	W		D	W					
31	Grand Canal		D		W				W			W	D				D				D				
32	Newport Blvd. Bridge			D			W			D, W					D			D	W						
35	San Diego Creek	W	D			W				D, W					D, W			W				W			D

D: Dry Weather (April 15 - October 15); W: Wet Weather (October 16 - April 14)

Table 6. Status of TMDL Tasks as of September 2013.

Task	Status
1. Routine Monitoring Program	On-going. Over 31,000 samples collected to date.
2. Water Quality Model for Bacteria Indicators	Completed
3. Beneficial Use Assessment Plans for REC-1, SHEL	Completed
4. Beneficial Use Assessment Reports	Completed
5. Source Identification and Characterization Plans for Dunes Resort, Urban Runoff, Agriculture, and Natural Sources	Completed
6. Source Identification and Characterization Reports	Completed
7. Evaluation of Vessel Waste Program	Completed
8. TMDL, WLA, and LA Evaluation and Source Monitoring Program	On-going
9. Updated TMDL Report	Anticipate submitting to Santa Ana Regional Board 2013-14.
10. Adjust TMDL, and adopt interim WLAs, Las, and Compliance dates, if necessary.	To be completed

APPENDIX A

California Regional Water Quality Control Board

Santa Ana Region

Winston H. Hickox
Secretary for Environmental Protection

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Gray Davis
Governor

January 7, 2000

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Chairman, Newport Bay Watershed Executive Comm.
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REQUEST FOR TECHNICAL REPORTS FOR THE IMPLEMENTATION OF THE TOTAL MAXIMUM DAILY LOAD FOR FECAL COLIFORM IN NEWPORT BAY

Dear Supervisor Wilson, Messrs. Roeder, Danner, Rudat, Ream, Dunek, and Huston, Ms. Mittermeier and Ms. Hall Hart, and Mr. Tamaribuchi:

On April 9, 1998, the California Regional Water Quality Control Board, Santa Ana Region, (Regional Board) adopted Resolution No. 99-10, which amended the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to establish a Total Maximum Daily Load (TMDL) for fecal coliform in Newport Bay. The TMDL is the maximum load of fecal coliform that can be discharged to the Bay while assuring that the Bay's beneficial uses (e.g., recreation and shellfish harvesting uses) are protected. This TMDL was approved by the State Water Resources Control Board (SWRCB) on July 15, 1999, and by the Office of Administrative Law (OAL) on December 30, 1999, whence the TMDL became effective. For your information, the TMDL has also been submitted to the US EPA, which has already endorsed it; formal approval is also anticipated in the near future.

As you know, Board staff worked closely with the members of the Newport Bay Watershed Management and Executive Committees in the development of this TMDL. All parties sought to recommend a TMDL that would fulfill its legal obligations to achieve water quality objectives and protect beneficial uses, but which also recognized the significant uncertainties and difficulties associated with the fecal coliform problem. The adopted TMDL reflects consensus on a phased approach, whereby plans for further studies are to be submitted in accordance with a specific schedule, and whereby a detailed implementation plan will be developed later, based on the results of these studies. The study results may also indicate the need for revision of the TMDL; the Regional Board has committed to the review of the TMDL as warranted. A copy of the adopted TMDL is attached for your reference.

Pursuant to Water Code Section 13267, this letter is a request for technical reports that provide plans for further study and analysis, as required by the TMDL. We note that, in some cases (identified below), the plans required by the TMDL have already been or are being developed as part of the Health Risk Assessment (HRA) being conducted for the Bay. Please be aware that Regional Board approval of all the plans is required. We intend to present the proposed and, in some cases completed plans to the Regional Board at the earliest opportunity, following the submittal of your response to this request. As discussed below, we will recommend that the Regional Board accept the completed plans for modeling bacterial inputs and fate and for assessment of the recreational beneficial use of the Bay. You should be aware that Regional Board consideration of the plans will take place at a public hearing, and the Regional Board may require changes based on the input provided.

Pursuant to the Basin Plan requirements for the TMDL for fecal coliform in Newport Bay, and Section 13267 of the California Water Code, the County of Orange and the Cities of Irvine, Tustin, Newport Beach, Lake Forest, Santa Ana, Orange, and Costa Mesa, and the Irvine Company are hereby requested to submit the following, by the dates specified. These plans and schedules may be submitted together in a single report or separate reports for each task and jurisdiction.

1. Routine Monitoring Program (Section 3.a.ii.a)

"By January 30, 2000 the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay. At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1 and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by September 1 of each year.

In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the bacterial objectives in the Bay (if appropriate). Any such individual or group plans shall also be submitted by January 30, 2000. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with water quality objectives shall be submitted by September 1 of each year.

The monitoring plan(s) shall be implemented upon Regional Board approval."

We are aware that the Orange County Health Care Agency (OCHCA) is implementing a monitoring program that meets most of the requirements cited above and it is acceptable for this monitoring program to be continued to provide for compliance with these requirements. The one difference between what is required by the TMDL and the monitoring being conducted by the OCHCA is that the OCHCA currently monitors for E.coli bacteria instead of fecal coliform. Since the Basin Plan objectives and the TMDL specifically address fecal coliform, monitoring for fecal coliform must be conducted as specified above. However, we also realize that E.coli bacteria constitute 80-90% of the fecal coliforms measured by the fecal coliform test method, and that the E.coli test method employed by OCHCA offers substantial time and resource savings. Therefore, we are willing to consider the use of E.coli monitoring as a surrogate for fecal coliform, provided that the relationship between E.coli and fecal coliform is demonstrated by the proposed monitoring program. Therefore, if you wish to use the OCHCA's monitoring program to comply with the above cited requirements, then you are requested to include in your proposed monitoring plan a plan for demonstrating the relationship between E.coli bacteria and fecal coliform.

2. Water Quality Model for Bacterial Indicators (Section 3.a.ii.b)

"By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay."

As stated above, staff will recommend that the Regional Board find that the water quality model development effort that is part of the HRA satisfies the above requirement of the TMDL, provided that the model is capable of analysis of fecal coliform inputs to Newport Bay.

3. Beneficial Use Assessment (Section 3.a.ii.c)

"By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment."

By February 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates (Task 10, Table 5-9g)."

A workplan for assessment of the body contact recreation beneficial use throughout Newport Bay has been developed as part of the HRA and work has already been conducted pursuant to it. Staff has indicated our belief that the plan to conduct the assessment is appropriate and we will recommend its approval to the Regional Board. However, a plan and schedule for assessing the shellfish harvesting beneficial uses will need to be submitted. We are aware that the development of a workplan is underway.

4. Source Identification and Characterization (Section 3.a.ii.d)

"By March 1, 2000, the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By March 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by March 1, 2000 and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000 the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s)."

5. Evaluation of Vessel Waste Control Program (Section 3.a.ii.e)

"By April 1, 2000, the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board."

6. TMDL, WLA and LA Evaluation and Source Monitoring Program Section 3.a.ii.f)

"By 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g of the TMDL the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g. Reports of the data collected pursuant to approved indlvidual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.

The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval."

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7. Updated TMDL Report (Section 3.a.ii.g)

"By 6 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g of the TMDL the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules."

This request for monitoring and technical information applies to the County of Orange, each individual City within the Newport Bay Watershed, and the Irvine Company. The Regional Board and its staff have worked with the Newport Bay Watershed Executive Committee in the development of this TMDL and it is our assumption that this Committee will assume the responsibility for preparing a coordinated response to this request. However, the County, each City, and the Irvine Company is severally responsible for ensuring compliance with this request for monitoring and technical information, and for the implementation of the TMDL for fecal coliform in the Newport Bay Watershed within the areas of the watershed within their respective jurisdictions. We are obligated to advise you that failure to submit the requested monitoring and technical information by the specified deadline may subject the County, each City, and the Irvine Company to potential civil liability pursuant to Section 13268 of the California Water Code.

Should there be any questions, please contact me at (909) 782-3284, Joanne Schneider at (909) 782-3287, or Ken Theisen at (909) 320-2028.

Sincerely,

Gerard J. Thibeault
Executive Officer
Santa Ana Regional Water Quality Control Board

Attachment: Copy of Basin Plan TMDL for Fecal Coliform in Newport Bay Watershed

cc (w/ Attachment): Regional Board
Newport Bay Pathogen TMDL Mailing List

Attachment to Resolution No. 99-10

Amendment to the Santa Ana Region Basin Plan

Chapter 5 - Implementation Plan, Discussion of Newport Bay Watershed (page 5-39 et seq.)

3. Bacterial Contamination

Bacterial contamination of the waters of Newport Bay can directly affect two designated beneficial uses: water-contact recreation (**REC-1**) and shellfish harvesting (**SHEL**). The Orange County Health Care Agency (OCHCA) conducts routine bacteriological monitoring and more detailed sanitary surveys as necessary, and is responsible for closure of areas to recreational and shellfish harvesting uses if warranted by the results.

Because of consistently high levels of total coliform bacteria, the upper portion of Upper Newport Bay (Upper Bay) has been closed to these uses since 1974. In 1978, the shellfish harvesting prohibition area was expanded to include all of the Upper Bay, and the OCHCA generally advises against the consumption of shellfish harvested anywhere in the Bay. Bacterial objectives established to protect shellfish harvesting activities are rarely met in the Bay. (Fecal coliform objectives for the protection of shellfish harvesting and water-contact recreation are shown in Chapter 4, "Enclosed Bays and Estuaries". The OCHCA has relied on total coliform standards specified in the California Health and Safety Code. Fecal coliform are a subset of total coliform.) Certain areas in the lower parts of the Upper Bay and in Lower Newport Bay (Lower Bay) are also closed to water-contact recreation on a temporary basis, generally in response to storms. In these areas, there is generally good compliance with water-contact recreation bacterial objectives in the summer.

Data collected by the OCHCA demonstrate that tributary inflows, composed of urban and agricultural runoff, including stormwater, are the principal sources of coliform input to the Bay. As expected, there are more violations of bacterial standards in the Bay during wet weather, when tributary flows are higher, than in dry weather. There are few data on the exact sources of the coliform in this runoff. Coliform has diverse origins, including: manure fertilizers which may be applied to agricultural crops and to commercial and residential landscaping; the fecal wastes of humans, household pets and wildlife; and other sources. Special investigations by OCHCA have demonstrated that food wastes are a significant source of coliform. Many restaurants wash down equipment and floor mats into storm drains tributary to the Bay and may improperly dispose of food waste such that it eventually washes into the Bay. Such discharges likely contribute to the chronic bacterial quality problems in certain parts of the Bay.

Another source of bacterial input to the Bay is the discharge of vessel sanitary wastes. Newport Bay has been designated a no-discharge harbor for vessel sanitary wastes since 1976. Despite this prohibition, discharges of these wastes have continued to occur. Since these wastes are of human origin, they pose a potentially significant public health threat.

The Regional Board, the City of Newport Beach (City), the County of Orange, the City of Newport Beach Harbor Quality Committee, and other parties have taken or stimulated actions to enforce the vessel waste discharge prohibition. The principal focus of these efforts has been to make compliance with the prohibition convenient and therefore more likely. Vessel waste pumpouts have been installed at key locations around the Bay and are inspected routinely by the OCHCA. A City ordinance addresses people-intensive boating activities to ensure proper disposal of sanitary wastes. The ordinance requires that sailing clubs, harbor tour, and boat charter operations install pumpouts for their vessels. Another City ordinance addresses vessel waste disposal by persons living on their boats. Efforts have also been made to ensure that there are adequate public rest rooms onshore. The City also sponsors an extensive public education campaign designed to advise both residents and visitors of the discharge prohibition, the significance of violations, and of the location of pumpouts and rest room facilities. The effectiveness of these extensive vessel waste control efforts is not known.

As noted, the fecal waste of wildlife, including waterfowl that inhabit the Bay and its environs, is a source of coliform input. The fecal coliform from these natural sources may contribute to the violations of water quality objectives and the loss of beneficial uses, but it is currently unknown to what extent these natural sources contribute to, or cause, the violations of bacterial quality objectives in Newport Bay.

Reports prepared by Regional Board staff describe the bacterial quality problems in the Bay in greater detail and discuss the technical basis for the fecal coliform TMDL that follows (21, 22). Implementation of this TMDL is expected to address these bacterial quality problems and to assure attainment of water quality standards, that is, compliance with water quality objectives and protection of beneficial uses.

3.a. Fecal Coliform TMDL

A prioritized, phased approach to the control of bacterial quality in the Bay is specified in this TMDL. This approach is appropriate, given the complexity of the problem, the paucity of relevant data on bacterial sources and fate, the expected difficulties in identifying and implementing appropriate control measures, and uncertainty regarding the nature and attainability of the SHEL use in the Bay. The phased approach is intended to allow for additional monitoring and

assessment to address areas of uncertainty and for future revision and refinement of the TMDL as warranted by these studies.

Table 5-9f summarizes the TMDL, Waste Load Allocations (WLAs) for point sources of fecal coliform inputs and Load Allocations (LAs) for nonpoint source inputs. As shown, the TMDL, WLAs and LAs are established to assure compliance with water contact recreation standards no later than December 30, 2014 and with shellfish standards no later than December 30, 2019. WLAs are specified for vessel waste and urban runoff, including stormwater, the quality of which is regulated under a County-wide NPDES permit issued by the Regional Board. This runoff is thus regulated as a point source, even though it is diffuse in origin. LAs are specified for fecal coliform inputs from agricultural runoff, including stormwater, and natural sources. The TMDL is to be adjusted, as appropriate, based upon completion of the studies contained in Table 5-9g. Upon completion of these studies, an updated TMDL report will be prepared summarizing the results of the studies and making recommendations regarding implementation of the TMDL. The results of the studies may lead to recommendations for changes to the TMDL specified in Table 5-9f to assure compliance with existing Basin Plan standards (objectives and beneficial uses). The study results may also lead to recommendations for changes to the Basin Plan objectives and/or beneficial uses. If such standards changes are approved through the Basin Plan amendment process, then appropriate changes to the TMDL would be required to assure attainment of the revised standards. Revision of the TMDL, if appropriate, would also be considered through the Basin Plan amendment process.

Upon completion and consideration of the studies and any appropriate Basin Plan amendments, a plan for compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, shall be established. It is expected that this plan will specify a phased compliance approach, based on consideration of such factors as geographic location, the priority assigned by the Regional Board to specific locations for control actions (see Section 3.a.ii, "Beneficial Use Assessment"), season, etc. Interim WLAs, LAs and compliance dates that lead to ultimate compliance with the TMDL will be established.

The TMDL and its allocations contain a significant margin of safety. The margin of safety can be either incorporated implicitly through analytical approaches and assumptions used to develop the TMDL or added explicitly as a separate component of the TMDL. A substantial margin of safety is implicitly incorporated in the TMDL in the fact that the TMDL does not apply criteria for dilution, natural die-off, and tidal flushing. The TMDL, WLAs, and LAs are established at concentrations equivalent to the water quality objectives.

Table 5-9f: Total Maximum Daily Load, Waste Load Allocations, and Load Allocations for Fecal Coliform in Newport Bay

Total Maximum Daily Load for Fecal Coliform in Newport Bay	Waste Load Allocations for Fecal Coliform in Urban Runoff, including stormwater, Discharges to Newport Bay	Load Allocations for Fecal Coliform in Agricultural Runoff, including stormwater, Discharges to Newport Bay	Load Allocations for Fecal Coliform from Natural Sources in all Discharges to Newport Bay	Waste Load Allocations for Vessel Waste
As soon as possible but no later than December 30, 2013			**In Effect**	**In Effect**
5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/ 100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	5-Sample/30-days Geometric Mean less than 200 organisms/100 mL, and not more than 10% of the samples exceed 400 organisms/ 100 mL for any 30-day period.	0 MPN/100 mL No discharge.
As soon as possible but no later than December 30, 2019				**In Effect**
Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	Monthly Median less than 14 MPN/100 mL, and not more than 10% of the samples exceed 43 MPN/100 mL.	0 MPN/100 mL No discharge.

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates

Task	Description	Compliance Date-As soon As Possible but No Later Than
Task 1	Routine Monitoring Program (Section 3.a.ii.a) a) Submit Proposed Routine Monitoring Plan(s)[1] b) Implement Routine Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	a) January 30, 2000 b) Upon Regional Board Approval of Plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 2	Water Quality Model for Bacterial Indicators (Section 3.a.ii.b) a) Submit Proposed Model Development Plan b) Submit Calibrated Model and Model Documentation	a) January 30, 2000 b) 13 months after Regional Board approval of plan(s)
Task 3	Beneficial Use Assessment Plan (Section 3.a.ii.c) Submit Proposed Assessment Plan for: a) REC-1 b) SHEL	a) January 30, 2000 b) March 1, 2001
Task 4	Beneficial Use Assessment Report (3.a.ii.c) Submit Beneficial Use Assessment Report for: a) REC-1 b) SHEL	a) 13 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s)
Task 5	Source Identification and Characterization Plan(s) (Section 3.a.ii.d) Submit Proposed Source Identification Plans for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	a) March 1, 2000 b) March 1, 2000 c) April 1, 2000 d) April 1, 2000

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates		
Task	**Description**	**Compliance Date-As Soon As Possible but No Later Than**
Task 6	Source Identification and Characterization Reports (Section 3.a.ii.d) Submit Source Identification and Characterization Reports for: a) The Dunes Resort b) Urban Runoff (including stormwater) c) Agriculture (including stormwater) d) Natural Sources	a) 7 months after Regional Board approval of plan(s) b) 13 months after Regional Board approval of plan(s) c) 16 months after Regional Board approval of plan(s) d) 16 months after Regional Board approval of plan(s)
Task 7	Evaluation of Vessel Waste Program (Section 3.a.ii.e) a) Submit Proposed Plan for Evaluating the Current Vessel Waste Program b) Submit Report on the Evaluation of the Vessel Waste Program	a) April 1, 2000 b) 12 months after Regional Board approval of plan
Task 8	TMDL, WLA, and LA Evaluation and Source Monitoring Program (Section 3.a.ii.f) a) Submit Proposed Evaluation and Source Monitoring Program Plan(s) b) Implement Evaluation and Source Monitoring Plan(s) c) Submit Monthly and Annual Reports (Reporting Period: April 1-March 31)	a) 3 months after completion of Tasks 2, 4a, and 6 b) Upon Regional Board approval of plan(s) c) Monthly within 30 days, Annual Report by September 1
Task 9	Updated TMDL Report Submit updated TMDL report for: a) REC-1 b) SHEL	a) 6 months after completion of Tasks 2, 4a, 6, and 7 b) 6 months after completion of Tasks 2, 4b, 6, and 7

Table 5-9g: Fecal Coliform Implementation Plan/Schedule Report Due Dates		
Task	**Description**	**Compliance Date-As Soon As Possible but No Later Than**
Task 10	Adjust TMDL, if necessary; adopt interim WLAs, LAs, and Compliance Dates (Section 3.a.ii.h) a) REC-1 b) SHEL	a) 12 months after completion of Updated TMDL Report for REC-1 (Task 9.a) b) 12 months after completion of Updated TMDL Report for SHEL (Task 9.b)
[1]Note: Provided that the monitoring program plan(s) fulfills the minimum requirements specified in this TMDL, approval of the TMDL shall constitute Regional Board approval of the monitoring program plan(s).		

3.a.i. TMDL Implementation

As soon as possible but no later than the dates specified in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach and agricultural operators in the Newport Bay watershed shall submit the plans and schedules shown in Table 5-9g and described in Section 3.a.ii. Subsequent phases of TMDL implementation shall take into account the results of the monitoring and assessment efforts required by the initial study phase of the TMDL implementation plan and other relevant studies.

The following sections describe the requirements for the submittal of plans by dischargers in the Newport Bay watershed to complete specific monitoring, investigations and analyses. In each and every case, the plans submitted by the named dischargers will be considered for approval by the Regional Board at a duly noticed public hearing as specified in Chapter 1.5, Division 3, Title 23 of the California Code of Regulations (Section 647 et seq.). The plans are to be implemented upon Regional Board approval and completed as specified in Table 5-9g.

3.a.ii. Monitoring and Assessment

Routine monitoring and special investigations and analyses are an important part of this phased TMDL. Routine monitoring is necessary to assess compliance with the bacterial quality objectives in the Bay and with the WLAs and LAs specified in the TMDL. Special investigations and analyses are needed to identify and characterize sources of fecal coliform input and to determine their fate in the Bay so that appropriate control measures can be developed and implemented. The effectiveness of current and future bacterial control measures needs to be evaluated. The results of these studies may warrant future changes to this TMDL.

3.a.ii.a. Routine Monitoring

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for routine monitoring to determine compliance with the bacterial quality objectives in the Bay. At a minimum, the proposed plan shall include the collection of five (5) samples/30-days at the stations specified in Table 5-9h and shown in Figure 5-1 and analysis of the samples for total and fecal coliform and enterococci. Reports of the collected data shall be submitted monthly. An annual report summarizing

the data collected for the year and evaluating compliance with the water quality objectives shall be submitted by September 1 of each year.

In lieu of this coordinated, regional monitoring plan, one or more of the parties identified in the preceding paragraph may submit an individual or group plan to conduct routine monitoring in areas solely within their jurisdiction to determine compliance with the bacterial objectives in the Bay (if appropriate). Any such individual or group plans shall also be submitted by January 30, 2000. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with water quality objectives shall be submitted by September 1 of each year.

The monitoring plan(s) shall be implemented upon Regional Board approval.

Table 5-9h

Newport Bay Sampling Stations for Routine Compliance Monitoring with Bacterial Quality Objectives (see Figure 1 for Station Locations)

Ski Zone	33rd Street	Park Avenue
Vaughns Launch	Rhine Channel	Via Genoa
Northstar Beach	De Anza	Alvarado/Bay Is.
Abalone Avenue	Promontory Pt.	10th Street
Dunes East	Bayshore Beach	15th Street
Dunes Middle	Onyx Avenue	19th Street
Dunes West	Garnet Avenue	Lido Island Yacht Club
Dunes North	Ruby Avenue	Harbor Patrol
43rd Street	Sapphire Avenue	N Street Beach
38th Street	Newport Blvd. Bridge	Rocky Point
San Diego Creek @ Campus Dr.	Santa Ana Delhi Channel	Big Canyon Wash
Backbay Dr. Drain		

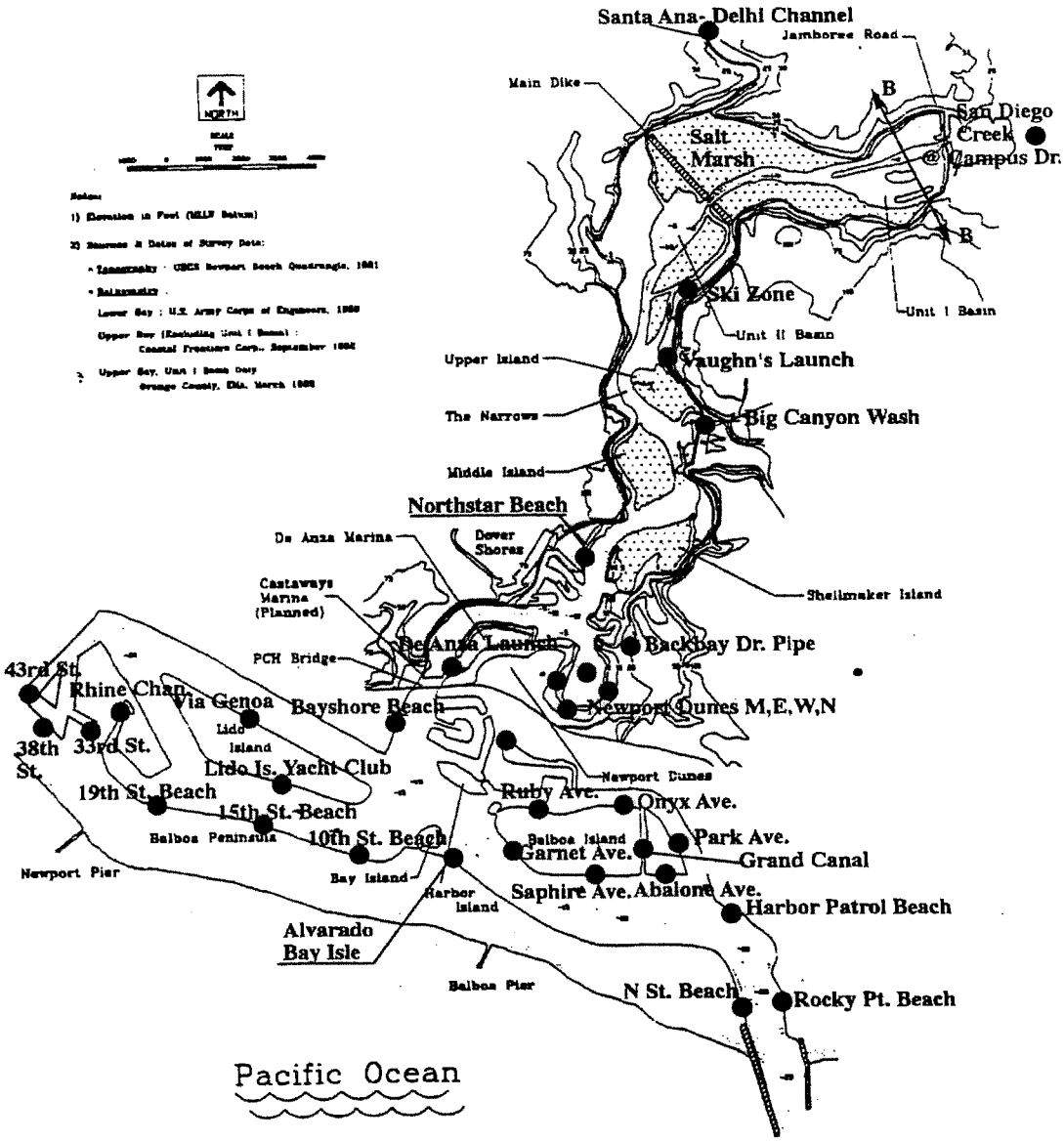

Figure 5-1: Newport Bay Bacterial Quality Monitoring Stations

3.a.ii.b. Fate of Bacterial Inputs

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach and the agricultural operators in the Newport Bay watershed shall submit a plan for the development and submittal of a water quality model to be completed by 13 months after Regional Board approval of the plan. The model shall be capable of analysis of fecal coliform inputs to Newport Bay, the fate of those inputs, and the effect of those inputs on compliance with bacterial quality objectives in the Bay.

3.a.ii.c. Beneficial Use Assessment

By January 30, 2000, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify water contact recreation activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the water contact recreation beneficial use assessment.

By March 1, 2001, the County of Orange , the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach shall submit a plan to complete, by 13 months after Regional Board approval of the plan, a beneficial use assessment to identify and quantify shellfish harvesting activities in Newport Bay. By 13 months after Regional Board approval of the beneficial use assessment plan, these parties shall submit a report of the results of the shellfish harvesting beneficial use assessment.

The beneficial use assessment reports shall contain recommendations for prioritizing areas within Newport Bay for purposes of evaluation and implementation of cost-effective and reasonable control actions as part of the TMDL process. The Regional Board will consider these recommendations and make its determinations regarding high priority water contact recreation and shellfish harvesting areas at a duly noticed public hearing. These determinations will be considered in establishing interim WLAs and LAs and compliance dates (Task 10, Table 5-9g).

3.a.ii.d. Source Identification and Characterization

By March 1, 2000, the County of Orange and the City of Newport Beach shall submit a proposed plan for a program, to be completed within 7 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to The Dunes Resort. In lieu of this coordinated plan, each of these parties may submit an individual plan to identify and characterize fecal coliform inputs to The Dunes Resort. Any such individual plan shall also be submitted by March 1, 2000 and completed within 7 months after Regional Board approval of the plan(s).

By March 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 13 months after Regional Board approval of the plan to identify and characterize fecal coliform inputs to Newport Bay from urban runoff, including stormwater. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from urban runoff from areas within its jurisdiction. Any such individual or group plan shall also be submitted by March 1, 2000 and completed within 13 months after Regional Board approval of the plan(s).

By April 1, 2000, the agricultural operators in the Newport Bay watershed shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from agricultural runoff, including stormwater. In lieu of this coordinated plan, one or more of the agricultural operators may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from agricultural runoff from areas within their jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000, and completed within 16 months after Regional Board approval of the plan(s).

By April 1, 2000, the County of Orange and the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest, and Newport Beach shall submit a proposed plan for a program, to be completed within 16 months after Regional Board approval of the plan, to identify and characterize fecal coliform inputs to Newport Bay from natural sources. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to identify and characterize fecal coliform inputs to the Bay from natural sources from areas within its jurisdiction. Any such individual or group plan shall also be submitted by April 1, 2000 and completed within 16 months after Regional Board approval of the plan(s).

3.a.ii.e. Evaluation of Vessel Waste Control Program

By April 1, 2000, the County of Orange and the City of Newport Beach shall submit a plan to complete, by one year after Regional Board approval of the plan, an assessment of the effectiveness of the vessel waste control program implemented by those agencies in Newport Bay. The plan shall be implemented upon approval by the Regional Board. A report of the study results shall be submitted, together with recommendations for changes to the vessel waste program necessary to ensure compliance with this TMDL.

The Regional Board will consider appropriate changes to the vessel waste control program. These changes shall be implemented in accordance with a schedule to be established by the Regional Board.

3.a.ii.f. TMDL, WLA and LA Evaluation and Source Monitoring Program

By 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g, the County of Orange, the Cities of Tustin, Irvine, Costa Mesa Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall propose a plan for evaluation and source monitoring to determine compliance with the WLAs and LAs specified in Table 5-9f. In lieu of this coordinated, regional plan, one or more of these parties may submit an individual or group plan to conduct TMDL, WLA, LA and Source Evaluation monitoring from areas solely within their jurisdiction. Any such individual or group plan shall also be submitted by 3 months after completion of Tasks 2, 4a, and 6 as shown in Table 5-9g. Reports of the data collected pursuant to approved individual/group plan(s) shall be submitted monthly and an annual report summarizing the data and evaluating compliance with WLAs and LAs shall be submitted by September 1 of each year. The annual report shall also include an evaluation of the effectiveness of control measures implemented to control sources of fecal coliform, and recommendations for any changes to the control measures needed to ensure compliance with the TMDL, WLAs, and LAs.

The evaluation and source monitoring plan(s) shall be implemented upon Regional Board approval.

3.a.ii.g. Updated TMDL Report

The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Orange, Lake Forest and Newport Beach, and the agricultural operators in the Newport Bay watershed shall submit Updated TMDL Reports as specified in Table 5-9g. These updated TMDL reports shall, at a minimum, integrate and evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The

evaluate the results of the studies required in Table 5-9g (Task 1 – 7). The reports shall include recommendations for revisions to the TMDL, if appropriate and for interim WLAs, LAs and compliance schedules

3.a.ii.h. Adjust TMDL; Adopt Interim WLA, LAs and Compliance Dates

Based on the results of the studies required by Table 5-9g and recommendations made in the Updated TMDL Reports, changes to the TMDL for fecal coliform may be warranted. Such changes would be considered through the Basin Plan Amendment process. Upon completion and consideration of the studies and any appropriate Basin Plan amendments, interim WLAs and LAs that lead to ultimate compliance with the TMDL specified in Table 5-9f, or with an approved amended TMDL, will be established with interim compliance dates. Schedules will also be established for submittal of implementation plans for control measures to achieve compliance with these WLAs, LAs, and compliance dates. These implementation plans will be considered by the Regional Board at a duly noticed public hearing.

The Regional Board is committed to the review of this TMDL every three years or more frequently if warranted by these or other studies. The County of Orange, the Cities of Tustin, Irvine, Costa Mesa, Santa Ana, Lake Forest, and Newport Beach, The Irvine Company and the Irvine Ranch Water District have undertaken to prepare a health risk assessment for Newport Bay for water contact recreation and shellfish harvesting beneficial uses. This study will evaluate whether exceedances of fecal coliform objectives correlates with actual impairment of beneficial uses and may recommend revisions to the Basin Plan objectives and/or beneficial use designations. Because this study is in progress, it is not required by this TMDL implementation plan, but will be considered in conjunction with the studies required by the implementation plan.

APPENDIX B

Rainfall Total for Each Monitoring Year