

WATER QUALITY TEST RESULTS
SANTA BARBARA HARBOR
JULY 2007 THROUGH JUNE 2008

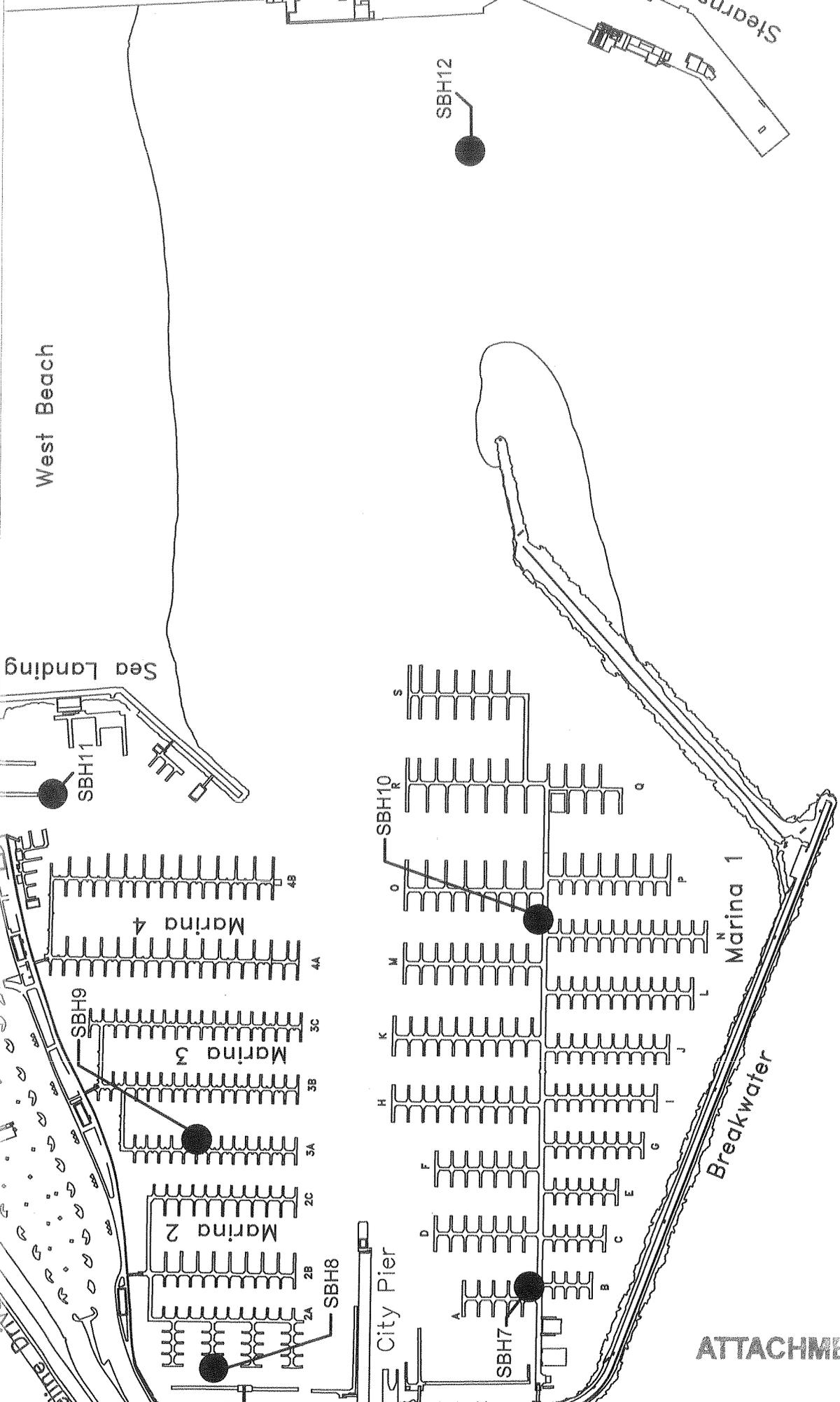
MAR 19 2008
#5

Total Coliform MPN/100mls					
Station	July	August	September	May	June
SBH #7	98	95	74	175	906
SBH #8	73	31	74	98	74
SBH #9	1187	262	110	31	185
SBH #10	145	74	41	20	<10
SBH #11	613	169	231	31	161
SBH #12	63	216	97	199	85
SBH #13	10	NA	<10	41	<10
Limit: <10,000 MPN/100mls					

Fecal Coliform MPN/100mls					
Station	July	August	September	May	June
SBH #7	10	30	<10	<10	63
SBH #8	<10	10	10	10	10
SBH #9	<10	41	10	<10	20
SBH #10	20	52	10	<10	<10
SBH #11	41	<10	52	20	41
SBH #12	<10	98	10	86	63
SBH #13	<10	NA	<10	31	<10
Limit: <400 MPN/100mls					

Enterococcus MPN/100mls					
Station	July	August	September	May	June
SBH #7	10	10	10	<10	<10
SBH #8	<10	<10	10	<10	<10
SBH #9	10	10	<10	<10	<10
SBH #10	10	<10	<10	<10	10
SBH #11	<10	<10	41	10	10
SBH #12	<10	10	10	10	<10
SBH #13	<10	NA	<10	<10	<10
Limit: <104 MPN/100mls					

MAR 19 2009
#5



West Beach

Sea Landing

State Drive

City Pier

Breakwater

ATTACHMENT #2

SBH13

SBH12

SBH11

SBH10

SBH9

SBH7

SBH8

Marina 1

Marina 2

Marina 3

Marina 4

West Beach

Sea Landing

State Drive

City Pier

Breakwater

ATTACHMENT #2

SBH13

SBH12

SBH11

SBH10

SBH9

SBH7

SBH8

Marina 1

Marina 2

Marina 3

Marina 4

West Beach

Sea Landing

State Drive

City Pier

Breakwater

ATTACHMENT #2

SBH13

SBH12

SBH11

SBH10

SBH9

SBH7

SBH8

Marina 1

Marina 2

Marina 3

Marina 4

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City Pier

Breakwater

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SBH12

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SBH9

SBH7

SBH8

Marina 1

Marina 2

Marina 3

Marina 4

West Beach

Sea Landing

State Drive

City Pier

Breakwater

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SBH13

SBH12

SBH11

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SBH9

SBH7

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Marina 1

Marina 2

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Marina 4

West Beach

Sea Landing

State Drive

City Pier

WATER QUALITY TEST RESULTS
EAST BEACH MOORING
APRIL 2008 THROUGH AUGUST 2008

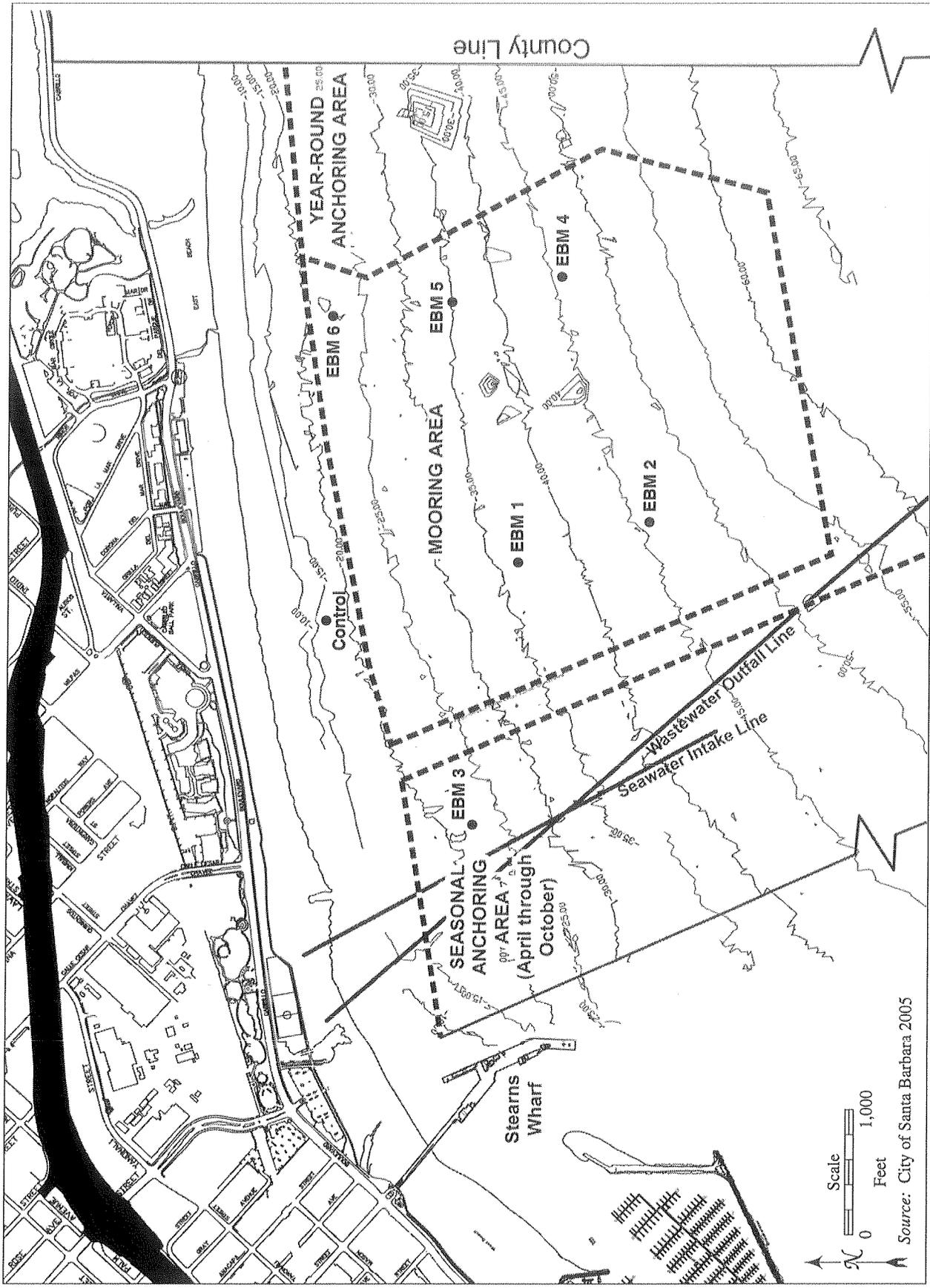
MAR 19 2009
#6

Total Coliform MPN/100mls			
Station	April	June	August
EBM #1	<10	<10	<10
EBM #2	<10	<10	<10
EBM #3	<10	<10	<10
EBM #4	<10	<10	20
EBM #5	<10	<10	10
EBM #6	<10	<10	NA
Control	<10	<10	<10
Limit: <10,000 MPN/100mls			

Fecal Coliform MPN/100mls			
Station	April	June	August
EBM #1	<10	<10	<10
EBM #2	<10	<10	<10
EBM #3	<10	<10	<10
EBM #4	<10	<10	10
EBM #5	<10	<10	<10
EBM #6	<10	<10	NA
Control	<10	<10	<10
Limit: <400 MPN/100mls			

Enterococous MPN/100mls			
Station	April	June	August
EBM #1	<10	<10	10
EBM #2	<10	<10	<10
EBM #3	<10	<10	<10
EBM #4	<10	<10	<10
EBM #5	<10	<10	20
EBM #6	<10	<10	NA
Control	<10	<10	<10
Limit: <104 MPN/100mls			

MAR 19 2009
#5



Source: City of Santa Barbara 2005

Map 1. Mooring and Anchoring Areas with Sampling Locations (EBM 1-6 and Control)

Dissolved Oxygen Levels in the Harbor

MAR 19 2009
#5

7/30/2007

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	3.48 mg/l	3.17 mg/l
Station #8	Marina 2B300	3.38 mg/l	3.23 mg/l
Station #9	Marina 3A030	3.79 mg/l	3.89 mg/l
Station #10	Marina 1M001	4.80 mg/l	5.07 mg/l
Station #11	West Finger of Launch Ramp	3.62 mg/l	3.56 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.25 mg/l	5.60 mg/l
Station #13	Control, 100 yards Offshore	6.46 mg/l	7.07 mg/l

9/26/2007

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.36 mg/l	5.55 mg/l
Station #8	Marina 2B300	5.65 mg/l	4.52 mg/l
Station #9	Marina 3A030	5.50 mg/l	6.06 mg/l
Station #10	Marina 1M001	6.34 mg/l	5.73 mg/l
Station #11	West Finger of Launch Ramp	5.08 mg/l	4.92 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.07 mg/l	8.03 mg/l
Station #13	Control, 100 yards Offshore	7.62 mg/l	9.76 mg/l

10/30/2007

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.00 mg/l	5.05 mg/l
Station #8	Marina 2B300	6.33 mg/l	3.93 mg/l
Station #9	Marina 3A030	6.70 mg/l	6.36 mg/l
Station #10	Marina 1M001	6.34 mg/l	5.87 mg/l
Station #11	West Finger of Launch Ramp	5.15 mg/l	4.87 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	8.48 mg/l	8.13 mg/l
Station #13	Control, 100 yards Offshore	9.34 mg/l	9.95 mg/l

11/29/2007

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	4.61 mg/l	4.43 mg/l
Station #8	Marina 2B300	4.20 mg/l	4.24 mg/l
Station #9	Marina 3A030	4.33 mg/l	4.47 mg/l
Station #10	Marina 1M001	4.88 mg/l	4.55 mg/l
Station #11	West Finger of Launch Ramp	4.15 mg/l	4.25 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	8.68 mg/l	8.54 mg/l
Station #13	Control, 100 yards Offshore	7.71 mg/l	7.57 mg/l

12/12/2007

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	3.97 mg/l	3.92 mg/l
Station #8	Marina 2B300	4.27 mg/l	4.40 mg/l
Station #9	Marina 3A030	4.36 mg/l	4.68 mg/l
Station #10	Marina 1M001	4.32 mg/l	5.05 mg/l
Station #11	West Finger of Launch Ramp	4.07 mg/l	4.13 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.57 mg/l	6.81 mg/l
Station #13	Control, 100 yards Offshore	6.97 mg/l	6.72 mg/l

2/21/2008

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	6.85 mg/l	6.81 mg/l
Station #8	Marina 2B300	6.12 mg/l	6.27 mg/l
Station #9	Marina 3A030	6.28 mg/l	6.50 mg/l
Station #10	Marina 1M001	6.46 mg/l	6.65 mg/l
Station #11	West Finger of Launch Ramp	5.88 mg/l	5.96 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	7.27 mg/l	7.20 mg/l
Station #13	Control, 100 yards Offshore	7.21 mg/l	7.21 mg/l

ATTACHMENT #5

MAR 19 2009
#5

Dissolved Oxygen Levels in the Harbor

3/11/2008

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	4.81 mg/l	4.36 mg/l
Station #8	Marina 2B300	3.88 mg/l	3.73 mg/l
Station #9	Marina 3A030	4.52 mg/l	4.85 mg/l
Station #10	Marina 1M001	5.26 mg/l	5.00 mg/l
Station #11	West Finger of Launch Ramp	4.42 mg/l	4.52 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	5.55 mg/l	5.62 mg/l
Station #13	Control, 100 yards Offshore	5.66 mg/l	5.85 mg/l

4/16/2008

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.31 mg/l	6.75 mg/l
Station #8	Marina 2B300	5.05 mg/l	5.00 mg/l
Station #9	Marina 3A030	5.40 mg/l	6.25 mg/l
Station #10	Marina 1M001	5.27 mg/l	6.18 mg/l
Station #11	West Finger of Launch Ramp	5.02 mg/l	5.08 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.35 mg/l	7.50 mg/l
Station #13	Control, 100 yards Offshore	7.17 mg/l	9.35 mg/l

6/18/2008

		<i>Near Surface DO</i>	<i>Near Bottom DO</i>
Station #7	Marina 1A002	5.23 mg/l	4.66 mg/l
Station #8	Marina 2B300	5.25 mg/l	4.02 mg/l
Station #9	Marina 3A030	5.73 mg/l	4.71 mg/l
Station #10	Marina 1M001	5.15 mg/l	5.02 mg/l
Station #11	West Finger of Launch Ramp	5.30 mg/l	4.58 mg/l
Station #12	Red Bouy #10, Mouth of Harbor	6.60 mg/l	6.61 mg/l
Station #13	Control, 100 yards Offshore	8.92 mg/l	9.09 mg/l

ATTACHMENT #5

CUSHMAN CONTRACTING CORPORATION
P.O. Box 147
Goleta, CA 93116-0147

MAR 19 2008

#5

Subject: Harbor Debris Cleanup: July, 2007-December, 2008
Date: December 19, 2008

During the course of our Harbor Debris cleanup efforts much regularity has been noticed.

Most west-facing docks and fingers are the primary collecting spots for debris. The reason this side collects more debris is most likely due to the direction in which debris are moving. The wind, along with the out-to-sea current at low tide is in an easterly direction. This results in a "comb like" effect, trapping the debris in these areas. Because there are more areas for trash and debris to collect in at these areas, this is where main effort has been concentrated.

A second collection area for debris is in the areas of the Harbor designated as "A" and "B" on the maintenance map. Area "A" is in the vicinity of the storm drain outfall in the northwest corner of the harbor closest to Shoreline Drive. Area "B" is all along the north side of the harbor in the rocks below the seawall in Marinas 2, 3 & 4. For cleanup, a skiff or some small vessel is the only way to reach these areas. These areas are monitored at least once a month and always after holidays.

A third collection area for debris is in the area of the Harbor designated as "C" on the maintenance map. Area "C" is in the vicinity of the boat launch. The main collection point in this area is along the east side of the harbor along the rock jetty. This is most likely due to the same easterly moving debris direction described above. This area also requires cleanup by skiff or some small vessel.

The debris collected that can be categorized as regular or reoccurring consist of; newspapers, cigarettes, plastic bottles and buckets, bags, styrofoam, candy and food wrappers, aluminum cans, tennis balls, rope, kelp, big limbs and bamboo.

We have found that walking along the marinas and docks is more time efficient, covers a larger area and produces a much higher volume of debris than working from a skiff. A skiff is used in areas inaccessible by foot, for removal of larger debris and where it is more efficient.

We have also observed that after storms or holidays a full day of cleanup is often needed due to the increase in the amount of trash. For storms this is due to the increase in flow from overcrowded storm drains. For holidays this is due to the increase in boat and pedestrian traffic in the Harbor.

In early October an unusual combination of high tides and wind out of the south brought an inordinate amount of kelp into the harbor area. The necessary removal of approximately 23,000 pounds of kelp from the harbor area to beyond the breakwater involved over 36 man-hours with numerous men and equipment. This work needed to be accomplished in a short time period to accommodate normal harbor traffic navigation and impacted boat slips.

ATTACHMENT #6

