
BMP Retrofit Pilot Project

Quarterly Status Report No. 12

BMP Retrofit Pilot Project — District 7 and District 11

CTSW-RT-01-076 February 22, 2001

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INTRODUCTION

Background and Purpose

Periodic status reports and meetings are specified in the District 7 and District 11 Scoping Study as a means of updating NRDC, EPA, San Diego Baykeeper, and Santa Monica Baykeeper on the progress of the BMP Retrofit Pilot Program. The bi-weekly and quarterly status meetings have been scheduled on a regular basis to coincide with general project milestones and periods of significant activity. Approximate scheduled dates for the periodic status meetings are given in the *Scoping Study*. This report provides background documentation for the twelfth status meeting which will be held on March 14, 2001.

The scope of the status reports includes a general program-level overview of the activities that precede the status meetings. Status reports include information regarding the Pilot Program: (1) remaining/recently constructed BMP sites, (2) OMM activities and sampling/monitoring results, (3) vector and biological updates, and (4) other items pertaining to the pilot study. The program Master Schedule is contained in the *Scoping Study* for each District.

The preceding Status Meeting (No. 11) was held December 14, 2000. The meeting minutes are included as Appendix A. The main subjects discussed at Status Meeting No. 11 included the following:

- Vector Update, including Larval Monitoring/Abatement Update, DHS Interim Mosquito Production Report, and update on the DHS Survey.
- Overview of Operation and Maintenance Labor Hours/Cost
- Overview of Empirical Observations Data
- Device Specific Updates, including CDS Mosquito-proofing and MCTT covers
- Metro/Paxton Update
- Final Report Development Update
- Cost Workgroup Update

The project calendar listing meetings and submittals scheduled for the next few months is included as Appendix F.

NON-STORMWATER RUNOFF INSPECTIONS

During the quarterly reporting period, occurrences of non-stormwater discharges were noted at two BMP sites during routine visits. Weekly inspections by the O&M crew were conducted for these sites. As agreed, weekly inspections are discontinued when no non-stormwater discharges are noted at the same sites during four subsequent weekly visits.

The following table summarizes when non-stormwater runoff was noted at the sites inspected. **Non-stormwater Weekly Inspections have been discontinued. Should non-stormwater discharge be noted during routine inspections, weekly non-stormwater discharge inspection will resume at that location.**

Week of	Altadena MS Strip/IT	I5/SR78 SF
December 11, 2000	Y	
December 18, 2000	N	
December 25, 2000	N	
January 1, 2001	N	Y
January 8, 2001	N	N
January 15, 2001	-	N
January 22, 2001		N
January 29, 2001		N
February 5, 2001		-

Y – Non-stormwater runoff was observed

N - No non-stormwater runoff observed during follow-up visit

- Discontinued weekly inspections.

**ACTIVITY DESCRIBED IN THIS QUARTERLY REPORT COVERS THE PERIOD
FROM NOVEMBER 21, 2000 THROUGH FEBRUARY 22, 2001**

General Notes/Activities

During the past quarter, routine inspection and maintenance of the BMPs have been conducted. Biweekly updates have been held with the Plaintiffs and specific operational and program items were discussed during Biweekly Conference Calls. Discussion items pertaining to specific devices include: (1) La Costa sand filter and Lakewood and Via Verde MCTT breeding; (2) differences in the level of breeding for the same devices in different districts; (3) wet-basin vegetation regrowth; (4) non-stormwater discharge; (5) mosquito-proofing CDS Units, (6) MID changes, (7) swale hydraulic residence time calculations, (8) sand filter operation and maintenance; and (9) Final Report Preparation. Each specific issue is discussed in detail in this report.

Details on operation, monitoring, and maintenance of the BMPs during the past quarter are provided in this document. Other supporting details are included as appendices to this document.

District 7 BMP Pilot Sites

The teams mobilized for five storm events during this quarterly period: January 8, 10-12 and 24, and February 10-13 and 19, 2001. Summaries of the first four events are provided below. The fifth event met mobilization criteria, but the storm weakened, hence the decision was made to do hydraulic residence time testing at the Biofiltration Swales, and no sampling occurred.

Hydraulic residence time testing has been completed at all District 7 biofiltration swales. The results of this testing will be provided in the summary report due out this summer.

Table 1. District 7 January 8, 2001, Event

Site	BMP Type	Date of Sample Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 7									
I-605/SR-91	IB	1/8/01	0.55	Y	NA	NA	NA	NA	Y
I-210 East of Orcas	CDS	1/8/01	0.13	Y	N ¹	N	NA	NA	Y
I-210 East of Filmore	CDS	1/8/01	0.06	Y	N ²	Y	NA	NA	Y
I-5/I-605	EDB	1/8/01	0.44	Y	Y	Y	>75,>75	>12,>12	Y
I-605/SR-91	EDB	1/8/01	0.55	Y	Y ³	Y	>75,NA	>12,NA	Y
Alameda MS	OWS	1/8/01	0.24	Y	NA	Y	NA	NA	Y
Eastern MS	MF	1/8/01	0.11	Y	N ⁴	N	NA	NA	Y
Foothill MS	MF	1/8/01	0.05	Y	N ²	N	NA	NA	Y
Termination P & R	MF	1/8/01	0.72	Y	N ⁵	Y	NA	NA	Y
Via Verde P & R	MCTT	1/8/01	0.13	Y	N ⁶	Y ⁷	NA	NA	Y
Lakewood P & R	MCTT	1/8/01	0.47	Y	Y	Y	>75,>75	>12,>12	Y
Altadena	Bio Strip	1/8/01	0.08	Y	N ²	N	NA	NA	Y
	Infiltration Trench	1/8/01	0.08	Y	NA	NA	NA	NA	Y
Foothill MS	DII north- SG Insert	1/8/01	0.05	Y	N ²	NA	NA	NA	Y
	DII south- FF Insert	1/8/01	0.05	Y	N	NA	NA	NA	Y
Las Flores MS	DII north-SG Insert	1/8/01	0.24	Y	N ⁴	NA	NA	NA	Y
	DII south-FF Insert	1/8/01	0.24	Y	Y	NA	>75	>12	Y
Rosemead MS	DII north-FF Insert	1/8/01	0.07	Y	N ²	NA	NA	NA	Y
	DII south-SG Insert	1/8/01	0.07	Y	N ²	NA	NA	NA	Y
I-605/SR-91	Bio Strip	1/8/01	0.55	Y	N ⁸	N	NA	NA	Y
	Bio Swale	1/8/01	0.55	Y	Y ³	N	>75,NA	>12,NA	Y
Cerritos MS	Bio Swale	1/8/01	0.55	Y	Y	Y	>75,>75	>12,>12	Y
I-5/I-605	Bioswale	1/8/01	0.44	Y	Y ³	N	>75,NA	>12,NA	Y
I-605/ Del Amo	Bioswale	1/8/01	0.55	Y	Y	Y	>75,>75	>12, 8	Y

¹ No flow into CDS unit

² Insufficient rainfall and sample volume.

³ Influent sample collected and submitted to laboratory. No flow at effluent – water infiltrated.

⁴ Insufficient sample volume for analysis.

⁵ Influent sample successfully collected, but was not submitted because effluent sample could not be collected due to pump failure.

⁶ Insufficient sample volume at influent; water level in sedimentation chamber below settling tubes, hence no effluent sample collected.

⁷ Grab sample was collected at the influent only.

⁸ Flow meter failure at control location

Table 2. District 7 January 10-12, 2001 Event

Site	BMP Type	Date of Sample Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 7									
I-605/SR-91	IB	1/10-12/01	3.47	Y	NA	NA	NA	NA	Y
I-210 East of Orcas	CDS	1/10-12/01	4.33	Y	Y ¹	Y	>75,>75	>12,>12	Y
I-210 East of Filmore	CDS	1/10-12/01	~4 ²	Y	Y	Y	>75,>75	>12,>12	Y
I-5/I-605	EDB	1/10-12/01	4.10	Y	Y	Y	>75,>75	>12,>12	Y
I-605/SR-91	EDB	1/10-12/01	3.47	Y	Y ³	NA	>75,NA	>12,NA	Y
Alameda MS	OWS	1/10-12/01	3.91	Y	NA	Y	NA	NA	Y
Eastern MS	MF	1/10-12/01	3.56	Y	Y	Y	>75,>75	>12,>12	Y
Foothill MS	MF	1/10-12/01	4.07	Y	Y ⁴	Y	>75,NA	>12,NA	Y
Termination P & R	MF	1/10-12/01	3.96	Y ⁵	NA	NA	NA	NA	Y
Via Verde P & R	MCTT	1/10-12/01	3.41	Y	Y	Y	>75,>75	>12,>12	Y
Lakewood P & R	MCTT	1/10-12/01	3.79	Y	Y	NA	>75,>75	>12,>12	Y
Altadena	Bio Strip	1/10-12/01	4.19	Y	Y	Y	>75,>75	>12,>12	Y
	Infiltration Trench	1/10-12/01	4.19	Y	NA	NA	NA	NA	Y
Foothill MS	DII north- SG Insert	1/10-12/01	4.07	Y	Y	NA	>75	>12	Y
	DII south- FF Insert	1/10-12/01	4.07	Y	Y	NA	>75	>12	Y
Las Flores MS	DII north-SG Insert	1/10-12/01	5.92	Y	Y	NA	>75	>12	Y
	DII south-FF Insert	1/10-12/01	5.92	Y	Y	NA	>75	>12	Y
Rosemead MS	DII north-FF Insert	1/10-12/01	3.92	Y	Y	NA	>75	>12	Y
	DII south-SG Insert	1/10-12/01	3.92	Y	Y	NA	>75	>12	Y
I-605/SR-91	Bio Strip	1/10-12/01	3.47	Y	Y	Y	>75,>75	>12,>12	Y
	Bio Swale	1/10-12/01	3.47	Y	Y	Y	>75,>75	>12,>12	Y
Cerritos MS	Bio Swale	1/10-12/01	3.47	Y	Y	NA	>75,>75	>12,>12	Y
I-5/I-605	Bioswale	1/10-12/01	4.10	Y	Y	Y	>75,>75	>12,>12	Y
I-605/ Del Amo	Bioswale	1/10-12/01	3.47	Y	Y	N	>75,>75	>12,>12	Y

¹ Samples were successfully collected and sent to the laboratory, but the flow meter failed thus compromising the sample.

² Rain gauge failed during the storm.

³ Influent sample collected and submitted to laboratory. Effluent sample was not submitted to the laboratory due to flow meter failure, thus compromising the sample.

⁴ Influent sample was collected and submitted to the laboratory, but effluent sample could not be collected due to pump failure.

⁵ Pump failure of both the original pump and replacement pump during and after the January 8, 2001 storm rendered the site offline for this event.

Table 3. District 7 January 24, 2001 Event

Site	BMP Type	Date of Sample Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 7									
I-605/SR-91	IB	1/24/01	0.30	Y	NA	NA	NA	NA	Y
I-210 East of Orcas	CDS	1/24/01	0.47	Y	NA ¹	NA	NA	NA	Y
I-210 East of Filmore	CDS	1/24/01	0.60	Y	Y	Y	>75,>75	>12,>12	Y
I-5/I-605	EDB	1/24/01	0.54	Y	Y	NA	>75,>75	>12,>12	Y
I-605/SR-91	EDB	1/24/01	0.30	Y	Y	NA	>75,>75	>12, 9	Y
Alameda MS	OWS	1/24/01	0.31	Y	NA	Y	NA	NA	Y
Eastern MS	MF	1/24/01	0.64	Y	Y	Y	>75,>75	>12,>12	Y
Foothill MS	MF	1/24/01	0.50	Y	Y	Y	>75,>75	>12,>12	Y
Termination P & R	MF	1/24/01	0.36	Y	Y	Y	>75,>75	>12,>12	Y
Via Verde P & R	MCTT	1/24/01	0.53	NA	NA	NA	NA	NA	NA
Lakewood P & R	MCTT	1/24/01	0.43	Y	Y	NA	>75,>75	>12,>12	Y
Altadena	Bio Strip	1/24/01	0.44	Y	Y	NA	>75,>75	>12,>12	Y
	Infiltration Trench	1/24/01	0.44	Y	NA	NA	NA	NA	Y
Foothill MS	DII north- SG Insert	1/24/01	0.50	Y	Y	NA	>75	>12	Y
	DII south- FF Insert	1/24/01	0.50	Y	Y	NA	>75	>12	Y
Las Flores MS	DII north-SG Insert	1/24/01	0.52	Y	Y	NA	>75	>12	Y
	DII south-FF Insert	1/24/01	0.52	Y	Y	NA	>75	>12	Y
Rosemead MS	DII north-FF Insert	1/24/01	0.49	Y	Y	NA	>75	>12	Y
	DII south-SG Insert	1/24/01	0.49	Y	Y	NA	>75	>12	Y
I-605/SR-91	Bio Strip	1/24/01	0.30	Y	N ²	NA	NA	NA	Y
	Bio Swale	1/24/01	0.30	Y	Y ³	NA	>75,NA	>12,NA	Y
Cerritos MS	Bio Swale	1/24/01	0.30	Y	Y ^{3,4}	NA	>75,NA	>12,NA	Y
I-5/I-605	Bioswale	1/24/01	0.54	Y	Y ³	Y	>75,NA	>12,NA	Y
I-605/ Del Amo	Bioswale	1/24/01	0.30	Y	Y	NA	>75,>75	>12,>12	Y

¹ The flow meter failed and no sample was collected.

² Sampler pacing was set too high for the total storm volume received; only 5 aliquots were collected at the influent, and none at the effluent due to no flow.

³ Influent sample collected and submitted to laboratory. No flow at effluent due to infiltration.

⁴ No flow at effluent due to bypass through gopher burrows.

Table 4. District 7 February 10-13, 2001 Event

Site	BMP Type	Date of Sample Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 7									
I-605/SR-91	IB	2/10-13/01	3.24	Y	NA	NA	NA	NA	Y
I-210 East of Orcas	CDS	2/10-11/01	>0.09 ^{1,4}	Y	Y	Y	>75,>75	>12,>12	Y
I-210 East of Filmore	CDS	2/10-11/01	0.56 ⁴	Y	Y	Y	>75,>75	>12,>12	Y
I-5/I-605	EDB	2/10-13/01	3.41 ⁵	Y	Y	NA	>75,>75	>12,>12	Y
I-605/SR-91	EDB	2/10-13/01	3.24 ⁵	Y	Y	NA	>75,>75	>12,>12	Y
Alameda MS	OWS	2/10-11/01	0.31 ⁴	Y	NA	Y	NA	NA	Y
Eastern MS	MF	2/10-13/01	4.16 ⁵	Y	Y	NA	>75,>75	>12,>12	Y
Foothill MS	MF	2/10-11/01	0.28 ⁴	Y	Y	Y ²	>75,>75	>12,>12	Y
Termination P & R	MF	2/10-11/01	0.32 ⁴	Y	Y	NA	>75,>75	>12,>12	Y
Via Verde P & R	MCTT	2/10-11/01	0.44	NA	NA	NA	NA	NA	NA
Lakewood P & R	MCTT	2/10-12/01	0.99 ⁶	Y	Y	NA	>75,>75	>12,>12	Y
Altadena	Bio Strip	2/10-11/01	0.47 ⁴	Y	Y	NA	>75,>75	>12,>12	Y
	Infiltration Trench	2/10-11/01	0.47 ⁴	Y	NA	NA	NA	NA	Y
Foothill MS	DII north- SG Insert	2/10-11/01	0.28 ⁴	Y	Y	NA	>75	>12	Y
	DII south- FF Insert	2/10-11/01	0.28 ⁴	Y	Y	NA	>75	>12	Y
Las Flores MS	DII north-SG Insert	2/10-11/01	0.94 ⁴	Y	Y	NA	>75	>12	Y
	DII south-FF Insert	2/10-11/01	0.94 ⁴	Y	Y	NA	>75	>12	Y
Rosemead MS	DII north-FF Insert	2/10-11/01	0.30 ⁴	Y	Y	NA	>75	>12	Y
	DII south-SG Insert	2/10-11/01	0.30 ⁴	Y	Y	NA	>75	>12	Y
I-605/SR-91	Bio Strip	2/10-13/01	3.24	Y	Y	NA	>75,>75	>12,>12	Y
	Bio Swale	2/10-13/01	3.24	Y ³	NA	NA	NA	NA	Y
Cerritos MS	Bio Swale	2/10-13/01	3.24	Y ³	NA	NA	NA	NA	Y
I-5/I-605	Bioswale	2/10-13/01	3.41	Y ³	NA	NA	NA	NA	Y
I-605/ Del Amo	Bioswale	2/10-13/01	3.24	Y ³	NA	NA	NA	NA	Y

¹ Rain gauge became blocked during the storm.

² Effluent grab sample not collected; no one on site during initial discharge.

³ Hydraulic residence time testing only.

⁴ Samplers were turned off after the first event i.e. on the 11th, as minimum percent storm capture, number of aliquots and sample volume were achieved. Rainfall totals cover 2/10-11/01.

⁵ Samplers were allowed to run through the next event, as minimum percent storm capture, number of aliquots and sample volume were not achieved after the first event. Rainfall totals cover 2/10-13/01.

⁶ Site was sampled until the chamber filled with water. Samplers were turned off on 2/12/01. Rainfall total covers 2/10-12/01.

The following is a discussion of activities during the quarter for each BMP site.

I-605/SR-91 Interchange Infiltration Basin (Site ID 73101)

Monitoring/Sampling Activities

- 11/30/00: Tested the lysimeter by setting up the vacuum pump on the lysimeter and leaving it running overnight at a vacuum of 20 inches of Hg to determine if moisture could be drawn from the soil.
- 12/1/00: Checked vacuum pump on the lysimeter. Vacuum was still at 20 inches of Hg. Checked system for air leaks. Pump was still operational. No sample was available.
- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was mobilized to make empirical observations of the infiltration basin.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized to make empirical observations of the infiltration basin. During periods of heavy rainfall, flow bypass occurred at the overflow structure because the depth of water passing through the overflow structure exceeded the bypass weir elevation. An attempt was made to collect a vadose zone sample. The lysimeter was turned on during the storm event and a vacuum was applied for at least 24 hours. However, the attempt to collect a sample was unsuccessful.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 90% probability of occurrence. Storm event produced 0.30 inch of rainfall. A team was mobilized to make empirical observations of the infiltration basin.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized to make empirical observations of the infiltration basin.

Operations and Maintenance

- 11/20/00: Repaired erosion on the northeast slope, underneath the asphalt swale on the access road.
- 12/6/00: Conducted monthly site inspection.
- 12/28-29/00: Removed woody vegetation, backfilled and compacted gopher holes and removed trash and debris.
- 1/17/01: Conducted monthly/post-storm site inspection.

- 2/6/01: Removed woody vegetation, backfilled and compacted gopher holes, removed trash and debris and repaired erosion on the northeast slope, underneath the asphalt swale on the access road.
- 2/7/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues / Solutions

None this period.

I-210/East Orcas Avenue Continuous Deflection Separators (Site ID 73102)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.13 inch of rainfall. A team was mobilized to make empirical observations of the CDS unit. No flow entered the CDS unit, hence no samples were collected.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 4.33 inches of rainfall. A team was mobilized to make empirical observations of the CDS unit. Flow bypass occurred through the weir box. Debris in the mosquito proofing/bypass bag impeded flow out of the CDS unit. Composite and grab samples were successfully collected and sent to the laboratory, but the flow meter failed thus compromising the composite sample.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 90% probability of occurrence. Storm event produced 0.47 inch of rainfall. A team was mobilized to make empirical observations of the CDS unit. No composite samples were collected due to a flow meter malfunction, and grab samples were not collected.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced >0.09 inches of rainfall. The rain gauge became blocked during the storm, hence no further rainfall was recorded. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operations and Maintenance

- 12/8/00: Conducted monthly site inspection. The sump was 40% full of accumulated litter, debris and sediment. Additionally, 4 inches of floatable materials, such as styrofoam and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no maintenance was required.
- 1/15/01: Conducted monthly/post-storm site inspection. The sump was completely full of accumulated litter, debris and sediment. Additionally, 12 inches of floatable materials, such as styrofoam, plastic and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were met, hence maintenance was required.
- 1/16/01: Removed litter and debris captured and bypassed by the CDS unit and weir box for segregation, characterization, and to calculate mass and volume of material. Removed trash and debris in BMP area.
- 2/5/01: Conducted monthly/post-storm site inspection. Pushed debris from the weir box into the CDS unit. The sump was only 4% full of accumulated litter, debris and sediment. Additionally, 1 inch of floatable materials, such as styrofoam and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no further maintenance was required.
- 2/9/01: The end of the litter bypass/mosquito proofing bag was cut off in order to prevent impedance of flow from the CDS unit, which was observed during the January 10-12, 2001 storm event. The end of the bag was weighted down to prevent mosquitoes entering. A new litter bypass collection basket was fabricated and installed downstream of the H-flume.
- 2/14/01: Removed sediment from the concrete ditch adjacent to the CDS unit and removed trash and debris.
- 2/16/01: Conducted post-storm site inspection. The sump was 58% full of accumulated litter, debris and sediment. Additionally, 4 inches of floatable materials, such as styrofoam and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no further maintenance was required.

Vector Activities

11/11/0, 12/01/0, 12/08/00, 12/15/00: Breeding observed. Abated with Altosid liquid..

Issues / Solutions

None this period.

I-210/East of Filmore Street Continuous Deflection Separators (Site ID 73103)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.06 inch of rainfall. A team was mobilized, but rainfall and sample volume were insufficient to send composite samples to the laboratory. However, grab samples were successfully collected and submitted. Empirical observations were made.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced approximately 4 inches of rainfall. The rain gauge failed during the storm, so an accurate rainfall total was not recorded. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred through the weir box. Debris in the mosquito proofing/bypass bag impeded flow out of the CDS unit.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.60 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred through the weir box.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.56 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operations and Maintenance

- 12/8/00: Conducted monthly site inspection. The sump was 57% full of accumulated litter, debris and sediment. Additionally, 1 inch of floatable materials, such as styrofoam and plastic, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no maintenance was required.

- 1/15/01: Conducted monthly/post-storm site inspection. The sump was completely full of accumulated litter, debris and sediment. Additionally, 3 inches of floatable materials, such as styrofoam, plastic and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were met, hence maintenance was required.
- 1/16/01: Removed litter and debris captured and bypassed by the CDS unit and weir box for segregation, characterization, and to calculate mass and volume of material. Removed trash and debris in BMP area.
- 2/5/01: Conducted monthly/post-storm site inspection. Pushed debris from the weir box into the CDS unit. The sump was only 6% full of accumulated litter, debris and sediment. Additionally, 1/2 inch of floatable materials, such as styrofoam and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no further maintenance was required.
- 2/9/01: The end of the litter bypass/mosquito proofing bag was cut off in order to prevent impedance of flow from the CDS unit, which was observed during the January 10-12, 2001 storm event. The end of the bag was weighted down to prevent mosquitoes entering. A new litter bypass collection basket was fabricated and installed downstream of the H-flume.
- 2/14/01: Removed trash and debris adjacent to the CDS unit.
- 2/16/01: Conducted post-storm site inspection. The sump was 17% full of accumulated litter, debris and sediment. Additionally, 1-1/2 inches of floatable materials, such as styrofoam and organic debris, were observed at the surface. Maintenance thresholds outlined in the Maintenance Indicator Document were not met, hence no further maintenance was required.

Vector Activities

None this period.

Issues / Solutions

None this period.

I-5/I-605 Extended Detention Basin (Site ID 74101)

Monitoring/Sampling Activities

- 11/21-22/00: Installed safety pins on influent and effluent monitoring equipment enclosures.
- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.44 inch of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent

samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 4.10 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Minor erosion occurred in several spots along the east slope. Overflow was observed at approximately 2330 on January 10, 2001.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.54 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Trash and debris were resuspended near the outlet structure.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.41 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operation and Maintenance

- 11/29/00: Measured dimensions of the outlet structure and effluent to determine the quantity of concrete and the type of equipment needed for modifications to eliminate the problem of ponding water.
- 12/6/00: Conducted monthly site inspection.
- 12/21/00: Removed woody vegetation and trash.
- 12/27-28/00: Removed woody vegetation and trash, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.

- 2/2/01: The outlet structure was modified by core hole drilling the outlet structure, installing stainless steel orifice plates, and grouting the sump to eliminate the ponding water problem.
- 2/6/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

Breeding was noted on Nov 22, Dec 1, 8, 15, 22, 28, and Jan 4. Abated with Altosid liquid.

Issues/Solutions

None this period.

I-605/SR-91 Extended Detention Basin (Site ID 74102)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory, but there was essentially no flow at the effluent due to water infiltrating, thus no effluent sample was collected. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made and grab samples were collected.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations. However, only the influent sample was collected and submitted to laboratory. The effluent sample was not submitted to the laboratory due to flow meter failure, which compromised the sample. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Overflow was observed at approximately 1630 on January 10, 2001.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture, but only the influent met minimum number of aliquots. The effluent sampled 9 aliquots, but enough volume was collected to run the entire analytical suite. Empirical observations were made.

2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operation and Maintenance

- 12/6/00: Conducted monthly site inspection.
- 12/19/00: Removed woody vegetation and trash, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 2/6/01: Removed trash and backfilled and compacted gopher holes.
- 2/7/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues/Solutions

None this period.

Paxton Maintenance Station Media Filter (Site ID 74103)

Metro Maintenance Station Multi-Chamber Treatment Train (Site ID 74104)

Paxton project is scheduled for tentative bid opening on March 1. The Metro project is tentatively scheduled for advertisement on March 5, 2001 and bid opening of April 1. The updated schedule is as follows:

Action	Duration	Milestone	Estimated Completion Date	
			Paxton	Metro
Incorporate preliminary Structures and D7OE review comments		Submit entire PS&E package	03/08/00 (actual)	03/08/00 (actual)
Structures and D7OE Review	4 weeks			
		Receive comments from Structures and D7OE	04/06/00 (actual)	04/06/00 (actual)
Consultant revise PS&E	17.4 weeks			
		Submit to D7	08/07/00 (actual)	08/07/00 (actual)
Structures final review and Final Revisions	2 weeks			
		Submit final to D7	08/21/00 (actual)	08/21/00 (actual)
D7 process and format PS&E	12.3 weeks			
		D7 submit to HQ	11/15/00 (actual)	11/15/00 (actual)
HQ review and processing; advertise contract	13 weeks			
		Advertise contract	01/29/01(actual)	03/05/01
Bid Period, evaluate bids, Award and Approval of Contract	12 weeks			
		Notice to Proceed	04/23/01	5/28/01
Construction	21 weeks			
		Construction complete	09/17/01	10/22/01
Install Instrumentation	2 weeks			
		Operational	10/1/01	11/05/01

Alameda Maintenance Station (Site ID 74201)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 80% probability of occurrence. Storm event produced 0.24 inch of rainfall. A team was mobilized and grab samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Empirical observations were made. The effluent discharge was clear, but contained black suspended solids and had a hydrocarbon odor, compared to the influent.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.91 inches of rainfall. A team was mobilized and grab samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Empirical observations were made. The influent discharge was brown with low turbidity, while the effluent was virtually clear, with only a slight brown color and slight turbidity. A sheen was observed at the influent and effluent, although at the effluent it was very light.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.31 inches of rainfall. A team was mobilized and grab samples were collected at both the influent and effluent locations and sent to the laboratory for analysis. Empirical observations were

made. The effluent was clear and colorless with no sheen, compared to the influent, which was a brown emulsion with suspended solids. However, the effluent had a musty, hydrogen sulfide smell.

2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.31 inches of rainfall. A team was mobilized and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Empirical observations were made.

Operation and Maintenance

- 12/7/00: Conducted monthly site inspection.
- 12/18/00: Removed trash and debris.
- 1/18/01: Conducted monthly/post-storm site inspection.
- 2/6/01: Removed trash and debris.
- 2/22/01: Conducted quarterly site inspection. Removed trash and debris.

Vector Activities

None this period.

Issues/Solutions

None this period.

Eastern Regional Maintenance Station (Site ID 74202)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.11 inch of rainfall. A team was mobilized and a composite sample was collected at the influent only. However, there was insufficient sample volume for analysis, so the sample was not sent to the laboratory. Empirical observations were made, but no grab samples were collected.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.56 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The volume capacity of the sedimentation

chamber was reached and subsequent flow bypass occurred. Runoff took over 48 hours to drain from the sand filter.

- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.64 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Runoff took approximately five days to drain from the sand filter.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 4.16 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made, but no grab samples were collected. Runoff took less than 48 hours to drain from the sand filter.

Operation and Maintenance

- 11/28/00: Replaced mosquito netting on the sump.
- 12/7/00: Conducted monthly site inspection. Removed trash and debris.
- 12/18/00: Repaired leak in 2 inch PVC discharge pipe.
- 1/18/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 1/25/01: Inlet pipes were blocked to prevent flow into the BMP from the January 26, 2001 storm event to allow subsequent inspection and maintenance.
- 2/5/01: Since drain time of the sand filters was found to be up to five days, exceeding the 48 hour threshold defined in the OMM Plan, Caltrans and Law personnel inspected the site to check for blockages in the standpipe orifices. One of the bottom orifices at Eastern was blocked. It did not appear that the gravel bags interfered with flow. The orifice was cleared and the decision was made to increase the orifice size from ½ inch to 5/8 inch to increase flow from the sedimentation chamber to the sand filter, and to minimize the chance of blockage. A hard, crusty layer of silt was observed on top of the sand up to a depth of 1 inch.
- 2/6/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 2/9/01: Increased orifice size from ½ inch to 5/8 inch. Rearranged gravel bags so that they did not cover upper holes.
- 2/17/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues/Solutions

None this period.

Foothill Maintenance Station (Site ID 74203)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.05 inch of rainfall. A team was mobilized, but insufficient rainfall and sample volume meant no composite samples were sent to the laboratory. Empirical observations were.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 4.07 inches of rainfall. A team was mobilized and a composite sample was collected at the influent only and submitted to the laboratory. Influent sample met minimum percent storm capture

and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Effluent sample could not be collected due to pump failure. The pump failed during the storm because of vapor lock. Subsequently, the sedimentation chamber filled with runoff and flow bypass occurred. The pump was subsequently fixed. Empirical observations were made, and grab samples were collected at both the influent and effluent locations. Runoff took over 48 hours to drain from the sand filter.

- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.5 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The sand filter was observed to be 80% covered with water up to 2 inches deep. Runoff took approximately five days to drain from the sand filter.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.28 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations for the composite, but only at the influent for the grab, and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Runoff took approximately 51 hours to drain from the sand filter.

Operation and Maintenance

- 12/7/00: Conducted monthly site inspection. Picked up trash and debris, and removed vegetation from the sand filter.
- 1/15/01: Airlocked pump was checked by Law's contracted electrician.
- 1/18/01: Conducted monthly/post-storm site inspection. Picked up trash and debris.
- 1/25/01: Inlet pipes were blocked to prevent flow into the BMP from the January 26, 2001 storm event to allow subsequent inspection and maintenance.
- 2/5/01: Since drain time of the sand filters was found to be up to five days, exceeding the 48 hour threshold defined in the OMM Plan, Caltrans and Law personnel inspected the site to check for blockages in the standpipe orifices. All the orifices in the standpipe at Foothill were found to be clear. It did not appear that the gravel bags interfered with flow. Other District 7 Sand Filter sites had blocked orifices however, so the decision was made to increase the orifice size from 1/2 inch to 5/8 inch to increase flow from the sedimentation chamber to the sand filter, and to minimize the chance of blockage. A hard, crusty layer of silt was observed on top of the sand up to a depth of 1 1/4 inches.

- 2/6/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 2/9/01: Increased orifice size from 1/2 inch to 5/8 inch. Rearranged gravel bags so that they did not cover upper holes.
- 2/16/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues/Solutions

The decision was made during the February 22, 2001 biweekly meeting to evaluate the drain time of the sand filter during the next storm event prior to conducting any additional maintenance.

Termination Park and Ride (Site ID 74204)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.72 inch of rainfall. A team was mobilized, and an influent sample was successfully collected, but was not submitted because an effluent sample could not be collected due to pump failure. The pump failed because the bearings had gone bad. The pump was removed on January 9, 2001 and replaced by a recently repaired one from Brown & Caldwell. It was checked before installing. However, the pump only worked intermittently. Law's subcontracted electrician verified that there was adequate power to the pump. Consequently, an operational pump was not available to be installed in time for the January 10, 2001 storm event. The Sand Filter reached flow volume capacity and subsequent flow bypass occurred. Empirical observations were made, and grab samples were collected at both the influent and effluent locations.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.96 inches of rainfall. A team was mobilized to make empirical observations only, as the site was offline due to the previous pump failure. The Sand Filter reached flow volume capacity and subsequent flow bypass occurred.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.36 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The sand filter was observed to have 6 inches

of standing water on the sand filter. Runoff took approximately five days to drain from the sand filter.

2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.32 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Runoff took less than 48 hours to drain from the sand filter.

Operation and Maintenance

- 11/27/00: A new electrical service was installed.
- 11/29/00: Law's subcontracted electrician made final power connections from the temporary power pole.
- 12/6/00: Conducted monthly site inspection. Removed trash and debris.
- 1/11/01: Law's subcontracted electrician inspected the pumps. The pumps were sent for repair.
- 1/15/01: Installed and tested rebuilt effluent pump.
- 1/18/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 1/25/01: Inlet pipes were blocked to prevent flow into the BMPs from the January 26, 2001 storm event to allow subsequent inspection and maintenance.
- 2/5/01: Since drain time of the sand filters was found to be up to five days, exceeding the 48 hour threshold defined in the OMM Plan, Caltrans and Law personnel inspected the site to check for blockages in the standpipe orifices. All three bottom orifices at Termination were blocked. It did not appear that the gravel bags interfered with flow. The orifices was cleared and the decision was made to increase the orifice size from ½ inch to 5/8 inch to increase flow from the sedimentation chamber to the sand filter, and to minimize the chance of blockage. A hard, crusty layer of silt was observed on top of the sand up to a depth of 1 inch.
- 2/6/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 2/9/01: Increased orifice size from ½ inch to 5/8 inch. Rearranged gravel bags so that they did not cover upper holes. Readjusted "off" float to an improved position.
- 2/17/01: Conducted post-storm site inspection.

Vector Activities

January 18: Breeding observed; abated with Altosid liquid.

Issues/Solutions

Due to lack of power to the site during night time hours i.e., while the Park and Ride lights were on, the following solution was implemented during this quarter:

Installed 100 amp 120/240/single phase/3w temporary 25 ft pole with overhead feed and made connections to existing meter pedestal.

Via Verde Park and Ride (Site ID 74206)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.13 inch of rainfall. A team was mobilized, but there was low flow into the sedimentation chamber and not enough influent sample volume was collected to submit for analysis. The water level was below the settling tubes, thus transfer of runoff from the sedimentation chamber to the sand filter was not necessary and no effluent samples were collected. Empirical observations were made, and a grab sample was collected at the influent only.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.41 inches of rainfall. The team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The sedimentation basin filled to within 18 inches from the top, but did not bypass. Most of the water drained out of the basin by January 14, 2001, due to the leak.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.53 inches of rainfall. A team was not mobilized as the site was offline due to the leak fix.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.44 inches of rainfall. A team was not mobilized as the site was offline due to the leak fix.

Operation and Maintenance

- 11/20/00: Measured the water level in the sedimentation chamber.
- 11/30/00: Installed a bubbler to measure water level changes in the sedimentation chamber.
- 12/7/00: Conducted monthly site inspection. Removed trash and debris.
- 12/20/00: Site visit with contractor to prepare scope of work to waterproof sedimentation chamber.

- 1/5/01: Law personnel met with Hallsten Corporation who surveyed the site for preparation of shop drawings for the MCTT cover.
- 1/6-18/01: Shop drawings for the MCTT cover were prepared, revised and approved.
- 1/16/01: Pumped water from the sedimentation chamber to the filter chamber in preparation for repairing the sedimentation chamber leak.
- 1/17/01: Removed settling tubes, fiberglass grates, beams and pump from the sedimentation chamber in preparation for repairing the sedimentation chamber leak.
- 1/18/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 1/18-30/01: Ace Restoration & Waterproofing, Inc. conducted work to seal the leak in the sedimentation chamber.
- 1/19-2/16/01: Fabrication of MCTT cover including non-destructive testing of structural welds.
- 2/1-2/01: Tested pipe from grit chamber to sedimentation chamber for leaks. Pipe was found to leak.
- 2/5/01: Met onsite with Insitu-Form to evaluate whether their technology would repair the leak. Insitu-Form declined the job because of the configuration of the pipe with its 90 degree bends.
- 2/6/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 2/7/01: Met onsite with SanCon Technologies to discuss repairing the leaking influent pipe. SanCon suggested CCTV of the pipe before committing to the job.
- 2/13/01: Removed plug from the discharge end of the influent pipe.
Sawed off the top of the ladder in preparation for the installation of the cover.
- 2/15/01: Pumped water from the grit chamber into the filter media in preparation for the CCTV.
- 2/16/01: Conducted post-storm site inspection. CCTV of the influent pipe leading to the sedimentation chamber was conducted by SanCon Technologies. Some evidence of infiltration near the lower joints was observed.
- 2/21/01: Reinstalled side wall rail supports, fiberglass grates and about half of the settling tubes. Started installation of the covers.
- 2/22/01: Continued installation of the covers.
- 2/23/01: Completed installation of the covers. Smoke tested the cover.

Vector Activities

December 8: Breeding observed. Abated with Altosid pellets.

Issues/Solutions

Ace Restoration & Waterproofing, Inc. signed a contract with Law on January 9, 2001 to repair the leak at Via Verde MCTT at a cost of \$15,568. The work was done from January 18 to 30, 2001. Materials used are commonly used for water storage tanks. The scope of work was as follows:

- Sandblast walls and floors
- Remove sand and debris, and stage in barrels for proper disposal by others
- Clean walls and floor slab per material manufacturers recommendations
- Rout all joints and cracks 1/4" x 1/4" and seal with Sikaflex 15LM Elastomeric Sealant
- Fill all large rock pockets and holes with waterplug (hydraulic cement)
- Prime walls and floors with Elasto-Poxy Primer
- Apply first coat of Elasto-Deck B.T. 1000
Within 24 hours, apply second coat of Elasto-Deck B.T. 1000.

SanCon Technologies provided a cost proposal of \$19,900 to CCTV and line the pipe between the grit chamber and sedimentation chamber. Authorization by Caltrans to proceed with fix was given on 2/23/01. Repair will be made within approximately two weeks.

Lakewood Park and Ride (Site ID 74206)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.47 inch of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow-weighted sample from the sedimentation chamber/sand filter transfer pump discharge was collected.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 3.79 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The sedimentation basin reached flow volume capacity and bypass occurred. Flow-weighted sample from the sedimentation chamber/sand filter transfer pump discharge was collected.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.43 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made, but no grab samples were collected. Flow-weighted sample from the sedimentation chamber/sand filter transfer pump discharge was collected.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 0.99 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made, but no grab samples were collected. Flow-weighted sample from the sedimentation chamber/sand filter transfer pump discharge was collected.

Operation and Maintenance

- 12/6/00: Conducted monthly site inspection. Removed trash and debris.

- 12/14/00: Removed trash and debris that could not be reached during the site inspection.
- 1/5/01: Law personnel met with Hallsten Corporation who surveyed the site for preparation of shop drawings for the MCTT cover.
- 1/6-18/01: Shop drawings for the MCTT cover were prepared, revised and approved.
- 1/18/01: Conducted monthly/post-storm site inspection. Removed trash and debris.
- 1/19-2/16/01: Fabrication of MCTT cover including non-destructive testing of structural welds.
- 2/6/01: Conducted monthly/post-storm site inspection. Removed trash and debris. Repaired grit chamber cover and removed floating trash from sedimentation basin.
- 2/13/01: Sawed off the top of the ladder in preparation for the installation of the cover.
- 2/16/01: Conducted post-storm site inspection.
- 2/20/01: Started installation of the covers.
- 2/21/01: Continued installation of the covers.
- 2/22/01: Completed installation of the covers. Smoke tested the cover for leaks. Cover was installed sufficiently tight to minimize entrance/exit of vectors.

Vector Activities

November 22, December 1, 8, 15, 28, January 4 and 18: Breeding observed. Abated with Altosid liquid.

Issues/Solutions

There was found to be a lack of power to the site especially during night time hours (i.e., while the Park and Ride lights were on). The solution has been to operate the pumps during daylight hours to minimize the impact of power problems.

Altadena Maintenance Station Bio Strip and Infiltration Trench (Site ID 73211 a, b)

Monitoring/Sampling Activities

- 12/1/00: Tested the lysimeter by setting up the vacuum pump on the lysimeter and leaving it running overnight at a vacuum of 20 inches of Hg to determine if moisture could be drawn from the soil.
- 12/2/00: Checked vacuum pump on the lysimeter. Vacuum was still at 20 inches of Hg. Checked system for air leaks. Pump was still operational. No sample was available.
- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.08 inch of rainfall. A team

was mobilized, but insufficient rainfall and sample volume meant no composite samples were sent to the laboratory. Empirical observations were made, but no grab samples were collected.

- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inches of rainfall, with a 100% probability of occurrence. Storm event produced 4.19 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass (overflow) was observed in the infiltration trench at 01:30 on January 11, 2001. An attempt was made to collect a vadose zone sample from the trench. The lysimeter was turned on during the storm event and a vacuum was applied for at least 24 hours. However, the attempt to collect a sample was unsuccessful.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.44 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.47 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operations and Maintenance

- 12/7/00: Conducted monthly site inspection.
- 12/9/00: Inspected and drained spreader ditch, following a small storm event on 12/8/00.
- 12/11/00: Drained spreader ditch due to further rain.
- 12/18/00: Picked up trash and debris.
- 12/19/00: Removed weeds greater than 12 inches tall.
- 1/14/01: Conducted monthly/post storm site inspection and drained spreader ditch, following the 1/8/01 and 1/10-12/01 storm events.
- 1/29/01: Inspected and drained spreader ditch, following the storm events on 1/24/01 and 1/26/01.

- 1/30/01: Removed weeds greater than 12 inches tall, picked up trash and debris and started cutting the vegetation to 6 inches.
- 1/31/01: Completed vegetation trimming and removed cuttings.
- 2/5/01: Conducted monthly/post-storm site inspection.
- 2/21/01: Inspected and drained spreader ditch following storm event on 2/19/01.

Vector Activities

None this period.

Issues / Solutions

None this period.

Foothill Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73216 a, b)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 80% probability of occurrence. Storm event produced 0.05 inch of rainfall. A team was mobilized, but insufficient rainfall and sample volume meant no composite samples were sent to the laboratory. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 4.07 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred at the both the Fossil Filter and StreamGuard locations and the Fossil Filter was cleaned out once during the storm event.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.50 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred at the both the Fossil Filter and StreamGuard locations.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.28 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and

StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

Operations and Maintenance

- 12/7/01: Conducted monthly site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 12/13/00: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 12/13-14/00.
- 1/7/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/8/01. Trash and debris were removed from the Fossil Filter DII.
- 1/9/01: Conducted post/pre-storm inspection of DIIs for a storm forecasted to occur on 1/10/01. Trash and debris were removed from the Fossil Filter DII.
- 1/18/01: Conducted monthly/post-storm inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 1/23/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/24/01. Trash and debris were removed from the Fossil Filter DII.
- 2/5/01: Conducted monthly/post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 2/9/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 2/10/01. Trash and debris were removed from the Fossil Filter DII.
- 2/15/01: Conducted post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.

Vector Activities

None this period.

Issues / Solutions

None this period.

Las Flores Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73217 a, b)

Monitoring/Sampling Activities

- 12/14/00: Repaired rubber berm around the sampling vault at the StreamGuard location.

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 80% probability of occurrence. Storm event produced 0.24 inch of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations. However, there was insufficient sample volume at the StreamGuard, hence only the Fossil Filter sample was sent to the laboratory for analysis. The sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 5.92 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.52 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.94 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.

Operations and Maintenance

- 12/8/00: Conducted monthly site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 12/9/00: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 12/10/00.
- 1/7/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/8/01. Trash and debris were removed from the Fossil Filter DII.

- 1/9/01: Conducted post/pre-storm inspection of DIIs for a storm forecasted to occur on 1/10/01. Trash and debris were removed from the Fossil Filter DII.
- 1/19/01: Conducted monthly/post-storm inspection of DIIs. Trash and debris were removed from the Fossil Filter DII. During the inspection, a rip in the StreamGuard fabric was observed. The manufacturer recommended replacing the StreamGuard rather than repairing it.
- 1/23/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/24/01. A new StreamGuard was installed. The used DII and associated materials were bagged and labeled, and were sent to the laboratory for analysis. Trash and debris were removed from the Fossil Filter DII.
- 2/5/01: Conducted monthly/post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 2/9/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 2/10/01. Trash and debris were removed from the Fossil Filter DII.
- 2/16/01: Conducted post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.

Vector Activities

None this period.

Issues / Solutions

None this period

Rosemead Maintenance Station Drain Inlet Insert (StreamGuard and Fossil Filter Inserts) (Site ID 73218 a, b)

Monitoring/Sampling Activities

- 11/22/00: Repaired rubber berm around the sampling vault at the Fossil Filter location.
- 12/14/00: Repaired rubber berm around the sampling vault at the Fossil Filter location.
- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.07 inch of rainfall. A team was mobilized, but insufficient rainfall and sample volume meant no composite samples were sent to the laboratory. Empirical observations were made. The Fossil Filter DII was cleaned out once during the storm event.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 3.92 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and

StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred at the both the Fossil Filter and StreamGuard locations and the Fossil Filter was cleaned out once during the storm event.

- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.49 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred at the both the Fossil Filter and StreamGuard locations and the Fossil Filter was cleaned out once during the storm event.
- 2/10-11/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team was mobilized and composite samples were collected at both the Fossil Filter and StreamGuard DII locations and sent to the laboratory for analysis. Both samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred at the StreamGuard location.

Operations and Maintenance

- 12/7/00: Conducted monthly site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 12/13/00: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 12/13-14/00. Trash and debris were removed from the Fossil Filter DII. Storm dissipated.
- 12/14/00: Closed gap between the DII and the inlet by repairing the rubber seal at the Fossil Filter location.
- 12/17/00: Readjusted StreamGuard and inserted more wood shims to keep the insert in place.
- 1/7/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/8/01. Trash and debris were removed from the Fossil Filter DII.
- 1/9-10/01: Conducted post/pre-storm inspection of DIIs for a storm forecasted to occur on 1/10/01. Trash and debris were removed from the Fossil Filter DII.
- 1/18/01: Conducted monthly/post-storm inspection of DIIs. Trash and debris were removed from the Fossil Filter DII and debris was removed from on top of the grate at the StreamGuard location.

- 1/23/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 1/24/01. Trash and debris were removed from the Fossil Filter DII.
- 2/6/01: Conducted monthly/post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.
- 2/9/01: Conducted pre-storm inspection of DIIs for a storm forecasted to occur on 2/10/01. Trash and debris were removed from the Fossil Filter DII.
- 2/16/01: Conducted post-storm site inspection of DIIs. Trash and debris were removed from the Fossil Filter DII.

Vector Activities

- 12/08/00: Breeding observed in the monitoring flume. Abated with Altosid liquid.

Issues / Solutions

None this period.

I-605/SR-91 Interchange Bio Strip & Swale (Site ID 73222 a, b)

Monitoring/Sampling Activities

Strip:

- 12/8/00: Dug a trench downstream of the control location to encourage drainage to the culvert.
- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was mobilized and although sample was collected at the control location, the flow meter failed, hence the sample was not submitted for analysis. There was no flow at the effluent location. Empirical observations were made but no grab samples were collected.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow into the strip was uneven and channelized through the middle of the strip. The majority of flow went through the central and southern parts of the strip.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team

was mobilized but the sampler pacing was set too high for the total storm volume received; only 5 aliquots were collected at the influent, and none at the effluent due to no flow. Empirical observations were made.

2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized and the samplers were left running over both events as the minimum criteria i.e., number of aliquots etc, had not been met by the end of the first event. Composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite by the end of the second event. Empirical observations were made.

Swale:

1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory. No flow occurred at the effluent as the water infiltrated. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred due to gopher holes at the effluent end of the swale. Water emerged from gopher holes downstream of the effluent flume, causing ponding. Efforts were made to prevent flow backing up into the effluent flume.

1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory. No flow occurred at the effluent as the water infiltrated. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90%

probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized to perform hydraulic residence time testing, but no runs were achieved.

Operations and Maintenance

Strip:

- 12/6/00: Conducted monthly site inspection.
- 12/20/00: Removed trash and weeds greater than 12 inches tall, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 2/1/01: Removed trash and weeds greater than 12 inches tall, and backfilled and compacted gopher holes.
- 2/2/01: Cut vegetation to 6 inches and removed the trimmings.
- 2/7/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Swale:

- 12/6/00: Conducted monthly site inspection.
- 12/20/00: Removed trash and weeds greater than 12 inches tall, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 1/31/01: Removed trash and weeds greater than 12 inches tall, backfilled and compacted gopher holes and cut vegetation to 6 inches and removed the trimmings.
- 2/7/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues / Solutions

None this period.

Cerritos Maintenance Station Bio Swale (Site ID 73223)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was

mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Some flow bypass occurred through gopher holes.

- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Flow bypass occurred through gopher holes.
- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory. No flow occurred at the effluent as the water infiltrated or bypassed through gopher holes. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized to perform hydraulic residence time testing, and 2 out of 3 runs were achieved.
- 2/19/01: Forecast predicted rain to produce 0.25 – 0.33 inch of rainfall, with an 80% probability of occurrence. A team was mobilized to perform hydraulic residence time testing, and 2 runs were achieved to reach a total of 4 runs, more than the total required.

Operations and Maintenance

- 12/6/00: Conducted monthly site inspection.
- 12/19/00: Removed trash and weeds greater than 12 inches tall, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 2/2/01: Removed trash and weeds greater than 12 inches tall, backfilled and compacted gopher holes, cut vegetation to 6 inches and removed the trimmings, and began erosion repair of the north slope.
- 2/7/01: Conducted monthly/post-storm site inspection, completed erosion repair of the north slope and backfilled and compacted gopher holes.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues / Solutions

Flow bypass was observed at the Cerritos Maintenance Station Swale, during storms. Flow bypass occurred through gopher burrows despite installation of the hardware mesh. Erosion occurred after storms along the mesh, mostly near the influent end of the swale, where gophers had tunneled.

A revised Maintenance Indicator Document was issued on 1/10/01, which incorporated a change in reseeded of barren spots in biofiltration swales and strips. The clarification was added that if after 2 applications (2 seasons) reseeded and growth is unsuccessful both times, an erosion blanket will be installed along bare areas.

I-5/I-605 Bio Swale (Site ID 73224)

Monitoring/Sampling Activities

1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.44 inch of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory. No flow occurred at the effluent as the water infiltrated. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.

1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 4.10 inches of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Scouring occurred down the middle of the swale and especially at the influent end, due to excessive flow.

1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.54 inches of rainfall. A team was mobilized and influent sample was collected and submitted to the laboratory. Essentially no flow occurred at the effluent as the water infiltrated. Influent sample met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made and grab samples were collected.

2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of

both storm events produced 3.24 inches of rainfall. A team was mobilized to perform hydraulic residence time testing, and 1 out of 3 runs were achieved.

- 2/19/01: Forecast predicted rain to produce 0.25 – 0.33 inch of rainfall, with an 80% probability of occurrence. A team was mobilized to perform hydraulic residence time testing, and 2 runs were achieved to complete the total required.

Operations and Maintenance

- 12/6/00: Conducted monthly site inspection.
- 12/20/00: Removed trash and weeds greater than 12 inches tall, and backfilled and compacted gopher holes.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 2/1/01: Began cutting vegetation to 6 inches and removed the trimmings.
- 2/2/01: Removed trash and backfilled and compacted gopher holes.
- 2/5/01: Removed weeds greater than 12 inches tall, completed cutting vegetation to 6 inches and removed the trimmings, and repaired slope erosion.
- 2/6/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues / Solutions

None this period.

I-605/Carson & Del Amo Bio Swale (Site ID 73225)

Monitoring/Sampling Activities

- 1/8/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with an 80% probability of occurrence. Storm event produced 0.55 inch of rainfall. A team was mobilized and composite and grab samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture, but only the influent met minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.
- 1/10-12/01: Forecast predicted rain to produce 1 – 3 inch of rainfall, with a 100% probability of occurrence. Storm event produced 3.47 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the

effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made. Water depth was observed to be 3 to 4 inches across the swale.

- 1/24/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 90% probability of occurrence. Storm event produced 0.30 inches of rainfall. A team was mobilized and composite samples were collected at both the influent and the effluent locations and sent to the laboratory for analysis. Influent and effluent samples met minimum percent storm capture and minimum number of aliquots, and enough volume was collected to run the entire analytical suite. Empirical observations were made.
- 2/10-13/01: Forecast predicted rain to produce 0.25 – 0.50 inch of rainfall, with a 70% probability of occurrence on 2/10/01, and 1 – 2 inches of rainfall, with a 90% probability of occurrence for the second event during 2/12-13/01. The total of both storm events produced 3.24 inches of rainfall. A team was mobilized to perform hydraulic residence time testing, and 2 out of 3 runs were achieved.
- 2/19/01: Forecast predicted rain to produce 0.25 – 0.33 inch of rainfall, with an 80% probability of occurrence. A team was mobilized to perform hydraulic residence time testing, but there was not enough effluent discharge.

Operations and Maintenance

- 12/6/00: Conducted monthly site inspection.
- 12/29/00: Removed trash and weeds greater than 12 inches tall.
- 1/17/01: Conducted monthly/post-storm site inspection.
- 2/5/01: Removed trash and weeds greater than 12 inches tall, and cut vegetation to 6 inches and removed the trimmings.
- 2/7/01: Conducted monthly/post-storm site inspection.
- 2/15/01: Conducted post-storm site inspection.

Vector Activities

None this period.

Issues / Solutions

None this period.

District 11 BMP Pilot Sites

Monitoring Activities Applicable to all sites

During the months of January and February, five storm events were monitored in District 11. Rainfall, percent capture, and sample aliquot numbers are provided in the tables below for each monitored storm event.

During the January 8, 2001 storm event the effluent flow meter at I-5/SR-56 malfunctioned, thus no samples were sent to laboratory for analysis. At all three District 11 bioswales rainfall totals were low and provided insufficient flow for sampling. No significant observations were noted.

Table 1: Event #3 – January 8, 2001

Site	BMP Type	Date of Sampling Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 11									
I-5/SR-56	EDB	1/8/01	0.47	Y	N ¹	N	NA	NA	Y
I-15/SR-78	EDB	1/8/01	0.29	Y	Y	N	>75	>12	Y
I-5/La Costa (West)	IB	1/8/01	0.21	Y	NA	NA	NA	NA	Y
I-5/La Costa (East)	WB	1/8/01	0.21	Y	Y	N	>75	11	Y
I-5/Manchester	EDB	1/8/01	0.32	Y	Y	N	>75	>12	Y
Kearny Mesa MS	StormFilter	1/8/01	0.28	Y	Y	Y	>75	>12	Y
Escondido MS	MF	1/8/01	0.29	Y	Y ²	N	>75	>12	Y
La Costa P & R	MF	1/8/01	0.22	Y	Y	Y	>75	>12	Y
SR-78/I-5 P& R	MF	1/8/01	0.20	Y	Y	N	>75	9	Y
Melrose Ave/SR-78	Bio Swale	1/8/01	0.16	Y	N ³	N	NA	NA	Y
I-5 Palomar Airport Rd	Bio Swale	1/8/01	0.19	Y	N ³	N	NA	NA	Y
Carlsbad MS	Bio Strip	1/8/01	0.20	Y	N ³	N	NA	NA	Y
	Infiltration Trench	1/8/01	0.20	Y	Y	Y	>75	>12	Y

¹ Composite sample not collected due to flow meter failure at effluent

² Influent sample only; insufficient flow at effluent

³ Insufficient flow for sampling

Significant rainfall amounts were encountered during the January 11, 2001, storm event: At I-5/SR-56 water overflowed the outlet riser for a short period of time and Carlsbad infiltration trench overflowed briefly during the storm. Escondido sand filter was not draining after significant rainfall and it was concluded that the media was crusted over. The water backed up the BMP and was observed ponding in the maintenance yard and bypassing the filter. No samples were sent to the laboratory from this site. Palomar swale had influent flow meter problems. The flow meter was replaced during the event; but communication problems with

the new equipment could not be resolved and thus no samples were sent to the laboratory for analysis from this site.

Table 2: Event #4 – January 11, 2001

Site	BMP Type	Date of Sampling Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	No. of Aliquots	Empirical Observations
					Comp	Grab			
District 11									
I-5/SR-56	EDB	1/11/01	2.84	Y	Y	Y	>75	>12	Y
I-15/SR-78	EDB	1/11/01	1.62	Y	Y	Y	>75	>12	Y
I-5/La Costa (West)	IB	1/11/01	1.66	Y	NA	NA	NA	NA	Y
I-5/La Costa (East)	WB	1/11/01	1.69	Y	Y	Y	>75	>12	Y
I-5/Manchester	EDB	1/11/01	2.20	Y	Y	Y	>75	>12	Y
Kearny Mesa MS	StormFilter	1/11/01	2.35	Y	Y	NA	>75	>12	Y
Escondido MS	MF	1/11/01	1.78	Y	N ¹	NA	NA	NA	Y
La Costa P & R	MF	1/11/01	1.64	Y	Y	Y	>75	>12	Y
SR-78/I-5 P& R	MF	1/11/01	1.99	Y	Y	Y	>75	>12	Y
Melrose Ave/SR-78	Bio Swale	1/11/01	1.79	Y	Y	Y	>75	>12	Y
I-5 Palomar Airport Rd	Bio Swale	1/11/01	1.65	Y	N ²	Y	>75	>12	Y
Carlsbad MS	Bio Strip	1/11/01	1.79	Y	Y	Y	>75	>12	Y
	Infiltration Trench	1/11/01	1.79	Y	Y	Y	>75	>12	Y

¹ Sand filter was not draining and backed up BMP

² Composite sample not collected due to flow meter failure at influent

During the January 26, 2001, storm event all sites were successfully sampled and sent to the laboratory for analysis. No significant observations were noted.

Table 3: Event #5 – January 26, 2001

Site	BMP Type	Date of Sampling Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 11									
I-5/SR-56	EDB	1/26/01	0.78	Y	Y	NA	>75	>12	Y
I-15/SR-78	EDB	1/26/01	0.58	Y	Y	NA	>75	>12	Y
I-5/La Costa (West)	IB	1/26/01	0.59	Y	NA	NA	NA	NA	Y
I-5/La Costa (East)	WB	1/26/01	0.60	Y	Y	NA	>75	>12	Y
I-5/Manchester	EDB	1/26/01	0.95	Y	Y	NA	>75	>12	Y
Kearny Mesa MS	StormFilter	1/26/01	0.73	Y	Y	NA	>75	>12	Y
Escondido MS	MF	1/26/01	0.75	Y	Y	NA	>75	>12	Y
La Costa P & R	MF	1/26/01	0.58	Y	Y	NA	>75	>12	Y
SR-78/I-5 P& R	MF	1/26/01	0.55	Y	Y	NA	>75	>12	Y
Melrose Ave/SR-78	Bio Swale	1/26/01	0.93	Y	Y	Y	>75	>12	Y
I-5 Palomar Airport Rd	Bio Swale	1/26/01	0.59	Y	Y	Y	>75	>12	Y
Carlsbad MS	Bio Strip	1/26/01	0.56	Y	Y	N	>75	>12	Y
	Infiltration Trench	1/26/01	0.56	Y	Y	N	>75	>12	Y

The forecast for the February 10, 2001, storm event was for an 80% chance of 0.25 to 0.50 inches of rainfall. All sites were armed remotely and storm crews were put on standby.

Rainfall amounts were minimal at all sites except SR-78/I-5, Escondido MS, and I-15/SR-78. These sites were sampled successfully and composite samples were sent to the laboratory for analysis. Empirical observations were not taken.

Table 4: Event #6 – February 10, 2001									
Site	BMP Type	Date of Sampling Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 11									
I-5/SR-56	EDB	2/10/01	NA	N ¹	N	NA	NA	NA	N
I-15/SR-78	EDB	2/10/01	0.20	N ¹	Y	NA	>75	>12	N
I-5/La Costa (West)	IB	2/10/01	NA	N ¹	NA	NA	NA	NA	N
I-5/La Costa (East)	WB	2/10/01	NA	N ¹	N	NA	NA	NA	N
I-5/Manchester	EDB	2/10/01	NA	N ¹	N	NA	NA	NA	N
Kearny Mesa MS	StormFilter	2/10/01	NA	N ¹	N	NA	NA	NA	N
Escondido MS	MF	2/10/01	0.22	N ¹	Y	N	>75	10 ²	N
La Costa P & R	MF	2/10/01	NA	N ¹	N	NA	NA	NA	N
SR-78/I-5 P & R	MF	2/10/01	0.24	N ¹	Y	NA	>75	>12	N
Melrose Ave/SR-78	Bio Swale	2/10/01	NA	N ¹	N	N	NA	NA	N
I-5 Palomar Airport Rd	Bio Swale	2/10/01	NA	N ¹	N	N	NA	NA	N
Carlsbad MS	Bio Strip	2/10/01	NA	N ¹	N	N	NA	NA	N
	Infiltration Trench	2/10/01	NA	N ¹	N	N	NA	NA	N

¹ Stations were armed remotely and storm crews were on call

² 17 samples at influent; 10 samples at effluent

During the February 12, 2001, storm event the influent sampler at I-5/SR-56 malfunctioned. Composite samples were not sent to the laboratory from this site. All other sites were successfully sampled, and samples were sent to the laboratory for analysis. No significant observations were noted.

Table 5: Event #7 – February 12, 2001									
Site	BMP Type	Date of Sampling Event	Rainfall Total	Mobilized	Sampled		% Storm Capture	Number of Aliquots	Empirical Observations
					Comp	Grab			
District 11									
I-5/SR-56	EDB	2/12/01	NA	Y	N ¹	NA	NA	NA	N
I-15/SR-78	EDB	2/12/01	1.10	Y	Y	NA	>75	>12	Y
I-5/La Costa (West)	IB	2/12/01	1.52	Y	NA	NA	NA	NA	Y
I-5/La Costa (East)	WB	2/12/01	1.54	Y	Y	NA	>75	>12	Y
I-5/Manchester	EDB	2/12/01	0.94	Y	Y	NA	>75	>12	Y
Kearny Mesa MS	StormFilter	2/12/01	1.20	Y	Y	NA	>75	>12	Y
Escondido MS	MF	2/12/01	1.19	Y	Y	Y	>75	>12	Y
La Costa P & R	MF	2/12/01	1.48	Y	Y	NA	>75	>12	Y
SR-78/I-5 P & R	MF	2/12/01	1.97	Y	Y	NA	>75	>12	Y
Melrose Ave/SR-78	Bio Swale	2/12/01	1.71	Y	Y	Y	>75	>12	Y
I-5 Palomar Airport Rd	Bio Swale	2/12/01	1.83	Y	Y	Y	>75	>12	Y
Carlsbad MS	Bio Strip	2/12/01	1.58	Y	Y	Y	>75	>12	Y
	Infiltration Trench	2/12/01	1.58	Y	Y	Y	>75	>12	Y

¹ Composite sample not collected due to sampler failure at influent

Maintenance Activities Applicable to all sites

None this period.

Vector Activities Applicable to all sites

11/27/00, 12/5/00, 12/11/00, 12/18/00, 12/27/00, 1/2/01, 1/8/01, 1/16/01, 1/22/01, 1/30/01, 2/5/01, and 2/12/01: County of San Diego Vector Control performed inspections.

I-5/SR-56 Extended Detention Basin (Site ID 111101)

Monitoring/Sampling Activities

- 12/11/00: Effluent monitoring equipment was flow tested to verify accuracy.
- 1/8/01: National Weather Service (NWS) forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.47 inches of rainfall. Composite samples were not sent to the laboratory due to a flow meter failure at the effluent.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 2.84 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.78 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.21 inches of rainfall. Composite samples were not collected due to a sampler failure at the effluent.

Operations and Maintenance

- 12/4/00: Conducted monthly site inspection; removed trash and debris.
- 1/3/01 and 2/2/01: Conducted monthly site inspection.
- 1/9/01, 1/14/01, and 1/28/01: Conducted post-storm site inspections.

Vector Activities

- 11/21/00: Mosquito breeding noted in the standing water in both riprap areas.
- 11/27/00: Mosquito breeding noted in the standing water in both riprap areas.

Both areas abated with less than one ounce of Altosid pellets.

12/27/00 and 1/2/01: Mosquito breeding was noted in the one to two square feet of standing water in the first riprap area.

2/12/01: Standing water was observed in both riprap areas. Mosquito breeding was noted in the first area only.

Issues / Solutions

None this period.

SR-78/I-15 Extended Detention Basin (Site ID 111102)

Monitoring/Sampling Activities

12/5/00: Effluent monitoring equipment was flow tested to verify accuracy.

1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.29 inches of rainfall. Composite samples were sent to the laboratory for analysis.

1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.62 inches of rainfall. Composite samples were sent to the laboratory for analysis.

1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.58 inches of rainfall. Composite samples were sent to the laboratory for analysis.

2/10/01: NWS forecast predicted 80% chance of 0.25 to 0.50 inches of rain. Monitoring crews were put on standby and stations were armed. The storm event produced 0.20 inches of rainfall. Composite samples were sent to the laboratory for analysis.

2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.10 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

12/5/00: Conducted monthly site inspection; removed trash and debris.

11/28/00, 1/3/01, and 2/1/01: Conducted monthly site inspection.

1/10/01, 1/15/01, and 1/28/01: Conducted post-storm site inspections.

Vector Activities

None this period.

Issues / Solutions

None this period.

I-5/La Costa Avenue Infiltration Basin (Site ID 111103)

Monitoring/Sampling Activities

- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.21 inches of rainfall. Empirical observations were made.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.66 inches of rainfall. Empirical observations were made.
- 1/16/01: Groundwater well monitoring was conducted.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.59 inches of rainfall. Empirical observations were made.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.52 inches of rainfall. Empirical observations were made.

Operations and Maintenance

- 12/5/01: Trash and debris were removed from the site.
- 1/3/01 and 2/2/01: Conducted monthly site inspection.
- 1/9/01, 1/14/01, 1/26/01, and 2/16/01: Conducted post-storm site inspections.
- 2/5/01: Crews reinforced netting support poles.

Vector Activities

November 13, 21, 27, December 5, 11, 18, 27, January 2, 22, February 12: Breeding observed in the basin. 12/5/00: Site abated with Altosid pellets.

Issues / Solutions

None this period.

I-5/La Costa Wet Basin (Site ID 111104)

Monitoring/Sampling Activities

- 11/30/00: Influent monitoring equipment was flow tested to verify accuracy.
- 12/4/01, 1/2/01, and 2/5/01: The monthly paired 48-hour time weighted composite baseline sampling (at the 6 inch inlet pipe from the trapezoidal channel and at the wet basin effluent) was conducted
- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.21 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.69 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.60 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.54 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 12/4/00: Conducted monthly site inspection; removed trash and debris.
- 1/2/01, and 2/2/01: Conducted monthly site inspection.
- 1/9/01, 1/14/01, 1/28/01, and 2/16/01: Conducted post-storm site inspections.
- 1/24/01, 1/30/01 and 2/8/01: The sandbag dam in the trapezoidal channel was re-built.

Vector Activities

December 11, 27, January 22, 30: Mosquito breeding was noted in the basin.

Issues / Solutions

None this period.

I-5/Manchester Avenue Extended Detention Basin (Site ID 111105)

Monitoring/Sampling Activities

- 12/11/00: Effluent monitoring equipment was flow tested to verify accuracy.

- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.32 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 2.20 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.95 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 0.94 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

12/4/00 and 1/3/01: Conducted monthly site inspection; removed trash and debris.

2/2/01: Conducted monthly site inspection.

1/16/01, and 1/30/01, 2/14/01: Conducted post-storm site inspections.

Vector Activities

None this period.

Issues/Solutions

None this period.

Kearny Mesa Maintenance Station StormFilter - Perlite/Zeolite (Site ID 112201)

Monitoring/Sampling Activities

12/5/00: Influent and effluent monitoring equipment was flow tested to verify accuracy.

1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.28 inches of rainfall. Composite samples were sent to the laboratory for analysis.

- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 2.35 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.73 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.20 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

12/4/00, 1/3/01, and 2/2/01: Conducted monthly site inspection.

1/9/01, 1/12/01, 1/27/01, and 2/14/01: Conducted post-storm site inspections.

Vector Activities

11/27/00, 12/5/00, 12/11/00, 12/18/00, 1/2/01, 1/8/01, and 1/22/01: Mosquito breeding was noted in the spreader trough of the third basin.

12/5/00: Site was abated with Altosid pellets.

12/27/00: There was standing water in the spreader through of all three basins and in the presedimentation chamber. Mosquito breeding was noted in the presedimentation chamber and in the spreader trough of the third basin.

1/16/01: There was standing water in the spreader through of all three basins and in the presedimentation chamber. No mosquito breeding was noted but raccoon tracks were noted in all three basins.

Issues / Solutions

None this period.

Escondido Maintenance Station Media Filter - Sand (Site ID 112202)

Monitoring/Sampling Activities

12/7/00: Influent and effluent monitoring equipment was flow tested to verify accuracy.

1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.29 inches of rainfall. Due to insufficient flow, composite samples were collected at the influent only and thus no samples were sent to the laboratory for analysis.

- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.78 inches of rainfall. The sand filter media was crusted over and the BMP would not drain. No composite samples were sent to the laboratory.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.75 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.19 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 12/5/00, 1/3/01, and 2/1/01: Conducted monthly site inspection.
- 1/10/01, 1/15/01, 1/27/01, and 2/14/01: Conducted post-storm site inspections.
- 1/19/01: Influent monitoring pad was cut to alleviate ponding water in maintenance yard when BMP bypass occurs.
- 1/22/01: Core samples were taken from the sand filter.
- 1/23/01: The top two inches of sand were removed from the filter bed. The sand was then stockpiled on site in accordance with OMM procedures. Two-inch layer of was replaced with washed sand.

Vector Activities

- 11/21/00: Mosquito breeding was noted in the sedimentation basin.
- 12/27/00: One mosquito larva found in the 0.5-inches of standing water in the sedimentation basin

Issues / Solutions

Replacement of top 2 inches (on 1/23/01) of soil returned sand filter drain-time to within acceptable range.

La Costa Park and Ride Media Filter - Sand (Site ID 112203)

Monitoring/Sampling Activities

- 11/29/01: Influent monitoring equipment was flow tested to verify accuracy.
- 12/8/00: Effluent monitoring equipment was flow tested to verify accuracy.

- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.22 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.64 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.58 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.48 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 11/29/01, 1/30/01, and 2/20/01: Sediment was cleared from influent channel.
- 12/4/00: Conducted monthly site inspection; removed trash and debris.
- 1/2/01, and 2/2/01: Conducted monthly site inspection.
- 1/9/01, 1/16/01, 1/29/01, and 2/20/01: Conducted post-storm site inspections.

Vector Activities

- 11/13/01, 12/11/00, 12/18/00, 12/27/00, 1/2/01, 1/8/01, 1/22/01, and 2/5/01: Mosquito breeding was observed in the three small depressions in the spreader trough.
- 11/21/01, and 11/27/01: Mosquito breeding was observed in the center depression in the spreader trough.

Issues / Solutions

None this period.

SR-78/I-5 Park and Ride Media Filter - Sand (Site ID 112204)

Monitoring/Sampling Activities

- 11/30/00: Influent monitoring equipment was flow tested to verify accuracy.
- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.20 inches of rainfall. Composite samples were sent to the laboratory for analysis.

- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.99 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.55 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/10/01: NWS forecast predicted 80% chance of 0.25 to 0.50 inches of rain. Monitoring crews were put on standby and stations were armed. The storm event produced 0.24 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.97 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 12/5/00: Conducted monthly site inspection; removed trash and debris.
- 1/2/01, and 2/1/01: Conducted monthly site inspection.
- 1/10/01, 1/16/01, 1/29/01, 2/11/01, and 2/14/01: Conducted post-storm site inspections.

Vector Activities

- 11/21/00, 11/27/00, 12/18/00, and 1/16/01: Mosquito breeding was noted in the three small depressions in the spreader trough.
- 12/5/00: Minor mosquito breeding noted in standing water covering 50% of the sedimentation basin. Significant mosquito breeding noted in the small depressions in the spreader trough. Sedimentation basin and spreader trough abated with Altosid pellets.
- 12/11/00, 1/2/01, and 1/22/01: Mosquito breeding noted in the standing water covering 25% of the surface of the sedimentation basin and in the standing water in the three small depressions in the spreader trough.
- 1/8/01: Mosquito breeding noted in the standing water covering 25% of the surface of the sedimentation basin and in the standing water in the three small depressions in the spreader trough. Two first instar Anopheles sp. Larvae were also found in the sedimentation basin.
- 1/8/01: Mosquito breeding noted in the standing water covering 40% of the surface of the sedimentation basin and in the standing water in the three small depressions in the spreader trough.

Issues / Solutions

None this period.

Melrose Ave/SR-78 Bio Swale (Site ID 112205)

Monitoring/Sampling Activities

- 12/12/00: Effluent monitoring equipment was flow tested to verify accuracy.
- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.16 inches of rainfall. There was insufficient flow for sampling.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.79 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.93 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.71 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 11/29/00: Cleared sediment and debris from effluent channel.
- 12/5/00 and 1/3/01: Conducted monthly site inspection; removed trash and debris.
- 1/30/01: Removed sediment from influent channel.
- 2/1/01: Conducted monthly site inspection.
- 1/9/01, 1/15/01, 1/27/01, 2/20/01, and 2/14/01: Conducted post-storm site inspections.

Vector Activities

None this period.

Issues / Solutions

None this period.

I-5 Palomar Airport Biofiltration Swale (Site ID 112206)

Monitoring/Sampling Activities

- 12/12/00: Effluent monitoring equipment was flow-tested to verify accuracy.

- 1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.19 inches of rainfall. There was insufficient flow for sampling.
- 1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.65 inches of rainfall. Composite samples were sent to the laboratory due to a flow meter failure at the influent.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.59 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.83 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operation and Maintenance

12/5/00 and 1/2/01: Conducted monthly site inspection; removed trash and debris.

1/9/01, 1/17/01, 1/27/01, and 2/14/01: Conducted post-storm site inspections.

1/30/01: Gopher holes were collapsed.

Vector Activities

None this period.

Issues / Solutions

None this period.

Carlsbad Maintenance Station Bio Strip Infiltration Trench (Site ID 112207)

Monitoring/Sampling Activities

12/8/00: Effluent monitoring equipment was flow tested to verify accuracy.

12/12/00: Influent monitoring equipment was flow tested to verify accuracy.

1/8/01: NWS forecast predicted 60% chance of 0.25 inches of rain. Monitoring crews were mobilized. The storm event produced 0.20 inches of rainfall. There was insufficient flow for sampling.

1/11/01: NWS forecast predicted 100% chance of 1.0 to 3.0 inches of rain. Monitoring crews were mobilized. The storm event produced 1.79 inches of rainfall. Composite samples were sent to the laboratory for analysis.

1/14/01: Vadose zone sampling was conducted. A vacuum was applied for 24-hours, but no sample was produced.

- 1/17/01: Groundwater well monitoring was conducted.
- 1/26/01: NWS forecast predicted 80% chance of 0.50 to 1.0 inches of rain. Monitoring crews were mobilized. The storm event produced 0.56 inches of rainfall. Composite samples were sent to the laboratory for analysis.
- 2/12/01: NWS forecast predicted 100% chance of 1.0 to 1.5 inches of rain. Monitoring crews were mobilized. The storm event produced 1.58 inches of rainfall. Composite samples were sent to the laboratory for analysis.

Operations and Maintenance

- 12/5/00 and 1/3/01: Conducted monthly site inspection.
- 1/9/01, 1/17/01, and 2/14/01: Conducted post-storm site inspections.

Vector Activities

None this period.

Issues / Solutions

None this period.

Summary of Target and Successfully Sampled Storms Per Site

Location	BMP Type	Monitoring Consultant	Operational (yes/no)	Operational Date	Target Number of Storms	Successfully Sampled Storms ^{1,4} (PRELIMINARY)			
						1998-1999	1999-2000	2000-2001	Total to Date
District 7									
I-605/SR-91	IB	MW/Law	Yes	4/9/99	4	0	8 ³	6 ³	14 ³
I-210 East of Orcas	CDS	MW/Law	Yes	8/10/00	8	0	0	1	1
I-210 East of Filmore	CDS	MW/Law	Yes	8/10/00	8	0	0	4	4
I-5/I-605	EDB	MW/Law	Yes	2/26/99	10	2	4	5	11
I-605/SR-91	EDB	MW/Law	Yes	2/22/99	10	3	3	4 ⁶	10
Paxton P & R	MF	MW/Law	No	5/21/01 ²	8	0	0	0	0
Metro MS	MCTT	MW/Law	No	5/21/01 ²	8	0	0	0	0
Alameda MS	OWS	MW/Law	Yes	5/17/99	8	0	4	5	9
Eastern MS	MF	MW/Law	Yes	2/15/99	8	1	4	3	8
Foothill MS	MF	MW/Law	Yes	3/8/99	8	2	4	3	9
Termination P & R	MF	MW/Law	Yes	5/17/99	8	0	4	3	7
Via Verde P & R	MCTT	MW/Law	Yes	5/17/99	8	0	4	2	6
Lakewood P & R	MCTT	MW/Law	Yes	5/17/99	8	0	4	6	10
Altadena	Bio Strip	MW/Law	Yes	10/1/99	8	0	6 ⁸	4	10
	Infiltration Trench	MW/Law	Yes	10/1/99	8	0	6 ³	5 ³	11 ³
Foothill MS	DII north- SG Insert	MW/Law	Yes	1/22/99	8	0 ⁷	7	4	11
	DII south- FF Insert	MW/Law	Yes	1/22/99	8	0 ⁷	7	4	11
Las Flores MS	DII north-SG Insert	MW/Law	Yes	1/22/99	8	0 ⁷	5	4	9
	DII south-FF Insert	MW/Law	Yes	1/22/99	8	0 ⁷	5	5	10
Rosemead MS	DII north-FF Insert	MW/Law	Yes	1/22/99	8	0 ⁷	5	5 ⁵	10
	DII south-SG Insert	MW/Law	Yes	1/22/99	8	0 ⁷	5	5	10
I-605/SR-91	Bio Strip	MW/Law	Yes	10/1/99	8	0	3 ⁶	4 ⁶	7
	Bio Swale	MW/Law	Yes	10/1/99	8	0	3 ⁶	5 ¹⁰	8
Cerritos MS	Bio Swale	MW/Law	Yes	10/1/99	8	0	4	5 ⁶	9
I-5/I-605	Bio Swale	MW/Law	Yes	10/1/99	8	0	4	4	8
I-605/ Del Amo	Bio Swale	MW/Law	Yes	10/1/99	8	0	2	5 ⁶	7
District 11									
I-5/SR-56	EDB	KLI	Yes	1/24/99	12	5	5	3	13
I-15/SR-78	EDB	KLI	Yes	1/24/99	12	4	5	6	15
I-5/La Costa (West)	IB	KLI	Yes	1/24/99	12	8 ³	13 ³	5 ³	26 ³
I-5/La Costa (East)	WB	KLI	Yes	10/1/99	8	0	5	4	9
I-5/Manchester (East)	EDB	KLI	Yes	10/1/99	8	0	4	6	10
Kearney Mesa MS	StormFilter	KLI	Yes	10/1/99	12	3	6	5	14
Escondido MS	MF	KLI	Yes	2/16/99	12	3	5	4	12
La Costa P & R	MF	KLI	Yes	2/16/99	12	3	5	4	12
SR-78/I-5 P& R	MF	KLI	Yes	2/26/99	12	2	6	7	15
Melrose Ave/SR-78	Bio Swale	KLI	Yes	3/1/99	12	0	2 ⁹	5 ¹⁰	7
I-5 Palomar Airport Rd	Bio Swale	KLI	Yes	10/1/99	12	0	3 ⁶	2	5
Carlsbad MS	Bio Strip	KLI	Yes	10/1/99	12	0	3	4	7
	Infiltration Trench	KLI	Yes	10/1/99	12	8 ³	11 ³	6 ³	25 ³

¹All 1998-1999 DII data in question. A criteria for acceptance has been established. 1998-1999 Data will be reviewed at the end of the year (2000).

²Subject to schedule update

³Empirical Observations and runoff testing from influent only. No runoff effluent; groundwater or vadose zone samples only.

⁴All Stormwater sampling will terminate at the end of the defined monitoring season – Spring 2001

⁵Subject to review: first sample of the season did not meet minimum number of aliquots but did meet percent storm capture

⁶During one storm, influent sample collected; no effluent flow, thus no effluent sampled.

⁷1998/1999 DII data was disqualified

⁸Subject to review: did not meet minimum number of aliquots but did meet percent storm capture

⁹Influent samples collected; no effluent flow, thus no effluent sampled.

¹⁰During two storms, influent samples collected; no effluent flow, thus no effluent sampled.

NOTE: Storm totals do not include results of February 19, 2001, event.

OMM PLAN ACTIVITIES

Maintenance Indicator Document

During the past quarter, changes were made to the Maintenance Indicator Document (MID). Recent changes to the MID pertain to hydroseeding of EDBs, infiltration basins, biofiltration strips, and swales. It was agreed that the wording in the MID be changed to, "If after two applications (2 seasons) of reseeding/replanting and growth is unsuccessful both times, an erosion blanket will be installed along bare areas. No erosion blanket will be installed within areas where major maintenance will be performed, i.e. detention basin invert."

Database

The OMM Database is updated monthly and posted on the www.rbf.com/caltrans web site. Data collected during inspections, maintenance, empirical observations, and preliminary analytical data is posted on the web site. The database incorporates data through the month of January 2001. **Appendix C** provides an overview of the data collected during empirical observations.

O&M Cost

Cumulative operation and maintenance cost and hours are tracked as part of the program. Costs from October through December 2000 are included in **Appendix B** of this document. Summary sheets are provided with costs sorted by BMP types as well as by Districts

VECTOR ACTIVITIES

Summary of vector activities from November 22, 2000 through February 23, 2001.

DISTRICT 7

San Gabriel Valley Mosquito & Vector Control District

Monitoring

Breeding was observed at the following sites:

12/8/00 – Sedimentation chamber of the Via Verde P&R MCTT (Site #74206)
monitoring flume located near the Rosemead DII (Site #73218).

Abatement

12/8/00 - Sedimentation chamber of the Via Verde P&R MCTT (Site #74206) treated
with Altosid pellets.

Monitoring flume located near the Rosemead DII (Site #73218) treated with
Altosid liquid.

Greater Los Angeles County Vector Control District

Monitoring

Breeding was observed at the following sites:

11/22/00 – CDS unit at I-210 / East of Orcas (Site #73102)
Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

12/1/00 - CDS unit at I-210 / East of Orcas (Site #73102)

Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

12/8/00 - CDS unit at I-210 / East of Orcas (Site #73102)
Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

12/15/00 - CDS unit at I-210 / East of Orcas (Site #73102)
Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

12/22/00 - Outlet sump of I-5 / I-605 EDB (Site #74101)

12/28/00 - Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

1/4/01 - Outlet sump of I-5 / I-605 EDB (Site #74101)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

1/18/01 – Sedimentation chamber of Termination P&R Media Filter (Site #74204)
Sedimentation chamber of Lakewood P&R MCTT (Site #74208)

Abatement

11/22/00 - CDS unit at I-210 / East of Orcas (Site #73102) treated with Altosid liquid.
Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with
Altosid liquid.

- 12/1/00 - CDS unit at I-210 / East of Orcas (Site #73102) treated with Altosid liquid.
Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.
- 12/8/00 - CDS unit at I-210 / East of Orcas (Site #73102) treated with Altosid liquid.
Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.
- 12/15/00 - CDS unit at I-210 / East of Orcas (Site #73102) treated with Altosid liquid.
Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.
- 12/22/00 - Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
- 12/28/00 - Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.
- 1/4/01 - Outlet sump of I-5 / I-605 EDB (Site #74101) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.
- 1/18/01 - Sedimentation chamber of Termination P&R Media Filter (Site #74204) treated with Altosid liquid.
Sedimentation chamber of Lakewood P&R MCTT (Site #74208) treated with Altosid liquid.

Los Angeles County West Vector Control District

Monitoring

No sites were found breeding at this time.

Abatement

No abatement carried out during this time period.

DISTRICT 11

County of San Diego Vector Surveillance and Control

Monitoring

Breeding was observed at the following sites:

11/13/00 – The EDB at I-5 / SR-56 (Site #111101)

Spreader trough of the media filter at La Costa P&R (Site #112203)

The IB at La Costa (Site #111103)

11/21/00 - The EDB at I-5 / SR-56 (Site #111101)

Spreader trough of the media filter at La Costa P&R (Site #112203)

The IB at La Costa (Site #111103)

Spreader trough of media filter at SR-78 / I-5 P&R (Site #112204)

Sedimentation chamber of media filter at Escondido MS (Site #112202)

11/27/00 – StormFilter at Kearney Mesa MS (Site #112201)

The EDB at I-5 / SR-56 (Site #111101)

Spreader trough of the media filter at La Costa P&R (Site #112203)

The IB at La Costa (Site #111103)

Spreader trough of media filter at SR-78 / I-5 P&R (Site #112204)

12/5/00 - StormFilter at Kearney Mesa MS (Site #112201)

The IB at La Costa (Site #111103)

Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R

(Site #112204)

- 12/11/00 - StormFilter at Kearney Mesa MS (Site #112201)
 Spreader trough of the media filter at La Costa P&R (Site #112203)
 The WB at La Costa (Site #111104)
 The IB at La Costa (Site #111103)
 Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
 (Site #112204)
- 12/18/00 - StormFilter at Kearney Mesa MS (Site #112201)
 Spreader trough of the media filter at La Costa P&R (Site #112203)
 The IB at La Costa (Site #111103)
 Spreader trough of media filter at SR-78 / I-5 P&R (Site #112204)
- 12/27/00 - StormFilter at Kearney Mesa MS (Site #112201)
 The EDB at I-5 / SR-56 (Site #111101)
 Spreader trough of the media filter at La Costa P&R (Site #112203)
 The WB at La Costa (Site #111104)
 The IB at La Costa (Site #111103)
 Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
 (Site #112204)
 Sedimentation chamber of media filter at Escondido MS (Site #112202)
- 1/02/01 - StormFilter at Kearney Mesa MS (Site #112201)
 The EDB at I-5 / SR-56 (Site #111101)
 Spreader trough of the media filter at La Costa P&R (Site #112203)
 The IB at La Costa (Site #111103)
 Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
 (Site #112204)
- 1/08/01 - StormFilter at Kearney Mesa MS (Site #112201)
 Spreader trough of the media filter at La Costa P&R (Site #112203)
 Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
 (Site #112204)
- 1/16/01 - Spreader trough of media filter at SR-78 / I-5 P&R (Site #112204)
- 1/22/01 - StormFilter at Kearney Mesa MS (Site #112201)
 Spreader trough of the media filter at La Costa P&R (Site #112203)

The WB at La Costa (Site #111104)

The IB at La Costa (Site #111103)

Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
(Site #112204)

1/30/01 - Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
(Site #112204)

2/05/01 - Spreader trough of the media filter at La Costa P&R (Site #112203)

2/12/01 - The EDB at I-5 / SR-56 (Site #111101)

The IB at La Costa (Site #111103)

Abatement

11/27/00 - The EDB at I-5 / SR-56 (Site #111101) treated with Altosid pellets.

12/5/00 - StormFilter at Kearney Mesa MS (Site #112201) treated with Altosid pellets.

The IB at La Costa (Site #111103) treated with Altosid pellets.

Sedimentation chamber and spreader trough of media filter at I-5 / SR-78 P&R
(Site #112204) treated with Altosid pellets.

DEPARTMENT OF HEALTH SERVICES

Out-of-State Survey

Work continues on the supplemental out of state survey, as well as the vector breeding design review. Due to the lack of responses from certain agencies, DHS has requested and received an extension deadline of April 30, 2001 for the out of state survey report. As an additional supplement to the out of state survey report, DHS submitted a travel request to Caltrans in regards to visiting cities outside of California where vector control agencies have experience with storm water management structures. Consequently, a visit to Portland, Oregon will be made in early March. A presentation is planned for the Quarterly meeting to document the trip's events.

Vector Database

The DHS vector database reports have been updated for this quarter and are available via the RBF website.

MCTT Monitoring and “Mosquito-Proofing”

In response to Bob Pitt’s recommendations for the MCTT sites, DHS, in association with the Greater Los Angeles County Vector Control District, has assisted Brown and Caldwell and Law Crandall in attempting to mosquito proof the MCTT at the Lakewood P&R.

Construction and installation of the aluminum covers terminated the week of February 19, 2001.

CDS Monitoring and “Mosquito Proofing”

On November 9, 2000, a mosquito screen was installed on the downstream portion of the CDS unit. Additionally, Law Crandall sealed all holes and eliminated the gaps between the lids and the weir box and sump. In the following months, it was noted that no new entry of larvae were found in the devices, although residual larvae prior to installment of the screen bag were abated for continued safety. By late December, GLACVCD determined that the screen bags were effective at preventing entry of mosquitoes. Unfortunately, because the mosquito-proofing screen mesh bag was found to impede flow through the CDS devices, it was decided that the ends of the bags would be cut off and weighted down to prevent entry of mosquitoes.

EDB Monitoring and “Mosquito Proofing”

Standing water at the I-5 / I-605 EDB sump has persisted consistently throughout this wet season. To alleviate the breeding problem, on February 2, 2001, work to retrofit the sump was completed. Details include core hole drilling the outlet sump, installing stainless steel orifice plates, and grouting the sump. To date, it appears to be draining well; no sign of vector breeding has been found.

Sites Monitored by Vector Control District

Location	BMP Type	Monitor Consultant	Vector Control District	Activities
DISTRICT 7				
I-605/SR-91	IB	MW/Law	GLACVCD	None this period.
I-210 East of Orcas	CDS	MW/Law	GLACVCD	None this period.
I-210 East of Filmore	CDS	MW/Law	GLACVCD	None this period.
I-5/I-605	EDB	MW/Law	GLACVCD	November 22: Breeding observed. Abated with Altosid liquid December 1: Breeding observed. Abated with Altosid liquid December 8: Breeding observed. Abated with Altosid liquid December 15: Breeding observed. Abated with Altosid liquid December 22: Breeding observed. Abated with Altosid liquid December 28: Breeding observed. Abated with Altosid liquid January 4: Breeding observed. Abated with Altosid liquid.
I-605/SR-91	EDB	MW/Law	GLACVCD	None this period.
Paxton Park & Ride	MF	MW/Law	GLACVCD	N/A
Metro MS	MCTT	MW/Law	GLACVCD	N/A
Alameda MS	OWS	MW/Law	GLACVCD	None this period.
Eastern MS	MF	MW/Law	GLACVCD	None this period.
Foothill MS	MF	MW/Law	SGVVCD	None this period.
Termination Park & Ride	MF	MW/Law	GLACVCD	January 18: Breeding observed; abated with Altosid liquid.
Via Verde Park & Ride	MCTT	MW/Law	SGVVCD	December 8: Breeding observed. Abated with Altosid pellets.
Lakewood Park & Ride	MCTT	MW/Law	GLACVCD	November 22: Breeding observed. Abated with Altosid liquid December 1: Breeding observed. Abated with Altosid liquid December 8: Breeding observed. Abated with Altosid liquid December 15: Breeding observed. Abated with Altosid liquid December 28: Abated with Altosid liquid January 4: Breeding observed. Abated with Altosid liquid January 18: Breeding observed; abated with Altosid liquid.
Altadena	Bio Strip/IT	MW/Law	GLACVCD	None this period.
Foothill	DII	MW/Law	SGVVCD	None this period
Las Flores	DII	MW/Law	LA Co West	None this period.
Rosemead	DII	MW/Law	SGVVCD	None this period.
I-605/SR-91	Bio Strip/Swale	MW/Law	GLACVCD	None this period.
Cerritos MS	BioSwale	MW/Law	GLACVCD	None this period.
I-5/I-605	BioSwale	MW/Law	GLACVCD	None this period.

Location	BMP Type	Monitor Consultant	Vector Control District	Activities
I-605/ Del Amo	BioSwale	MW/Law	GLACVCD	None this period.
DISTRICT 11				
I-5/SR-56	EDB	KLI	SD Co VC	November 13: Breeding observed November 21: Breeding observed November 27: Breeding observed December 27: Breeding observed January 2: Breeding observed February 12: Breeding observed
I-15/SR-78	EDB	KLI	SD Co VC	None this period.
I-5/La Costa (West)	IB	KLI	SD Co VC	November 13: Breeding observed November 21: Breeding observed November 27: Breeding observed December 5: Breeding observed December 11: Breeding observed December 18: Breeding observed December 27: Breeding observed January 2: Breeding observed January 22: Breeding observed February 12: Breeding observed
I-5/La Costa (East)	WB	KLI	SD Co VC	December 11: Breeding observed December 27: Breeding observed January 22: Breeding observed
I-5/Manchester (East)	EDB	KLI	SD Co VC	None this period.
Kearny Mesa MS	StormFilter (Perlite/Zeolite)	KLI	SD Co VC	November 27: Breeding observed December 5: Breeding observed December 11: Breeding observed December 18: Breeding observed December 27: Breeding observed January 2: Breeding observed January 8: Breeding observed January 22: Breeding observed
Escondido MS	MF	KLI	SD Co VC	December 27: Breeding observed
La Costa Park & Ride	MF	KLI	SD Co VC	November 13: Breeding observed November 21: Breeding observed November 27: Breeding observed December 11: Breeding observed December 18: Breeding observed December 27: Breeding observed January 2: Breeding observed January 8: Breeding observed

Location	BMP Type	Monitor Consultant	Vector Control District	Activities
				January 22: Breeding observed Feb ruary 5: Breeding observed
SR-78/I-5 Park & Ride	MF	KLI	SD Co VC	November 21: Breeding observed November 27: Breeding observed December 5: Breeding observed December 11: Breeding observed December 18: Breeding observed December 27: Breeding observed January 2: Breeding observed January 8: Breeding observed January 16: Breeding observed January 22: Breeding observed January 30: Breeding observed
Melrose Ave/SR-78	Bio Swale	KLI	SD Co VC	None this period.
I-5 Palomar Airport Road	Bio Swale	KLI	SD Co VC	None this period.
Carlsbad MS	Bio Strip/IT	KLI	SD Co VC	None this period.

ENVIRONMENTAL INFORMATION

Dudek and Associates, Inc., surveyed the BMPs in late November, early and late December 2000, early and late January and early February 2001. The surveys consisted of reviewing the sites for potential endangered, threatened, or sensitive species issues. Conditions reviewed included presence of water and presence of nesting birds or suitable habitat.

Standing water was consistently present at the La Costa Wet Basin and La Costa Infiltration Basin during this monitoring period. Additionally, standing water was present at the I-5/SR Media Filter during the November visit; and at the SR-56/I-5 Extended Detention Basin during the January visit.

Nesting birds were not detected during the surveys. It is recommended that the net exclusion devices be reinstalled at the media filters with the onset of the breeding season (February 15).

The trapping of pocket gophers was discontinued at all sites per the May 10, 2000, conference call. No trapping activities were conducted by Dudek during this reporting period.

It should be noted that mitigation/maintenance of the BMP facilities will continue according to the previously agreed to Maintenance Indicator Document (MID).

No nesting birds or sensitive species were observed in residence at any BMP site during this quarterly that would preclude schedule maintenance. Monthly surveys will continue during the spring and summer.

Monthly Survey reports are provided in Appendix D of this document.

WEATHER

Precipitation data for Los Angeles and San Diego were obtained from NOAA. Precipitation data since the beginning of the 1999-2000 and 2000-2001 seasons is for two gages in Los Angeles and two gages in San Diego is provided below.

The data presented here is for reference only. The actual rainfall at individual BMP sites will vary from the values given in the table. The data presented above for Los Angeles is as of 4:00 p.m. for the preceding 24 hours on the date indicated. For San Diego, the data is as of 5:00 p.m. for the preceding 24 hours.

<i>December 1999</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.03	25	0.00	10	0.03	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>January 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.12	16	0.00	1	0.28	16	0.03
2	0.00	17	0.02	2	0.04	17	Trace
3	0.00	18	0.01	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.02	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.42	10	0.00	25	Trace
11	0.00	26	0.14	11	0.00	26	0.03
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.03	15	0.00	30	Trace
		31	0.21			31	0.08

February 2000							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.58	1	0.00	16	0.07
2	0.00	17	0.08	2	0.00	17	0.14
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.29	5	0.02	20	0.33
6	0.00	21	1.63	6	0.00	21	1.19
7	0.00	22	0.00	7	0.00	22	0.58
8	0.00	23	1.09	8	Trace	23	0.08
9	0.00	24	0.00	9	0.00	24	0.63
10	0.41	25	0.00	10	0.03	25	0.00
11	0.12	26	0.00	11	0.09	26	0.00
12	0.62	27	0.24	12	0.39	27	Trace
13	0.26	28	0.00	13	0.06	28	Trace
14	0.44	29	0.00	14	0.06	29	0.00
15	0.00			15	0.00		

March 2000							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.04	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.01	18	0.00	3	0.01	18	0.00
4	0.27	19	0.00	4	Trace	19	0.00
5	1.78	20	0.00	5	0.65	20	0.10
6	0.04	21	0.00	6	0.08	21	0.00
7	0.00	22	0.00	7	0.05	22	0.00
8	0.71	23	0.00	8	0.06	23	0.00
9	0.01	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	Trace
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

April 2000							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	1.03	2	0.00	17	0.02
3	0.00	18	0.46	3	0.00	18	0.46
4	0.00	19	0.00	4	0.00	19	0.01
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	Trace
7	0.00	22	0.00	7	0.00	22	0.01
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.04	30	0.00

<i>May 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	Trace	23	Trace
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	Trace
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>June 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	Trace
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	Trace
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00

<i>July 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>August 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	Trace	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.07	14	0.00	29	0.01
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>September 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	Trace	22	0.00
8	0.00	23	0.15	8	0.00	23	Trace
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00

<i>October 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.01	20	0.00
6	0.00	21	0.00	6	0.06	21	0.01
7	0.00	22	0.00	7	0.01	22	Trace
8	0.00	23	0.00	8	0.00	23	Trace
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.04	25	0.00
11	0.12	26	0.07	11	0.05	26	Trace
12	0.12	27	0.25	12	Trace	27	0.38
13	0.00	28	0.01	13	0.00	28	0.17
14	0.00	29	0.07	14	0.00	29	0.00
15	0.00	30	0.53	15	0.00	30	0.51
		31	0.00			31	0.00

<i>November 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	Trace	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	Trace	24	0.00
10	0.00	25	0.00	10	0.04	25	0.00
11	0.00	26	0.00	11	0.22	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	Trace	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00

<i>December 2000</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.00	20	0.00
6	0.00	21	0.00	6	0.00	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.00	23	0.00
9	0.00	24	0.00	9	0.00	24	0.00
10	0.00	25	0.00	10	0.00	25	0.00
11	0.00	26	0.00	11	0.00	26	0.00
12	0.00	27	0.00	12	0.00	27	0.00
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>January 2001</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	Trace
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.00	3	0.00	18	0.00
4	0.00	19	0.00	4	0.00	19	0.00
5	0.00	20	0.00	5	0.01	20	0.00
6	0.00	21	0.00	6	Trace	21	0.00
7	0.00	22	0.00	7	0.00	22	0.00
8	0.00	23	0.00	8	0.29	23	0.00
9	0.01	24	0.30	9	0.36	24	0.06
10	0.21	25	0.00	10	0.00	25	0.00
11	3.61	26	0.52	11	1.11	26	0.26
12	0.59	27	0.00	12	0.84	27	0.34
13	0.00	28	0.00	13	0.00	28	0.00
14	0.00	29	0.00	14	0.00	29	0.00
15	0.00	30	0.00	15	0.00	30	0.00
		31	0.00			31	0.00

<i>February 2001</i>							
Los Angeles – Downtown/USC				San Diego			
Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)	Day	Precip. (Inches)
1	0.00	16	0.00	1	0.00	16	0.00
2	0.00	17	0.00	2	0.00	17	0.00
3	0.00	18	0.02	3	0.00	18	0.00
4	0.00	19	0.18	4	0.00	19	0.00
5	0.00	20	0.57	5	0.00	20	0.03
6	0.00	21	0.00	6	0.00	21	0.00
7	0.06	22	0.00	7	0.01	22	Trace
8	0.01	23		8	0.05	23	
9	0.00	24		9	0.00	24	
10	0.36	25		10	Trace	25	
11	0.02	26		11	0.04	26	
12	1.00	27		12	Trace	27	
13	2.94	28		13	0.41	28	
14	0.92			14	0.17		
15	0.00			15	0.00		

APPENDIX A
QUARTERLY STATUS MEETING NO. 11 MINUTES

The following items presented summarize the substantive items discussed or issues resolved at the above meeting to the best of the writer's memory.

BMP Retrofit Pilot Program Meeting Minutes

ISSUE VERSION: FINAL

MEETING NO.: 11
DATE: 12/14/00
TIME: 9:30 am
LOCATION: RBF

SUBJECT: Quarterly Status Meeting No. 11

Prepared by: S. Taylor

Approved by: 

(Signature)

Date Prepared: 1/3/01

Attendee Names / Company

A. Lantin/RBF
S. Taylor/RBF
L. Hansen/RBF
K. Smarke/Caltrans HQ
D. Failing/Caltrans D7
P. Thakur/Caltrans D7
R. Gordon/Caltrans
S. Ramos/Caltrans D11
C. Tesoro/Caltrans D11
M. Barrett/UT
R. Graff/SD Baykeeper

Attendee Names / Company

B. Currier/UC Davis
E. DeLano/NRDC
R. Horner/NRDC
E. Othmer/Law Crandall
C. Myers/DHS
D. Messer/Larry Walker Associates
G. Friedman/Montgomery Watson
D. Robison/Brown/Caldwell
C. Warn/Kinnetic Labs
S. Fleshli/SM Baykeeper

Copies To:

File

The following items presented summarize the substantive items discussed or issues resolved at the above meeting to the best of the writer's memory.

ITEM	DESCRIPTION	STATUS	OPENED	DUE	ACTION FOR:
1.	<p>Agenda Item 2 (Opening Remarks): Plaintiffs noted that the Agenda Item 8 is a '3rd Party Team' Update rather than Cost Workgroup Update (the Cost Workgroup has concluded). Plaintiffs also noted that the Paxton and Metro sites in District 7 are not going to be completed by the stipulated schedule (Schedule in the District 7 Stipulation). They expressed concern about this and asked that Caltrans respond and engage in dialogue on the issue.</p>	Old	3/15/00		District 7
2.	<p>Agenda Item 3a (Vector Monitoring): There were very few abatements from mid-July to mid-September. Most abatements in District 7 were at the MCTT or CDS sites. The I-5/605 EDB also had some abatements. In District 11, three abatements at I-5/SR 56 and sand filters. Rich Horner noted that the I-5/I-605 has been abated more often than other sites, but also that there is a change to the outlet structure being completed that should correct the standing water and associated breeding problem. Avoiding this kind of EDB outlet design in the future is a lesson learned. I-5/SR 56 in District 11 has also been observed breeding. The riprap pockets tend to breed at the basin inlet area. Eastern MS and all of the sand filters in D11 breed more often than other D7 filters. Caltrans to look at the conditions causing sand filters in District 11 to breed more regularly. In District 7, Lakewood PR breeds more often than Via Verde. Caltrans to respond to these issues at the next bi-weekly call. Plaintiffs also noted on page 44 of the Quarterly report [Status 10] relative to the La Costa sand filter that breeding was noted on the sand portion of the filter. Caltrans to investigate and determine where the breeding was occurring on the filter.</p>	New	12/14/00	1/4/01	Caltrans/RBF
3.	<p>Agenda Items 3a,b (DHS Report/Survey): DHS noted that the CDS devices and the MCTT units are the big mosquito producers. The retrofits of these devices to seal openings may help this issue. In the future, if we install mosquito proofing on structures (BMPs) that hold water, there is still a concern that the mosquito proofing can be maintained on a long-term basis. DHS would like to look at these devices over the long-term to see if the mitigation is effective before rendering a final judgment. Cost of maintaining the vector abatement mitigation on the devices is also a factor.</p> <p>In another few months, DHS should have an updated report on the expanded survey/questionnaire. It should be noted that the California vector program is significantly advanced as compared to many other parts of the country, and this makes gathering information from those areas difficult. It is also a problem that DHS does not have out of state travel authority. Rich Horner noted that the county in King County does not have a mosquito control agency, and receives few complaints. He further noted that getting information of this type, when a vector agency does not exist, is a result that should be factored into the analysis. DHS responded that public complaints are not necessarily a good indicator of a problem or lack thereof. Unless the problem becomes acute, there is no real reporting or way to gauge the magnitude of the problem through public comment.</p>	New	12/14/00	3/14/01	DHS
4.	<p>Agenda Item 4 (Overview of O&M Labor Hours and Cost): Prior to the main agenda item, several non-agenda items were discussed: As a follow-up on removal efficiency of biofilter swales presented at the previous Quarterly Status Meeting,</p>	New	12/14/00	3/14/01	Plaintiffs/Caltrans

ITEM	DESCRIPTION	STATUS	OPENED	DUE	ACTION FOR:
	<p>M. Barrett went over the data that included infiltration of storm water in biofilters (previously this was excluded from preliminary efficiency calculations for this device). Numbers were computed using the Scoping study methodology. Rick Graff noted that the La Costa WB had two failures of sampling equipment. KLI replied that they were two different sampler units, and the failures were unrelated. KLI is working with Sigma to determine the problem with the equipment. It was noted that a higher level of vigilance will be provided for the wet basin to make sure that we get as many successful storms at the site as possible. KLI noted that at Palomar swale, the flow-measuring pipe was removed and the flow sensor mounted directly to the concrete because debris was routinely blocking the pipe. It was confirmed that sheet flow to the Palomar swale will be estimated and its loading added to the point influent loading in final calculations.</p> <p>Rich Horner noted that we had a problem with adopt a highway cutting the biofilter at the site. KLI responded that the site has now been signed.</p> <p>Rich Horner also noted that the media filter data were compromised by a late storm influent (La Costa SF). KLI responded that the data will be asterisked, and this will be accommodated in the calculations. Rich Horner asked that Caltrans come up with a solution to this problem and talk about it at the next bi-weekly conference call.</p> <p>Rick Graff noted that slope at the Melrose biofilter should not be shot with hydroseed again, we are not getting growth. Rick also inquired as to the pace of the wet basin regrowth and asked to have an estimate of the % coverage returned after the August harvest to discuss at the next bi-weekly call.</p> <p>OMM Data: Rick Graff asked for clarification of the ‘travel’ category. Law responded that it is the time spent in the car getting to the site. It was noted that the costs shown for maintenance are not meant to be used in the final report. Rather, the hours will be used to identify the effort required for each site/device. Plaintiffs were concerned about the extrapolation of the data. For example, it was noted that the administration hours are a big line item. Santa Monica BK inquired why are drain inlet inserts have such relatively high administration time. Law responded that they have a relatively high maintenance burden, and consequently have a high associated administration time.</p> <p>Operations category: Includes inspections, these are a significant part of total OM hours. Maintenance category: Large data range, from 1% to 78% of the total OM effort. But less than 15% of the hours are attributable to maintenance at about half the sites. 66% of the maintenance is scheduled (via the MID).</p> <p>Rich Horner asked that we note if there is scheduled maintenance that we deem unnecessary in the final report. Can we reduce the maintenance without hurting performance of the device? There are also significant differences between vector control costs in District 7 and District 11.</p>				

ITEM	DESCRIPTION	STATUS	OPENED	DUE	ACTION FOR:
	<p>It was noted that sand filter inspection requirements are relatively high. For biofilter swales, about 50% of the OM hours are administration, there is also a significant effort for watering biofilters in District 7.</p> <p>Possible Adjustments: Administration - get Caltrans general overhead numbers for other maintenance tasks. Assign plant establishment costs to construction rather than OM. VCD costs need to be normalized between vector districts. Eliminate specific outlier values for any category that appears suspect during the data reduction process.</p> <p>The Plaintiffs asked how we can resolve the maintenance effort requirements and how they will be incorporated into the final report. It was suggested to have a small subgroup to discuss this issue. Everett DeLano and Bill Evans to discuss this. BayKeeper to be kept informed on these exchanges (email)</p>				
5.	<p>Agenda Item No. 5 (Overview of Empirical Observations Data): Rich Horner noted that this part of the study was his idea, and that he included it so that the study team would be alert for new information to help improve the operation and maintenance of the devices. There are probably some valuable observations recorded as a part of this program, and we need to find the significant items and report on them. RBF reviewed the empirical observation information and how the data reduction will proceed. The Plaintiffs agreed with the overall approach, and added that no special data reduction or compilations are necessary for the empirical observations.</p> <p>It was agreed to implement the suggestions given in the slides and have an example to discuss for the next meeting. The observations suggested would be done during one of the inspections in February. RBF to develop suggested changes for the other devices (changes to empirical observations, suggestions to EDBs were presented) and have them available at the next Quarterly meeting.</p>	New	12/14/00	3/14/01	Caltrans/RBF
6.	Note: Agenda Items 7 and 8 were presented ahead of Agenda Item 6				
7.	<p>Agenda Item No. 7 (Final Report Development Update): It was noted that the report Subcommittee met on 12/13, and discussed a draft outline. The Plaintiffs concurred with the outline and made several suggestions. The revised report outline will be distributed with the next bi-weekly report (1/4/01). Everett DeLano suggested that an executive summary be added to the report/outline.</p>	New	12/14/00	1/4/01	RBF
8.	<p>Agenda Item No. 8 (3rd Party Team Update): There is an agreed upon summary table of cost issues, this was distributed to the 3rd party team. The 3rd party team must produce a progress report in 2-3 months from now, and in 6 months they must be done with the final report. Work by the 3rd party team was initiated on October 30, 2000.</p>	New	12/14/00	3/14/01	3 rd Party Team
9.	<p>Agenda Item No. 6a (CDS Mosquito-proofing): MW-C reported that the litter bag was replaced with a net (too small for mosquito entry), foam was installed to seal openings/cracks, and holes were sealed</p>	New	12/14/00	1/4/01	LWA

ITEM	DESCRIPTION	STATUS	OPENED	DUE	ACTION FOR:
	etc. Rich Horner inquired as to the result of the mosquito-proofing. Dean Messer indicated that the VCDs are optimistic that the new additions are working, but given the time of the year, they want to monitor the results during the spring when the vector problem is more acute. This issue will be followed-up at the next bi-weekly conference call.				
10.	Agenda Item No. 6b (MCTT Covers): Received 4 bids for the construction of the MCTT covers, selected the low bidder of \$34,957. Law feels the low bidder understands the work and that the bid is good even though there is quite a spread between the bidders.	New	12/14/00	3/14/01	Law
11.	Agenda Item No. 6c (Metro/Paxton Schedule Update): These two sites will not be operational this winter and are scheduled for operation in Fall 2001. They could have challenges causing their completion to slip later than the currently scheduled 9/01.	Old	3/15/00	9/01	District 7
12.	Agenda Item No. 9 (Closing): Next bi-weekly conference call scheduled for January 4, 2001, and next quarterly meeting scheduled for March 14, 2001, at RBF. Doug Failing noted that we were not going to be monitoring on Christmas and New Year holidays. After further discussion, it was agreed that the black out periods would be from noon Friday the 22nd until 8am Tuesday the 25th and on Saturday the 30th to midnight on day of first. Rick Graff wanted the critical sites (wet basin) to be monitored on the Saturday before each holiday if possible.				

APPENDIX B: OPERATION AND MAINTENANCE LABOR HOURS/COST

APPENDIX C: EMPIRICAL OBSERVATION DATA OVERVIEW

Description	Question	Observation	
Effluent Water Quality Appearance	Color:	Brown	31
		Colorless	12
		Green	2
		Other	3
		White	3
		Yellow	8
	Floating materials:	None	48
		Organic material	3
		Surface film	5
	Odor:	Trash or debris	1
		Musty	7
	Oil and grease:	None	49
		Sheen	3
	Turbidity	None	50
Cloudy, translucent		13	
Heavy cloudiness, opaque		4	
Some cloudiness but transparent		7	
		33	
Erosion	Basin bed:	104 total entries	
		7 observations of erosion	
	Basin side slopes:	118 total entries	
		21 observations of erosion	
	In inflow/influent channel:	111 total entries	
		12 observations of erosion	
	In outflow/effluent channel:	104 total entries, nothing observed	
Near inlet:	105 total entries		
	15 observations of erosion		
Near outlet:	106 total entries		
	1 observation of erosion		
Hydrologic and Hydraulic Characteristics	Flow Conditions: Check all that apply	Facility discharging through regular outlet	102
		Facility discharging via emergency overflow	4
	Standing water conditions	Runoff entering facility	93
		Other water standing pool(s):	33
		Water standing in multiple pools	39
		Water standing in one isolated pool	10
	Water standing over entire basin	81	
	Color:	Brown	31
		Colorless	14
		Gray	1
		Green	2
		White	2
		Yellow	11
	Floating materials:	None	31

Description	Question	Observation
Influent Water Quality Appearance		Oil and grease 9
		Organic material 13
		Surface film 10
		Trash or debris 12
	Odor (check all that apply):	Musty 4
		None 54
	Oil and grease:	None 46
		Sheen 12
	Turbidity:	Cloudy, translucent 14
		Heavy cloudiness, opaque 4
	None 10	
	Some cloudiness but transparent 30	
Inlet Conditions	Describe any obstructions or restrictions interfering with inflow/influent	133 total entries 19 observations of obstructions
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent	140 total entries 10 observations of obstructions

Description	Question	Observation
Solids Deposition and Resuspension	In inflow/influent channel:	140 total entries
		72 observations of deposition
	In multiple spots:	111 total entries
		17 observations of deposition
	In one spot:	124 total entries
		42 observations of deposition
	Over entire basin:	130 total entries
Vegetation	Solids resuspension evident (check all that apply):	50 observations of deposition
		In inflow/influent channel 7
		In outflow/effluent channel 3
		Near inlet 8
		Near outlet 3
	Basin bed vegetation cover:	All or nearly bare 32
		Complete 11
		Few large bare spots 11
		Few small bare spots 18
		Large areas bare 34
		Many large bare spots 14
		Many small bare spots 9
	Basin bed vegetation type:	All grasses 90
		Mostly grasses, some wetland plants 24
	Basin bed: Extent of woody shrubs or trees:	88 total observations
		4 observations of shrubs
	Basin side slopes vegetation cover:	All or nearly bare 20
	Complete 11	
	Few large bare spots 14	
	Few small bare spots 56	
	Large areas bare 24	
	Many large bare spots 20	
	Many small bare spots 17	
Basin side slopes vegetation type:	All grasses 101	
	Mostly grasses, some wetland plants 35	
Basin side slopes: Extent of woody shrubs or trees:	94 total observations	
	20 notes of woody shrubs, flowers weeds	

Description	Question	Observation	
Erosion	Adjacent to CDS-	None	2
	Erosion comments:	None	2
	Near inlet-	None	2
	Near outlet-	None	2
Hydrologic and Hydraulic Characteristics	Flow conditions	Facility discharging box	1
		Flow passing through the separation screen	2
		Runoff entering facility	2
		Water flowing through CDS at a perceptible velocity	2
	If flow is bypassing or overtopping the CDS, what is the flow rate measured by the downstream flume:	N/A	2
Inlet Conditions	Describe any erosion being caused by the flow upstream or at the entrance to the CDS:	None	2
	Describe any obstructions or restrictions interfering with inflow/influent:	None	1
		Trash and debris (foam plates) were caught at the inlet before entering the CDS unit. This caused debris to back-up into the influent pipe and weir box.	1
	Describe flow distribution where flow enters the CDS- Flow entering the CDS without being impeded:	Yes	2
	Describe flow distribution where flow enters the CDS- Is there evidence of a backwater condition:	No	2
Inlet Water Quality Appearance	Color	Brown	2
	Floating materials	Organic material	2
		Trash or debris	2
	Odor	Musty	2
	Oil and grease	None	2
	Turbidity	Some cloudiness but transparent	2
Litter and Solids Deposition and Resuspension	Has any litter or debris bypassed the CDS and collected in the litter bypass bag? If yes, describe the type and quantity:	No	2
	In inflow/influent pipe- record the type	About one inch of sediment has built up in the influent pipe and weir box.	1
		Trash and debris floating on entire surface.	1
	In outflow/effluent pipe- record the type	No debris or trash observed.	1
		None	1
	Solids resuspension evident	In inflow/influent channel	2
	Trash and debris was covering most of the water surface in the CDS unit, and was moving in a circular fashion.	1	
	Within the CDS- record the type		1

CDS

Description	Question	Observation
		Trash/debris and organic debris (leaves, twigs) are floating in the CDS. 1
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent:	None 2
Outlet Water Quality Appearance	Color	Brown 2
	Floating materials	None 2
	Odor	Musty 2
	Oil and grease	None 2
	Turbidity	Some cloudiness but transparent 2
Structural Condition of Facility	Record the presence of the following	Vandalism 1

DrainInletInsert

Description	Question	Observation	
Hydrologic and Hydraulic Characteristics	Flow conditions (check all that apply)	Flow bypassing DII	38
		Flow discharging through DII	165
		Runoff entering facility	130
	Is there standing water in the inlet?	No	177
		Yes	10
Standing water within or over the drain inlet insert?	No	165	
	Yes	21	
Inlet Conditions	Are there any gaps between the drain inlet insert and the drain inlet?	No	64
		Yes	4
	Describe any obstructions or restrictions interfering with inflow/influent		195 total entries 55 observations of obstructions
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent:		188 total entries 19 observations of obstructions
	Is the rubber berm around the effluent sampling chamber intact?	No	1
		Yes	67
Solids Deposition and Resuspension	For the insert, record type		130 total entries 51 observations of Deposition
	Solids deposition and resuspension comments:		188 total entries 74 observations of deposition
	Solids resuspension evident (check all that apply)	Inlet	26
		Insert	52
Other (describe)		2	
Structural Condition of Facility	Record the presence of the following (check all that apply and give location in comments):	Concrete cracking or spalling:	7
		Metal corrosion:	3

DrainInletInsert

Description	Question	Observation	
Water Quality Appearance - DII Outlet	Color	Brown	79
		Colorless	30
		Gray	4
		Green	2
		Violet	5
		White	4
		Yellow	3
	Floating Materials	None	35
		Oil and Grease	15
		Organic Material	7
		Surface film	9
		Trash or debris	2
	Odor	Hydrocarbon	1
		Musty	1
		None	62
	Oil and Grease	None	37
		Sheen	27
Turbidity	Cloudy, translucent	7	
	Heavy cloudiness, opaque	2	
	None	26	
	Some cloudiness but transparent	30	
Water Quality Appearance- DII Inlet	Color	Blue	1
		Brown	22
		Colorless	28
		Gray	5
		Red	1
		Violet	5
		White	5
		Yellow	2
	Floating Materials	None	16
		Oil and grease (see below)	16
		Organic material	18
		Surface film	8
		Trash or debris	11
	Odor	Hydrocarbon	1
		None	49
	Oil and grease	None	26
		Sheen	20
Turbidity	Cloudy, translucent	4	
	None	26	
	Some cloudiness but transparent	20	

OWS

Description	Question	Observation	
Effluent Water Quality Appearance	Color	Black	1
		Brown	1
		Colorless	4
		Green	1
		Other	2
	Floating materials:	None	6
		Oil and grease	2
		Surface film	2
	Odor (check all that apply):	Hydrogen sulfide	2
		Musty	2
None		5	
Oil and grease	None	6	
	Sheen	2	
Turbidity	None	4	
	Some cloudiness but transparent	4	
Hydrologic and Hydraulic Characteristics	Are there any indications of leakage (e.g., falling water level without flow occurring from a chamber)?	No	8
		Flow conditions (check all that apply)	Facility discharging
	Flow over forebay weir to coalescing plate pack		3
	Flow passing oil retaining baffle to afterbay		1
	Runoff entering facility		10
	Standing water conditions (check all that apply and record measurements as appropriate)	Standing water in afterbay	3
Standing water in coalescing plate chamber		2	
Standing water in forebay		3	
Influent Water Quality Appearance	Color	Brown	5
		Colorless	2
		Green	2
		Other	1
		Floating materials:	None
	Oil and grease		3
	Organic material		4
	Surface film		4
	Trash or debris		4
	Odor (check all that apply):	Hydrogen sulfide	1
		Musty	2
		None	6
Oil and grease	None	6	
	Sheen	6	

OWS

Description	Question	Observation
	Turbidity	Cloudy, translucent 4 Some cloudiness but transparent 4
Inlet Conditions	Describe any obstructions or restrictions interfering with inflow/influent	11 total entries 2 observations
Oil Skimming and Absorbing Equipment Conditions	Describe any indications that the oil skimmer function is impaired or that the absorbent is near capacity	Flow is uniformly distributed 6 Appears to be in good condition. 9 observations, nothing noted
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent	None 10 observations NONE 1 observation

Description	Question	Observation
Solids Deposition and Resuspension	Record - in afterbay:	9 total entries 1 observation
	Record - in coalescing plate pack:	9 total entries, nothing observed
	Record - in forebay:	9 total entries 3 observations

SandFilter

Description	Question	Observation	
Effluent Water Quality Appearance	Color	Brown	10
		Colorless	24
		Orange	3
		Other	6
		Red	1
		Yellow	19
	Floating materials:	None	58
		Organic material	3
		Surface film	1
	Odor (check all that apply):	Trash or debris	2
		Musty	4
	Oil and grease	None	57
		None	58
		Sheen	2
Turbidity	Cloudy, translucent	2	
	Heavy cloudiness, opaque	1	
	None	34	
	Some cloudiness but transparent	25	
Hydrologic and Hydraulic Characteristics	Are there any indication of leakage?	No	114
		Yes	2
	Flow conditions	Facility discharging	86
		Flow bypassing facility	4
		Flow from pretreatment sed chamber to sand chamber	101
		Flow from pretreatment sedimentation chamber to sand chamber	3
		Flow passing overflow weir to outlet bay (Austin)	25
		Flow short circuiting through facility	4
	Standing water conditions	Runoff entering facility	107
		Standing water in Outlet bay (Austin type only):	48
		Standing water in pretreatment sediment chamber	165
Standing water in sand chamber:		86	
Color:	Black	4	
	Brown	35	
	Colorless	10	
	Green	3	
	Orange	1	
	Other	4	
	White	1	

SandFilter

Description	Question	Observation	
Influent Water Quality Appearance		Yellow	21
	Floating materials:	None	23
		Oil and grease	20
		Organic material	29
		Surface film	19
		Trash or debris	11
	Odor (check all that apply):	Hydrocarbon	1
		Musty	7
		None	59
		Sewage	1
	Oil and grease:	Heavy floating concentration	2
		None	38
		Sheen	28
	Turbidity:	Cloudy, translucent	9
		Heavy cloudiness, opaque	11
	None	13	
	Some cloudiness but transparent	35	

SandFilter

Description	Question	Observation
Inlet Conditions	Describe any obstructions or restrictions interfering with inflow/influent	131 total entries 10 observations of obstruction
	Describe flow distribution where flow passes weir or baffle at exit of inlet chamber	Flow is not uniformly distributed 12 Flow is uniformly distributed 87
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent	147 total entries 8 observations of obstructions
Solids Deposition and Resuspension	Record - in Outlet Bay:	135 total entries 18 observations of deposition
	Record - in Pretreatment Sedimentation Chamber.	158 total entries 124 observation of deposition
	Record - in Sand Chamber.	149 total entries 67 observations of deposition
	Solids resuspension evident (check all that apply):	Outlet Bay (Austin Type only) 1 Pretreatment Sedimentation Chamber 31 Sand Chamber 5
Structural Condition of Facility	Record the presence of the following (check all that apply and give location in comments):	Concrete cracking or spalling 1
		Metal Corrosion 1
Treatment Medium Condition	Describe any indications that the filter medium is clogging	170 total entries 12 observations of clogging

MCTT

Description	Question	Observation	
Effluent Water Quality Appearance	Color:	Colorless	3
		Other:	1
	Floating materials:	Yellow	2
		None	5
	Odor:	Musty	1
		None	7
	Oil and grease:	None	5
Turbidity:	None	1	
	Some cloudiness but transparent	5	
Hydrologic and Hydraulic Characteristics	Are there any indications of leakage (e.g., falling water level without flow occurring from a chamber)?	No	12
	Flow conditions (check all that apply)	Facility discharging	2
		Flow over inlet weir to settling chamber occurring	2
		Runoff entering facility	13
	Standing water conditions: Check all that apply	Standing water in inlet chamber	3
Standing water in settling chamber		15	
Influent Water Quality Appearance	Color:	Brown	12
		Colorless	4
		Green	1
		Yellow	2
	Floating Materials.	None	6
		Oil and grease	3
		Organic Material	8
		Surface film	3
		Trash or debris	6
		Odor:	Musty
	Oil and Grease:	None	18
		Emulsion	1
	Turbidity:	None	10
		Sheen	9
Heavy cloudiness, opaque		4	
None		4	
	Some cloudiness but transparent	12	
Inlet Conditions	Describe any obstructions or restrictions interfering with inflow/influent		20 total entries
	Describe flow distribution where flow passes weir or baffle at exit of inlet chamber	Flow is uniformly distributed	3 observation of obstructions 9
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent		18 total entries 2 observations of obstructions

MCTT

Description	Question	Observation
Solids Deposition and Resuspension	Record the type - in filter chamber:	18 total entries
		4 observation of deposition
	Record - in inlet chamber:	19 total entries
		11 observations of deposition
	Record - in settling chamber:	18 total entries
Treatment Medium Condition	Solids resuspension evident (check all that apply):	13 observations of deposition
	Inlet chamber	1
	Other	2
	Settling chamber	4
	Describe any indications that the plate settlers or filter medium is clogging	18 total entries, nothing observed.

StormFilter

Description	Question	Observation	
Effluent Water Quality Appearance	Color:	Brown	11
		Colorless	1
		Yellow	6
	Floating materials:	None	17
	Odor (check all that apply):	None	17
	Oil and grease	None	17
	Turbidity:	Cloudy, translucent	2
		None	5
Hydrologic and Hydraulic Characteristics	Are there any indications of leakage (e.g. falling water level w/o flow occurring from a chamber)	No	25
	Flow Conditions (check all that apply)	Facility discharging	15
		Flow bypassing facility	1
		Flow over inlet baffle occurring	15
		Runoff entering facility	16
		Underdrain manifold from cartridge bay flowing to outlet bay	16
	Standing water conditions (record measurements as appropriate and check all that apply)	Standing water in Cartridge bay	27
		Standing water in inlet bay	29
Influent Water Quality Appearance	Color	Brown	12
		Yellow	5
	Floating materials	None	3
		Oil and grease	9
		Organic material	1
		Surface film	1
		Trash or debris	1
	Odor (check all that apply):	Hydrocarbon	1
		Musty	2
		None	14
	Oil and grease	None	6
		Sheen	11
Turbidity:	Cloudy, translucent	4	
	Heavy cloudiness, opaque	3	
	None	3	

StormFilter

Description	Question	Observation
		Some cloudiness but transparent 7
Inlet Conditions	Describe any obstructions or restrictions interfering with inflow/influent Describe flow distribution where flow passes weir or baffle at exit of inlet chamber: Describe flow distribution where flow passes weir or baffle at exit of inlet chamber:	30 total entries, nothing noted Flow is not uniformly distributed. (Describe in comments) 7 Flow is uniformly distributed 15
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent.	No flow 32 total entries, nothing noted

StormFilter

Description	Question	Observation										
Solids Deposition and Resuspension	Record - in Cartridge bay	32 total entries										
		13 observations										
	Record - in inlet bay.	32 total entries										
		16 observations										
	Record - in outlet bay	32 total entries										
		6 observations										
	Record - in pretreatment sedimentation chamber.	32 total entries										
Treatment Medium Condition	Describe any indications that the filter medium is clogging	22 observations 31 total entries, nothing noted										
	Solids resuspension evident (check all that apply)	<table border="0"> <tr> <td data-bbox="1150 722 1283 750">Cartridge Bay</td> <td data-bbox="1759 722 1776 750">1</td> </tr> <tr> <td data-bbox="1150 755 1241 782">Inlet Bay</td> <td data-bbox="1759 755 1776 782">2</td> </tr> <tr> <td data-bbox="1150 787 1213 815">Other</td> <td data-bbox="1759 787 1776 815">1</td> </tr> <tr> <td data-bbox="1150 820 1255 847">Outlet Bay</td> <td data-bbox="1759 820 1776 847">1</td> </tr> <tr> <td data-bbox="1150 852 1423 880">Pretreatment Sedimentation Chamber</td> <td data-bbox="1759 852 1776 880">3</td> </tr> </table>	Cartridge Bay	1	Inlet Bay	2	Other	1	Outlet Bay	1	Pretreatment Sedimentation Chamber	3
Cartridge Bay	1											
Inlet Bay	2											
Other	1											
Outlet Bay	1											
Pretreatment Sedimentation Chamber	3											

Swale

Description	Question	Observation	
Erosion	Record erosion locations, area(s) covered, and depth(s) as applicable.	In Inflow/influent channel	7
		In outflow/effluent channel:	7
		Near inlet:	9
		Near outlet	9
		Swale bed (swales only):	12
		Swale side slopes (Swales only)	19
Hydrologic and Hydraulic Characteristics	Flow conditions (check all that apply)	Flow distributed uniformly throughout BMP	41
		Flow not uniformly distributed throughout BMP	12
		Runoff entering facility	52
		Facility discharging	25
		Flow bypassing facility	10
		Flow overtopping facility	4
		Water flowing through BMP at perceptible velocity	37
Standing water conditions (record measurements as appropriate)	Water standing in one isolated pool	27	
	Water standing over entire swale	14	
Inlet Conditions	Describe any erosion being caused by flow upstream or at the entrance to the Swale		59 total entries
			5 observations
	Describe any obstructions or restrictions interfering with inflow/influent		63 total entries
			14 observations
	Describe flow distribution where flow enters vegetated treatment zone:	Flow not uniformly distributed across full width of the swale	8
		Flow uniformly distributed across full width of the swale	52
Inlet Water Quality Appearance	Color:	Brown	33
		Colorless	16
		Gray	1
		Other	6
		Yellow	5
	Floating materials:	None	22
		Oil and grease	21
		Organic material	7
		Surface film	6
		Trash or debris	18
Odor (check all that apply):	Musty	2	
	None	57	

Swale

Description	Question	Observation	
	Oil and grease	None	34
		Sheen	24
	Turbidity	Cloudy, translucent	9
		None	18
		Some cloudiness but transparent	31
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent		61 total observations 8 observations
Outlet Water Quality Appearance	Color:	Brown	14
		Colorless	17
		Other	7
		Yellow	3
	Floating materials:	None	33
		Oil and grease	3
		Organic material	3
		Surface film	3
		Trash or debris	3
	Odor (check all that apply):	Hydrogen sulfide	1
		Musty	1
		None	40
		Sewage	1
	Oil and grease	None	38
		Sheen	4
	Turbidity	Cloudy, translucent	3
		None	24
		Some cloudiness but transparent	13

Swale

Description	Question	Observation
Solids Deposition and Resuspension	Record type (trash/debris, oil/grease, other organics), location(s), area(s) covered, and depth(s), as applicable:	In multiple spots: 11
		In one spot: 16
		In outflow/effluent channel: 12
		Inflow/Influent channel: 55
	Solids resuspension evident (check all that apply):	Over entire Swale/Strip: 17
	In inflow/influent channel: 12	
	In outflow/effluent channel: 1	
	Near inlet: 7	
Near outlet: 1		
Structural Condition of Facility	Record the presence of the following (Check all that apply and give location in comments)	Inlet Structure Damage: 1
		Outlet Structure Damage: 1
Vegetation Condition	Extent of woody shrubs or trees:	None: 118
		Complete: 41
		Few small bare spots: 32
	Swale bed vegetation type:	All grasses: 48
		Mostly grasses, some wetland plants: 27
	Swale side slopes vegetation cover (Swales only):	Complete: 14
		Few large bare spots: 30
		Few small bare spots: 21
		Large area bare: 6
		Many large are spots: 1
Many small bare spots: 3		
Swale side slopes vegetation type (Swales only):	All grasses: 32	
	Mostly grasses, some wetland plants: 20	

Strip

Description	Question	Observation	
Erosion for Biofiltration Strip Only	In inflow/influent channel	None	1
	In outflow/effluent channel	None	1
	Near flow discharge:	None	1
	Near inlet:	None	1
	Strip slope:	None	1
Hydrologic & Hydraulic Characteristics for Biofiltration Strip	Flow conditions (check all that apply)	Flow distributed uniformly throughout Biofiltration Strip	7
		Flow is not uniformly distributed throughout Biofiltration Strip	1
		Runoff entering facility	8
		Facility discharging	5
		Flow bypassing facility	1
Inlet Conditions for Biofiltration Strip	Describe any erosion being caused by the flow upstream or at the entrance to the Biofiltration Strip		9 total entries, nothing noted
	Describe any obstructions or restrictions interfering with inflow/influent		8 total entries, nothing noted
	Describe flow distribution where flow enters vegetated treatment zone:	Flow is not uniformly distributed across full Biofiltration Strip	1
	Describe flow distribution where flow enters vegetated treatment zone:	Flow is uniformly distributed across full Biofiltration Strip	7
Inlet Water Quality Appearance	Color:	Brown	6
		Colorless	2
		Gray	1
	Floating materials:	None	2
		Oil and grease	3
		Surface film	1
		Trash or debris	4
	Odor (check all that apply):	Musty	1
		None	8
	Oil and grease	None	6
		Sheen	3
	Turbidity:	Cloudy, translucent	1
None		3	
Some cloudiness but transparent		5	
Outlet Conditions for	Describe any obstructions or restrictions interfering with outflow/effluent		8 total entries

Strip

Description	Question	Observation
Biofiltration Strip	Describe any obstructions or restrictions interfering with outflow/effluent	1 observation
Outlet Water Quality Appearance	Color	Brown 1
		Colorless 2
		Other 2
	Floating materials	None 5
	Odor (check all that apply)	Musty 1
		None 4
	Oil and grease	None 5
Turbidity	None 4	
	Some cloudiness but transparent 1	

Strip

Description	Question	Observation	
Solids Deposition and Resuspension for Biofiltration Strip	Record - in inflow/influent channel		8 total entries
			7 observations
	Record - in multiple spots	None	1
	Record - in one spot	Cigarette butts, minor amounts trash/debris	1
		None	1
	Record - in outflow/effluent channel	None	1
		One paper.	1
	Record - over entire Biofiltration Strip	Few pieces of plastic.	1
		None	1
Structural Condition of Biofiltration Strip	Record the presence of the following (Check all that apply and give location in comments)	In inflow/influent channel	1
		Near inlet	1
Vegetation	Biofiltration Strip vegetation cover	Near outlet	1
		Other	1
		Outlet structure damage	1
		Complete	3
		Few large bare spots	4
		Few small bare spots	2
Biofiltration Strip vegetation type	All grasses	7	
	Mostly grasses, some wetland plants	2	
	Extent of woody shrubs or trees	8	
	None		

StripTrench

Description	Question	Observation		
Erosion	Record - for Strip slope	8 total entries 2 observations		
	Record - in inflow/influent channel	7 total entries 1 observation		
	Record - in outflow/effluent channel	7 total entries nothing observed		
	Record - near flow discharge	7 total entries nothing observed		
Erosion for Biofiltration Strip Only	Biofiltration Strip slope:	9 total entries nothing observed		
	In outflow/effluent channel	9 total entries nothing observed		
	Near flow discharge:	10 total entries 1 observation		
Hydrologic & Hydraulic Characteristics for Biofiltration Strip	Flow Conditions (check all that apply)	Flow distributed uniformly throughout Biofiltration Strip	13	
		Flow not uniformly distributed throughout Biofiltration Strip (Describe distribution)	11	
		Runoff entering facility	24	
		Facility discharging	12	
		Flow bypassing facility	2	
		Water flowing through Strip at perceptible velocity	14	
		Flow bypassing facility	1	
		Runoff entering facility	16	
		Standing water conditions:	Water standing in observation well	9
			Water standing over the top of the infiltration medium	1
Infiltration Medium Condition for Infiltration Trench	Describe any indications that the infiltration medium is clogging	17 total entries 3 observations		
Inlet Conditions for Biofiltration Strip	Erosion being caused by flow upstream or at the entrance to the Strip	24 total entries 3 observations		
	Describe any obstructions or restrictions interfering with inflow/influent	25 total entries 4 observations		
	Describe flow distribution where flow enters vegetated treatment zone:	Flow not uniformly distributed across full width of strip	12	
		Flow uniformly distributed across full width of strip	9	
	Erosion being caused by the flow upstream or at the entrance to the infiltration medium:	None	18 total entries	

StripTrench

Description	Question	Observation	
	Describe any obstructions or restrictions interfering with inflow/influent	None 19 total entries, nothing observed	1 observation
Inlet Water Quality Appearance	Color	Brown	5
		Colorless	1
		Other	3
		Yellow	3
	Floating materials	None	6
		Oil and grease	11
		Organic material	2
		Organic material	
	Odor (check all that apply)	Trash or debris	1
		Hydrogen sulfide	1
Outlet Conditions for Biofiltration Strip	Describe any obstructions or restrictions interfering with outflow/effluent		21 total entries 2 observations
	Overflow Conditions for Infiltration Trench	Is the IT overflowing?	No

StripTrench

Description	Question	Observation	
Solids Deposition and Resuspension for Biofiltration Strip	In inflow/influent channel:		26 total entries 15 observations
	In multiple spots:		19 total entries 1 observation
	In one spot:		20 total entries 1 observation
	In outflow/effluent channel:		24 entries 9 observations
	Over entire Strip:		24 entries 8 observations
	Solids resuspension evident (check all that apply):	In inflow/influent channel	2
		Near inlet	3
	Other	3	
Solids Deposition and Resuspension for Infiltration Trench	Filter fabric:		9 total entries, nothing noted
	In multiple spots:		9 total entries, nothing noted
	In observation well:		9 total entries, nothing noted
	In one surface spot:		9 total entries, nothing noted
	Over entire IT surface:		15 total entries 9 observations
	Solids resuspension evident (check all that apply):	Other	1
		Upstream of IT	1
		Where flow enters IT	1
Structural Condition of Biofiltration Strip	Record the presence of the following	Inlet structure damage	1
Vegetation	Biofiltration Strip vegetation cover	All or nearly bare	1
		Few large bare spots	1
		Few small bare spots	5
		Many large bare spots	2
		Many small bare spots	5
Biofiltration Strip vegetation type	All grasses	10	
Vegetation Condition for Biofiltration Strip Only	Biofiltration strip vegetation cover:	Complete	22
	Biofiltration Strip vegetation type:	All grasses	19
		Mostly grasses, some wetland plants	3
	Extent of woody shrubs or trees:	(3) over hanging trees	1
		None	13
Water Quality Appearance for IT	Color	Brown	6
		Colorless	6
		Other	3
		Yellow	3
	Floating materials	None	11
		Oil and grease	5
		Organic material	1
Odor (check all that apply)	None	15	

StripTrench

Description	Question	Observation	
	Oil and grease	None	10
		Sheen	6
	Turbidity	Cloudy, translucent	3
		None	5
		Some cloudiness but transparent	8

Description	Question	Observation	
Hydrologic & Hydraulic Characteristics for Infiltration Trench	Flow conditions	Effluent from Biofiltration Strip is surfacing in IT instead of infiltrating	1
		Runoff entering facility	2
	If flow is not uniformly distributed throughout the Biofiltration Strip, describe distribution	lower half; 1-2"	1
	Standing Water conditions: Record measurements as appropriate.	Water standing in observation well	3
		Water standing over the top of the infiltration medium	1
Infiltration Medium Condition for Infiltration Trench	Describe any indications that the infiltration medium is clogging		9 total entries 3 observations of clogging
Inlet Conditions for Infiltration Trench	Describe any erosion being caused by the flow upstream or at the entrance to the infiltration medium:		8 total entries 1 observation of erosion
	Describe any obstructions or restrictions interfering with inflow/influent		8 total entries, nothing noted
Overflow Conditions for Infiltration Trench	Is the IT overflowing? (If yes, explain)	No	11
Solids Deposition and Resuspension for Infiltration Trench	Record - for filter fabric		7 observations, nothing noted
	Record - in multiple spots		7 observations, nothing noted
	Record - in observation well		7 observations, nothing noted
	Record - in one surface spot		8 total entries 2 observations
	Record - over entire IT surface		8 total entries 3 observations
	Solids resuspension evident; Check all that apply	Other	
	Where flow enters IT		1
Water Quality Appearance for IT	Color; Check all that apply and describe under comments	Black	1
		Brown	1
		Other	1
	Floating Materials: Check all that apply and describe under comments	Oil and grease (see below)	1
		Organic Material	1
		Surface film	1
	Odor: Check all that apply and describe under comments	None	3

Description	Question	Observation	
	Oil and Grease: Check all that apply and describe under comments	Deposit	1
	Turbidity; Check all that apply and describe under comments	None	2
		Cloudy, translucent	2
		None	3
		Some cloudiness, but transparent	1

Description	Question	Observation	
Erosion	Record erosion - Basin side slopes		23 total entries
			6 observations of erosion
	Record erosion - in inflow/influent channel.		18 total entries, nothing noted
	Record erosion - in outflow/effluent channel.		16 total entries, nothing noted
	Record erosion - near inlet.		19 total entries, nothing noted
	Record erosion - near overflow structure: Record erosion - Basin Bed.		16 total entries, nothing noted 19 total entries, 2 observations of erosion
Hydrologic and Hydraulic Characteristics	Flow conditions	Facility discharging	1
		Flow bypassing facility	4
		Runoff entering facility	17
	Standing water conditions:	Water standing in one isolated pool:	4
	Water standing over entire basin	23	
Infiltration Surface Condition	Describe any other evidence that clogging is occurring		16 total entries
			2 observations of clogging
	Describe any surface crust that is evident		16 total entries
	Record any evidence of soil compaction	Foot traffic	3 observations of crust 10
Inlet Conditions	Describe any erosion or resuspension - in the influent channel and/or the basin:		26 total entries
			4 observations of deposition
	Describe any obstructions or restrictions interfering with inflow/influent		22 total entries
			1 observation of obstruction
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent		14 total entries
			3 observations of obstructions
Solids Deposition and Resuspension	Record- in inflow/influent channel		27 total entries
			17 observations of deposition
	Record - in multiple spots.		15 total entries
			4 observations of deposition
	Record - in one spot.		15 total entries
			7 observations of deposition
	Record - in outflow/effluent channel. Record - over entire basin		14 total entries, nothing noted 17 total entries
		3 observations of deposition	
	Solid resuspension evident (check all that apply)	In inflow/influent channel	4
		Near inlet	2
		Other	1
	Basin bed vegetation cover	Complete	2

Description	Question	Observation	
Vegetation	Basin bed vegetation type	Few bare spots	5
		Few large bare spots	1
		Large areas bare	1
		Many large bare spots	6
		All grasses	4
		All wetland plants	1
		Mostly grasses, some wetland plants	2
		Mostly wetland plants, some grasses	2
	Basin side slopes vegetation cover.	Complete	7
		Few large bare spots	5
		Few small bare spots	4
		Many large bare spots	1
	Basin side slopes vegetation type.	Many small bare spots	5
		All grasses	6
		Mostly grasses, some wetland plants	4
		Mostly wetland plants, some grasses	2
Extent of woody shrubs or trees	35 total entries 4 observations of woody vegetation		

Description	Question	Observation
Water Quality Appearance	Color: Check all that apply and describe under comments	Black 1
		Blue 1
		Brown 14
		Colorless 8
		Green 2
	Floating Materials: Check all that apply and describe under comments	None 10
		Oil and Grease, see below 5
		Organic material 9
		Surface film 2
		Trash or debris 3
	Odor: Check all that apply and describe under comments	None 23
		Pesticide or herbicide 1
	Oil and Grease: Check all that apply and describe under comments	None 18
		Sheen 6
	Turbidity	Cloudy, translucent 3
Heavy cloudiness, opaque 5		
None 4		
Some cloudiness but transparent 12		

WetBasin

Description	Question	Observation
Erosion	Basin bed, record erosion locations, area(s) covered, and depth(s):	23 total entries, nothing noted
	Basin side slopes, record erosion locations, area(s) covered, and depth(s)	22 total entries 4 observations
	In inflow/influent channel, record erosion locations, area(s) covered, and depth(s):	23 total entries 2 observations
	In outflow/effluent channel, record erosion locations, area(s) covered, and depth(s):	22 total entries, nothing noted
	Near inlet, record erosion locations, area(s) covered, and depth(s)	23 total entries 1 observations
	Near outlet, record erosion locations, area(s) covered, and depth(s):	22 total entries, nothing noted
Hydrologic and Hydraulic Characteristics	Flow conditions (check all that apply)	Facility discharging through regular outlet 15 Runoff entering facility 12
	Standing water conditions (record measurements as appropriate and check all that apply):	Water standing in multiple pools 1
		Water standing over entire basin 20
	Inlet Conditions	Describe any erosion or resuspension of settled solids being caused by the flow in the influent channel and/or the basin:
Describe any obstructions or restrictions interfering with inflow/influent		23 total entries 7 observations
Outlet Conditions	Describe any obstructions or restrictions interfering with outflow/effluent:	22 total entries, nothing noted
Solids Deposition and Resuspension	In inflow/influent channel, record the type (trash or debris, oil and grease, other organics), location(s), area(s) covered, and depth(s):	24 total entries
		15 observations
	In multiple spots, record the type (trash or debris, oil and grease, other organics), location(s), area(s) covered, and depth(s):	21 total enters
		4 observations
	In one spot, record the type(trash or debris, oil and grease, other organics), location(s), area(s) covered, an depth(s):	21 total enters
		6 observations
	In outflow/effluent channel, record the type (trash or debris, oil and grease, other organics), location(s), area(s), covered, and depth(s):	22 total entries
4 observations		
Over entire basin, record the type (trash or debris, oil and grease, other organics), location(s), area(s) covered, and depth(s):	22 total entries	
Solids resuspension evident (check all that apply)		3 observations
	In inflow/influent channel	2
	In outflow/effluent channel	1
	Near inlet	1

WetBasin

Description	Question	Observation	
		Near outlet	1
		Other	3
Structural Condition of Facility	Record the presence of the following (check all that apply and give location in comments):	Inlet structure damage	1

WetBasin

Description	Question	Observation	
Vegetation	Basin bed vegetation cover	Complete	16
		Few small bare spots	2
		Many small bare spots	1
	Basin bed vegetation type	All wetland plants	8
		Mostly grasses, some wetland plants	1
		Mostly wetland plants, some grasses	14
	Basin side slopes vegetation cover	Complete	15
		Few large bare spots	3
		Few small bare spots	2
	Basin side slopes vegetation type:	Many large bare spots	3
		Many small bare spots	1
		All grasses	3
	Extent of woody shrubs or trees:	All wetland plants	2
Mostly grasses, some wetland plants		11	
Mostly wetland plants, some grasses		8	
			13 total entries 1 observations
Water Quality Appearance for Wetbasin Effluent	Color	Brown	5
		Green	10
		Other:	1
	Floating Materials:	Yellow	5
		None	5
		Organic Material	9
	Odor (check all that apply):	Surface film	2
		Hydrogen sulfide	1
	Oil and Grease	None	13
		None	15
	Turbidity	Cloudy, translucent	5
Heavy cloudiness, opaque		1	
None		3	
		Some cloudiness but transparent	6
Water Quality Appearance for Wetbasin Influent	Color:	Black	1
		Brown	8
		White	1
		Yellow	2
	Floating Materials (check all that apply):	None	3
		Oil and grease (see below)	3
		Organic material	6
		Surface film	3
	Odor (check all that apply):	Trash or debris	7
		Musty	1
	Oil and grease:	None	10
		None	9
	Turbidity	Sheen	3
Cloudy, translucent		6	
		heavy cloudiness, opaque	3

WetBasin

Description	Question	Observation
		Some cloudiness but transparent 2

**APPENDIX D:
BIOLOGICAL MONITORING REPORTS – NOVEMBER, DECEMBER 2000, AND
JANUARY 2001**

**CALTRANS BMP Retrofit Pilot Program
Districts 7 and 11**

**BIOLOGICAL MONITORING REPORT
for
November 2000**

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INTRODUCTION

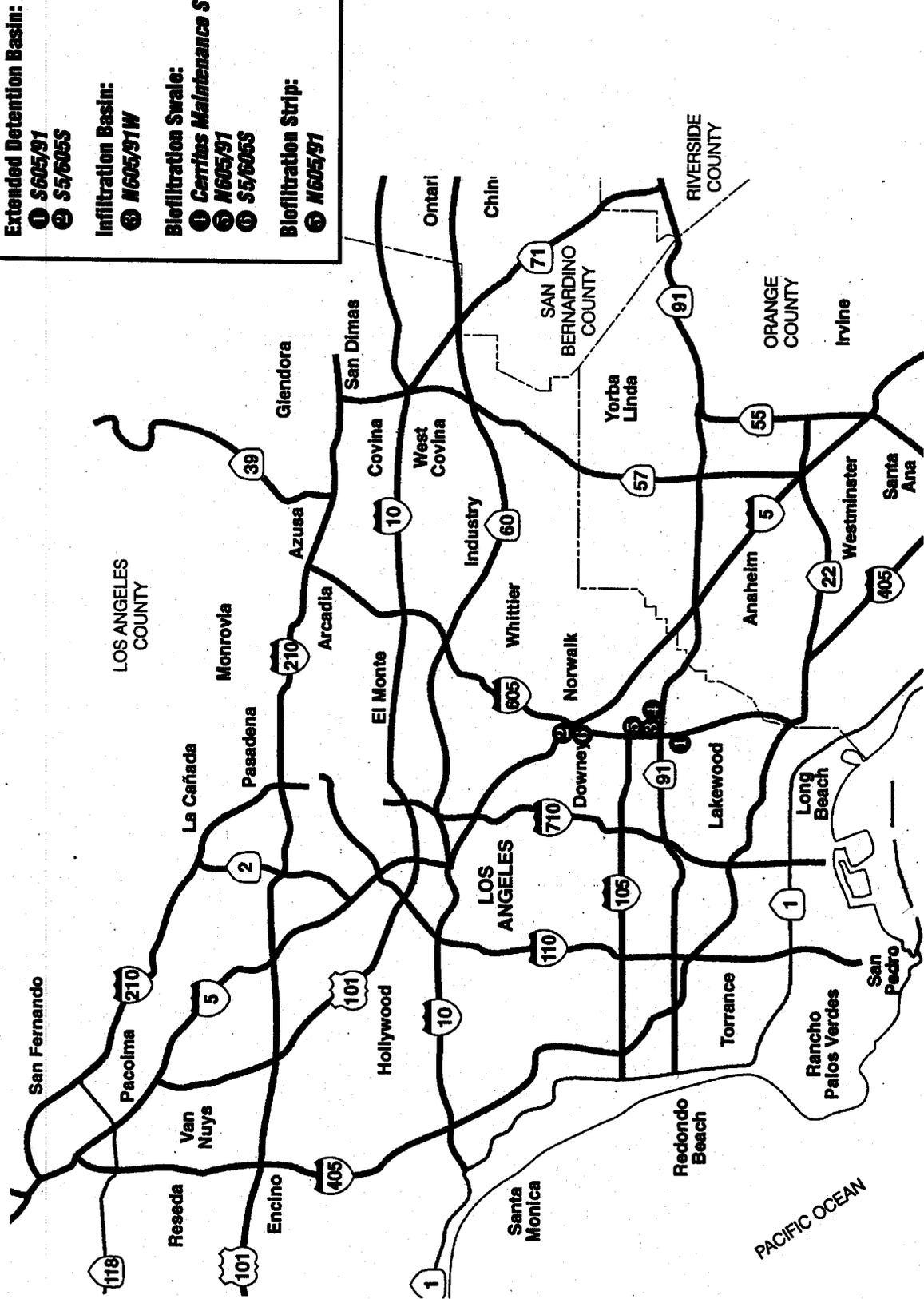
This report is intended to describe biological monitoring efforts in regards to the California Department of Transportation (Caltrans) Best Management Practices facilities (BMP) pilot study occurring in Districts 7 and 11 (Los Angeles and San Diego, respectively). The pilot study, BMP locations, and BMP descriptions have been well described previously by RBF Consulting (RBF, 1999).

Six District 7 BMP sites (*Figure 1*) and nine District 11 BMP sites (*Figure 2*) are monitored monthly by Dudek and Associates, Inc. (DUDEK). DUDEK previously determined that the 15 sites may have the potential to become significant from a wildlife perspective. DUDEK wildlife biologist Jeff D. Priest conducted visits for the District 11 BMPs and District 7 BMP's on November 30th and December 1st, 2000. Survey conditions were appropriate for detection of wildlife (*i.e.*, partly cloudy to clear skies, mild temperatures, light breezes).

Table 1 presents a synopsis of potential issues related to each BMP site. A discussion of each BMP site follows the table.

TABLE 1
BMP LOCATIONS, TYPE, POTENTIAL BIOLOGICAL ISSUES
AND SUMMARY OF FINDINGS

Location; BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/ Action*	Nesting Birds	Standing Water	Species Observed
I-605/SR-91; InfBa	No	N/A	Yes/None	No	No	No	rock dove
I-5/I-605; ExtDB	No	N/A	Yes/None	No	No	No	none
I-605/SR-91; BiofSt	No	N/A	Yes/None	No	No	No	rock dove
Cerritos MS; BiofSw	No	N/A	Yes/None	Yes/none	No	No	house finch and rock dove
I-5/I-605; BiofSw	No	N/A	Yes/None	No	No	No	None
I-605/SR-91; BiofSw	No	N/A	Yes/None	No	No	No	rock dove and mourning dove
I-5/Manchester; ExtDB	No	N/A	Yes/None	No	No	No	killdeer, mourning dove and rock dove
I-5/SR-56; ExtDB	No	N/A	Yes/None	No	No	No	American kestrel, California towhee, western meadowlark, house finch and common yellowthroat
I-15/SR-78; ExtDB	No	N/A	Yes/None	Yes/None	No	No	American kestrel
I-5/La Costa W; InfBa	No	N/A	No	No	No	Yes	osprey, house finch and lesser goldfinch
I-5/La Costa SE; WetBa	No	N/A	Yes/None	Yes/None	No	Yes	mallard, common yellowthroat, California towhee and mosquito fish



Extended Detention Basin:
 ① S605/91
 ② S5/605S

Infiltration Basin:
 ③ N605/91W

Biofiltration Swale:
 ④ Cerritos Maintenance Station/N91
 ⑤ N605/91
 ⑥ S5/605S

Biofiltration Strip:
 ⑦ N605/91



Not to Scale

FIGURE
1

Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
 Regional Location Map - District 7, Los Angeles

BASE MAP SOURCE: RBF CONSULTING, 4/99

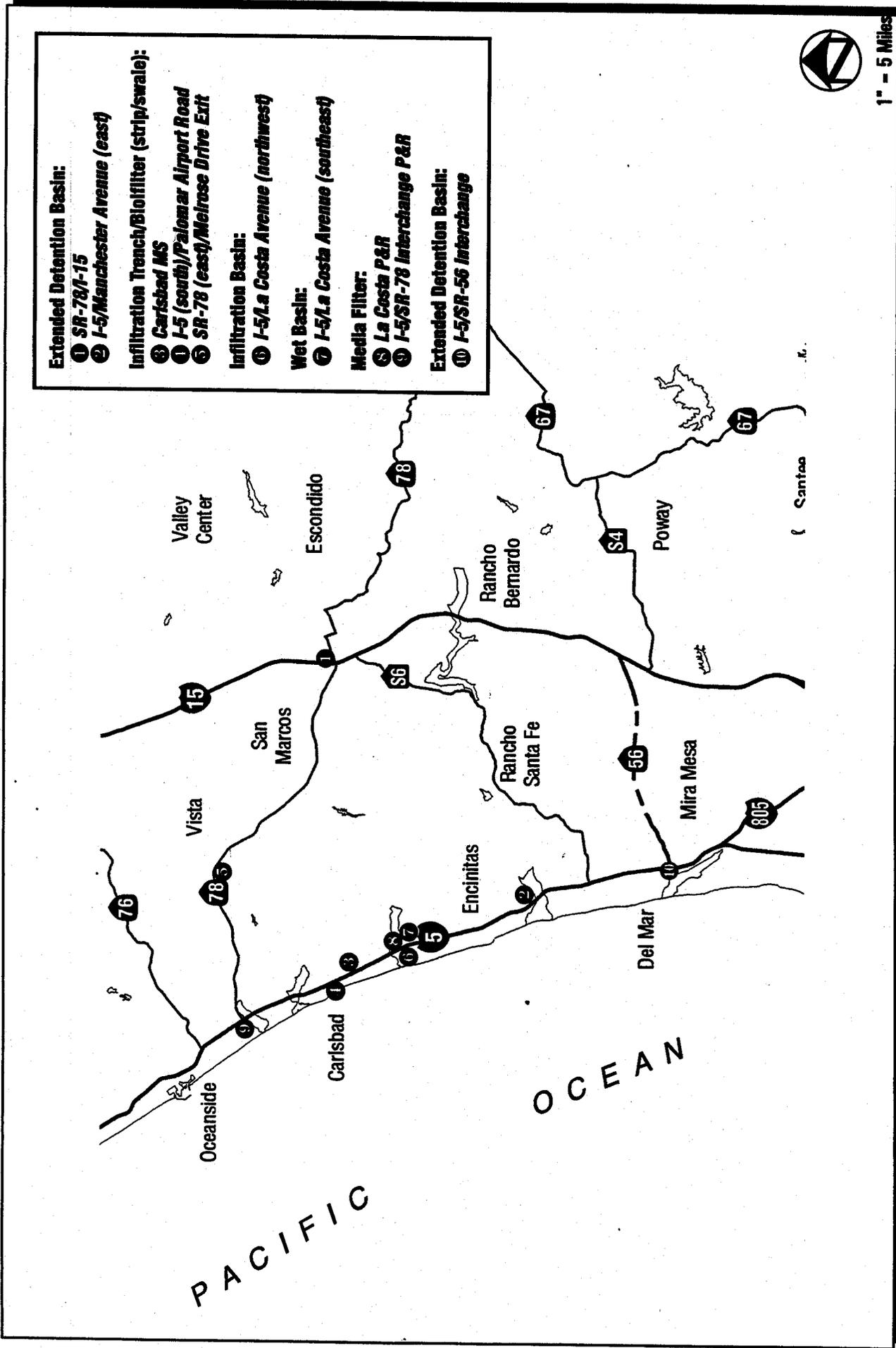


FIGURE 2

**Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
Regional Location Map - District 11, San Diego**

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TABLE 1 (Continued)
BMP LOCATIONS, TYPE AND POTENTIAL BIOLOGICAL ISSUES

Location; BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/ Action*	Nesting Birds	Standing Water	Species Observed
SR-78/Melrose; BiofSw	No	N/A	Yes/None	Yes/None	No	No	common raven
I-5/Palomar Airport; BiofSw	No	N/A	Yes/None	Yes/None	No	No	none
I-5/La Costa P&R; MedFi	No	N/A	No	No	No	No	red-tailed hawk
I-5/SR-78 P&R; MedFi	No	N/A	No	No	No	Yes	common raven

- InfBa - Infiltration Basin
- ExtDB - Extended Detention Basin
- BiofSw - Biofiltration Swale
- BiofSt - Biofiltration Strip
- WetBa - Wet Basin
- MedFi - Media Filter

* Action needed to protect against potential sensitive species occupation – does not account for any actions required to protect site from herbivory, erosion, or other problems caused by fossorial mammals.

DISTRICT 7 (LOS ANGELES) BMP SITES

605/91 Interchange Biofiltration Swale

No water was present during this monitoring period. No sensitive species were present or expected.

There are no recommendations at this time.

605/91 Interchange Biofiltration Strip

No water was present during this month's monitoring effort. The caution tape around the strip was intact. No sensitive species were detected or expected.

No recommendations are required at this time.

605/91 Interchange Infiltration Basin

No sensitive species were detected or expected. No water was present during this month's monitoring effort.

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There are no maintenance recommendations at this time.

5/605 Interchange Extended Detention Basin

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

5/605 Interchange Biofiltration Swale

No water was present during the survey, however, a high level of herbaceous, weedy vegetation has grown within the swale. In addition, five mule fat (*Baccharis salicifolia*) recruits are growing adjacent to the swale.

No sensitive species were detected or expected.

There are no recommendations at this time.

Cerritos Maintenance Station/91 Biofiltration Swale

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

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DISTRICT 11 (SAN DIEGO) BMP SITES

5/56 Interchange Extended Detention Basin

No water was present during the survey. In addition, bare portions of the basin had been recently hydroseeded. No sensitive species were detected or expected.

There are no recommendations at this time.

5/Manchester Avenue Extended Detention Basin

No water was present during the survey. In addition, bare portions of the basin had been recently hydroseeded. There are no sensitive species issues at this time.

There are no recommendations at this time.

5/La Costa Avenue Wet Basin

Water was present in both the basin and adjacent storm channel. At the time of the visit, approximately 1% of the water surface area in the basin and approximately 80% of the water surface area in the storm channel was covered with algae. The cattail (*Typha* sp.) vegetation is growing back quickly and provides habitat for nesting birds. There are no sensitive species issues at this time.

There are no recommendations at this time.

La Costa Avenue Media Filter

Standing water was present (approximately five square meters) on the south site of the media filter. The net exclusion device was not present at the time of the survey.

There are no recommendations at this time.

5/La Costa Avenue Infiltration Basin

Twelve to eighteen inches of standing water was present at the time of the survey. In addition, a new net exclusion device was present with support posts and cables securing the net over the entire basin. No sensitive species were detected or expected at this time.

There are no recommendations at this time.

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5/Palomar Airport Road Biofiltration Swale

No water was present during the survey. There were no sensitive species issues.

There are no recommendations at this time.

78/Melrose Drive Biofiltration Swale

At the time of the survey, the grass within the swale had been recently mowed and the southern bank had been recently hydroseeded. In addition, 'keep off the grass' signs were present. Neither sensitive species nor water was present during the survey.

There are no recommendations at this time.

78/15 Extended Detention Basin

No water was present during the survey. In addition, bare portions of the basin had been recently hydroseeded. No sensitive species were detected.

There are no recommendations at this time.

5/78 Media Filter

There were no issues at the media filter. The net exclusion device was not present.

There are no recommendations.

COMMENTS

During this period, DUDEK conducted a site visit to all BMP's. Water was present at three of the 15 BMP sites addressed in this report (District 11- La Costa Wet Basin, La Costa Infiltration Basin and the I-5/I-78 Media Filter). Photos were taken of each of the BMP sites and are available upon request.

Presently, nesting birds will not constrain maintenance activities, nor will sensitive species.

LITERATURE CITED

Robert Bein, William Frost and Associates. 1999. Project Information for Selected Best Management Practice (BMP) Sites in Caltrans Districts 7 and 11. 27pp.

CALTRANS BMP Retrofit Pilot Program
Districts 7 and 11

BIOLOGICAL MONITORING REPORT
for
December 2000

Prepared for:

RBF Consulting

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Monitoring Report • Caltrans BMP Retrofit Pilot Program

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Monitoring Report • Caltrans BMP Retrofit Pilot Program

INTRODUCTION

This report is intended to describe biological monitoring efforts in regards to the California Department of Transportation (Caltrans) Best Management Practices facilities (BMP) pilot study occurring in Districts 7 and 11 (Los Angeles and San Diego, respectively). The pilot study, BMP locations, and BMP descriptions have been well described previously by RBF Consulting (RBF, 1999).

Six District 7 BMP sites (*Figure 1*) and nine District 11 BMP sites (*Figure 2*) are monitored monthly by Dudek and Associates, Inc. (DUDEK). DUDEK previously determined that the 15 sites may have the potential to become significant from a wildlife perspective. DUDEK wildlife biologist Jeff D. Priest conducted visits for the District 11 BMPs and District 7 BMP's on December 28th, 2000, January 3rd and 5th, 2001. Survey conditions were appropriate for detection of wildlife (*i.e.*, partly cloudy to clear skies, mild temperatures, light breezes) with the exception of the January 5th visits during which intermittent rainfall occurred.

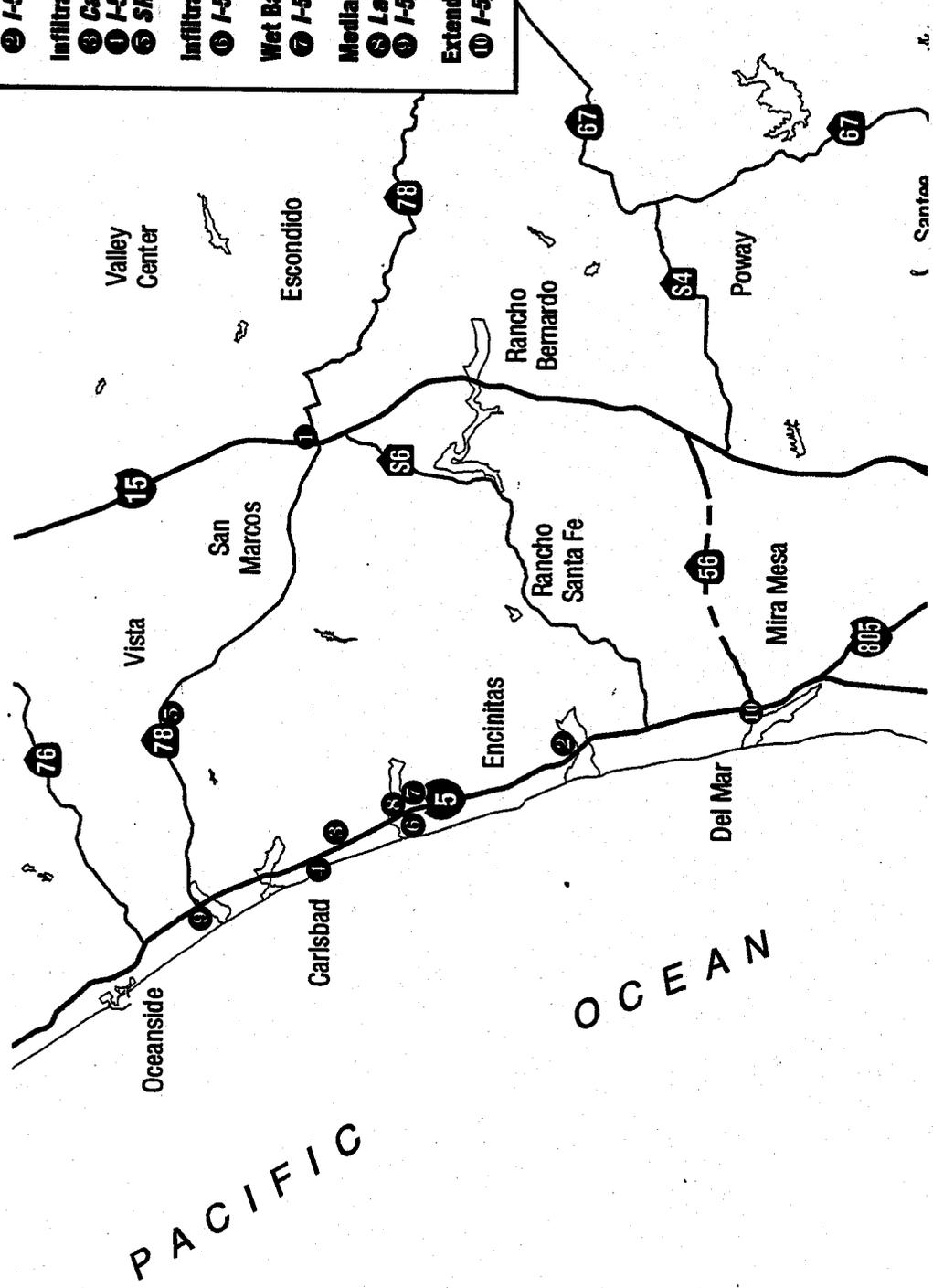
Table 1 presents a synopsis of potential issues related to each BMP site. A discussion of each BMP site follows the table.

**TABLE 1
BMP LOCATIONS, TYPE, POTENTIAL BIOLOGICAL ISSUES
AND SUMMARY OF FINDINGS**

Location; BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/ Action*	Nesting Birds	Standing Water	Species Observed
I-605/SR-91; InfBa	No	N/A	Yes/None	No	No	No	rock dove
I-5/I-605; ExtDB	No	N/A	Yes/None	No	No	No	mourning dove, house finch and American kestrel
I-605/SR-91; BiofSt	No	N/A	Yes/None	No	No	No	rock dove
Cerritos MS; BiofSw	No	N/A	Yes/None	Yes/none	No	No	none
I-5/I605; BiofSw	No	N/A	Yes/None	No	No	No	rock dove
I-605/SR-91; BiofSw	No	N/A	Yes/None	No	No	No	rock dove
I-5/Manchester; ExtDB	No	N/A	Yes/None	No	No	No	killdeer and rock dove
I-5/SR-56; ExtDB	No	N/A	Yes/None	No	No	No	black phoebe, bushtit, white-crowned sparrow, common raven, mourning dove and California ground squirrel {although no squirrel burrows were observed within the fenced area}
I-15/SR-78; ExtDB	No	N/A	Yes/None	Yes/None	No	No	common raven, American kestrel and red-tailed hawk
I-5/La Costa W; InfBa	No	N/A	No	No	No	Yes	none

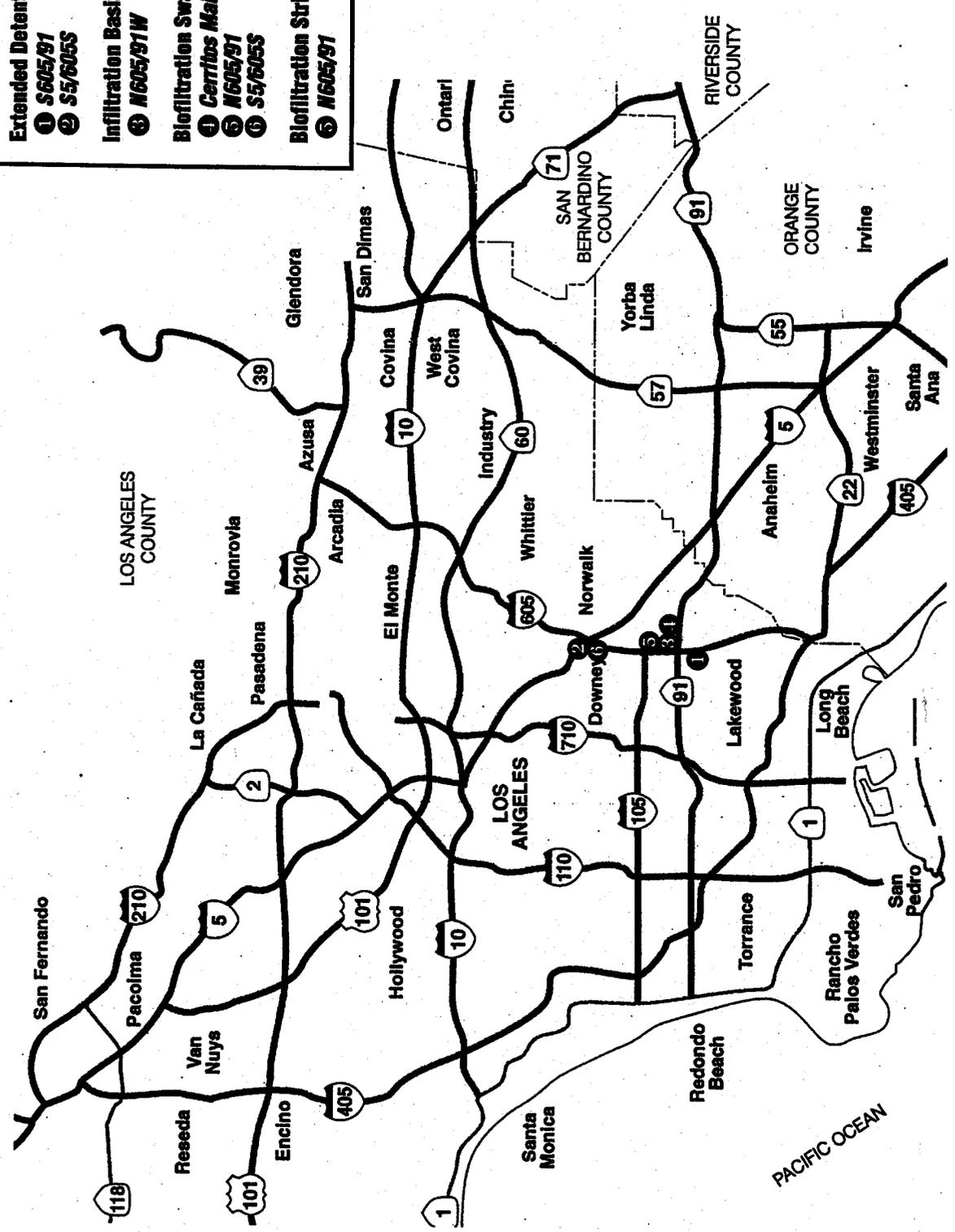
Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
Regional Location Map - District 11, San Diego

- Extended Detention Basin:**
- ① SR-78/15
 - ② I-5/Manchester Avenue (east)
- Infiltration Trench/Biofilter (strip/swale):**
- ③ Carlsbad MS
 - ④ I-5 (south)/Palomar Airport Road
 - ⑤ SR-78 (east)/Melrose Drive Exit
- Infiltration Basin:**
- ⑥ I-5/La Costa Avenue (northwest)
- Wet Basin:**
- ⑦ I-5/La Costa Avenue (southeast)
- Media Filter:**
- ⑧ La Costa P&R
 - ⑨ I-5/SR-78 Interchange P&R
- Extended Detention Basin:**
- ⑩ I-5/SR-56 Interchange



1" = 5 Miles

- Extended Detention Basin:**
- ① S605/91
 - ② S5/605S
- Infiltration Basin:**
- ③ N605/91W
- Biofiltration Swale:**
- ④ Carrizo Maintenance Station/W91
 - ⑤ N605/91
 - ⑥ S5/605S
- Biofiltration Strip:**
- ⑦ N605/91



Not to Scale

FIGURE 1

Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
 Regional Location Map - District 7, Los Angeles

BASE MAP SOURCE: NSF CONSULTING, 4/99

Monitoring Report • Caltrans BMP Retrofit Pilot Program

TABLE 1 (Continued)
BMP LOCATIONS, TYPE AND POTENTIAL BIOLOGICAL ISSUES

Location; BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/ Action*	Nesting Birds	Standing Water	Species Observed
I-5/La Costa SE; WetBa	No	N/A	Yes/None	Yes/None	No	Yes	California towhee, white-crowned sparrow, house finch and black phoebe
SR-78/Melrose; BiofSw	No	N/A	Yes/None	Yes/None	No	No	lesser goldfinch and bushtit
I-5/Palomar Airport; BiofSw	No	N/A	Yes/None	Yes/None	No	No	common raven
I-5/La Costa P&R; MedFi	No	N/A	No	No	No	No	black phoebe, common raven and wren
I-5/SR-78 P&R; MedFi	No	N/A	No	No	No	No	none

- InfBa - Infiltration Basin
- ExtDB - Extended Detention Basin
- BiofSw - Biofiltration Swale
- BiofSt - Biofiltration Strip
- WetBa - Wet Basin
- MedFi - Media Filter

* Action needed to protect against potential sensitive species occupation – does not account for any actions required to protect site from herbivory, erosion, or other problems caused by fossorial mammals.

DISTRICT 7 (LOS ANGELES) BMP SITES

605/91 Interchange Biofiltration Swale

No water was present during this monitoring period, however, grass within the swale has grown very thick, presumably from recent water flow.

No sensitive species were present or expected.

There are no recommendations at this time.

605/91 Interchange Biofiltration Strip

No water was present during this month's monitoring effort.

No sensitive species were detected or expected.

No recommendations are required at this time.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

605/91 Interchange Infiltration Basin

No sensitive species were detected or expected. No water was present during this month's monitoring effort.

There are no maintenance recommendations at this time.

5/605 Interchange Extended Detention Basin

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

5/605 Interchange Biofiltration Swale

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

Cerritos Maintenance Station/91 Biofiltration Swale

No water was present during this monitoring period. No sensitive species were detected or expected.

There are no recommendations at this time.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

DISTRICT 11 (SAN DIEGO) BMP SITES

5/56 Interchange Extended Detention Basin

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

5/Manchester Avenue Extended Detention Basin

No water was present during the survey. There are no sensitive species issues at this time.

There are no recommendations at this time.

5/La Costa Avenue Wet Basin

Rain was falling at the time of the visit. In addition, both the basin and adjacent storm channel contained standing water. There are no sensitive species issues at this time.

There are no recommendations at this time.

La Costa Avenue Media Filter

No standing water was present within the filter at the time of the visit. However, water stains and footprints were present within the sand media side of the filter.

There are no recommendations at this time.

5/La Costa Avenue Infiltration Basin

Rain was falling at the time of the visit. In addition, the basin floor was covered with standing water. No sensitive species were detected or expected at this time.

There are no recommendations at this time.

5/Palomar Airport Road Biofiltration Swale

No water was present during the survey. In addition, 'keep off the grass' signs were present and grass within the swale has grown back. There were no sensitive species issues.

There are no recommendations at this time.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

78/Melrose Drive Biofiltration Swale

No water was present at the time of the survey. In addition, no sensitive species were detected.

There are no recommendations at this time.

78/15 Extended Detention Basin

No water was present during the survey. No sensitive species were detected or expected.

There are no recommendations at this time.

5/78 Media Filter

At the time of the visit, the north side of the media filter contained a small amount of puddled water (less than one square meter and less than one inch deep). In addition, footprints were present in the mud within the filter. There were no issues at the media filter. The net exclusion device was not present.

There are no recommendations.

COMMENTS

During this period, DUDEK conducted a site visit to all BMP's. Water was present at two of the 15 BMP sites addressed in this report (District 11- La Costa Wet Basin and La Costa Infiltration Basin). Photos were taken of each of the BMP sites and are available upon request.

Presently, nesting birds will not constrain maintenance activities, nor will sensitive species.

LITERATURE CITED

Robert Bein, William Frost and Associates. 1999. Project Information for Selected Best Management Practice (BMP) Sites in Caltrans Districts 7 and 11. 27pp.

**CALTRANS BMP Retrofit Pilot Program
Districts 7 and 11**

**BIOLOGICAL MONITORING REPORT
for
January 2001**

Prepared for:

RBF Consulting

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Monitoring Report • Caltrans BMP Retrofit Pilot Program

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Monitoring Report • Caltrans BMP Retrofit Pilot Program

INTRODUCTION

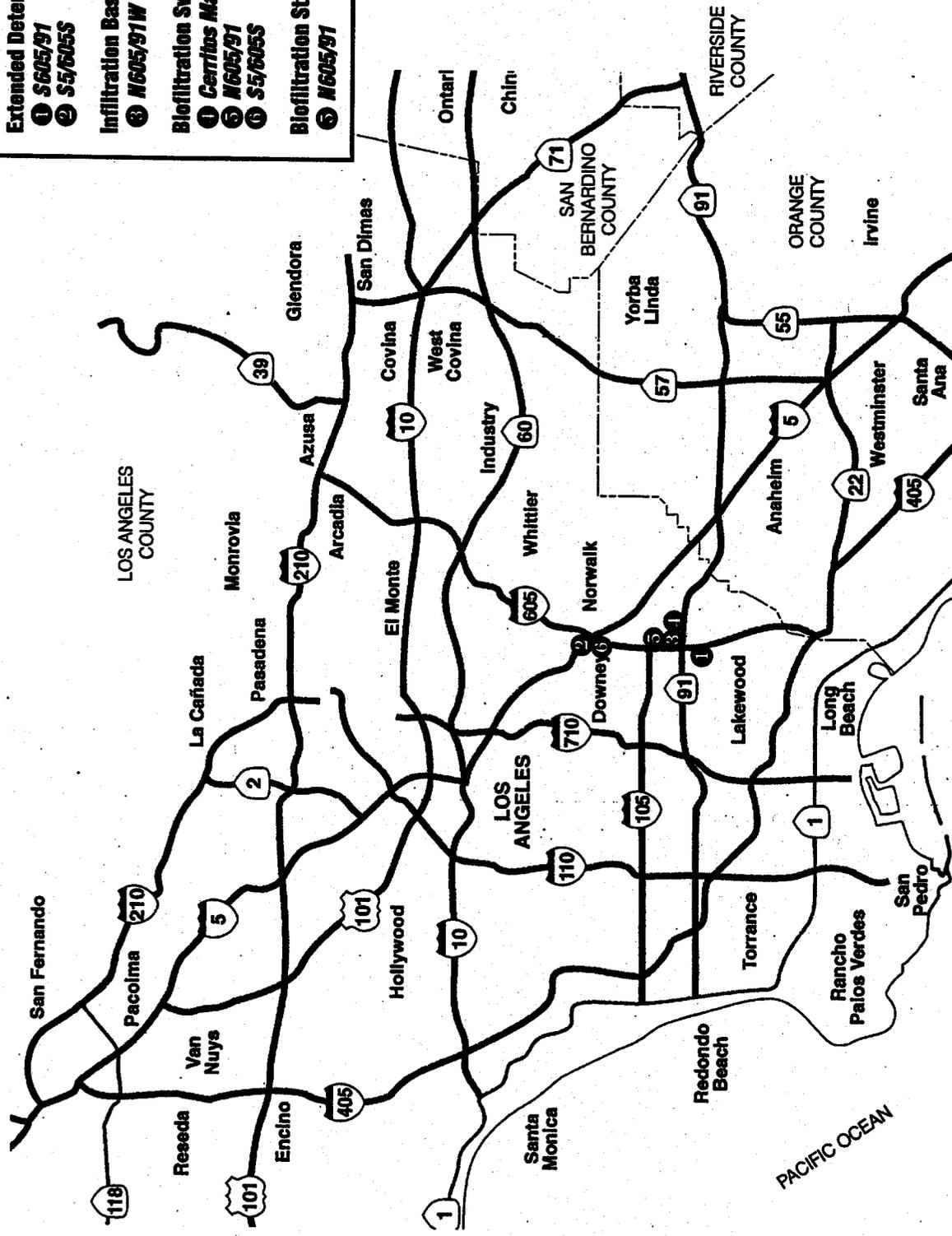
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Table 1 presents a synopsis of potential issues related to each BMP site. A discussion of each BMP site follows the table.

**TABLE 1
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AND SUMMARY OF FINDINGS**

Location; BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/ Action*	Nesting Birds	Standing Water	Species Observed
I-605/SR-91; InfBa	No	N/A	Yes/None	No	No	No	rock dove and cabbage white butterfly
I-5/I-605; ExtDB	No	N/A	Yes/None	No	No	No	common raven
I-605/SR-91; BiofSt	No	N/A	Yes/None	No	No	No	rock dove and common raven
Cerritos MS; BiofSw	No	N/A	Yes/None	Yes/none	No	No	Rock dove
I-5/I605; BiofSw	No	N/A	Yes/None	No	No	No	Black phoebe and rock dove
I-605/SR-91; BiofSw	No	N/A	Yes/None	No	No	No	None
I-5/Manchester; ExtDB	No	N/A	Yes/None	No	No	Yes	mourning dove, house finch, and rock dove
I-5/SR-56; ExtDB	No	N/A	Yes/None	No	No	Yes	killdeer, bushtit, Costa's hummingbird, lesser goldfinch, California towhee and common raven
I-15/SR-78; ExtDB	No	N/A	Yes/None	Yes/None	No	No	mourning dove and rock dove
I-5/La Costa W; InfBa	No	N/A	No	No	No	Yes	Bushtit, California towhee, common raven and Costa's hummingbird



- Extended Detention Basin:**
- ① S605/91
 - ② S5/605S
- Infiltration Basin:**
- ③ N605/91W
- Biofiltration Swale:**
- ④ Carrizo Maintenance Station/N91
 - ⑤ N605/91
 - ⑥ S5/605S
- Biofiltration Strip:**
- ⑦ N605/91



Not to Scale

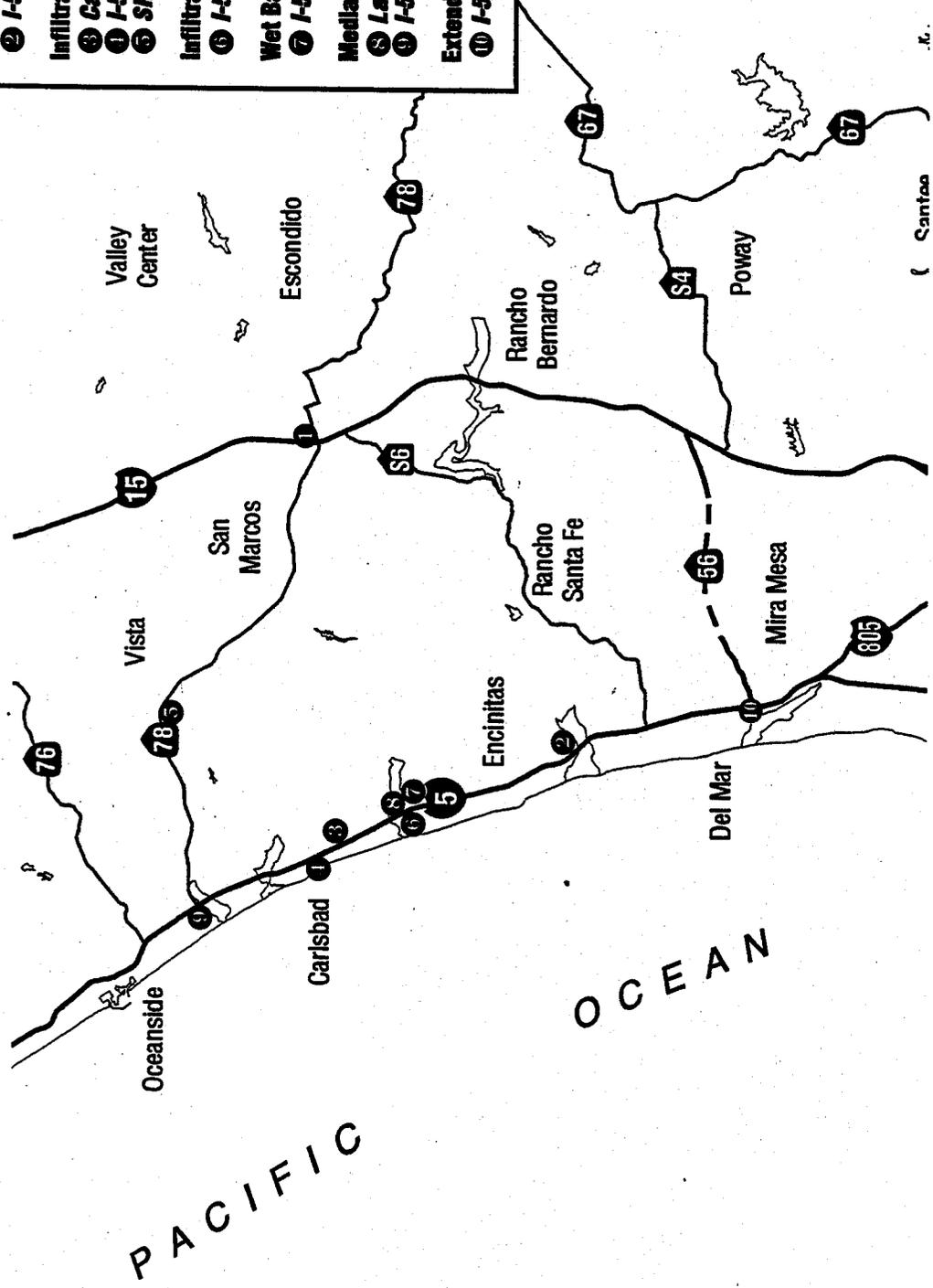
FIGURE
1

BASE MAP SOURCE: REF CONSULTING, 499

Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
Regional Location Map - District 7, Los Angeles

Caltrans BMP Retrofit Pilot Program, LA & SD Counties - Biological Monitoring Report
Regional Location Map - District 11, San Diego

- Extended Detention Basin:**
- ① SR-78/I-15
 - ② I-5/Manchester Avenue (east)
- Infiltration Trench/Biofilter (strip/swale):**
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 - ④ I-5 (south)/Palomar Airport Road
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- Wet Basin:**
- ⑦ I-5/La Costa Avenue (southeast)
- Media Filter:**
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1" = 5 Miles

Monitoring Report • Caltrans BMP Retrofit Pilot Program

TABLE 1 (Continued)
BMP LOCATIONS, TYPE AND POTENTIAL BIOLOGICAL ISSUES

Location: BMP Type	Sensitive Species Activity/Type	Action	Gopher Mounds/ Action*	Ground Squirrel Holes/Action*	Nesting Birds	Standing Water	Species Observed
I-5/La Costa SE; WetBa	No	N/A	Yes/None	Yes/None	No	Yes	Red-winged blackbird, mallard, house finch, great blue heron, common yellowthroat, and Costa's hummingbird
SR-78/Melrose; BiofSw	No	N/A	Yes/None	Yes/None	No	No	House finch and common raven
I-5/Palomar Airport; BiofSw	No	N/A	Yes/None	Yes/None	No	No	none
I-5/La Costa P&R; MedFi	No	N/A	No	No	No	No	Costa's hummingbird, California towhee, lessergoldfinch, common raven, and great egret (observed in adjacent habitat)
I-5/SR-78 P&R; MedFi	No	N/A	No	No	No	No	Common raven

- InfBa - Infiltration Basin
- ExtDB - Extended Detention Basin
- BiofSw - Biofiltration Swale
- BiofSt - Biofiltration Strip
- WetBa - Wet Basin
- MedFi - Media Filter

* Action needed to protect against potential sensitive species occupation – does not account for any actions required to protect site from herbivory, erosion, or other problems caused by fossorial mammals.

DISTRICT 7 (LOS ANGELES) BMP SITES

605/91 Interchange Biofiltration Swale

At the time of the survey a Caltrans crew was mowing and weeding the biofiltration swale. No water was present. No sensitive species were detected or expected.

There are no recommendations at this time.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

605/91 Interchange Biofiltration Strip

No water was present during this month's monitoring effort. Cheeseweed (*Malva parviflora*) is proliferating throughout the biofiltration strip. No sensitive species were detected or expected.

No recommendations are required at this time.

605/91 Interchange Infiltration Basin

No water was present at the time of the survey. The basin supported new growth of grass and herbaceous weeds. Caution tape around the basin has begun to degrade. No sensitive species were detected or expected.

There are no recommendations at this time.

5/605 Interchange Extended Detention Basin

No water was present during the survey. The caution tape around the basin has degraded. No sensitive species were detected or expected.

There are no recommendations at this time.

5/605 Interchange Biofiltration Swale

The swale was damp, however, no flowing water was present during the survey. Two mule fat (*Baccharis salicifolia*) recruits are growing adjacent to the swale. The caution tape around the swale was intact. No sensitive species were detected or expected.

There are no recommendations at this time.

Cerritos Maintenance Station/91 Biofiltration Swale

No water was present during the survey. Gopher damage to the swale was present. No sensitive species were detected or expected.

It is recommended that the gopher damage in the swale be repaired.

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DISTRICT 11 (SAN DIEGO) BMP SITES

5/56 Interchange Extended Detention Basin

Standing water was present among the rip rap strip in the bottom of the basin. The remainder of the basin was saturated and supported two young willow (*Salix lasiolepis*) recruits. No sensitive species were detected or expected.

There are no recommendations at this time.

5/Manchester Avenue Extended Detention Basin

Approximately 12 to 18 square meters (surface area) of standing water was present in the basin at the time of the survey. There are no sensitive species issues at this time.

There are no recommendations at this time.

5/La Costa Avenue Wet Basin

Water was present in both the basin and adjacent storm channel. The cattail (*Typha* sp.) vegetation has recovered quickly. There are no sensitive species issues at this time.

There are no recommendations at this time.

La Costa Avenue Media Filter

At the time of the survey, the southern side of the media filter was saturated, however, no standing water was present. The net previously covering the north side of the filter has been removed.

With the onset of the breeding season, it is recommended that the net exclusion device be placed over the media filter.

5/La Costa Avenue Infiltration Basin

At the time of the survey, standing water filled the basin to within approximately five inches of the basin rim. In addition, the recent high-water mark appeared to be above the basin rim, extending over the paved perimeter. No sensitive species were detected or expected at this time. The net exclusion device was intact.

There are no recommendations at this time.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

5/Palomar Airport Road Biofiltration Swale

No water was present at the time of the survey. There were no sensitive species issues.

There are no recommendations at this time.

78/Melrose Drive Biofiltration Swale

No sensitive species were detected at the time of the survey. No water was present.

There are no recommendations at this time.

78/15 Extended Detention Basin

No water was present during the survey. No sensitive species were detected.

There are no recommendations at this time.

5/78 Media Filter

The northern side of the media filter was wet at the time of the survey, however, no standing water was present. There were no issues at the media filter.

With the onset of the breeding season, it is recommended that the net exclusion device be placed over the media filter.

COMMENTS

During this period, DUDEK conducted a site visit to all BMP's. Water was present at four of the 15 BMP sites addressed in this report (District 11- La Costa Wet Basin, La Costa Infiltration Basin, I-5/SR-56 Extended Detention Basin and Manchester Avenue Extended Detention Basin). Photos were taken of each of the BMP sites and are available upon request.

Presently, nesting birds will not constrain maintenance activities, nor will sensitive species. With the onset of the breeding season, nesting birds may potentially affect activities during the spring and early summer.

Monitoring Report • Caltrans BMP Retrofit Pilot Program

LITERATURE CITED

Robert Bein, William Frost and Associates. 1999. Project Information for Selected Best Management Practice (BMP) Sites in Caltrans Districts 7 and 11. 27pp.

DUDEK

& ASSOCIATES, INC.

Professional Teams for Complex Projects

February 2001

2195-01

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APPENDIX E: LA COSTA INFILTRATION BASIN LOG

BMP RETROFIT PILOT PROGRAM
PS&E LOCATION 3
I-SILA COSTA AVE INFILTRATION BASIN

TABLE 1
WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading Headwall (FT)	Monitoring Well (FT)	Pond Depth (FT)	Groundwater Elev (FT)	Delta (FT)	By	Comment
12/12/97	--	--	BORING WW-1	--	2.22	4.67	GDC	Existing surface elevation: 10.22 ft (3.117m)
12/13/97	--	--	BORING WW-2	--	1.69	5.20	GDC	Existing surface elevation: 10.69 ft (3.258m)
12/23/97	--	--	--	--	No groundwater encountered.	--	GDC	SD-7 initial investigation monitoring well installed. (Bottom at 5 ft bgs.)
2/10/98	--	--	3.00	--	7.92	-1.03	GDC	Reading after a series of rain storms. Adjacent ground saturated and surface ponding observed.
4/2/98	--	--	5.85	--	7.34	-0.45	GDC	SDMMW-1 Permanent monitoring well installed. (Bottom at 20 ft bgs.)
6/30/98	10:00am	--	6.90	--	6.29	0.60	KLI	
7/3/98	4:15pm	--	6.95	--	6.24	0.65	KLI	
8/31/98	11:57am	--	7.17	--	6.02	0.87	KLI	
9/28/98	--	--	--	--	4.38	--	RBF	Exploratory hole excavated by contractor. Ground water elevation 0.54ft below original design invert, 4.92ft (1.5m)
11/2/98	4:04pm	--	7.60	--	5.59	1.30	KLI	
11/11/98	4:55pm	--	7.60	--	5.59	1.30	KLI	
12/2/98	--	--	7.61	--	5.58	1.31	KLI	
12/17/98	--	--	--	--	0.00	--	CT RE	Exploratory holes excavated 10.2 feet below invert elevation. No groundwater observed.
1/20/99	7:05am	--	7.14	--	6.05	0.84	GDC	
2/24/99	10:15am	2.08	--	--	--	--	GC	No signs of mosquitoes. Surface has 2"-3" dia algae.
3/2/99	2:00pm	1.88	--	--	--	--	AW	
3/9/99	11:00am	1.73	--	--	--	--	GC	- no algae present from 2/24/99.
3/12/99	1:00pm	1.86	9.00	1.45	4.19	2.70	AW	< 0.1in rain on 3/11/99, no algae.
3/16/99	4:55pm	1.98	6.90	1.57	6.29	0.60	AW	< 0.2in rain on 3/15/99, 2mm dia algae scattered on water surface. Dried high-algae-line observed on headwall at 2.84ft mark.
3/23/99	10:00am	1.76	7.08	1.35	6.11	0.78	AW	, no algae.
3/26/99	10:20am	2.48	9.00	2.07	4.19	2.70	AW	< 0.5in rain on 3/25/99, no algae.
3/30/99	9:05am	2.28	8.85	1.87	4.34	2.55	AW	6-sf algae at NW corner. Vector Control District treated basin with Alkosisd briquettes and stocked basin with mosquito fish.
4/2/99	8:15am	2.89	8.35	2.48	4.84	2.05	AW	<0.5in rain on 4/1/99, no algae.
4/6/99	2:00pm	2.69	7.00	2.28	6.19	0.70	AW	, no algae.
4/9/99	10:00am	2.67	7.00	2.26	6.19	0.70	AW	, 1mm dia algae, 8sf at NW corner.
4/13/99	10:00am	2.89	6.91	2.48	6.28	0.61	AW	<0.8in rain on 4/11/99, <1mm dia algae approx 8sf.
4/20/99	9:50am	2.52	9.30	2.11	3.89	3.00	AW	, algae mats at NW corner.
4/27/99	2:25pm	2.50	7.10	2.09	6.09	0.80	AW	, 6-1-2ft dia alga mats.
5/5/99	1:10pm	2.06	7.00	1.65	6.19	0.70	AW	, few scattered 1-5mm dia algae.
5/18/99	5:55pm	1.66	7.15	1.25	6.04	0.85	AW	collection of small floating algae mats varying 4-8" wide and approx. 10ft long.
5/25/99	5:40pm	1.50	7.10	1.09	6.09	0.80	AW	, 6-12" wide alga mat at perimeter of the basin.
6/8/99	5:40pm	1.30	7.25	0.89	5.94	0.95	AW	, alga mats at perimeter and interior of the basin. <0.14" Rain rcvd June 1,2,3
6/15/99	1:45pm	1.10	7.20	0.69	5.99	0.90	AW	, alga mats at perimeter and interior of the basin.

TABLE 1
 WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth (FT)	Groundwater Elev (FT)	Delta (FT)	By	Comment
		Headwall (FT)	Monitoring Well (FT)					
6/28/99	1:50pm	0.82	7.30	0.41	5.89	1.00	AW	alg mats at perimeter and scattered 2/3 length within basin interior.
7/7/99	12:45pm	0.62	7.50	0.21	5.69	1.20	AW	alg mats 2/3 length of the basin at perimeter and scattered 10inch mats within interior.
7/19/99	10:30am	0.43	7.40	0.02	5.79	1.10	AW	alg mats cover 60% of basin.
8/3/99	11:45am	0.22	7.50	-0.19	5.69	1.20	AW	alg mats cover 90% of basin.
8/17/99	10:50am	0.12	7.55	-0.29	5.64	1.25	AW	Basin is empty. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
8/31/99	9:50am	0.12	7.55	-0.29	5.64	1.25	AW	Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
9/15/99	11:45am	-0.26	7.60	-0.67	5.59	1.30	AW	Basin is empty. Surface of the southern portion of the basin is dry. A 1sft, 1in deep puddle of water is located at the scour hole adjacent to the outlet.
9/28/99	11:55am	0.08	7.60	-0.33	5.59	1.30	AW	Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
10/12/99	10:05am	0.08	7.65	-0.33	5.54	1.35	AW	Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
10/26/99	3:00pm	0.08	7.70	-0.33	5.49	1.40	AW	Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
11/9/99	2:35pm	0.08	7.65	-0.33	5.54	1.35	AW	Basin is empty. Surface of the southern portion of the basin is dry. Residual water is ponded in the scour hole at the outlet (approximately 2ft x 2ft).
11/23/99	4:05pm	No standing water.	7.60	No standing water.	5.59	1.30	FP	Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed.
12/8/99	10:15am	No standing water.	7.75	No standing water.	5.44	1.45	AW	Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed.
12/21/99	3:30pm	No standing water.	7.75	No standing water.	5.44	1.45	AW	Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed.
1/4/00	12:20pm	No standing water.	7.65	No standing water.	5.54	1.35	AW	Basin is empty. Surface of the basin is dry. The invert of the scour hole at the outlet is saturated. No ponding was observed.
1/18/00	8:50am	No standing water.	7.85	No standing water.	5.34	1.55	AW	Basin is empty. Surface of the basin is damp. The invert of the scour hole at the outlet is saturated. No ponding was observed.
2/1/00	10:15am	Small Pools.	7.45	No standing water.	5.74	1.15	CW	Ponding was observed in several small pools in center of basin. Strong H2S smell from well.
2/15/00	4:45pm	1.60	7.50	1.19	5.69	1.20	MZ	Strong H2S smell from well. Basin has a large pool of water at 1.6ft.
2/29/00	12:30pm	2.90	7.25	2.49	5.94	0.95	MZ	Groundwater was sampled for water quality. Strong H2S smell from well. Basin at capacity with a 2.9 ft stage.

TABLE 1
 WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth (FT)	Groundwater Elev (FT)	Delta (FT)	By	Comment
		Headwall (FT)	Monitoring Well (FT)					
3/15/00	2:30pm	2.90	7.18	2.49	6.01	0.88	CW	Strong H2S smell from well. Basin at capacity with a 2.9 ft stage.
3/28/00	11:15am	1.51	7.35	1.10	5.84	1.05	CW	Strong H2S smell from well. Basin stage has dropped to 1.51 feet.
4/11/00	10:00am	1.20	7.50	0.79	5.69	1.20	BJ	Strong H2S smell from well. Basin level continues to drop during dry weather.
4/24/00	9:30am	1.60	7.45	1.19	5.74	1.15	MZ	Strong H2S smell from well and groundwater very saline. Basin level has risen from last observation because of April 17 storm event.
5/12/00	10:00am	0.78	7.60	0.37	5.59	1.30	CW	Strong H2S smell. Woody wetland vegetation present in basin
5/24/00	2:10pm	0.59	7.63	0.18	5.56	1.33	MZ	Weak H2S smell. Woody wetland vegetation present in basin
6/15/00	11:30am	0.47	7.70	0.06	5.49	1.40	BJ	Weak H2S smell. Basin level continues to drop during dry weather.
6/30/00	10:30am	No standing water.	7.80	No standing water.	5.39	1.50	BJ	Weak H2S smell. Basin is now dry.
7/12/00	11:30am	No standing water.	7.90	No standing water.	5.29	1.60	CW	H2S odor not present. Basin is dry.
7/28/00	12:10am	No standing water.	7.91	No standing water.	5.28	1.61	VG	Musty odor present. Basin is dry.
8/11/00	1:00pm	No standing water.	7.92	No standing water.	5.27	1.62	CW	No odor. Basin Dry.
8/24/00	9:45am	No standing water.	7.98	No standing water.	5.21	1.68	VG	No odor. Basin Dry.
9/7/00	11:15am	No standing water.	8.07	No standing water.	5.12	1.77	CW	No odor. Basin Dry.
9/20/00	10:00am	No standing water.	7.96	No standing water.	5.23	1.66	BB	No odor. Basin Dry.
10/6/00	11:00 AM	No standing water.	7.95	No standing water.	5.24	1.65	CW	No odor. Basin Dry.
10/18/00	11:45 AM	No standing water.	7.9	No standing water.	5.29	1.60	BJ	H2S odor present. Basin is dry.
11/3/00	3:00 PM	2.60	7.37	2.19	5.82	1.07	VG	H2S odor present. Basin is full and near capacity. One of the bird deterrent netting support poles has fallen.
11/15/00	12:00 PM	2.10	7.4	1.69	5.79	1.10	VG	H2S odor present. Basin is full and near capacity. One of the bird deterrent netting support poles has fallen.
11/30/00	1:58 PM	1.25	7.54	0.84	5.65	1.24	BB	H2S Odor present.
12/13/00	3:30 PM	0.98	7.6	0.57	5.59	1.30	BJ	H2S Odor present.
12/28/00	10:35 AM	0.46	7.57	0.05	5.62	1.27	CW	H2S Odor present.
1/16/01	11:15 AM	2.5	7.21	2.09	5.98	0.91	CW	No odor.
2/2/01	11:40 AM	2.6	7.5	2.19	5.69	1.20	BJ	No odor.
2/20/01	11:50 AM	2.9	7.35	2.49	5.84	1.05	BJ	No odor. Basin overflowing onto access road.

Temporary Well: Well Cover elevation 10.99 ft (3.35m). Well rim elevation 10.92 ft.

WSE at monitoring well = Well cover elevation (FT) - Monitoring Well Reading (FT)

BMP RETROFIT PILOT PROGRAM
 PS&E LOCATION 3
 I-SILA COSTA AVE INFILTRATION BASIN

TABLE 1
 WATER SURFACE ELEVATION SUMMARY SHEET

Date	Time	Field Reading		Pond Depth* (FT)	Groundwater Elev (FT)	Delta (FT)	By	Comment
		Headwall (FT)	Monitoring Well (FT)					

Permanent Well: Monitoring well notch at elevation 13.186 ft (4.02m)

WSE at monitoring well = Notch elevation (FT) - Monitoring Well Reading (FT)

Monitoring Well reading = Distance to groundwater surface

*

Pond Depth = Headwall Field Reading (FT) - Pipe Invert Location on the Headwall Gauge (FT)

Pipe Invert Location on the Headwall Gauge (FT) = 0.41 ft

Note: Negative Pond Depths indicate ponded water is below invert.

This is due to scour and settlement of the invert material.

Delta = Basin Invert - Groundwater elevation

Basin Invert = 6.89 FT (2.1m)

AW- RBF

FP- RBF

GC- RBF

GDC-Group Delta Consultants (Formerly LKR- The LKR Group, Consulting Geotechnical Engineers)

KLI- Kinnetic Laboratories, Inc.

CT RE- Caltrans Resident Engineer

APPENDIX F: PROJECT CALENDAR

November

2	Biweekly Conference Call
14	Biweekly Report Due
16	Biweekly Conference Call
23	No Monitoring/Sampling
30	Quarterly Status 11 Report Due

November 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																										
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December

- 13** D7 Studies Meeting at RBF 9 am
Sweeper Meeting at RBF 1-3 pm
Final Report Meeting at RBF 3-5 pm
- 14** 9:30 AM2:30 PM-Quarterly Meeting No. 11 at RBF, Irvine Office.
Participants-NRDC, EPA, Baykeepers, Consultants, Caltrans.
- 24** No Monitoring/Sampling
- 25** No Monitoring/Sampling
- 26** Biweekly Report Due
- 28** Bi-Weekly Conference Call
- 31** No Monitoring/Sampling

December 2000

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																		
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January

1	No Sampling
2	Biweekly report due
4	Biweekly Conference Call
16	Biweekly report due
18	Biweekly Conference Call
30	Biweekly report due

January 2001

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February

- 1** Biweekly Conference Call
- 16** 9:00am to 11:00am Second Level Dispute Resolution Meeting, Dispute of October 24, 2000. Participants: Steve Borroum, Everett DeLano, Bill Evans, Doug Failing, Chris May (for Richard Horner), Steve Weisberg, Caltrans Staff and consultants as needed.
- 11:00am-12:00pm Retrofit Pilot Program Cost Evaluation Issues-Meeting of Parties' Representatives. Participants: Representatives of NRDC, Caltrans, EPA, San Diego BayKeeper.
- 12:00pm-12:30pm First Level Dispute Resolution Meeting-Dispute of February 1, 2001. Participants: Brian Currier, Everett DeLano, Bill Evans, Chris May, Paul Thakur, Caltrans staff and consultants as needed.
- 1:30pm-3:00pm Retrofit Pilot Program Cost Evaluation Issues-Meeting of Parties' Representatives and 'Third Party' Team of Consultants. Participants: Representatives of NRDC, Caltrans, EPA, San Diego BayKeeper, Glenrose Engineering, Holmes Narver, Caltrans staff and consultants as needed.
- LOCATION: Caltrans District 12 Offices, Room C1116, 3337 Michelson, Suite CN380, Irvine, CA 92612-1699.
- 20** Biweekly Report Due
- 22** Biweekly Conference Call-10:00am

February 2001

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday																																																																																																		
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March

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Quarterly Status Meeting No.12 at RBF 9:30-2:30

March 2001

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