

# Project Final Report

Submittal Date December 14, 2009

Grant Agreement No.: 02-243-550-0

Project Name: Segunda Deshecha Canada (M02) Urban Runoff Treatment Facility

Grantee Name: City of San Clemente

Project Manager: Handan Cirit, P.E.  
 Consulting Civil Engineer  
 C-Tech Inc.  
 For City of San Clemente

*Handan Cirit*  
 Signature

## Summary of Work Completed (List all tasks)

Work Item	Items for Review #	Due Date	% of Work Complete	Date Submitted
EXHIBIT A	<b>Scope of Work:</b>			
1.0	QAPP & Monitoring Plan			
1.1	QAPP	June 2006	100%	April 2008
1.2	Monitoring Plan	June 2006	100%	April 2008
2.0	<b>Work to be Performed by Grantee:</b>			
2.1.1	RFP for Design Engineer	December 2004	100%	November 14, 2004
2.1.3	As-Advertised Contract Documents	March 2006	100%	August 14, 2006
2.1.4	Copy of Bid Summary & Proof of Advertisement	June 2006	100%	September 29, 2006
2.1	Project Design		100%	
2.2	Project implementation		100%	September 30, 2008
2.2.2	Photo Documentation of Construction	September 2005,2006, 2007	100%	September 30, 2008
3.0	<b>Reporting:</b>			
3.1	Annual Progress Summary	September 2005,2006, 2007,2008	100%	September 30, 2008
3.2	Draft Project Final Report	June 2008	100%	December 4, 2009
3.3	Final Project Report	September 2008	0%	
EXHIBIT C	<b>SWRCB General Conditions :</b>			
#6	CEQA Document	September 2004	100%	September 7, 2004 and July 5, 2005
#6	NEPA Document		100%	July 20, 2006
#22	Regulatory Permits (estimated) :	June 2006		
	California Coastal Commission		100%	March 13, 2006
	County of Orange Encroachment Permit		100%	July 18, 2006
	RWQCB 401 Certification***& NPDES Permit ***SOCWA is pursuing a permit amendment for the City for discharge of treated urban runoff to the jointly owned land outfall.		100%	August 16, 2006
	USACE 404 Certification		100%	May 22, 2006
	Ca Fish and Game approval		100%	June 27, 2006

# **Project Final Report**

## **Introduction**

### **Project Objective**

The objective of the project is to evaluate the effectiveness of diversion of 100% of the dry weather urban runoff flows (up to 1.5 cfs) in reducing bacteria levels from the Segunda Deshecha Canada (M02) storm drain channel to North Beach. The County of Orange Coastal Storm Drain Outfall Program monitors bacterial levels at the M02 channel outlet as well as the surf zone. The success of the project will be measured by comparing the M02 channel outlet and surf zone water quality monitoring data during the operation of the system to the historical water quality monitoring data collected by the County.

### **Scope of Project**

Urban Runoff from 4800-acre Segunda Deshecha Canada (M02) watershed drains through both natural and concrete lined channels and outlets at North Beach in the City of San Clemente. The urban runoff contains high levels of indicator bacteria impacting the North Beach. The City constructed the M02 urban runoff treatment facility upstream of the North Beach to divert dry weather urban runoff thus eliminating dry weather urban runoff reaching to the North Beach. The urban runoff treatment facility is shut down during periods of rain.

### **Approach and Techniques Use**

The City collects M02 dry weather urban runoff and conveys flows to a pressure sand filtration system for treatment. The treated effluent is discharged to the City's land outfall combining with the secondary treated wastewater for ocean disposal.

## **Background and Description**

Urban runoff from the 4,800-acre Segunda Deshecha (M02) watershed drains through both natural and concrete-lined channels and discharges from a concrete box structure directly onto the North Beach to the Pacific Ocean. North Beach, the City's second highest frequented beach with approximately 600,000 annual users, is located on the northern portion of the City's shoreline near the western end of Avenida Pico. The City constructed the M02 Urban Runoff Treatment Facility (project) up stream of North Beach to divert and treat up to 1.5 cfs dry weather urban runoff from the M02 channel thus eliminating dry weather urban runoff reaching the North Beach. Dry weather urban runoff is collected in a drop inlet box located in the concrete section of the M02 channel and is directed to the project. As part of the project, minor dry weather flow entering M02 channel downstream of the diversion is also collected and diverted to an adjacent sanitary sewer.

The project includes a pump station adjacent to the M02 channel, a pressure filtration treatment facility in the City's Water Reclamation Plant, and conveyance pipelines. The filtered urban runoff is discharged to the City's land-outfall combining with the secondary treated wastewater for disposal. The project cost was \$3.4 million and was funded from the State Water Resources Control Proposition 40 grant (\$1.8 million), US EPA grant (\$719,839) and the City funds.

## **Monitoring and Reporting**

## Project Final Report

The City completed construction of the project in September 30, 2008 but the project final acceptance and commissioning was delayed to the end of April 2009 due to impact of algae from the M02 channel. The filtration system required installation of fabric screens and also the City's added SCADA for remote control and monitoring of facilities. The project was successfully started and has been in operation continuously from June 1, 2009 through October 31, 2009 capturing upstream nuisance water in the flood control channel. The project is shut off during rain events.

The environmental data was collected in accordance with the City's approved Quality Assurance Project Plan and Monitoring Plan (QAPP) for the project at the locations described below. A map showing these locations provided as Exhibit A.

- M02 Flood Control Channel Ocean Outlet and Surf Zone monitoring at North Beach: The County of Orange Coastal Storm Drain Outfall Program\* has been providing weekly bacteria levels and flow monitoring for the M02 channel outlet and the ocean surf zone. This historical and current monitoring data was used to evaluate the project effectiveness as provided in Exhibit B.
- (M02) Urban Runoff Pump Station: The City collected continuous flow and weekly bacteria levels monitoring data for the urban runoff diverted from the M02 channel prior to conveyance to the filters. This monitoring data is provided as Exhibit C. The City provided weekly inspection of the M02 channel drop inlet confirming capture of 100% of channel urban runoff during operation of the Project.
- Filtered Effluent Discharge Monitoring: As of June 1, 2009 the City monitored pH, grease and oil, settleable solids, total suspended solids and turbidity of the treated urban runoff effluent prior to discharge to City's land-outfall as stipulated in the City's NPDES permit as provided in Exhibit C.

### **Project Effectiveness**

The City's QAPP for the project identified the project's mission and goal as evaluation of effectiveness of the diversion of the dry weather flows in reducing bacteria levels from the M02 channel to North Beach within the outlet and the surf zone. The County provided a summary of flow and bacterial levels at the channel outlet and ocean surf zone for years 2007 through 2009 for the period April 1 through October 31 to evaluate Project effectiveness. As shown on Exhibit B the project was effective to reduce bacteria levels and further improve ocean water quality at North Beach to meet AB-411 ocean water quality objectives.

\*Coastal Storm Drain Outfall Program: The National Pollutant Discharge Elimination System (NPDES) Municipal Stormwater Permit, issued by the San Diego Regional Water Quality Control Board to Orange County and the incorporated cities of South Orange County, requires routine bacteriological monitoring of coastal storm drains and their respective ocean receiving waters. Pursuant to these requirements, a monitoring program was developed by the County and approved by the Regional Board. Samples are collected weekly during dry weather from the major storm drains, and in the surf zone 25 yards upcoast (northerly direction) and 25 yards downcoast (southerly direction) of the respective drain-ocean interface. The intent of this monitoring is to evaluate the impacts (magnitude and trends) of urban runoff to the coastal zone.

Attachments: Exhibit A- Monitoring Locations

Exhibit B- County of Orange Coastal Storm Drain Monitoring M02 Channel and Ocean Surf Zone at North Beach

Exhibit C- M02 Urban Runoff Facility Monitoring at City Facilities

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## Project Final Report

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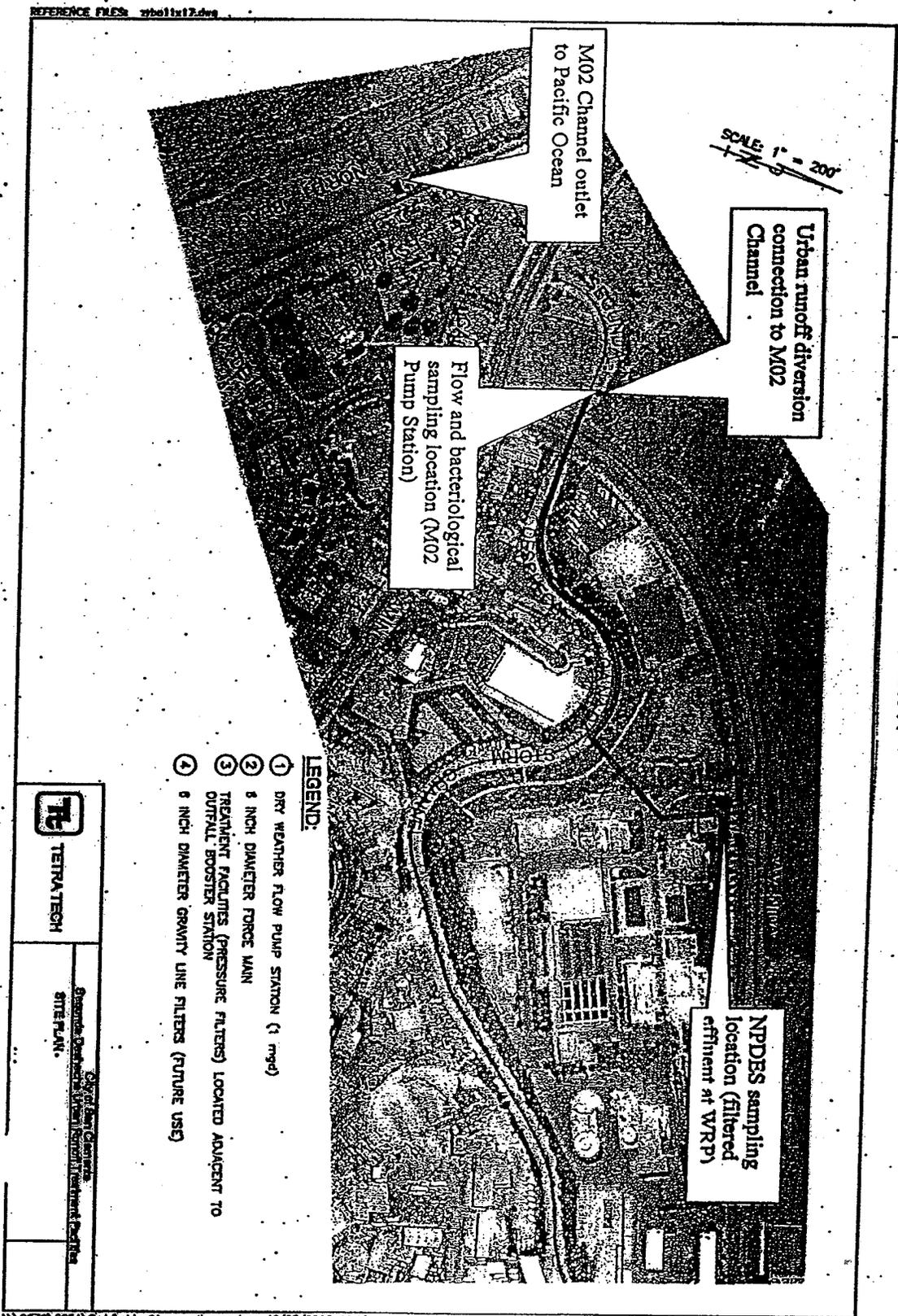
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SEGUNDA DESHECHA CANADA (M02) URBAN RUNOFF FACILITY  
 MONITORING LOCATIONS  
 EXHIBIT A



**Exhibit B**

**County of Orange  
Coastal Storm Drain Monitoring M02 Channel and Ocean Surf Zone at North Beach**

Summary of Bacteria Test Results (established 30-day geometric log mean standards)  
Total Coliform (TC), Fecal Coliform (FC), Enterococcus (ENT) in count/100ml  
April 1 through October 31, 2007, 2008 & 2009

Date	Ocean*			Channel			Ave.Flow (cfs)	Ave.Flow (mgd)
	TC	FC	ENT	TC	FC	ENT		
April 2007	187	26	19	7980	663	609	0.89	0.58
April 2008	48	12	16	2938	177	417	1.26	0.81
April 2009	27	9	11	350	48	80	2.44	1.57
May 2007	73	15	15	15400	857	638	0.99	0.64
May 2008	95	25	30	2705	427	643	1.15	0.74
May 2009	28	9	9	DRY	DRY	DRY		
June 2007	391	79	43	4287	1398	649	1.04	0.67
June 2008	137	35	29	2771	446	922	1.48	0.95
June 2009	27	9	16	**6600	**780	**1260	*0.9	0.58
July 2007	328	51	34	5965	1214	818	0.81	0.52
July 2008	32	18	14	4924	786	328	0.66	0.43
July 2009	13	9	9	***420	***27	***20		
August 2007	628	95	144	27185	3372	2341	1.19	0.77
August 2008	175	29	38	8360	1074	805	5.31	3.43
August 2009	19	11	11	**230	**70	**50		
September 2007	450	70	99	32404	2707	1760	1.60	1.03
September 2008	50	24	35	9276	2292	581	0.35	0.23
September 2009	16	9	12	***5103	***616	***1166		
October 2007	221	82	114	12656	1635	1255	1.07	0.69
October 2008	191	52	73	21334	1671	1907	0.53	0.34
October 2009	94	27	62	**70000	**400	**6000	*1.6	1.03

\*Upcoast and downcoast ocean data combined

\*\*Single sample. Five weekly sample data not available due to dry channel.

\*\*\*Geometric mean based on three weekly samples due to dry channel.

**% Exceedance of AB-411 Ocean Recreational Contact Standard**

	TC	FC	ENT
2007	7.2%	11%	45%
2008	1.4%	1.1%	18%
2009	0.0%	0.0%	2.5%

Date & Time	Upcoast			Channel			Downcoast			
	TC	FC	ENT	TC	FC	ENT	TC	FC	ENT	
04-Apr-07 10:35	40	<9	<9	4,800	480	440	1.17	320	70	40
11-Apr-07 10:10	130	20	9	2,200	420	650	0.71	180	80	30
18-Apr-07 09:20	9	<9	<9	6000	470	560	0.60	200	40	40
25-Apr-07 10:35	900	20	9	64000	2000	860	1.09	2900	40	50
GEOMEAN	81	13	9	7990	663	609	0.89	433	51	39
02-May-07 09:55	<9	9	<9	56000	1400	1390	0.55	1,100	20	60
09-May-07 10:23	70	<9	9	24,000	2100	760	0.94	600	70	40
16-May-07 10:55	30	<9	<9	5,300	860	380		180	30	<9
23-May-07 10:25	9	<9	9	6,400	250	120	0.09	200	<9	20
29-May-07 09:35	120	20	20	19,000	730	2200	2.40	<9	9	9
GEOMEAN	29	11	11	15400	857	638	0.99	185	20	21
05-Jun-07 09:45	4000	270	480	13,300	2400	3200	1.07	990	200	130
13-Jun-07 10:00	80	20	<9	3,900	1300	280	1.32	170	50	<9
19-Jun-07 09:15	1,600	500	210	2,100	1260	460	0.83	150	60	60
26-Jun-07 10:15	200	30	<9	3,100	973	430	0.94	210	30	20
GEOMEAN	566	95	53	4287	1398	649	1.04	270	65	34
02-Jul-07 10:25	240	70	<9	2,200	2,600	480	0.79	110	40	9
11-Jul-07 10:00	180	60	30	5,400	680	990	0.11	900	120	120
18-Jul-07 09:20	730	70	150	4100	410	850	1.27	1,170	90	230
25-Jul-07 09:30	80	<9	9	26000	3000	1110	1.07	460	50	20
GEOMEAN	224	39	25	5965	1214	816	0.81	480	68	47
01-Aug-07 08:35	250	20	140	37000	1700	1400	0.80	520	30	200
08-Aug-07 09:30	20	9	<9	13,000	1700	850	0.77	480	140	110
15-Aug-07 09:45	2100	250	140	35000	2300	3000	1.05	260	20	80
22-Aug-07 10:30	740	130	130	42000	4100	2700	1.65	4500	510	570
29-Aug-07 08:40	2800	720	420	21000	16000	7300	1.67	1500	340	390
GEOMEAN	465	84	99	27185	3372	2341	1.19	848	108	208
05-Sep-07 08:40	310	50	40	32000	3600	6900	1.44	3200	290	590
12-Sep-07 09:10	80	9	40	5,900	2300	1590	1.44	410	100	99
19-Sep-07 09:00	2100	250	150	146000	2120	230	1.09	220	40	100
26-Sep-07 09:25	510	30	160	40000	2900	3800	2.44	220	140	40
GEOMEAN	404	43	79	32404	2707	1760	1.60	502	113	124
03-Oct-07 09:40	4400	3100	420	21000	2000	1400	0.82	30	<9	30
10-Oct-07 09:15	20	<9	9	4,800	480	420	1.25	240	90	300
17-Oct-07 09:55	80	50	30	24000	1600	1350	0.89	1,190	170	240
24-Oct-07 09:00	440	40	310	22000	2000	2800		130	80	320
31-Oct-07 09:35	220	60	70	6,100	3600	1400	1.30	370	370	220
GEOMEAN	233	60	76	12656	1635	1255	1.07	210	84	172

Date & Time	Upcoast			Channel			Downcoast			
	TC	FC	ENT	TC	FC	ENT	CFS	TC	FC	ENT
02-Apr-08 10:10	9	<9	<9	3,900	130	470	1.08	160	20	30
09-Apr-08 10:40	20	9	<9	2,700	170	410	1.16	160	20	20
16-Apr-08 09:45	<9	<9	<9	2,100	170	250	1.30	100	9	9
23-Apr-08 09:30	<9	9	<9	3,300	210	580	1.23	170	<9	30
30-Apr-08 10:10	40	<9	9	3,000	220	450	1.58	240	40	90
GEOMEAN	14	9	9	2938	177	417	1.26	160	17	27
07-May-08 09:50	2,200	340	710	25000	3100	5100	1.86	280	30	40
14-May-08 09:45	200	40	9	2,100	420	380	1.30	20	<9	<9
21-May-08 07:15	<9	<9	9	300	50	70	0.88	9	<9	20
28-May-08 09:45	190	20	40	3,400	510	1330	0.76	190	30	40
GEOMEAN	166	40	39	2705	427	643	1.15	55	16	23
04-Jun-08 09:10	420	90	80	6,000	2500	1210	1.77	1,060	220	100
11-Jun-08 09:10	420	60	99	3,600	380	850	2.84	280	90	9
18-Jun-08 09:30	220	30	<9	4,400	420	270	1.15	40	<9	20
25-Jun-08 09:10	30	9	40	620	99	2600	0.16	<9	<9	<9
GEOMEAN	185	35	41	2771	448	922	1.48	102	36	20
01-Jul-08 10:05	9	9	<9	9,700	2000	480	0.67	20	<9	<9
09-Jul-08 09:45	170	40	30	9,300	2000	680	0.67	9	<9	<9
14-Jul-08 08:55	1,310	80	40	13,400	1800	850	0.84	<9	<9	9
22-Jul-08 08:34	150	80	40	3,800	520	680	0.47	9	20	<9
29-Jul-08 09:15	9	9	<9	630	80	20	0.66	30	<9	<9
GEOMEAN	77	29	21	4924	786	328	0.66	13	11	9
04-Aug-08 10:50	9	9	<9	5,800	490	360	0.67	20	<9	<9
12-Aug-08 10:25	1,600	30	90	5,800	390	680	7.98	1,600	80	170
21-Aug-08 10:20	670	150	140	22,000	17,000	2600	7.92	290	130	290
25-Aug-08 10:30	99	9	9	6,800	410	650	0.03	100	20	9
GEOMEAN	176	25	32	8960	1074	805	5.31	175	34	45
02-Sep-08 10:12	150	20	70	7,200	660	1420	0.36	110	<9	50
10-Sep-08 09:53	20	9	<9	6500	2100	290	0.56	9	<9	9
18-Sep-08 10:40	140	210	130	113000	83000	840	0.28	500	480	760
23-Sep-08 10:53	9	<9	<9	1,400	240	330	0.19	20	<9	9
GEOMEAN	44	24	29	9276	2292	581	0.35	56	24	42
02-Oct-08 09:38	540	270	140	27000	1000	1290	1.04	470	230	280
09-Oct-08 10:15	520	80	70	28,000	2800	2900	0.96	40	<9	<9
14-Oct-08 11:42	310	50	220	28,000	480	960	0.39	220	100	150
22-Oct-08 08:58	110	20	80	72000	44000	3900	0.18	50	40	9
27-Oct-08 10:35	230	40	150	2,900	220	1800	0.07	140	20	50
GEOMEAN	294	61	121	21334	1671	1907	0.53	124	44	44



**Exhibit C**  
**M02 Urban Runoff Facility Monitoring at City Facilities**  
**May 1, 2009 through October 31, 2009**

	M02 Pump Station			Filter Effluent @WRP					
	MO2FC Fecal Coliform	MO2ENTC Enterococcus	MO2TC Total Coliform	MO2FLOW Flow	MO2TSS Total Suspended Solids	MO2SS Settleable Solids	MO2PH Ph	MO2GO Grease & Oil	MO2TURB Turb
	CFU	CFU	CFU	MGD	mg/L	ml/L	SU	mg/L	NTU
05/01/2009									
05/02/2009									
05/03/2009									
05/04/2009	10.00	120.00	400.00						
05/05/2009	300.00	1700.00	3100.00						
05/06/2009									
05/07/2009									
05/08/2009									
05/09/2009									
05/10/2009									
05/11/2009	40.00	800.00	3000.00						
05/12/2009									
05/13/2009	100.00	700.00	1300.00						
05/14/2009									
05/15/2009									
05/16/2009									
05/17/2009									
05/18/2009	40.00	200.00	300.00						
05/19/2009	8.00	20.00	80.00						
05/20/2009									
05/21/2009									
05/22/2009									
05/23/2009									
05/24/2009									
05/25/2009									
05/26/2009	40.00	40.00	300.00						
05/27/2009									
05/28/2009									
05/29/2009									
05/30/2009									
05/31/2009									
06/01/2009				0.500					
06/02/2009				0.480	15.20	<0.10	7.98	<2.00	2.58
06/03/2009	500.00	1400.00	5400.00	0.198					
06/04/2009				0.341					
06/05/2009				0.371					
06/06/2009				0.333					
06/07/2009				0.360					
06/08/2009	700.00	1000.00	3700.00	0.438					
06/09/2009				0.373	6.30	<0.10	8.15	<2.00	1.78
06/10/2009				0.119					
06/11/2009				0.486					
06/12/2009				0.344					
06/13/2009				0.355					

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**M02 Urban Runoff Facility Monitoring at City Facilities**  
**May 1, 2009 through October 31, 2009**

	M02 Pump Station			Filter Effluent @WRP					
	MO2FC	MO2ENTC	MO2TC	MO2FLOW	MO2TSS	MO2SS	MO2PH	MO2GO	MO2TURB
	Fecal Coliform	Enterococcus	Total Coliform	Flow	Total Suspended Solids	Settleable Solids	Ph	Grease & Oil	Turb
CFU	CFU	CFU	MGD	mg/L	ml/L	SU	mg/L	NTU	
06/14/2009				0.330					
06/15/2009				0.341					
06/16/2009	200.00	2400.00	2000.00	0.365	7.80	<0.10	8.23	<2.00	1.95
06/17/2009				0.346					
06/18/2009				0.360					
06/19/2009				0.333					
06/20/2009				0.407					
06/21/2009				0.664					
06/22/2009				0.311					
06/23/2009				0.390	7.50	<0.10	8.13	<2.00	2.47
06/24/2009	<2.00	4000.00	2300.00	0.494					
06/25/2009				0.334					
06/26/2009				0.397					
06/27/2009				0.458					
06/28/2009				0.322					
06/29/2009	480.00	1100.00	5100.00	0.382					
06/30/2009				0.548	7.20	<0.10	8.08	<2.00	1.95
07/01/2009				0.249					
07/02/2009				0.203					
07/03/2009				0.262					
07/04/2009				0.380					
07/05/2009				0.330					
07/06/2009				0.324					
07/07/2009				0.360	14.70	<0.10	8.15	<2.00	2.86
07/08/2009	300.00	800.00	3000.00	0.369					
07/09/2009				0.290					
07/10/2009				0.304					
07/11/2009				0.307					
07/12/2009				0.335					
07/13/2009				0.328					
07/14/2009	60.00	500.00	3000.00	0.262					
07/15/2009				0.054					
07/16/2009				0.382	12.40	<0.10	8.04	<2.00	2.44
07/17/2009				0.135					
07/18/2009				0.405					
07/19/2009				0.614					
07/20/2009				0.609					
07/21/2009				0.499	6.80	<0.10	8.19	<2.00	1.47
07/22/2009	70.00	200.00	8000.00	0.398					
07/23/2009				0.403					
07/24/2009				0.365					

**Exhibit C**  
**M02 Urban Runoff Facility Monitoring at City Facilities**  
**May 1, 2009 through October 31, 2009**

	M02 Pump Station			Filter Effluent @WRP					
	MO2FC	MO2ENTC	MO2TC	MO2FLOW	MO2TSS	MO2SS	MO2PH	MO2GO	MO2TURB
	Fecal Coliform	Enterococcus	Total Coliform	Flow	Total Suspended Solids	Settleable Solids	Ph	Grease & Oil	Turb
CFU	CFU	CFU	MGD	mg/L	ml/L	SU	mg/L	NTU	
07/25/2009				0.348					
07/26/2009				0.078					
07/27/2009				0.000					
07/28/2009				0.272					
07/29/2009	60.00	400.00	9000.00	0.425					
07/30/2009				0.388	10.20	<0.10	7.97	<2.00	1.92
07/31/2009				0.317					
08/01/2009				0.410					
08/02/2009				0.391					
08/03/2009				0.485					
08/04/2009				0.463	5.60	<0.10	8.58	<2.00	1.05
08/05/2009	300.00	1800.00	5000.00	0.429					
08/06/2009				0.374					
08/07/2009				0.413					
08/08/2009				0.360					
08/09/2009				0.442					
08/10/2009				0.545					
08/11/2009				0.380	8.70	<0.10	8.56	<2.00	1.98
08/12/2009	100.00	700.00	900.00	0.385					
08/13/2009				0.391					
08/14/2009				0.288					
08/15/2009				0.351					
08/16/2009				0.300					
08/17/2009				0.433					
08/18/2009				0.432	7.30	<0.10	8.52	<2.00	1.32
08/19/2009	200.00	200.00	1100.00	0.462					
08/20/2009				0.390					
08/21/2009				0.396					
08/22/2009				0.404					
08/23/2009				0.431					
08/24/2009				0.441					
08/25/2009				0.448	10.10	<0.10	8.50	<2.00	1.50
08/26/2009	10.00	2300.00	1500.00	0.364					
08/27/2009				0.375					
08/28/2009				0.371					
08/29/2009				0.373					
08/30/2009				0.396					
08/31/2009				0.356					
09/01/2009				0.097	14.00	<0.10	8.55	<2.00	1.92
09/02/2009	700.00	2800.00	9000.00	0.390					
09/03/2009				0.278					

**Exhibit C**  
**M02 Urban Runoff Facility Monitoring at City Facilities**  
**May 1, 2009 through October 31, 2009**

	M02 Pump Station			Filter Effluent @WKP					
	MO2FC	MO2ENTC	MO2TC	MO2FLOW	MO2TSS	MO2SS	MO2PH	MO2GO	MO2TURB
	Fecal Coliform	Enterococcus	Total Coliform	Flow	Total Suspended Solids	Settleable Solids	Ph	Grease & Oil	Turb
CFU	CFU	CFU	MGD	mg/L	ml/L	SU	mg/L	NTU	
09/04/2009				0.369					
09/05/2009				0.397					
09/06/2009				0.408					
09/07/2009				0.321					
09/08/2009				0.465	15.90	<0.10	8.55	<2.00	3.40
09/09/2009	900.00	3800.00	900.00	0.410					
09/10/2009				0.386					
09/11/2009				0.317					
09/12/2009				0.392					
09/13/2009				0.248					
09/14/2009				0.000					
09/15/2009				0.310	20.80	<0.10	8.50	<2.00	2.50
09/16/2009	300.00	2100.00	2800.00	0.341					
09/17/2009				0.320					
09/18/2009				0.300					
09/19/2009				0.338					
09/20/2009				0.382					
09/21/2009				0.413					
09/22/2009				0.398	4.00	<0.10	8.14	<2.00	0.92
09/23/2009	300.00	40.00	1100.00	0.379					
09/24/2009				0.384					
09/25/2009				0.248					
09/26/2009				0.403					
09/27/2009				0.355					
09/28/2009				0.368					
09/29/2009				0.368	32.10	<0.10	8.12	<2.00	6.52
09/30/2009	600.00	1600.00	3200.00	0.408					
10/01/2009				0.342					
10/02/2009				0.401					
10/03/2009				0.329					
10/04/2009				0.370					
10/05/2009				0.396					
10/06/2009				0.367	26.60	<0.10	8.31	<2.00	4.04
10/07/2009	1200.00	1900.00	5200.00	0.307					
10/08/2009				0.342					
10/09/2009				0.348					
10/10/2009				0.399					
10/11/2009				0.437					
10/12/2009				0.307					
10/13/2009				0.122					
10/14/2009				0.000					

**Exhibit C**  
**M02 Urban Runoff Facility Monitoring at City Facilities**  
**May 1, 2009 through October 31, 2009**

	M02 Pump Station			Filter Effluent @WRP					
	MO2FC	MO2ENTC	MO2TC	MO2FLOW	MO2TSS	MO2SS	MO2PH	MO2GO	MO2TURB
	Fecal Coliform	Enterococcus	Total Coliform	Flow	Total Suspended Solids	Settleable Solids	Ph	Grease & Oil	Turb
	CFU	CFU	CFU	MGD	mg/L	ml/L	SU	mg/L	NTU
10/15/2009				0.000					
10/16/2009				0.457	5.80	<0.10	8.32	<2.00	2.27
10/17/2009				0.531					
10/18/2009				0.388					
10/19/2009				0.502					
10/20/2009				0.377	6.30	<0.10	8.08	<2.00	2.50
10/21/2009	200.00	2800.00	3100.00	0.482					
10/22/2009				0.257					
10/23/2009				0.575					
10/24/2009				0.296					
10/25/2009				0.292					
10/26/2009				0.289					
10/27/2009				0.297	10.00	<0.10	8.11	<2.00	2.20
10/28/2009	600.00	3300.00	7100.00	0.309					
10/29/2009				0.261					
10/30/2009				0.358					
10/31/2009				0.288					

## Cirit, Handan

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**From:** nrpi@ice.ucdavis.edu  
**Sent:** Thursday, December 10, 2009 3:31 PM  
**To:** Cirit, Handan  
**Subject:** NRPI Online Form - Submission Confirmation

An electronic entry was sent to NRPI:

**Project Title:**  
Segunda Deshecha Canada(M02) Urban Runoff Treatment Facility

**Login Info:**  
Handan Cirit  
[cirith@san-clemente.org](mailto:cirith@san-clemente.org)

**Primary Contact Info:**  
Handan Cirit  
910 Calle Negocio  
San Clemente, CA 92673  
[cirith@san-clemente.org](mailto:cirith@san-clemente.org)

Thank you for using the NRPI Online Form. Your project will be reviewed for quality control purposes and will post within one week to the NRPI Homepage. At that time, please query your project at [www.ice.ucdavis.edu/nrpi](http://www.ice.ucdavis.edu/nrpi) by title or contact name. If you have any additions of corrections, go to the NRPI Online Form and login to edit your project. If you have any questions, please contact Kevin Ward at 530-752-2378 or email her at [kcward@ucdavis.edu](mailto:kcward@ucdavis.edu).

# Natural Resource Projects Inventory

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## A) Project Information

1. **Project Title:** Segunda Deshecha Canada(M02) Urban Runoff Treatment Facility

2. **Project Type:** Water Quality

3. **Project Purpose/Goals:**

To evaluate effectiveness of diversion of 100% of the dry weather urban runoff flows (up to 1.5 cfs) in reducing bacteria levels from the Segunda Deshecha Canada (M02) storm drain channel to North Beach, San Clemente. The County of Orange Coastal Storm Drain Outfall Program monitors bacterial levels at the M02 channel outlet as well as the surf zone. The success of the project will be measured by comparing the M02 channel outlet and surf zone water quality monitoring data during the operation of the system to the historical water quality monitoring data collected by the County

4. **Project Abstract (brief description of project):**

Urban Runoff from 4800-acre Segunda Deshecha Canada (M02) watershed drains through both natural and concrete lined channels and outlets at North Beach in the City of San Clemente. The urban runoff contains high levels of indicator bacteria impacting the North Beach. The City constructed the M02 urban runoff treatment facility upstream of the North Beach to divert dry weather urban runoff thus eliminating dry weather urban runoff reaching to the North Beach. The urban runoff treatment facility is shut down during periods of rain.

5. **Watershed Plan Name:** Segunda Deshecha Canada

6. **Website URL:**

## B) Funding Programs

### Funding Info 1

Agency: State Water Resources Control Board

Program: Clean Beaches

Source: Proposition 40

Amount: \$1,800,000

### Funding Info 2

Agency: U.S. Environmental Protection Agency

Program: Other Funding Program

Source:

Amount: \$719,839

### Funding Info 3

Agency: City of San Clemente

Program: City of San Clemente

Source: Local Funds

Amount: \$880,161

## C) Contact Information

### 1. Project Contact

Handan Cirit

Email: [cirith@san-clemente.org](mailto:cirith@san-clemente.org)

Consulting Engineer

City of San Clemente

Webpage:

910 Calle Negocio

Phone: 949-361-6128

San Clemente, CA 92673

Fax:

### 2. Secondary Project Contact

Tom Bonigut  
 Assistant City Engineer  
 City of San Clemente  
 910 Calle Negocio  
 San Clemente, CA 92673

Email: bonigutt@san-clemente.org  
 Webpage:  
 Phone: 949-361-6187  
 Fax:

### 3. Data Contact

## D) Data Availability

### 1. Project Data Available? Yes

Project Data: Water Quality

2. Publicly Available Reports: County of Orange Coastal Storm Drain Outfall Program Segunda Deshacha Canada (M02) Urban Runoff Treatment Facility Project Final Report

## E) Project Time Frame

Start Date: 10/26/2006 End Date: 10/31/2009

## F) Participant and Funding Information

City of San Clemente	Lead Agency	Funder	\$880,161 cash
State Water Resources Control Board		Funder	\$1,800,000 cash
U.S EPA	Funder		\$719,839 cash
County of Orange	Cooperator		

## G) Geographical Information

1. Size of project: 4800 Acres

2. Counties included in project: Orange

3a) Location Description: Upstream of North Beach Along M02 Channel at Avenida Pico, San Clemente

3b) Latitude and Longitude of project center-point

Latitude: 33.43154

Longitude: -117.63286

3c) Township / Range / Section:

## H) Resource Issues

Resource Issues:

Urban Runoff

Water Quality Issues:

Beach Closures

## I) California NPS Program Plan

Management Measures:

## J) Habitat

Habitats in the project area:

Urban

## K) Species

Does this project target the protection/conservation of specific species? Does this project try to introduce or eradicate a species as part of restoration or conservation efforts?

## L) Project Methods

1. Methods
2. Fertilizer
3. Irrigation

## M) Control Methods

Chemical Controls:

Cultural Controls:

Fire Controls:

Mechanical/Manual Controls:

Grazing Controls:

Biocontrol Agents:

Other Controls:

## N) Project Progress

1. Have the project goals listed in Section "A" been attained? Yes
2. Performance Standards  
No Performance Standards
3. Monitoring

**Monitoring Schedule and Description:** Project operation commenced on June 1, 2009 and continues operation. The County of Orange maintains historical and on-going ocean outlet and surf zone bacteriological monitoring data pursuant to the Coastal Storm Drain Outfall Program that is used to evaluate project effectiveness.

### 4. Problems

What problems have you encountered with this project?

## O) Project Status and Needs

1. Current phases of the project: Completed
2. Current needs for the project:  
Other needs: Final Project Approval

## P) Comments

Additional Comments: