Provided in **Table 3-3** is the priority list for light root intrusion.

TABLE 3-3
Light Root Removal Prioritization

Priority Order	Map Sheet	Light Root Removal (ft)
1	11C	6,204
2	10B	5,929
3	5D	5,339
4	16A	5,260
5	10C	5,259
6	16B	4,166
7	9D	3,786
8	16C	3,487
9	5C	3,390
10	10D	3,338
11	9B	3,261
12	17A	2,368
13	11A	2,345
14	16D	2,265
15	17D	1,774
16	15B	1,480
17	17C	1,047
18	4D	990
19	6C	771
20	22B	665
21	27D	620
22	27A	518
23	18C	320
24	9A	201
25	15D	199
	Total	64,982

Root intrusion has a large impact on the sewer lines. Out of the 240,000 feet of sewer analyzed, almost 100,000 feet are invaded by roots. One-third of the roots are heavy and may cause increasing damage to the pipe if not removed. There is double the amount of light roots than heavy, presenting potential problems in the future.

Presented below is **Table 3-4**, grease removal prioritization. Using the District map sheet, nearby sources can be identified that may be causing grease buildup. This table provides indication of those areas that need to be regularly maintained.

TABLE 3-4
Grease Removal Prioritization

Priority Order	Map Sheet	Grease Removal (ft)
1	9D	2,697
2	9B	1,699
3	5C	906
4	10C	300
5	4D	300
6	16A	272
7	10D	233
	Total	6,407

The last sewer problem that may cause flow restriction is debris. The debris removal prioritization is presented in **Table 3-5**. The types of debris found were sand, rock, mineral deposits, brick, concrete and paper.

TABLE 3-5
Debris Removal Prioritization

Priority Order	Map Sheet	Debris Removal (ft)
1	16A	1,614
2	15B	1,127
3	9B	892
4	9D	750
5	4D	675
6	16C	350
7	10C	267
8	17A	211
9	5C	150
10	27A	150
	Total	6,186

Summary of Sewer Prioritization

An effort to set up a prioritized repair schedule is dependent on many factors. From the previous tables in this section, the order of which areas require the most cleaning has been established. It is apparent that there is a large range of priority map sheets within the system. Choosing which condition and locations should be taken care of first needs to be phased. The rehabilitation schedule should be based on the most severe flow restriction deficiency and quantity. A maintenance program may also help alleviate those reoccurring problems, such as grease and debris.

In the process of implementing repairs, it should be recognized that some cleaning techniques could take care of more than one sewer problem. The sewer lines would then need to be analyzed to ensure the proper lengths of cleaning required are defined, and are not counted twice.

Manhole Prioritization

The manhole inspection summary report by Sancon provided the District with a corrective action plan. Emphasis was placed on short-term problems and solutions. Sancon formulated three separate condition schedules, immediate, very poor and poor. Sancon defines these conditions as follows:

- Immediate – Inspected manhole has "very poor" grade for both walls and base area.
- Very Poor – Inspected manhole has "very poor" grade for base area, includes corrosion of shelf areas, broken and cracked areas, overall loss of material and softening of concrete.
- Poor - Inspected manhole has "poor condition" grade for both walls and base areas. These manholes indicated the initial onset or medium levels of deterioration.

The results of their analysis are supplied in Appendix B, and are summarized below in **Table 3-6,** Manhole Condition. The table lists the number of manholes per District map sheet that qualify for each condition and the total sum of recognized problems per sheet. Also provided at the bottom of the table is the total number of immediate, very poor and poor manholes discovered in the system.

Sancon reported 18 manholes to have immediate repair condition, seven of these were fully deteriorated: 9D-205, 9D-207, 9D-212, 15B-407, 16C-106, 16C-110, 16C-306 and one unknown manhole on sheet 9D.

TABLE 3-6
Manhole Condition

Map Sheet	Condition			Sheet Total
	Immediate	Very Poor	Poor	
4D	-	5	-	5
9A	-	-	-	0
9B	1	7	5	13
9C	-	-	-	0
9D	9	5	7	20
15B	4	9	4	17
15D	-	1	-	1
16A	-	1	9	10
16B	-	-	-	0
16C	4	9	11	24
Total	18	37	36	

Summary of Manhole Prioritization

It was recommended by Sancon to set up a rehabilitation program immediately for the seven fully deteriorated manholes. Provide a phased rehabilitation program to address and alleviate the serious deterioration of the remaining 11 manholes in the immediate group.

For the very poor condition manholes, Sancon provided another recommendation. They stated that these manholes should be tracked and a repair program undertaken over a period of time to prevent further deterioration of these areas and could be accomplished as part of an overall continually phased rehabilitation program.

Lastly, the manholes in poor condition as evaluated by Sancon, were recommended a rehabilitation program as defined: While no apparent near term structural problems were notes (other than root intrusion, blockages, etc.) it is recommended that Carlsbad Municipal Water District track these manholes and possibly plan on incorporating these manholes into a future rehabilitation program as part of a long term maintenance effort.

Section 4
Cost Estimate

IMPLMENTATION

Rehabilitation Program

The sewer and manhole problems have been identified through inspection and prioritized for repair based on flow restriction and condition. A priority order established those areas with the highest need for repair for each problem. The driving force for scheduling the repair is determined on the availability of funds. Therefore, a cost analysis is helpful in planning the rehabilitation program.

Sewer Cost Estimate

To estimate the rehabilitation costs for the District to clean the sewer lines with roots, grease and debris problems, a cost survey was conducted. Several contractors were asked to provide a cost estimate based on 100,000 linear feet of 6-inch to 10-inch diameter pipe for root removal with small quantities of grease and debris problems. The contractors assumed there is easy access to every manhole, a supplied water source and an available debris dumpsite. In addition, any physical restraints (i.e. protruding laterals) within the sewer line may add to the costs.

Four sewer maintenance control contractors provided information for the rehabilitation cost survey. **Table 4-1** below lists each contractor, area, contact telephone number and their quote for jetting and root cutting. The first three contractors provide the cleaning service, but the last, Root X, is a do-it-yourself company, providing their product with application instructions. Contractor submittal information is provided in Appendix C.

TABLE 4-1
Cost Survey

Company	Area	Phone #	Cost Estimate ($/ft)	
			Jetting	Root Cutting
Houston Harris	Riverside	909-686-4241	0.26	0.49
Empire Pipe Cleaning	Anaheim	714-639-8352	0.48	.48
National Plant Services	Long Beach	800-445-3614	0.3-0.4	0.75-1.0
Root X	Salem, OR	800-884-4974	1.05	-

To estimate the mean cost for rehabilitation of the sewer the following assumptions where made:

- District will not clean all of their sewers at the same time
- Supply water costs are not included
- Disposal costs are not included
- Traffic handling is not included
- All manholes are easily accessible
- Sewer lines do not have any extreme physical obstructions

The mean rehabilitation rate for jetting is estimated to be $0.50 per foot and for root cutting to be $0.75 per foot.

Repair Recommendation

Depending on the sewer line condition, the treatment can be jetting or root cutting. Both of these processes can be done with or without chemicals. The use of chemicals is to permanently stop the re-growth of roots. Jetting in most instances could take care of debris, grease and light roots. For heavy roots and grease buildup, root cutting is required. Since video inspection has already been done, the contractor will have a good idea of the treatment necessary to completely clean the sewer lines. If video inspection has not been previously done, the sewer maintenance contractor will initially jet the sewer line and evaluate the discharge. If the discharge is not clear after jetting, root cutting may be required. Therefore, jetting and root cutting charges would be incurred.

Sewer Repair Costs

Applying the mean rehabilitation rate to the length of the sewer that would require cleaning for each District map sheet, every sheet was estimated for cleanup and then ranked. The appropriate repair charge is multiplied by the total rehabilitation length to establish the total cost of cleanup per sheet for the particular problem. Using the information summarized in Section 3, the following tables provide the costs associated with the sewer deficiencies.

The first table, **Table 4-2**, presents the costs for heavy and light root removal. Root removal for both light and heavy is assumed to required root cutting. The first column is priority order followed by map sheet, linear feet of root removal and the associated cost.

TABLE 4-2
Heavy and Light Root Cost Estimate

Priority Order	Map Sheet	Heavy Root Removal (ft)	Repair Cost ($)	Map Sheet	Light Root Removal (ft)	Repair Cost ($)
1	10C	5,423	$4,067	11C	6,204	$4,653
2	15B	3,352	$2,514	10B	5,929	$4,447
3	5C	3,327	$2,495	5D	5,339	$4,004
4	9B	3,139	$2,354	16A	5,260	$3,945
5	16C	2,446	$1,835	10C	5,259	$3,944
6	16A	2,283	$1,712	16B	4,166	$3,125
7	4D	1,785	$1,339	9D	3,786	$2,840
8	27D	1,593	$1,195	16C	3,487	$2,615
9	9A	1,554	$1,166	5C	3,390	$2,543
10	9D	1,425	$1,069	10D	3,338	$2,504
11	11C	1,239	$929	9B	3,261	$2,446
12	9C	927	$695	17A	2,368	$1,776
13	15D	810	$608	11A	2,345	$1,759
14	16D	701	$526	16D	2,265	$1,699
15	17A	453	$340	17D	1,774	$1,331
16	16B	340	$255	15B	1,480	$1,110
17	11A	292	$219	17C	1,047	$785
18	10D	289	$217	4D	990	$743
19	5D	280	$210	6C	771	$578
20	27A	225	$169	22B	665	$499
21				27D	620	$465
22				27A	518	$389
23				18C	320	$240
24				9A	201	$151
25				15D	199	$149
	Total	31,883	$23,912	Total	64,982	$48,737

Heavy roots are the highest priority and should be implemented for repair first. However, lights may be removed at the same time as heavy roots in each District map sheets. In this case, **Table 4-3** has been developed to help determine the cost per sheet for heavy and light root removal.

TABLE 4-3
Map Sheet Root Removal

Map Sheet	Heavy Root Removal (ft)	Light Root Removal (ft)	Total Root Removal (ft)	Repair Cost ($)
10C	5,423	5,259	10,682	$8,012
15B	3,352	1,480	4,832	$3,624
5C	3,327	3,390	6,717	$5,038
9B	3,139	3,261	6,400	$4,800
16C	2,446	3,487	5,933	$4,450
16A	2,283	5,260	7,543	$5,657
4D	1,785	990	2,775	$2,081
27D	1,593	620	2,213	$1,660
9A	1,554	201	1,755	$1,316
9D	1,425	3,786	5,211	$3,908
11C	1,239	6,204	7,443	$5,582
9C	927	0	927	$695
15D	810	199	1,009	$757
16D	701	2,265	2,966	$2,225
17A	453	2,368	2,821	$2,116
16B	340	4,166	4,506	$3,380
11A	292	2,345	2,637	$1,978
10D	289	3,338	3,627	$2,720
5D	280	5,339	5,619	$4,214
27A	225	518	743	$557
10B	0	5,929	5,929	$4,447
17D	0	1,774	1,774	$1,331
17C	0	1,047	1,047	$785
6C	0	771	771	$578
22B	0	665	665	$499
18C	0	320	320	$240
21B	0	0	0	$0
21D	0	0	0	$0
Total	31,883	64,982	96,865	$72,649

The table is based on heavy root prioritization, not on total root removal per map sheet. Therefore, the cost for each sheet varies and is not in order from highest cost to lowest cost.

Table 4-4 provides the cost estimate for grease removal by jetting. In some instances, jetting may not provide enough scour to remove extreme grease buildup, requiring root cutting to remove the grease layer from the pipeline. Therefore, both costs are provided.

TABLE 4-4
Map Sheet Grease Removal

Priority Order	Map Sheet	Grease Removal (ft)	Jetting Repair Cost ($)	Root Cutting Repair Cost (S)
1	9D	2,697	$1,349	$2.023
2	9B	1,699	$850	$1.274
3	5C	906	$453	S680
4	10C	300	$150	S225
5	4D	300	$150	S225
6	16A	272	$136	S204
7	10D	233	$117	S175
Total		6,407	$3,204	$4.805

The cost estimate to remove debris by jetting is provided in **Table 4-5.**

TABLE 4-5
Map Sheet Debris Removal

Priority Order	Map Sheet	Debris Removal (ft)	Repair Cost ($)
1	16A	1,614	$807
2	15B	1,127	$564
3	9B	892	$446
4	9D	750	$375
5	4D	675	$338
6	16C	350	$175
7	10C	267	$134
8	17A	211	$106
9	5C	150	$75
10	27A	150	$75
Total		6,186	$3,093

Sewer Rehabilitation Cost Summary

The total cost for heavy root, grease and debris removal from the sewer is estimated at $38,180. If light roots were to be removed, the cost would increase by $48,737 to $86,917. **Table 4-6** presents the summary estimated costs for sewer rehabilitation.

TABLE 4-6
Sewer Cost Summary

Type of Repair	Estimated Cost ($)
Heavy root removal	$23,912
Light root removal	($48,737)
Grease removal	$3,204
Debris removal	$3,093
Approximate Total Cost With Light Roots	$38,180 ($86,917)

These cost include all the problems noted in every district map sheet. The costs of repair for each problem would be considerably lower if only the highest priority map sheets were cleaned first. Also, if the sewer lines that have both roots and grease/debris problems were repair for both problems, there would be about a $3,000 saving.

Manhole Cost Estimate

The manholes determined immediate for rehabilitation by Sancon require base, channel and shaft repairs. Cost estimates for theses repairs are provided in **Table 4-7.**

TABLE 4-7
Manhole Cost Estimate

Description	Estimated Cost ($)
Manhole Rehabilitation	$3,000
Shelf/Base Rebuilding	$350
Regrout grade rings	$100
Rebuild Manhole	$6,500

Manhole rehabilitation includes water blasting, mortar, and lining at a depth of seven feet or less. Shelf/Base rebuilding includes rehabilitation of corroded, broken and cracked shelves. Regrouting of grade rings replaces grout that has deteriorated or eroded.

Manhole rebuilding includes all costs associated with the reconstruction of a deteriorated manhole.

Manhole Repair Costs

There were 18 manholes found to have immediate problems. Out of the 18, seven were found fully deteriorated, and must be rebuilt. The estimated cost to rebuild the seven manholes is $45,500. The remaining 11 manholes will need work to rehabilitate the base, walls, steps and grade rings. Each rehabilitated manhole may cost about $3,500, a total of approximately $38,500. The total cost for rehabilitation of the 18 sewer manholes is approximately $84,000. **Table 4-7** summarizes these costs.

Table 4-7
Manhole Cost Summary

Repair	Manholes	Unit Cost ($)	Cost ($)
Rebuild	7	$6,500	$45,500
Rehabilitation	11	$3,500	$38,500
		Approximate Total Cost	$84,000

APPENDICES

APPENDIX A

Carlsbad Municipal Water District

Inspection of Existing Manholes
CMWD Project No. 94-402
Summary Report

Sancon Engineering, Inc.
June 22, 1994

Summary

Sancon Engineering, Inc. has conducted a survey of sewer manholes in the City of Carlsbad per requirements of CMWD Project No. 94-402. Sancon personnel actually inspected 327 manholes although the contract only specified approximately 245 manholes.

The purpose of the survey, as contracted by CMWD, was to determine the existing condition and structural integrity of each of the manholes covered under the contract.

This final report provides a summary of the survey and Sancon Engineering's recommended corrective action. The intent is to provide CMWD with sufficient data and information to develop a corrective action plan, as required, to address noted problems. Primary emphasis is placed on the short term problems and solutions. However, the data in this report can be used to address both short term and long term issues.

Out of the 327 sewer manholes inspected, it is our opinion that 18 of the manholes inspected require base, channel and shaft repairs in the immediate to near term. Of these 18, seven (7) appear to require immediate refurbishment due to the degree of deterioration noted in attached tables.

In conducting the survey, it was noted that a few manholes were flooded and indicated little if any flow. While outside the scope of this contract, this might be indicative of a problem in the sewer lines themselves. It is recommended that CMWD flush these lines and investigate these blockages.

The following table summarizes the manholes in the order they were inspected and provides the condition of the noted features of each manhole and any other relevant comments applicable to the manhole inspected.

This data has been incorporated into a computerized data base. Using the data base, different sorts were made to identify those particular manholes with accelerated rates of deterioration and as requiring some degree of corrective action.

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
1	Jefferson (Btwn Las Flores and I-5 Frwy)	fair	poor	corroded	fair	poor	grade ring offset
2	Jefferson and Las Flores	fair	fair	corroded	fair	very poor	
3	Jefferson(Btwn Las Flores and Buena Vista)	fair	fair	corroded	fair	very poor	
4	Jefferson at Buena Vista (North MH)	fair	fair	corroded	fair	poor	
5	Jefferson at Buena Vista (South MH)	fair	fair	corroded	poor	very poor	channel broken up and cracked
6	Jefferson at Buena Place	fair	fair	fair	fair	very poor	
7	Buena Place near Jefferson	fair	fair	fair	good	very poor	
8	Buena Place near Cul de Sac	fair	fair	fair	good	poor	
9	Buena Vista (Btwn Jefferson and Tuttle)	fair	fair	fair	good	good	
10	Buena Vista at Tuttle	fair	fair	fair	fair	poor	
11	Tuttle near Niki Lanefair	fair	fair	fair	good	good	
12	Davis (Btwn Buena Vista and Knowles)	fair	fair	fair	good	fair	
13	Knowles at Davis (East MH)	fair	fair	fair	fair	fair	
14	Knowles at Davis (West MH)	fair	fair	fair	fair	fair	
15	Knowles (Btwn Jefferson and Davis)	fair	fair	fair	fair	fair	
16	Jefferson at Knowles (North MH)	fair	fair	fair	fair	poor	
17	Jefferson at Knowles (South MH)	fair	poor	corroded	fair	poor	
18	Jefferson (Btwn Knowles and Laguna)	fair	fair	fair	poor	poor	
19	Jefferson at Laguna (West MH)	fair	poor	corroded	poor	poor	
20	Jefferson at Laguna (East MH)	fair	poor	corroded	poor	poor	
21	Laguna at Cabrillo	fair	fair	fair	fair	poor	
22	Laguna at Davis	fair	fair	fair	fair	poor	
23	Davis near side street Cul de Sac	fair	fair	fair	fair	fair	
24	Davis at Cul de Sac	fair	fair	fair	fair	fair	
25	Laguna (Btwn Jefferson and Kreymeyer)	fair	very poor	fair	fair	poor	
26	Laguna at Kreymeyer	fair	fair	corroded	poor	very poor	
27	Kreymeyer near pool	good	good	corroded	fair	poor	
28	Laguna at Madison	fair	very poor	fair	poor	very poor	
29	Laguna (Btwn Madison and Buena Vista Cir.)	fair	very poor	fair	poor	very poor	
30	Laguna at Buena Vista Cir.	fair	poor	fair	fair	poor	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
31	Laguna at Roosevelt	fair	poor	fair	fair	poor	
32	2441 Buena Vista Cir.	fair	fair	fair	fair	fair	
33	2431 Buena Vista Cir.	fair	fair	corroded	fair	poor	
34	Buena Vista Cir. near empty lot	fair	fair	corroded	fair	poor	
35	2391 Buena Vista Cir.	fair	fair	fair	fair	fair	
36	550 Laguna	fair	fair	fair	fair	poor	
37	State St. at Laguna (South MH)	fair	fair	fair	fair	fair	
38	State St. at Laguna (North MH)	fair	poor	fair	poor	poor	root intrusion
39	2630 State St.	fair	fair	fair	fair	very poor	
40	2562 State St.	fair	poor	fair	fair	fair	
41	Pacific at Garfield	fair	fair	fair	good	good	
42	Pacific (Btwn Garfield and Mountian View)	fair	fair	fair	good	good	
43	Pacific at Mountian View	fair	fair	corroded	fair	fair	
44	Mountian View at Normandy	fair	fair	corroded	fair	poor	
45	2300 Ocean at Mountian View	fair	fair	corroded	fair	poor	
46	2340"D" Ocean	fair	fair	corroded	fair	poor	
47	Garfield at Ocean	fair	fair	corroded	fair	poor	
48	Ocean at "The Beach" Condo Complex	fair	fair	corroded	fair	poor	
49	2459 Ocean (North MH)	fair	fair	corroded	fair	poor	
50	2459 Ocean (South MH)	fair	fair	corroded	fair	poor	
51	Ocean at Pacific	fair	fair	corroded	fair	poor	
52	Ocean at Cypress	fair	fair	corroded	fair	poor	
53	2633 Ocean	fair	fair	corroded	fair	fair	
54	Ocean at Beech (North MH)	fair	fair	corroded	fair	poor	
55	Ocean at Beech (South MH)	fair	fair	corroded	fair	fair	
56	2747 Ocean	fair	fair	corroded	fair	fair	
57	Ocean at Christianson Way (West MH)	fair	fair	corroded	fair	fair	
58	Ocean at Christianson Way (East MH)	fair	fair	corroded	fair	fair	
59	Ocean at Grand (West MH)	fair	poor	corroded	poor	poor	
60	Ocean at Grand (East MH)	fair	poor	corroded	poor	poor	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
61	2955 Ocean	fair	fair	corroded	poor	poor	
62	Ocean at Carlsbad Village Dr. (West MH)	fair	very poor	corroded	poor	poor	
63	Ocean at Carlsbad Village Dr. (East MH)	fair	very poor	corroded	poor	poor	
64	Ocean at Oak (West MH)	fair	poor	corroded	poor	very poor	
65	Ocean at Oak (East MH)	fair	poor	corroded	poor	very poor	
66	South end of Ocean (sidewalk near fountian, W. MH)	fair	fair	corroded	fair	fair	
67	South end of Ocean (sidewalk near fountian, E. MH)	fair	poor	corroded	poor	very poor	shevles in bad shape
68	Railroad Easement near Redwood	fair	fair	corroded	poor	poor	blockage,lots of debris in line
69	Railroad Easement (Btwn Tamarack and Redwood)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
70	Railroad Easement (Btwn Redwood and Hemlock)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
71	Railroad Easement at Hemlock	fair	poor	corroded	very poor	very poor	
72	Railroad Easement at Juniper	fair	fair	corroded	fair	poor	
73	Railroad Easement near Juniper	fair	good	corroded	poor	poor	
74	Railroad Easement (Btwn Juniper and Acacia)	fair	poor	corroded	poor	poor	
75	Railroad Easement at Acacia	fair	fair	corroded	poor	poor	
76	Railroad Easement near Acacia	fair	fair	corroded	poor	very poor	
77	Railroad Easement (Btwn Acacia and Chestnut)	fair	good	corroded	fair	fair	
78	Railroad Easement at Chestnut (West MH)	fair	fair	corroded	very poor	very poor	
79	Railroad Easement at Chestnut (East MH)	fair	poor	corroded	poor	poor	
80	Railroad Easement (Btwn Pine and Walnut)	fair	fair	corroded	poor	very poor	blockage, water over shelves
81	Railroad Easement at Pine (West MH)	fair	poor	corroded	very poor	very poor	blockage
82	Railroad Easement at Pine (East MH)	fair	poor	corroded	very poor	very poor	
83	Pine at Washington (West MH)	fair	fair	corroded	fair	fair	
84	Pine at Washington (East MH)	fair	poor	corroded	poor	poor	
85	Carlsbad Village Dr. at Washington (West MH)	fair	poor	corroded	very poor	very poor	blockage,grease buildup
86	Carlsbad Village Dr. at Washington (East MH)	fair	very poor	corroded	very poor	very poor	
87	Grand at Washington	fair	fair	corroded	fair	poor	
88	Christianson Way at Washington	fair	fair	corroded	fair	fair	
89	385 Washington (or 385 Beech)	fair	fair	corroded	fair	poor	blockage
90	Railroad Easement at Beech	fair	poor	corroded	poor	poor	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
91	Railroad Easement at railroad marker 229	fair	fair	corroded	poor	poor	
92	Railroad Easement at RR marker "W" (North of 229)	fair	fair	corroded	fair	fair	
93	2737 Jefferson near Laguna (North MH)	fair	fair	corroded	fair	very poor	
94	2737 Jefferson near Laguna (South MH)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
95	Jefferson at Arbuckle	fair	fair	fair	fair	very poor	blockage,water over shelves
96	Jefferson at Home St.	fair	fair	corroded	fair	poor	
97	885 Home St.	fair	fair	fair	fair	poor	
98	Home St. at Hope St.	fair	fair	fair	fair	poor	
99	Grand at Hope St.	fair	fair	fair	fair	poor	
100	Grand at Harding	fair	fair	fair	fair	poor	root intrusion,possible seepage
101	Jefferson at Grand	fair	fair	corroded	fair	poor	
102	Jefferson North of Carlsbad Village Drive	fair	fair	fair	fair	fair	
103	Madison South of Oak St.	fair	fair	corroded	fair	fair	
104	Madison South of Carlsbad Village Drive	fair	fair	corroded	fair	fair	
105	Madison North of Carlsbad Village Drive	fair	fair	corroded	fair	very poor	blockage,channel and shelves covered in grease
106	Madison at Grand	fair	very poor	corroded	fair	very poor	blockage,line completely blocked
107	2810 Madison Street	loose*	fair	fair	fair	poor	* Frame/Cover loose-Homeowner complained
108	Madison at Arbuckle	fair	very poor	fair	fair	fair	
109	2646 Madison	fair	fair	fair	fair	fair	root intrusion
110	2621 Roosevelt	fair	poor	fair	fair	fair	
111	2667 Roosevelt	fair	poor	fair	fair	fair	
112	2727 Roosevelt at Beech	fair	fair	fair	fair	fair	
113	2801 Roosevelt	fair	fair	fair	fair	fair	
114	Roosevelt at Grand (Northwest MH)	fair	very poor	corroded	very poor	very poor	
115	Roosevelt at Grand (Southwest MH)	fair	very poor	corroded	poor	very poor	
116	Grand at Tyler St. (North MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
117	Grand at Tyler St. (South MH)	fair	very poor	corroded	poor	poor	
118	Roosevelt at Carlsbad Village Drive	fair	fair	corroded	fair	fair	
119	Roosevelt at Oak Ave.	fair	fair	corroded	fair	fair	
120	Roosevelt at Pine	fair	fair	corroded	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
121	Tyler St. at Pine	fair	fair	fair	fair	fair	
122	Tyler (Btwn pine and Walnut)	fair	fair	fair	fair	fair	
123	3324 Tyler	fair	fair	fair	fair	fair	
124	Tyler North of Chestnut	fair	fair	fair	fair	fair	Manhole not shown on map
125	Chestnut at Tyler	fair	fair	fair	fair	fair	
126	Chestnut at Railroad Easement	DANGER*	poor	corroded	poor	very poor	Frame not cemented, ready to slide off !
127	Near Chestnut & RR.Easement (SE. corner apartment)	fair	poor	corroded	poor	very poor	blockage,major buildup in line
✓128	Grand near Washington (East of RR.Track,South MH)	fair	very poor	corroded	poor	very poor	
✓129	Grand near Washington (East of RR.Track,West MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
130	Grand near Washington (East of RR.Track,North MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
131	1ST. MH North of Grand (Alley East of RR.Track)	fair	fair	fair	fair	fair	Manhole not shown on map
132	2ND. MH North of Grand (Alley East of RR.Track)	fair	fair	corroded	fair	fair	
133	N. of Grand (Alley E. of RR.Track,SE. lumber sign)	fair	fair	corroded	fair	poor	
✓134	N. of Grand (Alley E. of RR.Track,at Beech St.)	fair	poor	corroded	very poor	very poor	
135	Behind 2659 State St."Mission Electric Supply"	fair	fair	corroded	fair	fair	
136	Behind 2599 State St.	fair	fair	corroded	fair	poor	
137	End of alley East of Railroad Easement	fair	fair	fair	fair	fair	Capped Pipeline
138	East corner parking lot for 2333 State St.,in dirt	fair	poor	corroded	very poor	very poor	
139	Beech East of Carlsbad Blvd.	fair	fair	none	fair	fair	
140	Beech West of Carlsbad Blvd.	fair	fair	none	fair	fair	
141	Beech at Garfield	fair	fair	none	fair	fair	
142	Beech at Christianson Way	fair	fair	fair	fair	poor	
143	Across from 2775 Carlsbad Blvd. Northbound lane	fair	fair	fair	fair	poor	
144	Christianson Way East of Carlsbad Blvd.	fair	fair	fair	fair	fair	
145	Mountian View Dr. at Carlsbad Blvd.	fair	fair	corroded	fair	poor	
146	Carlsbad Blvd. near Mountian View Dr.	fair	poor	corroded	poor	very poor	
147	Carlsbad Blvd."Army & Navy Academy" sign-sidewalk	fair	fair	corroded	fair	poor	
148	Carlsbad Blvd. near "Army & Navy Academy" sign	fair	fair	fair	fair	fair	
149	Carlsbad Blvd. at Cypress	fair	fair	fair	fair	fair	
150	Grand at Garfield	fair	fair	fair	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
151	Grand (Btwn Carlsbad Blvd. and Washington)	fair	fair	fair	fair	very poor	
152	2967 Carlsbad Blvd.	fair	fair	corroded	fair	poor	Flush Hole?
153	Carlsbad Blvd. at Garfield	fair	poor	corroded	very poor	very poor	
154	Carlsbad Blvd. at Carlsbad Village Drive	fair	fair	corroded	fair	poor	
155	Carlsbad Village (Btwn Carlsbad Blvd & Washington)	fair	poor	fair	fair	fair	
156	Lincoln at Oak	fair	poor	corroded	fair	poor	root intrusion
157	3155 Lincoln	fair	poor	corroded	fair	fair	
158	Lincoln at Pine	fair	fair	corroded	fair	poor	root intrusion
159	Pine East of Lincoln	fair	poor	fair	fair	poor	root intrusion
160	3244 Lincoln	very poor	fair	fair	fair	fair	
161	Lincoln at Walnut	very poor	fair	fair	fair	fair	
162	340 Walnut	poor	fair	fair	fair	fair	
163	3360 Lincoln	poor	fair	corroded	fair	fair	
164	Lincoln at Chestnut	fair	fair	fair	fair	fair	
165	Chestnut East of Lincoln	fair	fair	fair	fair	fair	
166	Pine at Garfield	poor	fair	corroded	fair	fair	
167	3265 Garfield	good	fair	fair	fair	fair	Manhole not shown on map
168	3267 Garfield	fair	fair	corroded	poor	very poor	
169	Garfield at Sycamore	fair	poor	fair	fair	poor	root intrusion
170	Garfield at Maple	poor	poor	corroded	fair	very poor	
171	Garfield at Acacia	good	fair	fair	fair	poor	Manhole not shown on map
172	122 Acacia	fair	fair	fair	fair	fair	
173	271 Acacia	fair	fair	corroded	fair	very poor	
174	316 Acacia	fair	very poor	corroded	very poor	very poor	Drop inlet
175	Garfield at Cherry	fair	poor	corroded	poor	poor	
176	Garfield at Juniper	fair	poor	corroded	fair	poor	
177	330 Juniper	fair	fair	corroded	fair	poor	
178	131 Hemlock	fair	fair	fair	fair	poor	
179	302"B" Hemlock	good	fair	fair	fair	fair	
180	330 Hemlock	fair	fair	fair	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
181	3812 Garfield	poor	poor	corroded	fair	poor	
182	167 Redwood	poor	poor	fair	fair	very poor	
183	331 Redwood	poor	fair	fair	fair	fair	
184	3884 Garfield	fair	poor	corroded	fair	poor	
185	161 Tamarack	fair	very poor	corroded	fair	poor	
186	237 Tamarack	fair	fair	fair	fair	fair	
187	350 Tamarack	fair	fair	fair	fair	fair	
188	Carlsbad Blvd. at Chinquapin Pump Station	fair	good	good	good	good	Manhole has coating (paint), and pumps
189	Carlsbad Blvd. at Sequoia	fair	fair	fair	fair	fair	
190	Carlsbad Blvd. at Tamarack	fair	fair	fair	fair	fair	
191	Carlsbad Blvd. at Redwood	fair	poor	corroded	fair	poor	
192	Carlsbad Blvd. at Hemlock	fair	poor	fair	fair	poor	
193	Carlsbad Blvd. at Juniper	fair	poor	corroded	poor	very poor	
194	Carlsbad Blvd. at Cherry	fair	fair	corroded	fair	poor	
195	Carlsbad Blvd. at Acacia	fair	poor	corroded	fair	poor	
196	Carlsbad Blvd. at Maple	fair	poor	corroded	fair	poor	
197	Carlsbad Blvd. at Chestnut	fair	poor	fair	fair	poor	
198	Carlsbad Blvd. at Sycamore	fair	poor	corroded	fair	poor	
199	Carlsbad Blvd. at Walnut	fair	fair	corroded	fair	fair	
200	Carlsbad Blvd. South of Pine	fair	poor	corroded	fair	poor	
201	Carlsbad Blvd. at Pine	fair	poor	corroded	poor	poor	
202	3930 Garfield	fair	poor	corroded	poor	very poor	
203	136 Sequoia	fair	fair	fair	fair	fair	
204	Garfield at Chinquapin Replaced March 1995	fair	very poor	none	very poor	very poor	Immediate to near term rehab recommended
205	155 Chinquapin	fair	poor	fair	fair	fair	
206	Chinquapin East of Garfield	fair	fair	fair	fair	fair	
207	319 Chinquapin	fair	fair	corroded	fair	fair	
208	385 Chinquapin	fair	fair	corroded	fair	fair	
209	4024 Garfield	fair	fair	corroded	fair	fair	
210	Garfield at Date	fair	fair	corroded	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
211	314 Date	fair	fair	corroded	fair	fair	
212	393 Date	fair	fair	corroded	fair	fair	
213	220 Olive	fair	fair	corroded	fair	fair	
214	Olive at the Cul de Sac	fair	fair	corroded	fair	fair	
215	Railroad Easement South of Tamarack	fair	poor	corroded	poor	very poor	
216	Railroad Easement at Chinquapin	fair	poor	corroded	poor	poor	
217	Railroad Easement at Date (East of fenceline)	fair	poor	corroded	poor	poor	
218	East of RR.Easement at Olive (Construction site)	fair	poor	corroded	poor	poor	Manhole not shown on map
219	E.of RR.Easement at Olive (SW.corner apartments)	fair	poor	fair	poor	very poor	Manhole not shown on map
220	Railroad Easement Southeast of Olive	---	---	---	---	---	Lid rusted shut,similar conditions to MH.217
221	4004 Chinquapin near garage "ED"	good	good	good	good	good	
222	4006 Chinquapin near garage "BA"	good	good	good	good	good	
223	4012 Chinquapin near garage "BA"	good	good	good	good	good	
224	4016 Chinquapin near garage "JI"	good	good	good	good	good	
225	4016 Chinquapin near mailbox	fair	poor	corroded	poor	poor	
226	4016 Chinquapin near parking spot "Reserved 94"	good	good	good	fair	fair	
227	4015 Chinquapin near garage "ED"	good	good	good	good	good	
228	4009 Chinquapin near garage "BA"	good	good	good	good	good	
229	4165 Harbor at the Cul de Sac	fair	poor	corroded	poor	very poor	
230	4070 Harbor	fair	fair	corroded	fair	fair	
231	3986 Long at the Cul de Sac	fair	fair	corroded	fair	poor	
232	3976 Long in front yard	fair	poor	corroded	fair	poor	
233	3976 Long in back yard	fair	poor	corroded	poor	poor	
234	422 Chinquapin	fair	fair	none	fair	fair	
235	Chinquapin at Baldwin	fair	good	good	good	good	
236	4045 Baldwin	fair	fair	fair	fair	fair	
237	Chinquapin at Layang Layang Cir.	fair	fair	fair	fair	fair	
238	745 Chinquapin	fair	fair	fair	fair	fair	
239	4006 Layang Layang Cir.	good	good	good	good	good	
240	4008 Layang Layang Cir.	good	good	good	good	good	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
241	4012 Layang Layang Cir.	good	fair	none	fair	fair	root intrusion
242	Between 4010 and 4012 Layang Layang Cir.	good	good	none	good	good	
243	4016 Layang Layang Cir. near mailbox	fair	fair	none	fair	fair	
244	Southwest of 4016 Layang Layang Cir.	good	good	none	good	good	
245	S.end apart.lot,Layang L.Cir.(S.MH.by const.site)	fair	poor	corroded	poor	poor	
246	S.end apart.lot,Layang L.Cir.(N.MH.by const.site)	good	poor	none	poor	poor	
247	4020 Layang Layang Cir. Southwest end	good	good	none	good	good	
248	4021 Layang Layang Cir. Southeast end	good	good	none	good	good	
249	4021 Layang Layang Cir.	good	good	none	good	good	
250	4011 Layang Layang Cir.	good	good	none	good	good	
251	4007 Layang Layang Cir. East end	good	good	none	good	good	
252	3952 Jefferson	very poor	fair	corroded	fair	fair	
253	Jefferson at Citrus	fair	fair	corroded	fair	fair	
254	Jefferson at Tamarack	fair	fair	corroded	fair	fair	
255	Jefferson at Carol	fair	fair	corroded	fair	fair	root intrusion
256	3774 Jefferson	fair	fair	corroded	fair	fair	root intrusion
257	3726 Jefferson	fair	fair	corroded	fair	fair	
258	740 Anchor Way near Jefferson	fair	fair	none	fair	fair	
259	640 Anchor Way	fair	fair	none	fair	fair	
260	540 Jefferson	fair	fair	none	fair	fair	
261	440 Anchor Way	fair	fair	none	fair	fair	
262	Hisbiscus at Nautical (near Anchor)	fair	fair	none	fair	fair	
263	3815 Hisbiscus	fair	fair	none	fair	fair	
264	3855 Hisbiscus	fair	fair	none	fair	fair	
265	Hisbiscus at Nautical (near Tamarack)	fair	fair	none	poor	poor	blockage
266	3875 Nautical	fair	poor	none	poor	poor	blockage
267	3830 Nautical	fair	fair	fair	fair	poor	blockage
268	3715 Nautical	fair	fair	fair	fair	fair	
269	Magnolia at Jefferson	fair	fair	corroded	fair	poor	
270	3736 Harding St.	fair	fair	corroded	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
271	3786 Harding St.	fair	fair	corroded	fair	fair	
272	Harding St. at Carol	fair	fair	corroded	fair	fair	
273	Tamarack at Linmar St.	fair	fair	corroded	fair	fair	
274	3945 Linmar St.	fair	fair	corroded	fair	very poor	channel clogged
275	Tamarack West of Linmar	fair	poor	corroded	poor	poor	
276	511 Tamarack	fair	fair	corroded	fair	fair	
277	Near 3914 Hisbiscus	fair	fair	corroded	fair	fair	
278	3945 Hisbiscus	fair	fair	corroded	fair	fair	
279	3975 Hisbiscus	fair	fair	corroded	fair	fair	
280	3960 Hisbiscus at the Cul de Sac	fair	fair	corroded	fair	fair	Debris in bottom
281	438 Tamarack	fair	fair	corroded	fair	very poor	blockage
282	421 Tamarack	fair	fair	corroded	fair	very poor	blockage
283	411 Tamarack	fair	fair	corroded	fair	very poor	blockage
284	930 Magnolia at Cul de Sac	fair	fair	corroded	fair	fair	
285	Magnolia at Harding	fair	fair	corroded	fair	fair	
286	722 Magnolia	fair	fair	corroded	fair	fair	
287	673 Magnolia	fair	fair	corroded	fair	fair	
288	637 Magnolia	fair	fair	corroded	fair	fair	
289	Entrance to "The Village Apartments" on Magnolia	fair	fair	corroded	fair	fair	
290	Magnolia at Roosevelt	fair	poor	corroded	poor	poor	
291	3478 Roosevelt	fair	fair	corroded	fair	poor	
292	Roosevelt at Chestnut	fair	fair	corroded	fair	fair	
293	3342 Roosevelt	fair	fair	corroded	fair	fair	
294	661 Roosevelt	fair	fair	corroded	fair	fair	
295	Madison at Chestnut	fair	fair	corroded	fair	fair	
296	3443 Madison	fair	fair	corroded	fair	fair	
297	Madison at Palm	fair	fair	corroded	fair	fair	
298	3545 Madison	fair	fair	corroded	fair	fair	
299	765"A" Palm	fair	fair	corroded	fair	fair	
300	Palm at Jefferson	fair	fair	corroded	fair	fair	

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
301	3439 Jefferson	fair	fair	corroded	fair	fair	
302	Harding at Chestnut	fair	fair	corroded	fair	fair	
303	3450 Harding	fair	fair	corroded	fair	fair	
304	Harding at Palm (North)	fair	fair	corroded	fair	fair	
305	Harding at Palm (South)	fair	poor	corroded	poor	poor	
306	Harding at Avocado	fair	fair	corroded	fair	fair	
307	810 Avocado	fair	fair	corroded	fair	fair	
308	Harding at Camellia	fair	fair	corroded	fair	fair	
309	755 Camellia	fair	fair	corroded	fair	fair	channel clogged
310	842 Camellia	fair	fair	corroded	fair	fair	
311	823 Camellia	fair	fair	corroded	fair	fair	
312	575"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
313	555"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
314	West of 555"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
315	North of 3610"J" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
316	3610"J" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
317	3610"A" Village Dr. (off Roosevelt)	---	---	---	---	---	Lid rusted shut
318	3640"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
319	3670"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
320	3670"A" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
321	515"A" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
322	550"J" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
323	550"G" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
324	3665"F" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
325	3645"G" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
326	3639"C" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	
327	3659"A" Village Dr. (off Roosevelt)	fair	fair	fair	fair	fair	

The following table provides a summary of 18 manholes inspected that were graded as "very poor" for the both the walls and base area of each manhole with locations as noted.

Furthermore, seven (7) of these manholes were noted as fully deteriorated with recommendation as noted below that immediate corrective rehabilitation be considered.

Recommendation

Set up a rehabilitation program immediately for the seven (7) fully deteriorated manholes. Provide a phased rehabilitation program to address and alleviate the serious deterioration of the remaining eleven (11) manholes in this group.

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
69	Railroad Easement (Btwn Tamarack and Redwood)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
70	Railroad Easement (Btwn Redwood and Hemlock)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
71	Railroad Easement at Hemlock	fair	poor	corroded	very poor	very poor	
78	Railroad Easement at Chestnut (West MH)	fair	fair	corroded	very poor	very poor	
81	Railroad Easement at Pine (West MH)	fair	poor	corroded	very poor	very poor	blockage
82	Railroad Easement at Pine (East MH)	fair	poor	corroded	very poor	very poor	
85	Carlsbad Village Dr. at Washington (West MH)	fair	poor	corroded	very poor	very poor	blockage,grease buildup
86	Carlsbad Village Dr. at Washington (East MH)	fair	very poor	corroded	very poor	very poor	
94	2737 Jefferson near Laguna (South MH)	fair	poor	corroded	very poor	very poor	Immediate to near term rehab recommended
114	Roosevelt at Grand (Northwest MH)	fair	very poor	corroded	very poor	very poor	
116	Grand at Tyler St. (North MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
129	Grand near Washington (East of RR.Track,West MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
130	Grand near Washington (East of RR.Track,North MH)	fair	very poor	corroded	very poor	very poor	Immediate to near term rehab recommended
134	N. of Grand (Alley E. of RR.Track,at Beech St.)	fair	poor	corroded	very poor	very poor	
138	East corner parking lot for 2333 State St.,in dirt	fair	poor	corroded	very poor	very poor	
153	Carlsbad Blvd. at Garfield	fair	poor	corroded	very poor	very poor	
174	316 Acacia	fair	very poor	corroded	very poor	very poor	Drop inlet
204	Garfield at Chinquapin 3-28-95 NEW/NEG	fair	very poor	none	very poor	very poor	Immediate to near term rehab recommended

The following table summarizes a total of 37 manholes noted as having the base areas in a "very poor" condition.

This includes corrosion of the shelf areas, broken and cracked areas and overall loss of material and general softening of the concrete.

Recommendation

These manholes should be tracked and a repair program undertaken over a period of time to prevent further deterioration of these areas and could be accomplished as part of an overall continually phased rehabilitation program.

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
2	Jefferson and Las Flores	fair	fair	corroded	fair	very poor	
3	Jefferson(Btwn Las Flores and Buena Vista)	fair	fair	corroded	fair	very poor	
5	Jefferson at Buena Vista (South MH)	fair	fair	corroded	poor	very poor	channel broken up and cracked
6	Jefferson at Buena Place	fair	fair	fair	fair	very poor	
7	Buena Place near Jefferson	fair	fair	fair	good	very poor	
26	Laguna at Kreymeyer	fair	fair	corroded	poor	very poor	
28	Laguna at Madison	fair	very poor	fair	poor	very poor	
29	Laguna (Btwn Madison and Buena Vista Cir.)	fair	very poor	fair	poor	very poor	
39	2630 State St.	fair	fair	fair	fair	very poor	
64	Ocean at Oak (West MH)	fair	poor	corroded	poor	very poor	
65	Ocean at Oak (East MH)	fair	poor	corroded	poor	very poor	
67	South end of Ocean (sidewalk near fountian, E. MH)	fair	poor	corroded	poor	very poor	shevles in bad shape
76	Railroad Easement near Acacia	fair	fair	corroded	poor	very poor	
80	Railroad Easement (Btwn Pine and Walnut)	fair	fair	corroded	poor	very poor	blockage,water over shelves
93	2737 Jefferson near Laguna (North MH)	fair	fair	corroded	fair	very poor	
95	Jefferson at Arbuckle	fair	fair	fair	fair	very poor	blockage,water over shelves
105	Madison North of Carlsbad Village Drive	fair	fair	corroded	fair	very poor	blockage,channel and shelves covered in grease
106	Madison at Grand	fair	very poor	corroded	fair	very poor	blockage,line completely blocked
115	Roosevelt at Grand (Southwest MH)	fair	very poor	corroded	poor	very poor	
126	Chestnut at Railroad Easement	DANGER*	poor	corroded	poor	very poor	Frame not cemented, ready to slide off !
127	Near Chestnut & RR.Easement (SE. corner apartment)	fair	poor	corroded	poor	very poor	blockage,major buildup in line
128	Grand near Washington (East of RR.Track,South MH)	fair	very poor	corroded	poor	very poor	
146	Carlsbad Blvd. near Mountian View Dr.	fair	poor	corroded	poor	very poor	
151	Grand (Btwn Carlsbad Blvd. and Washington)	fair	fair	fair	fair	very poor	
168	3267 Garfield	fair	fair	corroded	poor	very poor	
170	Garfield at Maple	poor	poor	corroded	fair	very poor	
173	271 Acacia	fair	fair	corroded	fair	very poor	
182	167 Redwood	poor	poor	fair	fair	very poor	
193	Carlsbad Blvd. at Juniper	fair	poor	corroded	poor	very poor	
202	3930 Garfield	fair	poor	corroded	poor	very poor	
215	Railroad Easement South of Tamarack	fair	poor	corroded	poor	very poor	
219	E.of RR.Easement at Olive (SW.corner apartments)	fair	poor	fair	poor	very poor	Manhole not shown on map
229	4165 Harbor at the Cul de Sac	fair	poor	corroded	poor	very poor	
274	3945 Linmar St.	fair	fair	corroded	fair	very poor	channel clogged
281	438 Tamarack	fair	fair	corroded	fair	very poor	blockage
282	421 Tamarack	fair	fair	corroded	fair	very poor	blockage
283	411 Tamarack	fair	fair	corroded	fair	very poor	blockage

The following table summarizes those manholes that were noted as having both the walls and base areas in "poor condition".

These manholes generally indicate initial onset to medium levels of deterioration. This may have occurred over a long period of time and further deterioration is of course subject to various factors, including continued presence of sulfide gases, flow conditions, etc.

Recommendation

While no apparent near term structural problems were noted (other than root intrusion, blockages, etc.) it is recommended that Carlsbad Municipal Water District track these manholes and possibly plan on incorporating these manholes into a future rehabilitation program as part of a long term maintenance effort.

MH	Location	Frame/Cvr	Grade Ring	Steps	Walls	Base	Comments
18	Jefferson (Btwn Knowles and Laguna)	fair	fair	fair	poor	poor	
19	Jefferson at Laguna (West MH)	fair	poor	corroded	poor	poor	
20	Jefferson at Laguna (East MH)	fair	poor	corroded	poor	poor	
38	State St. at Laguna (North MH)	fair	poor	fair	poor	poor	root intrusion
59	Ocean at Grand (West MH)	fair	poor	corroded	poor	poor	
60	Ocean at Grand (East MH)	fair	poor	corroded	poor	poor	
61	2955 Ocean	fair	fair	corroded	poor	poor	
62	Ocean at Carlsbad Village Dr. (West MH)	fair	very poor	corroded	poor	poor	
63	Ocean at Carlsbad Village Dr. (East MH)	fair	very poor	corroded	poor	poor	
68	Railroad Easement near Redwood	fair	fair	corroded	poor	poor	blockage,lots of debris in line
74	Railroad Easement (Btwn Juniper and Acacia)	fair	poor	corroded	poor	poor	
75	Railroad Easement at Acacia	fair	fair	corroded	poor	poor	
79	Railroad Easement at Chestnut (East MH)	fair	poor	corroded	poor	poor	
84	Pine at Washington (East MH)	fair	poor	corroded	poor	poor	
90	Railroad Easement at Beech	fair	poor	corroded	poor	poor	
73	Railroad Easement near Juniper	fair	good	corroded	poor	poor	
91	Railroad Easement at railroad marker 229	fair	fair	corroded	poor	poor	
117	Grand at Tyler St. (South MH)	fair	very poor	corroded	poor	poor	
175	Garfield at Cherry	fair	poor	corroded	poor	poor	
201	Carlsbad Blvd. at Pine	fair	poor	corroded	poor	poor	
216	Railroad Easement at Chinquapin	fair	poor	corroded	poor	poor	
217	Railroad Easement at Date (East of fenceline)	fair	poor	corroded	poor	poor	
218	East of RR.Easement at Olive (Construction site)	fair	poor	corroded	poor	poor	Manhole not shown on map
225	4016 Chinquapin near mailbox	fair	poor	corroded	poor	poor	
233	3976 Long in back yard	fair	poor	corroded	poor	poor	
245	S.end apart.lot,Layang L.Cir.(S.MH.by const.site)	fair	poor	corroded	poor	poor	
246	S.end apart.lot,Layang L.Cir.(N.MH.by const.site)	good	poor	none	poor	poor	
265	Hisbiscus at Nautical (near Tamarack)	fair	fair	none	poor	poor	blockage
266	3875 Nautical	fair	poor	none	poor	poor	blockage
275	Tamarack West of Linmar	fair	poor	corroded	poor	poor	
290	Magnolia at Roosevelt	fair	poor	corroded	poor	poor	
305	Harding at Palm (South)	fair	poor	corroded	poor	poor	
315	North of 3610"J" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
316	3610"J" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
320	3670"A" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	
321	515"A" Village Dr. (off Roosevelt)	fair	fair	fair	poor	poor	

Overall Recommendations

(1) Implement immediate rehabilitation program for those manholes previously noted.

(2) Implement a phased rehabilitation program into CMWD's yearly preventative maintenance plan that will address the repair requirements of these manholes in the near term (1-2 year), mid-term (2-5 years) and the long term (5-10 years).

APPENDIX B

Manhole Inspection
Immediate Condition

Location	District Map-MH	Reference MH	Frame/ Cover	Grade Ring	Steps	Walls	Base	Comments
Railroad Easement (Btwn Tamarack and Redwood)	16C - 110	69	fair	poor	corroded	very poor	very poor	immediate to near term rehab recommended
Railroad Easement (Btwn Redwood and Hemlock)	16C - 106	70	fair	poor	corroded	very poor	very poor	immediate to near term rehab recommended
Railroad Easement at Hemlock	16C - 107	71	fair	poor	corroded	very poor	very poor	
Railroad Easement at Chestnut (West MH)	15B - 209	78	fair	fair	corroded	very poor	very poor	
Railroad Easement at Pine (West MH)	15B/9D - ?	81	fair	poor	corroded	very poor	very poor	blockage
Railroad Easement at Pine (East MH)	15B/9D - ?	82	fair	poor	corroded	very poor	very poor	
Carlsbad Village Dr. at Washington (West MH) Elm	9D - 400	85	fair	poor	corroded	very poor	very poor	blockage, grease buildup
Carlsbad Village Dr. at Washington (East MH) Elm	9D - 401	86	fair	very poor	corroded	very poor	very poor	
2737 Jefferson near Laguna (South MH)	9B - 40?	94	fair	poor	corroded	very poor	very poor	blockage, water over shelves
Roosevelt at Grand (Northwest MH)	9D - 203	114	fair	very poor	corroded	very poor	very poor	
Grand at Tyler St. (North MH)	9D - 205	116	fair	very poor	corroded	very poor	very poor	immediate to near term rehab recommended
Grand near Washington (East of RR. Track, West MH)	9D - 207	129	fair	very poor	corroded	very poor	very poor	immediate to near term rehab recommended
Grand near Washington (East of RR. Track, North MH)	9D - 212	130	fair	very poor	corroded	very poor	very poor	immediate to near term rehab recommended
N. of Grand (Alley E. of RR. Tranck, at Beech St.)	9D - 101	134	fair	poor	corroded	very poor	very poor	
East corner parking lot for 2333 State St., in dirt	9D - 303	138	fair	poor	corroded	very poor	very poor	
316 Acacia	15B - 407	174	fair	very poor	corroded	very poor	very poor	drop inlet
Garfield at Chinquapin	16C - 306	204	fair	very poor	none	very poor	very poor	immediate to near term rehab recommended

Manhole Inspection
Very Poor Condition

Location	Manhole	Inspector MH #	Frame/ Cover	Grade Ring	Steps	Walls	Base	Comments
Jefferson and Las Flores	4D - 203	203	fair	fair	corroded	fair	very poor	
Jefferson (Btwn Las Flores and Buena Vista)	4D - 401	401	fair	fair	corroded	fair	very poor	
Jefferson at Buena Vista (South MH)	4D - 406	406	fair	fair	corroded	poor	very poor	channel broken up and cracked
Jefferson at Buena Place	4D - 407	407	fair	fair	fair	fair	very poor	
Buena Place near Jefferson	4D - 408	408	fair	fair	fair	good	very poor	
Laguna at Kreymeyer	9B - 210	210	fair	fair	corroded	poor	very poor	
Laguna at Madison	9B - 209	209	fair	very poor	fair	poor	very poor	
Laguna (Btwn Madison and Buena Vista Cir.)	9B - 30-?	30-?	fair	very poor	fair	poor	very poor	
2630 State St.	9B - 311	311	fair	fair	fair	fair	very poor	
Ocean at Oak (West MH)	15B - 102	102	fair	poor	corroded	poor	very poor	
Ocean at Oak (East MH)	15B - 101	101	fair	poor	corroded	poor	very poor	
South end of Ocean (sidewalk near fountain, E. MH)	15B - 103	103	fair	poor	corroded	poor	very poor	shevles in bad shape
Railroad Easement near Acacia	16A - 300	300	fair	fair	corroded	poor	very poor	
Railroad Easement (Btwn Pine and Walnut)	15B - 214	214	fair	fair	corroded	poor	very poor	blockage, water over shelves
2737 Jefferson near Laguna (North MH)	9B - 400	400	fair	fair	corroded	fair	very poor	immediate to near term rehab recommended
Jefferson at Arbuckle	9B - 404	404	fair	fair	corroded	fair	very poor	
Madison North of Carlsbad Village Drive	9D - 204	204	fair	fair	corroded	fair	very poor	blockage, channel and shelves covered in grease
Madison at Grand	9D - 201	201	fair	very poor	corroded	fair	very poor	blockage, line completely blocked
Roosevelt at Grand (Southwest MH)	9D - 211	211	fair	very poor	corroded	poor	very poor	
Chestnut at Railroad Easement	15B - 219	219	DANGER	poor	corroded	poor	very poor	frame not cemented, ready to slide off!
Near Chestnut & RR. Easement (SE. corner apartment)	15B - 210	210	fair	poor	corroded	poor	very poor	blockage, major buildup in line
Grand near Washington (East of RR. Track, South MH)	9D - 208	208	fair	very poor	corroded	poor	very poor	
Carlsbad Blvd near Mountain View Dr.	9B - 313?	313?	fair	poor	corroded	poor	very poor	
Grand (Btwn Carlsbad Blvd and Washington)	9D - 115	115	fair	fair	fair	fair	very poor	
3267 Garfield	15B - 203?	203?	poor	poor	corroded	poor	very poor	
Garfield at Maple	15B - 404	404	poor	poor	corroded	fair	very poor	
271 Acacia	15B - 406	406	fair	fair	corroded	fair	very poor	
167 Redwood	16C - 100	100	poor	poor	fair	fair	very poor	
Carlsbad Blvd at Juniper	15D - 203	203	fair	poor	corroded	poor	very poor	
3930 Garfield	16C - 307	307	fair	poor	corroded	poor	very poor	
Railroad Easement South of Tamarack	16C - 115/6	115/6?	fair	poor	corroded	poor	very poor	
East of RR Easement at Olive (SW corner apts)	16C - ?	?	fair	poor	fair	poor	very poor	manhole not shown on map
4165 Harbor at the Cul de Sac	16C - 407	407	fair	poor	corroded	poor	very poor	
3945 Linmar St.	16C - 210	210	fair	fair	corroded	fair	very poor	channel clogged
438 Tamarck	16C - 119	119	fair	fair	corroded	fair	very poor	blockage
421 Tamarck	16C - 117	117	fair	fair	corroded	fair	very poor	blockage
411 Tamarck	16C - 112	112	fair	fair	corroded	fair	very poor	blockage

Manhole Inspection
Poor Conditions

Location	Manhole	Inspector MH #	Frame/ Cover	Grade Ring	Steps	Walls	Base	Comments
Jefferson (Btwn Knowles and Laguna)	9B - 206	206	fair	fair	fair	poor	poor	
Jefferson at Laguna (West MH)	9B - 212	212	fair	poor	corroded	poor	poor	
Jefferson at Laguna (East MH)	9B - 213	213	fair	poor	corroded	poor	poor	
State St. at Laguna (North MH)	9B - 302	302	fair	poor	fair	poor	poor	root intrusion
Ocean at Grand (West MH)	9D - 305	305	fair	poor	corroded	poor	poor	
Ocean at Grand (East MH)	9D - 306	306	fair	poor	corroded	poor	poor	
2955 Ocean	9D - 307	307	fair	fair	corroded	poor	poor	
Ocean at Carlsbad Village Dr. (West MH) Elm St.	9D - 312	312	fair	very poor	corroded	poor	poor	
Ocean at Carlsbad Village Dr. (East MH) Elm St.	9D - 311	311	fair	very poor	corroded	poor	poor	
Railroad Easement near Redwood	16C - 105?	105?	fair	fair	corroded	poor	poor	blockage, lost of debris in line
Railroad Easement near Juniper	16A - 303	303	fair	good	corroded	poor	poor	
Railroad Easement (Btwn Juniper and Acacia)	16A - 302	302	fair	poor	corroded	poor	poor	
Railroad Easement at Acacia	16A - 301	301	fair	fair	corroded	poor	poor	
Railroad Easement at Chestnut (East MH)	15B - 208	208	fair	poor	corroded	poor	poor	
Pine at Washington (East MH)	15B - 215	215	fair	poor	corroded	poor	poor	
Railroad Easement at Beech	9D - 103	103	fair	poor	corroded	poor	poor	
Railroad Esement at railroad marker 229	9B - 320	320	fair	fair	corroded	poor	poor	
Grand at Tyler St. (South MH)	9D - 206	206	fair	very poor	corroded	poor	poor	
Garfield at Cherry	15B - 207	207	fair	poor	corroded	poor	poor	
Carlsbad Blvd at Pine	15B - 106	106	fair	poor	corroded	poor	poor	
Railroad Easement at Cinquapin	16C - 400	400	fair	poor	corroded	poor	poor	
Railroad Easement at Date (East of fencline)	16C - 403	403	fair	poor	corroded	poor	poor	
East of RR Easement at Olive (Contruction site)	16C - ?	?	fair	poor	corroded	poor	poor	manhole not shown on map
4016 Chinquapin near mailbox	16C - ?	?	fair	poor	corroded	poor	poor	
3976 Long in back yard	16C - ?	?	fair	poor	corroded	poor	poor	
S. end apt. lot, Layang Cir.(S.MH. by const. site)	16C - ?	?	fair	poor	corroded	poor	poor	
S. end apt. lot, Layang Cir.(N.MH. by const. site)	16C - ?	?	good	poor	none	poor	poor	
Hisbiscus at Nautical (near Tamarack)	16C - 122	122	fair	fair	none	poor	poor	blockage
3875 Nautical	16C - 118	118	fair	poor	none	poor	poor	blockage
Tamarack West of Linmar	16C - 208	208	fair	fair	corroded	fair	very poor	
Magnolia at Roosevelt	16A - 118	118	fair	poor	corroded	poor	poor	
Harding at Palm (South)	16A - 201	201	fair	fair	corroded	fair	fair	
North of 3610 "J" Village Dr. (off Roosevelt)	16A - 308	308	fair	fair	fair	fair	fair	
3610 "J" Village Dr. (off Roosevelt)	16A - 307	307	fair	fair	fair	fair	fair	
3670 "A" Village Dr. (off Roosevelt)	16A - ?	?	fair	fair	fair	poor	poor	
515 "A" Village Dr. (off Roosevelt)	16A - ?	?	fair	fair	fair	poor	poor	

APPENDIX C

HOUSTON HARRIS
PIPE CLEANING SPECIALISTS

210 Cardinal Lane, Riverside, CA 92507 • 909/686-4241, Fax 909/686-0921

October 30, 1998

Montgomery Watson Consulting
ATTN: Brenda Petry
Symphony Tower
750 "B" Street, Suite 1610
San Diego, CA 92101-8131

Dear Brenda,

Thank you for your inquiry of Houston & Harris Pipe Cleaning Specialists. We are a small partnership servicing municipalities, water districts, government agencies and private construction contractors. Our primary services are hydrowashing sewer lines and stormdrains and video pipe inspection of sewer lines, stormdrains and water lines. We have been in business for approximately 11 years.

I understand your interest at this time is in having an estimated 240,000 linear feet of both 6" & 8" sewer line hydrowashed and portions rootcut also. Our price to hydrowash would be $.19 per foot and to root-cut would be $.26 per foot. We would require a water source for the cleaning procedure and also an appropriate dumpsite for all the debris removed while cleaning and/or rootcutting. Traffic control would be the responsibility of the City of Carlsbad or if the City would prefer we handle it, the price could be adjusted to include this also.

For the hydrowashing operation we use Vactor 2100 Series trucks. These are combination units that not only jet but also vacuum the debris from the entry manhole; they are extremely efficient and clean operating units. We will be taking possession of a new vehicle within 10 days and I have enclosed a brochure of the particular unit we've purchased. Please see enclosed.

A list of references is also attached. Please feel free to contact any of these clients. I hope this has given you a general idea of our company. Our owners work in the field as video operators to help maintain a high quality standard that we have worked hard to develop. We look forward to working with the City of Carlsbad. If you have further questions, please call at 909-686-4241.

Sincerely,

Pamela Houston

Pamela Houston
Houston & Harris Pipe Cleaning Specialists

ph

Enclosures

HOUSTON & HARRIS PIPE CLEANING SPECIALISTS

CUSTOMER LIST

CITIES

City of Chino Utilities
5050 Schaefer Avenue
Chino, CA 91710
Gil Aldaco - 909-591-9841

City of Corona
306 S. Vicentia
Corona, CA 91720
Sam Hernandez - 909-736-2443

City of Culver City
9770 Culver Blvd.
Culver City, CA 90232-0507
~~Sam Talebian - 310-253-5619~~ Pam Keyes - 1·310·253·5621
~~Lynn Moeller - 310-253-5622~~

City of Grand Terrace
22795 Barton Road
Grand Terrace, CA 92324
John Donlevy - 909-430-2226

City of Murrieta
26442 Beckman Court
Murrieta, CA 92562
Mike Brooks - 909-696-7501

City of Palm Springs Waste Water Treatment Plant
4375 Mesquite
Palm Springs, CA 92264
Cliff Graham - 760-323-8166

City of Temecula
43174 Business Park Drive
Temecula, CA 92590
Brad Buron - 909-694-6411

Water Districts

Apple Valley Water District
P.O. Box 429
Apple Valley, CA 92307
Roger Lopez - 760-240-7500

Big Bear Area Regional Wastewater Agency
P.O. Box 517
Big Bear City, CA 92314
Dan - 909-584-4018

Coachella Valley Water District
P.O. Box 1058
Coachella, CA 92236-1058
Ed Solis - 760-779-1604

Desert Water Agency
P.O. Box 1710
Palm Springs, CA 92263-1710
Paul Scaletta - 760-323-4971

Eastern Municipal Water District
P.O. Box 8300
San Jacinto, CA 92581-8300
Brian Agner - 909-928-3777

Edgemont Community Services District
P.O. Box 2024
Riverside, CA 92516-2024
Joe Teague - 909-653-5120

Elsinore Valley Water District
31315 Chaney Street
Lake Elsinore, CA 92530-3000
Loren Sorber - 909-674-3146

Home Gardens Sanitary District
13538 Magnolia Avenue
Home Gardens, CA 91719
Keith Seymore - 909-735-2368

Jurupa Community Services District
8621 Jurupa Road
Riverside, CA 92509
Dan -909-685-7434

Lee Lakes Water District
22646 Temescal Canyon Road
Corona, CA 91719
Bill - 909-277-1414

Mission Springs Water District
66575 Second Street
Desert Hot Springs, CA 92240
Brent - 760-329-6278

Newhall County Water District
23780 N. Pine Street
Santa Clarita, CA 91322-0970
Mark Lindemann - 805-259-3610

Rubidoux Community Services District
P.O. Box 3098
Rubidoux, CA 92519
Gilbert Fausto - 909-684-0641

Victor Valley Waste Water
20111 Shay Road
Victorville, CA 92394
Bruce - 760-246-8638

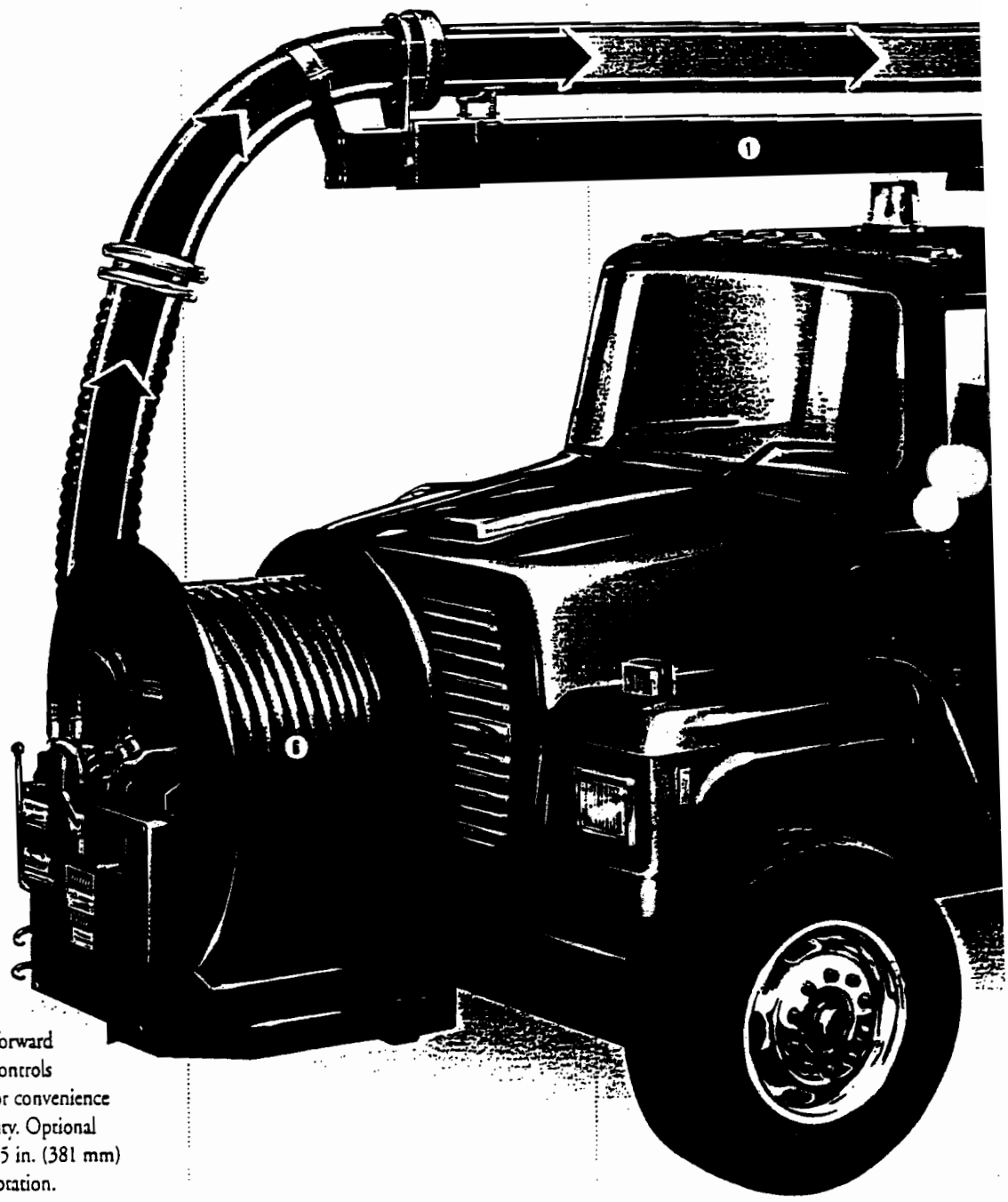
Yucaipa Valley Water District
12770 Second Street
Yucaipa, CA 92399-0730
Ken - 909-795-2491

This is a partial customer list.

1) Fully Hydraulic Boom
Provides effortless in/out and up, down, left and right movement with full 180° rotation for easy positioning into hard to reach areas. Trouble-free hydraulic power eliminates adjustment and maintenance problems common to sprocket and chain systems.

2) Powerful Positive Displacement Vacuum
Blower is chassis-driven directly through a 495 HP rated continuous-duty transfer case. Eliminates belts, pulleys, clutches, drive line slip and maintenance, while boosting efficiency and reliability. Inlet volume up to 5000 CFM produces up to 18 Hg to significantly increase velocity pull of debris at greater working depths.

3) Direct Driven Hydraulic Water Pump
The hydraulic water pump is direct[illegible] through a heavy-duty transfer cas[illegible] Optional variable flow control allows operator to adjust flow and pressure while maintaining a full and constant vacuum.



6) Front Mounted Hose Reel
Front mount provides the operator with a safe, efficient work station. Heavy-duty high capacity reel with hydraulically-powered forward and reverse. Operator controls located on both sides for convenience and operator productivity. Optional telescopic action adds 15 in. (381 mm) of reach and 270° reel rotation.

'ump
'ect driven
.se.
'lows
'ure while
'acuum.

4) Multi-Stage Blower Filtration System
Exclusive Vactor design provides unmatched blower protection to ensure optimum service life and productivity:

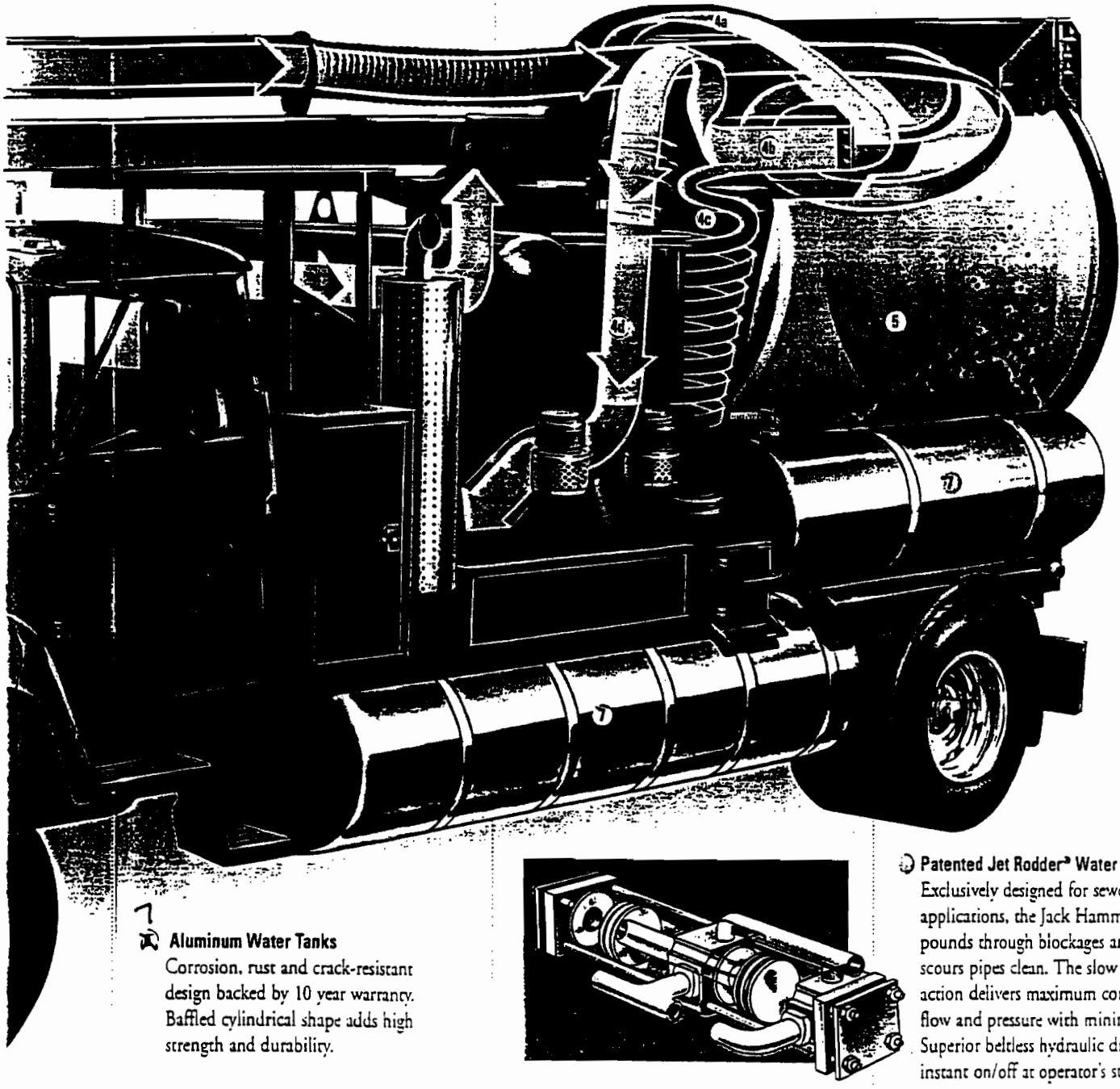
a) Dual air ports maximize material separation in the debris body

b) Stainless steel ball shutoffs prevent liquid debris carry-over

c) Centrifugal cyclone (optional) for severe and dusty environments removes any escaping particles and condensation from the air stream

d) Final stainless steel screen strainer removes particles as small as 10 microns to provide ultimate blower protection

5) Easy Load, Fast Dump Debris Body
Safe and efficient design shields the operator from potential contaminat Made of 3/16 in. (4.76 mm) ExTen corrosion and abrasion-resistant ste the full 50° dump angle is achieved a single, double acting hydraulic cyl Capacities available from 5 to 16 cu (4 to 12 m³).

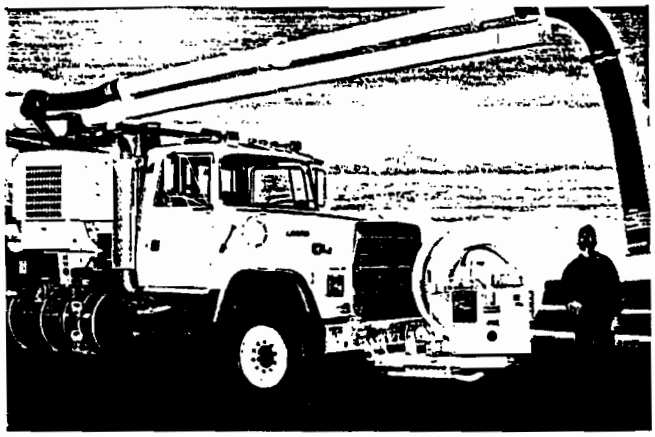


7) Aluminum Water Tanks
Corrosion, rust and crack-resistant design backed by 10 year warranty. Baffled cylindrical shape adds high strength and durability.

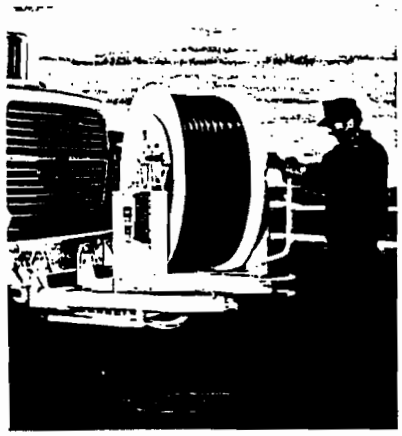
3) Patented Jet Rodder® Water Pump
Exclusively designed for sewer cleaning applications, the Jack Hammer® action pounds through blockages and virtually scours pipes clean. The slow stroke action delivers maximum continuous flow and pressure with minimal wear. Superior beltless hydraulic drive with instant on/off at operator's station.

Options

The synergy of the unique Vactor telescoping, rotating hose reel and telescoping boom creates a highly efficient work system. ►



Telescoping Boom
Provides 23 ft. (7 m) of reach for optimum versatility and productivity. Extends and retracts; moves up, down, right and left, from a walk-around pendant control or the work-station control panel. Trouble-free hydraulic operation eliminates adjustment and maintenance problems common to belt and chain systems.



Telescoping, Rotating Hose Reel
Allows quick, easy positioning over the sewer to reduce the chance of hose damage due to misalignment. Also permits cleaning multiple inlets without moving the truck chassis. Rotates a full 270° and telescopes out 15 in. (381 mm) from the truck. Dual controls allow operator to work safely from either side.

Additional Options

- Over 100 precision-engineered safety and productivity enhancements
- Multi-flow Jet Rodder® system
- Cold weather recirculation system
- Liquid debris pump-off system
- Debris flush-out system
- Fail-safe hydraulic door locking system
- Water tank capacity up to 2000 gallons (7570 L)
- Pump delivery systems up to 200 GPM
- Hose reel capacity up to 1,000 ft. (305 m)
- Accumulator

Value-Added Services

Vactor's commitment to the customer continues long after the sale.

- On-time delivery
- Factory-trained worldwide dealer network for assistance with service and maintenance
- Off-site regional training sessions and specific end-users training
- Genuine Performance Matched Parts™
- Training center with hands-on instruction for operator and service personnel
- Customized leasing and financial services

Warranty

The Vactor 2100 series is warranted against defects in material or workmanship for a period of 12 months from the date of delivery to the original purchaser; 5 years on the centrifugal compressor, and 10 years on the water tanks. Optional extended warranty packages are available. Consult your Vactor dealer for complete warranty information.

Your Vactor Dealer is:

HAAKER EQUIPMENT COMPANY
Superior Municipal Equipment
3505 Pomona Blvd. Pomona, CA 91768
(909) 598-2706

VACTOR®

Vactor Manufacturing, Inc.
Subsidiary of Federal Signal Corporation
1621 South Illinois Street
Streator, Illinois, U.S.A. 61364
(815) 672-3171 Phone
(815) 672-2779 Fax

EZ

The Environmental Protection Specialists

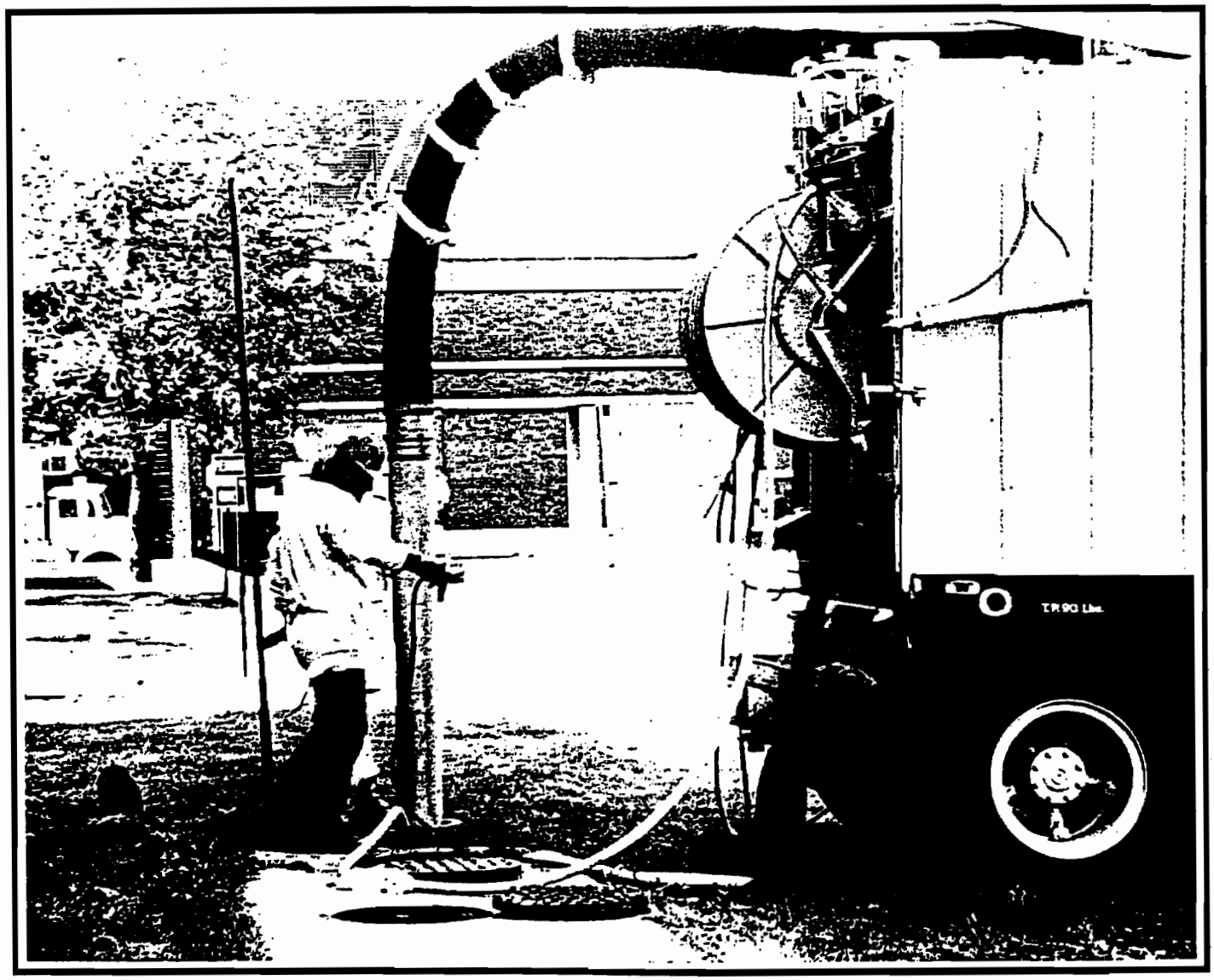
NATIONAL PLANT SERVICES, INC.
1461 Harbor Avenue
Long Beach, CA 90813-2741

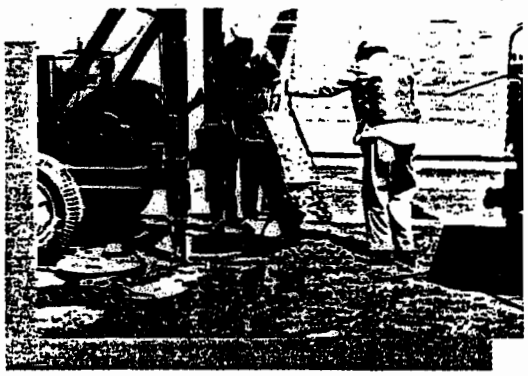
Phone: 562-436-7600
Fax: 562-495-1528
Toll Free: 1-800-445-3614

Carylon Company

Carylon
CORPORATION

Nationwide Environmental Maintenance Services





Sewer Cleaning

Clogged sewer lines can quickly turn from a nuisance into a nightmare of municipal health hazards — and irate phone calls. Whether clogging is caused by sewage back-up or natural disasters, such as landslides, mudflows or floods, you need someone who can respond with the right type of equipment and experienced personnel. That's when you can count on a Carylon company. Our sewer cleaning services include:

High Velocity Jetting: Our customized jetting equipment sets up in minutes and rids your sewers of blockages more quickly than any other method available. Turbulent action of water pumped through specially designed nozzles at pressures up to 2,000 psi literally scours your sewers clean. Obstructions and debris are removed without damaging your sewer walls

Power Bucketing: For fast, effective cleaning of your severely clogged sewer lines, we use specially-designed, machine-driven buckets and scrapers specifically sized for the pipe being cleaned. No other firm can match our extensive power bucketing experience.

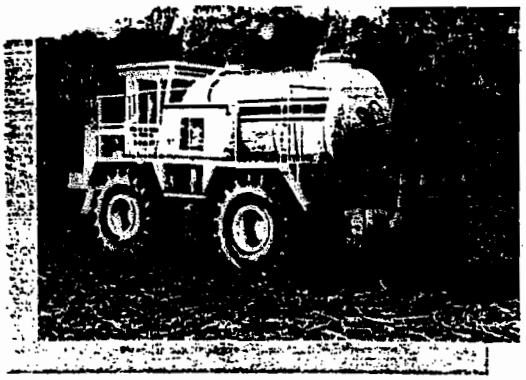
Root Removal: The Environmental Protection Agency (EPA) calls root intrusion, "the most destructive single element facing those maintaining a wastewater collection system." If you're waging a constant battle against root intrusion, call us and get rid of the problem once and for all. Our root removal specialists combine high-powered root cutters with EPA-approved herbicidal treatment to kill intruding roots and inhibit their growth. We can even seal your lines in the same operation.

Color TV Inspection

How do you find problems in your sewer system without costly guesswork and excavation? Call a Carylon company. We pioneered the use of closed-circuit TV to inspect sewer lines. Our specially designed color cameras pinpoint problems in pipes as small as 4" in diameter to as large as 96" in diameter. Trouble spots, such as cracked or broken tiles, offset joints, and blockages are quickly and precisely located without excavation. Service includes audio- video tape and computer-generated report of the inspection.

Mini-Cam TV Inspection: Pipe lines and other areas previously inaccessible due to their size or location can now be easily and economically inspected. Using specially designed miniature cameras and equipment, Carylon company technicians can internally inspect piping as small as 2 inches in diameter. They can see behind, under, over, between, and inside equipment and structures; look into service connections, pipes, holes, wells, walls, chimneys and tanks. Problems are quickly located and can be recorded on video tape.

All Work Completely GUARANTEED!



Carylon companies offer the most sophisticated process available to transport and land apply liquid or dewatered biosolids on a large or small scale. Our equipment moves the material with maximum efficiency and minimal soil compaction. We also assist you with site acquisition and permitting, as well as conduct soil and environmental monitoring as part of the total land application program.

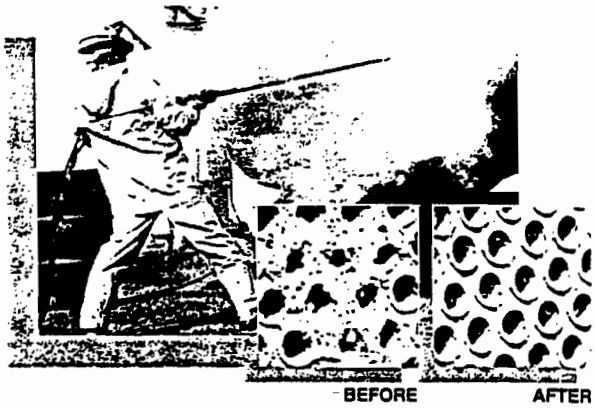
Hydro-Vac Excavation

Using low pressure, Hydro-Vac technology, we can quickly and safely excavate in areas inaccessible to conventional digging equipment and where pressure gas lines and pipelines are present. Major oil and gas companies, consultants, petrochemical plants and contractors depend on our speed, safety and know-how for everything from pilot holes and slot-trenching to major excavations. Regulatory authorities recognize our Hydro-Vac technology as "non-mechanical" excavation, allowing our equipment to work within 5 feet of hotline buffer zone boundaries.

Vacuum Removal of Wastes & Debris

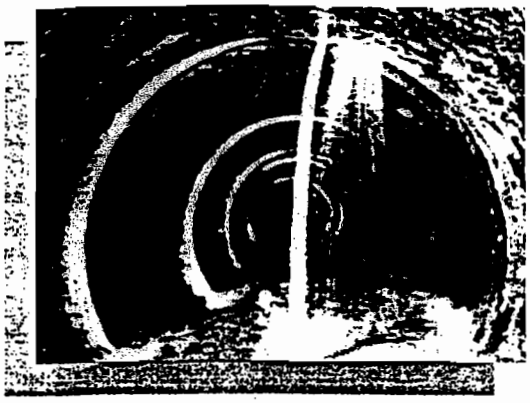
Many cleanup jobs that used to take days are completed in just hours. Our custom-built vacuum vehicles quickly cleanup the toughest, dirtiest material, no matter where it's located — in fact, we can reach places where you've never been able to clean before. The tremendous suction generated by our equipment ensures the quick removal of wastes and debris — without stirring up dangerous particles or annoying dust. Metal chips, slag, steel shot, wood chips, sawdust, grain, mill scale, slurries, water are just some of the materials that can be removed quickly and efficiently. Conventional cleanup methods simply cannot compete with the speed and effectiveness of our high-powered vacuuming service.

Water Blast Cleaning



Using specialized equipment operating and pressures up to 20,000 psi, our technicians can quickly cut through stubborn scales and product build-up in boiler and heat exchanger tubes; remove old paint, dirt and rust from structures, machinery and equipment; and literally peel away soft or hardened deposits from chemical processing equipment without any damage to their original surfaces. Water blasting is the ideal method for cleaning internal as well as external areas, flat or irregularly shaped surfaces, and for getting at those places that, in the past, were almost impossible to reach, let alone clean.

BEFORE



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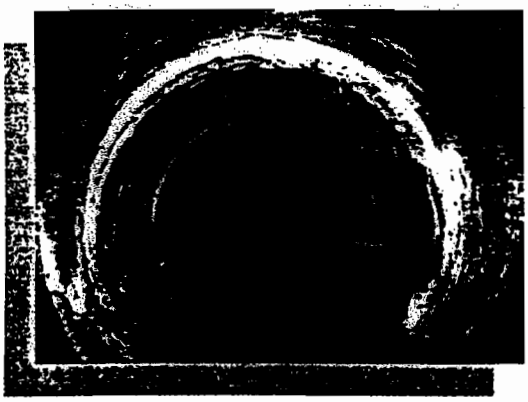


Infiltration Control

The results of eliminating extensive infiltration/inflow in your sewers can be the same as adding more pipe line to your system and capacity to your treatment plant. Our combination TV Inspection/Sewer Joint Sealing service provides a guaranteed solution to the problem of excessive infiltration, without costly excavation, disruption of traffic, or by-pass pumping of sewage.

When a leak is located by the TV camera, our technician stationed in a mobile laboratory at the job-site can isolate and seal the leak, usually in less than a minute.

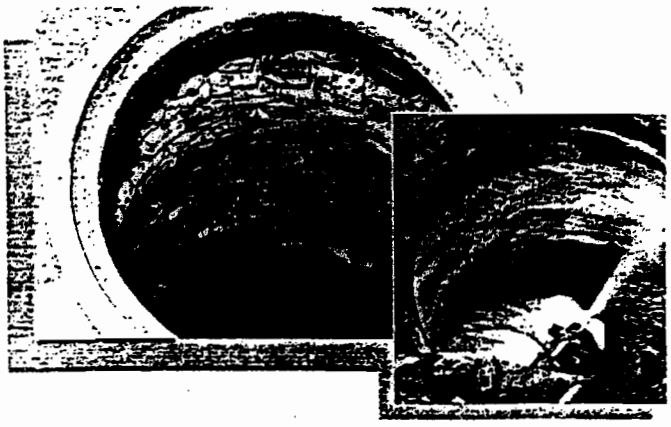
Pipe condition, type of leak, type of soil, chemicals present in the sewage and ground water pressure are all factors that are considered before selecting a chemical/catalyst combination that is most suitable.

Proportioning, blending and injection of the grout is varied to meet specific conditions and requirements of each individual job. The operation is handled entirely from above ground without any excavation, blockage of sewers or by-passing of sewage. All seals are fully guaranteed.

Slip Lining

A practical and economical method for rehabilitating sewer, force main and industrial piping. Slip-lining creates a new pipe within an old one through the introduction of a high-density, polyethylene liner. It is an appropriate repair method for extensively cracked or corroded pipe, particularly if the original pipe is located in unstable soil or in an area that makes excavation and replacement impossible or too expensive.

Carylon companies can install tough polyethylene liners for less than half the cost of replacement. Slip lining can completely eliminate infiltration/inflow, increase the carrying capacity of pipes and add to the structural integrity of your system.



Manhole Rehabilitation

Excessive infiltration/inflow from deteriorating manholes places an unnecessary burden on a community's sewer system, wastes thousands of dollars, and can create serious water pollution control problems. Our manhole rehabilitation specialists can solve your manhole infiltration/inflow problems; restoring your structures to "better than new" condition in less time than it would take to replace them — and for a fraction of the cost. Ask about our "Spray-Seal" polyurea method of manhole rehabilitation. It's like nothing you've ever seen before.

All Workers Hazwoper Trained!

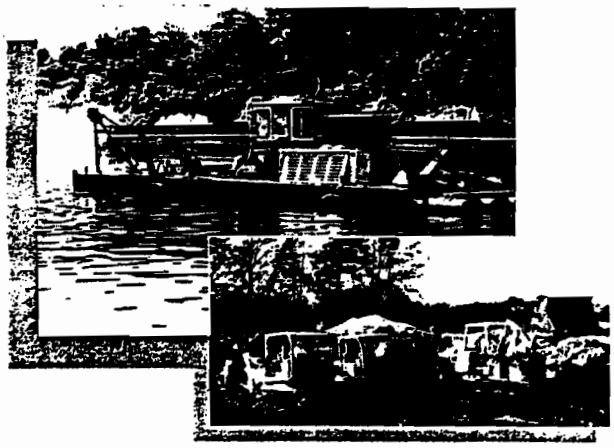
Our experts have helped hundreds of industries and municipalities across the country meet E.P.A. regulations. Working under the direction of the consulting engineer, we can handle all or any part of your correction program; from beginning analysis through the rehabilitation of the entire system. Services include: infiltration/inflow analysis, sewer system evaluation survey, continuous flow monitoring, isolation flow gauging, manhole inspection, dyed water flooding, smoke testing, stormwater sampling and analysis, data collection for NPDES and stormwater permit application.

Hazardous Waste On-Site Treatment

Hazardous liquid waste can be cleaned up without large, initial capital outlay by using our transportable treatment units (TTU's). Our TTU's roll right up to your job site and can process liquid batches up to 1,000 gallons, producing purified water which can be discharged into an industrial sewer, and dewatered filter cakes which can be recycled or disposed of in a qualified landfill.

Transportable Treatment Services, Inc., a Carylon company pioneered the design, testing, and permitting of TTU's and, holds the very first Part "B" Permit to be issued in the state of California for TTU's to perform authorized on-site treatment of liquid hazardous waste.

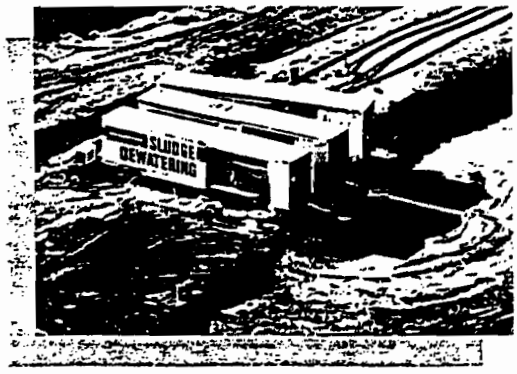
Hydraulic Dredging/On-site Soil/Sludge Remediation



Carylon's fleet of completely portable dredges are equipped with the latest power equipment for the fast, efficient cleanup and reclamation of harbors, reservoirs, ponds, lagoons, intake basins and retention areas. Capable of reaching depths of 27 feet, we can remove as much as 2,000 gallons of sludge or sediment per minute and up to 300 cubic yards per hour.

Our experienced 40 hour OSHA trained heavy equipment operators enable Carylon companies to complete site remediation projects such as lagoon closure/cappings, routine removal of contaminated soils/sludges, and EPA regulated site closures.

Sludge Dewatering



Whether your needs call for temporary, seasonal, or long-term dewatering, Carylon companies have the expertise, manpower and equipment to do the job. Using mobile units that roll right up to your door, we quickly remove sludge contaminated sediment or oily wastes from pits, ponds, lagoons, industrial tanks and digesters. Our belt-filter presses, recessed chamber plate and frame presses and/or centrifuges reduce the sludge to a dry, cake-like material that is suitable for incineration, recycling/recovery or land application disposal.

All Services Available Nationwide

Carylon Companies Combine the Most Advanced Technology with More Than
47 Years of Experience and Back All of Their Work with
A Guarantee that Is Unmatched in the Industry:

You Must Be Satisfied or You Pay Absolutely Nothing!

The Companies of Carylon:

ALABAMA
Birmingham
Video Industrial Services, Inc.
1-800-341-1425

Decatur
Video Industrial Services, Inc.
1-800-826-3498

CALIFORNIA
Long Beach
National Plant Services, Inc.
1-800-445-3614

Transportable Treatment Services, Inc.
1-800-446-6100

ILLINOIS
Chicago
National Power Rodding Corp.
1-800-621-4342

Sewer System Evaluations, Inc.
1-800-621-4342

South Roxana, IL (St. Louis)
Odesco Industrial Services, Inc.
1-800-423-1954

INDIANA
East Chicago
National Industrial Maintenance, Inc.
1-800-551-2218

MICHIGAN
Dearborn (Detroit)
National Industrial Maintenance, Inc.
1-800-952-0111

MISSOURI
Kansas City
Ace Pipe Cleaning, Inc.
1-800-325-9372

NEW JERSEY
Newark
National Water Main Cleaning Co.
1-800-242-7257

Newfield
Video Pipe Services, Inc.
1-800-634-6014

NORTH CAROLINA
Charlotte
Bio-Nomic Services, Inc.
1-800-782-6798

OHIO
Columbus
Metropolitan Environmental Services, Inc.
1-800-860-7378

Lorain *(Cleveland)*
Robinson Pipe Services, Inc.
1-800-548-5514

PENNSYLVANIA
Chester (Philadelphia)
Mobile Dredging & Pumping Co.
1-800-635-9689

Eighty-Four (Pittsburgh)
Robinson Pipe Cleaning Co.
1-800-553-4690

TEXAS
Pasadena (Houston)
Specialized Maintenance Services, Inc
1-800-365-3400

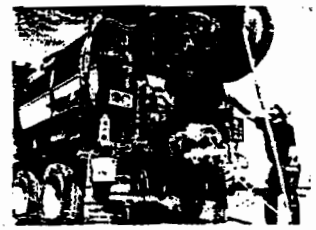
CANADA
Truro, Nova Scotia
Video Industrial Services
(902) 895-8498

For a Free Job Site Survey and Cost Estimate, Call the
Carylon Company Shown Below or the One Nearest You.

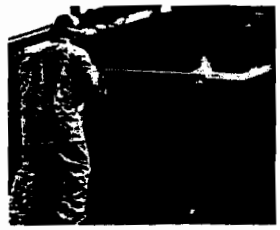
Carylon Corporation
The Environmental Protection Specialists
2500 W. Arthington Street • Chicago, IL 60612-4108
1-800-621-4342

10M-Rev. 11/95PA

No One Offers

you more  environmental 

maintenance services... 

or backs them with a better guarantee! 

The Carylon Companies have been providing solutions to water and wastewater maintenance problems for municipalities, utilities and industries across the country for more than 47 years. We have the resources and experience necessary to meet all of your needs. And, we back our work with a guarantee that is unmatched in the industry—

You must be satisfied or you pay nothing for our services!

This guarantee covers closed-circuit television inspection, emergency spill clean-up, hydraulic dredging, industrial tank/digester cleaning, infiltration/inflow control, lagoon closures, manhole rehabilitation, process pipe and sewer cleaning, slip lining, sludge dewatering, biosolids land application, vacuum removal of wastes and debris, water blasting, hydro-vac excavation or anything else in environmental maintenance.

No one offers you more, or backs you up better. Call us for a free site survey and estimate!

Carylon Corporation **1-800-621-4342**

The Environmental Protection Specialists

Carylon Corporation • 2500 West Arthington Street • Chicago, IL 60612-4108 • Fax 312-666-5810

Fighting a Sewer Line Root Problem?

Duke It Out!

DUKE'S

Sewer Line Chemical Root Control Service

DUKE'S SERVICE...

Effective

Eliminates Sewer Stoppages Due to Roots

Kills All Roots in Sewer Line

Cuts Through Grease

Inhibits Root Re-growth for 3–5 Years

EPA Registered

Will Not Harm Trees

Carefully Applied to Protect Treatment Plant

Saves Money

Eliminates Routine Cutting and Emergency Calls

Adds Years to the Life of Sewer Pipe

Eliminates Costly Dig-ups and Pipe Replacement

Protects Against Future Groundwater Infiltration

Reduces Liability and Clean-up Costs Caused by Sewer Stoppages

Proven

Used in Over 700 Municipalities
Over 8 Million Feet of Sewer Treated

We Specialize in Problem Easements, Big Pipe and Off-Road Work

References Available

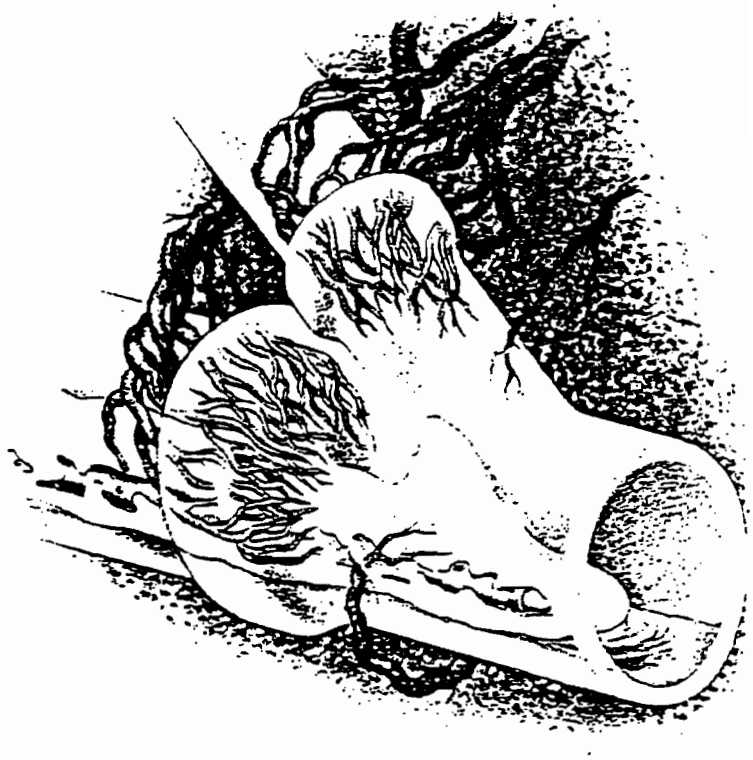
Guaranteed

Duke's Guarantees Against Stoppages for 2 Years, and for 3 Years on Repeat Applications (For Full Details Ask for a Copy of Our Written Guarantee)

Licensed and Insured

Here's How It Works

1 *Foam is pumped through a discharge hose, completely filling the main line from manhole to manhole. Foam is compressed against all pipe surfaces, into cracks and joints, and forced up connecting sewers for maximum contact of all roots.**



"To date, we have treated a total of 15 miles of sewer. The results speak for themselves. Overall, we have reduced mainline stoppages in areas that were treated by approximately 60 percent. A large portion of our lateral stoppages has decreased because the foam killed the roots at the mainline connection with the lateral."

M. Kenneth Sutton, Public Works Magazine

*Large diameter pipe requires sufficient [illegible]

"Within a month we started seeing dramatic results."

Tim Casey, Public Works, Magazine

2 ***Roots die and stop growing upon contact with the foam. Trees are not harmed. By-pass pumping and cleaning prior to treatment is generally not required. Sewer service is never interrupted.***

3 ***Dead roots decay naturally and slough off. Growth inhibitors prevent root re-growth for 3-5 years.***

"In the year since the project was completed, we experienced just three root related trouble calls out of 457 ions treated. In each case, Duke's re-treated the pipe section (per their guarantee)."

Stan Stewart, American City & County Magazine

DUKE'S

Sewer Line Chemical Root Control Service

800-44-ROOTS

800-447-6687

ROOTX

Directions for Use

Preparing for Application

After determining the correct Orifice size for the FDU 100, take the FDU 100 along with the ROOTX Chemical, to the upstream manhole, where the ROOTX application will begin.

Place the cleaner hose with cleaner nozzle into downstream manhole, as in normal operation, and send the hose with nozzle to the upstream manhole where the ROOTX application will begin. Once the cleaner hose has reached the upstream manhole, pull the hose out of the manhole and lay it on top of the ground.

You should now have your cleaner hose, ROOTX Chemical bags, FDU 100 with Foam Dispersal Nozzle, Plastic Locking Pin, Transfer Tube and Rubber O-Rings at the upstream manhole where the ROOTX application will begin.

Suggestions: To prevent having to enter a manhole to retrieve the cleaner hose, it is recommended that a Single Wire Hydraulic hose, 15-20 feet in length, 3/4" or 1" in diameter, be used as a leader hose which can then be attached to the cleaner hose. Attach the cleaner nozzle to the leader hose and send it to the upstream manhole, where the ROOTX application will begin. When the nozzle reaches the manhole, use a long pole with a hook on the end to pull the leader hose out of the manhole. This makes retrieval of the cleaner hose much easier and does not require that someone enter the manhole to retrieve the hose. Another suggestion is that the cleaner operator introduces slack in the cleaner hose, which will make it easier to retrieve at the upstream manhole.

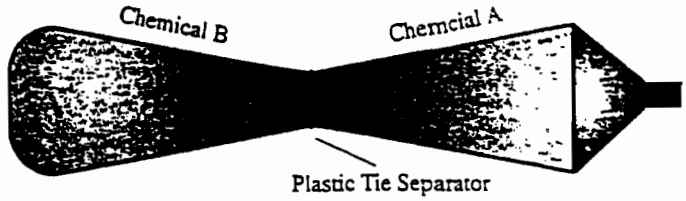
Mixing the Rootx Chemical

While wearing rubber gloves and a dust mask, open the ROOTX box which contains two 20# bags of ROOTX chemical. The FDU 100 is designed to hold one 20 # bag of ROOTX chemical, which is sufficient to treat up to 400ft. of 6-18" pipe. Take one ROOTX bag and remove the plastic tie in the middle of the bag which separates the two dry components, the white chemical A an the brown chemical B. Be careful not to puncture or tear the bag during this process. After you have removed the plastic tie, grab each end of the bag and begin to mix the chemicals, by shaking the bag vigorously from the side to side. A proper mixture has been achieved when both chemicals A and B form a tan mixture of white and brown chemicals. This process should take approximately two minutes.

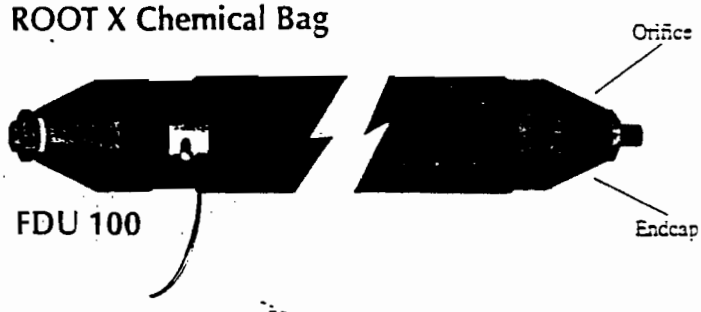
WARNING: A Carbon Dioxide (Co2) buildup will occur during the mixing process. In the event that the bag should become so full of Co2 gas that it may break, you should open a small hole in the end of the bag to release the gas, then continue the mixing process until you achieve a proper mixture.

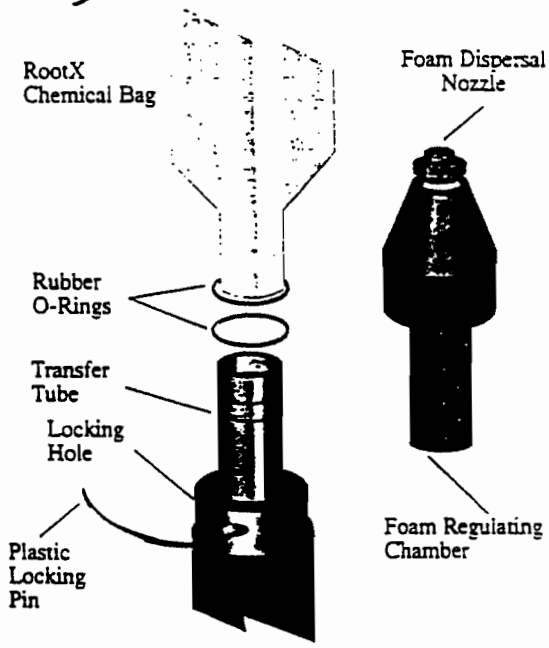
3. Attaching the Transfer Tube

After a proper mixture has been achieved, open the end of the narrow part of the bag with either scissors or a knife. Open just the end where the bag has been sealed. Take the Transfer Tube which has a single groove at one end and two grooves at the other end, and insert it into the opening you have created, single groove end first. Then place the rubber O-rings over the bag and into the grooves which the bag material is covering, leaving one groove exposed and uncovered on the outside of the bag. The exposed groove will be used in locking the Transfer Tube into the FDU 100.



ROOT X Chemical Bag





How to Determine the Endcap Orifice Size

Use a 5-gallon bucket or other suitable container to determine the Gallons Per Minute (GPM) at idle of the cleaner truck. Operate the cleaner truck at idle engine speed and fill the 5-gallon bucket using the cleaner hose without a nozzle. Utilize a watch to time the filling of the bucket. Once you have determined the amount of seconds it took to fill the 5-gallon bucket, refer to the orifice chart to find out the proper orifice size. Call General Chemical Co. with this orifice size and the orifice will be placed in the FDU 100 and shipped to your location. This will ensure that the FDU 100 (Foam Dispersal Unit) will maintain proper water pressure and chemical dispertion.

Orifice Chart

SECONDS TO FILL 5 GAL.	CLEANER G.P.M.	ORIFICE SIZE
60-51	5	1/8
50-38	6 to 7	5/32
37-34	8 to 9	11/64
33-28	>9 to 10	3/16
27-24	11 to 12	13/64
23-21	13 to 14	7/32
20-19	15	15/64
18-16	16 to 19	1/4
15-14	20 to 21	9/32
13-12	22 to 26	19/64
11	27	5/16

Note: Always go down to smaller orifice if it is less than next full size (i.e. 7.8 gpm use 7 size, not 8)

FDU 100

You should now have a bag with the ROOTX Chemical mixed to form a tan color and a Transfer Tube attached to the narrow end of the chemical bag. Take the Transfer Tube and slip it into the FDU 100 where the Foam Dispersal Nozzle fits. Take the plastic locking pin and insert it into the locking hole. Push the Plastic Locking Pin in as far as it will go. Lift the bag slowly, letting the chemical flow through the Transfer Tube into the FDU 100. Tap both the chemical bag and the FDU 100 occasionally to make sure you have proper flow and that the chemical is settling into the FDU 100. After completion of the transfer of ROOTX Chemical to the FDU 100, pull out the Plastic Locking Pin and remove the Transfer Tube from the FDU 100. Then insert the Foam Dispersal Nozzle into the FDU 100 and lock it into place with the Plastic Locking Pin.

Remove the rubber O-Rings from the Transfer Tube and pull the Transfer Tube out of the narrow end of the bag. Be sure to save your Transfer Tube and Rubber O-Rings for future applications. Dispose of the chemical bag by depositing in a sanitary land fill or by incineration if allowed by state and local authorities.

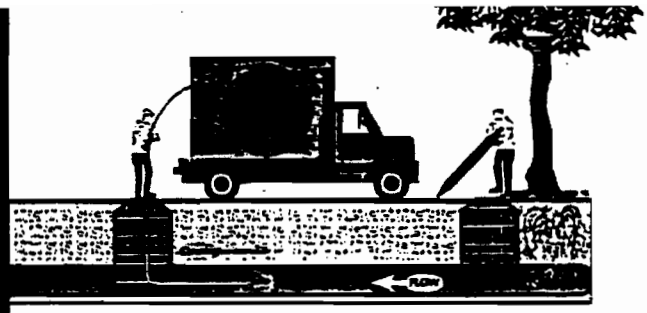
5. Application

The FDU 100 should now be filled with 20 pounds of ROOTX Chemical. Attach the cleaner hose to the Inlet End Cap of the FDU 100. Slowly reel in the cleaner hose while lowering the FDU 100 into the manhole. Suggestion: Attaching a string to the Foam Dispersal Nozzle end of the FDU 100 will enable the worker at the upstream manhole to lower the FDU 100 into the hole, while the cleaner operator is pulling the cleaner hose back slowly, without entry, while the operator is slowly retrieving the cleaner hose. The string should be attached in such a manner that it will not hang up in the pipe during the foam spray application.

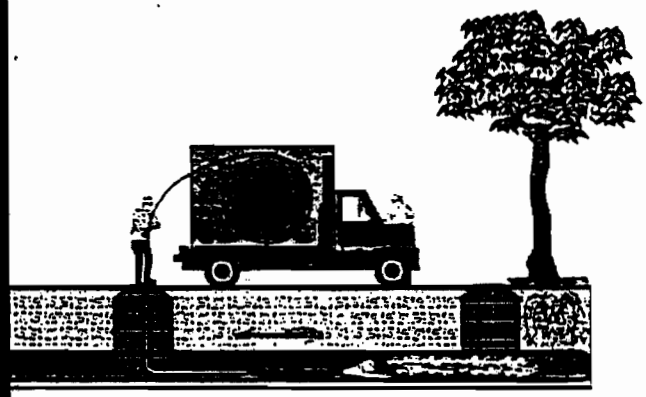
Once the FDU 100 is placed in the hole, the cleaner operator should be signaled to start the water, and only run the Cleaner at an engine idle speed. The worker at the upstream manhole should verify that foam is emitting from the nozzle. Once the foam dispersal has been verified, the FDU 100 should be pulled through the pipe at a speed no greater than 20 feet per minute.

6. Finished Application

The ROOTX application is finished when the FDU 100 reaches the downstream manhole. The cleaner is now turned off and the FDU 100 is retrieved from the downstream manhole. Smaller size pipe requires gently shaking and pulling by the operator at ground level, in order to retrieve the applicator. After the FDU 100 is removed, unhook the cleaner hose and detach the Foam Dispersal Nozzle. Then wash out any excess chemical with a hose, making sure that the wash water goes directly into the sewer through the open manhole. You are now ready for another application.



Cleaning the line



RootX application

Direct Application Method without FDU 100

RootX is a very flexible product, not only can it be applied in conjunction with a Cleaner Truck but it can also be applied by pouring the self-foaming RootX directly into the pipeline. The following is the method of Direct Application or pouring of RootX directly into the pipeline.

1. Take a 40-pound box of RootX which contains the two pre-packaged 20-pound chemical bags. Both components within these bags should be mixed so that the proper foaming action is created. This can be done by releasing the plastic tie which separates the white chemical A and the brown chemical B. Shake the bags back and forth vigorously until the brown and white components are thoroughly mixed.

2. After a thorough mixture is achieved, pour the RootX chemical directly into the upstream manhole. Follow the pouring of the chemical with 25-30 gallons of water. The water activates the foaming action of RootX. The foam acting as a carrying agent and will fill the pipe with the root killing chemical. The foam can then be carried down the pipe with the existing flow or by running a cleaning nozzle about 100-200ft. up the pipe and then retracted, from the down stream manhole. This creates a vacuum which draws the foam down the pipe even farther. Another effective application of RootX is to pour the RootX directly into the pipe and plug the pipe at the down stream manhole and soak the roots in the RootX root killing foam for one hour.

40 pounds of RootX poured directly into the pipeline will effectively treat 300ft. of 8-10 inch line.

GENERAL CHEMICAL ©.
P.O. Box 7626/Salem. Oregon.97303
1.800.844.4974
Phone 503.364.2999 FAX 503.364.0085

DUKE'S
SEWER ROOT CONTROL SPECIALISTS

SYRACUSE, NY
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FAX (315) 475-4203

DUKE'S

Jet Power II - Grease Liquifier

ROOTX

Foaming Root Control

Fax Cover Sheet

Date :	November 2, 1998	**Pages :**	1 (including cover)
To :	Cindy Resler	**From :**	Rich Davis
Company :	Montgomery Watson	**Company :**	RootX
Fax:	619-239-3895	**Fax:**	503-364-0085
Phone :	619-699-4154	**Phone :**	800-844-4974

Subject : RootX - quote for city of Carlsbad

1745 Salem Industrial Drive NE/Salem, Oregon.97303/Toll Free 1.800.844.4974/Telephone 503.364.2999/Fax 503.364.0085

ROOTX

Foaming Root Control

Quote for the City of Carlsbad

75 RootX 40 lb. boxes	Shipping	Total
$21,750.00	$695.33	$22,445.33

The dispersal unit for RootX (FDU 100) normally costs $995.00, but if a city orders 10 or more boxes on their first order, this unit is provided at no cost.

This is enough chemical to treat up to 60,000 linear feet of line ranging in diameter of up to 18 inches.

1745 Salem Industrial Drive NE/Salem, Oregon.97303/Toll Free 1.800.844.4974/Telephone 503.364.2999/Fax 503.364.0095

GENERAL CHEMICAL ©.

RootX

DIRECTIONS FOR USE

RootX is available in two convenient packages.

Application Rates for 2- and 4- pound jars

One 2- pound jar: Approximately 50 ft. of 4- inch pipe.

One 4- pound jar: Approximately 100 ft. of 4- inch pipe.

One 4- pound jar: Approximately 75 ft. of 6- inch pipe.

2- Pound Jar

Add entire contents of a 2- pound jar into a pail or bucket and mix the two components that were in the jar thoroughly without water. Then either dump the RootX mixture into the toilet bowl slowly, or a sewer cleanout if available. Make sure that when you are pouring the chemical into the application site you do not create a splash which could come in contact with and burn the users eyes. When applying into the toilet make sure to flush immediately after emptying the contents, this will help avoid a foam overflowing the bowl. When applying into a sewer cleanout make sure to follow the application with 3-5 gallons of water.

4- Pound Jar

Add entire contents of a 4- pound jar into a bucket or pail and mix the two components that were in the jar thoroughly without water. Then pour the RootX mixture into the sewer cleanout slowly and carefully, so as not to burn the user's eyes. Flush the toilet one time or add 3-5 gallons of water behind it to push the foam completely into the sewer line. It is **not** recommended that a 4- pound jar be added to the toilet because of the probability of a foam overflow.

We recommend that you restrict water usage from four to six hours after treatment, to assure absorption of the chemical into the roots.

1745 Salem Industrial Drive NE/Salem.Oregon.97303/Toll Free 1.800.844.4974/Telephone 503.364.2999/Fax 503 364 0085

GUARANTEE

We guarantee to kill all the roots in every sewer we treat and to eliminate main line stoppages caused by live tree roots.

If live roots are found in a sewer within six months after the application, or if a treated sewer plugs up and floods due to tree roots during the guarantee period (see below), we will **re-treat that section, at our own expense, or remit to the customer 100% of the payment we received to treat that section of sewer.**

The decision of the customer as to the cause of the plug-up is binding.

This guarantee applies only to sewer stoppages caused by live tree roots. It does not apply to stoppages caused by grease or other foreign matter; flat, collapsed or deformed pipe; or flooding caused by a surcharged or plugged sewer section downstream from a guaranteed sewer section. **This guarantee applies to main line sewers only.**

Guarantee Period

Any section of sanitary sewer we treat will not plug up and flood due to tree root obstructions for a period of **two years.** The guarantee period begins on the date of treatment, and ends two years after the date of treatment.

Extended Guarantee With Repeat Treatments

Whenever we perform a repeat application to a section of sewer within six months of the expiration of the previous guarantee, the guarantee is extended for an **additional three years.**

Re-treatments, performed at no charge in honor of the guarantee, do not extend the expiration date of the guarantee.

Liability

Duke's is an insured, fully licensed pesticide application company, and is certified to apply EPA registered herbicides to sanitary sewers in compliance with Federal and State regulations.

Duke's accepts responsibility for any damage to above-ground vegetation. Duke's is not responsible for damages caused by sewer stoppages.

DUKE'S Sales & Service, Inc.
1020 Hiawatha Blvd. West
Syracuse, New York 13204

(315) 472-4781
(800) 447-6687
FAX (315) 475-4203

GENERAL CHEMICAL ©.
PO Box 7626
Salem, OR 97303

MATERIAL SAFETY DATA SHEET

Trade Name: RootX
EPA Reg. No.: 68464-1

SECTION I - INGREDIENTS

Component	CAS No.
Sulfamic Acid (H 503 NH2)	5329-14-6
Sodium Bicarbonate (NaC03)	144-55-8
Non Ionic Surfactants	9036-19-5
2.6 Dichlorobenzontrile	1194-65-6
Kaolin Clay	1332-58-7

SECTION II - PHYSICAL & CHEMICAL DATA

	Product A	Product B
Appearance	White Granules	Brown Granules
Odor	Odorless	Slight Aromatic
Boiling Point	408°F(Decomposition)	N/A
Melting Point	255°F	N/A
Specific Gravity	(H20=1) 2.18	N/A
Vapor Pressure	M M HG/2 0	N/A
Vapor Density	N/A	N/A
Water Solubility	21%	Insoluble

SECTION III - FIRE, REACTIVITY & EXPLOSION DATA

Flash Point: 420°F for Dichlobenil
Flammability Classification: Class I .
Extinguishing Media: Use extinguishing media appropriate for surrounding fire. Avoid direct water stream on molten material (splatter occurs).
Fire Fighting Techniques: Wear full protective clothing including self-contained breathing apparatus. Use water spray to cool nearby containers.
Unusual Fire & Explosion Hazards: May release sulfur trioxide, or ammonia when involved in a fire. Aqueous solutions of this product are mildly acidic. Avoid contact with Aluminum, Explosive Hydrogen may result.
Stability: Stable
Polymerization: Will not occur
Conditions to Avoid: Excessive heat, reducing agents
Materials to Avoid: Hazardous reaction in aqueous solution may occur with chlorine, hypochlorous acid, hypochlorites, cyanides, or sulfides. Strong Alkalis should be avoided.
Hazardous Decomposition Products: May release sulfur dioxide, sulfur trioxide, or ammonia gases and organic compounds in black smoke. Dichlobenil may hydrolyze to 2.6 dichlorobenzamide in Alkaline/alcoholic solutions.

SECTION IV - HEALTH HAZARD DATA

Effects of overexposure:
Immediate: Burning eyes, irritated skin, mouth and throat
Long-term: May aggravate some medical conditions such as Wilson's disease
This material is not considered to be a carcinogen by the National Toxicology Program, The Occupational Safety & Health Administration, or the International Agency for the Research on Cancer.

Skin Contact, Skin Absorption, Eye Contact

SECTION VI - PERMISSIBLE EXPOSURE LIMITS

No Applicable Information Found

SECTION VII - CANCER HAZARD

No Applicable Information Found - See Section IV

SECTION VIII - PRECAUTIONS, SPILLS

DOT Storage Category: Non DOT regulated

Precautions for Handling and Storing: Store in cool, dry, well ventilated place away from incompatible materials. Keep packages dry at all times. Full and empty containers retain product residue and vapors.

Other Precautions: Wash thoroughly if on skin after handling. Do not get in eyes, on skin, or on clothing. Do not cut, grind, weld, or drill on or near containers.

Actions if Released or Spilled: Wear appropriate protective equipment and clothing. For small spills, sweep up and dispose of in DOT-approved waste containers. For large spills, shovel into DOT-approved waste containers. Keep out of surface waters and soil. Introduce lime or soda ash to form insoluble salts.

Waste Disposal Methods: Plastic containers- triple rinse, then offer for recycling or reconditioning, or incinerate. If state and local regulations allow, burn, but stay away from smoke. NOTE: Dispose of all wastes in accordance with federal, state, and local regulations.

SECTION IX - CONTROLS, PROTECTION

Ventilation Controls: Work in well-ventilated area. Use local mechanical exhaust ventilation capable of minimizing dust emissions at the point of use.

Respiratory Protection: Not required for normal handling when used with adequate ventilation.

Protective Gloves & Clothing: Wear rubber gloves, long sleeve shirt, trousers, and safety shoes when handling.

Eye & Face Protection: Chemical splash-proof goggles or face shield - do not wear contacts if at all possible

Special Protective Measures for Maintenance Work: Eye wash facility and safety shower should be nearby and ready to use. Use clothing and equipment consistent with good pesticide handling and application procedures.

SECTION X - FIRST AID & EMERGENCY PROCEDURES

If in eyes: Call physician. Hold eyelids open and flush with a gentle steady stream of water for 15 minutes.

If on skin: Wash with plenty of soap and water. Get medical attention.

If swallowed: Call physician or poison control center. Drink promptly a large quantity of milk, egg whites or gelatin mixture, or if these are not available, a large quantity of water. Avoid alcohol. Do not induce vomiting or give anything by mouth to an unconscious person.

If inhaled: Remove victim to fresh air. If not breathing, and only if an individual is properly trained and has personal protection equipment available, the individual should consider CPR, after first contacting emergency personnel. Get medical attention.

Note to physician: Probable mucosal damage may contraindicate the use of gastric lavage. Measures against circulatory shock, respiratory depression and convulsions may be needed.

SECTION XI - MSDS PREPARATION DATES

Date Prepared: 11-6-95

Preparer: Chris Ueeck

SECTION XII - CONTACT PARTY

General Chemical Co.
1745 Salem Industrial DR NE / PO Box 7626
Salem, OR 97303

Emergency Telephone No.: 800-424-9300
Information Telephone No.: 800-844-4974

SEWER OVERFLOW PREVENTION & RESPONSE PLAN

October 26, 2006

1165 E. TAYLOR STREET, VISTA, CA 92084-3303 (760) 726-1340

CITY OF VISTA

SEWER OVERFLOW RESPONSE PLAN

Revised
October 26, 2006

APPROVED BY:

Lawrence D. Pierce, P.E.
Director of Engineering/Public Works

11/27/06
Date

Sudi Shoja, P.E.
Assistant Director of Engineering/Public Works

11/27/06
Date

Rita L. Geldert
City Manager

11/27/06
Date

SEWER OVERFLOW RESPONSE PLAN
TABLE OF CONTENTS

SEWER OVERFLOW PREVENTION PLAN

Objective is to prevent or minimize the potential for sewer overflows.

A. Implement sewer maintenance schedule.

1. Clean all sewer lines, manholes, and cleanouts every 6 to 8 months.

   a. Maintain computerized schedule to track activity.

2. Root control and Rodder program is set up in known problem areas.

   a. Schedule for this program is being computerized to track activity.

3. Establish an inflow and infiltration program for the sewer lines with known problems.

   a. The City's sewer crews will continue with their smoke testing of sewer lines in those areas suspected of having inflow and infiltration problems.

4. Replace the Raceway Basin Pump Station.

   a. Until replacement, follow a maintenance schedule based on manufacturer recommendations for all pumps, motors and process valves, etc.

   b. Keep log of all maintenance and repairs performed.

   c. City awarded the contract for construction on March 8, 2005 and construction is almost complete.

B. Implement Sewer Master Plan.

1. City of Vista's Master Plan was updated by Post, Buckley, Schuh & Jernigan, Inc. (PBS&J) in 2001, and again in 2003. The Master Plan and environmental report were adopted by the City Council/Board in 2003. Projects are tracked and managed using project scheduling software. The current Sewer CIP summary schedule can be obtained from the Engineering Department.

2. Projects address a 25-year plan near term projects are identified, ranked and approved by Council with the CIP budgets on a two fiscal year cycle. Ranking from CIP budget for FY 2005-2006, and 2006-2007. This can by accessed online at: http://www.ci.vista.ca.us/weblink/index.asp, then clicking on "City Clerk, Financial Documents", "Capital Improvement Programs" and "CC 06-07 CIP".

D. Update Sewer Master Plan. The 2003 Master plan calls for the City /Buena's overflow prevention plan to be amended as needed or at least every three years to meet changes in design, construction, operation and/or maintenance needs. The City/District has commenced to complete the next update for the FY 2007-2008, 2008-2009 CIP budget.

E. This SOPP will be reviewed and amended as necessary if there are any sewer overflows. The amendments will be prepared under the direction of Director of Engineering/City Engineer or designee.

F. Any changes made to this plan will be submitted to the Regional Water Quality Control Board if requested. All amendments to this plan will be distributed to all appropriate personnel.

G. This plan will be kept at the City of Vista's Engineering Department and distributed to all appropriate personnel. The Director of Engineering/City Engineer or designee will be responsible for this plan.

SEWER OVERFLOW RESPONSE PLAN

1) PURPOSE

In case of sewer overflow, the City of Vista will have a formalized response plan for sewer emergencies. The response plan will have both "During Working Hours Response Procedures" and "After Working Hours Response Procedures." The hour at which a sewer overflow emergency occurs is the determining factor regarding which set of procedures will be followed. If the emergency occurs during regular working hours, Monday through Friday between 6:30 a.m. to 4:00 p.m., staff will implement "During Working Hours Response Procedures." If the emergency occurs before or after regular working hours, staff will implement "After Working Hours Response Procedures."

"During Working Hours Procedures" require an appropriate combination of agency personnel consisting of trained and qualified crewmembers and an Incident Coordinator (supervisor or lead person) to respond to emergency calls. The crew chief is sent to the reported overflow site to investigate and will report to the supervisor if it is an overflow and if additional personnel and equipment are required. The City of Vista will maintain the following equipment and vehicles: sectional rodder, jet-vacuum trucks, safety equipment, confined space entry equipment, overflow containment supplies, plugs (various sizes), and miscellaneous emergency pipe supplies.

"After Working Hours Procedures" require a qualified standby person assigned to respond to the reporting party's call within 20 minutes. Typically, the standby person is assigned for a 7-day period from a pool of voluntary employees trained and qualified to perform standby duties. Upon arrival at the overflow, the standby person will assess the situation, call out additional personnel and specify the appropriate equipment required at the scene, and begin mitigating the overflow. The standby vehicle will be equipped with the minimum equipment required to initially respond to any overflow.

2) WORKING HOURS RESPONSE PROCEDURES

These procedures pertain to sewer overflow emergencies occurring Monday through Friday between 6:30 a.m. and 4:00 p.m.

THE FOLLOWING PROCEDURES ARE TO BE FOLLOWED WHEN RESPONDING TO ALL SEWER OVERFLOW EMERGENCIES:

A. Emergency call received by Agency.

B. Crew Chief(s) notified/dispatched to emergency.

C. Supervisor and/or lead person assumes responsibility as Incident Coordinator. Incident Coordinator will be Wastewater Supervisor, when he is working and Public Works Supervisor(s) for private sewer spills that affect a storm drain within city boundaries. They can be reached at (760) 726-1340 1621 or 1631. If Wastewater Supervisor is not available, the appropriate crew chief will assume the responsibility as Incident Coordinator.

D. Incident Coordinator contacts Public Works Supervisor(s), at (760) 726-1340 x. 1621 or 1631 and Stormwater Code Officer, Sandi Sotola @ (760) 402-2895.

E. First crewmember at scene evaluates situation and communicates with Incident Coordinator.

During evaluation, the first person(s) at the site has six duties:

1. Determine if the overflow emergency is completely private, risk to public right-of-way or waters of the U.S or threatening public right-of-way or waters of the U.S.
   i. A private overflow is defined as a sewer spill that is COMPLETELY contained on private property with no threat to spill into waters of the U.S. (private or public land) or into the public ROW.
   ii. A risk is defined as a spill that is likely to enter into waters of the U.S. (private or public land) or into the public ROW
   iii. A threat to public ROW or waters of the U.S. is defined as a spill that is either a) spilling into the waters of the U.S. (private or public land) or into the public ROW or b) it is imminent that the spill will enter the waters of the U.S. (private or public land) or into the public ROW.
2. Determine cause of overflow emergency.
3. Evaluate the situation, determine what resources are needed to remedy the situation and report the information to the Incident Coordinator.
4. Take digital pictures of sewer overflow emergency to determine amount of spill for reporting and documentation.
5. Commence preliminary steps to mitigate the overflow.
6. Take steps to protect the health and safety of the building occupants.

F. Initiate plan of action.

Private

i. Notify property owner that they need to call a plumber and rectify the situation as soon as possible.
ii. The property owner needs to be informed of the proper clean-up procedures (i.e., DO NOT hose down into the public ROW)
iii. Make proper notifications to the following:
   a. City of Vista Engineering-Stormwater
   b. County of San Diego DEH

Private – *Risk*

i. Call for additional personnel and equipment as required.
ii. Contact the Public Works Supervisor(s) to respond to calls within city boundaries that are/will affect a city storm drain.
iii. Public Works Supervisor(s) will notify property owner that they need to call a plumber and rectify the situation as soon as possible.
iv. Incident Coordinator tracks spill progress to ensure the spill does not become a threat as defined above.
v. The property owner needs to be informed of the proper clean-up procedures (i.e., DO NOT hose down into the public ROW)
vi. Make proper notifications to the following:
   a. City of Vista Engineering-Stormwater
   b. County of San Diego DEH

Private – *Threat*

i. Call for additional personnel and equipment as required.
ii. Contact the Public Works Supervisor(s) to respond to calls within city boundaries that are/will affect a city storm drain.

iii. Call plumber from approved list
iv. Public Works Supervisor(s) will notify property owner/manager or resident(s) that water will be shut off immediately – INQUIRE if there is any tenant with medical condition that requires water service (e.g., dialysis, etc.).
v. Shut off and lock water meter
vi. Notify Vista Irrigation District that water meter has been shut off and locked until further notice
vii. Notify property owner that a plumber has been called to rectify the situation as soon as possible and that the City will be back charging them for the costs.
viii. Make proper notifications to the following:
    a. City of Vista Engineering-Stormwater
    b. County of San Diego DEH

Public

i. Correct cause of the overflow.
Correct the cause of the spill (blockage, pump station failure).
ii. Clean up overflow site.
Clean up of the site requires four steps:
    1. Thorough cleansing of site and removal of debris
    2. Disinfecting of site
    3. Determination of size of spill
    4. Posting of signs if necessary
iii. Wastewater Supervisor, Incident Coordinator and/or Public Works Supervisor(s) contacts City Risk Management if (1) spill is caused by City main blockage or (2) there is damage to personal property involved in the spill or sewage has entered a storm drain.
iv. Written reports from crew member(s) who responded to call
Written report must contain the following information: overflow amount, location, time, and who has been notified.
v. Incident Coordinator initiates "Reporting" to Regional Board and County Health Department, if necessary.

Supervisor will consult with the Regional Water Quality Control Board and County of San Diego Department of Health Services to meet all reporting, posting, and Proposition 65 requirements.

See Page 8 for the reporting requirements for Regional Water Quality Control Board and County of San Diego Department of Health Services.

3) AFTER WORKING HOURS RESPONSE PROCEDURES

These procedures pertain to sewer overflow emergencies occurring after hours Monday through Sunday.

THE FOLLOWING PROCEDURES ARE TO BE FOLLOWED WHEN RESPONDING TO ALL SEWER OVERFLOW EMERGENCIES.

A. Emergency call received by agency's after hour's answering service.

B. Standby person notified.

The standby person receives information on sewer overflow emergencies (time, location, and caller).

C. Standby person evaluates situation.

During evaluation, the first person(s) at the site has six duties:

1. Determine if the overflow emergency is completely private, risk to public right-of-way or waters of the U.S or threatening public right-of-way or waters of the U.S.
   i. A private overflow is defined as a sewer spill that is COMPLETELY contained on private property with no threat to spill into waters of the U.S. (private or public land) or into the public ROW.
   ii. A risk is defined as a spill that is likely to enter into waters of the U.S. (private or public land) or into the public ROW.
   iii. A threat to public ROW or waters of the U.S. is defined as a spill that is either a) spilling into the waters of the U.S. (private or public land) or into the public ROW or b) it is imminent that the spill will enter the waters of the U.S. (private or public land) or into the public ROW.
2. Determine cause of overflow emergency.
3. Evaluate the situation, determine what resources are needed to remedy the situation and report the information to the Incident Coordinator.
4. Take pictures of sewer overflow emergency to determine amount of spill for reporting and documentation.
5. Commence preliminary steps to mitigate the overflow.
6. Take steps to protect the health and safety of the building occupants.
7. Contact Public Works Supervisor(s) for all private sewer overflows that are at risk of reaching a city storm drain.

D. Initiate plan of action.

Private

i. Notify property owner that they need to call a plumber and rectify the situation as soon as possible.
ii. The property owner needs to be informed of the proper clean-up procedures (i.e., DO NOT hose down into the public ROW)
iii. Make proper notifications to the following:
   a. Public Works Supervisor(s) (*Within city of Vista jurisdictional boundaries only.)*
   a. City of Vista Engineering-Stormwater
   b. County of San Diego DEH

Private - *Risk*

i. Contact Public Works Supervisor(s) for immediate response.
ii. Public Works Supervisor(s) will call for additional personnel and equipment as required.
iii. Public Works Supervisor(s) will notify property owner that they need to call a plumber and rectify the situation as soon as possible.
iv. Public Works Supervisor(s) will track spill progress to ensure the spill does not become a threat as defined above.
v. The property owner needs to be informed of the proper clean-up procedures (i.e., DO NOT hose down into the public ROW)
vi. Make proper notifications to the following:
   a. City of Vista Engineering-Stormwater
   b. County of San Diego DEH

Private - *Threat*

i. Public Works Supervisor(s) will call for additional personnel and equipment as required.
ii. Public Works Supervisor(s) will call plumber from approved list
iii. Public Works Supervisor(s) will notify property owner/manager or resident(s) that water will be shut off immediately – INQUIRE if there is any tenant with medical condition that requires water service (e.g., dialysis, etc.).
iv. Shut off and lock water meter
v. Public Works Supervisor(s) will notify Vista Irrigation District that water meter has been shut off and locked until further notice
vi. Public Works Supervisor(s) will notify property owner that a plumber has been called to rectify the situation as soon as possible and that the City will be back charging them for the costs.
vii. Public Works Supervisor(s) will make proper notifications to the following:
    a. City of Vista Engineering-Stormwater
    b. County of San Diego DEH

Public

i. Wastewater Supervisor will call for additional personnel and equipment as required.

ii. Correct cause of the overflow.
Correct the cause of the spill (blockage, pump station failure).

iii. Clean up overflow site.
Clean up of the site requires four steps:
1. Thorough cleansing of site and removal of debris
2. Disinfecting of site
3. Determination of size of spill
4. Posting of signs if necessary

iv. Contact City Risk Management during the next working day if (1) spill is caused by City main blockage or (2) there is damage to personal property involved in the spill.

v. Written reports from crew member(s) who responded to call.

Written report must contain the following information: overflow amount, location, time, and who has been notified.

vi. Supervisor initiates "Reporting" to Regional Board and County Health Department, if necessary.

Supervisor will consult with the Regional Water Quality Control Board and County of San Diego Department of Health Services to meet all reporting, posting, and Proposition 65 requirements.

See Page 8 for the reporting requirements for Regional Water Quality Control Board and County of San Diego Department of Health Services.

4) SEWAGE SPILL EMERGENCY AND NOTIFICATION PROCEDURE

Purpose

The purpose of this safety practice is to provide procedures to be implemented in the event of a wastewater spill.

General

In the event of a spill, the first priority is to assess the situation and control the spill. If the discharge cannot be contained, the standby person should be notified, and any other personnel deemed necessary to assist in correcting or controlling the spill.

All wastewater spills must be reported promptly to the proper agencies, as identified in this procedure.

City Staff Notification

Notification of City staff should be made with one of the following within fifteen minutes from the time you become aware of a spill.

Private Spills Affecting City Storm Drains

The Public Works Supervisor(s) shall be contacted immediately for any private sewer spill that reaches a city storm drain. The Public Works Supervisor(s) will make all appropriate agency notifications.

PRIORITY NOTIFICATION LIST

SEWER RELATED COMPLAINTS/SPILLS DURING REGULAR BUSINESS HOURS

1.	Lisa Feeney	Ext. 1662
2.	George Solano	Ext. 1661
3.	Craig Trammell	Ext. 1603
4.	Larry Pierce	Ext. 1332
5.	Carlos Mendoza	Ext. 1323

AFTER HOURS CONTACT RANCHO DISPATCH - (858) 756-3006

Private Sewer Spills that Reach City Storm Drains

1. Chuck Crist	(760) 726-1340 Ext. 1631 – Cell: (760) 809-2943 – Home: (760) 751-1551
2. Rudy Luna	(760) 726-1340 Ext. 1621 – Cell: (760) 809-2946 – Home: (760) 940-0257
2. George Solano	(760) 726-1340 Ext. 1661 – Cell: (760) 908-3510 – Home: (760) 630-4753
3. Craig Trammell	(760) 726-1340 Ext. 1603 – Cell: (760) 612-5423 – Home: (760) 724-7407
4. Larry Pierce	(760) 726-1340 Ext. 1332 – Cell: (760) 525-8651

A. COUNTY OF SAN DIEGO DEPARTMENT OF HEALTH SERVICES NOTIFICATION

The County Health Services Department must be notified immediately. If possible, prior to notifying the Department, complete a "County of San Diego Department of Health Services Sewage Spill Report Form" (Exhibit A). This report form is designed to include the important details of the spill so the facts are communicated to the Health Services Department. This report should be submitted via facsimile within 24 hours following a sewer overflow event. Contact with the Health Services staff can be made Monday through Friday, 7:30 a.m. to 4:30 p.m. During all other hours, weekends and holidays calls are to be directed to the County's Communications Center. Once contact has been made with the Communications Center personnel, it should be made very clear to them that immediate notification of the Health Services staff is very critical and request that a Health Specialist contact the City of Vista. A complete written report of the incident is to be forwarded to Health Services within three (3) working days. The following sewage spills should be reported:

1. Any discharge to the ocean, bay, river, flowing streams and open storm drains.
2. Any discharge more than 50 gallons.
3. Any discharge near homes, schools, parks or areas, which are accessible to the public.

B. CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD (CRWQCB) NOTIFICATION

The RWQCB must be notified within 24 hours of any spill, provided the ultimate destination is surface waters. Prior to notifying the Regional Board, fill out a "California Regional Water Quality Control Board Sewer Overflow Report Form" (Form - Exhibit A; Instructions for Completing Form, Exhibit B). During the initial telephone reporting, Items 1-5, and 7-12 should be reported. Contact with the Regional Board staff can be made Monday through Friday, 8:00 a.m. to 5:00 p.m. During all other hours, weekends and holidays, the same number is used, but you will be greeted by an answering machine to which you will convey the information. A completed Sewer Overflow report along with any additional information must be submitted to the Regional Board no later than five (5) days following the starting date of the overflow event.

C. SPILL NOTIFICATION FOR ENCINA AND AGUA HEDIONDA CREEKS, AGUA HEDIONDA AND BUENA VISTA CREEK AND LAGOONS

A spill resulting in the discharge of wastewater into the Encina and Agua Hedionda Creeks, Agua Hedionda and Buena Vista Creek and Lagoons will require notification of the following specified authorities:

NOTIFICATIONS FOR ALL SPILLS

1. County of San Diego, Department of Environmental Health Land & Water Quality Division
   - Office..... (858) 495-5579
   - Fax..... (858) 694-3670
   - Weekends, Holidays, after hours County Communications Center..... (858) 565-5255
   - Fax..... (858) 694-3670

2. California Regional Water Quality Control Board, San Diego
   - Fisayo Osibodu ..... (858) 636-3155
   - Fax..... (858) 571-6972
   - Weekends, Holidays, after hours ..... (858) 467-2952

NOTIFICATIONS FOR SPILLS AFFECTING/MAY AFFECT AGUA HEDIONDA LAGOON

3. Carlsbad Municipal Water/Public Works ..... (760) 438-2722
   General Manager ..... (During Business Hours) (760) 438-2722
   Stormwater Division (Business Hours) Don Wasco, WW Supervisor Cell (760) 802-4756
   Police Dispatch – After Hours Emergencies ..... (760) 931-2197

4. Robin Putnam, Director of Community Development
   City of Vista phone ..... 726-1340 Ext. 1201

5. San Diego Gas & Electric
   Environmental Affairs – 24 Hour Dispatch ..... (800) 611-7343
   Power Plant Control Room Facilities Manager ..... (760) 931-7221

6. State of California Lifeguard Department ..... (760) 438-2675
   Or ..... (760) 438-2881

7. Carlsbad Aqua Farms ..... John Davis, Work (760) 438-2444
   Fax ..... (760) 438-3568

8. Agua Hedionda Lagoon Foundation ..... Eric Munoz, President, (760) 438-1465

9. Dawson Property Notification ..... Mr. Schaefer, (760) 599-8982 / 727-9857

10. UCSD Conservancy
    Isabelle Kay 1-858-229-4677

NOTIFICATIONS FOR SPILLS AFFECTING/MAY AFFECT BUENA VISTA LAGOON

11. City of Oceanside
    Water Utilities Department ..... (760) 435-5800
    Public Works Office, Mark Patanode, WW Supervisor ..... (760) 435-5840
    Mark Patanode Cell ..... (760) 535-0535
    (After Hours Emergencies– Police Non-Emergency Dispatch) ..... (760) 435-4900

D. NOTIFICATIONS FOR SPILLS GREATER THAN 1,000 GALLONS ONLY

12. Office of Emergency Services
    Contact the Office of Emergency Services if the overflow event is **greater than 1,000 gallons.**
    Report the incident to the attendant. 1-800-852-7550
    Be sure to retain the OES incident number the attendant gives you

Pump Station Related Spill, Encina Emergency – After Hours (760) 438-3941 – Operator (24 Hrs.)

1. Carlos Mendoza* (760) 726-1340 Ext. 1323
1. George Solano (760) 726-1340 Ext. 1661
2. Craig Trammell (760) 726-1340 Ext. 1603
3. Larry Pierce (760) 726-1340 Ext. 1332
4. Carlos Mendoza (760) 726-1340 Ext. 1323

*Raceway Basin Pump Station, Buena Creek, Shadowridge & Buena Vista Pump Stations

Incident Documentation

The following information must be recorded accurately and documented.

a. Date and time that the spill started.

b. Date and time that the spill was stopped. In the event that the overflow has not been abated, then state what is being done and give an estimated time of repair/correction.

c. Estimate the volume discharged. Include how you arrived at the quantity.

d. Location of spill, i.e., street location, lagoon, creek, north, south, yards, feet, etc.

e. Structure where the spill occurred, i.e., pump station, manhole, force main, sewer line, etc.

f. Cause of spill, i.e., equipment/power failure, etc.

g. Final destination of the spill and other conditions if applicable, i.e., lagoon, creek, flood control channel, etc.

In the event of a wastewater spill, immediate notification must be made to the proper authorities. The responsibility of notifying the authorities is to be made at the Public Works Operations Manager level (or designee). Prior to reporting the spill, review the documentation to make sure it is complete. **Remember, always document the date, time and name of the person receiving the incident report.**

Private sewer spills affecting any city storm drain shall be reported by the Public Works Supervisor(s). Public Works Supervisor(s) will complete and forward all appropriate paperwork to the proper personnel and agencies.

5) POSTING WARNING SIGNS AND SAMPLING

A. The posting of receiving waters with contaminated water signs is required if directed by Health Services. Although Health Services is the responsible authority for directing the closure of areas and the posting of signs, the City has made the decision to be proactive in this area. Therefore, if a spill occurs and there is a possibility of wastewater entering recreational waters or other waterways where the public may come in contact, posting of those areas will be made, but only at the direction of the Director of Engineering/Public Works or designee.

B. Contaminated water signs are to be posted at the spill site and the quarantine area, as determined by Health Services and/or as necessary to reasonably warn the public.

1. If posting of the beaches is required, the signs shall be placed at 50-foot intervals for a minimum of 600 feet on each side of the lagoon and/or creek opening into the ocean.

2. If posting of lagoons or wetlands is required, the signs shall be placed at a minimum of 50-foot intervals for high use areas and every 600 feet for low use areas.

C. The location and placement of all warning signs and tape shall be recorded using the "City of Vista Sewage Spill Quarantine Report Form" and vicinity map associated with the spill site

(Exhibit C). Twice daily, inspections of the spill site and quarantined area shall be made to replace and/or repair signs and ensure that proper posting is being maintained. Each site visit will require that a "Sewage Spill Quarantine Report" be completed documenting sign replacement and other items of importance.

1. Warning signs are to be maintained until the Director of Engineering/Public Works or designee has given direction. The County Health Department requires a minimum of three (3) consecutive days of negative laboratory results before considering lifting restrictions.

2. A guideline for determining when it is appropriate to remove warning signs when a spill has been made to a creek (waterway) is as follows: three days after spill posting, take a fecal coliform sample both up and down stream of the spill area. If the MPN are less than 1,000 (fecal coliform) or less than 200 (Membrane Filter Method) signs can be removed or, if the downstream results (MPN) are less or equal to the results obtained at the upstream location, signs can be removed.

D. An inventory of spill warning signs in English and Spanish, wood stakes, along with caution tape, will be maintained at the Public Works Yard. These supplies will be maintained at a sufficient level to ensure proper posting of an area in the event of a major spill.

E. Public Works Supervisor(s) shall maintain a backup inventory of spill signs for all private sewer spills affecting public storm drains within city boundaries.

SAMPLING

A. Sampling of the receiving waters should be conducted as soon as possible after the spill incident has been controlled. Wastewater Personnel will collect the sample and deliver it to the lab.

B. The Director of Engineering/Public Works or designee will develop a sampling program and implement collection and testing as soon as possible after the spill.

C. Daily laboratory results will be reported to the Public Works Operations Manager or designee prior to notifying the Health Department. The Health Department is to be notified daily of test results as long as restrictions are in place to protect the public.

6) MEDIA AND PUBLIC RESPONSE

A. The Director of Engineering/Public Works or designee will handle information to the media.

B. Inquiries by the public, newspapers, television and radio stations should be referred to the Director of Engineering/Public Works or designee. Only when directed by management should personnel attempt to respond to questions or explain the spill incident and/or actions being taken.

C. The County Department of Health Services is responsible to comply with Proposition 65 Public Notification Requirements. Health Services will issue media releases as required.

7) SEWAGE SPILL INFORMATION AND REPORTING FORMS

San Diego County Department of Environmental Health

1. Immediate telephone reporting of a sewer overflow event.

2. Designated Public Information Officer is the person who releases information to the local newspapers regarding the sewer overflow event. Copies of any press releases are to be sent to the Health Department.

3. Contact State of California Office of Emergency Services at 1-800-852-7550 if the overflow event is greater than 1,000 gallons. Report spill and obtain control number.

4. Submit the completed Sewer Overflow Spill report within 24 hours following the starting of the sewer overflow event.

San Diego County Department of Environmental Health Contact
Clay Clifton..... (858) 495-5579
Fax..... (858) 694-3670
Address.....PO Box 129261, San Diego, CA 92112-9261

After Hours, Weekends, Holidays - County Communications.. (858) 565-5255
Request to have the Haz-Mat Duty Specialist paged.
Fax:..... (858) 694-3670

California Regional Water Quality Control Board

1. If a sewer overflow event results in a discharge to surface waters:
   a) Report by telephone within 24 hours of a sewer overflow event. This telephone report shall include the information specified by Item No.'s 3-6, 9, 20, 22 and 25 of the Sewer Overflow Report (SOR) form (Exhibit A) supplied by the Regional Board.
   b) Submit the completed SOR form and any additional pertinent information no later than five days following the starting date of the sewer overflow event.

2. If a sewer overflow event does not result in a discharge to surface waters:
   a) No telephone report is required.
   b) Submit the completed SOR (Exhibit A) form and any additional pertinent information no later than five days following the starting date of the sewer overflow event.

California Regional Water Quality Control Board Contact
Fisayo Osibodu, Water Resource Control Engineer ..... (858) 636-3155
Fax..... (858) 571-6972
Address..... 9174 Skypark Court, Ste. 100, San Diego, CA 92123-4340

8) MITIGATION OF CITY CAUSED SPILL

A. **Purpose:** If the backup of the City main sewer line causes a sewage spill, the City has a responsibility to restore or replace any lost property to as near to its pre-spill condition as possible. It is important that all assigned sewer personnel regarding any liability demands follow proper procedures within the wastewater division. In order to best insure that an individual's or company's property is restored to as close to its pre-spill condition as possible, the following steps will be taken:

B. **Public Works:**

1. General: Wastewater employees are required to report potential liability claims against the City to their immediate supervisor. That supervisor will report this information to Public Works Operations Manager immediately upon being informed by a given employee. ***No wastewater employee shall offer opinions to the public regarding City liability in any incident that may occur in the course of their work.*** Risk Management will determine liability in all cases following an investigation into each incident. Division employees are to refer all inquiries regarding liability claims to the Public Works Operations Manager. The Director of Engineering/Public Works or his designee will be responsible for any press releases or direct responses to inquiries by members of the press.

2. Potential Claims: When an individual informs any member of the Public Works Department that he or she intends to file a liability claim against the City, that individual will be directed to contact the Risk Management Office for the appropriate procedures to make a claim. [(760) 726-1340 Ext. 1407]

3. Response to a Spill: When a spill occurs, Public Works Wastewater personnel will:

   (a) ***Refrain from giving any opinions as to the cause of the emergency.***
   (b) Be courteous and professional.
   (c) Be customer oriented.
   (d) Inspect the scene carefully.
   (e) Take digital photographs of the spill damage before any cleanup is begun.
   (f) Obtain the details surrounding the emergency.
   (g) Refrain from arguing with affected residents.
   (h) Do not apologize for the emergency.
   (i) Turn in the Emergency Incident Form to immediate supervisor as soon as possible.

4. Notification of Risk Management: When a spill is determined to be caused by the backup of the City main sewer line and not the lateral, the Wastewater Supervisor will notify the Public Works Operations Manager, Director of Engineering/Public Works and Risk Management (760) 723-1340, extension 1407, at the first possible time during working hours if:

   (a) The spill is caused by the City main sewer line backup, and

   (b) The spill has caused some property damage to the residence or business (i.e., carpet soiled, furniture or cloths contaminated that must be thrown away, etc.), or

   (c) If, in the opinion of the Wastewater Supervisor, there exists the possibility of a future claim from the spill (i.e., loss of wages, emotional stress, etc.).

5. Public Works Responsibility: Public Works will be responsible for stopping the spill and clearing the blockage. Public Works will contact Risk Management who will work with either a Contractor or staff, for the following:

   (a) Risk Management will authorize the removal of and clean up of all sewage/spill contamination to the dwelling. This includes, but is not limited to, removal of all contaminated carpeting, dry wall, fixtures and furniture.
   Note: No demolition or repairs will be made without prior approval from Risk Management. The Public Works office will keep a file of appropriate private emergency cleaning services firms.
   (b) Restoring or replacing all removed drywall, molding, and permanent fixtures that cannot be cleaned to as close to pre-spill condition as possible.
   (c) Re-plastering and repainting all removed or damaged surfaces of the dwelling to as near as possible to its condition prior to the spill.
   (d) If emergency housing is needed, the Public Works Operations Manager or the Director of Engineering/Public Works, or their designee will make that authorization. Generally, the maximum stay is three (3) days. If a party is unable to return to their home/apartment after day three, the homeowner or apartment dwellers must provide for their own shelter. On a case-by-case basis, the Director of Engineering/Public Works may grant an extension beyond the three-day period. The Public Works office will keep a file of appropriate emergency shelter locations.
   (e) Provide instructions to the residents of any spill site for the cleaning of all personal items contaminated (i.e. cloths, drapes or furniture). Advice given should be to minimize the disposal of personal items or furniture if they can be properly cleaned.

6. What Public Works is **NOT** Responsible for: Public Works will not be responsible for replacing or paying for any of the following items:

   (a) Carpeting replacement
   (b) Clothing cleaning or replacement
   (c) Furniture replacement
   (d) Food, phone calls, any miscellaneous expenses

   Note: The above listed items will be addressed through the claims process.

C. **Risk Management**: When Risk Management receives notification of a sewage spill from the Wastewater Supervisor, Risk Management will take the following actions:

1. Determine if there has been property damage that might warrant a claim, and if there is,

2. Notify the City's claims adjusting services that there has been a sewage spill and that a claims adjuster is needed to document the spill damage.

3. Upon request, provide Claimant with a copy of the City or Buena Sanitation Claim form.

4. Make the final recommendation to either settle or deny any filed claim.

D. **Claims Adjusting Service**: When notified by the City's Risk Management Division of a sewage spill that needs a claims adjuster, adjusting service will provide the following:

1. Notification to the potential claimant (owner or renter of the site of the spill) of the adjuster's representation of the City.
2. Investigation of the claim.
3. Negotiation of the replacement of any damaged / removed floor covering, drapes or furniture.
4. Negotiation of the settlement of any remaining expenses claimed by the owner and/or renter of the property where spill occurred.
5. Make a recommendation to the City Risk Manager to either settle or deny the claim.

Claims Adjuster Contact

Ed Garbo ..... (858) 592-6742
Office..... (877) 262-0101
Cell..... (619) 895-0246
Fax..... (858) 592-6751
Address.....11777 Bernardo Plaza Ct., Ste. 201, San Diego, CA 92128

EXHIBIT A

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN DIEGO REGION

SANITARY SEWER OVERFLOW REPORT FORM
06/13/2001

1. SANITARY SEWER OVERFLOW SEQUENTIAL TRACKING NUMBER: _____

2. REPORTED TO: _____
ENTER FAX, VOICE MAIL, OR NAME OF REGIONAL BOARD STAFF

3. DATED REPORTED: ____/____/____(MM/DD/YY)

TIME REPORTED: _____(MILITARY OR 24-HOUR TIME)

4. REPORTED BY: _____

5. PHONE: (_____) _____

6. RESPONSIBLE SEWER AGENCY: _____

_____

7. OVERFLOW START: DATE: ____/____/____(MM/DD/YY)

TIME: _____(MILITARY OR 24-HOUR TIME)

8. OVERFLOW END: DATE: ____/____/____(MM/DD/YY)

TIME: _____(MILITARY OR 24-HOUR TIME)

9. TOTAL OVERFLOW VOLUME: _____(GALLONS)

10. OVERFLOW VOLUME RECOVERED: _____ (GALLONS)

SANITARY SEWER OVERFLOW LOCATIONS:

11. STREET: _____

12. CITY: _____

13. COUNTY: _____ (SD, RI, OR)

14. ZIP CODE: _____
15. SANITARY SEWER OVERFLOW STRUCTURE I.D.: _____

16. NUMBER OF OVERFLOWS AT THIS LOCATION IN PAST 12 MONTHS: _____

17. OVERFLOW CAUSE – SHORT DESCRIPTION – CIRCLE ONE

ROOTS	GREASE	LINE BREAK	INFILTRATION
ROCKS	BLOCKAGE	POWER FAILURE	PUMP STATION FAILURE
DEBRIS	VANDALISM	FLOOD DAMAGE	MANHOLE FAILURE
	OTHER	CONSTRUCTION	

18. OVERFLOW CAUSE – DETAILED DESCRIPTION OF CAUSE: _____

_____

_____

_____

_____

_____

_____

_____

_____

19. SANITARY SEWER OVERFLOW CORRECTION – DESCRIPTION OF ALL PREVENTATIVE AND CORRECTIVE MEASURES TAKEN OR PLANNED:

_____

_____

_____

_____

_____

_____

_____

INITIAL AND SECONDARY RECEIVING WATERS:

20. DID THE SANITARY SEWER OVERFLOW REACH SURFACE WATERS? _____(Y OR N)

21. DID THE SANITARY SEWER OVERFLOW ENTER A STORM DRAIN? _____(Y OR N)

22. NAME OR DESCRIPTION OF INITIAL RECEIVING WATERS (IF NONE, TYPE NONE)

_____

23. NAME OR DESCRIPTION OF SECONDARY RECEIVING WATERS. (IF NONE, TYPE NONE)

_____

24. IF THE SANITARY SEWER OVERFLOW DID NOT REACH SURFACE WATERS, DESCRIBE THE FINAL DESTINATION OF SEWAGE:

_____

_____

_____

NOTIFICATION:

25. WAS THE LOCAL HEALTH SERVICES AGENCY NOTIFIED? _____(Y OR N)

26. IF THE OVERFLOW WAS OVER 1,000 GALLONS TO SURFACE WATER, WAS THE OFFICE OF EMERGENCY SERVICES (OES) NOTIFIED? _____ (Y OR N) (NOT APPLICABLE, ENTER N/A)

AFFECTED AREA POSTING:

27. WERE SIGNS POSTED TO WARN OF CONTAMINATION: _____(Y OR N)

28. HOW MANY DAYS WERE THE WARNING SIGNS POSTED? _____

29. REMARKS:

_____

_____

_____

_____

NOTE: IF THE SANITARY SEWAGE OVERFLOW EVENT RESULTS IN A DISCHARGE OF MORE THAN 1,000 GALLONS TO SURFACE WATERS, THIS FORM MUST BE RECEIVED BY THE REGIONAL BOARD NO LATER THAN FIVE (5) DAYS AFTER THE OVERFLOW START DATE.

The following certification must be completed within the five-day notice:

I swear under penalty of perjury that the information submitted in this document is true and correct. I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information; I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____

Signature

_____

Name

_____

Title

_____

Date

EXHIBIT B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN DIEGO REGION – INSTRUCTIONS FOR COMPLETING THE SEWER OVERFLOW REPORT FORM

1. SEQUENTIAL TRACKING NUMBER:

   This number shall be assigned by each sanitary sewer collection agency. The first 3 digits will represent the State fiscal year from July through June. The next 3 digits will represent a unique sequential number assigned to each overflow. (Example: the first overflow in FY 2006-07 will be 067001).

2. REPORTED TO:

   If reported, name of the Regional Board staff contact that was notified or one of the following terms: VOICE MAIL and PHONE NUMBER, or FAX.

3. DATE REPORTED:

   If a sewer overflow discharge to surface waters has occurred, record the date the Regional Board is notified by telephone that a sewer overflow event has occurred. Dates are reported as a 6-digit number corresponding to the year, month and day. For example – March 31, 1994 should be recorded on the form as "940331".

3. TIME REPORTED:

   If a sewer overflow discharge to surface waters has occurred, record the time the Regional Board was notified by telephone of the sewer overflow event (HH:MM in military or 24 hour time).

4. REPORTED BY:

   Record the name of the person who may be contacted by Regional Board staff for additional information on the sewer overflow event.

5. PHONE:

   Record the area code and phone number of the person who may be contacted by Regional Board staff for additional information on the sewer overflow event.

6. RESPONSIBLE SEWER AGENCY:

   Record the name of the Agency City of Vista/Buena Sanitation, which is responsible for the operation of the sewer collection system at the sewer overflow event location.

7. OVERFLOW START:

Record the date and time that the sewer overflow event started. Dates should be recorded as a six-digit number corresponding to the year, month and day. For example, March 31, 1994 would be recorded as "940331". The reported time should be specified in military or 24-hour time.

8. OVERFLOW END:

Record the date and time that the overflow ended. Dates should be recorded as a six-digit number corresponding to the year, month and day. For example, March 31, 1994 should be recorded as "940331". The reported time should be specified in military or 24-hour time.

9. TOTAL OVERFLOW VOLUME:

Record an estimate of the total volume of sewage discharged in the course of the sewer overflow event. Be sure to include volume units in terms of gallons or million gallons.

10. OVERFLOW VOLUME RECOVERED:

Record an estimate of the volume of sewage recovered by the discharger. Volume units in gallons.

OVERFLOW LOCATION:

11. Record the street location of the sewer overflow event. The street location may be reported in terms of a street address or intersection.

12. Record the City location of the sewer overflow event.

13. Record the County location of the sewer overflow event. (Use SD for San Diego County)

14. Record the Zip Code location of the sewer overflow event.

15. OVERFLOW STRUCTURE I.D.

Record the name of the structure, such as the force main, pump station, storage pond, sewer line, manhole, etc., which is responsible for the sewer overflow event. For example, if sewage was discharged from Manhole 21, on Buena Vista Interceptor due to the failure of Buena Vista Pump Station, Buena Vista Pump Station should be recorded in the space provided.

16. NUMBER OF SANITARY SEWER OVERFLOWS AT THIS LOCATION:

Record the number of sanitary sewer overflows at this location in the past 12 months.

17. OVERFLOW CAUSE, SHORT DESCRIPTION:

Record the cause of the sewage overflow event. Use one of the following terms: roots, grease, line break, infiltration, rocks, debris, blockage, vandalism, flood damage, manhole failure, pump station failure, power failure, construction, other.

18. OVERFLOW CAUSE, DETAILED DESCRIPTION:

Record a detailed description of the cause of the sewer overflow event.

19. SANITARY SEWER OVERFLOW CORRECTION:

Record a description of all preventative and corrective measures taken or planned.

INITIAL AND SECONDARY RECEIVING WATERS

20. Did the sanitary sewer overflow reach surface waters? (Y or N).

21. Did the sanitary sewer overflow enter a storm drain? (Y or N).

22. Name or description of the initial receiving waters. The initial receiving water is the surface water, which the sewage reaches first. (If NONE, enter NONE).

23. Name or description of the secondary receiving waters. The secondary receiving water is the surface water(s), which the sewage reaches after the initial receiving water. (If NONE, enter NONE).

24. If the sanitary sewer overflow did not reach surface waters, record the final destination.

NOTIFICATION

25. Record if the local health services agency was notified. (Y or N).

26. Record, if the overflow was greater than or equal to 1,000 gallons, was the Office of Emergency Services (OES) notified. (Y or N) (If not applicable, enter N/A).

AFFECTED AREA POSTING:

27. Record if signs were posted. (Y or N)

28. Record how many days the warning signs were posted.

29. REMARKS

This space is provided for additional remarks or details on the reported overflow event.

The Sewer Overflow Report Form must be signed to certify that the information submitted is true and correct.

EXHIBIT C

CITY OF VISTA SEWAGE SPILL QUARANTINE REPORT FORM

DATE: _____ TIME: _____AM/PM

COMPLETED BY: _____

SPILL LOCATION: _____

QUARANTINE AREA: _____

LOCATION OF WARNING SIGNS: _____

_____

NOTE: SIGN PLACEMENT AT THE SPILL SITE AND QUARANTINE AREA SHALL BE AT A MINIMUM INTERVAL OF EVERY 50 FEET AND/OR AS NECESSARY TO REASONABLY WARN THE PUBLIC.

SPILL SITE: _____

SPILL SITE SIGN REPLACEMENT: _____

QUARANTINE AREA: _____

QUARANTINE AREA SIGN REPLACEMENT: _____

_____

_____

COMMENTS:

_____

_____

_____

_____

***THIS REPORT IS TO BE MAINTAINED AS A PERMANENT RECORD**

ENCINA WASTEWATER AUTHORITY

OPERATIONS DIVISION
OPERATIONS AND MAINTENANCE SAFETY PRACTICE
OMSP 3

Admin.03-7134a

DATE: March 3, 2003

SUBJECT: Sanitary Sewer Overflow Response Plan for the Encina Water Pollution Control Facility and Remote Facilities

1.0 PURPOSE

This Sanitary Sewer Overflow Response Plan (SSORP) has been developed to provide guidelines to Encina Wastewater Authority (EWA) staff when responding to a sanitary sewer overflow (overflow) at the Encina Water Pollution Control Facility (EWPCF) and EWA operated remote facilities. Effective overflow response will result in rapid: 1) mitigation of the condition causing the overflow; 2) remediation of any known adverse impact on the environment; and, 3) recovery and disposal of overflowed wastewater to the maximum extent practical. This SSORP shall be updated in conformance with all applicable rules promulgated by the California Regional Water Quality Control Board, San Diego Region (RWQCB) and shall be readily available to EWA personnel at all times.

2.0 GENERAL

2.1 Order 96-04. In May 1996, the RWQCB adopted Order No. 96-04, General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies to provide for a unified regional approach for the reporting and database tracking of sanitary sewer overflows and to reduce the administrative burden of issuing individual waste discharge requirements to each discharger. Order 96-04 is *Attachment 1* to this SSORP.

2.2 EWA's Obligation to Comply. The RWQCB did not name EWA as discharger subject to Order 96-04. However, EWA has a duty to operate and maintain the EWPCF, the Shadowridge Water Reclamation Facility (SRWRF), the Agua Hedionda Pump Station (AHPS), the Buena Creek Pump Station (BCPS), and the Buena Vista Pump Station (BVPS) in compliance with local, state and federal laws and regulations. These facilities are owned by the Encina Member Agencies and every Encina Member Agency is named as a discharger subject to Order 96-04 and, therefore is mandated by Order 96-04. Accordingly, EWA is obligated to comply with Order 96-04 and, therefore is mandated by Order 96-04 to comply with all conditions of the Order and is subject to enforcement action for any noncompliance therewith.

2.3 Prohibitions. Order 96-04 prohibits the "discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant."

2.4 Entry and Inspection. Order 96-04 authorizes the RWQCB to inspect the discharger's premises, records, facilities, equipment, practices, or operations; and to sample or monitor any substance or parameter, at any location, to assure compliance.

2.5 Corrective Action. Order 96-04 compels dischargers to take all reasonable steps to minimize or correct any adverse impact on the environment resulting from overflows and authorizes additional monitoring as may be necessary to determine the nature and impact of overflows.

2.6 Sanitary Sewer Overflow Response Plan. Order 96-04 requires all dischargers develop and maintain a SSORP establishing procedures for responding to overflows so as to minimize the sewer overflow volume which enters surface waters and minimize the adverse effects of sewer overflows on water quality and beneficial use.

2.7 Monitoring and Reporting. Order 96-04 orders dischargers to comply with Monitoring and Reporting Program 96-04 (see: *Attachment 2*).

2.8 Civil Monetary Remedies and Penalties. Order 96-04 provides for fines of up to $25,000 pr day for each day in which a violation occurs. Additional fines and mandatory minimum penalties may also be imposed. Repeat violations, false and/or incomplete reports may cause higher penalties. Negligent or intentional violations may also result in criminal liability.

3.0 ORGANIZATION

3.1 Incident Command System. The overflow Response Organization is comprised of an EWA organizational sub-structure designed to facilitate the requirements of an Incident Command System (ICS). The ICS structure will allow for outside resource involvement with the least possible disruption of existing EWA procedures. EWA staff will fill key positions in the overflow response organization, however, the facilities owners may be called upon to provide mitigation, remediation, logistical, technical and public relations support during an overflow event. (see *Attachment 3*)

3.2 Incident command Responsibilities. EWA will direct coordinate and direct overflow response actions as specified in this SSORP. Primary responsibilities for each level of organizational response are outlined in *Attachment 3*. If a duly authorized municipal police or fire officer takes command of an EWA established ICS, the EWA Incident commander shall continue all duties described below except where the exercise of such duties would conflict with the police or fire command.

3.3 Emergency Phone Directory EWA's General Safety Practice No. 11 provides EWA staff, member agency, regulatory and private sector service providers phone numbers and emergency contacts (see *Attachment 4*.)

4.0 MITIGATION AND REMEDIATION PROCEDURES

4.1 Overflow Mitigation and Remediation. The first function of EWA employees when responding to an overflow event is to safely mitigate (fix the condition causing the overflow) and remediate (clean up and recover sewage) the overflow as quickly as possible.

4.2 Mitigation. Fixing the condition causing the overflow will generally involve the safe completion of one or more of the following actions. Mitigation will also require other actions as indicated by the conditions presented at the overflow site. The imminent safety of the general public and EWA staff is of paramount concern. Mitigation efforts shall only begin when it is safe and practical to proceed.

a. Operate in Hand. Operating additional sewage pump systems (in hand) until the wet well level has been brought under control.

b. Restore Power. Restoring power to the pumping station either by starting the emergency generators or closing the main electrical service breaker to the affected facility.

c. Clear Obstructions. Clearing an obstructed bar screen or pump volute of rags and debris.

d. Isolate Breaks. Isolating a pipeline break and employing alternate pumping systems.

e. Check Circuits. Replacing fuses in pump control circuitry or otherwise repairing that circuitry.

f. Secure Flows. Securing flow to the facility or intercepting and rerouting of sewage flows around the facility.

g. Protect Pumps. The most potentially damaging overflow is caused by mechanical damage to pumps and piping in a station drywell. If pump motors are submerged, severe damage could result leaving the station without pumping capabilities. Therefore, appropriate steps should be taken to protect the facilities from damage that may result from rising water levels.

h. Prevent Public Contact. Isolating the public from possible contact with sewage or sewage contaminated surface water must be accomplished at this time. At the direction of the Incident commander, the overflow site and affected surface waters may be designated as a quarantine site. All effort should be made to limit public access to the overflow site and quarantine site. Barricades, cones, warning ribbon, and signs are available in the Encina warehouse and at designated remote locations to establish a control zone around the quarantine site.

i. Utilize Private Contractors. Private contractors may be summoned to provide assistance at the remote facility and overflow site (see *Attachment 5*).

j. BVPS. At the BVPS, pump motors not located in the drywell can become submerged if flow into the drywell is not stopped. The decision to secure pumps, close influent and effluent valves and breach the containment levy can be made only by the Incident Commander.

k. AHPS. The AHPS is equipped with a 450,000-gallon containment structure.

l. SWRF. The SWRF are designed to contain sewage overflows through a plant drainage system that returns overflowed sewage to the plant influent structure.

m. BCPS. As of this writing, risk assessment of the BCPS is not yet complete because the station has been on line less than thirty (30) days. Upon completion of the risk assessment, this section shall be updated.

4.3 Remediation. Remediation requires the following protocol be implemented safely and without unnecessary delay. Remediation may also require other actions as indicated by the conditions presented at the overflow site.

n. Safety. The imminent safety of the general public and EWA staff is of paramount concern. Remediation efforts shall only begin when it is safe and practical to proceed.

o. Recovery Pumping. An effective recovery operation will return the overflowed sewage to the sewer system as quickly as possible within these limits. Recovery pumps may be deployed even before the overflow occurs if the Incident Commander decides that an overflow is imminent. The Logistics Officer shall determine the type, number and location of such recovery pumping equipment.

p. Protection of Aquatic Life Forms. The California Fish and Game Department may recommend locations for recovery pumping equipment deemed critical for protection of aquatic life forms. EWA shall implement recommendations of the California Fish and Game Department during all overflow events.

q. Recovery Pumping Cannot Exceed System and Plant Capacities. Recovery pumping volumes shall not exceed the amounts that can be effectively handled by downstream pumping stations, sewerage piping systems and treatment plants.

5.0 QUANTIFICATION, DOCUMENTATION AND POSTING PROCEDURES

5.1 Overflow Quantification. Overflow quantification requires careful observation of discharges. Linear measurement of discharge streams and flow velocities are essential in quantifying overflow volumes. Photo documentation of the overflow event is also necessary for quantification purposes. Additionally, the EWA flow metering system can be employed to assist in accurate quantification of overflow volume. Official estimation of overflow volume is the sole responsibility and authority of the Incident Commander.

5.2 Overflow Events Records. All EWA Employees involved in an overflow event must be aware of the need to compile and report pertinent information in a clear and logical format. An official "Overflow Events Record" shall be maintained throughout the overflow event and Event Recorder. The Overflow Events Record shall, at a minimum, provide a chronological timeline documenting the following events:

a. Event times (failure, discharge start and stop etc.);

b. Personnel on site;

c. Arrival and departure times for all personnel;

d. Equipment on site;

e. Milestone events;

f. Photo and video documentation;

g. Overflow volume estimates;

h. Discharge stream linear and velocity measurements;

i. Arrival times of outside resources;

j. Regulatory volume estimates (number, duration and capacity of recovery pumps).

5.3 Overflow Posting. Although the San Diego County Department of Health Services (DHS) is the responsible authority for directing the closure of areas and the posting and removal of such advisory signs, the Incident Commander may direct the posting of contaminated water signs as necessary to prevent public contact with discharged sewage or sewage contaminated surface waters pursuant to the following guidelines:

a. Beaches. If posting of the beaches is required, the signs shall be placed at 50 ft. intervals for a minimum of 600 feet on each side of the point of ocean entry.

b. Other Waters. If posting of the beaches is required, the signs shall be placed at 50 ft. intervals for a minimum of 600 feet on each side of the point of entry.

c. SWRF and BCPS. Overflows originating at the SWRF will require posting of the area directly below the reservoir, adjacent to the homes on Green Oaks Road. Overflow

originating at the SWRF or BCPS may require posting of the Agua Hedionda Lagoon outlet.

d. AHPS. Overflows originating at the AHPS may require posting of the Agua Hedionda Lagoon (both east and west of the overflow site) and the beaches north and south of the Agua Hedionda Lagoon outlet.

e. BVPS. Overflows originating at the BVPS may require posting of the Buena Vista Lagoon and the beaches north and south of the lagoon outlet.

f. The location and placement of all warning signs shall be recorded using the EWA Wastewater Overflow Quarantine Report form (see *Attachment 5*). A diagrammatic map of the overflow site and quarantine area clearly illustrating the sign placement must accompany the Wastewater Overflow Quarantine Report form. Twice daily inspections of the overflow site and quarantine area shall be made to replace or repair the signs and ensure that proper posting is being maintained. A Wastewater Overflow Quarantine Report form must be completed for each inspection.

g. The contaminated water signs must be maintained until the Emergency Coordinator authorizes their removal. The San Diego County Department of Health Services will make the final decision as to when the signs may be removed based on background Coliform levels in the receiving waters and current Total and Fecal Coliform results (<1,000 Total and <200 Fecal Coliform per 100 ml).

h. A sufficient inventory of English/Spanish contaminated water signs, stakes (minimum 100) and warning tape (3 rolls) is to be maintained at the Buena Vista Pump Station, Agua Hedionda Pump Station, and Shadowridge Water Reclamation Plant. An inventory of 100 pre-mounted signs and warning tape is also maintained in the Encina warehouse.

i. Only the DHS may authorize the removal of advisory warning signs.

6.0 MONITORING AND SAMPLING PROCEDURES

6.1 Mobilization. When an overflow is imminent, or at the earliest possible opportunity during an actual overflow event, the Laboratory Supervisor will begin mobilizing the Laboratory Staff and Sampling Team.

6.2 Monitoring. The Laboratory Supervisor shall initiate and ensure the continuous collection of overflow related flow data from EWA's Centralized Flow Metering System.

a. Flow Data Essential. Flow data is essential to accurate overflow volume calculations, and thus, collection thereof shall not be discontinued unless so ordered by the Incident Commander.

b. Records Retention. All monitoring records must be retained for a period of five (5) years from the date of the sample, measurement, report or application.

6.3 Sampling Regime. The Laboratory Supervisor and Sampling Team will determine appropriate sampling locations to monitor levels of contamination as well as to establish natural background levels of Coliform in the receiving waters.

a. DHS & DFG Notifications. When the sampling regimen has been established, the Laboratory Supervisor will notify the San Diego County Department of Health Services (DHS) and the California Fish and Game Department (DFG). If either of these two agencies requires any additional testing to be conducted, the Laboratory Officer will incorporate these tests in the sampling regimen.

b. Modification of Sampling Regime. The Laboratory Supervisor will maintain daily contact with DHS and the DFG and will make any findings available to those agencies as requested. The Laboratory Supervisor may

c. Outside Sampling Assistance. If the duration of the overflow event will be longer than a few hours, the Technical Support Officer may opt to authorize outside sampling assistance. The Laboratory Supervisor will develop a long-term sampling program based on the likely extent of the impact and the site location and conditions.

d. Sampling Duration. The Sampling regimen is to continue until a determination is made by the DHS that danger to the public has been eliminated as evidenced by an appropriate notification by the DHS.

e. Summary Report. The Laboratory Supervisor will oversee the production, verify the accuracy of all laboratory reports and present a final summary report to the Incident Commander. EWA will make this summary report available to the facility owners, the DHS, the DFG or other authorities upon request.

f. Records Retention. All sampling records must be retained for a period of five (5) years from the date of the sample, measurement, report or application.

7.0 REPORTING

7.1 When to Report. These reporting requirements apply to any overflow that may, regardless of volume, cause temporary exceedance of applicable water quality objectives, pose a threat to the public health, adversely affect aquatic life or impair the public recreational use and aesthetic enjoyment of surface waters.

7.2 Reporting Responsibilities. The Emergency Coordinator shall make the initial RWQCB, OES and DHS notifications. Subsequent reports and monitoring results must be authorized and signed by the Operations Superintendent and the Laboratory Manager.

7.3 Initial RWQCB Notification. The Emergency Coordinator shall make the Initial RWQCB Notification and submit the Sanitary Sewer Overflow Report Form for overflow events originating within the compounds of any EWA operated facility. The Initial Notification, known as the 24-hour Sanitary Sewer Overflow Report, requires telephone, voice mail, or FAX reporting of the overflow event to the RWQCB within 24-hours from the time that the discharger has knowledge of the event, and can make that notification without substantially impeding mitigation, containment, cleanup or other emergency measures.

a. the name and phone number of the person reporting the event; the responsible sanitary sewer system agency (owner);
b. the estimated total sewer overflow volume;
c. the location of the overflow;
d. the receiving waters;

e. whether or not the sewer overflow is still occurring at the time of the report; and,

f. confirmation that the San Diego County Department of Health Services and the OES was, or will be notified as required under the reporting requirements of those service agencies;

g. RWQCB Office Hours, RWQCB offices are open Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m. excluding state holidays. Calls made after normal working hours will be forwarded to their emergency standby responder;

h. OES Notification. The Emergency Coordinator will also notify the Office of Emergency Services (OES) of overflow events in accordance with California Water Code Section 13271. Information required for OES notification is similar, if not identical to that required in the Initial Notification of the RWQCB.

i. DHS Notification. The Emergency Coordinator will also notify the DHS San Diego of overflow events in accordance with California Code of Regulations, Title 19, Article 1. Information required for San Diego County Department of Health Services notification is similar, if not identical, to that required in the Initial Notification of the RWQCB.

7.4 Sanitary Sewer Overflow Report. In addition to the Initial Report, every overflow must be reported to the RWQCB via the Sanitary Sewer Overflow Report must be filed not less than quarterly. (*see Attachment 5*)

a. Overflows Less Than 1,000 Gallons. In the event that there are no overflows in excess of 1,000 gallons, the Sanitary Sewer Overflow Report must be filed not less than quarterly.

b. Overflows of 1,000 Gallons or More. In the event that there any overflow of 1,000 gallons or more, the Sanitary Sewer Overflow Report must be filed within five (5) days of the overflow.

OWNER NOTIFICATION

8.1 Notifications. The Encina Member Agency owner and EWA General Manager must be immediately notified of all overflow events.

8.2 Phone Numbers. Refer to *Attachment 6* for 24-hour emergency phone numbers of facility owners.

8.3 After Hours Notification: The Cities of Carlsbad and Oceanside utilize the police dispatch for off-hour emergencies. The police dispatcher will need information about the nature of the emergency so that the proper people can be contacted.

8.4 Overflows at the AHPS and BVPS. Notify the Carlsbad Municipal Water District and the City of Vista.

a. Notification must be made as soon as safe and practical without substantially impeding mitigation, containment or other emergency measures.

b. The City of Oceanside, in agreement with the City of Vista, diverts approximately .2 to .4 mgd of flow to the City of Vista sewerage system. The flow enters the Vista system at the Encina bypass approximately one-half mile east of the Buena Vista Pump Station. During an overflow event at the Buena Vista Pump Station, this flow must be curtailed immediately. EWA Employees are not to operate the bypass valve. The closure of the

bypass valve may result in a overflow at the Buena Vista Pump Station in Oceanside (ol Hamar Drive...not to be confused with the EWA operated Buena Vista Pump Station). Contact the City of Oceanside at the numbers listed below (Section 10.0...Facility Owners) to request immediate curtailment of the diverted flow.

c. Overflows at the SWRF. Notify the City of Vista. Notification must be made as soon as safe and practical without substantially impeding mitigation, containment or other emergency measures.

8.0 TRAINING

8.1 Reviewing and Amending the SSORP: This Standard Operating Procedure shall be reviewed and amended by the Operations Superintendent as necessary after each overflow event and following each annual refresher training session to maintain the procedure in an up-to-date condition.

9.2 Annual Training: The Operations Superintendent or his/her designee shall also schedule annual refresher training, which is designed to reveal planning weaknesses, identify resource shortcomings, clarify roles and responsibilities, and improve performance, confidence and teamwork. The annual training shall consist of:

a. Tailgate Training. This session is to be conducted by Operations and Maintenance Shift Supervisors for the purpose of familiarizing all O&M staff with the procedure.

b. Tabletop Exercise: This training exercise is intended to simulate a overflow eve without the deployment equipment or personnel resources. The overflow event scenario is described by the facilitator and various response actions are discussed.

c. Full Scale Functional Exercise. This training exercise is intended to simulate a overflow event in all aspects. Equipment and personnel deployment will be included in this drill. Facility Owners will be invited and encouraged to participate in this exercise

d. Exercise Debriefing. Following the tabletop and functional exercise, the Emergency coordinator shall submit a written report to the Operations Superintendent summarizing the exercise and recommending any modifications needed to meet the SSORP's objectives. The training report should also include the names of all participants, date and time of the exercise.

Approved:_____ _____

General Manager Date

Attachment 1

Order 96-04

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS
PROHIBITING SANITARY SEWER OVERFLOWS
BY
SEWAGE COLLECTION AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. The following federal agencies, municipalities, counties, districts or other public bodies which own sanitary sewer collection systems or any facilities which collect and covey untreated sewage wastewater in the San Diego Region are named as dischargers in this Order:

Aliso Water Management Agency	County of San Diego
Buena Sanitary District	Eastern Municipal Water District
Capistrano Beach Sanitary District	El Toro Water District
Carlsbad Municipal Water District	Emerald Bay Services District
City of Chula Vista	Fairbanks Ranch Community Services District
City of Coronado	Fallbrook Public Utilities District
City of Del Mar	Irvine Ranch Water District
City of El Cajon	Leucadia County Water District
City of Encinitas	Los Alisos Water District
City of Escondido	Moulton Niguel Water District
City of Imperial Beach	Otay Water District
City of La Mesa	Padre Dam Municipal Water District
City of Laguna Beach	Pauma Valley Community Services District
City of Lemon Grove	Rainbow Municipal Water District
City of National City	Ramona Municipal Water District
City of Oceanside	Rancho Santa Fe Community Services District
City of Poway	Rancho California Water District
City of San Clemente	Santa Margarita Water District
City of San Diego	South Orange County Reclamation Authority
City of San Juan Capistrano	South East Regional Reclamation Authority
City of Solana Beach	South Coast County Water District
City of Vista	Trabuco Canyon Water District
U.S. Marine Corps, Camp Pendleton	Valley Center Municipal Water District
Vallecitos Water District	Whispering Palms Community Services District

1. A sanitary sewer system is a sewage wastewater collection system including sewers, pipes, pumps, or other conveyances which convey sewage wastewater (e.g. domestic, commercial, and industrial wastewaters) to a sewage treatment plant. A sanitary sewer overflow is each instance of a discharge from a sanitary sewer system at any point upstream of the sewage treatment plant. Temporary storage and conveyance facilities (such as wet wells, impoundments, tanks, highlines, etc.) are part of the sanitary sewer system and are not sanitary sewer overflows provided that sewage from these facilities is not discharged to waters of the state.

2. Sanitary sewer overflows consist of varying mixtures of domestic sewage, and industrial and commercial wastewater depending on the pattern of land uses in the sewage collection system tributary area. Sanitary sewer overflows often contain high levels of suspended solids, pathogenic organisms, toxic pollutants, nutrients, oxygen demanding organic compounds, oil and grease and other pollutants. Sanitary sewer overflows can cause temporary exceedances of applicable water quality objectives, pose a threat to the public health, adversely affect aquatic life, and impair the public recreational use and aesthetic enjoyment of surface waters in the San Diego Region.

3. Sanitary sewer overflows are a frequent occurrence in the San Diego Region. The chief causes of sanitary sewer overflows in the San Diego Region include grease blockages, root blockages, sewer line flood damages, manhole structure failures, vandalism, pump station mechanical failures, power outages, storm or ground water inflow/infiltration, debris blockages, and contractor caused damages. The causes of individual sanitary sewer overflows in the San Diego Region vary between collection systems depending on factors such as the age, complexity, size, construction materials, design capacity, tributary area population, and maintenance of the collection system. During the one year period from July 1994 through June 1995, approximately 50 million gallons of sanitary sewer overflows were reported to the Regional Board as shown in the table below. These overflows are a small fraction (0.03%) of the total sewage flows collected and treated in the Region of approximately 185,000 million gallons per year. Although the fraction of overflows is small, each sewer overflow can adversely affect beneficial uses as described in Finding 3 above. Sanitary sewer overflows reported to the Regional Board by sewage collection agencies within each county during the one year period from July 1994 through June 1995 are as follows:

County	Number of Overflows	Total Volume of Overflows (Gallons)	Average Volume per Overflow (Gallons)	Number of Overflows Reaching Surface Water	Percent of Overflows Reaching Surface Waters	Total Volume. Reaching Surface Water (Gallons)	Average Volume per Overflow Reaching Surface Water (Gallons)
SAN DIEGO	698	48,743,645	69,833	544	78 %	44,394,084	81,606
RIVERSIDE	6	725,000	120,833	5	83 %	715,000	143,000
ORANGE	59	1,223,820	20,742	32	54 %	1,169,635	36,551
TOTAL	763	50,692,465	211,408	581	76 %	46,278,719	261,157

1. The "Water Quality Control Plan for the San Diego Basin (9)" (hereinafter Basin Plan) was adopted by the Regional Board on September 8, 1994 and subsequently approved by the State Water Resources Control Board (hereinafter State Board) on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Board and approved by the State Board. The Basin Plan designates beneficial uses, narrative and numerical water quality objectives, and prohibitions which are applicable to the discharges prohibited under this Order.

2. The Basin Plan contains the following prohibitions which are applicable to the discharges prohibited under this Order:

   a. "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in California Water Code Section 13050, is prohibited."

   b. "The discharge of treated or untreated waste to lakes or reservoirs used for municipal water supply, or to inland surface water tributaries thereto, is prohibited."

   c. "The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. ..."

   d. "The dumping, deposition, or discharge of waste directly into waters of the state, or adjacent to such waters in any manner which may permit its being transported into the waters, is prohibited unless authorized by the Regional Board.

   e. "The unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited."

3. California Water Code Section 13243 provides that a Regional Board, in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, is not permitted.

4. The issuance of a single general waste discharge requirement order to the dischargers will:

   a) Provide for a unified regional approach for the reporting and database tracking of sanitary sewer overflows; and

   b) Reduce the administrative burden of issuing individual waste discharge requirements to each discharger

5. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act in accordance with Title 14, California Administrative Code, Chapter 3, Section 15270.

6. The Regional Board, in establishing the requirements contained herein, considered factors including, but not limited to the following:

   a. Past, present, and probable future beneficial uses of water.

   b. Environmental characteristics of the hydrologic unit under consideration, including the quality of water available thereto.

   c. Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

   d. Economic considerations

   e. The need for developing housing within the region.

   f. The need to develop and use recycled water.

   g. Beneficial uses to be protected and the water quality objectives reasonably required for that purpose.

   h. Other waste discharges.

   i. The need to prevent nuisance.

7. The Regional Board has considered all water resource related environmental factors associated with this prohibition of discharge of waste.

8. The Regional Board has notified the dischargers and all known interested parties of the intent to prescribe waste discharge requirements to prohibit unauthorized discharges from sanitary sewer systems at any point upstream of sewage treatment plants.

9. The Regional Board has, at a public meeting on May 9, 1996, held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this Order.

IT IS HEREBY ORDERED, that the dischargers, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of sewage from a sanitary sewer system at any point upstream of a sewage treatment plant is prohibited.

B. PROVISIONS

1. DUTY TO COMPLY

The discharger must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action.

2. ENTRY AND INSPECTION

The discharger shall allow the Regional Board, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

a. Enter upon the discharger's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Order;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and

d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this Order or as otherwise authorized by the California Water Code, any substances or parameters at any location.

3. CORRECTIVE ACTION

The discharger shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this Order, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.

4. SANITARY SEWER SYSTEM FAILURE

In an enforcement action, it shall not be a defense for the discharger that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order. Upon reduction, loss, or failure of the sanitary sewer system resulting in a sanitary sewer overflow, the discharger shall, to the extent necessary to maintain compliance with this Order, take any necessary remedial action to 1) control or limit the volume of sewage discharged and 2) terminate the sewage discharge as rapidly as possible and 3) recover as much of the sewage discharged as possible for proper disposal including any wash down water. The discharger shall implement all remedial actions to the extent they may be applicable to the discharge including the following:

a. Interception and rerouting of sewage flows around the sewage line failure;

b. Vacuum truck recovery of sanitary sewer overflows and wash down water;

c. Use of portable aerators where complete recovery of the sanitary sewer overflows is not practicable and where severe oxygen depletion in existing surface waters is expected; and

d. Cleanup of debris of sewage origin at the overflow site.

5. SANITARY SEWER OVERFLOW PREVENTION PLAN

No later than six months after the adoption of this order, the discharger shall develop and implement a Sanitary Sewer Overflow Prevention Plan (SSOPP). The SSOPP shall be designed to prevent, or minimize the potential for sanitary sewer overflows. The discharger shall maintain the SSOPP in an up-to-date condition and shall amend the SSOPP whenever there is a change (e.g. in the design, construction, operation, or maintenance of the sanitary sewer system or sewer facilities) which materially affects the potential for sanitary sewer overflows. The discharger shall review and amend the SSOPP as appropriate after each sanitary sewer overflow. The discharger shall submit the SSOPP and any amendments thereto to the Executive Officer upon request of the Executive Officer. The SSOPP and any amendments thereto shall be modified as necessary at the direction of the Executive Officer. The discharger shall ensure that the up-to-date SSOPP is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

6. SANITARY SEWER OVERFLOW RESPONSE PLAN

No later than six months after adoption of this order, the discharger shall develop and implement a Sanitary Sewer Overflow Response Plan (SSORP). The SSORP shall establish procedures for responding to sanitary sewer overflows so as to (a) minimize the sewer overflow volume which enters surface waters, and (b) minimize the adverse effects of sewer overflows on water quality and beneficial uses. The SSORP shall include a posting plan, in which any posting of areas contaminated with sewage is performed at the direction of the local health services agency. The discharger shall maintain the SSORP in an up-to-date condition and shall amend the SSORP as necessary to accomplish these objectives. The discharger shall review and amend the SSORP as appropriate after each sanitary sewer overflow. The discharger shall submit the SSORP and any amendments thereto to the Executive Officer upon request of the Executive Officer. The SSORP and any amendments thereto shall be modified as necessary at the direction of the Executive Officer. The discharger shall ensure that the up-to-date SSORP is readily available to sewer system personnel at all times and that sewer system personnel are familiar with it.

C. REPORTING AND RECORD KEEPING REQUIREMENTS

1. MONITORING AND REPORTING

Pursuant to California Water Code Section 13267(b), the discharger shall comply with the attached Monitoring and Reporting Program No.96-04, and future revisions thereto as specified by the Executive Officer. Monitoring results shall be reported at the intervals specified in Monitoring and Reporting Program No.96-04

2. PERMIT AVAILABILITY

A copy of this Order shall be maintained at appropriate locations and shall be available to sanitary sewer system operating and maintenance personnel at all times.

3. GENERAL REPORTING REQUIREMENT

The discharger shall furnish to the Executive Officer of this Regional Board, within a reasonable time, any information which the Executive Officer may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order. The discharger shall also furnish to the Executive Officer, upon request, copies of records required to be kept by this Order.

4. CHANGE IN OWNERSHIP

This Order is not transferrable to any person except after notice to the Executive Officer. The discharger shall submit this notice in writing at least 30 days in advance of any proposed transfer. The notice must include a written agreement between the existing and new discharger containing a specific date for the transfer of this Order's responsibility and coverage between the existing discharger and the new discharger. This agreement shall include an acknowledgement that the existing discharger is liable for violations up to the transfer date and that the new discharger is liable from the transfer date on.

5. INCOMPLETE REPORTS

Where the discharger becomes aware that it failed to submit any relevant facts in any report required under this Order to the Regional Board, it shall promptly submit such facts or information.

6. REPORT DECLARATION

All applications, reports, or information (except for 24 hour Sanitary Sewer Overflow Reports) submitted to the Executive Officer shall be signed and certified as follows:

a. All reports including disks (except for 24 hour Sanitary Sewer Overflow Reports) required by this Order and other information required by the Executive Officer shall be signed and certified by a person designated, for a municipality, state, federal or other public agency, by either a principal executive officer or ranking elected official, or by a duly authorized representative of that person as described in paragraph b. of this provision. Reports of monitoring results must also be signed by the chief plant operator and if the chief plant operator is not in the direct line of supervision of the laboratory function, the chief of the laboratory also.

b. An individual is a duly authorized representative only if:

(1) The authorization is made in writing by a person described in paragraph a. of this provision;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity; and

(3) The written authorization is submitted to the Executive Officer.

c. Any person signing a document under this provision shall make the following certification:

"I swear under penalty of perjury that the information submitted in this document is true and correct. I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

7. REGIONAL BOARD ADDRESS

The discharger shall submit reports required under this Order, or other information required by the Executive Officer, to:

Executive Officer (Sanitary Sewer Overflow Report)
California Regional Water Quality Control Board, San Diego Region
9771 Clairemont Mesa Blvd, Suite A
San Diego, California 92124-1331
Phone No.(619)467-2952
Fax No.(619)571-6972

D. NOTIFICATIONS

1. VESTED RIGHTS

This order does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to persons or property, nor protect the discharger from liability under federal, state or local laws, nor create a vested right for the discharger to continue the waste discharge.

2. CIVIL MONETARY REMEDIES FOR DISCHARGE VIOLATIONS

The California Water Code provides that any person who violates this Order is subject to a civil monetary remedy of up to $25,000 per day for each day in which the violation occurs. When there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1000 gallons, an additional liability may be imposed not to exceed twenty-five dollars ($25) times the number of gallons by which the volume discharged, but not cleaned up exceeds 1,000 gallons. Intentional negligent, or repeat violations of this Order may be subject to higher penalties.

3. CIVIL MONETARY PENALTIES FOR INVESTIGATION, REPORTING OR INSPECTION VIOLATIONS

The California Water Code provides that any person failing or refusing to furnish technical or monitoring program reports, as required under this Order, or falsifying any information provided in the technical or monitoring reports is subject to a civil liability of up to 25,000 dollars for each day in which the violation occurs.

4. U.S. EPA REVIEW

These requirements have not been officially reviewed by the United States Environmental Protection Agency and are not issued pursuant to Section 402 of the Clean Water Act.

5. SEVERABILITY

The provisions of this Order are severable, and if any provision of this Order, or the application of any provision of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order, shall not be affected thereby.

6. ORDER

This order becomes effective on the date of adoption by the Regional Board. This order and monitoring and reporting program supersedes all reporting requirements for sanitary sewer overflows at any point upstream of the sewage treatment plant for agencies and facilities with waste discharge requirements as listed in the attached Table A.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on May 9, 1996.

_____

John Robertus
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN DIEGO REGION

ADDENDUM NO. 1 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS PROHIBITING SANITARY SEWER OVERFLOWS BY SEWAGE COLLECTION AGENCIES

The California Regional Water Quality Control Board, San Diego Region, (hereinafter Regional Board) finds that:

1. On May 9, 1996, this Regional Board adopted Order No. 96-04 General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies. Order No. 96-04 prohibits sanitary sewer overflows upstream of a sewage treatment plant and establishes sanitary sewer overflow reporting requirements.

2. Finding No. 1 of Order No. 96-04 names as dischargers for the Order a list of federal agencies, municipalities, counties, districts or other public bodies which own sanitary sewer collection systems or any facilities which collect and convey untreated sewage wastewater in the San Diego Region.

3. By letter dated May 23, 1996, the Aliso Water Management Agency (AWMA) and South East Regional Reclamation Authority (SERRA) requested to be removed from Order No. 96-01. The May 23 letter stated that AWMA and SERRA do not own or operate any untreated sewage collection facilities. This addendum removes AWMA and SERRA as dischargers in Order No. 96-04.

4. The South Orange County Reclamation Authority (SOCRA) was formed to serve as a regional coordinator for water reclamation projects and does not own any untreated sewage collection facilities. This addendum removes SOCRA as a discharger in Order No. 96-04.

5. The Elsinore Valley Municipal Water District, Murrieta County Water District and Dana Point Sanitary District own untreated sewage collection facilities and were not named as discharges in Order No. 96-04. This addendum names the Elsinore Valley Municipal Water District, Murrieta County Water District, and Dana Point Sanitary District as dischargers in Order No. 96-04.

6. Monitoring and Reporting Program No. 96-04 was attached to Order No. 96-04. Section B.2.c. of Monitoring and Reporting Program No. 96-04 requires the dischargers to report sanitary sewer overflows to the Office of Emergency Services (OES) in accordance with California Water Code Section 13271 and provides a phone number and FAX number for OES. The phone number for OES in Monitoring and Reporting Program No. 96-04 is not correct. This addendum provides the correct phone number for OES.

7. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Title 14, California Administrative Code, Chapter 3, Section 15270.

8. The Regional Board has notified the Sewage Collection Agencies and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

9. The Regional Board has, at a public meeting on March 12, 1997, held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

1. The following agencies are removed from Finding No. 1 of Order No. 96-04 as dischargers:

Aliso Water Management Agency
South Orange County Reclamation Authority
South East Regional Reclamation Authority

2. The following agencies are added to Finding No. 1 of Order No. 96-04 as dischargers:

Elsinore Valley Municipal Water District
Murrieta County Water District
Dana Point Sanitary District

3. The phone number for the Office of Emergency Services (OES) in Section B.2.c. of Monitoring and Reporting Program No. 96-04 is changed to (800) 852-7550. Sanitary sewer overflows shall be reported to OES in accordance with California Water Code Section 13271.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on March 12, 1997.

_____

John H. Robertus
Executive Officer

California Regional Water Quality Control Board
San Diego Region

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 2 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS
PROHIBITING SANITARY SEWER OVERFLOWS
BY
SEWAGE COLLECTIONS AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On May 9, 1996, this Regional Board adopted Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies.* Order No. 96-04 prohibits sanitary sewer overflows upstream of a sewage treatment plant and establishes sanitary sewer overflow reporting requirements.

2. Finding No. 1 of Order No. 96-04 names as dischargers for the Order a list of federal agencies, municipalities, counties, districts or other public bodies which own sanitary sewer collection systems or any facilities which collect and convey untreated sewage wastewater in the San Diego Region.

3. The Navy Public Works Center is responsible for approximately 125 miles of sewer line at Navy sites and 35 miles at Marine Corps Air Station Miramar.

4. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

5. The Regional Board has notified the Sewage Collection Agencies and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

6. The Regional Board has, at a public meeting on May 13, 1998 held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

1. The U.S. Navy Public Works Center is added to Finding No. 1 of Order No. 96-04 as a discharger.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on May 13, 1998.

JOHN H. ROBERTUS
Executive Officer

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California Regional Water Quality Control Board
San Diego Region

ADDENDUM NO. 3 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS PROHIBITING SANITARY SEWER OVERFLOWS BY SEWAGE COLLECTIONS AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board) finds that:

1. On May 9, 1996, this Regional Board adopted Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies*. Order No. 96-04 prohibits sanitary sewer overflows upstream of a sewage treatment plant and establishes sanitary sewer overflow reporting requirements.

2. Finding No. 1 of Order No. 96-04 names as dischargers for the Order a list of federal agencies, municipalities, counties, districts or other public bodies which own sanitary sewer collection systems or any facilities which collect and convey untreated sewage wastewater in the San Diego Region.

3. By letter dated January 20, 1999, the South Orange County Reclamation Authority (SOCRA) notified the Regional Board the Dana Point Sanitary District and Capistrano Beach Water District had consolidated into another agency, the South Coast Water District. South Coast Water District has assumed all responsibilities of both agencies with respect to sewage collection and compliance with the requirements of Order NO. 96-04. This addendum deletes Dana Point Sanitary District and Capistrano Beach Water District as dischargers in Order No. 96-04.

4. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

5. The Regional Board has notified the Sewage Collection Agencies and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

6. The Regional Board has, at a public meeting on September 8, 1999 held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

1. Dana Point Sanitary District is deleted as a discharger from Order No. 96-04, and

2. Capistrano Beach Water District is deleted as a discharger from Order No. 96-04.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on September 8, 1999.

JOHN H. ROBERTUS
Executive Officer

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California Regional Water Quality Control Board
San Diego Region

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 4 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS
PROHIBITING SANITARY SEWER OVERFLOWS
BY
SEWAGE COLLECTIONS AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. On May 9, 1996, this Regional Board adopted Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies.* Order No. 96-04 prohibits sanitary sewer overflows upstream of a sewage treatment plant and establishes sanitary sewer overflow reporting requirements.

2. Finding No. 1 of Order No. 96-04 names as dischargers for the Order a list of federal agencies, municipalities, counties, districts or other public bodies which own sanitary sewer collection systems or any facilities which collect and convey untreated sewage wastewater in the San Diego Region.

3. Olivenhain Municipal Water District (OMWD) has notified this Regional Board that it has responsibility for the sanitary sewer collection system in the 4-S Ranch Development and other areas within its service boundaries.

4. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

5. The Regional Board has notified OMWD and all known interested parties of its intent to add OMWD as a discharger subject to Order No. 96-04.

6. The Regional Board has, at a public meeting on December 8, 1999 held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

1. OMWD is added to Finding No. 1 of Order No. 96-04 as a discharger.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on March 8, 2000.

_____
JOHN H. ROBERTUS
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 5 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS
PROHIBITING SANITARY SEWER OVERFLOWS
BY SEWAGE COLLECTION AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. Collection and conveyance of municipal wastewater in sanitary sewers entails the possibility of discharges of untreated or inadequately treated sewage as a result of overflows caused by pump failure, pipe rupture, flooding, blockage, and other reasonably foreseeable events. Discharges of untreated or inadequately treated sewage cause or threaten to cause conditions of pollution and nuisance. Such collection and conveyance is regulated by Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies*.

2. The Monitoring and Reporting Program associated with Order No. 96-04 contains an error which has caused confusion regarding the reporting requirements for certain sanitary sewage overflows and has resulted in some sewer agencies failing to report some overflows within the required time frames. Currently, the Monitoring and Reporting Program states that "if the sanitary sewer overflow event results in a discharge of 1,000 gallons or more to surface waters, the discharger shall: a) Report the overflow to the Regional Board by telephone, voice mail, or FAX within 24 hours .... e) Submit [a] completed sanitary sewer overflow form ... no later than 5 days from the start date of the sanitary sewer overflow." The intent of the Order, however, was to require sewer agencies to report all spills that are 1,000 gallons or more (regardless of destination) and all spills reaching surface waters (regardless of volume) within the 24-hour and 5-day time frames. This addendum reflects the intent of the Order.

3. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

4. The Regional Board has notified the Sewage Collection Agencies and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

5. The Regional Board has, at a public meeting on September 13, 2000 heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

Sections B.1, B.2 and B.3 of Monitoring and Reporting Program No. 96-04 are superseded by the following:

1. *24-Hour Reporting to the Regional Board*

If the sanitary sewer overflow event results in a discharge of 1,000 gallons or more, or results in a discharge to surface waters (any volume), the discharger shall:

Report the sanitary sewer overflow event to the Regional Board by any available means, including telephone, voice mail, or FAX, within 24 hours from the time that 1) discharger has knowledge of the sanitary sewage overflow, 2) notification is possible, and 3) notification can be provided without substantially impeding cleanup or other emergency measures. Notification may be made after normal business hours by leaving a message for the Regional Board on voice mail or FAX.

a) *For the purpose of this Order, surface waters include navigable waters, rivers, streams (including ephemeral streams), lakes, playa lakes, natural ponds, bays, the Pacific Ocean, lagoons, estuaries, man-made canals, ditches, dry arroyos, mudflats, sandflats, wet meadows, wetlands, swamps, marshes, sloughs and water courses, and storm drains tributary to surface waters. The term includes waters of the United States as used in the federal Clean Water Act (see 40 CFR 122.2)*

b) *The information reported to the Regional Board in the initial report shall include the name and phone number of the person reporting the sanitary sewer overflow, the responsible sanitary sewer system agency, the estimated total sewer overflow volume, the location, the receiving waters, whether or not the sewer overflow is still occurring at the time of the report, and confirmation that the local health services agency was or will be notified as required under the reporting requirements of the local health services agency.*

2. *Five-Day Reporting to the Regional Board*

If the sanitary sewer overflow event results in a discharge of 1,000 gallons or more, or results in a discharge to surface waters (any volume), the discharger shall:

Complete a copy of the Sanitary Sewer Overflow Form attached to Monitoring and Reporting Program No. 96-04, and submit the completed Sanitary Sewer Overflow Report form, along with any additional correspondence, to the Regional Board no later than 5 days following the starting date of the sanitary sewer overflow. Additional correspondence and follow-up reports should be submitted to the Regional Board, as necessary, to supplement the Sanitary Sewer Overflow Report

Form to provide detailed information on cause, response, adverse effects, corrective actions, preventative measures, or other information.

3. *Quarterly Reporting to the Regional Board*

For all sanitary sewer overflows, regardless of volume or final destination, the discharger shall:

Enter the data on a computer disk in the format described in Section C of Monitoring and Reporting Program No. 96-04 for submission to the Regional Board after the end of the quarter.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on September 13, 2000.

JOHN H. ROBERTUS
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 6 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS PROHIBITING SANITARY SEWER OVERFLOWS BY SEWAGE COLLECTION AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies,* prohibits "Sewage Collection Agencies" from causing or permitting sanitary sewer overflows upstream of a sewage treatment plant and establishes sanitary sewer overflow reporting requirements.

2. Finding No. 1 of Order No. 96-04 identifies both Los Alisos Water District and Irvine Ranch Water District as "Sewage Collection Agencies".

3. The Los Alisos Water District and the Irvine Ranch Water District have merged. The Irvine Ranch Water District has assumed all responsibilities of both agencies with respect to sewage collection and compliance with the requirements of Order No. 96-04.

4. The Sanitary Sewer Overflow Report Form dated May 9, 1996, appended to the Monitoring and Reporting Program for Sanitary Sewer Overflows, contains errors that have resulted in reporting inconsistencies in the past. Additionally, experience using the form has indicated that additional information regarding sanitary sewer overflows should be included to facilitate the initial assessment by the Regional Board of the impacts or possible impacts of sanitary sewer overflows on waters of the State. Use of the revised form, dated June 13, 2001, will correct these deficiencies.

5. Amendment of the list of Sewage Collection Agencies in Finding No. 1 of Order No. 96-04 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) because it involves a change in the organization of local governmental entities, in accordance with Section 15320, Chapter 3, Title 14, California Administrative Code. Replacement of the Sanitary Sewer Overflow Report Form dated May 9, 1996 by a revised version dated June 13, 2001 is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) because it involves changes to the sanitary sewer overflow reporting requirements for local governmental entities. The amended reporting form will aid the Regional Board in determining the effects of sanitary sewer overflows to the environment, and therefore is in accordance with Section 15308, Chapter 3, Title 14, California Administrative Code.

6. The Regional Board has notified the Sewage Collection Agencies identified in Order No. 96-04 and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

7. The Regional Board has, at a public meeting on June 13, 2001 held or provided an opportunity for a public hearing, and heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

1. Finding No. 1 of Order No. 96-04 is amended to delete the Los Alisos Water District from the list of entities identified as being subject to regulation under Order No. 96-04.

2. The Sanitary Sewer Overflow Report Form dated May 9, 1996, as attached to Monitoring and Reporting Program No. 96-04, is superceded by the Sanitary Sewer Overflow Report Form dated June 13, 2001 attached to this addendum.

3. All references to Sanitary Sewer Overflow Report Form in Order No. 96-04 and addenda thereto shall henceforth refer to the Sanitary Sewer Overflow Report Form dated June 13, 2001 attached to this addendum.

4. The required fields for each record provided in the Sanitary Sewer Overflow Quarterly Summary Report, as specified in Section C.1 of Monitoring and Reporting Program No. 96-04, shall henceforth refer to the document entitled, "Required Fields for Order No. 96-04 Quarterly Summary Report," attached to this addendum.

I, John H. Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on June 13, 2001.

JOHN H. ROBERTUS
Executive Officer

Attachment 2

Monitoring and Reporting Program

OVERFLOW REPORTING REQUIREMENTS

	RWQCB notification by telephone, voice mail, or FAX within 24 hours	RWQCB Sanitary Sewer Overflow Report Form	OES notification	San Diego County Department of Health Services notification	RWQCB monthly summary report (by Owner)
Overflows resulting in a discharge of greater than 1,000 gallons to surface waters	yes	yes	yes	yes	yes
Overflows that do not result in a discharge to surface waters or are less than 1,000 gallons	no	no	no	no	yes
Overflows which negatively impact surface waters regardless of volume	yes	yes	yes	yes	yes

Note: A pump station incident which results in the contained flooding of a temporary storage structure or station compound (such as at the Buena Vista or Agua Hedionda Pump Station) or a contained surcharge (such as may occur at the Shadowridge Water Reclamation Plant) is not considered a overflow and is, therefore, not considered within the scope of this document.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

MONITORING AND REPORTING PROGRAM No.96-04

SANITARY SEWER OVERFLOW REPORTING PROCEDURES
FOR
SEWAGE COLLECTION AGENCIES

A. MONITORING PROVISIONS

1. Monitoring results must be reported on discharge monitoring report forms approved by the Executive Officer.

2. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer

3. Records of monitoring information shall include:

   (a) The date, exact place, and time of sampling or measurements;
   (b) The individual(s) who performed the sampling or measurements;
   (c) The date(s) analyses were performed;
   (d) The individual(s) who performed the analyses;
   (e) The analytical techniques or method used; and
   (f) The results of such analyses.

4. All monitoring instruments and devices which are used by the discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy.

5. The monitoring reports shall be signed by an authorized person as required by Reporting and Record Keeping Requirement C.7.

B. SANITARY SEWER OVERFLOW REPORTING

1. All dischargers of sewage that occur from the discharger's sanitary sewer system at any point upstream of the sewage treatment plant shall be reported to the Regional Board. A sanitary sewer overflow is any discharge from a sanitary sewer system at any point upstream of the sewage treatment plant. For the purpose of this Order, surface waters include Waters of the United States as defined in 40 CFR 122.2 such as navigable waters, rivers, streams (including ephemeral streams), lakes, playa lakes, natural ponds, bays, the Pacific Ocean, lagoons, estuaries, man-made canals, ditches, dry arroyos, mudflats, sandflats, wet meadows, wetlands, swamps, marshes, sloughs and water courses. Sanitary sewer overflows to storm drains tributary to Waters of the United States shall be reported as discharges to surface waters.

2. If the sanitary sewer overflow event results in a discharge of 1,000 gallons or more to surface waters the discharger shall:

   a) Report the sanitary sewer overflow event to the Regional Board by telephone, by voice mail, or by FAX within 24 hours from the time that 1) discharger has knowledge of the sanitary sewage overflow, 2) notification is possible, and 3) notification can be provided without substantially impeding cleanup or other emergency measures. Regional Board office hours are between the hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, excluding state holidays. Regional Board voice mail and Fax machine are on-line 24 hours a day, 7 days a week.

   b) The information reported to the Regional Board in the initial telephone or FAX report shall include the name and phone number of the person reporting the sanitary sewer overflow, the responsible sanitary sewer system agency, the estimated total sewer overflow volume, the location, the receiving waters, whether or not the sewer overflow is still occurring at the time of the report, and confirmation that the local health services agency was or will be notified as required under the reporting requirements of the local health services agency.

c) Report the sanitary sewer overflow to the Office of Emergency Services (OES) in accordance with California Water Code Section 13271.

Office of Emergency Services
Phone (800) 825-7550
Use the Fax for follow-up only.
Fax (916) 262-1677

d) Complete the attached sanitary sewer overflow report form.

e) Submit the completed sanitary sewer overflow report form along with additional correspondence to the Regional Board no later than 5 days following the starting date of the sanitary sewer overflow. Additional correspondence and follow-up reports should be submitted, as necessary, to supplement the Sanitary Sewer Overflow Report Form to provide detailed information on cause, response, adverse effects, corrective actions, preventative measures, or other information.

f) Enter the data on a computer disk in the format described below for submission to the Regional Board at the end of the quarter.

3. If the sanitary sewer overflow does not result in a discharge to surface waters or is less than 1,000 gallons in volume, the discharger shall:

a) Not be required to report the sanitary sewer overflow to the Regional Board by telephone, by voice mail, or by FAX within 24 hours.

b) Enter the data on a computer disk in the format described below for submission to the Regional Board at the end of the quarter.

C. SANITARY SEWER OVERFLOW QUARTERLY SUMMARY REPORTS

1. An IBM-PC DOS compatible floppy disk containing the data described below on all sanitary sewer overflows for the quarter shall be submitted quarterly with a certification statement described in Reporting and Record Keeping Requirement C.7 of Order 96-04. The disk shall be labeled with the discharger's name, Monitoring and Reporting Program No.96-04, the quarter, the year, and the software format. The disk

shall be 3 1/2 inch, double sided, high density formatted for 1.44 MB. The information submitted shall be fully compatible with Microsoft EXCEL version 5.0. In order to safeguard the integrity of the information submitted on disk against errors caused by accidental changes, all information should be write protected. This can be done with Microsoft EXCEL version 5.0 by choosing "Protection" from Tools Menu, and choosing "Protect Sheet". If more than one sheet is created, protect every sheet with the same password. Any form of data protection may be used which will allow Regional Board staff to open the file and copy the data to a new file. This procedure will safeguard the integrity of information submitted on computer disk to the Regional Board. An EXCEL template of the database will be supplied.

Each sanitary sewer overflow shall be reported in a separate record in the file. Nonnumeric Data shall be entered in capital and lower case letters.

The required fields for each record shall be as follows:

Field Number	DESCRIPTION	Excel Format Code	LENGTH
1.	Sanitary Sewer Overflow Sequential Tracking Number. This number shall be assigned by each sanitary sewer collection agency for each sanitary sewer overflow. The first 3 digits will represent the State fiscal year from July through June. The next 3 digits will represent a unique sequential number assigned to each overflow. The first overflow for each agency in the 1996-97 fiscal year will be number 967001. The second overflow for each agency in the 1996-97 fiscal year	General	6

Field Number	DESCRIPTION	Excel Format Code	LENGTH
	will be number 967002.		
2.	If reported, name of the Regional Board staff contact who was notified of the sanitary sewer overflow or one of the following terms: VOICE MAIL and PHONE NUMBER, OR FAX.	General	20
3.	If reported, date and time reported to the Regional Board by phone or FAX.(MM/DD/YY HH:MM in military or 24 hour time)	Date/Time	14
4.	Name of a contact at the responsible sewer agency who has more information on the sanitary sewer overflow.	General	20
5.	Phone number where responsible sewer agency contact can be reached. Enter the area code and seven digits without separating parentheses or dashes.((###)###-####)	Custom	10
6.	Name of responsible sewer agency.	General	30
7.	Sanitary sewer overflow start date and time, estimated if necessary.	Date/Time	14

Field Number	DESCRIPTION	Excel Format Code	LENGTH
	(MM/DD/YY HH:MM in military or 24 hour time)		
8.	Sanitary sewer overflow end date and time. (MM/DD/YY HH:MM in military or 24 hour time)	Date/Time	14
9.	Total sanitary sewer overflow volume from the overflow start time to the overflow end time. (gallons)	General	13
10.	Volume of sewage recovered by the discharger. (gallons)	General	13
11.	Sanitary Sewer Overflow Location-- Street Address	General	30
12.	Sanitary Sewer Overflow Location--City	General	16
13.	Sanitary Sewer Overflow Location--County SD for San Diego RV for Riverside OR for Orange	General	2
14.	Sanitary Sewer Overflow Location--Zip Code	General	9
15.	Sanitary Sewer Overflow	General	30

Field Number	DESCRIPTION	Excel Format Code	LENGTH
	Structure I.D. (Type of structure where overflow occurred or which caused overflow.)		
16.	Number of Sanitary Sewer Overflows at this location in the past 12 months running.	General	3
17.	Sanitary Sewer Overflow Cause-- Short Description Use one of the following terms: Roots, Grease, Line Break, Infiltration, Rocks, Debris, Blockage, Vandalism, Flood Damage, Manhole Failure, Pump Station Failure, Power Failure, Construction, Other.	General	20
18.	Sanitary Sewer Overflow Cause -- Detailed Description of the cause.	General	248
19.	Sanitary Sewer Overflow Correction -- Description of all preventive and corrective measures taken or planned.	General	248
20.	Did the Sanitary Sewer Overflow reach surface waters? (Y or N)	General	1
21.	Did the Sanitary Sewer	General	1

Field Number	DESCRIPTION	Excel Format Code	LENGTH
	Overflow enter a storm drain? (Y or N)		
22.	Name or description of the initial receiving water. The initial receiving water is the surface water body which the sewage reaches first. This initial receiving water is the first bay, ocean, downstream canyon, or blue line stream shown on a USGS topographic map for the area of the discharge. All water body names must be spelled out. Abbreviations are not acceptable. If the sewage went to a storm drain, enter the name of the water body downstream of the storm drain. (If none, enter none)	General	30
23.	Name or description of the secondary receiving water(s). The secondary receiving water is the surface water(s) which the sewage reaches after the initial receiving water. This secondary receiving water is the bay, ocean, downstream canyon, or blue line stream shown on a USGS topographic map which the sewage reaches after the initial receiving water. All water body names must be spelled out. Abbreviations are not	General	30

Field Number	DESCRIPTION	Excel Format Code	LENGTH
	acceptable. (If none, enter none)		
24.	If the sanitary sewer overflow did not reach surface waters, describe the final destination of the sewage.	General	30
25.	Was the local health services agency notified? (Y or N)	General	1
26.	If the overflow to surface water was greater than or equal to 1,000 gallons, was the Office of Emergency Services (OES) notified? (Y or N) (If not applicable, enter NA)	General	2
27.	Were signs posted to warn of contamination? (Y or N)	General	1
28.	How many days were the warning signs posted?	General	3
29.	Remarks	General	90

2. A statement certifying that there were no sanitary sewer overflows for the quarter and the certification statement described in Reporting and Record Keeping Requirement C.7 of Order 96-04 may be submitted in lieu of a floppy disk.

D. SANITARY SEWER OVERFLOW SUMMARY REPORT SCHEDULE

1. Sanitary Sewer Overflow Summary Reports and certification statements shall be submitted to the Executive Officer in accordance with the following schedule:

Reporting Frequency	Report Period	Report Due
Quarterly	January - March	April 30
	April - June	July 30
	July - September	October 30
	October - December	January 30

The first quarterly summary report will be due October 30, 1996, for July - September,1996. Reports will be due quarterly thereafter.

2. Monitoring and Reporting Program No. 96-04 is effective as of May 9, 1996.

Ordered by:_____
John Robertus
Executive Officer

Dated:May 9, 1996

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ADDENDUM NO. 5 TO ORDER NO. 96-04

GENERAL WASTE DISCHARGE REQUIREMENTS PROHIBITING SANITARY SEWER OVERFLOWS BY SEWAGE COLLECTION AGENCIES

The California Regional Water Quality Control Board, San Diego Region (hereinafter Regional Board), finds that:

1. Collection and conveyance of municipal wastewater in sanitary sewers entails the possibility of discharges of untreated or inadequately treated sewage as a result of overflows caused by pump failure, pipe rupture, flooding, blockage, and other reasonably foreseeable events. Discharges of untreated or inadequately treated sewage cause or threaten to cause conditions of pollution and nuisance. Such collection and conveyance is regulated by Order No. 96-04, *General Waste Discharge Requirements Prohibiting Sanitary Sewer Overflows by Sewage Collection Agencies.*

2. The Monitoring and Reporting Program associated with Order No. 96-04 contains an error which has caused confusion regarding the reporting requirements for certain sanitary sewage overflows and has resulted in some sewer agencies failing to report some overflows within the required time frames. Currently, the Monitoring and Reporting Program states that "if the sanitary sewer overflow event results in a discharge of 1,000 gallons or more to surface waters, the discharger shall: a) Report the overflow to the Regional Board by telephone, voice mail, or FAX within 24 hours .... e) Submit [a] completed sanitary sewer overflow form ... no later than 5 days from the start date of the sanitary sewer overflow." The intent of the Order, however, was to require sewer agencies to report all spills that are 1,000 gallons or more (regardless of destination) and all spills reaching surface waters (regardless of volume) within the 24-hour and 5-day time frames. This addendum reflects the intent of the Order.

3. This project involves a prohibition of discharge and as such is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.) in accordance with Section 15108, Chapter 3, Title 14, California Administrative Code.

4. The Regional Board has notified the Sewage Collection Agencies and all known interested parties of its intent to amend waste discharge requirements prohibiting sanitary sewer overflows.

5. The Regional Board has, at a public meeting on September 13, 2000 heard and considered all comments pertaining to the terms and conditions of this addendum.

IT IS HEREBY ORDERED, that:

Sections B.1, B.2 and B.3 of Monitoring and Reporting Program No. 96-04 are superseded by the following:

1. *24-Hour Reporting to the Regional Board*

If the sanitary sewer overflow event results in a discharge of 1,000 gallons or more, or results in a discharge to surface waters (any volume), the discharger shall:

Report the sanitary sewer overflow event to the Regional Board by any available means, including telephone, voice mail, or FAX, within 24 hours from the time that 1) discharger has knowledge of the sanitary sewage overflow, 2) notification is possible, and 3) notification can be provided without substantially impeding cleanup or other emergency measures. Notification may be made after normal business hours by leaving a message for the Regional Board on voice mail or FAX.

a) *For the purpose of this Order, surface waters include navigable waters, rivers, streams (including ephemeral streams), lakes, playa lakes, natural ponds, bays, the Pacific Ocean, lagoons, estuaries, man-made canals, ditches, dry arroyos, mudflats, sandflats, wet meadows, wetlands, swamps, marshes, sloughs and water courses, and storm drains tributary to surface waters. The term includes waters of the United States as used in the federal Clean Water Act (see 40 CFR 122.2)*

b) *The information reported to the Regional Board in the initial report shall include the name and phone number of the person reporting the sanitary sewer overflow, the responsible sanitary sewer system agency, the estimated total sewer overflow volume, the location, the receiving waters, whether or not the sewer overflow is still occurring at the time of the report, and confirmation that the local health services agency was or will be notified as required under the reporting requirements of the local health services agency.*

2. *Five-Day Reporting to the Regional Board*

If the sanitary sewer overflow event results in a discharge of 1,000 gallons or more, or results in a discharge to surface waters (any volume), the discharger shall:

Complete a copy of the Sanitary Sewer Overflow Form attached to Monitoring and Reporting Program No. 96-04, and submit the completed Sanitary Sewer Overflow Report form, along with any additional correspondence, to the Regional Board no later than 5 days following the starting date of the sanitary sewer overflow. Additional correspondence and follow-up reports should be submitted to the Regional Board, as necessary, to supplement the Sanitary Sewer Overflow Report

Form to provide detailed information on cause, response, adverse effects, corrective actions, preventative measures, or other information.

3. *Quarterly Reporting to the Regional Board*

For all sanitary sewer overflows, regardless of volume or final destination, the discharger shall:

Enter the data on a computer disk in the format described in Section C of Monitoring and Reporting Program No. 96-04 for submission to the Regional Board after the end of the quarter.

I, John Robertus, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an Addendum adopted by the California Regional Water Quality Control Board, San Diego Region, on September 13, 2000.

JOHN H. ROBERTUS
Executive Officer

Attachment 3

Incident Command System

INCIDENT COMMAND SYSTEM

1.1. Incident Commander

a. Assume primary management and coordination of all emergency actions;
b. Perform initial assessment of overflow and estimate potential for impact on receiving waters, public health and the environment;
c. Request assistance from other departments within the EWA: delegate responsibilities;
d. Request assistance from facility owner;
e. Request mutual aid from neighboring wastewater agencies;
f. Direct immediate overflow control and containment measures;
g. Communicate with the General Manager and Public Information Officer;
h. Oversee corrective work and cleanup activities;
i. Direct the posting of contaminated water warning signs;
j. Approve sampling program;
k. With authorization from the General Manager, approve expenditure of emergency response resources;
l. Provide official estimate of overflow volume.

1.2. Emergency Coordinator

a. Notify all necessary regulatory agencies and provide immediate overflow information;
b. Coordinate with responding agencies;
c. Notify owner;
d. Notify and coordinate outside contractors as necessary;
e. Coordinate field inspection of contractors activities;
f. Document, by photos, overflow and abatement activities;
g. Submit RWQCB Sanitary Sewer Overflow Report Form (attached);
h. Apprise RWQCB and San Diego County Department of Health Services (DHS) of sampling program.

1.3 Event recorder

a. Event times
b. Personnel on site
c. Arrival and departure times for all personnel
d. Equipment on site
e. Milestone events
f. Discharge stream linear and velocity measurements
g. Arrival times of outside resources
h. Regulatory agencies on site
i. Recovery volume estimates

1.4 Public Information Officer

a. Coordinate all media and public information communications;
b. Report to the Incident Commander for status reports on overflow abatement activities;

c. Provide the General Manager with timely status reports, regarding media coverage and public information releases.

1.5 Technical Support Officer

a. Direct flow quantification efforts;
b. Notify Laboratory Supervisor of location, possible duration and potential impact of overflow;
c. Coordinate recovery equipment placement and operation;
d. Provide technical consultation for emergency repairs and materials;
e. Provide technical assistance in assessing damage to facilities;
f. Direct sampling program;
g. Recommend expenditure of emergency response resources as required.

1.6 Mitigation and Remediation Team Leader

a. Mobilize field crew and equipment for overflow abatement activities;
b. Designate primary and secondary field crew chiefs;
c. Secure utilities that present a hazard, e.g. electricity, gas etc.;
d. Dike and contain overflow area as required;
e. Supervise site security as needed.

1.7 Logistics Officer

a. Provide technical support for mitigation and remediation teams;
b. Provide support personnel and equipment as required during mitigation and remediation effort;
c. Provide as-built drawings of all facilities;
d. Contact outside contractors and arrange for the delivery of any necessary rental equipment (recovery pumps, generators, lighting etc.);
e. Manage security at remote facility, overflow site and quarantine area.

1.8 Laboratory Supervisor

a. Mobilize the EWA laboratory staff for monitoring of receiving waters;
b. Develop sampling regimen including sampling sites, frequency, types, receiving water background Coliform levels, staffing requirements, safety issues etc.;
c. Coordinate flow data collection from the EWA centralized flow monitoring system;
d. Coordinate the sampling regimen with the RWQCB, San Diego County Department of Health Services and California Fish and Game Department;
e. Coordinate posting of the quarantine area with contaminated water signs;
f. Verify all laboratory reports;
g. Develop and distribute summary report;
h. Arrange outside sampling assistance for long duration overflow events.

1.9 Safety Officer

a. Chronologically document safety related events during the overflow;
b. Provide safety related consultation to Incident Commander, Emergency Coordinator and Mitigation Team Leader;
c. Recommend expenditure of safety related emergency response resources;
d. Oversee the proper use of personal protective equipment.

1.10 Mitigation Team

a. Secure overflow;
b. Take necessary steps to protect pump station from damage which may result from rising water levels;
c. Construct temporary containment as necessary to protect receiving waters.

1.11 Remediation Team

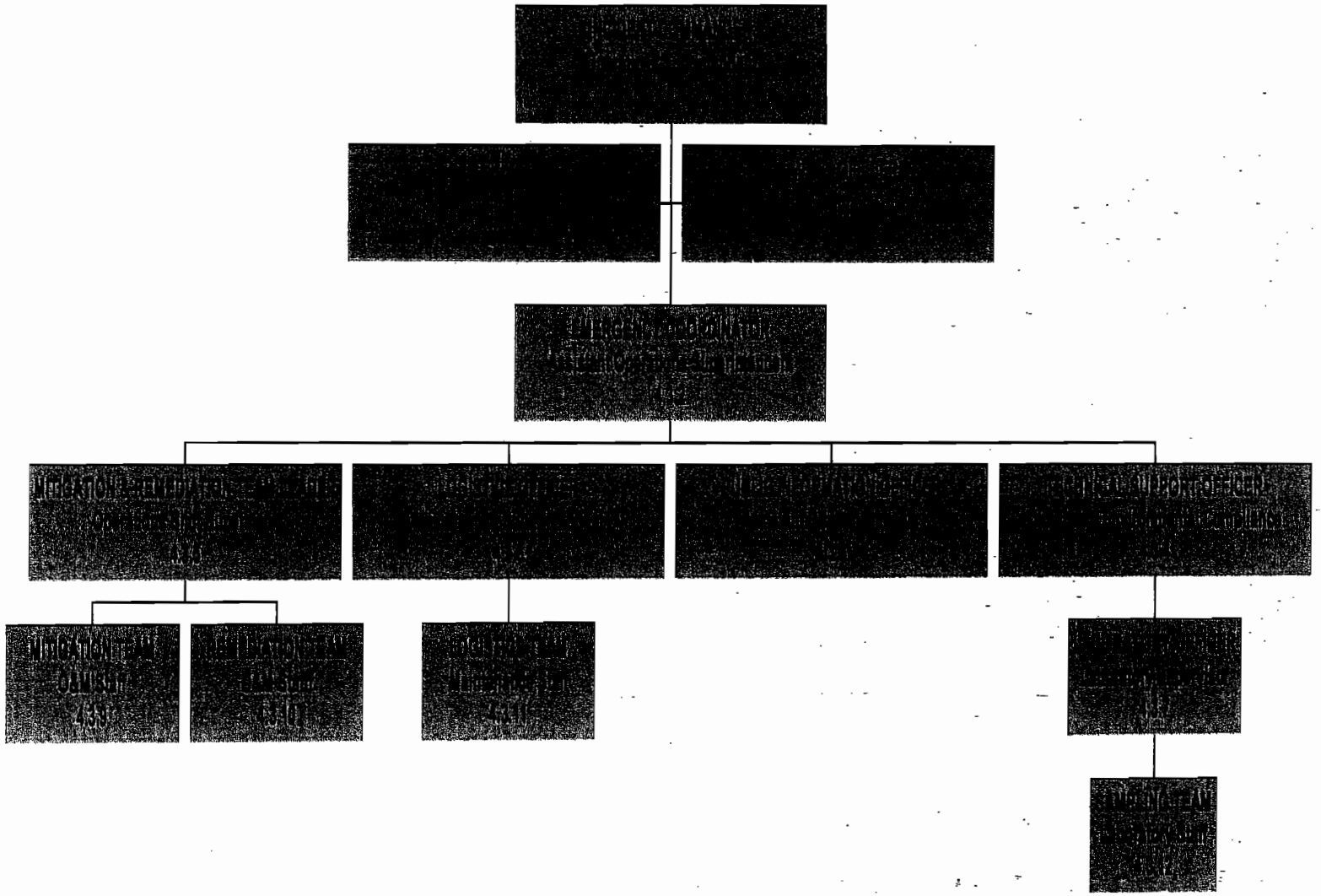
a. Make emergency pump station or plant repairs as necessary to ensure that the overflow is secured;
b. Construct temporary containment as necessary to protect receiving waters;
c. Set-up and operate recovery pumping systems.

1.12 Logistics Team

a. Provide equipment to the Mitigation and Remediation Teams as requested;
b. Provide all safety equipment as needed by Mitigation and Remediation teams and as directed by the Safety Officer;
c. Provide contaminated water warning signs to the Sampling or Remediation teams;
d. Provide food and drink to personnel at the remote facility as required;
e. Assess equipment availability from facility owner;
f. Assist with site security as required.

1.13 Sampling team

a. Assist in contaminated water sign posting of the overflow and quarantine sites; collect overflow site and quarantine area samples as directed by the Laboratory Officer.



Attachment 4

GSP11 – EMERGENCY PHONE DIRECTORY

ENCINA WASTEWATER AUTHORITY (EWA)

OPERATIONS DIVISION
GENERAL SAFETY PRACTICE NO. 11
GSP 11

Ref: ops/other/Emergency Phone Directory

DATE: **January 2007**
SUBJECT: **Encina Phone Directory**

1.0 PURPOSE:

This directory is provided to EWA Staff as a quick reference for contacting support services, regulatory

2.0 GENERAL:

2.1 This document is to be reviewed, updated and distributed annually.
2.2 Dial 911 for all life threatning situations
2.3 At the Shadowridge Water Reclamation Plant and the Buena Pump Station you must dial 9 to obtain an outside line
2.4 **THIS DIRECTORY IS NOT FOR DISTRIBUTION OUTSIDE OF EWA FACILITIES.**

A		
(APCD) Air Pollution Control District (Compliance Division)		858-650-4550
Ag-Tech Sludge Hauler Jim Donley		928-341-9625
	Cell	928.941-6398
(APCD) Air Pollution Control District (County)		858-650-4700
Agua Hedionda Pump Station	0 Cannon Rd., NW Hwy 5, Carlsbad, CA 92008	760-729-2765
Electric Power - SDG&E		800-411-7343
Water - City of Carlsbad		760-438-2722
Alarms and Telephone - Pacific Bell Repair Service		800-576-3484
Alarms Circuit ID Number 86YGQQ000003-001PT		
Account Number 760-729-6076-008-S4		
SDG&E Account #4973312055		
Allan, Scott, Operator		951-694-0349
	Cell:	951-852-6864
American Occupational Medicine AOM (injury or illness):		760-929-8269
B		
Bantegui, George, Operator		951-304-9631
	Cell:	760-224-4859
Basinski, Nick, Industrial Waste Control Inspector		619-299-3379
	Cell:	760-801-9106
Benjamin, Brian, Shift Supervisor Operations		760-591-9330
	Cell:	760-803-3701
Biggs, Debbie,Environmental Compliance Manager		619-660-7815
	Cell:	760-801-9116
Bonghi, Bill, Operator		949-498-3281
	Cell:	949-292-8438
Bollinger, Chuck, Shift Supervisor Operations		909-677-0840
Buena Creek Pump Station	10 Sycamore Avenue, Vista, CA 92083	760-727-5901
Electrical Power - SDG&E		800-411-7343
Vista Irrigation District		760-806-3120
Alarms And Telephone - Pacific Bell Repair Service		800-332-1321
Alarm Circuit ID Number 87YGQQ000018-001PT		
Account Number 338 371-2236 891 S 9164		
R.P.S. SDG&E Account #1990103806		
Buena Sanitation District		760-726-1340

Buena Vista Pump Station -	2140 Jefferson Avenue, Carlsbad, CA 92008	760-729-6076
Electrical Power - SDG&E		800-411-7343
Water - City of Carlsbad		760-438-2722
Alarms And Telephone - Pacific Bell Repair Service		800-332-1321
Alarm Circuit ID Number 86YGQQ000004-001PT		
Account Number 760-729-6076-008-S6		
SDG&E Acount #16554258		
C		
CAL/OSHA		619-767-2280
California Fish and Game Department		858-467-4201
Camarillo, Joel		858-922-7622
Campbell, Doug, Laboratory Supervisor		858-674-9642
	cell:	760-801-9118
Campos, Luis, Operator		760-434-5582
Carlsbad Municipal Water District		760-438-2722
off hours emergency	Police Dispatch (off hours emergency)	760-931-2197
Carollo Engineers (Engineering)		858-505-1020
	FAX:	858-505-1015
Casados, Eugene, Operator		858-673-9808
CHEMTREC (Chemical Emergencies)		800-424-9300
Cipollini, Joe, Operator		760-451-0939
City of Carlsbad (Police Dispatch)		760-931-2131
City of Encinitas		760-753-6203
City of Oceanside		760-435-5842
San Luis Rey Treatment Plant		760-966-4875
off hours emergency		760-966-4905
City of Vista		760-726-1340
Salano, George, Supervisor		760-726-1340 x1661
Feeney, Lisa, Office Specialist		760-726-1340 x1662
Mendoza, Carlos, Senior Civil Engineer		760-726-1340 x1323
(off hours emergency (Rancho Dispatch)		858-756-3006
Clowar, Paula, Support Specialist		760-729-5503
Coastal Commission (State)		619-521-8036
Cochrane, Randy, Mechanical Technician		760-726-6005
Construction: Filanc Co.		760-941-7130
Emergency Pager		619-960-1415
Contracting:		
Contractors Equipment Company (Nations Equipment)		760-741-9272
Don Hubbard Contracting Company		760-736-3241
CYTEC Industries Inc. (BFP Polymer)		800-438-5615
D		
Dale, Bruce, Assistant Superintendent Operations		760-731-2613
	Cell:	760-801-9110
Deleonardis, Fran, Shift Supervisor Operations		760-967-4901
Department of Fish & Game (State)		858-467-4201
Department of Health Services (Environmental Branch)		510-540-3210
Diving (C&W Diving Services, Inc.)		619-474-2700
	FAX:	619-477-2700
Don Hubbard Contracting Company		760-736-3241
Duvel, Charlie, Shift Supervisor Operations		760-510-2032
E		
EPA (US Public Information Center)		415-744-1500
Eaton/Cuttler Hammer (Electric Parts Supply, Jay Pussman)		909-869-8260
Einerston, Mitch, Mechanical Technition		760-758-4122
El Camino Rental		760-436-4131
Elder, Jim, Maintenance Supervisor		858-748-1921
	Cell:	760-801-9114
Encina WPCF - 6200 Avenida Encinas, Carlsbad, CA 92009		760-438-3941
Voice mail direct		760-438-3756
Shadowridge W.R.P.		760-727-0801
Agua Hedionda Pump Station		760-729-2765
Buena Vista Pump Station		760-729-6076
Buena Pump Station		760-727-5901
Shadowridge Pump Station		760-727-5901

Encinitas (City of Encinitas)		760-753-6203
San Elijo Water Pollution Control Facility - Encinitas		760-753-6203
Engineering:		
Carollo Engineers		858-505-1020
	FAX:	858-505-1015
Lee & Ro		858-558-4411
	FAX:	858-558-9522
Malcolm Pirnie		760-602-3800
	FAX:	760-602-3838
U.S. Army Corp of Engineers		858-674-5385
Wilson Engineering		760-438-4422
	FAX:	760-438-0173
English, James, Mechanical Technician		760-724-6734
Environmental Health Services (County of San Diego)		619-338-2222
Escondido Wastewater Treatment Plant		760-741-4626
Hale Avenue Reclamation Plant		
F		
Fairbanks Ranch Water Reclamation Facility		858-756-3301
Fallbrook Plant #1		760-723-5640
Main Office		760-728-1125
Plant #2		760-728-1714
Ferric:		
Kem Iron		800-321-4922
Fetu, John, Maintenance Planner		951-600-4465
	cell:	760-802-4300
Filance Construction Company		760-941-7130
Fish & Game (Department of Fish & Game) (State)		858-467-4201
Fish and Wildlife		800-344-9453
Fuel:		
Plavin Petroleum		760-745-6922
Furr, Carl, Cogeneration Specialist		760-433-0117
G		
Gafner Water Reclamation Plant - Leucadia County Water District		760-753-0155
H		
Hanson Aggregates		760-729-2010
Hardy, Kevin, Assitant General Manager		760-431-8779
	Cell:	760-801-9111
Have, Eric, Inventory Control Technician		760-726-2473
Hayhurst, Scott, Electrical Instrumentation Specialist		760-594-0648
Health Services:		
San Diego County Department of Health Services		619-338-2284
Hogan, Mike, General Manager		858-481-6555
	Cell:	760-801-9112
J		
Jardin, John, Operations Superintendant		760-724-0223
	Cell:	760-801-9113
Jovenal.Yani, Electrical Instrumentation Technician		858-484-9787
K		
Kem Iron (Ferric)		800-321-4922
Kearns, James, Mechanical Technician		760-439-9788
Knight Security		760-745-3604
L		
Larson,Duane,Facility Engineer		760-438-2310
	Cell:	760-272-9449
La Salina Plant - Oceanside		760-966-4870
Law, Justin, Assistant Chemist		760-720-5327
Leads, Jeff, Safety Officer		760-727-2325
	Cell:	760-801-9108
Lee & Ro (Engineering)		858-558-4411
	FAX:	858-558-9522
Leucadia Waste Water District		760-753-0155
Gafner Water Reclamation Plant		760-753-0155
Lifeguard Service		760-438-2675
M		
Madrigal, Jaime, Operator		760-591-3907

Manges, Alan, Shift Supervisor Operations		760-967-1147
Mattern, James, Operator		760-839-3873
McHorney, Kathy, Director of Finance		760-268-8867
	cell:	619-913-8039
Meadowlark Plant - Vallecitos		760-744-4550
Medical Emergency		
Tri-City Hospital		**760-724-8411**
Emergency		**911**
Miller, Teva, Operator		909-696-5264
Montalvo, Angie, Support Specialist		760-724-9403
Montanez, Louie (City of Carlsbad)		760-438-2722 x7137
Pager		760-293-3754
Standby Phone		760-202-2247
N		
Neff, Ray, Mechanical Technician		760-720-1884
	Cell:	760-845-7199
North County Coring Services		760-727-4818
Navarrette, Octavio, Operator		619-426-6137
O		
Oceanside (City of Oceanside)		760-435-5842
La Salina Plant		760-272-9449
San Luis Rey Treatment Plant		760-966-4875
off hours emergency		760-966-4905
Office of Emergency Services		916-262-1816
	FAX:	916-262-2837
Office of Operator Certification		
State Water Resources Control Board		916-227-4300
Operations Days	Cell:	760-801-9109
Operations Nights	Cell:	760-801-9120
P		
Parker, Gary, Systems Supervisor		619-460-3446
	Cell:	760-801-9117
Paving:		
Capitol Paving		760-941-2772
Plavin Petroleum, Escondido		760-745-6922
Polymer:		
Polydyne Inc. (DAF & BFP Polymer)		800-848-7659
R		
Raceway Pumping Station	Alarm Circuit ID # 87XRFS000003-001PT	
Rancho Santa Fe Water District		858-756-2257
Regional Water Quality Control Board		858-467-2952
	FAX:	858-571-6972
Remote 1	Cell:	760-801-9104
Remote II	Cell:	760-802-4997
Remote Maintenance	Cell:	760-801-9107
Rental:		
El Camino Rental		760-436-4131
Rockwell Electric		760-489-6767
S		
Sallay, Joe, Operator		760-945-3725
Sanchez, Haladeo	Cell:	951-760-5821
San Diego County Department of Health Services		619-338-2284
San Diego Gas & Electric		
24 Hour Trouble:		800-411-7343
Plant Security:		760-438-2431
Guard Shack:		760-268-4000
Control Center:		760-268-4000
Operations Supervisor:		760-268-4000
San Diego Gas & Electric Power Plant		760-268-4000
Control Room:		760-438-9100
Control Room:		760-438-4213
San Elijo Water Pollution Control Facility (Encinitas/Solana Beach)		760-753-6203
San Luis Rey Plant - Oceanside		760-966-4875
Scibilia, Chris, Operator		760-519-1252
Shadowridge W.R.P. - 2525 Lupine Hills Drive, Vista, CA 92083		760-727-0801
Pacific Bell		760-727-0801

SRWRP cont.	San Diego Gas & Electric		800-411-7343
	Electric Power		800-411-7343
	Water (Vista Irrigation District)		760-806-3120
	VID Night duty operator		760-806-3100
	Alarm Circuit ID number 87YGQQ000019-001PT		760-745-3604
	SDG&E Account #5365103809		
Shadowridge Security (Knight Security Service)			760-745-3604
Shook, David, Mechanical Technician			858-486-8180
Salano, George (City of Vista)			760-726-1340 x1661
Smith, Kevin, Mechanical Technician			760-889-4579
		Cell:	760-532-8616
Spangler, Stacey, Industrial Waste Control Inspector			760-889-4579
		Cell:	760-801-9103
Stand-By		Cell:	760-801-9119
Stand-By 2		Cell:	760-802-5930
State of California Lifeguard Service			760-438-2675
State Water Resources Control Board			916-341-5250
State Water Resources Control Board, Office of Operator Certification			916-341-5639
Stoecker, Jeff (LCWD)			760-632-0217
Pager			760-966-9310
Steinlicht, Michael	Maintenance Superintendent		760-798-1537
		Cell:	760-801-9102
Sunrise Materials, Vista			760-726-9984
T			
Tri-City Hospital			**760-724-8411**
Emergency			**911**
U			
Ummel, David, Systems Technician			951-302-3740
		Cell:	760-801-9105
Urabe, Lisa, Source Control			858-483-8059
		Cell:	760-801-9115
U.S. Army Corp of Engineers			858-674-5385
U.S. Environmental Protection Agency Region IX - San Francisco			415-744-1500
U.S. Fish and Wildlife			800-344-9453
V			
Vallecitos Water District			760-744-0460
Vista (City of Vista)			760-726-1340
(off hours, emergency (Rancho Dispatch)			858-756-3006
Vista Irrigation District			760-806-3120
W			
Waste Management (Grit Hauler)		Office:	760-439-2824
		Pager:	760-293-3801
Water Resources Control Board			916-341-5250
Wenske, Ireneusz, Operator			619-522-6710
Whispering Palms			619-756-4909
Wichman, Brad, Operator			760-471-9539
Wilson Engineering			760-438-4422
		FAX:	760-438-0173
Willi,Rachael, Lab Technician			619-972-7178
Warchol, Leeann, Purchasing Specialist			619-788-8816
		Cell:	619-788-8816
Wasko, Don, City of Carlsbad Public Works Supervisor		Cell:	760-802-4756

Subject: Department of Health Services (DHS), Preharvest Shellfish Unit

Date: November 30, 2006

RE: DHS contact numbers to report sewage upsets affecting shellfish growing area in Aqua Hedionda Lagoon

The following is a current list of persons to contact in case of a sewage or toxic release to surface waters in the Aqua Hedionda Lagoon watershed. The purpose of notifying the DHS, Preharvest shellfish unit staff is to prevent the harvest of shellfish for human consumption during times when shellfish may be contaminated by sewage or other toxic substances.

Notification of the shellfish operator, Carlsbad Aquafarm, should be made immediately. Carlsbad Aquafarm can be reached at (760) 438-2444 (John Davis, cell (760) 802-3178) or (760) 438-3568 (fax). DHS staff should be subsequently notified as soon as possible after notification of Carlsbad Aquafarm is first made. Please note that at any time individual staff may be in the field or otherwise unavailable for consultation in the event of a spill, in which case the caller should attempt to contact another staff member in the order given.

Your cooperation is appreciated.

1) Mark Commandatore:
(510) 412-4631 (work); (510) 750-2556 (cell); (510) 486-2889 (home)

2) Gregg Langlois (510) 412-4635 (work); (916) 819-0984 (page); (925) 937-9298 (home); (510) 750-2554 (cell)

3) Jill Baltan (510) 412-4633

4) Shellfish grower information line: After hours: (510) 412-4644

Attachment 5

Forms

ENCINA WASTEWATER AUTHORITY

OVERFLOW EVENTS RECORD

DATE: _____ TIME: _____ AM/PM

COMPLETED BY: _____

SPILL LOCATION: _____ TIME OF FAILURE: _____

TYPE OF FAILURE: _____

_____

_____

DISCHARGE TIME: START: _____ STOP: _____ DURATION: _____

DISCHARGE FLOW (calculate using linear and velocity measurements): _____

ESTIMATED OVERFLOW VOLUME: _____

PERSONNEL ON SITE: NAME:	AGENCY:	ARRIVAL TIME:	DEPARTURE TIME:

RECOVERY EQUIPMENT ON SITE: _____

_____

_____

RECOVERY TIME: START: _____ STOP: _____ DURATION: _____

PHOTO AND/OR VIDEO DOCUMENTATION:

NAME: _____ AGENCY: _____

ENCINA WATER POLLUTION CONTROL FACILITIES
WASTEWATER SPILL QUARANTINE REPORT

DATE: _____ TIME: _____ AM/PM

COMPLETED BY: _____

SPILL LOCATION: _____

QUARANTINE AREA: _____

LOCATION OF WARNING SIGNS:

NOTE: SIGN PLACEMENT AT THE SPILL SITE AND QUARANTINE AREA SHALL BE AT A MINIMUM INTERVALS OF EVERY 50 FT. AND/OR AS NECESSARY TO REASONABLY WARN THE PUBLIC.

SPILL SITE: _____

SPILL SITE SIGN REPLACEMENT: _____

QUARANTINE AREA: _____

QUARANTINE AREA SIGN REPLACEMENT: _____

_____

_____

C O M M E N T S:

_____

_____

_____

_____

_____

_____

_____

*THIS REPORT IS TO BE MAINTAINED AS A PERMANENT RECORD

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

SANITARY SEWER OVERFLOW REPORT FORM

06/13/2001

ALL ITEMS ARE REQUIRED TO BE ADDRESSED.

1. THIS REPORT IS (CIRCLE ONE): PRELIMINARY FINAL REVISED FINAL

2. SANITARY SEWER OVERFLOW SEQUENTIAL TRACKING NUMBER: _ _ _ _ _ _ _ _ _

3. REPORTED TO: _
(ENTER FAX, VOICE MAIL, OR NAME OF REGIONAL BOARD STAFF)

4. DATE REPORTED: _ _ _ /_ _ _ /_ _ _ (MM/DD/YY)

   TIME REPORTED: _ _ _ : _ _ _ (MILITARY OR 24 HOUR TIME)

5. REPORTED BY: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

6. PHONE: (_ _ _) _ _ _ - _ _ _ _

7. REPORTING SEWER AGENCY: _

8. RESPONSIBLE SEWER AGENCY: _

9. OVERFLOW START: DATE: _ _ _ /_ _ _ /_ _ _ (MM/DD/YY)

   TIME: _ _ _ : _ _ _ (MILITARY OR 24 HOUR TIME)

10. OVERFLOW END: DATE: _ _ _ /_ _ _ /_ _ _ (MM/DD/YY)

    TIME: _ _ _ : _ _ _ (MILITARY OR 24 HOUR TIME)

11. ESTIMATED OVERFLOW FLOW RATE: _ _ _ _ _ _ _ _ _ (GALLONS PER MINUTE)

12. TOTAL OVERFLOW VOLUME: _ _ _ _ _ _ _ _ _ (GALLONS)

13. OVERFLOW VOLUME RECOVERED: _ _ _ _ _ _ _ _ _ (GALLONS)

14. OVERFLOW VOLUME RELEASED TO ENVIRONMENT: _ _ _ _ _ _ _ _ _ (GALLONS)

SANITARY SEWER OVERFLOW LOCATION AND DESCRIPTION:

15. STREET: _

    CITY: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ ZIP CODE: _ _ _ _ _ _ _ _ _

16. COUNTY: _ _ (SD, RI, OR)

17. SANITARY SEWER OVERFLOW STRUCTURE I.D.:

_ _

18. NUMBER OF OVERFLOWS WITHIN 1000 FT. OF THIS LOCATION IN PAST 12 MONTHS _ _ _

19. DATES OF OVERFLOWS WITHIN 1000 FT OF THIS LOCATION IN PAST 12 MONTHS

_ _

20. OVERFLOW CAUSE --SHORT DESCRIPTION -- CIRCLE ONE

ROOTS	GREASE	LINE BREAK	INFILTRATION
ROCKS	BLOCKAGE	POWER FAILURE	PUMP STATION FAILURE
DEBRIS	VANDALISM	FLOOD DAMAGE	MANHOLE FAILURE
OTHER	UNKNOWN	CONSTRUCTION	PRIVATE PROPERTY

21. OVERFLOW CAUSE -- DETAILED DESCRIPTION OF CAUSE

_ _

_ _

_ _

_ _

_ _

22. SANITARY SEWER OVERFLOW CORRECTION -- DESCRIPTION OF ALL PREVENTATIVE AND CORRECTIVE MEASURES TAKEN OR PLANNED.

_ _

_ _

_ _

_ _

_ _

23. WAS THERE MEASURABLE PRECIPITATION DURING 72-HOUR PERIOD PRIOR TO THE OVERFLOW? _ _ (Y OR N)

INITIAL AND SECONDARY RECEIVING WATERS:

24. DID THE SANITARY SEWER OVERFLOW ENTER A STORM DRAIN? _ _ (Y OR N)

25. DID THE SANITARY SEWER OVERFLOW REACH SURFACE WATERS OTHER THAN A STORM DRAIN? _ _ (Y OR N)

26. NAME OR DESCRIPTION OF INITIAL RECEIVING WATERS. (IF NONE, TYPE NONE)

_ _

27. NAME OR DESCRIPTION OF SECONDARY RECEIVING WATERS. (IF NONE, TYPE NONE)

_ _

28. IF THE SANITARY SEWER OVERFLOW DID NOT REACH SURFACE WATERS, DESCRIBE THE FINAL DESTINATION OF SEWAGE.

_ _

NOTIFICATION:

29. WAS THE LOCAL HEALTH SERVICES AGENCY NOTIFIED? _ _ (Y OR N)

30. IF THE OVERFLOW WAS OVER 1,000 GALLONS, WAS THE OFFICE OF EMERGENCY SERVICES (OES) NOTIFIED? _ _ (Y or N) (NOT APPLICABLE, ENTER NA)

AFFECTED AREA POSTING:

31. WERE SIGNS POSTED TO WARN OF CONTAMINATION? _ _ (Y OR N)

32. LOCATION OF POSTING (IF POSTED): _

33. HOW MANY DAYS WERE THE WARNING SIGNS POSTED? _ _ _

34. REMARKS:

_ _

_ _

_____

_____

_____

_____

NOTES:

1) FOR DESCRIPTIONS AND CLARIFICATIONS OF ALL ITEMS ON THIS FORM, REFER TO ORDER NO. 96-04 AS AMENDED, INCLUDING THE DOCUMENT ENTITLED, "REQUIRED FIELDS FOR ORDER NO. 96-04 QUARTERLY SUMMARY REPORT."
2) IF THE SANITARY SEWER OVERFLOW EVENT RESULTS IN A DISCHARGE OF 1,000 GALLONS OR MORE, OR IN A DISCHARGE TO SURFACE WATERS, THIS FORM MUST BE RECEIVED BY THE REGIONAL BOARD NO LATER THAN FIVE DAYS AFTER THE OVERFLOW START DATE.

The following certification must be completed with the five-day notice:

I swear under penalty of perjury that the information submitted in this document is true and correct. I certify under penalty of perjury that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

_____
Signature

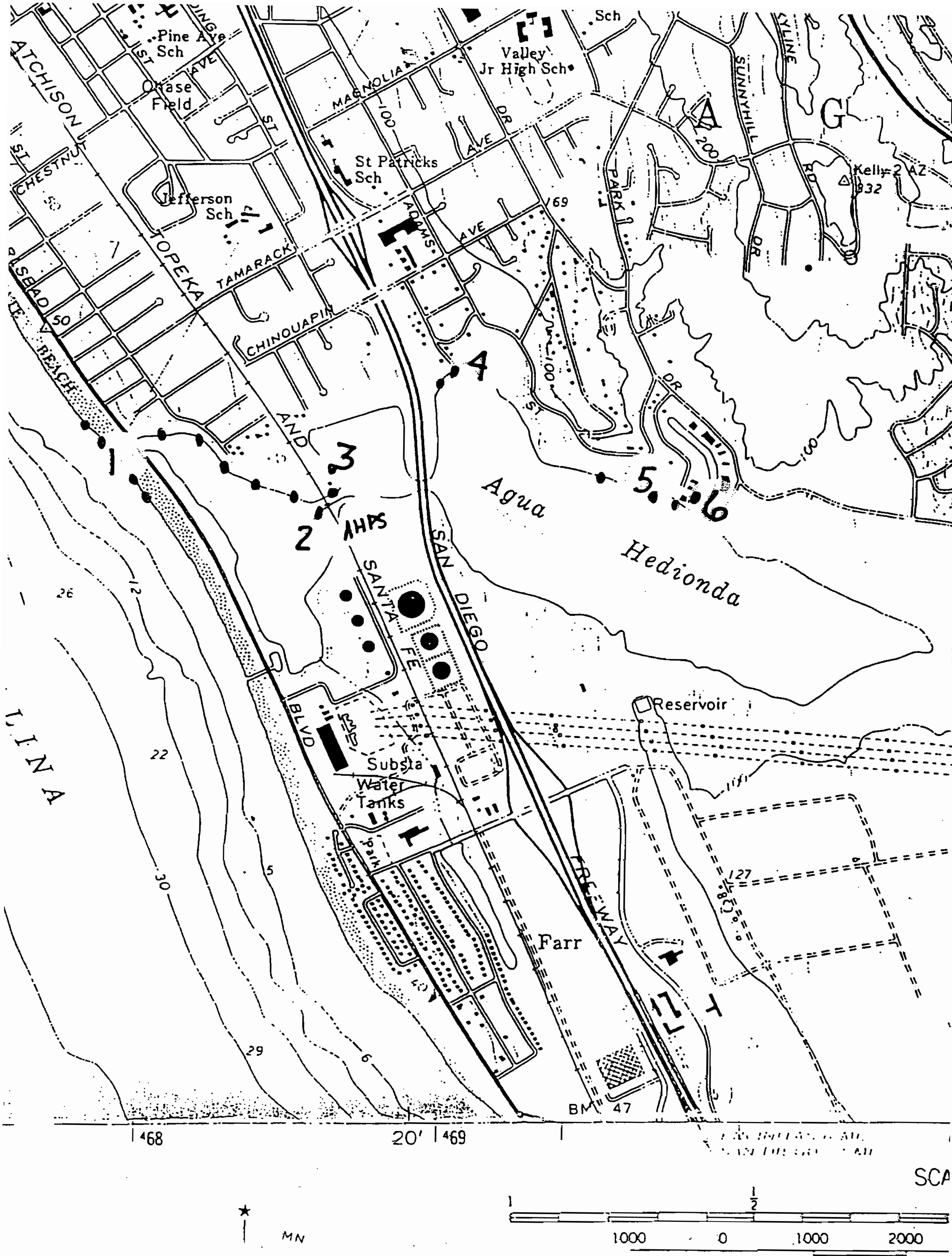
_____
Name

_____
Title

_____
Date

Attachment 6

Sample Location Map – Agua Hedionda


Pine Ave Sch
Valley Jr High Sch
Sch
ATCHISON
Chase Field
MAGNOLIA
AVE
ST
CHESTNUT
St Patricks Sch
Jefferson Sch
TOPEKA
TAMARACK
AVE
ADAMS
PARK
SUNNYHILL
DR
RD
Kelly 2 AZ
332
A
G
CHINQUAPIN
BEACH
AND
SANTA FE
SAN DIEGO
Agua Hedionda
1
2
3
4
5
6
1HPS
Reservoir
BLVD
Substa
Water Tanks
Park
FREEWAY
Farr
BM 47
127
LINA
468
20'
469
SCA
1
1/2
1000
0
1000
2000
MN

AQUA HEDIONDA PUMPSTATION SPILL RESPONSE SAMPLING PLAN

SAMPLE POINT 1. SAMPLES WILL BE COLLECTED FROM THE BRIDGE ON CARLSBAD BLVD. , WHICH IS THE INLET TO THE LAGOON. MAKE SURE TO STERILIZE THE SAMPLING ASSEMBLY. PARK AT TAMARACK BEACH PARKING LOT.

SAMPLE POINT 2. THIS SAMPLING POINT IS WEST OF THE TRESTLE NEAR THE AQUA HEDIONDA PUMPSTATION. YOU MUST WALK OUTSIDE OF CHAIN LINK FENCE TO GET TO THE SAMPLING POINT. BE CAREFUL OF THE UNSTABLE GROUND AND ROCKS IN THE AREA.
REMEMBER TO PAY ATTENTION TO THE RAILROAD , AS TRAINS ARE FREQUENTLY TRAVELING NORTH AND SOUTHBOUND !

SAMPLE POINT 3. THIS SAMPLE IS TO BE TAKEN AT THE YMCA CAMP LOCATED ACROSS FROM THE PUMPSTATION IN THE MIDDLE LAGOON. TO GET TO THIS SITE , TAKE CARLSBAD BLVD. TO TAMARACK ST. TO END OF STREET AND TURN LEFT(SOUTH) ONTO DIRT PATH AND PROCEED SLOWLY TO YMCA CAMP.

SAMPLE POINT 4. SNUG HARBOR MARINA BEACH AREA. TAMARACK AVE. EAST TO ADAMS ST. TURN RIGHT TO HARRISON ST. TURN RIGHT PROCEED TO PARKING AREA AT MARINA.

SAMPLE POINT 5. THIS SAMPLING POINT IS LOCATED AT THE CARLSBAD BOAT CLUB (BELOW MEXICAN RESTAURANT) LOCATED OFF ADAMS ST. A 1/2 MILE EAST OF SNUG HARBOR MARINA

SAMPLE POINT 6. BRISTOL COVE BOAT RAMP. ADAMS ST. EAST TO COVE DRIVE TURN RIGHT AND PROCEED TO THE END OF THE CUL DE SAC. THE BOAT RAMP IS LOCATED ON THE LEFT.

AQUA HEDIONDA PUMPSTATION SPILL RESPONSE WARNING SIGN POSTING PLAN

THE CITY OF VISTA IS PRIMARILY RESPONSIBLE FOR SIGN POSTING. YOU SHOULD VERIFY PROPER PLACEMENT AND VISIBILITY. THE CITY OF CARLSBAD WILL ALSO POST WHEN NEEDED. ENCINA LABORATORY PERSONNEL WILL CHECK AND REPLACE SIGNS IN THE MORNING, WHEN THE SAMPLES ARE TAKEN. EITHER THE CITY OF CARLSBAD OR VISTA WILL CHECK THE SIGN LOCATIONS IN THE AFTERNOON AND REPLACE IF NECESSARY.

THE RED DOTS ON THE MAP SIGNIFY APPROXIMATE AREAS FOR POSTING.

INNER LAGOON THREE MAIN AREAS WITHIN THE INNER LAGOON MUST BE POSTED. SNUG HARBOR MARINA HAS A SMALL SANDY BEACH AREA, WHERE A FEW SIGNS ARE NEEDED. THE CARLSBAD BOAT CLUB ALSO HAS A SMALL BEACH ACCESS AREA THAT REQUIRES POSTING. TO THE EAST OF THE BEACH CLUB IS A STRIP OF SAND WITH A GRASSY AREA THAT MUST BE POSTED. THE BOAT RAMP AT BRISTOL COVE REQUIRES A POSTING OF SIGNS AS WELL.

MIDDLE LAGOON A FEW SIGNS AT THE YMCA CAMP NEED TO BE DISPLAYED. POST SIGNS ALONG THE EDGES , ALLOW FOR TIDAL INFLUENCES , SO IT DOES NOT SUBMERGE THE WARNING SIGNS. THE PLACEMENT OF A SIGN AT THE ENTRANCE TO THE CAMP IS A GOOD IDEA.

OUTER LAGOON THE POSTING OF SIGNS ALONG THE WESTERN EDGE OF THE OUTER LAGOON CAN BE ACCOMPLISHED BY PARKING IN THE DIRT AREA, OFF CARLSBAD BLVD. A LARGE NUMBER OF FISHERMAN USE THIS AREA DAILY. POST SIGNS FROM AS FAR SOUTH AS POSSIBLE TO AS FAR NORTH AS POSSIBLE (LAGOON INLET). THE POSTING OF SIGNS ALONG THE NORTHERN SIDE CAN BE ACCOMPLISHED A VARIETY OF WAYS. FIRST, WOULD BE TO START POSTING FROM THE LAGOON INLET AND POST AS FAR EAST AS THE YMCA CAMP. THE HUBBS RESEARCH FACILITY HAS AN ELECTRONIC GATE AND CAN BE FOUND BY TAKING TAMARACK TO GARFIELD AVE. HEADING SOUTH ,TRAVELING ALONG THE EDGE OF THE LAGOON. THE PHONE NUMBER IS 434-9501, IDENTIFY YOURSELF AND THEY SHOULD BE ABLE TO UNLOCK A GATE , WHICH OPENS UP TO THE TRAIL RUNNING ALONG THE LAGOON.

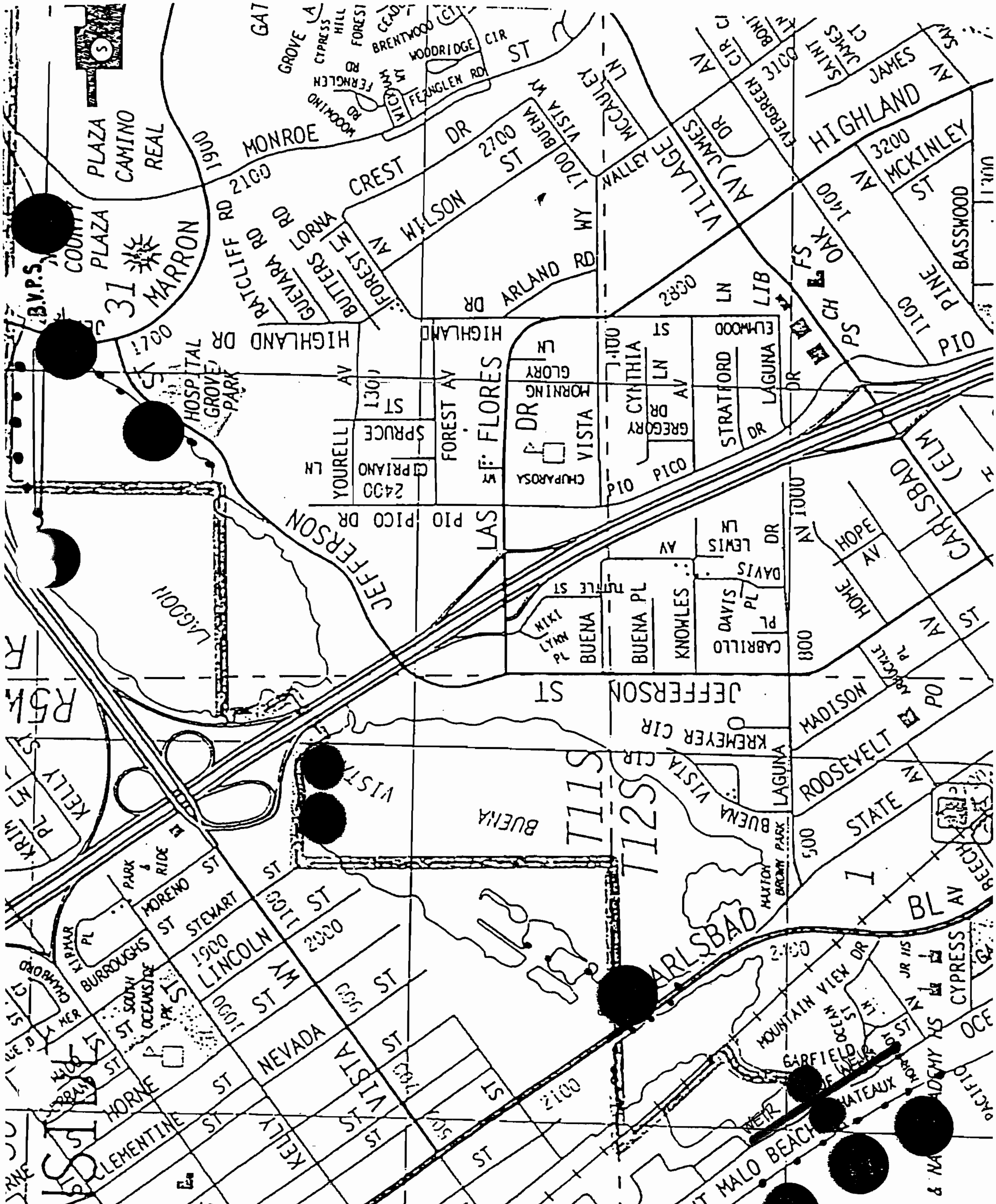
SHORE LINE THE BEACH AREA SHOULD HAVE SIGNS POSTED EVERY 50 FEET FROM MOUTH OF THE LAGOON NORTH AND SOUTH FOR APPROXIMATELY 200 FEET.

EMERGENCY PHONE NUMBERS

AQUA HEDIONDA PUMPSTATION	**(760) 729-2765**
ENCINA WASTEWATER AUTHORITY	**(760) 438-3941**
CITY OF CARLSBAD LOUIE MONTANEZ	**(760) 438-2722 EXT. 137 PAGER (619) 989-3209**
CITY OF VISTA PETE NIEBLAS	**(760) 726-1340 EXT. 1371**
HUBBS RESEARCH	**(760) 434-9501**
CARLSBAD AQUAFARMS	**(760) 438-2444**
SAN DIEGO DEPT. HEALTH SERVICES	**(619) 338-2848**
YMCA CAMP DON/MARY PATTEE	**(760) 434-9238**

Attachment 7

Sample Location Map – Buena Vista


PLAZA CAMINO REAL
COUNTY PLAZA
MARRON
MONROE
CREST DR
WILSON
FOREST AV
BUTTERS
GUEVARA RD
RATCLIFF RD
LORNA
ARLAND RD
HIGHLAND DR
HOSPITAL GROVE PARK
JEFFERSON
LAGOON
PIO PICO DR
LAS FLORES
VISTA WY
BUENA VISTA
VALLEY
MCCAULEY LN
VILLAGE
JAMES
EVERGREEN
HIGHLAND
MCKINLEY
BASSWOOD
PINE
OAK
PIO
STRATFORD
LAGUNA DR
CYNTHIA LN
GREGORY DR
CHUPAROSA
YOURELL
SPRUCE
CIPRIANO
HOPE AV
CARLSBAD
ELM
KNOWLES
BUENA PL
CABRILLO
DAVIS PL
NIKI LYNN PL
JEFFERSON ST
MADISON
ROOSEVELT
STATE
KREMEYER CIR
BUENA VISTA CIR
T11S
T12S
CARLSBAD BL
MOUNTAIN VIEW DR
GARFIELD
CHATEAUX
WEIR
SAINT MALO BEACH
CYPRESS
PACIFIC
KELLY
KRIM LN
PARK & RIDE
MORENO ST
STEWART
BURROUGHS
LINCOLN ST
NEVADA ST
VISTA WY
SOUTH OCEANSIDE PK
HORNE ST
CLEMENTINE ST
KELLY ST
B.V.P.S.

1PLE POINT 1. SAMPLE THE EAST SIDE OF THE JEFFERSON STREET BRIDGE INTO THE CREEK NEXT TO PUMPSTATION. PARK AT THE BUENA VISTA PUMPSTATION. BE CAREFUL AS THIS IS A HEAVY TRAFFIC AREA !

1PLE POINT 2. OFF JEFFERSON STREET AT DUCK FEEDING AREA PARKING LOT. SAMPLE LAGOON AT WESTERN EDGE OF PARKING LOT.

1PLE POINT 3. SAMPLE AT END OF LAGOON VIEW DRIVE, ON THE NORTH SIDE OF THE LAGOON PARALLEL TO HIGHWAY 78. THE REEDS ARE THICK AND THERE IS A SHORT PATH THROUGH THE ICEPLANT WHERE YOU SHOULD BE ABLE TO TAKE A SAMPLE.

1PLE POINT 4. SAMPLE FROM THE BUENA VISTA LAGOON BRIDGE AT THE EAST SIDE OF HIGHWAY 101. THIS SAMPLING POINT IS JUST SOUTH OF THE AUDOBON SOCIETY. THERE IS PARKING AREA SOUTH OF THE BRIDGE OFF THE ROAD IN A GRAVEL AREA. BE CAREFUL THIS IS A HEAVY TRAFFIC AREA !

1PLE POINT 5. THIS SAMPLING POINT IS IN THE SURFZONE DIRECTLY IN FRONT OF THE EARTHEN WEIR THAT SEPARATES THE LAGOON FROM THE BEACH AREA. DIRECTIONS TO GET TO THIS LOCATION ARE AS FOLLOWS: FROM CARLSBAD BLVD. TURN ON TO MOUNTAIN VIEW DR. (AT THE NORTHERN END OF THE ARMY AND NAVY ACADEMY) AND PROCEED TO WHERE THE ROAD TURNS SOUTH. YOU WILL SEE A GREEN SIGN THAT SAYS " PUBLIC BEACH ACCESS". THERE IS AMPLE PARKING AVAILABLE IN FRONT OF A COMPLEX CALLED THE BEACH RESORT. WALK DOWN THE STAIRS AND THE MOUTH OF THE LAGOON IS TO THE NORTH. SAMPLE IN SURFZONE DIRECTLY WEST OF THE EARTHEN WEIR

MPLE POINT 6. THIS POINT IS LOCATED IN THE SURFZONE 100 YARDS TO THE NORTH OF THE LAGOON MOUTH. THE SAMPLING POINT IS IN FRONT OF THE FORTH HOUSE (SAINT MALO RESORT) AND THERE IS A WEATHERED CONCRETE STAIRWAY IN THE ROCKS.

MPLE POINT 7. THIS POINT IS LOCATED IN THE SURFZONE APPROXIMATELY 30 YARDS NORTH OF THE STAIRS TO THE BEACH. A GOOD SAMPLE LOCATION WOULD BE TO SAMPLE IN FRONT OF THE THIRD HOUSE NORTH OF THE STAIRS.

MPLE POINT 8. THIS POINT IS LOCATED UPSTREAM OF THE PUMPSTATION APPROXIMATELY 50 YARDS. THE SAMPLE SHOULD BE TAKEN FROM THE NORTH SIDE OF BUENA VISTA CREEK.

BUENA VISTA PUMPSTATION SPILL RESPONSE WARNING SIGN POSTING PLAN

THE CITY OF VISTA IS PRIMARILY RESPONSIBLE FOR SIGN POSTING. YOU SHOULD VERIFY PROPER PLACEMENT AND VISIBILITY.

THE RED DOTS ON THE MAP SIGNIFY APPROXIMATE AREAS FOR POSTING.

ORTH SHORE AGOON — THE AREA OFF LAGOON VIEW DRIVE SHOULD HAVE SIGNS EVERY 50 FEET OR SO. THIS AREA IS DANGEROUS BECAUSE OF THE MUD. YOU SHOULD BE WEARING SAFETY BOOTS AND ALWAYS HAVE A PARTNER. PLACE SIGNS FROM JEFFERSON STREET TO THE END OF LAGOON VIEW DRIVE.

OUTH SHORE AGOON — POSTING AT THE DUCK FEEDING AREA IS VERY IMPORTANT BECAUSE OF HIGH PUBLIC USAGE. START POSTING SIGNS BY WALKING ALONG THE FENCE LINE TO THE [redacted], THEN WALK EASTWARD UNTIL YOU CAN'T GO ANY FURTHER , WHILE POSTING EVERY 50 FEET

AGOON AT 101 — HIGHWAY 101 AND AUDOBON SOCIETY AREA. START BY POSTING SIGNS ON THE WEST SIDE OF 101. POST THE SIGNS EVERY 50 FEET ALONG THE SPAN WERE THE LAGOON CAN BE REACHED , AND DO THE SAME FOR THE EAST SIDE. IN ADDITION, POST SIGNS NEXT TO THE AUDOBON SOCIETY DRIVEWAY. THE ARE PICNIC TABLES NEAR THE WATER, THERE IS AMPLE ACCESS TO THE LAGOON FROM HERE. FOLLOW THE SHREDDED BARK PATH EAST TO WHERE YOU SEE THE END OF THE CONDOMINIUM COMPLEX AND POST SIGNS EVERY 50 FEET OR SO.

HORE LINE — THE BEACH AREA SHOULD HAVE SIGNS POSTED EVERY 50 FEET FROM JUST SOUTH OF SAMPLE POINT 7 TO JUST NORTH OF SAMPLE POINT 6.

BE VERY [redacted] REFUL TAKING SAMPLES AND POSTING SIGNS !!

Attachment 8

Pump Back Location Map – Buena Vista

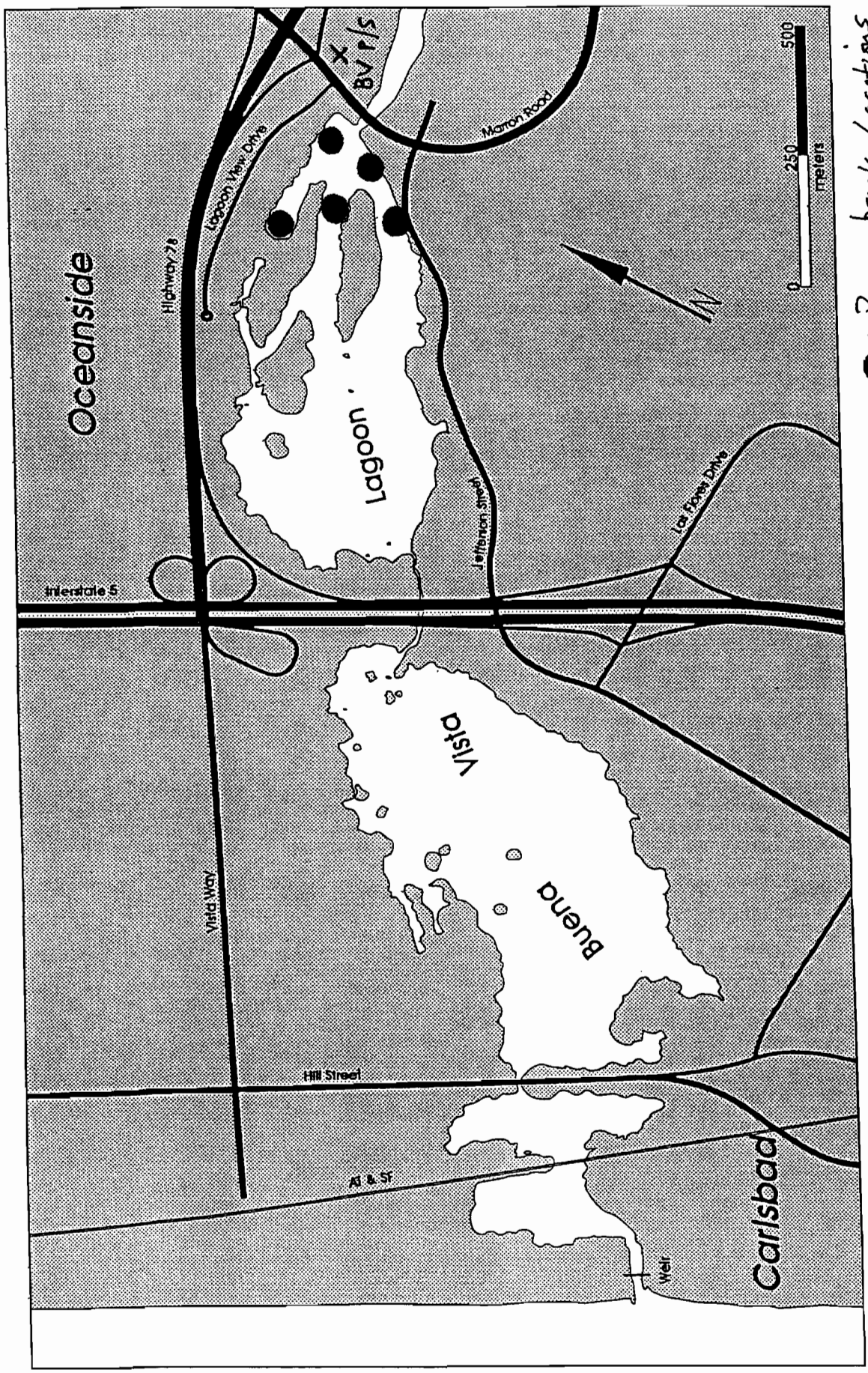


Figure 1. Buena Vista Lagoon.

ENCINA WASTEWATER AUTHORITY

MEMORANDUM

DATE: October 27, 2003

TO: Kevin M. Hardy, Assistant General Manager

FROM: Jeff Leads, Safety and Training Coordinator

SUBJECT: Spill Drill – After Action Report

On Wednesday October 8th, 2003, a multi agency spill drill was held at the Buena Creek Pump Station, located in the Buena Sanitation service area. The Spill Drill is a task that the Encina Wastewater Authority (EWA) endeavors on an annual basis, to demonstrate and test the integrity of it's Sanitary Sewer Overflow Prevention Plan (SSOPP) and the Sanitary Sewer Overflow Response Plan (SSORP).

A scenario was established to cause the 'Spill' during the spill drill planning meeting. The Cities of Vista and Carlsbad were invited to participate in the drill to test their own response as well as other critical tasks.

EWA was pre-determined to take the lead role in this drill. Immediately upon receiving the phone call that there was an alarm condition at the Buena Creek Pump Station, EWA mobilized and expedited efforts to reach the pump station.

EWA staff quickly initiated the Incident Command Structure (ICS) and the Incident Commander (IC) established a command post in a safe nearby area.

The 'Event Recorder' documented the chronological order of events (see attachment for details).

Prior to the drill EWA had established multiple objectives to test, these included:

- Communications- Do phones (cell and Landlines) work in such a remote station? Phone reception is sporadic at best down at the pump station, but was adequate at the command post.

- Emergency Phone Directory – Calls were made to member agencies to request assistance and logistics. The phone directory was tested successfully for accurate and up to date phone numbers.

- The Environmental Compliance Group (EC) with establishing sampling locations and sign postings, as well as communications with the State Regional Water Quality Control Board (SWRCB). The EC group was able to complete and document their tasks successfully.

- Operations were tasked with maintaining communications between the plant and the pump station, providing information to staff and assisting as needed.

- The Maintenance group was tasked with the timely repairs of getting the pump station back on line, due to the power failure and subsequent standby generator failure.

- The City of Vista had identified the objective of establishing sewage levels in the collections lines entering the pump station. Vista staff indicated that 'actual' sewage levels measured during the spill drill were very different than anticipated. Vista discovered that the collection lines actually had much greater capacity then originally estimated.

- The City of Carlsbad tasked itself with response times to the pump station from the City of Carlsbad. Carlsbad staff reported 45 – 50 minutes response times.

Summary:

Overall the spill drill was a success. Many issues were addressed and questions were answered that would not have been possible without doing a spill drill. EWA has produced a 'hit list' of items that were deficient during the drill, and the Safety Officer will be tasked with their timely completion.

Attachment: Chronological time line.

Encina Wastewater Authority Spill Drill Time Line

8:50 AM – received multiple alarms from Buena Creek Pump Station, contacted ops to respond.

9:00 AM – received gen failure alarms (total power outage), contacted Jardin and Steinlicht.

9:10 AM – Com failure confirmed – Parli and Corn enroute, sewage levels are rising…quickly.

9:20 AM – Cities of Vista, and Carlsbad contacted and notified of an imminent spill. Vista and Carlsbad sending equipment and staff.

9:30 AM – problems with generator identified, repairs started.

9:40 AM – Vista and Carlsbad positioning vactor trucks in anticipation of spill overflow.

9:50 AM – generator repairs completed and generator put back into service.

10:00 AM – Two pumps put in hand, sewage levels diminishing.

10:05 AM – Commercial power restored.

10:10 AM – Drill concludes.

Spill Drill Debrief Meeting

10/8/03

- Phone is electric – recommend analog phone

- Communication – was challenging – too many staff down at the station instead of at the command center. Suggest department heads stay at the command center. Suggest bringing walkie talkies.

- Buena Creek Pump Station alarm system does not immediately notify the operations control room.

- No 'defined' role for the person at the operations control room desk… a key position. Suggest having a role, suggest revolving roles, recommend training once SSORP/SSOPP are completed.

- Recommend having a real time drill where only the coordinator and the General Manager know.

- Sample map needs to be updated – manhole on Melrose identified as a location for sampling.

ENCINA WASTEWATER AUTHORITY

MEMORANDUM

DATE: November 15, 2004

TO: Kevin M. Hardy, Assistant General Manager

FROM: Jeff Leads, Safety and Training Coordinator

SUBJECT: Spill Drill – After Action Report

On Wednesday November 10th, 2004, a multi agency Spill Drill was held at the Buena Vista Pump Station, located in the Carlsbad service area. The Spill Drill is a task that the Encina Wastewater Authority (EWA) organizes on an annual basis to demonstrate and test the integrity of its Sanitary Sewer Overflow Prevention Plan (SSOP) and Sanitary Sewer Overflow Response Plan (SSORP), as well as the Incident Command Structure (ICS).

The Spill Drill is a coordinated, supervised activity normally used to test a function or operation within an agency. Drills are also utilized to provide training with new equipment, to develop new policies or procedures, or to practice and maintain current skills.

Tabletop exercise meetings were held to discuss the drill and to establish a scenario. A tabletop exercise simulates an emergency situation in an informal stress-free environment. It is designed to elicit constructive discussion as participants examine and resolve problems based on the SSORP.

A scenario was established during the tabletop meetings. EWA along with staff from the Cities of Vista, Carlsbad, and Oceanside chose to initiate a 'flooded drywell with water rising'. The rationale was to test an alternate method of holding incoming sewage while repairs could be made at the Pump Station. The City of Carlsbad was chosen to take the lead role in the drill.

Immediately after receiving the phone call that there was an alarm condition at the Buena Vista Pump Station, EWA staff mobilized and expedited efforts to reach the pump station.

Upon arrival, an Emergency Operations Center (EOC) was established, adjacent to the pump station. The EOC was used for transmitting information from the pump station to the various staff involved with mitigating a potential spill and establishing remedial actions to correct the pump station. Another location was identified and set-up as a staging area for equipment, trucks, and excavation machines. Also at this time the ICS was activated.

The 'Event Recorder' documented the chronological order of events (see attachment for details).

Prior to the drill EWA had identified several objectives to test, theses included:

- Communications: All 3 agencies (EWA,Vista,Carlsbad) utilize different methods to communicate. EWA relies on cell phone (as well as the Nextel direct/connect) Vista and Carlsbad rely on 900 mega-hertz walkie/talkies. That made for talking amongst each other very cumbersome. A solution could be that each member agency utilize the same type of communication device when emergencies arise.

- Traffic: It was staggering how much traffic cuts through the mall parking lot! The area used for staging is a small area behind the main mall parking lot but was used all afternoon as a short-cut. Future drills using this same staging area should use safety devices such as barricades, cones, and if necessary a flagger to prevent any injuries.

- Incident Command: There was some confusion as to who was the Incident Commander despite the fact the Carlsbad had the 'red vest' on their Superintendent. This confusion may have been attributed to the fact that there were actually three sites (the pump station, the EOC, and the remediation site) that needed to be managed.

- Communications: All 3 agencies (EWA,Vista,Carlsbad) utilize different methods to communicate. EWA relies on cell phone (as well as the Nextel direct/connect) Vista and Carlsbad rely on 900 mega-hertz walkie/talkies. That made for talking amongst each other very cumbersome. A solution could be that each member agency utilize the same type of communication device when emergencies arise.

- Traffic: It was staggering how much traffic cuts through the mall parking lot! The area used for staging is a small area behind the main mall parking lot but was used all afternoon as a short-cut. Future drills using this same staging area should use safety devices such as barricades, cones, and if necessary a flagger to prevent any injuries.

- Incident Command: There was some confusion as to who was the Incident Commander despite the fact the Carlsbad had the 'red vest' on their Superintendent. This confusion may have been attributed to the fact that there were actually three sites (the pump station, the EOC, and the remediation site) that needed to be managed.

- Emergency Phone Directory- Calls were made to member agencies to request assistance and logistics. The Phone Directory was tested successfully for accurate phone numbers. Keeping it accurate is paramount our phone directory was solid.

- Coordination- All involved wanted to make an extra effort to coordinate remediation efforts. As such each group was tasked with working closely with another group to learn from and help with during a stressful situation. That effort was a group success.

- Response Times- The City of Vista was very interested in their response time from receiving the emergency call to the time it took to actually make it to the pump station. Given that the drill was held in the afternoon (during peak rush hour traffic) Vista found that

their response times were very good (minimum time 12 minutes, maximum time 22 minutes).

- Staging Area- Vista and Carlsbad both wanted an area near the effected pump station where a staging area could be used. It was decided to use the vacant lot between the mall and the pump station for the drill and future use if needed.

- Emergency Operations Center- An Emergency Operations Center (EOC) was requested and set-up by the City of Carlsbad. The purpose of the EOC is to have a place where decisions and communications can be made as they relate to the incident. The EOC was set-up near the staging area and within eye site of both the pump station and the remediation point.

Summary:

Overall the Sill Drill was a success. We all learn from the previous spill drills and overall confidence builds. Issues were addressed that would not have been possible without doing a drill. I have three comments, which will be addressed during the spill debrief meeting.

1. Communications: All 3 agencies (EWA,Vista,Carlsbad) utilize different methods to communicate. EWA relies on cell phone (as well as the Nextel direct/connect) Vista and Carlsbad rely on 900 mega-hertz walkie/talkies. That made for talking amongst each other very cumbersome. A solution could be that each member agency utilize the same type of communication device when emergencies arise.

2. Traffic: It was staggering how much traffic cuts through the mall parking lot! The area used for staging is a small area behind the main mall parking lot but was used all afternoon as a short-cut. Future drills using this same staging area should use safety devices such as barricades, cones, and if necessary a flagger to prevent any injuries.

3. Incident Command: There was some confusion as to who was the Incident Commander despite the fact the Carlsbad had the 'red vest' on their Superintendent. This confusion may have been attributed to the fact that there were actually three sites (the pump station, the EOC, and the remediation site) that needed to be managed.

Attachment: Chronological time line.

Attachment 1

Chronological order of events:

1:30	EWA notified of alarm condition at Buena Vista Pump Station
1:31	Remote operator notified
1:33	EWA staff notified and responding
1:39	Remote operator notifies staff of the condition
1:40	City of Carlsbad notified
2:00	Repairs start-wet well isolated
2:02	station starts to overflow
2:05	City of Vista arrives
2:20	Flow diverted into Oceanside pump station
2:24	Flow level subsides at station
2:45	Repairs made to malfunctioning pump
2:46	Flow returned to station
2:57	Flow secured to Oceanside pump station
3:00	Flow to station continues – repairs have worked
3:10	Drill concludes

ENCINA WASTEWATER AUTHORITY

SPILL DRILL AGENDA

October 18, 2006

City of Vista, City of Carlsbad, Encina Staff

PLACE: AGUA HEDIONDA PUMP STATION

TIME: 8-8:30 AM

1. POSSIBLE SCENARIO: AUTOMOBILE ACCIDENT AT FRONT GATE OF POWER PLANT HAS KNOCKED DOWN POWER LINES. AH P/S HAS LOST COMMERCIAL POWER, AND THERE IS NO ACCESS TO THE FRONT GATE OF THE POWER PLANT.

   CHALLENGES WOULD INCLUDE:

   - ACCESS TO THE POWER PLANT
   - ESTABLISHING TEMPORARY POWER TO THE STATION
   - CAN THE STATION CONTROL FLOWS WITH ONLT ONE GENERATOR
   - BRINGING IN A STANDBY GENERATOR TO ASSIST WITH LOAD
   - COORDINATION EFFORTS
   - LOGISTICS
   - COMMUNICATIONS

SUMMARY OF BACTERIOLOGICAL TESTING DATA AT BUENA VISTA LAGOON (APRIL 2 - APRIL 14, 2007)
ENCINA WASTEWATER AUTHORITY LABORATORY ANALYSES

Total Coliform*

	4/2/07	4/3/07	4/4/07	4/5/07	4/6/07	4/7/07	4/8/07	4/9/07	4/10/07	4/11/07	4/12/07	4/13/07	4/14/07
BV01	3,800	8,300	5,700	3,300	1,900	3,400	2,600	5,600	2,200	6,600	4,300	3,600	3,300
BV02	1,820,000	970,000	1,010,000	4,170,000	1,520,000	830,000	360,000	130,000	50,000	25,000	30,000	7,000	14,000
BV03	2,460,000	1,900,000	1,250,000	3,280,000	820,000	720,000	290,000	120,000	52,000	41,000	28,000	5,000	5,000
BV04	2,120,000	2,080,000	1,140,000	1,970,000	930,000	1,170,000	260,000	80,000	26,000	28,000	13,000	3,000	4,000
BV05	3,000	900	1,300	500	100	600	400	300	200	300	300	400	300
BV06	6,950	3,800	700	1,600	900	400	300	7,600	400	500	200	1,100	600
BV07		199,500	20,000	31,400	3,200	1,400	200	4,200	400	300	300	800	500
BV08		112,500	40,000	32,400	3,600	1,200	600	3,100	200	400	600	500	200
BV09					1,100	1,000	800	2,800	3,300	1,800	400	300	500

Fecal Coliform*

	4/2/07	4/3/07	4/4/07	4/5/07	4/6/07	4/7/07	4/8/07	4/9/07	4/10/07	4/11/07	4/12/07	4/13/07	4/14/07
BV01	1,200	2,300	2,700	1,000	300	1,000	1,300	200	200	1,300	300	1,500	900
BV02	2,350,000	670,000	890,000	1,380,000	460,000	380,000	20,000	14,000	1,000	5,000	6,600	3,200	2,000
BV03	2,300,000	980,000	900,000	1,030,000	360,000	120,000	100,000	10,000	4,000	9,600	3,000	2,000	1,200
BV04	2,280,000	1,820,000	840,000	370,000	300,000	190,000	100,000	8,000	1,000	5,200	2,600	2,600	600
BV05	100	200	100	200	200	100	100	50	50	100	100	50	50
BV06	100	800	100	200	200	200	400	1,050	100	100	250	50	150
BV07		95,500	10,000	11,200	1,000	700	50	50	50	50	200	450	100
BV08		36,500	10,000	5,800	1,000	100	1,050	50	50	300	100	350	50
BV09					700	100	200	800	100	250	50	50	200

Enterococcus*

	4/2/07	4/3/07	4/4/07	4/5/07	4/6/07	4/7/07	4/8/07	4/9/07	4/10/07	4/11/07	4/12/07	4/13/07	4/14/07
BV01	200	300	300	100	200	200	100	1,000	600	900	100	100	100
BV02	482,000	116,000	110,000	116,000	22,000	8,000	3,000	3,000	2,400	1,200	1,200	200	1,200
BV03	438,500	112,000	118,000	122,000	22,000	6,000	3,000	2,000	1,400	5,200	1,400	1,200	200
BV04	421,500	118,000	126,000	118,000	36,000	4,000	1,000	2,000	2,000	2,000	400	400	600
BV05	100	100	100	100	100	100	50	50	50	50	50	50	50
BV06	100	100	100	400	100	100	100	100	50	50	100	50	50
BV07		1,000	2,000	200	100	600	50	50	50	50	50	100	50
BV08		1,000	2,000	200	100	100	50	50	50	50	50	50	50
BV09					100	100	50	100	50	50	50	50	50

**Values reported as less than a specific value in testing dilutions have been identified in this summary table as the value for purposes of numeric analyses.*

SUMMARY OF DISSOLVED OXYGEN MONITORING AT BUENA VISTA LAGOON (APRIL 2 - APRIL 20)

STATION ID	TYPE	Dissolved Oxygen Concentration (mg/l)																									
		04/02/07	04/03/07		04/04/07		04/05/07		04/06/07		04/07/07		04/08/07		04/09/07		04/10/07		04/11/07	04/12/07	04/13/07	04/14/07	04/15/07	4/16/2007	4/17/2007	4/18/2007	4/19/2007	4/20/2007
		PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	AM	AM	AM	AM	AM	AM	AM	AM	AM
BV01	SHORELINE		4.27			5.11	3.81	5.78	5.00	6.56	1.08	3.98	3.07	5.32	3.27	6.11	3.59	6.97	4.16	4.89	4.28	4.46	4.31	4.04	3.97	*	3.78	2.91
BV02	SHORELINE		1.75			1.37	1.68	1.35	0.99	4.73	2.55	4.33	3.11	4.95	3.36	8.98	3.23	11.03	5.19	5.43	4.87	5.44	4.15	3.40	3.81	*	4.35	5.77
BV03	SHORELINE		1.50			0.93	1.39	1.90	1.98	4.50	0.93	7.83	2.85	9.07	4.42	20.00	3.35	20.00	5.67	6.36	5.71	6.21	5.06	3.43	3.70	*	4.96	5.40
BV04	SHORELINE		1.55			1.22	1.12	1.76	0.50	0.98	0.82	4.34	3.68	7.71	3.37	11.88	3.62	16.70	5.41	5.60	5.43	6.50	4.21	3.81	4.61	*	5.84	7.62
BV05	SHORELINE	5.14	4.18		4.57		4.14	6.50	3.75	6.13	3.21	4.97	2.63	4.42	3.08	9.15	3.58	8.96	4.25	4.62	5.55	5.07	5.02	4.60	4.62	*	5.12	3.19
BV06	SHORELINE	5.92	5.48		5.80		5.36	6.04	6.35	*	6.26	7.56	5.63	8.74	6.24	9.18	4.23	10.02	6.18	7.92	5.92	5.34	7.19	5.10	5.49	*	4.85	4.01
BV07	SHORELINE			4.24	4.41		5.14	6.59	3.60	6.03	2.22	2.63	1.64	3.47	2.80	6.08	2.58	5.95	3.42	2.23	2.36	2.51	3.38	2.84	3.71	*	2.63	2.62
BV08	SHORELINE			4.45	5.92		5.06	7.31	3.70	6.40	2.35	4.03	1.97	4.12	2.77	6.52	2.64	6.48	2.94	3.23	2.45	2.85	3.46	2.61	2.77	*	2.78	2.47
10A	LAGOON			6.13	11.28	12.39	5.25	6.44	3.47	5.14	3.34	3.11	2.51	4.28	3.93	7.01	4.98	6.40	4.62	3.30	5.92	5.75	4.50	5.19	4.54	3.08	5.47	4.64
10B	LAGOON			7.26	12.80	14.88	8.82	7.23	4.28	6.27	4.86	5.44	3.90	7.45	5.15	8.73	5.77	8.19	5.55	4.55	6.17	7.19	5.28	6.40	5.59	3.56	6.55	6.43
10C	LAGOON			7.23	14.07																5.91	6.21	5.71	3.87	3.83	3.28	4.96	5.75
10D	LAGOON			7.00	12.87	15.06	3.58	7.58	5.82	6.70	3.28	5.45	2.99	7.40	5.51	9.24	3.85	8.12	4.47	3.89	6.04	6.72	6.33	5.05	4.96	5.11	5.75	6.07
10E	LAGOON			7.38	14.76	15.57	5.25	7.38	6.72	6.58	4.87	5.73	4.85	7.71	6.84	10.30	6.19	8.62	6.82	5.48	6.29	6.92	6.57	6.93	7.57	6.67	7.10	6.56
10F	LAGOON			7.53	13.38	17.91	9.41	9.27	6.88	7.46	4.38	6.23	3.61	8.69	6.25	10.53	5.59	10.53	6.42	5.73	5.85	6.02	6.06	6.43	5.97	5.78	6.82	5.22
10G	LAGOON			6.73	13.16	18.18	2.44	7.80	6.03	6.46	3.66	5.60	2.73	6.98	5.16	8.20	5.20	9.24	4.39	2.64	5.21	6.08	5.92	6.10	5.71	5.17	5.68	4.36
1	LAGOON			3.71	2.42																							
2	LAGOON			7.84	5.43																							
3	LAGOON			7.55	2.91																							
4	LAGOON			1.22	0.75																							
5	LAGOON			1.04	0.82																							
6	LAGOON			0.31	1.41																							
7	LAGOON			0.34	0.44																							
8	LAGOON			0.56	0.08																							
9	LAGOON			0.36	0.43																							
10	LAGOON		0.73	0.73	0.85																							
101	LAGOON					11.30	1.31	2.65	7.07	10.04	8.16	15.72	10.33	13.55	9.94	21.34	6.06	19.82	6.37	3.55	5.29	5.28	3.92	3.35	3.00	0.82	4.13	6.23
102	LAGOON					15.78	0.80	3.79	5.04	10.67	7.09	22.43	4.08	6.79	6.79	25.00	5.28	18.12	5.73	2.48	7.21	4.59	3.20	3.69	2.88	1.67	3.86	3.27
103	LAGOON					20.61	1.69	4.72	5.89	16.10	8.40	18.91	4.93	16.43	3.82	24.50	5.54	10.16	3.14	3.04	*	4.15	3.39	3.97	2.94	*	3.73	2.90
104	LAGOON					7.61	1.08	0.07	5.64	11.47	8.89	8.43	10.97	16.41	9.74	26.00	11.38	28.30	14.45	11.83	7.25	7.56	4.58	7.58	4.55	4.88	7.05	10.06
105	LAGOON					0.79	0.48	0.04	4.61	11.07	8.56	9.42	10.74	16.69	8.80	23.98	8.86	23.05	8.41	6.18	6.82	7.67	5.73	7.27	4.35	4.10	6.36	9.60
106	LAGOON					0.37	0.24	0.09	0.92	0.40	1.76	11.35	4.12	14.54	8.50	17.62	5.26	20.67	5.17	6.35	5.35	5.91	5.73	4.10	4.26	4.40	6.38	9.56
107	LAGOON		0.34			0.62	0.35	0.02	1.23	0.08	1.23	3.62	3.57	6.29	4.11	10.73	4.84	10.02	5.61	4.87	5.18	6.20	4.09	4.24	4.58	4.66	6.60	8.90
108	LAGOON		0.56			0.37	0.30	0.04	0.92	5.12	1.48	5.44	4.28	6.85	4.90	13.20	5.08	12.04	6.42	5.16	5.80	6.36	4.16	4.10	4.54	4.75	6.65	11.05
109	LAGOON					0.15	0.29	0.02	0.26	0.25	1.20	3.95	3.94	6.64	4.43	11.43	5.06	12.03	5.47	5.33	6.12	6.08	4.16	5.83	4.71	5.00	6.21	6.57

* Denotes probe failure, calibration failure, or data loss due to field sampling issue.
Blanks indiate sampling was not performed at station during the sampling period.

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 3, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0156

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/2/2007	8:37 AM	Rachael Willi	3,800	1,200	<200
Jefferson St. Bridge West Side (BV2)	4/2/2007	8:46 AM	Rachael Willi	1,820,000	2,350,000	482,000
Jefferson St. Duck Feeding Area (BV3)	4/2/2007	9:03 AM	Rachael Willi	2,460,000	2,300,000	438,500
Lagoon View Dr. North Shore (BV4)	4/2/2007	8:56 AM	Rachael Willi	2,120,000	2,280,000	421,500
PCH Bridge East Side (BV5)	4/2/2007	10:02 AM	Rachael Willi	3,000	<100	<100
Lagoon Spillway to Beach (BV6)	4/2/2007	10:15 AM	Rachael Willi	6,950	<100	<100
Receiving Water 75 ft. South (1S)	4/2/2007	11:05 AM	Rachael Willi	1	1	1
Receiving Water 150 ft. S (2S)	4/2/2007	11:10 AM	Rachael Willi	87	77	1
Receiving Water 300 ft. S (3S)	4/2/2007	11:15 AM	Rachael Willi	3	5	3
Receiving Water 600 ft. S (4S)	4/2/2007	11:20 AM	Rachael Willi	2	3	<1
Receiving Water 75 ft. North (1N)	4/2/2007	10:30 AM	Rachael Willi	13	5	3
Receiving Water 150 ft. N (2N)	4/2/2007	10:40 AM	Rachael Willi	18	12	1
Receiving Water 300 ft. N (3N)	4/2/2007	10:45 AM	Rachael Willi	8	9	2
Receiving Water 600 ft. N (4N)	4/2/2007	10:50 AM	Rachael Willi	6	4	1
Receiving Water 1200 ft. N (5N)	4/2/2007	10:55 AM	Rachael Willi	4	4	<1
Receiving Water 2000 ft. N (6N)	4/2/2007	11:00 AM	Rachael Willi	4	7	2

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/3/2007

ENCINA WASTEWATER AUTHORITY
A Public Agency
6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

ENCINA WASTEWATER AUTHORITY

April 4, 2007

Ref No. EC:07-0158

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/3/2007	8:42 AM	Joel Camarillo	8,300	2,300	300
Jefferson St. Bridge West Side (BV2)	4/3/2007	8:55 AM	Joel Camarillo	970,000	670,000	116,000
Jefferson St. Duck Feeding Area (BV3)	4/3/2007	9:18 AM	Joel Camarillo	1,900,000	980,000	112,000
Lagoon View Dr. North Shore (BV4)	4/3/2007	9:06 AM	Joel Camarillo	2,080,000	1,820,000	118,000
PCH Bridge East Side (BV5)	4/3/2007	9:34 AM	Joel Camarillo	900	200	<100
Lagoon Spillway to Beach (BV6)	4/3/2007	9:45 AM	Joel Camarillo	3,800	800	100
Receiving Water 75 ft. South (1S)	4/3/2007	9:52 AM	Joel Camarillo	77	<1	<1
Receiving Water 150 ft. S (2S)	4/3/2007	9:55 AM	Joel Camarillo	51	<1	1
Receiving Water 300 ft. S (3S)	4/3/2007	9:58 AM	Joel Camarillo	83	1	1
Receiving Water 600 ft. S (4S)	4/3/2007	10:03 AM	Joel Camarillo	34	2	1
Receiving Water 75 ft. North (1N)	4/3/2007	9:50 AM	Joel Camarillo	28	10	1
Receiving Water 150 ft. N (2N)	4/3/2007	9:53 AM	Joel Camarillo	11	7	<1
Receiving Water 300 ft. N (3N)	4/3/2007	9:57 AM	Joel Camarillo	14	12	4
Receiving Water 600 ft. N (4N)	4/3/2007	10:00 AM	Joel Camarillo	10	10	<1
Receiving Water 1200 ft. N (5N)	4/3/2007	10:05 AM	Joel Camarillo	50	3	<1
Receiving Water 2000 ft. N (6N)	4/3/2007	10:09 AM	Joel Camarillo	37	4	<1

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/4/2007

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 4, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0158

Contact: Ms. Elaine Lukey
Samplers: Mr. Paul Hartman

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
BV @ I-5 Bridge BV-7	4/3/2007	4:38 PM	Joel Camarillo	199,500	95,500	<1,000
BV @ 75 West I-5 Bridge BV-8	4/3/2007	4:45 PM	Joel Camarillo	112,500	36,500	<1,000
E= Estimated Value						

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/4/2007

ENCINA WASTEWATER AUTHORITY

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6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 5, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0162

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/4/2007	8:41 AM	Joel Camarillo	5,700	2,700	300
Jefferson St. Bridge West Side (BV2)	4/4/2007	8:37 AM	Joel Camarillo	1,010,000	890,000	110,000
Jefferson St. Duck Feeding Area (BV3)	4/4/2007	8:54 AM	Joel Camarillo	1,250,000	900,000	118,000
Lagoon View Dr. North Shore (BV4)	4/4/2007	8:40 AM	Joel Camarillo	1,140,000	840,000	126,000
PCH Bridge East Side (BV5)	4/4/2007	9:01 AM	Joel Camarillo	1,300	<100	<100
Lagoon Spillway to Beach (BV6)	4/4/2007	10:15 AM	Joel Camarillo	700	100	100
BV @ I-5 Bridge (BV-7)	4/4/2007	9:38 AM	Joel Camarillo	20,000	<10,000	<2,000
BV @ 75 West I-5 Bridge (BV-8)	4/4/2007	9:40 AM	Joel Camarillo	40,000	<10,000	<2,000
Receiving Water 75 ft. South (1S)	4/4/2007	10:20 AM	Joel Camarillo	3	1	<1
Receiving Water 150 ft. S (2S)	4/4/2007	10:22 AM	Joel Camarillo	2	<1	<1
Receiving Water 300 ft. S (3S)	4/4/2007	10:27 AM	Joel Camarillo	4	1	<1
Receiving Water 600 ft. S (4S)	4/4/2007	10:30 AM	Joel Camarillo	3	1	1
Receiving Water 75 ft. North (1N)	4/4/2007	10:15 AM	Joel Camarillo	2	1	<1
Receiving Water 150 ft. N (2N)	4/4/2007	10:17 AM	Joel Camarillo	3	3	<1
Receiving Water 300 ft. N (3N)	4/4/2007	10:20 AM	Joel Camarillo	3	2	<1
Receiving Water 600 ft. N (4N)	4/4/2007	10:24 AM	Joel Camarillo	3	1	<1
Receiving Water 1200 ft. N (5N)	4/4/2007	10:25 AM	Joel Camarillo	4	1	<1
Receiving Water 2000 ft. N (6N)	4/4/2007	10:32 AM	Joel Camarillo	7	<1	<1

E= Estimated Value

Certified By: Doug Campbell **Date:** 4/5/2007

Doug Campbell, Laboratory Supervisor

ENCINA WASTEWATER AUTHORITY
A Public Agency
6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

ENCINA WASTEWATER AUTHORITY

April 6, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0166

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/5/2007	8:12 AM	Joel Camarillo	3,300	1,000	100
Jefferson St. Bridge West Side (BV2)	4/5/2007	8:30 AM	Joel Camarillo	4,170,000	1,380,000	116,000
Jefferson St. Duck Feeding Area (BV3)	4/5/2007	8:34 AM	Joel Camarillo	3,280,000	1,030,000	122,000
Lagoon View Dr. North Shore (BV4)	4/5/2007	8:20 AM	Joel Camarillo	1,970,000	370,000	118,000
PCH Bridge East Side (BV5)	4/5/2007	8:41 AM	Joel Camarillo	500	200	<100
Lagoon Spillway to Beach (BV6)	4/5/2007	9:14 AM	Joel Camarillo	1,600	200	400
BV @ I-5 Bridge (BV-7)	4/5/2007	8:52 AM	Joel Camarillo	31,400	11,200	<200
BV @ 75 West I-5 Bridge (BV-8)	4/5/2007	8:52 AM	Joel Camarillo	32,400	5,800	<200
Receiving Water 75 ft. South (1S)	4/5/2007	9:16 AM	Joel Camarillo	11	7	<1
Receiving Water 150 ft. S (2S)	4/5/2007	9:20 AM	Joel Camarillo	10	19	1
Receiving Water 75 ft. North (1N)	4/5/2007	9:14 AM	Joel Camarillo	10	7	<1
Receiving Water 150 ft. N (2N)	4/5/2007	9:16 AM	Joel Camarillo	3	8	1

E= Estimated Value

Certified By: Doug Campbell **Date:** 4/6/2007

Doug Campbell, Laboratory Supervisor

ENCINA WASTEWATER AUTHORITY

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6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 9, 2007

Ref No. EC:07-0168

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/6/2007	9:19 AM	Rachael Willi	1,900	300	200
Jefferson St. Bridge West Side (BV2)	4/6/2007	9:28 AM	Rachael Willi	1,520,000	460,000	22,000
Jefferson St. Duck Feeding Area (BV3)	4/6/2007	9:43 AM	Rachael Willi	820,000	360,000	22,000
Lagoon View Dr. North Shore (BV4)	4/6/2007	9:32 AM	Rachael Willi	930,000	300,000	36,000
PCH Bridge East Side (BV5)	4/6/2007	9:54 AM	Rachael Willi	<100	200	<100
Lagoon Spillway to Beach (BV6)	4/6/2007	8:22 AM	Rachael Willi	900	200	<100
BV @ I-5 Bridge (BV-7)	4/6/2007	10:08 AM	Rachael Willi	3,200	1,000	100
BV @ 75 West I-5 Bridge (BV-8)	4/6/2007	10:08 AM	Rachael Willi	3,600	1,000	<100
Receiving Water 75 ft. South (1S)	4/6/2007	8:36 AM	Rachael Willi	20	21	<1
Receiving Water 150 ft. S (2S)	4/6/2007	8:38 AM	Rachael Willi	2	5	<1
Receiving Water 75 ft. North (1N)	4/6/2007	8:30 AM	Rachael Willi	14	10	<1
Receiving Water 150 ft. N (2N)	4/6/2007	8:33 AM	Rachael Willi	7	4	4
Pooling Water West of Spillway	4/6/2007	8:25 AM	Rachael Willi	1,100	700	<100

E= Estimated Value

Certified By: _____ **Date:** 4/9/2007

Doug Campbell, Laboratory Supervisor

ENCINA WASTEWATER AUTHORITY
A Public Agency
6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

ENCINA WASTEWATER AUTHORITY

April 9, 2007

Ref No. EC:07-0170

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/7/2007	9:26 AM	Rachael Willi	3,400	1,000	200
Jefferson St. Bridge West Side (BV2)	4/7/2007	9:27 AM	Rachael Willi	830,000	380,000	8,000
Jefferson St. Duck Feeding Area (BV3)	4/7/2007	9:39 AM	Rachael Willi	720,000	120,000	6,000
Lagoon View Dr. North Shore (BV4)	4/7/2007	9:30 AM	Rachael Willi	1,170,000	190,000	4,000
PCH Bridge East Side (BV5)	4/7/2007	8:55 AM	Rachael Willi	600	100	<100
Lagoon Spillway to Beach (BV6)	4/7/2007	9:36 AM	Rachael Willi	400	200	<100
BV @ I-5 Bridge (BV-7)	4/7/2007	9:10 AM	Rachael Willi	1,400	700	600
BV @ 75 West I-5 Bridge (BV-8)	4/7/2007	9:10 AM	Rachael Willi	1,200	<100	<100
Receiving Water 75 ft. South (1S)	4/7/2007	8:35 AM	Rachael Willi	1	2	1
Receiving Water 150 ft. S (2S)	4/7/2007	8:38 AM	Rachael Willi	1	<1	1
Receiving Water 75 ft. North (1N)	4/7/2007	8:40 AM	Rachael Willi	<1	<1	<1
Receiving Water 150 ft. N (2N)	4/7/2007	9:47 AM	Rachael Willi	2	1	<1
Pooling Water West of Spillway	4/7/2007	8:41 AM	Rachael Willi	1,000	100	100

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/9/2007

ENCINA WASTEWATER AUTHORITY
A Public Agency
6200 Avenida Encinas
Carlsbad, CA 92009-1009
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

ENCINA WASTEWATER AUTHORITY

April 9, 2007

Ref No. EC:07-0171

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/8/2007	9:55 AM	Rachael Willi	2,600	1,300	100
Jefferson St. Bridge West Side (BV2)	4/8/2007	9:50 AM	Rachael Willi	360,000	20,000	3,000
Jefferson St. Duck Feeding Area (BV3)	4/8/2007	10:04 AM	Rachael Willi	290,000	100,000	3,000
Lagoon View Dr. North Shore (BV4)	4/8/2007	9:45 AM	Rachael Willi	260,000	100,000	1,000
PCH Bridge East Side (BV5)	4/8/2007	9:05 AM	Rachael Willi	400	100	<50
Lagoon Spillway to Beach (BV6)	4/8/2007	8:38 AM	Rachael Willi	300	400	100
BV @ I-5 Bridge (BV-7)	4/8/2007	9:20 AM	Rachael Willi	200	<50	<50
BV @ 75 West I-5 Bridge (BV-8)	4/8/2007	9:22 AM	Rachael Willi	600	1,050	50
Receiving Water 75 ft. South (1S)	4/8/2007	8:38 AM	Rachael Willi	6	<1	1
Receiving Water 150 ft. S (2S)	4/8/2007	8:42 AM	Rachael Willi	13	1	<1
Receiving Water 75 ft. North (1N)	4/8/2007	8:41 AM	Rachael Willi	1	<1	<1
Receiving Water 150 ft. N (2N)	4/8/2007	8:45 AM	Rachael Willi	2	3	<1
Pooling Water West of Spillway	4/8/2007	8:36 AM	Rachael Willi	800	200	50
E= Estimated Value						

Certified By: _____ Date: 4/9/2007

Doug Campbell, Laboratory Supervisor

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 10, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0172

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/9/2007	9:20 AM	Rachael Willi	5,600	200	1,000
Jefferson St. Bridge West Side (BV2)	4/9/2007	9:22 AM	Rachael Willi	130,000	14,000	3,000
Jefferson St. Duck Feeding Area (BV3)	4/9/2007	9:33 AM	Rachael Willi	120,000	E 10,000	2,000
Lagoon View Dr. North Shore (BV4)	4/9/2007	9:20 AM	Rachael Willi	80,000	8,000	2,000
PCH Bridge East Side (BV5)	4/9/2007	8:49 AM	Rachael Willi	300	<50	<50
Lagoon Spillway to Beach (BV6)	4/9/2007	8:25 AM	Rachael Willi	7,600	1,050	100
BV @ I-5 Bridge (BV-7)	4/9/2007	9:13 AM	Rachael Willi	4,200	50	<50
BV @ 75 West I-5 Bridge (BV-8)	4/9/2007	9:15 AM	Rachael Willi	3,100	50	<50
Receiving Water 75 ft. South (1S)	4/9/2007	8:25 AM	Rachael Willi	2	1	<1
Receiving Water 150 ft. S (2S)	4/9/2007	8:30 AM	Rachael Willi	2	<1	<1
Receiving Water 75 ft. North (1N)	4/9/2007	8:34 AM	Rachael Willi	4	<1	1
Receiving Water 150 ft. N (2N)	4/9/2007	8:40 AM	Rachael Willi	2	<1	<1
Pooling Water West of Spillway (BV9)	4/9/2007	8:28 AM	Rachael Willi	2,800	800	100
E= Estimated Value						

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/10/2007

ENCINA WASTEWATER AUTHORITY

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6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 12, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0185

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/10/2007	9:22 AM	Rachael Willi	2,200	200	600
Jefferson St. Bridge West Side (BV2)	4/10/2007	9:20 AM	Rachael Willi	50,000	1,000	2,400
Jefferson St. Duck Feeding Area (BV3)	4/10/2007	9:26 AM	Rachael Willi	52,000	4,000	1,400
Lagoon View Dr. North Shore (BV4)	4/10/2007	9:15 AM	Rachael Willi	26,000	<1,000	2,000
PCH Bridge East Side (BV5)	4/10/2007	8:46 AM	Rachael Willi	200	50	<50
Lagoon Spillway to Beach (BV6)	4/10/2007	8:35 AM	Rachael Willi	400	100	50
BV @ I-5 Bridge (BV-7)	4/10/2007	8:58 AM	Rachael Willi	400	50	<50
BV @ 75 West I-5 Bridge (BV-8)	4/10/2007	9:00 AM	Rachael Willi	200	50	<50
Pooling Water West of Spillway (BV9)	4/10/2007	8:33 AM	Rachael Willi	3,300	100	<50
Receiving Water 75 ft. South (1S)	4/10/2007	8:30 AM	Rachael Willi	<2	<1	<1
Receiving Water 75 ft. North (1N)	4/10/2007	8:35 AM	Rachael Willi	<2	<1	<1

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/12/2007

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 12, 2007

Ref No. EC:07-0184

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Rachael Willi

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/11/2007	9:21 AM	Rachael Willi	6,600	1,300	900
Jefferson St. Bridge West Side (BV2)	4/11/2007	9:30 AM	Rachael Willi	25,000	5,000	1,200
Jefferson St. Duck Feeding Area (BV3)	4/11/2007	9:37 AM	Rachael Willi	41,000	9,600	5,200
Lagoon View Dr. North Shore (BV4)	4/11/2007	9:25 AM	Rachael Willi	28,000	5,200	2,000
PCH Bridge East Side (BV5)	4/11/2007	8:54 AM	Rachael Willi	300	100	<50
Lagoon Spillway to Beach (BV6)	4/11/2007	8:28 AM	Rachael Willi	500	100	50
BV @ I-5 Bridge (BV-7)	4/11/2007	9:10 AM	Rachael Willi	300	50	<50
BV @ 75 West I-5 Bridge (BV-8)	4/11/2007	9:10 AM	Rachael Willi	400	300	<50
Pooling Water West of Spillway (BV9)	4/11/2007	8:30 AM	Rachael Willi	1,800	250	<50
Receiving Water 75 ft. South (1S)	4/11/2007	8:35 AM	Rachael Willi	<1	2	<1
Receiving Water 75 ft. North (1N)	4/11/2007	8:32 AM	Rachael Willi	2	<1	<1

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/12/2007

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92011-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 13, 2007

Ref No. EC:07-0186

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Contact: Ms. Elaine Lukey
Samplers: Joel Camarillo

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml	Fecal Coliform cfu/100 ml	Enterococcus cfu/100 ml
				S.M 9222 B.	S.M. 9222 D.	S.M. 9230 C.
Upstream of Pump Station (BV1)	4/12/2007	9:17 AM	Joel Camarillo	4,300	300	100
Jefferson St. Bridge West Side (BV2)	4/12/2007	9:24 AM	Joel Camarillo	30,000	6,600	1,200
Jefferson St. Duck Feeding Area (BV3)	4/12/2007	9:32 AM	Joel Camarillo	28,000	3,000	1,400
Lagoon View Dr. North Shore (BV4)	4/12/2007	9:18 AM	Joel Camarillo	13,000	2,600	400
PCH Bridge East Side (BV5)	4/12/2007	8:45 AM	Joel Camarillo	300	100	<50
Lagoon Spillway to Beach (BV6)	4/12/2007	8:35 AM	Joel Camarillo	200	250	100
BV @ I-5 Bridge (BV-7)	4/12/2007	9:01 AM	Joel Camarillo	300	200	50
BV @ 75 West I-5 Bridge (BV-8)	4/12/2007	9:00 AM	Joel Camarillo	600	100	<50
Pooling Water West of Spillway (BV9)	4/12/2007	8:30 AM	Joel Camarillo	400	<50	50
Receiving Water 75 ft. South (1S)	4/12/2007	8:38 AM	Joel Camarillo	1	<1	3
Receiving Water 75 ft. North (1N)	4/12/2007	8:35 AM	Joel Camarillo	<1	2	6

E= Estimated Value

Certified By: Doug Campbell

Doug Campbell, Laboratory Supervisor

Date: 4/13/2007

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92009-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 14, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0197

Contact: Ms. Elaine Lukey
Samplers: Merkl & Associates

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml S.M 9222 B.	Fecal Coliform cfu/100 ml S.M. 9222 D.	Enterococcus cfu/100 ml S.M. 9230 C.
Upstream of Pump Station (BV1)	4/13/2007	7:45 AM	Joel Camarillo	3,600	1,500	100
Jefferson St. Bridge West Side (BV2)	4/13/2007	8:10 AM	Joel Camarillo	7,000	3,200	200
Jefferson St. Duck Feeding Area (BV3)	4/13/2007	6:33 AM	Joel Camarillo	5,000	2,000	1,200
Lagoon View Dr. North Shore (BV4)	4/13/2007	8:00 AM	Joel Camarillo	3,000	2,600	400
PCH Bridge East Side (BV5)	4/13/2007	8:55 AM	Joel Camarillo	400	50	<50
Lagoon Spillway to Beach (BV6)	4/13/2007	9:25 AM	Joel Camarillo	1,100	50	50
BV @ I-5 Bridge (BV-7)	4/13/2007	8:38 AM	Joel Camarillo	800	450	100
BV @ 75 West I-5 Bridge (BV-8)	4/13/2007	8:28 AM	Joel Camarillo	500	350	<50
Pooling Water West of Spillway (BV9)	4/13/2007	8:28 AM	Joel Camarillo	300	<50	<50
Receiving Water 75 ft. South (1S)	4/13/2007	11:12 AM	Joel Camarillo	2	<1	<1
Receiving Water 75 ft. North (1N)	4/13/2007	11:10 AM	Joel Camarillo	1	2	<1
107	4/13/2007	6:45 AM	Joel Camarillo	7,200	1,550	650
104	4/13/2007	7:00 AM	Joel Camarillo	12,600	1,650	<50
10E	4/13/2007	8:35 AM	Joel Camarillo	6,200	200	<50
103	4/13/2007	8:55 AM	Joel Camarillo	1,400	50	<50
10B	4/13/2007	8:13 AM	Joel Camarillo	2,000	<50	<50
102	4/13/2007	7:12 AM	Joel Camarillo	16,400	200	100

E= Estimated Value

Certified By: Debra L Bejop **Date:** 4/16/07

for **Doug Campbell, Laboratory Supervisor**

ENCINA WASTEWATER AUTHORITY

A Public Agency

6200 Avenida Encinas
Carlsbad, CA 92009-1095
Telephone (760) 438-3941
FAX (760) 438-3861 (Plant)
(760) 431-7493 (Admin)

April 15, 2007

Client: City Of Carlsbad
1635 Faraday Avenue
Carlsbad, CA 92009

Ref No. EC:07-0198

Contact: Ms. Elaine Lukey
Samplers: Merkl & Associates

ENCINA WASTEWATER AUTHORITY LABORATORY REPORT
E.L.A.P. Certification No. 1441

	Sample Date	Sample Time	Analyzed By:	Total Coliform cfu/100 ml S.M 9222 B.	Fecal Coliform cfu/100 ml S.M. 9222 D.	Enterococcus cfu/100 ml S.M. 9230 C.
Upstream of Pump Station (BV1)	4/14/2007	7:05 AM	Rachael Willi	3,300	900	<100
Jefferson St. Bridge West Side (BV2)	4/14/2007	6:14 AM	Rachael Willi	14,000	2,000	1,200
Jefferson St. Duck Feeding Area (BV3)	4/14/2007	6:26 AM	Rachael Willi	5,000	1,200	200
Lagoon View Dr. North Shore (BV4)	4/14/2007	6:05 AM	Rachael Willi	4,000	600	600
PCH Bridge East Side (BV5)	4/14/2007	7:51 AM	Rachael Willi	300	50	50
Lagoon Spillway to Beach (BV6)	4/14/2007	8:16 AM	Rachael Willi	600	150	50
BV @ I-5 Bridge (BV-7)	4/14/2007	7:35 AM	Rachael Willi	500	100	<50
BV @ 75 West I-5 Bridge (BV-8)	4/14/2007	7:26 AM	Rachael Willi	200	50	<50
Pooling Water West of Spillway (BV9)	4/14/2007	8:13 AM	Rachael Willi	500	200	<50

E= Estimated Value

Certified By: Debra L Beggs **Date:** 4/16/07

for **Doug Campbell, Laboratory Supervisor**

WESTON SOLUTIONS

WATER QUALITY FIELD DATA LOG

PROJECT/SURVEY NAME	DATE	PROJECT MANAGER	RECORDER
BVL Sewage	4/3/07		NW
STATION NAME	**NAV DATUM**	**LATITUDE**	**LONGITUDE**
Site 1 East	—	33.17519	-117.34724
SAMPLE IDENTIFICATION	**TIME STARTED (AT SITE)**	**TIME FINISHED (AT SITE)**	**GRAB SAMPLE TIME**
	1315	1320	

FIELD TEAM
N. Woodward, E. Goldstein

METEOROLOGICAL CHARACTERISTICS (DESCRIBE RAINFALL, WIND, TEMPERATURE, ETC.)
partly cloudy, sunny, breezy, 65-70°

WATER QUALITY APPEARANCE

ODOR	☐ HYDROGEN SULFIDE	☐ MUSTY	☒ SEWAGE	☐ AMMONIA	☐ GASOLINE	☐ OTHER
	☐ SOAP	☐ CHLORINE	☐ NONE			
COLOR	☐ YELLOW	☐ GREEN	☐ BLUE	☒ BROWN	☐ BLACK	☐ OTHER
	☐ GRAY	☐ WHITE	☐ COLORLESS			
FLOATING MATERIALS	☐ TRASH OR DEBRIS	☐ OIL AND GREASE	☐ ORGANIC MATERIAL	☐ SCUM	☐ SUDS	☐ OTHER
	☐ OBJECTS (DESCRIBE)					
TURBIDITY	☒ HEAVY CLOUDINESS, OPAQUE	☐ CLOUDY	☐ SOME CLOUDINESS	☐ NONE		

WATER QUALITY APPEARANCE COMMENTS:
no algal blumps

EROSION AND VEGETATION (DESCRIBE ANY VISUAL SIGNS OF SLIDE SLOPE EROSION AND/OR CHANGE IN VEGETATION CONDITION)
—

FIELD MEASUREMENTS: pH 7.98 TEMPERATURE (°C) 22.43 CONDUCTIVITY (µS/cm) 3441 µS/cm DO 45.1% 3.71 mg/L

FLOW WEIGHTED COMPOSITE SAMPLE INFORMATION (ENTER TIME OF BOTTLE CHANGES)

BOTTLE #1 _____ BOTTLE #2 _____ BOTTLE #3 _____

BOTTLE #4 _____ BOTTLE #5 _____ BOTTLE #6 _____

SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)
depth/ft – motored to site, anchored
– took measurements & photos using YSI 6 series

TEAM LEADER'S SIGNATURE _____

WATER QUALITY FIELD DATA LOG

PROJECT/SURVEY NAME	DATE	PROJECT MANAGER	RECORDER
BVL Sewage	4/3/07		NW
STATION NAME	**NAV DATUM**	**LATITUDE**	**LONGITUDE**
Site 2 East Lagoon	—	33.17584	-117.34808
SAMPLE IDENTIFICATION	**TIME STARTED (AT SITE)**	**TIME FINISHED (AT SITE)**	**GRAB SAMPLE TIME**
	1325	1330	—

FIELD TEAM
N. Woodward, E. Goldstein

METEOROLOGICAL CHARACTERISTICS (DESCRIBE RAINFALL, WIND, TEMPERATURE, ETC.)
Partly cloudy, breezy, 65-70°C

WATER QUALITY APPEARANCE

ODOR	☐ HYDROGEN SULFIDE	☐ MUSTY	☒ SEWAGE	☐ AMMONIA	☐ GASOLINE	☐ OTHER
	☐ SOAP	☐ CHLORINE	☐ NONE			
COLOR	☐ YELLOW	☐ GREEN	☐ BLUE	☒ BROWN	☐ BLACK	☐ OTHER
	☐ GRAY	☐ WHITE	☐ COLORLESS			
FLOATING MATERIALS	☐ TRASH OR DEBRIS	☐ OIL AND GREASE	☐ ORGANIC MATERIAL	☐ SCUM	☐ SUDS	☐ OTHER
	☐ OBJECTS (DESCRIBE)	NONE				
TURBIDITY	☒ HEAVY CLOUDINESS, OPAQUE	☐ CLOUDY	☐ SOME CLOUDINESS	☐ NONE		

WATER QUALITY APPEARANCE COMMENTS:

EROSION AND VEGETATION (DESCRIBE ANY VISUAL SIGNS OF SLIDE SLOPE EROSION AND/OR CHANGE IN VEGETATION CONDITION)
—

FIELD MEASUREMENTS: pH 8.06 TEMPERATURE (°C) 23.80 CONDUCTIVITY (µS/cm) 3348 µS/cm DO 93.7% 7.84 mg/L

FLOW WEIGHTED COMPOSITE SAMPLE INFORMATION (ENTER TIME OF BOTTLE CHANGES)

BOTTLE #1 _____ BOTTLE #2 _____ BOTTLE #3 _____

BOTTLE #4 _____ BOTTLE #5 _____ BOTTLE #6 _____

SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)
depth 1' 2inches — Moved to site, anchored
— took measurements & probes
using YSI 6 series

TEAM LEADER'S SIGNATURE _____

WATER QUALITY FIELD DATA LOG

PROJECT/SURVEY NAME	DATE	PROJECT MANAGER	RECORDER
BVL Sewage	4/3/07		NW
STATION NAME	**NAV DATUM**	**LATITUDE**	**LONGITUDE**
Site 3	—	33.17623	-117.34815
SAMPLE IDENTIFICATION	**TIME STARTED (AT SITE)**	**TIME FINISHED (AT SITE)**	**GRAB SAMPLE TIME**
	1335	1340	

FIELD TEAM
N. Woodward, E. Goldstein

METEOROLOGICAL CHARACTERISTICS (DESCRIBE RAINFALL, WIND, TEMPERATURE, ETC.)
partly cloudy, breezy, 65-70°

WATER QUALITY APPEARANCE

ODOR	☐ HYDROGEN SULFIDE	☐ MUSTY	☒ SEWAGE	☐ AMMONIA	☐ GASOLINE	☐ OTHER
	☐ SOAP	☐ CHLORINE	☐ NONE			
COLOR	☐ YELLOW	☐ GREEN	☐ BLUE	☒ BROWN	☐ BLACK	☐ OTHER
	☐ GRAY	☐ WHITE	☐ COLORLESS			
FLOATING MATERIALS	☐ TRASH OR DEBRIS	☐ OIL AND GREASE	☐ ORGANIC MATERIAL	☐ SCUM	☐ SUDS	☐ OTHER
	☐ OBJECTS (DESCRIBE)	☒ None				
TURBIDITY	☒ HEAVY CLOUDINESS, OPAQUE	☐ CLOUDY	☐ SOME CLOUDINESS	☐ NONE		

WATER QUALITY APPEARANCE COMMENTS:
Surface clear

EROSION AND VEGETATION (DESCRIBE ANY VISUAL SIGNS OF SLIDE SLOPE EROSION AND/OR CHANGE IN VEGETATION CONDITION)
—

FIELD MEASUREMENTS: pH 8.17 TEMPERATURE (°C) 23.83°C CONDUCTIVITY (µS/cm) 3990 µS/cm DO 96.1% Surface 7.55 mg/L

FLOW WEIGHTED COMPOSITE SAMPLE INFORMATION (ENTER TIME OF BOTTLE CHANGES)

BOTTLE #1 _____ BOTTLE #2 _____ BOTTLE #3 _____

BOTTLE #4 _____ BOTTLE #5 _____ BOTTLE #6 _____

SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)
depth 1 ft. 1 inch

using YSI 6 series

TEAM LEADER'S SIGNATURE _____

WATER QUALITY FIELD DATA LOG

PROJECT/SURVEY NAME	DATE	PROJECT MANAGER	RECORDER
BVL Sewage	4/3/07		NW
STATION NAME	**NAV DATUM**	**LATITUDE**	**LONGITUDE**
Site 4 East Lagoon		33.176660	-117.34462
SAMPLE IDENTIFICATION	**TIME STARTED (AT SITE)**	**TIME FINISHED (AT SITE)**	**GRAB SAMPLE TIME**
	1255	1258	

FIELD TEAM
NW/EG

METEOROLOGICAL CHARACTERISTICS (DESCRIBE RAINFALL, WIND, TEMPERATURE, ETC.)
Sunny, stronger breeze from W, 65°–70°

WATER QUALITY APPEARANCE

ODOR	☐ HYDROGEN SULFIDE	☐ MUSTY	☒ SEWAGE	☐ AMMONIA	☐ GASOLINE	☐ OTHER
	☐ SOAP	☐ CHLORINE	☐ NONE			
COLOR	☐ YELLOW	☐ GREEN	☐ BLUE	☒ BROWN	☐ BLACK	☐ OTHER
	☐ GRAY	☐ WHITE	☐ COLORLESS			
FLOATING MATERIALS	☐ TRASH OR DEBRIS	☐ OIL AND GREASE	☒ ORGANIC MATERIAL	☐ SCUM	☐ SUDS	☐ OTHER
	☐ OBJECTS (DESCRIBE)	algal clumps				
TURBIDITY	☒ HEAVY CLOUDINESS, OPAQUE	☐ CLOUDY	☐ SOME CLOUDINESS	☐ NONE		

WATER QUALITY APPEARANCE COMMENTS:
~~lots of~~ lots of algal clumps

EROSION AND VEGETATION (DESCRIBE ANY VISUAL SIGNS OF SLIDE SLOPE EROSION AND/OR CHANGE IN VEGETATION CONDITION)
—

FIELD MEASUREMENTS: pH 7.920 TEMPERATURE (°C) 21.84 CONDUCTIVITY (µS/cm) 3210 µS/cm DO 14.6% 1.22 mg/L

FLOW WEIGHTED COMPOSITE SAMPLE INFORMATION (ENTER TIME OF BOTTLE CHANGES)

BOTTLE #1 _____ BOTTLE #2 _____ BOTTLE #3 _____

BOTTLE #4 _____ BOTTLE #5 _____ BOTTLE #6 _____

SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)
depth 12" – motored to site, anchored
– took measurements
– took photos (3) of location
using YSI 6 series

TEAM LEADER'S SIGNATURE _____

WATER QUALITY FIELD DATA LOG

PROJECT/SURVEY NAME	DATE	PROJECT MANAGER	RECORDER
BVL Sewage Spill	4/3/07		NW
STATION NAME	**NAV DATUM**	**LATITUDE**	**LONGITUDE**
Site 5 East Lagoon	—	33.1TT30	-117.34536
SAMPLE IDENTIFICATION	**TIME STARTED (AT SITE)**	**TIME FINISHED (AT SITE)**	**GRAB SAMPLE TIME**
	1300	1310	—

FIELD TEAM
N. Woodward, E Goldstein

METEOROLOGICAL CHARACTERISTICS (DESCRIBE RAINFALL, WIND, TEMPERATURE, ETC.)
partly cloudy, breezy, 65°-70°

WATER QUALITY APPEARANCE

ODOR	☐ HYDROGEN SULFIDE	☐ MUSTY	☒ SEWAGE	☐ AMMONIA	☐ GASOLINE	☐ OTHER
	☐ SOAP	☐ CHLORINE	☐ NONE			
COLOR	☐ YELLOW	☐ GREEN	☐ BLUE	☒ BROWN	☐ BLACK	☐ OTHER
	☐ GRAY	☐ WHITE	☐ COLORLESS			
FLOATING MATERIALS	☐ TRASH OR DEBRIS	☐ OIL AND GREASE	☒ ORGANIC MATERIAL (algal clumps)	☐ SCUM	☐ SUDS	☐ OTHER
	☐ OBJECTS (DESCRIBE)					
TURBIDITY	☒ HEAVY CLOUDINESS, OPAQUE	☐ CLOUDY	☐ SOME CLOUDINESS	☐ NONE		

WATER QUALITY APPEARANCE COMMENTS:

EROSION AND VEGETATION (DESCRIBE ANY VISUAL SIGNS OF SLIDE SLOPE EROSION AND/OR CHANGE IN VEGETATION CONDITION)
—

FIELD MEASUREMENTS: pH 7.89 TEMPERATURE (°C) 21.06 CONDUCTIVITY (µS/cm) 3168 µS/cm DO 13.3% 1.04 mg/L

FLOW WEIGHTED COMPOSITE SAMPLE INFORMATION (ENTER TIME OF BOTTLE CHANGES)

BOTTLE #1 _____ BOTTLE #2 _____ BOTTLE #3 _____

BOTTLE #4 _____ BOTTLE #5 _____ BOTTLE #6 _____

SAMPLING ACTIVITIES (DESCRIBE ALL ACTIONS TAKEN AT EACH SITE VISIT AND PROVIDE ADDITIONAL COMMENTS AS NECESSARY)

depth 1'6" - motored to site, anchored
- took measurements and photos using YSI 6 series

TEAM LEADER'S SIGNATURE _____