

**PROPOSITION 1E STORMWATER FLOOD MANAGEMENT GRANT APPLICATION  
CITY OF PALM SPRINGS  
TAHQUITZ CREEK LEVEE RECONSTRUCTION  
EXHIBIT D  
ECONOMIC ANALYSIS: WATER SUPPLY COSTS AND BENEFITS**

**ATTACHMENT NO. 1  
SUPPLEMENT INFORMATION**

**PALM SPRINGS WASTEWATER TREATMENT PLANT  
2010 ANNUAL REPORT  
FOLLOWS THIS PAGE**



January 15, 2011

Robert Perdue, Executive Officer  
Regional Water Quality Control Board  
73-720 Fred Waring Drive, Suite 100  
Palm Desert, CA 92260

Re: Annual Review of Units of Operation for City of Palm Springs Wastewater Treatment Plant for Year 2010.

During this period the Palm Springs Wastewater Treatment Plant performed well.

Following is a brief description of each process:

#### TOTAL PLANT INFLUENT FLOW

The Wastewater Treatment Plant collected, transported, received, treated, and discharged 2,069.51 MG. A total of 3,002.53 MG was re-circulated and combined with the influent flow and then pumped to the trickling filters.

#### PRELIMINARY TREATMENT

202.37 tons of screenings and grit removed from the sewage flow was collected and disposed of properly. This material was hauled to the landfill in Lambs Canyon for disposal.

Annual maintenance was conducted on both the auger/compactor units of the barscreen.. During this operation a new screw shaft was installed.

#### PRIMARY TREATMENT

All clarifier mechanisms and sludge pumping operated well during the year with no equipment problems. Sludge blankets were maintained at prescribed levels allowing good settling of material prior to pumping to gravity thickener units and anaerobic digestion.

#### SECONDARY TREATMENT

Our trickling filters and secondary clarifiers have operated reliably during this period.

The overall removal efficiencies were 96% and 95% for BOD and TSS. Maintenance was performed on our #2 bridge collector mechanism . The unit was taken out of service and its clarifiers were pumped out to



allow access into the area. Cable pieces that allow raising and lowering of hoist mechanisms were replaced with stainless steel chain. The bridge unit and clarifiers were placed back into service.

### SOLIDS HANDLING

We continue to remove solids from digestion at an accelerated rate and, once on the ground, we aggressively mix this material so that drying times are shorter allowing it to reach a dryer state that reduces odors and allows for removal for disposal at an earlier date.

In 2008, we began a rehab project on our #1 digester. This project continues and at this date is still incomplete. We anticipate the #1 Digester will be back in operation early in 2011. However, with the one digester we have been able to maintain a final sludge product that meets Class B requirements.

### LABORATORY

All testing was performed for monitoring reporting as per Wastewater Discharge Requirements. Bi-weekly analysis for BOD and TSS; monthly analysis for nitrate, nitrite, total nitrogen, total dissolved solids, sulfate, chloride, and fluoride, and quarterly analysis of our secondary effluent, and three monitoring wells was conducted by TestAmerica Laboratories of Irvine, CA, a state ELAP certified laboratory. Quarterly analysis of digested sludge was also conducted by TestAmerica Labs. All results were submitted with our monthly reporting.

Veolia Water North America Palm Springs maintains an ELAP certificate for the plant laboratory and we perform daily testing for pH and 60-minute Settleability as per our WDR. The current ELAP certificate was issued on 1/1/2010 and remains in effect until 12/31/2011.

The laboratory continues to participate in the Proficiency Testing Program. We conduct tests on unknown samples for the WP Performance program coordinated by Veolia Water North America. We continued to achieve satisfactory results in 2010.

### EFFLUENT DISPOSAL

Of the 2,069.51 MG received and treated, 607.903 MG of secondary effluent was discharged to groundwater recharge via percolation ponds and 1,461.603 MG was delivered off-site to the Desert Water Agency for further treatment and ultimate use as irrigation water on green belt areas. This calculates to a monthly average of 50.66 MG to percolation and 121.80 MG to further treatment.

The annual average for chloride in our effluent reached 80.2 mg/l in December 2010. This exceeds our limit of 70 mg/l for chloride. In addition, as of December 2010 the annual effluent average sulfate concentration was 90.7 mg/l, which exceeds our discharge limit of 90 mg/l. We have begun an enhanced monitoring program for chloride and sulfate to better understand their variability and to identify possible sources of these substances. We maintained a bi-weekly testing schedule for chloride and sulfate in the plant influent and effluent. Additionally, we are sampling from the collection system and the water system to identify areas of the highest concentrations. We have also surveyed nearly 200 commercial establishments in Palm Springs



to identify those using salt-regenerated water softeners or other processes that may be contributing higher levels of chloride or sulfate to the wastewater.

The Plant achieved annual removal efficiencies of 96% Biochemical Oxygen Demand and 95% Total Suspended Solids.

Results from analyses of quarterly samples from our monitoring wells were submitted.

### CAPITAL IMPROVEMENT

Pursuant to the direction from the City of Palm Springs, Veolia Water engaged Carollo Engineers to complete a Capital Improvement Plan for the Wastewater Treatment Plant. Based on this plan projects were identified and work has begun. In 2008 the City of Palm Springs along with Veolia Water began a Capital Improvement Project to clean our #1 digester and refurbish it by making repairs to the fixed, concrete cover, applying coating material on the inside, and replacing the mixing and heating elements of this digester to maintain its function as a fully operational Primary Digester. This project will be completed in 2011.

The new Reclaimed Water Pump Station has been working reliably since it went on line. This station is supplying tertiary effluent to both the DeMuth Park and the wastewater plant and is controlled by a state-of-the-art SCADA control system. In the future reclaimed water will be used at the new Animal Shelter.

A major retrofit of the gravity thickener process was completed during this time. This process was improved by adding piping, valves, and flow metering to allow both thickeners to be used simultaneously; something that was never possible before. In addition, a state-of-the-art polymer system was installed to allow chemical dosing of the sludge flows to either thickener.

A new 8' security fence is currently being installed around the WWTP, a new electric gate is being installed at the front entrance, and a laser beam security system is being installed to monitor the plants center core area to discourage intruders.

Future plans to refurbish the aging electrical infrastructure are being finalized and work should begin in 2011.

### BIOSOLIDS HANDLING AND DISPOSAL

This process operated well all year with the following occurrences:

A total of 1,234.32 dry tons of digested biosolids were processed and dewatered using the drying beds and belt filter press in 2010. During 2010 1,331.85 dry tons of biosolids were hauled to a composting facility in Kern County.

Results from analysis for heavy metals of our biosolids are included with this report.



## COLLECTION SYSTEM

All units of the Collection System operated well this year. In addition, our Collection Crew hydraulically cleaned over 208 miles of main sewer during 2010. In addition 1,816 catch basins of the down and under system and over 300 storm drain catch basins throughout the City were maintained during 2010. In addition, over 44 miles of the collection system were inspected with a CCTV inspection unit.

Collection personnel responded to 391 requests for service. The biggest portion of these was Dig Alert notices which were investigated by Veolia personnel. There were 11 incidences that were determined to be within private sewer laterals and were referred to the property owners.

Our system suffered one SSO this past year. An estimated quantity of 2000 gallons overflowed a manhole at Via Miraleste and made its way following gutters until it ran into a storm drain approximately  $\frac{3}{4}$  of a mile away. Veolia forces arrived at the site of the overflow and quickly broke the stoppage which was primarily a combination of roots, rags, and grease. Following cleanup of the area, they responded to the location of the storm drain and cleaned up the sewage flow that entered the drain. This event was reported to the Office of Emergency Services, the County of Riverside, and the RWQCB.

Our ongoing Fats, Oils, and Grease program is progressing quite well. Our inspection program has put us in direct contact with all food service establishments in the City to present minimum requirements and Best Management Practices to all businesses operating grease interceptors within the City of Palm Springs. Additionally, a Master Plan was completed for the Collection System.

I certify under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Sincerely submitted,

A handwritten signature in black ink, appearing to read "Jack Martin".

Jack Martin  
Project Manager, VWNAOS / Palm Springs WWTP

Attach: Annual Monitoring Report of heavy metal concentrations in digested sludge  
Annual Data Summary

cc: Marcus Fuller, Assistant Public Works Director / City of Palm Springs

California Regional Water Quality Control Board  
Colorado River Basin Region  
Monitoring and Reporting Program for the City of Palm Springs

WDID No: 7A330114012  
Order No: 93-076  
Reporting Frequency: Annually

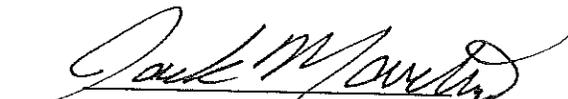
Results for 2010

Sludge that is generated at the treatment facility shall be sampled and analyzed a minimum of quarterly for the following:  
Annual average results are:

Arsenic (As)	5.2 mg/kg
Cadmium (Cd)	1.5 mg/kg
Copper (Cu)	510 mg/kg
Lead (Pb)	19 mg/kg
Mercury (Hg)	1.5 mg/kg
Molybdenum (Mo)	16 mg/kg
Nickel (Ni)	14 mg/kg
Selenium (Se)	8.7 mg/kg
Zinc (Zn)	940 mg/kg

In addition to the above, the discharger shall inspect and document any operational and maintenance problems by reviewing each unit process. This review shall be reported annually.

I declare under penalty of law that this document and all attachments were prepared under the direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

  
Jack Martin, Project Manager, VWWOS, Inc

ANNUAL REPORT FOR 2010

	Influent Flow						BOD						TSS						Inf Temp		Sec Recirc
	Max Flow		Min Flow		MGD		Raw Inf		Sec Eff		Removal		Max		Min		deg F		Tot Flow		
	MG	MGD	MG	MGD	MG	MGD	mg/l	%	mg/l	%	mg/l	%	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	MG	
Jan '10	175.551	5.663	7.169	4.962	260	11.9	96	14.0	9.4	265	9.2	96.62	14.0	6.5	284.155						
Feb '10	158.206	5.650	6.229	5.072	258	9.5	96	10.0	8.6	250	8.6	96.10	11.0	5.5	247.245						
Mar '10	187.756	6.057	6.607	5.459	275	8.3	97	11.0	2.0	234	10.3	94.93	14.0	7.0	258.841						
Apr '10	183.772	6.126	6.702	5.412	276	7.6	97	9.8	6.4	272	8.3	96.89	10.0	5.0	251.783						
May '10	177.742	5.734	6.550	5.207	268	8.9	96	12.0	7.8	340	11.4	95.87	18.0	9.0	261.864						
Jun '10	161.540	5.385	5.750	5.062	314	10.4	96	16.0	6.3	336	14.6	95.14	18.0	12.0	211.427						
Jul '10	169.998	5.484	6.178	4.963	228	8.1	95	15.0	5.0	203	9.5	94.35	16.0	5.0	29.189						
Aug '10	166.460	5.370	5.885	4.955	198	5.5	97	7.4	4.0	210	6.1	96.82	9.0	5.0	279.771						
Sep '10	167.878	5.596	6.141	4.456	203	6.5	96	9.1	4.9	165	7.8	94.61	13.0	5.0	286.618						
Oct '10	172.034	5.549	6.283	4.890	197	7.5	96	9.1	5.7	183	7.5	97.05	15.0	5.0	314.887						
Nov '10	178.140	5.938	6.755	5.260	191	7.8	96	9.2	6.2	215	9.7	95.54	28.0	0.0	249.878						
Dec '10	170.429	5.498	8.222	4.816	183	8.8	95	12.0	6.9	134	11.6	89.69	32.0	5.0	326.875						
Anl Avg	172.46	5.670			238	8.40	96			236	9.54	95.26			87.3	250.211					
Anl Total	2,069.51															3,002.53					

	Secondary Effluent						Settleable Solids						pH			
	SO4 =		Cl -		F -		NO3 - (N)		NO2 - (N)		Tot N (N)		VOC		VOC	
	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l	ug/l	exception	mg/l	exception
Jan '10	490.0	100.4	80.3	0.56	9.70	0.37	15.37	ND		105.905	69.646	17.5	0.1	99.3	7.8	7.3
Feb '10	420.0	98.0	79.6	0.68	12.00	0.43	18.33			99.787	58.419	18.4	0.1	99.4	7.8	7.3
Mar '10	530.0	93.3	81.9	0.52	10.00	0.38	17.68	ND		61.082	126.674	18.1	0.1	99.4	7.7	7.2
Apr '10	540.0	89.2	80.6	0.64	12.00	0.44	18.04			14.043	169.729	19.1	0.1	99.4	7.6	7.2
May '10	500.0	88.0	86.5	0.53	11.00	0.71	13.91			26.706	151.036	18.2	0.1	99.4	7.5	7.3
Jun '10	530.0	86.8	87.0	0.47	14.00	0.38	22.08	ND		22.584	138.956	20.6	0.1	99.4	7.5	7.3
Jul '10	480.0	83.5	73.4	0.44	6.90	0.17	9.17			22.163	147.835	13.5	0.1	99.2	7.5	7.3
Aug '10	490.0	87.6	76.9	0.50	7.80	0.30	10.20			16.561	149.899	13.7	0.1	99.0	7.5	7.3
Sep '10	470.0	97.1	82.3	0.43	4.60	1.50	9.30	ND		18.143	149.735	15.1	0.1	99.2	7.5	7.3
Oct '10	480.0	95.9	77.4	0.47	6.70	0.32	9.02			54.374	117.660	15.8	0.1	99.3	7.5	7.3
Nov '10	470.0	85.8	80.6	0.54	9.70	0.37	13.07			58.659	119.481	15.6	0.1	99.3	7.6	7.4
Dec '10	450.0	82.2	75.1	0.42	8.80	0.46	13.94			107.896	62.533	14.7	0.1	99.3	7.7	7.3
Anl Total	488	90.6	80.1	0.52	9.43	0.49	14.18	ND		607.903	1,461.603	16.7	0.1	99.3	7.6	7.3
Anl Avg										50.66	121.80					

Digested Sludge

	Thickened Sludge			Drawn to Beds			BFP to Beds			Dig Sludge to Beds - dry tons			Dig Sludge to Beds - gal drawn			Digested Sludge Hauled				
	%TS	%VS		%TS	%VS		%TS	%VS		Drawn	BFP	Total	Drawn	BFP	Total	Wet Wt	%TS	Dry Wt	d.m.t.	
Jan '10	4.3	73	0.3	62	1.1	56	16.87	90.67	107.54	189,000	952,800	1,141,800	0.00	0.00	0.00	0.00	76	307.13	278.58	
Feb '10	3.7	74	0.2	61	1.6	53	7.00	124.31	131.31	73,000	1,164,400	1,237,400	404.12	404.12	404.12	404.12	53	244.29	221.58	
Mar '10	2.8	72	0.2	58	1.7	57	11.57	150.05	161.62	111,000	1,469,640	1,580,640	460.93	460.93	460.93	460.93	54	86.65	78.59	
Apr '10	2.8	73	0.1	64	1.5	53	5.21	132.51	137.72	59,500	1,440,000	1,499,500	279.51	279.51	279.51	279.51	76	137.36	124.59	
May '10	3.3	71	0.9	59	0.3	60	57.66	24.18	81.84	804,000	323,000	1,127,000	180.74	180.74	180.74	180.74	0.00	0.00	0.00	
Jun '10	2.7	71	1.5	59	0.0		101.84	0.00	101.84	1,233,750	0	1,233,750	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Jul '10	3.2	73	1.4	52	0.0		88.49	0.00	88.49	999,000	0	999,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Aug '10	3.3	72	1.5	57	0.0		83.12	0.00	83.12	1,059,000	0	1,059,000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Sep '10	3.5	69	1.2	62	0.0		80.31	0.00	80.31	979,500	0	979,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Oct '10	2.7	71	1.4	57	0.0		91.44	0.00	91.44	1,004,500	0	1,004,500	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Nov '10	2.4	72	1.5		0.0		90.49	0.00	90.49	1,085,000	0	1,085,000	585.70	585.70	585.70	585.70	95	556.42	504.68	
Dec '10	2.5	69	0.6		0.6		40.53	38.06	78.60	486,000	456,400	942,400	0.00	0.00	0.00	0.00	69			
Ar1 Avg	3.1	72	0.9	58	0.6	57	674.52	559.79	1,234.32	8,083,250	5,806,240	13,889,490	1,911.00	1,911.00	1,911.00	1,911.00		1,331.85	1,208.03	
Ar1 Tot																				

Gas Usage Hours of Operation

	Nat Gas			Digester Gas			AQMD			Thickened Sludge
	ST	ME-12	ME-03	AD	ST	ME-12	ME-03	ME-01	MB	
Jan '10	0.0	0.0	0.0					0	3,966,838	1,017,073
Feb '10	0.0	0.0	0.0					1	5,300,648	943,124
Mar '10	0.0	0.0	0.0					1	5,905,550	1,377,109
Apr '10	0.0	0.0	0.0					1	5,187,455	1,376,608
May '10	0.0	0.0	0.0					1	4,888,106	1,179,539
Jun '10	0.0	0.0	0.0					0	5,031,709	1,160,600
Jul '10	0.0	0.0	0.0					1	5,074,076	1,056,538
Aug '10	81.0	0.0	0.0					1	5,594,538	1,071,515
Sep '10	0.0	0.0	0.0					0	4,734,086	941,108
Oct '10	0.0	0.0	0.0					1	3,408,369	1,192,800
Nov '10	0.0	6.7	0.0					1	3,061,568	1,156,118
Dec '10	0.0	31.1	0.0					1	3,003,163	1,258,764

Sludge stored

	This yr and		Sludge stored		Grit & Screenings	
	wet tons	dry tons	wet tons	dry tons	Jan '10	Feb '10
Sludge on	351.70				23.81	22.51
This yr	613.96				20.62	24.65
Sludge haul	0.00	1,331.85	1,208.03		11.40	12.69
Sludge Generated					15.63	12.27
To beds	wet tons	dry tons	d.m.t.		14.75	15.52
SI Produce	1234.32	852.80	773.51		11.21	17.31
Max					24.65	
Avg					13.49	
Total					202.37	

Quarterly Testing

Monitoring Well #1										
	TDS mg/l	SO4 mg/l	CL mg/l	F mg/l	NO3(N) mg/l	NO2(N) mg/l	TKN mg/l	Tot N (N) mg/l	VOC ug/l	Exception Constituent ug/l
Jan '10	1,100	220	190	0.15	32.0	0.15	3.40	35.6	ND	
Feb '10									ND	
Mar '10									ND	
Apr '10									ND	
May '10	530	120	85	0.12	2.7	0.15	0.30	3.15	ND	
Jun '10									ND	
Jul '10									ND	
Aug '10	530	120	90	0.10	0.3	0.15	0.66	1.14	ND	
Sep '10									ND	
Oct '10									ND	
Nov '10									ND	
Dec '10	590	120	95	0.10	4.2	0.15	0.94	5.3	ND	
Anl Avg	688	145	115	0.1	9.8	0.15	1.33	11.3	ND	

Total  
Avg

Arrowhead
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Monitoring Well #2										
	TDS mg/l	SO4 mg/l	CL mg/l	F mg/l	NO3(N) mg/l	NO2(N) mg/l	TKN mg/l	Tot N (N) mg/l	VOC ug/l	Exception Constituent ug/l
Jan '10	550	130	88	0.2	7.1	0.67	5.00	12.77		
Feb '10									ND	
Mar '10				<0.1					ND	
Apr '10									ND	
May '10	940	160	150	0.1	25.0	0.15	6.30	31.45	ND	
Jun '10									ND	
Jul '10									ND	
Aug '10	1,000	190	200	<0.1	31.0	0.15	1.10	32.25	ND	
Sep '10									ND	
Oct '10									ND	
Nov '10									ND	
Dec '10	870	230	130	0.1	20.0	0.15	9.30	29.45	ND	
Anl Avg	840	178	142	0.1	20.8	0.28	5.43	26.5	ND	



Jan '10	1.0	1.4	440	16	1.3	15	11	9.5	780
Feb '10	1.0				1.0				
Mar '10									
Apr '10									
May '10									
Jun '10	1.0	1.6	580	22	1.7	21	16	7.9	1100
Jul '10									
Aug '10									
Sep '10									
Oct '10									
Nov '10									
Dec '10									
Avg	1.0	0.75	255	10	1.33	9	7	4.35	470

1.0

Biosolids - Fecal Coliform/% Total Solids

	Total Coliform		% Total Solids	
	Pile #1	Pile #2	Pile #1	Pile #2
Jan '10				
Feb '10				
Mar '10				
Apr '10				
May '10				
Jun '10				
Jul '10				
Aug '10				
Sep '10				
Oct '10				
Nov '10				
Dec '10				
Averages			% TS	Average

Trickling Filter Pumping - Hours

	ST-P-01	ST-P-02	ST-P-03	ST-ME-11	ST-ME-12	ST-P-06
Jan '10	0.0	0.0	726.1	0.0	0.0	0.0
Feb '10	0.0	611.9	44.0	0.0	0.0	0.0
Mar '10	0.0	725.2	0.0	0.0	0.0	0.0
Apr '10	0.0	702.7	0.0	0.0	0.0	0.0
May '10	0.0	726.2	0.8	0.0	0.0	0.0
Jun '10	0.0	702.7	0.0	0.0	0.0	0.0
Jul '10	0.0	723.5	0.0	0.0	0.0	0.0
Aug '10	0.0	563.0	165.8	0.0	0.0	0.0
Sep '10	124.0	271.7	301.6	0.0	0.0	0.0
Oct '10	164.0	375.1	188.2	0.0	0.0	0.0
Nov '10	0.0	698.3	0.6	0.0	6.7	0.0
Dec '10	0.0	722.9	0.1	0.0	31.1	0.0
Total	288.0	6,823.2	1,427.2	0.0	37.8	0.0