

	Total Costs
Capital Costs - Plant 4	
Construction - Phase 1 - AST Foundation and Clearwell	\$520,000.00
Construction - Phase 2 - GAC Foundation	\$390,000.00
Construction - Phase 3 - GAC Vessels	\$875,800.00
Construction - Phase 4 - GAC and Site Piping	\$274,900.00
Construction - Phase 5 - AST Treatment System and Building	\$4,289,830.00
Engineering Study, Report, Preliminary Design and Final Design	\$384,856.51
Environmental Abatement Monitoring	\$7,956.04
Site Survey During Design and Construction	\$25,824.17
Soil Borings	\$3,592.00
Construction Administration - All Phases	\$126,806.36
Construction Inspection - All Phases	\$239,572.44
Additional O&M Costs - Plant 4	
Present Value of 30 Year Annual O&M Costs	\$5,625,000.00
Capital Costs - Plant 6	
Construction - GAC Building	\$615,000.00
Construction - GAC System	\$867,800.00
Construction - Treatment Building Improvements	\$1,200,000.00
Engineering Study, Report, Preliminary Design and Final Design	\$198,075.79
Environmental Abatement Monitoring	\$2,089.36
Site Survey During Design and Construction	\$13,873.31
Soil Borings	\$3,950.00
Construction Administration - All Phases	\$45,000.00
Construction Inspection - All Phases	\$135,000.00
Additional O&M Costs - Plant 6	
Present Value of 30 Year Annual O&M Costs	\$3,763,000.00
Public Bonding Costs	
Interest on Debt Through 12/31/11 (approximate)	\$475,000.00
Total	\$20,082,925.98

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## SUMMARY OF ADDITIONAL ANNUAL OPERATING COSTS

## VOC TREATMENT SYSTEM IMPROVEMENTS AT PLANT 4

## **INCREASE IN ANNUAL ELECTRICAL POWER COSTS**

Electric Utility Provider:	LIPA
Electrical Rate Code:	285
Increase in Plant Electrical Demand:	70 KW

Consumption Charges:

-				
<u>Demand</u> 70 KW	Operating Hours <sup>(1)</sup> 2,080 Hrs	Annual Demand 145,600 KW Hrs	<u>Rate Charge<sup>(2)</sup></u> \$0.185 / KW Hr	Annual Costs \$26,900
Increase in	Annual Electrical Operat	ting Costs = \$11	,800 + \$28,300 =	\$26,900
	d on average Annual Pumpage des fuel surcharge	e over the last five years o	of 350 MGY.	
ANNUAL FIL	TER REPLACEMENT OPE	RATING COSTS		
Filters Must Cost of Rep	Must Be Replaced Every Be Replaced Twice per lacing Pre-Filters: lacing Filters:			
Annual Filte	er Replacement Operatir	ng Costs = (\$200 x 1	2) + (\$400 x 2) =	\$3,200
ANNUAL GA	AC REPLACEMENT COSTS	2		
		6 20,000 lbs Every 5 Year \$2.00 per lb	S	
Annual Cos	t of GAC Change-Out =	(6 x 20,000 x \$2.00)	/ 5 years =	\$48,000
INCREASE IN ANNUAL PLANT MONITORING LABOR COSTS				
Required Additional Plant Monitoring = 1 Hrs / Day Required Additional Man-hours = 1 Hrs / Day x 365 Days / year = 365 Hrs				
Increase in	Annual Plant Monitoring	Labor Costs = \$50	/ Hr* x 365 Hrs =	\$18,250

\* - Estimated hourly rate for plant operator – includes associated benefit costs.

## INCREASE IN ANNUAL LAB MONITORING OPERATING COSTS

Monthly VOC Water Samples Required Post GAC VOC Sample Rate Charge = \$165 / Sample



## SUMMARY OF ADDITIONAL ANNUAL OPERATING COSTS

## VOC TREATMENT SYSTEM IMPROVEMENTS AT PLANT 4

Annual Number of Samples Required = 4 Samples / Month x 12 Months = 48 Samples

Increase in Annual Lab Monitoring Operating Costs = \$165 x 48 Samples = \$7,920

## SUM OF INCREASE IN ANNUAL DISTRICT OPERATING COSTS

<ol> <li>Increase in Annual Electrical Operating Costs:</li> <li>Annual Filter Replacement Costs:</li> <li>Annual GAC Replacement Costs:</li> <li>Increase in Plant Monitoring Operating Costs:</li> <li>Increase in Laboratory Monitoring Costs:</li> </ol>	\$26,900 \$ 3,200 \$48,000 \$18,250 \$ 7,920		
SUM OF INCREASE IN ANNUAL DISTRICT OPERATING COSTS:	\$104,270		
PRESENT WORTH VALUE			

Additional Annual Operating Costs:	\$104,270
Treatment System Life:	30 Years
Operating Cost Inflation Rate	5.0%
Investment Interest Rate	1.5%

## PRESENT WORTH VALUE:

\$5,625,000

## With savings deposit of \$5,625,000 settlement at Year 0

		Additional Annual	
	Savings Account Value	Operating Cost at	
Year	at 1.5% Interest Rate	5.0% Inflation Rate	Savings Account Balance
0	\$5,625,000	\$104,270	\$5,520,730
1	\$5,603,541	\$109,484	\$5,494,057
2	\$5,576,468	\$114,958	\$5,461,511
3	\$5,543,433	\$120,706	\$5,422,728
4	\$5,504,069	\$126,741	\$5,377,328
5	\$5,457,988	\$133,078	\$5,324,910
6	\$5,404,784	\$139,732	\$5,265,052
7	\$5,344,028	\$146,718	\$5,197,309
8	\$5,275,269	\$154,054	\$5,121,215
9	\$5,198,033	\$161,757	\$5,036,276
10	\$5,111,820	\$169,845	\$4,941,975
11	\$5,016,105	\$178,337	\$4,837,768
12	\$4,910,334	\$187,254	\$4,723,080
13	\$4,793,926	\$196,617	\$4,597,310
14	\$4,666,269	\$206,447	\$4,459,822
15	\$4,526,719	\$216,770	\$4,309,949
16	\$4,374,599	\$227,608	\$4,146,990
17	\$4,209,195	\$238,989	\$3,970,206
18	\$4,029,759	\$250,938	\$3,778,821
19	\$3,835,504	\$263,485	\$3,572,019
20	\$3,625,599	\$276,659	\$3,348,939
21	\$3,399,174	\$290,492	\$3,108,681
22	\$3,155,311	\$305,017	\$2,850,294
23	\$2,893,049	\$320,268	\$2,572,781
24	\$2,611,373	\$336,281	\$2,275,092
25	\$2,309,218	\$353,095	\$1,956,123
26	\$1,985,465	\$370,750	\$1,614,715
27	\$1,638,935	\$389,287	\$1,249,648
28	\$1,268,393	\$408,752	\$859,641
29	\$872,535	\$429,189	\$443,346
30	\$449,996	\$450,649	-\$653



# SUMMARY OF ADDITIONAL ANNUAL OPERATING COSTS

## VOC TREATMENT SYSTEM IMPROVEMENTS AT PLANT 6

## **INCREASE IN ANNUAL ELECTRICAL POWER COSTS**

Electric Utility Provider:	LIPA
Electrical Rate Code:	285
Increase in Plant Electrical Demand:	35 KW

Consumption Charges:

<u>Demand</u>	Operating Hours <sup>(1)</sup>	<u>Annual Demand</u>	<u>Rate Charge<sup>(2)</sup></u>	Annual Costs
35 KW	1,785 Hrs	62,500 KW Hrs	\$0.185 / KW Hr	\$11,560

Increase in Annual Electrical Operating Costs = \$11,800 + \$28,300 = \$11,560

(1) Based on average Annual Pumpage over the last five years of 300 MGY.

(2) Includes fuel surcharge

## ANNUAL GAC REPLACEMENT COSTS

Quantity of Vessels:	4
GAC per Vessel:	20,000 lbs
Frequency of GAC Change-Outs:	Every 5 Years
Cost of GAC Change-Out:	\$2.00 per lb

Annual Cost of GAC Change-Out = (4 x 20,000 x \$2.00) / 5 years = \$32,000

## **INCREASE IN ANNUAL PLANT MONITORING LABOR COSTS**

Required Additional Plant Monitoring = 1 Hrs / Day Required Additional Man-hours = 1 Hrs / Day x 365 Days / year = 365 Hrs

Increase in Annual Plant Monitoring Labor Costs = \$50 / Hr\* x 365 Hrs = \$18,250

\* - Estimated hourly rate for plant operator – includes associated benefit costs.

## **INCREASE IN ANNUAL LAB MONITORING OPERATING COSTS**

Monthly VOC Water Samples Required Post GAC VOC Sample Rate Charge = \$165 / Sample Annual Number of Samples Required = 4 Samples / Month x 12 Months = 48 Samples			
Increase in Annual Lab Monitoring Operating Costs = $165 \times 48$ Samples =	\$7,920		
SUM OF INCREASE IN ANNUAL DISTRICT OPERATING COSTS			
<ol> <li>Increase in Annual Electrical Operating Costs:</li> <li>Annual GAC Replacement Costs:</li> </ol>	\$11,560 \$32.000		

\$18,250

3. Increase in Plant Monitoring Operating Costs:

4. Increase in Laboratory Monitoring Costs:



## SUMMARY OF ADDITIONAL ANNUAL OPERATING COSTS

## VOC TREATMENT SYSTEM IMPROVEMENTS AT PLANT 6

\$ 7,920

SUM OF INCREASE IN ANNUAL DISTRICT OPERATING COSTS:		\$69,730	
	PRESENT WORTH VALUE		
	Additional Annual Operating Costs: Treatment System Life: Operating Cost Inflation Rate Investment Interest Rate	\$69,730 30 Years 5.0% 1.5%	
	PRESENT WORTH VALUE:		\$3,763,000

	<u>,                                     </u>	Additional Annual	
	Savings Account Value	Operating Cost at	
Year	at 1.5% Interest Rate	5.0% Inflation Rate	Savings Account Balance
0	\$3,763,000	\$69,730	\$3,693,270
1	\$3,748,669	\$73,217	\$3,675,453
2	\$3,730,584	\$76,877	\$3,653,707
3	\$3,708,513	\$80,721	\$3,627,791
4	\$3,682,208	\$84,757	\$3,597,451
5	\$3,651,413	\$88,995	\$3,562,418
6	\$3,615,854	\$93,445	\$3,522,409
7	\$3,575,245	\$98,117	\$3,477,128
8	\$3,529,285	\$103,023	\$3,426,262
9	\$3,477,656	\$108,174	\$3,369,482
10	\$3,420,024	\$113,583	\$3,306,441
11	\$3,356,038	\$119,262	\$3,236,776
12	\$3,285,328	\$125,225	\$3,160,103
13	\$3,207,504	\$131,486	\$3,076,018
14	\$3,122,158	\$138,061	\$2,984,097
15	\$3,028,859	\$144,964	\$2,883,895
16	\$2,927,154	\$152,212	\$2,774,942
17	\$2,816,566	\$159,822	\$2,656,743
18	\$2,696,595	\$167,814	\$2,528,781
19	\$2,566,713	\$176,204	\$2,390,509
20	\$2,426,366	\$185,014	\$2,241,352
21	\$2,274,972	\$194,265	\$2,080,707
22	\$2,111,917	\$203,978	\$1,907,939
23	\$1,936,558	\$214,177	\$1,722,381
24	\$1,748,216	\$224,886	\$1,523,330
25	\$1,546,180	\$236,131	\$1,310,050
26	\$1,329,700	\$247,937	\$1,081,763
27	\$1,097,990	\$260,334	\$837,656
28	\$850,221	\$273,351	\$576,870
29	\$585,523	\$287,018	\$298,505
30	\$302,983	\$301,369	\$1,614