

Placitas Trails Water System Improvements Project Cost Estimate

AdEdge Technologies

Phase 1: Pilot Testing AD26 Media

Item	Description	Unit	Quantity	Unit Cost	Total
1	Pilot Testing (14-day study)	LS	1	\$ 18,000	\$ 18,000
2	Engineering Consultant Supervision	LS	1	\$ 4,000	\$ 4,000
Subtotal: \$					22,000
				Contingency 10%	\$ 2,200
				NMGRT (Sandoval County) 6.6250%	\$ 1,458
Phase I Total: \$					25,658

Phase 2: Hydropneumatic Tank Elimination

Item	Description	Unit	Quantity	Unit Cost	Total
1	Roll-up Garage Door, CIP	LS	1	\$ 3,000	\$ 3,000
2	Packaged Variable Speed Pumps, CIP	LS	1	\$ 50,000	\$ 50,000
3	Misc Electrical, CIP	LS	1	\$ 5,000	\$ 5,000
4	Tank Removal	LS	1	\$ 15,000	\$ 15,000
5	Misc Valves (Valves, Unions, etc), CIP	LS	1	\$ 10,000	\$ 10,000
6	Plumbing Reconfiguration, CIP	LS	1	\$ 10,000	\$ 10,000
Subtotal: \$					93,000
				Contingency 10%	\$ 9,300
				NMGRT (Sandoval County) 6.6250%	\$ 6,161
Total: \$					108,461

Engineering, Legal and Professional Services:

1	Basic engineering services*	1	LS	11.5%	\$ 12,473
	Design, Bid				
2	Additional engineering services	1	LS	5.0%	\$ 5,423
3	Construction inspection*	1	LS	6.5%	\$ 7,050
				Contingency 10%	\$ 2,495
				NMGRT (Sandoval County) 6.6250%	\$ 1,818
Sub-Total for Engineering, Legal and Professional Services: \$					29,259
Phase II Total Cost: \$					137,720

Phase 3: Arsenic Removal System					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	***AD26 Arsenic Removal System	LS	1	\$ 120,000	\$ 120,000
2	Electronics and Controls	LS	1	\$ 30,000	\$ 30,000
3	Misc Plumbing	LS	1	\$ 20,000	\$ 20,000
4	Building Modifications	LF	1	\$ 50,000	\$ 50,000
Subtotal:					\$ 220,000
				Contingency 10%	\$ 22,000
				NMGRT (Sandoval County) 6.6250%	\$ 14,575
Total for Construction:					\$ 256,575
Engineering, Legal and Professional Services:					
1	Basic engineering services*	1	LS	10.2%	\$ 26,171
	Design and Bid process				
2	Additional Engineering Services	1	LS	5.0%	\$ 12,829
3	Construction inspection*	1	LS	5.5%	\$ 14,112
				Contingency 10%	\$ 5,311
				NMGRT (Sandoval County) 6.6250%	\$ 3,870
Sub-Total for Engineering, Legal and Professional Services:					\$ 62,293
Phase III Total Cost:					\$ 318,868

Cost Summary	Construction	Services	Total	O&M (20-yr)
Phase 1		\$ 25,658	\$ 25,658	
Phase 2	\$ 108,461	\$ 29,259	\$ 137,720	\$ 5,900
Phase 3	\$ 256,575	\$ 62,293	\$ 318,868	\$ 108,518
All Phases	\$ 365,036	\$ 117,209	\$ 482,245	\$ 114,418

Operations and Maintenance-Annual

1	Media Exchange	LS	1	\$ 1,200	\$ 1,200
2	**Consumables (FeCl ₃)	LS	1	\$ 1,410	\$ 1,410
3	Labor - System Operation	HR	78	\$ 45	\$ 3,510
4	Electrical Power	LS	1	\$ 786	\$ 786
5	Reclaim Tank Cleaning	LS	16	\$ 65	\$ 1,040
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 7,946
Present Worth Cost over Design Period:					\$120,438.61

Total Lifetime Design Costs	\$602,684
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*Based on RUS fee schedule, actual eng. services cost to be provided in cost proposal

** Costs of all FeCl₃ injection processes use a fixed cost per annum for comparative analysis

*** Cost includes estimated contractor mark-up on bid

Placitas Trails Water System Improvements Project Cost Estimate					
Pall Water Processing					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	CMF Arsenic Removal System	LS	1	\$ 375,000	\$ 375,000
Subtotal:					\$ 375,000
				Contingency 10%	\$ 37,500
				NMGRT (Sandoval County) 6.6250%	\$ 24,844
Total for Construction:					\$ 437,344

Operations and Maintenance-Annual

1	Microfiltration Media Exchange	LS	1	\$ 1,600	\$ 1,600
2	**Consumables (FeCl ₃)	LS	1	\$ 1,410	\$ 1,410
3	Electricity- Pumps	LS	1	\$ 1,745	\$ 1,745
4	Labor - System Operation	HR	64	\$ 45	\$ 2,880
5	Labor - Sludge Disposal	LS	60	\$ 65	\$ 3,900
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 11,535
Present Worth Cost over Design Period:					\$174,827.24

Total Lifetime Design Costs	\$612,170.99
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* Costs do not include controls or electronics, used only for comparative analysis

** Costs of all FeCl₃ injection processes use a fixed cost per annum for comparative analysis

Placitas Trails Water System Improvements Project Cost Estimate

AdEdge Technologies

Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	AD26 Arsenic Removal System	LS	1	\$ 92,900	\$ 92,900
Subtotal:					\$ 92,900
Contingency 10%					\$ 9,290
NMGRT (Sandoval County) 6.6250%					\$ 6,155
Total for Construction:					\$ 108,345

Operations and Maintenance-Annual

1	Media Exchange	LS	1	\$ 1,200	\$ 1,200
2	**Consumables (FeCl ₃)	LS	1	\$ 1,410	\$ 1,410
3	Labor - System Operation	HR	78	\$ 45	\$ 3,510
4	Reclaim Tank Cleaning	LS	16	\$ 65	\$ 1,040
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 7,160
Present Worth Cost over Design Period:					\$108,518.25

Total Lifetime Design Costs	\$216,862.87
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* Costs do not include controls or electronics, used only for comparative analysis

* Cost of decant tank is included

** Costs of all FeCl₃ injection processes use a fixed cost per annum for comparative analysis

Placitas Trails Water System Improvements Project Cost Estimate					
Orca Water Technologies					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	Coag/Filtration Arsenic Removal System	LS	1	\$ 120,000	\$ 120,000
Subtotal:					\$ 120,000
				Contingency 10%	\$ 12,000
				NMGRT (Sandoval County) 6.6250%	\$ 7,950
Total for Construction:					\$ 139,950

Operations and Maintenance-Annual

1	Sand Filter Exchange	LS	1	\$ 300	\$ 300
2	**Consumables (FeCl ₃)	LS	1	\$ 1,410	\$ 1,410
3	Labor - System Operation	HR	104	\$ 45	\$ 4,680
4	Labor - Sand Filter exchange	HR	24	\$ 65	\$ 1,560
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 7,950
Present Worth Cost over Design Period:					\$120,491.76

Total Lifetime Design Costs	\$260,441.76
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* Costs do not include controls or electronics, used only for comparative analysis

** Costs of all FeCl₃ injection processes use a fixed cost per annum for comparative analysis

Placitas Trails Water System Improvements Project Cost Estimate

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Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	Electroflocc Arsenic Removal System	LS	1	\$ 210,000	\$ 210,000
Subtotal:					\$ 210,000
				Contingency 10%	\$ 21,000
				NMGRT (Sandoval County) 6.6250%	\$ 13,913
Total for Construction:					\$ 244,913

Operations and Maintenance-Annual

1	Consumables - Aluminum Plate Replacement	LS	1	\$ 4,100	\$ 4,100
2	Electrical Power Consumption	LS	1	\$ 610	\$ 610
3	Labor - System Operation	HR	100	\$ 45	\$ 4,500
4	Labor - Sludge Disposal	LS	54	\$ 65	\$ 3,510
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 12,720
Present Worth Cost over Design Period:					\$192,788.67

Total Lifetime Design Costs	\$437,701.17
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* Costs do not include controls or electronics, used only for comparative analysis

** Costs of all FeCl3 injection processes use a fixed cost per annum for comparative analysis

Placitas Trails Water System Improvements Project Cost Estimate

Siemens:

Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	Titanium Oxide Adsorption As Removal System	LS	1	\$ 36,000	\$ 36,000
Subtotal:					\$ 36,000
Contingency 10%					\$ 3,600
NMGR (Sandoval County) 6.6250%					\$ 2,385
Total for Construction:					\$ 41,985

Operations and Maintenance-Annual

1	Media Exchange	1	LS	\$ 73,400	\$ 73,400
2	Labor - System Operation	HR	64	\$ 45	\$ 2,880
3	Labor - Media Exchange	HR	96	\$ 65	\$ 6,240
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 82,520
Present Worth Cost over Design Period:					\$1,250,701.33

Total Lifetime Design Costs	\$1,292,686.33
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Placitas Trails Water System Improvements Project Cost Estimate

Basin Water

Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	Basin Adsorbtion/Ion Exchange Hybrid	LS	1	\$ 40,000	\$ 40,000
Subtotal:					\$ 40,000
				Contingency 10%	\$ 4,000
				NMGRT (Sandoval County) 6.6250%	\$ 2,650
Total for Construction:					\$ 46,650

Operations and Maintenance-Annual

1	**O&M Handled by Basin	LS	1	\$ 13,756	\$ 13,756
2	Labor - System Operation	HR	30	\$ 45	\$ 1,350
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 15,106
Present Worth Cost over Design Period:					\$228,951.70

Total Lifetime Design Costs	\$275,601.70
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* Costs do not include installation, controls, or electronics, used only for comparative analysis

** Cost of contracted services and media exchanges with Basin are subject to change

Placitas Trails Water System Improvements Project Cost Estimate

Watts Premiere POU RO

Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	POU RO Units	LS	150	\$ 356	\$ 53,325
Subtotal:					\$ 53,325
				Contingency 10%	\$ 5,333
				NMGRT (Sandoval County) 6.6250%	\$ 3,533
Total for Construction:					\$ 62,190

Operations and Maintenance-Annual

1	Consumables - RO Membranes	LS	1	\$ 4,170	\$ 4,170
2	Labor - In Home Replacement	HR	540	\$ 45	\$ 24,300
Real Interest Rate					2.80%
Planning Period (yrs.)					20
Annual O&M Cost:					\$ 28,470
Present Worth Cost over Design Period:					\$431,501.05

Total Lifetime Design Costs	\$493,691.33
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* Costs do not include controls or electronics, used only for comparative analysis

** Costs of all FeCl3 injection processes use a fixed cost per annum for comparative analysis

Placitas Trails Water System Improvements Project Cost Estimate					
East Pumphouse Decant Tank					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	5,000 Gallon Tank, CIP	LS	1	\$ 10,000	\$ 10,000
2	Building Modifications	LS	1	\$ 30,000	\$ 30,000
3	Misc plumbing	LS	1	\$ 10,000	\$ 10,000
Subtotal:					\$ 50,000
				Contingency 10%	\$ 5,000
				NMGRT (Sandoval County) 6.6250%	\$ 3,313
Total for Construction:					\$ 58,313

Placitas Trails Water System Improvements Project Cost Estimate					
West Pumphouse Decant Tank					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	Manway Installation, CIP	LS	1	\$ 2,500	\$ 2,500
2	Backwash Line Parallel to Well 2 fill, CIP	LF	5800	\$ 10	\$ 58,000
3	Miscellaneous Plumbing, CIP	LS	1	\$ 10,000	\$ 10,000
4	Booster Pump, CIP	LS	1	\$ 10,000	\$ 10,000
5	Cleanouts, CIP	LS	2	\$ 5,000	\$ 10,000
Subtotal:					\$ 90,500
				Contingency 10%	\$ 9,050
				NMGRT (Sandoval County) 6.6250%	\$ 5,996
Total for Construction:					\$ 105,546

Placitas Trails Water System Improvements Project Cost Estimate					
Arroyo Discharge					
Item	Description	Unit	Quantity	Unit Cost	Total
Capital Costs					
1	4-Inch PVC	LF	1250	\$ 20	\$ 25,000
2	Flap Valve	LS	1	\$ 1,500	\$ 1,500
Subtotal:					\$ 26,500
				Contingency 10%	\$ 2,650
				NMGRT (Sandoval County) 6.6250%	\$ 1,756
Total for Construction:					\$ 30,906