Green Valley Special Utility District
24" Pipe Line IH-35 Crossing

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	2,500	$1.00	$2,500.00
2	Install 24" diameter DIP	LF	2,500	$175.00	$437,500.00
3	Install 24" diameter gate valves w/box	EA	2	$9,350.00	$18,700.00
4	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
5	Ductile Iron Fittings	TON	4	$4,500.00	$18,000.00
6	Install Fire Hydrant Assembly	EA	5	$4,500.00	$22,500.00
7	Fencing Repair	LF	2,500	$1.00	$2,500.00
8	Final Grade & Seed	LF	2,500	$1.00	$2,500.00
9	Bore	LF	250	$500.00	$125,000.00
	TOTAL CONSTRUCTION				**$642,200.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$64,220.00
	Contingencies	10%			$64,220.00
	TOTAL				**$770,640.00**
	Easements	LF	2,500	$12.00	$30,000.00
	Easement Surveys and Acquisition Costs	LF	2,500	$5.00	$12,500.00
	Easement Acquisition Consultant	LF	2,500	$5.00	$12,500.00
	TOTAL EASEMENT COSTS				**$55,000.00**
	Basic Engineering	12%			$92,476.80
	Surveying	LF	5,000	$2.00	$10,000.00
	Construction Phase Services	1.5%			$11,559.60
	TOTAL ENGINEERING COSTS				**$114,036.40**
	TOTAL PROJECT				**$939,676.40**

Note: 1. Unit prices were used from SAWS average unit price list revised October 2005.

Green Valley Special Utility District
Well Side Booster Pump Station

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.5	$2,500.00	$3,750.00
2	0.5 MG Composite Ground Storage Tank	EA	1	$500,000.00	$500,000.00
3	Install 24" diameter DIP Water pipe	LF	250	$175.00	$43,750.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Pumps, Pump Pad, Appurtenances Facility	LS	1	$250,000.00	$250,000.00
9	MCC, MCC Building, and MCC Building Items	LS	1	$300,000.00	$300,000.00
10	Site Power	LS	1	$75,000.00	$75,000.00
11	Chemical Building and Chemical Yard Pipe	LS	1	$50,000.00	$50,000.00
12	Site Controls and Communication	LS	1	$75,000.00	$75,000.00
13	Driveway	SY	500	$45.00	$22,500.00
14	Fencing	LF	1,000	$12.00	$12,000.00
15	Landscaping	LS	1	$2,500.00	$2,500.00
16	Emergency Generator	LS	1	$200,000.00	$200,000.00
	TOTAL CONSTRUCTION				**$1,598,400.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$159,840.00
	Contingencies	10%			$175,824.00
	TOTAL				**$1,934,064.00**
	Property	AC	1.0	$28,000.00	$28,000.00
	Easement Surveys and Acquisition Costs	AC	1.0	$3,000.00	$3,000.00
	Attorney	LS	1.0	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$38,500.00**
	Basic Engineering	10%			$193,406.40
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$207,406.40**
	TOTAL PROJECT				**$2,179,970.40**

Green Valley Special Utility District
Plant 9 Improvements

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$2,500.00	$2,500.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	500	$175.00	$87,500.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Emergency Generator	EA	1	$200,000.00	$200,000.00
9	Demo Existing Plant 9	LS	1	$75,000.00	$75,000.00
10	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,958,900.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$195,890.00
	Contingencies	10%			$215,479.00
	TOTAL				**$2,370,269.00**
	Easements		0	$12.00	$0.00
	Easement Surveys and Acquisition Costs		0	$2.00	$0.00
	Environmental Investigation		0	$1.00	$0.00
	TOTAL EASEMENT COSTS				**$0.00**
	Basic Engineering	10%			$237,026.90
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical Services	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$251,026.90**
	TOTAL PROJECT				**$2,621,295.90**

Green Valley Special Utility District
830' Elevated Storage Tank at Most Western FM 78

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$45,000.00	$45,000.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,735,150.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$173,515.00
	Contingencies	10%			$190,866.50
	TOTAL				**$2,099,531.50**
	Property	AC	1.0	$12,000.00	$12,000.00
	Easement Surveys and Acquisition Costs	LS	1.0	$4,500.00	$4,500.00
	Attorney	LS	1.0	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$24,000.00**
	Basic Engineering	10%			$209,953.15
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$223,953.15**
	TOTAL PROJECT				**$2,347,484.65**

Green Valley Special Utility District
12" Pipe Line along Marion Road from CRWA Pipe to GV Road

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	8,000	$1.00	$8,000.00
2	Install 12" diameter PVC C909 Pipe	LF	8,000	$65.00	$520,000.00
3	Install 12" diameter gate valves w/box	EA	8	$2,500.00	$20,000.00
4	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
5	Ductile Iron Fittings	TON	6	$4,500.00	$27,000.00
6	Install Fire Hydrant Assembly	EA	8	$4,500.00	$36,000.00
7	Fencing Repair	LF	8,000	$1.00	$8,000.00
8	Final Grade & Seed	LF	8,000	$1.00	$8,000.00
	TOTAL CONSTRUCTION				**$633,000.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$63,300.00
	Contingencies	10%			$63,300.00
	TOTAL				**$759,600.00**
	Easements	LF	8,000	$12.00	$96,000.00
	Easement Surveys and Acquisition Costs	LF	8,000	$5.00	$40,000.00
	Easement Acquisition Consultant	LF	8,000	$5.00	$40,000.00
	TOTAL EASEMENT COSTS				**$176,000.00**
	Basic Engineering	12%			$91,152.00
	Surveying	LF	8,000	$2.00	$16,000.00
	Construction Phase Services	1.5%			$11,394.00
	TOTAL ENGINEERING COSTS				**$118,546.00**
	TOTAL PROJECT				**$1,054,146.00**

Green Valley Special Utility District
12" Pipe Line along Tolle Road & Country Lane

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	9,000	$1.00	$9,000.00
2	Install 12" diameter PVC C909 Pipe	LF	9,000	$65.00	$585,000.00
3	Install 12" diameter gate valves w/box	EA	8	$2,500.00	$20,000.00
4	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
5	Ductile Iron Fittings	TON	6	$4,500.00	$27,000.00
6	Install Fire Hydrant Assembly	EA	8	$4,500.00	$36,000.00
7	Fencing Repair	LF	9,000	$1.00	$9,000.00
8	Final Grade & Seed	LF	9,000	$1.00	$9,000.00
	TOTAL CONSTRUCTION				**$701,000.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$70,100.00
	Contingencies	10%			$70,100.00
	TOTAL				**$841,200.00**
	Easements	LF	9,000	$12.00	$108,000.00
	Easement Surveys and Acquisition Costs	LF	9,000	$5.00	$45,000.00
	Easement Acquisition Consultant	LF	9,000	$5.00	$45,000.00
	TOTAL EASEMENT COSTS				**$198,000.00**
	Basic Engineering	12%			$100,944.00
	Surveying	LF	9,000	$2.00	$18,000.00
	Construction Phase Services	1.5%			$12,618.00
	TOTAL ENGINEERING COSTS				**$131,562.00**
	TOTAL PROJECT				**$1,170,762.00**

Green Valley Special Utility District
750' Elevated Water Storage Tank at McQueeney

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$2,500.00	$2,500.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	0.5 MG Concrete Ground Storage Tank	EA	1	$500,000.00	$500,000.00
4	Pumps, Pump Pad, Appurtenances, Chem	LS	1	$250,000.00	$250,000.00
5	MCC, Building, Site Power, SCADA	LS	1	$300,000.00	$300,000.00
6	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
7	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
8	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
9	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
10	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
11	Emergency Generator	EA	1	$200,000.00	$200,000.00
12	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$2,942,650.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$294,265.00
	Contingencies	10%			$323,691.50
	TOTAL				**$3,560,606.50**
	Property	LS	1	$12,000.00	$12,000.00
	Easement Surveys and Acquisition Costs	LS	1	$4,500.00	$4,500.00
	Attorney	LS	1	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$24,000.00**
	Basic Engineering	10%			$356,060.65
	Surveying	LS	1	$9,500.00	$9,500.00
	Geotechnical Services	LS	1	$15,000.00	$15,000.00
	TOTAL ENGINEERING COSTS				**$380,560.65**
	TOTAL PROJECT				**$3,965,167.15**

Green Valley Special Utility District
12" Pipe along Schwab & Wosnig

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare ROW	LF	11,500	$1.00	$11,500.00
2	Install 12" diameter PVC C909 pipe	LF	11,500	$65.00	$747,500.00
3	Install 12" diameter gate valves w/box	EA	11	$2,500.00	$27,500.00
4	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
5	Ductile Iron Fittings	TON	6	$4,500.00	$27,000.00
6	Install Fire Hydrant Assembly	EA	11	$4,500.00	$49,500.00
7	Fencing Repair	LF	11,500	$1.00	$11,500.00
8	Final Grade & Seed	LF	11,500	$1.00	$11,500.00
	TOTAL CONSTRUCTION				**$892,000.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$89,200.00
	Contingencies	10%			$89,200.00
	TOTAL				**$1,070,400.00**
	Easements	LF	11,500	$12.00	$138,000.00
	Easement Surveys and Acquisition Costs	LF	11,500	$5.00	$57,500.00
	Easement Acquisition Consultant	LF	11,500	$5.00	$57,500.00
	TOTAL EASEMENT COSTS				**$253,000.00**
	Basic Engineering	12%			$128,448.00
	Surveying	LF	11,500	$2.00	$23,000.00
	Construction Phase Services	1.5%			$16,056.00
	TOTAL ENGINEERING COSTS				**$167,504.00**
	TOTAL PROJECT				**$1,490,904.00**

Green Valley Special Utility District
Common Ground Storage Tank and Booster Pump Station
Common to all Three wells

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$2,500.00	$2,500.00
2	1 MG Concrete Ground Storage Tank	EA	1	$900,000.00	$900,000.00
3	Pumps, Pump Pad, Appurtenances, Chem	LS	1	$250,000.00	$250,000.00
4	MCC, Building, Site Power, SCADA	LS	1	$300,000.00	$300,000.00
5	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
6	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
7	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
8	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
9	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
10	Emergency Generator	EA	1	$200,000.00	$200,000.00
11	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,842,650.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$184,265.00
	Contingencies	10%			$202,691.50
	TOTAL				**$2,229,606.50**
	Property	LS	1	$45,000.00	$45,000.00
	Easement Surveys and Acquisition Costs	LS	1	$5,000.00	$5,000.00
	Attorney	LS	1	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$57,500.00**
	Basic Engineering	10%			$222,960.65
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical Services	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$236,960.65**
	TOTAL PROJECT				**$2,524,067.15**

Green Valley Special Utility District
24" Pipe Line connects Existing Wells

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1	$2,500.00	$1,250.00
2	Install 24" diameter DIP	LF	5,700	$175.00	$997,500.00
3	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
4	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	5	$4,500.00	$22,500.00
7	Fencing Repair	LF	5700	$1.00	$5,700.00
8	Final Grading & Seed	LF	5,700	$1.00	$5,700.00
	TOTAL CONSTRUCTION				**$1,096,550.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$109,655.00
	Contingencies	10%			$120,620.50
	TOTAL				**$1,326,825.50**
	Easements	LF	5,700	$12.00	$68,400.00
	Easement Surveys and Acquisition Costs	LF	5,700	$2.00	$11,400.00
	Easement Acquisition Consultant	LF	5,700	$1.00	$5,700.00
	TOTAL EASEMENT COSTS				**$85,500.00**
	Basic Engineering	10%			$132,682.55
	Surveying	LF	5,700	$2.00	$11,400.00
	Construction Phase Services	1.5%			$19,902.38
	TOTAL ENGINEERING COSTS				**$163,984.93**
	TOTAL PROJECT				**$1,576,310.43**

Green Valley Special Utility District
750' Elevated Storage Tank at South of Plant 10

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$2,500.00	$2,500.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	0.5 MG Concrete Ground Storage Tank	EA	1	$500,000.00	$500,000.00
4	Pumps, Pump Pad, Appurtenances, Chem	LS	1	$250,000.00	$250,000.00
5	MCC, Building, Site Power, SCADA	LS	1	$300,000.00	$300,000.00
6	Install 24" diameter DIP	LF	550	$175.00	$96,250.00
7	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
8	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
9	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
10	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
11	Emergency Generator	EA	1	$200,000.00	$200,000.00
12	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$2,942,650.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$294,265.00
	Contingencies	10%			$323,691.50
	TOTAL				**$3,560,606.50**
	Property	LS	1	$12,000.00	$12,000.00
	Easement Surveys and Acquisition Costs	LS	1	$4,500.00	$4,500.00
	Attorney	LS	1	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$24,000.00**
	Basic Engineering	10%			$356,060.65
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical Services	LS	1	$15,000.00	$15,000.00
	TOTAL ENGINEERING COSTS				**$375,560.65**
	TOTAL PROJECT				**$3,960,167.15**

Green Valley Special Utility District
12" Pipeline along Weil Road - BPS extension to Marion Road

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	11,600	$1.00	$11,600.00
2	Install 12" diameter C909 PVC Pipe	LF	11,600	$65.00	$754,000.00
3	Install 12" diameter valves w/box	EA	11	$2,500.00	$27,500.00
4	Install 12" diameter tie-ins	EA	1	$3,000.00	$3,000.00
5	Install 8" diameter tie-ins	EA	1	$2,500.00	$2,500.00
6	Ductile Iron Fittings	EA	4	$4,500.00	$18,000.00
7	Install Fire Hydrant Assembly	EA	10	$4,500.00	$45,000.00
8	Fencing Repair	LF	11,600	$1.00	$11,600.00
9	Final Grading & Seed	LF	11,600	$1.00	$11,600.00
	TOTAL CONSTRUCTION				**$884,800.00**
	Bonds, Mobilization & Insurance	10%			$88,480.00
	Contingencies	10%			$97,328.00
	TOTAL				**$1,070,608.00**
	Easements	LF	11,600	$12.00	$139,200.00
	Easement Surveys and Acquisition Costs	LF	11,600	$2.00	$23,200.00
	Easement Acquisition Consultant	LF	11,600	$1.00	$11,600.00
	TOTAL EASEMENT COSTS				**$174,000.00**
	Basic Engineering	10%			$107,060.80
	Surveying	LF	11,600	$2.00	$23,200.00
	Construction Phase Services	1.5%			$16,059.12
	TOTAL ENGINEERING COSTS				**$146,319.92**
	TOTAL PROJECT				**$1,390,927.92**

Green Valley Special Utility District
Pipeline along Klein Road - FM 1044 to FM 725

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	15,155	$1.00	$15,155.00
2	Install 16" diameter C905 PVC Pipe	LF	15,155	$100.00	$1,515,500.00
3	Install 16" diameter valves w/box	EA	15	$5,500.00	$82,500.00
4	Install 4" diameter tie-ins	EA	2	$885.00	$1,770.00
5	Install 8" diameter tie-ins	EA	5	$1,980.00	$9,900.00
6	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
7	Ductile Iron Fittings	EA	5	$4,500.00	$22,500.00
8	Install Fire Hydrant Assembly	EA	15	$4,500.00	$67,500.00
9	Fencing Repair	LF	15,155	$1.00	$15,155.00
10	Final Grading & Seed	LF	15,155	$1.00	$15,155.00
	TOTAL CONSTRUCTION				**$1,751,135.00**
	Bonds, Mobilization & Insurance	10%			$175,113.50
	Contingencies	10%			$192,624.85
	TOTAL				**$2,118,873.35**
	Easements	LF	15,155	$12.00	$181,860.00
	Easement Surveys and Acquisition Costs	LF	15,155	$2.00	$30,310.00
	Easement Acquisition Consultant	LF	15,155	$1.00	$15,155.00
	TOTAL EASEMENT COSTS				**$227,325.00**
	Basic Engineering	10%			$211,887.34
	Surveying	LF		$2.00	$0.00
	Construction Phase Services	1.5%			$31,783.10
	TOTAL ENGINEERING COSTS				**$243,670.44**
	TOTAL PROJECT				**$2,589,868.79**

Green Valley Special Utility District
830' EST @ Hardy Rd and Union Wine

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$45,000.00	$45,000.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,735,150.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$173,515.00
	Contingencies	10%			$190,866.50
	TOTAL				**$2,099,531.50**
	Property	AC			$0.00
	Easement Surveys and Acquisition Costs	LS			$0.00
	Attorney	LS			$0.00
	TOTAL EASEMENT COSTS				**$0.00**
	Basic Engineering	10%			$209,953.15
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$223,953.15**
	TOTAL PROJECT				**$2,323,484.65**

Green Valley Special Utility District
Pipeline from FM 725 to CRWA Lake Dunlap WTP

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	3,340	$1.00	$3,340.00
2	Install 16" diameter C905 PVC Pipe	LF	3,340	$100.00	$334,000.00
3	Install 16" diameter valves w/box	EA	3	$5,500.00	$16,500.00
4	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
5	Ductile Iron Fittings	EA	2	$4,500.00	$9,000.00
6	Install Fire Hydrant Assembly	EA	2	$4,500.00	$9,000.00
7	Fencing Repair	LF	3,340	$1.00	$3,340.00
8	Final Grading & Seed	LF	3,340	$1.00	$3,340.00
	TOTAL CONSTRUCTION				**$384,520.00**
	Bonds, Mobilization & Insurance	10%			$38,452.00
	Contingencies	10%			$42,297.20
	TOTAL				**$465,269.20**
	Easements	LF	3,340	$12.00	$40,080.00
	Easement Surveys and Acquisition Costs	LF	3,340	$2.00	$6,680.00
	Easement Acquisition Consultant	LF	3,340	$1.00	$3,340.00
	TOTAL EASEMENT COSTS				**$50,100.00**
	Basic Engineering	10%			$46,526.92
	Surveying	LF		$2.00	$0.00
	Construction Phase Services	1.5%			$6,979.04
	TOTAL ENGINEERING COSTS				**$53,505.96**
	TOTAL PROJECT				**$568,875.16**

Green Valley Special Utility District
16" Pipeline along FM 725 - Union Wine to Altwein

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	3,900	$1.00	$3,900.00
2	Install 16" diameter C905 PVC Pipe	LF	3,900	$100.00	$390,000.00
3	Install 16" diameter valves w/box	EA	4	$5,500.00	$22,000.00
4	Install 16" diameter tie-ins	EA	1	$4,000.00	$4,000.00
5	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
6	Ductile Iron Fittings	EA	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	4	$4,500.00	$18,000.00
8	Fencing Repair	LF	3,900	$1.00	$3,900.00
9	Final Grading & Seed	LF	3,900	$1.00	$3,900.00
	TOTAL CONSTRUCTION				**$460,700.00**
	Bonds, Mobilization & Insurance	10%			$46,070.00
	Contingencies	10%			$50,677.00
	TOTAL				**$557,447.00**
	Easements	LF	3,900	$12.00	$46,800.00
	Easement Surveys and Acquisition Costs	LF	3,900	$2.00	$7,800.00
	Easement Acquisition Consultant	LF	3,900	$1.00	$3,900.00
	TOTAL EASEMENT COSTS				**$58,500.00**
	Basic Engineering	10%			$55,744.70
	Surveying	LF	3,900	$2.00	$7,800.00
	Construction Phase Services	1.5%			$8,361.71
	TOTAL ENGINEERING COSTS				**$71,906.41**
	TOTAL PROJECT				**$687,853.41**

Green Valley Special Utility District
16" Weil Road BPS Fill Pipeline - Youngsford to Weil Rd BPS

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	9,500	$1.00	$9,500.00
2	Install 16" diameter C905 PVC Pipe	LF	9,500	$100.00	$950,000.00
3	Install 16" diameter valves w/box	EA	8	$5,500.00	$44,000.00
4	Install 16" diameter tie-ins	EA	2	$4,000.00	$8,000.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	8	$4,500.00	$36,000.00
7	Fencing Repair	LF	9,500	$1.00	$9,500.00
8	Final Grading & Seed	LF	9,500	$1.00	$9,500.00
	TOTAL CONSTRUCTION				**$1,080,000.00**
	Bonds, Mobilization & Insurance	10%			$108,000.00
	Contingencies	10%			$118,800.00
	TOTAL				**$1,306,800.00**
	Easements	LF	9,500	$12.00	$114,000.00
	Easement Surveys and Acquisition Costs	LF	9,500	$4.00	$38,000.00
	Easement Acquisition Consultant	LF	9,500	$4.00	$38,000.00
	TOTAL EASEMENT COSTS				**$190,000.00**
	Basic Engineering	10%			$130,680.00
	Surveying	LF	9,500	$2.00	$19,000.00
	Construction Phase Services	1.5%			$19,602.00
	TOTAL ENGINEERING COSTS				**$169,282.00**
	TOTAL PROJECT				**$1,666,082.00**

Green Valley Special Utility District
830' EST @ Youngsford and Short Cut Rd

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$45,000.00	$45,000.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,735,150.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$173,515.00
	Contingencies	10%			$190,866.50
	TOTAL				**$2,099,531.50**
	Property	AC	1.0	$30,000.00	$30,000.00
	Easement Surveys and Acquisition Costs	LS	1.0	$4,500.00	$4,500.00
	Attorney	LS	1.0	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$42,000.00**
	Basic Engineering	10%			$209,953.15
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$223,953.15**
	TOTAL PROJECT				**$2,365,484.65**

Green Valley Special Utility District
12" Pipeline along N Santa Clara Rd - Weil Rd to Gerdes Rd

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	19,720	$1.00	$19,720.00
2	Install 12" diameter C909 PVC Pipe	LF	19,720	$65.00	$1,281,800.00
3	Install 12" diameter valves w/box	EA	19	$2,500.00	$47,500.00
4	Install 12" diameter tie-ins	EA	2	$3,000.00	$6,000.00
5	Ductile Iron Fittings	EA	6	$4,500.00	$27,000.00
6	Install Fire Hydrant Assembly	EA	19	$4,500.00	$85,500.00
7	Fencing Repair	LF	19,720	$1.00	$19,720.00
8	Final Grading & Seed	LF	19,720	$1.00	$19,720.00
	TOTAL CONSTRUCTION				**$1,506,960.00**
	Bonds, Mobilization & Insurance	10%			$150,696.00
	Contingencies	10%			$165,765.60
	TOTAL				**$1,823,421.60**
	Easements	LF	19,720	$12.00	$236,640.00
	Easement Surveys and Acquisition Costs	LF	19,720	$2.00	$39,440.00
	Easement Acquisition Consultant	LF	19,720	$1.00	$19,720.00
	TOTAL EASEMENT COSTS				**$295,800.00**
	Basic Engineering	10%			$182,342.16
	Surveying	LF	19,720	$2.00	$39,440.00
	Construction Phase Services	1.5%			$27,351.32
	TOTAL ENGINEERING COSTS				**$249,133.48**
	TOTAL PROJECT				**$2,368,355.08**

Green Valley Special Utility District
16" Pipeline along Schumann Rd - Pioneer Rd to Plant 10

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	11,350	$1.00	$11,350.00
2	Install 16" diameter C909 PVC Pipe	LF	11,350	$100.00	$1,135,000.00
3	Install 16" diameter valves w/box	EA	10	$5,500.00	$55,000.00
4	Install 16" diameter tie-ins	EA	2	$5,750.00	$11,500.00
5	Install 12" diameter tie-ins	EA	1	$3,000.00	$3,000.00
6	Ductile Iron Fittings	EA	4	$4,500.00	$18,000.00
7	Install Fire Hydrant Assembly	EA	10	$4,500.00	$45,000.00
8	Fencing Repair	LF	11,350	$1.00	$11,350.00
9	Final Grading & Seed	LF	11,350	$1.00	$11,350.00
	TOTAL CONSTRUCTION				**$1,301,550.00**
	Bonds, Mobilization & Insurance	10%			$130,155.00
	Contingencies	10%			$143,170.50
	TOTAL				**$1,574,875.50**
	Easements	LF	11,350	$12.00	$136,200.00
	Easement Surveys and Acquisition Costs	LF	11,350	$2.00	$22,700.00
	Easement Acquisition Consultant	LF	11,350	$1.00	$11,350.00
	TOTAL EASEMENT COSTS				**$170,250.00**
	Basic Engineering	10%			$157,487.55
	Surveying	LF	11,350	$2.00	$22,700.00
	Construction Phase Services	1.5%			$23,623.13
	TOTAL ENGINEERING COSTS				**$203,810.68**
	TOTAL PROJECT				**$1,948,936.18**

Green Valley Special Utility District
16" Pipeline along Pioneer Rd (connect)

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	1,330	$1.00	$1,330.00
2	Install 16" diameter C905 PVC Pipe	LF	1,330	$100.00	$133,000.00
3	Install 16" diameter valves w/box	EA	2	$5,500.00	$11,000.00
4	Install 16" diameter tie-ins	EA	2	$5,750.00	$11,500.00
5	Ductile Iron Fittings	EA	1	$4,500.00	$4,500.00
6	Install Fire Hydrant Assembly	EA	2	$4,500.00	$9,000.00
7	Fencing Repair	LF	1,330	$1.00	$1,330.00
8	Final Grading & Seed	LF	1,330	$1.00	$1,330.00
	TOTAL CONSTRUCTION				**$172,990.00**
	Bonds, Mobilization & Insurance	10%			$17,299.00
	Contingencies	10%			$19,028.90
	TOTAL				**$209,317.90**
	Easements	LF	1,330	$12.00	$15,960.00
	Easement Surveys and Acquisition Costs	LF	1,330	$2.00	$2,660.00
	Easement Acquisition Consultant	LF	1,330	$1.00	$1,330.00
	TOTAL EASEMENT COSTS				**$19,950.00**
	Basic Engineering	10%			$20,931.79
	Surveying	LF	1,330	$2.00	$2,660.00
	Construction Phase Services	1.5%			$3,139.77
	TOTAL ENGINEERING COSTS				**$26,731.56**
	TOTAL PROJECT				**$255,999.46**

Green Valley Special Utility District
8" Pipeline along Lower Valley Ln - Weir Rd to Haeckerville Rd

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	5,900	$1.00	$5,900.00
2	Install 8" diameter C909 PVC Pipe	LF	5,900	$50.00	$295,000.00
3	Install 8" diameter valves w/box	EA	5	$2,000.00	$10,000.00
4	Install 4" diameter tie-ins	EA	2	$885.00	$1,770.00
5	Ductile Iron Fittings	EA	2	$4,500.00	$9,000.00
6	Install Fire Hydrant Assembly	EA	5	$4,500.00	$22,500.00
7	Fencing Repair	LF	5,900	$1.00	$5,900.00
8	Final Grading & Seed	LF	5,900	$1.00	$5,900.00
	TOTAL CONSTRUCTION				**$355,970.00**
	Bonds, Mobilization & Insurance	10%			$35,597.00
	Contingencies	10%			$39,156.70
	TOTAL				**$430,723.70**
	Easements	LF	5,900	$12.00	$70,800.00
	Easement Surveys and Acquisition Costs	LF	5,900	$2.00	$11,800.00
	Easement Acquisition Consultant	LF	5,900	$1.00	$5,900.00
	TOTAL EASEMENT COSTS				**$88,500.00**
	Basic Engineering	10%			$43,072.37
	Surveying	LF	5,900	$2.00	$11,800.00
	Construction Phase Services	1.5%			$6,460.86
	TOTAL ENGINEERING COSTS				**$61,333.23**
	TOTAL PROJECT				**$580,556.93**

Green Valley Special Utility District
8" Pipeline along Lower Seguin Rd (connect)

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	4,300	$1.00	$4,300.00
2	Install 8" diameter C909 PVC Pipe	LF	4,300	$50.00	$215,000.00
3	Install 8" diameter valves w/box	EA	4	$2,000.00	$8,000.00
4	Install 4" diameter tie-ins	EA	1	$885.00	$885.00
5	Install 8" diameter tie-ins	EA	1	$1,980.00	$1,980.00
6	Ductile Iron Fittings	EA	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	4	$4,500.00	$18,000.00
8	Fencing Repair	LF	4,300	$1.00	$4,300.00
9	Final Grading & Seed	LF	4,300	$1.00	$4,300.00
	TOTAL CONSTRUCTION				**$265,765.00**
	Bonds, Mobilization & Insurance	10%			$26,576.50
	Contingencies	10%			$29,234.15
	TOTAL				**$321,575.65**
	Easements	LF	4,300	$12.00	$51,600.00
	Easement Surveys and Acquisition Costs	LF	4,300	$2.00	$8,600.00
	Easement Acquisition Consultant	LF	4,300	$1.00	$4,300.00
	TOTAL EASEMENT COSTS				**$64,500.00**
	Basic Engineering	10%			$32,157.57
	Surveying	LF	4,300	$2.00	$8,600.00
	Construction Phase Services	1.5%			$4,823.63
	TOTAL ENGINEERING COSTS				**$45,581.20**
	TOTAL PROJECT				**$431,656.85**

Green Valley Special Utility District
8" Pipeline along Bolton Rd (connect)

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	1,250	$1.00	$1,250.00
2	Install 8" diameter C909 PVC Pipe	LF	1,250	$50.00	$62,500.00
3	Install 8" diameter valves w/box	EA	2	$2,000.00	$4,000.00
4	Install 2" diameter tie-ins	EA	1	$500.00	$500.00
5	Install 8" diameter tie-ins	EA	1	$1,980.00	$1,980.00
6	Ductile Iron Fittings	EA	1	$4,500.00	$4,500.00
7	Install Fire Hydrant Assembly	EA	2	$4,500.00	$9,000.00
8	Fencing Repair	LF	1,250	$1.00	$1,250.00
9	Final Grading & Seed	LF	1,250	$1.00	$1,250.00
	TOTAL CONSTRUCTION				**$86,230.00**
	Bonds, Mobilization & Insurance	10%			$8,623.00
	Contingencies	10%			$9,485.30
	TOTAL				**$104,338.30**
	Easements	LF	6,300	$12.00	$75,600.00
	Easement Surveys and Acquisition Costs	LF	6,300	$2.00	$12,600.00
	Easement Acquisition Consultant	LF	6,300	$1.00	$6,300.00
	TOTAL EASEMENT COSTS				**$94,500.00**
	Basic Engineering	10%			$10,433.83
	Surveying	LF	6,300	$2.00	$12,600.00
	Construction Phase Services	1.5%			$1,565.07
	TOTAL ENGINEERING COSTS				**$24,598.90**
	TOTAL PROJECT				**$223,437.20**

Green Valley Special Utility District
8" Pipeline along Schmoekel Rd - Stolte Rd to Santa Clara Rd

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	9,300	$1.00	$9,300.00
2	Install 8" diameter C909 PVC Pipe	LF	9,300	$50.00	$465,000.00
3	Install 8" diameter valves w/box	EA	9	$2,000.00	$18,000.00
3	Install 4" diameter tie-ins	EA	2	$885.00	$1,770.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	9	$4,500.00	$40,500.00
7	Fencing Repair	LF	9,300	$1.00	$9,300.00
8	Final Grading & Seed	LF	9,300	$1.00	$9,300.00
	TOTAL CONSTRUCTION				**$566,670.00**
	Bonds, Mobilization & Insurance	10%			$56,667.00
	Contingencies	10%			$62,333.70
	TOTAL				**$685,670.70**
	Easements	LF	9,300	$12.00	$111,600.00
	Easement Surveys and Acquisition Costs	LF	9,300	$2.00	$18,600.00
	Easement Acquisition Consultant	LF	9,300	$1.00	$9,300.00
	TOTAL EASEMENT COSTS				**$139,500.00**
	Basic Engineering	10%			$68,567.07
	Surveying	LF	9,300	$2.00	$18,600.00
	Construction Phase Services	1.5%			$10,285.06
	TOTAL ENGINEERING COSTS				**$97,452.13**
	TOTAL PROJECT				**$922,622.83**

Green Valley Special Utility District
GVSUD Take-Point Meter Station at Santa Clara Rd & IH10

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	0.25	$2,500.00	$625.00
2	8" Cla Val	EA	1	$25,000.00	$25,000.00
3	Install 16" diameter DIP Class 350 pipe	LF	100	$85.00	$8,500.00
4	Install 8" diameter DIP Class 350 pipe	LF	25	$70.00	$1,750.00
5	Install 16" diameter valves w/box	EA	1	$5,500.00	$5,500.00
6	Install 16" diameter tie-ins	EA	1	$4,000.00	$4,000.00
7	Ductile Iron Fittings	TON	1	$4,500.00	$2,250.00
8	Install Fire Hydrant Assembly	EA	0	$4,500.00	$0.00
9	Metering Station Concrete & Buidling	SF	288	$35.00	$10,080.00
10	Site Power	LS	1	$2,500.00	$2,500.00
11	Site Electrical	LS	1	$12,000.00	$12,000.00
12	Chemical Building and Chemical Yard Pipe	LS	1	$15,000.00	$15,000.00
13	Site Controls and Communication	LS	1	$15,000.00	$15,000.00
14	Driveway	SY	200	$45.00	$9,000.00
15	Fencing	LF	120	$12.00	$1,440.00
16	Landscaping	LS	1	$500.00	$500.00
	TOTAL CONSTRUCTION				**$113,145.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$11,314.50
	Contingencies	10%			$12,445.95
	TOTAL				**$136,905.45**
	Property	AC			$0.00
	Easement Surveys and Acquisition Costs	AC			$0.00
	Attorney	LS			$0.00
	TOTAL EASEMENT COSTS				**$0.00**
	Basic Engineering	10%			$13,690.55
	Surveying	LS	1	$2,000.00	$2,000.00
	Geotechnical	LS	2	$1,200.00	$2,400.00
	TOTAL ENGINEERING COSTS				**$18,090.55**
	TOTAL PROJECT				**$154,996.00**

Green Valley Special Utility District
750' EST @ Gin Road

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$45,000.00	$45,000.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	550	$175.00	$96,250.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,735,150.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$173,515.00
	Contingencies	10%			$190,866.50
	TOTAL				**$2,099,531.50**
	Property	AC	1.0	$30,000.00	$30,000.00
	Easement Surveys and Acquisition Costs	LS	1.0	$4,500.00	$4,500.00
	Attorney	LS	1.0	$7,500.00	$7,500.00
	TOTAL EASEMENT COSTS				**$42,000.00**
	Basic Engineering	10%			$209,953.15
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$223,953.15**
	TOTAL PROJECT				**$2,365,484.65**

Green Valley Special Utility District 38
8" Pipeline along FM 775 - Leissner School Rd to Beutnagel Ln

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	11,900	$1.00	$11,900.00
2	Install 8" diameter C909 PVC Pipe	LF	11,900	$50.00	$595,000.00
3	Install 8" diameter valves w/box	EA	11	$2,000.00	$22,000.00
3	Install 16" diameter tie-ins	EA	1	$1,600.00	$1,600.00
4	Install 6" diameter tie-ins	EA	1	$5,750.00	$5,750.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	11	$4,500.00	$49,500.00
7	Fencing Repair	LF	11,900	$1.00	$11,900.00
8	Final Grading & Seed	LF	11,900	$1.00	$11,900.00
	TOTAL CONSTRUCTION				**$723,050.00**
	Bonds, Mobilization & Insurance	10%			$72,305.00
	Contingencies	10%			$79,535.50
	TOTAL				**$874,890.50**
	Easements	LF	11,900	$12.00	$142,800.00
	Easement Surveys and Acquisition Costs	LF	11,900	$2.00	$23,800.00
	Easement Acquisition Consultant	LF	11,900	$1.00	$11,900.00
	TOTAL EASEMENT COSTS				**$178,500.00**
	Basic Engineering	10%			$87,489.05
	Surveying	LF	11,900	$2.00	$23,800.00
	Construction Phase Services	1.5%			$13,123.36
	TOTAL ENGINEERING COSTS				**$124,412.41**
	TOTAL PROJECT				**$1,177,802.91**

Green Valley Special Utility District
12" Pipeline along Abbott Road - FM 1518 to FM 2538

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	11,125	$1.00	$11,125.00
2	Install 12" diameter C909 PVC Pipe	LF	11,125	$65.00	$723,125.00
3	Install 12" diameter valves w/box	EA	11	$2,500.00	$27,500.00
3	Install 4" diameter tie-ins	EA	3	$885.00	$2,655.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	11	$4,500.00	$49,500.00
7	Fencing Repair	LF	11,125	$1.00	$11,125.00
8	Final Grading & Seed	LF	11,125	$1.00	$11,125.00
	TOTAL CONSTRUCTION				**$849,655.00**
	Bonds, Mobilization & Insurance	10%			$84,965.50
	Contingencies	10%			$93,462.05
	TOTAL				**$1,028,082.55**
	Easements	LF	11,125	$12.00	$133,500.00
	Easement Surveys and Acquisition Costs	LF	11,125	$2.00	$22,250.00
	Easement Acquisition Consultant	LF	11,125	$1.00	$11,125.00
	TOTAL EASEMENT COSTS				**$166,875.00**
	Basic Engineering	10%			$102,808.26
	Surveying	LF	11,125	$2.00	$22,250.00
	Construction Phase Services	1.5%			$15,421.24
	TOTAL ENGINEERING COSTS				**$140,479.49**
	TOTAL PROJECT				**$1,335,437.04**

Green Valley Special Utility District
8" Pipeline along New Berlin Rd - Gable Ln to Miller Rd

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	11,345	$1.00	$11,345.00
2	Install 8" diameter C909 PVC Pipe	LF	11,345	$50.00	$567,250.00
3	Install 8" diameter valves w/box	EA	11	$2,000.00	$22,000.00
4	Install 4" diameter tie-ins	EA	2	$885.00	$1,770.00
5	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
6	Install Fire Hydrant Assembly	EA	11	$4,500.00	$49,500.00
7	Fencing Repair	LF	11,345	$1.00	$11,345.00
8	Final Grading & Seed	LF	11,345	$1.00	$11,345.00
	TOTAL CONSTRUCTION				**$688,055.00**
	Bonds, Mobilization & Insurance	10%			$68,805.50
	Contingencies	10%			$75,686.05
	TOTAL				**$832,546.55**
	Easements	LF	11,345	$12.00	$136,140.00
	Easement Surveys and Acquisition Costs	LF	11,345	$2.00	$22,690.00
	Easement Acquisition Consultant	LF	11,345	$1.00	$11,345.00
	TOTAL EASEMENT COSTS				**$170,175.00**
	Basic Engineering	10%			$83,254.66
	Surveying	LF	11,345	$2.00	$22,690.00
	Construction Phase Services	1.5%			$12,488.20
	TOTAL ENGINEERING COSTS				**$118,432.85**
	TOTAL PROJECT				**$1,121,154.40**

Green Valley Special Utility District
8" Pipeline along Engel Rd - Green Valley Rd to Service Boundary

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	3,200	$1.00	$3,200.00
2	Install 8" diameter C909 PVC Pipe	LF	3,200	$50.00	$160,000.00
3	Install 8" diameter valves w/box	EA	3	$2,000.00	$6,000.00
4	Install 4" diameter tie-ins	EA	1	$885.00	$885.00
5	Ductile Iron Fittings	EA	1	$4,500.00	$4,500.00
6	Install Fire Hydrant Assembly	EA	3	$4,500.00	$13,500.00
7	Fencing Repair	LF	3,200	$1.00	$3,200.00
8	Final Grading & Seed	LF	3,200	$1.00	$3,200.00
	TOTAL CONSTRUCTION				**$194,485.00**
	Bonds, Mobilization & Insurance	10%			$19,448.50
	Contingencies	10%			$21,393.35
	TOTAL				**$235,326.85**
	Easements	LF	3,200	$12.00	$38,400.00
	Easement Surveys and Acquisition Costs	LF	3,200	$2.00	$6,400.00
	Easement Acquisition Consultant	LF	3,200	$1.00	$3,200.00
	TOTAL EASEMENT COSTS				**$48,000.00**
	Basic Engineering	10%			$23,532.69
	Surveying	LF	3,200	$2.00	$6,400.00
	Construction Phase Services	1.5%			$3,529.90
	TOTAL ENGINEERING COSTS				**$33,462.59**
	TOTAL PROJECT				**$316,789.44**

Green Valley Special Utility District
Plant 1 - 1MG Ground Storage Tank

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.5	$2,500.00	$3,750.00
2	1MG Concrete Ground Storage Tank	EA	1	$750,000.00	$750,000.00
3	Install 24" diameter DIP Water pipe	LF	100	$75.00	$7,500.00
4	Install 24" diameter valves w/box	EA	2	$9,350.00	$18,700.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Site Power	LS	1	$75,000.00	$75,000.00
9	Site Controls and Communication	LS	1	$60,000.00	$60,000.00
10	Driveway	SY	500	$45.00	$22,500.00
11	Fencing	LF	1,000	$12.00	$12,000.00
12	Landscaping	LS	1	$7,500.00	$7,500.00
13	Existing ROW Pipe Coordination	LS	1	$25,000.00	$25,000.00
14	DEMO existing Plant 1	LS	1	$25,000.00	$25,000.00
	TOTAL CONSTRUCTION				**$1,033,450.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$103,345.00
	Contingencies	10%			$113,679.50
	TOTAL				**$1,250,474.50**
	Property	AC			$0.00
	Easement Surveys and Acquisition Costs	AC			$0.00
	Attorney	LS			$0.00
	TOTAL EASEMENT COSTS				**$0.00**
	Basic Engineering	10%			$125,047.45
	Surveying	LS	1	$8,000.00	$8,000.00
	Geotechnical	LS	1	$19,000.00	$19,000.00
	TOTAL ENGINEERING COSTS				**$152,047.45**
	TOTAL PROJECT				**$1,402,521.95**

Green Valley Special Utility District
16" Pipeline along FM 1044 from Green Valley Rd to Youngsford

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	19,400	$1.00	$19,400.00
2	Install 16" diameter C905 PVC Pipe	LF	19,400	$100.00	$1,940,000.00
3	Install 16" diameter valves w/box	EA	20	$5,500.00	$110,000.00
4	Install 12" diameter tie-ins	EA	1	$3,000.00	$3,000.00
5	Install 8" diameter tie-ins	EA	2	$1,980.00	$3,960.00
6	Ductile Iron Fittings	EA	5	$4,500.00	$22,500.00
7	Install Fire Hydrant Assembly	EA	20	$4,500.00	$90,000.00
8	Fencing Repair	LF	19,400	$1.00	$19,400.00
9	Final Grading & Seed	LF	19,400	$1.00	$19,400.00
	TOTAL CONSTRUCTION				**$2,227,660.00**
	Bonds, Mobilization & Insurance	10%			$222,766.00
	Contingencies	10%			$245,042.60
	TOTAL				**$2,695,468.60**
	Easements	LF	19,400	$12.00	$232,800.00
	Easement Surveys and Acquisition Costs	LF	19,400	$5.00	$97,000.00
	Easement Acquisition Consultant	LF	19,400	$5.00	$97,000.00
	TOTAL EASEMENT COSTS				**$426,800.00**
	Basic Engineering	12%			$323,456.23
	Surveying	LF	19,400	$2.00	$38,800.00
	Construction Phase Services	1.5%			$40,432.03
	TOTAL ENGINEERING COSTS				**$402,688.26**
	TOTAL PROJECT				**$3,524,956.86**

Green Valley Special Utility District
16" Pipeline along Union Wine from FM 1044 to Sunshine Lane

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	9,200	$1.00	$9,200.00
2	Install 16" diameter C905 PVC Pipe	LF	9,200	$100.00	$920,000.00
3	Install 16" diameter valves w/box	EA	9	$5,500.00	$49,500.00
4	Install 12" diameter tie-ins	EA	1	$3,000.00	$3,000.00
5	Install 4" diameter tie-ins	EA	1	$885.00	$885.00
6	Ductile Iron Fittings	EA	3	$4,500.00	$13,500.00
7	Install Fire Hydrant Assembly	EA	9	$4,500.00	$40,500.00
8	Fencing Repair	LF	9,200	$1.00	$9,200.00
9	Final Grading & Seed	LF	9,200	$1.00	$9,200.00
	TOTAL CONSTRUCTION				**$1,054,985.00**
	Bonds, Mobilization & Insurance	10%			$105,498.50
	Contingencies	10%			$116,048.35
	TOTAL				**$1,276,531.85**
	Easements	LF	9,200	$12.00	$110,400.00
	Easement Surveys and Acquisition Costs	LF	9,200	$5.00	$46,000.00
	Easement Acquisition Consultant	LF	9,200	$5.00	$46,000.00
	TOTAL EASEMENT COSTS				**$202,400.00**
	Basic Engineering	12%			$153,183.82
	Surveying	LF	9,200	$2.00	$18,400.00
	Construction Phase Services	1.5%			$19,147.98
	TOTAL ENGINEERING COSTS				**$190,731.80**
	TOTAL PROJECT				**$1,669,663.65**

Green Valley Special Utility District
16" Pipeline along Youngsford from FM 1044 to FM 725

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	20,500	$1.00	$20,500.00
2	Install 16" diameter C905 PVC Pipe	LF	20,500	$100.00	$2,050,000.00
3	Install 16" diameter valves w/box	EA	20	$5,500.00	$110,000.00
4	Install 12" diameter tie-ins	EA	1	$3,000.00	$3,000.00
5	Install 4" diameter tie-ins	EA	1	$885.00	$885.00
6	Ductile Iron Fittings	EA	6	$4,500.00	$27,000.00
7	Install Fire Hydrant Assembly	EA	20	$4,500.00	$90,000.00
8	Fencing Repair	LF	20,500	$1.00	$20,500.00
9	Final Grading & Seed	LF	20,500	$1.00	$20,500.00
	TOTAL CONSTRUCTION				**$2,342,385.00**
	Bonds, Mobilization & Insurance	10%			$234,238.50
	Contingencies	10%			$257,662.35
	TOTAL				**$2,834,285.85**
	Easements	LF	20,500	$12.00	$246,000.00
	Easement Surveys and Acquisition Costs	LF	20,500	$5.00	$102,500.00
	Easement Acquisition Consultant	LF	20,500	$5.00	$102,500.00
	TOTAL EASEMENT COSTS				**$451,000.00**
	Basic Engineering	12%			$340,114.30
	Surveying	LF	20,500	$2.00	$41,000.00
	Construction Phase Services	1.5%			$42,514.29
	TOTAL ENGINEERING COSTS				**$423,628.59**
	TOTAL PROJECT				**$3,708,914.44**

Green Valley Special Utility District
16" Pipeline along FM 1044 from Youngsford to Wosnig Road

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	LF	13,800	$1.00	$13,800.00
2	Install 16" diameter C905 PVC Pipe	LF	13,800	$100.00	$1,380,000.00
3	Install 16" diameter valves w/box	EA	13	$5,500.00	$71,500.00
4	Install 4" diameter tie-ins	EA	2	$885.00	$1,770.00
5	Ductile Iron Fittings	EA	4	$4,500.00	$18,000.00
6	Install Fire Hydrant Assembly	EA	13	$4,500.00	$58,500.00
7	Fencing Repair	LF	13,800	$1.00	$13,800.00
8	Final Grading & Seed	LF	13,800	$1.00	$13,800.00
	TOTAL CONSTRUCTION				**$1,571,170.00**
	Bonds, Mobilization & Insurance	10%			$157,117.00
	Contingencies	10%			$172,828.70
	TOTAL				**$1,901,115.70**
	Easements	LF	13,800	$12.00	$165,600.00
	Easement Surveys and Acquisition Costs	LF	13,800	$5.00	$69,000.00
	Easement Acquisition Consultant	LF	13,800	$5.00	$69,000.00
	TOTAL EASEMENT COSTS				**$303,600.00**
	Basic Engineering	12%			$228,133.88
	Surveying	LF	13,800	$2.00	$27,600.00
	Construction Phase Services	1.5%			$28,516.74
	TOTAL ENGINEERING COSTS				**$284,250.62**
	TOTAL PROJECT				**$2,488,966.32**

Green Valley Special Utility District
830' EST @ Plant 3

Engineering Opinion of Probable Costs

ITEM	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
1	Prepare Site	AC	1.0	$45,000.00	$45,000.00
2	1 MG Composite Elevated Storage Tank	EA	1	$1,500,000.00	$1,500,000.00
3	Install 24" diameter DIP Water pipe	LF	200	$175.00	$35,000.00
4	Install 24" diameter valves w/box	EA	4	$9,350.00	$37,400.00
5	Install 24" diameter tie-ins	EA	2	$6,500.00	$13,000.00
6	Ductile Iron Fittings	TON	2	$4,500.00	$9,000.00
7	Install Fire Hydrant Assembly	EA	1	$4,500.00	$4,500.00
8	Driveway, Fencing, Landscape Site Dress Up	LS	1	$30,000.00	$30,000.00
9	DEMO Plant 3 EST	LS	1	$30,000.00	$30,000.00
	TOTAL CONSTRUCTION				**$1,703,900.00**
	Bonds, Mobilization, Prep ROW & Insurance	10%			$170,390.00
	Contingencies	10%			$187,429.00
	TOTAL				**$2,061,719.00**
	Property	AC			$0.00
	Easement Surveys and Acquisition Costs	LS			$0.00
	Attorney	LS			$0.00
	TOTAL EASEMENT COSTS				**$0.00**
	Basic Engineering	10%			$206,171.90
	Surveying	LS	1	$4,500.00	$4,500.00
	Geotechnical	LS	1	$9,500.00	$9,500.00
	TOTAL ENGINEERING COSTS				**$220,171.90**
	TOTAL PROJECT				**$2,281,890.90**

ATTACHMENT 2
GVSUD PUMP RECORDS

Water for a Better Life
Since 1963

GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD)

FACT SHEET

- Celebrated 50 years as a Superior Water System in 2013.
- Average Residential usage for YTD 2014 is 6,551 Gallons per Month.
- 10,046 Customers as of September 2014 in Guadalupe, Comal and Bexar County.
- Majority of GVSUD Customers are Residential and Light Commercial.
- Maximum day usage in past 12 months was 4,563,200 in Oct. 2013.
- Minimum day usage in past 12 months was 1,019,500 gallons in Nov. 2013.
- GVSUD currently has 4 sources of water including:
    - Edwards Aquifer
    - Trinity Aquifer
    - Lake Dunlap Surface Water
    - Carrizo Ground Water
- Average Annual growth system wide has been 4.45% over the past 10 years.
- Average Annual use per Residential connection has been 0.34 AF/connection. over the past 10 years, 2013 Average use was 0.28 AF/connection.
- GVSUD has a projected water connection total of 26,804 by the year 2034.
- GVSUD pumped 3052.5 AF of water in the past 12 months. They currently have contracts for 9,494 AF of water.
- GVSUD has an elected board with 3 current members in the City of New Braunfels city limits and ETJ.
- City of New Braunfels development and fire flow requirements are met prior to a potable water contract being presented to the Board. All subdivisions and distribution system projects have passed City and Fire Department Inspections.
- Recently TWDB projects have been completed to increase capacity to the system with over $2 million per year spent on infrastructure upgrades. The District has several priority projects identified to maintain their level of service into the future.

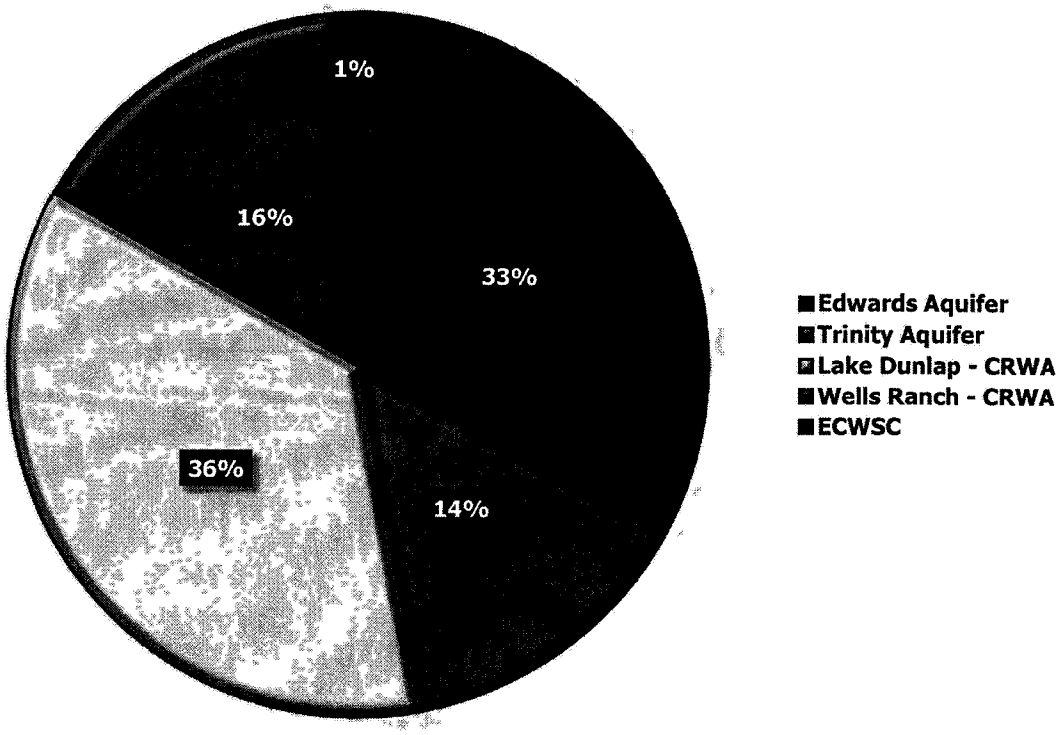
Water for a Better Life
Since 1963

GREEN VALLEY SPECIAL UTILITY DISTRICT (GVSUD)

WATER SOURCES

SEPTEMBER 2014

Water Source	*Acre-feet*	*Percentage*
Edwards Aquifer	119.6743	33%
Trinity Aquifer	51.2044	14%
Lake Dunlap - CRWA	131.3146	36%
Wells Ranch - CRWA	56.9309	16%
ECWSC	4.4253	1%
Total AF Produced	***363.55***	



Green Valley SUD Operations Report October 2013 - September 2014

	October	November	December	January	February	March	April	May	June	July	August	September	
Edwards Aquifer	107.207	97.6103	98.8163	103.863	109.7035	71.3946	84.7473	78.8305	92.2293	76.3573	106.0976	119.6743	
Trinity Aquifer	0	0	0	0	7.887	38.6434	38.6434	51.6156	45.8492	43.36	45.8492	51.2044	
Lake Dunlap - CRWA	85.2322	70.1609	61.2489	70.6212	78.097	66.2327	69.4244	81.79	99.1926	96.3416	118.9808	131.3146	
Wells Ranch - CRWA	37.575	35.9029	55.396	54.172	59.9354	52.0146	36.4891	38.235	26.8742	28.1264	48.4148	56.9309	
ECWSC	3.996	1.347	0.2056	0.8562	2.3017	0.4634	0.4481	1.8996	2.8663	2.8449	2.5165	4.4253	
Total Gallons Produced	76,252,500	66,806,400	70,275,400	74,787,000	84,045,000	74,538,000	74,865,000	82,236,000	87,006,000	80,495,000	104,878,000	118,463,000	
Total AF Produced	234.0103	205.0213	215.6673	229.5129	257.9246	228.7487	229.7522	252.373	267.0116	247.0301	321.8588	363.5496	3052.46
Average Daily Use (gallons)	2,471,500	1,952,000	2,167,600	2,367,300	2,562,000	2,603,300	2,276,700	2,468,800	2,706,900	3,000,300	3,090,200	3,574,900	
Maximum Daily Use (gallons)	4,563,200	2,758,400	4,097,300	3,876,400	3,958,400	3,158,800	3,442,700	3,073,400	3,163,700	4,306,700	4,322,800	4,244,700	
Minimum Daily Use (gallons)	1,180,500	1,019,500	1,403,500	1,685,700	1,625,500	2,076,600	1,526,300	1,998,600	2,149,000	2,286,500	2,362,500	2,735,700	
Average Residential (gallons/month)	6,301	5,721	4,902	5,646	5,421	4,844	5,120	7,247	7,437	7,529	8,407	10,037	
Average Residential gallons/month for 12 month period			6,551										

September 2014 Water Sources

		Percentage
Edwards Aquifer	119.6743	33%
Trinity Aquifer	51.2044	14%
Lake Dunlap - CRWA	131.3146	36%
Wells Ranch - CRWA	56.9309	16%
ECWSC	4.4253	1%
Total AF Produced	363.5495	

ATTACHMENT 3

TCEQ (30 TAC §290.45)

Texas Administrative Code

TITLE 30	ENVIRONMENTAL QUALITY
PART 1	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
CHAPTER 290	PUBLIC DRINKING WATER
SUBCHAPTER D	RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS
RULE §290.45	**Minimum Water System Capacity Requirements**

(a) General provisions.

(1) The requirements contained in this section are to be used in evaluating both the total capacities for public water systems and the capacities at individual pump stations and pressure planes which serve portions of the system that are hydraulically separated from, or incapable of being served by, other pump stations or pressure planes. The capacities specified in this section are minimum requirements only and do not include emergency fire flow capacities for systems required to meet requirements contained in §290.46(x) and (y) of this title (relating to Minimum Acceptable Operating Practices for Public Drinking Water Systems).

(2) The executive director will require additional supply, storage, service pumping, and pressure maintenance facilities if a normal operating pressure of 35 pounds per square inch (psi) cannot be maintained throughout the system, or if the system's maximum daily demand exceeds its total production and treatment capacity. The executive director will also require additional capacities for a system that is unable to maintain a minimum pressure of 20 psi during fire fighting, line flushing, other unusual conditions, and systems that are required to provide fire flow as specified in §290.46(x) and (y) of this title.

(3) The executive director may establish additional capacity requirements for a public water system using the method of calculation described in subsection (g)(2) of this section if there are repeated customer complaints regarding inadequate pressure or if the executive director receives a request for a capacity evaluation from customers of the system.

(4) Throughout this section, total storage capacity does not include pressure tank capacity.

(5) The executive director may exclude the capacity of facilities that have been inoperative for the past 120 days and will not be returned to an operative condition within the next 30 days when determining compliance with the requirements of this section.

(6) The capacity of the treatment facilities shall not be less than the required raw water or groundwater production rate or the anticipated maximum daily demand of the system.

(7) If a public water system that is an affected utility fails to provide a minimum of 35 psi throughout the distribution system during emergency operations as soon as it is safe and practicable following the

occurrence of a natural disaster, a revised emergency preparedness plan or justification regarding pressure drop shall be submitted for review and approval within 180 days of the date normal power is restored. Based on the review of the revised emergency preparedness plan, the executive director may require additional or alternative auxiliary emergency facilities.

(b) Community water systems.

(1) Groundwater supplies must meet the following requirements.

(A) If fewer than 50 connections without ground storage, the system must meet the following requirements:

(i) a well capacity of 1.5 gallons per minute (gpm) per connection; and

(ii) a pressure tank capacity of 50 gallons per connection.

(B) If fewer than 50 connections with ground storage, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more service pumps having a total capacity of 2.0 gpm per connection; and

(iv) a pressure tank capacity of 20 gallons per connection.

(C) For 50 to 250 connections, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more pumps having a total capacity of 2.0 gpm per connection at each pump station or pressure plane. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane. If only wells and elevated storage are provided, service pumps are not required; and

(iv) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection.

(D) For more than 250 connections, the system must meet the following requirements:

(i) two or more wells having a total capacity of 0.6 gpm per connection. Where an interconnection is provided with another acceptable water system capable of supplying at least 0.35 gpm for each connection in the combined system under emergency conditions, an additional well will not be required as long as the 0.6 gpm per connection requirement is met for each system on an individual basis. Each water system must still meet the storage and pressure maintenance requirements on an individual basis unless the interconnection is permanently open. In this case, the systems' capacities will be rated as though a single system existed;

(ii) a total storage capacity of 200 gallons per connection;

(iii) two or more pumps that have a total capacity of 2.0 gpm per connection or that have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service, whichever is less, at each pump station or pressure plane. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane. If only wells and elevated storage are provided, service pumps are not required;

(iv) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection. If pressure tanks are used, a maximum capacity of 30,000 gallons is sufficient for up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections. Alternate methods of pressure maintenance may be proposed and will be approved if the criteria contained in subsection (g)(5) of this section are met; and

(v) emergency power for systems which serve more than 250 connections and do not meet the elevated storage requirement. Sufficient emergency power must be provided to deliver a minimum of 0.35 gpm per connection to the distribution system in the event of the loss of normal power supply. Alternately, an emergency interconnection can be provided with another public water system that has emergency power and is able to supply at least 0.35 gpm for each connection in the combined system. Emergency power facilities in systems serving 1,000 connections or greater must be serviced and maintained in accordance with level 2 maintenance requirements contained in the current National Fire Protection Association (NFPA 110 Standard). Although not required, compliance with NFPA 110 Standard is highly recommended for systems serving less than 1,000 connections. Logs of all emergency power use and maintenance must be maintained and kept on file for a period of not less than three years. These records must be made available, upon request, for executive director review.

(E) Mobile home parks with a density of eight or more units per acre and apartment complexes which supply fewer than 100 connections without ground storage must meet the following requirements:

(i) a well capacity of 1.0 gpm per connection; and

(ii) a pressure tank capacity of 50 gallons per connection with a maximum of 2,500 gallons required.

(F) Mobile home parks and apartment complexes which supply 100 connections or greater, or fewer than 100 connections and utilize ground storage must meet the following requirements:

(i) a well capacity of 0.6 gpm per connection. Systems with 250 or more connections must have either two wells or an approved interconnection which is capable of supplying at least 0.35 gpm for each connection in the combined system;

(ii) a total storage of 200 gallons per connection;

(iii) at least two service pumps with a total capacity of 2.0 gpm per connection; and

(iv) a pressure tank capacity of 20 gallons per connection.

(2) Surface water supplies must meet the following requirements:

(A) a raw water pump capacity of 0.6 gpm per connection with the largest pump out of service;

(B) a treatment plant capacity of 0.6 gpm per connection under normal rated design flow;

(C) transfer pumps (where applicable) with a capacity of 0.6 gpm per connection with the largest pump out of service;

(D) a covered clearwell storage capacity at the treatment plant of 50 gallons per connection or, for systems serving more than 250 connections, 5.0% of daily plant capacity;

(E) a total storage capacity of 200 gallons per connection;

(F) a service pump capacity that provides each pump station or pressure plane with two or more pumps that have a total capacity of 2.0 gpm per connection or that have a total capacity of at least 1,000 gpm and the ability to meet peak hourly demands with the largest pump out of service, whichever is less. For systems which provide an elevated storage capacity of 200 gallons per connection, two service pumps with a minimum combined capacity of 0.6 gpm per connection are required at each pump station or pressure plane;

(G) an elevated storage capacity of 100 gallons per connection or a pressure tank capacity of 20 gallons per connection. If pressure tanks are used, a maximum capacity of 30,000 gallons is sufficient for systems of up to 2,500 connections. An elevated storage capacity of 100 gallons per connection is required for systems with more than 2,500 connections. Alternate methods of pressure maintenance may be proposed and will be approved if the criteria contained in subsection (g)(5) of this section are met; and

(H) emergency power for systems which serve more than 250 connections and do not meet the elevated storage requirement. Sufficient emergency power must be provided to deliver a minimum of 0.35 gpm per connection to the distribution system in the event of the loss of normal power supply. Alternately, an emergency interconnection can be provided with another public water system that has emergency power and is able to supply at least 0.35 gpm for each connection in the combined system. Emergency power facilities in systems serving 1,000 connections or greater must be serviced and maintained in accordance with level 2 maintenance requirements contained in the current NFPA 110 Standard. Although not required, compliance with NFPA 110 Standard is highly recommended for systems serving less than 1,000 connections. Logs of all emergency power use and maintenance must be maintained and kept on file for a period of not less than three years. These records must be made available, upon request, for executive director review.

(3) Any community public water system that is an affected utility shall have an emergency preparedness plan approved by the executive director and must meet the requirements for emergency operations contained in subsection (h) of this section. This includes any affected utility that provides 100 gallons of elevated storage capacity per connection.

(c) Noncommunity water systems serving transient accommodation units. The following water capacity requirements apply to noncommunity water systems serving accommodation units such as hotel rooms, motel rooms, travel trailer spaces, campsites, and similar accommodations.

(1) Groundwater supplies must meet the following requirements.

(A) If fewer than 100 accommodation units without ground storage, the system must meet the following requirements:

(i) a well capacity of 1.0 gpm per unit; and

(ii) a pressure tank capacity of ten gallons per unit with a minimum of 220 gallons.

(B) For systems serving fewer than 100 accommodation units with ground storage or serving 100 or more accommodation units, the system must meet the following requirements:

(i) a well capacity of 0.6 gpm per unit;

(ii) a ground storage capacity of 35 gallons per unit;

(iii) two or more service pumps which have a total capacity of 1.0 gpm per unit; and

(iv) a pressure tank capacity of ten gallons per unit.

(2) Surface water supplies, regardless of size, must meet the following requirements:

(A) a raw water pump capacity of 0.6 gpm per unit with the largest pump out of service;

(B) a treatment plant capacity of 0.6 gpm per unit;

(C) a transfer pump capacity (where applicable) of 0.6 gpm per unit with the largest pump out of service;

(D) a ground storage capacity of 35 gallons per unit with a minimum of 1,000 gallons as clearwell capacity;

(E) two or more service pumps with a total capacity of 1.0 gpm per unit; and

(F) a pressure tank capacity of ten gallons per unit with a minimum requirement of 220 gallons.

(3) A noncommunity public water system that is an affected utility shall meet the requirements of subsection (h) of this section.

(d) Noncommunity water systems serving other than transient accommodation units.

(1) The following table is applicable to paragraphs (2) and (3) of this subsection and shall be used to determine the maximum daily demand for the various types of facilities listed.

Attached Graphic

(2) Groundwater supplies must meet the following requirements.

(A) Subject to the requirements of subparagraph (B) of this paragraph, if fewer than 300 persons per day are served, the system must meet the following requirements:

(i) a well capacity which meets or exceeds the maximum daily demand of the system during the hours of operation; and

(ii) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(B) Systems which serve 300 or more persons per day or serve fewer than 300 persons per day and provide ground storage must meet the following requirements:

(i) a well capacity which meets or exceeds the maximum daily demand;

(ii) a ground storage capacity which is equal to 50% of the maximum daily demand;

(iii) if the maximum daily demand is less than 15 gpm, at least one service pump with a capacity of three times the maximum daily demand;

(iv) if the maximum daily demand is 15 gpm or more, at least two service pumps with a total capacity of three times the maximum daily demand; and

(v) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(3) Each surface water supply or groundwater supply that is under the direct influence of surface water, regardless of size, must meet the following requirements:

(A) a raw water pump capacity which meets or exceeds the maximum daily demand of the system with the largest pump out of service;

(B) a treatment plant capacity which meets or exceeds the system's maximum daily demand;

(C) a transfer pump capacity (where applicable) sufficient to meet the maximum daily demand with the largest pump out of service;

(D) a clearwell capacity which is equal to 50% of the maximum daily demand;

(E) two or more service pumps with a total capacity of three times the maximum daily demand; and

(F) a minimum pressure tank capacity of 220 gallons with additional capacity, if necessary, based on a sanitary survey conducted by the executive director.

(4) A noncommunity public water system that is an affected utility shall meet the requirements of subsection (h) of this section.

(e) Water wholesalers. The following additional requirements apply to systems which supply wholesale treated water to other public water supplies.

(1) All wholesalers must provide enough production, treatment, and service pumping capacity to meet or exceed the combined maximum daily commitments specified in their various contractual obligations.

(2) For wholesale water suppliers, minimum water system capacity requirements shall be determined by calculating the requirements based upon the number of retail customer service connections of that wholesale water supplier, if any, fire flow capacities, if required by §290.46(x) and (y) of this title and adding that amount to the maximum amount of water obligated or pledged under all wholesale contracts.

(3) Emergency power is required for each portion of the system which supplies more than 250 connections under direct pressure and does not provide an elevated storage capacity of at least 100 gallons per connection. If emergency power is required, it must be sufficient to deliver 20% of the

minimum required service pump capacity in the event of the loss of normal power supply. When the wholesaler provides water through an air gap into the purchaser's storage facilities it will be the purchaser's responsibility to meet all minimum water system capacity requirements including emergency power.

(4) A wholesaler that is an affected utility must meet the requirements specified in subsection (h) of this section.

(f) Purchased water systems. The following requirements apply only to systems which purchase treated water to meet all or part of their production, storage, service pump, or pressure maintenance capacity requirements.

(1) The water purchase contract must be available to the executive director in order that production, storage, service pump, or pressure maintenance capacity may be properly evaluated. For purposes of this section, a contract may be defined as a signed written document of specific terms agreeable to the water purchaser and the water wholesaler, or in its absence, a memorandum or letter of understanding between the water purchaser and the water wholesaler.

(2) The contract shall authorize the purchase of enough water to meet the monthly or annual needs of the purchaser.

(3) The contract shall also establish the maximum rate at which water may be drafted on a daily and hourly basis. In the absence of specific maximum daily or maximum hourly rates in the contract, a uniform purchase rate for the contract period will be used.

(4) The maximum authorized daily purchase rate specified in the contract, or a uniform purchase rate in the absence of a specified daily purchase rate, plus the actual production capacity of the system must be at least 0.6 gpm per connection.

(5) For systems which purchase water under direct pressure, the maximum hourly purchase authorized by the contract plus the actual service pump capacity of the system must be at least 2.0 gpm per connection or provide at least 1,000 gpm and be able to meet peak hourly demands, whichever is less.

(6) The purchaser is responsible for meeting all production requirements. If additional capacity to meet increased demands cannot be attained from the wholesaler through a new or amended contract, additional capacity must be obtained from water purchase contracts with other entities, new wells, or surface water treatment facilities. However, if the water purchase contract prohibits the purchaser from securing water from sources other than the wholesaler, the wholesaler is responsible for meeting all production requirements.

(7) All other minimum capacity requirements specified in this section and §290.46(x) and (y) of this title shall apply.

(g) Alternative capacity requirements. Public water systems may request approval to meet alternative capacity requirements in lieu of the minimum capacity requirements specified in this section. Any water system requesting to use an alternative capacity requirement must demonstrate to the satisfaction of the executive director that approving the request will not compromise the public health or result in a degradation of service or water quality and comply with the requirements found in §290.46(x) and (y) of this title. Alternative capacity requirements are unavailable for groundwater systems serving fewer than

50 connections without total storage as specified in subsection (b)(1) of this section or for noncommunity water systems as specified in subsections (c) and (d) of this section.

(1) Alternative capacity requirements for public water systems may be granted upon request to and approval by the executive director. The request to use an alternative capacity requirement must include:

(A) a detailed inventory of the major production, pressurization, and storage facilities utilized by the system;

(B) records kept by the water system that document the daily production of the system. The period reviewed shall not be less than three years. The applicant may not use a calculated peak daily demand;

(C) data acquired during the last drought period in the region, if required by the executive director;

(D) the actual number of active connections for each month during the three years of production data;

(E) description of any unusual demands on the system such as fire flows or major main breaks that will invalidate unusual peak demands experienced in the study period;

(F) any other relevant data needed to determine that the proposed alternative capacity requirement will provide at least 35 psi in the public water system except during line repair or during fire fighting when it cannot be less than 20 psi; and

(G) a copy of all data relied upon for making the proposed determination.

(2) Alternative capacity requirements for existing public water systems must be based upon the maximum daily demand for the system, unless the request is submitted by a licensed professional engineer in accordance with the requirements of paragraph (3) of this subsection. The maximum daily demand must be determined based upon the daily usage data contained in monthly operating reports for the system during a 36 consecutive month period. The 36 consecutive month period must end within 90 days of the date of submission to ensure the data is as current as possible.

(A) Maximum daily demand is the greatest number of gallons, including groundwater, surface water, and purchased water delivered by the system during any single day during the review period. Maximum daily demand excludes unusual demands on the system such as fire flows or major main breaks.

(B) For the purpose of calculating alternative capacity requirements, an equivalency ratio must be established. This equivalency ratio must be calculated by multiplying the maximum daily demand, expressed in gpm per connection, by a fixed safety factor and dividing the result by 0.6 gpm per connection. The safety factor shall be 1.15 unless it is documented that the existing system capacity is adequate for the next five years. In this case, the safety factor may be reduced to 1.05. The conditions in §291.93(3) of this title (relating to Adequacy of Water Utility Service) concerning the 85% rule shall continue to apply to public water systems that are also retail public utilities.

(C) To calculate the alternative capacity requirements, the equivalency ratio must be multiplied by the appropriate minimum capacity requirements specified in subsection (b) of this section. Standard rounding methods are used to round calculated alternative production capacity requirement values to the nearest one-hundredth.