

**Villa Del Monte Mutual Water Company**  
**Water Tank Replacement and Chloramination upgrade**  
**Member Review**  
June 20, 2018

**Anticipated attendees:**

Mike Miller	Board member	Fred Eggers	Board member
John Overstreet	Board member	Jim Culp	Board member
Pradeep Sanders	Board member	Jennifer LaForce	Book keeper
John Ardigo	Shareholder	Lawrence Gordon	Shareholder
Peter Van Cleef	Shareholder	Donald Navarini	Shareholder
Irene Miller	Shareholder	Alejandro Arnaiz	Shareholder
Greg Illes	Shareholder	Gary MacKenzie	Water operator

Agenda

1. Project update
  - a. Geotech report is complete
    - i. Report indicates the replacement tank can be installed in the current location if the recommendations are followed.
  - b. Temporary tanks and controls are complete.
    - i. We are using 100% SJWC water until our project is completed.
    - ii. The (6) 5,000 gallon temporary tanks are working.
    - iii. This 30,000 gallon capacity includes (1) max day demand plus some spare.
  - c. Conceptual engineering complete.
    - i. Chloramination treatment options are identified.
    - ii. 176K tank size has been identified.
    - iii. Conceptual budget was prepared
2. Treatment options
  - a. Modify the existing system to control and inject liquid ammonia.
  - b. Provide a packaged disinfection management system.
3. Tank discussion
  - a. Storage tank report from Preferred Tank and Tower determined it was not economically feasible to repair the tank.
    - i. We ask for a quote to refurbish the old tank and it came in at \$420K
  - b. Review the different tank construction types in the MNS report.
    - i. Option-4 (bolted steel w/glass coating is in the current budget valued at \$250K)
  - c. Compare first costs and long-term cost benefits.
  - d. Make a decision on what best applies to our system.
4. Construction budget
  - a. Review the engineers cost budget
  - b. See attached cost to date and budget summary

5. Payment options

- a. Review the member obligation
- b. Consider member pay upfront
- c. Review construction financing
- d. Review the need for a bridge loan to fund initial work prior to the loan funding.

6. Next steps

- a. Release MNS engineers to develop permit drawings
  - i. \$39,235.00
- b. Apply for permit
- c. Look for a candidate to project manage the construction.
- d. Go out for bids for the work

Presented by  
Mike Miller  
President  
Villa Del Monte Mutual Water Company

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Estimate Contingency	@	15.00%		\$85,774
Subtotals				\$657,601
Escalate to Midpoint of Construction (3% per year)	@	1.50%		\$9,864
Estimated Bid Cost				\$667,465
Total Estimate				\$667,470
<b>Total Estimate</b>				<b>\$670,000</b>



**OPINION OF PROBABLE CONSTRUCTION COST**

Project: Villa Del Monte Mutual Water Company  
 Building Area: Tank Replacement and Chloramination Improvements W/ PSI System  
 Estimate Type:  Conceptual  Preliminary (w/o plans)  Design Development @

Prepared By: NEP  
 Date Prepared: 1/30/2018  
 MNS Proj. No. VDMWC.170472

Months to Midpoint of Construction: 6  
 Construction Change Order % complete

Item No.	Description	Qty.	Units	Materials		Installation		Total
				\$/Unit	Total	\$/Unit	Total	
1	Existing Tank and Foundation Demolition	1	LS			\$10,000	\$10,000	\$10,000
2	Over Excavation and Offhaul/Stockpile (5 foot depth, 5 foot horizontal)	300	CY	\$1	\$300	\$8	\$2,400	\$2,700
3	Scarification and Recompaction	180	SY	\$1	\$180	\$2	\$360	\$540
4	Geo-Grid and Filter Fabric	540	SY	\$9	\$4,860	\$4	\$2,160	\$7,020
5	Native Fill and Compaction	120	CY	\$2	\$240	\$30	\$3,600	\$3,840
6	Structural Fill and Compaction	120	CY	\$55	\$6,600	\$30	\$3,600	\$10,200
7	Tank Foundation	60	CY	\$250	\$15,000	\$250	\$15,000	\$30,000
8	176,400 Gallon Glass Lined Bolted Water Storage Tank	1	LS	\$125,000	\$125,000	\$125,000	\$125,000	\$250,000
9	Tank Cathodic Protection	1	LS	\$10,000	\$10,000	\$5,000	\$5,000	\$15,000
10	Reinstall Pressure Transducer	1	LS	\$50	\$50	\$250	\$250	\$300
11	Miscellaneous Site Piping, Valves, Appurtenances	1	LS	\$10,000	\$10,000	\$10,000	\$10,000	\$20,000
12	6-inch Flexible Expansion Joint	2	EA	\$3,000	\$6,000	\$500	\$1,000	\$7,000
13	Site Fine Grading and Road Repair	1	LS	\$1,500	\$1,500	\$1,500	\$1,500	\$3,000
14	Concrete Overflow Trench Drain	1	LS	\$1,000	\$1,000	\$1,500	\$1,500	\$2,500
15	PSI Chloramine Residual Management System	1	LS	\$89,000	\$89,000	\$10,000	\$10,000	\$99,000
16	8-Foot Square FRP Building	2	EA	\$250	\$500	\$50	\$100	\$600
17	Concrete Housekeeping Pad	6	EA	\$250	\$1,500	\$250	\$1,500	\$3,000
18	Electrical Improvements	1	LS	\$7,500	\$7,500	\$5,000	\$5,000	\$12,500
19	PLC/SCADA Programming	1	CY	\$50	\$50	\$5,000	\$5,000	\$5,050
	Subtotals				\$279,280		\$202,970	\$482,250
	Mobilization	@	2.00%		\$5,586		\$4,059	\$9,645
	Subtotals				\$284,866		\$207,029	\$491,895
	Taxes - Materials Costs	@	8.50%		\$24,214			\$24,214
	Subtotals				\$309,079		\$207,029	\$516,109
	Contractor OH&P	@	15.00%		\$46,362		\$31,054	\$77,416
	Subtotals				\$355,441		\$238,084	\$593,525
	Estimate Contingency	@	15.00%					\$89,029
	Subtotals							\$682,554
	Escalate to Midpoint of Construction (3% per year)	@	1.50%					\$10,238
	Estimated Bid Cost							\$692,792
	Total Estimate							\$692,800
	<b>Total Estimate</b>							<b>\$690,000</b>

Tank replacement  
 Treatment upgrade  
 \$120,150.00

Villa Del Monte Mutual Water Company  
 Replacement tank and chloramination project  
 Budget update 6/20/2018

Tasks and costs already completed

Temporary tank farm		
Site preparation	Dave Norman Construction	\$2,818.30
Tanks	Green Rubber Kennedy Ag	\$16,655.00
Piping	Furlo & Furlo	\$9,530.00
Controls support	Tesco	\$4,310.00
Misc	Gary & David	\$14,656.91
Engineering		
Geotech report	Pacific Crest Engineering	\$7,590.00
Preliminary engineering part	MNS Engineering	\$11,334.00
	<b>Total cost spent to date</b>	<b>\$66,894.21</b>

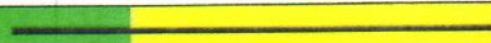

Future costs

Engineering		
Detail design	MNS Engineering	\$39,235.00
Permit support	MNS Engineering	\$12,455.00
Bidding & Construction support	MNS Engineering	\$24,315.00
Construction budget	See MNS work sheet	\$670,000.00
Owner contingency	10%	\$67,000.00
Project management	Allowance	\$42,000.00 (Assume 6 months at 40 hours per month at \$175/hr)
	<b>Total projected future costs</b>	<b>\$855,005.00</b>

**Total projected project costs \$921,899.21**

125 # of members  
 \$7,375.19 Project cost per member

**Table 1: Tank Material Alternative Comparison Color Alternative Review Table**

Legend	Good 			Poor 	
Tank Type	Tank Features				
	Tank Construction Cost	Anticipated Useful Tank Life	Required Maintenance	Maintenance Cost	Other Issues
Corrugated Steel	\$90,000	10-20	Complete Replacement	\$90,000 every 10-20 years	Not designed in accordance with AWWA requirements
Bolted Steel w/ Epoxy Coating	\$125,000	30-40	Minor Repair as Needed	N/A	Potential for leaks at seals
Bolted Steel w/ Glass Coating	\$250,000	50+	Minor Repair as Needed	N/A	Potential for leaks at seals
Welded Steel	\$365,000	100	Interior and Exterior Recoating on 30-year cycle	\$150,000 every 30 years	High cost of long-term maintenance, and changing regulations for recoating materials and application

The cost of the tank construction is limited to the tank only, and does not include the tank foundation, subgrade preparation, site piping and appurtenances, etc., which are anticipated to be similar for each type of tank. Maintenance costs are in present value. The cost for standard maintenance activities including regular cleaning and inspection is in addition to cyclical maintenance costs.

Based on this analysis, a bolted steel tank with a glass coating is the recommended alternative. The Skyview Terrace tank site is secluded, and at low risk for damage due to vandalism, bullets, flying objects, etc. With minimal maintenance costs anticipated over the lifetime of the tank, it provides the best combination of anticipated useful life and maintenance requirements.

## 6.0 Tank Appurtenances

The tank will be provided with the following appurtenances:

- Interior ladder
- Exterior ladder with Occupational Health and Safety Administration (OSHA)-compliant cage, designed to limit access to VDMWC Staff only
- Roof hatch
- Roof handrails, extending 8 feet on either side of the exterior ladder
- Center roof vent
- Shell manway at ground level
- Exterior overflow
- Inlet connection on exterior of tank
- Outlet connections to supply and drain on exterior of tank
- Fire Department connection
- Flexible connections for tank inlets and outlets to accommodate potential tank settlement