

**BEAVER MOUNTAIN
ESTATES
WATER COMMITTEE**

Purpose:

**To develop written
recommendations to
achieve sustainable, long-
term, and reliable water
system operations**

Committee Members

- Matt Dorsett: Principal at Spiars Engineering with 25 years experience in the water works industry
- Keven Hendricks: Currently maintains and manages BME and South Fork Ranch water systems
- Ed Cannon: Electrical engineer and owner of Cannon Consulting LLC, an aviation certification consulting firm
- Jeff Booth: Retired Executive VP and partner, Embrey Partners, Ltd (40 years real estate development experience in 13 states), executive advisory board member at Texas A&M Mays business School
- Sheri Howard: 25 years Facilities and Construction Engineer for an Oil & Gas company

INFRASTRUCTURE

- 122 Lots in 3 Phases
 - Phase I: 33 lots
 - Phase II: 35 lots
 - Phase III: 54 (includes Crow's nest)
- One active, permitted well co-located with the 10,000-gallon storage tank on lot 43 (BME II)
- One well drilled on Lot 10 (BME I) but requires permit to utilize
- Additional wells: unusable or abandoned due to low production and/or high chemical/minerals
 - Lots 39, 40, 43, 48 (BME II)
 - Lot 47 (BME III-2)
- Storage tank gravity feeds the distribution system in S Skyline, Church Creek, and Escondida
- Storage tank also feeds the pressure tank located on Lot 10 (BME I); the pressure tank feeds the distribution system in Sky Line Drive and Lot 45 on S Skyline
- Case Walker obligations (additional well, storage tank) were never constructed and are to be funded with proceeds of lots donated to POA

CURRENT ISSUES

- Current system not in compliance with state regulations
- Only one well supplying system
- Recent data from 7/2 showed ~ 22,300 gallons usage in 24 hours with 41 homes out of 122 constructed (33%)
 - 8.1M gal/year, permitted for 8.7M
 - Pump running 12 hours (not ideal)
- Model estimated 4,000 gal per day due to leaks
- Pressure Relief Valves need repair – not holding ideal pressure on system – leads to additional strain
- All of us have experienced system outages due to system failures
- Current budgets and assessments will not support the current system or the work required to bring the system into compliance and create a sustainable long term and reliable system

PERMITTING

Retained Kruse Law PLLC

Current status detailed in memo issued

March 23, 2023, by Mirko Kruse

- Phase I & 2: 19.5 acre-feet per year, 2.8 acre-feet per year consumptive use for 68 lots
- Phase III: 7 acre-feet per year for 51 lots – problem is no well in Phase III to supply this water
- Crow's Nest (3 lots): 0.5 acre-feet per year

Update

- Combine all augmentation certificates
- Well permits
- Currently cross-connecting systems
- BME has a finite volume of water available each year
- This is a long process involving bureaucracies and lawyers in a challenging water rights environment

SYSTEM MAPPING AND MODELING

Network Model

- Contracted Davis Engineering to map and construct a network model of the system
- Goal: Develop a plan for sustainable operations including future capital projects, maintenance costs, etc. while operating in compliance with state permits
- Surveyed in / utilized existing maps – all lines and valves
- Preliminary Issues Identified
 - Estimated water loss: 4,000 gallons per day = 1.46 million gallons per year
 - Possible leak locations

Model Information

- Capacity required upon build out
 - Tanks
 - Pumps
 - Pipelines
- Tank capacity – optimization with running pump (longevity of pump life)
- Identifying PRV (pressure reducing valve) ideal locations
 - Maintain consistent system pressure
 - Lowers pressure, less strain on piping
 - Goal is to maintain < 100 psig
- Early results - additional 20,000 tank

CURRENT OPERATIONS

- Slip Lining System
 - 1,000 feet previously sliplined
 - 2,200 feet remain to be sliplined
 - 1,000 additional feet this summer ~ \$8,400 for material, \$ for labor (can change)
- Meter installation on new and existing homes (aides modeling and water accountability)
- Leak Repairs
- Pump Repair
- Repair existing PRVs (pressure reducing valves), potential addition of individual PRVs based on system configuration
- Well Testing
- Possibly bringing wells back on-line

WATER SYSTEM GOVERNANCE

Changes required to allow fee structure that supports sustainable water system operations (changes also needed for general cleanup, conflicting sections, etc.)

Modeling operational plan off of South Fork Ranches.

Recommendations to be developed for:

- Water board composition – number, terms, appointment vs election
- Bylaws and other operational guidelines (policies and procedures)
- Accounting and invoicing
- Tap fees
- Meter reading and reporting
- Communication – website or portal for updates, operational matters, invoicing?
- Water accountability
- Funding Structure

FUTURE UPDATES

- Davis engineering report and recommendation will be finalized
- Permitting update and timeline
- Repair / slip lining
- Well testing

Questions

