

## Standard Operating Procedures – Hardin County Water District No. 1

Department:	Distribution System	Effective Date:	Oct 23, 2018
SOP No.:		Latest Revision:	Mar 29, 2022
SOP Desc:	Nitrification Plan		
Resp. Person:	WQS/ WTP supervisor/ Distribution supervisor/ Operations Manager		

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### 1. Critical Tasks Reminder:

A Nitrification plan is in place to prevent nitrification, determine if nitrification is occurring, and the necessary actions to take to correct nitrification in the distribution system.

- A. Specific identified sites in the Hardin County Water District No.1 distribution system that have previously had WQ issues, are important sampling sites, and show potential issues for Nitrification:
- a. Kenton Court Apartments (hydrant ID 17)
  - b. 2142 Dixie Hwy (hydrant ID 177)
  - c. Corner of 86 and Smallwood Ln (hydrant ID 744)- close to the end of our service and Hardinsburg line
  - d. 351 Horn Cemetery Rd (hydrant ID 1070)
  - e. 3124 High Plains (hydrant ID 841)
  - f. 12531 HWY 333 (hydrant ID 847)
  - g. 5894 Flaherty Rd (hydrant ID 642)
  - h. 1058 White Lane (hydrant ID 1072)
  - i. Brizendine Tank (hydrant ID 811) - This hydrant should probably be flushed for 5 minutes to ensure line turnover and a representative sample from the tank.
  - j. 346 Laurel Ridge (hydrant ID- 738)
  - k. 16165 Salt River Rd/ End of 920 (hydrant ID-1022)
  - l. 14990 Rineyville Big Springs Rd/ End of 220 (hydrant ID-1024)
  - m. 11362 Rineyville Big Springs Rd/Corner of 920 & 220 (hydrant ID-1028)
  - n. 1784 Bratcher Lane (hydrant ID-873)
  - o. 6860 Flaherty Rd/ Otter Creek Tavern (hydrant ID996)- Sampled due to close proximity to MCWD purchase point
  - p. 1498 Dixie/ Corner of Redmar and Dixie (hydrant ID- 156)
- B. Sampling should consist of using the HACH SL1000 Portable Parallel Analyzer (PPA). Tests in the field that should be ran:
- a. Monochloramine
  - b. Free Ammonia
  - c. Total Chlorine
  - d. Nitrite
- C. Extra test that can be ran at Pirtle Spring Water Treatment Plant for confirmation or analysis:
- a. All of the above mentioned
  - b. HPC
  - c. pH

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- d. Total coliform bacteria
2. How often sampling should occur.
  - A. The chloramine conversion took place on October 23, 2018.
  - B. After that first week: sampling will occur Monday and Thursday for a couple weeks.
    - a. Beginning in December sampling will be reduced to every Monday unless the below listed parameters are reached.
    - b. Once temperatures begin to reach an average of 75F, sampling will go back to twice a week (Monday and Thursday).
3. Sampling results to look for during sampling
  - a. Monochloramine- similar to the total chlorine result
  - b. Free Ammonia- .03-.07 (during Spring and Summer) and .05-.10 (Fall and Winter)
  - c. Total Chlorine- 2.8-3.0 (during Spring and Summer) and 2.5-2.7 (Fall and Winter)
  - d. Nitrite- <.06
4. Action levels for each parameters
  - a. Monochloramine- refer to total chlorine
  - b. Free Ammonia
    - i. >.25- consult with Pirtle WTP so they can look at the treatment process
  - c. Total Chlorine
    - i. <1.5 -flush longer and WTP increase chlorine dose
    - ii. <1.0 – flush, WTP increase chlorine, and re sample location in 2 days (Ex.: sample Monday, re-sample Wednesday)
    - iii. <.5- BELOW REGULATION, flush, WTP increase chlorine, possible tank draining if necessary. Re-sample in 2 days
  - d. Nitrite
    - i. >.06- flush
    - ii. >.075- automatic flusher in the area
    - iii. >.100- flush, tank drain, and re-sample 2 days later