2017 TRIBUTARY AND GROUNDWATER SAMPLING PROGRAM

for

Pennichuck Water Works

December 2017

Prepared For:
Pennichuck Water Works
200 Concord Street
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1.0 Background

Pennichuck Water Works (PWW) has been collecting data from the watershed since 1991. Over this time, sampling locations and parameters varied until around 2005, when a sampling program was developed using a specific set of water quality parameters for nine tributary locations within the watershed. This program was further refined in 2007 to include continuous flow monitoring. Since then, water quality sampling and flow measurements at tributary locations have been ongoing, with modifications and adjustments made as needed.

In 2013, PWW initiated a pilot groundwater sampling program to compare water quality parameters to those found in the tributaries. The tributary and groundwater sampling program has been modified over the past several years, including adding and removing locations, well replacement, and field processing of samples.

2.0 Monitoring Locations

The ten groundwater and tributary sampling locations are shown on **Figure 1** with descriptions provided in **Table 1**.

Table 1 – Groundwater and Tributary Sampling Locations

Sampling Location	Tributary Station ID	Groundwater Station ID	Location / Description
01-BFB	01-BFB-T	01-BFB-MW	Boire Field Brook, Tinker Road
09-PEN	09-PEN-T	N/A[1]	Holt Pond Dam
09T-PEN[2]	09T-PEN-T	09T-PEN-MW	Route 101A Bridge
09-XPB	09-XPB-T	09-XPB-MW (01-CML)	Unnamed Tributary to Pennichuck Brook on 101A. (Craftsman Lane Bridge)
01-WCH	01-WCH-T	01-WCH-MW	South Merrimack Road Bridge
01-XWB	01-XWB-T	01-XWB-MW	Unnamed Tributary to Witches Brook
12-PEN	12-PEN-T	12-PEN-MW	Nevins Road Bridge
01-MUD	01-MUD-T	01-MUD-MW	Farley Road Bridge
02-WCH	02-WCH-T	02-WCH-MW	Ames Road Bridge on Route 122
01-HAY[3]	01-HAY-T	01-HAY-MW	Hayden Road in PSNH electrical line easement

[1]Groundwater monitoring discontinued in 2016 due to poor recharge through locally restrictive soils.
[2]Groundwater monitoring well not installed adjacent to tributary sampling locations.
[3]Groundwater and tributary monitoring was added in 2016.

3.0 Data Collection

In 2017, water samples were collected by Comprehensive Environmental Inc. (CEI) on the following dates: May 4th, June 14th, July 6th, August 22nd, September 27th, October 19th, and November 15th. Due to poor well recharge and/or low water levels during summer months, observed during portions of the 2017 sampling program, some groundwater locations (02-WCH and 01-HAY) had occurrences where no water was present for sample collection. The remaining sampling rounds were conducted without issue.

The parameters analyzed both in the field by CEI, and in the lab by Granite State Analytical and Chemserve are summarized in **Table 2**.

Table 2 – Sampling Parameters

Field Analysis	Laboratory Analysis	
Groundwater and Tributaries	**Tributaries**	**Groundwater**
• Conductivity • Dissolved Oxygen • pH • Temperature • Groundwater Level / Staff Gauge Reading	• Ammonia-Nitrogen • Chloride • E. Coli • Fecal Coliform • Nitrate-Nitrogen • Nitrite-Nitrogen • Total Kjeldahl Nitrogen • Total Nitrogen • Total Phosphorus • Total Suspended Solids	• Ammonia-Nitrogen • Chloride • Nitrate-Nitrogen • Nitrite-Nitrogen • Total Alkalinity • Total Dissolved Solids • Total Kjeldahl Nitrogen • Total Nitrogen • Total Phosphorus

The 2017 tributary sampling program continued unchanged from the previous year. The 2017 groundwater sampling program installed replacement wells for sampling locations with poor recharge (02-WCH and 01-HAY) towards the end of the year, in hopes of improving recharge and providing in-situ filtering through a sand layer during future sampling years.

Staff gauges and electronic dataloggers were previously installed at nine of the ten tributary locations (exception being 01-HAY due to low or dry water levels) to collect year-round stream elevations, and stage-discharge relationship equations were developed based on field measurements. Data was downloaded by CEI approximately every six weeks during spring, summer, and fall months and converted to an approximate flow for each tributary.

4.0 Data Analysis

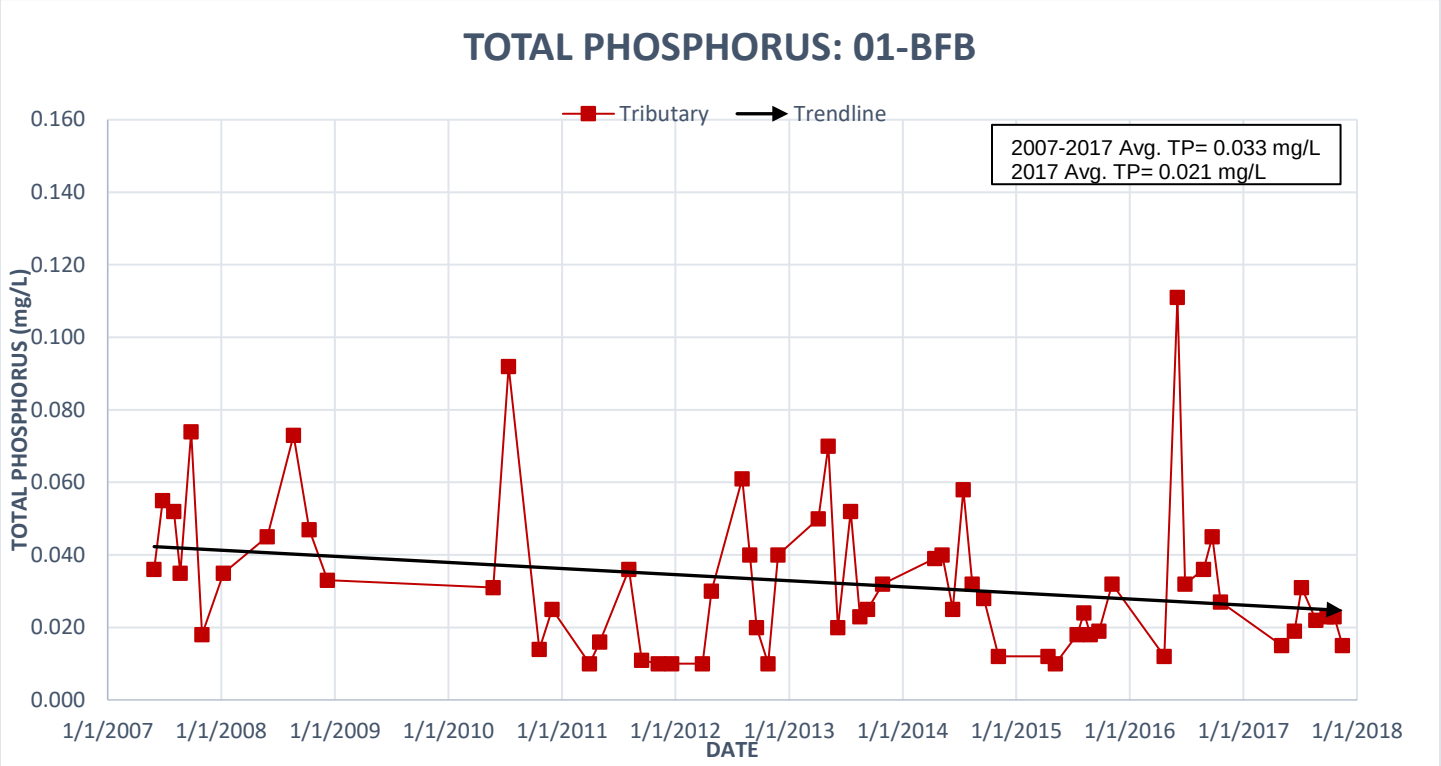
The following sections provide a brief data analysis for each location. For more detailed information, see the attachments at the end of this report.

4.1 01-BFB

Sampling location 01-BFB is located at the culvert intersection of Tinker Road and Boire Field Brook. The immediate vicinity of the sampling location is residential, but the upstream watershed includes commercialized areas of Route 101A, including Nashua Municipal Airport.

Total Phosphorus Analysis

The contributing watershed for 01-BFB is the smallest and most heavily developed within the watershed. Data results since 2007 for this location show a decreasing trend for total phosphorus (TP) levels. Although drought conditions in 2016 appear to have contributed to TP levels that were the highest since 2007 and 2008, 2017 levels were similar to those in 2015 and amongst the lowest for the period of data collection (2007 through 2017).



Groundwater levels were in the lower range when compared to other sampling locations within the watershed, consistent with other sampling locations in eastern areas of the watershed.

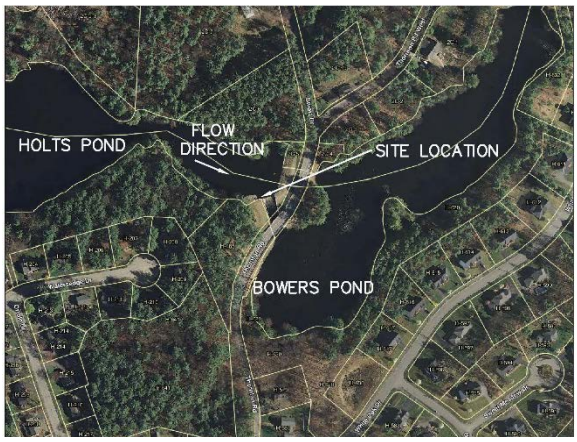
Other Analyses of Note

pH levels for both the groundwater and tributary have consistently been higher (more basic) than other sampling locations, with highest levels (e.g. pH of 8.94) generally occurring during the mid to late summer. Conductivity levels for the tributary water at 01-BFB have historically been the highest of any sampling locations in the watershed and may be associated with road salt applied upstream on the Everett Turnpike and at the airport during the winter months that slowly leach into the tributary when groundwater levels are high. Groundwater alkalinity was approximately 5 to 6 times higher than other locations, further indicating potential influence from road salt.

Note that a Source Water Protection Grant was submitted to NHDES to perform additional study of this subwatershed, pending grant approval expected in early 2018.

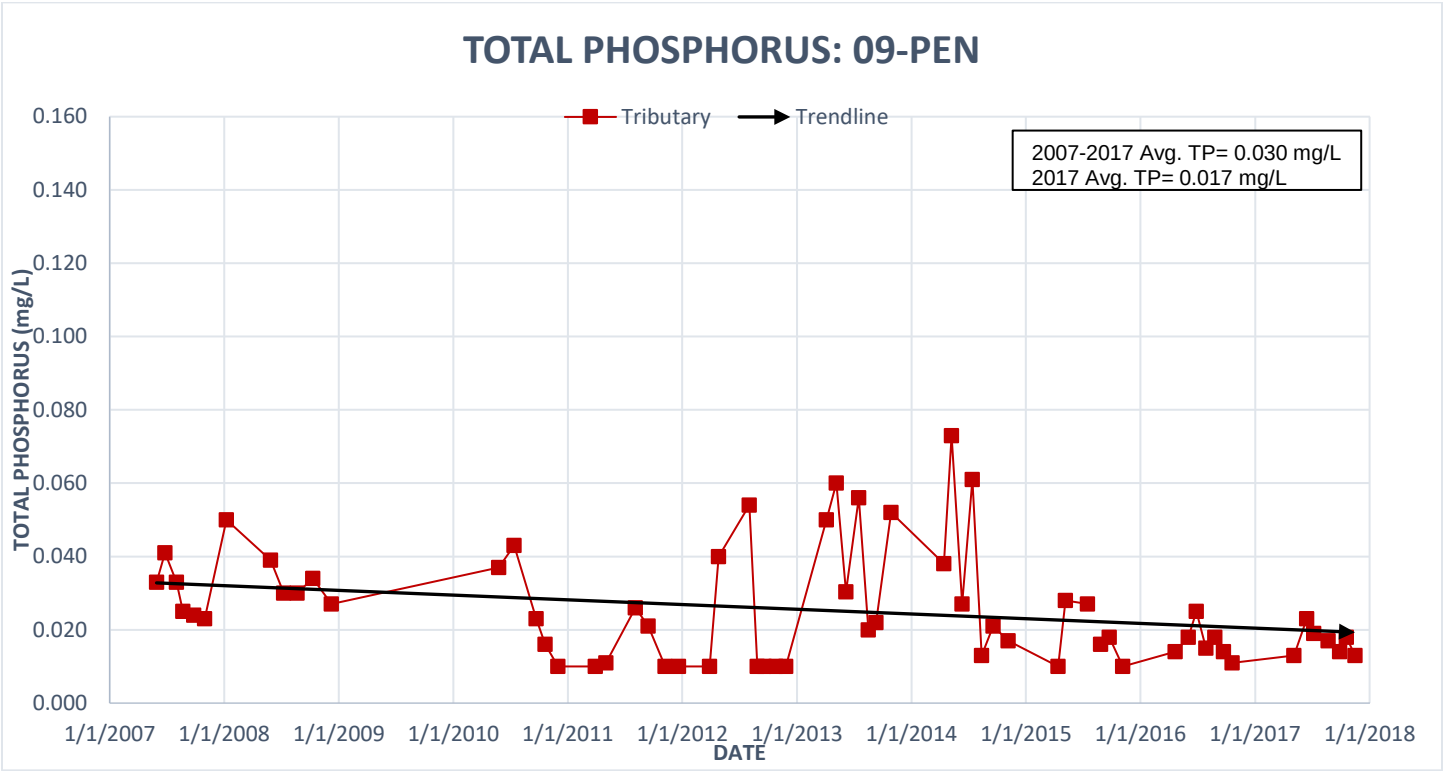
4.2 09-PEN

Sampling location 09-PEN is located on the upstream side of the dam separating Holts and Bowers Ponds. This area is preceded by the supply pond, Holts Pond.



Total Phosphorus Analysis

Tributary TP results for 09-PEN have been relatively consistent over the past three sampling seasons (2015 through 2017). Tributary total phosphorus levels were among the lowest of all tributary locations during 2017, with an average concentration of 0.017 mg/L. Holts Pond, located just upstream of 09-PEN, may be contributing to lower TP levels at this location, as phosphorous levels in the next upstream location (09T-PEN) have generally been significantly higher, and amongst the highest in the watershed. This is likely caused by Holts Pond acting as a phosphorus sink, as deeper water and slower flow velocities allow for settling of phosphorus attached to particulate matter. Phosphorus in both sediment and the water column also can be partially uptaken by macrophytes (rooted aquatic plants) and therefore temporarily removed during the growing season. This location has ranked among the best water quality sampling locations during recent years.



Note: Surface water data for 8/6/15 was removed due to lab error.

Groundwater sampling at 09-PEN was discontinued at the end of the 2015 sampling rounds since it has historically been unreliable due to poor recharge associated with silty soils.

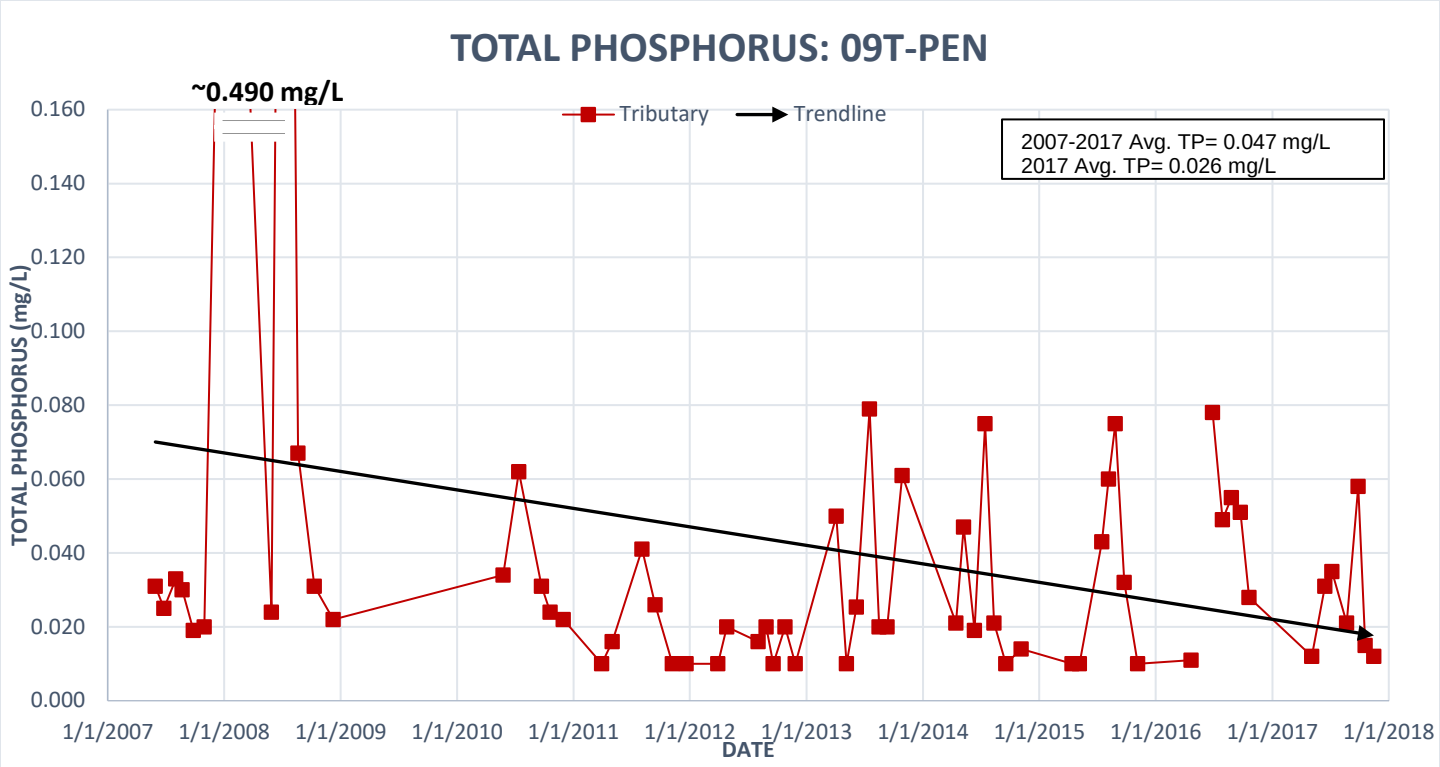
Other Analyses of Note
2017 tributary results for *E. coli* averaged 54 cts/100mL. Although this was a higher average than recent years, no samples exceeded the NH Class A Surface Water Quality Standard of 153 cts/100 mL and were approximately average for watershed sampling locations. Other parameters were consistent with previous years.

4.3 09T-PEN

Sampling location 09T-PEN is located at the culvert where Pennichuck Brook passes underneath Route 101A. The terrain at this location is unsuitable for microwell installation, so the groundwater sampling station is located a few hundred yards downstream, behind the Pennichuck Square shopping complex.

Total Phosphorus Analysis
As this location is positioned immediately downstream of three stations with some of the highest phosphorus concentrations, tributary phosphorus concentrations at this site are also high. It is notable that the TP data for this location has been relatively erratic over the period of record, with results consistently varying between approximately 0.01 mg/L and 0.08 mg/L (or higher) over the past five years. 2017 tributary phosphorus levels were generally consistent with recent years, and generally among the highest in the watershed. Total phosphorus at this location has been variable throughout the years, with water quality ranging from middle of the pack to among the worst in the watershed.

This area has also seen historic dumping of assorted yard wastes immediately upstream of this location in the vicinity of the groundwater well, potentially contributing to high phosphorus levels at this location.

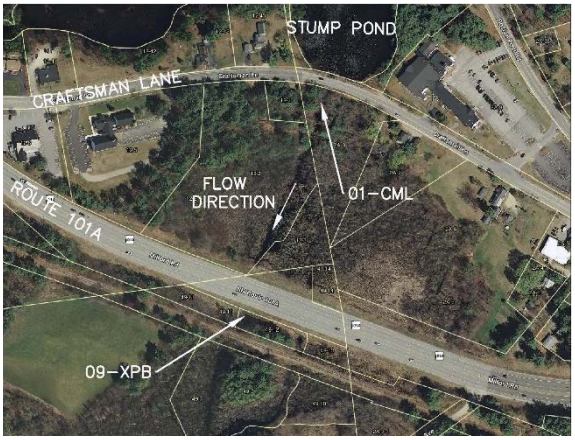


Note: Surface water data for 6/2/16 was removed due to lab error.

On average, groundwater phosphorus levels at this location are among the lowest in the watershed. In general, sampling locations in the northeast portion of the watershed have lower concentrations than those located in central and southern areas.

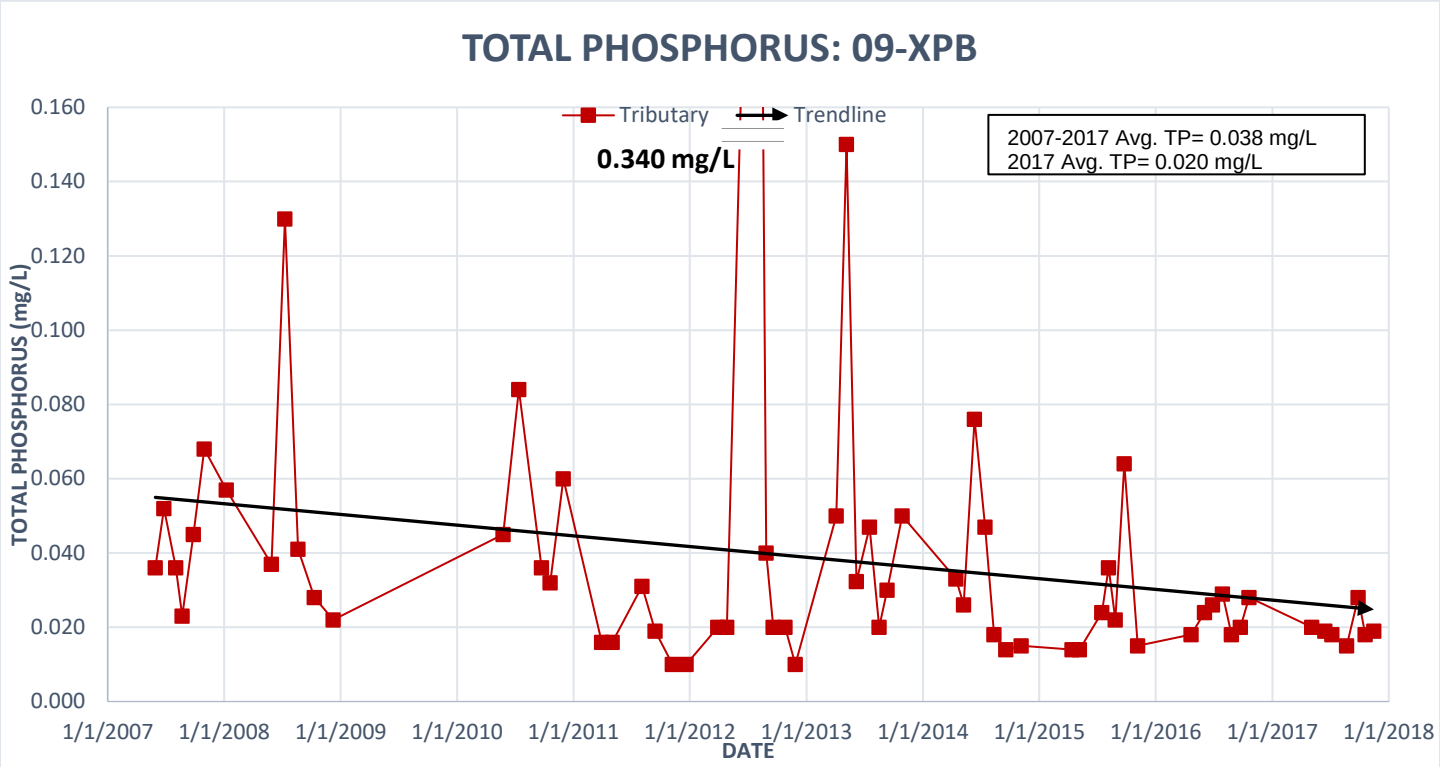
4.4 09-XPB / 01-CML

Sampling location 09-XPB is split into two sites. Groundwater and tributary monitoring is conducted at site 01-CML, while data logging and stage discharge readings are performed at site 09-XPB, located just south of Rt. 101A. Note that during sampling efforts, the culvert under Craftsman Lane was observed to be in generally poor condition.



Total Phosphorus Analysis

Data results since 2007 for 09-XPB show a decreasing trend for TP levels. Although this location has one of the highest average TP since 2007 (0.038 mg/L), the average TP level in 2017 was relatively low and amongst the lowest for all monitoring sites. It is also notable that total phosphorus levels at this location have been relatively low and stable over the past three sampling seasons (2015 through 2017), following years of higher and more erratic data results, particularly in 2012 and 2013. TP concentrations at this location appear to be decreasing over recent years when compared to previous sampling rounds.



Groundwater phosphorus levels for this location are relatively low when compared to other locations, as in general, sampling locations in the northeast portion of the watershed have lower concentrations than other areas.

Other Analyses of Note

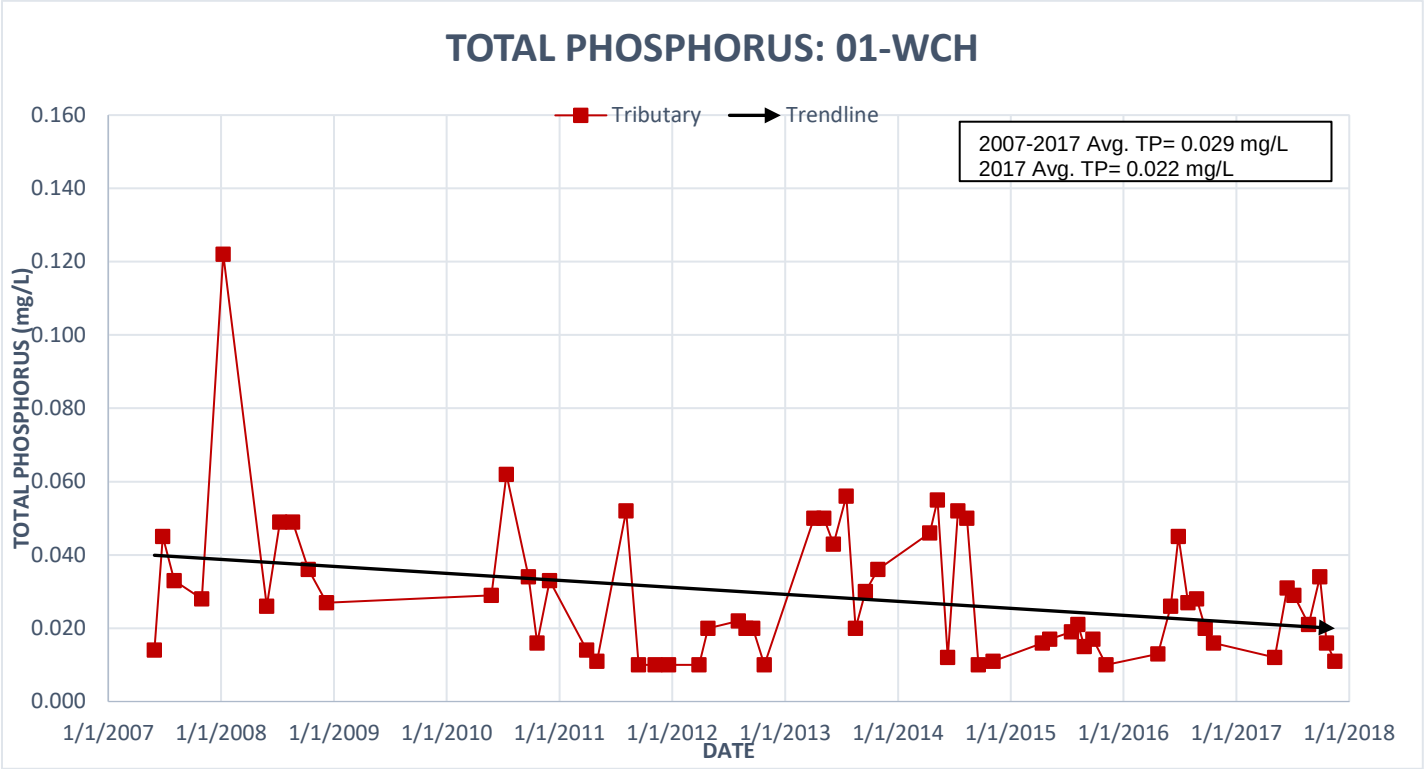
Year 2017 saw one occurrence of ammonia present in the tributary water quality sample collected September 27, whereas the previous year had four occurrences. Elevated levels of total suspended solids were also observed on this sampling date. *E. coli* and fecal coliform both had unusually elevated results on May 4, however the remaining parameters, such as nitrogen and pH were consistent with historical values.

4.5 01-WCH

Sampling location 01-WCH is located on South Merrimack Road, just south of a set of railroad tracks. Large wetlands exist on both sides of the Witches Brook culvert, with the brook forming a meandering channel through emergent vegetation. Water velocity is typically slow in this area but water levels are deep, especially after heavy rain events.

Total Phosphorus Analysis

Tributary results for 01-WCH have generally been decreasing since 2007, with an average concentration of 0.029 mg/L for the period of record. Average 2017 tributary TP levels (0.022 mg/L) were comparable to those observed in 2016 (0.025 mg/L) and are approximately average compared to other locations. Tributary TP has been relatively stable at this location.



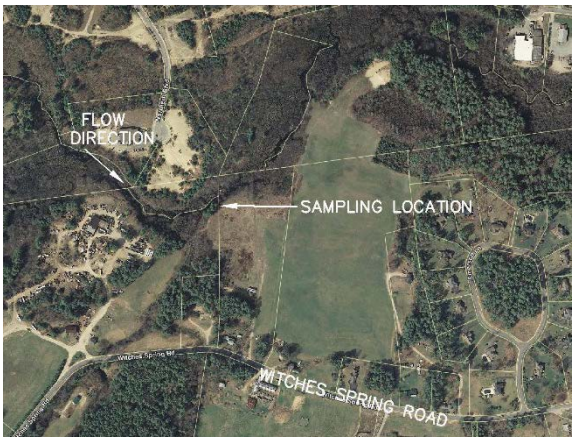
Although groundwater TP concentrations during 2016 were among the highest in the watershed, 2017 indicated that it was towards a moderate or low-end when compared to other locations.

Other Analyses of Note

Groundwater at this location had higher concentrations of total Kjeldahl nitrogen (TKN) than other groundwater locations. Remaining nitrogen components (nitrate, nitrite, and ammonia) were consistent with other locations, indicating a potential organic source of nitrogen in this area.

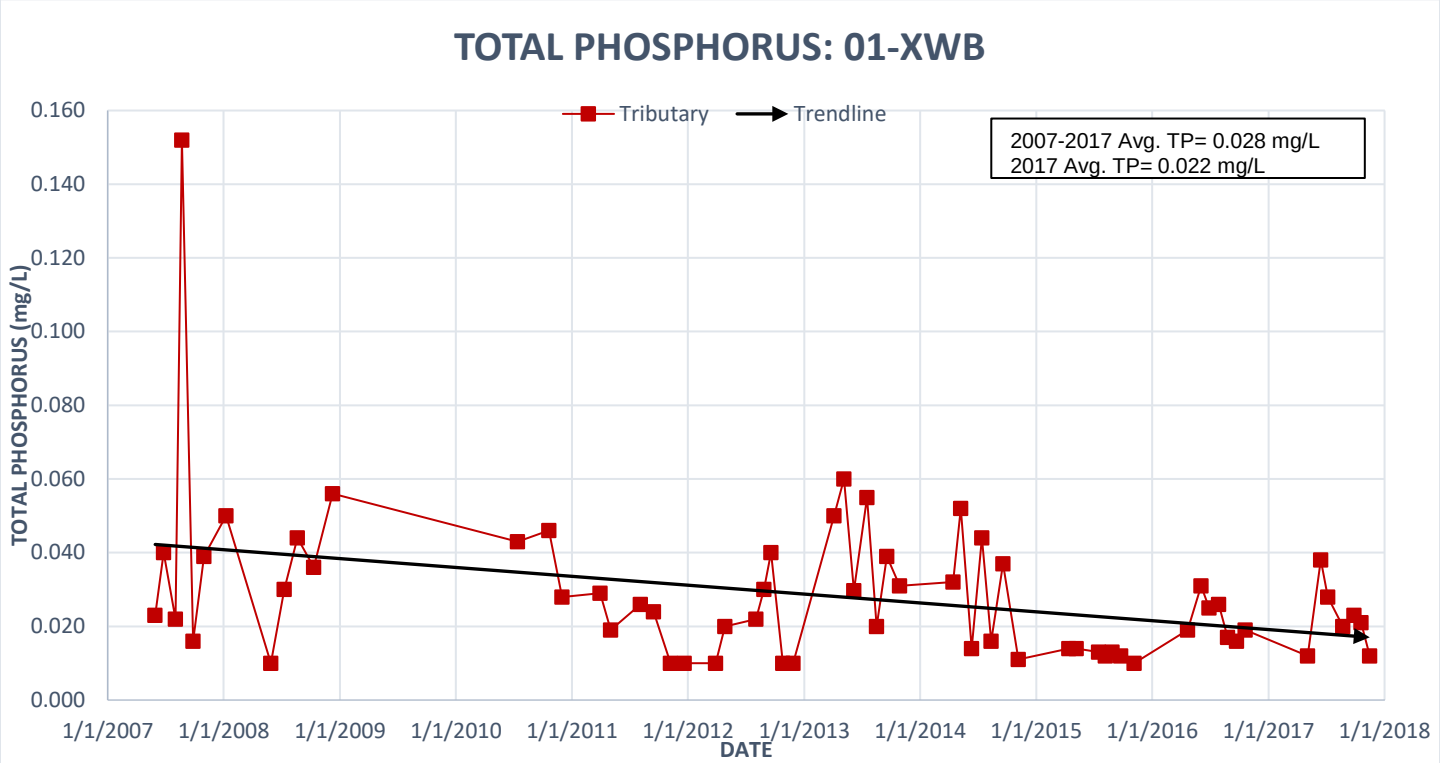
4.6 01-XWB

Sampling location 01-XWB is located on the edge of a farm plot off of Witches Spring Road. The tributary is unnamed and travels through a combination of wooded, residential, agricultural and wetland/swamp areas. The farm is used for hay production and there are small livestock enclosures in the area. This portion of the tributary is wide and deep but moves slowly.



Total Phosphorus Analysis

Tributary results for 01-XWB have generally shown a decreasing trend since 2007, with an average concentration of 0.028 mg/L. Similar to 01-WCH, average 2017 tributary TP levels (0.022 mg/L) were comparable to those observed in 2016 (0.022 mg/L), and moderately higher than in 2015. TP results from sampling years prior to 2015 are generally higher and more erratic in range. Tributary concentrations are approximately average compared to other locations.



Groundwater phosphorus concentrations are moderate to high at this location, and may be influenced by a "hot spot" located in this general area, with higher concentrations located generally towards the southwest.

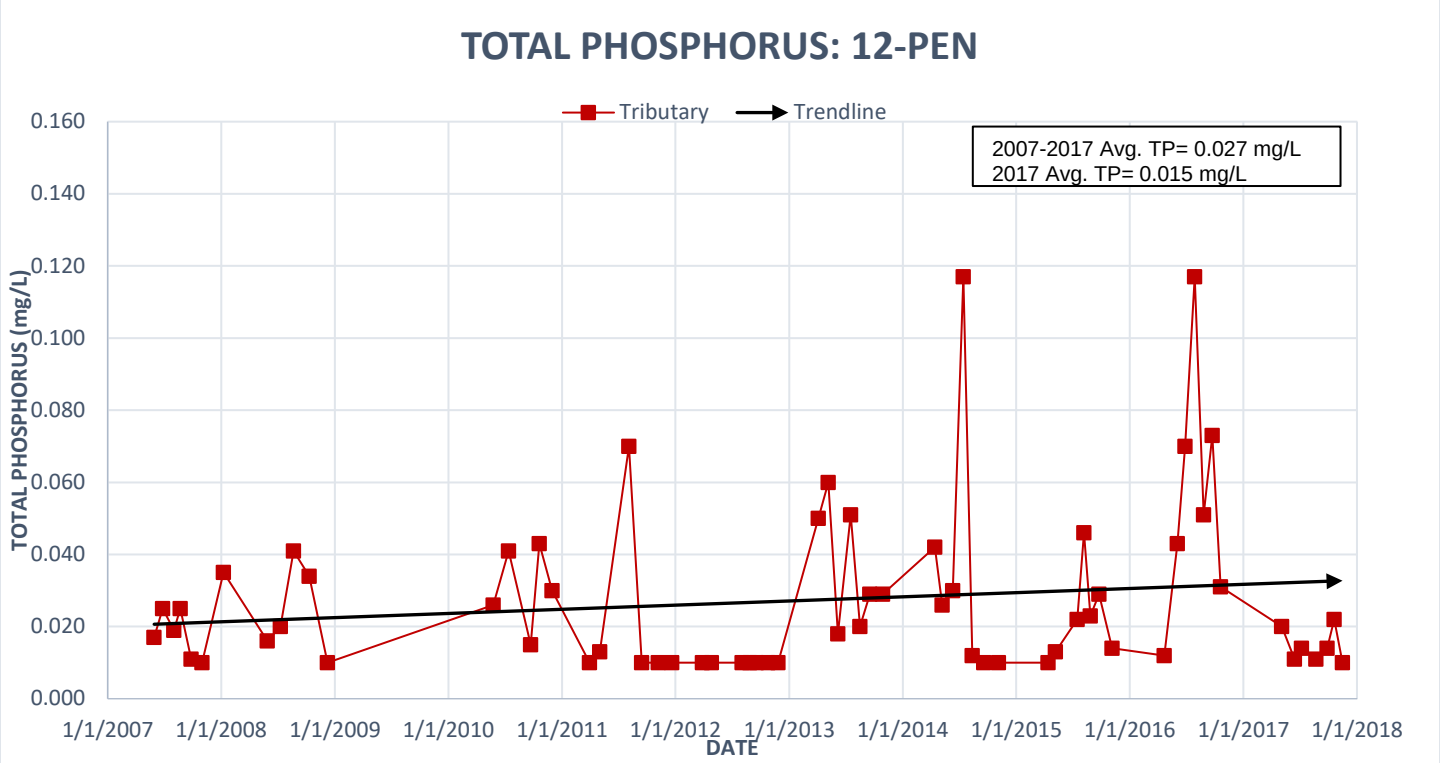
4.7 12-PEN

Sampling location 12-PEN is located where Nevins Road crosses Pennichuck Brook. The watershed is mostly wooded and residential, but there are some small livestock enclosures in the area. This subwatershed is also home to a relatively large farming area known as Scooter's Farm of Woodmont, with much of the crop appearing to consist of apples. Water velocity is generally high while water depth is low. However, beaver dams constructed downstream have caused the water in this area to stagnate on occasion.

Total Phosphorus Analysis

The 2007 through 2017 data shows a slight increasing trend for tributary total phosphorus at 12-PEN, with an average of 0.027 mg/L for the period of record. Although this location had some of the watersheds highest average total phosphorus values for 2013 through 2016, results from were among the lowest of all sampling locations. This is somewhat unusual, as recent years have indicated that total phosphorus concentrations are generally increasing during recent years when compared to previous sampling rounds.

Groundwater concentrations in 2017 were higher than average when compared to other sampling locations within the watershed, and also higher than 2016. This location, in conjunction with stations 01-MUD, 02-WCH, and 01-HAY appear to be heavily influenced by TP contributions from groundwater.

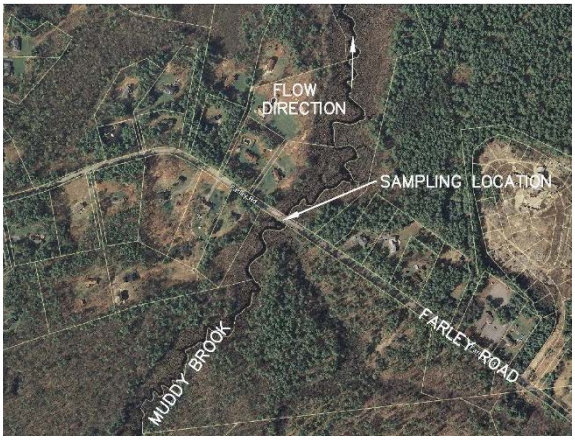


Other Analyses of Note

Water levels have begun to decrease following elevated levels observed in 2016. It is possible that reduced water levels have allowed for better flushing and thus the lower observed phosphorus levels within the tributary during this period.

4.8 01-MUD

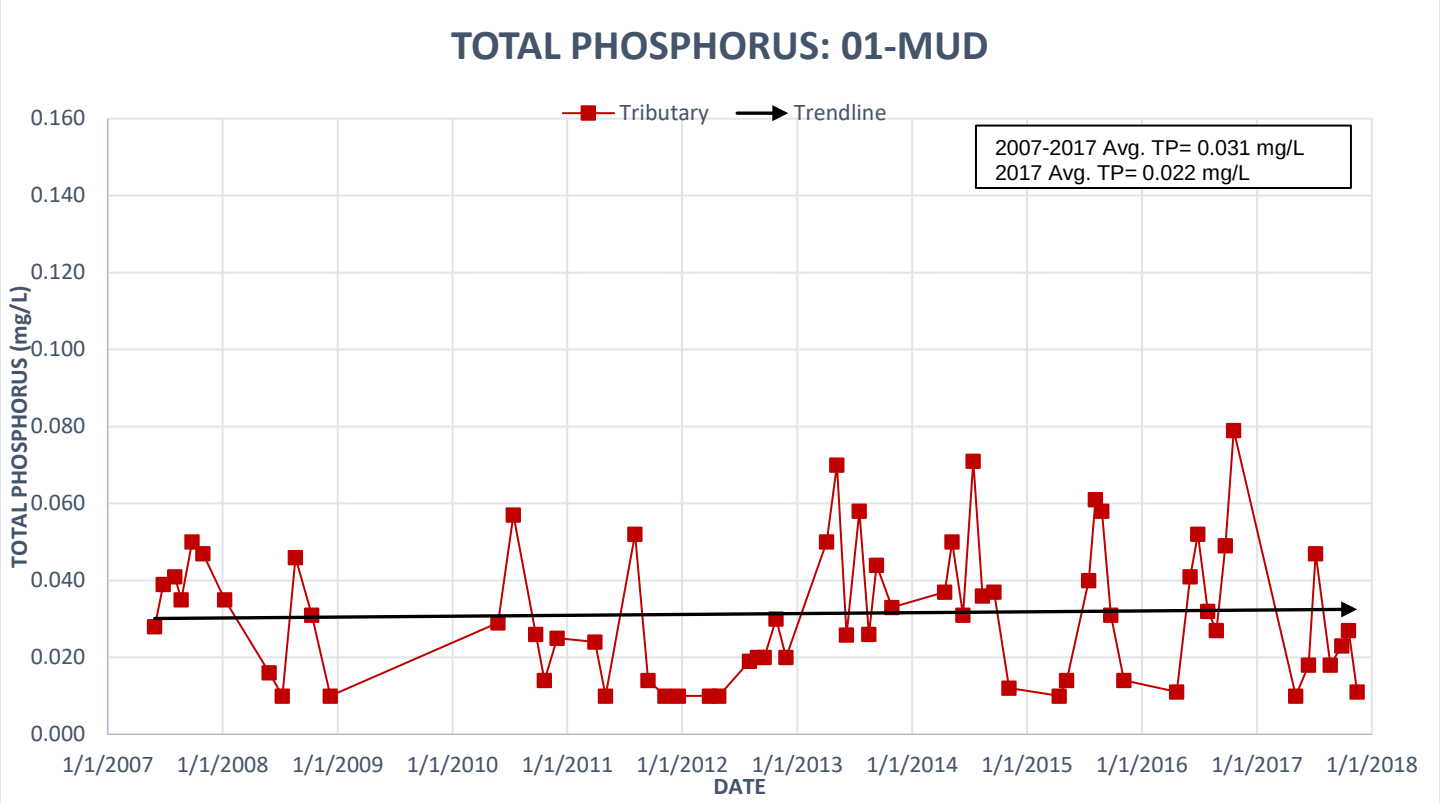
Sampling location 01-MUD is located where Muddy Brook crosses underneath Farley Road. Much like 01-WCH, this area consists of a large wetland with the Muddy Brook stream channel meandering through the vegetation. Water velocity is also low and typical water depth high.



Total Phosphorus Analysis

Tributary phosphorus levels at this location have historically been among the highest in the

watershed, with an average TP of 0.031 mg/L over the period of record. TP results from 2017 (0.022 mg/L) were lower than average for this site, and comparable with the average results observed for all the sites. TP concentrations at this location have generally been increasing throughout the sampling program.



Groundwater levels at 01-MUD had the highest phosphorus concentrations in 2017, at approximately two to three times higher than the next highest locations on average. This location does have higher total dissolved solids than other locations, however remaining groundwater sampling locations with high TDS do not have correspondingly high TP concentrations. Due to a combination of other factors (see below), it is possible that high groundwater phosphorus concentrations are contributing to elevated TP concentrations, again potentially due to a "hot spot" of soil TP concentration in this general area.

Other Analyses of Note

01-MUD groundwater has the lowest (most acidic) pH levels (e.g. pH of 5.53) and highest conductivity levels of all locations within the watershed. It is possible that due to naturally acidic soils and high conductivity, groundwater may be leaching phosphorus into the tributary at this location. However, this location also had the highest quantities of total dissolved solids (TDS) present within each sample, which may be artificially inflating phosphorus levels by also quantifying phosphorus bound to soil particles.

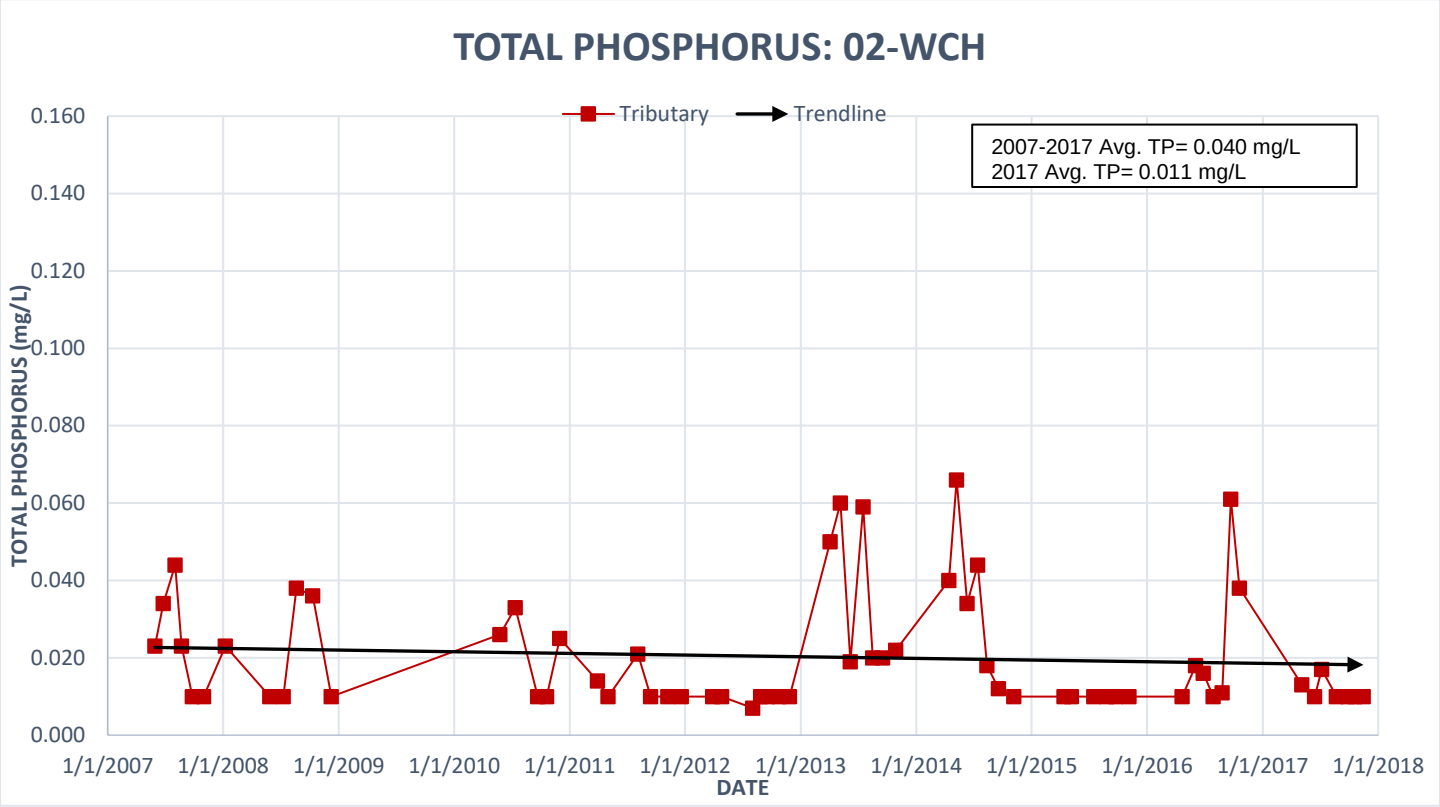
4.9 02-WCH

Sampling location 02-WCH is located where Witches Brook flows underneath Ames Road. The brook travels through a largely wooded and residential area of Hollis, NH. This site has a

groundwater well adjacent to the tributary as of 2016. This well has poor recharge and was often dry during parts of the year and samples could not be obtained during those times.

Total Phosphorus Analysis

Tributary results for 02-WCH have generally been at or near the laboratory detection limit of 0.01 mg/L since late 2014, with the exception of higher results from September and October 2016. It is possible that the dry conditions throughout the 2016 sampling program contributed to this spike. In 2017, concentrations returned to the generally low levels observed before the end of 2016, and concentrations at this location are still among the lowest in the watershed and generally representative of the background concentration of the upper watershed. TP trends have been relatively stable at this location.



Note: Surface water data for 8/6/15 was removed due to lab error

Groundwater phosphorus concentrations are the lowest in the watershed during 2016 based on five samples collected. During 2017, only a single sample was collected due to low groundwater at this location, however the lone sample was among the highest in the watershed. However, this does lend credence to the hypothesis that a "hot spot" exists in the vicinity of stations 12-PEN, 01-MUD, 02-WCH, and 01-HAY. Additionally, this well location should be re-drilled to a deeper depth during 2018 if low groundwater levels as observed during 2017 continue into 2018.

Other Analyses of Note

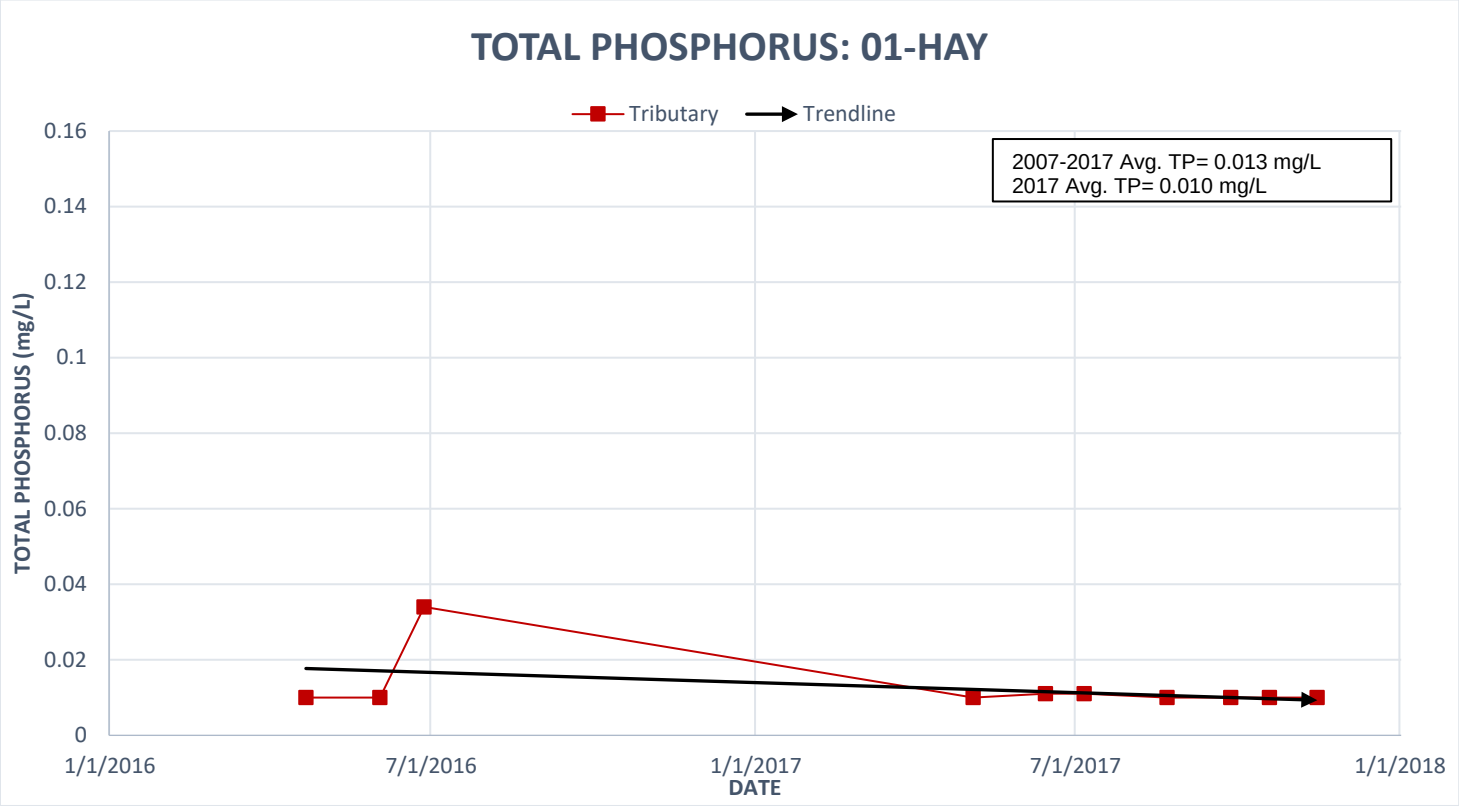
Nitrates at this location have been historically high, with this trend continuing into 2017, however there is no obvious reason for this location to have concentrations approximately three times higher than other locations.

4.10 01-HAY

This site is located on Haynes Road underneath the power lines. A staff gauge and tributary sampling at this site was added at the beginning of the 2016 sampling rounds.

Total Phosphorus Analysis

Seven tributary samples were collected from this site in 2017, however only two groundwater samples were collected since the groundwater well was experiencing poor recharge. Tributary concentrations were among the lowest in the watershed as expected due to the station location in a relatively undeveloped area towards the headwaters of the watershed. Total phosphorus concentrations have been relatively stable at this location.



Groundwater concentrations were the highest in the watershed; however, this was largely due to one high reading collected during dry conditions. Regardless, this location also saw high overall concentrations of TP in groundwater during 2017, consistent with a potential "hot spot". More data is needed for both tributary and groundwater to perform an analysis. Additionally, this well location should be re-drilled to a deeper depth during 2018 if low groundwater levels as observed during 2017 continue into 2018.

5.0 Phosphorus Data Summary

Tributary

In general, average tributary total phosphorus concentrations were lower in 2017 compared to concentrations in 2016, and overall lower than the average concentration observed from 2007 through 2017. Tributary location 09T-PEN had the highest average phosphorus concentration, with 01-MUD, 01-XWB, 01-WCH, and 01-BFB all having the next highest concentrations during 2017. This is generally consistent with previous years.

Stations 01-HAY, 12-PEN, and 02-WCH had the lowest TP concentrations during 2017, with 01-HAY and 02-WCH being consistent with previous years. 12-PEN has been somewhat variable throughout the sampling program, varying from among the best and worst water quality year by year. Although these three locations are located in areas with generally high groundwater total phosphorus concentrations (see below), these locations do not yet appear to be adversely impacted by groundwater. In contract, 01-MUD may be impacted by the presence of high total phosphorus concentrations in groundwater due to unique soil chemistry in the surrounding area.

Groundwater

During 2017, total phosphorus concentrations further up in the watershed headwaters are generally higher, with levels at locations 02-WCH and 01-HAY being among the highest levels sampled. This differs from the 2016 sampling round when these locations were generally of moderate concentration, although only limited samples were collected during 2017 which could artificially skew results. Stations 12-PEN and 01-MUD were again high in total phosphorus in 2017, consistent with 2016 results.

It appears that a "hot spot" of phosphorus may exist near the central and southwest portions of the watershed, centered around 01-MUD and radiating out towards nearby stations. This location also had the most acidic soil (lowest pH), highest conductivity levels (as much as twelve times higher than other locations), and highest alkalinity (approximately 5 times higher than other locations). It is possible that due to naturally acidic soils, high conductivity, and high alkalinity, groundwater in this area may be leaching phosphorus into the tributary at this location, as 01-MUD has the highest phosphorus concentrations of the tributary locations. Soil samples collected in 2012 from monitoring wells at each location did not reveal substantially higher phosphorus levels at these locations and therefore may indicate a combination of factors leading to higher phosphorus concentrations in groundwater. Remaining stations surrounding this "hot spot" area (e.g. 01-HAY, 12-PEN, and 02-WCH) also had high concentrations of total phosphorus in the groundwater, however generally did not have correspondingly high total concentrations in surface water tributaries.

Groundwater total phosphorus concentrations generally decrease closer to the supply ponds towards the eastern and northern areas, as locations 09T-PEN, 09-XPB, and 01-BFB are among the lowest.

6.0 Recommendations

Additional follow-up should be explored during the 2018 sampling program as outlined under select tasks in the 2018 Capital Expenditure Budget Figures memo submitted October 10, 2017, the 2017 Capital Expenditure Budget Figure memo submitted November 2, 2016, and per below.

The following items are recommended as follow-up actions during 2018 and beyond:

- Continue the existing tributary sampling program in 2018;
- Monitor tributary locations with existing or historic blockages (09-XPB, 01-XWB, and 12-PEN) and attempt to reestablish stage-discharge relationships if required based on water level fluctuations and/or beaver dam activity;
- Drill deeper groundwater wells at locations 02-WCH and 01-HAY to provide more and better sampling opportunities if low groundwater elevations observed during 2017 continue into 2018;
- As outlined under Section 4.2, station 09-PEN, indicates that Holts Pond may be providing some attenuation to phosphorus impacts. Therefore, it is likely that Harris Pond is performing the same benefits to water quality entering the supply pond by acting as a phosphorus sink and allowing sediment to settle out of the water column. Therefore, Pennichuck should perform a feasibility analysis of dredging Harris Pond to restore water and sediment storage as outlined under a NHDES Source Water Protection Grant in order to continue improving water quality to downstream areas (Task 3, 2017 budget memo);
- Perform additional analysis of the area around station 01-BFB and contributing Boire Field Brook tributary under a NHDES Source Water Protection Grant to better understand stormwater rand water quality impacts. Tasks should include a subwatershed assessment for BMPs and land uses, hydraulic and flooding assessment, and culvert evaluation (Task 4, 2017 budget memo); and
- Perform additional analysis of the area around station 01-MUD to attempt to find the reason behind higher groundwater concentrations. This will likely consist of a combination of desktop analysis and supporting field work as part of the proposed Phosphorus Data Analysis and Modeling task under the November 2, 2016 memorandum (Task 4, 2016 budget memo).

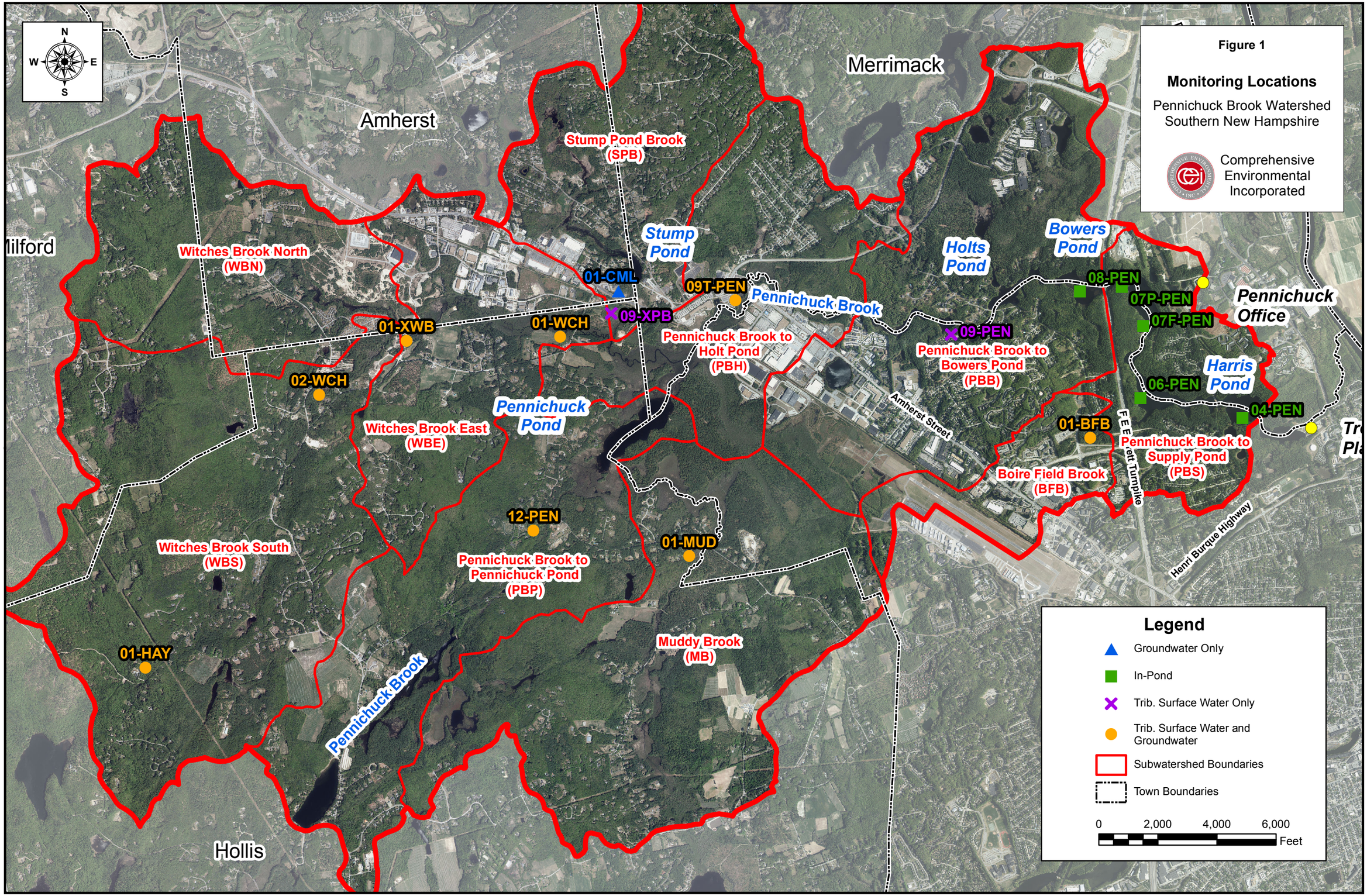

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Figure 1
Monitoring Locations
Pennichuck Brook Watershed
Southern New Hampshire
Comprehensive Environmental Incorporated
Amherst
Merrimack
Milford
Witches Brook North (WBN)
Stump Pond Brook (SPB)
Stump Pond
Holts Pond
Bowers Pond
01-CML
09T-PEN
09-XPB
Pennichuck Brook
08-PEN
07P-PEN
07F-PEN
Pennichuck Office
01-XWB
01-WCH
Pennichuck Brook to Holt Pond (PBH)
09-PEN
Pennichuck Brook to Bowers Pond (PBB)
Harris Pond
06-PEN
04-PEN
02-WCH
Pennichuck Pond
Witches Brook East (WBE)
Amherst Street
01-BFB
Pennichuck Brook to Supply Pond (PBS)
Boire Field Brook (BFB)
F E E Turnpike
Henri Burque Highway
12-PEN
01-MUD
Witches Brook South (WBS)
Pennichuck Brook to Pennichuck Pond (PBP)
Muddy Brook (MB)
01-HAY
Pennichuck Brook
Hollis
Legend
Groundwater Only
In-Pond
Trib. Surface Water Only
Trib. Surface Water and Groundwater
Subwatershed Boundaries
Town Boundaries
0
2,000
4,000
6,000
Feet

Attachment A:
Tributary Sampling Data, 2007 through 2017

Pennichuck Water Works
Tributary Sampling Data
2013 through 2017

Total coliform: exceeds detection limits
All others: non-detect
Expected outlier or laboratory error

	Station	Date	eading	Ammonia		Chloride		Conductivity		DO		E. coli		Fecal Coliform		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		TKN		Total Nitrogen		Total Phosphorus		TSS	
01-BFB	01-BFB	1/1/2013																															
	01-BFB	4/4/2013		0.2	mg/L	240	mg/L	930	µS/cm	10.76	mg/L	1	cts/100 mL	1	cts/100 mL					0.5	mg/L	6.86	pH units	4.8	°C	0.5	mg/L	0.8	mg/L	0.05	mg/L	6	mg/L
	01-BFB	5/6/2013	0.62	0.2	mg/L			813	µS/cm	10.23	mg/L	7.3	cts/100 mL	0								6.87	pH units	19.2	°C	0.5	mg/L			0.07	mg/L	6	mg/L
	01-BFB	6/6/2013	0.52	0.2	mg/L			512	µS/cm	6.28	mg/L	79.4	cts/100 mL	17	cts/100 mL							6.67	pH units	18.2	°C	0.5	mg/L			0.02	mg/L	6	mg/L
	01-BFB	7/17/2013	0.59	0.2	mg/L	167	mg/L	718	µS/cm	8.35	mg/L	140	cts/100 mL	260	cts/100 mL	0.38	mg/L	0.2	mg/L	0.38	mg/L	6.82	pH units	23.6	°C	0.5	mg/L	0.38	mg/L	0.052	mg/L	6	mg/L
	01-BFB	8/16/2013	0.50	0.2	mg/L	139	mg/L	509	µS/cm	7.35	mg/L	98.5	cts/100 mL	140	cts/100 mL	0.3	mg/L	0.2	mg/L	0.3	mg/L	6.79	pH units	18.4	°C	0.5	mg/L	0.3	mg/L	0.023	mg/L	6	mg/L
	01-BFB	9/10/2013	0.48	0.2	mg/L	155	mg/L	533	µS/cm	11.51	mg/L	71.7	cts/100 mL	0		0.28	mg/L	0.2	mg/L	0.28	mg/L	6.89	pH units	17.3	°C	0.5	mg/L	0.28	mg/L	0.025	mg/L	6	mg/L
	01-BFB	10/28/2013	0.43	0.1	mg/L	146	mg/L	417	µS/cm	10.32	mg/L	21.3	cts/100 mL	80	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.86	pH units	6.1	°C	0.5	mg/L	0.2	mg/L	0.032	mg/L	6	mg/L
	01-BFB	1/1/2014																															
	01-BFB	4/14/2014	0.62	0.2	mg/L	259	mg/L	990	µS/cm			17.3	cts/100 mL	28	cts/100 mL	0.55	mg/L	0.2	mg/L	0.55	mg/L	7.45	pH units	10.3	°C	0.2	mg/L	0.55	mg/L	0.039	mg/L	4	mg/L
	01-BFB	5/8/2014	0.54	0.2	mg/L	246	mg/L	934	µS/cm	9.89	mg/L	16.1	cts/100 mL	10	cts/100 mL	0.33	mg/L	0.2	mg/L	0.33	mg/L	7.12	pH units	12.4	°C	0.2	mg/L	0.33	mg/L	0.04	mg/L	4	mg/L
	01-BFB	6/11/2014	0.46	0.2	mg/L	215	mg/L	531	µS/cm	8.28	mg/L	1300	cts/100 mL	1350	cts/100 mL	0.26	mg/L	0.2	mg/L	0.26	mg/L	7.97	pH units	17.6	°C	0.2	mg/L	0.26	mg/L	0.025	mg/L	4	mg/L
	01-BFB	7/14/2014	0.42	0.2	mg/L	172	mg/L	474	µS/cm	7.79	mg/L	201	cts/100 mL	151	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.63	pH units	23.2	°C	0.2	mg/L	0.2	mg/L	0.058	mg/L	4	mg/L
	01-BFB	8/12/2014	0.42	0.2	mg/L	138	mg/L	402	µS/cm	8.34	mg/L	154	cts/100 mL	180	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.20	pH units	21.3	°C	0.2	mg/L	0.2	mg/L	0.032	mg/L	4	mg/L
	01-BFB	9/18/2014	0.36	0.2	mg/L	164	mg/L	418	µS/cm	10.61	mg/L	24.6	cts/100 mL	24	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.56	pH units	13.4	°C	0.2	mg/L	0.2	mg/L	0.028	mg/L	4	mg/L
	01-BFB	11/5/2014	0.52	0.2	mg/L	157	mg/L	400	µS/cm	11.38	mg/L	9.6	cts/100 mL	14	cts/100 mL	0.3	mg/L	0.2	mg/L	0.3	mg/L	7.18	pH units	9.7	°C	0.2	mg/L	0.3	mg/L	0.012	mg/L	4	mg/L
	01-BFB	1/1/2015																															
	01-BFB	4/13/2015	0.66	0.2	mg/L	257	mg/L	1022	µS/cm	11.70	mg/L	1	cts/100 mL	2	cts/100 mL	0.5	mg/L	0.2	mg/L	0.5	mg/L	7.66	pH units	9.3	°C	1.14	mg/L	1.64	mg/L	0.012	mg/L	4	mg/L
	01-BFB	5/7/2015	0.53	0.2	mg/L	251	mg/L	970	µS/cm	9.70	mg/L	30.9	cts/100 mL	34	cts/100 mL	0.25	mg/L	0.2	mg/L	0.25	mg/L			14.2	°C	0.557	mg/L	0.81	mg/L	0.01	mg/L	4	mg/L
	01-BFB	7/16/2015	0.46	0.2	mg/L	194	mg/L	708	µS/cm	4.04	mg/L	127	cts/100 mL	310	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.52	pH units	18.7	°C	0.537	mg/L	0.537	mg/L	0.018	mg/L	4	mg/L
	01-BFB	8/6/2015	0.38	0.2	mg/L	207	mg/L	774	µS/cm	5.35	mg/L	162	cts/100 mL	110	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.66	pH units	18.9	°C	1.18	mg/L	1.18	mg/L	0.024	mg/L	4	mg/L
	01-BFB	8/27/2015	0.32	0.2	mg/L	203	mg/L	742	µS/cm	5.96	mg/L	55.6	cts/100 mL	110	cts/100 mL	0.28	mg/L	0.2	mg/L	0.28	mg/L	7.62	pH units	19.3	°C	0.495	mg/L	0.78	mg/L	0.018	mg/L	4	mg/L
	01-BFB	9/24/2015	0.32	0.2	mg/L	171	mg/L	561	µS/cm	7.45	mg/L	53	cts/100 mL	50	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	8.27	pH units	14.2	°C	0.569	mg/L	0.79	mg/L	0.019	mg/L	4	mg/L
	01-BFB	11/5/2015	0.38	0.2	mg/L	150	mg/L	481.3	µS/cm			5.2	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.82	pH units	8.9	°C	0.2	mg/L	0.2	mg/L	0.032	mg/L	4	mg/L
	01-BFB	1/1/2016																															
	01-BFB	4/21/2016	0.49			254	mg/L	1059	µS/cm			6.3	cts/100 mL	4	cts/100 mL	0.21	mg/L	0.2	mg/L	0.21	mg/L	7.53	pH units	10.45	°C					0.012	mg/L	4	mg/L
	01-BFB	6/2/2016	0.41	0.2	mg/L	218	mg/L	770	µS/cm	4.15	mg/L	116	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	8.11	pH units	16.6	°C	1.98	mg/L	1.98	mg/L	0.111	mg/L	8	mg/L
	01-BFB	6/27/2016	3.00	0.2	mg/L	226	mg/L	859	µS/cm	4.19	mg/L	73.3	cts/100 mL	100	cts/100 mL	0.25	mg/L	0.2	mg/L	0.25	mg/L	8.18	pH units	20.7	°C	0.203	mg/L	0.45	mg/L	0.032	mg/L	4	mg/L
	01-BFB	7/28/2016																															
	01-BFB	8/25/2016	0.30	0.2	mg/L	158	mg/L	680	µS/cm	5.74	mg/L	248	cts/100 mL	170	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.19	pH units	20.3	°C	0.797	mg/L	0.8	mg/L	0.036	mg/L	4	mg/L
	01-BFB	9/22/2016	0.30	0.2	mg/L	126	mg/L	515	µS/cm	6.15	mg/L	121	cts/100 mL	93	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.08	pH units	17.2	°C	0.45	mg/L	0.45	mg/L	0.045	mg/L	4	mg/L
	01-BFB	10/19/2016	0.30	0.2	mg/L	119	mg/L	459.9	µS/cm	6.98	mg/L	56.5	cts/100 mL	59	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.94	pH units	14.7	°C	0.685	mg/L	0.68	mg/L	0.027	mg/L	4	mg/L
	01-BFB	1/1/2017																															
	01-BFB	5/4/2017	0.54	0.2	mg/L	244	mg/L	723	µS/cm	7.40	mg/L	40.2	cts/100 mL	28	cts/100 mL	0.37	mg/L	0.2	mg/L	0.37	mg/L	8.87	pH units	11.2	°C	0.809	mg/L	1.18	mg/L	0.015	mg/L	4	mg/L
	01-BFB	6/14/2017	0.50	0.2	mg/L	267	mg/L	983	µS/cm	4.86	mg/L	172	cts/100 mL	219	cts/100 mL	0.34	mg/L	0.2	mg/L	0.34	mg/L	8.23	pH units	19.3	°C	0.496	mg/L	0.84	mg/L	0.019	mg/L	4	mg/L
	01-BFB	7/6/2017	0.51	0.2	mg/L	254	mg/L	936	µS/cm	5.25	mg/L	261	cts/100 mL	326	cts/100 mL	0.34	mg/L	0.2	mg/L	0.34	mg/L	9.18	pH units	19.6	°C	0.2	mg/L	0.34	mg/L	0.031	mg/L	4	mg/L
	01-BFB	8/22/2017	0.45	0.2	mg/L	180	mg/L					111	cts/100 mL	138	cts/100 mL	0.27	mg/L	0.2	mg/L	0.27	mg/L					1.04	mg/L	1.31	mg/L	0.022	mg/L	4	mg/L
	01-BFB	9/27/2017	0.36	0.2	mg/L	234	mg/L					125	cts/100 mL	194	cts/100 mL	0.48	mg/L	0.2	mg/L	0.48	mg/L					0.428	mg/L	0.91	mg/L	0.023	mg/L	4	mg/L
	01-BFB	10/19/2017	0.40	0.2	mg/L	212	mg/L	580	µS/cm	9.04	mg/L	28.2	cts/100 mL	46	cts/100 mL	0.3	mg/L	0.2	mg/L	0.3	mg/L	7.33	pH units	10.6	°C	0.655	mg/L	0.96	mg/L	0.023	mg/L	4	mg/L
	01-BFB	11/15/2017	0.48	0.2	mg/L	195	mg/L	516	µS/cm	12.30	mg/L	13.5	cts/100 mL	9	cts/100 mL	0.33	mg/L	0.2	mg/L	0.33	mg/L	8.68	pH units	5.5	°C	0.655	mg/L	0.98	mg/L	0.015	mg/L	4	mg/L
09-PEN	09-PEN	1/1/2013																															
	09-PEN	4/4/2013	0.46	0.2	mg/L	27	mg/L	127.3	µS/cm	10.09	mg/L	18.7	cts/100 mL	6	cts/100 mL					0.5	mg/L	6.56	pH units	4.7	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	09-PEN	5/6/2013	0.30	0.365	mg/L			195.9	µS/cm	7.26	mg/L	52	cts/100 mL	22	cts/100 mL							7.11	pH units	20.1	°C	0.5	mg/L			0.06	mg/L	6	mg/L
	09-PEN	6/6/2013	0.25	0.2	mg/L			138.5	µS/cm	5.36	mg/L	49.6	cts/100 mL	48	cts/100 mL							6.42	pH units	21.2	°C	0.5	mg/L			0.0304	mg/L	6	mg/L
	09-PEN	7/17/2013	0.30	0.2	mg/L	41	mg/L	188.2	µS/cm	2.40	mg/L	34.5	cts/100 mL	70	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.64	pH units	26.4	°C	0.5	mg/L	0.2	mg/L	0.056	mg/L	6	mg/L
	09-PEN	8/16/2013	0.35	0.2	mg/L	38	mg/L	141.7	µS/cm	3.49	mg/L	52.8	cts/100 mL	260	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.59	pH units	19.6	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	09-PEN	9/10/2013	0.18	0.2	mg/L	71	mg/L	226	µS/cm	8.75	mg/L	21.3	cts/100 mL	48	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.84	pH units	17.8	°C	0.5	mg/L	0.2	mg/L	0.022	mg/L	6	mg/L
	09-PEN	10/28/2013	0.20	0.1	mg/L	68	mg/L	179.5	µS/cm	9.16	mg/L	18.7	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.58	pH units	7.7	°C	0.5	mg/L	0.2	mg/L	0.052	mg/L	6	mg/L
	09-PEN	1/1/2014																															
	09-PEN	4/14/2014	0.54	0.2	mg/L	33	mg/L	150	µS/cm			27.8	cts/100 mL	26	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.66	pH units	12	°C	0.2	mg/L	0.2	mg/L	0.038	mg/L	4	mg/L
	09-PEN	5/8/2014	0.42	0.2	mg/L	38	mg/L	169.1	µS/cm	7.63	mg/L	24.9	cts/100 mL	38	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.06	pH units	13.9	°C	0.2	mg/L	0.2	mg/L	0.073	mg/L	4	mg/L
	09-PEN	6/11/2014	0.15	0.2	mg/L	55	mg/L	144.6	µS/cm	5.98	mg/L	38.8	cts/100 mL	52	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.20	pH units	21	°C	0.2	mg/L	0.2	mg/L	0.027	mg/L	4	mg/L
	09-PEN	7/14/2014	0.24	0.2	mg/L	53	mg/L	157.5	µS/cm	4.49	mg/L	16.1	cts/100 mL	9	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.98	pH units	25	°C	0.992	mg/L	0.99	mg/L	0.061	mg/L	4	mg/L
	09-PEN	8/12/2014	0.15	0.2	mg/L	70	mg/L	185.2	µS/cm	5.55	mg/L	10.7	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.00	pH units	22.9	°C	0.2	mg/L	0.2	mg/L	0.013	mg/L	4	mg/L
	09-PEN	9/18/2014	0.18	0.2	mg/L	81	mg/L	198.8	µS/cm	6.87	mg/L	21.1	cts/100 mL	67	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.95	pH units	14.8	°C	0.2	mg/L	0.2	mg/L	0.021	mg/L	4	mg/L
	09-PEN	11/5/2014	0.32	0.2	mg/L	46	mg/L	109.6	µS/cm	9.39	mg/L	35.9	cts/100 mL	18	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	7.3	°C	0.2	mg/L	0.2	mg/L	0.017	mg/L	4	mg/L
	09-PEN	1/1/2015																															
	09-PEN	4/13/2015	0.80	0.2	mg/L	31	mg/L	139.7	µS/cm	9.61	mg/L	15.6	cts/100 mL	10	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.25	pH units	9.3	°C	0.976	mg/L	0.98	mg/L	0.01	mg/L	4	mg/L
	09-PEN	5/7/2015	0.44	0.2	mg/L	47	mg/L	196.1	µS/cm	6.63	mg/L	152	cts/100 mL	116	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			18.4	°C	0.597	mg/L	0.6	mg/L	0.028	mg/L	4	mg/L
	09-PEN	7/16/2015	0.22	0.2	mg/L	54	mg/L	231.8	µS/cm	2.44	mg/L	21.6	cts/100 mL	46	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.74	pH units	23.5	°C	0.617	mg/L	0.617	mg/L	0.027	mg/L	4	mg/L
	09-PEN	8/6/2015	0.15	0.2	mg/L	76	mg/L	316.3	µS/cm	2.20	mg/L	4	cts/100 mL	190	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.60	pH units	23.6	°C	0.967	mg/L	0.97	mg/L	0.313	mg/L	4	mg/L
	09-PEN	8/27/2015	0.08	0.2	mg/L	85	mg/L	349.1	µS/cm	3.16	mg/L	5.2	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.80	pH units	22.9	°C	0.495	mg/L	0.5	mg/L	0.016	mg/L	4	mg/L
	09-PEN	9/24/2015	0.05	0.2	mg/L	96	mg/L	330.5	µS/cm	4.05	mg/L	7.4	cts/100 mL	30	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.56	pH units	17	°C	0.503	mg/L	0.5	mg/L	0.018	mg/L	4	mg/L
	09-PEN	11/5/2015	0.18	0.2	mg/L	64	mg/L	194.1	µS/cm			7.5	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.94	pH units	9.2	°C	0.039	mg/L	0.039	mg/L	0.01	mg/L	4	mg/L
	09-PEN	1/1/2016																															
	09-PEN	4/21/2016		0.2	mg/L	48	mg/L					13.5	cts/100 mL	32	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.562	mg/L	0.56	mg/L	0.014	mg/L	4	mg/L
	09-PEN	6/2/2016	0.14	0.2	mg/L	65	mg/L	272.1	µS/cm	3.54	mg/L	6.3	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	7.88	pH units	21.3	°C	0.2	mg/L	0.2	mg/L	0.018	mg/L	4	mg/L
	09-PEN	6/27/2016	0.04	0.2	mg/L	84	mg/L	370.7	µS/cm	5.11	mg/L	6.3	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.20	pH units	25.4	°C	0.2	mg/L	0.2	mg/L	0.025	mg/L	4	mg/L
	09-PEN	7/28/2016	0.06	0.2	mg/L	145	mg/L	616	µS/cm	3.79	mg/L	6.3	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.92	pH units	25.9	°C	0.589	mg/L	0.59	mg/L	0.015	mg/L	4	mg/L
	09-PEN	8/25/2016	0.04	0.2	mg/L	131	mg/L	536	µS/cm	4.73	mg/L	11	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.68	pH units	23.2	°C	0.635	mg/L	0.64	mg/L	0.018	mg/L	5	mg/L
	09-PEN	9/22/2016	0.05	0.2	mg/L	144	mg/L	546	µS/cm	3.75	mg/L	9.7	cts/100 mL	4	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.79	pH units	20.6	°C	0.45	mg/L	0.45	mg/L	0.014	mg/L	4	mg/L
	09-PEN	10/19/2016	0.10	0.2	mg/L	142	mg/L	450.2	µS/cm	6.84	mg/L	15.6	cts/100 mL	23	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.21	pH units	13.6	°C	0.548	mg/L	0.55	mg/L	0.011	mg/L	4	mg/L
	09-PEN	1/1/2017																															
	09-PEN	5/4/2017	0.45	0.2	mg/L	41	mg/L	142.3	µS/cm	5.97	mg/L	50.4	cts/100 mL	57	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.96	pH units	13.5	°C	0.623	mg/L	0.62	mg/L	0.013	mg/L	4	mg/L
	09-PEN	6/14/2017	0.44	0.2	mg/L	42	mg/L	198.4	µS/cm	1.53	mg/L	44.8	cts/100 mL	57	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.95	pH units	24.8	°C	0.731	mg/L	0.73	mg/L	0.023	mg/L	4	mg/L
	09-PEN	7/7/2017	0.28	0.2	mg/L	55	mg/L	241.4	µS/cm	2.98	mg/L	30.9	cts/100 mL	38	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.75	pH units	24.5	°C	0.576	mg/L	0.58	mg/L	0.019	mg/L	4	mg/L
	09-PEN	8/22/2017	0.23	0.2	mg/L	65	mg/L					49.6	cts/100 mL	53	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					1.16	mg/L	1.16	mg/L	0.017	mg/L	4	mg/L
	09-PEN	9/27/2017	0.10	0.2	mg/L	84	mg/L							24	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.315	mg/L	0.32	mg/L	0.014	mg/L	4	mg/L
	09-PEN	10/19/2017	0.18	0.2	mg/L	77	mg/L	236	µS/cm	6.37	mg/L	85.2	cts/100 mL	75	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.41	pH units	12.7	°C	0.428	mg/L	0.43	mg/L	0.018	mg/L	4	mg/L
	09-PEN	11/15/2017	0.31	0.2	mg/L	51	mg/L	130.8	µS/cm	10.55	mg/L	62	cts/100 mL	35	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.39	pH units	3.7	°C	0.541	mg/L	0.54	mg/L	0.013	mg/L	4	mg/L

Pennichuck Water Works
Tributary Sampling Data
2013 through 2017

Total coliform: exceeds detection limits
All others: non-detect
Expected outlier or laboratory error

	Station	Date	eading	Ammonia		Chloride		Conductivity		DO		E. coli		Fecal Coliform		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		TKN		Total Nitrogen		Total Phosphorus		TSS	
09T-PEN	09T-PEN	1/1/2013																															
	09T-PEN	4/4/2013	3.00	0.2	mg/L	24	mg/L	115.3	µS/cm	9.73	mg/L	4.1	cts/100 mL	3	cts/100 mL					0.5	mg/L	6.22	pH units	5.1	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	09T-PEN	5/6/2013	2.24	0.2	mg/L			163.1	µS/cm	8.53	mg/L	21.3	cts/100 mL	12	cts/100 mL							6.95	pH units	20	°C	0.5	mg/L			0.01	mg/L	6	mg/L
	09T-PEN	6/6/2013	2.22	0.2	mg/L			116.3	µS/cm	4.05	mg/L	47.1	cts/100 mL	100	cts/100 mL							5.95	pH units	20.1	°C	0.5	mg/L			0.0254	mg/L	6	mg/L
	09T-PEN	7/17/2013	2.59	0.2	mg/L	35	mg/L	166.9	µS/cm	0.91	mg/L	46.5	cts/100 mL	100	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.15	pH units	25.6	°C	0.5	mg/L	0.2	mg/L	0.079	mg/L	7	mg/L
	09T-PEN	8/16/2013	2.54	0.2	mg/L	33	mg/L	128	µS/cm	2.72	mg/L	75.9	cts/100 mL	240	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.23	pH units	19.3	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	09T-PEN	9/10/2013	1.63	0.2	mg/L	59	mg/L	187.8	µS/cm	3.85	mg/L	179	cts/100 mL	220	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.06	pH units	16.6	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	09T-PEN	10/28/2013	1.84	0.1	mg/L	55	mg/L	147.1	µS/cm	7.57	mg/L	7.4	cts/100 mL	19	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.41	pH units	5.5	°C	0.5	mg/L	0.2	mg/L	0.061	mg/L	6	mg/L
	09T-PEN	1/1/2014																															
	09T-PEN	4/14/2014	3.06	0.2	mg/L	29	mg/L	120	µS/cm			34.5	cts/100 mL	8	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.23	pH units	11.8	°C	0.2	mg/L	0.2	mg/L	0.021	mg/L	4	mg/L
	09T-PEN	5/8/2014	2.64	0.2	mg/L	34	mg/L	149.2	µS/cm	7.86	mg/L	20.1	cts/100 mL	26	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.06	pH units	14.7	°C	0.2	mg/L	0.2	mg/L	0.047	mg/L	4	mg/L
	09T-PEN	6/11/2014	2.14	0.2	mg/L	42	mg/L	117	µS/cm	5.12	mg/L	33.1	cts/100 mL	20	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.14	pH units	20.5	°C	0.2	mg/L	0.2	mg/L	0.019	mg/L	4	mg/L
	09T-PEN	7/14/2014	2.24	0.2	mg/L	41	mg/L	130.9	µS/cm	1.66	mg/L	184	cts/100 mL	87	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.58	pH units	24.4	°C	1.21	mg/L	1.21	mg/L	0.075	mg/L	6	mg/L
	09T-PEN	8/12/2014	1.86	0.2	mg/L	54	mg/L	145.2	µS/cm	2.18	mg/L	41.9	cts/100 mL	68	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	20.9	°C	0.2	mg/L	0.2	mg/L	0.021	mg/L	4	mg/L
	09T-PEN	9/18/2014	1.72	0.2	mg/L	57	mg/L	138.9	µS/cm	4.16	mg/L	98.5	cts/100 mL	27	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.69	pH units	13.6	°C	0.798	mg/L	0.8	mg/L	0.01	mg/L	4	mg/L
	09T-PEN	11/5/2014	3.00	0.2	mg/L	39	mg/L	94.5	µS/cm	7.53	mg/L	12.2	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.08	pH units	7.4	°C	0.2	mg/L	0.2	mg/L	0.014	mg/L	4	mg/L
	09T-PEN	1/1/2015																															
	09T-PEN	4/13/2015	3.30	0.2	mg/L	26	mg/L	121.5	µS/cm	9.96	mg/L	4.1	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.34	pH units	10	°C	0.876	mg/L	0.88	mg/L	0.01	mg/L	4	mg/L
	09T-PEN	5/7/2015	2.53	0.2	mg/L	40	mg/L	171.1	µS/cm	6.72	mg/L	34.1	cts/100 mL	26	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			19.4	°C	0.478	mg/L	0.48	mg/L	0.01	mg/L	4	mg/L
	09T-PEN	7/16/2015	2.30	0.2	mg/L	42	mg/L	185.5	µS/cm	1.01	mg/L	61.3	cts/100 mL	74	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.49	pH units	21.8	°C	0.573	mg/L	0.573	mg/L	0.043	mg/L	7	mg/L
	09T-PEN	8/6/2015	1.95	0.2	mg/L	52	mg/L	223.4	µS/cm	0.81	mg/L	73.8	cts/100 mL	343	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.40	pH units	21.4	°C	0.889	mg/L	0.89	mg/L	0.06	mg/L	22	mg/L
	09T-PEN	8/27/2015	-	0.2	mg/L	58	mg/L	244	µS/cm	1.02	mg/L	88.2	cts/100 mL	45	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.38	pH units	21.6	°C	0.987	mg/L	0.99	mg/L	0.075	mg/L	8	mg/L
	09T-PEN	9/24/2015	1.10	0.2	mg/L	75	mg/L	260	µS/cm	2.75	mg/L	32.2	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.77	pH units	15.6	°C	0.701	mg/L	0.7	mg/L	0.032	mg/L	4	mg/L
	09T-PEN	11/5/2015	1.97	0.2	mg/L	51	mg/L	157.2	µS/cm			4.1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.68	pH units	9	°C	0.393	mg/L	0.39	mg/L	0.01	mg/L	4	mg/L
	09T-PEN	1/1/2016																															
	09T-PEN	4/21/2016	0.34	0.2	mg/L	41	mg/L	191	µS/cm			16.1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.48	pH units	13.52	°C	0.538	mg/L	0.54	mg/L	0.011	mg/L	4	mg/L
	09T-PEN	6/2/2016	1.82	0.2	mg/L	51	mg/L	216.7	µS/cm	1.32	mg/L	55.6	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	7.33	pH units	20.2	°C	1.84	mg/L	1.84	mg/L	0.397	mg/L	16	mg/L
	09T-PEN	6/27/2016	1.20	0.2	mg/L	57	mg/L	256.5	µS/cm	1.58	mg/L	63.8	cts/100 mL	82	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.28	pH units	23.3	°C	1.19	mg/L	1.19	mg/L	0.078	mg/L	13	mg/L
	09T-PEN	7/28/2016	0.90	0.2	mg/L	78	mg/L	328	µS/cm	1.12	mg/L	32.3	cts/100 mL	61	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.40	pH units	22.7	°C	1.17	mg/L	1.17	mg/L	0.049	mg/L	4	mg/L
	09T-PEN	8/25/2016	1.50	0.2	mg/L	68	mg/L	306.5	µS/cm	1.50	mg/L	87.8	cts/100 mL	47	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.25	pH units	21	°C	0.728	mg/L	0.73	mg/L	0.055	mg/L	7	mg/L
	09T-PEN	9/22/2016	2.50	0.2	mg/L	63	mg/L	255.3	µS/cm	2.43	mg/L	104	cts/100 mL	36	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.74	pH units	20.2	°C	0.38	mg/L	0.38	mg/L	0.051	mg/L	24	mg/L
	09T-PEN	10/19/2016	1.55	0.2	mg/L	72	mg/L	239.1	µS/cm	4.66	mg/L	228	cts/100 mL	261	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.25	pH units	13.7	°C	0.64	mg/L	0.64	mg/L	0.028	mg/L	4	mg/L
	09T-PEN	1/1/2017																															
	09T-PEN	5/4/2017	3.05	0.2	mg/L	35	mg/L	126	µS/cm	6.04	mg/L	16.1	cts/100 mL	8	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.35	pH units	14	°C	0.53	mg/L	0.53	mg/L	0.012	mg/L	4	mg/L
	09T-PEN	6/14/2017	2.81	0.2	mg/L	35	mg/L	177.3	µS/cm	1.51	mg/L	54.7	cts/100 mL	47	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.21	pH units	24.5	°C	0.34	mg/L	0.34	mg/L	0.031	mg/L	4	mg/L
	09T-PEN	7/6/2017	2.59	0.2	mg/L	43	mg/L	197.2	µS/cm	6.76	mg/L	79.8	cts/100 mL	84	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.30	pH units	22.8	°C	0.2	mg/L	0.2	mg/L	0.035	mg/L	4	mg/L
	09T-PEN	8/22/2017	2.26	0.2	mg/L	52	mg/L					58.3	cts/100 mL	56	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.692	mg/L	0.69	mg/L	0.021	mg/L	4	mg/L
	09T-PEN	9/27/2017	1.77	0.2	mg/L	58	mg/L					50.4	cts/100 mL	84	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.655	mg/L	0.66	mg/L	0.058	mg/L	12	mg/L
	09T-PEN	10/19/2017	2.14	0.2	mg/L	47	mg/L	165	µS/cm	4.43	mg/L	29.2	cts/100 mL	26	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.48	pH units	13.3	°C	0.428	mg/L	0.43	mg/L	0.015	mg/L	4	mg/L
	09T-PEN	11/15/2017	2.42	0.2	mg/L	129	mg/L	111.5	µS/cm	7.20	mg/L	24.9	cts/100 mL	9	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.18	pH units	3.6	°C	0.655	mg/L	0.66	mg/L	0.012	mg/L	4	mg/L
09-XPB	09-XPB	1/1/2013																															
	09-XPB	4/4/2013	1.26	0.2	mg/L	45	mg/L	182.6	µS/cm	11.37	mg/L	1	cts/100 mL	0						0.5	mg/L	6.27	pH units	5.5	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	09-XPB	5/6/2013	1.10	0.402	mg/L			230	µS/cm	9.90	mg/L	15.8	cts/100 mL	30	cts/100 mL							7.23	pH units	21.4	°C	0.5	mg/L			0.15	mg/L	6	mg/L
	09-XPB	6/6/2013	0.92	0.2	mg/L			145.5	µS/cm	5.62	mg/L	11	cts/100 mL	120	cts/100 mL							6.30	pH units	21.2	°C	0.5	mg/L			0.0323	mg/L	6	mg/L
	09-XPB	7/17/2013	0.90	0.2	mg/L	46	mg/L	208.2	µS/cm	4.53	mg/L	98.7	cts/100 mL	120	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.17	pH units	27.3	°C	0.5	mg/L	0.2	mg/L	0.047	mg/L	6	mg/L
	09-XPB	8/16/2013	0.80	0.2	mg/L	38	mg/L	144.7	µS/cm	4.76	mg/L	38.9	cts/100 mL	60	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.15	pH units	21.3	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	09-XPB	9/10/2013		0.2	mg/L	56	mg/L	190.9	µS/cm	5.97	mg/L	12.2	cts/100 mL	24	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.35	pH units	17.8	°C	0.5	mg/L	0.2	mg/L	0.03	mg/L	22	mg/L
	09-XPB	10/28/2013	0.56	0.1	mg/L	28.9	mg/L	150.9	µS/cm	7.44	mg/L	2	cts/100 mL	3	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.08	pH units	9.8	°C	0.5	mg/L	0.2	mg/L	0.05	mg/L	6	mg/L
	09-XPB	1/1/2014																															
	09-XPB	4/14/2014	1.46	0.2	mg/L	46	mg/L	170	µS/cm			2	cts/100 mL	0		0.52	mg/L	0.2	mg/L	0.52	mg/L			13.8	°C	0.2	mg/L	0.52	mg/L	0.033	mg/L	4	mg/L
	09-XPB	5/8/2014	1.28	0.2	mg/L	51	mg/L	215.1	µS/cm	10.58	mg/L	1	cts/100 mL	0		0.2	mg/L	0.2	mg/L	0.2	mg/L	6.55	pH units	15.4	°C	0.2	mg/L	0.2	mg/L	0.026	mg/L	4	mg/L
	09-XPB	6/11/2014	0.74	0.2	mg/L	453	mg/L	158.3	µS/cm	7.95	mg/L	5.2	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.71	pH units	21.1	°C	0.2	mg/L	0.2	mg/L	0.076	mg/L	4	mg/L
	09-XPB	7/14/2014		0.2	mg/L	54	mg/L	161.2	µS/cm	3.43	mg/L	4.1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.75	pH units	24.5	°C	1.21	mg/L	1.21	mg/L	0.047	mg/L	4	mg/L
	09-XPB	8/12/2014	0.78	0.2	mg/L	57	mg/L	177.4	µS/cm	3.85	mg/L	7.3	cts/100 mL	<1	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.64	pH units	20.2	°C	0.2	mg/L	0.2	mg/L	0.018	mg/L	4	mg/L
	09-XPB	9/18/2014	0.76	0.2	mg/L	56	mg/L	155	µS/cm	5.46	mg/L	6.3	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.49	pH units	15.6	°C	0.2	mg/L	0.2	mg/L	0.014	mg/L	4	mg/L
	09-XPB	11/5/2014	1.67	0.2	mg/L	53	mg/L	132.1	µS/cm	9.83	mg/L	1	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.46	pH units	8.7	°C	0.2	mg/L	0.2	mg/L	0.015	mg/L	4	mg/L
	09-XPB	1/1/2015																															
	09-XPB	4/13/2015	1.60	0.2	mg/L	42	mg/L	180.8	µS/cm	11.78	mg/L	1	cts/100 mL	2	cts/100 mL	0.51	mg/L	0.2	mg/L	0.51	mg/L	6.68	pH units	6.9	°C	0.2	mg/L	0.51	mg/L	0.014	mg/L	4	mg/L
	09-XPB	5/7/2015	1.24	0.2	mg/L	55	mg/L	226	µS/cm	9.31	mg/L	1	cts/100 mL	4	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			20.8	°C	0.537	mg/L	0.54	mg/L	0.014	mg/L	4	mg/L
	09-XPB	7/16/2015	1.50	0.2	mg/L	54	mg/L	223	µS/cm	4.97	mg/L	34.1	cts/100 mL	22	cts/100 mL	1.08	mg/L	0.2	mg/L	1.08	mg/L	6.55	pH units	22	°C	0.83	mg/L	1.91	mg/L	0.024	mg/L	4	mg/L
	09-XPB	8/6/2015	2.04	0.2	mg/L	63	mg/L	263.5	µS/cm	2.41	mg/L	37.9	cts/100 mL	56	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.47	pH units	23.6	°C	1.3	mg/L	1.3	mg/L	0.036	mg/L	4	mg/L
	09-XPB	8/27/2015	1.46	0.75	mg/L	67	mg/L	238.8	µS/cm	0.56	mg/L	4.1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.16	pH units	15.1	°C	0.987	mg/L	1.74	mg/L	0.022	mg/L	4	mg/L
	09-XPB	9/24/2015	1.30	1.35	mg/L	67	mg/L	246.3	µS/cm	0.65	mg/L	7.3	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.45	pH units	13.2	°C	1.36	mg/L	2.71	mg/L	0.064	mg/L	13	mg/L
	09-XPB	11/5/2015	1.65	0.2	mg/L	65	mg/L	208.9	µS/cm			1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.62	pH units	10.8	°C	0.39	mg/L	0.39	mg/L	0.015	mg/L	5	mg/L
	09-XPB	1/1/2016																															
	09-XPB	4/21/2016	1.16	0.2	mg/L	58	mg/L	267	µS/cm			3.1	cts/100 mL	9	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.52	pH units	15.49	°C	0.701	mg/L	0.7	mg/L	0.018	mg/L	4	mg/L
	09-XPB	6/2/2016	1.36	0.2	mg/L	62	mg/L	256.7	µS/cm	3.57	mg/L	18.7	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	7.05	pH units	20.5	°C	0.654	mg/L	0.65	mg/L	0.024	mg/L	4	mg/L
	09-XPB	6/27/2016	0.50	0.2	mg/L	64	mg/L	260.9	µS/cm	2.95	mg/L	24.6	cts/100 mL	19	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.62	pH units	20.1	°C	0.631	mg/L	0.63	mg/L	0.026	mg/L	4	mg/L
	09-XPB	7/28/2016	0.60	0.82	mg/L	66	mg/L	282.2	µS/cm	2.87	mg/L	8.5	cts/100 mL	23	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.64	pH units	20.1	°C	0.913	mg/L	1.73	mg/L	0.029	mg/L	7	mg/L
	09-XPB	8/25/2016	0.50	0.87	mg/L	68	mg/L	287.8	µS/cm	1.77	mg/L	10.9	cts/100 mL	3	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.97	pH units	18	°C	0.866	mg/L	1.74	mg/L	0.018	mg/L	4	mg/L
	09-XPB	9/22/2016		0.26	mg/L	73	mg/L	291.5	µS/cm	5.90	mg/L	80.1	cts/100 mL	101	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.61	pH units	19.5	°C	0.496	mg/L	0.76	mg/L	0.020	mg/L	5	mg/L
	09-XPB	10/19/2016	0.55	0.38	mg/L	70	mg/L	254.8	µS/cm	3.48	mg/L	3.1	cts/100 mL	7	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.86	pH units	15.4	°C	0.731	mg/L	1.11	mg/L	0.028	mg/L	4	mg/L
	09-XPB	1/1/2017																															
	09-XPB	5/4/2017	1.54	0.2	mg/L	54	mg/L	191.5	µS/cm	7.56	mg/L	124	cts/100 mL	131	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.20	pH units	15.6	°C	1.16	mg/L	1.16	mg/L	0.020	mg/L	4	mg/L
	09-XPB	6/14/2017	1.52	0.2	mg/L	60	mg/L	264.3	µS/cm	4.82	mg/L	20.1	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.41	pH units	24.8	°C	0.246	mg/L	0.25	mg/L	0.019	mg/L	4	mg/L
	09-XPB	7/6/2017	1.00	0.2	mg/L	60	mg/L	258.9	µS/cm	3.30	mg/L	11	cts/100 mL	28	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.90	pH units	23.4	°C	0.2	mg/L	0.2	mg/L	0.018	mg/L	4	mg/L
	09-XPB	8/22/2017	1.26	0.2	mg/L	68	mg/L					17.5	cts/100 mL	31	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					1.74	mg/L	1.74	mg/L	0.015	mg/L	4	mg/L
	09-XPB	9/27/2017	0.68	0.38	mg/L	62	mg/L					9.5	cts/100 mL	19	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.655	mg/L	1.04	mg/L	0.028	mg/L	30	mg/L
	09-XPB	10/19/2017	1.15	0.2	mg/L	73	mg/L	241	µS/cm	6.09	mg/L	1	cts/100 mL	30	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.69	pH units	14.8	°C	0.655	mg/L	0.66	mg/L	0.018	mg/L	4	mg/L
	09-XPB	11/15/2017	1.35	0.2	mg/L	63	mg/L	278.6	µS/cm	9.40	mg/L	3.1	cts/100 mL	1	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.87	pH units	4.1	°C	1.79	mg/L	1.79	mg/L	0.019	mg/L	4	mg/L

Pennichuck Water Works
Tributary Sampling Data
2013 through 2017

Total coliform: exceeds detection limits
All others: non-detect
Expected outlier or laboratory error

	Station	Date	eading	Ammonia		Chloride		Conductivity		DO		E. coli		Fecal Coliform		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		TKN		Total Nitrogen		Total Phosphorus		TSS	
01-WCH	01-WCH	1/1/2013																															
	01-WCH	4/4/2013	1.46	0.2	mg/L	240	mg/L	104.2	µS/cm	10.69	mg/L	3.1	cts/100 mL	3	cts/100 mL					0.5	mg/L	6.20	pH units	5.8	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	01-WCH	5/6/2013	1.04	0.2	mg/L			161.4	µS/cm	6.54	mg/L	14.6	cts/100 mL	2	cts/100 mL							7.06	pH units	15.1	°C	0.5	mg/L			0.05	mg/L	6	mg/L
	01-WCH	6/6/2013	1.00	0.2	mg/L			122.2	µS/cm	4.10	mg/L	219	cts/100 mL	261	cts/100 mL							5.99	pH units	19	°C	0.5	mg/L			0.0429	mg/L	6	mg/L
	01-WCH	7/17/2013	1.07	0.2	mg/L	42	mg/L	179.3	µS/cm	6.13	mg/L	95.9	cts/100 mL	120	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.27	pH units	26.4	°C	0.5	mg/L	0.2	mg/L	0.056	mg/L	6	mg/L
	01-WCH	8/16/2013	1.00	0.2	mg/L	39	mg/L	133.3	µS/cm	8.04	mg/L	111	cts/100 mL	120	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.27	pH units	19.9	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	01-WCH	9/17/2013	1.12	0.2	mg/L	48	mg/L	147.7	µS/cm	6.68	mg/L	190	cts/100 mL	0		0.2	mg/L	0.2	mg/L	0.2	mg/L	5.99	pH units	13.2	°C	0.5	mg/L	0.2	mg/L	0.03	mg/L	6	mg/L
	01-WCH	10/28/2013	1.48	0.1	mg/L	56	mg/L	146.4	µS/cm	6.20	mg/L	41	cts/100 mL	38	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.08	pH units	6.4	°C	0.5	mg/L	0.2	mg/L	0.036	mg/L	6	mg/L
	01-WCH	1/1/2014																															
	01-WCH	4/14/2014	1.65	0.2	mg/L	28	mg/L	100	µS/cm			6.3	cts/100 mL	3	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			12.4	°C	0.2	mg/L	0.2	mg/L	0.046	mg/L	4	mg/L
	01-WCH	5/8/2014	1.40	0.2	mg/L	35	mg/L	148.3	µS/cm	7.84	mg/L	8.6	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.56	pH units	14.4	°C	0.2	mg/L	0.2	mg/L	0.055	mg/L	4	mg/L
	01-WCH	6/11/2014	1.44	0.2	mg/L	47	mg/L	123.7	µS/cm	5.50	mg/L	140	cts/100 mL	97	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.60	pH units	20	°C	0.2	mg/L	0.2	mg/L	0.012	mg/L	4	mg/L
	01-WCH	7/14/2014	1.25	0.2	mg/L	52	mg/L	141.5	µS/cm	3.56	mg/L	38.4	cts/100 mL	23	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.50	pH units	25.5	°C	0.2	mg/L	0.2	mg/L	0.052	mg/L	4	mg/L
	01-WCH	8/12/2014	1.08	0.2	mg/L	60	mg/L	155.2	µS/cm	5.51	mg/L	41.9	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.50	pH units	21	°C	0.2	mg/L	0.2	mg/L	0.05	mg/L	6	mg/L
	01-WCH	9/18/2014	1.12	0.2	mg/L	61	mg/L	146.2	µS/cm	6.51	mg/L	42.6	cts/100 mL	22	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.44	pH units	14	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	01-WCH	11/5/2014	1.59	0.2	mg/L	40	mg/L	105.4	µS/cm	5.16	mg/L	55.6	cts/100 mL	32	cts/100 mL	0.21	mg/L	0.2	mg/L	0.21	mg/L	6.25	pH units	7.4	°C	0.2	mg/L	0.21	mg/L	0.011	mg/L	4	mg/L
	01-WCH	1/1/2015																															
	01-WCH	4/13/2015	1.90	0.2	mg/L	25	mg/L	113.1	µS/cm	10.12	mg/L	2	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.81	pH units	10.4	°C	0.2	mg/L	0.2	mg/L	0.016	mg/L	4	mg/L
	01-WCH	5/7/2015	1.49	0.2	mg/L	43	mg/L	171.6	µS/cm	6.92	mg/L	58.3	cts/100 mL	56	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			18.5	°C	0.438	mg/L	0.44	mg/L	0.017	mg/L	4	mg/L
	01-WCH	7/16/2015	1.10	0.2	mg/L	51	mg/L	198.2	µS/cm	3.25	mg/L	39.9	cts/100 mL	72	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.45	pH units	21.1	°C	0.672	mg/L	0.672	mg/L	0.019	mg/L	4	mg/L
	01-WCH	8/6/2015	0.94	0.2	mg/L	61	mg/L	235.4	µS/cm	4.26	mg/L	61.3	cts/100 mL	106	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.42	pH units	21.6	°C	1.01	mg/L	1.01	mg/L	0.021	mg/L	4	mg/L
	01-WCH	8/27/2015	0.96	0.2	mg/L	64	mg/L	249.1	µS/cm	4.00	mg/L	131	cts/100 mL	105	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.30	pH units	21.5	°C	0.593	mg/L	0.59	mg/L	0.015	mg/L	4	mg/L
	01-WCH	9/24/2015	1.00	0.2	mg/L	222.5	mg/L	222.5	µS/cm			152	cts/100 mL	55	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.40	pH units	15	°C	0.613	mg/L	0.61	mg/L	0.017	mg/L	4	mg/L
	01-WCH	11/5/2015	1.49	0.2	mg/L	60	mg/L	179.1	µS/cm			33.2	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.52	pH units	8.5	°C	0.349	mg/L	0.35	mg/L	0.01	mg/L	4	mg/L
	01-WCH	1/1/2016																															
	01-WCH	4/21/2016	1.38	0.2	mg/L	40	mg/L	183	µS/cm			5.2	cts/100 mL	10	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.22	pH units	13.32	°C	0.2	mg/L	0.2	mg/L	0.013	mg/L	4	mg/L
	01-WCH	6/2/2016	1.20	0.2	mg/L	52	mg/L	202.6	µS/cm	2.18	mg/L	104	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.72	pH units	18.3	°C	0.538	mg/L	0.54	mg/L	0.026	mg/L	4	mg/L
	01-WCH	6/27/2016	1.24	0.2	mg/L	63	mg/L	277.7	µS/cm	2.53	mg/L	86.2	cts/100 mL	88	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.52	pH units	25.8	°C	0.29	mg/L	0.29	mg/L	0.045	mg/L	4	mg/L
	01-WCH	7/28/2016	1.20	0.2	mg/L	74	mg/L	334.2	µS/cm	2.55	mg/L	41.3	cts/100 mL	50	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.81	pH units	26.5	°C	0.589	mg/L	0.59	mg/L	0.027	mg/L	4	mg/L
	01-WCH	8/25/2016	1.40	0.2	mg/L	68	mg/L	281.1	µS/cm	3.25	mg/L	98.7	cts/100 mL	24	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.85	pH units	23.7	°C	0.612	mg/L	0.61	mg/L	0.028	mg/L	4	mg/L
	01-WCH	9/22/2016	1.50	0.2	mg/L	58	mg/L	226.8	µS/cm	3.05	mg/L	118	cts/100 mL	101	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.75	pH units	20.7	°C	0.2	mg/L	0.2	mg/L	0.02	mg/L	4	mg/L
	01-WCH	10/19/2016	1.50	0.2	mg/L	70	mg/L	234.3	µS/cm	2.28	mg/L	1410	cts/100 mL	173	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	14.4	°C	0.708	mg/L	0.71	mg/L	0.016	mg/L	4	mg/L
	01-WCH	1/1/2017																															
	01-WCH	5/4/2017	1.75	0.2	mg/L	28	mg/L	101.3	µS/cm	7.55	mg/L	18.5	cts/100 mL	25	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.60	pH units	13.8	°C	1.58	mg/L	1.58	mg/L	0.012	mg/L	4	mg/L
	01-WCH	6/14/2017	1.60	0.2	mg/L	43	mg/L	194.3	µS/cm	3.26	mg/L	131	cts/100 mL	93	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.82	pH units	24.5	°C	0.34	mg/L	0.34	mg/L	0.031	mg/L	4	mg/L
	01-WCH	7/6/2017	1.51	0.2	mg/L	49	mg/L	201.5	µS/cm	2.62	mg/L	56.5	cts/100 mL	53	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.23	pH units	23.6	°C	0.2	mg/L	0.2	mg/L	0.029	mg/L	4	mg/L
	01-WCH	8/22/2017	1.46	0.2	mg/L	57	mg/L					77.6	cts/100 mL	49	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.809	mg/L	0.81	mg/L	0.021	mg/L	4	mg/L
	01-WCH	9/27/2017	n/a	0.2	mg/L	65	mg/L					22.8	cts/100 mL	42	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.2	mg/L	0.2	mg/L	0.034	mg/L	4	mg/L
	01-WCH	10/19/2017	1.45	0.2	mg/L	64	mg/L	131	µS/cm	5.06	mg/L	24	cts/100 mL	38	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.50	pH units	12	°C	0.2	mg/L	0.2	mg/L	0.016	mg/L	4	mg/L
	01-WCH	11/15/2017	1.59	0.2	mg/L	43	mg/L	111.7	µS/cm	9.07	mg/L	115	cts/100 mL	62	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	6.76	pH units	3.4	°C	0.315	mg/L	0.54	mg/L	0.011	mg/L	4	mg/L
12-PEN	12-PEN	1/1/2013																															
	12-PEN	4/4/2013	0.82	0.2	mg/L	24	mg/L	118.2	µS/cm	12.05	mg/L	2	cts/100 mL	1	cts/100 mL					0.5	mg/L	6.63	pH units	5.3	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	12-PEN	5/6/2013	0.52	0.2	mg/L			138.1	µS/cm	9.73	mg/L	4.1	cts/100 mL	0								7.12	pH units	13.7	°C	0.5	mg/L			0.06	mg/L	6	mg/L
	12-PEN	6/6/2013	0.68	0.2	mg/L			96.6	µS/cm	8.67	mg/L	16	cts/100 mL	17	cts/100 mL							6.54	pH units	16.8	°C	0.5	mg/L			0.018	mg/L	6	mg/L
	12-PEN	7/17/2013	0.59	0.2	mg/L	30	mg/L	147	µS/cm	11.24	mg/L	119	cts/100 mL	56	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	24.3	°C	0.5	mg/L	0.2	mg/L	0.051	mg/L	6	mg/L
	12-PEN	8/16/2013	0.46	0.2	mg/L	28	mg/L	113.2	µS/cm	8.88	mg/L	16.1	cts/100 mL	100	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.28	pH units	18	°C	0.5	mg/L	0.5	mg/L	0.02	mg/L	6	mg/L
	12-PEN	9/17/2013	0.35	0.2	mg/L	27	mg/L	104.7	µS/cm	14.05	mg/L	24.6	cts/100 mL	0		0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	11	°C	0.5	mg/L	0.2	mg/L	0.029	mg/L	56	mg/L
	12-PEN	10/28/2013	0.26	0.1	mg/L	28	mg/L	89.1	µS/cm	11.15	mg/L	13.1	cts/100 mL	19	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.57	pH units	8	°C	0.5	mg/L	0.2	mg/L	0.029	mg/L	6	mg/L
	12-PEN	1/1/2014																															
	12-PEN	4/14/2014	0.96	0.2	mg/L	28	mg/L	80	µS/cm			2	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			14.6	°C	0.2	mg/L	0.2	mg/L	0.042	mg/L	4	mg/L
	12-PEN	5/8/2014	0.74	0.2	mg/L	33	mg/L	147.4	µS/cm	10.36	mg/L	4.1	cts/100 mL	9	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.65	pH units	13.8	°C	0.2	mg/L	0.2	mg/L	0.026	mg/L	4	mg/L
	12-PEN	6/11/2014	0.54	0.2	mg/L	34	mg/L	97	µS/cm	10.09	mg/L	66.3	cts/100 mL	32	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.69	pH units	18.1	°C	0.2	mg/L	0.2	mg/L	0.03	mg/L	4	mg/L
	12-PEN	7/14/2014	0.58	0.2	mg/L	32	mg/L	97.3	µS/cm	9.21	mg/L	22.8	cts/100 mL	11	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.76	pH units	22.6	°C	0.2	mg/L	0.2	mg/L	0.117	mg/L	27	mg/L
	12-PEN	8/12/2014	0.40	0.2	mg/L	32	mg/L	97	µS/cm	10.36	mg/L	27.5	cts/100 mL	12	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	7.36	pH units	18.5	°C	0.2	mg/L	0.22	mg/L	0.012	mg/L	4	mg/L
	12-PEN	9/18/2014	0.58	0.2	mg/L	33	mg/L	90.5	µS/cm	11.26	mg/L	37.3	cts/100 mL	21	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.94	pH units	11.9	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	12-PEN	11/5/2014	1.56	0.2	mg/L	31	mg/L	84.3	µS/cm	11.62	mg/L	25.6	cts/100 mL	10	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.92	pH units	9.6	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	12-PEN	1/1/2015																															
	12-PEN	4/13/2015	2.16	0.2	mg/L	35	mg/L	95.7	µS/cm	12.61	mg/L	3.1	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.24	pH units	9.2	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	12-PEN	5/7/2015	1.18	0.2	mg/L	36	mg/L	153.9	µS/cm	9.39	mg/L	42.6	cts/100 mL	18	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			18.6	°C	0.817	mg/L	0.82	mg/L	0.013	mg/L	4	mg/L
	12-PEN	7/16/2015	0.41	0.2	mg/L	39	mg/L	154.5	µS/cm	6.01	mg/L	43.2	cts/100 mL	62	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.60	pH units	20	°C	1.26	mg/L	1.26	mg/L	0.022	mg/L	4	mg/L
	12-PEN	8/6/2015	0.27	0.2	mg/L	38	mg/L	156.9	µS/cm	5.08	mg/L	48	cts/100 mL	78	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.61	pH units	19.7	°C	0.77	mg/L	0.77	mg/L	0.046	mg/L	4	mg/L
	12-PEN	8/27/2015	0.26	0.2	mg/L	38	mg/L	164	µS/cm	4.37	mg/L	133	cts/100 mL	85	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.65	pH units	21.5	°C	0.692	mg/L	0.69	mg/L	0.023	mg/L	7	mg/L
	12-PEN	9/24/2015	0.17	0.36	mg/L	38	mg/L	140.3	µS/cm	5.01	mg/L	63.1	cts/100 mL	35	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.56	pH units	14.4	°C	0.679	mg/L	1.04	mg/L	0.029	mg/L	4	mg/L
	12-PEN	11/5/2015	0.27	0.2	mg/L	37	mg/L	123.7	µS/cm			37.9	cts/100 mL	40	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.41	pH units	11.1	°C	0.327	mg/L	0.33	mg/L	0.014	mg/L	4	mg/L
	12-PEN	1/1/2016																															
	12-PEN	4/21/2016	0.58	0.2	mg/L	43	mg/L	199	µS/cm			3.1	cts/100 mL	4	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.48	pH units	13.62	°C	0.2	mg/L	0.2	mg/L	0.012	mg/L	4	mg/L
	12-PEN	6/2/2016	0.69	0.2	mg/L	46	mg/L	171.3	µS/cm	4.17	mg/L	236	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.79	pH units	18.2	°C	0.654	mg/L	0.65	mg/L	0.043	mg/L	11	mg/L
	12-PEN	6/27/2016	2.45	0.2	mg/L	42	mg/L	182.1	µS/cm	1.80	mg/L	276	cts/100 mL	220	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	20.6	°C	1.42	mg/L	1.42	mg/L	0.07	mg/L	4	mg/L
	12-PEN	7/28/2016	2.80	0.2	mg/L	45	mg/L	202.3	µS/cm	1.61	mg/L	7.4	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.29	pH units	21.6	°C	9.77	mg/L	9.77	mg/L	0.117	mg/L	4	mg/L
	12-PEN	8/25/2016	2.30	0.2	mg/L	39	mg/L	165	µS/cm	1.64	mg/L	248	cts/100 mL	65	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.66	pH units	19.7	°C	0.542	mg/L	0.54	mg/L	0.051	mg/L	5	mg/L
	12-PEN	9/22/2016	2.40	0.28	mg/L	31	mg/L	146	µS/cm	1.29	mg/L	79.4	cts/100 mL	32	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.68	pH units	17.7	°C	0.519	mg/L	0.8	mg/L	0.073	mg/L	4	mg/L
	12-PEN	10/19/2016	0.50	0.2	mg/L	39	mg/L	141.6	µS/cm	3.49	mg/L	326	cts/100 mL	43	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.70	pH units	13.5	°C	1.03	mg/L	1.03	mg/L	0.031	mg/L	4	mg/L
	12-PEN	1/1/2017																															
	12-PEN	5/4/2017	1.18	0.2	mg/L	46	mg/L	167.7	µS/cm	7.98	mg/L	5.2	cts/100 mL	8	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.90	pH units	15.7	°C	0.576	mg/L	0.58	mg/L	0.020	mg/L	10	mg/L
	12-PEN	6/14/2017	0.98	0.2	mg/L	45	mg/L	191.8	µS/cm	5.75	mg/L	130	cts/100 mL	173	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.90	pH units	22.5	°C	0.2	mg/L	0.2	mg/L	0.011	mg/L	4	mg/L
	12-PEN	7/6/2017	1.30	0.2	mg/L	44	mg/L	192	µS/cm	4.68	mg/L	41.9	cts/100 mL	36	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.79	pH units	21.8	°C	0.2	mg/L	0.2	mg/L	0.014	mg/L	4	mg/L
	12-PEN	8/22/2017	1.47	0.2	mg/L	43	mg/L					61.3	cts/100 mL	55	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.2	mg/L	0.2	mg/L	0.011	mg/L	4	mg/L
	12-PEN	9/27/2017	n/a	0.2	mg/L	42	mg/L					62.4	cts/100 mL	88	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.2	mg/L	0.2	mg/L	0.014	mg/L	4	mg/L
	12-PEN	10/19/2017	2.54	0.2	mg/L	42	mg/L	134	µS/cm	7.21	mg/L	31.4	cts/100 mL	22	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.20	pH units	11.4	°C	0.428	mg/L	0.43	mg/L	0.022	mg/L	4	mg/L
	12-PEN	11/15/2017	1.28	0.2	mg/L	47	mg/L	127.5	µS/cm	17.13	mg/L	8.6	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.53	pH units	5.4	°C	0.428	mg/L	0.43	mg/L	0.010	mg/L	4	mg/L

Pennichuck Water Works
Tributary Sampling Data
2013 through 2017

Total coliform: exceeds detection limits
All others: non-detect
Expected outlier or laboratory error

	Station	Date	eading	Ammonia		Chloride		Conductivity		DO		E. coli		Fecal Coliform		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		TKN		Total Nitrogen		Total Phosphorus		TSS	
01-MUD	01-MUD	1/1/2013																															
	01-MUD	4/4/2013	2.38	0.2	mg/L	23	mg/L	129.7	µS/cm	10.37	mg/L	2	cts/100 mL	4	cts/100 mL							6.75	pH units	6.1	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	01-MUD	5/6/2013	2.42	0.2	mg/L			151.6	µS/cm	7.10	mg/L	48	cts/100 mL	30	cts/100 mL							7.09	pH units	14.3	°C	0.5	mg/L			0.07	mg/L	6	mg/L
	01-MUD	6/6/2013	2.38	0.374	mg/L			115.2	µS/cm	3.30	mg/L	66.9	cts/100 mL	119	cts/100 mL							6.64	pH units	17.8	°C	0.5	mg/L			0.0258	mg/L	6	mg/L
	01-MUD	7/17/2013	1.82			19	mg/L	161.9	µS/cm	8.95	mg/L	166	cts/100 mL	160	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.90	pH units	25.8	°C	0.5	mg/L	0.2	mg/L	0.058	mg/L	6	mg/L
	01-MUD	8/16/2013	1.97	0.2	mg/L	25	mg/L	120.2	µS/cm	5.18	mg/L	43.7	cts/100 mL	260	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.50	pH units	18.5	°C	0.5	mg/L	0.2	mg/L	0.026	mg/L	6	mg/L
	01-MUD	9/10/2013	1.96	0.2	mg/L	15	mg/L	112.6	µS/cm	3.88	mg/L	33.1	cts/100 mL	36	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	12.4	°C	0.5	mg/L	0.2	mg/L	0.044	mg/L	6	mg/L
	01-MUD	10/28/2013	1.87	0.1	mg/L	33	mg/L	98.3	µS/cm	7.14	mg/L	5.2	cts/100 mL	1	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.62	pH units	10	°C	0.5	mg/L	0.2	mg/L	0.033	mg/L	6	mg/L
	01-MUD	1/1/2014																															
	01-MUD	4/14/2014	2.42	0.2	mg/L	31	mg/L	140	µS/cm			13.4	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			12.6	°C	0.2		0.2	mg/L	0.037	mg/L	4	mg/L
	01-MUD	5/8/2014	2.28	0.2	mg/L	23	mg/L	146.7	µS/cm	8.62	mg/L	41	cts/100 mL	53	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.85	pH units	13.7	°C	0.2	mg/L	0.2	mg/L	0.05	mg/L	4	mg/L
	01-MUD	6/11/2014	2.29	0.2	mg/L	19	mg/L	96.7	µS/cm	4.87	mg/L	83.6	cts/100 mL	50	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.68	pH units	19.9	°C	0.2	mg/L	0.2	mg/L	0.031	mg/L	4	mg/L
	01-MUD	7/14/2014	2.22	0.2	mg/L	17	mg/L	168.2	µS/cm	3.47	mg/L	14.6	cts/100 mL	9	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.72	pH units	21.6	°C	0.2	mg/L	0.2	mg/L	0.071	mg/L	4	mg/L
	01-MUD	8/12/2014	2.22	0.2	mg/L	27	mg/L	126.7	µS/cm	4.61	mg/L	326	cts/100 mL	208	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.83	pH units	20.1	°C	0.2	mg/L	0.2	mg/L	0.036	mg/L	4	mg/L
	01-MUD	9/18/2014	2.58	0.2	mg/L	26	mg/L	109.9	µS/cm	2.25	mg/L	7.3	cts/100 mL	3	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.49	pH units	12.4	°C	0.2	mg/L	0.2	mg/L	0.037	mg/L	4	mg/L
	01-MUD	11/5/2014	2.48	0.2	mg/L	23	mg/L	85..7	µS/cm	8.17	mg/L	78.9	cts/100 mL	36	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.36	pH units	7.8	°C	0.2	mg/L	0.2	mg/L	0.012	mg/L	4	mg/L
	01-MUD	1/1/2015																															
	01-MUD	4/13/2015	2.70	0.2	mg/L	23	mg/L	85	µS/cm	9.62	mg/L	3.1	cts/100 mL	2	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	7.61	pH units	9.8	°C	0.2	mg/L	0.22	mg/L	0.01	mg/L	4	mg/L
	01-MUD	5/7/2015	2.48	0.2	mg/L	31	mg/L	148.8	µS/cm	6.91	mg/L	21.1	cts/100 mL	30	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L			18.6	°C	0.458	mg/L	0.46	mg/L	0.014	mg/L	4	mg/L
	01-MUD	7/16/2015		0.2	mg/L	22	mg/L	145.4	µS/cm	0.48	mg/L	36.4	cts/100 mL	56	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.52	pH units	20.3	°C	1.03	mg/L	1.03	mg/L	0.04	mg/L	4	mg/L
	01-MUD	8/6/2015	2.20	0.2	mg/L	22	mg/L	151.3	µS/cm	0.86	mg/L	23.1	cts/100 mL	28	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.51	pH units	19.3	°C	1.42	mg/L	1.42	mg/L	0.061	mg/L	9	mg/L
	01-MUD	8/27/2015	1.80	0.2	mg/L	30	mg/L	195	µS/cm	2.57	mg/L	3.1	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.79	pH units	21.1	°C	0.593	mg/L	0.59	mg/L	0.058	mg/L	4	mg/L
	01-MUD	9/24/2015	1.62	0.2	mg/L	28	mg/L	147.1	µS/cm	3.91	mg/L	10.9	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.69	pH units	16.3	°C	0.679	mg/L	0.68	mg/L	0.031	mg/L	4	mg/L
	01-MUD	11/5/2015	2.01	0.2	mg/L	17	mg/L	82.1	µS/cm			8.6	cts/100 mL	10	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.48	pH units	7.4	°C	0.481	mg/L	0.48	mg/L	0.014	mg/L	4	mg/L
	01-MUD	1/1/2016																															
	01-MUD	4/21/2016	2.36	0.2	mg/L	34	mg/L	184	µS/cm			3.1	cts/100 mL	1	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	6.55	pH units	13.03	°C	0.631	mg/L	0.85	mg/L	0.011	mg/L	4	mg/L
	01-MUD	6/2/2016	3.20	0.2	mg/L	22	mg/L	161.7	µS/cm	0.54	mg/L	50.4	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.74	pH units	19.2	°C	0.747	mg/L	0.75	mg/L	0.041	mg/L	4	mg/L
	01-MUD	6/27/2016	2.12	0.2	mg/L	28	mg/L	194.4	µS/cm	3.51	mg/L	313	cts/100 mL	210	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.91	pH units	25.8	°C	0.509	mg/L	0.51	mg/L	0.052	mg/L	7	mg/L
	01-MUD	7/28/2016	1.60	0.2	mg/L	28	mg/L	214.6	µS/cm	4.70	mg/L	8.5	cts/100 mL	15	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.00	pH units	29	°C	0.542	mg/L	0.54	mg/L	0.032	mg/L	4	mg/L
	01-MUD	8/25/2016	1.60	0.2	mg/L	19	mg/L	153	µS/cm	6.73	mg/L	48.7	cts/100 mL	19	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.86	pH units	25.6	°C	0.45	mg/L	0.45	mg/L	0.027	mg/L	4	mg/L
	01-MUD	9/22/2016	1.60	0.2	mg/L	27	mg/L	189.8	µS/cm	2.04	mg/L	28.2	cts/100 mL	5	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.83	pH units	21.2	°C	0.38	mg/L	0.38	mg/L	0.049	mg/L	4	mg/L
	01-MUD	10/19/2016	1.55	0.2	mg/L	33	mg/L	175.4	µS/cm	3.76	mg/L	44.1	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.66	pH units	17	°C	1.44	mg/L	1.44	mg/L	0.079	mg/L	23	mg/L
	01-MUD	1/1/2017																															
	01-MUD	5/4/2017	2.29	0.2	mg/L	30	mg/L	143.4	µS/cm	5.85	mg/L	16	cts/100 mL	25	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.85	pH units	14.8	°C	0.553	mg/L	0.55	mg/L	0.010	mg/L	4	mg/L
	01-MUD	6/14/2017	2.27	0.2	mg/L	23	mg/L	167.1	µS/cm	1.90	mg/L	95.9	cts/100 mL	54	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.95	pH units	23	°C	0.2	mg/L	0.2	mg/L	0.018	mg/L	4	mg/L
	01-MUD	7/6/2017	2.35	0.2	mg/L	32	mg/L	212.7	µS/cm	2.66	mg/L	260	cts/100 mL	276	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.77	pH units	21.4	°C	0.2	mg/L	0.2	mg/L	0.047	mg/L	4	mg/L
	01-MUD	8/22/2017	2.23	0.2	mg/L	17	mg/L					52.9	cts/100 mL	62	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					2.09	mg/L	2.09	mg/L	0.018	mg/L	4	mg/L
	01-MUD	9/27/2017	n/a	0.2	mg/L	16	mg/L					194	cts/100 mL	225	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.2	mg/L	0.2	mg/L	0.023	mg/L	6	mg/L
	01-MUD	10/19/2017	2.71	0.2	mg/L	30	mg/L	144	µS/cm	3.48	mg/L	276	cts/100 mL	219	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.95	pH units	13.5	°C	0.655	mg/L	0.66	mg/L	0.027	mg/L	4	mg/L
	01-MUD	11/15/2017	2.05	0.2	mg/L	33	mg/L	101.7	µS/cm	8.46	mg/L	39.9	cts/100 mL	17	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.47	pH units	4.2	°C	0.315	mg/L	0.32	mg/L	0.011	mg/L	4	mg/L
01-XWB	01-XWB	1/1/2013																															
	01-XWB	4/4/2013	2.46	0.2	mg/L	18	mg/L	87.1	µS/cm	12.10	mg/L	1	cts/100 mL	2	cts/100 mL					0.5	mg/L	6.81	pH units	7.6	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	01-XWB	5/6/2013	1.98	0.2	mg/L			123	µS/cm	8.77	mg/L	34.1	cts/100 mL	30	cts/100 mL							7.21	pH units	16.8	°C	0.5	mg/L			0.06	mg/L	6	mg/L
	01-XWB	6/6/2013	2.32	0.374	mg/L			91.5	µS/cm	6.02	mg/L	142	cts/100 mL	123	cts/100 mL							6.10	pH units	17.3	°C	0.5	mg/L			0.0297	mg/L	6	mg/L
	01-XWB	7/17/2013	2.42	0.2	mg/L	31	mg/L	139.4	µS/cm	8.57	mg/L	67.6	cts/100 mL	38	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.03	pH units	25.5	°C	0.5	mg/L	0.2	mg/L	0.055	mg/L	6	mg/L
	01-XWB	8/16/2013	2.44	0.2	mg/L	29	mg/L	106.9	µS/cm	5.82	mg/L	98.5	cts/100 mL	70	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.08	pH units	18.2	°C	0.5	mg/L	0.2	mg/L	0.02	mg/L	6	mg/L
	01-XWB	9/17/2013	2.25	0.2	mg/L	31	mg/L	104.7	µS/cm	9.39	mg/L	179	cts/100 mL	6	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.10	pH units	13.1	°C	0.5	mg/L	0.2	mg/L	0.039	mg/L	6	mg/L
	01-XWB	10/28/2013	2.67	0.1	mg/L	33	mg/L	97.6	µS/cm	7.11	mg/L	166	cts/100 mL	120	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.30	pH units	7.4	°C	0.5	mg/L	0.2	mg/L	0.031	mg/L	6	mg/L
	01-XWB	1/1/2014																															
	01-XWB	4/14/2014	2.76	0.2	mg/L	24	mg/L	110	µS/cm			6.3	cts/100 mL	2	cts/100 mL	0.21	mg/L	0.2	mg/L	0.21	mg/L			11.8	°C	0.2	mg/L	0.21	mg/L	0.032	mg/L	4	mg/L
	01-XWB	5/8/2014	2.77	0.2	mg/L	28	mg/L	124.5	µS/cm	8.46	mg/L	18.5	cts/100 mL	13	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L	6.77	pH units	15.2	°C	0.2	mg/L	0.22	mg/L	0.052	mg/L	4	mg/L
	01-XWB	6/11/2014	2.62	0.2	mg/L	34	mg/L	94.5	µS/cm	8.47	mg/L	248	cts/100 mL	198	cts/100 mL	0.26	mg/L	0.2	mg/L	0.26	mg/L	6.42	pH units	18.3	°C	0.2	mg/L	0.26	mg/L	0.014	mg/L	4	mg/L
	01-XWB	7/14/2014	2.60	0.2	mg/L	36	mg/L	103.1	µS/cm	6.39	mg/L	41.9	cts/100 mL	38	cts/100 mL	0.21	mg/L	0.2	mg/L	0.21	mg/L	6.58	pH units	24.4	°C	0.2	mg/L	0.21	mg/L	0.044	mg/L	4	mg/L
	01-XWB	8/12/2014	2.26	0.2	mg/L	38	mg/L	106.7	µS/cm	7.70	mg/L	124	cts/100 mL	114	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.58	pH units	21	°C	0.2	mg/L	0.2	mg/L	0.016	mg/L	4	mg/L
	01-XWB	9/18/2014	2.30	0.2	mg/L	37	mg/L	96.7	µS/cm	8.18	mg/L	29.5	cts/100 mL	26	cts/100 mL	0.27	mg/L	0.2	mg/L	0.27	mg/L	6.64	pH units	13.8	°C	0.2	mg/L	0.27	mg/L	0.037	mg/L	7	mg/L
	01-XWB	11/5/2014	2.58	0.2	mg/L	27	mg/L	76	µS/cm	9.76	mg/L	11	cts/100 mL	4	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	9.40	pH units	6.48	°C	0.2	mg/L	0.2	mg/L	0.011	mg/L	4	mg/L
	01-XWB	1/1/2015																															
	01-XWB	4/13/2015	1.90	0.2	mg/L	21	mg/L	134.9	µS/cm	12.27	mg/L	1	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	11.4	°C	0.2	mg/L	0.2	mg/L	0.014	mg/L	4	mg/L
	01-XWB	5/7/2015	2.57	0.2	mg/L	34	mg/L	136.8	µS/cm	9.82	mg/L	7.4	cts/100 mL	12	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L			19.2	°C	0.378	mg/L	0.6	mg/L	0.014	mg/L	4	mg/L
	01-XWB	7/16/2015	2.51	0.2	mg/L	39	mg/L	150.6	µS/cm	6.62	mg/L	39.9	cts/100 mL	58	cts/100 mL	0.28	mg/L	0.2	mg/L	0.28	mg/L	6.55	pH units	19.8	°C	0.77	mg/L	1.05	mg/L	0.013	mg/L	4	mg/L
	01-XWB	8/6/2015	2.73	0.2	mg/L	42	mg/L	164	µS/cm	5.24	mg/L	98.7	cts/100 mL	136	cts/100 mL	0.29	mg/L	0.2	mg/L	0.29	mg/L	6.51	pH units	19.8	°C	0.692	mg/L	0.98	mg/L	0.012	mg/L	4	mg/L
	01-XWB	8/27/2015	2.81	0.2	mg/L	43	mg/L	164.1	µS/cm	4.77	mg/L	125	cts/100 mL	145	cts/100 mL	0.26	mg/L	0.2	mg/L	0.26	mg/L	6.34	pH units	19.8	°C	0.79	mg/L	1.05	mg/L	0.013	mg/L	4	mg/L
	01-XWB	9/24/2015	2.87	0.2	mg/L	43	mg/L	147.1	µS/cm	5.03	mg/L	225	cts/100 mL	70	cts/100 mL	0.32	mg/L	0.2	mg/L	0.32	mg/L	6.34	pH units	14.6	°C	0.481	mg/L	0.8	mg/L	0.012	mg/L	4	mg/L
	01-XWB	11/5/2015	2.96	0.2	mg/L	39	mg/L	126.7	µS/cm			16.1	cts/100 mL	10	cts/100 mL	0.26	mg/L	0.2	mg/L	0.26	mg/L	6.35	pH units	8.9	°C	0.459	mg/L	0.72	mg/L	0.01	mg/L	4	mg/L
	01-XWB	1/1/2016																															
	01-XWB	4/21/2016	3.14	0.2	mg/L	30	mg/L	142	µS/cm			7.4	cts/100 mL	12	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.36	pH units	14.45	°C	0.2	mg/L	0.2	mg/L	0.019	mg/L	7	mg/L
	01-XWB	6/2/2016		0.2	mg/L	40	mg/L	153.9	µS/cm	2.69	mg/L	178	cts/100 mL			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.46	pH units	17.9	°C	0.2	mg/L	0.2	mg/L	0.031	mg/L	4	mg/L
	01-XWB	6/27/2016		0.2	mg/L	45	mg/L	195.6	µS/cm	3.09	mg/L	67.7	cts/100 mL	61	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.44	pH units	23.8	°C	0.562	mg/L	0.56	mg/L	0.025	mg/L	4	mg/L
	01-XWB	7/28/2016	2.00	0.2	mg/L	46	mg/L	207.8	µS/cm	3.68	mg/L	23.1	cts/100 mL	48	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.81	pH units	25	°C	0.2	mg/L	0.2	mg/L	0.026	mg/L	4	mg/L
	01-XWB	8/25/2016	2.90	0.2	mg/L	43	mg/L	188.6	µS/cm	4.30	mg/L	133	cts/100 mL	74	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.36	pH units	21.6	°C	1.72	mg/L	1.72	mg/L	0.017	mg/L	4	mg/L
	01-XWB	9/22/2016	2.70	0.2	mg/L	45	mg/L	183.5	µS/cm	4.12	mg/L	248	cts/100 mL	84	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	19.4	°C	0.311	mg/L	0.31	mg/L	0.016	mg/L	4	mg/L
	01-XWB	10/19/2016	2.70	0.2	mg/L	44	mg/L	161.2	µS/cm	4.73	mg/L	69.1	cts/100 mL	82	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.47	pH units	15.6	°C	0.594	mg/L	0.59	mg/L	0.019	mg/L	4	mg/L
	01-XWB	1/1/2017																															
	01-XWB	5/4/2017	2.82	0.2	mg/L	26	mg/L	92	µS/cm	8.39	mg/L	14.8	cts/100 mL	23	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.80	pH units	14	°C	0.506	mg/L	0.51	mg/L	0.012	mg/L	4	mg/L
	01-XWB	6/14/2017	2.63	0.2	mg/L	37	mg/L	158.2	µS/cm	5.05	mg/L	248	cts/100 mL	179	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.45	pH units	22.3	°C	0.574	mg/L	0.57	mg/L	0.038	mg/L	4	mg/L
	01-XWB	7/6/2017	3.32	0.2	mg/L	44	mg/L	183.8	µS/cm	6.14	mg/L	2420	cts/100 mL	2420	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.39	pH units	21.8	°C	0.2	mg/L	0.2	mg/L	0.028	mg/L	4	mg/L
	01-XWB	8/22/2017	2.06	0.2	mg/L	46	mg/L					194	cts/100 mL	119	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.46	mg/L	0.46	mg/L	0.020	mg/L	4	mg/L
	01-XWB	9/27/2017	2.04	0.2	mg/L	48	mg/L					147	cts/100 mL	142	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.2	mg/L	0.2	mg/L	0.023	mg/L	4	mg/L
	01-XWB	10/19/2017	2.50	0.2	mg/L	45	mg/L	144	µS/cm	5.48	mg/L	48.7	cts/100 mL	45	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.71	pH units	12.6	°C	0.2	mg/L	0.2	mg/L	0.021	mg/L	4	mg/L
	01-XWB	11/15/2017	2.60	0.2	mg/L	31	mg/L	84.8	µS/cm	10.25	mg/L	45.7	cts/100 mL	17	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.92	pH units	4.7	°C	0.428	mg/L	0.43	mg/L	0.012	mg/L	4	mg/L

Pennichuck Water Works
Tributary Sampling Data
2013 through 2017

Total coliform: exceeds detection limits
All others: non-detect
Expected outlier or laboratory error

	Station	Date	eading	Ammonia		Chloride		Conductivity		DO		E. coli		Fecal Coliform		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		TKN		Total Nitrogen		Total Phosphorus		TSS	
02-WCH	02-WCH	1/1/2013																															
	02-WCH	4/4/2013	1.28	0.2	mg/L	14	mg/L	74	µS/cm	12.15	mg/L	2	cts/100 mL	1	cts/100 mL					0.5	mg/L	6.49	pH units	5.8	°C	0.5	mg/L	0.5	mg/L	0.05	mg/L	6	mg/L
	02-WCH	5/6/2013	0.76	0.2	mg/L			109.4	µS/cm	10.10	mg/L	12.2	cts/100 mL	0								7.21	pH units	14.2	°C	0.5	mg/L			0.06	mg/L	6	mg/L
	02-WCH	6/6/2013		0.2	mg/L			84.6	µS/cm	9.28	mg/L	6.3	cts/100 mL	7	cts/100 mL							6.87	pH units	15.2	°C	0.5	mg/L			0.019	mg/L	6	mg/L
	02-WCH	7/17/2013	0.61	0.2	mg/L	30	mg/L	129.7	µS/cm	12.18	mg/L	10.8	cts/100 mL	6	cts/100 mL	0.47	mg/L	0.2	mg/L	0.47	mg/L	6.35	pH units	21.2	°C	0.5	mg/L	0.47	mg/L	0.059	mg/L	6	mg/L
	02-WCH	8/16/2013	0.59	0.2	mg/L	30	mg/L	108.9	µS/cm	9.43	mg/L	9.8	cts/100 mL	0		0.49	mg/L	0.2	mg/L	0.49	mg/L	6.03	pH units	16.3	°C	0.5	mg/L	0.49	mg/L	0.02	mg/L	6	mg/L
	02-WCH	9/17/2013	0.55	0.2	mg/L	30	mg/L	103.5	µS/cm	14.40	mg/L	16.1	cts/100 mL	0		0.48	mg/L	0.2	mg/L	0.48	mg/L	6.19	pH units	11.5	°C	0.5	mg/L	0.48	mg/L	0.02	mg/L	6	mg/L
	02-WCH	10/28/2013	0.58	0.1	mg/L	32	mg/L	94.6	µS/cm	10.89	mg/L	1	cts/100 mL	1	cts/100 mL	0.49	mg/L	0.2	mg/L	0.49	mg/L	6.26	pH units	7.8	°C	0.5	mg/L	0.49	mg/L	0.022	mg/L	6	mg/L
	02-WCH	1/1/2014																															
	02-WCH	4/14/2014	1.28	0.2	mg/L	21	mg/L	70	µS/cm			3.1	cts/100 mL	1	cts/100 mL	0.22	mg/L	0.2	mg/L	0.22	mg/L			11.3	°C	0.2	mg/L	0.22	mg/L	0.04	mg/L	5	mg/L
	02-WCH	5/8/2014	0.98	0.2	mg/L	26	mg/L	110.2	µS/cm	11.18	mg/L	1	cts/100 mL	2	cts/100 mL	0.25	mg/L	0.2	mg/L	0.25	mg/L	6.54	pH units	13.2	°C	0.2	mg/L	0.25	mg/L	0.066	mg/L	4	mg/L
	02-WCH	6/11/2014	0.66	0.2	mg/L	34	mg/L	90.7	µS/cm	11.00	mg/L	8.6	cts/100 mL	2	cts/100 mL	0.48	mg/L	0.2	mg/L	0.48	mg/L	6.80	pH units	15.2	°C	0.2	mg/L	0.48	mg/L	0.034	mg/L	4	mg/L
	02-WCH	7/14/2014	0.54	0.2	mg/L	37	mg/L	104.8	µS/cm	10.17	mg/L	236	cts/100 mL	175	cts/100 mL	0.58	mg/L	0.2	mg/L	0.58	mg/L	7.06	pH units	19	°C	0.2	mg/L	0.58	mg/L	0.044	mg/L	4	mg/L
	02-WCH	8/12/2014	0.51	0.2	mg/L	40	mg/L	105.9	µS/cm	11.00	mg/L	108	cts/100 mL	8	cts/100 mL	0.62	mg/L	0.2	mg/L	0.62	mg/L	6.55	pH units	17	°C	0.2	mg/L	0.62	mg/L	0.018	mg/L	4	mg/L
	02-WCH	9/18/2014	0.48	0.2	mg/L	38	mg/L	96.6	µS/cm	11.92	mg/L	8.5	cts/100 mL	17	cts/100 mL	0.6	mg/L	0.2	mg/L	0.6	mg/L	6.46	pH units	12.7	°C	0.2	mg/L	0.6	mg/L	0.012	mg/L	4	mg/L
	02-WCH	11/5/2014	0.90	0.2	mg/L	26	mg/L	68.8	µS/cm	12.44	mg/L	4.1	cts/100 mL	2	cts/100 mL	0.26	mg/L	0.2	mg/L	0.26	mg/L	6.32	pH units	9.4	°C	0.2	mg/L	0.26	mg/L	0.01	mg/L	4	mg/L
	02-WCH	1/1/2015																															
	02-WCH	4/13/2015	1.48	0.2	mg/L	18	mg/L	142.5	µS/cm	13.02	mg/L	1	cts/100 mL	2	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.98	pH units	9.1	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	02-WCH	5/7/2015	0.89	0.2	mg/L	33	mg/L	131.5	µS/cm	10.72	mg/L	5.2	cts/100 mL	2	cts/100 mL	0.3	mg/L	0.2	mg/L	0.3	mg/L			16.3	°C	0.318	mg/L	0.62	mg/L	0.01	mg/L	4	mg/L
	02-WCH	7/16/2015	0.60	0.2	mg/L	42	mg/L	146.2	µS/cm	10.19	mg/L	35.9	cts/100 mL	40	cts/100 mL	0.67	mg/L	0.2	mg/L	0.67	mg/L	6.64	pH units	16	°C	0.396	mg/L	1.07	mg/L	0.01	mg/L	4	mg/L
	02-WCH	8/6/2015	0.57	0.2	mg/L	45	mg/L	157.1	µS/cm	6.89	mg/L	16	cts/100 mL	6	cts/100 mL	0.64	mg/L	0.2	mg/L	0.64	mg/L	6.56	pH units	16	°C	0.475	mg/L	1.12	mg/L	1.29	mg/L	4	mg/L
	02-WCH	8/27/2015	0.52	0.2	mg/L	46	mg/L	96.6	µS/cm	9.31	mg/L	29.2	cts/100 mL	15	cts/100 mL	0.61	mg/L	0.2	mg/L	0.61	mg/L	6.69	pH units	16.9	°C	0.396	mg/L	1.01	mg/L	0.01	mg/L	4	mg/L
	02-WCH	9/24/2015	0.50	0.2	mg/L	46	mg/L	150	µS/cm	8.70	mg/L	13.4	cts/100 mL	5	cts/100 mL	0.64	mg/L	0.2	mg/L	0.64	mg/L	6.53	pH units	13.4	°C	0.37	mg/L	1.01	mg/L	0.01	mg/L	4	mg/L
	02-WCH	11/5/2015	0.56	0.2	mg/L	41	mg/L	130.4	µS/cm			3	cts/100 mL	5	cts/100 mL	0.46	mg/L	0.2	mg/L	0.46	mg/L	6.39	pH units	9.9	°C	0.217	mg/L	0.68	mg/L	0.01	mg/L	4	mg/L
	02-WCH	1/1/2016																															
	02-WCH	4/21/2016	1.52	0.2	mg/L	27	mg/L	127	µS/cm			1	cts/100 mL	5	cts/100 mL	0.23	mg/L	0.2	mg/L	0.23	mg/L	6.30	pH units	12.7	°C	0.2	mg/L	0.23	mg/L	0.01	mg/L	4	mg/L
	02-WCH	6/2/2016	1.70	0.2	mg/L	40	mg/L	137.9	µS/cm	6.71	mg/L	19.9	cts/100 mL			0.53	mg/L	0.2	mg/L	0.53	mg/L	6.49	pH units	14.2	°C	1.03	mg/L	1.56	mg/L	0.018	mg/L	4	mg/L
	02-WCH	6/27/2016	2.60	0.2	mg/L	47	mg/L	179.9	µS/cm	6.03	mg/L	17.3	cts/100 mL	33	cts/100 mL	0.62	mg/L	0.2	mg/L	0.62	mg/L	6.71	pH units	19.8	°C	0.203	mg/L	0.82	mg/L	0.016	mg/L	4	mg/L
	02-WCH	7/28/2016	1.45	0.2	mg/L	50	mg/L	199.6	µS/cm	6.44	mg/L	43.2	cts/100 mL	36	cts/100 mL	0.5	mg/L	0.2	mg/L	0.5	mg/L	6.65	pH units	21.6	°C	2.6	mg/L	3.1	mg/L	0.01	mg/L	4	mg/L
	02-WCH	8/25/2016	1.60	0.2	mg/L	47	mg/L	185.7	µS/cm	6.48	mg/L	82	cts/100 mL	30	cts/100 mL	0.51	mg/L	0.2	mg/L	0.51	mg/L	6.40	pH units	20.1	°C	3.97	mg/L	4.48	mg/L	0.011	mg/L	4	mg/L
	02-WCH	9/22/2016	1.80	0.2	mg/L	48	mg/L	175.2	µS/cm	7.24	mg/L	365	cts/100 mL	299	cts/100 mL	0.52	mg/L	0.2	mg/L	0.52	mg/L	6.48	pH units	17.1	°C	0.311	mg/L	0.83	mg/L	0.061	mg/L	21	mg/L
	02-WCH	10/19/2016	2.00	0.2	mg/L	49	mg/L	167.7	µS/cm	6.54	mg/L	21.6	cts/100 mL	54	cts/100 mL	0.37	mg/L	0.2	mg/L	0.37	mg/L	6.50	pH units	14.9	°C	0.845	mg/L	1.22	mg/L	0.038	mg/L	12	mg/L
	02-WCH	1/1/2017																															
	02-WCH	5/4/2017	2.09	0.2	mg/L	24	mg/L	87.4	µS/cm	9.15	mg/L	52.9	cts/100 mL	32	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.98	pH units	13.9	°C	0.506	mg/L	0.51	mg/L	0.013	mg/L	4	mg/L
	02-WCH	6/14/2017	1.65	0.2	mg/L	39	mg/L	145.8	µS/cm	7.34	mg/L	6.3	cts/100 mL	13	cts/100 mL	0.37	mg/L	0.2	mg/L	0.37	mg/L	6.54	pH units	18.6	°C	0.576	mg/L	0.95	mg/L	0.010	mg/L	4	mg/L
	02-WCH	7/6/2017	1.39	0.2	mg/L	51	mg/L	184.2	µS/cm	8.21	mg/L	32.7	cts/100 mL	24	cts/100 mL	0.62	mg/L	0.2	mg/L	0.62	mg/L	6.34	pH units	17.7	°C	0.576	mg/L	0.58	mg/L	0.017	mg/L	4	mg/L
	02-WCH	8/22/2017	1.22	0.2	mg/L	50	mg/L					37.9	cts/100 mL	39	cts/100 mL	0.54	mg/L	0.2	mg/L	0.54	mg/L					0.2	mg/L	0.54	mg/L	0.010	mg/L	4	mg/L
	02-WCH	9/27/2017	1.90	0.2	mg/L	51	mg/L					29.5	cts/100 mL	23	cts/100 mL	0.66	mg/L	0.2	mg/L	0.66	mg/L					0.2	mg/L	0.66	mg/L	0.010	mg/L	4	mg/L
	02-WCH	10/19/2017	0.80	0.2	mg/L	48	mg/L	146	µS/cm	9.70	mg/L	161	cts/100 mL	194	cts/100 mL	0.59	mg/L	0.2	mg/L	0.59	mg/L	6.10	pH units	11.6	°C	0.315	mg/L	0.9	mg/L	0.010	mg/L	4	mg/L
	02-WCH	11/15/2017	1.02	0.2	mg/L	29	mg/L	80.5	µS/cm	13.52	mg/L	25.9	cts/100 mL	4	cts/100 mL	0.28	mg/L	0.2	mg/L	0.28	mg/L	6.13	pH units	5.3	°C	0.315	mg/L	0.6	mg/L	0.010	mg/L	4	mg/L
01-HAY	01-HAY	1/1/2013																															
	01-HAY	4/4/2013																															
	01-HAY	5/6/2013																															
	01-HAY	6/6/2013																															
	01-HAY	7/17/2013																															
	01-HAY	8/16/2013																															
	01-HAY	9/17/2013																															
	01-HAY	10/28/2013																															
	01-HAY	1/1/2014																															
	01-HAY	4/14/2014																															
	01-HAY	5/8/2014																															
	01-HAY	6/11/2014																															
	01-HAY	7/14/2014																															
	01-HAY	8/12/2014																															
	01-HAY	9/18/2014																															
	01-HAY	11/5/2014																															
	01-HAY	1/1/2015																															
	01-HAY	4/13/2015																															
	01-HAY	5/7/2015																															
	01-HAY	7/16/2015																															
	01-HAY	8/6/2015																															
	01-HAY	8/27/2015																															
	01-HAY	9/24/2015																															
	01-HAY	11/5/2015																															
	01-HAY	1/1/2016																															
	01-HAY	4/21/2016	0.98	0.2	mg/L	8	mg/L	51	µS/cm			1	cts/100 mL	1	cts/100 mL	0.2	mg/L	0.2	mg/L			6.32	pH units	12.54	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	01-HAY	6/2/2016	1.71	0.2	mg/L	8	mg/L	41.9	µS/cm	6.75	mg/L	135	cts/100 mL			0.2	mg/L	0.2	mg/L			6.57	pH units	15.1	°C	0.2	mg/L	0.2	mg/L	0.01	mg/L	4	mg/L
	01-HAY	6/27/2016	0.00	0.2	mg/L	21	mg/L	107.2	µS/cm	3.05	mg/L	6.3	cts/100 mL	96	cts/100 mL	0.2	mg/L	0.2	mg/L			6.82	pH units	20.7	°C	0.247	mg/L	0.25	mg/L	0.034	mg/L	4	mg/L
	01-HAY	7/28/2016	0.00																														
	01-HAY	8/25/2016	0.00																														
	01-HAY	9/22/2016	0.00																														
	01-HAY	10/19/2016	0.00																														
	01-HAY	1/1/2017																															
	01-HAY	5/4/2017	1.10	0.2	mg/L	6	mg/L	32	µS/cm	7.93	mg/L	7.4	cts/100 mL	11	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.16	pH units	13	°C	0.506	mg/L	0.51	mg/L	0.010	mg/L	4	mg/L
	01-HAY	6/14/2017	0.76	0.31	mg/L	7	mg/L	41	µS/cm	6.03	mg/L	63.8	cts/100 mL	63	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.53	pH units	20.2	°C	0.46	mg/L	0.46	mg/L	0.011	mg/L	4	mg/L
	01-HAY	7/6/2017	0.63	0.2	mg/L	5	mg/L	36.7	µS/cm	5.80	mg/L	22.6	cts/100 mL	16	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	19.7	°C	0.576	mg/L	0.58	mg/L	0.011	mg/L	4	mg/L
	01-HAY	8/22/2017	0.47	0.2	mg/L	8	mg/L					36.4	cts/100 mL	54	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					3.13	mg/L	3.13	mg/L	0.010	mg/L	4	mg/L
	01-HAY	9/27/2017	1.50	0.2	mg/L	7	mg/L					199	cts/100 mL	185	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L					0.881	mg/L	0.88	mg/L	0.010	mg/L	4	mg/L
	01-HAY	10/19/2017	0.50	0.2	mg/L	9	mg/L	39	µS/cm	8.11	mg/L	31.3	cts/100 mL	45	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.40	pH units	12.2	°C	0.2	mg/L	0.2	mg/L	0.010	mg/L	4	mg/L
	01-HAY	11/15/2017	0.79	0.2	mg/L	4	mg/L	20.2	µS/cm	13.30	mg/L	21.3	cts/100 mL	1	cts/100 mL	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.86	pH units	4.8	°C	0.655	mg/L	0.66	mg/L	0.010	mg/L	4	mg/L

Attachment B:
Groundwater Sampling Data, 2012 through 2017

Pennichuck Water Works
Groundwater Sampling Data
2013 through 2017

Filtered Phosphorus - outlier >0.250 mg/L
Filtered Phosphorus - caution, abnormally high value
All - non-detect

	Station	Date	Water Level Depth	Ammonia		Chloride		Conductivity		DO		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		Total Alkalinity		Total Dissolved Solids		TKN		Total Nitrogen		Total Phosphorus, Filtered		Total Phosphorus, Unfiltered	
01-BFB	01-BFB	1/1/2013																															
	01-BFB	4/4/2013				86	mg/L									0.5	mg/L									0.7	mg/L	0.7	mg/L	0.22	mg/L		
	01-BFB	7/17/2013	2.32	0.4	mg/L	90	mg/L	426	µS/cm	4.23	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.08	pH units	17.7	°C					0.5	mg/L	0.2	mg/L	0.2	mg/L		
	01-BFB	8/16/2013	2.50	0.2	mg/L	200	mg/L	646	µS/cm	2.61	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.51	pH units	17.1	°C					0.5	mg/L	0.2	mg/L	0.024	mg/L		
	01-BFB	9/10/2013	2.75	0.2	mg/L	133	mg/L	436	µS/cm	2.83	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.63	pH units	17.4	°C					0.5	mg/L	0.2	mg/L	0.02	mg/L		
	01-BFB	10/28/2013	2.89	0.1	mg/L	135	mg/L	406	µS/cm	2.71	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.61	pH units	13.5	°C					0.5	mg/L	0.2	mg/L	0.052	mg/L		
	01-BFB	1/1/2014																															
	01-BFB	4/14/2014	1.83	0.2	mg/L	209	mg/L	720	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	7.45	pH units	7.4	°C					0.2	mg/L	0.2	mg/L	0.029	mg/L		
	01-BFB	5/8/2014	2.13	0.2	mg/L	76	mg/L	280	µS/cm	8.80	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.35	pH units	8.8	°C					0.2	mg/L	0.2	mg/L	0.06	mg/L		
	01-BFB	6/11/2014	2.46	0.2	mg/L	304	mg/L	519	µS/cm	8.13	mg/L	0.5	mg/L	0.2	mg/L	0.5	mg/L	7.60	pH units	11.5	°C					0.2	mg/L	0.5	mg/L	0.094	mg/L		
	01-BFB	7/14/2014	2.66	0.2	mg/L	196	mg/L	472	µS/cm	2.98	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.92	pH units	15.8	°C					0.2	mg/L	0.2	mg/L	0.066	mg/L		
	01-BFB	8/12/2014	2.78	0.2	mg/L	254	mg/L	571	µS/cm	2.87	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.69	pH units	17.5	°C					0.2	mg/L	0.2	mg/L	0.034	mg/L		
	01-BFB	9/18/2014	2.91	0.2	mg/L	119	mg/L	315	µS/cm	2.98	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.79	pH units	16.9	°C					0.2	mg/L	0.2	mg/L	0.021	mg/L		
	01-BFB	11/5/2014	2.51	0.2	mg/L	143	mg/L	385	µS/cm	2.45	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.91	pH units	13.8	°C					0.2	mg/L	0.2	mg/L	0.013	mg/L		
	01-BFB	1/1/2015																															
	01-BFB	4/13/2015	1.89	0.2	mg/L	113	mg/L	423	µS/cm	8.75	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.75	pH units	5.6	°C					0.2	mg/L	0.2	mg/L	0.012	mg/L		
	01-BFB	5/7/2015	2.22	0.2	mg/L	211	mg/L	680	µS/cm	7.60	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L			10.9	°C					0.438	mg/L	0.44	mg/L	0.01	mg/L		
	01-BFB	7/16/2015	2.60	0.2	mg/L	279	mg/L	856	µS/cm	2.57	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.73	pH units	14.4	°C					0.498	mg/L	0.498	mg/L	0.01	mg/L		
	01-BFB	8/6/2015	2.77	0.2	mg/L	181	mg/L	579	µS/cm	1.73	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.70	pH units	16.2	°C					0.633	mg/L	0.63	mg/L	0.016	mg/L		
	01-BFB	8/27/2015	2.86	0.2	mg/L	212	mg/L	695	µS/cm	2.04	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.72	pH units	17.5	°C					0.396	mg/L	0.4	mg/L	0.01	mg/L		
	01-BFB	9/24/2015	2.89	0.2	mg/L	202	mg/L	681	µS/cm	2.09	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.49	pH units	17.7	°C					0.393	mg/L	0.39	mg/L	0.01	mg/L		
	01-BFB	11/5/2015	2.80	0.2	mg/L	140	mg/L	523	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	7.02	pH units	15.2	°C					0.679	mg/L	0.68	mg/L	0.256	mg/L		
	01-BFB	1/1/2016																															
	01-BFB	4/21/2016	2.45	0.2	mg/L	282	mg/L	1090	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.80	pH units	7.36	°C					1.14	mg/L	1.14	mg/L			0.568	mg/L
	01-BFB	6/2/2016	2.80	0.2	mg/L	239	mg/L	690	µS/cm	3.46	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.70	pH units	10.5	°C					0.608	mg/L	0.61	mg/L			0.633	mg/L
	01-BFB	6/27/2016	2.96	0.2	mg/L	227	mg/L	752	µS/cm	2.61	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.63	pH units	14.3	°C					1.58	mg/L	1.58	mg/L			1.320	mg/L
	01-BFB	7/28/2016	3.80	0.2	mg/L	212	mg/L	736	µS/cm	2.37	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.27	pH units	17.1	°C					1.47	mg/L	1.47	mg/L			0.825	mg/L
	01-BFB	8/25/2016	3.20	0.2	mg/L	152	mg/L	631	µS/cm	3.10	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.99	pH units	18.6	°C					3.3	mg/L	3.3	mg/L			1.200	mg/L
	01-BFB	9/22/2016	2.90	0.2	mg/L	127	mg/L	552	µS/cm	3.38	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.93	pH units	18.4	°C					0.589	mg/L	0.59	mg/L			0.391	mg/L
	01-BFB	10/19/2016	2.80	0.2	mg/L	121	mg/L	487.4	µS/cm	1.91	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.50	pH units	16.9	°C					0.662	mg/L	0.66	mg/L			0.119	mg/L
	01-BFB	1/1/2017																															
	01-BFB	5/4/2017	2.00	0.2	mg/L	81	mg/L	348.1	µS/cm	6.23	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.88	pH units	8.5	°C	37	g CaCO3/L	199	mg/L	1.79	mg/L	1.79	mg/L			1.260	mg/L
	01-BFB	6/15/2017	2.15	0.2	mg/L	178	mg/L	540	µS/cm	6.35	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.15	pH units	11.6	°C	32	g CaCO3/L	344	mg/L	0.887	mg/L	0.89	mg/L			0.836	mg/L
	01-BFB	7/6/2017	2.37	0.2	mg/L	155	mg/L	524	µS/cm	3.40	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	9.18	pH units	13.4	°C	64	g CaCO3/L	407	mg/L	1.27	mg/L	1.27	mg/L			0.463	mg/L
	01-BFB	8/22/2017	2.55	0.2	mg/L	214	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L					77	g CaCO3/L	389	mg/L	1.39	mg/L	1.39	mg/L			0.856	mg/L
	01-BFB	9/27/2017	3.67	0.2	mg/L	108	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L					66	g CaCO3/L	291	mg/L	0.881	mg/L	0.88	mg/L			0.629	mg/L
	01-BFB	10/19/2017	2.79	0.2	mg/L	216	mg/L	641	µS/cm	3.30	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.70	pH units	16.1	°C	60	g CaCO3/L	471	mg/L	0.541	mg/L	0.54	mg/L			0.534	mg/L
	01-BFB	11/15/2017	2.38	0.2	mg/L	146	mg/L	551	µS/cm	1.65	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	8.35	pH units	13.3	°C	74	g CaCO3/L	374	mg/L	0.655	mg/L	0.66	mg/L			0.344	mg/L
09-PEN	09-PEN	1/1/2013																															
	09-PEN	4/4/2013				410	mg/L									0.9	mg/L									0.5	mg/L	0.9	mg/L	0.01	mg/L		
	09-PEN	7/17/2013	2.92	0.4	mg/L	227	mg/L	780	µS/cm	12.25	mg/L	0.67	mg/L	0.2	mg/L	0.67	mg/L	6.53	pH units	23.1	°C					0.5	mg/L	0.67	mg/L	0.074	mg/L		
	09-PEN	8/16/2013	2.97	0.2	mg/L	235	mg/L	741	µS/cm	7.56	mg/L	1.14	mg/L	0.2	mg/L	1.14	mg/L	6.42	pH units	18.3	°C					2.8	mg/L	3.9	mg/L	0.02	mg/L		
	09-PEN	9/10/2013	3.27	0.2	mg/L	266	mg/L	716	µS/cm	12.81	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.51	pH units	17.4	°C					0.5	mg/L	0.2	mg/L	0.02	mg/L		
	09-PEN	10/28/2013	3.22	0.1	mg/L	150	mg/L	439	µS/cm	10.42	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.65	pH units	13	°C					0.5	mg/L	0.2	mg/L	0.04	mg/L		
	09-PEN	1/1/2014																															
	09-PEN	4/14/2014	2.53	0.2	mg/L	333	mg/L	860	µS/cm			2.03	mg/L	0.2	mg/L	0.2	mg/L	6.37	pH units	15	°C					0.2	mg/L	2.03	mg/L	0.051	mg/L		
	09-PEN	5/8/2014	2.65	0.2	mg/L	401	mg/L	1369	µS/cm	10.46	mg/L	2.75	mg/L	0.2	mg/L	2.75	mg/L	6.73	pH units	12	°C					0.2	mg/L	2.75	mg/L	0.138	mg/L		
	09-PEN	6/11/2014	3.13	0.2	mg/L	443	mg/L	902	µS/cm	9.86	mg/L	1.56	mg/L	0.2	mg/L	1.56	mg/L	6.78	pH units	16.2	°C					0.2	mg/L	1.56	mg/L	0.045	mg/L		
	09-PEN	7/14/2014	3.20	0.2	mg/L	425	mg/L	922	µS/cm	9.68	mg/L	0.56	mg/L	0.2	mg/L	0.56	mg/L	6.79	pH units	20.2	°C					0.2	mg/L	0.56	mg/L	0.056	mg/L		
	09-PEN	8/12/2014	3.31	0.2	mg/L	248	mg/L	595	µS/cm	10.36	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	7.09	pH units	19	°C					0.2	mg/L	0.2	mg/L	0.027	mg/L		
	09-PEN	9/18/2014	3.28	0.2	mg/L	124	mg/L	356	µS/cm	10.83	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.90	pH units	15.8	°C					0.876	mg/L	0.88	mg/L	0.062	mg/L		
	09-PEN	11/5/2014	3.01	0.2	mg/L	220	mg/L	474	µS/cm	10.98	mg/L	3.36	mg/L	0.2	mg/L	3.36	mg/L	6.92	pH units	12.9	°C					0.2	mg/L	3.36	mg/L	0.01	mg/L		
	09-PEN	1/1/2015																															
	09-PEN	4/13/2015	2.38	0.2	mg/L	211	mg/L	728	µS/cm	11.27	mg/L	1.32	mg/L	0.2	mg/L	1.32	mg/L	6.96	pH units	10.2	°C					0.975	mg/L	0.98	mg/L	0.01	mg/L		
	09-PEN	5/7/2015	2.90	0.2	mg/L	163	mg/L	598	µS/cm	10.44	mg/L	1.83	mg/L	0.2	mg/L	1.83	mg/L			14.1	°C					0.458	mg/L	2.29	mg/L	0.02	mg/L		
	09-PEN	7/16/2015	3.08	0.2	mg/L	260	mg/L	801	µS/cm	6.03	mg/L	2.58	mg/L	0.2	mg/L	2.58	mg/L	6.94	pH units	16.8	°C					0.2	mg/L	2.58	mg/L	0.01	mg/L		
	09-PEN	8/6/2015	3.24	0.2	mg/L	249	mg/L	770	µS/cm	6.72	mg/L	0.45	mg/L	0.2	mg/L	0.45	mg/L	6.95	pH units	17.5	°C					0.633	mg/L	1.08	mg/L	0.01	mg/L		
	09-PEN	8/27/2015	3.28	0.2	mg/L	130	mg/L	484.5	µS/cm	6.24	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.84	pH units	18.8	°C					0.593	mg/L	0.59	mg/L	0.01	mg/L		
	09-PEN	9/24/2015	3.38	0.2	mg/L	94	mg/L	366.6	µS/cm	6.54	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.97	pH units	18.8	°C					0.635	mg/L	0.64	mg/L	0.01	mg/L		
	09-PEN	11/5/2015	3.10	0.2	mg/L	96	mg/L	378.4	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.89	pH units	16.8	°C					0.283	mg/L	0.28	mg/L	0.017	mg/L		

Pennichuck Water Works
Groundwater Sampling Data
2013 through 2017

Filtered Phosphorus - outlier >0.250 mg/L
Filtered Phosphorus - caution, abnormally high value
All - non-detect

	Station	Date	Water Level Depth	Ammonia	Chloride	Conductivity	DO	Nitrate	Nitrite	Nitrate/Nitrite	pH	Temperature	Total Alkalinity	Total Dissolved Solids	TKN	Total Nitrogen	Total Phosphorus, Filtered	Total Phosphorus, Unfiltered
09T-PEN	09T-PEN	1/1/2013																
	09T-PEN	4/4/2013			26 mg/L					0.5 mg/L					0.5 mg/L	0.5 mg/L	0.01 mg/L	
	09T-PEN	7/17/2013	3.20	0.4 mg/L	23 mg/L	184 µS/cm	9.54 mg/L	0.2 mg/L	0.2 mg/L	0.4 mg/L	6.04 pH units	24.2 °C			7.27 mg/L	7.27 mg/L	2.97 mg/L	
	09T-PEN	8/16/2013	3.28	0.2 mg/L	21 mg/L	131.4 µS/cm	6.38 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.64 pH units	18.1 °C			4.07 mg/L	4.07 mg/L	0.327 mg/L	
	09T-PEN	9/10/2013	3.97	0.2 mg/L	21 mg/L	97 µS/cm	7.94 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.93 pH units	17.1 °C			0.5 mg/L	0.2 mg/L	0.061 mg/L	
	09T-PEN	10/28/2013	3.87	0.1 mg/L	21 mg/L	101.8 µS/cm	9.39 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.19 pH units	12.7 °C			0.5 mg/L	0.2 mg/L	0.02 mg/L	
	09T-PEN	1/1/2014																
	09T-PEN	4/14/2014	2.60	0.2 mg/L	70 mg/L	170 µS/cm		0.41 mg/L	0.2 mg/L	0.2 mg/L	6.79 pH units	12.2 °C			4.2 mg/L	4.61 mg/L	2.11 mg/L	
	09T-PEN	5/8/2014	3.01	0.2 mg/L	28 mg/L	161.1 µS/cm	8.27 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.62 pH units	10.7 °C			3.17 mg/L	3.17 mg/L	2.03 mg/L	
	09T-PEN	6/11/2014	3.48	0.2 mg/L	23 mg/L	84.1 µS/cm	6.90 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.49 pH units	13.9 °C			0.2 mg/L	0.2 mg/L	0.623 mg/L	
	09T-PEN	7/14/2014	3.53	0.2 mg/L	28 mg/L	89.2 µS/cm	8.63 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.53 pH units	18.2 °C			1.46 mg/L	1.46 mg/L	0.368 mg/L	
	09T-PEN	8/12/2014	3.85	0.2 mg/L	27 mg/L	80.2 µS/cm	10.14 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.71 pH units	17.4 °C			0.2 mg/L	0.2 mg/L	0.01 mg/L	
	09T-PEN	9/18/2014	3.96	0.2 mg/L	28 mg/L	85.4 µS/cm	9.64 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.58 pH units	16.6 °C			1.48 mg/L	1.48 mg/L	0.311 mg/L	
	09T-PEN	11/5/2014	3.24	0.2 mg/L	39 mg/L	121.9 µS/cm	10.11 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.73 pH units	13.6 °C			0.2 mg/L	0.2 mg/L	0.507 mg/L	
	09T-PEN	1/1/2015																
	09T-PEN	4/13/2015	2.57	0.2 mg/L	23 mg/L	136.7 µS/cm	9.89 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.60 pH units	8.1 °C			0.2 mg/L	0.2 mg/L	0.275 mg/L	
	09T-PEN	5/7/2015	3.17	0.2 mg/L	20 mg/L	117.2 µS/cm	9.39 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L		14 °C			1.14 mg/L	1.14 mg/L	0.223 mg/L	
	09T-PEN	7/16/2015	3.34	0.2 mg/L	27 mg/L	99.4 µS/cm	7.73 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.26 pH units	16.5 °C			0.731 mg/L	0.731 mg/L	0.564 mg/L	
	09T-PEN	8/6/2015	3.78	0.2 mg/L	44 mg/L	126.9 µS/cm	6.70 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.55 pH units	18 °C			2.09 mg/L	2.09 mg/L	0.01 mg/L	
	09T-PEN	8/27/2015	4.04	0.2 mg/L	35 mg/L	137.8 µS/cm	5.95 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.12 pH units	18.7 °C			0.987 mg/L	0.99 mg/L	0.01 mg/L	
	09T-PEN	9/24/2015	4.26		29 mg/L	107.3 µS/cm	6.04 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.40 pH units	17.5 °C					0.01 mg/L	
	09T-PEN	11/5/2015	3.76	0.2 mg/L	86 mg/L	270.8 µS/cm		0.2 mg/L	0.2 mg/L	0.2 mg/L	6.23 pH units	13.6 °C			0.2 mg/L	0.2 mg/L	0.01 mg/L	
	09T-PEN	1/1/2016																
	09T-PEN	4/21/2016	3.49	0.2 mg/L	41 mg/L	204 µS/cm		0.2 mg/L	0.2 mg/L	0.2 mg/L	5.90 pH units	9.51 °C			0.794 mg/L	0.79 mg/L		0.348 mg/L
	09T-PEN	6/2/2016	3.90	0.2 mg/L	44 mg/L	128.9 µS/cm	6.17 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.17 pH units	11.6 °C			1.03 mg/L	1.03 mg/L		0.267 mg/L
	09T-PEN	6/27/2016	1.03	0.2 mg/L	43 mg/L	163.7 µS/cm	5.85 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.32 pH units	15.6 °C			3.12 mg/L	3.12 mg/L		1.77 mg/L
	09T-PEN	7/28/2016	4.84	0.2 mg/L	55 mg/L	237.2 µS/cm	5.54 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.96 pH units	18.4 °C			1.61 mg/L	1.61 mg/L		0.893 mg/L
	09T-PEN	8/25/2016	4.35	0.2 mg/L	47 mg/L	255.3 µS/cm	6.08 mg/L	0.57 mg/L	0.2 mg/L	0.57 mg/L	7.07 pH units	18.1 °C			3.14 mg/L	3.71 mg/L		4.28 mg/L
	09T-PEN	9/22/2016	4.09	0.2 mg/L	22 mg/L	198.7 µS/cm	6.66 mg/L	0.56 mg/L	0.2 mg/L	0.56 mg/L	7.62 pH units	17.4 °C			4.27 mg/L	4.38 mg/L		0.02 mg/L
	09T-PEN	10/19/2016	4.13	0.2 mg/L	43 mg/L	213.8 µS/cm	5.63 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.53 pH units	16.4 °C			0.754 mg/L	0.75 mg/L		0.343 mg/L
	09T-PEN	1/1/2017																
	09T-PEN	5/4/2017	2.78	0.2 mg/L	51 mg/L	229.2 µS/cm	7.72 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.42 pH units	10.1 °C	11 g CaCO3/L	452 mg/L	1.79 mg/L	1.79 mg/L		0.86 mg/L
	09T-PEN	6/15/2017	3.08	0.2 mg/L	41 mg/L	247.8 µS/cm	6.50 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.20 pH units	14 °C	9 g CaCO3/L	208 mg/L	0.496 mg/L	0.5 mg/L		0.441 mg/L
	09T-PEN	7/6/2017	3.38	0.2 mg/L	48 mg/L	169 µS/cm	4.61 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.73 pH units	15 °C	9 g CaCO3/L	136 mg/L	0.2 mg/L	0.2 mg/L		1.8 mg/L
	09T-PEN	8/22/2017	2.98	0.2 mg/L	47 mg/L			0.2 mg/L	0.2 mg/L	0.2 mg/L			10 g CaCO3/L	287 mg/L	1.27 mg/L	1.27 mg/L		0.487 mg/L
	09T-PEN	9/27/2017	3.91	0.2 mg/L	93 mg/L			0.2 mg/L	0.2 mg/L	0.2 mg/L			13 g CaCO3/L	643 mg/L	0.655 mg/L	0.66 mg/L		0.952 mg/L
	09T-PEN	10/19/2017	3.85	0.2 mg/L	58 mg/L	128 µS/cm	8.80 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.79 pH units	15 °C	10 g CaCO3/L	119 mg/L	1.11 mg/L	1.11 mg/L		0.669 mg/L
	09T-PEN	11/15/2017	3.34	0.2 mg/L	41 mg/L	514 µS/cm	5.65 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.75 pH units	11.7 °C	16 g CaCO3/L	348 mg/L	1.56 mg/L	1.56 mg/L		0.218 mg/L
01-CML (09-XPB)	01-CML (09	1/1/2013																
	01-CML (09	4/4/2013			67 mg/L					0.5 mg/L					0.5 mg/L	0.5 mg/L	0.13 mg/L	
	01-CML (09	7/17/2013	3.20	0.4 mg/L	456 mg/L	1229 µS/cm	4.57 mg/L	0.2 mg/L	0.2 mg/L	0.4 mg/L	5.62 pH units	20.1 °C			0.5 mg/L	0.2 mg/L	0.035 mg/L	
	01-CML (09	8/16/2013	3.26	0.2 mg/L	158 mg/L	486 µS/cm	7.00 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	5.98 pH units	16.3 °C			0.5 mg/L	0.2 mg/L	0.08 mg/L	
	01-CML (09	9/10/2013	3.47	0.2 mg/L	88 mg/L	264 µS/cm	7.50 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.66 pH units	15.7 °C			0.5 mg/L	0.2 mg/L	0.02 mg/L	
	01-CML (09	10/28/2013	3.46	0.1 mg/L	63 mg/L	185 µS/cm	6.82 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.48 pH units	13.4 °C			0.5 mg/L	0.2 mg/L	0.031 mg/L	
	01-CML (09	1/1/2014																
	01-CML (09	4/14/2014	2.95	0.2 mg/L	57 mg/L	230 µS/cm		0.2 mg/L	0.2 mg/L	0.2 mg/L		11.9 °C			0.2 mg/L	0.2 mg/L	0.379 mg/L	
	01-CML (09	5/8/2014	3.09	0.2 mg/L	39 mg/L	165.4 µS/cm	7.42 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.46 pH units	12.9 °C			0.2 mg/L	0.2 mg/L	0.071 mg/L	
	01-CML (09	6/11/2014	3.24	0.2 mg/L	61 mg/L	796 µS/cm	7.07 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.02 pH units	14 °C			0.2 mg/L	0.2 mg/L	0.036 mg/L	
	01-CML (09	7/14/2014	3.37	0.2 mg/L	360 mg/L	720 µS/cm	7.86 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.33 pH units	16.1 °C			0.2 mg/L	0.2 mg/L	0.032 mg/L	
	01-CML (09	8/12/2014	3.44	0.2 mg/L	253 mg/L	508 µS/cm	9.13 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.45 pH units	16.1 °C			0.2 mg/L	0.2 mg/L	0.01 mg/L	
	01-CML (09	9/18/2014	3.47	0.2 mg/L	122 mg/L	264 µS/cm	9.26 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.56 pH units	15 °C			0.2 mg/L	0.2 mg/L	0.221 mg/L	
	01-CML (09	11/5/2014	3.10	0.2 mg/L	150 mg/L	332 µS/cm	9.00 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.27 pH units	13.8 °C			0.2 mg/L	0.2 mg/L	0.01 mg/L	
	01-CML (09	1/1/2015																
	01-CML (09	4/13/2015	2.91	0.2 mg/L	89 mg/L	373 µS/cm	9.91 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.67 pH units	9.5 °C			0.2 mg/L	0.2 mg/L	0.01 mg/L	
	01-CML (09	5/7/2015	3.09	0.2 mg/L	83 mg/L	273 µS/cm	9.02 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L		14.5 °C			0.398 mg/L	0.4 mg/L	0.01 mg/L	
	01-CML (09	7/16/2015	2.91	0.2 mg/L	252 mg/L	660 µS/cm	7.31 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.06 pH units	13.7 °C			0.2 mg/L	0.554 mg/L	0.01 mg/L	
	01-CML (09	8/6/2015	2.71	0.2 mg/L	247 mg/L	724 µS/cm	6.04 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.09 pH units	15.6 °C			0.77 mg/L	0.77 mg/L	0.01 mg/L	
	01-CML (09	8/27/2015	3.10	0.2 mg/L	125 mg/L	385.6 µS/cm	5.66 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.29 pH units	15.3 °C			0.593 mg/L	0.59 mg/L	0.01 mg/L	
	01-CML (09	9/24/2015	3.29	0.2 mg/L	90 mg/L	275.6 µS/cm	2.19 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.36 pH units	15 °C			0.503 mg/L	0.5 mg/L	0.038 mg/L	
	01-CML (09	11/5/2015	2.95	0.2 mg/L	62 mg/L	226.7 µS/cm		0.2 mg/L	0.2 mg/L	0.2 mg/L	6.39 pH units	13.8 °C			0.305 mg/L	0.3 mg/L	0.031 mg/L	
	01-CML (09	1/1/2016																
	01-CML (09	4/21/2016	3.25	0.28 mg/L	73 mg/L	325 µS/cm		0.2 mg/L	0.2 mg/L	0.2 mg/L	6.05 pH units	11.56 °C			4.37 mg/L	4.65 mg/L		1.13 mg/L
	01-CML (09	6/2/2016	3.05	0.2 mg/L	137 mg/L	384 µS/cm	5.12 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.60 pH units	12.6 °C			0.957 mg/L	0.96 mg/L		0.282 mg/L
	01-CML (09	6/27/2016	1.08	0.2 mg/L	92 mg/L	321.3 µS/cm	3.45 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.62 pH units	16.5 °C			10.1 mg/L	10.1 mg/L		2.49 mg/L
	01-CML (09	7/28/2016	3.75	0.2 mg/L	59 mg/L	203.1 µS/cm	6.16 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.04 pH units	14.7 °C			2.21 mg/L	2.21 mg/L		0.845 mg/L
	01-CML (09	8/25/2016	4.60	0.2 mg/L	66 mg/L	224.6 µS/cm	6.17 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.90 pH units	16.1 °C			2.35 mg/L	2.35 mg/L		0.696 mg/L
	01-CML (09	9/22/2016	2.72	0.2 mg/L	71 mg/L	250.8 µS/cm	7.15 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	7.28 pH units	17 °C			1.24 mg/L	1.24 mg/L		0.341 mg/L
	01-CML (09	10/19/2016	3.55	0.2 mg/L	74 mg/L	257.2 µS/cm	6.77 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.82 pH units	15.2 °C			1.19 mg/L	1.19 mg/L		0.087 mg/L
	01-CML (09	1/1/2017																
	01-CML (09	5/4/2017	1.67	0.2 mg/L	98 mg/L	319.4 µS/cm	9.10 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.97 pH units	11.4 °C	6 g CaCO3/L	228 mg/L	1.09 mg/L	1.09 mg/L		0.595 mg/L
	01-CML (09	6/15/2017	2.75	0.2 mg/L	578 mg/L	1385 µS/cm	5.90 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.43 pH units	13.1 °C	5 g CaCO3/L	991 mg/L	1.75 mg/L	1.75 mg/L		1.26 mg/L
	01-CML (09	7/6/2017	2.93	0.2 mg/L	438 mg/L	1181 µS/cm	5.04 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.27 pH units	13.3 °C	9 g CaCO3/L	829 mg/L	0.2 mg/L	0.2 mg/L		0.606 mg/L
	01-CML (09	8/22/2017	2.94	0.21 mg/L	176 mg/L			0.2 mg/L	0.2 mg/L	0.2 mg/L			22 g CaCO3/L	353 mg/L	3.48 mg/L	3.69 mg/L		0.929 mg/L
	01-CML (09	9/27/2017	3.23	0.2 mg/L	166 mg/L			0.2 mg/L	0.2 mg/L	0.2 mg/L			24 g CaCO3/L	338 mg/L	2.92 mg/L	2.92 mg/L		0.828 mg/L
	01-CML (09	10/19/2017	3.35	0.2 mg/L	103 mg/L	322 µS/cm	8.27 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.71 pH units	16.2 °C	26 g CaCO3/L	198 mg/L	2.01 mg/L	2.01 mg/L		0.664 mg/L
	01-CML (09	11/15/2017	3.08	0.2 mg/L	73 mg/L	251 µS/cm	5.05 mg/L	0.2 mg/L	0.2 mg/L	0.2 mg/L	6.91 pH units	14.1 °C	33 g CaCO3/L	180 mg/L	11.3 mg/L	11.3 mg/L		1.71 mg/L

Pennichuck Water Works
Groundwater Sampling Data
2013 through 2017

Filtered Phosphorus - outlier >0.250 mg/L
Filtered Phosphorus - caution, abnormally high value
All - non-detect

	Station	Date	Water Level Depth	Ammonia		Chloride		Conductivity		DO		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		Total Alkalinity		Total Dissolved Solids		TKN		Total Nitrogen		Total Phosphorus, Filtered		Total Phosphorus, Unfiltered	
01-WCH	01-WCH	1/1/2013																															
	01-WCH	4/4/2013				55	mg/L									2.1	mg/L									0.5	mg/L	2.1	mg/L	0.01	mg/L		
	01-WCH	7/17/2013	1.95	0.4	mg/L	68	mg/L	259	µS/cm	10.72	mg/L	0.2	mg/L	0.2	mg/L	0.4	mg/L	5.67	pH units	14.5	°C					0.5	mg/L	0.2	mg/L	0.154	mg/L		
	01-WCH	8/16/2013	1.76	0.2	mg/L	76	mg/L	247	µS/cm	6.82	mg/L	2.41	mg/L	0.2	mg/L	2.41	mg/L	5.58	pH units	13.6	°C					0.5	mg/L	2.41	mg/L	0.02	mg/L		
	01-WCH	9/17/2013	1.80	0.2	mg/L	80	mg/L	243	µS/cm	10.63	mg/L	0.2	mg/L	2.33	mg/L	2.33	mg/L	5.58	pH units	12.6	°C					0.5	mg/L	2.33	mg/L	0.024	mg/L		
	01-WCH	10/28/2013	1.56	0.1	mg/L	61	mg/L	158.3	µS/cm	2.71	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.88	pH units	11.4	°C					0.5	mg/L	0.2	mg/L	0.025	mg/L		
	01-WCH	1/1/2014																															
	01-WCH	4/14/2014	1.12	0.2	mg/L	67	mg/L	250	µS/cm			1.77	mg/L	0.2	mg/L	1.77	mg/L			11.1	°C					0.2	mg/L	1.77	mg/L	0.025	mg/L		
	01-WCH	5/8/2014	1.43	0.2	mg/L	49	mg/L	208.2	µS/cm	7.17	mg/L	1.92	mg/L	0.2	mg/L	1.92	mg/L	5.83	pH units	10.9	°C					0.2	mg/L	1.92	mg/L	0.048	mg/L		
	01-WCH	6/11/2014	1.51	0.2	mg/L	40	mg/L	118.7	µS/cm	8.21	mg/L	1.85	mg/L	0.2	mg/L	1.85	mg/L	5.95	pH units	13	°C					0.2	mg/L	1.85	mg/L	0.071	mg/L		
	01-WCH	7/14/2014	1.72	0.2	mg/L	41	mg/L	119.2	µS/cm	7.47	mg/L	1.74	mg/L	0.2	mg/L	1.74	mg/L	6.00	pH units	13.9	°C					0.2	mg/L	1.72	mg/L	0.061	mg/L		
	01-WCH	8/12/2014	1.86	0.2	mg/L	41	mg/L	116.4	µS/cm	7.58	mg/L	1.85	mg/L	0.2	mg/L	1.85	mg/L	6.03	pH units	13.5	°C					0.2	mg/L	1.85	mg/L	0.01	mg/L		
	01-WCH	9/18/2014	1.82	0.2	mg/L	42	mg/L	114.9	µS/cm	6.02	mg/L	0.2	mg/L	1.8	mg/L	1.8	mg/L	5.91	pH units	12.8	°C					0.2	mg/L	1.8	mg/L	0.013	mg/L		
	01-WCH	11/5/2014	1.31	0.2	mg/L	93	mg/L	116.4	µS/cm	4.63	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.96	pH units	11.1	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	01-WCH	1/1/2015																															
	01-WCH	4/13/2015	0.92	0.2	mg/L	104	mg/L	419	µS/cm	5.75	mg/L	1.8	mg/L	0.2	mg/L	1.8	mg/L	5.34	pH units	9.7	°C					0.2	mg/L	1.8	mg/L	0.011	mg/L		
	01-WCH	5/7/2015	1.04	0.2	mg/L	72	mg/L	277	µS/cm	5.39	mg/L	1.75	mg/L	0.2	mg/L	1.75	mg/L			11.5	°C					0.478	mg/L	2.23	mg/L	0.01	mg/L		
	01-WCH	7/16/2015	1.75	0.2	mg/L	58	mg/L	185.4	µS/cm	5.58	mg/L	1.54	mg/L	0.2	mg/L	1.54	mg/L	5.79	pH units	11.6	°C					0.613	mg/L	2.15	mg/L	0.01	mg/L		
	01-WCH	8/6/2015	2.94	0.2	mg/L	61	mg/L	200.1	µS/cm	4.45	mg/L	1.57	mg/L	0.2	mg/L	1.57	mg/L	5.73	pH units	12.5	°C					0.514	mg/L	2.08	mg/L	0.01	mg/L		
	01-WCH	8/27/2015	2.00	0.2	mg/L	51	mg/L	173	µS/cm	3.22	mg/L	1.4	mg/L	0.2	mg/L	1.4	mg/L	5.65	pH units	12.8	°C					0.495	mg/L	1.9	mg/L	0.017	mg/L		
	01-WCH	9/24/2015	1.99	0.2	mg/L	37	mg/L	141.8	µS/cm	3.11	mg/L	1.3	mg/L	0.2	mg/L	1.3	mg/L	6.02	pH units	13.2	°C					0.635	mg/L	1.94	mg/L	0.086	mg/L		
	01-WCH	11/5/2015	1.57	0.2	mg/L	39	mg/L	145.6	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	5.95	pH units	12.1	°C					0.2	mg/L	1.56	mg/L	0.01	mg/L		
	01-WCH	1/1/2016																															
	01-WCH	4/21/2016	2.24	0.2	mg/L	79	mg/L	370	µS/cm			2.35	mg/L	0.2	mg/L	2.35	mg/L	5.79	pH units	10.55	°C					6.28	mg/L	8.63	mg/L			0.625	mg/L
	01-WCH	6/2/2016	2.30	0.2	mg/L	26	mg/L	109.2	µS/cm	4.96	mg/L	1.6	mg/L	0.2	mg/L	1.6	mg/L	6.54	pH units	11.3	°C					3.14	mg/L	4.74	mg/L			1.15	mg/L
	01-WCH	6/27/2016	2.35	0.2	mg/L	61	mg/L	208.5	µS/cm	1.67	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.01	pH units	18	°C					43.5	mg/L	43.5	mg/L			2.11	mg/L
	01-WCH	7/28/2016	2.98	0.36	mg/L	74	mg/L	287.9	µS/cm	1.99	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.15	pH units	25	°C					21.2	mg/L	21.6	mg/L			2.84	mg/L
	01-WCH	8/25/2016	3.30	0.26	mg/L	86	mg/L	345.6	µS/cm	2.68	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.55	pH units	24	°C					18.0	mg/L	18.3	mg/L			2.27	mg/L
	01-WCH	9/22/2016	2.82	0.2	mg/L	114	mg/L	418.8	µS/cm	2.79	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.67	pH units	20.5	°C					3.3	mg/L	3.3	mg/L			0.299	mg/L
	01-WCH	10/19/2016	3.13	0.2	mg/L	73	mg/L	233	µS/cm	3.57	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.45	pH units	12.6	°C					2.4	mg/L	2.4	mg/L			0.283	mg/L
	01-WCH	1/1/2017																															
	01-WCH	5/4/2017	1.79	0.2	mg/L	57	mg/L	186	µS/cm	5.98	mg/L	0.93	mg/L	0.2	mg/L	0.93	mg/L	7.04	pH units	13.1	°C	7	g CaCO3/L	159	mg/L	1.55	mg/L	2.48	mg/L			0.15	mg/L
	01-WCH	6/15/2017	2.80	0.2	mg/L	34	mg/L	139.1	µS/cm	4.38	mg/L	1.21	mg/L	0.2	mg/L	1.21	mg/L	6.63	pH units	14.7	°C	15	g CaCO3/L	103	mg/L	5.34	mg/L	6.55	mg/L			2.02	mg/L
	01-WCH	7/6/2017	2.09	0.2	mg/L	37	mg/L	148.2	µS/cm	4.36	mg/L	0.99	mg/L	0.2	mg/L	0.99	mg/L	6.32	pH units	17	°C	24	g CaCO3/L	144	mg/L	15.1	mg/L	16.1	mg/L			2.23	mg/L
	01-WCH	8/22/2017	2.30	0.2	mg/L	31	mg/L					1.13	mg/L	0.2	mg/L	1.13	mg/L					14	g CaCO3/L	131	mg/L	0.692	mg/L	1.82	mg/L			0.174	mg/L
	01-WCH	9/27/2017	n/a	0.2	mg/L	34	mg/L					0.55	mg/L	0.2	mg/L	0.55	mg/L					30	g CaCO3/L	134	mg/L	11.2	mg/L	11.8	mg/L			1.22	mg/L
	01-WCH	10/19/2017	2.30	0.2	mg/L	33	mg/L	148	µS/cm	8.05	mg/L	1.39	mg/L	0.2	mg/L	1.39	mg/L	6.45	pH units	14.8	°C	14	g CaCO3/L	130	mg/L	0.768	mg/L	2.16	mg/L			0.524	mg/L
	01-WCH	11/15/2017	1.77	0.2	mg/L	60	mg/L	710	µS/cm	2.51	mg/L	0.44	mg/L	0.2	mg/L	0.44	mg/L	6.46	pH units	11.7	°C	11	g CaCO3/L	170	mg/L	6.99	mg/L	7.43	mg/L			0.971	mg/L
12-PEN	12-PEN	1/1/2013																															
	12-PEN	4/4/2013				42	mg/L									0.5	mg/L									0.5	mg/L	0.5	mg/L	0.01	mg/L		
	12-PEN	7/17/2013	2.00	0.4	mg/L	42	mg/L	171.9	µS/cm	3.61	mg/L	0.2	mg/L	0.2	mg/L	0.4	mg/L	6.43	pH units	14.2	°C					0.5	mg/L	0.2	mg/L	0.217	mg/L		
	12-PEN	8/16/2013	2.43	0.2	mg/L	41	mg/L	144.2	µS/cm	2.29	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.04	pH units	13.1	°C					0.5	mg/L	0.2	mg/L	0.02	mg/L		
	12-PEN	9/17/2013	3.02	0.2	mg/L	39	mg/L	134.5	µS/cm	3.03	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.98	pH units	11.7	°C					0.5	mg/L	0.2	mg/L	0.02	mg/L		
	12-PEN	10/28/2013	3.32	0.1	mg/L	37	mg/L	111.7	µS/cm	2.43	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.06	pH units	12.6	°C					0.5	mg/L	0.2	mg/L	0.019	mg/L		
	12-PEN	1/1/2014																															
	12-PEN	4/14/2014	1.36	0.2	mg/L	39	mg/L	160	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L			8.2	°C					0.2	mg/L	0.2	mg/L	0.019	mg/L		
	12-PEN	5/8/2014	1.82	0.2	mg/L	33	mg/L	143.9	µS/cm	2.45	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.18	pH units	9.6	°C					0.2	mg/L	0.2	mg/L	0.048	mg/L		
	12-PEN	6/11/2014	2.27	0.2	mg/L	31	mg/L	87	µS/cm	2.50	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.44	pH units	9.6	°C					0.2	mg/L	0.2	mg/L	0.031	mg/L		
	12-PEN	7/14/2014	2.70	0.2	mg/L	30	mg/L	88	µS/cm	2.85	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.37	pH units	12	°C					0.2	mg/L	0.2	mg/L	0.057	mg/L		
	12-PEN	8/12/2014	3.10	0.2	mg/L	35	mg/L	94.4	µS/cm	2.48	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.34	pH units	12.3	°C					0.2	mg/L	0.2	mg/L	0.031	mg/L		
	12-PEN	9/18/2014	3.28	0.2	mg/L	35	mg/L	94.8	µS/cm	2.72	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.24	pH units	12.4	°C					0.2	mg/L	0.2	mg/L	0.011	mg/L		
	12-PEN	11/5/2014	2.20	0.2	mg/L	33	mg/L	109.4	µS/cm	2.26	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.35	pH units	11.9	°C					0.2	mg/L	0.2	mg/L	0.048	mg/L		
	12-PEN	1/1/2015																															
	12-PEN	4/13/2015	1.10	0.2	mg/L	34	mg/L	148.5	µS/cm	2.91	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.37	pH units	4	°C					14.6	mg/L	14.6	mg/L	0.072	mg/L		
	12-PEN	5/7/2015	1.62	0.2	mg/L	35	mg/L	143.3	µS/cm	3.69	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L			9	°C					0.517	mg/L	0.52	mg/L	0.058	mg/L		
	12-PEN	7/16/2015	2.21	0.2	mg/L	34	mg/L	120.1	µS/cm	3.50	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.12	pH units	12.7	°C					0.869	mg/L	0.869	mg/L	0.01	mg/L		
	12-PEN	8/6/2015	2.70	0.2	mg/L	33	mg/L	118.1	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.04	pH units	12.8	°C					0.652	mg/L	0.65	mg/L	0.015	mg/L		
	12-PEN	8/27/2015	3.04	0.2	mg/L	34	mg/L	118	µS/cm	1.16	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.89	pH units	12.7	°C					0.298	mg/L	0.3	mg/L	0.01	mg/L		
	12-PEN	9/24/2015	3.42	0.2	mg/L	35	mg/L	123.7	µS/cm	2.70	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.07	pH units	14.1	°C					0.327	mg/L	0.33	mg/L	0.01	mg/L		
	12-PEN	11/5/2015	3.03	0.2	mg/L	36	mg/L	127.6	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	6.08	pH units	13.3	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	12-PEN	1/1/2016																															
	12-PEN	4/21/2016	2.06	0.2	mg/L	43	mg/L	200	µS/cm			0.54	mg/L	0.2	mg/L	0.54	mg/L	5.75	pH units	7.89	°C					1.31	mg/L	1.85	mg/L			0.425	mg/L
	12-PEN	6/2/2016	2.02	0.2	mg/L	45	mg/L	143	µS/cm	3.47	mg/L	0.48	mg/L	0.2	mg/L	0.48	mg/L	6.46	pH units	9.5	°C					7.65	mg/L	8.13	mg/L			0.712	mg/L
	12-PEN	6/27/2016	1.91	0.2	mg/L	46	mg/L	163.5	µS/cm	2.15	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.22	pH units	14.3	°C					3.61	mg/L	3.61	mg/L			1.88	mg/L
	12-PEN	7/28/2016	1.35	0.21	mg/L	47	mg/L	189.5	µS/cm	2.41	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.05	pH units	20.5	°C					1.1	mg/L	1.31	mg/L			0.559	mg/L
	12-PEN	8/25/2016	2.40	0.23	mg/L	40	mg/L	162.5	µS/cm	2.20	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.07	pH units	20.2	°C					2.86	mg/L	3.09	mg/L			1.01	mg/L
	12-PEN	9/22/2016	2.43	0.26	mg/L	36	mg/L	135.4	µS/cm	2.27	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.47	pH units	18.7	°C					0.519	mg/L	0.78	mg/L			0.829	mg/L
	12-PEN	10/19/2016	3.17	0.2	mg/L	44	mg/L	164.9	µS/cm	1.88	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.28	pH units	16	°C					1.01	mg/L	1.01	mg/L			0.309	mg/L
	12-PEN	1/1/2017																															
	12-PEN	5/4/2017	1.45	0.2	mg/L	47	mg/L	139.2	µS/cm	2.85	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.57	pH units	9.9	°C	11	g CaCO3/L	117	mg/L	2.11	mg/L	2.11	mg/L			1.41	mg/L
	12-PEN	6/15/2017	1.56	0.2	mg/L	47	mg/L	143.5	µS/cm	2.31	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.47	pH units	10.6	°C	11	g CaCO3/L	129	mg/L	1.12	mg/L	1.12	mg/L			1.26	mg/L
	12-PEN	7/6/2017	1.89	0.2	mg/L	46	mg/L	148.3	µS/cm	2.42	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.27	pH units	12.6	°C	12	g CaCO3/L	129	mg/L	0.2	mg/L	0.2	mg/L			1.09	mg/L
	12-PEN	8/22/2017	2.16	0.2	mg/L	45	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L					12	g CaCO3/L	120	mg/L	1.97	mg/L	1.97	mg/L			0.954	mg/L
	12-PEN	9/27/2017	2.16	0.2	mg/L	42	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L					14	g CaCO3/L	133	mg/L	0.994	mg/L	0.99	mg/L			0.983	mg/L
	12-PEN	10/19/2017	2.25	0.2	mg/L	43	mg/L	144	µS/cm	3.35	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.09	pH units	15.6	°C	13	g CaCO3/L	100	mg/L	1.79	mg/L	1.79	mg/L			1.28	mg/L
	12-PEN	11/15/2017	1.73	0.2	mg/L	48	mg/L	146.7	µS/cm	1.91	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.50	pH units	13	°C	12	g CaCO3/L	130	mg/L	0.315	mg/L	0.32	mg/L			0.228	mg/L

Pennichuck Water Works
Groundwater Sampling Data
2013 through 2017

Filtered Phosphorus - outlier >0.250 mg/L
Filtered Phosphorus - caution, abnormally high value
All - non-detect

	Station	Date	Water Level Depth	Ammonia		Chloride		Conductivity		DO		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		Total Alkalinity		Total Dissolved Solids		TKN		Total Nitrogen		Total Phosphorus, Filtered		Total Phosphorus, Unfiltered	
01-MUD	01-MUD	1/1/2013																															
	01-MUD	4/4/2013				350	mg/L									0.5	mg/L									0.5	mg/L	0.5	mg/L	0.02	mg/L		
	01-MUD	7/17/2013	1.45	0.4	mg/L	314	mg/L	1004	µS/cm	3.34	mg/L	0.2	mg/L	0.2	mg/L	0.4	mg/L	5.78	pH units	16.9	°C					0.5	mg/L	0.2	mg/L	0.8	mg/L		
	01-MUD	8/16/2013	1.36	0.2	mg/L	334	mg/L	916	µS/cm	2.38	mg/L	5.05	mg/L	1	mg/L	5.05	mg/L	5.68	pH units	15.4	°C					0.5	mg/L	5.05	mg/L	0.02	mg/L		
	01-MUD	9/17/2013	1.40	0.2	mg/L	373	mg/L	960	µS/cm	5.01	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.49	pH units	14	°C					0.5	mg/L	0.2	mg/L	0.038	mg/L		
	01-MUD	10/28/2013	1.46	0.1	mg/L	378	mg/L	850	µS/cm	3.00	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.74	pH units	13.2	°C					0.5	mg/L	0.2	mg/L	0.031	mg/L		
	01-MUD	1/1/2014																															
	01-MUD	4/14/2014	0.80	0.2	mg/L	282	mg/L	960	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L			8.2	°C					0.2	mg/L	0.2	mg/L	0.031	mg/L		
	01-MUD	5/8/2014	1.00	0.2	mg/L	287	mg/L	947	µS/cm	4.98	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.94	pH units	10.4	°C					0.2	mg/L	0.2	mg/L	0.042	mg/L		
	01-MUD	6/11/2014	1.10	0.2	mg/L	296	mg/L	609	µS/cm	5.36	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.92	pH units	13.9	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	01-MUD	7/14/2014	1.21	0.2	mg/L	275	mg/L	589	µS/cm	4.29	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.96	pH units	14.5	°C					0.2	mg/L	0.2	mg/L	0.036	mg/L		
	01-MUD	8/12/2014	1.39	0.2	mg/L	270	mg/L	577	µS/cm	3.43	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.79	pH units	15.8	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	01-MUD	9/18/2014	1.17	0.2	mg/L	269	mg/L	565	µS/cm	3.83	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.00	pH units	14.6	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	01-MUD	11/5/2014	0.85	0.2	mg/L	315	mg/L	647	µS/cm	6.70	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.07	pH units	12.3	°C					0.2	mg/L	0.2	mg/L	0.010	mg/L		
	01-MUD	1/1/2015																															
	01-MUD	4/13/2015	0.50	0.2	mg/L	104	mg/L	490	µS/cm	7.17	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.54	pH units	8.3	°C					0.2	mg/L	0.2	mg/L	0.068	mg/L		
	01-MUD	5/7/2015	0.95	0.2	mg/L	107	mg/L	443	µS/cm	5.89	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L			13	°C					0.697	mg/L	0.7	mg/L	0.014	mg/L		
	01-MUD	7/16/2015	0.40	0.2	mg/L	138	mg/L	443	µS/cm	3.38	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.03	pH units	12.4	°C					0.81	mg/L	0.81	mg/L	0.01	mg/L		
	01-MUD	8/6/2015	1.17	0.2	mg/L	210	mg/L	603	µS/cm	4.41	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.89	pH units	14.2	°C					0.869	mg/L	0.87	mg/L	0.01	mg/L		
	01-MUD	8/27/2015	1.61	0.2	mg/L	222	mg/L	660	µS/cm	4.53	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.93	pH units	15	°C					0.495	mg/L	0.5	mg/L	0.014	mg/L		
	01-MUD	9/24/2015	1.85	0.2	mg/L	241	mg/L	683	µS/cm	1.77	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.98	pH units	15.2	°C					0.635	mg/L	0.64	mg/L	0.114	mg/L		
	01-MUD	11/5/2015	1.30	0.2	mg/L	277	mg/L	797	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	5.83	pH units	13.9	°C					0.481	mg/L	0.48	mg/L	0.01	mg/L		
	01-MUD	1/1/2016																															
	01-MUD	4/21/2016	1.14	0.2	mg/L	357	mg/L	1351	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	5.60	pH units	10.79	°C					0.2	mg/L	0.2	mg/L			0.915	mg/L
	01-MUD	6/2/2016	0.73	0.2	mg/L	458	mg/L	1303	µS/cm	4.27	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.81	pH units	11.1	°C					1.05	mg/L	1.05	mg/L			2.67	mg/L
	01-MUD	6/27/2016	1.45	0.22	mg/L	586	mg/L	1637	µS/cm	2.52	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.77	pH units	15.6	°C					1.07	mg/L	1.29	mg/L			2.81	mg/L
	01-MUD	7/28/2016	1.89	0.51	mg/L	571	mg/L	1710	µS/cm	3.85	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.81	pH units	16.8	°C					4.41	mg/L	4.92	mg/L			12.3	mg/L
	01-MUD	8/25/2016	1.86	0.2	mg/L	506	mg/L	1543	µS/cm	4.03	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	4.64	pH units	17	°C					2.00	mg/L	2.00	mg/L			4.77	mg/L
	01-MUD	9/22/2016	2.54	0.2	mg/L	487	mg/L	1432	µS/cm	4.42	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.91	pH units	16.1	°C					0.241	mg/L	0.24	mg/L			0.441	mg/L
	01-MUD	10/19/2016	1.80	0.2	mg/L	483	mg/L	1385	µS/cm	6.12	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.97	pH units	15.2	°C					1.19	mg/L	1.19	mg/L			0.747	mg/L
	01-MUD	1/1/2017																															
	01-MUD	5/4/2017	1.00	0.2	mg/L	653	mg/L	1615	µS/cm	3.72	mg/L	0.25	mg/L	0.2	mg/L	0.25	mg/L	5.80	pH units	9.5	°C	10	g CaCO3/L	1200	mg/L	0.785	mg/L	1.03	mg/L			3.57	mg/L
	01-MUD	6/15/2017	1.10	0.2	mg/L	781	mg/L	2025	µS/cm	3.85	mg/L	0.29	mg/L	0.2	mg/L	0.29	mg/L	5.74	pH units	12	°C	8	g CaCO3/L	1420	mg/L	0.34	mg/L	0.63	mg/L			6.08	mg/L
	01-MUD	7/6/2017	1.05	0.2	mg/L	0.2	mg/L	2045	µS/cm	3.10	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.70	pH units	13.9	°C	11	g CaCO3/L	1380	mg/L	0.2	mg/L	0.2	mg/L			4.96	mg/L
	01-MUD	8/22/2017	1.14	0.26	mg/L	664	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L					10	g CaCO3/L	161	mg/L	1.74	mg/L	2	mg/L			4.19	mg/L
	01-MUD	9/27/2017	1.11	0.2	mg/L	725	mg/L					0.26	mg/L	0.2	mg/L	0.26	mg/L					10	g CaCO3/L	1260	mg/L	0.994	mg/L	1.25	mg/L			2.01	mg/L
	01-MUD	10/19/2017	1.15	0.22	mg/L	761	mg/L	1015	µS/cm	3.56	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.53	pH units	15.6	°C	11	g CaCO3/L	1300	mg/L	0.655	mg/L	0.88	mg/L			15.4	mg/L
	01-MUD	11/15/2017	1.04	0.2	mg/L	754	mg/L	1960	µS/cm	6.27	mg/L	0.23	mg/L	0.2	mg/L	0.23	mg/L	5.87	pH units	12.7	°C	9	g CaCO3/L	1340	mg/L	0.655	mg/L	0.88	mg/L			2.17	mg/L
01-XWB	01-XWB	1/1/2013																															
	01-XWB	4/4/2013				17	mg/L									0.9	mg/L									0.5	mg/L	0.9	mg/L	0.01	mg/L		
	01-XWB	7/17/2013	2.75	0.4	mg/L	17	mg/L	96.7	µS/cm	3.60	mg/L	1.27	mg/L	0.2	mg/L	1.27	mg/L	5.55	pH units	19.1	°C					0.5	mg/L	1.27	mg/L	0.288	mg/L		
	01-XWB	8/16/2013	2.78	0.2	mg/L	17	mg/L	83.9	µS/cm	1.84	mg/L	0.79	mg/L	0.2	mg/L	0.79	mg/L	5.48	pH units	18.1	°C					0.5	mg/L	0.79	mg/L	0.02	mg/L		
	01-XWB	9/17/2013	3.05	0.2	mg/L	20	mg/L	99.8	µS/cm	6.69	mg/L	1.1	mg/L	0.2	mg/L	1.1	mg/L	5.57	pH units	16.3	°C					0.5	mg/L	1.1	mg/L	0.032	mg/L		
	01-XWB	10/28/2013	2.94	0.1	mg/L	26	mg/L	91.8	µS/cm	4.87	mg/L	1.56	mg/L	0.2	mg/L	1.56	mg/L	5.68	pH units	13.9	°C					0.5	mg/L	1.56	mg/L	0.031	mg/L		
	01-XWB	1/1/2014																															
	01-XWB	4/14/2014	2.08	0.2	mg/L	6	mg/L	60	µS/cm			0.46	mg/L	0.2	mg/L	0.46	mg/L			10.7	°C					0.2	mg/L	0.46	mg/L	0.033	mg/L		
	01-XWB	5/8/2014	2.33	0.2	mg/L	23	mg/L	112.5	µS/cm	4.50	mg/L	1.41	mg/L	0.2	mg/L	1.41	mg/L	5.88	pH units	10.2	°C					0.2	mg/L	1.41	mg/L	0.048	mg/L		
	01-XWB	6/11/2014	2.72	0.2	mg/L	14	mg/L	60.1	µS/cm	2.74	mg/L	1.14	mg/L	0.2	mg/L	0.2	mg/L	5.80	pH units	12.9	°C					0.2	mg/L	1.14	mg/L	0.041	mg/L		
	01-XWB	7/14/2014	3.03	0.2	mg/L	13	mg/L	61.1	µS/cm	4.12	mg/L	0.96	mg/L	0.2	mg/L	0.96	mg/L	5.90	pH units	17.5	°C					0.2	mg/L	0.96	mg/L	0.076	mg/L		
	01-XWB	8/12/2014	3.28	0.2	mg/L	20	mg/L	72.1	µS/cm	3.78	mg/L	1.34	mg/L	0.2	mg/L	1.34	mg/L	5.85	pH units	17.9	°C					0.2	mg/L	1.34	mg/L	0.01	mg/L		
	01-XWB	9/18/2014	3.28	0.2	mg/L	21	mg/L	71.2	µS/cm	4.29	mg/L	1.3	mg/L	0.2	mg/L	1.3	mg/L	5.81	pH units	16.6	°C					0.2	mg/L	1.3	mg/L	0.01	mg/L		
	01-XWB	11/5/2014	2.65	0.2	mg/L	28	mg/L	82.6	µS/cm	2.92	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.89	pH units	13.1	°C					0.2	mg/L	1.14	mg/L	0.01	mg/L		
	01-XWB	1/1/2015																															
	01-XWB	4/13/2015	2.10	0.2	mg/L	17	mg/L	102.2	µS/cm	4.75	mg/L	1.2	mg/L	0.2	mg/L	1.2	mg/L	6.08	pH units	6.1	°C					0.2	mg/L	1.2	mg/L	0.01	mg/L		
	01-XWB	5/7/2015	2.52	0.2	mg/L	16	mg/L	81.8	µS/cm	3.55	mg/L	1.12	mg/L	0.2	mg/L	1.12	mg/L			10.8	°C					0.298	mg/L	1.42	mg/L	0.01	mg/L		
	01-XWB	7/16/2015	2.91	0.2	mg/L	14	mg/L	78.9	µS/cm	2.63	mg/L	0.75	mg/L	0.2	mg/L	0.75	mg/L	5.59	pH units	16.1	°C					0.554	mg/L	1.3	mg/L	0.01	mg/L		
	01-XWB	8/6/2015	3.03	0.2	mg/L	18	mg/L	92.9	µS/cm	2.91	mg/L	1.65	mg/L	0.2	mg/L	1.06	mg/L	5.64	pH units	17.2	°C					0.593	mg/L	1.65	mg/L	0.01	mg/L		
	01-XWB	8/27/2015	3.01	0.2	mg/L	21	mg/L	103.6	µS/cm	2.78	mg/L	1.36	mg/L	0.2	mg/L	1.36	mg/L	5.61	pH units	17.2	°C					0.396	mg/L	1.76	mg/L	0.01	mg/L		
	01-XWB	9/24/2015	3.08	0.2	mg/L	22	mg/L	105	µS/cm	2.85	mg/L	1.42	mg/L	0.2	mg/L	1.42	mg/L	5.75	pH units	16.8	°C					0.2	mg/L	1.42	mg/L	0.01	mg/L		
	01-XWB	11/5/2015	2.80	0.2	mg/L	19	mg/L	90.5	µS/cm			1	mg/L	0.2	mg/L	1	mg/L	5.79	pH units	13.6	°C					0.767	mg/L	1.77	mg/L	0.372	mg/L		
	01-XWB	1/1/2016																															
	01-XWB	4/21/2016	2.31	0.2	mg/L	16	mg/L	109	µS/cm			1.85	mg/L	0.2	mg/L	1.85	mg/L	5.54	pH units	8.47	°C					0.538	mg/L	2.39	mg/L			0.375	mg/L
	01-XWB	6/2/2016	2.51	0.2	mg/L	22	mg/L	100.5	µS/cm	3.51	mg/L	1.38	mg/L	0.2	mg/L	1.38	mg/L	6.02	pH units	12.3	°C					0.678	mg/L	2.06	mg/L			0.772	mg/L
	01-XWB	6/27/2016	2.64	0.2	mg/L	23	mg/L	111.3	µS/cm	3.42	mg/L	1.4	mg/L	0.2	mg/L	1.4	mg/L	5.97	pH units	16.3	°C					2.31	mg/L	3.71	mg/L			2.62	mg/L
	01-XWB	7/28/2016	2.92	0.2	mg/L	24	mg/L	111.2	µS/cm	4.20	mg/L	1.43	mg/L	0.2	mg/L	1.43	mg/L	6.22	pH units	15.8	°C					2.74	mg/L	4.17	mg/L			2.36	mg/L
	01-XWB	8/25/2016	3.00	0.2	mg/L	24	mg/L	122.3	µS/cm	3.50	mg/L	1.41	mg/L	0.2	mg/L	1.41	mg/L	5.88	pH units	17.9	°C					5.20	mg/L	6.61	mg/L			1.28	mg/L
	01-XWB	9/22/2016	3.00	0.2	mg/L	25	mg/L	119.7	µS/cm	2.63	mg/L	1.51	mg/L	0.2	mg/L	1.51	mg/L	6.07	pH units	16.9	°C					1.08	mg/L	0.2	mg/L			0.408	mg/L
	01-XWB	10/19/2016	3.00	0.2	mg/L	27	mg/L	121	µS/cm	3.71	mg/L	1.56	mg/L	0.2	mg/L	1.56	mg/L	5.98	pH units	15.1	°C					0.48	mg/L	2.04	mg/L			0.566	mg/L
	01-XWB	1/1/2017																															
	01-XWB	5/4/2017	2.03	0.2	mg/L	15	mg/L	71.6	µS/cm	3.16	mg/L	1.03	mg/L	0.2	mg/L	1.03	mg/L	5.78	pH units	9.3	°C	8	g CaCO3/L	69.3	mg/L	5.9	mg/L	6.93	mg/L			2.14	mg/L
	01-XWB	6/15/2017	2.30	0.2	mg/L	12	mg/L	68.5	µS/cm	2.65	mg/L	0.67	mg/L	0.2	mg/L	0.67	mg/L	6.30	pH units	13.1	°C	5	g CaCO3/L	70.6	mg/L	0.887	mg/L	1.56	mg/L			1.09	mg/L
	01-XWB	7/6/2017	2.75	0.2	mg/L	9	mg/L	66.5	µS/cm	2.06	mg/L	0.35	mg/L	0.2	mg/L	0.35	mg/L	5.89	pH units	16.5	°C	8	g CaCO3/L	65.3	mg/L	0.692	mg/L	1.04	mg/L			1.66	mg/L
	01-XWB	8/22/2017	3.12	0.2	mg/L	10	mg/L					0.24	mg/L	0.2	mg/L	0.24	mg/L					9	g CaCO3/L	67.1	mg/L	1.62	mg/L	1.86	mg/L			1.16	mg/L
	01-XWB	9/27/2017	3.12	0.2	mg/L	26	mg/L					1.35	mg/L	0.2	mg/L	1.35	mg/L					7	g CaCO3/L	92	mg/L	1.56	mg/L	2.91	mg/L			1.17	mg/L
	01-XWB	10/19/2017	2.40	0.2	mg/L	24	mg/L	96	µS/cm	3.33	mg/L	1.51	mg/L	0.2	mg/L	1.51	mg/L	5.67	pH units			6	g CaCO3/L	84	mg/L	1.11	mg/L	2.62	mg/L			0.845	mg/L
	01-XWB	11/15/2017	2.46	0.2	mg/L	23	mg/L	100.3	µS/cm	2.34	mg/L	0.98	mg/L	0.2	mg/L	0.98	mg/L	6.14	pH units	12.6	°C	6	g CaCO3/L	88.2	mg/L	0.428	mg/L	1.41	mg/L			0.232	mg/L

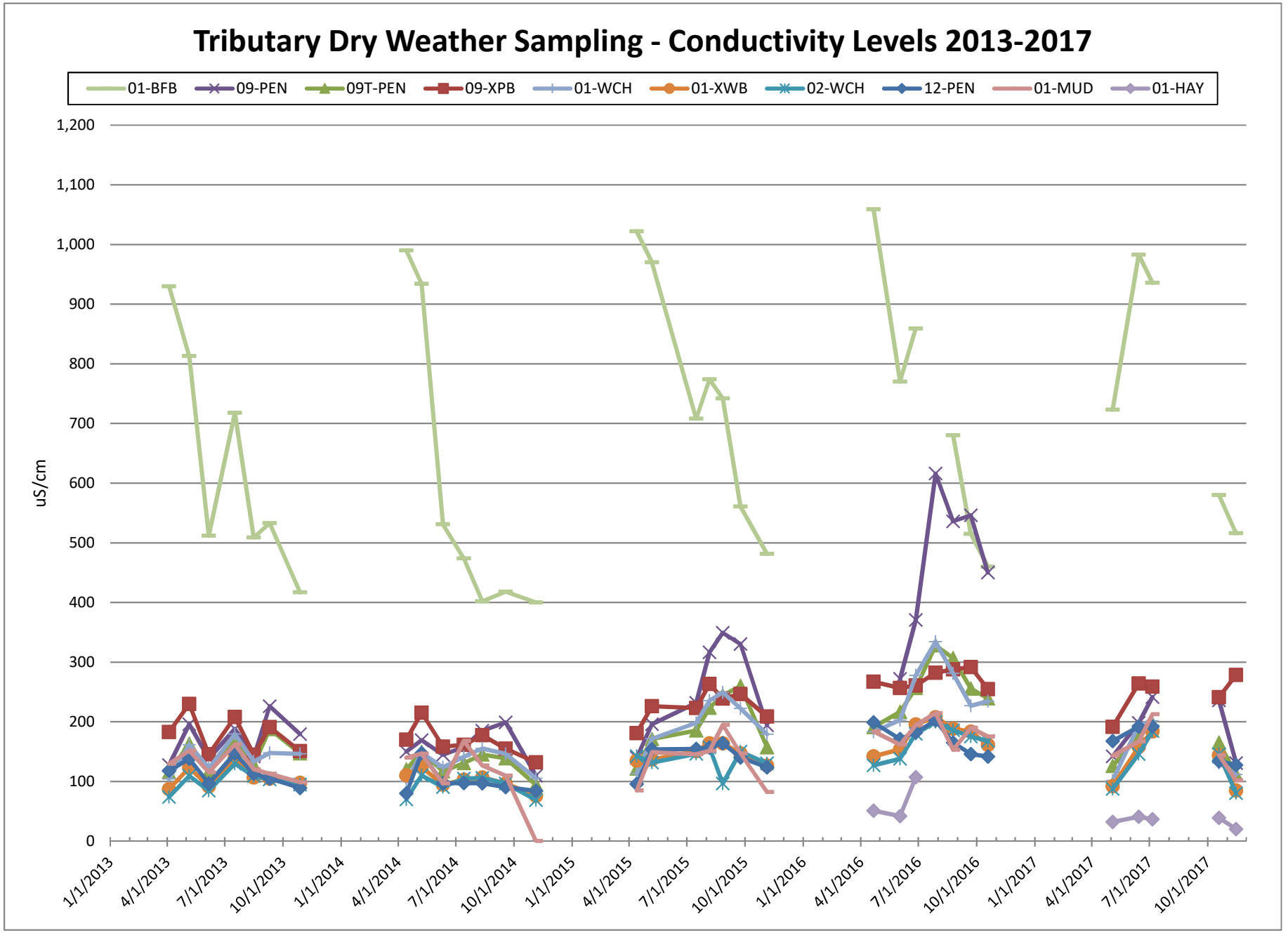
Pennichuck Water Works
Groundwater Sampling Data
2013 through 2017

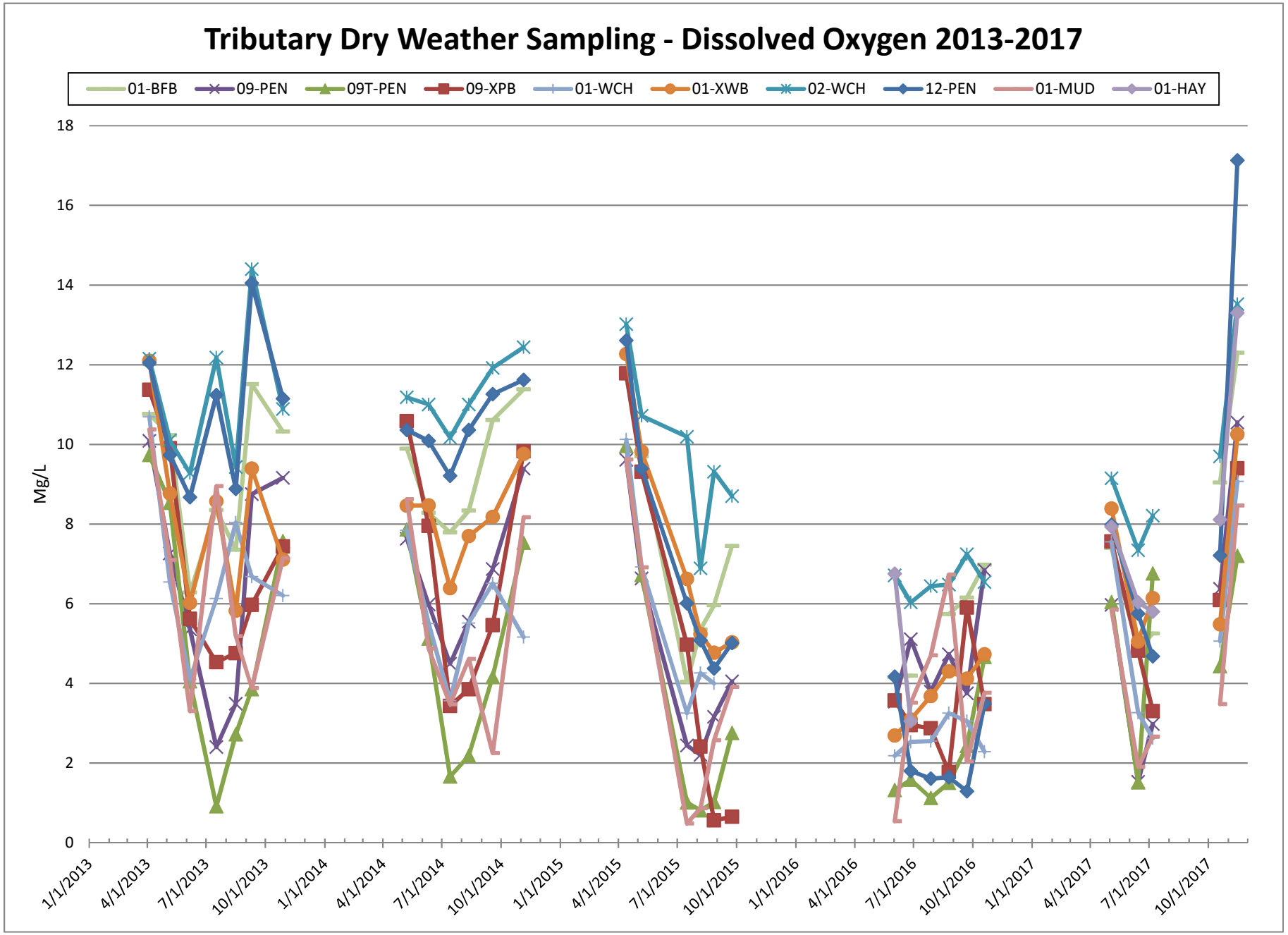
Filtered Phosphorus - outlier >0.250 mg/L
Filtered Phosphorus - caution, abnormally high value
All - non-detect

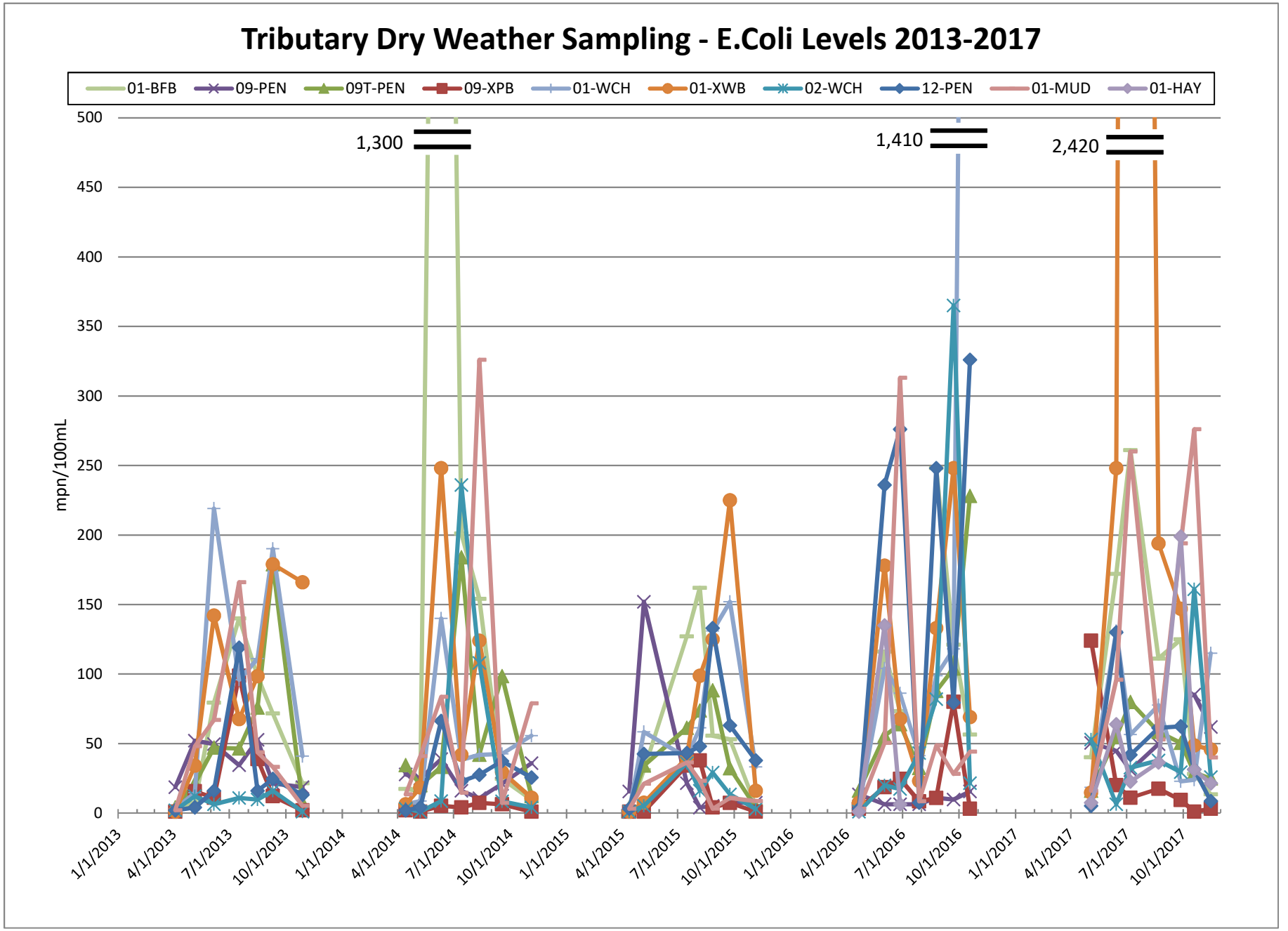
	Station	Date	Water Level Depth	Ammonia		Chloride		Conductivity		DO		Nitrate		Nitrite		Nitrate/Nitrite		pH		Temperature		Total Alkalinity		Total Dissolved Solids		TKN		Total Nitrogen		Total Phosphorus, Filtered		Total Phosphorus, Unfiltered	
02-WCH	02-WCH	1/1/2013																															
	02-WCH	4/4/2013				59	mg/L									0.5	mg/L									0.5	mg/L	0.5	mg/L	0.03	mg/L		
	02-WCH	7/17/2013	1.80	0.4	mg/L	25	mg/L	97.3	µS/cm	4.96	mg/L	0.2	mg/L	0.2	mg/L	0.4	mg/L	5.57	pH units	19.2	°C					2.38	mg/L	2.38	mg/L	0.038	mg/L		
	02-WCH	8/16/2013	1.88	0.2	mg/L	24	mg/L	85.9	µS/cm	5.25	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.68	pH units	17.1	°C					0.5	mg/L	0.2	mg/L	0.02	mg/L		
	02-WCH	9/17/2013	1.90	0.2	mg/L	26	mg/L	44.2	µS/cm	4.98	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.31	pH units	15.2	°C					0.5	mg/L	0.2	mg/L	0.029	mg/L		
	02-WCH	10/28/2013	1.93	0.1	mg/L	10	mg/L	40.9	µS/cm	4.13	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.81	pH units	11.3	°C					0.5	mg/L	0.2	mg/L	0.049	mg/L		
	02-WCH	1/1/2014																															
	02-WCH	4/14/2014	1.44	0.2	mg/L	41	mg/L	150	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L			10.2	°C					0.2	mg/L	0.2	mg/L	0.031	mg/L		
	02-WCH	5/8/2014	1.83	0.2	mg/L	35	mg/L	140.6	µS/cm	7.96	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.89	pH units	10.3	°C					0.2	mg/L	0.2	mg/L	0.08	mg/L		
	02-WCH	6/11/2014	2.13	0.2	mg/L	71	mg/L	161.8	µS/cm	7.60	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.85	pH units	13.2	°C					0.2	mg/L	0.2	mg/L	0.037	mg/L		
	02-WCH	7/14/2014	2.46	0.2	mg/L	33	mg/L	88.5	µS/cm	8.15	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.26	pH units	17.3	°C					0.2	mg/L	0.2	mg/L	0.046	mg/L		
	02-WCH	8/12/2014	3.10	0.2	mg/L	22	mg/L	70.7	µS/cm	9.53	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.37	pH units	17.7	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	02-WCH	9/18/2014	2.86	0.2	mg/L	21	mg/L	63.2	µS/cm	9.80	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.22	pH units	15.8	°C					0.2	mg/L	0.2	mg/L	0.057	mg/L		
	02-WCH	11/5/2014	1.90	0.2	mg/L	43	mg/L	222	µS/cm	6.80	mg/L	1.49	mg/L	0.2	mg/L	0.2	mg/L	5.79	pH units	11.2	°C					0.2	mg/L	1.49	mg/L	0.01	mg/L		
	02-WCH	1/1/2015																															
	02-WCH	4/13/2015	1.40	0.2	mg/L	99	mg/L	356	µS/cm	5.84	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.84	pH units	6	°C					0.2	mg/L	0.2	mg/L	0.01	mg/L		
	02-WCH	5/7/2015	1.01	0.2	mg/L	44	mg/L	161.8	µS/cm	7.06	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L			11.7	°C					0.478	mg/L	0.48	mg/L	0.01	mg/L		
	02-WCH	7/16/2015	2.03	0.2	mg/L	128	mg/L	384.2	µS/cm	4.01	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.30	pH units	15.4	°C					0.455	mg/L	0.455	mg/L	0.01	mg/L		
	02-WCH	8/6/2015	2.74	0.2	mg/L	42	mg/L	142.2	µS/cm	6.26	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.95	pH units	16.3	°C					0.633	mg/L	0.63	mg/L	0.034	mg/L		
	02-WCH	8/27/2015	4.02	0.2	mg/L	37	mg/L					0.2	mg/L	0.2	mg/L	0.2	mg/L									0.396	mg/L	0.4	mg/L	0.161	mg/L		
	02-WCH	9/24/2015		0.2	mg/L	46	mg/L					0.64	mg/L	0.2	mg/L	0.64	mg/L									0.37	mg/L	1.01	mg/L	0.01	mg/L		
	02-WCH	11/5/2015	2.00	0.2	mg/L	31	mg/L	128.7	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	5.50	pH units	12.6	°C					0.503	mg/L	0.5	mg/L	0.413	mg/L		
	02-WCH	1/1/2016																															
	02-WCH	4/21/2016						619	µS/cm									5.89	pH units	11.72	°C												
	02-WCH	6/2/2016																															
	02-WCH	6/27/2016	3.73					278.5	µS/cm	5.25	mg/L							6.55	pH units	21.2	°C												
	02-WCH	7/28/2016	3.45	2.61	mg/L	23	mg/L	290	µS/cm	4.45	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.14	pH units	22.3	°C					12.7	mg/L	15.3	mg/L			0.403	mg/L
	02-WCH	8/25/2016	3.28	2.12	mg/L	23	mg/L	195.3	µS/cm	4.90	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.07	pH units	20	°C					15	mg/L	17.1	mg/L			0.438	mg/L
	02-WCH	9/22/2016	2.56	2.16	mg/L	21	mg/L	210.9	µS/cm	5.19	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.42	pH units	21.9	°C					4.1	mg/L	6.26	mg/L			0.272	mg/L
	02-WCH	10/19/2016	2.21	1.73	mg/L	22	mg/L	130.2	µS/cm	4.84	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.24	pH units	16	°C					5.46	mg/L	7.19	mg/L			0.218	mg/L
	02-WCH	1/1/2017																															
	02-WCH	5/4/2017	2.75																														
	02-WCH	6/15/2017	2.23																														
	02-WCH	7/6/2017	3.41																														
	02-WCH	8/22/2017	n/a																														
	02-WCH	9/27/2017	4.43																														
	02-WCH	10/19/2017	4.75																														
	02-WCH	11/15/2017	4.48	0.62	mg/L	11	mg/L	114.7	µS/cm	6.55	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.29	pH units	9.5	°C	63	g CaCO3/L	117	mg/L	4.28	mg/L	4.9	mg/L			1.82	mg/L
01-HAY	01-HAY	1/1/2013																															
	01-HAY	4/4/2013																															
	01-HAY	7/17/2013																															
	01-HAY	8/16/2013																															
	01-HAY	9/17/2013																															
	01-HAY	10/28/2013																															
	01-HAY	1/1/2014																															
	01-HAY	4/14/2014																															
	01-HAY	5/8/2014																															
	01-HAY	6/11/2014																															
	01-HAY	7/14/2014																															
	01-HAY	8/12/2014																															
	01-HAY	9/18/2014																															
	01-HAY	11/5/2014																															
	01-HAY	1/1/2015																															
	01-HAY	4/13/2015																															
	01-HAY	5/7/2015																															
	01-HAY	7/16/2015																															
	01-HAY	8/6/2015																															
	01-HAY	8/27/2015																															
	01-HAY	9/24/2015																															
	01-HAY	11/5/2015																															
	01-HAY	1/1/2016																															
	01-HAY	4/21/2016	1.92	0.2	mg/L	84	mg/L	321	µS/cm			0.2	mg/L	0.2	mg/L	0.2	mg/L	5.52	pH units	8.92	°C					0.771	mg/L	0.77	mg/L			0.314	mg/L
	01-HAY	6/2/2016	2.18	0.2	mg/L	47	mg/L	145.8	µS/cm	5.79	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	5.72	pH units	13.20	°C					0.2	mg/L	0.2	mg/L			0.244	mg/L
	01-HAY	6/27/2016	3.29	0.2	mg/L	37	mg/L	155.7	µS/cm	6.70	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.39	pH units	18.30	°C					8.91	mg/L	8.91	mg/L			3.79	mg/L
	01-HAY	7/28/2016																															
	01-HAY	8/25/2016																															
	01-HAY	9/22/2016																															
	01-HAY	10/19/2016																															
	01-HAY	1/1/2017																															
	01-HAY	5/4/2017	2.03	0.2	mg/L	118	mg/L	320.2	µS/cm	10.06	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.40	pH units	9.8	°C	12	g CaCO3/L	295	mg/L	9.46	mg/L	9.46	mg/L			2.67	mg/L
	01-HAY	6/15/2017	2.46																														
	01-HAY	7/6/2017	2.30																														
	01-HAY	8/22/2017	n/a																														
	01-HAY	9/27/2017	3.21																														
	01-HAY	10/19/2017	2.8																														
	01-HAY	11/15/2017	2.85	0.2	mg/L	101	mg/L	331	µS/cm	8.83	mg/L	0.2	mg/L	0.2	mg/L	0.2	mg/L	6.24	pH units	8.7	°C	58	g CaCO3/L	324	mg/L	3.14	mg/L	3.14	mg/L			9.51	mg/L

Attachment C:
Select Tributary Graphs, 2013 through 2017

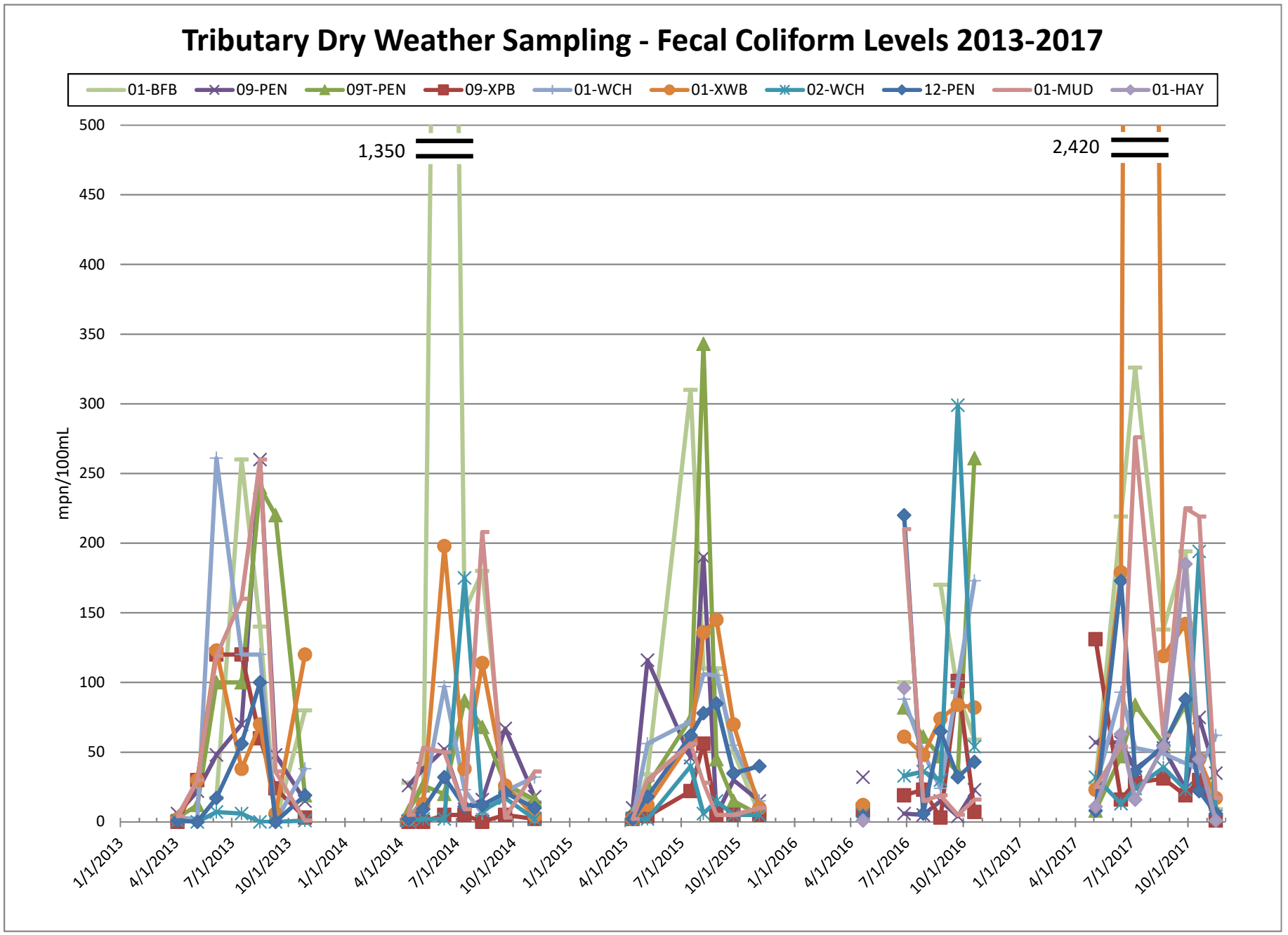
(note, graphs abbreviated to show recent data from 2013 through 2017 for enhanced readability)

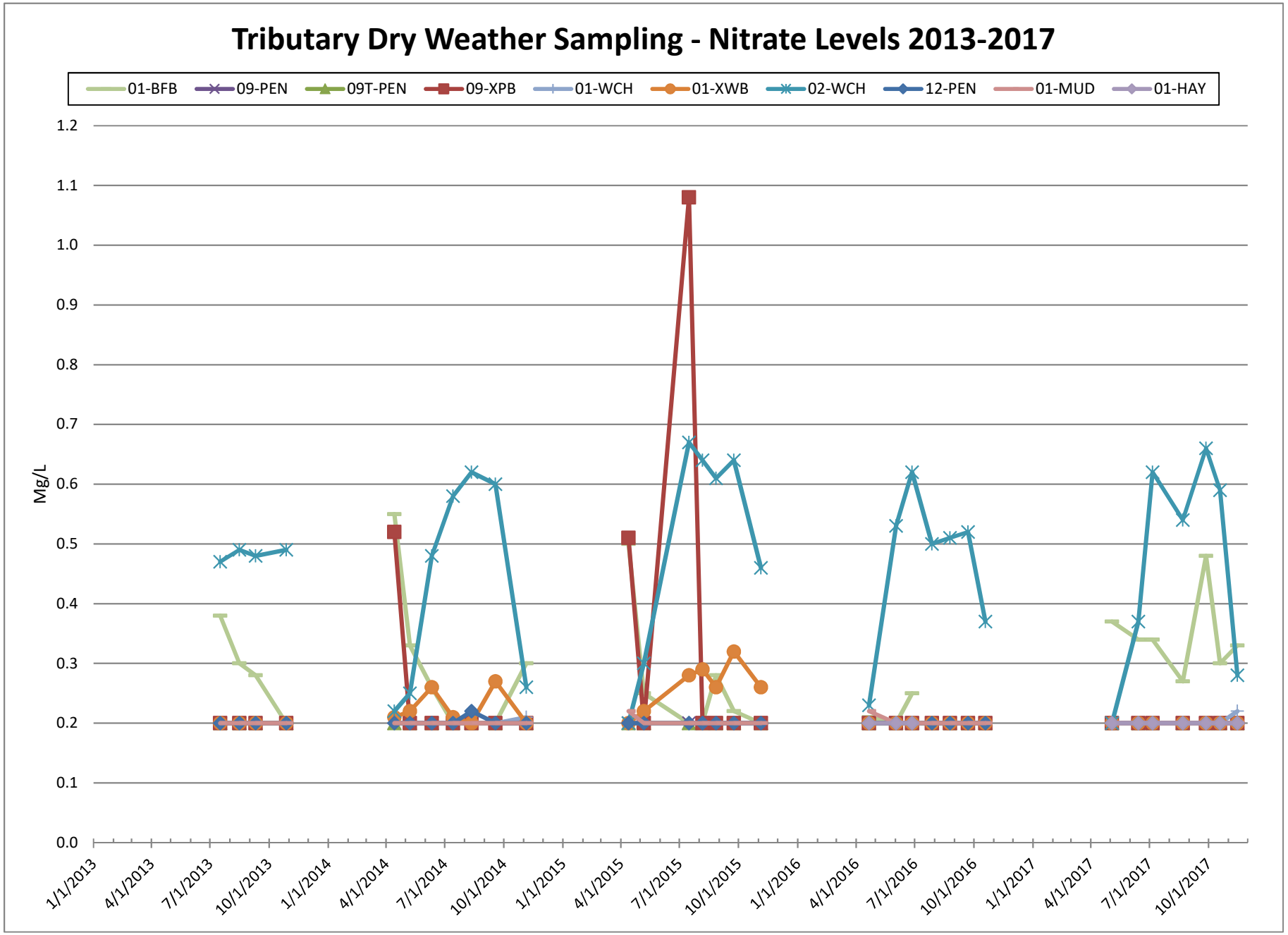

Tributary Dry Weather Sampling - Conductivity Levels 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
uS/cm
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

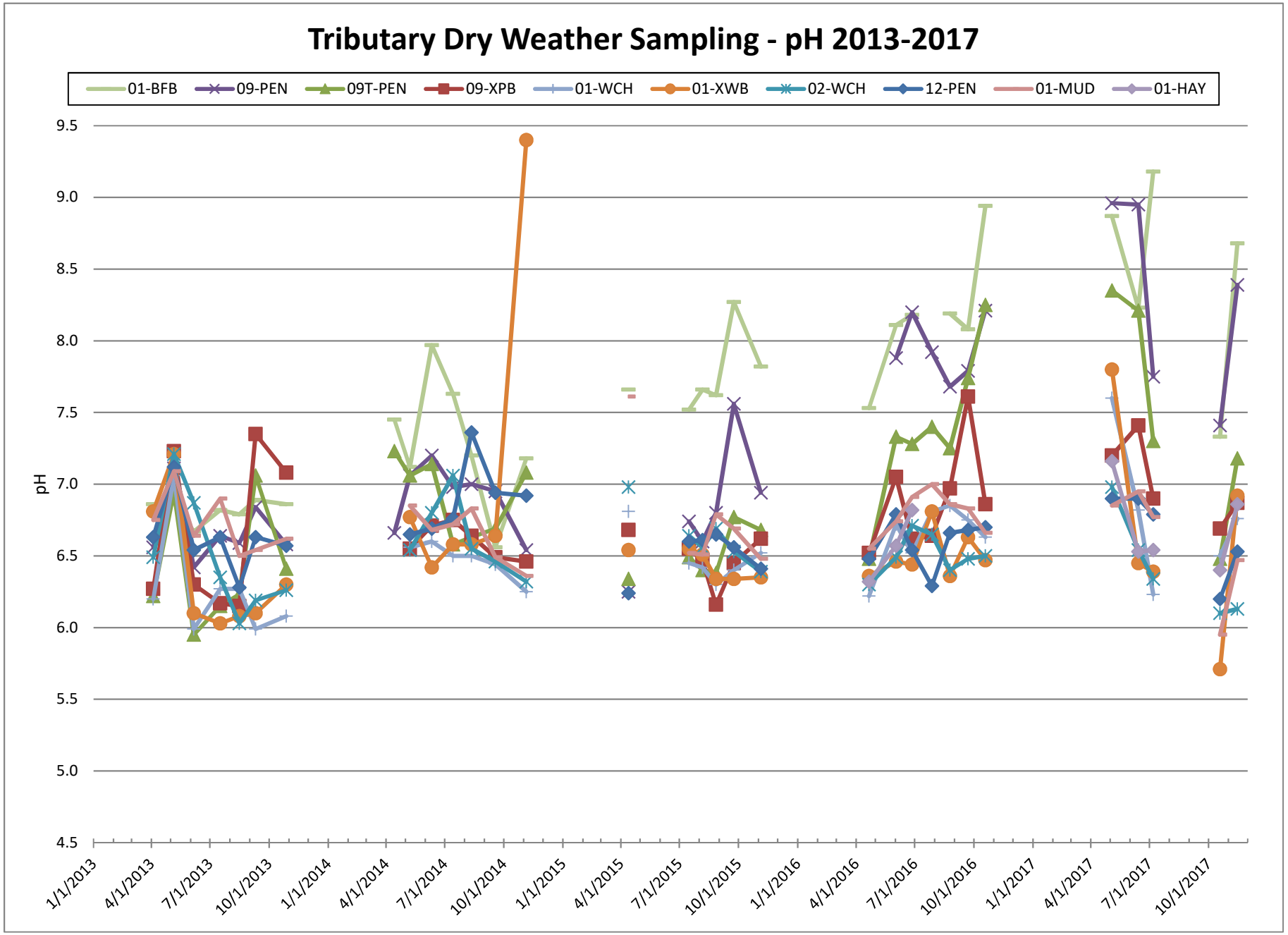

Tributary Dry Weather Sampling - Dissolved Oxygen 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
Mg/L
18
16
14
12
10
8
6
4
2
0
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

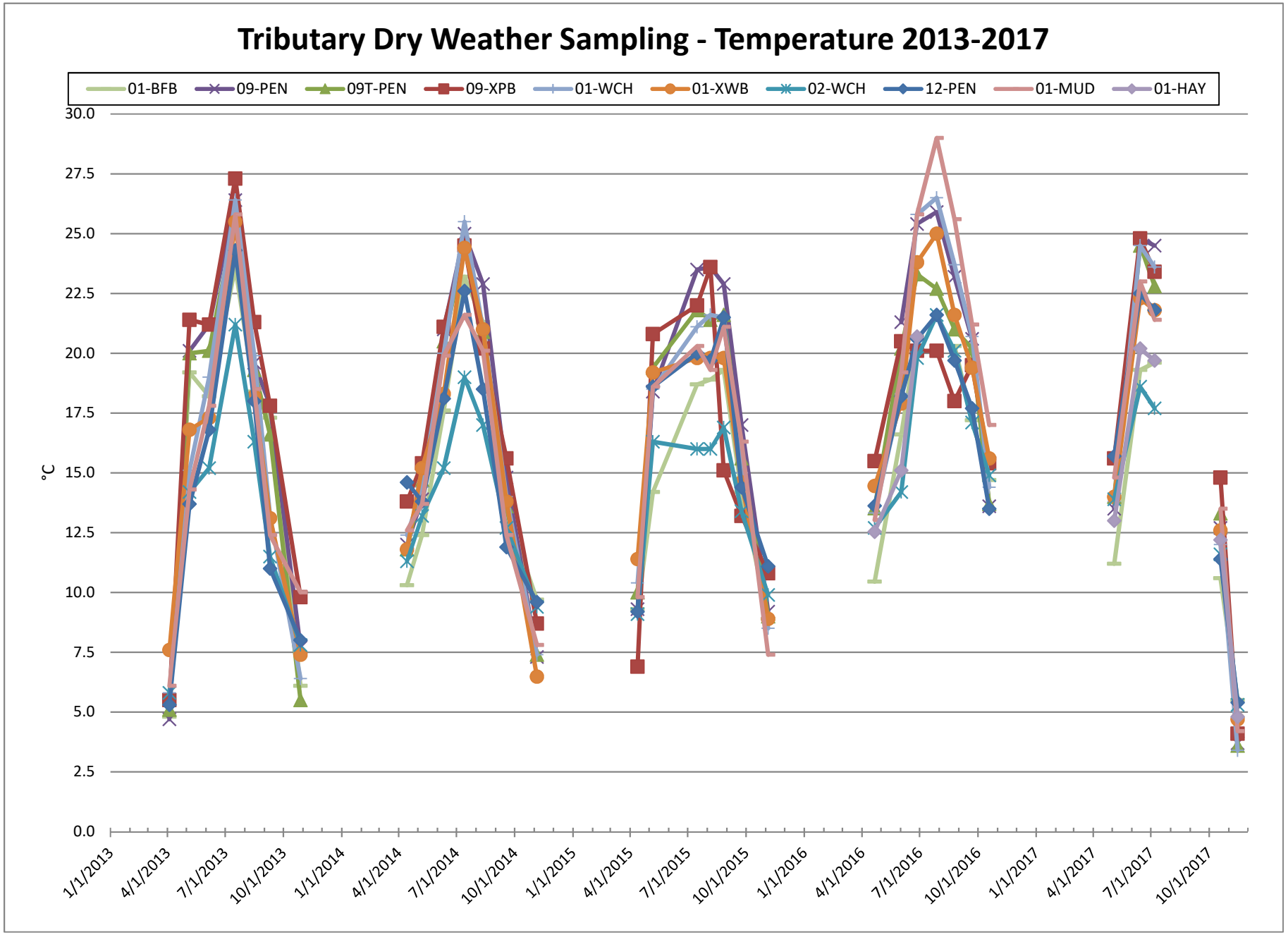

Tributary Dry Weather Sampling - E.Coli Levels 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
mpn/100mL
500
450
400
350
300
250
200
150
100
50
0
1,300
1,410
2,420
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

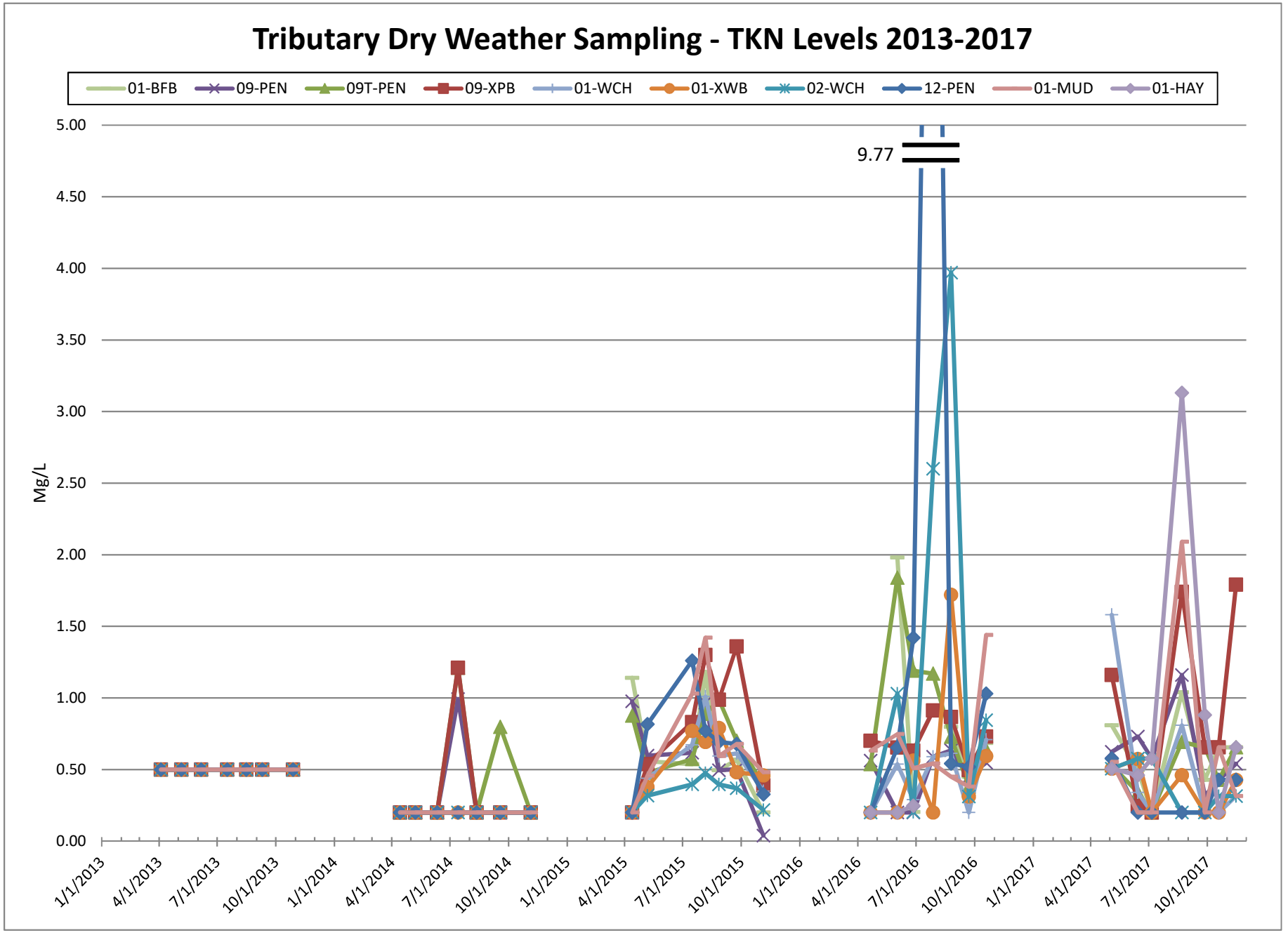
Tributary Dry Weather Sampling - Fecal Coliform Levels 2013-2017

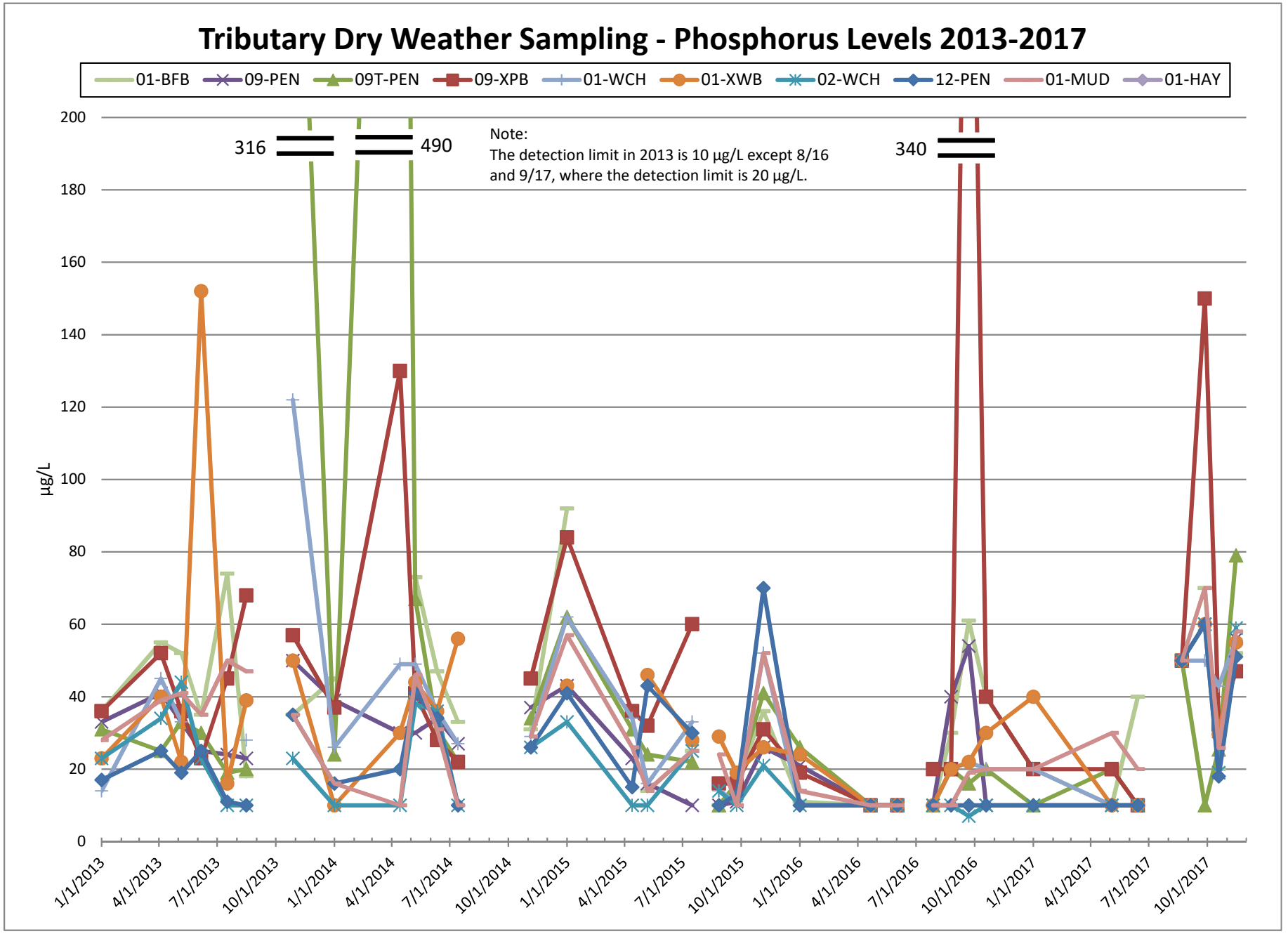



Tributary Dry Weather Sampling - Nitrate Levels 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
Mg/L
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017


Tributary Dry Weather Sampling - pH 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

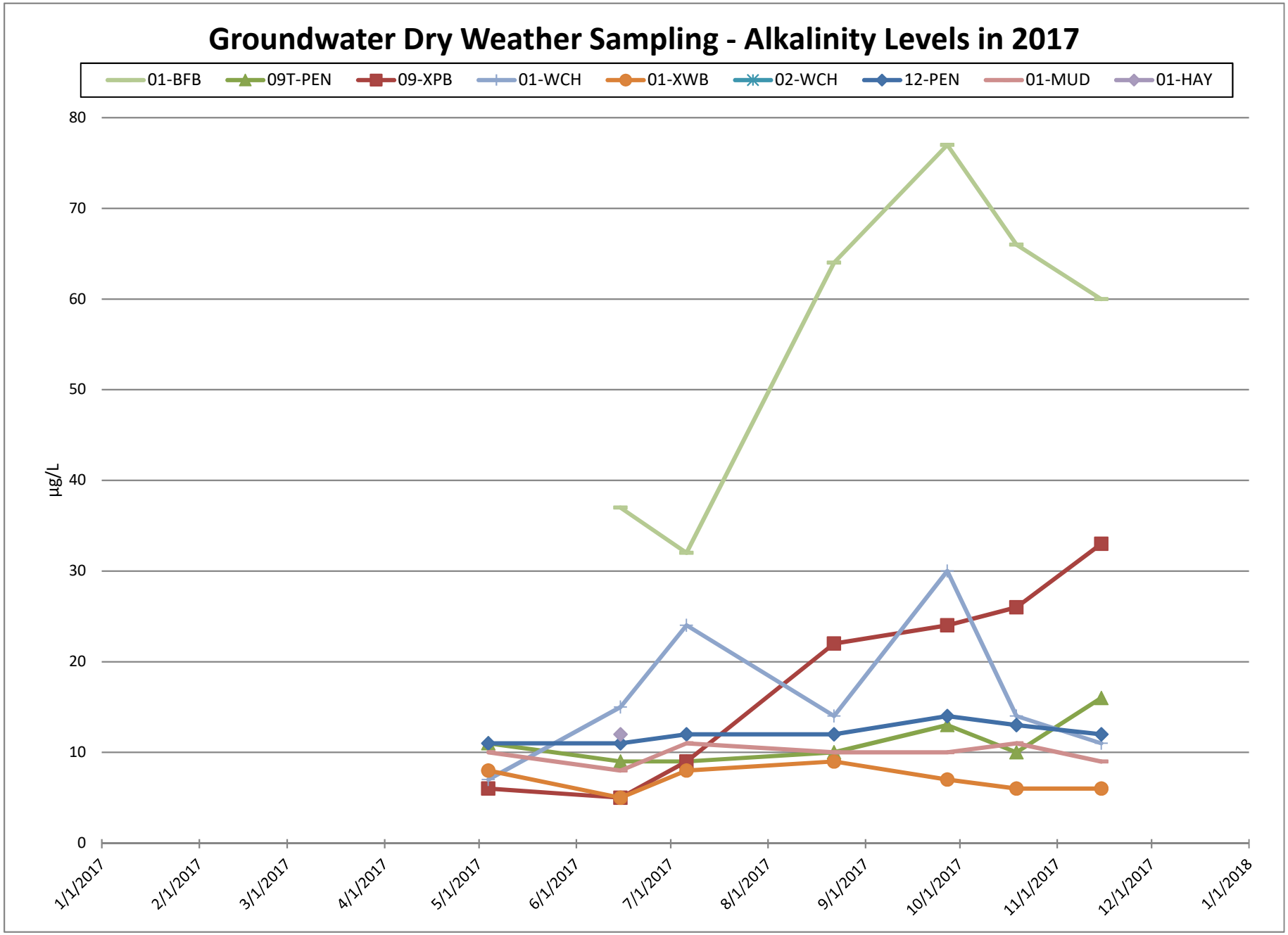

Tributary Dry Weather Sampling - Temperature 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
°C
30.0
27.5
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

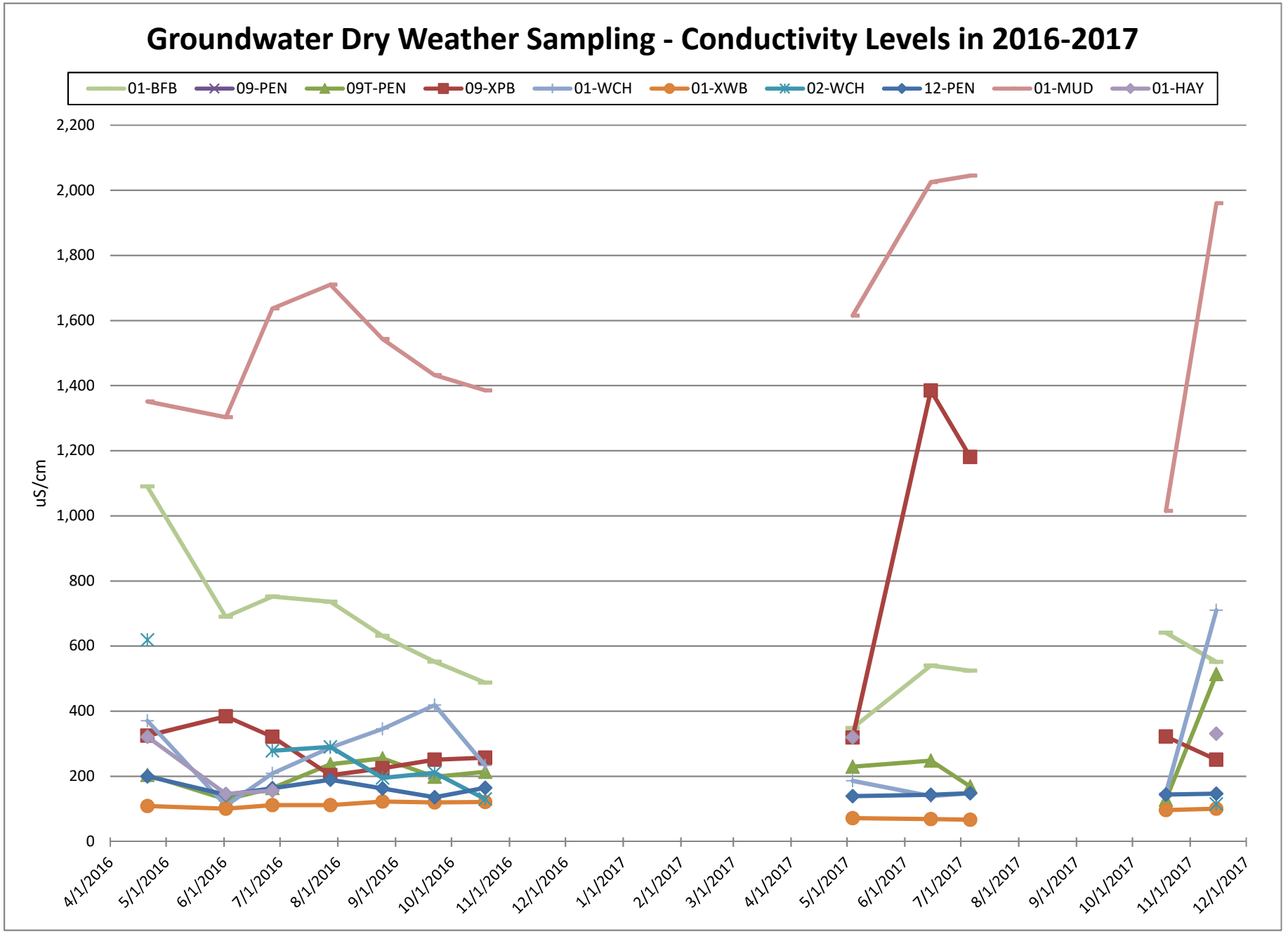

Tributary Dry Weather Sampling - TKN Levels 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
Mg/L
5.00
4.50
4.00
3.50
3.00
2.50
2.00
1.50
1.00
0.50
0.00
9.77
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

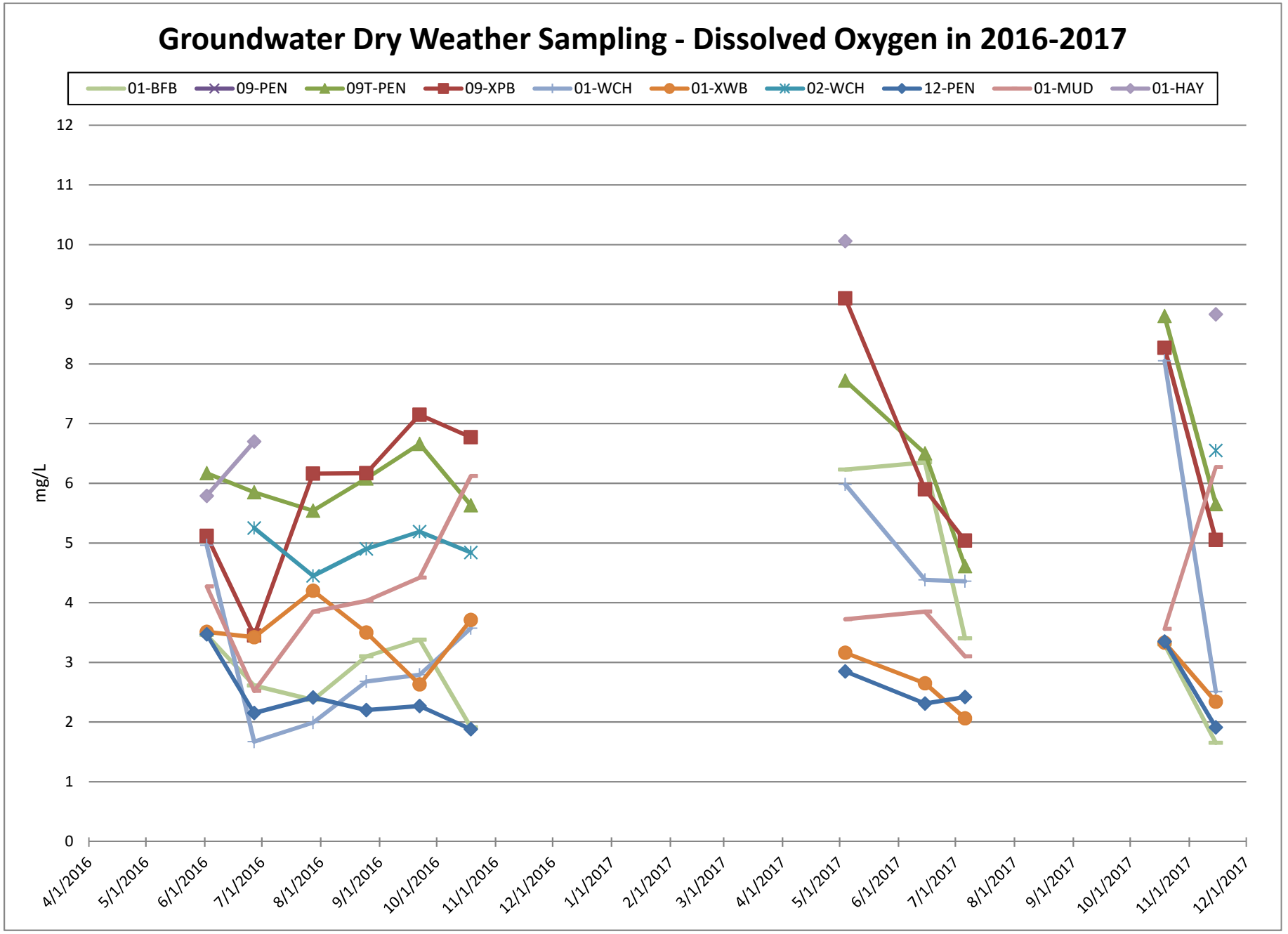

Tributary Dry Weather Sampling - Phosphorus Levels 2013-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
316
490
340
Note:
The detection limit in 2013 is 10 µg/L except 8/16 and 9/17, where the detection limit is 20 µg/L.
µg/L
200
180
160
140
120
100
80
60
40
20
0
1/1/2013
4/1/2013
7/1/2013
10/1/2013
1/1/2014
4/1/2014
7/1/2014
10/1/2014
1/1/2015
4/1/2015
7/1/2015
10/1/2015
1/1/2016
4/1/2016
7/1/2016
10/1/2016
1/1/2017
4/1/2017
7/1/2017
10/1/2017

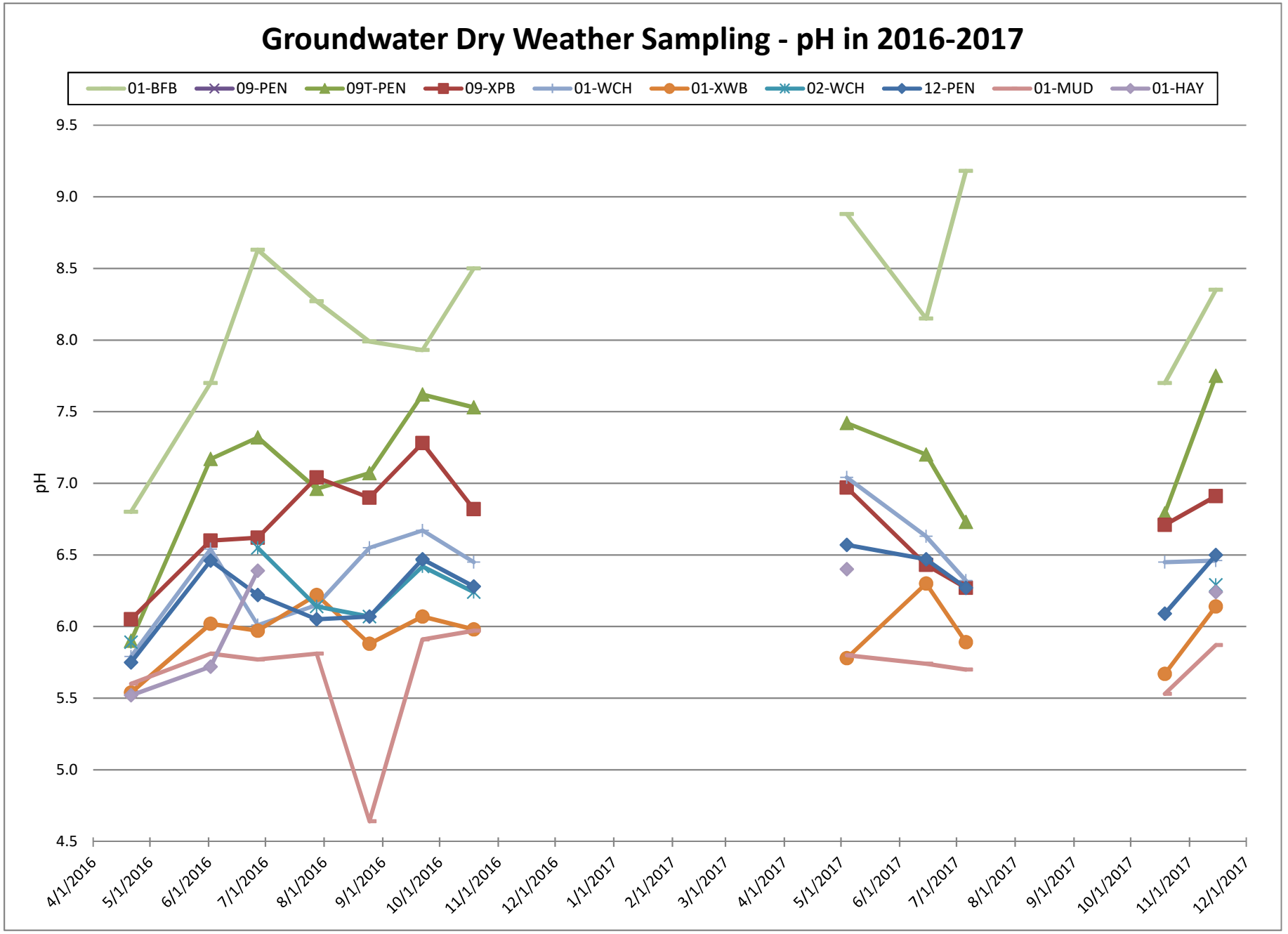
Attachment D:
Select Groundwater Graphs, 2016 through 2017

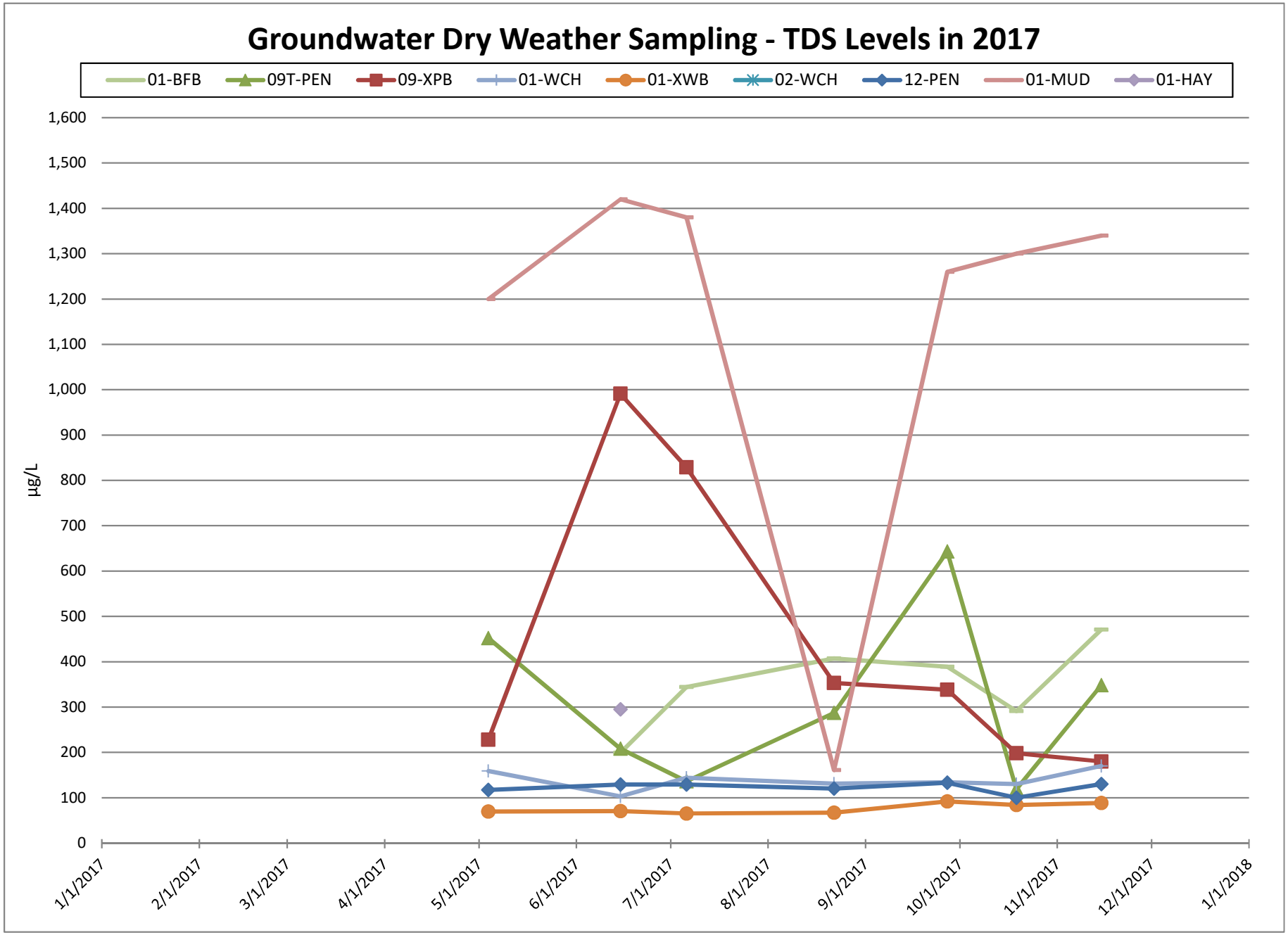
(note, graphs abbreviated to show recent data from 2016 through 2017, as all samples were all unfiltered)


Groundwater Dry Weather Sampling - Alkalinity Levels in 2017
01-BFB
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
80
70
60
50
40
30
20
10
0
µg/L
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017
1/1/2018

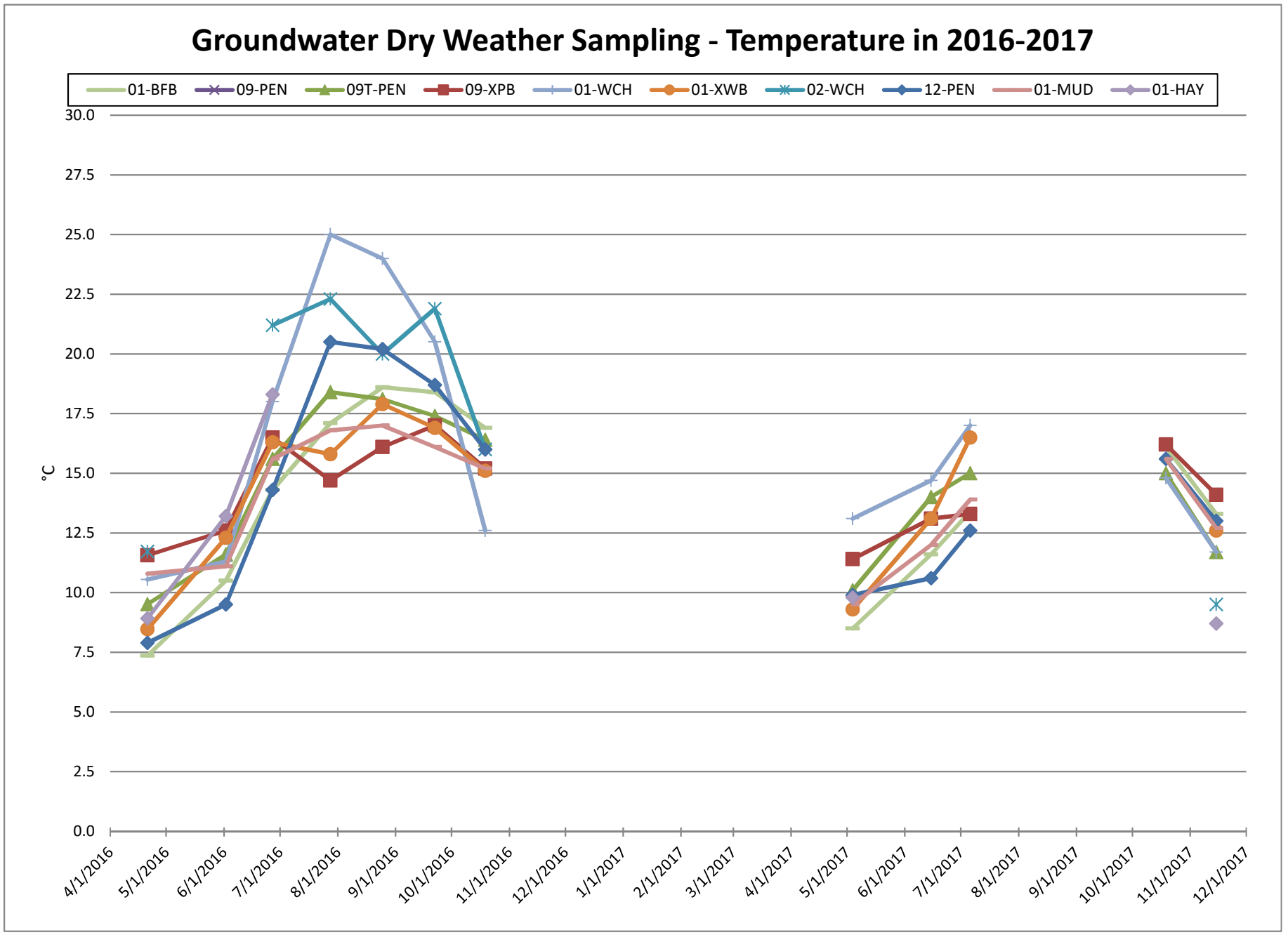

Groundwater Dry Weather Sampling - Conductivity Levels in 2016-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
uS/cm
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017

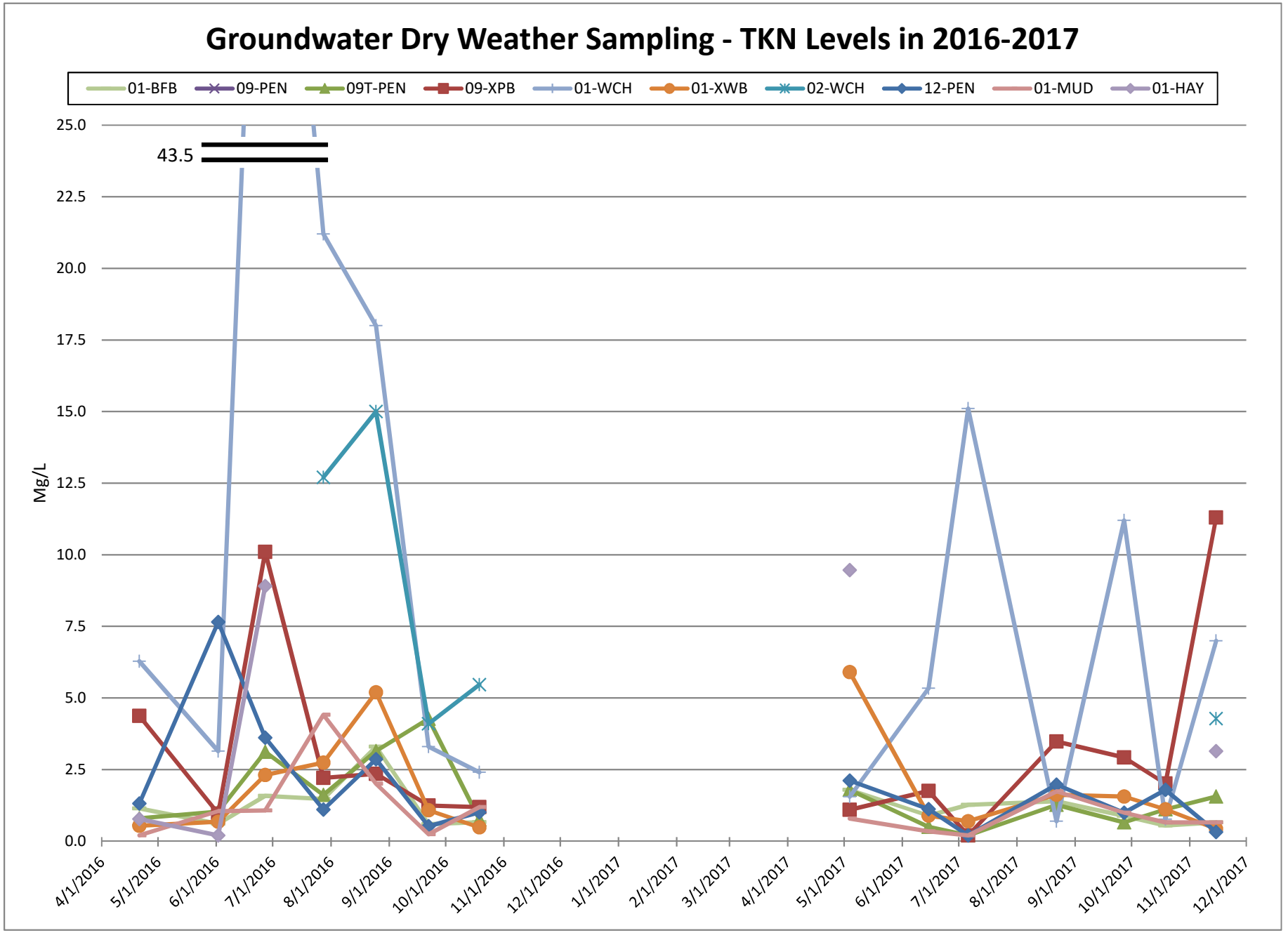

Groundwater Dry Weather Sampling - Dissolved Oxygen in 2016-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
mg/L
0
1
2
3
4
5
6
7
8
9
10
11
12
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017

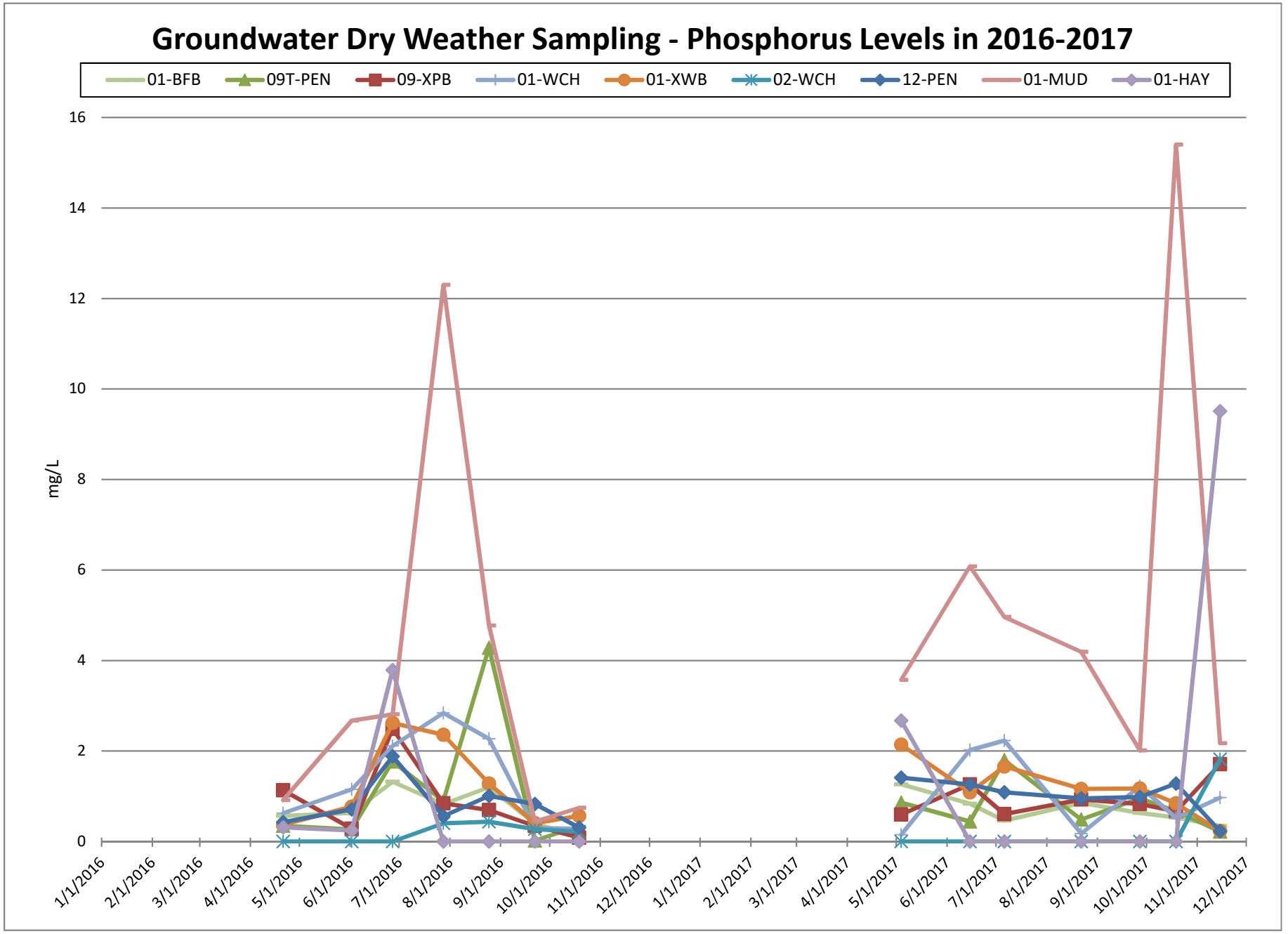

Groundwater Dry Weather Sampling - pH in 2016-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
pH
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
5.0
4.5
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017


Groundwater Dry Weather Sampling - TDS Levels in 2017
01-BFB
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
µg/L
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017
1/1/2018

Groundwater Dry Weather Sampling - Temperature in 2016-2017




Groundwater Dry Weather Sampling - TKN Levels in 2016-2017
01-BFB
09-PEN
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
43.5
Mg/L
25.0
22.5
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017


Groundwater Dry Weather Sampling - Phosphorus Levels in 2016-2017
01-BFB
09T-PEN
09-XPB
01-WCH
01-XWB
02-WCH
12-PEN
01-MUD
01-HAY
mg/L
16
14
12
10
8
6
4
2
0
1/1/2016
2/1/2016
3/1/2016
4/1/2016
5/1/2016
6/1/2016
7/1/2016
8/1/2016
9/1/2016
10/1/2016
11/1/2016
12/1/2016
1/1/2017
2/1/2017
3/1/2017
4/1/2017
5/1/2017
6/1/2017
7/1/2017
8/1/2017
9/1/2017
10/1/2017
11/1/2017
12/1/2017