

Horsham

Water Quality Update

October 11, 2017

Short Term Remediation Action Plan:

1. Temporary Treatment Systems at Wells 10, 17 and 21
2. Permanent Treatment Systems at Wells 26 and 40
3. Shutdown all other wells except keep Well 7 in operation
4. North Wales Water Authority increase to 1.2 million gpd
5. Possible suspension of Aqua PA Interconnection

Short Term Remediation Action Plan Update:

1. Temporary Treatment Systems at Wells 10, 17 and 21:
 - Well 10. Resin is working well to date.
 - 1st carbon change out & addition of resin: Nov. 2016
 - Based on test results, mid-resin PFOA breakthrough is projected to occur this fall. Almost a full year with no break through. Resin has worked well.
 - Well 17 no change since last update:
 - 1st carbon change out: Dec. 2016
 - 2nd carbon change out: July 19, 2017
 - Well 21 no change since last update:
 - 1st carbon change out: Nov. 2016
 - 2nd carbon change out: June 20, 2017

Short Term Remediation Action Plan Update:

2. Permanent Treatment Systems at Wells 26 & 40 no change since last update:
 - Replacement of carbon at Well 26 was completed July 12th
 - Replacement of carbon at Well 40 was completed on July 6th
 - HWSA received **6 water quality related calls in September:**
 - VFD was installed on Well 40 to control air.
 - **System & service flushing is being performed as needed.**
 - **HWSA is evaluating a recommendation and sequential approach to relining and/or replacing water mains in affected areas of the system.**
 - The discolored water is not from the wells; it is believed to be caused by changes in flow patterns in areas served by older mains as wells are suspended from service and other sources are brought on line or as maintenance occurs, such as backwash at Well 40.

Short Term Remediation Action Plan Update:

3. Shutdown all other wells except keep Well 7 in operation:

- Currently, all wells except Well 7 are suspended from service. **It is beginning to run a little more frequently which indicates improved tank turnover.**

4. North Wales Water Authority:

- Currently at the maximum of 1.2 million gpd

5. Aqua PA Interconnect:

- Currently at 225,000 gpd
 - May test result: 31 ppt combined
 - June test result: 17.8 ppt combined
 - July test result: 22.9 ppt combined
 - Aug. test result: 25 ppt combined

Chlorine Residual:

- Temporary problem until the long term remediation plan gets fully implemented
- Weekly flushing of the system to move water
- Maintenance dose done to the Lower State Rd. tank
- Adding chlorine at the NWWA interconnection
- Increased frequency of testing at the tanks and through out the system
- Change in weather and cooling temperatures will help
- Evaluating other ideas

Other Factors:

- PADEP Permit conditions
 - Well 10 special conditions for resin pilot
 - Upon mid-resin breakthrough, well to be taken out of service & pumped to waste until post-resin breakthrough
- Changes in drought status
- Demand changes
- Water Main Breaks

Other Factors:

- Longer run times on wells.
 - Normal run time is usually 14 hours a day.
 - All wells running 18 - 24 hours a day.
- Quality control of lab analytical results
- Declines in production yields
 - Well 21 - had to install smaller pump in order to accommodate temporary treatment
 - Well 40 - decrease in yield due to sealing upper 100' of well, yield loss is in excess of 100,000 gpd
- Mechanical breakdowns and/or routine maintenance requirements at active sources
- Factors including but not limited to those above will necessitate operational changes over the course of the short term plan

Private Wells:

- Navy:
 - 450 private wells have been sampled
 - 96 tested above the EPA LHAL 70 ppt
 - 74 have been connected to public system
 - 3 properties owners have rejected the offer
 - 2 have not accepted nor rejected the offer
 - 4 are already connected & only require well abandonment
 - 4 properties require main extensions
 - 5 are delayed due to well abandonment issue
 - 4 connections pending
 - 78 tested between 40 and 70 ppt
 - Phase II of water main extensions is completed and homes have been connected
 - Phase III of water main extensions: in early stages of design, includes two separate mains

- Air National Guard:
 - 4 private wells have been sampled
 - 4 have been connected to the public system

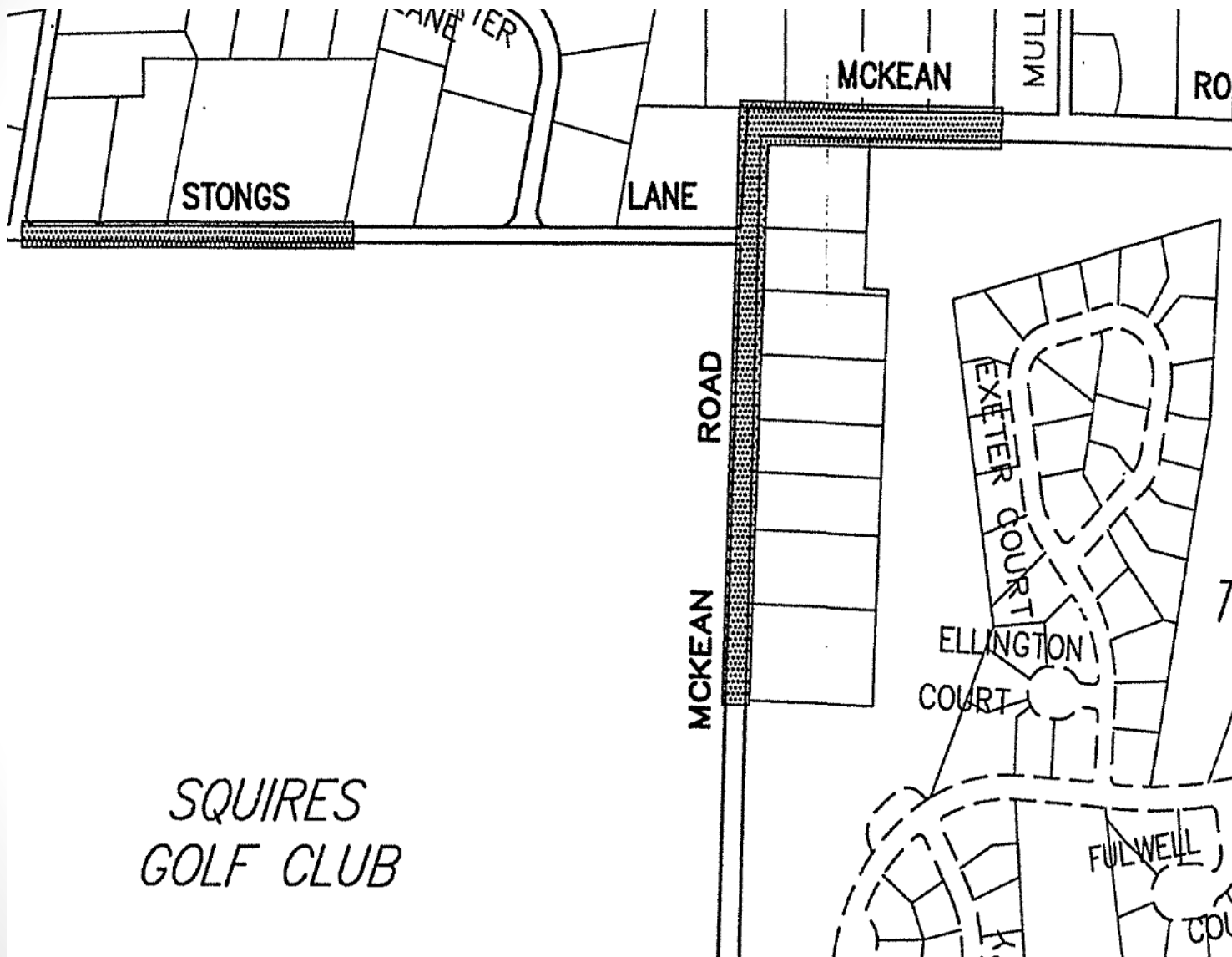
Long Term Remediation Action Plan:

1. Convert temporary treatment systems at wells 10, 17, & 21, to permanent treatment systems.
2. Permanent Treatment System on five additional wells: Wells 2, 4, 19, 20 & 22.
3. Permanent Treatment System on the Aqua PA interconnection
4. Additional interconnection with North Wales Water Authority
5. North Wales Water Authority: 600,000 gpd
6. 1.8 miles of new water main to make public water available

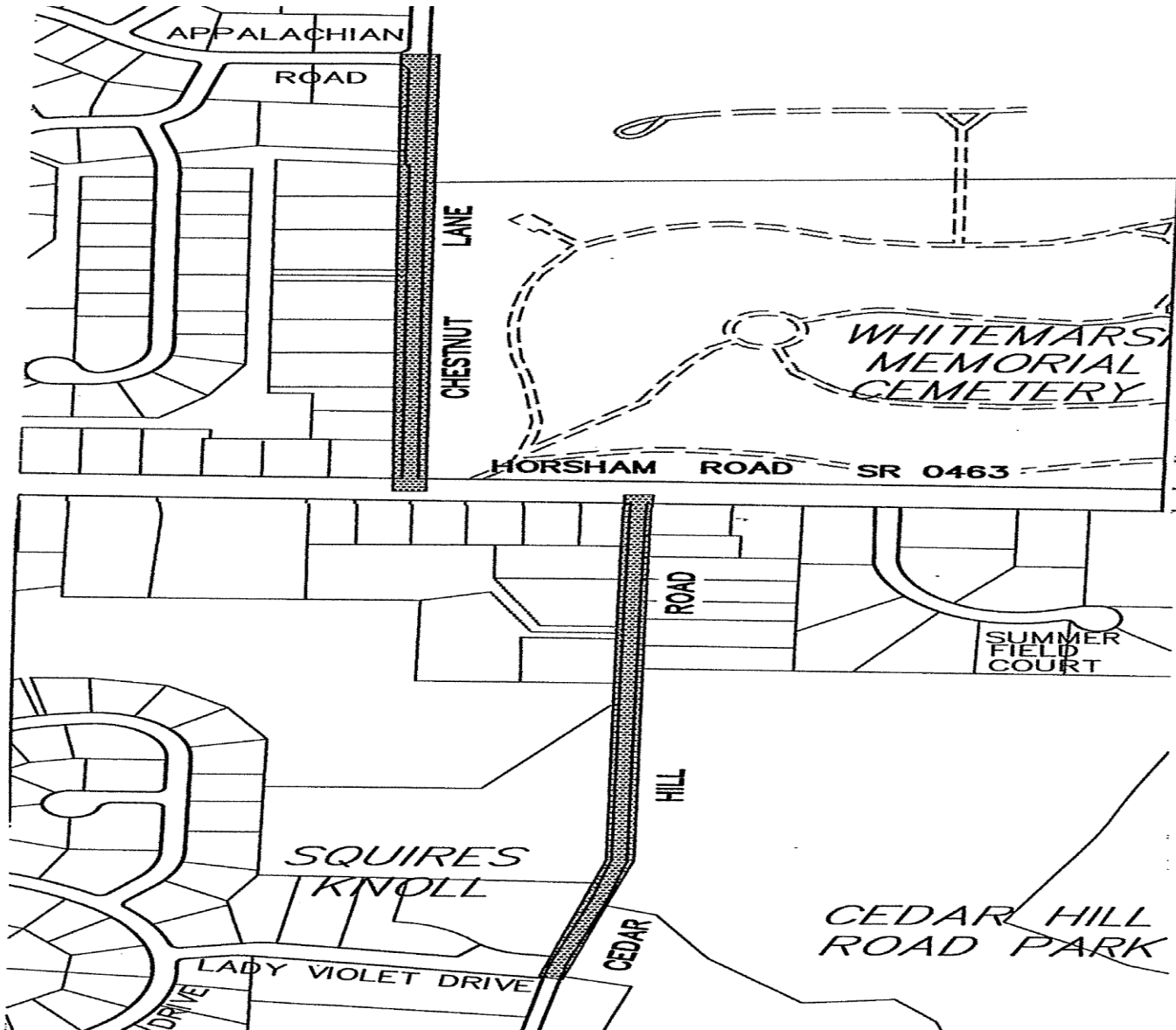
Long Term Remediation Action Plan:

- PennVest Board awarded the \$10M grant on Jan. 25, 2017.
- PennVest settlement occurred & was completed on July 6, 2017.
- Permanent Treatment Systems:
 - Finalized an easement with Workspace
 - Pre-construction meeting scheduled for Oct. 16th
 - Will have a tentative schedule next month
- Main Extensions:
 - Project will make water service available to 54 homes – all property owners have been advised of the future availability of service
 - Construction began on Sept. 8, 2017 and is ongoing
- NWWA interconnection:
 - Pre-construction meeting was held
 - Reviewing contractor's submittals
 - Construction expected to begin in November

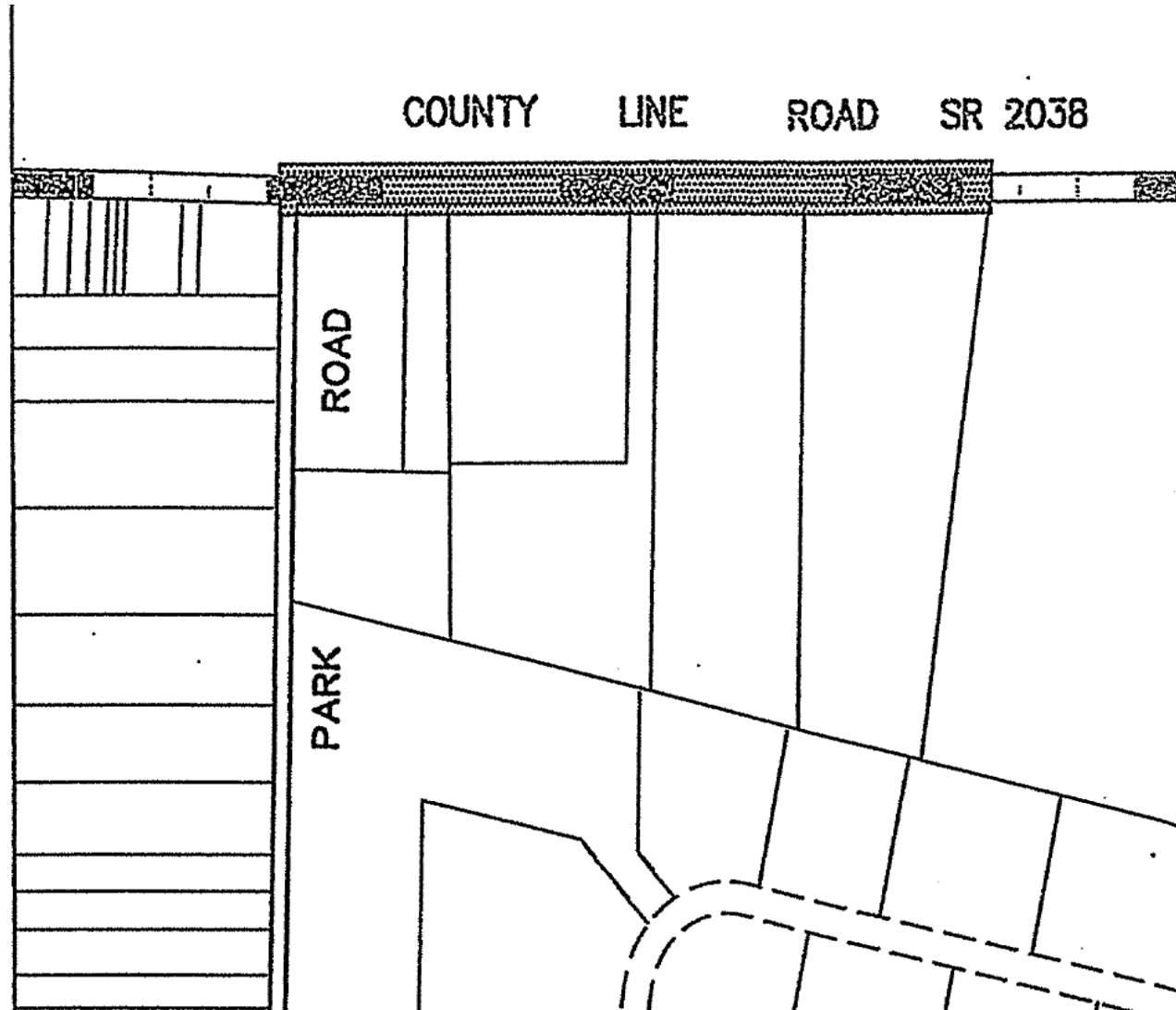
Long Term Remediation Action Plan:



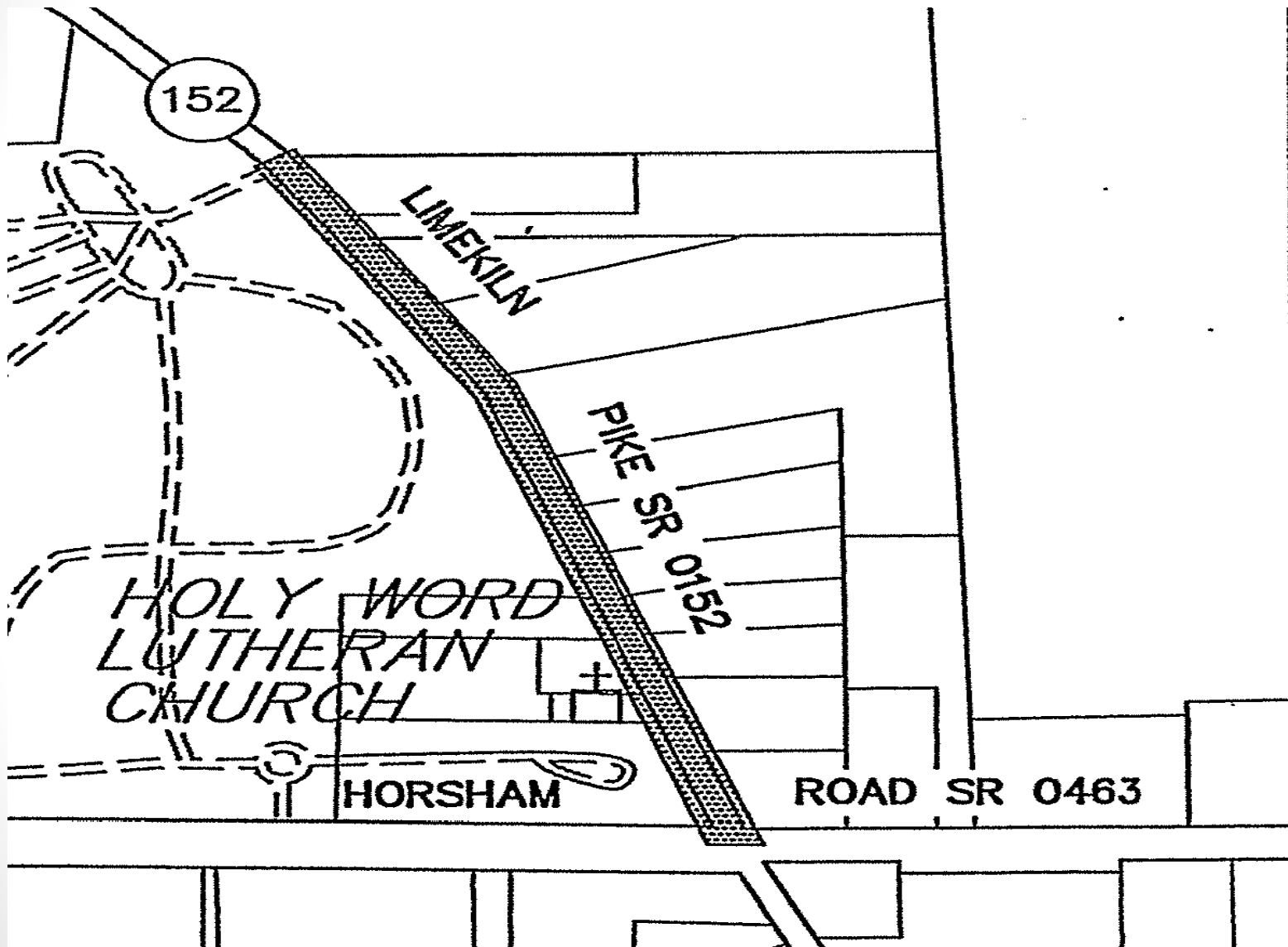
Long Term Remediation Action Plan:



Long Term Remediation Action Plan:



Long Term Remediation Action Plan:



Recap of Drinking Water Efforts:

- Treatment systems were installed on five planned wells by the end of 2016
- Currently, approximately 86% of water serving the public system is either filtered or supplied by NWWA.
- As of this update, the combined concentration of PFOS/PFOA from all sources currently supplying the public system is approximately 4 ppt.
- Other sources which remain in service are those with the lowest detected levels of PFOS/PFOA based on increased monitoring since adoption of the short term plan last year.
- Will continue to purchase water and rely on a mix of sources to ensure our residents have a safe and adequate supply.
- Will continue to test filters in accordance with DEP operations permits.
- Horsham Township continues to achieve more stringent water quality standards than those set by EPA and DEP.

Wastewater:

- Wastewater sampling at the Horsham Air Guard Station (HAGS):
 - HAGS wastewater discharge permit limit is 300 ppt combined
 - August 2016 sample 3,600 ppt combined
 - December 2016 sample 197 ppt combined
 - Feb/March 2017 sample 250 ppt combined
 - **August 2017 sample 192 ppt combined**
 - The HAGS wastewater discharge permit expired on June 30, 2017. HWSA has advised HAGS that new/extended permit is required. Situation under review by the National Guard Bureau.
- Effluent monitoring results at the Park Creek Sewage Treatment Plant are currently averaging 27 ppt combined vs. results from earlier 2016 which averaged over 200 ppt combined
 - There have been 3 test results showing non-detect for PFOS.

Stormwater:

- Horsham Air Guard Station:
 - Treatment system for groundwater/stormwater has been installed and became operational on Oct. 2, 2017.
 - Treatment is Granular Activated Carbon and Resin
 - HAGS will initiate sampling to verify treatment and to monitor carbon life.
 - Funding is for one year.
- Navy Base:
 - Closed off two artesian wells
 - Outfalls along the northern end of the base are being sealed. Work is on-going.
 - Evaluating options to modify retention basin to hold additional storm water.

Location of photos taken on July 27, 2017



Looking forward:

- Continue communication to the residents
- Adjust short term plan through various operational changes as necessary based on fluctuations in demand or as necessitated by other system conditions e.g. main breaks, flushing, chlorine residual
- Comply with PennVest **requirements for reimbursement of costs associated** the long term plan infrastructure.
- Continue to meet, lobby and work to address the storm water run off from the bases
- Continue to lobby to receive reimbursement of costs and full funding relating to the contamination. New letters seeking reimbursement will be mailed shortly.

Looking forward:

- Continue towards implementation of the long term plan
- Continue following any Federal and/or State Legislation regarding PFOA and PFOS
- Continue following any research and/or information regarding possible new treatment methods for PFOA and PFOS

Our Public Water System:

- We continue to ensure our residents have a safe and adequate supply.
- We continue to achieve more stringent water quality standards than those set by EPA and DEP.
- We are using the best available water treatment technology and were even the first in the State to be issued a public water supply permit to use a state of the art technology, Resin.
- We have a team of well trained and experienced professionals.

Our Public Water System:

- Charles Haas, Professor of Environmental Engineering at Drexel University, August 4, 2017:
 - “The big issue is that you can never get to zero (health) risk”
 - “The challenge is what level do you set that’s adequately protective of public health and can be met in an affordable manner”
 - “as long as the water authorities are in compliance with federal and state standards, there’s no reason to fear or panic”

Our Public Water System:

- Howard Neukrug, Professor of Practice in Water at University of Pennsylvania, August 4, 2017:
 - “drinking water quality has vastly improved in the decades since the implementation of the Clean Water Act and Safe Drinking Water Act in the early 1970’s”
 - “There’s less and less and less contamination in the water supply. American water is safer and more accessible today than at any time in history”

Communication:

- Monthly updates at Council's second Wednesday public meetings
- Township website: www.horsham.org
- HWSA website: www.horshamwater-sewer.com
- Water hotline: 215-907-0034
- Follow us on Twitter at @HorshamTownship
- Like us on Facebook at Horsham Township
- Sign up for email updates at water@horsham.org