

**Application of Pennsylvania-American Water Company for Acquisition of
the Wastewater Assets of the Township of Exeter
66 Pa. C.S. §1329
Application Filing Checklist – Water/Wastewater
Docket No. A-2018-_____**

22. Other requirements. Demonstrate compliance with the following:
- b. For **wastewater** system acquisitions, provide a copy of the DEP-approved Act 537 Official Sewage Facilities Plans for the affected municipalities.

RESPONSE:

- b. See attached Act 537 Official Sewage Facilities Plan, Volume 1 & 2, accompanied by December 2, 2014 DEP conditional approval letter.



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
CLEAN WATER PROGRAM

December 2, 2014

Exeter Township Supervisors
c/o Mr. Troy Bingaman, Secretary
4975 DeMoss Road
Reading, PA 19606

Re: Approval Letter – Official Plan Update
Act 537 Planning
DEP CODE NO. A1-06932-ACT
APS ID No. 844569
AUTH ID No. 1029028
Exeter Township, Berks County

RECEIVED
DEC 04 2014
EXETER TOWNSHIP
BOARD OF SUPERVISORS

Ladies and Gentlemen:

The Department of Environmental Protection (DEP) has reviewed the proposed Official Plan Update submitted on June 5, 2014, prepared by Gannett Fleming, and entitled Act 537 Plan Amendment, Township of Exeter (March 2014 revised November 2014). The submission is consistent with the planning requirements in Chapter 71 of DEP's regulations. This Act 537 Plan Amendment provides for the direct replacement of the trunk sewers in the Schuylkill River, Heisters Creek and Antietam Creek Drainage Areas. Also, the implementation of a township-wide Sewage Management Plan with the inclusion of the Glen Oley Farms area as a future public sewer service area.

The plan is approved with the following conditions:

1. The approved projects will require Water Management Part II Permits for construction and operation of the proposed sewerage facilities. The permit applications must be submitted in the name of the municipality. Issuance of a Part II Permit will be based upon a technical evaluation of the permit application and supporting documentation. Starting construction prior to obtaining a Part II Permit is a violation of The Clean Streams Law.
2. Other Departmental permits may be required for construction if encroachment to streams or wetlands will result. Information regarding the requirements for such permits or approvals can be obtained from the Department's Permitting and Technical Services Section, Waterways & Wetlands Program, Southcentral Regional Office, 909 Elmerton Avenue, Harrisburg, PA 17110, at 717.705.4802.
3. The Department notes the Township's commitment to perform field investigations pursuant to establishing consistency with the requirements of the Jurisdictional Agencies

(JA) involved in the PNDI review process. Permits will not be issued without documentation from the appropriate JA that their concerns have been addressed.

Since DEP has approved your Plan, you are now eligible to receive a 50 percent planning cost reimbursement grant as provided under Section 6 of the Sewage Facilities Act (Act 537). A copy of the reimbursement application can be downloaded from the DEP website at <http://www.elibrary.dep.state.pa.us/dsweb/View/Collection-8773>. You are reminded that reimbursement applications must show detailed cost breakdowns of tasks completed or you will place your reimbursement in jeopardy.

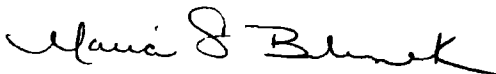
Any person aggrieved by this action may appeal, pursuant to Section 4 of the Environmental Hearing Board Act, 35 P.S. Section 7514, and the Administrative Agency Law, 2 Pa. C.S. Chapter 5A, to the Environmental Hearing Board, Second Floor, Rachel Carson State Office Building, 400 Market Street, PO Box 8457, Harrisburg, PA 17105-8457, 717.787.3483. TDD users may contact the Board through the Pennsylvania Relay Service, 800.654.5984. Appeals must be filed with the Environmental Hearing Board within 30 days of receipt of written notice of this action unless the appropriate statute provides a different time period. Copies of the appeal form and the Board's rules of practice and procedure may be obtained from the Board. The appeal form and the Board's rules of practice and procedure are also available in braille or on audiotape from the Secretary to the Board at 717.787.3483. This paragraph does not, in and of itself, create any right of appeal beyond that permitted by applicable statutes and decisional law.

IF YOU WANT TO CHALLENGE THIS ACTION, YOUR APPEAL MUST REACH THE BOARD WITHIN 30 DAYS. YOU DO NOT NEED A LAWYER TO FILE AN APPEAL WITH THE BOARD.

IMPORTANT LEGAL RIGHTS ARE AT STAKE, HOWEVER, SO YOU SHOULD SHOW THIS DOCUMENT TO A LAWYER AT ONCE. IF YOU CANNOT AFFORD A LAWYER, YOU MAY QUALIFY FOR FREE PRO BONO REPRESENTATION. CALL THE SECRETARY TO THE BOARD (717.787.3483) FOR MORE INFORMATION.

If you have any questions or concerns, please call Mr. Barry L. Sweger at 717.705.4761.

Sincerely,



Maria D. Bebenek, P.E.
Program Manager

cc: Gannett Fleming, Inc.
Exeter Township Planning Commission
Berks County Planning Commission

Act 537 Plan Amendment

Township of Exeter

Berks County, Pennsylvania

March 2014

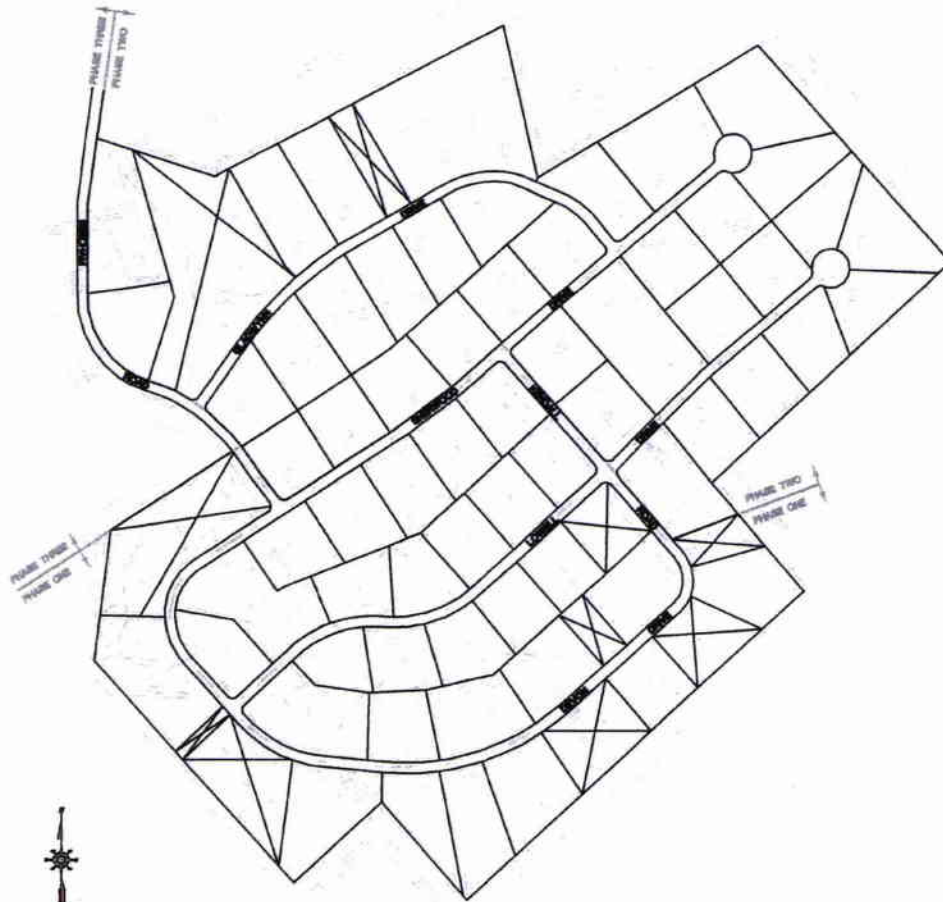
Volume 2

Prepared by:



Gannett Fleming
VALLEY FORGE, PENNSYLVANIA

EXETER TOWNSHIP ACT 537 PLAN NEEDS ANALYSIS FOR GLEN OLEY FARM SPECIAL STUDY AREA



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West Reading, PA 19611
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Exeter Township Act 537 Update

Needs Analysis for Glen Oley Farm Study Area (Special Study)

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SECTION III. EXISTING SEWAGE FACILITIES IN THE PLANNING AREA - IDENTIFYING THE EXISTING NEEDS

A. EXISTING SEWAGE FACILITIES IN THE PLANNING AREA

The “Glen Oley Farms” development consists of three phases or sections (see study area Map No. 1). Phase One dates to approximately 1958 and all homes are served by individual wells and On-Lot Sewage Disposal Systems (O.L.D.S.). Phase Two dates to approximately 1976 and all but two homes are served by individual wells and O.L.D.S. Phase Three was developed in the mid 1990’s and all homes are served by individual wells and a public sewerage collection, conveyance and treatment system owned and operated by the Exeter Township Municipal Authority.

During construction of the Phase Three Collection System, a pumping station was constructed along Beecham Road that was sized sufficiently to accommodate collection and conveyance of Phases One and Two should the need or opportunity to provide service to these areas ever arise.

B. SEWAGE DISPOSAL NEEDS

The “Glen Oley Farms” study area encompasses Phase One and Phase Two of the “Glen Oley Farms” development as illustrated on the base map (Map No. 1).

The entire study area comprises 74 properties, totaling 94.37 acres. Sixty-four properties (86%) have been improved as of the date of this study. See Appendix A for an updated list of properties within the study area.

C. TYPES OF ONLOT SYSTEMS IN USE

Phase One of the study area contains homes that were built primarily during the 1960’s and 1970’s. The majority of the O.L.D.S. in Phase One are in-ground beds or trenches with single compartment septic tanks. Nearly all are pre-regulatory.

Phase Two of the study area contains homes that were built during the 1980s and 1990s. There is a mixture of O.L.D.S. technologies in use and all were permitted and installed in accordance with the regulations that were in effect at the time of construction. During the course of the 2010 study, it was discovered that two properties within Phase Two had already been connected to the public sewerage system. These two properties were not included in the door-to-door surveys.

D. SANITARY SURVEY – WORK SUMMARY NARRATIVE

The original Needs Analysis for the Glen Oley Farm Study Area was conducted in July, 2010. Although the study met PA DEP requirements, Township Officials and residents felt that a survey of only 23 properties (36%) did not provide sufficient detail with which to make an informed decision on whether to proceed with design and installation of a public sewerage collection system for Phase I & II. As a result, this special study was authorized for the purpose of obtaining as many surveys and as much supporting information as possible.

The identification and documentation of sewage-associated problems involves the collection and tabulation of information in the form of reports, surveys, administrative actions and verification of all data with actual fieldwork.

There are three general needs categories relative to sewage disposal that must be considered as follows:

1. Public health needs
2. Water pollution needs
3. Community development needs

The public health needs are evaluated based upon health hazard and water pollution problems that involve discharging untreated or inadequately treated sewage to the surface of the ground or the waters of the Commonwealth (including groundwater).

Water pollution needs evaluate migration of sewage effluent from On-Lot Sewage Disposal Systems (O.L.D.S.) into the receiving stream. Evaluation of the tributary stream adjacent to the

study area was not included in the scope of these analyses due to the absence of methods of direct conveyance (i.e. wildcat sewers).

The future needs of a study area include population growth rates, proposed land use, zoning criteria, existing and proposed development and many other factors analyzed over a 20-year growth cycle.

All of the properties surveyed are single family residences served by O.L.D.S., some of which are pre-regulatory. The types of O.L.D.S. vary technologically from in-ground, gravity fed systems to above ground and pressure dosed systems.

Berks Envirotech Inc., the firm appointed as Exeter Township's Sewage Enforcement Agency, performed the on-lot sewage survey. The surveys were conducted in October, November and December, 2013. Weather conditions varied during this period from mild to cold with snow.

A door-to-door survey was conducted, utilizing the approved PA DEP Forms, obtaining detailed information from the individual property owners. All information was field verified by at least one representative of Berks Envirotech, Inc. Survey forms can be found in Appendix C.

E. PUBLIC HEALTH NEEDS

The public health needs are identified through the number of confirmed, suspected and potential malfunctions within the study area. The following summarizes each of the three types of public health needs:

1. Confirmed Malfunctions: Those malfunctions documented by dye testing, laboratory test results, observation by a certified Sewage Enforcement Officer or a professional with experience in On-Lot Disposal Systems (O.L.D.S.), "Best Technical Guidance" repair permits, and seasonally wet absorption areas. Also included are piped discharges from a single structure with direct evidence of sewage (i.e. direct

observation of soap suds, food residue, solids, odors, etc.), reported system backups, malfunctions with photographic documentation or other similar evidence.

2. **Suspected Malfunctions:** Those systems exhibiting some malfunction characteristics such as abnormally green grass in the vicinity of an absorption area, piped discharges from one (or more than one) dwelling without direct evidence of sewage (i.e. no observation of soap suds, food residue, solids, odors, etc.), absorption areas located in known unsuitable soils (observed wetlands, rock outcropping, etc.), cesspools (in high density development), and pit (not vault) privies.
3. **Potential Malfunctions:** Those systems that appear to be operating satisfactorily but were constructed prior to system permitting requirements (i.e. pre-regulatory systems), systems located in areas extremely unlikely to receive permitting by current standards, systems constructed in areas having soils mapped as unsuitable or with severe limitations for O.L.D.S. and systems located on exceptionally steep slopes greater than 25 percent. Included as potential malfunctions are permits issued for O.L.D.S. repairs that meet Chapter 73 standards. While this needs category does not represent “stand alone”, existing needs, the information may be utilized in a needs analysis to locate areas affected by poorly defined adverse circumstances. For example, clusters of legitimate repairs will often indicate areas requiring closer scrutiny. All of the properties that contain limited or no available replacement area are included in this category.

In order to provide more detailed information for the Special Study, each property was given a preliminary evaluation by the Sewage Enforcement Officer for available replacement area. Each property has been evaluated as falling into one of three replacement area categories:

1. **Replacement Area is Available.** In the estimation of the SEO, there is sufficient available space, pending suitable soil probe and percolation testing, for O.L.D.S. replacement; or, soil probe and percolation testing for O.L.D.S replacement has already been conducted.

2. Limited Replacement Area is Available. O.L.D.S. replacement is possible, pending suitable soil probe and percolation testing; however, a “Best Technical Guidance” repair permit will be necessary due to well encroachment, isolation limitations, slope or other limiting factors. In some cases, further evaluation may reveal that there is no suitable space available for O.L.D.S. replacement (such as failed soil testing).

3. No Replacement Area is Available. In the best estimation of the SEO, there is insufficient area even to conduct soils testing for O.L.D.S replacement. In the event of a malfunction, if public sewerage services are not available, the only alternative for these properties would be a holding tank.

The results of replacement area evaluation can be seen on Map #6.

Table III-1 illustrates the summary of personal property interviews conducted within the study area of 62 improved properties utilizing on-lot sewage disposal systems (O.L.D.S.). 59 properties, or 95% of the properties, were surveyed. 3 property owners, or 5%, did not respond to our survey requests. We observed 1 confirmed malfunction, or 2%; 6 suspected malfunctions, or 10%; and 41 potential malfunctions, or 70%. Most of the properties categorized as potential malfunctions were due to pre-regulatory systems, limited replacement area or both. 48 properties, or 81%, of the properties that were surveyed qualified as a public health concern.

The confirmed malfunction is temporarily abated because the home is currently un-occupied. It is a public health concern and will require a long term solution to provide permanent sewage disposal. Suspected malfunctions should be followed up to ensure they do not become confirmed malfunctions (sewage violations).

TABLE III – 1 PUBLIC HEALTH NEEDS

Map Index #	Acreage	Confirmed Malfunction	Suspected Malfunction	Potential Malfunction	No Malfunction Status	O.L.D.S. Replacement			Observations & Findings
						R	L	N	
1	1.57			X			X		Limitations for replacement O.L.D.S.
2	1.51				X	X			
3	4.11				X	X			
4	1.26			X			X		Limitations for replacement O.L.D.S.
5	1.12		X			X			Owner reported green lush grass/spongy area over low corner of drainfield.
6	1.24				X	X			
7	1.34			X			X		Limitations for replacement O.L.D.S.
8	1.31				X	X			
9	1.05			X			X		Limitations for replacement O.L.D.S.
10	1.05				X	X			
11	1.09			X			X		Limitations for replacement O.L.D.S.
12	1.03			X			X		Limitations for replacement O.L.D.S.
13	1.06				X	X			
14	1.02				X	X			
15	1.09			X			X		Unpermitted repair; limitations for replacement O.L.D.S.
16	1.23			X			X		Unpermitted repair; limitations for replacement O.L.D.S.
17	1.48				X	X			
18	2.0				X	X			
19	1.03			X				X	No replacement area available.
20	1.06			X			X		Limitations for replacement O.L.D.S.
21	1.13			X				X	No replacement area available.

O.L.D.S. – On-Lot (Sewage) Disposal System

R – Replacement area is available (pending soil probe and percolation testing).

L – Limited replacement area is available (pending soil probe and percolation testing).

N – No replacement area is available.

Map Index #	Acreage	Confirmed Malfunction	Suspected Malfunction	Potential Malfunction	No Malfunction Status	O.L.D.S. Replacement			Observations & Findings
						R	L	N	
22	2.5			X		X			Currently using 3 rd system (2 nd replacement).
23	1.11	X					X		Evidence of system overflow found by SEO.
24	1.08			X			X		Limitations for replacement O.L.D.S.
25	1.0			X			X		Limitations for replacement O.L.D.S.
26	1.14			X			X		Limitations for replacement O.L.D.S.
27	1.1			X			X		Limitations for replacement O.L.D.S.
28	1.41			X				X	No replacement area available.
29	1.03			X			X		Limitations for replacement O.L.D.S.
30	1.03			X			X		Limitations for replacement O.L.D.S.
31	1.05			X			X		Limitations for replacement O.L.D.S.
32	1.09			X				X	No replacement area available.
33	1.6				X	X			
34	1.29		X			X			Unpermitted repair; history of system malfunction.
35	0.99			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
36	1.46			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
37	1.38			X			X		Replacement system; limitations for additional replacement O.L.D.S.
38	0.98			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
39	1.84		X				X		High liquid level in septic tank; pre-regulatory system; limitations for replacement O.L.D.S.
40	2.11			X		X			Pre-regulatory system.

O.L.D.S. – On-Lot (Sewage) Disposal System

R – Replacement area is available (pending soil probe and percolation testing).

L – Limited replacement area is available (pending soil probe and percolation testing).

N – No replacement area is available.

Map Index #	Acreage	Confirmed Malfunction	Suspected Malfunction	Potential Malfunction	No Malfunction Status	O.L.D.S. Replacement			Observations & Findings
						R	L	N	
41	1.09						X		Owner did not respond to survey request.
42	1.85			X		X			Un-permitted repair to pre-regulatory system.
43	0.99		X				X		Un-permitted repair to previously identified confirmed malfunction.
44	1.13			X			X		Limitations for replacement O.L.D.S.
45	1.12			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
46	1.0			X				X	No replacement area available
47	1.02			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
48	0.9			X		X			Pre-regulatory system.
49	0.95			X		X			Pre-regulatory system.
50	0.97			X			X		Pre-regulatory system.
51	0.94						X		Owner did not respond to survey request.
52	0.94			X			X		Replacement system in use; limitations for additional replacement O.L.D.S.
53	0.73			X			X		Limitations for replacement O.L.D.S.
54	0.92			X			X		Pre-regulatory system; limitations for replacement O.L.D.S.
55	0.99			X			X		Limitations for replacement O.L.D.S.
56	0.9						X		Owner did not respond to survey request.
57	0.88				X	X			
58	1.36			X		X			Pre-regulatory system; system has been repaired (by permit, 2007).

O.L.D.S. – On-Lot (Sewage) Disposal System

R – Replacement area is available (pending soil probe and percolation testing).

L – Limited replacement area is available (pending soil probe and percolation testing).

N – No replacement area is available.

Map Index #	Acreage	Confirmed Malfunction	Suspected Malfunction	Potential Malfunction	No Malfunction Status	O.L.D.S. Replacement			Observations & Findings
						R	L	N	
59	1.22		X			X			SEO observed liquid in riser of 2 nd septic tank; pre-regulatory system.
60	1.33			X		X			Pre-regulatory system.
61	1.03		X			X			History of malfunction; un-permitted repair; pre-regulatory system.
62	1.71			X			X		Replacement system in use; limitations for additional replacement O.L.D.S.
Totals	77.94 Acres	1	6	41	11	22	35	5	
		*2%	*10%	*70%	*19%	†36%	†57%	†8%	

*Malfunction percentages based on 59 parcels surveyed;
†Replacement area percentages based on 62 parcels within the survey area.
Percentages do not equal 100 due to rounding.

O.L.D.S. – On-Lot (Sewage) Disposal System

R – Replacement area is available (pending soil probe and percolation testing).

L – Limited replacement area is available (pending soil probe and percolation testing).

N – No replacement area is available.

F. INDIVIDUAL WATER SUPPLY

Of the 62 developed properties, water testing was completed for 57 properties. The samples were tested for the presence or absence of total and fecal coliform as well as nitrate/nitrogen levels.

The water sampling represents 91.9% of the 62 developed properties within the study area that are served by individual wells.

Laboratory analyses of samples were completed by M.J. Reider Associates, Inc., 107 Angelica Street, Reading, PA 19611, a PA DEP approved laboratory. Lab test results can be found in Appendix D.

Table III-2 illustrates the results of the 57 wells that were tested within the study area. Map No. 3 illustrates nitrate levels. Map No. 4 illustrates the presence or absence of total coliform bacteria. Map No. 5 illustrates the presence or absence of fecal coliform (e. coli.) bacteria.

The PA DEP safe drinking water standard for bacteria is zero. Therefore, testing for presence or absence is sufficient for this study. However, since this is a more detailed special study, we requested the lab to provide a count for any properties with positive results for fecal coliform (e. coli.) bacteria. There was only one such property.

The PA DEP safe drinking water standard for nitrate/nitrogen is less than 10 mg/l, however, a result of greater than 5 mg/l is considered to be elevated.

Twenty-five (or 43.9%) of wells that were sampled were not in compliance with PA DEP safe drinking water standards due to presence of bacteria or high nitrates. All property owners have been notified and advised to seek the services of a water quality specialist for further testing and remediation (see Appendix E).

Table III-2 – Well Test Results

PROPERTY #	TOTAL COLIFORM	FECAL COLIFORM	NITRATE NITROGEN MG/L	COMPLIES	DOES NOT COMPLY
1	X		3.19		X
2			3.22	X	
3	X		3.74		X
4	X		2.49		X
5	NOT TESTED				
6	X		2.02		X
7	X		2.87		X
8			<1	X	
9	X		5.27		X
10			2.47	X	
11			2.14	X	
12			3.21	X	
13			5.54	X	
14			<1	X	
15			<1	X	
16	X	X	2.28		X
17	X		<1		X
18			3.27	X	
19			<1	X	
20			8.25	X	
21			1.51	X	
22	X		4.07		X
23	X		3.18		X
24			1.62	X	
25			4.57	X	
26	X		5.79		X
27			2.11	X	
28	X		<1		X
29			4.48	X	
30	X		5.30		X
31			2.75	X	
32			1.58	X	
33			2.22	X	
34			<1	X	
35	X		<2		X
36			11.34		X
37	X		5.53		X
38			6.50	X	
39	X		3.01		X
40			2.21	X	
41	NOT TESTED				
42	NOT TESTED				
43			3.14	X	
44			2.54	X	
45	X		4.37		X

PROPERTY #	TOTAL COLIFORM	FECAL COLIFORM	NITRATE NITROGEN MG/L	COMPLIES	DOES NOT COMPLY
46			1.92	X	
47	X		5.12		X
48	X		3.21		X
49			2.81	X	
50			2.49	X	
51	NOT TESTED				
52	X		2.91		X
53	X		1.54		X
54			4.58	X	
55			1.86	X	
56	NOT TESTED				
57	X		3.07		X
58	X		1.68		X
59			1.85	X	
60			<1	X	
61			<1	X	
62	X		2.92		X

Total number of wells that comply with PA DEP safe drinking water standards: 32 or 56.1%.

Total number of wells that do not comply with PA DEP safe drinking water standards: 25 or 43.9%.

G. CONCLUSIONS

The “Glen Oley Farm” study area contains single family residential properties. All of the properties surveyed are served by individual O.L.D.S., some of which are pre-regulatory. There have been incidents of malfunctions and repairs throughout the development. Many of the properties lack sufficient space for an up-to-date replacement O.L.D.S. should the primary O.L.D.S. malfunction.

Planning, designing and installing a collection and conveyance system that connects to the existing public sewer system via the existing pump station located on Beecham Road will address the long term sewage disposal needs of the entire study area.

Alternatively, the township may adopt a Sewage Management Program ordinance. This can be incorporated into a new Township Sewage ordinance or adopted as a separate ordinance. It is likely that PA DEP will require this anyway. A Sewage Management Program mandates regular maintenance of on-lot sewage disposal systems in part by requiring residents to have their septic tanks cleaned regularly by a Licensed Septic Waste Hauler. Typically, the required interval is every three (3) years.

A Sewage Management Program will benefit all residents within the township that use on-lot sewage disposal. Enforcement will occur on a case-by-case basis both within the study area and throughout the township.

Appendix A
Property Owners within the Study Area

Appendix A

Map Index No.	Name & Address	Site Address	Parcel ID No.	Surveyed Y/N
1	Jeremy Lutz 30 Gladwynn Drive Reading, PA 19606	30 Gladwynn Drive	43533704809540	Y
2	Karen Smith 40 Gladwynn Drive Reading, PA 19606	40 Gladwynn Drive	43533704900670	Y
3	Kurt Falkenberg 60 Gladwynn Drive Reading, PA 19606	60 Gladwynn Drive	43533704904859	Y
4	John & Rita McHale, Jr. 51 Gladwynn Drive Reading, PA 19606	51 Gladwynn Drive	43533704905589	Y
5	Larry & Brenda Thren 41 Gladwynn Drive Reading, PA 19606	41 Gladwynn Drive	43533704904445	Y
6	Mark & Karen Vannice 31 Gladwynn Drive Reading, PA 19606	31 Gladwynn Drive	43533704903323	Y
7	Thomas & Julie Nein 21 Gladwynn Drive Reading, PA 19606	21 Gladwynn Drive	43533704901291	Y
8	Ramdas & Lata Padiyar 15 Gladwynn Drive Reading, PA 19606	15 Gladwynn Drive	43533704900075	Y
9	John & Luana Goldstan 11 Gladwynn Drive Reading, PA 19606	11 Gladwynn Drive	43533602899848	Y
10	Jeffrey & Dolores Keiser 45 Sherwood Drive Reading, PA 19606	45 Sherwood Drive	43533602990792	Y
11	James Sher & Christie Ganas 55 Sherwood Drive Reading, PA 19606	55 Sherwood Drive	43533602992856	Y
12	David & Gail Torrence 65 Sherwood Drive Reading, PA 19606	65 Sherwood Drive	43533704904003	Y
13	Jeffrey & Karen Keller 75 Sherwood Drive Reading, PA 19606	75 Sherwood Drive	43533704905148	Y

Map Index No.	Name & Address	Site Address	Parcel ID No.	Surveyed Y/N
14	Barry & Marjory Ewald 101 Sherwood Drive Reading, PA 19606	101 Sherwood Drive	43533704906375	Y
15	John & Suzanne Henneman 171 Sherwood Drive Reading, PA 19606	171 Sherwood Drive	43533704908503	Y
16	Eugene & Sharon Duaine 80 Gladwynn Drive Reading, PA 19606	80 Gladwynn Drive	43533704909705	Y
17	Stuart & Joanne Zager 205 Sherwood Drive Reading, PA 19606	205 Sherwood Drive	43534703000866	Y
18	Joseph & Dolores Miller Revocable Trust 212 Sherwood Drive Reading, PA 19606	212 Sherwood Drive	43534703013076	Y
19	Drew & Linda Parenti 208 Sherwood Drive Reading, PA 19606	208 Sherwood Drive	43534703004856	Y
20	John & Janice Kauker 204 Sherwood Drive Reading, PA 19606	204 Sherwood Drive	43534703002790	Y
21	Roman Fedorovsky & Larisa Notkina 200 Sherwood Drive Reading, PA 19606	200 Sherwood Drive	43534703001556	Y
22	Erik & Suzanne Nordhoy 180 Sherwood Drive Reading, PA 19606	180 Sherwood Drive	43534703000326	Y
23	Dagmar Kirjanov Est. c/o George Kirjanov 234 E 7 th St. New York, NY 10009	80 Kendall Drive	43533704908178	Y
24	Emil & Robin Schanzenbach, Jr. 50 Kendall Drive Reading, PA 19606	50 Kendall Drive	43534703000045	Y
25	Jeffrey Kline & Gladys Cornista 205 Lowell Drive Reading, PA 19606	205 Lowell Drive	43534703003431	Y
26	Stephen Getway 209 Lowell Drive Reading, PA 19606	209 Lowell Drive	43534703004567	Y
27	Daniel Stoltzfus & Monica Yasgur 215 Lowell Drive Reading, PA 19606	215 Lowell Drive	43534703005796	Y

Map Index No.	Name & Address	Site Address	Parcel ID No.	Surveyed Y/N
28	Anthony & Sara Lambert 218 Lowell Drive Reading, PA 19606	218 Lowell Drive	43534703008704	Y
29	John & Michele Weller 214 Lowell Drive Reading, PA 19606	214 Lowell Drive	43534703008504	Y
30	Randal & Kaarin Reinecker 212 Lowell Drive Reading, PA 19606	212 Lowell Drive	43534703006349	Y
31	James Hughes 200 Lowell Drive Reading, PA 19606	200 Lowell Drive	43534703005202	Y
32	Frederick & Jodi Ganster 180 Lowell Drive Reading, PA 19606	180 Lowell Drive	43534703003077	Y
33	William & Yvonne Dandrea, Jr. 30 Kendall Drive Reading, PA 19606	30 Kendall Drive	43534601092866	Y
34	Robert & Anita Dickie 90 Devon Drive Reading, PA 19606	90 Devon Drive	43534601095622	Y
35	Isaac & Eila Matza 60 Devon Drive Reading, PA 19606	60 Devon Drive	43534601091028	Y
36	David & Michelle Breen 50 Devon Drive Reading, PA 19606	50 Devon Drive	43533602989867	Y
37	Margaret Feinberg 46 Devon Drive Reading, PA 19606	46 Devon Drive	43533602987792	Y
38	Phyllis Goldstan 40 Devon Drive Reading, PA 19606	40 Devon Drive	43533602986712	Y
39	Gladys & Jill Skaist 30 Devon Drive Reading, PA 19606	30 Devon Drive	43533602981678	Y
40	Richard & Barbara Taglang 11 Sherwood Drive Reading, PA 19606	11 Sherwood Drive	43533602887967	Y
41	Harmeet & Birinder Family Trst. 378 Plaza Road N. Fair Lawn, NJ 07410	10 Sherwood Drive	43533602899069	N
42	Louise Wiener 10 Lowell Drive Reading, PA 19606	10 Lowell Drive	43533602990256	Y

Map Index No.	Name & Address	Site Address	Parcel ID No.	Surveyed Y/N
43	Joseph Reedy & Leigh Ann Levandowski 40 Sherwood Drive Reading, PA 19606	40 Sherwood Drive	43533602991425	Y
44	John Swestock & Donna Banis 60 Sherwood Drive Reading, PA 19606	60 Sherwood Drive	43533602993517	Y
45	Joseph & Beatrice Mraz 70 Sherwood Drive Reading, PA 19606	70 Sherwood Drive	43533602994679	Y
46	Richard & Maxine Henry 80 Sherwood Drive Reading, PA 19606	80 Sherwood Drive	43533602995893	Y
47	Mark & Gretchen Naso 90 Sherwood Drive Reading, PA 19606	90 Sherwood Drive	43533704907011	Y
48	Robert & Jeanette Mehlman 60 Lowell Drive Reading, PA 19606	60 Lowell Drive	43533602998886	Y
49	William & Gloria Ballamy 50 Lowell Drive Reading, PA 19606	50 Lowell Drive	43533602997782	Y
50	James & Judith McArdle 40 Lowell Drive Reading, PA 19606	40 Lowell Drive	43533602996567	Y
51	James & Stephanie Kohler 30 Lowell Drive Reading, PA 19606	30 Lowell Drive	43533602995433	N
52	Jim Ragland 20 Lowell Drive Reading, PA 19606	20 Lowell Drive	43533602993347	Y
53	John & Florence Russo 11 Lowell Drive Reading, PA 19606	11 Lowell Drive	533602993113	Y
54	Carter & Mary Benjamin, Jr. 21 Lowell Drive Reading, PA 19606	21 Lowell Drive	43533602995108	Y
55	Kerry & Lisa Minnich 31 Lowell Drive Reading, PA 19606	31 Lowell Drive	43533602997216	Y
56	James & Michele Dimmerling 41 Lowell Drive Reading, PA 19606	41 Lowell Drive	43533602998440	N

Map Index No.	Name & Address	Site Address	Parcel ID No.	Surveyed Y/N
57	Robert & Dona Merritt III 51 Lowell Drive Reading, PA 19606	51 Lowell Drive	43534601090426	Y
58	Edward & Wanda Gallagher 71 Devon Drive Reading, PA 19606	71 Devon Drive	43534601092504	Y
59	John Hellriegel & Margaret Chiarelli 55 Devon Drive Reading, PA 19606	55 Devon Drive	43533602999298	Y
60	Daniel & Jamie Quay 41 Devon Drive Reading, PA 19606	41 Devon Drive	43533602997065	Y
61	James King 37 Devon Drive Reading, PA 19606	37 Devon Drive	43533602985947	Y
62	Juan & Maria Kraljevic 31 Devon Drive Reading, PA 19606	31 Devon Drive	43533602982984	Y

Appendix B
Notices to Residents Requesting Survey
Participation

Exeter Township
Berks County, Pennsylvania
4975 DeMoss Road
Reading PA 19606
www.exetertownship.com



Office: 610-779-5660
Fax: 610-779-5950
Engineering: 610-779-5702
Fire Codes: 610-779-4888
Parks & Rec.: 610-406-0263
Police: 610-779-1490
Treatment Plant: 610-582-8300

EXETER TOWNSHIP

Board of Supervisors

NOTICE TO RESIDENTS OF GLEN OLEY FARMS, EXETER TOWNSHIP, BERKS COUNTY

RE: PROPOSED ACT 537 SEWAGE SPECIAL STUDY, GLEN OLEY FARMS STUDY AREA,
EXETER TOWNSHIP, BERKS COUNTY

Dear Resident,

NOTICE IS HEREBY GIVEN, the laws of the Commonwealth of Pennsylvania, specifically Act 537, dictate that local governments, such as Exeter Township, shall conduct a sewage needs analysis and survey. Exeter Township is in the process of updating its Act 537 Plan, which includes conducting an on-site review and observation of the on-lot sewage disposal systems and drinking water wells located within the Glen Oley Farms study area. The purpose of this study is to evaluate the soils, geology, density, type of sewage systems, and ground water within your property and the study area as a whole.

The Township's Sewage Enforcement Officer, Mr. Allen W. Madeira of Berks Envirotech, Inc., 519 Reading Avenue, West Reading, PA 19611 (610) 375-7640, has been authorized by your Township's Board of Supervisors to complete a special study of sewage facilities within the Glen Oley Farms study area. This notice shall advise you that Mr. Madeira will be contacting property owners within Glen Oley Farms to review historical information concerning your sewage system and existing water supply. We are requesting your voluntary cooperation to provide all information concerning the sewer system location, maintenance, installation date, well location, depth, etc., and any repair history or problems associated with your septic system.

The survey will begin September 17, 2013, and should be completed by November 7, 2013. Mr. Madeira will be conducting a door-to-door survey and will also be taking drinking water samples. Surveys will be conducted between the hours of 9:00 AM and 4:00 PM. The goal of this special study is to survey 100% of the 63 residential properties within the study area.

As mentioned above, part of this survey includes well water sampling. Samples will be taken from the pressure tank in your home. Please make the pressure tank accessible prior to Mr. Madeira's visit to your property. The procedure that will be used requires that the tank be flushed for at least 10 minutes prior to sterilization and sampling. If your home lacks a floor drain that will allow the pressure tank to run for at least 10 minutes, we are requesting that you provide a hose from the pressure tank to the exterior of the home or whatever measures you see fit to accommodate flushing the tank for at least 10 minutes.

Mr. Madeira may be accompanied by a representative who has been contracted as an independent consultant by some of the property owners within the study area. Both individuals have been instructed to present proper identification to any property owners requesting the same to confirm their identity. Thank you for your anticipated cooperation to assist in completing this special study.

Sincerely,
EXETER TOWNSHIP

A handwritten signature in black ink, appearing to read 'Troy S. Bingaman', with a long horizontal flourish extending to the left.

Troy S. Bingaman
Township Manager

*Code Enforcement
Environmental Site Assessments
Hydrologic Investigations*

**Phone 610-375-7640
Fax 610-375-7682**



*Municipal Consultation
Waste Water System Design
Zoning Administration*

**519 Reading Avenue
West Reading, PA 19611**

**OFFICE HOURS: MONDAY-FRIDAY 8:00 AM - 4:30 PM
E-MAIL: info@envirotechassociates.com**

GLEN OLEY FARM SEWAGE NEEDS ANALYSIS SPECIAL STUDY

Dear Resident,

Sorry we missed you! As we are sure you are aware by now, Berks Envirotech, Inc. is conducting a special study of the Glen Oley Farm sewer district that includes door-to-door surveys and drinking water well sampling. We must conduct these surveys weekdays during business hours. If you are not normally home at this time, we request that you contact the Sewage Enforcement Officer (SEO) to make arrangements to conduct your survey. While we cannot meet with you outside of weekday business hours, we will attempt to conform to your requirements and meet you at a day and time that best suits your schedule.

If you are normally home during weekday business hours and we came to your door at a bad time, don't worry, we'll be back. Surveys will be ongoing through the month of October and into November. Our goal is 100% participation, so we appreciate your cooperation.

Berks Envirotech, Inc.

Allen W. Madeira, SEO

Code Enforcement
Environmental Site Assessments
Hydrologic Investigations

Phone 610-375-7640
Fax 610-375-7682



Municipal Consultation
Waste Water System Design
Zoning Administration

519 Reading Avenue
West Reading, PA 19611

OFFICE HOURS: MONDAY-FRIDAY 8:00 AM - 4:30 PM
E-MAIL: info@envirotechassociates.com

December 9, 2013

James King
37 Devon Drive
Reading, PA 19606

Re: Glen Oley Farm Special Study
Last chance to be included

Dear Mr. King,

Sorry we missed you! As we are sure you are aware by now, Berks Envirotech, Inc. is conducting a special study of the Glen Oley Farm sewer district that includes door-to-door surveys and drinking water well sampling. We must conduct these surveys weekdays during business hours. If you are not normally home at this time, we request that you contact the Sewage Enforcement Officer (SEO) to make arrangements to conduct your survey. While we cannot meet with you outside of weekday business hours, we will attempt to conform to your requirements and meet you at a day and time that best suits your schedule.

We will be conducting surveys until December 18, 2013. After that date we must prepare the report. Any properties that we have not visited by December 18th will not be included in the Special Study. Our goal is 100% participation, so we appreciate your cooperation.

Please call to schedule now. You may reach me on my cell phone at 610-781-6931 day or evening.

Thank you,
Berks Envirotech, Inc.

Allen W. Madeira, SEO

Cc: Exeter Township

Appendix C

Survey Forms

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 1

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704809540

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-24-13
General weather conditions: 40° S / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JEREMY LUTZ STREET: 30 GLADWYN DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-413-8077 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 290 ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? DOWNHILL

Do you treat your water? Y (N) How? CL / UV DISINFECTION, SOFTNER, ION, OTHER _____

Was the water ever tested? (Y) / N When? SINCE HOUSE WAS BUILT

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 1.57 ACRE No. of dwelling units? 1

One or more sewage systems? _____ COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| (SEPTIC TANK) - 1250 | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL 6AL. | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>IN-GROUND PRESSURE DOSED TRENCHES</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 9-17-2013 Was it permitted? (Y) N When? APRIL 19, 2013

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y (N) How often? N/A Last time? N/A

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INSPECTION OF INTERIOR OF TANKS IS POSSIBLE

Has the system ever been repaired? Y / N When? N/A By permit? Y / N What part? N/A

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: THIS SURVEY WAS COMPLETED BY ACCESSING AVAILABLE PERMIT INFORMATION AND BY TELEPHONE CONVERSATION W/MR. LUTZ

- A SITE VISIT WAS CONDUCTED AND WATER SAMPLE TAKEN.
- ALTHOUGH THIS IS A BRAND NEW SYSTEM, THIS LOT IS CLASSIFIED AS A POTENTIAL MALFUNCTION DUE TO STEEP SLOPES, UNSUITABLE SOILS

MITED REPLACEMENT AREA IS AVAILABLE AND ISOLATION LIMITATIONS.

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 2

Malfunction Status: NONE
Tax Parcel ID #: 43533704900670

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-17-13
General weather conditions: 70°S / CLOUDY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: MIKE COLEMAN STREET: 40 GLADWYN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-451-2200 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well (UP) DOWNHILL?

Do you treat your water? (Y) N How? CL (UV DISINFECTION) (SOFTNER, ION, OTHER) FILTER

Was the water ever tested? (Y) N When? LAST YEAR

Any contamination? (Y) N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.51 ACRE No. of dwelling units? 1

One or more sewage systems? _____ COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|-----------------------|---------------------|-----------------|
| (SEPTIC TANK) - size? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1980 Was it permitted? (Y) N When? PRESUMABLY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER _____ | | |

If you noticed any of the above, are they seasonal or year-round? _____

Have you ever had your system pumped out? Y (N) How often? NOT SINCE THEY MOVED IN Last time? _____

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? GOOD ACCESS
INTERIOR INSPECTION IS AVAILABLE

Has the system ever been repaired? Y / N When? UNKNOWN By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: OWNER 3 YRS.

REPLACEMENT AREA IS AVAILABCE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 3

Malfunction Status: NONE
Tax Parcel ID #: 43533704904859

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-15-13
General weather conditions: 70°s / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: KURT FALKENBERG STREET: 60 GLADWYN DRIVE CITY: READING, PA
ZIP: 19101 PHONE #: 610-689-8222 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? GUESS 180 ft. Cased? Y/N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER FILTER

Was the water ever tested? Y / N When? ABOUT 1 1/2 YEARS AGO
Any contamination? Y / N What? (TC, FC, N, etc.)

How large is your lot? 4.11 ACRE No. of dwelling units? _____
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------|------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - 1200 GAL | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

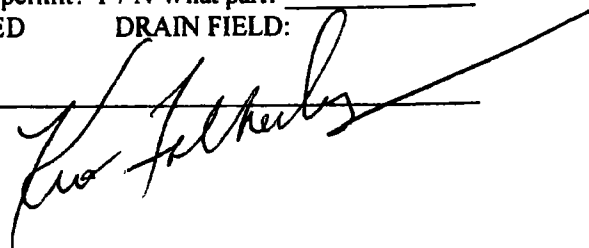
How old is your system? 1979 Was it permitted? Y / N When? PRESUMABLY
Have you every noticed any of the following near your septic system? _____

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER _____ | | |

If you noticed any of the above, are they seasonal or year-round? NO PROBLEMS REPORTED OR OBSERVED

Have you ever had your system pumped out? Y / N How often? EVERY 2 YRS Last time? LAST WEEK
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? INTERIOR / BAFFLES / D-BOX

Has the system ever been repaired? Y / N When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED
COMMENTS: 3RD OWNER - ABOUT 15 YRS



REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 4

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704905589

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-22-13
General weather conditions: 50°s/60°s LIGHT RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

JOHN AND (CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)
NAME: RITA McHALE STREET: 51 GLADWYN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-858-4610 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2
What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? 250+ ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-
Do you treat your water? (Y) N How? CL / (UV DISINFECTION) (SOFTNER) ION, OTHER FILTER
Was the water ever tested? (Y) N When? ABOUT A MONTH AGO
Any contamination? (Y) N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.26 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------|---------------------|-----------------|
| (SEPTIC TANK) - size - ? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

How old is your system? 1981 Was it permitted? Y / N When? _____
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|---|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER | <u>OPEN CLEANOUT PIPE FOUND IN YARD - NO EVIDENCE OF OVERFLOW</u> | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY YEAR Last time? LAST DECEMBER
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? Y / (N) When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS - ONLY HERE ABOUT 4 MONTHS/YEAR
INTERVIEW BY PHONE - ACCESS TO HOME (FOR SAMPLE) PROVIDED BY NEIGHBOR

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 5

Malfunction Status: SUSPECTED
Tax Parcel ID #: 533704904445

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-16-13
General weather conditions: <30° SUNNY / SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: LARRY THREN STREET: 41 GLADWIN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-5530 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? 240 ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? SLIGHTLY UPHILL

Do you treat your water? Y N How? CL UV DISINFECTION, SOFTNER, ION OTHER FILTER / TURBIDITY

Was the water ever tested? Y N When? MANY TIMES INCLUDING 2010 SURVEY AND EARLIER THIS YEAR

Any contamination? Y N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.12 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - SIZE? | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL <u>UNKNOWN</u> | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1980+/- Was it permitted? Y N When? PRESUMABLY / 1979 or 1980

Have you every noticed any of the following near your septic system? OWNER REPORTED OVER LOW CORNER OF DRAINFIELD

- | | | |
|----------------------------|----------------------------------|-------|
| <u>(GREEN LUSH GRASS)</u> | WETNESS OR <u>(SPONGY AREAS)</u> | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER | | |

If you noticed any of the above, are they seasonal or year-round? SEASONAL

Have you ever had your system pumped out? Y N How often? EVERY 3 YEARS Last time? APPROX. 2 YRS AGO

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? TANK INTERIOR / BAFFLE

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED _____ LINE: REPAIRED/REPLACED _____ DRAIN FIELD: _____

REPAIRED/REPLACED _____

COMMENTS: ORIGINAL OWNER

PRESSURE TANK IS DIFFICULT TO ACCESS FOR SAMPLING,
OWNER CHOSE NOT TO HAVE WATER TESTED AT THIS TIME

Larry Thren

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 6

Malfunction Status: NO MALF. STATUS
Tax Parcel ID #: 43533704903323

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-24-13
General weather conditions: 40's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: KAREN VANNICE STREET: 31 GLADWYN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 908-520-4799 OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y / N How? CL / (UV DISINFECTION) SOFTNER, ION, OTHER
Was the water ever tested? Y / N When? BEFORE MOVING IN / AT TIME OF PURCHASE
Any contamination? Y / N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.24 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - size - ? | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1980s +/- Was it permitted? Y / N When? PRESUMABLY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED
OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y (N) How often? NOT YET Last time?
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? TYPICAL REAL ESTATE INSPECTION

Has the system ever been repaired? Y (N) When? By permit? Y / N What part?
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:
REPAIRED/REPLACED

COMMENTS: OWNER SINCE JULY, 2012

REPLACEMENT AREA IS AVAILABLE

**DOOR-TO-DOOR
NEEDS SURVEY**

Map Index No.: 7

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704901291

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-17-13
General weather conditions: 70's / CLOUDY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JULIE NEIN STREET: 21 GLADWYN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-8290 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 4
What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? 257 ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? SLIGHTLY DOWNHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER FILTER
Was the water ever tested? (Y) N When? APPROX. 3 YEARS AGO
Any contamination? Y (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.34 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

(SEPTIC TANK) - size? ?	(INGROUND BED)	COMMUNITY SEWER
CESSPOOL	(INGROUND TRENCH)	STORM SEWER
OLD WELL	ELEVATED SAND MOUND	PIPE TO DITCH
HOLDING TANK	SEEPAGE PIT	PIPE TO STREAM
PRIVY	BORE HOLE	PIPE TO SURFACE
OTHER _____		

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

SEPTIC TANK	INGROUND BED	COMMUNITY SEWER
CESSPOOL	INGROUND TRENCH	STORM SEWER
OLD WELL	ELEVATED SAND MOUND	PIPE TO DITCH
HOLDING TANK	SEEPAGE PIT	PIPE TO STREAM
PRIVY	BORE HOLE	PIPE TO SURFACE
OTHER <u>SAME</u>		

How old is your system? 1981+- Was it permitted? (Y) N When? PRESUMABLY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

GREEN LUSH GRASS	WETNESS OR SPONGY AREAS	ODORS
WATER PONDING OR SURFACING	SYSTEM OVERFLOW	
SLUGGISH DRAINS	WASTEWATER BACKING INTO THE HOME	
OTHER <u>N/A</u>		

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YEARS Last time? LAST YEAR
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED
COMMENTS: OWNER SINCE 1998

Julie Nein

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 8

Malfunction Status: NONE
Tax Parcel ID #: 43533704900075

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-17-13
General weather conditions: 70's / cloudy

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: LATA PADILYAR STREET: 15 GLADWYN DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-4958 OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? 150(?) ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? _____

Do you treat your water? Y N How? CL / UV DISINFECTION (SOFTNER), ION, OTHER _____

Was the water ever tested? Y N When? 2010 STUDY

Any contamination? Y / N What? (TC, FC, N, etc.) _____

How large is your lot? 1.31 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|--|---------------------------------------|
| <input checked="" type="radio"/> SEPTIC TANK | <input checked="" type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input checked="" type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|---|---|---------------------------------------|
| <input type="radio"/> SEPTIC TANK | <input type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER <u>SAME</u> | | |

How old is your system? 1990 Was it permitted? Y N When? _____

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|--|--|-----------------------------|
| <input type="radio"/> GREEN LUSH GRASS | <input type="radio"/> WETNESS OR SPONGY AREAS | <input type="radio"/> ODORS |
| <input type="radio"/> WATER PONDING OR SURFACING | <input type="radio"/> SYSTEM OVERFLOW | |
| <input type="radio"/> SLUGGISH DRAINS | <input type="radio"/> WASTEWATER BACKING INTO THE HOME | |
| <input type="radio"/> OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? EVERY 2 YEARS Last time? LAST YEAR

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR / BAFFLE

Has the system ever been repaired? Y / N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED _____

COMMENTS: ORIGINAL OWNERS Lata R. Padilyar

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 9

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602899848

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-17-13
General weather conditions: 70°s / CLOUDY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JOHN GOLDSTAN STREET: 11 GLODWIN DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-4266 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 55 ft. Cased? (Y) N

How far is the well or spring from the drain field? APPROX. 100' ft. Is well UP / DOWNHILL? LEVEL / SLIGHT DOWNHILL

Do you treat your water? (Y) N How? CL (UV DISINFECTION) (SOFTNER) ION, OTHER FILTER / PH CONDITIONING

Was the water ever tested? (Y) N When? 2 YRS

Any contamination? Y / (N) What? (TC, FC, N, etc.) (NONE AFTER TREATMENT)

How large is your lot? 1.05 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------------|---------------------|-----------------|
| (SEPTIC TANK) - size? ? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? APPROX. 1989 Was it permitted? (Y) N When? PRESUMABLY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YEARS Last time? JAN. 2012

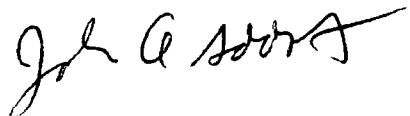
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y / N When? _____ By permit? Y (N) What part? ADDED RISER ON TANK

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: OWNERS SINCE 1992 (FORMER OWNERS NAME HUTZEL)



DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 10

Malfunction Status: NO MALF. STATUS
Tax Parcel ID #: 43533602990792

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-24-13
General weather conditions: 40's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JEFF KEISER STREET: 45 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0099 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2
What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N SLIGHTLY UPHILL
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER FILTER
Was the water ever tested? (Y) N When? 2011
Any contamination? Y / (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.05 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

(SEPTIC TANK) - 1000 GAL. (INGROUND BED) COMMUNITY SEWER
CESSPOOL NOT SURE (INGROUND TRENCH) STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER _____

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

SEPTIC TANK (CIRCLED) INGROUND BED (CIRCLED) COMMUNITY SEWER
CESSPOOL INGROUND TRENCH (CIRCLED) STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER SAME

How old is your system? 1979 Was it permitted? (Y) N When? PRESUMABLY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
WATER PONDING OR SURFACING SYSTEM OVERFLOW
SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
OTHER N/A

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YRS Last time? OCT., 2012
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR BAFFLES

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED
COMMENTS: OWNER SINCE 2004

Jeffrey I. Keiser

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 11

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602992856

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-22-13
General weather conditions: 50°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JAMES SHER STREET: 55 SHERWOOD DR. CITY: READING, PA
ZIP: 19604 PHONE #: 610-689-0594 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? 200 ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y N How? CL / UV DISINFECTION SOFTNER, ION, OTHER FILTER #2

Was the water ever tested? Y N When? 2001 - CLEAN 2010 - BACTERIA

Any contamination? Y N What? (TC, FC, N, etc.) AS NOTED ABOVE

How large is your lot? 1.09 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---|---------------------------------------|
| <input checked="" type="radio"/> SEPTIC TANK - SIZE? | <input checked="" type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| OTHER <u>PRESSURE DOSED IN-GROUND BED</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------------|---|---------------------------------------|
| <input type="radio"/> SEPTIC TANK | <input type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1989 Was it permitted? Y N When? PRESUMABLY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|---|---|--------------------------------|
| <input type="checkbox"/> GREEN LUSH GRASS | <input type="checkbox"/> WETNESS OR SPONGY AREAS | <input type="checkbox"/> ODORS |
| <input type="checkbox"/> WATER PONDING OR SURFACING | <input type="checkbox"/> SYSTEM OVERFLOW | |
| <input type="checkbox"/> SLUGGISH DRAINS | <input type="checkbox"/> WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

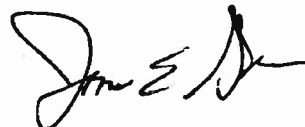
Have you ever had your system pumped out? Y N How often? TWICE SINCE 2001 Last time? 2-3 WKS AGO

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR/BAFFLES

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2001



DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 12

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704904003

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60°s / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: GAIL TORRENCE STREET: 65 SHERWOOD DR. CITY: READING, PA
ZIP: 19601 PHONE #: 610-689-0439 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER

Was the water ever tested? Y N When? ABOUT 12 YEARS AGO

Any contamination? Y N What? (TC, FC, N, etc.) _____

How large is your lot? 1.03 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---|---------------------------------------|
| <input checked="" type="radio"/> SEPTIC TANK - 1200 gal. | <input checked="" type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---|---------------------------------------|
| <input type="radio"/> SEPTIC TANK | <input type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER <u>SAME SYSTEM</u> | | |

How old is your system? 25-30 YRS Was it permitted? Y / N When? UNKNOWN (PRESUMABLY)

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|--|--|-----------------------------|
| <input type="radio"/> GREEN LUSH GRASS | <input type="radio"/> WETNESS OR SPONGY AREAS | <input type="radio"/> ODORS |
| <input type="radio"/> WATER PONDING OR SURFACING | <input type="radio"/> SYSTEM OVERFLOW | |
| <input type="radio"/> SLUGGISH DRAINS | <input type="radio"/> WASTEWATER BACKING INTO THE HOME | |
| <input type="radio"/> OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? EVERY 2 YRS Last time? COUPLE MONTHS AGO

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: OWNERS SINCE 2001

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 13

Malfunction Status: NONE
Tax Parcel ID #: 43533704905148

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-3-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JEFF & KAREN KELLER STREET: 75 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-9012 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 300' (I THINK) ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y / N How? CL (UV DISINFECTION) SOFTNER, ION, OTHER MINERAL TREATMENT?

Was the water ever tested? (Y) N When? 2-3 WKS AGO

Any contamination? Y (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.06 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------|---------------------|-----------------|
| (SEPTIC TANK) | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 23 YRS Was it permitted? (Y) N When? 1990

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? 2-3 YRS Last time? SUMMER, 2013

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: _____

Karen Y Keller

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 14

Malfunction Status: NO MALF. STATUS
Tax Parcel ID #: 43533704906375

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-24-13
General weather conditions: 40's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: BARRY EWALD STREET: 101 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19601 PHONE #: 610-689-8302 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER FILTER, REVERSE
Was the water ever tested? (Y) N When? DOESN'T REMEMBER OSMOSIS
Any contamination? Y / (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.02 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------|------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - size - ? | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | <u>5 - (INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>PRESSURE DOSED</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|----------------------|-----------------------|-----------------|
| <u>(SEPTIC TANK)</u> | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1993 +/- Was it permitted? (Y) N When? _____
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER _____ | | |

If you noticed any of the above, are they seasonal or year-round? _____

Have you ever had your system pumped out? (Y) N How often? ONE TIME Last time? APPROX. 2004
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? _____

Has the system ever been repaired? (Y) N When? 2004 +/- By permit? Y / (N) What part? PUMP REPLACED
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: WAT. ENCAP CLEANOUTS
REPAIRED/REPLACED
COMMENTS: OWNER SINCE 1998

! REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 15

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704908503

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-15-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: John & Suzanne Hennem STREET: 171 Sherwood Drive CITY: Reading, PA
ZIP: 19606 PHONE #: 610-689-5195 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER? (PREVIOUSLY G)

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 300+ ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / (UV DISINFECTION, SOFTNER, ION, OTHER)

Was the water ever tested? (Y) N When? JUNE 2013

Any contamination? (Y) N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.09 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| <u>(SEPTIC TANK) - 2</u> | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>PRESSURE DOSED INGROUND BED</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 19 YEARS Was it permitted? (Y) N When? APRIL, 1994

Have you every noticed any of the following near your septic system? SUMMER, 2010

- | | | |
|--|---|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING <u>SYSTEM OVERFLOW</u> | | |
| SLUGGISH DRAINS | <u>(WASTEWATER BACKING INTO THE HOME)</u> | |
| OTHER <u>PUMP BROKEN / DISCONNECTED - REPLACED IN 2010</u> | | |

(OWNER PRODUCED RECEIPT FOR THIS UN-PERMITTED REPAIR)

If you noticed any of the above, are they seasonal or year-round? _____

Have you ever had your system pumped out? (Y) N How often? ANNUALLY Last time? _____

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? _____

Has the system ever been repaired? (Y) N When? 2010 By permit? Y (N) What part? AT LEAST ONE UNPERMITTED REPAIR

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS Suzanne B. Henn

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 16

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704909705

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-4-13
General weather conditions: 40's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: GENE DUARME STREET: 80 GLENDAWN DR. CITY: READING PA
ZIP: 19606 PHONE #: 610-689-4119 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? (Y)N (180-300 Ft.?)
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? SLIGHTLY UPHILL
Do you treat your water? (Y)N How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER FILTER
Was the water ever tested? (Y)N When? IN THE LAST 6 MONTHS
Any contamination? (Y)N What? (TC, FC, N, etc.) BACTERIA RETESTED THEM NEGATIVE

How large is your lot? 1.23 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> 2 TOTAL 1200 G.P.L. | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>(ELEVATED SAND MOUND)</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>600 G.P.L. PUMP</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1988 +/- Was it permitted? (Y)N When? PRESUMABLY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y)N How often? EVERY 2 YRS Last time? EARLY SUMMER 2013
If it was pumped, was it inspected for cracks or broken baffles? (Y)N What part? INTERIOR TANKS

Has the system ever been repaired? (Y)N When? UNSURE By permit? (Y)N What part? SEE BELOW
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED
COMMENTS: OWNER SINCE 1999 - REPLACED EFFLUENT PUMP
ADDED ACCESS TO SEPTIC TANKS

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 17

Malfunction Status: NONE
Tax Parcel ID #: 43534703000866

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-26-13
General weather conditions: <40° RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: STU ZAGER STREET: 205 SHERWOOD DR CITY: READING PA
ZIP: 19606 PHONE #: 610-689-4550 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL? SPRING? CISTERN? PUBLIC? OTHER? (PART-TIME)
If you have a well: Is it DUG or DRILLED? HOW DEEP? 377 ft. Cased? Y 4 MONTHS/YR

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL+-

Do you treat your water? Y N How? CL UV DISINFECTION, SOFTNER, ION, OTHER IRON TREATMENT

Was the water ever tested? Y N When? 2010 STUDY

Any contamination? Y N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.48 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|-----------------------|-----------------|
| <u>(SEPTIC TANK)</u> -1500 GAL. TWIN COMP. | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>PRESSURE DOSED</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------|---------------------|-----------------|
| <u>SEPTIC TANK</u> | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1996 Was it permitted? Y N When? 1996 1995*

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? EVERY 3YR. ± Last time? ABOUT 1YR.

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR TANKS

Has the system ever been repaired? Y N When? _____ By permit? Y N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: * SEWAGE PERMIT # N41555 ISSUED JULY 16, 1995

610-587-1060 - STU ZAGER CELL#

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 18

Malfunction Status: NONE
Tax Parcel ID #: 43534703013076

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-24-13
General weather conditions: 50's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

JOSEPH & (CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)
NAME: DOLORES MILLER STREET: 212 SHERWOOD DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-8679 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2
What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? DOWNHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER FILTER
Was the water ever tested? (Y) N When? DOESN'T REMEMBER
Any contamination? Y (N) What? (TC, FC, N, etc.) _____

How large is your lot? 2.0 ACRE No. of dwelling units? 1
One or more sewage systems? _____ / _____ COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------|---------------------|-----------------|
| (SEPTIC TANK) - 1000 GAL | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>LIFT PUMP</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

How old is your system? APPROX. 20 YEARS Was it permitted? (Y) N When? 1991

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YEARS Last time? 2 YRS AGO DUE NOW!
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? (X) (N) When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED
COMMENTS: DR. GEB. SEXTON ORIGINAL OWNER
MILLERS ARE OWNERS OF 8 YEARS
Dolores Miller

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 19

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703004856

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-5-13
General weather conditions: 50°s / Fog / RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: LINDA PARENT STREET: 203 SHERWOOD DRIVE CITY: ROARING DA
ZIP: 19606 PHONE #: 910-622-7612 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? SLIGHTLY UP HILL

Do you treat your water (Y) N How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER FILTER

Was the water ever tested? (Y) N When? EVERY YEAR

Any contamination? Y (N) What? (TC, FC, N, etc.)

How large is your lot? 1.03 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------|-----------------------|-----------------|
| (SEPTIC TANK) - 2 | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | (ELEVATED SAND MOUND) | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>TRIANGULAR ESMB</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 14 YEARS Was it permitted? (Y) N When? 1999

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? ONCE Last time? WHEN THEY MOVED IN

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part?

Has the system ever been repaired? Y (N) When? By permit? Y / N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2010/2011
ORIGINAL OWNER: TERRY MILLER

NO REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 20

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703002790

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-26-13
General weather conditions: <40°, RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JOHN KAUKER STREET: 204 SHERWOOD DR. CITY: READING, PA
ZIP: 19606 PHONE #: 215-808-3161 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED?) HOW DEEP? 365+- ft. Cased? (Y) N
How far is the well or spring from the drain field? _____ ft. Is well UP / DOWNHILL?
Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER REVERSE OSMOSIS,
Was the water ever tested? (Y) N When? APPROX. 1 YR FILTER
Any contamination? Y / (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.066 ACRE No. of dwelling units? 1
One or more sewage systems? _____ COMMERCIAL / (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------|-----------------------|-----------------|
| (SEPTIC TANK) | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | (ELEVATED SAND MOUND) | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? _____ Was it permitted? (Y) N When? 1995+-
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 5 YRS OR SO Last time? ABOUT 5 YRS AGO
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? USES ENZYME ADDITIVE MONTHLY

Has the system ever been repaired? (Y) N When? 2006/2007 By permit? Y / (N) What part? EFFLUENT PUMP
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: THERE IS A SECOND WELL ALONG DRIVEWAY THAT IS NOT IN USE
- OWNER SINCE 2005 (ORIGINAL OWNER RAY & SANICE SCOTT)

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 21

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703001556

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-18-13
General weather conditions: 30°S - SUNNY - SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: FEODOROVSKY STREET: 200 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: _____ OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100 + ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER

Was the water ever tested? Y / N When? NOT SURE

Any contamination? Y / N What? (TC, FC, N, etc.) NOT SURE

How large is your lot? 1.13 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------------|----------------------------|-----------------|
| <u>SEPTIC TANK</u> - 1500 GAL. | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL <u>2 TANKS</u> | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>ELEVATED SAND MOUND</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------|---------------------|-----------------|
| <u>SEPTIC TANK</u> | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 14 YEARS (1999) Was it permitted? Y N When? 1997

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? TRICE SINCE 2000 Last time? 3 MONTHS AGO

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? TANKS ARE ACCESSIBLE

Has the system ever been repaired? Y / N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS - PERMIT # 016278 ISSUED OCT. 24, 1997 ON FILE

NO REPLACEMENT AREA AVAILABLE DUE TO SWIMMING POOL ER. IN REAR YARD.

NO REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 22

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703000326

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-15-13
General weather conditions: 70°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ERIK & SUSANNE NORDHOY STREET: 180 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-8929 OWNER OR RENTER? NUMBER OF RESIDENTS 5-7(?)

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-
Do you treat your water? Y N How? CL / UV DISINFECTION, SOFTNER ION, OTHER FILTER / IRON
Was the water ever tested? Y N When? EVERY YEAR (THIS PAST YEAR)
Any contamination? Y / N What? (TC, FC, N, etc.) _____

How large is your lot? 2.5 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK - 1500 GAL. INGROUND BED COMMUNITY SEWER
- CESSPOOL TWIN COMP. INGROUND TRENCH STORM SEWER
- OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
- HOLDING TANK SEEPAGE PIT PIPE TO STREAM
- PRIVY BORE HOLE PIPE TO SURFACE
- OTHER ALTERNATE AT-GRADE BED WITH PEAT FILTER - REPLACEMENT SYSTEM

THIS IS THE 3RD SEPTIC SYSTEM TO BE USED ON THIS PROPERTY - THE FIRST 2 MALFUNCTIONED

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK INGROUND BED COMMUNITY SEWER
- CESSPOOL INGROUND TRENCH STORM SEWER
- OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
- HOLDING TANK SEEPAGE PIT PIPE TO STREAM
- PRIVY BORE HOLE PIPE TO SURFACE
- OTHER SAME

How old is your system? NOV. 2012 Was it permitted? Y N When? SEPT. 2012
Have you every noticed any of the following near your septic system? NO PROBLEMS CURRENTLY

- GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
- WATER PONDING OR SURFACING SYSTEM OVERFLOW
- SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
- OTHER N/A

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? FREQUENTLY / IRREGULAR DUE TO MALF. Last time? SULT A FEW MONTHS AGO
If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR / BAFFLES / PUMP

Has the system ever been repaired? Y N When? NOV. 2012 By permit? Y N What part? NEW DRAIN FIELD
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: ALT. AT GRADE BED W/ PEAT FILTER
REPAIRED/REPLACED

COMMENTS: OWNER OF 15 +/- YRS (PREVIOUS OWNER DAVE MCMAHON)

TESTING HAS BEEN CONDUCTED AND TWO ADDITIONAL REPLACEMENT SITES ARE AVAILABLE ON THIS PROPERTY (DRIP IRR. IN FRONT YARD & EMB SW CORNER BEHIND TENNIS COURT)



REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 23

Malfunction Status: CONFIRMED
Tax Parcel ID #: 43533704908178

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60°s / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: SEE BELOW STREET: 80 KENDALL DRIVE CITY: READING, PA
ZIP: 19106 PHONE #: UNKNOWN OWNER OR RENTER? NUMBER OF RESIDENTS: SEE BELOW

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N ASSUMED UP HILL IN REAR YARD BUT COULD NOT FIND

How far is the well or spring from the drain field? 100 + (?) ft. Is well UP / DOWNHILL? UNKNOWN

Do you treat your water? Y (N) How? CL / UV DISINFECTION, SOFTNER, ION, OTHER UNKNOWN

Was the water ever tested? Y / N When? UNKNOWN

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 1.11 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | | |
|----------------------|---|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> | ? | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | | BORE HOLE | PIPE TO SURFACE |
| OTHER | | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |

OTHER UNKNOWN; SED FOUND SUMP PUMP DISCHARGE PIPE ON SIDE OF HOME

How old is your system? UNKNOWN Was it permitted? Y / N When? PRESUMABLY

Have you every noticed any of the following near your septic system?

- | | | |
|----------------------------|--------------------------------------|-------|
| GREEN LUSH GRASS | <u>(WETNESS OR SPONGY AREAS)</u> | ODORS |
| WATER PONDING OR SURFACING | <u>(SYSTEM OVERFLOW)</u> (SEE PHOTO) | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |

OTHER SED FOUND EVIDENCE OF SYSTEM OVERFLOW AT TANK ACCESS - THIS WAS OCCURRING WITH ONLY ONE OCCUPANT. EFFLUENT IS STILL VISIBLE IN PIPE.

If you noticed any of the above, are they seasonal or year-round? _____

Have you ever had your system pumped out? Y / N How often? UNKNOWN Last time? _____

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? INSUFFICIENT ACCESS

Has the system ever been repaired? Y / N When? UNKNOWN By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: OCCUPANT IS DECEASED - HOME IS CURRENTLY UN-OCCUPIED

SED CONDUCTED INVESTIGATION AS COMPLETELY AS POSSIBLE

OWNER: GEORGE KIRSANOV (SPOKE ON TELEPHONE) WATER SAMPLE TAKEN FROM
234 E. 7th ST. OUTDOOR FAUCET, REAR OF HOME
NEW YORK, NY 10009

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 24

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703000045

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-9-13
General weather conditions: 60's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ROBIN SCHANZENBACH STREET: 50 KENDALL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0877 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) / (N)

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? (Y) / (N) How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER _____

Was the water ever tested? (Y) / (N) When? 2001

Any contamination? Y / (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.08 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------------|---------------------|-----------------|
| (SEPTIC TANK) - size? ? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1978 Was it permitted? (Y) / (N) When? PRESUMABLY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) / (N) How often? EVERY 2-3 YRS Last time? LAST MONTH

If it was pumped, was it inspected for cracks or broken baffles? (Y) / (N) What part? INTERIOR / BAFFLES

Has the system ever been repaired? (Y) / (N) When? 2001 By permit? Y / (N) What part? UNKNOWN

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2001 

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 25

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703003431

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-17-13
General weather conditions: <30° SNOW

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JEFF KUNE STREET: 205 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0661 OWNER OR RENTER? NUMBER OF RESIDENTS: 5

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-
Do you treat your water? Y (N) How? CL / UV DISINFECTION, SOFTNER, ION, OTHER JUST A FILTER
Was the water ever tested? Y (N) When? JUST WHEN MOVED IN
Any contamination? Y (N) What? (TC, FC, N, etc.)

How large is your lot? 1.007 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------|------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> -1250 GAL. | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL <u>TWIN COMP.</u> | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>(ELEVATED SAND MOUND)</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 11 YEARS (2002) Was it permitted? Y (N) When? 2000
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y (N) How often? EVERY 2-3 YRS Last time? ABOUT 2 YRS AGO
If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? TANK INTERIOR / BAFFLES

Has the system ever been repaired? Y (N) When? By permit? Y / N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNER (PERMIT R 76 B19 ISSUED 8-14-00 ON FILE)
HEARTHSTONE HOMES WAS THE BUILDER

JK 702

**DOOR-TO-DOOR
NEEDS SURVEY**

Map Index No.: 26

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534763004567

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-12-13
General weather conditions: SUNNY 43°F SNOW ON GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: STEVE GETWAY STREET: 209 Lowell Drive CITY: READING, PA
ZIP: 19606 PHONE #: 508-221-8783 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-
Do you treat your water? (Y) N How? CL / (UV DISINFECTION) SOFTNER, ION, OTHER FILTER
Was the water ever tested? (Y) N When? WHEN MOVED IN
Any contamination? (Y) N What? (TC, FC, N, etc.) BACTERIAL

How large is your lot? 1.14 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

(SEPTIC TANK) - twin comp. INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER ALT. AT-GRADE BED w/ PEAT FILTER

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

SEPTIC TANK INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER SAME

How old is your system? 2005 +/- Was it permitted? (Y) N When? JAN. 7, 2004

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
WATER PONDING OR SURFACING SYSTEM OVERFLOW
SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
OTHER N/A

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? ONCE Last time? LAST YEAR

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR OF TANKS EFFLUENT FILTER

Has the system ever been repaired? (Y) N When? _____ By permit? (Y) N What part? _____

TANK: REPAIRED/REPLACED _____ LINE: REPAIRED/REPLACED _____ DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2007 +/-

- MODEL/SPEC HOME FOR HEARTHSTONE HOMES
- 1st OWNER CHAS. KRAFCZEK (SPELLING?)
- PERMIT R68337 ISSUED JAN 7, 2004
Stephan Getway

- LIMITED REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 27

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703005796

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-16-13
General weather conditions: 43° SUNNY - SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: DAN STOLTZFUS STREET: 215 LOWELL DRIVE CITY: READING, PA
ZIP: 19406 PHONE #: 610-689-0658 OWNER RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100 + ft. Is well UP / DOWNHILL? SLIGHTLY DOWNHILL

Do you treat your water? Y N How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER FILTER

Was the water ever tested? Y N When? _____

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 1.1 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---|---|--|
| <input checked="" type="checkbox"/> SEPTIC TANK | <input type="checkbox"/> INGROUND BED | <input type="checkbox"/> COMMUNITY SEWER |
| <input type="checkbox"/> CESSPOOL | <input type="checkbox"/> INGROUND TRENCH | <input type="checkbox"/> STORM SEWER |
| <input type="checkbox"/> OLD WELL | <input checked="" type="checkbox"/> ELEVATED SAND MOUND | <input type="checkbox"/> PIPE TO DITCH |
| <input type="checkbox"/> HOLDING TANK | <input type="checkbox"/> SEEPAGE PIT | <input type="checkbox"/> PIPE TO STREAM |
| <input type="checkbox"/> PRIVY | <input type="checkbox"/> BORE HOLE | <input type="checkbox"/> PIPE TO SURFACE |
| <input type="checkbox"/> OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|--|--|
| <input type="checkbox"/> SEPTIC TANK | <input type="checkbox"/> INGROUND BED | <input type="checkbox"/> COMMUNITY SEWER |
| <input type="checkbox"/> CESSPOOL | <input type="checkbox"/> INGROUND TRENCH | <input type="checkbox"/> STORM SEWER |
| <input type="checkbox"/> OLD WELL | <input type="checkbox"/> ELEVATED SAND MOUND | <input type="checkbox"/> PIPE TO DITCH |
| <input type="checkbox"/> HOLDING TANK | <input type="checkbox"/> SEEPAGE PIT | <input type="checkbox"/> PIPE TO STREAM |
| <input type="checkbox"/> PRIVY | <input type="checkbox"/> BORE HOLE | <input type="checkbox"/> PIPE TO SURFACE |
| <input type="checkbox"/> OTHER <u>SAME</u> | | |

How old is your system? 14 YEARS Was it permitted? Y N When? 1999-2000
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|---|---|--------------------------------|
| <input type="checkbox"/> GREEN LUSH GRASS | <input type="checkbox"/> WETNESS OR SPONGY AREAS | <input type="checkbox"/> ODORS |
| <input type="checkbox"/> WATER PONDING OR SURFACING | <input type="checkbox"/> SYSTEM OVERFLOW | |
| <input type="checkbox"/> SLUGGISH DRAINS | <input type="checkbox"/> WASTEWATER BACKING INTO THE HOME | |
| <input type="checkbox"/> OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? EVERY 2-3 YRS Last time? LAST FALL
If it was pumped, was it inspected for cracks or broken baffles? Y N What part? TANKS ARE ACCESSIBLE

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: 2ND OWNER - ORIGINAL OWNERS: DAVID & ALISON BRINK
BUILDER JAKE KRUMHOLTZ / CAMBRIDGE BLDRS.

Dm

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 28

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703008704

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-27-13
General weather conditions: <40°, RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: TONY LAMBERT STREET: 218 LOWELL DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-952-0300 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER?) ION, OTHER REVERSE OSMOSIS
Was the water ever tested? (Y) N When? DOESNT REMEMBER
Any contamination? (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.41 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------------|---------------------|-----------------|
| <u>(SEPTIC TANK)</u> | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>ALT. AT-GRADE BED</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 11 YRS. Was it permitted? (Y) N When? 2002 (+/-)
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? 3X SINCE 2002 Last time? ABOUT 3 YRS
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR OF TANKS IS ACCESSIBLE

Has the system ever been repaired? (Y) N When? 2011 By permit? (N) What part? ELEC. CONNECTION
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:
REPAIRED/REPLACED
COMMENTS: ORIGINAL OWNER - PERMIT ON FILE

In REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 29

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703008504

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-5-13
General weather conditions: 50°S / RAIN / FOG

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Jon Weller STREET: 214 Lowell Dr. CITY: Reading, PA
ZIP: 19606 PHONE #: 610-689-0043 OWNER OR RENTER? OWNER NUMBER OF RESIDENTS: 5

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y)N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? (Y)N How? CL (UV DISINFECTION / SOFTNER) ION, OTHER FILTER

Was the water ever tested? (Y)N When? 1 1/2 YRS. 2 YRS AGO REVERSE OSMOSIS

Any contamination? (Y)N What? (FC, FC, N, etc.)

How large is your lot? 1.03 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------------------|------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - 1 TWIN | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL <i>Comp.</i> | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>(ELEVATED SAND MOUND)</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? APPROX 10 YRS Was it permitted? (Y)N When? APPROX. 2003

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y)N How often? EVERY 1 1/2 YRS. Last time? LAST SPRING

If it was pumped, was it inspected for cracks or broken baffles? (Y)N What part? INTERIOR TANKS & EFFLUENT FILTER

Has the system ever been repaired? (N)N When? By permit? Y / N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2009

ORIGINAL OWNER MARK & TARA LOOS

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 30

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703006349

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-5-13
General weather conditions: 50's / Fog / RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

RANDAL # (CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: KAARIN REINECKER STREET: 212 LOWELL DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0224 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL? SPRING? CISTERN? PUBLIC? OTHER?)

If you have a well: Is it DUG or (DRILLED)? HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y / N How? CL (UV DISINFECTION) (SOFTNER) ION, OTHER REVERSE OSMOSIS

Was the water ever tested? (Y) N When? SPRING 2013 FILTER

Any contamination? Y / N What? (TC, FC, N, etc.) NOT SURE

How large is your lot? 1.03 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------|-----------------------|-----------------|
| (SEPTIC TANK) - 1 TWIN COMP. | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | (ELEVATED SAND MOUND) | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 10 YRS Was it permitted? (Y) N When? 2003

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? ONCE Last time? SUMMER 2013

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR OF TANK & EFFLUENT FILTER

Has the system ever been repaired? Y / (N) When? By permit? Y / N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS Kaarin Reinecker

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 31

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703005202

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-5-13
General weather conditions: 50's / RAIN / FOG

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Jim Hughes STREET: 200 Lower Drive CITY: Reading, Pa
ZIP: 19606 PHONE #: _____ OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? DOWNHILL

Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER CONDITIONER / FILTER

Was the water ever tested? Y N When? ABOUT 3 1/2 YRS. AGO

Any contamination? Y N What? (TC, FC, N, etc.) _____

How large is your lot? 1.05 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---|--|---------------------------------------|
| <input checked="" type="radio"/> SEPTIC TANK - <u>12 IN</u> | <input type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input checked="" type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|---|---|---------------------------------------|
| <input type="radio"/> SEPTIC TANK | <input type="radio"/> INGROUND BED | <input type="radio"/> COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | <input type="radio"/> STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | <input type="radio"/> PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | <input type="radio"/> PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | <input type="radio"/> PIPE TO SURFACE |
| <input type="radio"/> OTHER <u>SAME</u> | | |

How old is your system? APPROX. 15 YRS. Was it permitted? Y N When? 1999 +/-

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|---|---|--------------------------------|
| <input type="checkbox"/> GREEN LUSH GRASS | <input type="checkbox"/> WETNESS OR SPONGY AREAS | <input type="checkbox"/> ODORS |
| <input type="checkbox"/> WATER PONDING OR SURFACING | <input type="checkbox"/> SYSTEM OVERFLOW | |
| <input type="checkbox"/> SLUGGISH DRAINS | <input type="checkbox"/> WASTEWATER BACKING INTO THE HOME | |
| <input type="checkbox"/> OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? SUCT WHEN MOVED IN Last time? JUNE, 2010

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN
(TANKS ARE ACCESSIBLE)

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: OWNER ABOUT 3 1/2 YEARS

BERKS HOMES SPEC. HOUSE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 32

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534703003077

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-27-13
General weather conditions: <40°, RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Fred J. Ganster STREET: 180 Lowell Drive CITY: Reading, Pa
ZIP: 19606 PHONE #: 610-370-4399 OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? DOWNHILL

Do you treat your water? Y N How? CL UV DISINFECTION, SOFTNER, ION, OTHER FILTER

Was the water ever tested? Y N When? 2010

Any contamination? Y N What? (TC, FC, N, etc.) TOTAL COLIFORM

How large is your lot? 1.09 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------|----------------------------|-----------------|
| <u>SEPTIC TANK</u> | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>ELEVATED SAND MOUND</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 9 YEARS Was it permitted? Y N When? 2004

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? JUST ONCE Last time? 2010

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? TANK INTERIOR

Has the system ever been repaired? Y N When? 2010 By permit? Y / N What part? LATERAL ENDCAP C/O

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2010

OWNER INTENDS TO ADD RISERS TO SEPTIC TANK ACCESS

NO REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 33

Malfunction Status: NONE
Tax Parcel ID #: 43534601092866

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 9-26-13
General weather conditions: SUNNY 70°S

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Wm. D'ANDREA STREET: 30 KENDALL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0618 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y N How? CL / UV DISINFECTION / SOFTNER ION, OTHER FILTER

Was the water ever tested? Y N When? 2010 STUDY

Any contamination? Y N What? (TC, FC, N, etc.) TOTAL COLIFORM - ADDED TREATMENT

How large is your lot? 1.6 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------------------------|----------------------------|-----------------|
| <u>SEPTIC TANK</u> - 1500 GAL TOTAL | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | <u>ELEVATED SAND MOUND</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME SYSTEM</u> | | |

How old is your system? 1998 Was it permitted? Y N When? 1998 +/-

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER _____ | | |

If you noticed any of the above, are they seasonal or year-round? _____

Have you ever had your system pumped out? Y N How often? 2-3 YRS +/- Last time? 6-20-13

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? BAFFLES

Has the system ever been repaired? Y N When? 2 YRS. AGO By permit? Y N What part? BAFFLE BUT OBSERVED BY SEO: PAT WHITE

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: LOOK FOR ORIGINAL PERMIT APPROX. 1998 DR. SAM PELLIBRINO

REPLACEMENT AREA IS AVAILABLE

Tom A. P.A.

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 34

Malfunction Status: SUSPECTED
Tax Parcel ID #: 43534601095622

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60°s / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ANITA DICKIE STREET: 90 DEVON DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-9947 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? ALMOST 300 ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER FILTER

Was the water ever tested? (Y) N When? ABOUT 2 YRS. AGO

Any contamination? Y / N What? (TC, FC, N, etc.)

How large is your lot? 1.29 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------------|---------------------|-----------------|
| (SEPTIC TANK) - 500 GAL.? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN - PRE-REGULATORY</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? EARLY 1960S Was it permitted? Y / N When? N/A

Have you every noticed any of the following near your septic system? NOT SINCE REPAIR
NO PROBLEMS OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? USUALLY ONCE A YEAR Last time? FEB. OF 2013

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? PUMPER INSTALLED 6" PIPE TO

Has the system ever been repaired? (Y) N When? ABOUT 20 YRS. By permit? Y / N What part? UNPERMITTED

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED (DRAIN FIELD:)

REPAIRED/REPLACED

COMMENTS: OWNER SINCE LATE 1970S

(*) REPAIR CONSISTED OF REMOVING DRAIN TILE AND STONE AND REPLACING WITHIN SAME EXISTING BED - ALSO REMOVED STORMWATER FROM SYSTEM

4 77 Dickie

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 35

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534601091028

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 9-26-13
General weather conditions: SUNNY 70°S

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ISAAC MATZA STREET: 60 DEVON DR. CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-5900 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? 364 ft. Cased? Y N

How far is the well or spring from the drain field? 100+(?) ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y N How? CL UV DISINFECTION SOFTNER ION, OTHER FILTER

Was the water ever tested? Y N When? 8-22-12

Any contamination? Y N What? (TC, FC, N, etc.) _____

How large is your lot? 0.99 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK - 1,000 GAL.
- CESSPOOL
- OLD WELL
- HOLDING TANK
- PRIVY
- OTHER UNKNOWN PRE-REGULATORY SEE COMMENTS, BELOW
- INGROUND BED
- INGROUND TRENCH
- ELEVATED SAND MOUND
- SEEPAGE PIT
- BORE HOLE
- COMMUNITY SEWER
- STORM SEWER
- PIPE TO DITCH
- PIPE TO STREAM
- PIPE TO SURFACE

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK
- CESSPOOL
- OLD WELL
- HOLDING TANK
- PRIVY
- OTHER UNKNOWN - ASSUME ALL GOES TO SYSTEM INCLUDING SUMP PUMP
- INGROUND BED
- INGROUND TRENCH
- ELEVATED SAND MOUND
- SEEPAGE PIT
- BORE HOLE
- COMMUNITY SEWER
- STORM SEWER
- PIPE TO DITCH
- PIPE TO STREAM
- PIPE TO SURFACE

How old is your system? 1962 Was it permitted? Y / N When? PREREGULATORY

Have you every noticed any of the following near your septic system? NO PROBLEMS
REPORTED OR OBSERVED

- GREEN LUSH GRASS
- WATER PONDING OR SURFACING
- SLUGGISH DRAINS
- OTHER N/A
- WETNESS OR SPONGY AREAS
- SYSTEM OVERFLOW
- WASTEWATER BACKING INTO THE HOME
- ODORS

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? 3-4 YRS +/- Last time? 5-23-13

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? TANK LID NOT EXPOSED

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: MR. MATZA PRODUCED A PLAN FROM WHEN THE HOUSE WAS BUILT

SHOWING A 1000 GAL ROUND TANK FOLLOWED BY A 400 GAL. ROUND TANK (HE WAS NOT AWARE OF) FOLLOWED BY A 7-WAY DISTRIBUTION BOX AND A 7 "LEG" DRAINFIELD UNDER THE DRIVEWAY AND ALONG BOTH SIDES EXTENDING TO THE PROPERTY LINE.

Isaac Matza

LIMITED REPLACEMENT AREA AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 36

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602989867

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-12-13
General weather conditions: SUNNY < 30° SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: MICHELLE BREEN STREET: 50 DEVON DRIVE CITY: READING, PA
ZIP: 19601 PHONE #: 610-689-3777 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y)N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y)N How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER FILTER / REVERSE OSMOSIS
Was the water ever tested? (Y)N When? A LITTLE OVER 8 YRS AGO
Any contamination? (Y)N What? (TC, FC, N, etc.)

How large is your lot? 1.46 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - SIZE? | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL <u>UNKNOWN</u> | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>PRE-REGULATORY</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>AS FAR AS IS KNOWN - THE SAME</u> | | |

How old is your system? 1963 Was it permitted? Y / N When? UNKNOWN / PRE-REGULATORY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y)N How often? EVERY 4 YRS Last time? ABOUT 8 MONTHS AGO
If it was pumped, was it inspected for cracks or broken baffles? (Y)N What part? TANK INTERIOR

Has the system ever been repaired? (N)N When? By permit? Y / N What part?
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED
COMMENTS: 3RD OWNER Michelle Breen

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 37

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602987792

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-1-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: MARGARET FEINBERG STREET: 46 DEVON DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-9450 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER

Was the water ever tested? Y N When? 15 +/- YRS AGO

Any contamination? Y / N What? (TC, FC, N, etc.) HIGH IRON CONTENT

How large is your lot? 1.38 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------------|---------------------|-----------------|
| <u>SEPTIC TANK</u> - 1000 gal. | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>REPLACEMENT SYSTEM</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? APPROX. 2001 Was it permitted? Y N When? APPROX. 2001

Have you every noticed any of the following near your septic system? No PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? EVERY 3 YRS Last time? LAST MONTH

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? 6" CLEANOUT FOR PUMP ACCESS

Has the system ever been repaired? Y N When? APPROX. 2001 By permit? Y N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD.
REPAIRED/REPLACED

COMMENTS: CONTRACTOR WAS BUCKWALTER ETC.

Margaret Feinberg

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 38

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602986712

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-12-13
General weather conditions: SUNNY <30° SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: MATTHEW GOLDSTAN STREET: 40 DEVON DRIVE CITY: ROADING, PA
ZIP: 19102 PHONE #: 610-689-9498 OWNER OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? NOT SURE 300+ ft. Cased? Y / N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER _____

Was the water ever tested? Y / N When? DOESN'T REMEMBER

Any contamination? Y N What? (TC, FC, N, etc.) _____

How large is your lot? 0.98 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|--|-----------------|
| <input checked="" type="radio"/> SEPTIC TANK - SIZE? | <input checked="" type="radio"/> INGROUND BED | COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input checked="" type="radio"/> INGROUND TRENCH | STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | PIPE TO SURFACE |
| <input type="radio"/> OTHER <u>UNKNOWN PRE-REGULATORY SYSTEM</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|---|---|-----------------|
| <input type="radio"/> SEPTIC TANK | <input type="radio"/> INGROUND BED | COMMUNITY SEWER |
| <input type="radio"/> CESSPOOL | <input type="radio"/> INGROUND TRENCH | STORM SEWER |
| <input type="radio"/> OLD WELL | <input type="radio"/> ELEVATED SAND MOUND | PIPE TO DITCH |
| <input type="radio"/> HOLDING TANK | <input type="radio"/> SEEPAGE PIT | PIPE TO STREAM |
| <input type="radio"/> PRIVY | <input type="radio"/> BORE HOLE | PIPE TO SURFACE |
| <input type="radio"/> OTHER <u>AS FAR AS IS KNOWN - SAME SYSTEM</u> | | |

How old is your system? 1963 Was it permitted? Y / N When? PRE-REGULATORY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|---|---|--------------------------------|
| <input type="checkbox"/> GREEN LUSH GRASS | <input type="checkbox"/> WETNESS OR SPONGY AREAS | <input type="checkbox"/> ODORS |
| <input type="checkbox"/> WATER PONDING OR SURFACING | <input type="checkbox"/> SYSTEM OVERFLOW | |
| <input type="checkbox"/> SLUGGISH DRAINS | <input type="checkbox"/> WASTEWATER BACKING INTO THE HOME | |
| <input type="checkbox"/> OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y / N How often? EVERY 3 YRS Last time? 2 YRS AGO

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: SON OF ORIGINAL OWNER

Matthew S. Goldstan

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 39

Malfunction Status: SUSPECTED
Tax Parcel ID #: 43533602981678

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-2-13
General weather conditions: 70°S / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Jill Skaisit STREET: 30 DEVON DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-5420 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 100' ft. Cased? (Y) N 72'8" CASING

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL (UV DISINFECTION) (SOFTNER) ION, OTHER _____

Was the water ever tested? (Y) N When? ABOUT 1/2 YR. AGO

Any contamination? Y (N) What? (TC, FC, N, etc.) DID NOT KNOW TO BYPASS THE UV LIGHT

How large is your lot? 1.84 ACRE No. of dwelling units? 1

One or more sewage systems? _____ COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- (SEPTIC TANK) 2 INGROUND BED COMMUNITY SEWER
- CESSPOOL CURRENT OWNER IS (INGROUND TRENCH) STORM SEWER (PRE-REGULATORY)
- OLD WELL NOT SURE ELEVATED SAND MOUND PIPE TO DITCH SYSTEM
- HOLDING TANK WHAT SIZE SEEPAGE PIT PIPE TO STREAM
- PRIVY WAS REALLY INSTALLED BORE HOLE PIPE TO SURFACE
- OTHER RECORDS INDICATE A 1000 GAL TANK FOLLOWED BY A 500 GAL TANK, T-WAY D-BOX AND 420 FT. OF DRAIN TILE - LOCATION & DEPTH IS UNKNOWN

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK INGROUND BED COMMUNITY SEWER
- CESSPOOL INGROUND TRENCH STORM SEWER
- OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
- HOLDING TANK SEEPAGE PIT PIPE TO STREAM
- PRIVY BORE HOLE PIPE TO SURFACE
- OTHER AS FAR AS WE KNOW - THE SAME

How old is your system? 1967 Was it permitted? Y / N When? PRE REGULATORY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED EXCEPT:

- GREEN LUSH GRASS WETNESS OR SPONGY AREAS (ODORS)
- WATER PONDING OR SURFACING SYSTEM OVERFLOW POSSIBLE, OWNER IS
- SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME NOT SURE

OTHER THE LIQUID LEVEL IN THE 2ND TANK APPEARS TO BE HIGHER THAN THE INVERT OF THE OUTLET - LIMITED VISIBILITY, CANNOT BE SURE, HECKMAN REMOVED 2000 GAL. ?

If you noticed any of the above, are they seasonal or year-round? (SEE ACCOMPANYING PUMP RECEIPT)

Have you ever had your system pumped out? (Y) N How often? ABOUT 3 YRS. Last time? APRIL, 2013

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? INSUFFICIENT ACCESS

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: RECOMMEND INSTALLING 24" DIAM. RISERS TO FACILITATE MAINTENANCE OF TANKS (IF PUBLIC SEWERS DO NOT BECOME AVAILABLE). WE ALSO DISCUSSED SURFACE WATER DIVERSION.

Jill D. Skaisit

LIMITED REPLACEMENT AREA OBSERVED

F. HECKMAN AND SON, INC.

*pd # 33 Aug.
4/10/13*

2668 Leisch's Bridge Road
Leesport, PA 19533
Phone 610-916-1487
Fax 610-916-0679

INVOICE

WWW.LANDIS-HECKMAN.COM

Date: 04/03/13

Inv. No.: 2013000986

Due Date: 04/18/13

Page No.: 1

Customer #: SKAIST E

JILL SKAIST
30 DEVON DRIVE
READING PA 19606

(610) 689-5420

SERVICE DATE	TERMS	YOUR #	OUR #	REP. RV
4/2/13	NET 15 DAYS			
DESCRIPTION	QUANTITY	PRICE	EXTENDED	
PUMP, HAUL AND DISPOSAL OF 2000 GALLONS SEPTIC WASTE	1.0	259.1500	259.15	
PRO - PUMP - PER GALLON	1.0	49.0000	49.00	

Visa, Mastercard & Discover Accepted. Call with Account Information

SUB TOTAL	308.15
Fuel Surcharge	0.00
TAX	2.94
TOTAL	311.09

3 BY CASHING A CHECK FOR PAYMENT, YOU AGREE TO THE FOLLOWING TERMS: In the event your check is dishonored or returned for any reason, you authorize us to electronically (or by paper draft) re-present the check to your bank account for collection of the full amount of the check, plus any applicable fees as permitted by state law.

NET TO PAY	311.09
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PAST DUE ACCOUNTS REQUIRING FURTHER COLLECTION PROCEDURES WILL RESULT IN ADDITIONAL FEES.

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 40

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602887967

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-1-13
General weather conditions: 70'S / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: BARBARA TAGLANG STREET: 11 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-779-2649 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 95 ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y / N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER

Was the water ever tested? (Y) N When? DOESN'T REMEMBER (MORE THAN 2 YRS - HUSBAND DIED THAT - HE IS DECEASED)

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 2.11 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---|---------------------|-----------------|
| (SEPTIC TANK) | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN SIZE - 4 TRENCHES (PRE-REGULATORY)</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 46 YRS Was it permitted? Y / N When? 1967 (PRE-REGULATORY)

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? NOT SURE Last time? APPROX 2 1/2 - 3 YRS

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? TANK LID NOT EXPOSED

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: _____

Barbara J. Taglang

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 42

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602990256

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-12-13
General weather conditions: SUNNY 43° SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: LOUISE WIENER STREET: 10 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-4223 OWNER OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED HOW DEEP? UNKNOWN ft. Cased? Y / N *
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER
Was the water ever tested? Y / N When? DOESN'T REMEMBER
Any contamination? Y / N What? (TC, FC, N, etc.) BACTERIA

How large is your lot? 1.85 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)
SEPTIC TANK - SIZE? INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER UNKNOWN DRAINFIELD - PROBABLY PRE-REGULATORY

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)
SEPTIC TANK INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER SAME

How old is your system? 37 YRS Was it permitted? Y / N When? PRESUMABLY: 1972+/-
Have you every noticed any of the following near your septic system?

GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
WATER PONDING OR SURFACING SYSTEM OVERFLOW
SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
OTHER NOT SURE - REPORTED BY GARDENER

If you noticed any of the above, are they seasonal or year-round? EARLIER THIS YEAR

Have you ever had your system pumped out? Y / N How often? SHE THINKS EVERY YEAR Last time? JANUARY, 2013
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? SEPTMBER, 2013
TANK IS ACCESSIBLE

Has the system ever been repaired? Y / N When? SEPT., 2013 By permit? Y / N What part? BAFFLE
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:
REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNER
UNABLE TO SAMPLE WATER - PRESSURE TANK IS INACCESSABLE

Call Heckman's AND FIND OUT ABOUT REPAIR Louise J. Wiener
610-916-1487 - ALUM CALLED 12-26-13
RECEIPT IS ATTACHED
CRACKS AT AREA IS AVAILABLE

Fax 610-375-7682

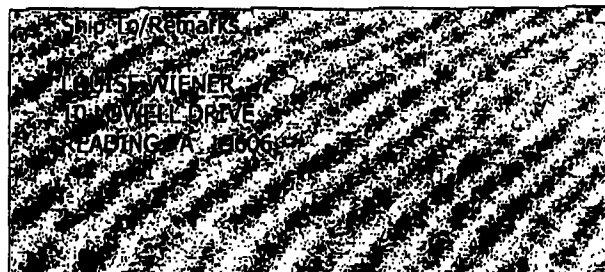
LANDIS
Mechanical Group Inc.

2668 Leisch's Bridge Road
Leesport, PA 19533
Phone 610-916-1487
Fax 610-916-0679

WWW.LANDIS-HECKMAN.COM

INVOICE

Date: 09/30/13 Inv. No.: 2013001317
Due Date: 10/15/13 Page No.: 1
Customer #: WIENER



SERVICE	TERMS	YOUR #	OUR #	REP.
9/11 & 9/17	NET 15 DAYS	VERBAL	PS13-699	DJ/JM
9/11: Jet outlet piping from septic tank to d-box, found broken baffle on outlet side, must return to repair.				
Urg. Jet Machine w/Mech #1 1st Hour		1.0	250.0000	250.00
Labor Mechanic #1 Addl Hours		4.0	68.0000	272.00
Labor Mechanic #2		5.0	68.0000	340.00
9/17: Excavate & repair septic tank baffle on outlet side, treated w/caustic, backfilled excavation.				
pvc pipe, fernco w/sheer band, pvc 90, pvc 2-way cleanout tee		1.0	104.0000	104.00
Caustic Soda 55 lb bag		1.0	125.0000	125.00
Excavator w/Operator #1 1st Hour		1.0	250.0000	250.00
Labor Mechanic #1 Addl Hours		4.0	68.0000	272.00
Labor Mechanic #2		5.0	68.0000	340.00

Visa, Mastercard & Discover Accepted. Call with Account Information

BY USING A CHECK FOR PAYMENT, YOU AGREE TO THE FOLLOWING TERMS: In the event your check is dishonored or returned for any reason, you authorize us to electronically (or by paper draft) re-present the check to your bank account for collection of the amount of the check, plus any applicable fees as permitted by state law.

PAST DUE ACCOUNTS REQUIRING FURTHER COLLECTION PROCEDURES WILL RESULT IN ADDITIONAL FEES.

SUB TOTAL	1953.00
Fuel Surcharge	0.00
TAX	0.00
TOTAL	1953.00
NET TO PAY	1953.00

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 43

Malfunction Status: SUSPECTED
Tax Parcel ID #: 43533002991425

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-3-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: LEIGHANN & JOSEPH REEDY STREET: 40 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-3956 OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y / N How? CL / UV DISINFECTION (SOFTNER) ION, OTHER

Was the water ever tested? Y / N When? 2010 STUDY (SEE RESULTS)

Any contamination? Y / N What? (TC, FC, N, etc.)

How large is your lot? 0.99 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK
 - CESSPOOL
 - OLD WELL
 - HOLDING TANK
 - PRIVY
 - OTHER NOT SURE OF SIZE OF TANK OR EXACT CONFIGURATION OF DRAINFIELD
- ? INGROUND BED
 - INGROUND TRENCH
 - ELEVATED SAND MOUND
 - SEEPAGE PIT
 - BORE HOLE
- COMMUNITY SEWER
 - STORM SEWER
 - PIPE TO DITCH
 - PIPE TO STREAM
 - PIPE TO SURFACE

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK
 - CESSPOOL
 - OLD WELL
 - HOLDING TANK
 - PRIVY
 - OTHER SUMP PUMP DISCHARGE TO FRONT YARD / GARDEN NEXT TO DRIVEWAY
- INGROUND BED
 - INGROUND TRENCH
 - ELEVATED SAND MOUND
 - SEEPAGE PIT
 - BORE HOLE
- COMMUNITY SEWER
 - STORM SEWER
 - PIPE TO DITCH
 - PIPE TO STREAM
 - PIPE TO SURFACE

How old is your system? 1986 +/- Was it permitted? Y / N When? UNKNOWN

Have you every noticed any of the following near your septic system? YES (+)

- GREEN LUSH GRASS
- WETNESS OR SPONGY AREAS
- ODORS
- WATER PONDING OR SURFACING / SYSTEM OVERFLOW
- SLUGGISH DRAINS
- WASTEWATER BACKING INTO THE HOME

OTHER THIS PROPERTY WAS IDENTIFIED AS A CONFIRMED MALFUNCTION DURING THE 2010 STUDY.

(+) IN JULY OF 2013 THE OWNER EXCAVATED A PIPE AND REMOVED 13 DEAD SNAPPING TURTLES THAT WERE CAUSING THE CLOG & OVERFLOW.

THE SYSTEM IS FUNCTIONING NOW.

Have you ever had your system pumped out? Y / N How often? NOT REGULARLY Last time? DOESN'T REMEMBER

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? INSUFFICIENT ACCESS
"TURTLE NEST"

Has the system ever been repaired? Y / N When? SUMMER 2013 By permit? Y (N) What part? REMOVED

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: OWNER APPROX. 10 YEARS

(+) THIS PROPERTY IS DESIGNATED A SUSPECTED MALFUNCTION DUE TO THE UN-PERMITTED REPAIR AND ABOVE INFORMATION. THE LAUNDRY DISCHARGE TO THE FRONT YARD VIA THE SUMP PUMP IS A VIOLATION THAT WOULD MAKE THIS PROPERTY A CONFIRMED MALFUNCTION BUT IS EASILY CORRECTED.

LIMITED REPAIRMENT AREA IS AVAILABLE

Leighann Reedy

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 44

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602993517

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-16-13
General weather conditions: <30° SUNNY - GROUND COVERED WITH SNOW

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JOHN SWESTOCK STREET: 60 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-621-2919 (OWNER OR RENTER? NUMBER OF RESIDENTS: 4)

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED?) HOW DEEP? 180 ft. Cased? (Y) N

How far is the well or spring from the drain field? 100 ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER _____

Was the water ever tested? (Y) N When? WHEN MOVED IN 2000

Any contamination? Y / (N) What? (TC, FC, N, etc.) _____

How large is your lot? 1.13 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------|---------------------|-----------------|
| (SEPTIC TANK) - SIZE-? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? _____ Was it permitted? (Y) N When? PRESUMABLY, 1978

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|------------------------------|----------------------------------|-------|
| <u>None</u> GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER _____ | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 TO 3 YEARS Last time? OCTOBER, 2013

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? _____

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED
COMMENTS: OWNER SINCE AUGUST, 2000

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 45

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602994679

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JOE & BETTY MRAZ STREET: 70 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19604 PHONE #: 610-1089-9448 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y)
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y) N How? CL (UV DISINFECTION) (SOFTNER) ION, OTHER
Was the water ever tested? (Y) N When? ABOUT A YEAR AGO - TESTS EVERY COUPLE OF YEARS
Any contamination? (Y) N What? (TC, FC, N, etc.)

How large is your lot? 1.12 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)
(SEPTIC TANK)? ? (INGROUND BED) COMMUNITY SEWER
(INGROUND TRENCH) STORM SEWER
CESSPOOL ELEVATED SAND MOUND PIPE TO DITCH
OLD WELL SEEPAGE PIT PIPE TO STREAM
HOLDING TANK BORE HOLE PIPE TO SURFACE
PRIVY
OTHER UNKNOWN/POSSIBLE PRE-REGULATORY SYSTEM

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)
(SEPTIC TANK) (INGROUND BED) COMMUNITY SEWER
CESSPOOL (INGROUND TRENCH) STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER SAME

How old is your system? 1972 Was it permitted? Y / N When? UNKNOWN
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED
GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
WATER PONDING OR SURFACING SYSTEM OVERFLOW
SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
OTHER

If you noticed any of the above, are they seasonal or year-round?

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YRS Last time? DEC. 2011
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? (Y) N When? 20 YRS +/- By permit? (Y) N What part? PIPE REPAIR
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: PRESUMABLY (BUCKWALTER, CONTRACTOR)
REPAIRED/REPLACED
COMMENTS: ORIGINAL OWNERS

Joseph B. Mraz

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 46

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602995893

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-9-13
General weather conditions: 60's / CLOUDY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: RICHARD L HENRY STREET: PO SHERWOOD DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-5577 OWNER OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER
Was the water ever tested? Y N When? 2-3 YRS.
Any contamination? Y N What? (TC, FC, N, etc.)

How large is your lot? 1.0 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | | |
|----------------------------|----------|------------------------|-----------------|
| <u>SEPTIC TANK</u> - size? | <u>?</u> | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | | BORE HOLE | PIPE TO SURFACE |
| OTHER | | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------|---------------------|-----------------|
| <u>SEPTIC TANK</u> | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1974 Was it permitted? Y N When? PRESUMABLY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? 3-4 YRS Last time? ABOUT 4 YRS. AGO
If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y N When? By permit? Y / N What part?
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS *Richard Henry*

NO REPLACEMENT AREAS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 47

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533704907011

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-13-13
General weather conditions: SUNNY <30° SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: GRETCHEN NASO STREET: 90 SHERWOOD DRIVE CITY: READING, PA
ZIP: 19601 PHONE #: 610-207-7758 (OWNER OR RENTER? NUMBER OF RESIDENTS: 4)

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? LEVEL +/-

Do you treat your water? Y / (N) How? CL / UV DISINFECTION, SOFTNER, ION, OTHER _____

Was the water ever tested? Y (N) When? _____

Any contamination? Y / N What? (TC, FC, N, etc.) N/A

How large is your lot? 1.02 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- (SEPTIC TANK) - size? ?
- CESSPOOL ?
- OLD WELL ?
- HOLDING TANK
- PRIVY
- OTHER UNKNOWN - POSSIBLE PRE-REGULATORY SYSTEM
- (INGROUND BED)
- (INGROUND TRENCH)
- ELEVATED SAND MOUND
- SEEPAGE PIT
- BORE HOLE
- COMMUNITY SEWER
- STORM SEWER
- PIPE TO DITCH
- PIPE TO STREAM
- PIPE TO SURFACE

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- SEPTIC TANK
- CESSPOOL
- OLD WELL
- HOLDING TANK
- PRIVY
- OTHER _____
- INGROUND BED
- INGROUND TRENCH
- ELEVATED SAND MOUND
- SEEPAGE PIT
- BORE HOLE
- COMMUNITY SEWER
- STORM SEWER
- PIPE TO DITCH
- PIPE TO STREAM
- PIPE TO SURFACE

How old is your system? 1974 +/- Was it permitted? Y / N When? PRESUMABLY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- GREEN LUSH GRASS
- WATER PONDING OR SURFACING
- SLUGGISH DRAINS
- OTHER N/A
- WETNESS OR SPONGY AREAS
- SYSTEM OVERFLOW
- WASTEWATER BACKING INTO THE HOME
- ODORS

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) / N How often? AT LEAST ONCE / YEAR Last time? SPRING

If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? Y / (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____

REPAIRED/REPLACED

COMMENTS: 3RD OR 4th OWNER

Gretchen A. Naso

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 48

Malfunction Status: POTENTIAL
Tax Parcel ID #: 4353360299886

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-2-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ROBERT MEHLMAN STREET: 100 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0061 OWNER OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y N How? CL UV DISINFECTION SOFTNER ION, OTHER FILTER

Was the water ever tested? Y N When? 3-4 YRS AGO

Any contamination? Y N What? (TC, FC, N, etc.) TOTAL COLIFORM

How large is your lot? 0.9 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---|-------------------------|-----------------|
| <u>SEPTIC TANK</u> | ? - <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN PRE-REGULATORY SYSTEM (EARLY 1960S) SEPTIC TANK FOLLOWED BY UNKNOWN DRAINFIELD</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>ASSUMED SAME (AS FAR AS IS KNOWN)</u> | | |

How old is your system? 50+- YRS Was it permitted? Y / N When? PRE-REGULATORY

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y N How often? 3-5 YRS. Last time? JUN, 2013

If it was pumped, was it inspected for cracks or broken baffles? Y N What part? INSUFFICIENT ACCESS (6" PIPE)

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: OWNER SINCE JAN. 2000

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 49

Malfunction Status: POTENTIAL MALF.
Tax Parcel ID #: 43533602997782

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-22-13
General weather conditions: 50°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: Wm. BALLAMY STREET: 50 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-5890 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? 200 +/- ft. Cased? (Y) N
How far is the well or spring from the drain field? APPROX. 85 ft. Is well UP / DOWNHILL? SLIGHTLY UPHILL
Do you treat your water? Y (N) How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER (HOT WATER ONLY)
Was the water ever tested? (Y) N When? ABOUT 10 YEARS AGO
Any contamination? Y / (N) What? (TC, FC, N, etc.) HARD WATER

How large is your lot? 0.95 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|------------------------------------|---------------------|-----------------|
| (SEPTIC TANK) - 1000 GAL. | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>PRE-REGULATORY SYSTEM</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 1968 +/- Was it permitted? Y / N When? PREREGULATORY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|--|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING SYSTEM OVERFLOW | | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 3 YEARS Last time? LAST MONTH
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR/Baffles

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNER William C. Ballamy

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 50

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602996807

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-2-13
General weather conditions: 70°S / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: SIM McARDLE STREET: 40 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-233-5843 OWNER OR RENTER? NUMBER OF RESIDENTS: 5
What kind of water system do you have? WELL SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED HOW DEEP? UNKNOWN ft. Cased? Y/N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y/N How? CL / UV DISINFECTION, SOFTNER ION, OTHER
Was the water ever tested? Y/N When? APPROX. 3 YRS AGO
Any contamination? Y / N What? (TC, FC, N, etc.) (HIGH PH - THAT'S IT)

How large is your lot? 0.97 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL RESIDENTIAL

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|---|------------------------------|-----------------|
| <u>SEPTIC TANK</u> ? | ? <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN SIZE - SEPTIC TANK FOLLOWED BY INGROUND DRAINFIELD</u> | | |
| | <u>PRE-REGULATORY SYSTEM</u> | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------|------------------------|-----------------|
| <u>SEPTIC TANK</u> | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? APPROX. 1971-1972 Was it permitted? Y / N When? UNKNOWN / PRE-REGULATORY
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y/N How often? ANNUALLY Last time? LAST FALL
If it was pumped, was it inspected for cracks or broken baffles? Y / N What part? UNKNOWN

Has the system ever been repaired? Y N When? _____ By permit? Y / N What part? _____
TANK: REPAIRED/REPLACED _____ LINE: REPAIRED/REPLACED _____ DRAIN FIELD: _____
REPAIRED/REPLACED _____

COMMENTS: OWNER SINCE 2002
Jim R. [Signature] 10/2/2013

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 52

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602993347

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JIM RAGLAND STREET: 20 LOWER DAVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-780-3771 OWNER OR RENTER? NUMBER OF RESIDENTS: 4

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 100 ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? Y (N) How? CL (UV DISINFECTION, SOFTNER) ION, OTHER (CIRCLED ITEMS NOT IN USE)

Was the water ever tested? Y (N) When? _____

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 0.94 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> | ? <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>LIFT PUMP TO D-BOX (REPLACEMENT SYSTEM)</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|---------------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>ASSUMED SAME</u> | | |

How old is your system? 1974/1975 +/- Was it permitted? Y / N When? UNKNOWN

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 3 YRS +/- Last time? JUNE +/- 2013

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? (Y) N When? UNKNOWN (DONE BY PREVIOUS OWNER) By permit? Y / N What part? UNKNOWN

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED (DRAIN FIELD)

REPAIRED/REPLACED
COMMENTS: OWNER SINCE 2002 - REPLACEMENT SYSTEM BY PREVIOUS OWNER

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 53

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602993113

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-8-13
General weather conditions: 60°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: FLORENCE RUSSO STREET: 11 LOWELL DRIVE CITY: READING, PA
ZIP: 19601 PHONE #: 610-689-9066 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 100+ ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER), ION, OTHER

Was the water ever tested? (Y) (N) When?

Any contamination? Y / N What? (TC, FC, N, etc.) UNKNOWN

How large is your lot? 0.73 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------|---------------------|-----------------|
| (SEPTIC TANK) - 1000 GAL | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL ? | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>AS FAR AS IS KNOWN - THE SAME</u> | | |

How old is your system? 1974 Was it permitted? (Y) N When? 1974 - MET REQ'S AT TIME

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY YEAR Last time? SPRING 2003

If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? INSUFFICIENT ACCESS

Has the system ever been repaired? (Y) N When? ABOUT 20 YEARS AGO By permit? Y / N What part? UNKNOWN DOESN'T REMEMBER

TANK: REPAIRED/REPLACED (LINE: REPAIRED/REPLACED) DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: ORIGINAL OWNERS - REMEMBERS A PIPE REPAIR 20 +/- YRS. AGO

POSSIBLY THE BLDG. SEWER LINE.

Florence M. Russo

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 54

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602995108

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-2-13
General weather conditions: 70°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: MARY BENJAMIN STREET: 21 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-3902 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 5

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? APPROX. LEVEL
Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER FILTER
Was the water ever tested? (Y) N When? NOT SURE OF PARAMETERS
Any contamination? Y / (N) What? (TC, FC, N, etc.) "NO PROBLEMS THAT WE KNOW OF."

How large is your lot? 0.92 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| (SEPTIC TANK) ? | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN SYSTEM / PRE-REGULATORY</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>AS FAR AS IS KNOWN - THE SAME</u> | | |


How old is your system? EARLY 1970S Was it permitted? Y / N When? UNKNOWN
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YRS Last time? LAST YEAR
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLE
ADDED 30" DIAM RISER / MANHOLE

Has the system ever been repaired? Y / (N) When? By permit? Y / N What part?
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:
REPAIRED/REPLACED

COMMENTS: OWNER SINCE 2002 

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 55

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602997216

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-16-13
General weather conditions: <30° SUNNY / SNOW COVERED GROUND

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: KERRY MINNICH STREET: 31 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0897 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER

Was the water ever tested? (Y) N When? 5 OR MORE YEARS AGO

Any contamination? Y (N) What? (TC, FC, N, etc.) NO PROBLEMS

How large is your lot? 0.99 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------------------|---------------------|-----------------|
| (SEPTIC TANK) - size? <u>UNKNOWN</u> | (INGROUND BED) | COMMUNITY SEWER |
| CESSPOOL | (INGROUND TRENCH) | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 37 yrs +/- Was it permitted? (Y) N When? PRESUMABLY 1977

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 3 YEARS Last time? 3 YRS AGO

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR OF TANK

Has the system ever been repaired? Y / (N) When? By permit? Y / N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:

REPAIRED/REPLACED

COMMENTS: OWNER FOR 13 YRS (SECOND OWNER)

KL Minich

LIMITED REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 57

Malfunction Status: NONE
Tax Parcel ID #: 43534601090426

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-3-13
General weather conditions: 70's / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: ROBERT T MERRITT STREET: 51 LOWELL DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-780-5979 OWNER OR RENTER? NUMBER OF RESIDENTS: 3

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y)
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? SLIGHTLY UPHILL
Do you treat your water? (Y) N How? CL. (UV DISINFECTION) (SOFTNER), ION, OTHER FILTER
Was the water ever tested? (Y) N When? 2 OR 3 TIMES SINCE 2005
Any contamination? Y (N) What? (TC, FC, N, etc.) (BUT TESTED FROM KITCHEN SINK AFTER TREATMENT)

How large is your lot? 0.88 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|----------------------|------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | <u>(ELEVATED SAND MOUND)</u> | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? 12 YRS +/- Was it permitted? (Y) N When? APPROX. 2001
Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED
OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? Y (N) How often? _____ Last time? _____
If it was pumped, was it inspected for cracks or broken baffles? Y (N) What part? _____

Has the system ever been repaired? (Y) N When? 3-4 YRS AGO By permit? Y (N) What part? LATERAL ENDCAP
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: CLEANOUT

REPAIRED/REPLACED
COMMENTS: OWNER SINCE 2005

R. Merritt

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 58

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43534601092504

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 11-26-13
General weather conditions: <40°, RAIN

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: EO GALLAGHER STREET: 71 DEVON DR. CITY: READING, PA
ZIP: 19606 PHONE #: 484-638-3265 OWNER OR RENTER? NUMBER OF RESIDENTS: 2
What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED?) HOW DEEP? UNKNOWN ft. Cased? (Y) N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? (Y) N How? CL / UV DISINFECTION (SOFTNER) ION, OTHER FILTER
Was the water ever tested? (Y) N When? LAST YEAR CURRENTLY NOT FUNCTIONAL
Any contamination? (Y) N What? (TC, FC, N, etc.)

How large is your lot? 1.36 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL?)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

(SEPTIC TANK) - SIZE? ? (INGROUND BED) COMMUNITY SEWER
(CESSPOOL) (INGROUND TRENCH) STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER PRE-REGULATORY SYSTEM (PIPE REPAIR IN 2007)

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

(SEPTIC TANK) (INGROUND BED) COMMUNITY SEWER
(CESSPOOL) (INGROUND TRENCH) STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER ASSUMED SAME

How old is your system? 1964 Was it permitted? Y / N When? UNKNOWN
Have you every noticed any of the following near your septic system?

(GREEN LUSH GRASS) (WETNESS OR SPONGY AREAS) (ODORS)
(WATER PONDING OR SURFACING) (SYSTEM OVERFLOW)
(SLUGGISH DRAINS) (WASTEWATER BACKING INTO THE HOME)
OTHER NOT SINCE REPAIR

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 3 YRS Last time? SPRING '13
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? TANK INTERIOR

Has the system ever been repaired? (Y) N When? 11-30-07 By permit? (Y) N What part?

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED
COMMENTS: REPAIR PERMIT 2034522 11-30-07 [Signature]

ORIGINAL HOME 1964 (REBUILT AFTER FIRE 2001)
OWNER SINCE JULY 29, 1992

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 59

Malfunction Status: SUSPECTED
Tax Parcel ID #: 43533602999298

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-1-13
General weather conditions: 70°S/SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

JOHN \$ (CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)
NAME: MARGARET HEURIEGEL STREET: 55 DEVON DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0141 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 2
What kind of water system do you have? (WELL?) SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N (BURIED)
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y / N How? CL / UV DISINFECTION, SOFTNER, ION, OTHER
Was the water ever tested? (Y) N When? ALMOST 2 YRS AGO (MARCH, 2011?)
Any contamination? Y / (N) What? (TC, FC, N, etc.)

How large is your lot? 1.22 ACRE (ALSO COUNTS 1/2 ACRE NEXT DOOR) No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)
(SEPTIC TANK) - 2 INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER UNKNOWN DRAINFIELD / PRE-REGULATORY

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)
SEPTIC TANK INGROUND BED COMMUNITY SEWER
CESSPOOL INGROUND TRENCH STORM SEWER
OLD WELL ELEVATED SAND MOUND PIPE TO DITCH
HOLDING TANK SEEPAGE PIT PIPE TO STREAM
PRIVY BORE HOLE PIPE TO SURFACE
OTHER SAME

How old is your system? 1970 Was it permitted? Y / N When? UNKNOWN
Have you every noticed any of the following near your septic system? (A) SEE BELOW

- GREEN LUSH GRASS WETNESS OR SPONGY AREAS ODORS
- WATER PONDING OR SURFACING SYSTEM OVERFLOW
- SLUGGISH DRAINS WASTEWATER BACKING INTO THE HOME
- (*) OTHER SED OBSERVED LIQUID IN RISER OF SECOND TANK

If you noticed any of the above, are they seasonal or year-round? (HUSBAND SAYS MAY)

Have you ever had your system pumped out? (Y) N How often? TWICE A YEAR Last time? NOT SURE JULY OR AUGUST
If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y / N When? UNKNOWN By permit? Y / N What part?
TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD:
REPAIRED/REPLACED
COMMENTS: NEW OWNER, ONLY 2ND YEAR - John Heuriegel

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 60

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602997065

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 10-1-13
General weather conditions: 70°s / SUNNY

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: DAN QUAY STREET: 41 DEVON DRIVE CITY: READING, PA
ZIP: 19606 PHONE #: 610-689-0010 OWNER OR RENTER? NUMBER OF RESIDENTS: 8

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? UNKNOWN ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION, (SOFTNER) ION, OTHER FILTER

Was the water ever tested? (Y) N When? COUPLE MONTHS AGO

Any contamination? Y (N) What? (TC, FC, N, etc.) HE SAID NO AT FIRST BUT THEN SAID HE THINKS HE REMEMBERS A SMALL AMOUNT OF BACTERIA - NOT SURE

How large is your lot? 1.33 ACRE No. of dwelling units? 1

One or more sewage systems? 1 COMMERCIAL (RESIDENTIAL)

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| (SEPTIC TANK) | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN DRAINFIELD / PRE-REGULATORY</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|-------------------|---------------------|-----------------|
| (SEPTIC TANK) | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME</u> | | |

How old is your system? APPROX. 1970-1972 Was it permitted? Y / N When? UNKNOWN

Have you every noticed any of the following near your septic system? NO PROBLEMS REPORTED OR OBSERVED

- | | | |
|----------------------------|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>N/A</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YRS Last time? APRIL, 2012

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? INTERIOR / BAFFLES

Has the system ever been repaired? Y (N) When? _____ By permit? Y / N What part? _____

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: _____
REPAIRED/REPLACED

COMMENTS: RESIDENT FOR ONLY 5 YEARS

REPLACEMENT AREA IS AVAILABLE

DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 61

Malfunction Status: SUSPECTED
Tax Parcel ID #: 43533602985947

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 12-20-13
General weather conditions: 30°S SUNNY - SNOW COVERED GRASS

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JAMES KING STREET: 37 DEVON DRIVE CITY: ROADING, PA
ZIP: 19106 PHONE #: 215-896-4733 (OWNER) OR RENTER? NUMBER OF RESIDENTS: 1

What kind of water system do you have? WELL? SPRING? CISTERN? PUBLIC? OTHER?
If you have a well: Is it DUG or DRILLED? HOW DEEP? UNKNOWN ft. Cased? Y/N
How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL
Do you treat your water? Y/N How? CL / UV DISINFECTION, SOFTNER ION, OTHER KITCHEN FILTER
Was the water ever tested? Y/N When? JULY, 2013
Any contamination? Y/N What? (TC, FC, N, etc.)

How large is your lot? 1.03 ACRE No. of dwelling units? 1
One or more sewage systems? 1 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--|------------------------|-----------------|
| <u>SEPTIC TANK</u> - size? | <u>INGROUND BED</u> | COMMUNITY SEWER |
| CESSPOOL | <u>INGROUND TRENCH</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>UNKNOWN PRE-REGULATORY SYSTEM</u> | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|--|---------------------|-----------------|
| SEPTIC TANK | INGROUND BED | COMMUNITY SEWER |
| CESSPOOL | INGROUND TRENCH | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER <u>SAME (AS FAR AS IS KNOWN)</u> | | |

How old is your system? APPROX. 43 YRS Was it permitted? Y / N When? UNKNOWN - 1970

Have you every noticed any of the following near your septic system? PROBABLY PRE-REGULATORY
* NO PROBLEMS OBSERVED CURRENTLY, HOWEVER THERE IS A HISTORY OF MALF.

- | | | |
|---|----------------------------------|--------------|
| <u>GREEN LUSH GRASS</u> | <u>WETNESS OR SPONGY AREAS</u> | <u>ODORS</u> |
| <u>WATER PONDING OR SURFACING / SYSTEM OVERFLOW</u> | | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |

OTHER SEO AWM VISITED THE SITE IN 2009 - SYSTEM WAS THEN MALFUNCTIONING
SOIL PROBE & PERCOLATION TESTING WAS CONDUCTED FOR A REPLACEMENT SYSTEM.

If you noticed any of the above, are they seasonal or year-round? THINKS PREVIOUS OWNER DIED IN JUNE, 2013

Have you ever had your system pumped out? Y N How often? Last time? UNKNOWN

Has the system ever been repaired? Y/N When? SEE BELOW By permit? Y N What part? SEE BELOW

TANK: REPAIRED/REPLACED LINE: REPAIRED/REPLACED DRAIN FIELD: REPAIRED/REPLACED
COMMENTS: OWNER SINCE JULY 2013

PREVIOUS OWNER: JOHN & GLORIA LICKNELL

⊛ AFTER THE SEO VISIT IN 2009 AN UNKNOWN/UNPERMITTED REPAIR OCCURRED - EVIDENCE: MALFUNCTION ABATED, NEW CLEANOUTS VISIBLE IN YARD. REPLACEMENT AREA IS QUADRATIC



DOOR-TO-DOOR
NEEDS SURVEY

Map Index No.: 62

Malfunction Status: POTENTIAL
Tax Parcel ID #: 43533602982984

Municipality: Exeter Township Co.: Berks Study Area: Glen Oley Farms Date: 9-26-13
General weather conditions: SUNNY 70°S

A survey is being conducted to determine if there are any sewage problems in this area. This is a general survey and the results are intended to be used in evaluating the need for community wide solutions.

(CIRCLE OR FILL IN AS APPROPRIATE; ADD COMMENTS AS NEEDED)

NAME: JUAN KRALJEVIC STREET: 31 DEVON DRIVE CITY: READING, PA
ZIP: 196010 PHONE #: 610-689-4960 OWNED OR RENTER? NUMBER OF RESIDENTS: 2

What kind of water system do you have? (WELL) SPRING? CISTERN? PUBLIC? OTHER?

If you have a well: Is it DUG or (DRILLED) HOW DEEP? 150 ± ft. Cased? (Y) N

How far is the well or spring from the drain field? 100+ ft. Is well UP / DOWNHILL? UPHILL

Do you treat your water? (Y) N How? CL / UV DISINFECTION (SOFTNER) ION, OTHER FILTER

Was the water ever tested? (Y) N When? 2/28/12 & 7/10/13

Any contamination? (Y) N What? (TC, FC, N, etc.) NO CONTAMINATION DETECTED (AFTER TREATMENT)

How large is your lot? 1.71 ACRE No. of dwelling units? 1

One or more sewage systems? 2 COMMERCIAL / RESIDENTIAL?

What kind of sewage system do you have? (CIRCLE ALL THAT APPLY)

- | | | |
|--------------------------|----------------------------------|-----------------|
| <u>(SEPTIC TANK)</u> - 2 | <u>(INGROUND BED)</u> - ORIGINAL | COMMUNITY SEWER |
| CESSPOOL | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

Where does your laundry and/or sink water go? (CIRCLE ALL THAT APPLY)

- | | | |
|----------------------|--------------------------|-----------------|
| <u>(SEPTIC TANK)</u> | <u>(INGROUND BED)</u> | COMMUNITY SEWER |
| CESSPOOL | <u>(INGROUND TRENCH)</u> | STORM SEWER |
| OLD WELL | ELEVATED SAND MOUND | PIPE TO DITCH |
| HOLDING TANK | SEEPAGE PIT | PIPE TO STREAM |
| PRIVY | BORE HOLE | PIPE TO SURFACE |
| OTHER _____ | | |

How old is your system? (SEE BELOW) Was it permitted? (Y) N When? 2000 (REPLACEMENT)

Have you every noticed any of the following near your septic system? NO PROBLEMS SINCE REPAIRS

- | | | |
|---|----------------------------------|-------|
| GREEN LUSH GRASS | WETNESS OR SPONGY AREAS | ODORS |
| WATER PONDING OR SURFACING | SYSTEM OVERFLOW | |
| SLUGGISH DRAINS | WASTEWATER BACKING INTO THE HOME | |
| OTHER <u>USED VALVE TO SWITCH BACK TO OLD DRAINFIELD APPROX. 3 YRS AGO.</u> | | |

If you noticed any of the above, are they seasonal or year-round? N/A

Have you ever had your system pumped out? (Y) N How often? EVERY 2 YRS. Last time? LAST YEAR

If it was pumped, was it inspected for cracks or broken baffles? (Y) N What part? TANK LID NOT EXPOSED

Has the system ever been repaired? (Y) N When? 2000 By permit? (Y) N What part? (SEE BELOW)

TANK: REPAIRED/REPLACED
LINE: REPAIRED/REPLACED
DRAIN FIELD: REPAIRED/REPLACED

COMMENTS: (ORIGINAL SYSTEM INSTALLED IN 1974; REPLACEMENT PERMIT

#P23671 INSTALLED 4-28-00 - 3WAY VALVE ALLOWS USE OF BOTH SYSTEMS
REPAIR PERMIT ALSO INCLUDED A SECOND 500 GALLON SEPTIC TANK (1500 GAL. TOTAL)

Appendix D
Lab Test Results



CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Map Index No. 1

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Jeremy Lutz
 30 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/29/13
 Lab ID: 39-13-0048246

Date Collected: 10/24/13 11:30
 Collected By: Client

Sample Desc: 43533704809540

Date Received: 10/24/13 15:20

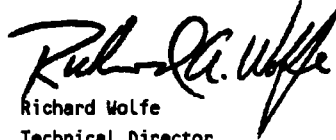
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/24	17:05	DSM
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/25	12:25	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.19	mg/L	1	1	EPA 300.0	10/24	22:40	JCL

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

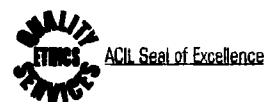
Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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M.J. Reider Associates, Inc.

Map Index No. 2

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Karen Smith
 40 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0047285
 Date Collected: 10/17/13 13:30
 Collected By: CLIENT
 Date Received: 10/17/13 15:33

Sample Desc: 43533704900670

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/17	14:44	RDD
Total Coliform Bacteria	Absent	/100ml	1	1	SM 9223B	10/18	11:10	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.22	mg/L	1	1	EPA 300.0	10/18	01:21	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 3

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Kurt Falkenberg
 60 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0046715
 Date Collected: 10/15/13 14:40
 Collected By: Client
 Date Received: 10/15/13 15:15

Sample Desc: 43533704904859

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/15	15:13	RDD
Total Coliform Bacteria	present	/100mL	1	1	SM 9223B	10/16	16:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.74	mg/L	1	1	EPA 300.0	10/15	21:53	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
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Map Index No. 4

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Rita McHale, Jr.
 51 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/25/13
 Lab ID: 39-13-0047686

Date Collected: 10/22/13 11:20
 Collected By: Client

Date Received: 10/22/13 12:25

Sample Desc: 43533704905589

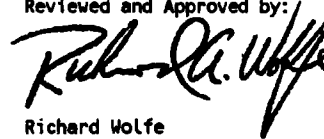
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/22	13:05	PLW
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/23	11:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.49	mg/l	1	1	EPA 300.0	10/22	15:37	JCL

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
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Map Index No. 6

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Mark & Karen Vannice
 31 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/29/13
 Lab ID: 39-13-0048247

Date Collected: 10/24/13 13:25
 Collected By: Client

Sample Desc: 43533704903323

Date Received: 10/24/13 15:20

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<	/100ml	2	1	SM 9222D	10/24	17:10	DSM
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/25	12:25	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.02	mg/l	1	1	EPA 300.0	10/24	23:05	JCL

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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M.J. Reider Associates, Inc.

Map Index No. 7

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Thomas & Julie Nein
 21 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0047284

Date Collected: 10/17/13 12:45
 Collected By: CLIENT

Date Received: 10/17/13 15:33

Sample Desc: 43533704901291

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/17	14:42	RDD
Total Coliform Bacteria	Present	/100ml	1	1	SM 9223B	10/18	11:10	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.87	mg/L	1	1	EPA 300.0	10/18	00:03	JAE


COMMENTS

01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Map Index No. 8

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Ramdas & Lata Padiyar
 15 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0047286

Date Collected: 10/17/13 14:10
 Collected By: CLIENT

Sample Desc: 43533704900075

Date Received: 10/17/13 15:33

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/17	14:48	RDD
Total Coliform Bacteria	Absent	/100ml	1	1	SM 9223B	10/18	11:10	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	10/18	01:47	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:



Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Map Index No. 9

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Luana Goldstan
 11 Gladwynn Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0047287
 Date Collected: 10/17/13 14:45
 Collected By: CLIENT
 Date Received: 10/17/13 15:33

Sample Desc: 43533602899848

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/17	14:50	RDD
Total Coliform Bacteria	Present	/100ml	1	1	SM 9223B	10/18	11:10	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.27	mg/L	1	1	EPA 300.0	10/18	02:13	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by

Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
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Map Index No. 10

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Jeffrey & Dolores Keiser
 45 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/29/13
 Lab ID: 39-13-0048245

Date Collected: 10/24/13 11:00
 Collected By: Client

Sample Desc: 43533602990792

Date Received: 10/24/13 15:20

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/24	17:05	DSM
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/25	12:25	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.47	mg/L	1	1	EPA 300.0	10/24	22:14	JCL

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Map Index No. 11

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

James Sher & Christie Ganas
 55 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/25/13
 Lab ID: 39-13-0047684
 Date Collected: 10/22/13 09:45
 Collected By: Client
 Date Received: 10/22/13 12:25

Sample Desc: 43533602992856

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/22	13:50	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/23	11:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.14	mg/L	1	1	EPA 300.0	10/22	14:46	JCL

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Map Index No. 12

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

David & Gail Torrence
 65 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/11/13
 Lab ID: 39-13-0045530

Date Collected: 10/08/13 13:30
 Collected By: Client

Sample Desc: 43533704904003

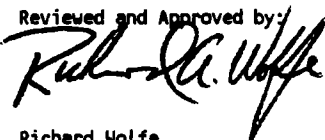
Date Received: 10/08/13 16:05

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/08	16:34	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.21	mg/L	1	1	EPA 300.0	10/09	07:16	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by:

 Richard Wolfe
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Map Index No. 13

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Jeffrey & Karen Keller
 75 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044925

Date Collected: 10/03/13 15:30
 Collected By: Client

Date Received: 10/03/13 16:15

Sample Desc: 43533704905148

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/03	16:30	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/04	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.54	mg/L	1	1	EPA 300.0	10/04	09:52	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by:

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Map Index No. 14

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Barry & Marjory Ewald
 101 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/29/13
 Lab ID: 39-13-0048244

Date Collected: 10/24/13 10:15
 Collected By: Client

Date Received: 10/24/13 15:20

Sample Desc: 43533704906375

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/24	17:05	DSM
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/25	12:25	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	10/24	21:48	JCL

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 15

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Suzanne Henneman
 171 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0046714

Date Collected: 10/15/13 14:15
 Collected By: Client

Sample Desc: 43533704908503

Date Received: 10/15/13 15:15

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/15	15:11	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/16	16:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	10/15	19:38	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by:


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 Technical Director

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Map Index No. 16

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Eugene & Sharon Duaine, Jr.
 80 Gladwynn Drive
 Reading, PA 19606

Date of Report: 11/08/13
 Lab ID: 39-13-0049555

Date Collected: 11/04/13 13:30
 Collected By: Client

Date Received: 11/04/13 14:10

Sample Desc: 43533704909705

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	4	/100ml	2	1	SM 9222D	11/04	14:34	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	11/05	09:30	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.28	mg/L	1	1	EPA 300.0	11/05	06:34	JAE

COMMENTS

- 01 The coliform present confirmed POSITIVE for E. coli.

- 02 Date and time the sample was placed in the incubator for total coliform is: 11/4/2013, 15:10

- 03 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

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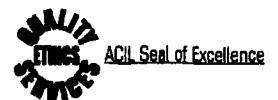
Reviewed and Approved by:

Richard G. Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 17

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Stuart & Joanne Zager
 205 Sherwood Drive
 Reading, PA 19606

Date of Report: 12/05/13
 Lab ID: 39-13-0052971
 Date Collected: 11/26/13 14:45
 Collected By: Client
 Date Received: 11/26/13 16:10

Sample Desc: 43534703000866

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	11/26	16:34	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	11/27	11:45	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/l	1	1	EPA 300.0	11/27	02:22	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 18

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Joseph & Dolores Miller
 Revocable Trust
 212 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/29/13
 Lab ID: 39-13-0048248

Date Collected: 10/24/13 14:15
 Collected By: Client

Date Received: 10/24/13 15:20

Sample Desc: 43534703013076

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<	/100ml	2	1	SM 9222D	10/24	17:20	DSM
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/25	12:25	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.27	mg/L	1	1	EPA 300.0	10/25	00:47	JCL

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 19

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Linda & Drew Parenti
 208 Sherwood Drive
 Reading, PA 19606

Date of Report: 12/10/13
 Lab ID: 39-13-0053962
 Date Collected: 12/05/13 10:15
 Collected By: Client
 Date Received: 12/05/13 14:46

Sample Desc: 43534703004856

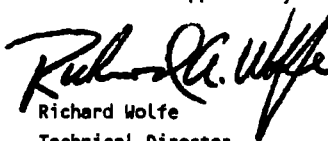
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/05	14:55	PLW
Total Coliform Bacteria	<1	mpn/100mL	1	1	SM 9223B	12/06	10:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	12/06	02:10	JAE

COMMENTS

01 The total coliform sample was placed in the incubator on 12/05/13 at 15:30.

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Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 20

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Janice Kauker
 204 Sherwood Drive
 Reading, PA 19606

Date of Report: 12/05/13
 Lab ID: 39-13-0052972

Date Collected: 11/26/13 15:15
 Collected By: Client

Sample Desc: 43534703002790

Date Received: 11/26/13 16:10

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	11/26	16:32	RDD
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	11/27	11:45	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	8.25	mg/l	1	1	EPA 300.0	11/27	02:47	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Technical Director

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Map Index No. 21

**Roman Fedorovsky & Larisa
Notkina
200 Sherwood Drive
Reading, PA 19606**

Attention: Allen Madeira
Reported To: Berks Envirotech, Inc.
519 Reading Avenue
West Reading PA 19611

Date of Report: 12/30/13
Lab ID: 39-13-0055886

Date Collected: 12/18/13 12:30
Collected By: CLIENT

Date Received: 12/18/13 13:05

Sample Desc: 43534703001556

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/18	15:45	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	12/19	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.51	mg/L	1	1	EPA 300.0	12/19	13:48	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

02 The total coliform sample was placed in the incubator on 12/18/13 at 17:55.

Distribution of Reports:

Reviewed and Approved by:



Richard Wolfe
Technical Director

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Map Index No. 22

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Erik & Suzanne Nordhoy
 180 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/22/13
 Lab ID: 39-13-0046713

Date Collected: 10/15/13 13:30
 Collected By: Client

Sample Desc: 43534703000326

Date Received: 10/15/13 15:15


	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/15	15:09	RDD
Total Coliform Bacteria	present	/100mL	1	1	SM 9223B	10/16	16:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	4.07	mg/L	1	1	EPA 300.0	10/15	18:20	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

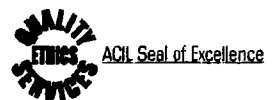
Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 23

80 Kendall Drive

Dagmar Kirjanov Est. c/o George
 Kirjanov
 234 E. 7th St.
 New York, NY 10009

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 10/11/13
 Lab ID: 39-13-0045527

Date Collected: 10/08/13 14:30
 Collected By: Client

Date Received: 10/08/13 16:05

Sample Desc: 43533704908178

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/08	16:30	PLW
Total Coliform Bacteria	present	/100mL	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.18	mg/L	1	1	EPA 300.0	10/09	06:00	JAE

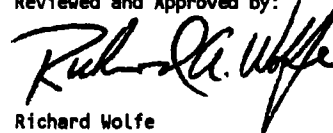
COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

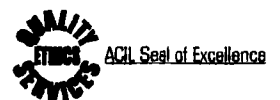
Reviewed and Approved by:


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Map Index No. 24

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Emil & Robin Schanzenbach, Jr.
 50 Kendall Drive
 Reading, PA 19606

Date of Report: 10/11/13
 Lab ID: 39-13-0045637

Date Collected: 10/09/13 10:30
 Collected By: Client

Date Received: 10/09/13 12:15

Sample Desc: 43534703000045

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/09	14:53	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/10	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.62	mg/L	1	1	EPA 300.0	10/09	14:46	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS

M.J. Reider Associates, Inc.

Map Index No. 25

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Jeffrey Kline & Gladys Cornista
 205 Lowell Drive
 Reading, PA 19606

Date of Report: 12/30/13
 Lab ID: 39-13-0055767
 Date Collected: 12/17/13 14:30
 Collected By: CLIENT
 Date Received: 12/17/13 15:33

Sample Desc: 43534703003431

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	12/17	16:09	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	12/18	10:45	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	4.57	mg/l	1	1	EPA 300.0	12/17	16:54	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The total coliform sample was placed in the incubator on 12/17/13 at 16:35.

Distribution of Reports:

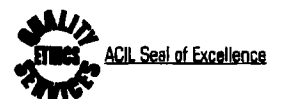
Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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M.J. Reider Associates, Inc.

Map Index No. 26

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Stephen Getway
 209 Lowell Drive
 Reading, PA 19606

Date of Report: 12/18/13
 Lab ID: 39-13-0055164
 Date Collected: 12/12/13 13:30
 Collected By: Client
 Date Received: 12/12/13 16:36

Sample Desc: 43534703004567

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/12	17:37	RDD
Total Coliform Bacteria	Present	/100mL	1	1	SM 9223B	12/14	09:30	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.79	mg/L	1	1	EPA 300.0	12/13	19:02	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

- 03 The total coliform sample was placed in the incubator on 12/13/13 at 13:30.

Distribution of Reports:

Reviewed and Approved by:



Richard Wolfe
 Technical Director

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Map Index No. 27

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Daniel Stoltzfus & Monica Yasgur
 215 Lowell Drive
 Reading, PA 19606

Date of Report: 12/19/13
 Lab ID: 39-13-0055549

Date Collected: 12/16/13 13:30
 Collected By: CLIENT

Date Received: 12/16/13 15:53

Sample Desc: 43534703005796

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	12/16	16:05	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	12/17	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.11	mg/L	1	1	EPA 300.0	12/17	01:35	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The total coliform sample was placed in the incubator on 12/16/13 at 16:45.

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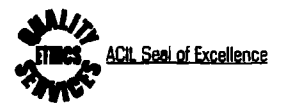
Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 28

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Anthony & Sara Lambert
 218 Lowell Drive
 Reading, PA 19606

Date of Report: 12/05/13
 Lab ID: 39-13-0053187
 Date Collected: 11/27/13 12:15
 Collected By: Client
 Date Received: 11/27/13 15:00

Sample Desc: 43534703008704

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	11/27	15:04	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	11/28	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	11/27	21:49	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.
- 03 The total coliform was placed in the incubator on 11/27/2013, at 17:55.

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Reviewed and Approved by:

Richard Wolfe
 Technical Director

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Map Index No. 29

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Michele Weller
 214 Lowell Drive
 Reading, PA 19606

Date of Report: 12/10/13
 Lab ID: 39-13-0053963

Date Collected: 12/05/13 12:15
 Collected By: Client

Sample Desc: 43534703008504

Date Received: 12/05/13 14:46

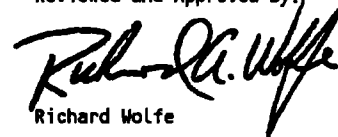
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	12/05	14:55	PLW
Total Coliform Bacteria	<1	mpn/100ml	1	1	SM 9223B	12/06	10:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	4.48	mg/l	1	1	EPA 300.0	12/06	02:35	JAE

COMMENTS

01 The total coliform sample was placed in the incubator on 12/05/13 at 15:30.

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Map Index No. 30

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Randal & Kaarin Reinecker
 212 Lowell Drive
 Reading, PA 19606

Date of Report: 12/10/13
 Lab ID: 39-13-0053965

Date Collected: 12/05/13 14:15
 Collected By: Client

Sample Desc: 43534703006349

Date Received: 12/05/13 14:46


	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/05	15:01	PLW
Total Coliform Bacteria	28	mpn/100mL	1	1	SM 9223B	12/06	10:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.30	mg/L	1	1	EPA 300.0	12/06	04:15	JAE

COMMENTS

01 The total coliform sample was placed in the incubator on 12/05/13 at 15:30.

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Reviewed and Approved by:


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 Technical Director

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Map Index No. 31

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

James G. Hughes
 200 Lowell Drive
 Reading, PA 19606

Date of Report: 12/10/13
 Lab ID: 39-13-0053964

Date Collected: 12/05/13 13:10
 Collected By: Client

Sample Desc: 43534703005202

Date Received: 12/05/13 14:46

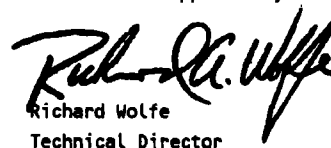
	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/05	15:01	PLW
Total Coliform Bacteria	<1	mpn/100mL	1	1	SM 9223B	12/06	10:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.75	mg/L	1	1	EPA 300.0	12/06	03:50	JAE

COMMENTS

01 The total coliform sample was placed in the incubator on 12/05/13 at 15:30.

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Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 32

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Frederick K. & Jodi Ganster
 180 Lowell drive
 Reading, Pa. 19606

Date of Report: 12/05/13
 Lab ID: 39-13-0053188

Date Collected: 11/27/13 14:05
 Collected By: Client

Date Received: 11/27/13 15:00

Sample Desc: 43534703003077

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	11/27	15:04	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	11/28	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.58	mg/L	1	1	EPA 300.0	11/28	22:14	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The total coliform was placed in the incubator on 11/27/2013, at 17:55.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Technical Director

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Map Index No. 33

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

William & Yvonne Dandrea, Jr.
 30 Kendall Drive
 Reading, PA 19606

Date of Report: 10/01/13
 Lab ID: 39-13-0043599

Date Collected: 09/26/13 14:00
 Collected By: CLIENT

Date Received: 09/26/13 15:20

Sample Desc: 43534601092866


	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	09/26	15:07	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	09/27	12:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.22	mg/L	1	1	EPA 300.0	09/27	03:33	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by:


 Richard Wolfe
 Technical Director

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Map Index No. 34

Robert & Anita Dickie
 90 Devon Drive
 Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 12/20/13
 Lab ID: 39-13-0045529

Date Collected: 10/08/13 12:10
 Collected By: CLIENT

Sample Desc: 43534601095622

Date Received: 10/08/13 16:05

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/08	16:34	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	10/09	06:51	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 This report has been amended to correct the sample description as per customer.

Distribution of Reports:

Reviewed and Approved by:

Richard A. Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 35

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Isaac & Eila Matza
 60 Devon Drive
 Reading, PA 19606

Date of Report: 10/01/13
 Lab ID: 39-13-0043598
 Date Collected: 09/26/13 12:00
 Collected By: CLIENT
 Date Received: 09/26/13 15:20

Sample Desc: 43534601091028

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	09/26	15:05	RDD
Total Coliform Bacteria	Present	/100mL	1	1	SM 9223B	09/27	12:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.61	mg/L	1	1	EPA 300.0	09/27	03:05	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 36

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

David & Michelle Breen
 50 Devon Drive
 Reading, PA 19606

Date of Report: 12/18/13
 Lab ID: 39-13-0055413

Date Collected: 12/13/13 14:30
 Collected By: Client

Date Received: 12/13/13 16:05

Sample Desc: 43533602989867

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	12/13	15:44	RDD
Total Coliform Bacteria	Absent	/100ml	1	1	SM 9223B	12/14	11:00	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	11.34	mg/L	1	1	EPA 300.0	12/14	03:03	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The total coliform sample was placed in the incubator on 12/13/13 at 16:50.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 37

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Margaret Feinberg
 46 Devon Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044269

Date Collected: 10/01/13 13:15
 Collected By: Client

Sample Desc: 43533602987792

Date Received: 10/01/13 15:38

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	10/01	15:30	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/02	12:20	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.53	mg/L	1	1	EPA 300.0	10/02	01:59	JAE

COMMENTS

01 The coliform present did NOT confirm positive for E. coli.

02 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

PHONE CALL

NAME: <u>Allen</u>		DATE: <u>12/23</u>	TIME: <u>9:00 AM</u>
TO: <u>Margaret Feinberg</u>		<input checked="" type="checkbox"/> PHONED <input type="checkbox"/> RETURNED YOUR CALL <input type="checkbox"/> PLEASE CALL <input type="checkbox"/> WILL CALL AGAIN <input type="checkbox"/> CAME TO SEE YOU <input type="checkbox"/> WANTS TO SEE YOU	
FROM: <u>46 Devon Dr.</u>			
PHONE: <u>610 689-9450</u>			
MESSAGE: <u>question about test results</u>			
<u>AWM RETURNED CALL 12-23-13 @ 11:30 AM.</u>			
<u>LEFT V.M. RECOMMEND SEEK SERVICES OF A</u>			
<u>SERIES QUALIFIED WATER QUALITY EXPERT</u>			

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 38

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Phyllis Goldstan
 40 Devon Drive
 Reading, PA 19606

Date of Report: 12/18/13
 Lab ID: 39-13-0055165

Date Collected: 12/12/13 16:05
 Collected By: Client

Sample Desc: 43533602986712

Date Received: 12/12/13 16:36

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/12	17:37	RDD
Total Coliform Bacteria	Absent	/100mL	1	1	SM 9223B	12/14	09:30	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	6.50	mg/L	1	1	EPA 300.0	12/13	19:34	JAE

COMMENTS

- 01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The total coliform sample was placed in the incubator on 12/13/13 at 13:30.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Technical Director

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Map Index No. 39

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Gladys & Jill Skaist
 30 Devon Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044593

Date Collected: 10/02/13 10:15
 Collected By: Client

Sample Desc: 43533602981678

Date Received: 10/02/13 16:08

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/02	16:04	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/03	11:25	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.01	mg/L	1	1	EPA 300.0	10/03	01:50	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 40

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Richard & Barbara Taglang
 11 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044270

Date Collected: 10/01/13 15:00
 Collected By: Client

Sample Desc: 43533602887967

Date Received: 10/01/13 15:38

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	10/01	15:33	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/02	12:20	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.21	mg/L	1	1	EPA 300.0	10/02	02:25	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 43

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Joseph Reedy &
 Leigh Ann Levandowski
 40 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044924

Date Collected: 10/03/13 12:30
 Collected By: Client

Date Received: 10/03/13 16:15

Sample Desc: 43533602991425

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/03	16:30	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/04	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.14	mg/l	1	1	EPA 300.0	10/04	09:26	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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 Richard Wolfe
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Map Index No. 44

John Swestock & Donna Banis
60 Sherwood Drive
Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 12/19/13
 Lab ID: 39-13-0055550

Date Collected: 12/16/13 15:10
 Collected By: CLIENT

Date Received: 12/16/13 15:53

Sample Desc: 43533602993517

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/16	16:08	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	12/17	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.54	mg/L	1	1	EPA 300.0	12/17	02:05	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

02 The total coliform sample was placed in the incubator on 12/16/13 at 16:45.

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Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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Map Index No. 45

Attention: Allen Madeira
Reported To: Berks Envirotech, Inc.
519 Reading Avenue
West Reading PA 19611

Joseph & Beatrice Mraz
70 Sherwood Drive
Reading, PA 19606

Date of Report: 10/11/13
Lab ID: 39-13-0045528

Date Collected: 10/08/13 15:30
Collected By: Client

Sample Desc: 43533602994679

Date Received: 10/08/13 16:05

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/08	16:34	PLW
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	4.37	mg/L	1	1	EPA 300.0	10/09	06:25	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
Technical Director

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Map Index No. 46

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Richard & Maxine Henry
 80 Sherwood Drive
 Reading, PA 19606

Date of Report: 10/11/13
 Lab ID: 39-13-0045638

Date Collected: 10/09/13 11:30
 Collected By: Client

Sample Desc: 43533602995893

Date Received: 10/09/13 12:15

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/09	14:53	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/10	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.92	mg/L	1	1	EPA 300.0	10/09	16:03	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Map Index No. 47

Mark & Gretchen Naso
 90 Sherwood Drive
 Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 12/18/13
 Lab ID: 39-13-0055414

Date Collected: 12/13/13 15:30
 Collected By: Client

Date Received: 12/13/13 16:05

Sample Desc: 43533704907011

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/13	15:46	RDD
Total Coliform Bacteria	Present	/100mL	1	1	SM 9223B	12/14	11:00	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	5.12	mg/L	1	1	EPA 300.0	12/14	03:35	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

- 03 The total coliform sample was placed in the incubator on 12/13/13 at 16:50.

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Reviewed and Approved by:

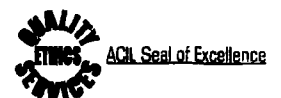
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Map Index No.48

Robert & Jeanette Mehlman
60 Lowell Drive
Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 10/09/13
 Lab ID: 39-13-0044594

Date Collected: 10/02/13 13:30
 Collected By: Client

Date Received: 10/02/13 16:08

Sample Desc: 43533602998886

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/02	16:04	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/03	11:25	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.21	mg/L	1	1	EPA 300.0	10/03	03:08	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.
- 02 The coliform present did NOT confirm positive for E. coli.

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 Richard Wolfe
 Technical Director

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Map Index No. 49

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

William & Gloria Ballamy
 50 Lowell Drive
 Reading, PA 19606

Date of Report: 10/25/13
 Lab ID: 39-13-0047685
 Date Collected: 10/22/13 10:25
 Collected By: Client
 Date Received: 10/22/13 12:25

Sample Desc: 43533602997782

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/22	13:05	PLW
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/23	11:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.81	mg/L	1	1	EPA 300.0	10/22	15:11	JCL

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by

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 Technical Director

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Map Index No. 50

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

James & Judith McArdle
 40 Lowell Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044595

Date Collected: 10/02/13 14:40
 Collected By: Client

Date Received: 10/02/13 16:08

Sample Desc: 43533602996567

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	10/02	16:07	RDD
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/03	11:25	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.49	mg/L	1	1	EPA 300.0	10/03	05:18	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

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Reviewed and Approved by:

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Map Index No. 52

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Jim Ragland
 20 Lowell Drive
 Reading, PA 19606

Date of Report: 10/11/13
 Lab ID: 39-13-0045526
 Date Collected: 10/08/13 10:30
 Collected By: Client
 Date Received: 10/08/13 16:05

Sample Desc: 43533602993347

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/08	16:30	PLW
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.91	mg/l	1	1	EPA 300.0	10/09	05:34	JAE

COMMENTS

- 01 The coliform present did NOT confirm positive for E. coli.

- 02 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

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 Richard Wolfe
 Technical Director

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Map Index No. 53

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

John & Florence Russo
 11 Lowell Drive
 Reading, PA 19606

Date of Report: 10/11/13
 Lab ID: 39-13-0045525

Date Collected: 10/08/13 11:20
 Collected By: Client

Sample Desc: 43533602993113

Date Received: 10/08/13 16:05

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/08	16:30	PLW
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/09	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.54	mg/l	1	1	EPA 300.0	10/09	03:52	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

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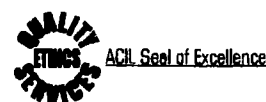
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Map Index No. 54

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Carter & Mary Benjamin, Jr.
 21 Lowell Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044596
 Date Collected: 10/02/13 15:40
 Collected By: Client
 Date Received: 10/02/13 16:08

Sample Desc: 43533602995108

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/02	16:07	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/03	11:25	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	4.58	mg/L	1	1	EPA 300.0	10/03	05:44	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

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Map Index No. 55

Kerry & Lisa Minnich
31 Lowell Drive
Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 12/19/13
 Lab ID: 39-13-0055548

Date Collected: 12/16/13 12:40
 Collected By: CLIENT

Date Received: 12/16/13 15:53

Sample Desc: 43533602997216

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/16	16:02	PLW
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	12/17	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.86	mg/L	1	1	EPA 300.0	12/17	01:05	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

02 The total coliform sample was placed in the incubator on 12/16/13 at 16:45.

Distribution of Reports:

Reviewed and Approved by:

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Map Index No. 57

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Robert & Donna Lea Merritt III
 51 Lowell Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044923
 Date Collected: 10/03/13 14:00
 Collected By: Client
 Date Received: 10/03/13 16:15

Sample Desc: 43534601090426

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTERIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	10/03	16:30	PLW
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	10/04	11:30	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	3.07	mg/L	1	1	EPA 300.0	10/04	09:00	JAE

COMMENTS

- 01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

- 02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS

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Map Index No. 58

Edward & Wanda Gallagher
 71 Devon Drive
 Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 12/05/13
 Lab ID: 39-13-0052970

Date Collected: 11/26/13 13:30
 Collected By: Client

Sample Desc: 43534601092504

Date Received: 11/26/13 16:10

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100ml	1	1	SM 9222D	11/26	16:36	RDD
Total Coliform Bacteria	present	/100ml	1	1	SM 9223B	11/27	11:45	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.68	mg/L	1	1	EPA 300.0	11/27	01:57	JAE

COMMENTS

- 01 The coliform present did NOT confirm positive for E. coli.

- 02 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Richard Wolfe
 Technical Director

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M.J. Reider Associates, Inc.

Map Index No. 59

John Hellriegel & Margaret Chiarelli
55 Devon Drive
Reading, PA 19606

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Date of Report: 10/09/13
 Lab ID: 39-13-0044271

Date Collected: 10/01/13 12:00
 Collected By: CLIENT

Sample Desc: 43533602999298

Date Received: 10/01/13 15:38

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100ml	2	1	SM 9222D	10/01	15:36	RDD
Total Coliform Bacteria	absent	/100ml	1	1	SM 9223B	10/02	12:20	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	1.85	mg/L	1	1	EPA 300.0	10/02	02:50	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:

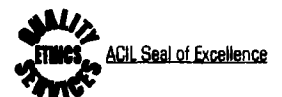
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 Richard Wolfe
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M.J. Reider Associates, Inc.

Map Index No. 60

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Daniel & Jamie Quay
 41 Devon Drive
 Reading, PA 19606

Date of Report: 10/09/13
 Lab ID: 39-13-0044268

Date Collected: 10/01/13 11:30
 Collected By: Client

Date Received: 10/01/13 15:38

Sample Desc: 43533602997065

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	10/01	15:27	RDD
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	10/02	12:20	PLW
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	10/02	01:33	JAE

COMMENTS

01 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

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Map Index No. 61

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

James King
 37 Devon Drive
 Reading, PA 19606

Date of Report: 01/02/14
 Lab ID: 39-13-05 6455

Date Collected: 12/20/13 11: 15
 Collected By: Client

Sample Desc: 43533602985947

Date Received: 12/20/13 11: 46

	Result	Unit	Rep Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<1	/100mL	1	1	SM 9222D	12/20	13:46	RDD
Total Coliform Bacteria	absent	/100mL	1	1	SM 9223B	12/21	12:00	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	<1	mg/L	1	1	EPA 300.0	12/20	13:31	JAE

COMMENTS

- 01 The total coliform sample was placed in the incubator on 12/20/13 at 16:50.
- 02 This water complies with the PA DEP standard for safe drinking water for coliform bacteria.

Distribution of Reports:

Reviewed and Approved by:



Richard Wolfe
 Technical Director

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CERTIFICATE OF ANALYSIS
M.J. Reider Associates, Inc.

Map Index No. 62

Attention: Allen Madeira
 Reported To: Berks Envirotech, Inc.
 519 Reading Avenue
 West Reading PA 19611

Juan & Maria Kraljevic
 31 Devon Drive
 Reading, PA 19606

Date of Report: 10/01/13
 Lab ID: 39-13-0043597
 Date Collected: 09/26/13 10:30
 Collected By: CLIENT
 Date Received: 09/26/13 15:20

Sample Desc: 43533602982984

	Result	Unit	Rep. Limit	Dilutn Factor	Procedure	Test Date	Test Time	Analyst
BACTI								
MICROBIOLOGY								
Fecal Coliform	<2	/100mL	2	1	SM 9222D	09/26	15:03	RDD
Total Coliform Bacteria	Present	/100mL	1	1	SM 9223B	09/27	12:15	RDD
CHEMISTRY								
ION CHROMAT								
Nitrogen, Nitrate	2.92	mg/L	1	1	EPA 300.0	09/27	01:41	JAE

COMMENTS

01 This water does NOT comply with the PA DEP standard for safe drinking water for coliform bacteria.

02 The coliform present did NOT confirm positive for E. coli.

Distribution of Reports:

Reviewed and Approved by:

Richard Wolfe
 Technical Director

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Appendix E
Notice to Residents
Regarding Well Test Results

*Code Enforcement
Environmental Site Assessments
Hydrologic Investigations*



*Municipal Consultation
Waste Water System Design
Zoning Administration*

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E-MAIL: info@envirotechassociates.com**

November 26, 2013

Eugene J. Jr. & Sharon L. Duaine
80 Gladwyn Drive
Reading, PA 19606

Re: Water Test Results

Dear Mr. & Mrs. Duaine,

I thought you should have these results sooner rather than later. As you can see, your water tested positive for fecal coliform (specifically, E. coli.). Your water does not meet PA DEP Safe Drinking Water Standards and presents a potential health hazard due to the presence of fecal bacteria.

We recommend you seek the services of a Water Quality Specialist to advise you regarding disinfection/water treatment.

We trust this shall serve to inform you accordingly.

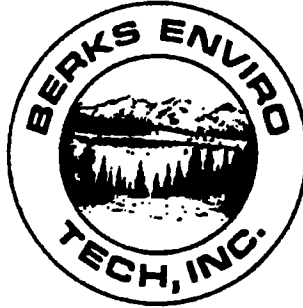
Sincerely,
BERKS ENVIROTECH, INC.

A handwritten signature in black ink, appearing to read "Allen W. Madeira".

Allen W. Madeira, SEO

Enclosures

*Code Enforcement
Environmental Site Assessments
Hydrologic Investigations*



*Municipal Consultation
Waste Water System Design
Zoning Administration*

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E-MAIL: info@envirotechassociates.com**

December 20, 2013

Residents of Glen Oley Farms who participated in our recent survey

Re: Water Test Results

Dear Resident,

We wish to thank you for participating in the recent door-to-door survey regarding well water and sewage disposal. The data we gathered will be useful in updating Exeter Township's Act 537 Plan.

Many of you requested a copy of your well test results. More than half of the wells sampled did not meet PA DEP safe drinking water standards due to the presence of bacteria. We are, therefore, copying each of you with your results.

For those of you whose well did not comply with safe drinking water standards, we recommend that you seek the services of a water quality specialist, on your own. Further testing and remediation through disinfection may be required.

For those whose well did comply with safe drinking water standards, please be aware that the condition of your drinking water can fluctuate, therefore, it is recommended that you also periodically have your well tested to ensure that your water is safe to drink.

Again, thank you for your participation.

Sincerely,
BERKS ENVIROTECH, INC.

Allen W. Madeira
Sewage Enforcement Officer

Corrosivity - corrosive water may weaken or destroy the water system piping.

Fluoride in excessive amounts may cause mottling of the teeth.

Foaming Agents in higher concentrations may impart undesirable taste and foaming properties.

Iron at higher concentrations will impart undesirable tastes and stains to fixtures and laundry

Manganese at higher concentrations will impart undesirable tastes and stains to fixtures and laundry.

Odor is an indication of the presence of organic and inorganic pollutants from industrial, municipal or natural sources.

pH A high pH indicates alkaline water and may impart a bitter taste or encrust pipes with mineral deposits. A low pH indicates acidic water, which can cause pinhole leaks in copper piping.

Sulfates in high concentrations can form hard scales in boilers and heat exchangers, impart taste effects, and laxative effects with excessive intake.

Total Dissolved Solids in high concentrations can make the water aesthetically unacceptable and can shorten the life of home hot water heaters.

Zinc is only considered detrimental to health in very high concentrations. High concentrations will impart an undesirable taste.

Total Hardness:	
concentration	description
0-75 mg/l	soft
75-150 mg/l	moderately hard
150-300 mg/l	hard
300 and up	very hard

If you wish to calculate hardness in grains per gallon (gpg):

$gpg = \text{mg/l of Hardness divided by } 17.1$

Hardness is caused by metallic ions dissolved in the water. Natural sources are dissolved limestone from rainwater. A water softener should be considered when hardness exceeds 180 mg/l. Hard Water can cause a build up of scale that can damage water heaters. Water with 0 mg/l hardness is corrosive. A low hardness generally results in water with a low pH, which can cause pinhole leaks in copper piping.

Volatile Organic Compounds (VOCs) are present in paints, fuels, cleaning solutions, and degreasers. In high doses they can cause damage to kidneys, liver and nervous systems. Many VOCs are suspected of causing cancer.

Pesticides (Common SOCs) are commonly used in agricultural areas. They are suspected of causing cancer.

If you have any questions regarding your drinking water quality please contact the laboratory at 610-374-5129.

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PA DEP website: <http://www.depweb.state.pa.us>
Keyword : drinking water



Interpreting Drinking Water Analyses

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The Pennsylvania Department of Environmental Protection (PA DEP) and the Environmental Protection Agency (EPA) do not regulate Private Drinking Water.

The following table lists the PA DEP Maximum Contamination Levels for Public Drinking Water. These levels can be used as a guide for Private Drinking Water.

Microbiological Contaminants:

Total Coliform Bacteria	Absence
Fecal Coliform Bacteria	Absence

Inorganic Chemicals:

Aluminum	0.2	mg/l
Antimony	0.006	mg/l
Arsenic	0.01	mg/l
Barium	2	mg/l
Beryllium	0.004	mg/l
Cadmium	0.005	mg/l
Chloride	250	mg/l
Chromium	0.1	mg/l
Color	15 color units	
Copper*	1.0	mg/l
Corrosivity	not corrosive	
Cyanide (free)	0.2	mg/l
Fluoride	2	mg/l
Foaming Agents	0.5	mg/l
Iron	0.3	mg/l
Lead*	0.005	mg/l
Manganese	0.05	mg/l
Mercury	0.002	mg/l
Nitrate	10	mg/l
Nitrite	1	mg/l
Odor	3	TON
pH	6.5 to 8.5	
Selenium	0.05	mg/l
Silver	0.1	mg/l
Sulfate	250	mg/l
Thallium	0.002	mg/l
Total Dissolved Solids	500	mg/l
Turbidity	1	NTU
Zinc	5	mg/l

Volatile Organic Chemicals (VOCs):

Benzene	0.005	mg/l
Carbon Tetrachloride	0.005	mg/l
Chlorobenzene	0.1	mg/l
1,2-Dichlorobenzene	0.6	mg/l
1,4-Dichlorobenzene	0.075	mg/l
1,2-Dichloroethane	0.005	mg/l
1,1-Dichloroethylene	0.007	mg/l
C-1,2-Dichloroethylene	0.07	mg/l
1,2-Dichloropropane	0.005	mg/l
Ethylbenzene	0.7	mg/l
Methylene Chloride	0.005	mg/l
Styrene	0.1	mg/l
Tetrachloroethylene	0.005	mg/l
Toluene	1	mg/l
1,2,4-Trichlorobenzene	0.07	mg/l
1,1,1-Trichloroethane	0.2	mg/l
1,1,2-Trichloroethane	0.005	mg/l
T-1,2-Dichloroethylene	0.1	mg/l
Trichloroethylene	0.005	mg/l
Vinyl Chloride	0.002	mg/l
Xylenes (Total)	10	mg/l

Common Synthetic Organic Chemicals (SOCs):

Atrazine	0.003	mg/l
2,4-D	0.07	mg/l
Dalapon	0.2	mg/l
Methoxychlor	0.04	mg/l
Dinoseb	0.007	mg/l
Picloram	0.5	mg/l
Simazine	0.004	mg/l
Toxaphene	0.003	mg/l
2,4,5-TP (Silvex)	0.05	mg/l

(Additional SOC compounds exist, contact the laboratory for a more extensive list)

* Based on bottled water regulations

What Does it mean if a value exceeds these levels?

The standard microbiological analysis for judging the suitability of water for drinking is the Coliform test. Coliform bacteria are naturally occurring in plants and soils in the environment, and in the intestines of warm-blooded animals (humans included). Water containing coliform bacteria (present) is suspect of being in contact with domestic sewage, animal manure or soils. This water may contain pathogenic bacteria or viruses that may cause serious illnesses. Private water supplies contaminated with coliform bacteria should be disinfected.

Decontamination of your well can be accomplished by following the instructions on the DEP Fact Sheet: "Disinfection of Home Wells and Springs", available from our office, our website, or on the PA DEP website.

The laboratory suggests testing your well water annually for Coliform bacteria and Nitrate/Nitrite.

Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver can be toxic.

Nitrate in high concentrations can cause "Blue Baby Disease" in infants. High nitrate concentrations may be an indication of seepage from domestic sewage, livestock manure or fertilizer.

Nitrite is more hazardous to infants than nitrate for the same reason.

Chloride levels greater than 250 mg/l may impart an objectionable taste to the water. High chloride values may also have an adverse affect on domestic plumbing.

Color is not objectionable from a health standpoint. Its presence suggests the water may need additional treatment.

Copper in excessive amounts may stain fixtures and cause adverse tastes.

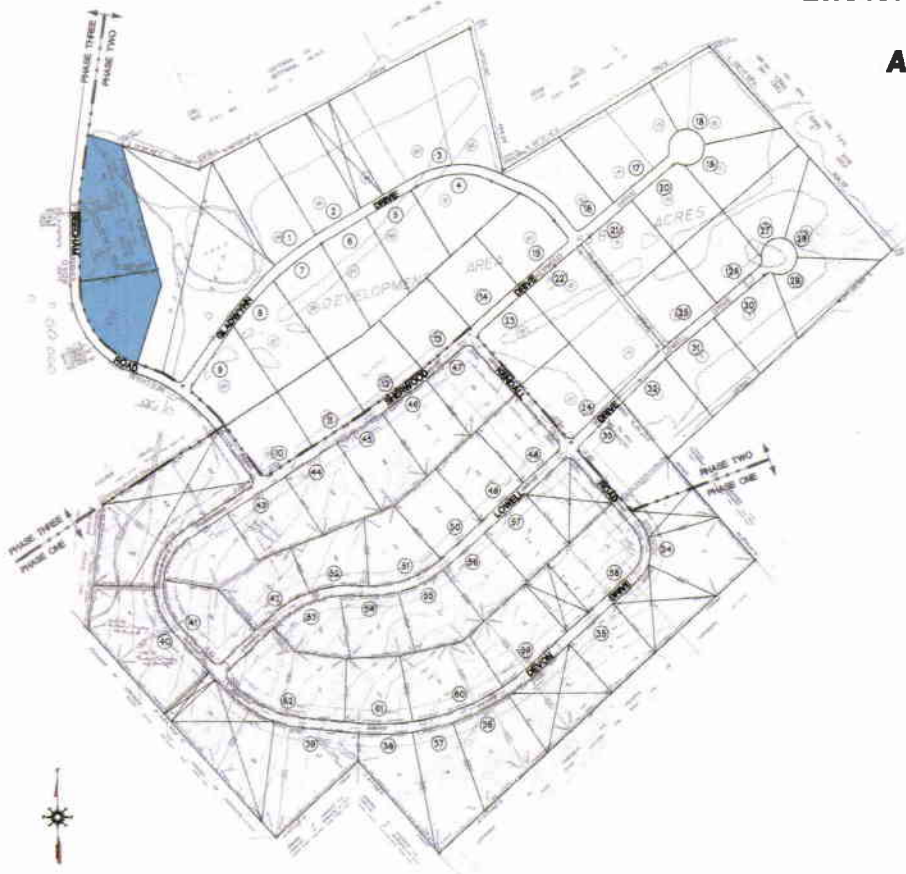
**Exeter Twp, Berks County, PA
Glen Oley Farms
Act 537 Study Area**

**Map # 1
Study Area**

SURVEYED PARCELS

Ⓜ MAP INDEX NUMBER

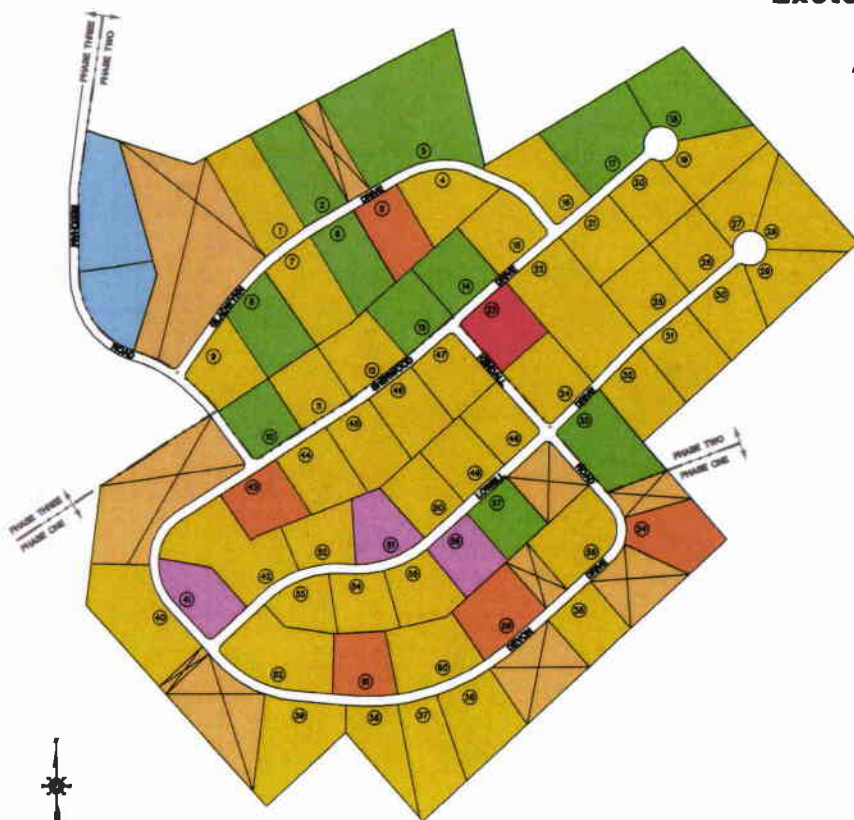
■ PROPERTIES ALREADY SERVED BY PUBLIC SEWER



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Email: Info@EnvirotechAssociates.com

**Exeter Twp, Berke County, PA
Glen Oley Farms
Act 537 Study Area**

**Map # 2
Public Health Needs**



SURVEYED PARCELS

- ⊕ MAP INDEX NUMBER
- OLDS CONDITIONS**
- CONFIRMED MALFUNCTION
- SUSPECTED MALFUNCTION
- POTENTIAL MALFUNCTION
- NO MALFUNCTION
- PUBLIC SEWER
- DID NOT RESPOND TO SURVEY





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Date: December 28, 2010

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**Exeter Twp, Berks County, PA
Glen Oley Farms
Act 537 Study Area**

**Map # 3
Nitrate Levels**

SURVEYED PARCELS



MAP INDEX NUMBER

WELL NITRATE LEVELS

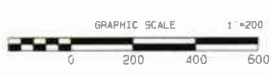
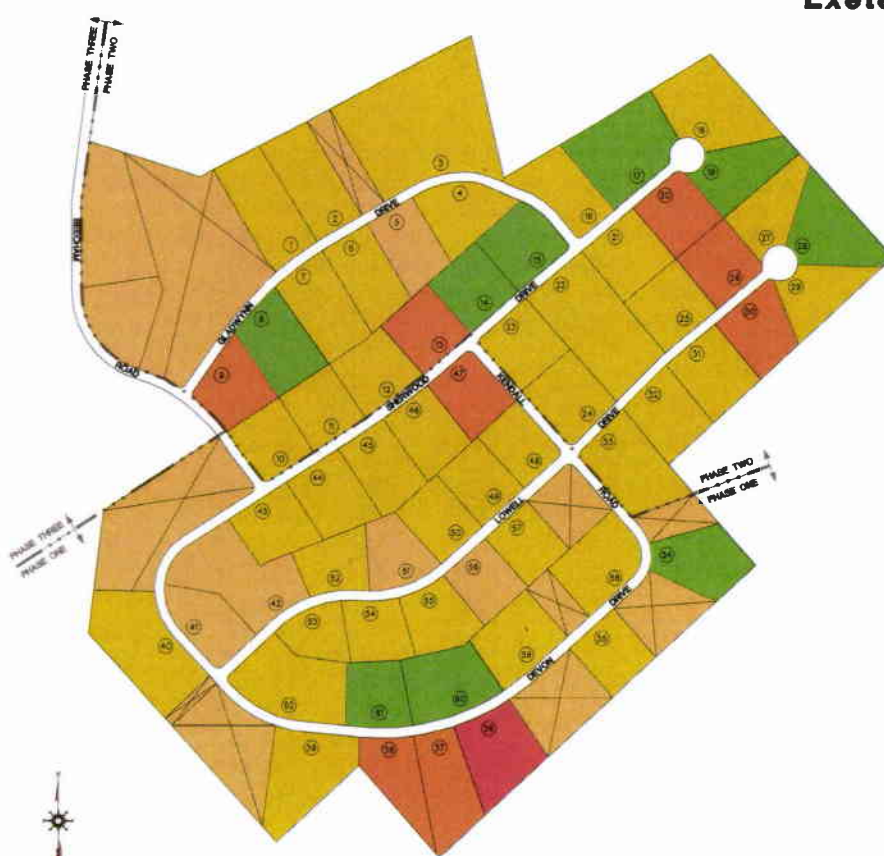


<1

1 - 5

5 - 10

10 +



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Date: December 24, 2015

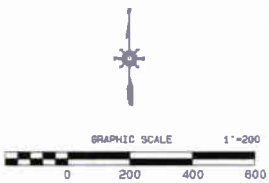
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**Exeter Twp, Berks County, PA
Glen Oley Farms
Act 537 Study Area**

**Map # 4
Total Coliform**

SURVEYED PARCELS

- ⊙ MAP INDEX NUMBER
- TOTAL COLIFORM**
- NOT DETECTED
- DETECTED





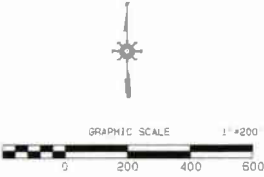
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Exeter Twp, Berks County, PA Glen Oley Farms Act 537 Study Area

Map # 5 Fecal Collform

SURVEYED PARCELS

- Ⓜ MAP INDEX NUMBER
- FECAL COLIFORM
 - NOT DETECTED
 - DETECTED



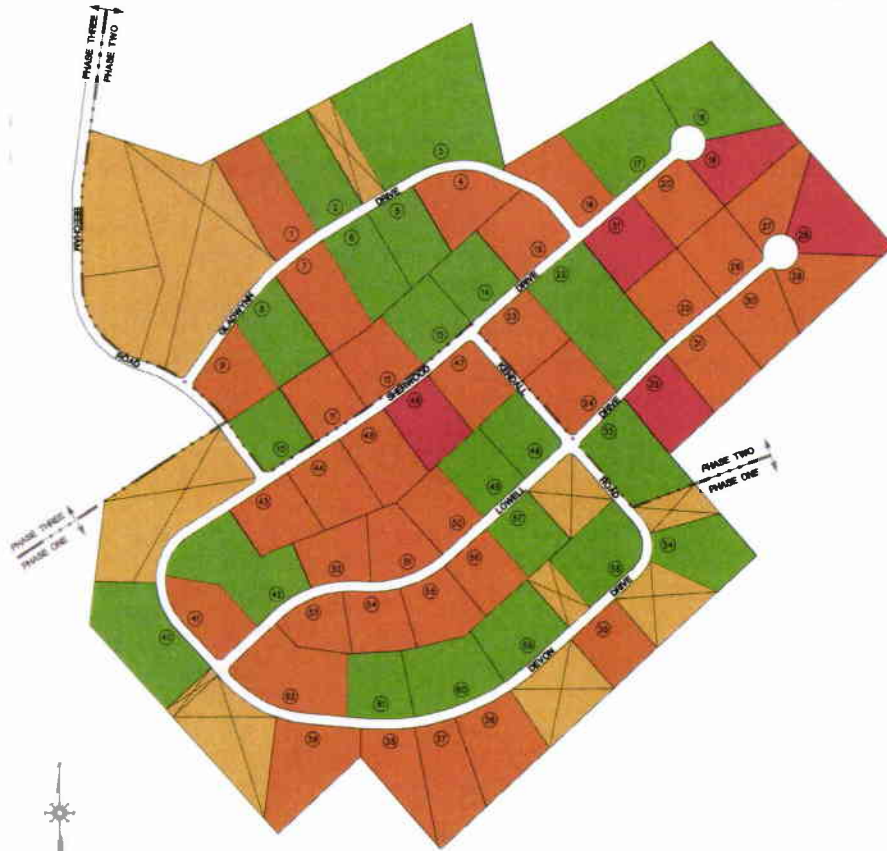
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Glen Oley Farms
Act 537 Study Area**

**Map # 6
Replacement Areas**

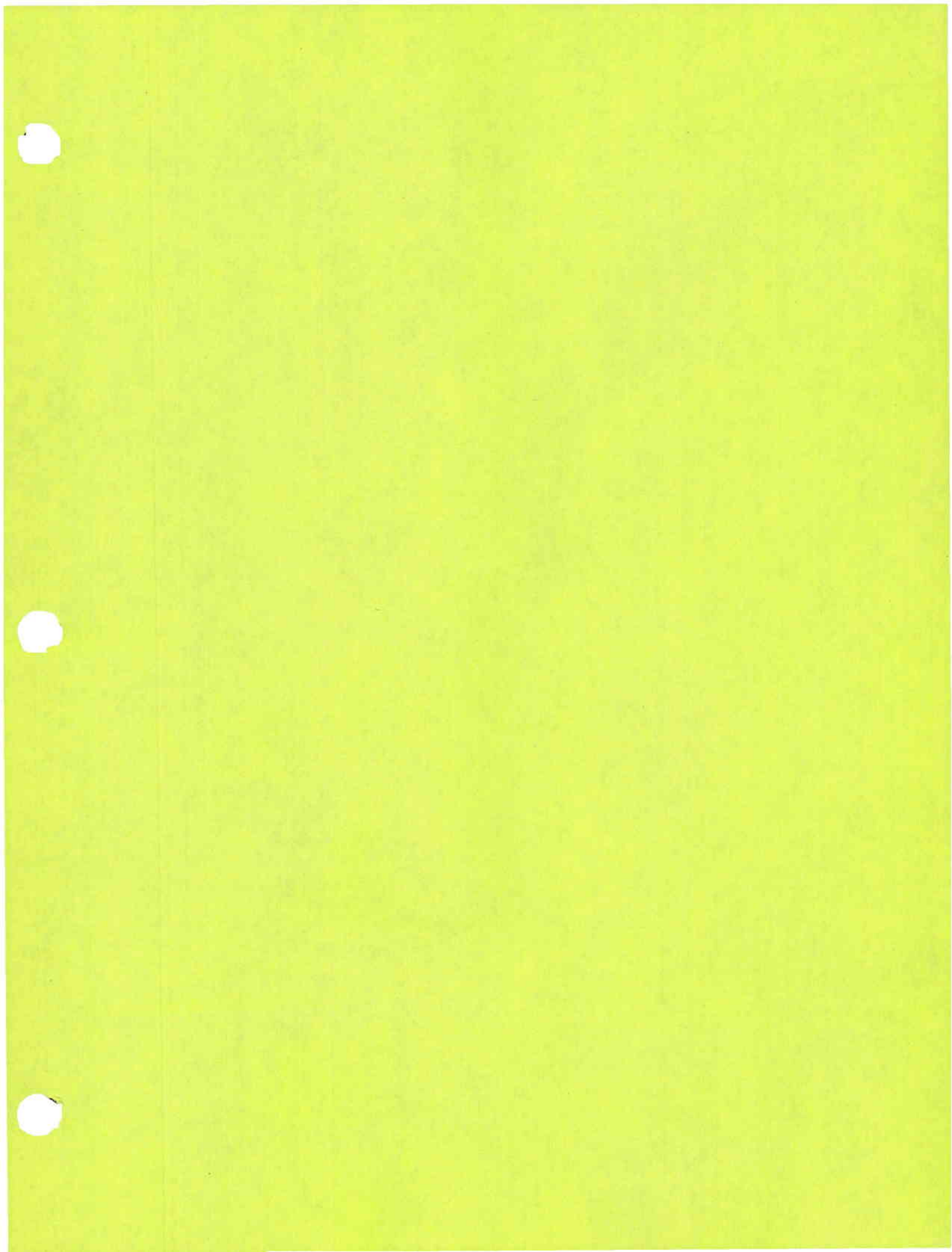
SURVEYED PARCELS

- Ⓜ MAP INDEX NUMBER
- AVAILABLE REPLACEMENT AREA
- REPLACEMENT AREA IS AVAILABLE *
- LIMITED REPLACEMENT AREA AVAILABLE *
- NO REPLACEMENT AREA AVAILABLE
- * PENDING SUCCESSFUL SOIL PROBE AND PERCOLATION TESTING





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Act 537 Plan Amendment

Township of Exeter

Berks County, Pennsylvania

March 2014

Volume 1

Prepared by:



Gannett Fleming
VALLEY FORGE, PENNSYLVANIA

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1. Introduction

The Pennsylvania Department of Environmental Protections (PADEP) notified Exeter Township, Berks County, Authority (ETBCA) and St. Lawrence Borough by letters dated April 30, 2007, that future connections to overloaded sewerage facilities should be prohibited and immediate action should be taken to correct the overloads. ETBCA authorized Gannett Fleming to prepare a Corrective Action Plan in response to this notice. The Corrective Action Plan dated August 13, 2007, was approved by PADEP by letter dated October 1, 2007. ETBCA has provided PADEP with the first CAP Annual Progress Report in January 2007. In addition to the Corrective Action Plan, ETBCA authorized Gannett Fleming to provide a preliminary evaluation the capacity within the three trunk sewers.

Gannett Fleming conducted a preliminary capacity assessment of Exeter's three trunk sewers using available information from Exeter Township and St. Lawrence Borough. The preliminary capacity assessment indicated that there are potential overloads points within the Antietam Creek Trunk Sewer downstream of the identified sewer overflow locations. The assessment also identified several runs within the Schuylkill River Trunk Sewer and the Heisters Creek Trunk Sewer where potential overloads may occur within the next five years. Exeter Township then planned to include further capacity evaluation of the trunk sewers as part of the Act 537 planning amendment.

A Plan of Study and a Task Activity Report for Act 537 planning were submitted to the PADEP for approval by letter on October 31, 2007. In a letter dated November 30, 2007, PADEP approved the Plan of Study and the Task Activity Report for Act 537 planning. The Act 537 Plan is being developed to address long-term development and wastewater flow projections from St. Lawrence Borough and Exeter Township. The limited flow from Alsace Township and Lower Alsace Township and flow from St. Lawrence Borough is conveyed through the Antietam Creek Trunk Sewer to the Schuylkill River Trunk Sewer. The Schuylkill River and Heisters Creek Trunk Sewers end at the Exeter

Township Wastewater Treatment Plant. Analysis of the flow projections was used for capacity evaluation of the three trunk sewers to determine areas of concerns and possible deficiencies to be addressed as future growth introduces additional wastewater flows. The various areas showing capacity deficiencies were identified and reviewed to access possible alternative solutions to improve the system.

2. Plan Summary

2.1. Background and Objective

As part of the Corrective Action Plan (CAP) approved by the PADEP on October 1, 2007, Exeter Township developed this Act 537 Plan Amendment to address the capacity issues developing within their collection and conveyance system. As part of this plan, Exeter Township performed flow studies of the Antietam Creek Trunk Sewer, Schuylkill River Truck Sewer, and the Heisters Creek Trunk Sewer. These flow studies along with long term projections for wastewater flow from Exeter Township, Saint Lawrence Borough, and Alsace Township provided data for identification and evaluation of the existing system to identify current and future capacity issues.

3. Previous Wastewater Planning

3.1. General

Sewage facilities planning in Berks County began in 1970 with the Berks County Master Water and Sewer Plan prepared under the Pennsylvania Sewage Facilities Act. Exeter Township began installation of sanitary sewer to serve the community in the 1960's. The Township population has grown since that time and planning has taken place to address the need of the growing community.

3.2. Previous Planning

Previous Sewage Facilities planning for Exeter Township is addressed in the following documents:

Berks County Master Water and Sewer Plan
Rehabilitation of Trunk Sewer (Relief Project)
Wastewater Treatment Plant Expansion

3.2.1. Berks County Master Water and Sewer Plan

The Berks County Master Water and Sewer Plan was originally published in May 1970 and last updated in June of 1979. This report was prepared as part of the data maintenance process of the Comprehensive Water Quality Management Program (COWAMP/208). Exeter Township is included in Service Area – Water Planning Area V. Water Planning Area V includes the City of Reading, Wyomissing Valley Authority (Shillington, Mohnton, West Lawn, West Reading, Wyomissing, portion of Wyomissing Hills), Cacoosing Creek Area (Spring Township, Sinking Springs, parts of Lower & South Heidelberg and parts of Bern Township), Mount Penn Borough (includes part of Lower Alsace Township) and Exeter Township. At the time this report was written, the Exeter Wastewater Treatment plant was under construction for an upgrade to 2.40 million gallons per day (MGD).

3.2.2. Rehabilitation of Trunk Sewer (Relief Sewer Project)

An Act 537 Plan revision of 1988 was approved to address improvements to the Antietam Creek Trunk Sewer as a result of a flow metering program conducted in 1985. At the conclusion of the metering program, it was recommended that the Exeter Township Berks County Authority, consider planning to construct relief sewer facilities for portions of the Antietam Creek Trunk sewer. The existing sewer had been in place since 1968 and it had become hydraulically overloaded. Since efforts to reduce the infiltration/inflow (I&I), it became necessary to relieve the sewer.

3.2.3. Wastewater Treatment Plant Expansion

The Act 537 Plan, a revision to the 1979 Berks County Master Water and Sewer Plan, currently in use for the Township of Exeter was completed in October of 1989, adopted by Exeter Township, and approved by the Pennsylvania Department of Environmental

Resources, now the PADEP, in February of 1991. The October 1989 Act 537 Plan revision was approved to increase the wastewater treatment plant capacity to 5.9 MGD on an annual average basis and 7.0 MGD on a three month maximum basis. The area of greatest concern in the 537 Plan updated was the Baumstown area where the on-lot systems were failing and there was groundwater contamination. The plant expansion protected groundwater and aided community and economic development in the area. This revision also addressed projections based on the Comprehensive Plan of Exeter Township dated February 1984.

3.3. Current Planning

Exeter Township has not prepared a comprehensive update to the Act 537 Plan since 1989. Since that time, a number of sewer subdivisions and land developments have been planned, designed, approved and constructed within the Township. These subdivisions and land developments were provided services through the processing of planning modules or planning module exemptions as applicable. The additional wastewater flow from these developments is conveyed to the Townships trunk sewers and is being evaluated as part of this planning effort. The trunk sewers were planned, designed, and constructed several years ago. Some of the trunk sewer pipe runs date back as far as the late 1960's. The current planning will look at the adequacy of these aged pipe runs while considering the impact from recent development and projected development within Exeter Township and St. Lawrence Borough.

3.4. Adequacy of Previous Planning

The previous planning is approaching the end of its projected time table and has some areas which need to be addressed. The Act 537 Plan from 1989 was prepared to address the wastewater treatment plant expansion with demand projections to the year 2010. At that point, there were no projections or calculations to determine the adequacy of the collection and conveyance system to route the flow to the wastewater treatment plant.

The population projections from this study have adequately provided for the growth to date, but did not include projections beyond 2010.

4. Physical and Demographical Analysis

4.1. Identification and Description of the Study Area

The service area of the Exeter Township system was identified under Area V of the 1979 Berks County Master Water and Sewer Plan and the 1989 Act 537 Plan. For the purpose of this plan, the study area includes Exeter Township and St. Lawrence Borough. The development within the Township is concentrated to the southern and western areas with most of the eastern areas of the Township remaining outside available sewer collection service areas. There is an area of the northern portion of the Township along Old Friedensburg Road and Wegman Road serviced by the sewer collection system.

4.2. Drainage Basins

The Exeter Township drainage areas are tributary to the Schuylkill River Basin. The Antietam Creek drainage area lies to the north western area of the Township, including the Borough of St. Lawrence, flowing to the Schuylkill River in the south. The southwest portion of the Township drains directly to the Schuylkill River. The Heisters Creek drainage area contains a smaller portion of the Township from the center of the Township south and east draining to the Schuylkill River.

4.3. Physical Characteristics of the Study Area

4.3.1. Steep slopes

There are various areas of steep slopes within the study area unsuitable for the use of on-lot sewage disposal. Steep slope areas are present within some of the parcels considered development projections. The steep slopes are a limiting factor in development of parcels and must be considered in the calculations for the projected EDUs.

4.3.2. Geology

There are various geological features within the study area limiting the suitability for on-lot disposal, wastewater sludge disposal, and land application of wastewater. There are areas of nitrate-nitrogen groundwater pollution identified on Figure 3 in Appendix A.

4.4. Water Supply Resources

Exeter Township properties are served by public and private water service. Public water is provided for the more developed areas of the Township by Pennsylvania-American Water Company and Mount Penn Borough Municipal Authority. Individual wells are used to supply water to individual homes and businesses in other areas of the Township.

4.5. Population and Wastewater Flow History

4.5.1. Population

The Exeter Township wastewater system serves Exeter Township, St. Lawrence Borough, the Shady Lane Estates area of Alsace Township, and a small portion of Lower Alsace Township. Exeter Township is situated directly along the state route 422 corridor between Reading and King of Prussia which has led to continued growth of suburban communities. The population history from the Berks County Planning Commission is summarized in Table 1. The populations served from Alsace and Lower Alsace Townships are limited and are therefore not considered in future expansion. Their population history and projections will not be included.

Table 1
Population History

Municipality	1990	% Change	2000	% Change	2010
Exeter Township	17260	22.6	21161	20.7	25550
St. Lawrence Borough	1542	17.5	1812	0	1809

Source - U.S. Census Bureau, 1990 Census and 2000 Census and 2010 Census

The information indicates a steady growth rate over twenty percent continuing for the past 21 years. The population rise has led to an increase in the number of service industries and commercial developments placing additional demand on the wastewater system.

4.5.2. Wastewater Flow History

Annual Wasteload Reports and Chapter 94 Reports are prepared by Gannett Fleming, Inc. on behalf of Exeter Township to comply with PADEP regulations. Table 2 shows the average annual flow history at the Exeter Township Wastewater Treatment Plant as taken from these reports through years from 2000 to 2011.

Table 2
Exeter Township Wastewater Treatment Plant
Average Annual Flow History (MGD)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Avg. Flow	3.65	2.83	2.70	3.73	3.80	3.08	2.90	2.86	3.38	3.32	3.39	4.35

The average annual flow from the past 11 years ranged from 2.70 to 4.35 MGD, averaging 3.37 MGD.

5. Existing Sewerage Facilities

5.1. Description of the Exeter Township Sewer System

The Exeter Township sewer collection system is divided into three main drainage basins conveyed to the wastewater treatment plant through the Antietam Creek, Heisters Creek and Schuylkill River Trunk Sewers. The collection system collects and conveys domestic and industrial wastewater through 87 miles of sewer pipe to the Exeter Wastewater Treatment Plant. The system contains six wastewater pumping stations to move wastewater through the collection system.

5.2. Antietam Creek Trunk Sewer

The Antietam Creek Trunk Sewer begins at manhole 15 within the Schuylkill River Trunk Sewer at the southern border of the Township and extends north through St. Lawrence Borough to manhole 400 near Butter Lane. The portion of the Antietam Trunk Sewer between manhole 201 and manhole 232 lies within St. Lawrence Borough. The Antietam Creek Trunk Sewer ranges in diameter from twelve inches at its upper reaches to twenty seven inches at the connection point to the Schuylkill River Trunk Sewer.

5.3. Schuylkill River Trunk Sewer

The Schuylkill River Trunk Sewer begins at the Exeter Wastewater Treatment Plant at manhole 1 and continues along the southern border of the Township and the Schuylkill River, then turning north along East Neversink Road ending at manhole 76 at S.R. 422. The Schuylkill River Trunk Sewer is fifteen inches in diameter up to the connection point of the Antietam Creek Trunk Sewer where it is enlarged to thirty inches in diameter up to the wastewater treatment plant.

5.4. Heisters Creek Trunk Sewer

The Heisters Creek Trunk Sewer begins at the Exeter Wastewater Treatment Plant at manhole 111 and continues upstream along the Heisters Creek to manhole 133, where it branches to the collection system. The branch is from manhole 133 to manhole 140

through to manhole C80. The Heisters Creek Trunk Sewer ranges in diameter from eight inches at its upper reaches to sixteen inches at the connection point to the Schuylkill River Trunk Sewer.

5.5. Tributary Municipal Sewer Systems

St. Lawrence Borough and parts of Lower Alsace and Alsace Townships are served by the Antietam Creek Trunk Sewer and The Exeter Township Wastewater Treatment Plant.

5.6. Connections Points to the Exeter Township Sewer System

St. Lawrence Borough and a portion Lower Alsace and Alsace Townships are served by the Exeter Township Sewer System. The St. Lawrence Borough collection system contains multiple connection points to the Exeter Township collection system including a portion of Antietam Creek Trunk Sewer located within the Borough, and owned by the Borough. Shady Lane Estates in Alsace Township is connected the Exeter Township Sewer. Various properties within Lower Alsace Township connect to the Antietam Creek Trunk Sewer where it is located within Lower Alsace Township.

5.7. Exeter Township Wastewater Treatment Plant

The Exeter Township Wastewater Treatment Plant located at 400 Hanover Road, Birdsboro, Pennsylvania and was expanded to an annual average capacity of 5.9 MGD by the 1989 ACT 537 Plan Update to serve Exeter Township and St. Lawrence Borough. The Exeter Township WWTP operates under National Pollutant Discharge Elimination System (NPDES) Permit No. PA0026972 and consists of two (2) separate treatment flow trains, the East WWTP and the West WWTP. The East WWTP consists of four (4) Primary Clarifiers, two (2) Aeration Tanks, two (2) Final Clarifiers, and four (4) Chlorine Contact Tanks. This portion of the WWTP is used exclusively for the storage of high-strength residual waste, as needed. The West WWTP consists of the Main Pumping Station, Headworks Building, four (4) Primary Clarifiers, three (3) 1st Stage Aeration

Tanks, two (2) 2nd Stage Aeration Tanks, four (4) Final Clarifiers, and two (2) Chlorine Contact Tanks. *Figure 1* presents a process flow diagram of the facility.

The East WWTP is designed for an annual average daily flow of 1.2 MGD and utilizes Outfall 001, and the West WWTP is designed for an annual average daily flow of 5.9 MGD and utilizes Outfall 002. The net annual average hydraulic capacity is 7.1 MGD (1.2 MGD + 5.9 MGD). The West WWTP also has a permitted maximum month flow of 8.43 MGD. The net maximum month hydraulic capacity is 9.63 MGD (1.2 MGD + 8.43 MGD), and the design annual average organic loading capacity is 20,289 lbs BOD₅/day. The Exeter WWTP treats wastewater originating from Exeter Township, St. Lawrence Borough, and small portions of Alsace Township and Lower Alsace Township in Berks County, Pennsylvania.

6. Future Growth and Development

6.1. Municipal and County Planning

Planning documents adopted by Exeter Township pursuant to the Pennsylvania Municipalities Planning Code include the following:

- The Joint Comprehensive Plan for Amity Township, Exeter Township, St. Lawrence Borough – October 2005
- Exeter Township Subdivision and Land Development Ordinance – last revised May 23, 2011
- Exeter Township Zoning Ordinance - last revised June 13, 2011

6.1.1. The Joint Comprehensive Plan

This comprehensive plan is the first joint planning effort by St. Lawrence Borough, Amity Township and Exeter Township. This joint venture was initiated because of the recognized need to examine overall planning for the area in the face of development trends and pressures in the region; to develop common goals and objectives for land use, circulation, community facilities, housing, open space and recreation, natural resources, municipal services, and resource preservation; analyze interrelationships with

surrounding municipalities; coordinate land use, housing, transportation, community facility and utility, economic development, and resource preservation planning; and acknowledge the Comprehensive Plan for Berks County. The Joint Comprehensive Plan includes several objectives which are relevant to this Act 537 planning study. They are as follows:

- Prepare and implement a resource protection and management strategy for the region.
- Protect water resources within the municipalities and thus the quantity and quality of surface and ground water. Water courses of particular concern are Schuylkill River, the Antietam, Manatawny, Monocacy, Limekiln, Heisters, Ironstone, and Owatin Creeks, Trout Run, tributaries to the creeks, wetlands and floodplains along the river and creeks, and steep slopes draining to the water courses.
- Protect groundwater throughout the municipalities, including remaining limestone areas where the potential for pollution and groundwater resources tend to be greatest.
- Protect and improve water quality in the region.
- Encourage recharge of the water table as development occurs.
- Designate growth areas which are logical extensions of existing concentrations of development, have appropriate access, can be efficiently served by the circulation system, and can be efficiently served by public sewer and water systems.
- Discourage development in areas not suitable for on-site sewage disposal which cannot be feasibly sewerred.
- Encourage infill development among existing developments where appropriate because of available infrastructure and lack of environmental constraints.
- Ensure that required infrastructure is constructed by developers.
- Protect water supplies in the region and require development to demonstrate adequate capacity that will not adversely affect other water supplies.

- Plan for a safe, clean water supply which will adequately serve the region in the future.
- Support water conservation measures.
- Assure that the scale of development in the region is consistent with the capacity of the regions infrastructure.
- Provide for adequate enforcement of municipal regulations and ensure regulations are up-to-date.
- Coordinate public sewer and water planning with land use policies and establish growth areas where public water and sewer facilities are available.
- Restrict the extension of public sewer and water facilities to areas proposed to remain rural and in open space.

6.1.2. Subdivision and Land Development Ordinance

Subdivision and land development within Exeter Township is regulated by the Township's Subdivision and Land Development Ordinance last revised May 23, 2011. The Ordinance addresses subdivision and land development plan requirements, design standards, and improvement specifications. There are no specific requirements that have a bearing on this Act 537 planning project, however all new subdivision and land developments including those that may occur within the Study Area in the future, must comply with the requirements of the ordinance.

6.1.3. Zoning Ordinance

Zoning within Exeter Township is regulated by the Township's Zoning Ordinance last revised June 13, 2011. The zoning ordinance establishes and sets forth zoning districts and general regulation. The Ordinance is enacted in accordance with Community Development Objective as set forth in the Joint Comprehensive Plan for Amity Township, Exeter Township and St. Lawrence Borough. The Zoning Map is provided in Appendix A.

6.2. Potential Development

Table A1 in Appendix A indicates the total potential additional EDUs in the Study area of the Township based on current zoning regulations. Additionally, Tables A2 through A5 in the Appendix provide a breakdown of the projected EDUs for five, ten, twenty and thirty year potential development. The future development and projected EDUs were derived from review of the developable parcels within Exeter Township. The parcel area was compared to the current zoning and geographic features to determine an estimated EDU requirement for the property. The EDUs were then divided into projected timeframes with developments currently under review by the Township into the five year projection. There are also properties within the Township which are considered to be undevelopable based on their current usage or geographic features.

6.2.1. Glen Oley Farms

There is an existing development in the Township called Glen Oley Farms (Parcel 15). In October 2013 a needs analysis was performed for this area by Envirotech & Associates, Inc. Phases one and two of the development are served by individual wells and on-lot sewage disposal systems. Phase three was developed and the homes are served by individual wells and a public sewer collection system. During the needs analysis, phase one and phase two of Glen Oley Farms are referred to as the study area. In phases one and two there are total of 74 properties. 62 of which are improved with houses located on the lots. Of the 62 properties, 59 were surveyed. There was one confirmed malfunction (un-occupied house), 6 suspected malfunctions and 41 potential malfunctions were observed. As a result of that study, the Exeter Township Board of Supervisors are going to implement a Sewage Management Plan for this area of the Township. The results of that investigation have been included as an appendix to this report.

6.3. Population Projections

The population projections for Exeter Township and St. Lawrence Borough for 2020 and 2030 are included in Table 3 as obtained from the Berks County Planning Commission. Alsace Township will not be adding customers to Exeter Township's system beyond those already serviced.

Table 3
Population Projections

Municipality	2020	2030
Exeter Township	23,757	25,183
St. Lawrence Borough	2,034	2,156

Source – Berks County Planning Commission

6.4. Wastewater Flow Projections

Table A1, in Appendix A, summarizes the projected EDUs and flow per developed parcel using 229 gallons per day per EDU. Tables A2 through A5 in Appendix A provide a breakdown of the project EDUs for five, ten, twenty and thirty year potential development listed by parcel designation. These tables also list the assumed collection system and interceptor connection points used in the capacity analysis performed for each interceptor. The incremental existing and projected flows were added to the trunk sewers at the various connection points and analyzed using a static flow model. Flows at the various interceptor locations were determined from 2008 metering activity, treatment plant inflow, and pumping station flow data. The service area was divided into seven (7) zones. The flow percentages from these seven zones were further divided into the various connection points on the trunk sewers. The Flow Distribution method is detailed in the table, "Flow Distribution Considering 2008 Metering Results", in Appendix A. A table of incremental flow is also provided showing a further breakdown of distribution. The 2008 Meter Flow and pumping station and treatment plant flow data tables are provided in Appendix A.

7. Trunk Sewer Capacity Alternatives

7.1. Antietam Creek Trunk Sewer

Gannett Fleming conducted a sewer capacity evaluation of the affected trunk sewer by static modeling, including portions of the affected trunk sewer above and below the problem area. The calculated results of the capacity evaluation are included in various tables found in Appendix A. The evaluation included portions of the Antietam Creek Trunk Sewer above, within, and below Saint Lawrence Borough, from Manhole 232B located north of the Borough to manhole 168 where Antietam Creek crosses Route 422. Based on the results of the evaluation, portions of the trunk sewer (Manhole 219 to Exeter Manhole 204) require an increase in pipe size from 12" to 18" diameter. Increasing capacity of these runs, together with the benefits derived from previous and ongoing infiltration/inflow corrective actions undertaken by Exeter Township and St. Lawrence Borough, will eliminate the sewer system overflows. Additionally the five year projected flow will dictate the replacement of five pipe runs within the Antietam Creek Trunk Sewer between manhole 179D and the connection to the Schuylkill River Trunk Sewer.

7.1.1. Planning

As part of the Windy Willows planning module, the ETBCA requested planning approval to increase the size of the Antietam Creek Trunk Sewer between Manhole 219 and Manhole 204 from 12" to 18" diameter. Should any of the homes be completed in Windy Willows prior to the completion of the construction, the Exeter Township Berks County Authority will evaluate on an individual bases depending on any connections allowed as part of the Corrective Action Plan. The construction of the Antietam Creek trunk sewer has been completed and a request to remove the Corrective Action Plan was submitted to the PA DEP January 29, 2013.

7.1.2. Flow Monitoring

In the spring of 2008, a portable flow meter was installed in manhole 215 to provide data on the existing base flow of the system. The flow data from the metering event was compared to flow data from the meters from St. Lawrence Borough and the estimated number of connections with the Exeter Township system tributary to this section of the trunk sewer. We also considered existing connections, long-term development, and wastewater flow projections made for Exeter Township and St. Lawrence Borough.

7.1.3. Peak Factor

The estimated instantaneous peak flow rates at 3.0 times the average daily flows. A standard peak flow rate factor for trunk and interceptor sewers is 2.5 times average daily flow. However, we used the slightly higher factor of 3.0 due to the age of the trunk sewers and to make an allowance for system infiltration/inflow, which is somewhat higher than average.

7.1.4. Trunk Sewer Replacement Project

Given that failures within this system have occurred in the past and analysis has determined the trunk sewer has capacity problems, we recommended replacement of the existing trunk sewer from manholes 219 to 204 before additional connections were made to tributary area of this trunk sewer section. The pipe replacement has been completed using eighteen inch diameter pipe to match the existing downstream diameter pipe size. The new pipe size provides for the projected flows of the tributary areas for the next 30 years with additional factor of safety. The construction of the Trunk Sewer has been completed and this upgrade has eliminated the overloading of Sewage Facilities above MH 208.

7.2. Schuylkill River Trunk Sewer

Gannett Fleming conducted a sewer capacity evaluation of the Schuylkill River Trunk Sewer by static modeling from manhole 61 at the eastern most point of the trunk sewer

to the point of influent into the wastewater treatment plant. This capacity analysis determined the existing trunk sewer is near capacity for almost every pipe run. Without action the capacity of the trunk sewer would limit the potential development and growth of the area. The capacity shortfall for the projected population growth could be addressed through construction of a parallel sewer main or direct replacement of the existing trunk sewer with larger diameter pipe.

7.3. Heisters Creek Trunk Sewer

Gannett Fleming conducted a sewer capacity evaluation of the Heisters Creek Trunk Sewer by static modeling from manhole C80 at the northern most point of the trunk sewer to manhole 111. This capacity analysis determined the existing trunk sewer is near capacity for 14 pipe runs at the five year projection horizon. Almost every pipe run within the trunk sewer would be over capacity by the twenty year projection horizon. Without action the capacity of the trunk sewer would limit the potential development and growth of the area. The capacity shortfall for the projected population growth could be addressed through construction of a parallel sewer main or direct replacement of the existing trunk sewer with larger diameter pipe.

8. Evaluation of Alternatives

8.1. Technical Feasibility Evaluation of Trunk Sewer Improvements

8.1.1. No Action for Improvements

The option would not be a feasible alternative because it does not address the corrective action plan items or the projected growth of Exeter Township. Future development and economic growth would be severely limited by the current flow capacity.

8.1.1. Construction of Parallel Sanitary Sewer

Construction of a parallel sewer along the existing Schuylkill River Trunk Sewer and

Heisters Creek Trunk Sewer could be constructed within the existing sanitary sewer easements and rights-of-way. The parallel sewer would require a similar number of new manholes as a direct replacement project without benefit of replacing old, possibly damaged or leaking manholes currently part of the system. The existing pipe runs would also remain in place forcing the Authority to take action to repair the pipe runs by other methods to reduce the inflow and infiltration currently adding to the overall flow. A parallel line would add to the maintenance effort of Authority staff with unknown future costs. This alternative was not selected because the extensive additional facilities being created, the additional work required to address maintenance issues of the existing lines, and the easement and right-of-way expansions expected to accommodate the wider occupancy of the facilities.

8.1.2. Direct Replacement of Sanitary Sewer

Current available products and construction techniques provide for a feasible direct replacement of the existing dated sewer mains. The pipe materials available today will provide a long life span, reduced maintenance requirements, and superior protection for inflow and infiltration when compared to the existing pipe. Direct replacement eliminates the issues with the existing mains such as joint degradation, pipe degradation, offset joints, and leaking pipes and manholes. Direct replacement using larger diameter pipe for the sizes estimated would be more costly for the pipe materials than the pipe size of a parallel system. However, the construction labor effort and manhole costs would be similar. When comparing the direct replacement and parallel main alternatives the overall costs for construction and future maintenance would be more favorable for the direct replacement.

8.2. Consistency with Planning Issues and Regulations

Technically feasible alternatives must be evaluated for consistency with various state and county requirements and programs. They include the following:

8.2.1. Plans developed and approved under Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act

The Berks County Master Water and Sewer Plan was originally published in May 1970 and last updated in June of 1979.

8.2.2. Municipal Wasteload Management

The PADEP notified ETBCA and St. Lawrence Borough by letters dated April 30, 2007, that future connections to overloaded sewerage facilities should be prohibited and immediate action should be taken to correct the overloads. ETBCA authorized Gannett Fleming to prepare a Corrective Action Plan in response to this notice. The Corrective Action Plan dated August 13, 2007, was approved by PADEP by letter dated October 1, 2007. Corrective Action Plan Annual Progress Reports were submitted to PADEP each year thereafter. The construction of the Trunk Sewer has been completed and this upgrade has eliminated the overloading of Sewage Facilities above MH 208. A request was submitted to the PA DEP January 29, 2013 to lift the Corrective Action Plan.

8.2.3. State Water Plan Developed Under the Water Protection Planning Act and the Pennsylvania Administrative Code

The proposed projects will not result in any wastewater discharges to surface waters or groundwater. Furthermore, the proposed capacity increases will provide additional assurance that hydraulic overloads of the trunk sewers will not occur, thereby preventing potential discharges of raw wastewater to nearby surface waters. The proposed project is consistent with the State Water Plan.

8.2.4. Comprehensive Plans developed under the Pennsylvania Municipalities Planning Code

This Act 537 Plan Revision provides planning for wastewater conveyance facilities needed to convey the additional wastewater flows from Exeter Township, St. Lawrence

Borough and Alsace Township. The development projections and wastewater flow projections were made by the municipalities, or their consultants, consistent with the current municipal zoning requirements and comprehensive plans of the respective municipalities. Each of the municipalities affected by this Plan has developed and adopted a municipal comprehensive plan. The dates of the most recently adopted municipal comprehensive plans are as follow:

<u>Municipality</u>	<u>Date of Plan</u>
Exeter Township	October 2005
St. Lawrence Borough	October 2005
Alsace Township	April 2009

Berks Vision 2020, a comprehensive plan for the County of Berks, supports the concept of smart growth. Smart growth is development that serves the economy, community, and environment. It refocuses the development debate from traditional versus no-growth; to “how and where” should new growth be accommodated. The sewer and water goal of Berks Vision 2020 is “to improve and maintain sanitary sewer and water systems in the existing developed areas, designated growth areas, and to provide sanitary sewer and water systems to future growth areas. The proposed trunk sewer capacity increases are consistent with the provisions of the municipal comprehensive plans and the Berks Vision 2020.

8.2.5. Plans developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987

This category is not applicable as Federal funding is not anticipated for this project and plans have not been developed under Title II of the Clean Water Act or Titles II and VI of the Water Quality Act of 1987 for the project’s service area.

8.2.6. Anti-degradation Requirements - PA Code, Title 25, Chapters 93, 95, and 102

The proposed trunk sewer capacity increases will not result in direct wastewater discharges to waters of the Commonwealth. Furthermore, all construction activities associated with the capacity increases will be required to adhere to appropriate erosion and sedimentation pollution controls and will not create any erosion or sedimentation. Individual development projects that will contribute to the projected wastewater flow increases will be required to have the appropriate erosion and sedimentation pollution controls and approvals. The proposed trunk sewer capacity increases are consistent with the anti-degradation requirements.

8.2.7. Pennsylvania's Prime Agricultural Land Policy

Facilities proposed for construction will mostly be direct replacements of existing facilities or will be constructed within existing easements. There will be no additional land acquisition requirements for project implementation, but there will be a need for some additional sewer and force main easements. None of these, however, will be on lands considered prime agricultural land. Furthermore, individual land development projects that will contribute to the projected wastewater flow increase will be required to comply with Pennsylvania's prime agricultural land policy requirements, as applicable. The proposed trunk sewer capacity increases are consistent with the prime agricultural land policy requirements.

8.2.8. County Stormwater Management Plans

Berks County has address stormwater management in the Tributaries to the Schuylkill River in Berks County Act 167 Stormwater Management Plan. Exeter Township adopted the plan at a public meeting on March 9, 2009. The proposed capacity increase projects are consistent with the County's stormwater management plans.

8.2.9. Wetland Protection under Chapter 105

Wetlands may or may not be present within the proposed project area. A wetlands assessment will be conducted during the design phase of the project to determine if wetlands are or may be located within the proposed areas of disturbance. Based on the findings of the assessment, appropriate measures will be taken to protect the wetlands. Furthermore, individual land development projects that will contribute to the projected wastewater flow increases are required to comply with applicable wetland protection requirements. The proposed trunk sewer replacements will be performed consistent with wetland protection requirements.

8.2.10. Protection of Rare, Endangered, or Threatened Plant and Animal Species

Pennsylvania Natural Diversity Inventory (PNDI) Project Planning and Environmental Review Forms were completed on-line for the proposed project improvements. The Project Search ID for Schuylkill River Trunk Sewer and Heisters Creek Trunk Sewer are 20121002374719 and 20121002374721 respectively. Copies of the Project Environmental Review Receipts, transmittals to the state agencies, and responses from the state agencies are provided in Appendix B.

8.2.11. Historical and Archaeological Resource Protection

A Request to Initiate Consultation form and supporting information for the proposed sanitary sewer trunk line replacements was forwarded to the Pennsylvania Historical and Museum Commission (PHMC) by letter (Certified Mail, Return Receipt Requested) dated October 3, 2012. A copy of the letter and the associated response can be found in Appendix B.

8.3. Resolution of Inconsistencies

The project involves replacement of existing facilities to be performed in accordance with the various State and Local Government requirements including Water Quality Permitting, PADEP General Permit, and NPDES permitting requirements.

8.4. Estimated Cost

8.4.1. Trunk Sewer Replacement

The table of “Estimated Construction Costs – Trunk Sewer Replacement” for the trunk sewer replacement is provided in Appendix A. The estimated costs calculated are based on current year prices for similar construction projects. The table provides construction costs estimated for the five, ten and twenty year projection horizons. Improvements for capacity should not be required between the twenty and thirty year projection horizon. The projections indicate the most significant costs for improvements to be within the first five years to address capacity issues in the both the Schuylkill Basin Trunk Sewer and the Heisters Creek Trunk Sewer.

8.5. Analysis of Funding Methods Available

Funding for the improvements could be attained from the existing capital improvement funds reserved by the Township, PennVest loans, or municipal bond issue.

8.6. Administrative Organizations and Legal Authority

The administrative organizations and legal authorities involved are already established and will continue to operate in accordance with their established procedures within the defined study area of Exeter Township and St. Lawrence Borough.

8.7. Plan Implementation

Implementation of the capacity improvement recommendations will be undertaken by Exeter Township to accommodate the projected flow from Exeter Township and St.

Lawrence Borough. Implementation will begin with planning and engineering design after approval of the Act 537 Plan Amendment.

9. Institutional Evaluation

9.1. Evaluation of Exeter Township and the Exeter Township, Berks County Authority

The ETBCA is the wastewater treatment, collection and conveyance authority for all of Exeter Township and St. Lawrence Borough. In January of 2014, the Township initiated the process to eliminate the Authority and transfer all assets and operation to Exeter Township. Upon approval of the Act 537 Plan Revision, the Exeter Township will implement the project. Exeter Township will obtain the necessary permits and financing, construct the trunk sewer replacement through the public bid process, and operate and maintain the new and existing sanitary sewer collection and conveyance system.

9.1.1. Financial and Debt Status

The Exeter Township will finance the project using available Authority funds and bond financing attained in 2011 and 2012 specifically for the sanitary sewer improvements.

9.1.2. Available Staff and Administrative Resources

The staff of Exeter Township will be capable of maintaining the replaced trunk sewers but may be required to add staff as the projected development becomes reality in the future. Their current staff consists of full-time employees dedicated to the operation and maintenance of the wastewater treatment plant and collection system. Exeter Township has a Superintendent and Assistant Superintendent guiding the day to day operation of the labor force. Both Exeter Township and St. Lawrence Borough have adequate staff and administrative resources to maintain the existing facilities. Professional and construction services are contracted to provide additional resources.

9.1.3. Existing Legal Authority

The ETBCA is the wastewater treatment, collection and conveyance Authority for all of Exeter Township and St. Lawrence Borough. Exeter Township will have the necessary legal authority to implement the project and continue effective operation and administration of the entire system once the transfer is complete.

9.2. Analysis and Descriptions of Institutional Alternatives

Institutional alternatives were not considered for this amendment because the existing organizations are functioning adequately for the service area.

9.3. Discussion of Necessary Administrative and Legal Activities for Implementation

An Act 537 Plan Resolution must be passed by Exeter Township. Exeter Township will continue with the responsibility for maintenance and operation of the facilities. Exeter Township will authorize engineering and legal services, establish easements and rights-of way, secure permits and approvals, advertise the construction project, accept bids, award the construction contracts, issue notices to proceed, complete construction, and closeout the project. The necessary ordinances and regulations are in place for implementation of the project.

9.3.1. Permits and Approvals

Exeter Township will be required to secure the following:

- Water Quality Management Permit
- NPDES Permit
- Berks County Conservation District Review
- General Permits for Utility Stream Crossings

10. Implementation Schedule and Justification for Selected Technical and Institutional Alternatives

10.1. Selected Wastewater Facilities Alternative

10.1.1. Antietam Creek Trunk Sewer

A direct replacement of the Antietam Creek Trunk Sewers calculated to be below the projected flow capacity for the projections to 2030 was performed as a direct replacement in order to maintain the existing sanitary sewer easements without expansion of the easements across residential properties and narrow access areas, and to replace existing deteriorating facilities. The replacement of this Trunk Sewer line was completed in 2013.

10.1.2. Schuylkill River Trunk Sewer

The trunk sewer calculated to be below the projected flow capacity for the projections to 2030 will be directly replaced with new pipe of adequate capacity. This solution is a cost effective use of existing easement through floodplain areas without the need for easement expansion or extensive archeological studies. Replacement of existing pipes will remove facilities that could cause future maintenance issues. When comparing an option of an interconnected parallel line direct replacement will have fewer new structures and will have better flow characteristics through various flow conditions.

10.1.3. Heisters Creek Trunk Sewer

The trunk sewer calculated to be below the projected flow capacity for the projections to 2030 will be directly replaced with new pipe of adequate capacity. This solution is a cost effective use of existing easement through unimproved and improved private property without the need for permanent easement expansion, new easements, or extensive archeological studies. Replacement of existing pipes will remove deteriorated existing facilities and improve flow characteristics through the same alignment.

10.1.4. Glen Oley Farms

A Sewage Management Ordinance will be implemented in this area of the Township to address the issues from the Glen Oley Farms special study. A Sewage Management program will mandate regular maintenance of the on-lot sewage disposals systems by requiring residents to have their septic tanks cleaned regularly.

10.2. Capital Financing Plan

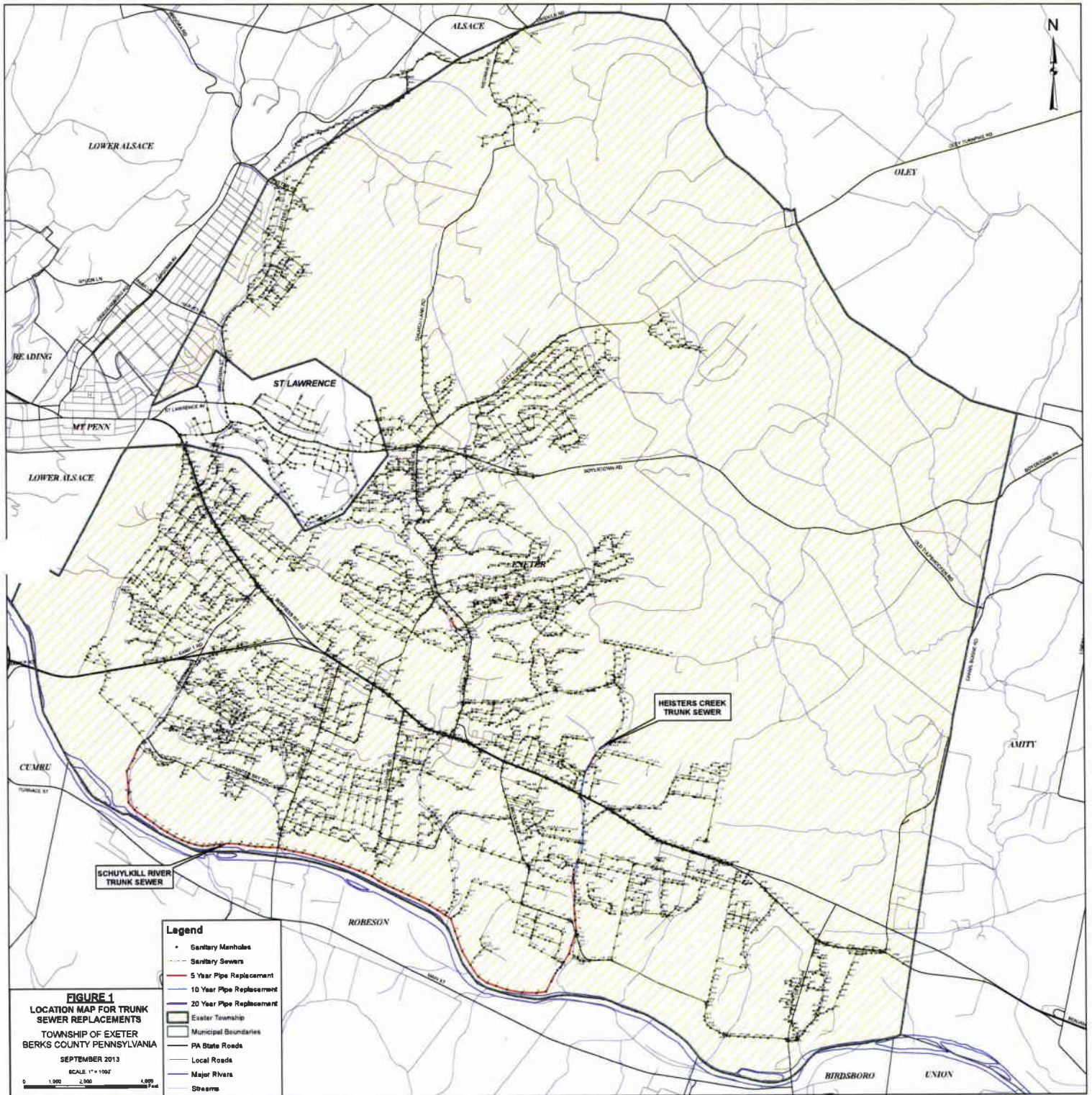
Exeter Township will finance the project using available Exeter Township funds and bond financing attained in 2011 and 2012 specifically for the sanitary sewer improvements.

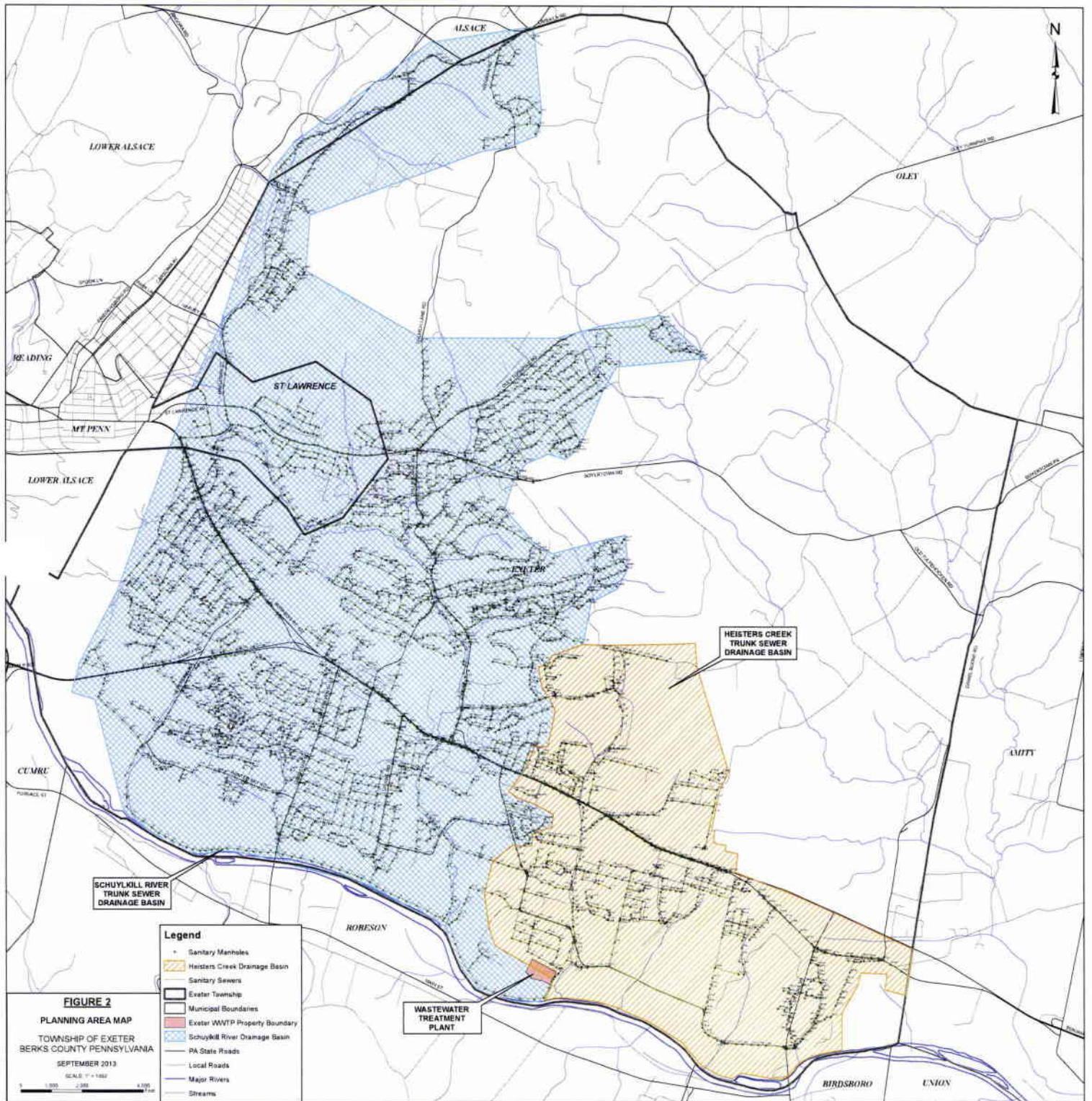
10.3. Schedule

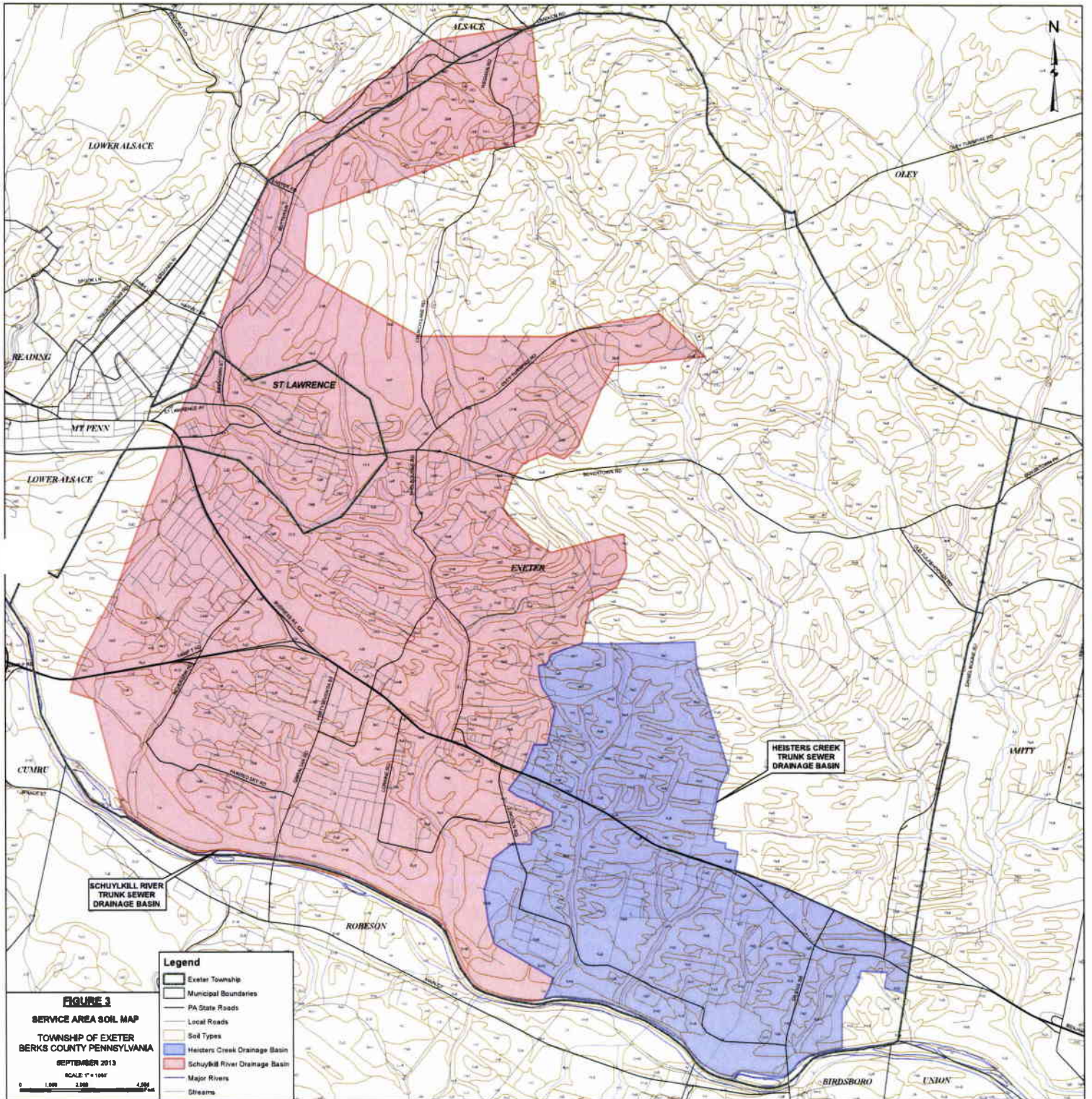
Complete Act 537 Plan.....	September 2013
Public Advertisement of Plan	October 2013
Plan Submission to the Exeter Township Planning Commission .	October 2013
Plan Submission to the Berks County Planning Commission	October 2013
Comments received from Planning Commission.....	December 2013
Township Approval of Plan.....	April 2014
Submit Plan to DEP.....	April 2014
DEP Approval.....	June 2014
Begin Design	June 2014
Complete Design	August 2014
WQM Part II Permit	September 2014
Bid/Contract Award.....	December 2014
Construction Begins	December 2014
Construction Completed	April 2015
Capacity Available	April 2015

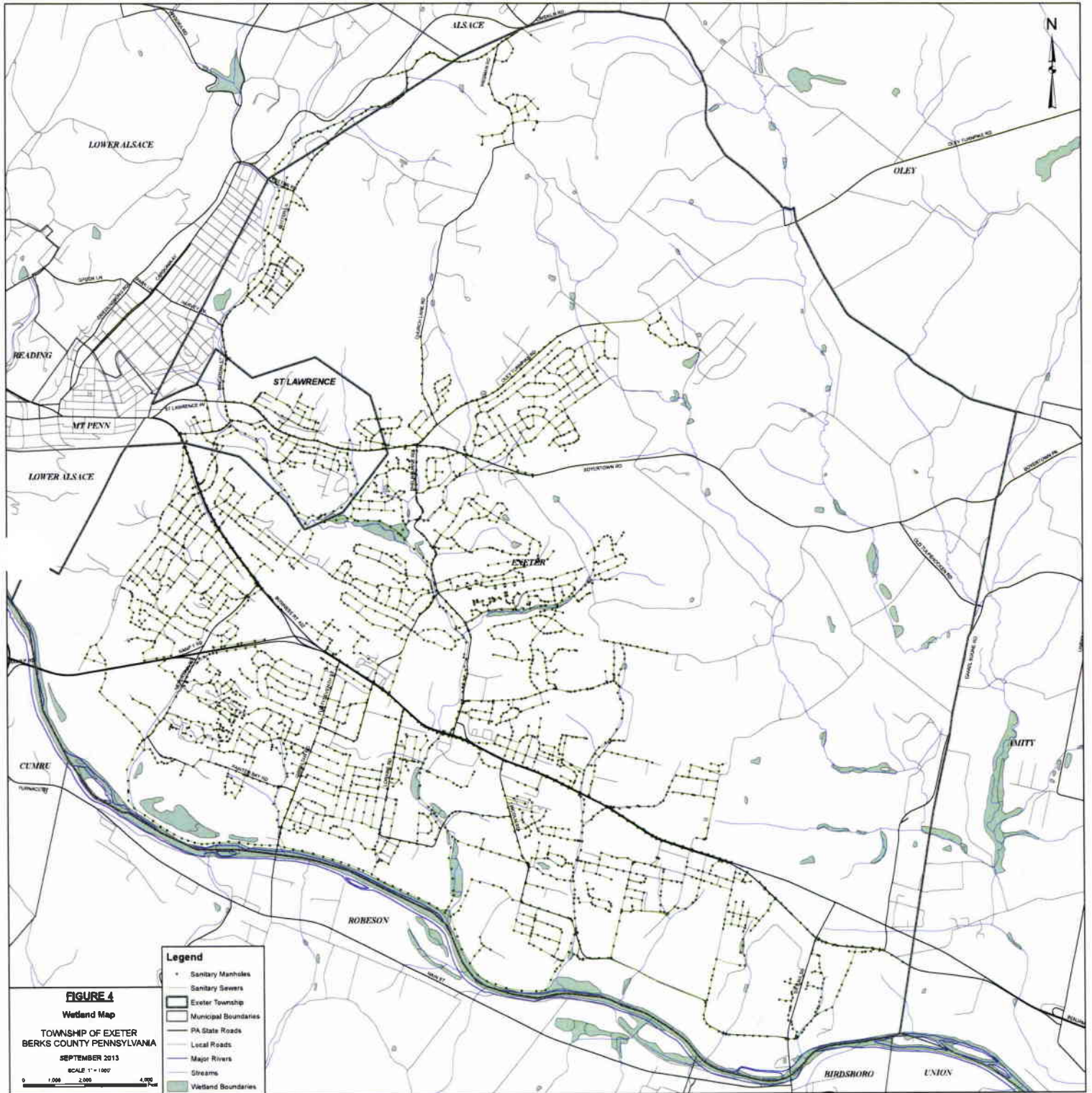
Note: This schedule is subject to change. Updates to the schedule will be provided to PADEP as adjustments are made.

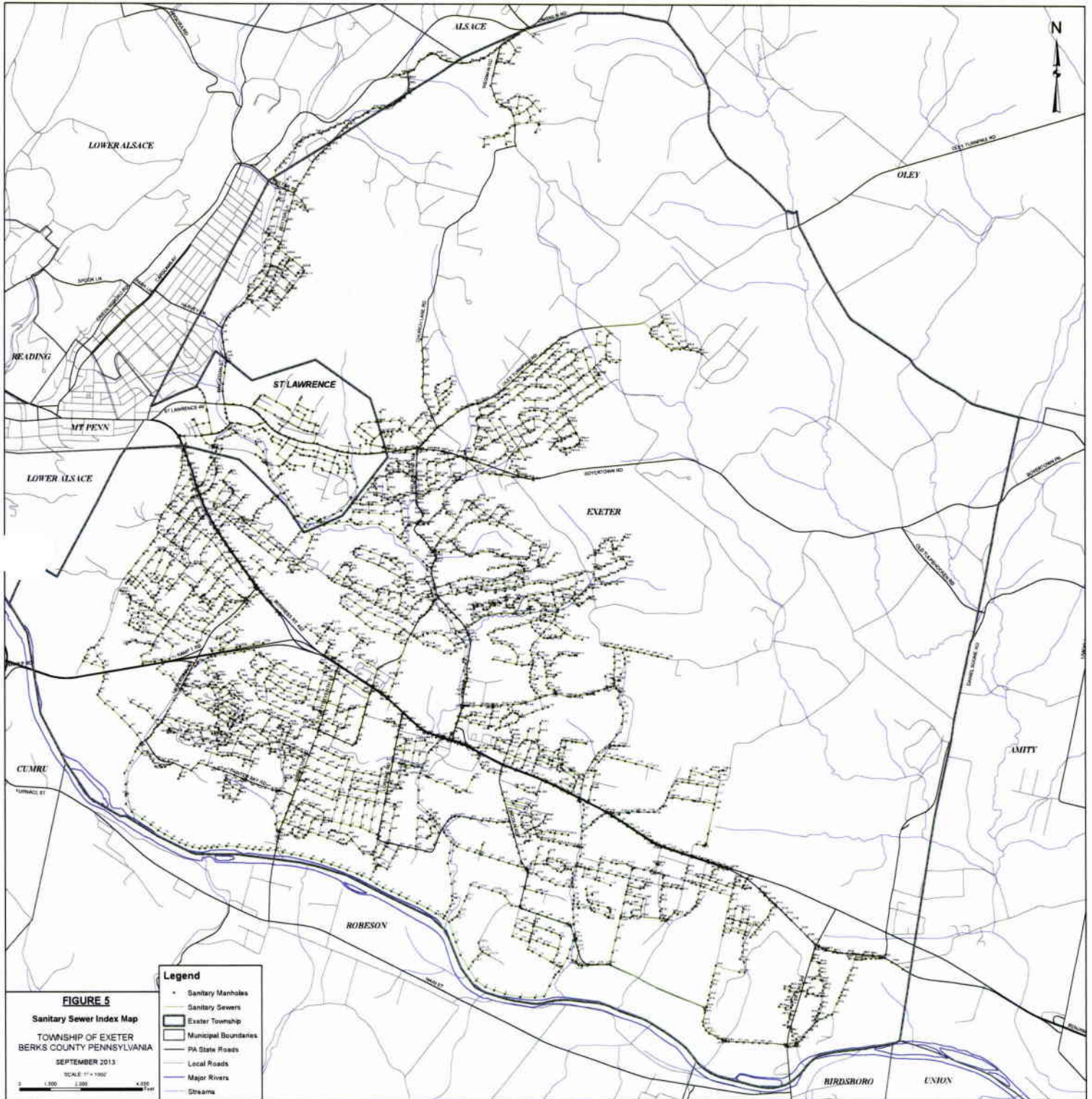
Appendix A Figures and Tables











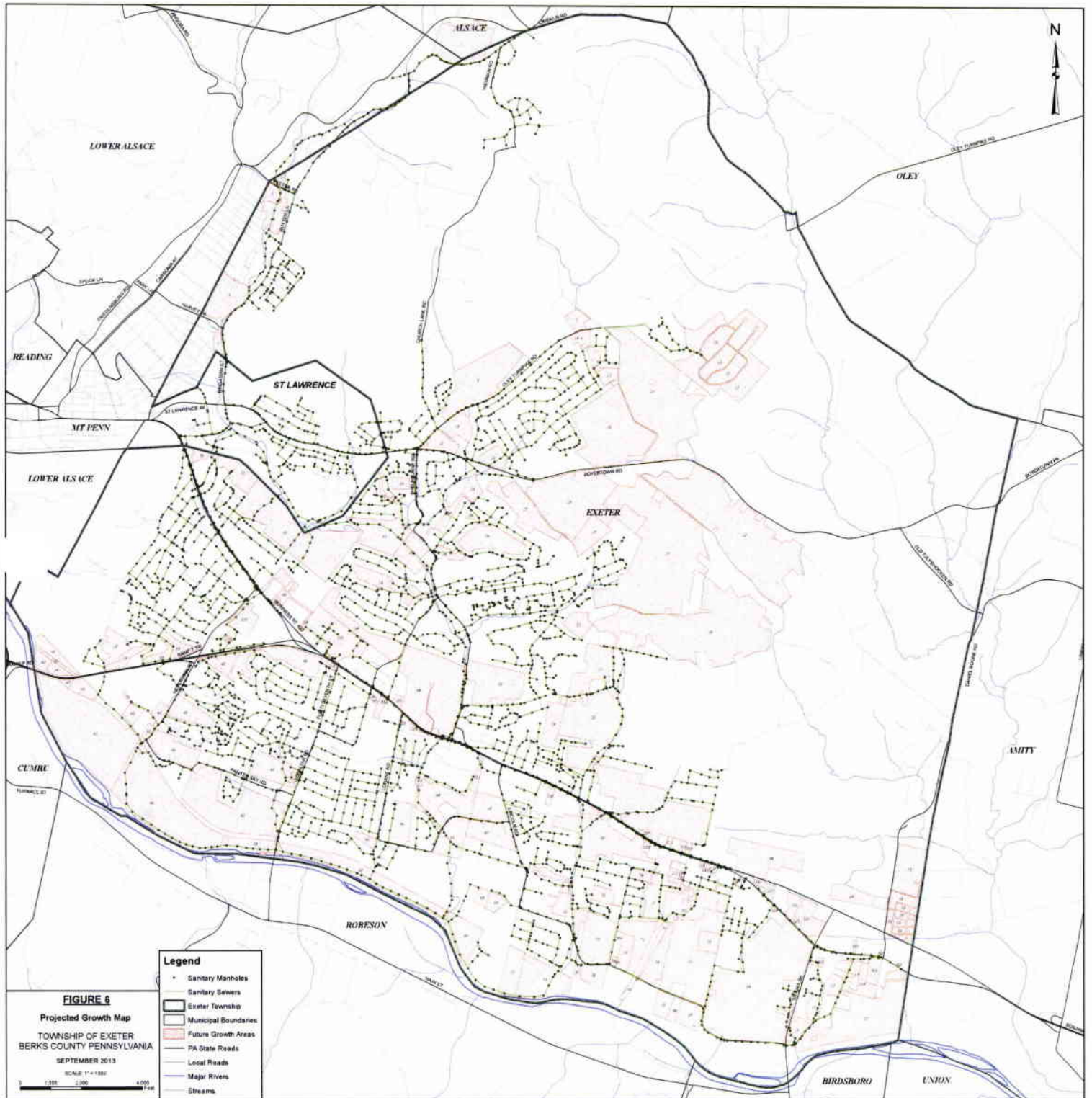


FIGURE 6

Projected Growth Map

TOWNSHIP OF EXETER
 BERKS COUNTY PENNSYLVANIA
 SEPTEMBER 2013

SCALE: 1" = 1000'

0 1,000 2,000 4,000 Feet

- Legend**
- Sanitary Manholes
 - - - Sanitary Sewers
 - ▬ Exeter Township
 - ▬ Municipal Boundaries
 - ▬ Future Growth Areas
 - ▬ PA State Roads
 - ▬ Local Roads
 - ▬ Major Rivers
 - ▬ Streams

Act 537 Plan Amendment

Table A1

Exeter Township

Potential Development Parcel Summary

Item Revised per Exeter 537 Review Meeting Notes

Parcel Designation	Parcel Information			Potential EDUs	EDUs for Potential Development			Flow at 229 gpd/EDU	Collection System Connection Point	Interceptor Connection Point	Projected Timeframe	TOWNSHIP SPECIFIED UNITS	TOWNSHIP NOTES
	Gross Area	Present Zoning	Projection Basis		Residential	Commercial	Industrial						
1	46.89	SR0	15	27	27			6183	B408	232B	10	27	WINDY WILLOWS SUBDIVISION - PLANNED (COURT CASE)
2	14.84	SR1	19	26	26			5954	B333	232B	20		-40% FLOODPLAIN
3		SR1	10	0	0			0	B375, B336	232B		0	SCHOOL AND/OR FLOODPLAIN
4		SR1	10	0	0			0	236	232B		0	PUBLIC LAND AND FLOODPLAIN
5		SR1	10	0	0			0	232B	232B		0	PUBLIC LAND AND FLOODPLAIN
6	85.15	SR1	10	190	190			43510	B472	232B	20		CURRENT LOTS ARE NOT VACANT
7	7.61	SR1	10	23	23			5267	B485	232B	20		Residential
8	3.36	SR1	10	10	10			2290	FR12	193A	20		Residential
9	5.36	SR1	10	0	0			0	FR8A	193A		0	OPEN SPACE
10	7.79	SR1	10	0	0			0	FR56	193A		0	TOWNSHIP PARK
11	14.52	SR1	10	0	0			0	B474	232B		0	EXISTING CEMETARY
12	11.56	SR1	10	0	0			0	B546	232B		0	EXISTING SCHOOL - JACKSONWALD ELEMENTARY
13	10.24	SR1	10	30	30			6870	FR93	193A	10		Residential
14	2.33	SR1	10	7	7			1603	FR12	193A	20		Residential
15	0.00	R	15	74	74			16946	GO1	193A		84	GLEN OLEY FARMS (Dependent on Special Study)
16	108.98	AP	15	35		Proposed School		8000	FR6-4 (C01)	193A	5	7	Central Catholic School Escrowed for Construction
17	581.50	R	6	466	466			106714	C96	C80	20		APROX. 1/3 HAS SLOPE ISSUES
18	44.74	SR1	10	130	130			29770	R159	171	10		Residential
19	105.48	R		30				6800	FR2B-3	193A	5		EXETER ELEMENTARY SCHOOL
20	148.85	AP	15	3	3			687	C96	C80	20		
21	11.72	SR1	10	35	35			8015	PV51	166	20		Residential
22	31.63	SR1	21	74	74			16946	C100, C104	C80	10		SOME SLOPE ISSUES, -20%
23	79.90	SR1	18	163	163			37327	C73	C73	10		STREAM WILL CAUSE LIMITATIONS
24	16.54	SR1	14	0	0			0	C108	C80		0	TOWNSHIP OWNED
25	110.60	SR0	16	151	151			34579	C132, C135	133	10		SOME COMMERCIAL AND FLOODPLAIN -15%
26		SR3	14	0	0			0				0	OPEN SPACE
27	34.45	SR3	22	51	51			11679	B458A	193A	20		SLOPE ISSUES FOR 50%+
28	7.52	SR3	12	22	22			5038	EG18	190	10		Residential
29	4.91	SR3	12	15	15			3435	HR40A	193A	20		Residential
30		SR3	14	0	0			0	193A	193A		0	OPEN SPACE
31	19.44	SR3	14	0	0			0	191	191	30		UNUSABLE - FLOODPLAIN, SLOPES, WETLANDS
32	18.17	SR3	14	0	0			0	AV48, AV45	GM-1A		0	OPEN SPACE
33	0.00	SR3/SR1	14	0	0			0	B193, 205A, B180A	204		0	SCHOOLS
34	0.00	SR3	14	0	0			0				0	TOWNSHIP OWNED GOLF COURSE
35	20.21	SR1	10	59	59			13511	B225, B244	208	10		Residential
36	7.08	SR1	10	21	21			4809	B240	208	20		Residential
37	15.37	UR	13	45	45			10305	A79	61	10		Residential
38	9.65	UR	14	0	0			0	CS31	61		0	EXISTING RETIREMENT HOME
39	0.00	UR	14	0	0			0	A75			0	TOWNSHIP OPEN SPACE
40	11.22	UR	13	33	33			7557		99	61	20	Residential
41	17.76	UR	13	52	52			11908		67	61	10	Residential
42	26.48	UR	13	77	77			17633	A189	60A	10		Residential
43	91.77	SR1	10	267	267			61143	A32	34	20		Residential
44	23.60	UR	13	69	69			15801	SV4	34	10		Residential
45	4.58	SR1	10	14	14			3206	A6	24	10		Residential
46	18.80	SR1	14	0	0			0	A20	24		0	SCHOOL

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	Gross Area	Present Zoning	Projection Basis		Residential	Commercial	Industrial						
47	21.32	SR1	10	62	62			14198	B13	154	10	Residential	
48	19.82	SR2	10	58	58			13282	B13	154	10	Residential	
49	81.52	SR2	17	134	134			30686	130	130	10	SOME COMMERCIALLY ZONED OR FLOOD PLAIN -25%	
50	7.17	SR2	14	0	0			0			0	OPEN SPACE	
51	8.03	SR2	11	24	24			5496	V17	121	20	Residential	
52	18.11	SR1	16	45	45			10305	119	119	20	-15% FLOOD PLAIN	
53	20.15	SR1	20	30	30			6870	6	6	30	-50% FLOOD PLAIN	
54	39.39	SR1	14	0	0			0			0	TOWNSHIP TREATMENT PLANT	
55	83.57	SR2	11	185	185			42365	BP2, BP48	114	10	Residential	
58	5.09	SR2	14	0	0			0	C31	114	10	EXISTING INDUSTRIAL USE	
57	141.95	SR0	9	228	228			52212	BR35	114	20	Residential	
58	86.02	SR0	15	73	73			16717	BR50	114	30	73 AREA FOR POSSIBLE SEWER EXPANSION (73 EXISTING)	
59	0.90	LI	4	2		2	458	IP4	61	61	10	VACANT INDUSTRIAL LOT	
60	6.07	LI	4	14		14	3206	IP3	61	61	10	VACANT INDUSTRIAL LOT	
61	4.96	LI	4	11		11	2519	65A	61	61	10	VACANT INDUSTRIAL LOT	
62	2.61	LI	4	6		6	1374	65A	61	61	10	VACANT INDUSTRIAL LOT	
63	6.07	LI	4	14		14	3206	161	161	161	10	VACANT INDUSTRIAL LOT	
64	80.99	LI	4	134		134	30686	157	157	157	20	VACANT INDUSTRIAL LOT	
65	80.99	LI	4	134		134	30686	153	153	153	20	VACANT INDUSTRIAL LOT	
66	44.13	LI	4	97		97	22213	BP30	114	114	30	VACANT INDUSTRIAL LOT	
67	18.82	LI	4	41		41	9389	BR50	114	114	30	VACANT INDUSTRIAL LOT	
68	4.83	LI	4	11		11	2518	LCC3A	117	117	10	VACANT INDUSTRIAL LOT	
69	6.59	LI	4	15		15	3435	LCC2	117	117	10	VACANT INDUSTRIAL LOT	
70	53.68	LI	4	118		118	27022	C15	114	114	10	Vacant Industrial Lot (Same Parcel as 82)	
71	82.57	LI	4	181		181	41449	LR17	114	114	20	VACANT INDUSTRIAL LOT	
72	22.78	LI	4	50		50	11450	C22	114	114	30	Vacant Industrial Lot (Same Parcel as 75 and 80)	
73	8.00	LI	4	14		14	3206	LR17	114	114	30	VACANT INDUSTRIAL LOT	
74	19.45	LI	4	43		43	9847	LR17	114	114	30	VACANT INDUSTRIAL LOT	
75	See Parcel 72												Vacant Industrial Lot (Same Parcel as 72 and 80)
76	10.39	LI	4	23		23	5267	C22	114	114	20	VACANT INDUSTRIAL LOT	
77	8.62	LI	4	22		22	5038	LR24	114	114	20	VACANT INDUSTRIAL LOT	
79	1.31	LI	4	3		3	687	C22	114	114	10	VACANT INDUSTRIAL LOT	
80	See Parcel 72												Vacant Industrial Lot (Same Parcel as 72 and 75)
81	1.77	LI	4	4		4	916	C18	114	114	20	VACANT INDUSTRIAL LOT	
82	See Parcel 70												Vacant Industrial Lot (Same Parcel as 70)
83	17.81	LI	4	39		39	8831	C22	114	114	30	VACANT INDUSTRIAL LOT	
84	6.00	LI	4	14		14	3206	C22	114	114	30	VACANT INDUSTRIAL LOT	
85	9.69	LI	4	22		22	5038	LR17	114	114	30	VACANT INDUSTRIAL LOT	
86	5.20	LI	4	12		12	2748	LR17	114	114	20	VACANT INDUSTRIAL LOT	
87	13.52	LI	4	30		30	6870	LR17	114	114	10	VACANT INDUSTRIAL LOT	
88	205.02	LI, GI, HC	14	0	0	0	0	0	LR17	114	20	EXISTING LANDFILL WITH VACANT COMM. FRONTAGE	
89	0.00	LI	14	0	0	0	0	0			0	FLOODPLAIN AND BACKED BY RAISED RAILROAD	
90	113.01	LI	14	0	0	0	0	0			0	TOWNSHIP PARK	
91	10.48	LI	4	23		23	5267	A71	61	61	30	VACANT INDUSTRIAL LOT	
92	3.09	LI	4	7		7	1603	A71	61	61	30	VACANT INDUSTRIAL LOT	
93	139.93	LI	4	306		306	70074	A71	61	61	30	VACANT INDUSTRIAL LOT	

Act 537 Plan Amendment

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Exeter Township

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	Gross Area	Present Zoning	Projection Basis		Residential	Commercial	Industrial						
94	6.98	LI	4	14			14	3206	A71	61	30		VACANT INDUSTRIAL LOT
95	See Parcel 70												Vacant Industrial Lot (Same Parcel as 93)
96	8.64	LI	4	19			19	4351	A71	61	30		VACANT INDUSTRIAL LOT
97	6.98	LI	4	14			14	3206	A71	61	30		VACANT INDUSTRIAL LOT
98	31.91	SR1	14	0	0		0	0	EL1	61	0		TOWNSHIP OPEN SPACE AND LIBRARY
99	20.57	SCC	8	135			135	30915	A105	61	20		VACANT COMMERCIAL LOT
100	47.20	HC	3	218			218	49922	B58, E65	166	5	218	EXETER COMMONS SHOPPING CENTER
101	0.09	HC	3	1			1	229	CH91	166	20		VACANT COMMERCIAL LOT
102	8.00	HC	3	27			27	6183	BR44	166	20		VACANT COMMERCIAL LOT
103	2.15	HC	3	8			8	1832	BR64	166	20		VACANT COMMERCIAL LOT
104	10.87	HC	3	36			36	8244	BR42	166	30		VACANT COMMERCIAL LOT
105	14.48	SCC	8	95			95	21755	105	61	10		VACANT COMMERCIAL LOT
106	1.12	HC	3	4			4	916	A129	61	30		VACANT COMMERCIAL LOT
107	0.85	SCC	8	6			6	1374	102	61	10		VACANT COMMERCIAL LOT
108	2.36	HC	3	8			8	1832	B110	166	10		VACANT COMMERCIAL LOT
109	0.57	HC	3	2			2	458	B62A	166	10		VACANT COMMERCIAL LOT
110	0.32	HC	3	2			2	458	B62A	166	10		VACANT COMMERCIAL LOT
111	2.18	HC	3	8			8	1832	B47	166	20		VACANT COMMERCIAL LOT
112	Annexed to Developed Property												
113	Annexed to Developed Property												
114	1.20	HC	3	40			4	916	B43A	166	20		VACANT COMMERCIAL LOT
115	6.01	SCC	8	40			40	9160	SQ15	162A1	20		VACANT COMMERCIAL LOT
116	2.78	HC	3	10			10	2290	C131	140	10		VACANT COMMERCIAL LOT
117	0.45	HC	3	2			2	458	C172	145	20		VACANT COMMERCIAL LOT
118	1.70	HC	3	6			6	1374	C177	145	10		VACANT COMMERCIAL LOT
119	1.16	HC	3	4			4	916	C178	145	10		VACANT COMMERCIAL LOT
120	1.84	HC	3	7			7	1603	C185	145	10		VACANT COMMERCIAL LOT
121	1.37	HC	3	5			5	1145	C176	145	10		VACANT COMMERCIAL LOT
122	3.13	HC	3	11			11	2519	BP17	114	20		VACANT COMMERCIAL LOT
123	2.22	HC	3	8			8	1832	BP26	114	10		VACANT COMMERCIAL LOT
124	0.58	HC	3	2			2	458	BP26	114	10		VACANT COMMERCIAL LOT
125	0.20	HC	3	1			1	229	BP26	114	20		VACANT COMMERCIAL LOT
126	0.23	HC	3	1			1	229	BP17	114	20		VACANT COMMERCIAL LOT
127	0.24	HC	3	1			1	229	BP17	114	20		VACANT COMMERCIAL LOT
128	0.23	HC	3	1			1	229	BP37	114	10		VACANT COMMERCIAL LOT
129	0.35	HC	3	2			2	458	BP37	114	10		VACANT COMMERCIAL LOT
130	1.20	HC	3	4			4	916	PP39	114	20		VACANT COMMERCIAL LOT
131	4.25	HC	3	14			14	3206	PP36	114	20		VACANT COMMERCIAL LOT
132	7.37	HC	3	25			25	5725	CH89	114	20		VACANT COMMERCIAL LOT
133	15.91	HC	3	53			53	12137	CH87	114	20		VACANT COMMERCIAL LOT
134	0.36	HC	3	2			2	458	PP33	114	20		VACANT COMMERCIAL LOT
135	0.06	HC	3	1			1	229	CH88	114	20		VACANT COMMERCIAL LOT
136	0.28	HC	3	1			1	229	BR50	114	10		VACANT COMMERCIAL LOT
137	0.79	HC	3	3			3	687	BR47	114	10		VACANT COMMERCIAL LOT
RD1		HC	3	40			40		B42A	166	5		Possible Hotel Redevelopment

Act 537 Plan Amendment

Table A2

Exeter Township

Potential Development Parcel Summary - 5 Year Projection

Parcel Information		Potential EDUs	Collection System Connection Point	Interceptor Connection Point	COMMENTS
Parcel Designation	Gross Area (acres)				
15	0	74	GO1	193A	Glen Oley Farms (Dependent of Special Study)
16	109	35	FR6-4 (CC1)	193A	Central Catholic School Escrowed for Construction
19	105	30	FR2B-3	193A	EXETER ELEMENTARY SCHOOL
100	47	218	B58, EG5	166	EXETER COMMONS SHOPPING CENTER
RD1	0	40	B42A	166	Possible Hotel Redevelopment

Table A3

Exeter Township

Potential Development Parcel Summary - 10 Year Projection

Parcel Information		Potential EDUs	Collection System Connection Point	Interceptor Connection Point	COMMENTS
Parcel Designation	Gross Area (acres)				
13	10	30	FR93	193A	Residential
18	45	130	R159	171	Residential
22	32	74	C100, C104	C80	SOME SLOPE ISSUES, ~20%
23	80	163	C73	C73	STREAM WILL CAUSE LIMITATIONS
25	111	151	C132, C135	133	SOME COMMERCIAL AND FLOODPLAIN ~15%
28	8	22	EG18	190	Residential
35	20	59	B225, B244	208	Residential
37	15	45	A79	61	Residential
41	18	52	67	61	Residential
42	26	77	A189	60A	Residential
44	24	69	SV4	34	Residential
45	5	14	A6	24	Residential
47	21	62	B13	154	Residential
48	20	58	B13	154	Residential
49	62	134	130	130	SOME COMMERCIAL ZONED OR FLOOD PLAIN ~25%
55	64	185	BP2, BP48	114	Residential
56	5	0	C31	114	EXISTING INDUSTRIAL USE
59	1	2	IP4	61	VACANT INDUSTRIAL LOT
60	6	14	IP3	61	VACANT INDUSTRIAL LOT
61	5	11	65A	61	VACANT INDUSTRIAL LOT
62	3	6	65A	61	VACANT INDUSTRIAL LOT
63	6	14	161	161	VACANT INDUSTRIAL LOT
68	5	11	LCC3A	117	VACANT INDUSTRIAL LOT
69	7	15	LCC2	117	VACANT INDUSTRIAL LOT
70	54	118	C15	114	Vacant Industrial Lot (Same Parcel as 82)
79	1	3	C22	114	VACANT INDUSTRIAL LOT
87	14	30	LR17	114	VACANT INDUSTRIAL LOT
105	14	95	105	61	VACANT COMMERCIAL LOT
107	1	6	102	61	VACANT COMMERCIAL LOT
108	2	8	B110	166	VACANT COMMERCIAL LOT
109	1	2	B62A	166	VACANT COMMERCIAL LOT
110	0	2	B62A	166	VACANT COMMERCIAL LOT
116	3	10	C131	140	VACANT COMMERCIAL LOT
118	2	6	C177	145	VACANT COMMERCIAL LOT
119	1	4	C178	145	VACANT COMMERCIAL LOT
120	2	7	C185	145	VACANT COMMERCIAL LOT
121	1	5	C176	145	VACANT COMMERCIAL LOT
123	2	8	BP26	114	VACANT COMMERCIAL LOT
124	1	2	BP26	114	VACANT COMMERCIAL LOT
128	0	1	BP37	114	VACANT COMMERCIAL LOT
129	0	2	BP37	114	VACANT COMMERCIAL LOT
136	0	1	BR50	114	VACANT COMMERCIAL LOT
137	1	3	BR47	114	VACANT COMMERCIAL LOT

Table A4

Exeter Township

Potential Development Parcel Summary - 20 Year Projection

Parcel Information		Potential EDUs	Collection System Connection Point	Interceptor Connection Point	COMMENTS
Parcel Designation	Gross Area (acres)				
2	15	26	B333	232B	~40% FLOODPLAIN
6	65	190	B472	232B	CURRENT LOTS ARE NOT VACANT
7	8	23	B485	232B	Residential
8	3	10	FR12	193A	Residential
14	2	7	FR12	193A	Residential
17	582	466	C96	C80	APROX. 1/3 HAS SLOPE ISSUES
21	12	35	PV51	166	Residential
27	34	51	B458A	193A	SLOPE ISSUES FOR 50%+
29	5	15	HR40A	193A	Residential
36	7	21	B240	208	Residential
40	11	33	99	61	Residential
43	92	267	A32	34	Residential
51	8	24	V17	121	Residential
52	18	45	119	119	~15% FLOOD PLAIN
57	142	228	BR35	114	Residential
64	61	134	157	157	VACANT INDUSTRIAL LOT
65	61	134	153	153	VACANT INDUSTRIAL LOT
71	83	181	LR17	114	VACANT INDUSTRIAL LOT
76	10	23	C22	114	VACANT INDUSTRIAL LOT
77	10	22	LR24	114	VACANT INDUSTRIAL LOT
81	2	4	C18	114	VACANT INDUSTRIAL LOT
86	5	12	LR17	114	VACANT INDUSTRIAL LOT
88	205	0	LR17	114	EXISTING LANDFILL WITH VACANT COMM. FRONTAGE
99	21	135	A105	61	VACANT COMMERCIAL LOT
101	0	1	CH91	166	VACANT COMMERCIAL LOT
102	8	27	BR44	166	VACANT COMMERCIAL LOT
103	2	8	BR64	166	VACANT COMMERCIAL LOT
111	2	8	B47	166	VACANT COMMERCIAL LOT
114	1	40	B42A	166	VACANT COMMERCIAL LOT
115	6	40	SQ15	162A1	VACANT COMMERCIAL LOT
117	0	2	C172	145	VACANT COMMERCIAL LOT
122	3	11	BP17	114	VACANT COMMERCIAL LOT
125	0	1	BP26	114	VACANT COMMERCIAL LOT
126	0	1	BP17	114	VACANT COMMERCIAL LOT
127	0	1	BP17	114	VACANT COMMERCIAL LOT
130	1	4	PP39	114	VACANT COMMERCIAL LOT
131	4	14	PP36	114	VACANT COMMERCIAL LOT
132	7	25	CH89	114	VACANT COMMERCIAL LOT
133	16	53	CH87	114	VACANT COMMERCIAL LOT
134	0	2	PP33	114	VACANT COMMERCIAL LOT
135	0	1	CH88	114	VACANT COMMERCIAL LOT

Table A5

Exeter Township

Potential Development Parcel Summary - 30 Year Projection

Parcel Information		Potential EDUs	Collection System Connection Point	Interceptor Connection Point	COMMENTS
Parcel Designation	Gross Area (acres)				
31	19	0	191	191	UNUSABLE - FLOODPLAIN, SLOPES, WETLANDS
53	20	30	6	6	~50% FLOOD PLAIN
58	86	73	BR50	114	AREA FOR POSSIBLE SEWER EXPANSION (73 EXISTING)
66	44	97	BP30	114	VACANT INDUSTRIAL LOT
67	19	41	BR50	114	VACANT INDUSTRIAL LOT
72	23	50	C22	114	Vacant Industrial Lot (Same Parcel as 75 and 80)
73	6	14	LR17	114	VACANT INDUSTRIAL LOT
74	19	43	LR17	114	VACANT INDUSTRIAL LOT
83	18	39	C22	114	VACANT INDUSTRIAL LOT
84	6	14	C22	114	VACANT INDUSTRIAL LOT
85	10	22	LR17	114	VACANT INDUSTRIAL LOT
91	10	23	A71	61	VACANT INDUSTRIAL LOT
92	3	7	A71	61	VACANT INDUSTRIAL LOT
93	140	306	A71	61	VACANT INDUSTRIAL LOT
94	6	14	A71	61	VACANT INDUSTRIAL LOT
96	9	19	A71	61	VACANT INDUSTRIAL LOT
97	6	14	A71	61	VACANT INDUSTRIAL LOT
104	11	36	BR42	166	VACANT COMMERCIAL LOT
106	1	4	A129	61	VACANT COMMERCIAL LOT

Table A6
Exeter Township
Zoning Classification Flowrate Projection Basis

Projection Basis	Zoning Classification	Projected EDUs/gpd by Zoning Classification	Min. Lot Size (acres)
2	GI	2000.00 gpd per acre	5.00
3	HC	750.00 gpd per acre	0.23
4	LI	500.00 gpd per acre	2.00
5	NC	500.00 gpd per acre	0.28
6	R	0.80 EDUs per acre	1.00
7	RC	0.27 EDUs per acre	3.00
8	SCC	1500.00 gpd per acre	3.00
9	SR0	1.60 EDUs per acre	0.50
10	SR1	2.90 EDUs per acre	0.28
11	SR2	2.90 EDUs per acre	0.28
12	SR3	2.90 EDUs per acre	0.28
13	UR	2.90 EDUs per acre	0.28
14		No potential Development, restricted or permanent open space, Township parks, and churches or cemeteries	
15	0.00	74.00 GO1	
16		Gross area reduced by 15% for floodplains	193A
17		Gross area reduced by 25% for floodplains	
18		Gross area reduced by 30% for floodplains	
19		Gross area reduced by 40% for floodplains	
20		Gross area reduced by 50% for floodplains	
21		Gross area reduced by 20% for steep slopes	
22		Gross area reduced by 50% for steep slopes	

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pipe Capacity Failures by Year

System Information										Base	5 Year	10 Year	20 Year	30 Year	Projected
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
Antietam Creek Trunk (232B to 166)															
232B	232A	15		116.83	0.0073	1.227	0.313	0.013	3.569	1.029	1.029	1.050	1.215	1.215	PASS
232A	232	15		98.78	0.0016	1.227	0.313	0.013	1.672	1.029	1.029	1.050	1.215	1.215	PASS
23W	22W	12	VCP	130.00	0.0100	0.785	0.250	0.013	2.301	1.029	1.029	1.050	1.215	1.215	PASS
22W	21W	12	VCP	333.00	0.0050	0.785	0.250	0.013	1.627	1.029	1.029	1.050	1.215	1.215	PASS
21W	20W	12	VCP	402.00	0.0050	0.785	0.250	0.013	1.627	1.029	1.029	1.050	1.215	1.215	PASS
20W	19W	12	VCP	199.57	0.0224	0.785	0.250	0.013	3.441	1.029	1.029	1.050	1.215	1.215	PASS
19W	18W	12	VCP	341.19	0.0050	0.785	0.250	0.013	1.627	1.029	1.029	1.050	1.215	1.215	PASS
18W	17W	12	VCP	86.50	0.0150	0.785	0.250	0.013	2.819	1.029	1.029	1.050	1.215	1.215	PASS
7W	16.1W	12	VCP	122.80	0.0240	0.785	0.250	0.013	3.565	1.029	1.029	1.050	1.215	1.215	PASS
16.1W	16W	12	VCP	52.00	0.0240	0.785	0.250	0.013	3.565	1.029	1.029	1.050	1.215	1.215	PASS
16W	15.05W	12	VCP	144.47	0.0100	0.785	0.250	0.013	2.301	1.029	1.029	1.050	1.215	1.215	PASS
15.05W	15W	12	VCP	68.95	0.0100	0.785	0.250	0.013	2.301	1.029	1.029	1.050	1.215	1.215	PASS
15W	219B	12	VCP	138.14	0.0050	0.785	0.250	0.013	1.627	1.029	1.029	1.050	1.215	1.215	PASS
219B	219A	12		273.72	0.0144	0.785	0.250	0.013	2.762	2.264	2.264	2.285	2.450	2.450	PASS
219A	219	12		36.07	0.0144	0.785	0.250	0.013	2.762	2.264	2.264	2.285	2.450	2.450	PASS
219	218	18	SaniTiteHP	271.99	0.7500	1.766	0.375	0.011	69.449	2.305	2.305	2.326	2.491	2.491	PASS
218	217	18	SaniTiteHP	400.00	0.5700	1.766	0.375	0.011	60.544	2.305	2.305	2.326	2.491	2.491	PASS
217	216	18	SaniTiteHP	93.54	0.4800	1.766	0.375	0.011	55.559	2.305	2.305	2.326	2.491	2.491	PASS
216	215	18	SaniTiteHP	340.80	0.5400	1.766	0.375	0.011	58.929	2.305	2.305	2.326	2.491	2.491	PASS
215	214	18	SaniTiteHP	330.08	0.6100	1.766	0.375	0.011	62.632	2.305	2.305	2.326	2.491	2.491	PASS
214	213	18	SaniTiteHP	45.00	5.0000	1.766	0.375	0.011	179.316	2.305	2.305	2.326	2.491	2.491	PASS
213	213A	18	SaniTiteHP	50.00	5.4600	1.766	0.375	0.011	187.383	2.305	2.305	2.326	2.491	2.491	PASS
213A	212	18	SaniTiteHP	202.78	0.9800	1.766	0.375	0.011	79.386	2.305	2.305	2.326	2.491	2.491	PASS
212	211	18	SaniTiteHP	189.56	0.5500	1.766	0.375	0.011	59.472	2.305	2.305	2.326	2.491	2.491	PASS
211	210	18	SaniTiteHP	172.00	0.5400	1.766	0.375	0.011	58.929	2.305	2.305	2.326	2.491	2.491	PASS
210	209	18	SaniTiteHP	296.68	0.5400	1.766	0.375	0.011	58.929	2.459	2.459	2.480	2.645	2.645	PASS
209	208	18	SaniTiteHP	239.50	0.5600	1.766	0.375	0.011	60.011	2.459	2.459	2.480	2.645	2.645	PASS
208	207	18	SaniTiteHP	255.19	0.8000	1.766	0.375	0.011	71.726	2.521	2.521	2.584	2.764	2.764	PASS
207	206	18	SaniTiteHP	294.81	0.8100	1.766	0.375	0.011	72.173	2.521	2.521	2.584	2.764	2.764	PASS
206	205	18	SaniTiteHP	316.55	0.8200	1.766	0.375	0.011	72.617	2.521	2.521	2.584	2.764	2.764	PASS
205	204	18	SaniTiteHP	349.51	0.8500	1.766	0.375	0.011	73.934	2.521	2.521	2.584	2.764	2.764	PASS

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pipe Capacity Failures by Year

System Information										Base	5 Year	10 Year	20 Year	30 Year	Projected
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
204	203	18		158.25	0.0063	1.767	0.376	0.013	5.398	2.583	2.583	2.646	2.826	2.826	PASS
203	202	18		175.69	0.0063	1.767	0.376	0.013	5.398	2.583	2.583	2.646	2.826	2.826	PASS
202	201	18		242.41	0.0062	1.767	0.376	0.013	5.355	2.850	2.850	2.913	3.093	3.093	PASS
201	200	18		382.59	0.0040	1.767	0.376	0.013	4.301	2.850	2.850	2.913	3.093	3.093	PASS
200	199	18		374.89	0.0040	1.767	0.376	0.013	4.301	2.850	2.850	2.913	3.093	3.093	PASS
199	198	18		329.24	0.0121	1.767	0.376	0.013	7.481	2.850	2.850	2.913	3.093	3.093	PASS
198	197	18		370.87	0.0067	1.767	0.376	0.013	5.566	2.912	2.912	2.975	3.155	3.155	PASS
197	196	18		365.98	0.0067	1.767	0.376	0.013	5.566	2.912	2.912	2.975	3.155	3.155	PASS
196	195	18		399.95	0.0067	1.767	0.376	0.013	5.566	2.912	2.912	2.975	3.155	3.155	PASS
195	194	18		334.07	0.0067	1.767	0.376	0.013	5.566	2.912	2.912	2.975	3.155	3.155	PASS
194	193A	18		100.00	0.0063	1.767	0.376	0.013	5.398	2.912	2.912	2.975	3.155	3.155	PASS
193A	193	21		208.16	0.0061	2.405	0.438	0.013	8.003	4.384	4.480	4.564	4.804	4.804	PASS
193	192	21		399.82	0.0081	2.405	0.438	0.013	9.223	4.384	4.480	4.564	4.804	4.804	PASS
192	191	20 DIP (C.50)		412.49	0.0035	2.181	0.417	0.013	5.321	4.384	4.480	4.564	4.804	4.804	PASS
191	190A	20 DIP (C.50)		236.55	0.0062	2.181	0.417	0.013	7.081	4.384	4.480	4.564	4.804	4.804	PASS
Parallel Sewer 190A to 179 (assume 50% of inflow)															
190A	190	18		129.90	0.0051	1.767	0.376	0.013	4.856	2.192	2.240	2.282	2.402	2.402	PASS
190	189A	18		130.00	0.0280	1.767	0.376	0.013	11.379	2.243	2.291	2.351	2.471	2.471	PASS
189A	189	18		223.00	0.0050	1.767	0.376	0.013	4.809	2.243	2.291	2.351	2.471	2.471	PASS
189	188	18		216.00	0.0053	1.767	0.376	0.013	4.951	2.243	2.291	2.351	2.471	2.471	PASS
188	187A	18		260.00	0.0047	1.767	0.376	0.013	4.662	2.243	2.291	2.351	2.471	2.471	PASS
187A	187	18		34.00	0.0050	1.767	0.376	0.013	4.809	2.243	2.291	2.351	2.471	2.471	PASS
187	186A	18		75.00	0.0050	1.767	0.376	0.013	4.809	2.243	2.291	2.351	2.471	2.471	PASS
186A	186	18		354.00	0.0053	1.767	0.376	0.013	4.951	2.254	2.302	2.362	2.482	2.482	PASS
186	185	18		30.00	0.0050	1.767	0.376	0.013	4.809	2.254	2.302	2.362	2.482	2.482	PASS
185	184	18		263.00	0.0050	1.767	0.376	0.013	4.809	2.254	2.302	2.362	2.482	2.482	PASS
184	183	18		250.00	0.0050	1.767	0.376	0.013	4.809	2.254	2.302	2.362	2.482	2.482	PASS
183	182	18		394.00	0.0050	1.767	0.376	0.013	4.809	2.254	2.302	2.362	2.482	2.482	PASS
182	181	18		88.00	0.0050	1.767	0.376	0.013	4.809	2.387	2.435	2.495	2.615	2.615	PASS
181	180	18		264.00	0.0050	1.767	0.376	0.013	4.809	2.387	2.435	2.495	2.615	2.615	PASS
180	179	18 CIC		97.13	0.0030	1.767	0.376	0.013	3.725	2.387	2.435	2.495	2.615	2.615	PASS
Parallel Sewer 190A to 179 (assume 50% of inflow)															

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pipe Capacity Failures by Year

System Information										Base	5 Year	10 Year	20 Year	30 Year	Projected
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure @ 100%
190A	179G	16	DIP (C.50)	162.08	0.0149	1.396	0.334	0.013	6.060	2.192	2.240	2.282	2.402	2.402	PASS
179G	GM-4A	15		220.11	0.0038	1.227	0.313	0.013	2.576	2.192	2.240	2.282	2.402	2.402	PASS
GM-4A	GM-4	15		126.04	0.0047	1.227	0.313	0.013	2.865	2.192	2.240	2.282	2.402	2.402	PASS
GM-4	GM-3	15		69.91	0.0047	1.227	0.313	0.013	2.865	2.202	2.250	2.292	2.412	2.412	PASS
GM-3	GM-2	15		222.96	0.0067	1.227	0.313	0.013	3.420	2.202	2.250	2.292	2.412	2.412	PASS
GM-2	GM-1A	15		92.65	0.0047	1.227	0.313	0.013	2.865	2.202	2.250	2.292	2.412	2.412	PASS
GM-1A	179F	15		257.07	0.0051	1.227	0.313	0.013	2.984	2.202	2.250	2.292	2.412	2.412	PASS
179F	179E	15		170.52	0.0286	1.227	0.313	0.013	7.067	2.284	2.332	2.374	2.494	2.494	PASS
179E	179D	18	DIP (C.50)	193.22	0.0031	1.767	0.376	0.013	3.786	2.284	2.332	2.374	2.494	2.494	PASS
179D	179C	18		202.79	0.0012	1.766	0.375	0.013	2.351	2.284	2.332	2.374	2.494	2.494	10 Year
179C	179B	18		251.01	0.0038	1.767	0.376	0.013	4.192	2.284	2.332	2.374	2.494	2.494	PASS
179B	179A	18		420.02	0.0012	1.766	0.375	0.013	2.351	2.284	2.332	2.374	2.494	2.494	10 Year
179A	179	18	DIP (C.50)	80.21	0.0021	1.767	0.376	0.013	3.116	2.284	2.332	2.374	2.494	2.494	PASS
179	178	27		291.52	0.0038	3.975	0.563	0.013	12.343	4.672	4.768	4.870	5.110	5.110	PASS
178	177	27		275.60	0.0022	3.975	0.563	0.013	9.391	4.682	4.778	4.880	5.120	5.120	PASS
177	176	27		366.36	0.0042	3.975	0.563	0.013	12.976	4.682	4.778	4.880	5.120	5.120	PASS
176	175A	27		99.23	0.0305	3.975	0.563	0.013	34.968	4.682	4.778	4.880	5.120	5.120	PASS
175A	175	27		103.80	0.0030	3.975	0.563	0.013	10.967	4.682	4.778	4.880	5.120	5.120	PASS
175	174B	27		227.00	0.0019	3.975	0.563	0.013	8.728	4.682	4.778	4.880	5.120	5.120	PASS
174B	174A	27		126.20	0.0031	3.975	0.563	0.013	11.148	4.682	4.778	4.880	5.120	5.120	PASS
174A	174	27		205.10	0.0012	3.975	0.563	0.013	6.936	4.682	4.778	4.880	5.120	5.120	PASS
174	173B	27		105.09	0.0014	3.975	0.563	0.013	7.492	4.682	4.778	4.880	5.120	5.120	PASS
173B	173A	27		146.85	0.0023	3.975	0.563	0.013	9.602	4.682	4.778	4.880	5.120	5.120	PASS
173A	173A1	27		73.88	0.0032	3.975	0.563	0.013	11.326	4.682	4.778	4.880	5.120	5.120	PASS
173A1	173	27		139.98	0.0051	3.975	0.563	0.013	14.299	4.682	4.778	4.880	5.120	5.120	PASS
173	172A	27		278.41	0.0019	3.975	0.563	0.013	8.728	4.682	4.778	4.880	5.120	5.120	PASS
172A	172	27		97.51	0.0021	3.975	0.563	0.013	9.175	4.682	4.778	4.880	5.120	5.120	PASS
172	171	27		275.31	0.0013	3.975	0.563	0.013	7.219	4.744	4.840	4.942	5.182	5.182	PASS
171	170A	27		244.64	0.0016	3.975	0.563	0.013	8.009	4.754	4.850	5.042	5.282	5.282	PASS
170A	170	27		307.23	0.0021	3.975	0.563	0.013	9.175	4.754	4.850	5.042	5.282	5.282	PASS
170	169	27		66.30	0.0400	3.975	0.563	0.013	40.045	4.754	4.850	5.042	5.282	5.282	PASS
169	168	27		130.77	0.0167	3.975	0.563	0.013	25.875	4.754	4.850	5.042	5.282	5.282	PASS

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Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pipe Capacity Failures by Year

System Information										Base	5 Year	10 Year	20 Year	30 Year	Projected
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
168	167A	27		228.41	0.0208	3.975	0.563	0.013	28.877	4.785	4.881	5.073	5.313	5.313	PASS
167A	167	21		10.00	0.0146	2.405	0.438	0.013	12.383	4.785	4.881	5.073	5.313	5.313	PASS
167	166	18		121.21	0.0039	1.766	0.375	0.013	4.238	4.785	4.881	5.073	5.313	5.313	5 Year
167A	166A	18		132.25	0.0049	1.766	0.375	0.013	4.750	4.785	4.881	5.073	5.313	5.313	5 Year
166A	166	18		10.00	0.0050	1.766	0.375	0.013	4.798	4.785	4.881	5.073	5.313	5.313	5 Year

Antietam Creek Trunk (166 to 15)

166	164A	27 RCP		484.16	0.0051	3.975	0.563	0.013	14.299	5.392	5.638	5.839	6.163	6.190	PASS
164A	164	27 RCP		136.61	0.0042	3.975	0.563	0.013	12.976	5.392	5.638	5.839	6.163	6.190	PASS
164	163	27 RCP		388.74	0.0033	3.975	0.563	0.013	11.502	5.392	5.638	5.839	6.163	6.190	PASS
163	162A	27 RCP		135.80	0.0076	3.975	0.563	0.013	17.455	5.392	5.638	5.839	6.163	6.190	PASS
162A	162A1	27 RCP		169.64	0.0069	3.975	0.563	0.013	16.632	5.649	5.895	6.096	6.420	6.447	PASS
162A1	162	27 RCP		122.00	0.0055	3.975	0.563	0.013	14.849	5.732	5.978	6.179	6.533	6.560	PASS
162	161	27 RCP		401.13	0.0066	3.975	0.563	0.013	16.266	5.732	5.978	6.179	6.533	6.560	PASS
161	160	27 RCP		423.26	0.0071	3.975	0.563	0.013	16.871	5.732	5.978	6.191	6.545	6.572	PASS
160	159	27 RCP		376.24	0.0063	3.975	0.563	0.013	15.892	5.732	5.978	6.191	6.545	6.572	PASS
159	158A1	27 RCP		297.92	0.0054	3.975	0.563	0.013	14.713	5.732	5.978	6.191	6.545	6.572	PASS
158A1	157	27 RCP		453.64	0.0075	3.975	0.563	0.013	17.340	5.732	5.978	6.191	6.545	6.572	PASS
157	156	27 RCP		149.92	0.0046	3.975	0.563	0.013	13.580	5.742	5.988	6.201	6.648	6.675	PASS
156	155	27 RCP		100.00	0.0053	3.975	0.563	0.013	14.577	5.742	5.988	6.201	6.648	6.675	PASS
155	154	27 RCP		267.45	0.0047	3.975	0.563	0.013	13.727	5.742	5.988	6.201	6.648	6.675	PASS
154	153	27 RCP		327.70	0.0042	3.975	0.563	0.013	12.976	5.752	5.998	6.295	6.742	6.769	PASS
153	152	27 RCP		351.13	0.0030	3.975	0.563	0.013	10.967	5.752	5.998	6.295	6.835	6.862	PASS
152	151	27 RCP		352.39	0.0054	3.975	0.563	0.013	14.713	5.752	5.998	6.295	6.835	6.862	PASS
151	150	27 RCP		315.84	0.0038	3.975	0.563	0.013	12.343	5.752	5.998	6.295	6.835	6.862	PASS
150	149	27 RCP		364.08	0.0040	3.975	0.563	0.013	12.663	5.752	5.998	6.295	6.835	6.862	PASS
149	148	27 RCP		182.50	0.0051	3.975	0.563	0.013	14.299	5.752	5.998	6.295	6.835	6.862	PASS
148	147	27 RCP		182.56	0.0131	3.975	0.563	0.013	22.917	5.752	5.998	6.295	6.835	6.862	PASS
Parallel Sewer 147- 146															
147	146	18 DIP		210.00	0.0049	1.767	0.376	0.013	4.760	2.876	2.999	3.148	3.418	3.431	PASS
Parallel to 147- 146, 54" Encasing Pipe Under RR Track 146A2- 146A1															

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Exeter Township, Berks County

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	System Information						Pipe Capacity MGD	Base	5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%
				Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Projected Peak Daily Flow MGD		Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
147	146A2	21	DIP	10.35	0.0048	2.405	0.438	0.013	7.100	2.876	2.999	3.148	3.418	3.431	PASS	
146A2	146A1	20	DIP	222.77	0.0056	2.181	0.417	0.013	6.730	2.876	2.999	3.148	3.418	3.431	PASS	
146A1	146	21	DIP	10.35	0.0058	2.405	0.438	0.013	7.804	2.876	2.999	3.148	3.418	3.431	PASS	
146	15	27	RCP	216.64	0.0039	3.975	0.563	0.013	12.504	5.752	5.998	6.295	6.835	6.862	PASS	

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
Schuylkill River Trunk (61 to 15)															
61	60A	15		141.11	0.0070	1.227	0.313	0.013	3.496	1.852	1.852	2.014	2.131	2.401	PASS
60A	60	15		187.40	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
60	59	15		350.00	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
59	58	15		342.56	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
58	57	15		367.10	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
57	56A	15		300.00	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
56A	56	16		100.00	0.0018	1.396	0.334	0.013	2.106	1.893	1.893	2.109	2.226	2.496	10 Year
56	55	15		286.14	0.0018	1.227	0.313	0.013	1.772	1.893	1.893	2.109	2.226	2.496	5 Year
55	54	15		294.19	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
54	53	15		397.05	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
53	52	15		326.67	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
52	51	15		283.40	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
51	50	15		233.43	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
50	49	15		266.57	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
49	48	15		277.45	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
48	47	15		222.55	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
47	46	15		216.68	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
46	45	15		233.32	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
45	44	15		201.35	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
44	43	15		323.15	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
43	42	15		191.85	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
42	41	15		279.11	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
41	40	15		345.54	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
40	39	15		330.30	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
39	38	15		219.70	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
38	37	15		225.74	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
37	36	15		274.26	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
36	35	15		231.70	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
35	34	15		235.65	0.0015	1.227	0.313	0.013	1.618	1.893	1.893	2.109	2.226	2.496	5 Year
34	33	15		282.65	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year

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Exeter Township, Berks County

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
33	32	15		308.00	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
32	31	15		342.00	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
31	30	15		350.00	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
30	29	15		313.45	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
29	28	15		286.55	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
28	27	15		275.85	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
27	26	15		375.32	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
26	25	15		145.47	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
25	24	15		295.28	0.0015	1.227	0.313	0.013	1.618	2.624	2.624	2.888	3.191	3.461	5 Year
24	23	15		282.43	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
23	22	15		225.65	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
22	21	15		275.50	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
21	20	15		274.50	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
20	19	15		271.90	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
19	18	15		378.10	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
18	17	15		376.20	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
17	16	15		323.80	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
16	15	15		281.75	0.0015	1.227	0.313	0.013	1.618	3.190	3.190	3.466	3.769	4.039	5 Year
Schuylkill River Trunk (15 to Pumping Station)															
15	14	30	CIP	222.81	0.0010	4.906	0.625	0.013	8.379	8.942	9.188	9.761	10.604	10.901	5 Year
14	13	30	RCP	410.78	0.0010	4.906	0.625	0.013	8.379	8.952	9.198	9.771	10.614	10.911	5 Year
13	12	30	RCP	249.66	0.0010	4.906	0.625	0.013	8.379	8.952	9.198	9.771	10.614	10.911	5 Year
12	11	30	RCP	473.87	0.0010	4.906	0.625	0.013	8.379	8.952	9.198	9.771	10.614	10.911	5 Year
11	10	30	RCP	486.97	0.0010	4.906	0.625	0.013	8.379	8.952	9.198	9.771	10.614	10.911	5 Year
10	9	30	RCP	438.79	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.922	5 Year
9	8	30	RCP	375.07	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.922	5 Year
8	7	30	RCP	310.30	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.922	5 Year
7	6	30	RCP	351.54	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.922	5 Year
6	5	30	RCP	486.73	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.943	5 Year
5	4	30	RCP	477.53	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.943	5 Year

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
4	3	30	RCP	309.08	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.943	5 Year
3	2	30	RCP	356.50	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.943	5 Year
2	1	30	RCP	306.00	0.0010	4.906	0.625	0.013	8.379	8.963	9.209	9.782	10.625	10.943	5 Year
1	P.S.	30	CIP	68.50	0.0019	4.906	0.625	0.013	11.549	8.963	9.209	9.782	10.625	10.943	PASS

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Heisters Creek Trunk (C80 to 111)															
C80	C79	8		202.23	0.0242	0.349	0.167	0.013	1.216	0.086	0.086	0.137	0.461	0.461	PASS
C79	C78	8		224.96	0.0355	0.349	0.167	0.013	1.473	0.086	0.086	0.137	0.461	0.461	PASS
C78	C77	8		187.54	0.0110	0.349	0.167	0.013	0.820	0.086	0.086	0.137	0.461	0.461	PASS
C77	C76	8		212.46	0.0040	0.349	0.167	0.013	0.495	0.086	0.086	0.137	0.461	0.461	PASS
C76	C75	8		238.52	0.0174	0.349	0.167	0.013	1.031	0.086	0.086	0.137	0.461	0.461	PASS
C75	C74	8		387.25	0.0076	0.349	0.167	0.013	0.682	0.086	0.086	0.137	0.461	0.461	PASS
C74	C73	8		396.22	0.0163	0.349	0.167	0.013	0.998	0.086	0.086	0.137	0.461	0.461	PASS
C73	C72	8		175.00	0.0040	0.349	0.167	0.013	0.494	0.086	0.086	0.251	0.575	0.575	20 Year
C72	C71	8		254.09	0.0050	0.349	0.167	0.013	0.553	0.086	0.086	0.251	0.575	0.575	20 Year
C71	C70	8		250.45	0.0159	0.349	0.167	0.013	0.986	0.086	0.086	0.251	0.575	0.575	PASS
C70	C69	8		109.06	0.0040	0.349	0.167	0.013	0.494	0.115	0.115	0.280	0.604	0.604	20 Year
C69	C68	8		320.40	0.0047	0.349	0.167	0.013	0.536	0.115	0.115	0.280	0.604	0.604	20 Year
C68	C67	8		218.43	0.0087	0.349	0.167	0.013	0.729	0.331	0.331	0.496	0.820	0.820	20 Year
C67	C66	8		399.45	0.0040	0.349	0.167	0.013	0.494	0.383	0.383	0.548	0.872	0.872	10 Year
C66	C65	8		299.02	0.0040	0.349	0.167	0.013	0.494	0.383	0.383	0.548	0.872	0.872	10 Year
C65	C64	8 CIP		54.10	0.0041	0.349	0.167	0.013	0.500	0.383	0.383	0.548	0.872	0.872	10 Year
C64	140	8		20.57	0.0044	0.349	0.167	0.013	0.518	0.435	0.435	0.600	0.924	0.924	10 Year
140	139	8 CIP		73.43	0.0148	0.349	0.167	0.013	0.951	0.487	0.487	0.661	0.985	0.985	20 Year
139	138	8		128.20	0.0148	0.349	0.167	0.013	0.951	0.487	0.487	0.661	0.985	0.985	20 Year
138	137	8		163.64	0.0062	0.349	0.167	0.013	0.615	0.487	0.487	0.661	0.985	0.985	10 Year
137	136	8		262.68	0.0169	0.349	0.167	0.013	1.016	0.487	0.487	0.661	0.985	0.985	PASS
136	134	8		285.66	0.0060	0.349	0.167	0.013	0.605	0.487	0.487	0.661	0.985	0.985	10 Year
134	133	8 CIP		141.06	0.0060	0.349	0.167	0.013	0.605	0.487	0.487	0.661	0.985	0.985	10 Year
133	132	10		236.52	0.0035	0.545	0.209	0.013	0.839	0.746	0.746	1.025	1.349	1.349	10 Year
132	131	10		282.24	0.0035	0.545	0.209	0.013	0.839	0.746	0.746	1.025	1.349	1.349	10 Year
131	130	10		288.06	0.0035	0.545	0.209	0.013	0.839	0.772	0.772	1.051	1.375	1.375	10 Year
130	129	10		246.94	0.0121	0.545	0.209	0.013	1.560	0.772	0.772	1.144	1.468	1.468	PASS
129	128	10		93.62	0.0035	0.545	0.209	0.013	0.839	0.772	0.772	1.144	1.468	1.468	10 Year
128	127	10		271.38	0.0035	0.545	0.209	0.013	0.839	0.824	0.824	1.196	1.520	1.520	10 Year
127	126	10		141.87	0.0035	0.545	0.209	0.013	0.839	0.850	0.850	1.222	1.546	1.546	5 Year
126	125	10		134.35	0.0035	0.545	0.209	0.013	0.839	0.850	0.850	1.222	1.546	1.546	5 Year

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Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pipe Capacity Failures by Year

System Information										Base	5 Year	10 Year	20 Year	30 Year	Projected
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Capacity Failure @ 100%
125	124	10		143.78	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.575	1.575	5 Year
124	123	10		286.10	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.575	1.575	5 Year
123	122	10		143.90	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.575	1.575	5 Year
122	121	10		286.28	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.575	1.575	5 Year
121	120	10		263.72	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.593	1.593	5 Year
120	119	10		222.37	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.593	1.593	5 Year
119	118	10	CIP	338.66	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.626	1.626	5 Year
118	117	10		79.97	0.0035	0.545	0.209	0.013	0.839	0.879	0.879	1.251	1.626	1.626	5 Year
117	116	10		109.00	0.0039	0.545	0.209	0.013	0.886	1.008	1.008	1.401	1.776	1.776	5 Year
116	115	10		300.00	0.0040	0.545	0.209	0.013	0.897	1.008	1.008	1.401	1.776	1.776	5 Year
115	114	10		335.39	0.0040	0.545	0.209	0.013	0.897	1.008	1.008	1.401	1.776	1.776	5 Year
114	113	10		324.67	0.0040	0.545	0.209	0.013	0.897	1.325	1.325	1.964	2.744	3.017	5 Year
113	112	16	CIP	189.94	0.0022	1.396	0.334	0.013	2.328	1.441	1.441	2.080	2.860	3.133	20 Year
112	111	15		143.00	0.0022	1.227	0.313	0.013	1.959	1.441	1.441	2.080	2.860	3.133	10 Year

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

5 Year Pipe Replacement

System Information										5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%	New Pipe Capacity Check @ 90%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
		20	SaniTiteHP			2.181	0.417	0.011	#VALUE!						#VALUE!
		20	SaniTiteHP			2.181	0.417	0.011	#VALUE!						#VALUE!
167	166	20	SaniTiteHP	121.21	0.0039	2.181	0.417	0.011	6.636	4.785	4.881	5.073	5.313	5 Year	PASS
167A	166A	20	SaniTiteHP	132.25	0.0049	2.181	0.417	0.011	7.438	4.785	4.881	5.073	5.313	5 Year	PASS
166A	166	20	SaniTiteHP	10	0.005	2.181	0.417	0.011	7.514	4.785	4.881	5.073	5.313	5 Year	PASS
30A	60	18	SaniTiteHP	187.4	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
0	59	18	SaniTiteHP	350	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
39	58	18	SaniTiteHP	342.56	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
58	57	18	SaniTiteHP	367.1	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
57	56A	18	SaniTiteHP	300	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
56	55	18	SaniTiteHP	286.14	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	5 Year	PASS
55	54	18	SaniTiteHP	294.19	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
54	53	18	SaniTiteHP	397.05	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
53	52	18	SaniTiteHP	326.67	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
52	51	18	SaniTiteHP	283.4	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
51	50	18	SaniTiteHP	233.43	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
50	49	18	SaniTiteHP	266.57	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
49	48	18	SaniTiteHP	277.45	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
48	47	18	SaniTiteHP	222.55	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
47	46	18	SaniTiteHP	216.68	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
46	45	18	SaniTiteHP	233.32	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
45	44	18	SaniTiteHP	201.35	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
44	43	18	SaniTiteHP	323.15	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
43	42	18	SaniTiteHP	191.85	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
42	41	18	SaniTiteHP	279.11	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
41	40	18	SaniTiteHP	345.54	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
40	39	18	SaniTiteHP	330.3	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS

Sewer Capacity Evaluation
Exeter Township Major Trunk Sewers
Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
Exeter Township, Berks County

5 Year Pipe Replacement

System Information										5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%	New Pipe Capacity Check @ 90%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
39	38	18	SaniTiteHP	219.7	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
38	37	18	SaniTiteHP	225.74	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
37	36	18	SaniTiteHP	274.26	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
36	35	18	SaniTiteHP	231.7	0.0015	1.766	0.375	0.011	3.106	1.893	1.893	2.109	2.226	5 Year	PASS
35	34	20	SaniTiteHP	235.65	0.0015	2.181	0.417	0.011	4.116	1.893	1.893	2.109	2.226	5 Year	PASS
34	33	20	SaniTiteHP	282.65	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
33	32	20	SaniTiteHP	308	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
32	31	20	SaniTiteHP	342	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
31	30	20	SaniTiteHP	350	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
30	29	20	SaniTiteHP	313.45	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
29	28	20	SaniTiteHP	286.55	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
28	27	20	SaniTiteHP	275.85	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
27	26	20	SaniTiteHP	375.32	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
26	25	20	SaniTiteHP	145.47	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
25	24	20	SaniTiteHP	295.28	0.0015	2.181	0.417	0.011	4.116	2.624	2.624	2.888	3.191	5 Year	PASS
24	23	24	SaniTiteHP	282.43	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
23	22	24	SaniTiteHP	225.65	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
22	21	24	SaniTiteHP	275.5	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
21	20	24	SaniTiteHP	274.5	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
20	19	24	SaniTiteHP	271.9	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
19	18	24	SaniTiteHP	378.1	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
18	17	24	SaniTiteHP	376.2	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
17	16	24	SaniTiteHP	323.8	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
16	15	24	SaniTiteHP	281.75	0.0015	3.140	0.500	0.011	6.689	3.190	3.190	3.466	3.769	5 Year	PASS
15	14	36	SaniTiteHP	222.81	0.001	7.065	0.750	0.011	16.102	8.942	9.188	9.761	10.604	5 Year	PASS
14	13	36	SaniTiteHP	410.78	0.001	7.065	0.750	0.011	16.102	8.952	9.198	9.771	10.614	5 Year	PASS
13	12	36	SaniTiteHP	249.66	0.001	7.065	0.750	0.011	16.102	8.952	9.198	9.771	10.614	5 Year	PASS

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

5 Year Pipe Replacement

System Information										5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%	New Pipe Capacity Check @ 90%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
12	11	36	SaniTiteHP	473.87	0.001	7.065	0.750	0.011	16.102	8.952	9.198	9.771	10.614	5 Year	PASS
11	10	36	SaniTiteHP	486.97	0.001	7.065	0.750	0.011	16.102	8.952	9.198	9.771	10.614	5 Year	PASS
10	9	36	SaniTiteHP	438.79	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
9	8	36	SaniTiteHP	375.07	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
8	7	36	SaniTiteHP	310.3	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
7	6	36	SaniTiteHP	351.54	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
6	5	36	SaniTiteHP	496.73	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
5	4	36	SaniTiteHP	477.53	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
4	3	36	SaniTiteHP	309.08	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
3	2	36	SaniTiteHP	356.5	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
2	1	36	SaniTiteHP	306	0.001	7.065	0.750	0.011	16.102	8.963	9.209	9.782	10.625	5 Year	PASS
127	126	14	SDR35	141.87	0.0035	1.068	0.292	0.011	2.429	0.850	0.850	1.222	1.546	5 Year	PASS
126	125	14	SDR35	134.35	0.0035	1.068	0.292	0.011	2.429	0.850	0.850	1.222	1.546	5 Year	PASS
125	124	14	SDR35	143.78	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.575	5 Year	PASS
124	123	14	SDR35	286.1	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.575	5 Year	PASS
123	122	14	SDR35	143.9	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.575	5 Year	PASS
122	121	14	SDR35	286.28	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.575	5 Year	PASS
121	120	14	SDR35	263.72	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.593	5 Year	PASS
120	119	14	SDR35	222.37	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.593	5 Year	PASS
119	118	14	SDR35	338.66	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.626	5 Year	PASS
118	117	14	SDR35	79.97	0.0035	1.068	0.292	0.011	2.429	0.879	0.879	1.251	1.626	5 Year	PASS
117	116	14	SDR35	109	0.0039	1.068	0.292	0.011	2.564	1.008	1.008	1.401	1.776	5 Year	PASS
116	115	14	SDR35	300	0.004	1.068	0.292	0.011	2.597	1.008	1.008	1.401	1.776	5 Year	PASS
115	114	14	SDR35	335.39	0.004	1.068	0.292	0.011	2.597	1.008	1.008	1.401	1.776	5 Year	PASS
114	113	18	SaniTiteHP	324.67	0.004	1.766	0.375	0.011	5.072	1.325	1.325	1.964	2.744	5 Year	PASS

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

10 Year Pipe Replacement

System Information										5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%	New Pipe Capacity Check @ 90%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
56A	56	18	SaniTiteHP	100	0.0018	1.766	0.375	0.011	3.402	1.893	1.893	2.109	2.226	10 Year	PASS
C67	C66	10	SDR35	399.45	0.004	0.545	0.209	0.011	1.060	0.383	0.383	0.548	0.872	10 Year	PASS
C66	C65	10	SDR35	299.02	0.004	0.545	0.209	0.011	1.060	0.383	0.383	0.548	0.872	10 Year	PASS
C65	C64	10	SDR35	54.1	0.0041	0.545	0.209	0.011	1.073	0.383	0.383	0.548	0.872	10 Year	PASS
C64	140	10	SDR35	20.57	0.0044	0.545	0.209	0.011	1.112	0.435	0.435	0.600	0.924	10 Year	PASS
138	137	10	SDR35	163.64	0.0062	0.545	0.209	0.011	1.320	0.487	0.487	0.661	0.985	10 Year	PASS
136	134	10	SDR35	285.66	0.006	0.545	0.209	0.011	1.298	0.487	0.487	0.661	0.985	10 Year	PASS
134	133	10	SDR35	141.06	0.006	0.545	0.209	0.011	1.298	0.487	0.487	0.661	0.985	10 Year	PASS
133	132	12	SDR35	236.52	0.0035	0.785	0.250	0.011	1.609	0.746	0.746	1.025	1.349	10 Year	PASS
132	131	12	SDR35	282.24	0.0035	0.785	0.250	0.011	1.609	0.746	0.746	1.025	1.349	10 Year	PASS
131	130	12	SDR35	288.06	0.0035	0.785	0.250	0.011	1.609	0.772	0.772	1.051	1.375	5 Year	PASS
129	128	14	SDR35	93.62	0.0035	1.068	0.292	0.011	2.429	0.772	0.772	1.144	1.468	5 Year	PASS
128	127	14	SDR35	271.38	0.0035	1.068	0.292	0.011	2.429	0.824	0.824	1.196	1.520	5 Year	PASS
112	111	18	SaniTiteHP	143	0.0022	1.766	0.375	0.011	3.761	1.441	1.441	2.080	2.860	10 Year	PASS

Act 537 Plan Amendment

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

20 Year Pipe Replacement

System Information										5 Year	10 Year	20 Year	30 Year	Projected Capacity Failure @ 100%	New Pipe Capacity Check @ 90%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD		
C73	C72	10	SDR35	175	0.004	0.545	0.209	0.011	1.060	0.086	0.086	0.251	0.575	20 Year	PASS
C72	C71	10	SDR35	254.09	0.005	0.545	0.209	0.011	1.185	0.086	0.086	0.251	0.575	20 Year	PASS
C70	C69	10	SDR35	109.06	0.004	0.545	0.209	0.011	1.060	0.115	0.115	0.280	0.604	20 Year	PASS
C69	C68	10	SDR35	320.4	0.0047	0.545	0.209	0.011	1.149	0.115	0.115	0.280	0.604	20 Year	PASS
C68	C67	10	SDR35	218.43	0.0087	0.545	0.209	0.011	1.563	0.331	0.331	0.496	0.820	20 Year	PASS
140	139	10	SDR35	73.43	0.0148	0.545	0.209	0.011	2.039	0.487	0.487	0.661	0.985	20 Year	PASS
139	138	10	SDR35	128.2	0.0148	0.545	0.209	0.011	2.039	0.487	0.487	0.661	0.985	20 Year	PASS
113	112	18	SaniTiteHP	189.94	0.0022	1.766	0.375	0.011	3.761	1.441	1.441	2.080	2.860	20 Year	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Estimated Construction Costs - Trunk Sewer Replacement

5 Year Projected Pipe Replacement Costs				
Item	Quantity	Units	Estimated Construction Cost	Total Price
14" SDR35 PVC	2785	L.F.	\$ 170.00	\$ 473,450.00
18" SaniTiteHP	7532	L.F.	\$ 180.00	\$ 1,355,760.00
20" SaniTiteHP	3474	L.F.	\$ 200.00	\$ 694,800.00
24" SaniTiteHP	2690	L.F.	\$ 235.00	\$ 632,150.00
36" SaniTiteHP	5266	L.F.	\$ 290.00	\$ 1,527,140.00
5 Year Subtotal				\$ 4,683,300.00
10 Year Projected Pipe Replacement Costs				
Item	Quantity	Units	Unit Price	Total Price
10" SDR35 PVC	1364	L.F.	\$ 140.00	\$ 190,960.00
12" SDR35 PVC	807	L.F.	\$ 150.00	\$ 121,050.00
18" SaniTiteHP	866	L.F.	\$ 180.00	\$ 155,880.00
10 Year Subtotal				\$ 467,890.00
20 Year Projected Pipe Replacement Costs				
Item	Quantity	Units	Unit Price	Total Price
10" SDR35 PVC	1279	L.F.	\$ 140.00	\$ 179,060.00
18" SaniTiteHP	190	L.F.	\$ 180.00	\$ 34,200.00
20 Year Subtotal				\$ 213,260.00
30 Year Projected Pipe Replacement Costs				
Item	Quantity	Units	Unit Price	Total Price
No Pipe Replacements Scheduled				\$ -

Note: All prices shown based on estimated costs for present year construction.

**Sewer Capacity Evaluation
Exeter Township Major Trunk Sewers
Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
Exeter Township, Berks County**

Engineer's Project No.: 47837.022



Gannett Fleming
VALLEY FORGE, PENNSYLVANIA

**Static Model*

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
Antietam Creek Trunk (232B to 166)										
232B	232A	15		3.570	1.029		1.050	1.215	1.215	5 Year
232A	232	15		1.672	1.029	1.029	1.050	1.215	1.215	PASS
23W	22W	12	VCP	2.301	1.029	1.029	1.050	1.215	1.215	PASS
22W	21W	12	VCP	1.627	1.029	1.029	1.050	1.215	1.215	PASS
21W	20W	12	VCP	1.627	1.029	1.029	1.050	1.215	1.215	PASS
20W	19W	12	VCP	3.441	1.029	1.029	1.050	1.215	1.215	PASS
19W	18W	12	VCP	1.627	1.029	1.029	1.050	1.215	1.215	PASS
18W	17W	12	VCP	2.819	1.029	1.029	1.050	1.215	1.215	PASS
17W	16.1W	12	VCP	3.565	1.029	1.029	1.050	1.215	1.215	PASS
16.1W	16W	12	VCP	3.565	1.029	1.029	1.050	1.215	1.215	PASS
16W	15.05W	12	VCP	2.301	1.029	1.029	1.050	1.215	1.215	PASS
15.05W	15W	12	VCP	2.301	1.029	1.029	1.050	1.215	1.215	PASS
15W	219B	12	VCP	1.627	1.029	1.029	1.050	1.215	1.215	PASS
219B	219A	12		2.762	2.264	2.264	2.285	2.450	2.450	PASS
219A	219	12		2.762	2.264	2.264	2.285	2.450	2.450	PASS
219	218	18	SaniTiteHP	69.449	2.305	2.305	2.326	2.491	2.491	PASS
218	217	18	SaniTiteHP	60.544	2.305	2.305	2.326	2.491	2.491	PASS
217	216	18	SaniTiteHP	55.559	2.305	2.305	2.326	2.491	2.491	PASS
216	215	18	SaniTiteHP	58.929	2.305	2.305	2.326	2.491	2.491	PASS
215	214	18	SaniTiteHP	62.632	2.305	2.305	2.326	2.491	2.491	PASS
214	213	18	SaniTiteHP	179.316	2.305	2.305	2.326	2.491	2.491	PASS
213	213A	18	SaniTiteHP	187.383	2.305	2.305	2.326	2.491	2.491	PASS
213A	212	18	SaniTiteHP	79.386	2.305	2.305	2.326	2.491	2.491	PASS
212	211	18	SaniTiteHP	59.472	2.305	2.305	2.326	2.491	2.491	PASS
211	210	18	SaniTiteHP	58.929	2.305	2.305	2.326	2.491	2.491	PASS
210	209	18	SaniTiteHP	58.929	2.459	2.459	2.480	2.645	2.645	PASS
209	208	18	SaniTiteHP	60.011	2.459	2.459	2.480	2.645	2.645	PASS
208	207	18	SaniTiteHP	71.726	2.521	2.521	2.584	2.764	2.764	PASS
207	206	18	SaniTiteHP	72.173	2.521	2.521	2.584	2.764	2.764	PASS
206	205	18	SaniTiteHP	72.617	2.521	2.521	2.584	2.764	2.764	PASS
205	204	18	SaniTiteHP	73.934	2.521	2.521	2.584	2.764	2.764	PASS
204	203	18		5.398	2.583	2.583	2.646	2.826	2.826	PASS
203	202	18		5.398	2.583	2.583	2.646	2.826	2.826	PASS
202	201	18		5.355	2.850	2.850	2.913	3.093	3.093	PASS
201	200	18		4.301	2.850	2.850	2.913	3.093	3.093	PASS
200	199	18		4.301	2.850	2.850	2.913	3.093	3.093	PASS
199	198	18		7.481	2.850	2.850	2.913	3.093	3.093	PASS
198	197	18		5.566	2.912	2.912	2.975	3.155	3.155	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Check @ 100%
197	196	18		5.566	2.912	2.912	2.975	3.155	3.155	PASS
196	195	18		5.566	2.912	2.912	2.975	3.155	3.155	PASS
195	194	18		5.566	2.912	2.912	2.975	3.155	3.155	PASS
194	193A	18		5.398	2.912	2.912	2.975	3.155	3.155	PASS
193A	193	21		8.003	4.384	4.480	4.564	4.804	4.804	PASS
193	192	21		9.223	4.384	4.480	4.564	4.804	4.804	PASS
192	191	20	DIP (C.50)	5.321	4.384	4.480	4.564	4.804	4.804	PASS
191	190A	20	DIP (C.50)	7.081	4.384	4.480	4.564	4.804	4.804	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>										
190A	190	18		4.856	2.192	2.240	2.282	2.402	2.402	PASS
190	189A	18		11.379	2.243	2.291	2.351	2.471	2.471	PASS
189A	189	18		4.809	2.243	2.291	2.351	2.471	2.471	PASS
189	188	18		4.951	2.243	2.291	2.351	2.471	2.471	PASS
188	187A	18		4.662	2.243	2.291	2.351	2.471	2.471	PASS
187A	187	18		4.809	2.243	2.291	2.351	2.471	2.471	PASS
187	186A	18		4.809	2.243	2.291	2.351	2.471	2.471	PASS
186A	186	18		4.951	2.254	2.302	2.362	2.482	2.482	PASS
186	185	18		4.809	2.254	2.302	2.362	2.482	2.482	PASS
185	184	18		4.809	2.254	2.302	2.362	2.482	2.482	PASS
184	183	18		4.809	2.254	2.302	2.362	2.482	2.482	PASS
183	182	18		4.809	2.254	2.302	2.362	2.482	2.482	PASS
182	181	18		4.809	2.387	2.435	2.495	2.615	2.615	PASS
181	180	18		4.809	2.387	2.435	2.495	2.615	2.615	PASS
180	179	18	CIC	3.725	2.387	2.435	2.495	2.615	2.615	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>										
190A	179G	16	DIP (C.50)	6.060	2.192	2.240	2.282	2.402	2.402	PASS
179G	GM-4A	15		2.576	2.192	2.240	2.282	2.402	2.402	PASS
GM-4A	GM-4	15		2.865	2.192	2.240	2.282	2.402	2.402	PASS
GM-4	GM-3	15		2.865	2.202	2.250	2.292	2.412	2.412	PASS
GM-3	GM-2	15		3.420	2.202	2.250	2.292	2.412	2.412	PASS
GM-2	GM-1A	15		2.865	2.202	2.250	2.292	2.412	2.412	PASS
GM-1A	179F	15		2.984	2.202	2.250	2.292	2.412	2.412	PASS
179F	179E	15		7.067	2.284	2.332	2.374	2.494	2.494	PASS
179E	179D	18	DIP (C.50)	3.786	2.284	2.332	2.374	2.494	2.494	PASS
179D	179C	18		2.356	2.284	2.332	2.374	2.494	2.494	10 Year
179C	179B	18		4.192	2.284	2.332	2.374	2.494	2.494	PASS
179B	179A	18		2.356	2.284	2.332	2.374	2.494	2.494	10 Year
179A	179	18	DIP (C.50)	3.116	2.284	2.332	2.374	2.494	2.494	PASS
179	178	27		12.343	4.672	4.768	4.870	5.110	5.110	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
178	177	27		9.391	4.682	4.778	4.880	5.120	5.120	PASS
177	176	27		12.976	4.682	4.778	4.880	5.120	5.120	PASS
176	175A	27		34.968	4.682	4.778	4.880	5.120	5.120	PASS
175A	175	27		10.967	4.682	4.778	4.880	5.120	5.120	PASS
175	174B	27		8.728	4.682	4.778	4.880	5.120	5.120	PASS
174B	174A	27		11.148	4.682	4.778	4.880	5.120	5.120	PASS
174A	174	27		6.936	4.682	4.778	4.880	5.120	5.120	PASS
174	173B	27		7.492	4.682	4.778	4.880	5.120	5.120	PASS
173B	173A	27		9.602	4.682	4.778	4.880	5.120	5.120	PASS
173A	173A1	27		11.326	4.682	4.778	4.880	5.120	5.120	PASS
173A1	173	27		14.299	4.682	4.778	4.880	5.120	5.120	PASS
173	172A	27		8.728	4.682	4.778	4.880	5.120	5.120	PASS
172A	172	27		9.175	4.682	4.778	4.880	5.120	5.120	PASS
172	171	27		7.219	4.744	4.840	4.942	5.182	5.182	PASS
171	170A	27		8.009	4.754	4.850	5.042	5.282	5.282	PASS
170A	170	27		9.175	4.754	4.850	5.042	5.282	5.282	PASS
170	169	27		40.045	4.754	4.850	5.042	5.282	5.282	PASS
169	168	27		25.875	4.754	4.850	5.042	5.282	5.282	PASS
168	167A	27		28.877	4.785	4.881	5.073	5.313	5.313	PASS
167A	167	21		12.383	4.785	4.881	5.073	5.313	5.313	PASS
167	166	18		4.247	4.785	4.881	5.073	5.313	5.313	5 Year
167A	166A	18		4.760	4.785	4.881	5.073	5.313	5.313	5 Year
166A	166	18		4.809	4.785	4.881	5.073	5.313	5.313	5 Year

Antietam Creek Trunk (166 to 15)										
166	164A	27	RCP	14.299	5.392	5.638	5.839	6.163	6.190	PASS
164A	164	27	RCP	12.976	5.392	5.638	5.839	6.163	6.190	PASS
164	163	27	RCP	11.502	5.392	5.638	5.839	6.163	6.190	PASS
163	162A	27	RCP	17.455	5.392	5.638	5.839	6.163	6.190	PASS
162A	162A1	27	RCP	16.632	5.649	5.895	6.096	6.420	6.447	PASS
162A1	162	27	RCP	14.849	5.732	5.978	6.179	6.533	6.560	PASS
162	161	27	RCP	16.266	5.732	5.978	6.179	6.533	6.560	PASS
161	160	27	RCP	16.871	5.732	5.978	6.191	6.545	6.572	PASS
160	159	27	RCP	15.892	5.732	5.978	6.191	6.545	6.572	PASS
159	158A1	27	RCP	14.713	5.732	5.978	6.191	6.545	6.572	PASS
158A1	157	27	RCP	17.340	5.732	5.978	6.191	6.545	6.572	PASS
157	156	27	RCP	13.580	5.742	5.988	6.201	6.648	6.675	PASS
156	155	27	RCP	14.577	5.742	5.988	6.201	6.648	6.675	PASS
155	154	27	RCP	13.727	5.742	5.988	6.201	6.648	6.675	PASS

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
154	153	27	RCP	12.976	5.752	5.998	6.295	6.742	6.769	PASS
153	152	27	RCP	10.967	5.752	5.998	6.295	6.835	6.862	PASS
152	151	27	RCP	14.713	5.752	5.998	6.295	6.835	6.862	PASS
151	150	27	RCP	12.343	5.752	5.998	6.295	6.835	6.862	PASS
150	149	27	RCP	12.663	5.752	5.998	6.295	6.835	6.862	PASS
149	148	27	RCP	14.299	5.752	5.998	6.295	6.835	6.862	PASS
148	147	27	RCP	22.917	5.752	5.998	6.295	6.835	6.862	PASS
<i>Parallel Sewer 147- 146</i>										
147	146	18	DIP	4.760	2.876	2.999	3.148	3.418	3.431	PASS
<i>Parallel to 147- 146, 54" Encasing Pipe Under RR</i>										
147	146A2	21	DIP	7.100	2.876	2.999	3.148	3.418	3.431	PASS
146A2	146A1	20	DIP	6.730	2.876	2.999	3.148	3.418	3.431	PASS
146A1	146	21	DIP	7.804	2.876	2.999	3.148	3.418	3.431	PASS
146	15	27	RCP	12.504	5.752	5.998	6.295	6.835	6.862	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	

Schuylkill River Trunk (61 to 15)										
61	60A	15		3.496	1.852	1.852	2.014	2.131	2.401	PASS
60A	60	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
60	59	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
59	58	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
58	57	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
57	56A	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
56A	56	16		2.106	1.893	1.893	2.109	2.226	2.496	10 Year
56	55	15		1.773	1.893	1.893	2.109	2.226	2.496	5 Year
55	54	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
54	53	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
53	52	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
52	51	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
51	50	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
50	49	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
49	48	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
48	47	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
47	46	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
46	45	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
45	44	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
44	43	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
43	42	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
42	41	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
41	40	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
40	39	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
39	38	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
38	37	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
37	36	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
36	35	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
35	34	15		1.618	1.893	1.893	2.109	2.226	2.496	5 Year
34	33	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
33	32	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
32	31	15		1.753	2.624	2.624	2.888	3.191	3.461	5 Year
31	30	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
30	29	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
29	28	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
28	27	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
27	26	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
26	25	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
25	24	15		1.618	2.624	2.624	2.888	3.191	3.461	5 Year
24	23	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
23	22	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
22	21	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
21	20	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
20	19	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
19	18	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
18	17	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
17	16	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year
16	15	15		1.618	3.190	3.190	3.466	3.769	4.039	5 Year

Schuylkill River Trunk (15 to Pumping Station)					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
15	14	30	CIP	8.389	8.942	9.188	9.761	10.604	10.901	5 Year
14	13	30	RCP	8.389	8.952	9.198	9.771	10.614	10.911	5 Year
13	12	30	RCP	8.389	8.952	9.198	9.771	10.614	10.911	5 Year
12	11	30	RCP	8.389	8.952	9.198	9.771	10.614	10.911	5 Year
11	10	30	RCP	8.389	8.952	9.198	9.771	10.614	10.911	5 Year
10	9	30	RCP	8.389	8.963	9.209	9.782	10.625	10.922	5 Year
9	8	30	RCP	8.389	8.963	9.209	9.782	10.625	10.922	5 Year
8	7	30	RCP	8.389	8.963	9.209	9.782	10.625	10.922	5 Year
7	6	30	RCP	8.389	8.963	9.209	9.782	10.625	10.922	5 Year
6	5	30	RCP	8.389	8.963	9.209	9.782	10.625	10.943	5 Year
5	4	30	RCP	8.389	8.963	9.209	9.782	10.625	10.943	5 Year
4	3	30	RCP	8.389	8.963	9.209	9.782	10.625	10.943	5 Year
3	2	30	RCP	8.389	8.963	9.209	9.782	10.625	10.943	5 Year
2	1	30	RCP	8.389	8.963	9.209	9.782	10.625	10.943	5 Year
1	P.S.	30	CIP	11.563	8.963	9.209	9.782	10.625	10.943	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
Heisters Creek Trunk (C80 to 111)										
C80	C79	8		1.216	0.086	0.086	0.137	0.461	0.461	PASS
C79	C78	8		1.473	0.086	0.086	0.137	0.461	0.461	PASS
C78	C77	8		0.820	0.086	0.086	0.137	0.461	0.461	PASS
C77	C76	8		0.495	0.086	0.086	0.137	0.461	0.461	PASS
C76	C75	8		1.031	0.086	0.086	0.137	0.461	0.461	PASS
C75	C74	8		0.682	0.086	0.086	0.137	0.461	0.461	PASS
C74	C73	8		0.998	0.086	0.086	0.137	0.461	0.461	PASS
C73	C72	8		0.495	0.086	0.086	0.251	0.575	0.575	20 Year
C72	C71	8		0.553	0.086	0.086	0.251	0.575	0.575	20 Year
C71	C70	8		0.986	0.086	0.086	0.251	0.575	0.575	PASS
C70	C69	8		0.495	0.115	0.115	0.280	0.604	0.604	20 Year
C69	C68	8		0.536	0.115	0.115	0.280	0.604	0.604	20 Year
C68	C67	8		0.729	0.331	0.331	0.496	0.820	0.820	20 Year
C67	C66	8		0.495	0.383	0.383	0.548	0.872	0.872	10 Year
C66	C65	8		0.495	0.383	0.383	0.548	0.872	0.872	10 Year
C65	C64	8	CIP	0.501	0.383	0.383	0.548	0.872	0.872	10 Year
C64	140	8		0.519	0.435	0.435	0.600	0.924	0.924	10 Year
140	139	8	CIP	0.951	0.487	0.487	0.661	0.985	0.985	20 Year
139	138	8		0.951	0.487	0.487	0.661	0.985	0.985	20 Year
138	137	8		0.616	0.487	0.487	0.661	0.985	0.985	10 Year
137	136	8		1.016	0.487	0.487	0.661	0.985	0.985	PASS
136	134	8		0.606	0.487	0.487	0.661	0.985	0.985	10 Year
134	133	8	CIP	0.606	0.487	0.487	0.661	0.985	0.985	10 Year
133	132	10		0.840	0.746	0.746	1.025	1.349	1.349	10 Year
132	131	10		0.840	0.746	0.746	1.025	1.349	1.349	10 Year
131	130	10		0.840	0.772	0.772	1.051	1.375	1.375	10 Year
130	129	10		1.563	0.772	0.772	1.144	1.468	1.468	PASS
129	128	10		0.840	0.772	0.772	1.144	1.468	1.468	10 Year
128	127	10		0.840	0.824	0.824	1.196	1.520	1.520	10 Year
127	126	10		0.840	0.850	0.850	1.222	1.546	1.546	5 Year
126	125	10		0.840	0.850	0.850	1.222	1.546	1.546	5 Year
125	124	10		0.840	0.879	0.879	1.251	1.575	1.575	5 Year
124	123	10		0.840	0.879	0.879	1.251	1.575	1.575	5 Year
123	122	10		0.840	0.879	0.879	1.251	1.575	1.575	5 Year
122	121	10		0.840	0.879	0.879	1.251	1.575	1.575	5 Year
121	120	10		0.840	0.879	0.879	1.251	1.593	1.593	5 Year
120	119	10		0.840	0.879	0.879	1.251	1.593	1.593	5 Year
119	118	10	CIP	0.840	0.879	0.879	1.251	1.626	1.626	5 Year

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

3.0 Peak Factor

System Information					Base	5 Year	10 Year	20 Year	30 Year	Capacity Check @ 100%
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Pipe Capacity MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	Projected Peak Daily Flow MGD	
118	117	10		0.840	0.879	0.879	1.251	1.626	1.626	5 Year
117	116	10		0.887	1.008	1.008	1.401	1.776	1.776	5 Year
116	115	10		0.898	1.008	1.008	1.401	1.776	1.776	5 Year
115	114	10		0.898	1.008	1.008	1.401	1.776	1.776	5 Year
114	113	10		0.898	1.325	1.325	1.964	2.744	3.017	5 Year
113	112	16	CIP	2.329	1.441	1.441	2.080	2.860	3.133	20 Year
112	111	15		1.960	1.441	1.441	2.080	2.860	3.133	10 Year

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

5 Year Projected Flow Capacity Analysis

System Information										Base	5 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
Antietam Creek Trunk (232B to 166)													
232B	232A	15		116.83	0.0073	1.227	0.313	0.013	3.570	0.343	0.343	1.029	PASS
232A	232	15		98.78	0.0016	1.227	0.313	0.013	1.672	0.343	0.343	1.029	PASS
23W	22W	12	VCP	130.00	0.0100	0.785	0.250	0.013	2.301	0.343	0.343	1.029	PASS
22W	21W	12	VCP	333.00	0.0050	0.785	0.250	0.013	1.627	0.343	0.343	1.029	PASS
21W	20W	12	VCP	402.00	0.0050	0.785	0.250	0.013	1.627	0.343	0.343	1.029	PASS
20W	19W	12	VCP	199.57	0.0224	0.785	0.250	0.013	3.441	0.343	0.343	1.029	PASS
19W	18W	12	VCP	341.19	0.0050	0.785	0.250	0.013	1.627	0.343	0.343	1.029	PASS
18W	17W	12	VCP	86.50	0.0150	0.785	0.250	0.013	2.819	0.343	0.343	1.029	PASS
17W	16.1W	12	VCP	122.80	0.0240	0.785	0.250	0.013	3.565	0.343	0.343	1.029	PASS
16.1W	16W	12	VCP	52.00	0.0240	0.785	0.250	0.013	3.565	0.343	0.343	1.029	PASS
16W	15.05W	12	VCP	144.47	0.0100	0.785	0.250	0.013	2.301	0.343	0.343	1.029	PASS
15.05W	15W	12	VCP	68.95	0.0100	0.785	0.250	0.013	2.301	0.343	0.343	1.029	PASS
15W	219B	12	VCP	138.14	0.0050	0.785	0.250	0.013	1.627	0.343	0.343	1.029	PASS
219B	219A	12		273.72	0.0144	0.785	0.250	0.013	2.762	0.755	0.755	2.264	PASS
219A	219	12		36.07	0.0144	0.785	0.250	0.013	2.762	0.755	0.755	2.264	PASS
219	218	18	SaniTiteHP	271.99	0.7500	1.766	0.375	0.011	69.449	0.768	0.768	2.305	PASS
218	217	18	SaniTiteHP	400.00	0.5700	1.766	0.375	0.011	60.544	0.768	0.768	2.305	PASS
217	216	18	SaniTiteHP	93.54	0.4800	1.766	0.375	0.011	55.559	0.768	0.768	2.305	PASS
216	215	18	SaniTiteHP	340.80	0.5400	1.766	0.375	0.011	58.929	0.768	0.768	2.305	PASS
215	214	18	SaniTiteHP	330.08	0.6100	1.766	0.375	0.011	62.632	0.768	0.768	2.305	PASS
214	213	18	SaniTiteHP	45.00	5.0000	1.766	0.375	0.011	179.316	0.768	0.768	2.305	PASS
213	213A	18	SaniTiteHP	50.00	5.4600	1.766	0.375	0.011	187.383	0.768	0.768	2.305	PASS
213A	212	18	SaniTiteHP	202.78	0.9800	1.766	0.375	0.011	79.386	0.768	0.768	2.305	PASS
212	211	18	SaniTiteHP	189.56	0.5500	1.766	0.375	0.011	59.472	0.768	0.768	2.305	PASS
211	210	18	SaniTiteHP	172.00	0.5400	1.766	0.375	0.011	58.929	0.768	0.768	2.305	PASS
210	209	18	SaniTiteHP	296.68	0.5400	1.766	0.375	0.011	58.929	0.820	0.820	2.459	PASS

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

5 Year Projected Flow Capacity Analysis

System Information										Base	5 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning 'n'	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
209	208	18	SaniTiteHP	239.50	0.5600	1.766	0.375	0.011	60.011	0.820	0.820	2.459	PASS
208	207	18	SaniTiteHP	255.19	0.8000	1.766	0.375	0.011	71.726	0.840	0.840	2.521	PASS
207	206	18	SaniTiteHP	294.81	0.8100	1.766	0.375	0.011	72.173	0.840	0.840	2.521	PASS
206	205	18	SaniTiteHP	316.55	0.8200	1.766	0.375	0.011	72.617	0.840	0.840	2.521	PASS
205	204	18	SaniTiteHP	349.51	0.8500	1.766	0.375	0.011	73.934	0.840	0.840	2.521	PASS
204	203	18		158.25	0.0063	1.767	0.376	0.013	5.398	0.861	0.861	2.583	PASS
203	202	18		175.69	0.0063	1.767	0.376	0.013	5.398	0.861	0.861	2.583	PASS
202	201	18		242.41	0.0062	1.767	0.376	0.013	5.355	0.950	0.950	2.850	PASS
201	200	18		382.59	0.0040	1.767	0.376	0.013	4.301	0.950	0.950	2.850	PASS
200	199	18		374.89	0.0040	1.767	0.376	0.013	4.301	0.950	0.950	2.850	PASS
199	198	18		329.24	0.0121	1.767	0.376	0.013	7.481	0.950	0.950	2.850	PASS
198	197	18		370.87	0.0067	1.767	0.376	0.013	5.566	0.971	0.971	2.912	PASS
197	196	18		365.98	0.0067	1.767	0.376	0.013	5.566	0.971	0.971	2.912	PASS
196	195	18		399.95	0.0067	1.767	0.376	0.013	5.566	0.971	0.971	2.912	PASS
195	194	18		334.07	0.0067	1.767	0.376	0.013	5.566	0.971	0.971	2.912	PASS
194	193A	18		100.00	0.0063	1.767	0.376	0.013	5.398	0.971	0.971	2.912	PASS
193A	193	21		208.16	0.0061	2.405	0.438	0.013	8.003	1.461	1.493	4.480	PASS
193	192	21		399.82	0.0081	2.405	0.438	0.013	9.223	1.461	1.493	4.480	PASS
192	191	20	DIP (C.50)	412.49	0.0035	2.181	0.417	0.013	5.321	1.461	1.493	4.480	PASS
191	190A	20	DIP (C.50)	236.55	0.0062	2.181	0.417	0.013	7.081	1.461	1.493	4.480	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>													
190A	190	18		129.90	0.0051	1.767	0.376	0.013	4.856	0.731	0.747	2.240	PASS
190	189A	18		130.00	0.0280	1.767	0.376	0.013	11.379	0.748	0.764	2.291	PASS
189A	189	18		223.00	0.0050	1.767	0.376	0.013	4.809	0.748	0.764	2.291	PASS
189	188	18		216.00	0.0053	1.767	0.376	0.013	4.951	0.748	0.764	2.291	PASS
188	187A	18		260.00	0.0047	1.767	0.376	0.013	4.662	0.748	0.764	2.291	PASS
187A	187	18		34.00	0.0050	1.767	0.376	0.013	4.809	0.748	0.764	2.291	PASS

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

5 Year Projected Flow Capacity Analysis

System Information										Base	5 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
187	186A	18		75.00	0.0050	1.767	0.376	0.013	4.809	0.748	0.764	2.291	PASS
186A	186	18		354.00	0.0053	1.767	0.376	0.013	4.951	0.751	0.767	2.302	PASS
186	185	18		30.00	0.0050	1.767	0.376	0.013	4.809	0.751	0.767	2.302	PASS
185	184	18		263.00	0.0050	1.767	0.376	0.013	4.809	0.751	0.767	2.302	PASS
184	183	18		250.00	0.0050	1.767	0.376	0.013	4.809	0.751	0.767	2.302	PASS
183	182	18		394.00	0.0050	1.767	0.376	0.013	4.809	0.751	0.767	2.302	PASS
82	181	18		88.00	0.0050	1.767	0.376	0.013	4.809	0.796	0.812	2.435	PASS
81	180	18		264.00	0.0050	1.767	0.376	0.013	4.809	0.796	0.812	2.435	PASS
180	179	18	CIC	97.13	0.0030	1.767	0.376	0.013	3.725	0.796	0.812	2.435	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>													
190A	179G	16	DIP (C.50)	162.08	0.0149	1.396	0.334	0.013	6.060	0.731	0.747	2.240	PASS
179G	GM-4A	15		220.11	0.0038	1.227	0.313	0.013	2.576	0.731	0.747	2.240	PASS
GM-4A	GM-4	15		126.04	0.0047	1.227	0.313	0.013	2.865	0.731	0.747	2.240	PASS
GM-4	GM-3	15		69.91	0.0047	1.227	0.313	0.013	2.865	0.734	0.750	2.250	PASS
GM-3	GM-2	15		222.96	0.0067	1.227	0.313	0.013	3.420	0.734	0.750	2.250	PASS
GM-2	GM-1A	15		92.65	0.0047	1.227	0.313	0.013	2.865	0.734	0.750	2.250	PASS
GM-1A	179F	15		257.07	0.0051	1.227	0.313	0.013	2.984	0.734	0.750	2.250	PASS
179F	179E	15		170.52	0.0286	1.227	0.313	0.013	7.067	0.761	0.777	2.332	PASS
179E	179D	18	DIP (C.50)	193.22	0.0031	1.767	0.376	0.013	3.786	0.761	0.777	2.332	PASS
179D	179C	18		202.79	0.0012	1.767	0.376	0.013	2.356	0.761	0.777	2.332	PASS
179C	179B	18		251.01	0.0038	1.767	0.376	0.013	4.192	0.761	0.777	2.332	PASS
179B	179A	18		420.02	0.0012	1.767	0.376	0.013	2.356	0.761	0.777	2.332	PASS
179A	179	18	DIP (C.50)	80.21	0.0021	1.767	0.376	0.013	3.116	0.761	0.777	2.332	PASS
179	178	27		291.52	0.0038	3.975	0.563	0.013	12.343	1.557	1.589	4.768	PASS
178	177	27		275.60	0.0022	3.975	0.563	0.013	9.391	1.561	1.593	4.778	PASS
177	176	27		366.36	0.0042	3.975	0.563	0.013	12.976	1.561	1.593	4.778	PASS
176	175A	27		99.23	0.0305	3.975	0.563	0.013	34.968	1.561	1.593	4.778	PASS

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5 Year Projected Flow Capacity Analysis

System Information										Base	5 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
175A	175	27		103.80	0.0030	3.975	0.563	0.013	10.967	1.561	1.593	4.778	PASS
175	174B	27		227.00	0.0019	3.975	0.563	0.013	8.728	1.561	1.593	4.778	PASS
174B	174A	27		126.20	0.0031	3.975	0.563	0.013	11.148	1.561	1.593	4.778	PASS
174A	174	27		205.10	0.0012	3.975	0.563	0.013	6.936	1.561	1.593	4.778	PASS
174	173B	27		105.09	0.0014	3.975	0.563	0.013	7.492	1.561	1.593	4.778	PASS
173B	173A	27		146.85	0.0023	3.975	0.563	0.013	9.602	1.561	1.593	4.778	PASS
173A	173A1	27		73.88	0.0032	3.975	0.563	0.013	11.326	1.561	1.593	4.778	PASS
173A1	173	27		139.98	0.0051	3.975	0.563	0.013	14.299	1.561	1.593	4.778	PASS
173	172A	27		278.41	0.0019	3.975	0.563	0.013	8.728	1.561	1.593	4.778	PASS
172A	172	27		97.51	0.0021	3.975	0.563	0.013	9.175	1.561	1.593	4.778	PASS
172	171	27		275.31	0.0013	3.975	0.563	0.013	7.219	1.581	1.613	4.840	PASS
171	170A	27		244.64	0.0016	3.975	0.563	0.013	8.009	1.585	1.617	4.850	PASS
170A	170	27		307.23	0.0021	3.975	0.563	0.013	9.175	1.585	1.617	4.850	PASS
170	169	27		66.30	0.0400	3.975	0.563	0.013	40.045	1.585	1.617	4.850	PASS
169	168	27		130.77	0.0167	3.975	0.563	0.013	25.875	1.585	1.617	4.850	PASS
168	167A	27		228.41	0.0208	3.975	0.563	0.013	28.877	1.595	1.627	4.881	PASS
167A	167	21		10.00	0.0146	2.405	0.438	0.013	12.383	1.595	1.627	4.881	PASS
167	166	18		121.21	0.0039	1.767	0.376	0.013	4.247	1.595	1.627	4.881	FAIL
167A	166A	18		132.25	0.0049	1.767	0.376	0.013	4.760	1.595	1.627	4.881	FAIL
166A	166	18		10.00	0.0050	1.767	0.376	0.013	4.809	1.595	1.627	4.881	FAIL
Antietam Creek Trunk (166 to 15)													
166	164A	27	RCP	484.16	0.0051	3.975	0.563	0.013	14.299	1.797	1.879	5.638	PASS
164A	164	27	RCP	136.61	0.0042	3.975	0.563	0.013	12.976	1.797	1.879	5.638	PASS
164	163	27	RCP	388.74	0.0033	3.975	0.563	0.013	11.502	1.797	1.879	5.638	PASS
163	162A	27	RCP	135.80	0.0076	3.975	0.563	0.013	17.455	1.797	1.879	5.638	PASS
162A	162A1	27	RCP	169.64	0.0069	3.975	0.563	0.013	16.632	1.883	1.965	5.895	PASS

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
162A1	162	27	RCP	122.00	0.0055	3.975	0.563	0.013	14.849	1.911	1.993	5.978	PASS
162	161	27	RCP	401.13	0.0066	3.975	0.563	0.013	16.266	1.911	1.993	5.978	PASS
161	160	27	RCP	423.26	0.0071	3.975	0.563	0.013	16.871	1.911	1.993	5.978	PASS
160	159	27	RCP	376.24	0.0063	3.975	0.563	0.013	15.892	1.911	1.993	5.978	PASS
159	158A1	27	RCP	297.92	0.0054	3.975	0.563	0.013	14.713	1.911	1.993	5.978	PASS
158A1	157	27	RCP	453.64	0.0075	3.975	0.563	0.013	17.340	1.911	1.993	5.978	PASS
157	156	27	RCP	149.92	0.0046	3.975	0.563	0.013	13.580	1.914	1.996	5.988	PASS
156	155	27	RCP	100.00	0.0053	3.975	0.563	0.013	14.577	1.914	1.996	5.988	PASS
155	154	27	RCP	267.45	0.0047	3.975	0.563	0.013	13.727	1.914	1.996	5.988	PASS
154	153	27	RCP	327.70	0.0042	3.975	0.563	0.013	12.976	1.917	1.999	5.998	PASS
153	152	27	RCP	351.13	0.0030	3.975	0.563	0.013	10.967	1.917	1.999	5.998	PASS
152	151	27	RCP	352.39	0.0054	3.975	0.563	0.013	14.713	1.917	1.999	5.998	PASS
151	150	27	RCP	315.84	0.0038	3.975	0.563	0.013	12.343	1.917	1.999	5.998	PASS
150	149	27	RCP	364.08	0.0040	3.975	0.563	0.013	12.663	1.917	1.999	5.998	PASS
149	148	27	RCP	182.50	0.0051	3.975	0.563	0.013	14.299	1.917	1.999	5.998	PASS
148	147	27	RCP	182.56	0.0131	3.975	0.563	0.013	22.917	1.917	1.999	5.998	PASS
Parallel Sewer 147- 146													
147	146	18	DIP	210.00	0.0049	1.767	0.376	0.013	4.760	0.959	1.000	2.999	PASS
Parallel to 147- 146, 54" Encasing Pipe Under RR Track 146A2- 146A1													
147	146A2	21	DIP	10.35	0.0048	2.405	0.438	0.013	7.100	0.959	1.000	2.999	PASS
146A2	146A1	20	DIP	222.77	0.0056	2.181	0.417	0.013	6.730	0.959	1.000	2.999	PASS
146A1	146	21	DIP	10.35	0.0058	2.405	0.438	0.013	7.804	0.959	1.000	2.999	PASS
146	15	27	RCP	216.64	0.0039	3.975	0.563	0.013	12.504	1.917	1.999	5.998	PASS
Schuylkill River Trunk (61 to 15)													
61	60A	15		141.11	0.0070	1.227	0.313	0.013	3.496	0.617	0.617	1.852	PASS
60A	60	15		187.40	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL

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60	59	15		350.00	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL
59	58	15		342.56	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL
58	57	15		367.10	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL
57	56A	15		300.00	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL
56A	56	16		100.00	0.0018	1.396	0.334	0.013	2.106	0.631	0.631	1.893	PASS
56	55	15		286.14	0.0018	1.227	0.313	0.013	1.773	0.631	0.631	1.893	FAIL
55	54	15		294.19	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
54	53	15		397.05	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
53	52	15		326.67	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
52	51	15		283.40	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
51	50	15		233.43	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
50	49	15		266.57	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
49	48	15		277.45	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
48	47	15		222.55	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
47	46	15		216.68	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
46	45	15		233.32	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
45	44	15		201.35	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
44	43	15		323.15	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
43	42	15		191.85	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
42	41	15		279.11	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
41	40	15		345.54	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
40	39	15		330.30	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
39	38	15		219.70	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
38	37	15		225.74	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
37	36	15		274.26	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
36	35	15		231.70	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL
35	34	15		235.65	0.0015	1.227	0.313	0.013	1.618	0.631	0.631	1.893	FAIL

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34	33	15		282.65	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
33	32	15		308.00	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
32	31	15		342.00	0.0015	1.227	0.313	0.012	1.753	0.875	0.875	2.624	FAIL
31	30	15		350.00	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
30	29	15		313.45	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
29	28	15		286.55	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
28	27	15		275.85	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
27	26	15		375.32	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
26	25	15		145.47	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
25	24	15		295.28	0.0015	1.227	0.313	0.013	1.618	0.875	0.875	2.624	FAIL
24	23	15		282.43	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
23	22	15		225.65	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
22	21	15		275.50	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
21	20	15		274.50	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
20	19	15		271.90	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
19	18	15		378.10	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
18	17	15		376.20	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
17	16	15		323.80	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL
16	15	15		281.75	0.0015	1.227	0.313	0.013	1.618	1.063	1.063	3.190	FAIL

Schuylkill River Trunk (15 to Pumping Station)													
15	14	30	CIP	222.81	0.0010	4.907	0.626	0.013	8.389	2.981	3.063	9.188	FAIL
14	13	30	RCP	410.78	0.0010	4.907	0.626	0.013	8.389	2.984	3.066	9.198	FAIL
13	12	30	RCP	249.66	0.0010	4.907	0.626	0.013	8.389	2.984	3.066	9.198	FAIL
12	11	30	RCP	473.87	0.0010	4.907	0.626	0.013	8.389	2.984	3.066	9.198	FAIL
11	10	30	RCP	486.97	0.0010	4.907	0.626	0.013	8.389	2.984	3.066	9.198	FAIL
10	9	30	RCP	438.79	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL

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9	8	30	RCP	375.07	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
8	7	30	RCP	310.30	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
7	6	30	RCP	351.54	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
6	5	30	RCP	496.73	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
5	4	30	RCP	477.53	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
4	3	30	RCP	309.08	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
	2	30	RCP	356.50	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
	1	30	RCP	306.00	0.0010	4.907	0.626	0.013	8.389	2.988	3.070	9.209	FAIL
1	P.S.	30	CIP	68.50	0.0019	4.907	0.626	0.013	11.563	2.988	3.070	9.209	PASS

Heisters Creek Trunk (C80 to 111)													
C80	C79	8		202.23	0.0242	0.349	0.167	0.013	1.216	0.029	0.029	0.086	PASS
C79	C78	8		224.96	0.0355	0.349	0.167	0.013	1.473	0.029	0.029	0.086	PASS
C78	C77	8		187.54	0.0110	0.349	0.167	0.013	0.820	0.029	0.029	0.086	PASS
C77	C76	8		212.46	0.0040	0.349	0.167	0.013	0.495	0.029	0.029	0.086	PASS
C76	C75	8		238.52	0.0174	0.349	0.167	0.013	1.031	0.029	0.029	0.086	PASS
C75	C74	8		387.25	0.0076	0.349	0.167	0.013	0.682	0.029	0.029	0.086	PASS
C74	C73	8		396.22	0.0163	0.349	0.167	0.013	0.998	0.029	0.029	0.086	PASS
C73	C72	8		175.00	0.0040	0.349	0.167	0.013	0.495	0.029	0.029	0.086	PASS
C72	C71	8		254.09	0.0050	0.349	0.167	0.013	0.553	0.029	0.029	0.086	PASS
C71	C70	8		250.45	0.0159	0.349	0.167	0.013	0.986	0.029	0.029	0.086	PASS
C70	C69	8		109.06	0.0040	0.349	0.167	0.013	0.495	0.038	0.038	0.115	PASS
C69	C68	8		320.40	0.0047	0.349	0.167	0.013	0.536	0.038	0.038	0.115	PASS
C68	C67	8		218.43	0.0087	0.349	0.167	0.013	0.729	0.110	0.110	0.331	PASS
C67	C66	8		399.45	0.0040	0.349	0.167	0.013	0.495	0.128	0.128	0.383	PASS
C66	C65	8		299.02	0.0040	0.349	0.167	0.013	0.495	0.128	0.128	0.383	PASS
C65	C64	8	CIP	54.10	0.0041	0.349	0.167	0.013	0.501	0.128	0.128	0.383	PASS

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C64	140	8		20.57	0.0044	0.349	0.167	0.013	0.519	0.145	0.145	0.435	PASS
140	139	8	CIP	73.43	0.0148	0.349	0.167	0.013	0.951	0.162	0.162	0.487	PASS
139	138	8		128.20	0.0148	0.349	0.167	0.013	0.951	0.162	0.162	0.487	PASS
138	137	8		163.64	0.0062	0.349	0.167	0.013	0.616	0.162	0.162	0.487	PASS
137	136	8		262.68	0.0169	0.349	0.167	0.013	1.016	0.162	0.162	0.487	PASS
136	134	8		285.66	0.0060	0.349	0.167	0.013	0.606	0.162	0.162	0.487	PASS
34	133	8	CIP	141.06	0.0060	0.349	0.167	0.013	0.606	0.162	0.162	0.487	PASS
33	132	10		236.52	0.0035	0.546	0.209	0.013	0.840	0.249	0.249	0.746	PASS
132	131	10		282.24	0.0035	0.546	0.209	0.013	0.840	0.249	0.249	0.746	PASS
131	130	10		288.06	0.0035	0.546	0.209	0.013	0.840	0.257	0.257	0.772	PASS
130	129	10		246.94	0.0121	0.546	0.209	0.013	1.563	0.257	0.257	0.772	PASS
129	128	10		93.62	0.0035	0.546	0.209	0.013	0.840	0.257	0.257	0.772	PASS
128	127	10		271.38	0.0035	0.546	0.209	0.013	0.840	0.275	0.275	0.824	PASS
127	126	10		141.87	0.0035	0.546	0.209	0.013	0.840	0.283	0.283	0.850	FAIL
126	125	10		134.35	0.0035	0.546	0.209	0.013	0.840	0.283	0.283	0.850	FAIL
125	124	10		143.78	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
124	123	10		286.10	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
123	122	10		143.90	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
122	121	10		286.28	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
121	120	10		263.72	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
120	119	10		222.37	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
119	118	10	CIP	338.66	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
118	117	10		79.97	0.0035	0.546	0.209	0.013	0.840	0.293	0.293	0.879	FAIL
117	116	10		109.00	0.0039	0.546	0.209	0.013	0.887	0.336	0.336	1.008	FAIL
116	115	10		300.00	0.0040	0.546	0.209	0.013	0.898	0.336	0.336	1.008	FAIL
115	114	10		335.39	0.0040	0.546	0.209	0.013	0.898	0.336	0.336	1.008	FAIL
114	113	10		324.67	0.0040	0.546	0.209	0.013	0.898	0.442	0.442	1.325	FAIL

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

5 Year Projected Flow Capacity Analysis

System Information										Base	5 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
113	112	16	CIP	189.94	0.0022	1.396	0.334	0.013	2.329	0.480	0.480	1.441	PASS
112	111	15		143.00	0.0022	1.227	0.313	0.013	1.960	0.480	0.480	1.441	PASS

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning *n* Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	
Antietam Creek Trunk (232B to 166)													
232B	232A	15		116.83	0.0073	1.227	0.313	0.013	3.570	0.343	0.350	1.050	PASS
232A	232	15		98.78	0.0016	1.227	0.313	0.013	1.672	0.343	0.350	1.050	PASS
23W	22W	12	VCP	130.00	0.0100	0.785	0.250	0.013	2.301	0.343	0.350	1.050	PASS
22W	21W	12	VCP	333.00	0.0050	0.785	0.250	0.013	1.627	0.343	0.350	1.050	PASS
21W	20W	12	VCP	402.00	0.0050	0.785	0.250	0.013	1.627	0.343	0.350	1.050	PASS
20W	19W	12	VCP	199.57	0.0224	0.785	0.250	0.013	3.441	0.343	0.350	1.050	PASS
19W	18W	12	VCP	341.19	0.0050	0.785	0.250	0.013	1.627	0.343	0.350	1.050	PASS
18W	17W	12	VCP	86.50	0.0150	0.785	0.250	0.013	2.819	0.343	0.350	1.050	PASS
17W	16.1W	12	VCP	122.80	0.0240	0.785	0.250	0.013	3.565	0.343	0.350	1.050	PASS
16.1W	16W	12	VCP	52.00	0.0240	0.785	0.250	0.013	3.565	0.343	0.350	1.050	PASS
16W	15.05W	12	VCP	144.47	0.0100	0.785	0.250	0.013	2.301	0.343	0.350	1.050	PASS
15.05W	15W	12	VCP	68.95	0.0100	0.785	0.250	0.013	2.301	0.343	0.350	1.050	PASS
15W	219B	12	VCP	138.14	0.0050	0.785	0.250	0.013	1.627	0.343	0.350	1.050	PASS
219B	219A	12		273.72	0.0144	0.785	0.250	0.013	2.762	0.755	0.762	2.285	PASS
219A	219	12		36.07	0.0144	0.785	0.250	0.013	2.762	0.755	0.762	2.285	PASS
219	218	18	SaniTiteHP	271.99	0.7500	1.766	0.375	0.011	69.449	0.768	0.775	2.326	PASS
218	217	18	SaniTiteHP	400.00	0.5700	1.766	0.375	0.011	60.544	0.768	0.775	2.326	PASS
217	216	18	SaniTiteHP	93.54	0.4800	1.766	0.375	0.011	55.559	0.768	0.775	2.326	PASS
216	215	18	SaniTiteHP	340.80	0.5400	1.766	0.375	0.011	58.929	0.768	0.775	2.326	PASS
215	214	18	SaniTiteHP	330.08	0.6100	1.766	0.375	0.011	62.632	0.768	0.775	2.326	PASS
214	213	18	SaniTiteHP	45.00	5.0000	1.766	0.375	0.011	179.316	0.768	0.775	2.326	PASS
213	213A	18	SaniTiteHP	50.00	5.4600	1.766	0.375	0.011	187.383	0.768	0.775	2.326	PASS
213A	212	18	SaniTiteHP	202.78	0.9800	1.766	0.375	0.011	79.386	0.768	0.775	2.326	PASS

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 Exeter Township, Berks County

10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
212	211	18	SaniTiteHP	189.56	0.5500	1.766	0.375	0.011	59.472	0.768	0.775	2.326	PASS
211	210	18	SaniTiteHP	172.00	0.5400	1.766	0.375	0.011	58.929	0.768	0.775	2.326	PASS
210	209	18	SaniTiteHP	296.68	0.5400	1.766	0.375	0.011	58.929	0.820	0.827	2.480	PASS
209	208	18	SaniTiteHP	239.50	0.5600	1.766	0.375	0.011	60.011	0.820	0.827	2.480	PASS
208	207	18	SaniTiteHP	255.19	0.8000	1.766	0.375	0.011	71.726	0.840	0.861	2.584	PASS
207	206	18	SaniTiteHP	294.81	0.8100	1.766	0.375	0.011	72.173	0.840	0.861	2.584	PASS
206	205	18	SaniTiteHP	316.55	0.8200	1.766	0.375	0.011	72.617	0.840	0.861	2.584	PASS
205	204	18	SaniTiteHP	349.51	0.8500	1.766	0.375	0.011	73.934	0.840	0.861	2.584	PASS
204	203	18		158.25	0.0063	1.767	0.376	0.013	5.398	0.861	0.882	2.646	PASS
203	202	18		175.69	0.0063	1.767	0.376	0.013	5.398	0.861	0.882	2.646	PASS
202	201	18		242.41	0.0062	1.767	0.376	0.013	5.355	0.950	0.971	2.913	PASS
201	200	18		382.59	0.0040	1.767	0.376	0.013	4.301	0.950	0.971	2.913	PASS
200	199	18		374.89	0.0040	1.767	0.376	0.013	4.301	0.950	0.971	2.913	PASS
199	198	18		329.24	0.0121	1.767	0.376	0.013	7.481	0.950	0.971	2.913	PASS
198	197	18		370.87	0.0067	1.767	0.376	0.013	5.566	0.971	0.992	2.975	PASS
197	196	18		365.98	0.0067	1.767	0.376	0.013	5.566	0.971	0.992	2.975	PASS
196	195	18		399.95	0.0067	1.767	0.376	0.013	5.566	0.971	0.992	2.975	PASS
195	194	18		334.07	0.0067	1.767	0.376	0.013	5.566	0.971	0.992	2.975	PASS
194	193A	18		100.00	0.0063	1.767	0.376	0.013	5.398	0.971	0.992	2.975	PASS
193A	193	21		208.16	0.0061	2.405	0.438	0.013	8.003	1.493	1.521	4.564	PASS
193	192	21		399.82	0.0081	2.405	0.438	0.013	9.223	1.493	1.521	4.564	PASS
192	191	20	DIP (C.50)	412.49	0.0035	2.181	0.417	0.013	5.321	1.493	1.521	4.564	PASS
191	190A	20	DIP (C.50)	236.55	0.0062	2.181	0.417	0.013	7.081	1.493	1.521	4.564	PASS
Parallel Sewer 190A to 179 (assume 50% of inflow)													

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 Exeter Township, Berks County

10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
190A	190	18		129.90	0.0051	1.767	0.376	0.013	4.856	0.747	0.761	2.282	PASS
190	189A	18		130.00	0.0280	1.767	0.376	0.013	11.379	0.764	0.784	2.351	PASS
189A	189	18		223.00	0.0050	1.767	0.376	0.013	4.809	0.764	0.784	2.351	PASS
189	188	18		216.00	0.0053	1.767	0.376	0.013	4.951	0.764	0.784	2.351	PASS
188	187A	18		260.00	0.0047	1.767	0.376	0.013	4.662	0.764	0.784	2.351	PASS
187A	187	18		34.00	0.0050	1.767	0.376	0.013	4.809	0.764	0.784	2.351	PASS
187	186A	18		75.00	0.0050	1.767	0.376	0.013	4.809	0.764	0.784	2.351	PASS
186A	186	18		354.00	0.0053	1.767	0.376	0.013	4.951	0.767	0.787	2.362	PASS
186	185	18		30.00	0.0050	1.767	0.376	0.013	4.809	0.767	0.787	2.362	PASS
185	184	18		263.00	0.0050	1.767	0.376	0.013	4.809	0.767	0.787	2.362	PASS
184	183	18		250.00	0.0050	1.767	0.376	0.013	4.809	0.767	0.787	2.362	PASS
183	182	18		394.00	0.0050	1.767	0.376	0.013	4.809	0.767	0.787	2.362	PASS
182	181	18		88.00	0.0050	1.767	0.376	0.013	4.809	0.812	0.832	2.495	PASS
181	180	18		264.00	0.0050	1.767	0.376	0.013	4.809	0.812	0.832	2.495	PASS
180	179	18	CIC	97.13	0.0030	1.767	0.376	0.013	3.725	0.812	0.832	2.495	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>													
190A	179G	16	DIP (C.50)	162.08	0.0149	1.396	0.334	0.013	6.060	0.747	0.761	2.282	PASS
179G	GM-4A	15		220.11	0.0038	1.227	0.313	0.013	2.576	0.747	0.761	2.282	PASS
GM-4A	GM-4	15		126.04	0.0047	1.227	0.313	0.013	2.865	0.747	0.761	2.282	PASS
GM-4	GM-3	15		69.91	0.0047	1.227	0.313	0.013	2.865	0.750	0.764	2.292	PASS
GM-3	GM-2	15		222.96	0.0067	1.227	0.313	0.013	3.420	0.750	0.764	2.292	PASS
GM-2	GM-1A	15		92.65	0.0047	1.227	0.313	0.013	2.865	0.750	0.764	2.292	PASS
GM-1A	179F	15		257.07	0.0051	1.227	0.313	0.013	2.984	0.750	0.764	2.292	PASS
179F	179E	15		170.52	0.0286	1.227	0.313	0.013	7.067	0.777	0.791	2.374	PASS

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning 'n'	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
179E	179D	18	DIP (C.50)	193.22	0.0031	1.767	0.376	0.013	3.786	0.777	0.791	2.374	PASS
179D	179C	18		202.79	0.0012	1.767	0.376	0.013	2.356	0.777	0.791	2.374	FAIL
179C	179B	18		251.01	0.0038	1.767	0.376	0.013	4.192	0.777	0.791	2.374	PASS
179B	179A	18		420.02	0.0012	1.767	0.376	0.013	2.356	0.777	0.791	2.374	FAIL
179A	179	18	DIP (C.50)	80.21	0.0021	1.767	0.376	0.013	3.116	0.777	0.791	2.374	PASS
179	178	27		291.52	0.0038	3.975	0.563	0.013	12.343	1.589	1.623	4.870	PASS
178	177	27		275.60	0.0022	3.975	0.563	0.013	9.391	1.593	1.627	4.880	PASS
177	176	27		366.36	0.0042	3.975	0.563	0.013	12.976	1.593	1.627	4.880	PASS
176	175A	27		99.23	0.0305	3.975	0.563	0.013	34.968	1.593	1.627	4.880	PASS
175A	175	27		103.80	0.0030	3.975	0.563	0.013	10.967	1.593	1.627	4.880	PASS
175	174B	27		227.00	0.0019	3.975	0.563	0.013	8.728	1.593	1.627	4.880	PASS
174B	174A	27		126.20	0.0031	3.975	0.563	0.013	11.148	1.593	1.627	4.880	PASS
174A	174	27		205.10	0.0012	3.975	0.563	0.013	6.936	1.593	1.627	4.880	PASS
174	173B	27		105.09	0.0014	3.975	0.563	0.013	7.492	1.593	1.627	4.880	PASS
173B	173A	27		146.85	0.0023	3.975	0.563	0.013	9.602	1.593	1.627	4.880	PASS
173A	173A1	27		73.88	0.0032	3.975	0.563	0.013	11.326	1.593	1.627	4.880	PASS
173A1	173	27		139.98	0.0051	3.975	0.563	0.013	14.299	1.593	1.627	4.880	PASS
173	172A	27		278.41	0.0019	3.975	0.563	0.013	8.728	1.593	1.627	4.880	PASS
172A	172	27		97.51	0.0021	3.975	0.563	0.013	9.175	1.593	1.627	4.880	PASS
172	171	27		275.31	0.0013	3.975	0.563	0.013	7.219	1.613	1.647	4.942	PASS
171	170A	27		244.64	0.0016	3.975	0.563	0.013	8.009	1.617	1.681	5.042	PASS
170A	170	27		307.23	0.0021	3.975	0.563	0.013	9.175	1.617	1.681	5.042	PASS
170	169	27		66.30	0.0400	3.975	0.563	0.013	40.045	1.617	1.681	5.042	PASS
169	168	27		130.77	0.0167	3.975	0.563	0.013	25.875	1.617	1.681	5.042	PASS

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 Exeter Township, Berks County

10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
168	167A	27		228.41	0.0208	3.975	0.563	0.013	28.877	1.627	1.691	5.073	PASS
167A	167	21		10.00	0.0146	2.405	0.438	0.013	12.383	1.627	1.691	5.073	PASS
167	166	18		121.21	0.0039	1.767	0.376	0.013	4.247	1.627	1.691	5.073	FAIL
167A	166A	18		132.25	0.0049	1.767	0.376	0.013	4.760	1.627	1.691	5.073	FAIL
166A	166	18		10.00	0.0050	1.767	0.376	0.013	4.809	1.627	1.691	5.073	FAIL

Antietam Creek Trunk (166 to 15)										5 Yr.	10 Year	10 Year	Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
166	164A	27	RCP	484.16	0.0051	3.975	0.563	0.013	14.299	1.879	1.946	5.839	PASS
164A	164	27	RCP	136.61	0.0042	3.975	0.563	0.013	12.976	1.879	1.946	5.839	PASS
164	163	27	RCP	388.74	0.0033	3.975	0.563	0.013	11.502	1.879	1.946	5.839	PASS
163	162A	27	RCP	135.80	0.0076	3.975	0.563	0.013	17.455	1.879	1.946	5.839	PASS
162A	162A1	27	RCP	169.64	0.0069	3.975	0.563	0.013	16.632	1.965	2.032	6.096	PASS
162A1	162	27	RCP	122.00	0.0055	3.975	0.563	0.013	14.849	1.993	2.060	6.179	PASS
162	161	27	RCP	401.13	0.0066	3.975	0.563	0.013	16.266	1.993	2.060	6.179	PASS
161	160	27	RCP	423.26	0.0071	3.975	0.563	0.013	16.871	1.993	2.064	6.191	PASS
160	159	27	RCP	376.24	0.0063	3.975	0.563	0.013	15.892	1.993	2.064	6.191	PASS
159	158A1	27	RCP	297.92	0.0054	3.975	0.563	0.013	14.713	1.993	2.064	6.191	PASS
158A1	157	27	RCP	453.64	0.0075	3.975	0.563	0.013	17.340	1.993	2.064	6.191	PASS
157	156	27	RCP	149.92	0.0046	3.975	0.563	0.013	13.580	1.996	2.067	6.201	PASS
156	155	27	RCP	100.00	0.0053	3.975	0.563	0.013	14.577	1.996	2.067	6.201	PASS
155	154	27	RCP	267.45	0.0047	3.975	0.563	0.013	13.727	1.996	2.067	6.201	PASS
154	153	27	RCP	327.70	0.0042	3.975	0.563	0.013	12.976	1.999	2.098	6.295	PASS
153	152	27	RCP	351.13	0.0030	3.975	0.563	0.013	10.967	1.999	2.098	6.295	PASS
152	151	27	RCP	352.39	0.0054	3.975	0.563	0.013	14.713	1.999	2.098	6.295	PASS

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10 Year Projected Flow Capacity Analysis

System Information										5 Yr.	10 Year		Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	
151	150	27	RCP	315.84	0.0038	3.975	0.563	0.013	12.343	1.999	2.098	6.295	PASS
150	149	27	RCP	364.08	0.0040	3.975	0.563	0.013	12.663	1.999	2.098	6.295	PASS
149	148	27	RCP	182.50	0.0051	3.975	0.563	0.013	14.299	1.999	2.098	6.295	PASS
148	147	27	RCP	182.56	0.0131	3.975	0.563	0.013	22.917	1.999	2.098	6.295	PASS
Parallel Sewer 147- 146													
147	146	18	DIP	210.00	0.0049	1.767	0.376	0.013	4.760	1.000	1.049	3.148	PASS
Parallel to 147- 146, 54" Encasing Pipe Under RR Track 146A2- 146A1													
147	146A2	21	DIP	10.35	0.0048	2.405	0.438	0.013	7.100	1.000	1.049	3.148	PASS
146A2	146A1	20	DIP	222.77	0.0056	2.181	0.417	0.013	6.730	1.000	1.049	3.148	PASS
146A1	146	21	DIP	10.35	0.0058	2.405	0.438	0.013	7.804	1.000	1.049	3.148	PASS
146	15	27	RCP	216.64	0.0039	3.975	0.563	0.013	12.504	1.999	2.098	6.295	PASS
Schuylkill River Trunk (61 to 15)													
61	60A	15		141.11	0.0070	1.227	0.313	0.013	3.496	0.617	0.671	2.014	PASS
60A	60	15		187.40	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
60	59	15		350.00	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
59	58	15		342.56	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
58	57	15		367.10	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
57	56A	15		300.00	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
56A	56	16		100.00	0.0018	1.396	0.334	0.013	2.106	0.631	0.703	2.109	FAIL
56	55	15		286.14	0.0018	1.227	0.313	0.013	1.773	0.631	0.703	2.109	FAIL
55	54	15		294.19	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
54	53	15		397.05	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
53	52	15		326.67	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL

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System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
52	51	15		283.40	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
51	50	15		233.43	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
50	49	15		266.57	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
49	48	15		277.45	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
48	47	15		222.55	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
47	46	15		216.68	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
46	45	15		233.32	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
45	44	15		201.35	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
44	43	15		323.15	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
43	42	15		191.85	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
42	41	15		279.11	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
41	40	15		345.54	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
40	39	15		330.30	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
39	38	15		219.70	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
38	37	15		225.74	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
37	36	15		274.26	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
36	35	15		231.70	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
35	34	15		235.65	0.0015	1.227	0.313	0.013	1.618	0.631	0.703	2.109	FAIL
34	33	15		282.65	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
33	32	15		308.00	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
32	31	15		342.00	0.0015	1.227	0.313	0.012	1.753	0.875	0.963	2.888	FAIL
31	30	15		350.00	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
30	29	15		313.45	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
29	28	15		286.55	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
28	27	15		275.85	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
27	26	15		375.32	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
26	25	15		145.47	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
25	24	15		295.28	0.0015	1.227	0.313	0.013	1.618	0.875	0.963	2.888	FAIL
24	23	15		282.43	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
23	22	15		225.65	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
22	21	15		275.50	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
21	20	15		274.50	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
20	19	15		271.90	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
19	18	15		378.10	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
18	17	15		376.20	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
17	16	15		323.80	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
16	15	15		281.75	0.0015	1.227	0.313	0.013	1.618	1.063	1.155	3.466	FAIL
Schuylkill River Trunk (15 to Pumping Station)													
15	14	30	CIP	222.81	0.0010	4.907	0.626	0.013	8.389	3.063	3.254	9.761	FAIL
14	13	30	RCP	410.78	0.0010	4.907	0.626	0.013	8.389	3.066	3.257	9.771	FAIL
13	12	30	RCP	249.66	0.0010	4.907	0.626	0.013	8.389	3.066	3.257	9.771	FAIL
12	11	30	RCP	473.87	0.0010	4.907	0.626	0.013	8.389	3.066	3.257	9.771	FAIL
11	10	30	RCP	486.97	0.0010	4.907	0.626	0.013	8.389	3.066	3.257	9.771	FAIL
10	9	30	RCP	438.79	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
9	8	30	RCP	375.07	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
8	7	30	RCP	310.30	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
7	6	30	RCP	351.54	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL

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System Information										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
6	5	30	RCP	496.73	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
5	4	30	RCP	477.53	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
4	3	30	RCP	309.08	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
3	2	30	RCP	356.50	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
2	1	30	RCP	306.00	0.0010	4.907	0.626	0.013	8.389	3.070	3.261	9.782	FAIL
1	P.S.	30	CIP	68.50	0.0019	4.907	0.626	0.013	11.563	3.070	3.261	9.782	PASS

Heisters Creek Trunk (C80 to 111)										5 Yr.	10 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
C80	C79	8		202.23	0.0242	0.349	0.167	0.013	1.216	0.029	0.046	0.137	PASS
C79	C78	8		224.96	0.0355	0.349	0.167	0.013	1.473	0.029	0.046	0.137	PASS
C78	C77	8		187.54	0.0110	0.349	0.167	0.013	0.820	0.029	0.046	0.137	PASS
C77	C76	8		212.46	0.0040	0.349	0.167	0.013	0.495	0.029	0.046	0.137	PASS
C76	C75	8		238.52	0.0174	0.349	0.167	0.013	1.031	0.029	0.046	0.137	PASS
C75	C74	8		387.25	0.0076	0.349	0.167	0.013	0.682	0.029	0.046	0.137	PASS
C74	C73	8		396.22	0.0163	0.349	0.167	0.013	0.998	0.029	0.046	0.137	PASS
C73	C72	8		175.00	0.0040	0.349	0.167	0.013	0.495	0.029	0.084	0.251	PASS
C72	C71	8		254.09	0.0050	0.349	0.167	0.013	0.553	0.029	0.084	0.251	PASS
C71	C70	8		250.45	0.0159	0.349	0.167	0.013	0.986	0.029	0.084	0.251	PASS
C70	C69	8		109.06	0.0040	0.349	0.167	0.013	0.495	0.038	0.093	0.280	PASS
C69	C68	8		320.40	0.0047	0.349	0.167	0.013	0.536	0.038	0.093	0.280	PASS
C68	C67	8		218.43	0.0087	0.349	0.167	0.013	0.729	0.110	0.165	0.496	PASS
C67	C66	8		399.45	0.0040	0.349	0.167	0.013	0.495	0.128	0.183	0.548	FAIL
C66	C65	8		299.02	0.0040	0.349	0.167	0.013	0.495	0.128	0.183	0.548	FAIL
C65	C64	8	CIP	54.10	0.0041	0.349	0.167	0.013	0.501	0.128	0.183	0.548	FAIL

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System Information										5 Yr.		10 Year	
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
C64	140	8		20.57	0.0044	0.349	0.167	0.013	0.519	0.145	0.200	0.600	FAIL
140	139	8	CIP	73.43	0.0148	0.349	0.167	0.013	0.951	0.162	0.220	0.661	PASS
139	138	8		128.20	0.0148	0.349	0.167	0.013	0.951	0.162	0.220	0.661	PASS
138	137	8		163.64	0.0062	0.349	0.167	0.013	0.616	0.162	0.220	0.661	FAIL
137	136	8		262.68	0.0169	0.349	0.167	0.013	1.016	0.162	0.220	0.661	PASS
136	134	8		285.66	0.0060	0.349	0.167	0.013	0.606	0.162	0.220	0.661	FAIL
134	133	8	CIP	141.06	0.0060	0.349	0.167	0.013	0.606	0.162	0.220	0.661	FAIL
133	132	10		236.52	0.0035	0.546	0.209	0.013	0.840	0.249	0.342	1.025	FAIL
132	131	10		282.24	0.0035	0.546	0.209	0.013	0.840	0.249	0.342	1.025	FAIL
131	130	10		288.06	0.0035	0.546	0.209	0.013	0.840	0.257	0.350	1.051	FAIL
130	129	10		246.94	0.0121	0.546	0.209	0.013	1.563	0.257	0.381	1.144	PASS
129	128	10		93.62	0.0035	0.546	0.209	0.013	0.840	0.257	0.381	1.144	FAIL
128	127	10		271.38	0.0035	0.546	0.209	0.013	0.840	0.275	0.399	1.196	FAIL
127	126	10		141.87	0.0035	0.546	0.209	0.013	0.840	0.283	0.407	1.222	FAIL
126	125	10		134.35	0.0035	0.546	0.209	0.013	0.840	0.283	0.407	1.222	FAIL
125	124	10		143.78	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
124	123	10		286.10	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
123	122	10		143.90	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
122	121	10		286.28	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
121	120	10		263.72	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
120	119	10		222.37	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
119	118	10	CIP	338.66	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
118	117	10		79.97	0.0035	0.546	0.209	0.013	0.840	0.293	0.417	1.251	FAIL
117	116	10		109.00	0.0039	0.546	0.209	0.013	0.887	0.336	0.467	1.401	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning 'n' Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
116	115	10		300.00	0.0040	0.546	0.209	0.013	0.898	0.336	0.467	1.401	FAIL
115	114	10		335.39	0.0040	0.546	0.209	0.013	0.898	0.336	0.467	1.401	FAIL
114	113	10		324.67	0.0040	0.546	0.209	0.013	0.898	0.442	0.655	1.964	FAIL
113	112	16	CIP	189.94	0.0022	1.396	0.334	0.013	2.329	0.480	0.693	2.080	PASS
112	111	15		143.00	0.0022	1.227	0.313	0.013	1.960	0.480	0.693	2.080	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
Antietam Creek Trunk (232B to 166)													
232B	232A	15		116.83	0.0073	1.227	0.313	0.013	3.570	1.050	0.405	1.215	PASS
232A	232	15		98.78	0.0016	1.227	0.313	0.013	1.672	1.050	0.405	1.215	PASS
23W	22W	12	VCP	130.00	0.0100	0.785	0.250	0.013	2.301	1.050	0.405	1.215	PASS
22W	21W	12	VCP	333.00	0.0050	0.785	0.250	0.013	1.627	1.050	0.405	1.215	PASS
21W	20W	12	VCP	402.00	0.0050	0.785	0.250	0.013	1.627	1.050	0.405	1.215	PASS
20W	19W	12	VCP	199.57	0.0224	0.785	0.250	0.013	3.441	1.050	0.405	1.215	PASS
19W	18W	12	VCP	341.19	0.0050	0.785	0.250	0.013	1.627	1.050	0.405	1.215	PASS
18W	17W	12	VCP	86.50	0.0150	0.785	0.250	0.013	2.819	1.050	0.405	1.215	PASS
17W	16.1W	12	VCP	122.80	0.0240	0.785	0.250	0.013	3.565	1.050	0.405	1.215	PASS
16.1W	16W	12	VCP	52.00	0.0240	0.785	0.250	0.013	3.565	1.050	0.405	1.215	PASS
16W	15.05W	12	VCP	144.47	0.0100	0.785	0.250	0.013	2.301	1.050	0.405	1.215	PASS
15.05W	15W	12	VCP	68.95	0.0100	0.785	0.250	0.013	2.301	1.050	0.405	1.215	PASS
15W	219B	12	VCP	138.14	0.0050	0.785	0.250	0.013	1.627	1.050	0.405	1.215	PASS
219B	219A	12		273.72	0.0144	0.785	0.250	0.013	2.762	2.285	0.817	2.450	PASS
219A	219	12		36.07	0.0144	0.785	0.250	0.013	2.762	2.285	0.817	2.450	PASS
219	218	18	SaniTiteHP	271.99	0.7500	1.766	0.375	0.011	69.449	2.326	0.830	2.491	PASS
218	217	18	SaniTiteHP	400.00	0.5700	1.766	0.375	0.011	60.544	2.326	0.830	2.491	PASS
217	216	18	SaniTiteHP	93.54	0.4800	1.766	0.375	0.011	55.559	2.326	0.830	2.491	PASS
216	215	18	SaniTiteHP	340.80	0.5400	1.766	0.375	0.011	58.929	2.326	0.830	2.491	PASS
215	214	18	SaniTiteHP	330.08	0.6100	1.766	0.375	0.011	62.632	2.326	0.830	2.491	PASS
214	213	18	SaniTiteHP	45.00	5.0000	1.766	0.375	0.011	179.316	2.326	0.830	2.491	PASS
213	213A	18	SaniTiteHP	50.00	5.4600	1.766	0.375	0.011	187.383	2.326	0.830	2.491	PASS
213A	212	18	SaniTiteHP	202.78	0.9800	1.766	0.375	0.011	79.386	2.326	0.830	2.491	PASS

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
212	211	18	SaniTiteHP	189.56	0.5500	1.766	0.375	0.011	59.472	2.326	0.830	2.491	PASS
211	210	18	SaniTiteHP	172.00	0.5400	1.766	0.375	0.011	58.929	2.326	0.830	2.491	PASS
210	209	18	SaniTiteHP	296.68	0.5400	1.766	0.375	0.011	58.929	2.480	0.882	2.645	PASS
209	208	18	SaniTiteHP	239.50	0.5600	1.766	0.375	0.011	60.011	2.480	0.882	2.645	PASS
208	207	18	SaniTiteHP	255.19	0.8000	1.766	0.375	0.011	71.726	2.584	0.921	2.764	PASS
207	206	18	SaniTiteHP	294.81	0.8100	1.766	0.375	0.011	72.173	2.584	0.921	2.764	PASS
206	205	18	SaniTiteHP	316.55	0.8200	1.766	0.375	0.011	72.617	2.584	0.921	2.764	PASS
205	204	18	SaniTiteHP	349.51	0.8500	1.766	0.375	0.011	73.934	2.584	0.921	2.764	PASS
204	203	18		158.25	0.0063	1.767	0.376	0.013	5.398	2.646	0.942	2.826	PASS
203	202	18		175.69	0.0063	1.767	0.376	0.013	5.398	2.646	0.942	2.826	PASS
202	201	18		242.41	0.0062	1.767	0.376	0.013	5.355	2.913	1.031	3.093	PASS
201	200	18		382.59	0.0040	1.767	0.376	0.013	4.301	2.913	1.031	3.093	PASS
200	199	18		374.89	0.0040	1.767	0.376	0.013	4.301	2.913	1.031	3.093	PASS
199	198	18		329.24	0.0121	1.767	0.376	0.013	7.481	2.913	1.031	3.093	PASS
198	197	18		370.87	0.0067	1.767	0.376	0.013	5.566	2.975	1.052	3.155	PASS
197	196	18		365.98	0.0067	1.767	0.376	0.013	5.566	2.975	1.052	3.155	PASS
196	195	18		399.95	0.0067	1.767	0.376	0.013	5.566	2.975	1.052	3.155	PASS
195	194	18		334.07	0.0067	1.767	0.376	0.013	5.566	2.975	1.052	3.155	PASS
194	193A	18		100.00	0.0063	1.767	0.376	0.013	5.398	2.975	1.052	3.155	PASS
193A	193	21		208.16	0.0061	2.405	0.438	0.013	8.003	4.564	1.601	4.804	PASS
193	192	21		399.82	0.0081	2.405	0.438	0.013	9.223	4.564	1.601	4.804	PASS
192	191	20	DIP (C.50)	412.49	0.0035	2.181	0.417	0.013	5.321	4.564	1.601	4.804	PASS
191	190A	20	DIP (C.50)	236.55	0.0062	2.181	0.417	0.013	7.081	4.564	1.601	4.804	PASS
Parallel Sewer 190A to 179 (assume 50% of inflow)													

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20 Year Projected Flow Capacity Analysis

System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
190A	190	18		129.90	0.0051	1.767	0.376	0.013	4.856	2.282	0.801	2.402	PASS
190	189A	18		130.00	0.0280	1.767	0.376	0.013	11.379	2.351	0.824	2.471	PASS
189A	189	18		223.00	0.0050	1.767	0.376	0.013	4.809	2.351	0.824	2.471	PASS
189	188	18		216.00	0.0053	1.767	0.376	0.013	4.951	2.351	0.824	2.471	PASS
188	187A	18		260.00	0.0047	1.767	0.376	0.013	4.662	2.351	0.824	2.471	PASS
187A	187	18		34.00	0.0050	1.767	0.376	0.013	4.809	2.351	0.824	2.471	PASS
187	186A	18		75.00	0.0050	1.767	0.376	0.013	4.809	2.351	0.824	2.471	PASS
186A	186	18		354.00	0.0053	1.767	0.376	0.013	4.951	2.362	0.827	2.482	PASS
186	185	18		30.00	0.0050	1.767	0.376	0.013	4.809	2.362	0.827	2.482	PASS
185	184	18		263.00	0.0050	1.767	0.376	0.013	4.809	2.362	0.827	2.482	PASS
184	183	18		250.00	0.0050	1.767	0.376	0.013	4.809	2.362	0.827	2.482	PASS
183	182	18		394.00	0.0050	1.767	0.376	0.013	4.809	2.362	0.827	2.482	PASS
182	181	18		88.00	0.0050	1.767	0.376	0.013	4.809	2.495	0.872	2.615	PASS
181	180	18		264.00	0.0050	1.767	0.376	0.013	4.809	2.495	0.872	2.615	PASS
180	179	18	CIC	97.13	0.0030	1.767	0.376	0.013	3.725	2.495	0.872	2.615	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>													
190A	179G	16	DIP (C.50)	162.08	0.0149	1.396	0.334	0.013	6.060	2.282	0.801	2.402	PASS
179G	GM-4A	15		220.11	0.0038	1.227	0.313	0.013	2.576	2.282	0.801	2.402	PASS
GM-4A	GM-4	15		126.04	0.0047	1.227	0.313	0.013	2.865	2.282	0.801	2.402	PASS
GM-4	GM-3	15		69.91	0.0047	1.227	0.313	0.013	2.865	2.292	0.804	2.412	PASS
GM-3	GM-2	15		222.96	0.0067	1.227	0.313	0.013	3.420	2.292	0.804	2.412	PASS
GM-2	GM-1A	15		92.65	0.0047	1.227	0.313	0.013	2.865	2.292	0.804	2.412	PASS
GM-1A	179F	15		257.07	0.0051	1.227	0.313	0.013	2.984	2.292	0.804	2.412	PASS
179F	179E	15		170.52	0.0286	1.227	0.313	0.013	7.067	2.374	0.831	2.494	PASS

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System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
179E	179D	18	DIP (C.50)	193.22	0.0031	1.767	0.376	0.013	3.786	2.374	0.831	2.494	PASS
179D	179C	18		202.79	0.0012	1.767	0.376	0.013	2.356	2.374	0.831	2.494	FAIL
179C	179B	18		251.01	0.0038	1.767	0.376	0.013	4.192	2.374	0.831	2.494	PASS
179B	179A	18		420.02	0.0012	1.767	0.376	0.013	2.356	2.374	0.831	2.494	FAIL
179A	179	18	DIP (C.50)	80.21	0.0021	1.767	0.376	0.013	3.116	2.374	0.831	2.494	PASS
179	178	27		291.52	0.0038	3.975	0.563	0.013	12.343	4.870	1.703	5.110	PASS
178	177	27		275.60	0.0022	3.975	0.563	0.013	9.391	4.880	1.707	5.120	PASS
177	176	27		366.36	0.0042	3.975	0.563	0.013	12.976	4.880	1.707	5.120	PASS
176	175A	27		99.23	0.0305	3.975	0.563	0.013	34.968	4.880	1.707	5.120	PASS
175A	175	27		103.80	0.0030	3.975	0.563	0.013	10.967	4.880	1.707	5.120	PASS
175	174B	27		227.00	0.0019	3.975	0.563	0.013	8.728	4.880	1.707	5.120	PASS
174B	174A	27		126.20	0.0031	3.975	0.563	0.013	11.148	4.880	1.707	5.120	PASS
174A	174	27		205.10	0.0012	3.975	0.563	0.013	6.936	4.880	1.707	5.120	PASS
174	173B	27		105.09	0.0014	3.975	0.563	0.013	7.492	4.880	1.707	5.120	PASS
173B	173A	27		146.85	0.0023	3.975	0.563	0.013	9.602	4.880	1.707	5.120	PASS
173A	173A1	27		73.88	0.0032	3.975	0.563	0.013	11.326	4.880	1.707	5.120	PASS
173A1	173	27		139.98	0.0051	3.975	0.563	0.013	14.299	4.880	1.707	5.120	PASS
173	172A	27		278.41	0.0019	3.975	0.563	0.013	8.728	4.880	1.707	5.120	PASS
172A	172	27		97.51	0.0021	3.975	0.563	0.013	9.175	4.880	1.707	5.120	PASS
172	171	27		275.31	0.0013	3.975	0.563	0.013	7.219	4.942	1.727	5.182	PASS
171	170A	27		244.64	0.0016	3.975	0.563	0.013	8.009	5.042	1.761	5.282	PASS
170A	170	27		307.23	0.0021	3.975	0.563	0.013	9.175	5.042	1.761	5.282	PASS
170	169	27		66.30	0.0400	3.975	0.563	0.013	40.045	5.042	1.761	5.282	PASS
169	168	27		130.77	0.0167	3.975	0.563	0.013	25.875	5.042	1.761	5.282	PASS

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System Information										10 Yr.		20 Year		Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD		
168	167A	27		228.41	0.0208	3.975	0.563	0.013	28.877	5.073	1.771	5.313	PASS	
167A	167	21		10.00	0.0146	2.405	0.438	0.013	12.383	5.073	1.771	5.313	PASS	
167	166	18		121.21	0.0039	1.767	0.376	0.013	4.247	5.073	1.771	5.313	FAIL	
167A	166A	18		132.25	0.0049	1.767	0.376	0.013	4.760	5.073	1.771	5.313	FAIL	
166A	166	18		10.00	0.0050	1.767	0.376	0.013	4.809	5.073	1.771	5.313	FAIL	

Antietam Creek Trunk (166 to 15)										10 Yr.		20 Year		Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD		
166	164A	27	RCP	484.16	0.0051	3.975	0.563	0.013	14.299	5.839	2.054	6.163	PASS	
164A	164	27	RCP	136.61	0.0042	3.975	0.563	0.013	12.976	5.839	2.054	6.163	PASS	
164	163	27	RCP	388.74	0.0033	3.975	0.563	0.013	11.502	5.839	2.054	6.163	PASS	
163	162A	27	RCP	135.80	0.0076	3.975	0.563	0.013	17.455	5.839	2.054	6.163	PASS	
162A	162A1	27	RCP	169.64	0.0069	3.975	0.563	0.013	16.632	6.096	2.140	6.420	PASS	
162A1	162	27	RCP	122.00	0.0055	3.975	0.563	0.013	14.849	6.179	2.178	6.533	PASS	
162	161	27	RCP	401.13	0.0066	3.975	0.563	0.013	16.266	6.179	2.178	6.533	PASS	
161	160	27	RCP	423.26	0.0071	3.975	0.563	0.013	16.871	6.191	2.182	6.545	PASS	
160	159	27	RCP	376.24	0.0063	3.975	0.563	0.013	15.892	6.191	2.182	6.545	PASS	
159	158A1	27	RCP	297.92	0.0054	3.975	0.563	0.013	14.713	6.191	2.182	6.545	PASS	
158A1	157	27	RCP	453.64	0.0075	3.975	0.563	0.013	17.340	6.191	2.182	6.545	PASS	
157	156	27	RCP	149.92	0.0046	3.975	0.563	0.013	13.580	6.201	2.216	6.648	PASS	
156	155	27	RCP	100.00	0.0053	3.975	0.563	0.013	14.577	6.201	2.216	6.648	PASS	
155	154	27	RCP	267.45	0.0047	3.975	0.563	0.013	13.727	6.201	2.216	6.648	PASS	
154	153	27	RCP	327.70	0.0042	3.975	0.563	0.013	12.976	6.295	2.247	6.742	PASS	
153	152	27	RCP	351.13	0.0030	3.975	0.563	0.013	10.967	6.295	2.278	6.835	PASS	
152	151	27	RCP	352.39	0.0054	3.975	0.563	0.013	14.713	6.295	2.278	6.835	PASS	

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Exeter Township, Berks County

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System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
151	150	27	RCP	315.84	0.0038	3.975	0.563	0.013	12.343	6.295	2.278	6.835	PASS
150	149	27	RCP	364.08	0.0040	3.975	0.563	0.013	12.663	6.295	2.278	6.835	PASS
149	148	27	RCP	182.50	0.0051	3.975	0.563	0.013	14.299	6.295	2.278	6.835	PASS
148	147	27	RCP	182.56	0.0131	3.975	0.563	0.013	22.917	6.295	2.278	6.835	PASS
Parallel Sewer 147- 146													
147	146	18	DIP	210.00	0.0049	1.767	0.376	0.013	4.760	3.148	1.139	3.418	PASS
Parallel to 147- 146, 54" Encasing Pipe Under RR Track 146A2- 146A1													
147	146A2	21	DIP	10.35	0.0048	2.405	0.438	0.013	7.100	3.148	1.139	3.418	PASS
146A2	146A1	20	DIP	222.77	0.0056	2.181	0.417	0.013	6.730	3.148	1.139	3.418	PASS
146A1	146	21	DIP	10.35	0.0058	2.405	0.438	0.013	7.804	3.148	1.139	3.418	PASS
146	15	27	RCP	216.64	0.0039	3.975	0.563	0.013	12.504	6.295	2.278	6.835	PASS
Schuylkill River Trunk (61 to 15)													
61	60A	15		141.11	0.0070	1.227	0.313	0.013	3.496	2.014	0.710	2.131	PASS
60A	60	15		187.40	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
60	59	15		350.00	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
59	58	15		342.56	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
58	57	15		367.10	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
57	56A	15		300.00	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
56A	56	16		100.00	0.0018	1.396	0.334	0.013	2.106	2.109	0.742	2.226	FAIL
56	55	15		286.14	0.0018	1.227	0.313	0.013	1.773	2.109	0.742	2.226	FAIL
55	54	15		294.19	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
54	53	15		397.05	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
53	52	15		326.67	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL

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System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
52	51	15		283.40	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
51	50	15		233.43	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
50	49	15		266.57	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
49	48	15		277.45	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
48	47	15		222.55	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
47	46	15		216.68	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
46	45	15		233.32	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
45	44	15		201.35	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
44	43	15		323.15	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
43	42	15		191.85	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
42	41	15		279.11	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
41	40	15		345.54	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
40	39	15		330.30	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
39	38	15		219.70	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
38	37	15		225.74	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
37	36	15		274.26	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
36	35	15		231.70	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
35	34	15		235.65	0.0015	1.227	0.313	0.013	1.618	2.109	0.742	2.226	FAIL
34	33	15		282.65	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
33	32	15		308.00	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
32	31	15		342.00	0.0015	1.227	0.313	0.012	1.753	2.888	1.064	3.191	FAIL
31	30	15		350.00	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
30	29	15		313.45	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
29	28	15		286.55	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning *n*	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
28	27	15		275.85	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
27	26	15		375.32	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
26	25	15		145.47	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
25	24	15		295.28	0.0015	1.227	0.313	0.013	1.618	2.888	1.064	3.191	FAIL
24	23	15		282.43	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
23	22	15		225.65	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
22	21	15		275.50	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
21	20	15		274.50	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
20	19	15		271.90	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
19	18	15		378.10	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
18	17	15		376.20	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
17	16	15		323.80	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
16	15	15		281.75	0.0015	1.227	0.313	0.013	1.618	3.466	1.256	3.769	FAIL
Schuylkill River Trunk (15 to Pumping Station)													
15	14	30	CIP	222.81	0.0010	4.907	0.626	0.013	8.389	9.761	3.535	10.604	FAIL
14	13	30	RCP	410.78	0.0010	4.907	0.626	0.013	8.389	9.771	3.538	10.614	FAIL
13	12	30	RCP	249.66	0.0010	4.907	0.626	0.013	8.389	9.771	3.538	10.614	FAIL
12	11	30	RCP	473.87	0.0010	4.907	0.626	0.013	8.389	9.771	3.538	10.614	FAIL
11	10	30	RCP	486.97	0.0010	4.907	0.626	0.013	8.389	9.771	3.538	10.614	FAIL
10	9	30	RCP	438.79	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
9	8	30	RCP	375.07	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
8	7	30	RCP	310.30	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
7	6	30	RCP	351.54	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL

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System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n"	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
6	5	30	RCP	496.73	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
5	4	30	RCP	477.53	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
4	3	30	RCP	309.08	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
3	2	30	RCP	356.50	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
2	1	30	RCP	306.00	0.0010	4.907	0.626	0.013	8.389	9.782	3.542	10.625	FAIL
1	P.S.	30	CIP	68.50	0.0019	4.907	0.626	0.013	11.563	9.782	3.542	10.625	PASS

Heisters Creek Trunk (C80 to 111)													
C80	C79	8		202.23	0.0242	0.349	0.167	0.013	1.216	0.137	0.154	0.461	PASS
C79	C78	8		224.96	0.0355	0.349	0.167	0.013	1.473	0.137	0.154	0.461	PASS
C78	C77	8		187.54	0.0110	0.349	0.167	0.013	0.820	0.137	0.154	0.461	PASS
C77	C76	8		212.46	0.0040	0.349	0.167	0.013	0.495	0.137	0.154	0.461	PASS
C76	C75	8		238.52	0.0174	0.349	0.167	0.013	1.031	0.137	0.154	0.461	PASS
C75	C74	8		387.25	0.0076	0.349	0.167	0.013	0.682	0.137	0.154	0.461	PASS
C74	C73	8		396.22	0.0163	0.349	0.167	0.013	0.998	0.137	0.154	0.461	PASS
C73	C72	8		175.00	0.0040	0.349	0.167	0.013	0.495	0.251	0.192	0.575	FAIL
C72	C71	8		254.09	0.0050	0.349	0.167	0.013	0.553	0.251	0.192	0.575	FAIL
C71	C70	8		250.45	0.0159	0.349	0.167	0.013	0.986	0.251	0.192	0.575	PASS
C70	C69	8		109.06	0.0040	0.349	0.167	0.013	0.495	0.280	0.201	0.604	FAIL
C69	C68	8		320.40	0.0047	0.349	0.167	0.013	0.536	0.280	0.201	0.604	FAIL
C68	C67	8		218.43	0.0087	0.349	0.167	0.013	0.729	0.496	0.273	0.820	FAIL
C67	C66	8		399.45	0.0040	0.349	0.167	0.013	0.495	0.548	0.291	0.872	FAIL
C66	C65	8		299.02	0.0040	0.349	0.167	0.013	0.495	0.548	0.291	0.872	FAIL
C65	C64	8	CIP	54.10	0.0041	0.349	0.167	0.013	0.501	0.548	0.291	0.872	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
C64	140	8		20.57	0.0044	0.349	0.167	0.013	0.519	0.600	0.308	0.924	FAIL
140	139	8	CIP	73.43	0.0148	0.349	0.167	0.013	0.951	0.661	0.328	0.985	FAIL
139	138	8		128.20	0.0148	0.349	0.167	0.013	0.951	0.661	0.328	0.985	FAIL
138	137	8		163.64	0.0062	0.349	0.167	0.013	0.616	0.661	0.328	0.985	FAIL
137	136	8		262.68	0.0169	0.349	0.167	0.013	1.016	0.661	0.328	0.985	PASS
136	134	8		285.66	0.0060	0.349	0.167	0.013	0.606	0.661	0.328	0.985	FAIL
134	133	8	CIP	141.06	0.0060	0.349	0.167	0.013	0.606	0.661	0.328	0.985	FAIL
133	132	10		236.52	0.0035	0.546	0.209	0.013	0.840	1.025	0.450	1.349	FAIL
132	131	10		282.24	0.0035	0.546	0.209	0.013	0.840	1.025	0.450	1.349	FAIL
131	130	10		288.06	0.0035	0.546	0.209	0.013	0.840	1.051	0.458	1.375	FAIL
130	129	10		246.94	0.0121	0.546	0.209	0.013	1.563	1.144	0.489	1.468	PASS
129	128	10		93.62	0.0035	0.546	0.209	0.013	0.840	1.144	0.489	1.468	FAIL
128	127	10		271.38	0.0035	0.546	0.209	0.013	0.840	1.196	0.507	1.520	FAIL
127	126	10		141.87	0.0035	0.546	0.209	0.013	0.840	1.222	0.515	1.546	FAIL
126	125	10		134.35	0.0035	0.546	0.209	0.013	0.840	1.222	0.515	1.546	FAIL
125	124	10		143.78	0.0035	0.546	0.209	0.013	0.840	1.251	0.525	1.575	FAIL
124	123	10		286.10	0.0035	0.546	0.209	0.013	0.840	1.251	0.525	1.575	FAIL
123	122	10		143.90	0.0035	0.546	0.209	0.013	0.840	1.251	0.525	1.575	FAIL
122	121	10		286.28	0.0035	0.546	0.209	0.013	0.840	1.251	0.525	1.575	FAIL
121	120	10		263.72	0.0035	0.546	0.209	0.013	0.840	1.251	0.531	1.593	FAIL
120	119	10		222.37	0.0035	0.546	0.209	0.013	0.840	1.251	0.531	1.593	FAIL
119	118	10	CIP	338.66	0.0035	0.546	0.209	0.013	0.840	1.251	0.542	1.626	FAIL
118	117	10		79.97	0.0035	0.546	0.209	0.013	0.840	1.251	0.542	1.626	FAIL
117	116	10		109.00	0.0039	0.546	0.209	0.013	0.887	1.401	0.592	1.776	FAIL

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System Information										10 Yr.	20 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
116	115	10		300.00	0.0040	0.546	0.209	0.013	0.898	1.401	0.592	1.776	FAIL
115	114	10		335.39	0.0040	0.546	0.209	0.013	0.898	1.401	0.592	1.776	FAIL
114	113	10		324.67	0.0040	0.546	0.209	0.013	0.898	1.964	0.915	2.744	FAIL
113	112	16	CIP	189.94	0.0022	1.396	0.334	0.013	2.329	2.080	0.953	2.860	FAIL
112	111	15		143.00	0.0022	1.227	0.313	0.013	1.960	2.080	0.953	2.860	FAIL

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
Antietam Creek Trunk (232B to 166)													
232B	232A	15		116.83	0.0073	1.227	0.313	0.013	3.570	1.215	0.405	1.215	PASS
232A	232	15		98.78	0.0016	1.227	0.313	0.013	1.672	1.215	0.405	1.215	PASS
23W	22W	12	VCP	130.00	0.0100	0.785	0.250	0.013	2.301	1.215	0.405	1.215	PASS
22W	21W	12	VCP	333.00	0.0050	0.785	0.250	0.013	1.627	1.215	0.405	1.215	PASS
21W	20W	12	VCP	402.00	0.0050	0.785	0.250	0.013	1.627	1.215	0.405	1.215	PASS
20W	19W	12	VCP	199.57	0.0224	0.785	0.250	0.013	3.441	1.215	0.405	1.215	PASS
19W	18W	12	VCP	341.19	0.0050	0.785	0.250	0.013	1.627	1.215	0.405	1.215	PASS
18W	17W	12	VCP	86.50	0.0150	0.785	0.250	0.013	2.819	1.215	0.405	1.215	PASS
17W	16.1W	12	VCP	122.80	0.0240	0.785	0.250	0.013	3.565	1.215	0.405	1.215	PASS
16.1W	16W	12	VCP	52.00	0.0240	0.785	0.250	0.013	3.565	1.215	0.405	1.215	PASS
16W	15.05W	12	VCP	144.47	0.0100	0.785	0.250	0.013	2.301	1.215	0.405	1.215	PASS
15.05W	15W	12	VCP	68.95	0.0100	0.785	0.250	0.013	2.301	1.215	0.405	1.215	PASS
15W	219B	12	VCP	138.14	0.0050	0.785	0.250	0.013	1.627	1.215	0.405	1.215	PASS
219B	219A	12		273.72	0.0144	0.785	0.250	0.013	2.762	2.450	0.817	2.450	PASS
219A	219	12		36.07	0.0144	0.785	0.250	0.013	2.762	2.450	0.817	2.450	PASS
219	218	18	SaniTiteHP	271.99	0.7500	1.766	0.375	0.011	69.449	2.491	0.830	2.491	PASS
218	217	18	SaniTiteHP	400.00	0.5700	1.766	0.375	0.011	60.544	2.491	0.830	2.491	PASS
217	216	18	SaniTiteHP	93.54	0.4800	1.766	0.375	0.011	55.559	2.491	0.830	2.491	PASS
216	215	18	SaniTiteHP	340.80	0.5400	1.766	0.375	0.011	58.929	2.491	0.830	2.491	PASS
215	214	18	SaniTiteHP	330.08	0.6100	1.766	0.375	0.011	62.632	2.491	0.830	2.491	PASS
214	213	18	SaniTiteHP	45.00	5.0000	1.766	0.375	0.011	179.316	2.491	0.830	2.491	PASS
213	213A	18	SaniTiteHP	50.00	5.4600	1.766	0.375	0.011	187.383	2.491	0.830	2.491	PASS
213A	212	18	SaniTiteHP	202.78	0.9800	1.766	0.375	0.011	79.386	2.491	0.830	2.491	PASS

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System Information										20 Yr.		30 Year	
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
212	211	18	SaniTiteHP	189.56	0.5500	1.766	0.375	0.011	59.472	2.491	0.830	2.491	PASS
211	210	18	SaniTiteHP	172.00	0.5400	1.766	0.375	0.011	58.929	2.491	0.830	2.491	PASS
210	209	18	SaniTiteHP	296.68	0.5400	1.766	0.375	0.011	58.929	2.645	0.882	2.645	PASS
209	208	18	SaniTiteHP	239.50	0.5600	1.766	0.375	0.011	60.011	2.645	0.882	2.645	PASS
208	207	18	SaniTiteHP	255.19	0.8000	1.766	0.375	0.011	71.726	2.764	0.921	2.764	PASS
207	206	18	SaniTiteHP	294.81	0.8100	1.766	0.375	0.011	72.173	2.764	0.921	2.764	PASS
206	205	18	SaniTiteHP	316.55	0.8200	1.766	0.375	0.011	72.617	2.764	0.921	2.764	PASS
205	204	18	SaniTiteHP	349.51	0.8500	1.766	0.375	0.011	73.934	2.764	0.921	2.764	PASS
204	203	18		158.25	0.0063	1.767	0.376	0.013	5.398	2.826	0.942	2.826	PASS
203	202	18		175.69	0.0063	1.767	0.376	0.013	5.398	2.826	0.942	2.826	PASS
202	201	18		242.41	0.0062	1.767	0.376	0.013	5.355	3.093	1.031	3.093	PASS
201	200	18		382.59	0.0040	1.767	0.376	0.013	4.301	3.093	1.031	3.093	PASS
200	199	18		374.89	0.0040	1.767	0.376	0.013	4.301	3.093	1.031	3.093	PASS
199	198	18		329.24	0.0121	1.767	0.376	0.013	7.481	3.093	1.031	3.093	PASS
198	197	18		370.87	0.0067	1.767	0.376	0.013	5.566	3.155	1.052	3.155	PASS
197	196	18		365.98	0.0067	1.767	0.376	0.013	5.566	3.155	1.052	3.155	PASS
196	195	18		399.95	0.0067	1.767	0.376	0.013	5.566	3.155	1.052	3.155	PASS
195	194	18		334.07	0.0067	1.767	0.376	0.013	5.566	3.155	1.052	3.155	PASS
194	193A	18		100.00	0.0063	1.767	0.376	0.013	5.398	3.155	1.052	3.155	PASS
193A	193	21		208.16	0.0061	2.405	0.438	0.013	8.003	4.804	1.601	4.804	PASS
193	192	21		399.82	0.0081	2.405	0.438	0.013	9.223	4.804	1.601	4.804	PASS
192	191	20	DIP (C.50)	412.49	0.0035	2.181	0.417	0.013	5.321	4.804	1.601	4.804	PASS
191	190A	20	DIP (C.50)	236.55	0.0062	2.181	0.417	0.013	7.081	4.804	1.601	4.804	PASS
Parallel Sewer 190A to 179 (assume 50% of inflow)													

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Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
190A	190	18		129.90	0.0051	1.767	0.376	0.013	4.856	2.402	0.801	2.402	PASS
190	189A	18		130.00	0.0280	1.767	0.376	0.013	11.379	2.471	0.824	2.471	PASS
189A	189	18		223.00	0.0050	1.767	0.376	0.013	4.809	2.471	0.824	2.471	PASS
189	188	18		216.00	0.0053	1.767	0.376	0.013	4.951	2.471	0.824	2.471	PASS
188	187A	18		260.00	0.0047	1.767	0.376	0.013	4.662	2.471	0.824	2.471	PASS
187A	187	18		34.00	0.0050	1.767	0.376	0.013	4.809	2.471	0.824	2.471	PASS
187	186A	18		75.00	0.0050	1.767	0.376	0.013	4.809	2.471	0.824	2.471	PASS
186A	186	18		354.00	0.0053	1.767	0.376	0.013	4.951	2.482	0.827	2.482	PASS
186	185	18		30.00	0.0050	1.767	0.376	0.013	4.809	2.482	0.827	2.482	PASS
185	184	18		263.00	0.0050	1.767	0.376	0.013	4.809	2.482	0.827	2.482	PASS
184	183	18		250.00	0.0050	1.767	0.376	0.013	4.809	2.482	0.827	2.482	PASS
183	182	18		394.00	0.0050	1.767	0.376	0.013	4.809	2.482	0.827	2.482	PASS
182	181	18		88.00	0.0050	1.767	0.376	0.013	4.809	2.615	0.872	2.615	PASS
181	180	18		264.00	0.0050	1.767	0.376	0.013	4.809	2.615	0.872	2.615	PASS
180	179	18	CIC	97.13	0.0030	1.767	0.376	0.013	3.725	2.615	0.872	2.615	PASS
<i>Parallel Sewer 190A to 179 (assume 50% of inflow)</i>													
190A	179G	16	DIP (C.50)	162.08	0.0149	1.396	0.334	0.013	6.060	2.402	0.801	2.402	PASS
179G	GM-4A	15		220.11	0.0038	1.227	0.313	0.013	2.576	2.402	0.801	2.402	PASS
GM-4A	GM-4	15		126.04	0.0047	1.227	0.313	0.013	2.865	2.402	0.801	2.402	PASS
GM-4	GM-3	15		69.91	0.0047	1.227	0.313	0.013	2.865	2.412	0.804	2.412	PASS
GM-3	GM-2	15		222.96	0.0067	1.227	0.313	0.013	3.420	2.412	0.804	2.412	PASS
GM-2	GM-1A	15		92.65	0.0047	1.227	0.313	0.013	2.865	2.412	0.804	2.412	PASS
GM-1A	179F	15		257.07	0.0051	1.227	0.313	0.013	2.984	2.412	0.804	2.412	PASS
179F	179E	15		170.52	0.0286	1.227	0.313	0.013	7.067	2.494	0.831	2.494	PASS

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179E	179D	18	DIP (C.50)	193.22	0.0031	1.767	0.376	0.013	3.786	2.494	0.831	2.494	PASS
179D	179C	18		202.79	0.0012	1.767	0.376	0.013	2.356	2.494	0.831	2.494	FAIL
179C	179B	18		251.01	0.0038	1.767	0.376	0.013	4.192	2.494	0.831	2.494	PASS
179B	179A	18		420.02	0.0012	1.767	0.376	0.013	2.356	2.494	0.831	2.494	FAIL
179A	179	18	DIP (C.50)	80.21	0.0021	1.767	0.376	0.013	3.116	2.494	0.831	2.494	PASS
179	178	27		291.52	0.0038	3.975	0.563	0.013	12.343	5.110	1.703	5.110	PASS
178	177	27		275.60	0.0022	3.975	0.563	0.013	9.391	5.120	1.707	5.120	PASS
177	176	27		366.36	0.0042	3.975	0.563	0.013	12.976	5.120	1.707	5.120	PASS
176	175A	27		99.23	0.0305	3.975	0.563	0.013	34.968	5.120	1.707	5.120	PASS
175A	175	27		103.80	0.0030	3.975	0.563	0.013	10.967	5.120	1.707	5.120	PASS
175	174B	27		227.00	0.0019	3.975	0.563	0.013	8.728	5.120	1.707	5.120	PASS
174B	174A	27		126.20	0.0031	3.975	0.563	0.013	11.148	5.120	1.707	5.120	PASS
174A	174	27		205.10	0.0012	3.975	0.563	0.013	6.936	5.120	1.707	5.120	PASS
174	173B	27		105.09	0.0014	3.975	0.563	0.013	7.492	5.120	1.707	5.120	PASS
173B	173A	27		146.85	0.0023	3.975	0.563	0.013	9.602	5.120	1.707	5.120	PASS
173A	173A1	27		73.88	0.0032	3.975	0.563	0.013	11.326	5.120	1.707	5.120	PASS
173A1	173	27		139.98	0.0051	3.975	0.563	0.013	14.299	5.120	1.707	5.120	PASS
173	172A	27		278.41	0.0019	3.975	0.563	0.013	8.728	5.120	1.707	5.120	PASS
172A	172	27		97.51	0.0021	3.975	0.563	0.013	9.175	5.120	1.707	5.120	PASS
172	171	27		275.31	0.0013	3.975	0.563	0.013	7.219	5.182	1.727	5.182	PASS
171	170A	27		244.64	0.0016	3.975	0.563	0.013	8.009	5.282	1.761	5.282	PASS
170A	170	27		307.23	0.0021	3.975	0.563	0.013	9.175	5.282	1.761	5.282	PASS
170	169	27		66.30	0.0400	3.975	0.563	0.013	40.045	5.282	1.761	5.282	PASS
169	168	27		130.77	0.0167	3.975	0.563	0.013	25.875	5.282	1.761	5.282	PASS

Sewer Capacity Evaluation
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 Exeter Township, Berks County

30 Year Projected Flow Capacity Analysis

System Information										20 Yr.	30 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
168	167A	27		228.41	0.0208	3.975	0.563	0.013	28.877	5.313	1.771	5.313	PASS
167A	167	21		10.00	0.0146	2.405	0.438	0.013	12.383	5.313	1.771	5.313	PASS
167	166	18		121.21	0.0039	1.767	0.376	0.013	4.247	5.313	1.771	5.313	FAIL
167A	166A	18		132.25	0.0049	1.767	0.376	0.013	4.760	5.313	1.771	5.313	FAIL
166A	166	18		10.00	0.0050	1.767	0.376	0.013	4.809	5.313	1.771	5.313	FAIL

Antietam Creek Trunk (166 to 15)										20 Yr.	30 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
166	164A	27	RCP	484.16	0.0051	3.975	0.563	0.013	14.299	6.163	2.063	6.190	PASS
164A	164	27	RCP	136.61	0.0042	3.975	0.563	0.013	12.976	6.163	2.063	6.190	PASS
164	163	27	RCP	388.74	0.0033	3.975	0.563	0.013	11.502	6.163	2.063	6.190	PASS
163	162A	27	RCP	135.80	0.0076	3.975	0.563	0.013	17.455	6.163	2.063	6.190	PASS
162A	162A1	27	RCP	169.64	0.0069	3.975	0.563	0.013	16.632	6.420	2.149	6.447	PASS
162A1	162	27	RCP	122.00	0.0055	3.975	0.563	0.013	14.849	6.533	2.187	6.560	PASS
162	161	27	RCP	401.13	0.0066	3.975	0.563	0.013	16.266	6.533	2.187	6.560	PASS
161	160	27	RCP	423.26	0.0071	3.975	0.563	0.013	16.871	6.545	2.191	6.572	PASS
160	159	27	RCP	376.24	0.0063	3.975	0.563	0.013	15.892	6.545	2.191	6.572	PASS
159	158A1	27	RCP	297.92	0.0054	3.975	0.563	0.013	14.713	6.545	2.191	6.572	PASS
158A1	157	27	RCP	453.64	0.0075	3.975	0.563	0.013	17.340	6.545	2.191	6.572	PASS
157	156	27	RCP	149.92	0.0046	3.975	0.563	0.013	13.580	6.648	2.225	6.675	PASS
156	155	27	RCP	100.00	0.0053	3.975	0.563	0.013	14.577	6.648	2.225	6.675	PASS
155	154	27	RCP	267.45	0.0047	3.975	0.563	0.013	13.727	6.648	2.225	6.675	PASS
154	153	27	RCP	327.70	0.0042	3.975	0.563	0.013	12.976	6.742	2.256	6.769	PASS
153	152	27	RCP	351.13	0.0030	3.975	0.563	0.013	10.967	6.835	2.287	6.862	PASS
152	151	27	RCP	352.39	0.0054	3.975	0.563	0.013	14.713	6.835	2.287	6.862	PASS

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Exeter Township, Berks County

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System Information										20 Yr.		30 Year		Capacity Failure
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD		
151	150	27	RCP	315.84	0.0038	3.975	0.563	0.013	12.343	6.835	2.287	6.862	PASS	
150	149	27	RCP	364.08	0.0040	3.975	0.563	0.013	12.663	6.835	2.287	6.862	PASS	
149	148	27	RCP	182.50	0.0051	3.975	0.563	0.013	14.299	6.835	2.287	6.862	PASS	
148	147	27	RCP	182.56	0.0131	3.975	0.563	0.013	22.917	6.835	2.287	6.862	PASS	
Parallel Sewer 147- 146														
147	146	18	DIP	210.00	0.0049	1.767	0.376	0.013	4.760	3.418	1.144	3.431	PASS	
Parallel to 147- 146, 54" Encasing Pipe Under RR Track 146A2- 146A1														
147	146A2	21	DIP	10.35	0.0048	2.405	0.438	0.013	7.100	3.418	1.144	3.431	PASS	
146A2	146A1	20	DIP	222.77	0.0056	2.181	0.417	0.013	6.730	3.418	1.144	3.431	PASS	
146A1	146	21	DIP	10.35	0.0058	2.405	0.438	0.013	7.804	3.418	1.144	3.431	PASS	
146	15	27	RCP	216.64	0.0039	3.975	0.563	0.013	12.504	6.835	2.287	6.862	PASS	
Schuylkill River Trunk (61 to 15)														
61	60A	15		141.11	0.0070	1.227	0.313	0.013	3.496	2.131	0.800	2.401	PASS	
60A	60	15		187.40	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
60	59	15		350.00	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
59	58	15		342.56	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
58	57	15		367.10	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
57	56A	15		300.00	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
56A	56	16		100.00	0.0018	1.396	0.334	0.013	2.106	2.226	0.832	2.496	FAIL	
56	55	15		286.14	0.0018	1.227	0.313	0.013	1.773	2.226	0.832	2.496	FAIL	
55	54	15		294.19	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL	
54	53	15		397.05	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL	
53	52	15		326.67	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL	

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System Information										20 Yr.	30 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
52	51	15		283.40	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
51	50	15		233.43	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
50	49	15		266.57	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
49	48	15		277.45	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
48	47	15		222.55	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
47	46	15		216.68	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
46	45	15		233.32	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
45	44	15		201.35	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
44	43	15		323.15	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
43	42	15		191.85	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
42	41	15		279.11	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
41	40	15		345.54	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
40	39	15		330.30	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
39	38	15		219.70	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
38	37	15		225.74	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
37	36	15		274.26	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
36	35	15		231.70	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
35	34	15		235.65	0.0015	1.227	0.313	0.013	1.618	2.226	0.832	2.496	FAIL
34	33	15		282.65	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
33	32	15		308.00	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
32	31	15		342.00	0.0015	1.227	0.313	0.012	1.753	3.191	1.154	3.461	FAIL
31	30	15		350.00	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
30	29	15		313.45	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
29	28	15		286.55	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL

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Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

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System Information										20 Yr.		30 Year	
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
28	27	15		275.85	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
27	26	15		375.32	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
26	25	15		145.47	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
25	24	15		295.28	0.0015	1.227	0.313	0.013	1.618	3.191	1.154	3.461	FAIL
24	23	15		282.43	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
23	22	15		225.65	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
22	21	15		275.50	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
21	20	15		274.50	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
20	19	15		271.90	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
19	18	15		378.10	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
18	17	15		376.20	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
17	16	15		323.80	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL
16	15	15		281.75	0.0015	1.227	0.313	0.013	1.618	3.769	1.346	4.039	FAIL

Schuylkill River Trunk (15 to Pumping Station)													
15	14	30	CIP	222.81	0.0010	4.907	0.626	0.013	8.389	10.604	3.634	10.901	FAIL
14	13	30	RCP	410.78	0.0010	4.907	0.626	0.013	8.389	10.614	3.637	10.911	FAIL
13	12	30	RCP	249.66	0.0010	4.907	0.626	0.013	8.389	10.614	3.637	10.911	FAIL
12	11	30	RCP	473.87	0.0010	4.907	0.626	0.013	8.389	10.614	3.637	10.911	FAIL
11	10	30	RCP	486.97	0.0010	4.907	0.626	0.013	8.389	10.614	3.637	10.911	FAIL
10	9	30	RCP	438.79	0.0010	4.907	0.626	0.013	8.389	10.625	3.641	10.922	FAIL
9	8	30	RCP	375.07	0.0010	4.907	0.626	0.013	8.389	10.625	3.641	10.922	FAIL
8	7	30	RCP	310.30	0.0010	4.907	0.626	0.013	8.389	10.625	3.641	10.922	FAIL
7	6	30	RCP	351.54	0.0010	4.907	0.626	0.013	8.389	10.625	3.641	10.922	FAIL

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System Information										20 Yr.		30 Year	
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
6	5	30	RCP	496.73	0.0010	4.907	0.626	0.013	8.389	10.625	3.648	10.943	FAIL
5	4	30	RCP	477.53	0.0010	4.907	0.626	0.013	8.389	10.625	3.648	10.943	FAIL
4	3	30	RCP	309.08	0.0010	4.907	0.626	0.013	8.389	10.625	3.648	10.943	FAIL
3	2	30	RCP	356.50	0.0010	4.907	0.626	0.013	8.389	10.625	3.648	10.943	FAIL
2	1	30	RCP	306.00	0.0010	4.907	0.626	0.013	8.389	10.625	3.648	10.943	FAIL
1	P.S.	30	CIP	68.50	0.0019	4.907	0.626	0.013	11.563	10.625	3.648	10.943	PASS

Heisters Creek Trunk (C80 to 111)													
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
C80	C79	8		202.23	0.0242	0.349	0.167	0.013	1.216	0.461	0.154	0.461	PASS
C79	C78	8		224.96	0.0355	0.349	0.167	0.013	1.473	0.461	0.154	0.461	PASS
C78	C77	8		187.54	0.0110	0.349	0.167	0.013	0.820	0.461	0.154	0.461	PASS
C77	C76	8		212.46	0.0040	0.349	0.167	0.013	0.495	0.461	0.154	0.461	PASS
C76	C75	8		238.52	0.0174	0.349	0.167	0.013	1.031	0.461	0.154	0.461	PASS
C75	C74	8		387.25	0.0076	0.349	0.167	0.013	0.682	0.461	0.154	0.461	PASS
C74	C73	8		396.22	0.0163	0.349	0.167	0.013	0.998	0.461	0.154	0.461	PASS
C73	C72	8		175.00	0.0040	0.349	0.167	0.013	0.495	0.575	0.192	0.575	FAIL
C72	C71	8		254.09	0.0050	0.349	0.167	0.013	0.553	0.575	0.192	0.575	FAIL
C71	C70	8		250.45	0.0159	0.349	0.167	0.013	0.986	0.575	0.192	0.575	PASS
C70	C69	8		109.06	0.0040	0.349	0.167	0.013	0.495	0.604	0.201	0.604	FAIL
C69	C68	8		320.40	0.0047	0.349	0.167	0.013	0.536	0.604	0.201	0.604	FAIL
C68	C67	8		218.43	0.0087	0.349	0.167	0.013	0.729	0.820	0.273	0.820	FAIL
C67	C66	8		399.45	0.0040	0.349	0.167	0.013	0.495	0.872	0.291	0.872	FAIL
C66	C65	8		299.02	0.0040	0.349	0.167	0.013	0.495	0.872	0.291	0.872	FAIL
C65	C64	8	CIP	54.10	0.0041	0.349	0.167	0.013	0.501	0.872	0.291	0.872	FAIL

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System Information										20 Yr.	30 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
C64	140	8		20.57	0.0044	0.349	0.167	0.013	0.519	0.924	0.308	0.924	FAIL
140	139	8	CIP	73.43	0.0148	0.349	0.167	0.013	0.951	0.985	0.328	0.985	FAIL
139	138	8		128.20	0.0148	0.349	0.167	0.013	0.951	0.985	0.328	0.985	FAIL
138	137	8		163.64	0.0062	0.349	0.167	0.013	0.616	0.985	0.328	0.985	FAIL
137	136	8		262.68	0.0169	0.349	0.167	0.013	1.016	0.985	0.328	0.985	PASS
136	134	8		285.66	0.0060	0.349	0.167	0.013	0.606	0.985	0.328	0.985	FAIL
134	133	8	CIP	141.06	0.0060	0.349	0.167	0.013	0.606	0.985	0.328	0.985	FAIL
133	132	10		236.52	0.0035	0.546	0.209	0.013	0.840	1.349	0.450	1.349	FAIL
132	131	10		282.24	0.0035	0.546	0.209	0.013	0.840	1.349	0.450	1.349	FAIL
131	130	10		288.06	0.0035	0.546	0.209	0.013	0.840	1.375	0.458	1.375	FAIL
130	129	10		246.94	0.0121	0.546	0.209	0.013	1.563	1.468	0.489	1.468	PASS
129	128	10		93.62	0.0035	0.546	0.209	0.013	0.840	1.468	0.489	1.468	FAIL
128	127	10		271.38	0.0035	0.546	0.209	0.013	0.840	1.520	0.507	1.520	FAIL
127	126	10		141.87	0.0035	0.546	0.209	0.013	0.840	1.546	0.515	1.546	FAIL
126	125	10		134.35	0.0035	0.546	0.209	0.013	0.840	1.546	0.515	1.546	FAIL
125	124	10		143.78	0.0035	0.546	0.209	0.013	0.840	1.575	0.525	1.575	FAIL
124	123	10		286.10	0.0035	0.546	0.209	0.013	0.840	1.575	0.525	1.575	FAIL
123	122	10		143.90	0.0035	0.546	0.209	0.013	0.840	1.575	0.525	1.575	FAIL
122	121	10		286.28	0.0035	0.546	0.209	0.013	0.840	1.575	0.525	1.575	FAIL
121	120	10		263.72	0.0035	0.546	0.209	0.013	0.840	1.593	0.531	1.593	FAIL
120	119	10		222.37	0.0035	0.546	0.209	0.013	0.840	1.593	0.531	1.593	FAIL
119	118	10	CIP	338.66	0.0035	0.546	0.209	0.013	0.840	1.626	0.542	1.626	FAIL
118	117	10		79.97	0.0035	0.546	0.209	0.013	0.840	1.626	0.542	1.626	FAIL
117	116	10		109.00	0.0039	0.546	0.209	0.013	0.887	1.776	0.592	1.776	FAIL

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

30 Year Projected Flow Capacity Analysis

System Information										20 Yr.	30 Year		
Upstream Manhole	Downstream Manhole	Dia. in.	Pipe Material	Length ft.	Slope ft./ft.	Full Flow Area s.f.	Full Flow Hydraulic Radius	Manning "n" Coefficient	Pipe Capacity MGD	Projected Avg. Daily Flow MGD	Projected Avg. Daily Flow MGD	Projected Peak Daily Flow MGD	Capacity Failure
116	115	10		300.00	0.0040	0.546	0.209	0.013	0.898	1.776	0.592	1.776	FAIL
115	114	10		335.39	0.0040	0.546	0.209	0.013	0.898	1.776	0.592	1.776	FAIL
114	113	10		324.67	0.0040	0.546	0.209	0.013	0.898	2.744	1.006	3.017	FAIL
113	112	16	CIP	189.94	0.0022	1.396	0.334	0.013	2.329	2.860	1.044	3.133	FAIL
112	111	15		143.00	0.0022	1.227	0.313	0.013	1.960	2.860	1.044	3.133	FAIL

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

Flow Distribution Considering 2008 Metering Results

Flow Distribution by Interceptor Manhole				
MH	DESCRIPTION	Base Average Daily Flow (mgd)	Percent of Total (%)	2.5 INST. PEAK (mgd)
B61	E. 46TH STREET	0.017	0.64%	0.043
EG5	DEMOSS ROAD	0.017	0.64%	0.043
B53	PERKIOMEN AVE.	0.011	0.41%	0.028
B51A1	FAIRLANE & PERKIOMEN	0.062	2.34%	0.155
B48	FAIRLANE & PERKIOMEN	0.093	3.50%	0.233
B46	LORANE & PERKIOMEN	0.004	0.15%	0.010
166A		0.204	7.69%	
166		1.391	52.41%	3.478
162A		0.085	3.20%	0.213
162A1		0.029	1.09%	0.073
157		0.028	1.06%	0.070
154		0.028	1.06%	0.070
15		0.882	33.23%	2.205
14	Schuylkill River Trunk (East)	0.003	0.10%	0.009
10	Schuylkill River Trunk (East)	0.003	0.10%	0.009
	TOTALS	2.654	99.94%	6.635

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

Flow Distribution Considering 2008 Metering Results

Flow Distribution Considering 2008 Metering Results

<i>Flow Distribution by Zone</i>				
Zone	DESCRIPTION	Downstream Connection Point	Percent of Total (%)	
1	Above St. Lawrence Boro.	MP1	10.00%	
2	St. Lawrence	Various	15.00%	
3	Antietam Creek T.S. (North)	165	21.00%	
4	Antietam Creek T.S. (South)	15.000	10.00%	
5	Schuylkill River T.S. (West)	15	30.00%	
6	Heisters Creek T.S.	Plant	14.00%	
7	Schulykill River Trunk (East)	Plant	0.20%	
TOTALS			100.00%	

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

3.43 MGD Base Average Daily Flow Assumed

Antietam Creek Trunk Sewer Incremental Flows				
MH	DESCRIPTION	Average Daily Flow (mgd)	TSB Average Daily Flow (mgd)	3.0 INST. PEAK (mgd)
232B	Above St. Lawrence -Meter Pit 1	0.343	0.339	1.017
219B	near Meter Pit 4	0.412	0.200	0.600
219		0.014	0.012	0.036
210	near Meter Pit 2	0.051	0.060	0.180
208		0.021	0.022	0.066
204		0.021	0.020	0.060
202	near Meter Pit 3	0.089	0.090	0.270
198	HR20	0.021	0.021	0.063
193A	Includes Glen Oley Pumping Station	0.490	0.490	1.470
190A		0.000	0.000	0.000
GM-4	Parallel to 190 thru 182	0.003	0.004	0.012
179F		0.010	0.010	0.030
179F		0.017	0.018	0.054
190		0.017	0.017	0.051
187B	Parallel to 190A thru 179F	0.003	0.002	0.006
186A		0.003	0.005	0.015
182		0.045	0.045	0.135
178	CC31	0.003	0.003	0.009
172		0.021	0.020	0.060
171		0.003	0.003	0.009
168	SHELBOURNE & PERKIOMEN AVE.	0.010	0.010	0.030
		0.000		
166		0.202	0.204	0.612
162A		0.086	0.085	0.255
162A1		0.027	0.029	0.087
157		0.003	0.028	0.084
154		0.003	0.028	0.084
	TOTALS	1.921	1.765	5.295

Sewer Capacity Evaluation
 Exeter Township Major Trunk Sewers
 Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers
 Exeter Township, Berks County

3.43 MGD Base Average Daily Flow Assumed

Schuylkill River Trunk Sewer Incremental Flows				
MH	DESCRIPTION	Average Daily Flow (mgd)	TSB Average Daily Flow (mgd)	3.0 INST. PEAK (mgd)
61	flow from Antietam Creek TS enters	0.617	0.573	1.719
60A		0.014	0.010	0.030
34		0.244	0.150	0.450
24		0.189	0.149	0.447
15				0.000
14			0.034	0.102
10			0.034	0.102
		TOTALS	1.070	0.950

Heisters Creek Trunk Sewer Incremental Flows					
MH	DESCRIPTION	Average Daily Flow (mgd)	TSB Average Daily Flow (mgd)	3.0 INST. PEAK (mgd)	
C80	Includes Pineland Pumping Station	0.029	0.043	0.129	
C70		0.010	0.013	0.039	
C68		0.072	0.106	0.318	
C67		0.017	0.026	0.078	
C64		0.017	0.026	0.078	
140		0.017	0.026	0.078	
133		0.086	0.132	0.396	
131		0.009	0.013	0.039	
128		0.017	0.026	0.078	
127		0.009	0.013	0.039	
125		0.010	0.013	0.039	
117		0.043	0.066	0.198	
114		Includes Lincoln, Pottstown, and Baumstown Pumping Stations	0.106	0.158	0.474
113			0.038	0.052	0.156
	TOTALS	0.480	0.713	2.139	

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

2008 Metered Flows

Antietam Creek Trunk Sewer Incremental Flows					
MH	DESCRIPTION	Average Metered Daily Flow (mgd)	Metered Max. Flow (mgd)	Calculated Peak Factor	2.5 INST. PEAK (mgd)
215	5 week average flow	0.576	2.076	3.6	1.440
164	6 week average flow	1.285	4.233	3.3	3.213
149	7 week average flow	1.674	5.167	3.1	4.185
TOTALS		3.535	11.476		8.838

Schuylkill River Trunk Sewer Incremental Flows					
MH	DESCRIPTION	Average Metered Daily Flow (mgd)	Metered Max. Flow (mgd)	Calculated Peak Factor	2.5 INST. PEAK (mgd)
36	5 week average flow	0.417	0.955	2.3	1.043
18	5 week average flow	0.711	2.232	3.1	1.778
TOTALS		1.128	3.187		2.820

Heisters Creek Trunk Sewer Incremental Flows					
MH	DESCRIPTION	Average Metered Daily Flow (mgd)	Metered Max. Flow (mgd)	Calculated Peak Factor	2.5 INST. PEAK (mgd)
132	5 week average flow	0.111	0.699	6.3	0.278
112	5 week average flow	0.434	2.550	5.9	1.085
TOTALS		0.545	3.249		1.363

Sewer Capacity Evaluation

Exeter Township Major Trunk Sewers

Antietam Creek Trunk, Schuylkill River Trunk, and Heisters Creek Trunk Sewers

Exeter Township, Berks County

Pumping Station Flow Data

Annual Average Daily Flow (1)							
Inceptor Manhole	DESCRIPTION	Design Capacity (mgd)	2007 Average Daily Flow (mgd)	2008 Average Daily Flow (mgd)	2009 Average Daily Flow (mgd)	2010 Average Daily Flow (mgd)	2011 Average Daily Flow (mgd)
114	Lincoln Road	0.226	0.075	0.078	0.067	0.069	0.093
114	Buddies Place	0.344	0.013	0.011	0.011	0.010	0.012
114	Pottstown Avenue	0.933	0.009	0.010	0.009	0.008	0.011
114	South Baumstown	0.066	0.013	0.013	0.010	0.010	0.011
133	Pineland Road	0.271	0.002	0.002	0.002	0.002	0.002
193A	Glen Oley	0.256	0.004	0.005	0.005	0.005	0.006
TOTALS		2.096	0.115	0.118	0.104	0.104	0.135

Notes:

(1) Flows are based on pumping station hour meter readings and actual pump capacities.

Wastewater Treatment Plant Flow Data

Annual Average Daily Flow							
	DESCRIPTION	5 Yr. Average Daily Flow (mgd)	2007 Average Daily Flow (mgd)	2008 Average Daily Flow (mgd)	2009 Average Daily Flow (mgd)	2010 Average Daily Flow (mgd)	2011 Average Daily Flow (mgd)
	WWTP	3.461	2.860	3.382	3.324	3.389	4.351

Appendix B PNDI and PHMC

1. PROJECT INFORMATION

Project Name: Helsters Creek Trunk Sewer Replacement

Date of review: 10/2/2012 8:36:34 AM

Project Category: Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line

Project Length: 9841.0 feet

County: Berks Township/Municipality: Exeter

Quadrangle Name: BIRDSBORO ~ ZIP Code: 19508,19606

Decimal Degrees: 40.283618 N, -75.832357 W

Degrees Minutes Seconds: 40° 17' 1" N, -75° 49' 56.5" W



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send

project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Proposed Status: Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:

SIGNED copy of this Project Environmental Review Receipt

Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

Project location information (name of USGS Quadrangle, Township/Municipality, and County)

USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Roger A. Phillips, P.E.
Company/Business Name: Gannett Fleming, Inc.
Address: P.O. Box 60214
City, State, Zip: Valley Forge PA 19164
Phone: (610) 650-8181 Fax: (610) 650-8190
Email: R.phillips@gfnet.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

 10-10-2012
applicant/project proponent signature date

1. PROJECT INFORMATION

Project Name: **Schuylkill River Trunk Sewer Replacement**
 Date of review: **10/2/2012 8:28:33 AM**
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**
 Project Length: **18160.0 feet**
 County: **Berks Township/Municipality: Exeter**
 Quadrangle Name: **READING ~ ZIP Code: 19508,19606**
 Decimal Degrees: **40.283454 N, -75.855617 W**
 Degrees Minutes Seconds: **40° 17' 0 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel.

"Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: "Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. ""Project"" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur ."

Your answer is: **"2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands."**

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)

Scientific Name: *Lycopus rubellus*

Common Name: Bugleweed

Current Status: Endangered

Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Proposed Status: Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE: No impacts to federally listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum Materials to be submitted:*

- ___ SIGNED copy of this Project Environmental Review Receipt
- ___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
- ___ Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- ___ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- ___ A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- ___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- ___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

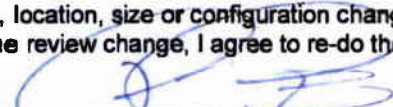
PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-8957

7. PROJECT CONTACT INFORMATION

Name: Roger A Phillips, P.E.
Company/Business Name: Carnett Fencing Inc.
Address: P.O. Box 40714
City, State, Zip: Valley Forge PA 19484
Phone: (610) 650-8101 Fax: (610) 650-8190
Email: R.Phillips@gfnet.com

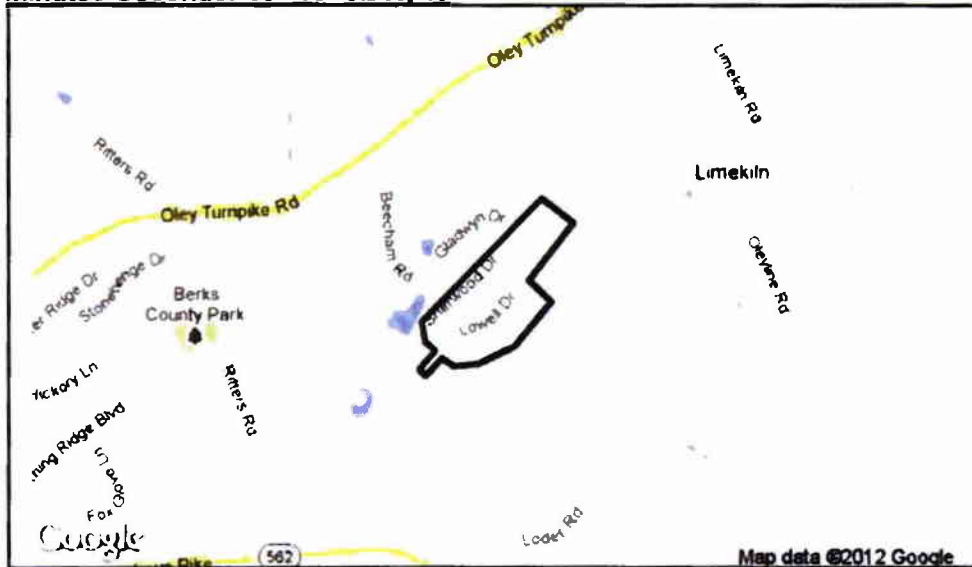
8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

 10-10-2012
applicant/project proponent signature date

1. PROJECT INFORMATION

Project Name: **Glen Oley Farms Sewer Extension**
 Date of review: **10/3/2012 8:41:16 AM**
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line (new - construction in new location)**
 Project Area: **45.6 acres**
 County: **Berks Township/Municipality: Exeter**
 Quadrangle Name: **BIRDSBORO ~ ZIP Code: 19606**
 Decimal Degrees: **40.331267 N, -75.813174 W**
 Degrees Minutes Seconds: **40° 19' 52 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Conservation Measure	No Further Review Required, See Agency Comments
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate that while threatened and endangered and/or special concern species and resources are in the project vicinity, no adverse impacts are anticipated. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. However, the jurisdictional agency/agencies recommend the project proponent/applicant follow the Conservation Measures indicated in their entirety. If a DEP permit is required for this project, DEP has the discretion to incorporate one or more Conservation Measures into its permit. This response does not reflect potential agency concerns regarding potential impacts to other ecological resources, such as wetlands.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: "Will the entire project area (including any discharge), plus a 300 feet buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, maintained (periodically mown) lawn, crop agriculture field or maintained orchard?"

Your answer is: 1. Yes

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Conservation Measure: Please avoid the introduction of invasive species in order to protect the integrity of nearby plant species of special concern. Voluntary cleaning of equipment/vehicles, using clean fill and mulch, and avoiding planting invasive species (<http://www.dcnr.state.pa.us/forestry/invasivetutorial/index.htm>) will help to conserve sensitive plant habitats.

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)

Scientific Name: *Tripsacum dactyloides*

Common Name: Eastern Gamma-grass

Current Status: Special Concern Species*

Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

4. DEP INFORMATION

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5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

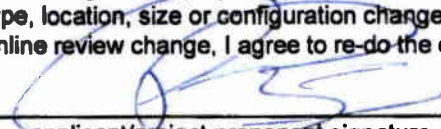
PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Roger A. Phillips, P.E.
Company/Business Name: Cannett Fleming, Inc.
Address: P.O. Box 50214
City, State, Zip: Valley Forge PA 19474
Phone: (610) 650-8101 Fax: (610) 650-8190
Email: RPhillips@cfnet.com

8. CERTIFICATION

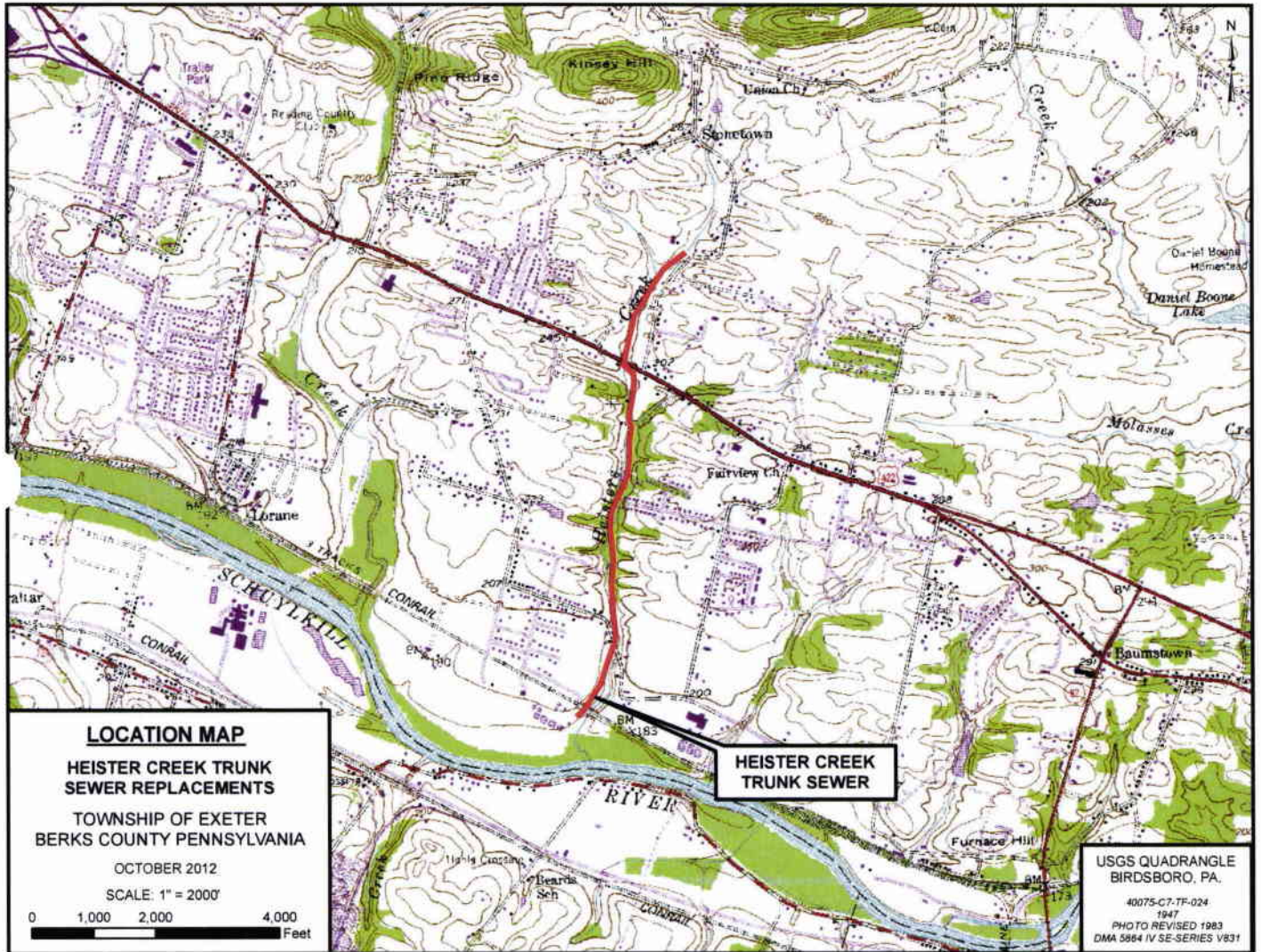
I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

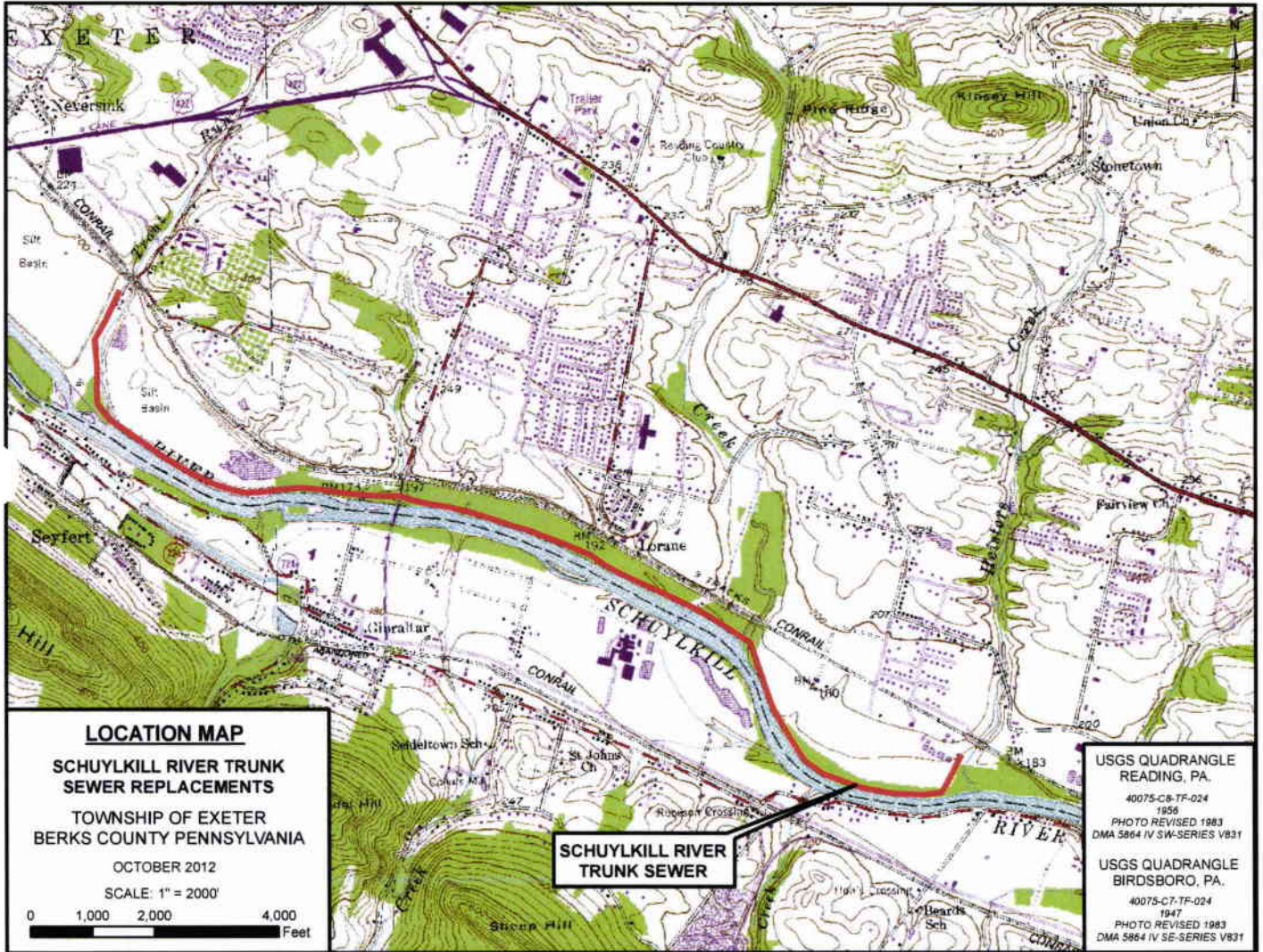


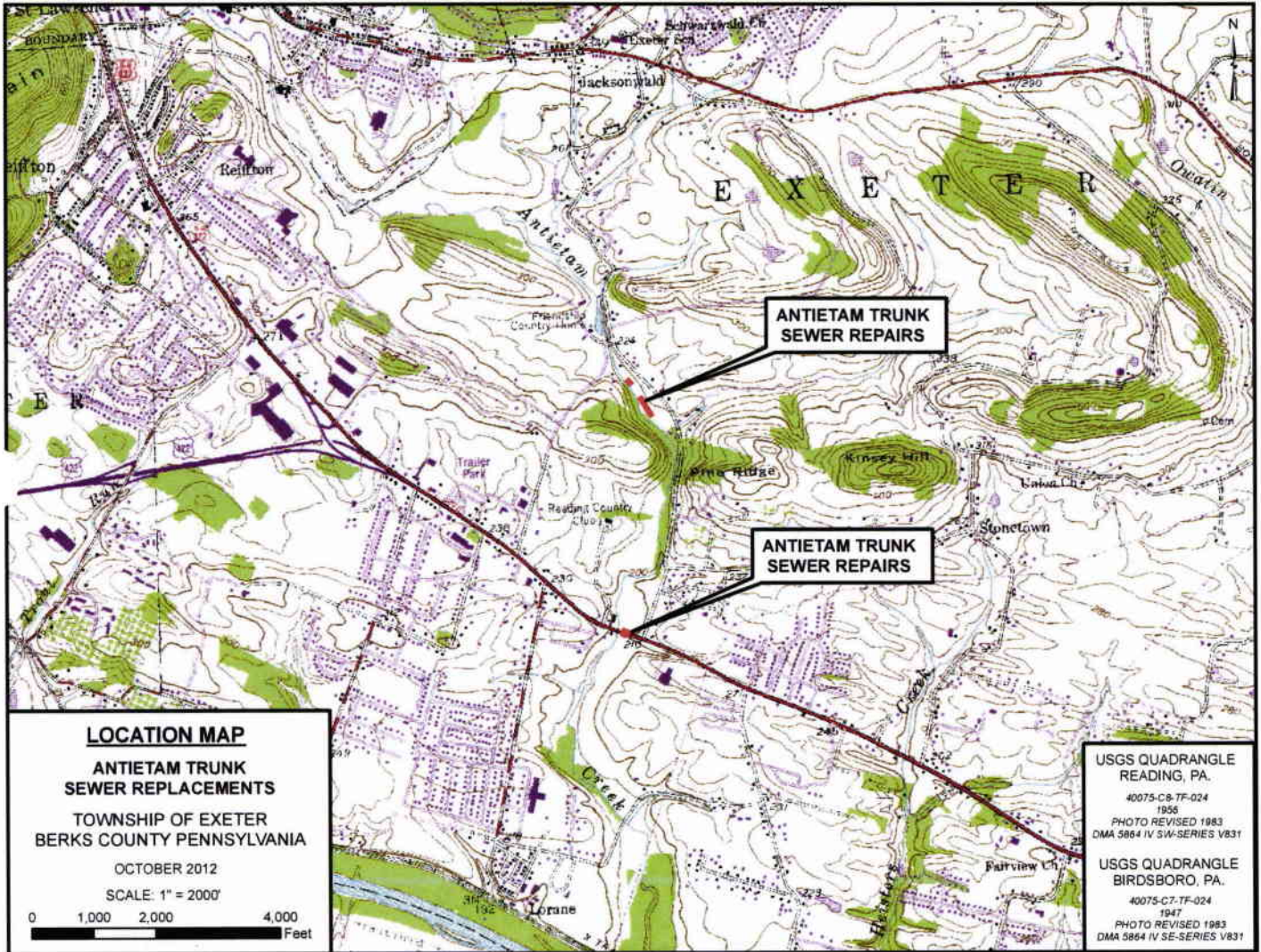
applicant/project proponent signature

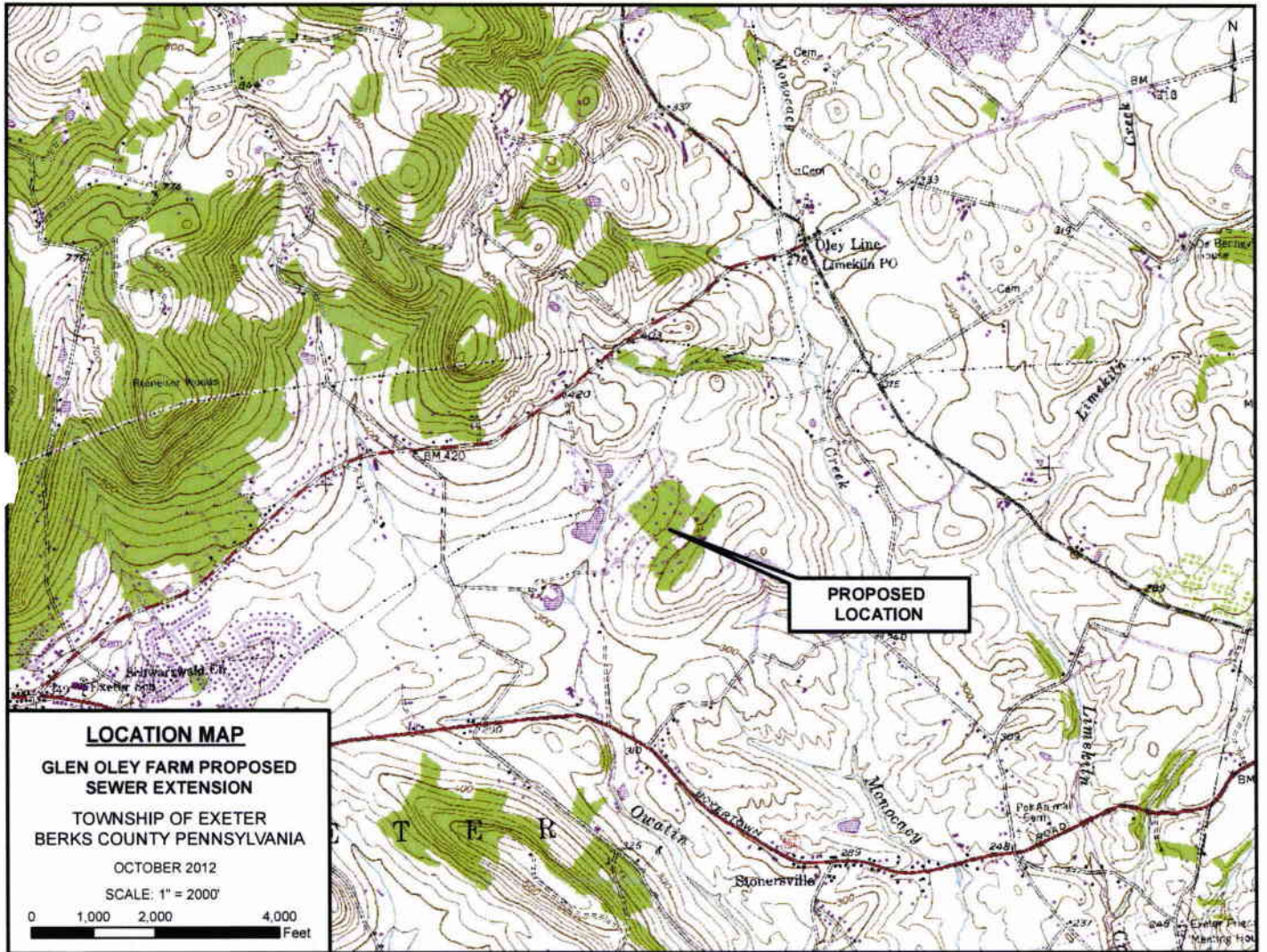
10-10-2012

date









LOCATION MAP

**GLEN OLEY FARM PROPOSED
SEWER EXTENSION**

**TOWNSHIP OF EXETER
BERKS COUNTY PENNSYLVANIA**

OCTOBER 2012

SCALE: 1" = 2000'

0 1,000 2,000 4,000
Feet

**Gannett Fleming***Excellence Delivered As Promised*

October 16, 2012

Pennsylvania Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane
Bellefonte, PA 16823-7437

RE: Act 537 Plan Amendment for Exeter Township
Schuylkill River and Heisters Creek Trunk Sewer Replacement
Exeter Township, Berks County

Dear Pennsylvania Fish and Boat Commission Staff:

Exeter Township is in the process of completing Act 537 planning. The Township intends to address the long term planning from St. Lawrence Borough and Exeter Township. The plan indicates replacement of existing facilities at the same location they are presently located.

A search on the Pennsylvania Natural Heritage Program website was performed as part of the environmental permit process. The search revealed potential impacts to Sensitive Species/Special Concerned Species within the project area. The PNDI Project Environmental Review Receipt is attached for your reference. We are seeking concurrence from your agency that the Act 537 planning project will not impact any species of concern.

We have enclosed the following documents for your information:

- Signed copy of the Project Environmental Review Receipt.
- Project narrative with a description of the overall project.
- USGS 7.5 minute quadrangle showing project location.
- Project location information.

If you have any questions or require any additional information, please contact me.

Very truly yours,

GANNETT FLEMING, INC.

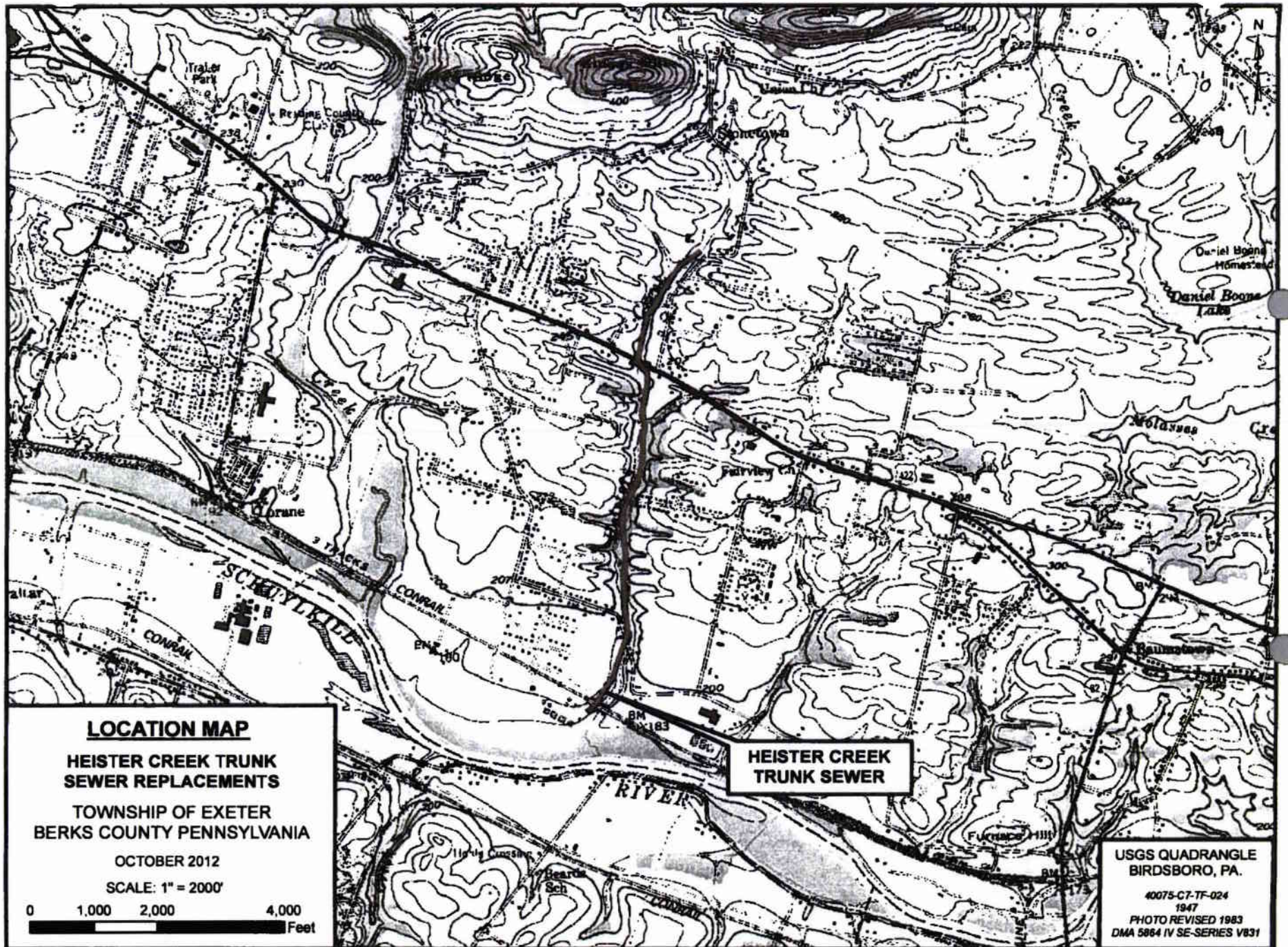
Roger A. Phillips, P.E.
Senior Project Manager

C: ETBCA Members
P. Herb
F. Reigle

**Exeter Township
Act 537 Planning**

Project Narrative

The Act 537 Plan is being developed to address long-term development and wastewater flow projections from St. Lawrence Borough and Exeter Township. The limited flow from Alsace Township and Lower Alsace Township and flow from St. Lawrence Borough is conveyed through the Antietam Creek Trunk Sewer to the Schuylkill River Trunk Sewer. The Schuylkill River and Heisters Creek Trunk Sewers end at the Exeter Township Wastewater Treatment Plant. The flow projections were used to perform a capacity evaluation of the three trunk sewers to determine areas of concerns and possible deficiencies to be addressed as future growth. The various pipe sections showing capacity deficiencies were identified and reviewed to access possible alternative solutions to improve the system. The locations of the proposed system improvements are shown on the attached maps.



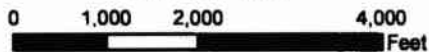
LOCATION MAP

**HEISTER CREEK TRUNK
SEWER REPLACEMENTS**

**TOWNSHIP OF EXETER
BERKS COUNTY PENNSYLVANIA**

OCTOBER 2012

SCALE: 1" = 2000'



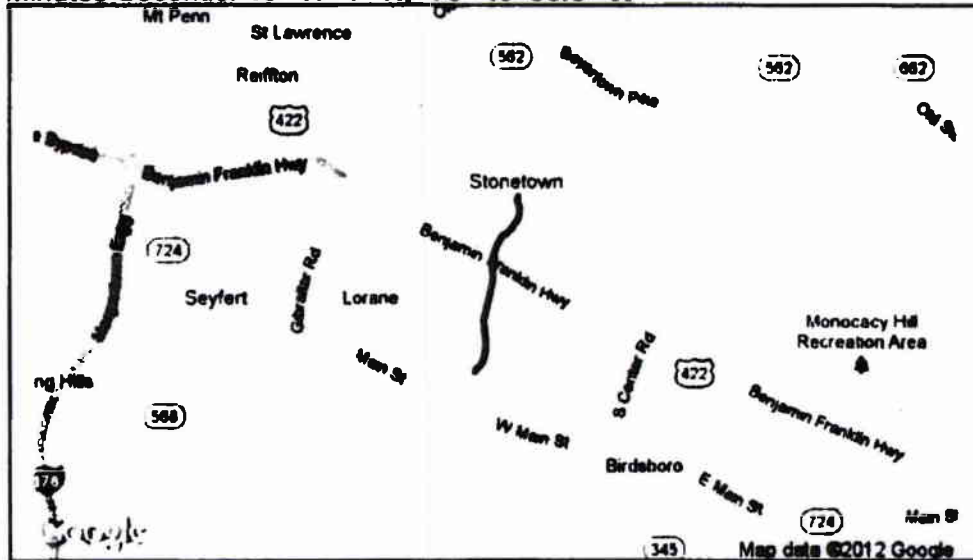
**HEISTER CREEK
TRUNK SEWER**

**USGS QUADRANGLE
BIRDSBORO, PA.**

40075-C7-TF-024
1947
PHOTO REVISED 1983
DMA 5864 IV SE-SERIES V831

1. PROJECT INFORMATION

Project Name: **Helsters Creek Trunk Sewer Replacement**
 Date of review: **10/2/2012 8:36:34 AM**
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**
 Project Length: **9841.0 feet**
 County: **Berks Township/Municipality: Exeter**
 Quadrangle Name: **BIRDSBORO ~ ZIP Code: 19508,19606**
 Decimal Degrees: **40.283618 N, -75.832357 W**
 Degrees Minutes Seconds: **40° 17' 1" N, -75° 49' 56.5" W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send

project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Proposed Status: Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:

- ___ SIGNED copy of this Project Environmental Review Receipt
- ___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
- ___ Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- ___ USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- ___ A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- ___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- ___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax: (717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerston Avenue, Harrisburg, PA. 17110-9797
Fax: (717) 787-6957

7. PROJECT CONTACT INFORMATION

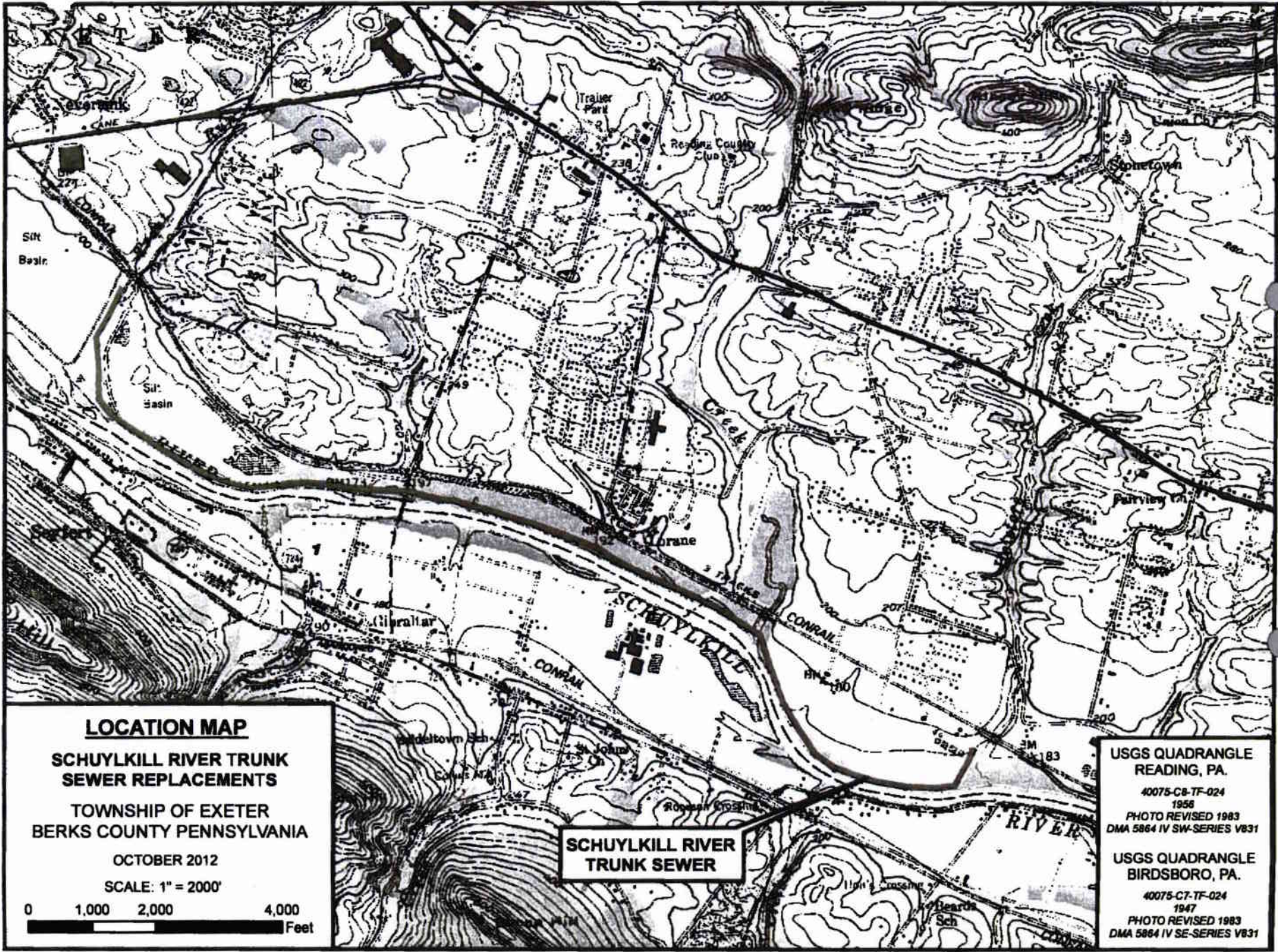
Name: Roger A. Phillips, P.E.
Company/Business Name: Gannett Fleming, Inc
Address: PO Box 66714
City, State, Zip: Valley Forge Pa 17116
Phone: (610) 650-3161 Fax: (610) 650-8100
Email: RPhillips@gfnet.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

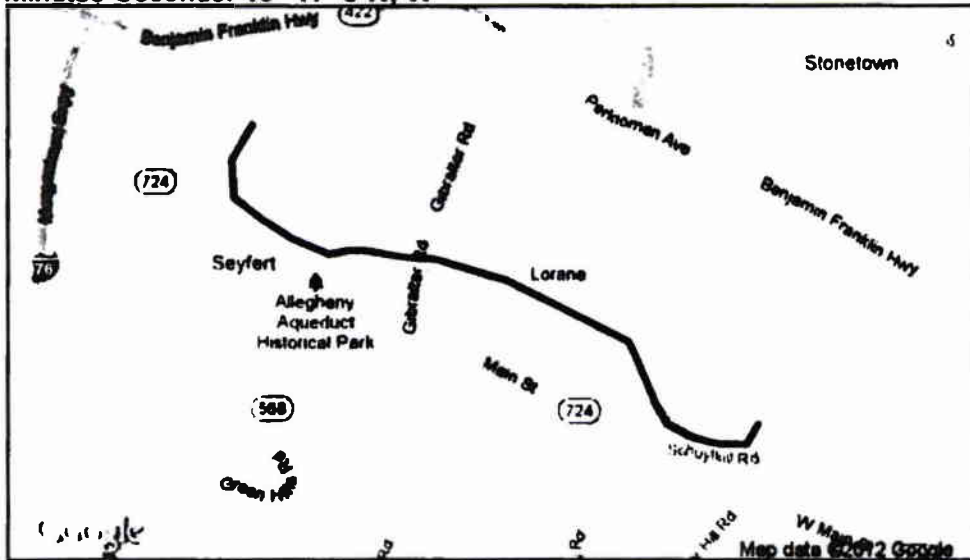
applicant/project proponent signature

10 10 2012
date



1. PROJECT INFORMATION

Project Name: **Schuylkill River Trunk Sewer Replacement**
 Date of review: **10/2/2012 8:28:33 AM**
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**
 Project Length: **18160.0 feet**
 County: **Berks Township/Municipality: Exeter**
 Quadrangle Name: **READING ~ ZIP Code: 19508,19606**
 Decimal Degrees: **40.283454 N, -75.855617 W**
 Degrees Minutes Seconds: **40° 17' 0 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .

Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: "Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. ""Project"" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected – either directly or indirectly – by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur ."

Your answer is: **"2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands."**

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats

Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are valid for two years (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies strongly advise against conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)

Scientific Name: Lycopus rubellus

Common Name: Bugleweed

Current Status: Endangered

Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Proposed Status: Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, send the following information to the agency(s) seeking this information (see AGENCY CONTACT INFORMATION).

Check-list of *Minimum Materials to be submitted:*

- SIGNED copy of this Project Environmental Review Receipt
- Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.
- Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552, Harrisburg, PA.
17105-8552
Fax:(717) 772-0271

U.S. Fish and Wildlife Service
Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Keith A. Phillips, PE
Company/Business Name: Geacrit & Sons, Inc.
Address: PO Box 204
City, State, Zip: State College PA 16801
Phone: (717) 652-2001 Fax: (717) 652-2006
Email: kphilips@geacrit.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

date

11051066



Pennsylvania Fish & Boat Commission

Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620
(814) 359-5237 Fax: (814) 359-5175

November 8, 2012



IN REPLY REFER TO
SIR# 39704

Gannett Fleming
Roger A. Phillips
P.O. Box 80794
Valley Forge, PA 19484

**RE: Species Impact Review (SIR) – Rare, Candidate, Threatened and Endangered Species
Act 537 Plan Amendment for Exeter Township
Schuylkill River and Heisters Creek Trunk Sewer Replacement
Exeter Township, Berks County, Pennsylvania**

Dear Mr. Phillips:

I have examined the project narrative and map accompanying your recent correspondence, which shows the location for the above-referenced project. Based on records maintained in the Pennsylvania Natural Diversity Inventory (PNDI) database and our own files, the state threatened eastern redbelly turtle (*Pseudemys rubriventris*) is known from the Schuylkill River in the vicinity of the project site.

The redbelly turtle is one of Pennsylvania's largest native aquatic turtles. This turtle species is known to inhabit relatively large, deep streams, rivers, ponds, lakes and marshes with permanent water and ample basking sites. Redbelly turtles are restricted to the southcentral and southeastern regions of the Commonwealth. The existence of this turtle species is threatened by habitat destruction, poor water quality, and competition with aggressive non-native turtle species that share its range and habitat (e.g., red-eared slider, *Trachemys scripta elegans*). In late spring and early summer, female redbelly turtles leave the water to find a nesting site, within sun-exposed sandy or loamy soil, usually within 100 m of the water.

The Heister Creek Trunk Sewer is not within potential redbelly turtle habitat, and I do not foresee the proposed Heister Creek project resulting in adverse impacts to the eastern redbelly turtle or any other rare or protected species under Pennsylvania Fish and Boat Commission jurisdiction. Based on the review of the project information and the proximity of the project to known element occurrences of the redbelly turtle, nesting areas for the redbelly turtle could be present within the proposed disturbance area along the Schuylkill River Trunk Sewer, or the area could be crossed by turtles seeking nesting sites further inland.

The following measures will be necessary in order to avoid impacts to redbelly turtles during the construction of this project:

- 1) All upland earth disturbance associated with portions of the trunk sewer *that are not in forest canopy cover* should be conducted outside the nesting and hatching season of the redbelly turtle, **October 15th to May 15th**. **If this seasonal restriction cannot be adhered to, further consultation with this office will be necessary to determine the best means of**

Our Mission:

www.fish.state.pa.us

To protect, conserve and enhance the Commonwealth's aquatic resources and provide fishing and boating opportunities.

preventing disruption of turtle nesting the length of the project area. Most of the project area appears thickly forested and would not be expected to support redbelly turtle nests.

- 2) Any turtles found within the staging area of the project should be safely moved outside the work zone in appropriate habitat.

Provided that seasonal restrictions can be followed as recommended above, best management practices are followed, and an approved strict erosion and sedimentation control plan is maintained, then I do not anticipate the proposed activity to have any significant adverse impacts to the redbelly turtle or any other rare or protected species under Pennsylvania Fish & Boat Commission jurisdiction.

If the seasonal restriction detailed in 1) above is not compatible with the project requirements, then I recommend completion of a biological survey to determine presence/absence of potential redbelly turtle nesting habitat in the proposed project area. The redbelly turtle habitat/nesting habitat survey should include a search for habitat and nesting areas within 1000 feet of the Schuylkill River. Note that the period from mid-May through July is the usual nesting time for the species.

A qualified biologist, who possesses the necessary Scientific Collector's Permit issued by the Pennsylvania Fish and Boat Commission, must conduct this habitat/nesting habitat survey. A list of biologists recognized as qualified by the Pennsylvania Fish and Boat Commission to perform redbelly turtle surveys is enclosed. Following completion of the survey, a report of the qualified redbelly turtle biologist's observations and conclusions must be submitted to this office for further review and consultation. We will use the information in this report to design methods of avoiding disturbance to redbelly turtle nests and hatchlings.

Note that this office performed no field inspection of the project area. Consequently, comments in this letter are not meant to address other issues or concerns that might arise concerning matters under Pennsylvania Fish and Boat Commission jurisdiction or that of other authorities. Please contact Kathy Gipe of this office at 814-359-5186 if you have any additional concerns regarding this response and **refer to the SIR number at the top of this letter**. Thank you for your cooperation and attention to this matter of threatened and endangered species conservation.

Sincerely,

Christopher A. Urban, Chief
Natural Diversity Section

CAU/KDG/kn

Enclosure (1)

PENNSYLVANIA FISH & BOAT COMMISSION
Division of Environmental Services
Natural Diversity Section
450 Robinson Lane
Bellefonte, PA 16823-9620

QUALIFIED EASTERN REDBELLY TURTLE BIOLOGISTS

The following list includes persons known to the Pennsylvania Fish and Boat Commission whom possess skills and have experience in properly searching for and finding eastern redbelly turtles (*Pseudemys rubriventris*) and in identifying their critical habitat. This information is not to be construed as an endorsement of individuals or firms by the Pennsylvania Fish and Boat Commission or any of its employees. Persons not on this list but who have documented experience in conducting scientific studies of, or successful searches for, eastern redbelly turtles and their critical habitat may submit their qualifications to the Natural Diversity Section for review and possible inclusion as a recognized biologist/surveyor. Each person added to or deleted from this list shall be at the sole discretion of the Pennsylvania Fish and Boat Commission. This list is subject to revision at any time without prior notice. Any individuals handling, collecting, or otherwise removing eastern redbelly turtles from their natural habitat, even if on a temporary basis for relocation, must first obtain a Scientific Collector's Permit from the Pennsylvania Fish and Boat Commission. All permitted collector's encounters with eastern redbelly turtles must be reported in writing to the Pennsylvania Fish and Boat Commission's Natural Diversity Section.

Dr. Rudolf G. Arndt
 Richard Stockton College of New Jersey
 Jim Leeds Road, P.O. Box 195
 Pomona, NJ 08240-0195
 (609) 652-4432

Gian Rocco, PhD
 322 Strawberry Hill Rd.
 Centre Hall, PA 16828
 (814) 364-1204
 Email: gxr124@psu.edu

Scott E. Bush
 Conestoga Rovers & Associates
 410 Eagleview Blvd.
 Suite 110
 Exton, PA 19341
 (610) 321-1800 Office

Michael Torocco
 Herpetological Associates, Inc.
 581 Airport Road
 Bethel, PA 19507
 717-933-8380; fax 717-933-4096
 Email: MTorocco@herpetologicalassociates.com

Deborah K. Poppel
 URS Corporation
 335 Commerce Drive, Suite 300
 Fort Washington, PA 19034
 (215) 367-2500 or (215) 367-2559
 Fax : (215) 367-1000
 Email: deborah_poppel@urscorp.com

Robert Zappalorti
 Raymond Farrell
 Herpetological Associates, Inc
 575 Toms River Road
 Jackson, NJ 08527
 (732) 833-8600
 Email: Rzappalort@aol.com

Marlin Corn, Bucks County Naturalist
 315 Swamp Rd.
 Newtown, PA 18940
 (215) -579-2815
 Email: cornsnake@verizon.net

Bryan Dubois
 Trident Environmental Consultants
 1856 Route 9
 Toms River, NJ 08755
 732-818-8699, fax 732-818-3744
 Email: tec@monmouth.com

Brandon M. Ruhe
 1237 Oysterdale Road
 Oley, PA 19547
 610-462-8530
 Email: bmruhe@ptd.net

47837.022



Excellence Delivered As Promised

October 16, 2012

Pennsylvania Department of Conservation and Natural Resources
Bureau of Forestry
400 Market Street
P.O. Box 8552
Harrisburg, PA 17105-8552

RE: Act 537 Plan Amendment for Exeter Township
Schuylkill River and Heisters Creek Trunk Sewer Replacement
Exeter Township, Berks County

Dear DCNR Staff:

Exeter Township is in the process of completing Act 537 planning. The Township intends to address the long term planning from St. Lawrence Borough and Exeter Township. The plan indicates replacement of existing facilities at the same location they are presently located.

A search on the Pennsylvania Natural Heritage Program website was performed as part of the environmental permit process. The search revealed potential impacts *Lycopus rubellus* within the project area. The PNDI Project Environmental Review Receipt is attached for your reference. We are seeking concurrence from your agency that the Act 537 planning project will not impact any species of concern.

We have enclosed the following documents for your information:

- Signed copy of the Project Environmental Review Receipt.
- Project narrative with a description of the overall project.
- USGS 7.5 minute quadrangle showing project location.
- Project location information.

If you have any questions or require any additional information, please contact me.

Very truly yours,
GANNETT FLEMING, INC.

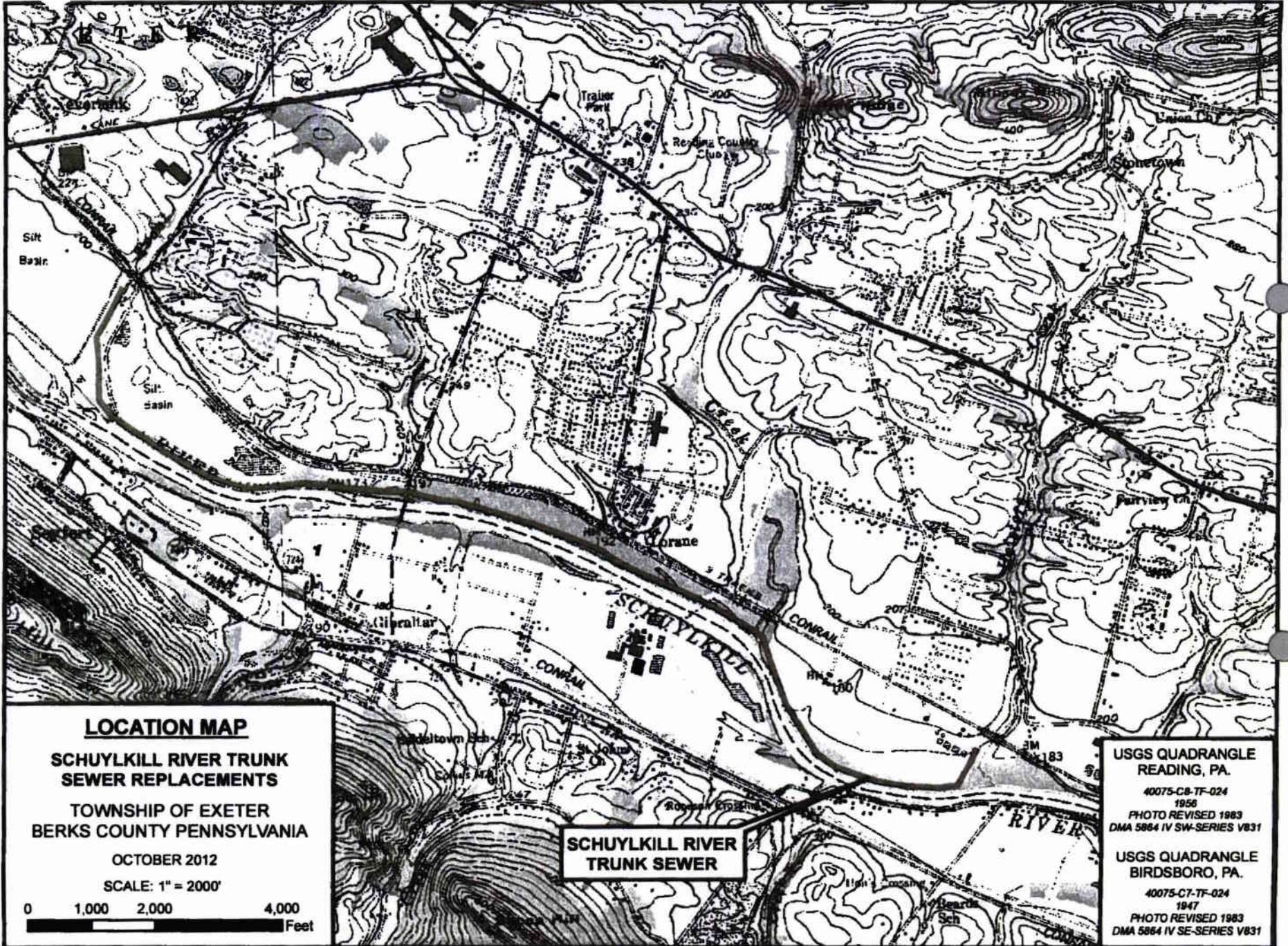
Roger A. Phillips, P.E.
Senior Project Manager

C: ETBCA Members
P. Herb
F. Reigle

**Exeter Township
Act 537 Planning**

Project Narrative

The Act 537 Plan is being developed to address long-term development and wastewater flow projections from St. Lawrence Borough and Exeter Township. The limited flow from Alsace Township and Lower Alsace Township and flow from St. Lawrence Borough is conveyed through the Antietam Creek Trunk Sewer to the Schuylkill River Trunk Sewer. The Schuylkill River and Heisters Creek Trunk Sewers end at the Exeter Township Wastewater Treatment Plant. The flow projections were used to perform a capacity evaluation of the three trunk sewers to determine areas of concerns and possible deficiencies to be addressed as future growth. The various pipe sections showing capacity deficiencies were identified and reviewed to access possible alternative solutions to improve the system. The locations of the proposed system improvements are shown on the attached maps.



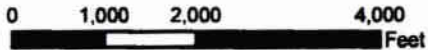
LOCATION MAP

**SCHUYLKILL RIVER TRUNK
SEWER REPLACEMENTS**

**TOWNSHIP OF EXETER
BERKS COUNTY PENNSYLVANIA**

OCTOBER 2012

SCALE: 1" = 2000'



**SCHUYLKILL RIVER
TRUNK SEWER**

**USGS QUADRANGLE
READING, PA.**

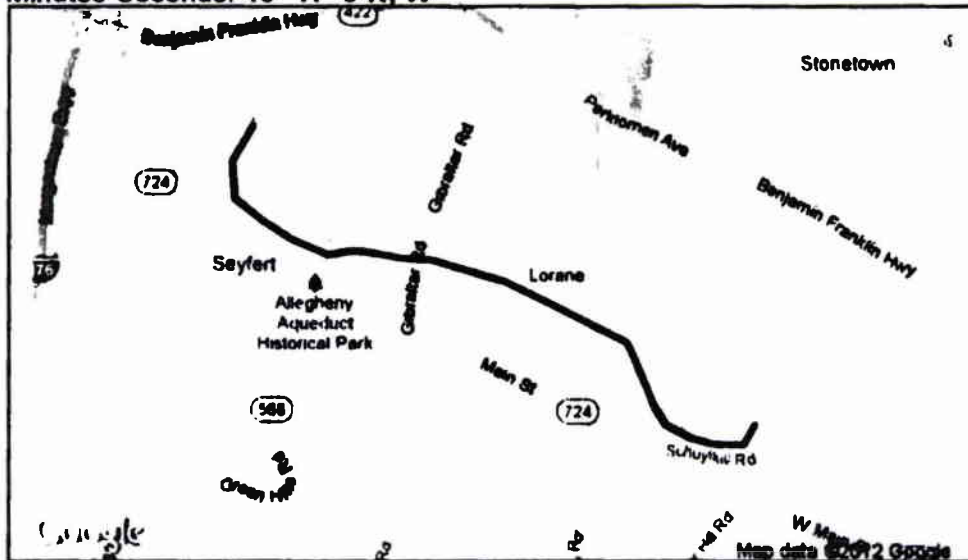
40075-C8-TF-024
1956
PHOTO REVISED 1983
DMA 5864 IV SW-SERIES V831

**USGS QUADRANGLE
BIRDSBORO, PA.**

40075-C7-TF-024
1947
PHOTO REVISED 1983
DMA 5864 IV SE-SERIES V831

1. PROJECT INFORMATION

Project Name: **Schuylkill River Trunk Sewer Replacement**
 Date of review: **10/2/2012 8:28:33 AM**
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**
 Project Length: **18160.0 feet**
 County: **Berks Township/Municipality: Exeter**
 Quadrangle Name: **READING ~ ZIP Code: 19508,19606**
 Decimal Degrees: **40.283454 N, -75.855617 W**
 Degrees Minutes Seconds: **40° 17' 0 N, W**



2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 in certain counties (Adams, Berks, Bucks, Carbon, Chester, Cumberland, Delaware, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, Schuylkill and York) must comply with the bog turtle habitat screening requirements of the PASPGP.

RESPONSE TO QUESTION(S) ASKED

Q1: Accurately describe what is known about wetland presence in the project area or on the land parcel.
"Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur .
Your answer is: **2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands.**

Q2: "Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. ""Project"" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur ."
Your answer is: **"2. The project area (or land parcel) has not been investigated by someone qualified to identify and delineate wetlands, or it is currently unknown if the project or project activities will affect wetlands."**

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats
Your answer is: **1. Yes**

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Game Commission

RESPONSE: No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)

Scientific Name: Lycopodium rubellus

Common Name: Bugleweed

Current Status: Endangered

Proposed Status: Endangered

PA Fish and Boat Commission

RESPONSE: Further review of this project is necessary to resolve the potential impacts(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name: Sensitive Species**

Common Name:

Current Status: Threatened

Proposed Status: Special Concern Species*

U.S. Fish and Wildlife Service

RESPONSE: No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

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WHAT TO SEND TO JURISDICTIONAL AGENCIES

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Check-list of Minimum Materials to be submitted:

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- Project location information (name of USGS Quadrangle, Township/Municipality, and County)
- USGS 7.5-minute Quadrangle with project boundary clearly indicated, and quad name on the map

The inclusion of the following information may expedite the review process.

- A basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)
- Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)
- Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams

4. DEP INFORMATION

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For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
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400 Market Street, PO Box 8552, Harrisburg, PA.
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Endangered Species Section
315 South Allen Street, Suite 322, State College, PA.
16801-4851
NO Faxes Please.

PA Fish and Boat Commission
Division of Environmental Services
450 Robinson Lane, Bellefonte, PA. 16823-7437
NO Faxes Please

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797
Fax:(717) 787-6957

7. PROJECT CONTACT INFORMATION

Name: Roger A Phillips, PE
Company/Business Name: Greenleaf Consulting Inc
Address: PO Box 20714
City, State, Zip: Lebanon PA 17042
Phone: (610) 626-2001 Fax: (610) 626-2006
Email: RPhillips@greenleaf.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

date



 BUREAU OF FORESTRY

November 14, 2012

PNDI Number: 20121002374719

Roger Phillips
Gannett Fleming, Inc.
Fax 610-650-8190

Re: Schuylkill River Trunk Sewer Replacement
Exeter Township, Berks County, PA

Dear Mr. Phillips,

Thank you for the submission of the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Receipt Number 20121002374719 for review. PA Department of Conservation and Natural Resources screened this project for potential impacts to species and resources of concern under DCNR's responsibility, which includes plants, terrestrial invertebrates, natural communities, and geologic features only.

No Impact Anticipated

PNDI records indicate species or resources of concern are located in the vicinity of the project. However, based on the information you submitted concerning the nature of the project, the immediate location, and our detailed resource information, DCNR has determined that no impact is likely. No further coordination with our agency is needed for this project.

This response represents the most up-to-date review of the PNDI data files and is valid for two years only. If project plans change or more information on listed or proposed species becomes available, our determination may be reconsidered. For PNDI project updates, please see the PNHP website at www.naturalheritage.state.pa.us for guidance. As a reminder, this finding applies to potential impacts under DCNR's jurisdiction only. Visit the PNHP website for directions on contacting the Commonwealth's other resource agencies for environmental review. Should you have any questions or concerns, please don't hesitate to contact me at 717.705.2823 or [c-aroehrbaugh@pa.gov](mailto:aroehrbaugh@pa.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew Rohrbaugh".

Andrew Rohrbaugh, Environmental Review Specialist
 Bureau of Forestry, Ecological Services Section
 Pennsylvania Natural Heritage Program

A handwritten signature in black ink, appearing to read "Rebecca H. Bowen".

Rebecca H. Bowen, Section Chief
 Bureau of Forestry, Ecological Services Section
 Pennsylvania Natural Heritage Program

**Gannett Fleming***Excellence Delivered As Promised*

October 16, 2012

PHMC
State Historic Preservation Office
400 North Street
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

RE: Act 537 Plan Amendment for Exeter Township
Schuylkill River and Heisters Creek Trunk Sewer Replacement
Exeter Township, Berks County

Dear PHMC Staff:

On behalf of Exeter Township, we are submitting the enclosed Project Review Form and Location Map for the Act 537 Plan Amendment for sanitary sewer trunk line replacement. The Act 537 Plan Amendment addresses long-term development and wastewater flow projections from St. Lawrence Borough and Exeter Township.

The various areas showing capacity deficiencies were identified and reviewed to access possible alternative solutions to improve the system. The capacity evaluations determined replacement of large portions of the Schuylkill River Trunk Sewer and Heisters Creek Trunk Sewer must be replaced with larger diameter pipe. This project will be a replacement of the existing facilities at the existing locations with disturbance limited to areas within thirty feet of the trunk sewer, the routing of the replacement sewer is indicated on the attached topographic map segments. Please advise of any potential impacts.

If you require any additional information, please contact me.

Very truly yours,
GANNETT FLEMING, INC.

Roger A. Phillips, P.E.
Senior Project Manager

C: ETBCA Members
P. Herb
F. Reigle



PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	
DATE RECEIVED:	
ER NUMBER:	

REV: 5/2012

SECTION A: GENERAL PROJECT INFORMATION

Is this a new submittal? YES NO OR This is additional information for ER Number:

Project Name Act 537 Plan Amendment County Berks

Project Address varies

City/State/ Zip Reading PA 19606 Municipality Exeter Township

SECTION B: PRIMARY CONTACT INFORMATION

Name Roger A. Phillips Phone (610) 650-8101

Company Gannett Fleming, Inc. Fax (610) 650-8190

Street/P.O. Box P.O. Box 80794 Email rphillips@gfnet.com

City/State/Zip Valley Forge PA 19484

SECTION C: PROJECT DESCRIPTION

This project is located on: (check all that apply) Federal property State property Municipal property Private property

List all Federal and State agencies and programs (funding, permits, licenses) involved in this project	Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
	State	Department of Environmental Protection	Water Quality Part II
	State	Department of Environmental Protection	NPDES
	State	Department of Environmental Protection	General Permit

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): Construction Demolition Rehabilitation Disposition

Total acres of project area: 14 Total acres of earth disturbance: 9

Are there any buildings or structures within the project area? Yes No Approximate age:

This project involves properties listed in or eligible for listing in the National Register of Historic Places, or designated as historic by a local government	Yes <input type="radio"/>	No <input checked="" type="radio"/>	Unsure <input type="radio"/>	Name of historic property or historic districts
---	---------------------------	-------------------------------------	------------------------------	---

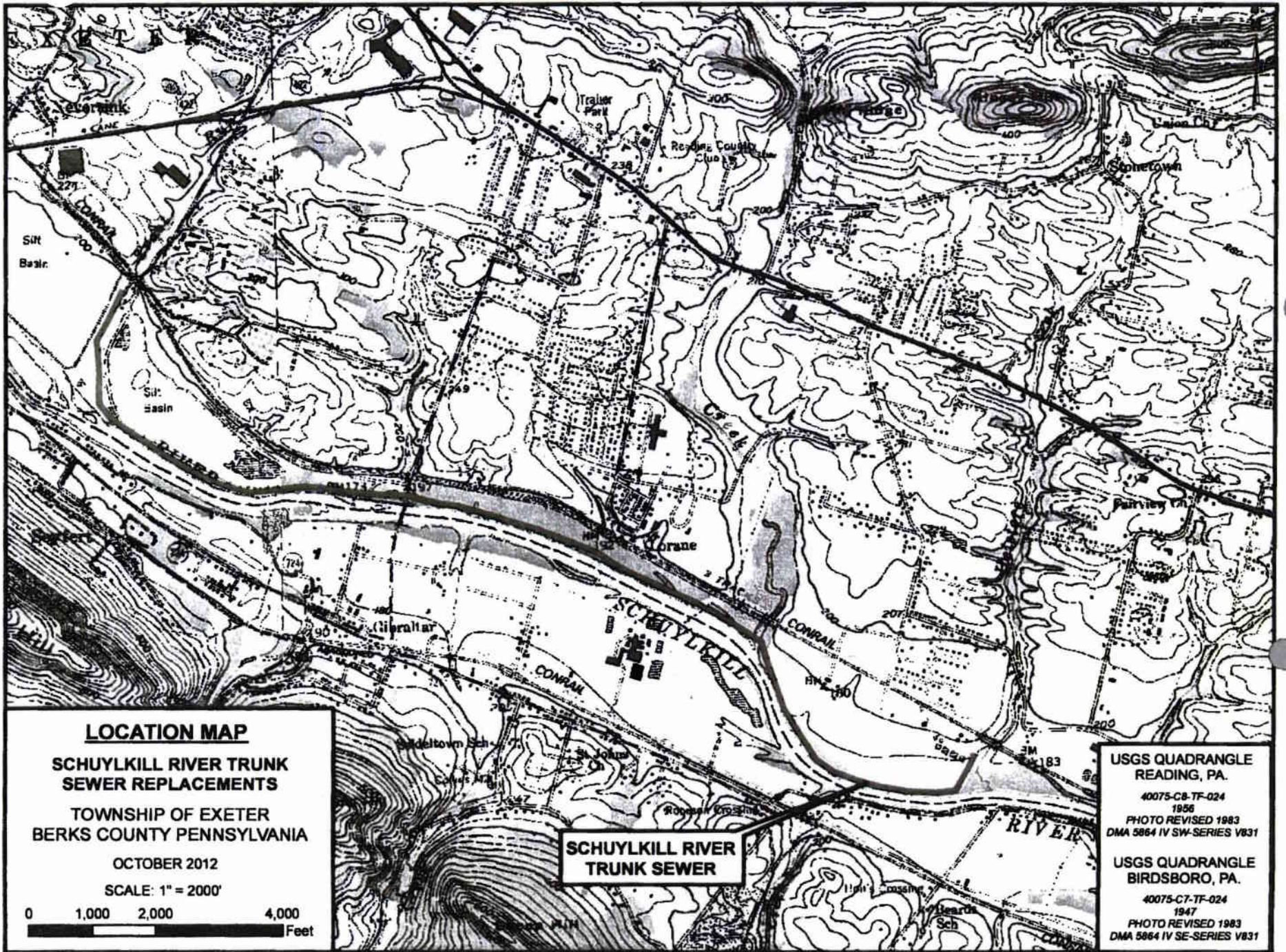
<p>Please print and mail completed form and all attachments to:</p> <p>PHMC State Historic Preservation Office 400 North St. Commonwealth Keystone Building, 2nd Floor Harrisburg, PA 17120-0093</p>	<p>Attachments – Please include the following information with this form</p> <p><input checked="" type="checkbox"/> Map – 7.5' USGS quad showing project boundary and Area of Potential Effect</p> <p><input checked="" type="checkbox"/> Description/Scope – Describe the project, including any ground disturbance and previous land use</p> <p><input type="checkbox"/> Site Plans/Drawings – Indicate the location and age, if known, of all buildings in the project area</p> <p><input type="checkbox"/> Photographs – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan</p>
---	--

SHPO DETERMINATION (SHPO USE ONLY)	SHPO REVIEWER:
<input type="checkbox"/> There are NO HISTORIC PROPERTIES in the Area of Potential Effect <input type="checkbox"/> The project will have NO EFFECT on historic properties <input type="checkbox"/> The project will have NO ADVERSE EFFECTS on historic properties:	<input type="checkbox"/> The project will have NO ADVERSE EFFECTS WITH CONDITIONS (see attached) <input type="checkbox"/> SHPO REQUESTS ADDITIONAL INFORMATION (see attached)

**Exeter Township
Act 537 Planning**

Project Narrative

The Act 537 Plan is being developed to address long-term development and wastewater flow projections from St. Lawrence Borough and Exeter Township. The limited flow from Alsace Township and Lower Alsace Township and flow from St. Lawrence Borough is conveyed through the Antietam Creek Trunk Sewer to the Schuylkill River Trunk Sewer. The Schuylkill River and Heisters Creek Trunk Sewers end at the Exeter Township Wastewater Treatment Plant. The flow projections were used to perform a capacity evaluation of the three trunk sewers to determine areas of concerns and possible deficiencies to be addressed as future growth. The various pipe sections showing capacity deficiencies were identified and reviewed to access possible alternative solutions to improve the system. The locations of the proposed system improvements are shown on the attached maps.



LOCATION MAP

**SCHUYLKILL RIVER TRUNK
SEWER REPLACEMENTS**
TOWNSHIP OF EXETER
BERKS COUNTY PENNSYLVANIA

OCTOBER 2012

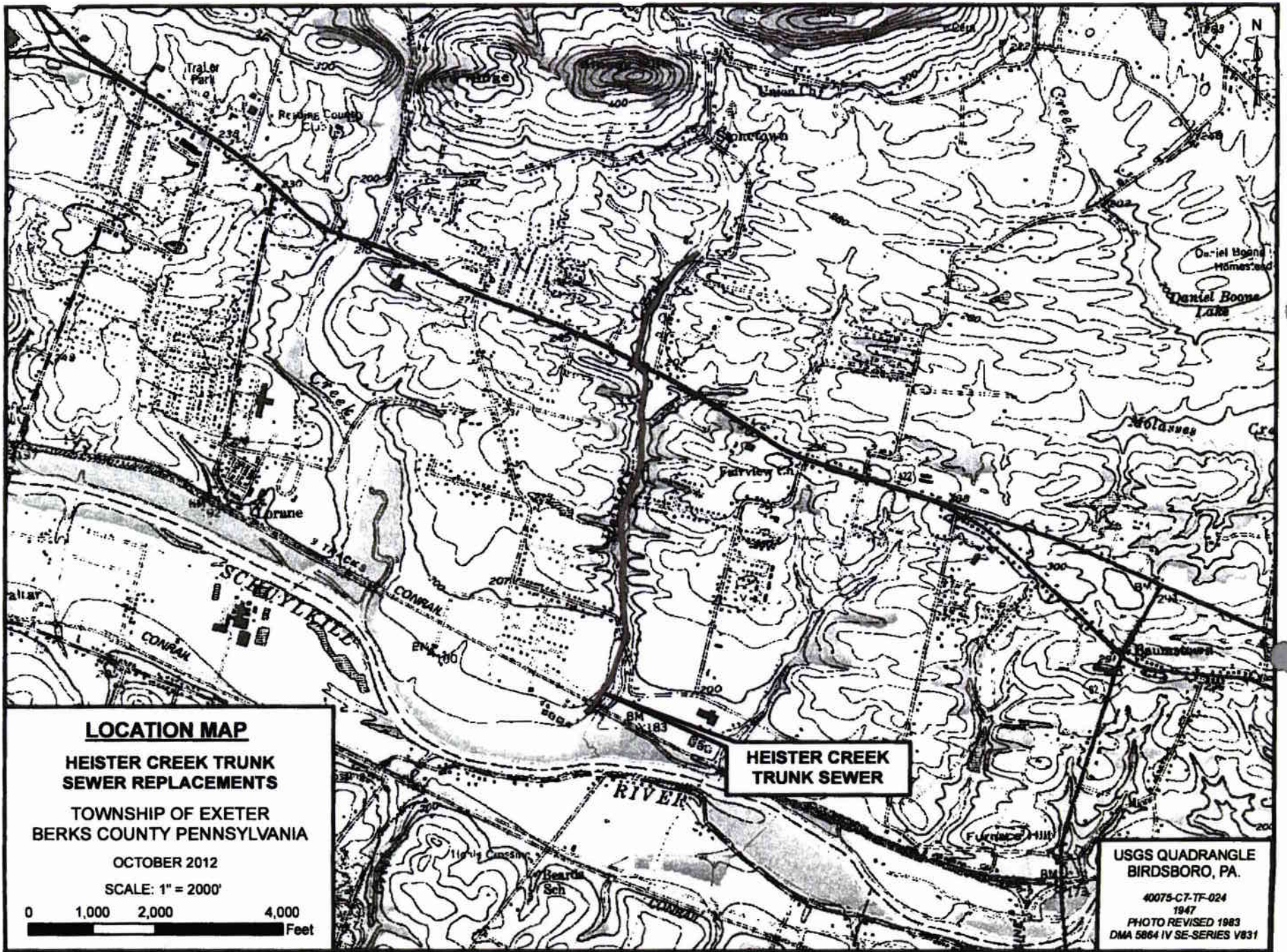
SCALE: 1" = 2000'



**SCHUYLKILL RIVER
TRUNK SEWER**

USGS QUADRANGLE
READING, PA.
40075-C8-TF-024
1956
PHOTO REVISED 1983
DMA 5864 IV SW-SERIES V831

USGS QUADRANGLE
BIRDSBORO, PA.
40075-C7-TF-024
1947
PHOTO REVISED 1983
DMA 5864 IV SE-SERIES V831



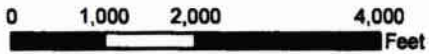
LOCATION MAP

**HEISTER CREEK TRUNK
SEWER REPLACEMENTS**

**TOWNSHIP OF EXETER
BERKS COUNTY PENNSYLVANIA**

OCTOBER 2012

SCALE: 1" = 2000'



**HEISTER CREEK
TRUNK SEWER**

**USGS QUADRANGLE
BIRDSBORO, PA.**

40075-C7-TF-024
1947
PHOTO REVISED 1983
DMA 5864 IV SE-SERIES V831



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

4 183 1022



November 16, 2012

Gannett Fleming
Attn: Roger A. Phillips, P.E.
P.O. Box 80794
Valley Forge, PA 19484-0794

RE: ER# 2013-0190-011-A
DEP Act 537 Plan Amendment for Exeter
Township/Schuylkill River and Heisters
Creek Trunk Sewer Replacement, Exeter
Township, Berks County

Dear Mr. Phillips:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 *et seq.* (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources. Our comments are as follows:

A significant archaeological site is located in your project area and others are likely to exist. These resources could be adversely affected by project activities. An archaeological survey is required to verify the extent of the known site and to locate other sites. The recorded site in the area is listed below.

P.A.S.S. # 36 Bk 0002

There may be historic buildings, structures, districts, and/or objects eligible for the National Register of Historic Places located in the project area. However, in our opinion, the activity described in your proposal should have no effect on such resources. Should the scope and/or nature of the project activities change, the Bureau for Historic Preservation should be contacted immediately.



Pennsylvania Historical & Museum Commission
Tim Corbett, Governor • Andrew F. Masich, Chairman • James M. Vaughan, Executive Director

Page Two
Mr. Phillips
November 16, 2012

If you have any questions or comments concerning our review for archaeological resources, please contact Mark Shaffer at (717) 783-9900. If you have any questions or comments concerning our review for historic resources, please contact Ann Safley at (717) 787-9121.

Sincerely,



Douglas C. McLearn, Chief
Division of Archaeology and Protection

cc: DEP, Southcentral Region



Pennsylvania Historical & Museum Commission

Tom Corbett, Governor • Andrew F. March, Chairman • James M. Vaughan, Executive Director



Commonwealth of Pennsylvania
 Pennsylvania Historical and Museum Commission
 Bureau for Historic Preservation
 Commonwealth Keystone Building, 2nd Floor
 400 North Street
 Harrisburg, PA 17120-0093
www.phmc.state.pa.us



December 6, 2012

Gannett Fleming
 Attn: Patti Kaufman, Senior Environmental Technician
 P.O. Box 80794
 Valley Forge, PA 19484

RE: ER# 2013-0190-011-B
 DEP Act 537 Plan Amendment for Exeter
 Township/ Schuylkill River and Heisters
 Creek Trunk Sewer Replacement, Exeter
 Township, Berks County

Dear Ms. Kaufman:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 *et seq.* (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources. Our comments are as follows:

Our understanding is that this sewer line replacement project will involve a direct replacement within the existing sewer line trench. Based on this, no archaeological investigations are necessary. This supersedes our letter dated November 16, 2012 for this project.

If you have any questions or comments concerning our review, please contact Mark Shaffer at (717) 783-9900.

Sincerely,

Douglas C. McLearn, Chief
 Division of Archaeology and Protection

cc: DEP, Southcentral region



Pennsylvania Historical & Museum Commission

Tom Corbett, Governor • Andrew E. Masich, Chairman • James M. Vaughan, Executive Director

Appendix C Proof of Advertisement

EXETER TWP. SUPERVISORS
4975 DEMOSS ROAD
READING, PA 19606

{ No. 0000389088

Page 1 of 1

Proof of Publication of Notice in Reading Eagle
Under Act No. 587, Approved May 16, 1929.

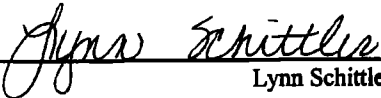
Commonwealth of Pennsylvania,
County of Berks

} SS:

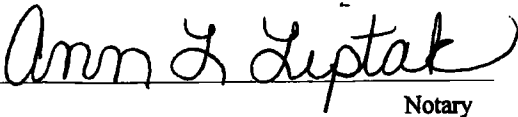
Lynn Schittler, Assistant Secretary, READING EAGLE COMPANY, of the County and Commonwealth aforesaid, being duly sworn, deposes and says that the READING EAGLE established January 28, 1868 is a newspaper of general circulation published at 345 Penn Street, City of Reading, County and State aforesaid, and that the printed notice or publication attached hereto is exactly the same as printed and published in the regular edition and issues of the said READING EAGLE on the following dates, viz.:

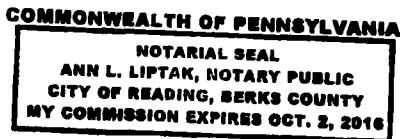
Reading Eagle Thursday, March 13, 2014, A.D.

Affiant further deposes that this person is duly authorized by READING EAGLE COMPANY, a corporation, publisher of said READING EAGLE, a newspaper of general circulation, to verify the foregoing statement under oath, and affiant is not interested in the subject matter of the aforesaid notice or advertisement, and that all allegations in the foregoing statements as to time, place, character of publication are true.


Lynn Schittler

Sworn to and subscribed before me on this day of March 13, 2014


Notary



PUBLIC NOTICE is hereby given that the Supervisors of Exeter Township, Berks County, are preparing an Act 537 Plan Revision for the entire Township and St. Lawrence Borough. The Township analyzed alternatives to address two portions of the study area. The alternatives included:

1. The Evaluation of Trunk Sewer Improvements (Schuylkill River, Heisters Creek, and Antietam Creek)
2. Feasibility Evaluation of Glen Oley Farms.

These two alternatives were further evaluated by the following:

1. Evaluation of Trunk Sewer Improvements (Schuylkill River, Heisters Creek, and Antietam Creek)
 - No Action for Improvements
 - Construction of Parallel Sanitary Sewer
 - Direct Replacement of Sanitary Sewer.
2. Evaluation of Glen Oley Farms
 - No Action for Improvements
 - Replacement of on-lot systems with new on-lot systems
 - Construction of a gravity sewer collection system
 - Implementation of a Sewage Management Plan

The alternatives in each group were evaluated and the following alternatives were recommended: Direct replacement of Trunk Sewer (Schuylkill River, Heisters Creek, and Antietam Creek) and the implementation of a Sewage Management Plan for Glen Oley Farms.

Upon publication of this notice, a 30-day review and comment period is in effect. Anyone wishing to review and/or comment may do so during this 30-day period. The Plan Revision is available for review between the hours of 8:00 AM to 4:00 PM Monday through Friday at the Exeter Township Building, 4975 DeMoss Road, Reading, PA 19606 (610-779-5660). Comments will be accepted at the Exeter Township Building, Attention: Township Manager at the above address.

Appendix D Public Comments

PREPARED STATEMENT FOR PUBLIC MEETING ON 26 FEBRUARY 2014

Members of the Board, the Authority, Mr. Miller, Mr. Herb, Mr. Bingaman and Mr. Riegel, thank you for allowing me to speak this evening. I have been asked to comment on behalf of my clients in response to the Township's receipt of a *Needs Analysis for the Glen Oley Farm Special Study Area*. As you know, I was retained as special environmental counsel last Spring by 48 of the 62 households that comprise the Glen Oley Farms Phase 1 and Phase 2 sub-divisions. My retention followed receipt by my clients of a letter from the Township reporting that the Department of Environmental Protection would be mandating the installation of sewers in Glen Oley. I appeared before you at a public meeting last June the 26th challenging the assumptions upon which the Township's proposed Act 537 Plan ostensibly relied to support a connection mandate. At the end of last June's public meeting on this issue, you the Board decided to withdraw the Glen Oley Farm's study from the proposed Act 537 Plan, and to commission a new more comprehensive special study, the scope of which was agreed upon at a joint meeting of working groups for the Township and Glen Oley Farms residents. Mr. Madeira's *Needs Analysis* is now complete, and we submit that the data collected from this more comprehensive study is an even more persuasive argument against a mandated connection than the data contained in last Summer's proposed Act 537 Plan. The *Needs Analysis* does not suggest or conclude that on lot septic systems in Glen Oley pose any threat to drinking water quality, does not suggest or conclude that existing systems are malfunctioning or are at an elevated risk of failing, and in the final analysis does not support imposing upon the residents of Glen Oley the significant expense that would accompany a forced connection.

At first blush, the study may seem to suggest that many of the on lot septic systems in Glen Oley are malfunctioning. The raw data collected by the study tells a different story. The study classifies Glen Oley's on lot septic systems into four categories: confirmed malfunctions; suspected malfunctions; potential malfunctions; and no malfunctions. Of the 59 homes surveyed, 11 exhibited NO signs of any malfunction. 41 of the homes were placed in the potential malfunction category. Why? Because by definition under a written PaDEP Guidance document, certain properties HAD to be so classified by Mr. Madeira if the lots on which those systems were constructed have limited replacement area or if they are what we call pre-regulatory (meaning they were constructed before system permitting requirements, generally the older systems dating to the 1950s, 60s and 70s). Of the 41 systems listed in the potential malfunction category, only 5 have no replacement area in the event of system failure, and those 5 are otherwise operating without any sign of a malfunction. All of the other 36 systems have at least some replacement area and are also operating without any hint of a malfunction. Of the 59 homes surveyed, only 6 fell into the suspected malfunction category, and of those 6, only 3 exhibited any signs that the systems might not be operating at optimal efficiency. But perhaps the most telling statistic in the entire *Needs Analysis* is the classification of only 1 on lot septic system falling into the confirmed malfunction category, 1 out of 59, and that one home is currently unoccupied, suggesting that system maintenance may be the cause of the confirmed malfunction! Conversely, that means that 58 of 59 surveyed

on lot septic systems in Glen Oley are operating as intended without any confirmed malfunction. Of note, the *Needs Analysis* does not address whether the single malfunctioning system can be fixed by measures as simple as fixing blocked or cracked lines or repairing broken baffles. The categories used in the *Needs Analysis* are ominous sounding to be sure, and almost seem to pre-suppose public sewers as the only available option. Those categories do not, however, accurately represent the true picture. When you analyze the raw data and not just the classification categories, what you find is that 55 of the 59 on lot septic systems surveyed exhibited no evidence of ongoing systemic malfunctions. We feel that the *Needs Analysis* must in all fairness clarify this all important distinction. The fact that a system is pre-regulatory, or that it lacks or has limited replacement area, does not necessarily make a system more or less prone to malfunction. On lot septic systems can function properly for extended periods with proper maintenance, and practically speaking, unless those systems are discharging to the ground surface or are backing-up into the house, those systems are functioning properly, as intended. This common sense definition of functionality needs to be accounted for in the *Needs Analysis*.

System functionality is but one component of the *Needs Analysis*. Water quality is another. Why? Because on lot systems have the potential to affect water quality. Is that the case here? We submit not, and in very emphatic terms. Only **one** property, **1 out of 57** surveyed, presented with a well water test result confirming the presence of fecal coliform, a failure rate consistent with the statewide average. From an evidentiary standpoint, this was the **only** property with bacteria in well water that can be directly attributed to human waste. The survey indicates that this particular property underwent an unpermitted repair. Depending on the nature of the repair, that could be the cause of fecal coliform in drinking water, not necessarily that the system is somehow beyond repair and is in need of replacement. Beyond fecal coliform, the *Needs Analysis* also tested for the presence of total coliform bacteria. The drinking water at 24 of the properties tested positive for total coliform bacteria, but unlike fecal coliform, total coliform is not by definition an indicator of on lot septic system failure. The presence of total coliform bacteria in a drinking water well can, to cite but one example, result from a poorly sealed well that allows surface water to infiltrate directly into groundwater. Surface water carries bacteria that is found in soil and plant matter, and until recently, most well drillers did not grout residential water supply wells thereby increasing the potential for surface water infiltration along a well's casing. Because any sewer mandate would not include connection to public water, if elevated total coliform readings are not caused by on lot septic systems, then a forced connection will do nothing to lower those readings. In addition to fecal coliform and total coliform, nitrate levels comprise the third prong of Mr. Madiera's water quality analysis. The nitrate levels in drinking water wells at Glen Oley are generally good with only **one** property, one in 57 surveyed, exhibiting nitrate levels in drinking water in excess of the Pennsylvania Safe Drinking Water Act standard of 10 milligrams per liter. All other properties have nitrate levels in well water **far below** the state drinking water standard. While 8 properties have elevated nitrate levels, those elevated levels are **NOT** above the state drinking water standard, and therefore by definition pose **NO** health risk. Significantly, the lone property with an excessive nitrate level did not exhibit any bacteria in its well water, suggesting that the

presence of nitrate in that property's well water stems from a source other than the property's on lot septic system. Of note in this regard, the scope of the *Needs Analysis* did not include any examination to rule out to what extent, if any, sources other than on lot septic systems are contributing to elevated well water sampling results. Without such a study, it is impossible to conclude to a reasonable degree of certainty whether the presence of bacteria and nitrates in drinking water wells at Glen Oley originates from the community's on lot septic systems.

Overall, the *Needs Analysis* does not statistically support a call for public sewers in Glen Oley at this time, and if PaDEP cites the data in the *Needs Analysis* as the basis for mandating sewers, I fear its mandate will not survive an administrative challenge by homeowners before the Environmental Hearing Board.

Unfortunately, the *Needs Analysis* has had an unintended consequence, and that is the prospect of its findings and conclusions being used to depress property values in Glen Oley, as a rule making it difficult to market homes in the development. Some prospective purchasers may be hesitant to relocate to Glen Oley not knowing if a sewer mandate is in the community's future, and others may no longer pay market prices for homes in Glen Oley, on the theory that the *Needs Analysis* paints a less than pristine picture of sub-surface conditions in the area. All the more reason for the Township to insist that the *Needs Analysis* be clarified so that it does not give the impression that health and safety issues permeate Glen Oley. During the upcoming period of public comment, the Township can further help in this regard by publicly opposing a need for sewers in Glen Oley at this time.

The *Needs Analysis* does make one suggestion that appeals to the Group, namely the adoption by ordinance of a sewage management program. Such an ordinance would require periodic inspections of each on lot septic system in the Township by its sewage enforcement officer, would help to ensure regulatory compliance, would help to keep systems working properly, would help residents to identify problems early so that repairs can be made before such problems cause health and safety issues, and would alleviate the need to burden residents of Glen Oley with the installation of public sewers. The Group concurs with Mr. Madeira's suggestion about a maintenance plan and asks that the Township strongly consider adopting such an ordinance. For what it's worth, the Department is likely to require the adoption of such an ordinance in any event.

Thank you for listening to the Group's concerns. Are there any questions?



PRACTICING ENVIRONMENTAL, ENERGY AND SUSTAINABILITY LAW

DAVID R. BEANE
ATTORNEY-AT-LAW

HELPING THE REGULATED COMMUNITY MANAGE ENVIRONMENTAL RISK AND SOLVE
ENVIRONMENTAL PROBLEMS™

P.O. Box 1339
READING, PENNSYLVANIA 19603
TEL: 610.378.5555
FAX: 610.378.5551
drb@beanellc.com
www.beanellc.com

The Exeter Township Board of Supervisors has reviewed the following public comment. The Exeter Township Board of Supervisors has determined that further investigation of this area is warranted and a more extensive needs analysis shall be completed. The results of the subsequent investigation will be presented in a Special Study that will be forwarded to the PA DEP when complete.



PRACTICING ENVIRONMENTAL, ENERGY AND SUSTAINABILITY LAW

DAVID R. BEANE
ATTORNEY-AT-LAW

drb@beanellc.com
beanellc.com

28 June 2013

VIA ELECTRONIC MAIL

EXETER TOWNSHIP BOARD OF SUPERVISORS
EXETER TOWNSHIP SEWER AUTHORITY
4975 DeMoss Road
Reading, Pennsylvania 19606
ATTN: Troy S. Bingaman, Township Manager/Secretary-Treasurer

RE: Glen Oley Farms Residents' Group-Comments to Exeter Township's Proposed Act 537 Plan Amendment

Dear Sirs/Madams:

I serve as special environmental counsel to 48 of the 63 households that comprise the Glen Oley Farms Phase 1 and Phase 2 sub-divisions. I write on behalf of my clients to voice opposition to those aspects of Exeter Township's proposed Act 537 Plan amendment that pertain to the Glen Oley Farms sanitary sewer extension. This letter is being submitted in response to the Township's request for public comment on the proposed Plan amendment. Our opposition is based on several grounds:

Objection No. 1

The Township proposes to base a connection mandate upon an assumption that on lot septic systems in the Phase 1 and Phase 2 subdivisions are malfunctioning or failing and pose a health and safety risk. Simply put, the sampling data relied upon by the Township is not sufficiently representative to support a finding that every household is so affected. Only 23 of the 63 affected households had their well water sampled and drain fields surveyed by Berks Enviro Tech back in the Summer of 2010. From that limited sampling data base, the Plan amendment makes assumptions about the sub-division as a whole that do not account for parcel specific variables. As to nitrates, while most of the sampling results are above the laboratory reporting limit, only two of those results would be considered elevated by the Pennsylvania Department of Environmental Protection, and NONE of the results are above the maximum contaminant level for nitrates under the Pennsylvania Safe Drinking Water Act (in fact, most of the results are less than half of the applicable 10 parts per million standard). It is telling that

Office: 610.378.5555 • Fax: 610.378.5551
Post Office Box 1339 • Reading, Pennsylvania 19603



sampling results purporting to support a connection mandate show an across the board ABSENCE of fecal coliform in ALL samples. It also speaks volumes to see that 86% of all on lot systems in the Phase 1 and Phase 2 subdivisions have NOT been labeled as systems with confirmed malfunctions, and that the total coliform failure rate in Glen Oley Farms is consistent with the statewide average. Reliance upon this data to support a connection mandate is troubling, as it raises the question of whether extrapolated assumptions are reliable to a reasonable degree of scientific certainty.

Objection No. 2

In addition to the sampling data not being sufficiently representative, the data also does not support a finding that on-lot disposal systems in the Phase 1 and 2 sub-divisions are the cause of any drinking water impairment. Other sources of bacteria and nitrate impacts are present in the surrounding area, including agricultural sources, and those sources were not studied to rule out to what extent, if any, they are contributing to elevated well water sampling results. Without such a study, it is impossible to conclude to a reasonable degree of scientific certainty that the presence of bacteria and elevated levels of nitrates in drinking water wells stem from malfunctioning or failed on lot disposal systems. The bottom line, enforced sanitary sewer connections may not necessarily reduce elevated well water bacteria and nitrate readings.

Objection No. 3

The Plan Amendment assumes without any analysis or factual support that existing or prospective septic system failures cannot be remedied. To withstand a legal challenge on this score, such an assumption must explain why any out-of-compliance system cannot be fixed by measures as simple as increased pumping, water conservation, fixing blocked or cracked lines, repairing broken baffles, replacing UV lamps or sleeves, or if more comprehensive corrective action is required, by remedies that include the use of holding tanks and modified systems such as drip irrigation, leaching chambers, at-grade absorption areas and peat filters. When a building is not construction code compliant, you don't tear down the building as your remedy of first resort and construct a new building. You first attempt to remedy any deficiencies piecemeal. The Plan amendment appears to seek demolition as the option of first resort without considering the viability of a lock-step approach.

Objection No. 4

The Township is trying to force connection upon many residents whose homes have been established for 40-50 years. The homes to which I refer exhibit mature landscaping, trees and long established patios, walkways and driveways, all of which are at risk of destruction at significant replacement cost to be borne by homeowners if the Township elects to proceed with a forced connection.



Objection No. 5

The proposed connection costs outlined in the Township's April 2013 letter to affected households seek to impose an expense that quite frankly in these harsh economic times, is prohibitive and simply beyond the means of many households in the Phase 1 and 2 subdivisions, even with payment plans. To mandate a forced connection will impose a hardship on many of the affected households, to say nothing about those homeowners who have invested thousands upon thousands of Dollars on relatively new systems, the most recent of which was a new pump and drainfield installed in the Fall of 2012 at a cost of over \$15,000. Mandating that these homeowners now pay for connection to a sanitary sewer system is fundamentally unfair.

Objection No. 6

Finally, assuming the Glen Oley Farms proposed extension is eventually approved by the Board of Supervisors and by the Pennsylvania Department of Environmental Protection, and assuming the proposed extension survives an Environmental Hearing Board challenge, the Plan does not address many issues that are of pressing concern for residents, including a provision for opt-outs, options other than a benefit assessment per property to allocate the cost of the sewer project, seeking only those costs from residents that are sustainable under the Commonwealth Court's reasonableness standard, unmetered use of source water originating from on-site wells if that water is used for outdoor purposes and does not enter the sanitary sewer system, a commitment from the Township that a back-up generator will be installed in the pumping station to guarantee continued operation in the event of electrical outages, and a favorable payment plan for Phase 1 and 2 subdivision residents who incur sewer project costs and fees. Opt-outs as contemplated would include an election not to connect to the sanitary sewer system, or to connect at a later date as a result of either convenience or because of a failed septic system that cannot be remedied or replaced.

Final Thoughts

Because the Township's planned amendment in its current form will not, in our opinion, withstand a legal challenge before the Environmental Hearing Board, my clients urge the Township to withdraw that part of the Plan pertaining to the Glen Oley Farms extension pending further study. We recognize that the Township has a regulatory obligation under Act 537 to address issues such as those presented in the Phase 1 and 2 Glen Oley Farms subdivisions, and to facilitate the Township's continuing obligation, we request a meeting with key decision-makers from the Township in an attempt to reach consensus on a plan for moving forward in a way that satisfies the concerns of all stakeholders in this process. The affected residents are clearly stakeholders here, and they feel with deep conviction that until now their input has not been solicited in the planning process. My clients look forward to working cooperatively with the Township in the days and weeks ahead.



Regards,

BEANE LLC

David R. Beane

DRB:drb

c: Frederick L. Reigle, Esquire (*via* electronic mail)

Appendix E Berks County Planning Commission Comments



County of Berks
Planning Commission

(610) 478-6300
FAX: (610) 478-6316

Berks County Services Center
633 Court Street, 14th Floor
Reading, PA 19601-4309

Peter F. Giorgi, Chairman
James C. McCarthy, Vice-Chairman
Lee C. Olsen, Secretary
James L. Mason
Thomas C. McKeon
Douglas Paul Rauch
Barry L. Schlouch
Mark C. Scott

Glenn R. Knoblauch, Executive Director
Heidi B. Masano, Asst. County Solicitor



June 12, 2013

Board of Supervisors
Exeter Township
4975 DeMoss Road
Reading, PA 19606

RE: Exeter Township Act 537 Plan Amendment

Dear Supervisors:

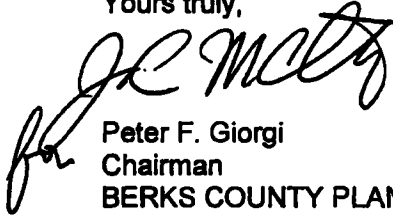
The Berks County Planning Commission is in receipt of the Exeter Township Act 537 Plan Amendment for review. The Commission offers the following comments:

- The Berks County Comprehensive Plan identifies the majority of the proposed future sewer service areas as consistent, except for Lots 16 and 20 found on Table A1, which are designated for Agricultural Preservation. The Commission recommends that Exeter Township remove Lots 16 and 20 from the future service area.
- The Commission recommends that reference to the Berks County Health Department be removed from pages 19 and 28, as there is no such Department.
- The Berks County Sewer and Water Regionalization Study Update recommends that sewage treatment facilities and systems receive regular maintenance and upgrades as needed in order to handle regional sewer service needs rather than having a proliferation of individual sewer treatment facilities.
- The Commission recommends that the Study include the estimated costs of connection, tap-in fee and user fees for the Glen Oley Farms Phase I and II area.
- The Commission supports the overall intent of the Study.

Thank you for the opportunity to review and comment upon this proposed amendment. The Commission does not undertake an engineering review of the project as that is the responsibility of the municipality and the Department of Environmental Protection.

Please send a copy of the Act 537 Plan once the Department of Environmental Protection has approved it and the municipality has adopted it for our records. Please feel free to contact staff at the above number if you have any questions.

Yours truly,



Peter F. Giorgi
Chairman
BERKS COUNTY PLANNING COMMISSION

cc: Paul Herb, Exeter Township
Gannett Fleming

www.countyofberks.com/planning

Appendix F Exeter Township Planning Commission Comments

Exeter Township
Berks County, Pennsylvania
4975 DeMoss Road
Reading PA 19606
www.exetertownship.com



Office: 610-779-5660
Fax: 610-779-5950
Engineering: 610-779-5702
Fire Marshal: 610-779-4888
Parks & Rec.: 610-779-2580
Police: 610-779-1490
Treatment Plant: 610-582-8300

EXETER TOWNSHIP
Planning Commission

November 20, 2013

Exeter Township, Berks County, Authority
4975 DeMoss Road
Reading, PA 19606

RE: ACT 537 PLAN AMENDMENT

Dear Mr. Drogo:

At our November 18, 2013 Planning Commission meeting we discussed the revised Act 537 plan

The Planning Commission moved to recommend approval of the Exeter Township, Berks County, Authority Act 537 plan addendum except for the addition of Glen Oley Farms Section 1 and 2, unless the Special Study detects significant coliform contamination of the area's ground water.

We also recommended sending the document back to the originator and have them correct obvious population errors (Table 3) and finally recommend that Figure 6 and Table A1 be clearly and boldly labeled with the caveat "for potential sewer planning only" to avoid misinterpretation or misuse.

The motion carried unanimously.

Sincerely,
EXETER TOWNSHIP
PLANNING COMMISSION

A handwritten signature in black ink that reads "Gary L. Shane". The signature is written in a cursive style.

Gary L. Shane
Planning Commission Secretary

lrc

cc: Communications
Board of Supervisors
Frederick Reigle, Esq.

The population projections that were used in the preparation of this report were from the Berks County Planning Commission. We contacted the planning commission and there have been no updates to the population projections to date.

Appendix G Resolution of Adoption

EXETER TOWNSHIP ACT 537 PLAN REVISION

RESOLUTION #2014- 09

RESOLUTION OF THE SUPERVISORS OF EXETER TOWNSHIP, BERKS COUNTY, PENNSYLVANIA (hereinafter "the municipality").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act" as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted thereunder, Chapter 71 of Title 25 of the Pennsylvania Code, required the municipality to adopt an Official Sewage Facilities Plan, providing for sewage services adequate to prevent contamination of water and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality, and

WHEREAS, Exeter Township has prepared a "Act 537 Plan Amendment" dated March 2014, which provides for sewage facilities in a portion of Exeter Township and St. Lawrence Borough, and

The alternatives were evaluated to address the projected capacity limits of the Schuylkill River and Heisters Creek Trunk Sewers and the Glen Oley Farms area; the following alternatives were recommended:

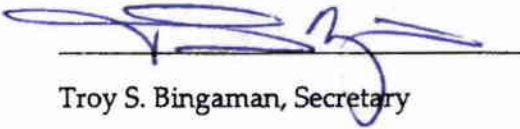
- A phased approach for replacement of the trunk sewer pipe runs to address capacity issues for five year, ten year and twenty year projected capacity issues for the Schuylkill River and Heisters Creek Trunk Sewer.
- Implementation of a Sewage Management Plan for the Glen Oley Farms area of the Township.

WHEREAS, Exeter Township, finds that the Facility Plan described above conforms to applicable zoning, subdivision, other municipal ordinances and plans and to a comprehensive program of pollution control and water quality management.

NOW, THEREFORE, BE IT RESOLVED that the Supervisors of the Township of Exeter, hereby adopt and submit to the Department of Environmental Protection for its approval as a revision to the "Official Plan" of the municipality, the above referenced Facility Plan. The municipality hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).



Jeff Bukowski, Chairman

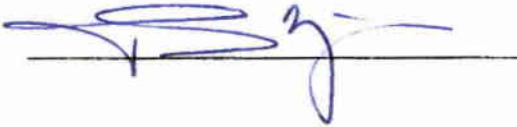


Troy S. Bingaman, Secretary

I, Troy S. Bingaman, Secretary, Exeter Township, Board of Supervisors hereby certify that the foregoing is a true copy of the Township's Resolution No. 2014-09, adopted April 14, 2014.

AUTHORIZED SIGNATURE

TOWNSHIP SEAL



Appendix H Content and Environmental Assessment Checklist



COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER STANDARDS AND FACILITY REGULATION

Act 537 Plan Content and Environmental Assessment Checklist

PART 1 GENERAL INFORMATION

A. Project Information

1. Project Name Act 537 Plan Amendment

2. Brief Project Description Act 537 Plan Amendment to address projected capacity issues within the Schuylkill River and Heisters Creek Trunk Sewers.

B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Exeter	Berks	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Bingaman	Troy			
Additional Individual Last Name	First Name	MI	Suffix	Title
Municipality Mailing Address Line 1	Mailing Address Line 2			
4975 DeMoss Road				
Address Last Line -- City	State	ZIP+4		
Reading	PA	19606		
Phone + Ext.	FAX (optional)	Email (optional)		
610-779-5660	610-779-5950			

C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
Exeter Township Act 537 Plan	
Site Location Line 1	Site Location Line 2

D. Project Consultant Information

Last Name	First Name	MI	Suffix
Phillips	Roger	A	
Title	Consulting Firm Name		
Senior Project Manager	Gannett Fleming, Inc.		
Mailing Address Line 1	Mailing Address Line 2		
P.O. Box 80794			
Address Last Line -- City	State	ZIP+4	Country
Valley Forge	PA	19484-0794	USA
Email	Phone + Ext.	FAX	
rphillips@gfnet.com	610-650-8101	610-650-8190	

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
_____	<u>TOC</u>	1. Table of Contents
_____	<u>5</u>	2. Plan Summary
_____	<u>26</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>Appendix A</u>	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
_____	<u>24</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	<u>27</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>Appendix G</u>	E. Provide a schedule of implementation for the project that identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
_____	<u>Appendix E & F</u>	3. Municipal Adoption: Original , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	<u>Appendix C</u>	4. Planning Commission / County Health Department Comments: Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	<u>Appendix D</u>	5. Publication: Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>27</u>	6. Comments and Responses: Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>18</u>	7. Implementation Schedule: A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, §71.31.d) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.c).
_____		8. Consistency Documentation: Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide.

PART 3 GENERAL PLAN CONTENT CHECKLIST

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	<u>2</u>	I. Previous Wastewater Planning
_____	<u>2</u>	A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	<u>2</u>	1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
_____	<u>NA</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
_____	<u>4</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
_____	<u>NA</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
_____	<u>5</u>	II. Physical and Demographic Analysis utilizing written description and mapping (All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	<u>5</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
_____	<u>5</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
_____	<u>Figure 3</u>	C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>NA</u>	D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>NA</u>	E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference-Title 25, §71.21.a.1.ii).
_____	<u>NA</u>	F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.

- _____ Figure 4 G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v). Appendix B, Section II.I of the Planning Guide.

- _____ Figure 1 and 2 **III. Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs**
- _____ 8 A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21.a.2.i.A).
 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).
 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference-Title 25, §71.21.a.2.i.B).
 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).
 5. A detailed description of the municipality's operation and maintenance requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).
- _____ NA
- _____ NA
- _____ NA
- _____ Volume 2 B. Using DEP's publication titled *Sewage Disposal Needs Identification*, identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
 1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).
 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).
 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).
- _____ Volume 2
- _____ Volume 2
- _____ Volume 2

- _____ Volume 2 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Sewage Disposal Needs Identification* publication. (Reference-Title 25 §71.21.a.2.ii.B).
- _____ Volume 2 5. Detailed description of operation and maintenance requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
- _____ NA C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
 - _____ NA 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
 - _____ NA 2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
 - _____ NA 3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
- _____ 10 **IV. Future Growth and Land Development**
 - A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
 - _____ Zoning Map 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).
 - _____ 12 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).
 - _____ Figure 4 3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.
 - B. Delineate and describe the following through map, text and analysis.
 - _____ Table A1 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDU's remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, §71.21.a.3.i).
 - _____ Table A1 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25,§71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).
 - _____ 14 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).

- _____ 14 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference-Title 25, §71.21.a.3.iv).
 - public ground/surface water supplies
 - recreational water use areas
 - groundwater recharge areas
 - industrial water use
 - wetlands

- _____ 14 5. Sewage planning necessary to provide adequate wastewater treatment for five and ten year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference-Title 25, §71.21.a.3.v).

- _____ 17 **V. Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities**
 - A. Conventional collection, conveyance, treatment and discharge alternatives including:**
 - _____ NA 1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).
 - _____ NA 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, §71.21.a.4.i).
 - _____ 17 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).
 - _____ 17 a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).
 - _____ 17 b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).
 - _____ NA c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).
 - _____ NA d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).
 - _____ NA e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).
 - _____ 17 4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).
 - _____ NA 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).
 - _____ NA 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).
 - B. The use of individual sewage disposal systems including individual residential spray irrigation systems based on:**
 - _____ NA 1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).
 - _____ NA 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
 - _____ NA 3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.
 - _____ NA 4. The repair, replacement or upgrading of existing malfunctioning systems in

areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).

- _____ NA a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).
- _____ NA b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).
- _____ NA c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).
- _____ NA C. The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference-Title 25, §71.64.d).
 - _____ NA 1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).
 - _____ NA 2. Soil suitability. (Reference-Title 25, §71.64.c.i).
 - _____ NA 3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
 - _____ NA 4. Municipal, Local, Agency or other controls over operation and maintenance requirements through a Sewage Management Program. (Reference-Title 25, §71.64.d). See Part "F" below.
- _____ NA D. The use of community land disposal alternatives including:
 - _____ NA 1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).
 - _____ NA 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
 - _____ NA 3. Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title 25, §71.21.a.2.ii.C). See Part "F" below.
 - _____ NA 4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.
- _____ NA E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference- Title 25, §71.21.a.4).
 - _____ NA 1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
 - _____ NA 2. Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
 - _____ NA 3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).
 - _____ NA 4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.
 - _____ NA 5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
- _____ NA F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:
 - _____ NA 1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).
 - _____ NA 2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).
 - _____ NA 3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule

- _____ established by the municipality. (Reference-Title 25, §71.73.b.2).
- _____ NA 4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:
- _____ NA a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).
- _____ NA b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.
- _____ NA 5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).
- _____ NA 6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).
- _____ NA G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, §71.21.a.4).
- _____ 1. Modification of existing comprehensive plans involving:
 - _____ NA a. Land use designations. (Reference-Title 25, §71.21.a.4).
 - _____ NA b. Densities. (Reference-Title 25, §71.21.a.4).
 - _____ NA c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).
 - _____ NA d. Improved enforcement. (Reference-Title 25, §71.21.a.4).
 - _____ NA e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).
- _____ 2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).
- _____ NA 3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference-Title 25, §71.21.a.4).
- _____ NA 4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).
- _____ 17 H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).
- _____ NA 1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).
- _____ 17 2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).
- _____ 17 3. Community economic conditions. (Reference-Title 25, §71.21.a.4).
- _____ NA 4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).
- _____ NA 5. Drinking water sources. (Reference-Title 25, §71.21.a.4).
- _____ NA 6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).
- _____ 17 **VI. Evaluation of Alternatives**
- _____ A. Technically feasible alternatives identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, §71.21.a.5.i.).
- _____ 19 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the

Planning Guide.

- _____ 19 2. **Municipal wasteload management Corrective Action Plans or Annual Reports** developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.
- _____ 19 3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A. 1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A. 1251-1376). (Reference-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.
- _____ 19 4. **Comprehensive plans** developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §71.21.a.5.i.D). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.
- _____ 21 5. **Antidegradation requirements** as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.
- _____ 19 6. **State Water Plans** developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.
- _____ 21 7. **Pennsylvania Prime Agricultural Land Policy** contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.
- _____ 21 8. **County Stormwater Management Plans** approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §71.21.a.5.i.H). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.
- _____ 22 9. **Wetland Protection.** Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference-Title 25, §71.21.a.5.i.I) Appendix B, Section II.I of the Planning Guide.
- _____ 22 10. **Protection of rare, endangered or threatened plant and animal species** as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference-Title 25, §71.21.a.5.i.J). Provide DEP with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.
- _____ 22 11. **Historical and archaeological resource protection** under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice

request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide.

- _____ 23 B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.
- _____ 17 C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).
- _____ NA D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).
- _____ 23 E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).
- _____ 23 F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).
- _____ NA 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).
- _____ NA 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).
- _____ 24 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).
- _____ 24 **VII. Institutional Evaluation**
- _____ 24 A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
 - _____ 24 1. Financial and debt status. (Reference-Title 25, §71.61.d.2).
 - _____ 24 2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)
 - _____ 25 3. Existing legal authority to:
 - _____ 25 a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).
 - _____ 25 b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).
 - _____ 25 c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).
 - _____ 25 d. Take enforcement actions against ordinance violators. (Reference-Title 25,

§71.61.d.2).

- _____ 25 e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).
- _____ 25 f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).
- _____ 25 B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
- _____ NA 1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).
- _____ NA 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).
- _____ NA 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).
- _____ 25 C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
- _____ NA 1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
- _____ NA 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).
- _____ NA 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
- _____ NA 4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
- _____ NA 5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
- _____ NA 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
- _____ _____ D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).

_____ 26 **VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives**

- _____ A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
- _____ 8 1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
- _____ 10 2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
- _____ _____ 3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
- _____ 23 4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
- _____ 23 5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
- _____ 23 6. Available financing methods. (Reference-Title 25, §71.21.a.6).

- _____ _____ 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
 - _____ 27 B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)
 - _____ 27 C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)
- IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)**
- _____ Appendix B A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance 381-5511-111. Include this document as “Appendix A” to the Act 537 Plan Update Revision. Note: *An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.*