KISKIMINETAS TOWNSHIP
ARMSTRONG COUNTY, PENNSYLVANIA

ACT 537 SEWAGE FACILITIES PLAN UPDATE
ORCHARD HILLS AREA

AUGUST 2024

Prepared by:

SENATE ENGINEERS AND SURVEYORS, DIVISION OF LSSE
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238
Telephone 412-826-5454
Fax 412-826-5458

Table of Contents

Tables

Appendices

KISKIMINETAS TOWNSHIP
Armstrong County, PA

ACT 537 SEWAGE FACILITIES PLAN
Orchard Hills Area

Chapter 1: Plan Summary

1.1 General Scope

This update is being completed by Kiskiminetas Township (Township) which is proposing to provide public sewage (wastewater) collection and conveyance system for the populated areas in the Orchard Hill and Spring Church Areas within the Township, which lie to the east of Apollo Borough. . The new collection/conveyance system will connect to an existing sanitary system located along Old State Road. The existing collection/conveyance system eventually connects to the Kiski Valley Water Pollution Control Authority (KVWPCA) sewer system, which ultimately delivers sewage to their regional treatment plant located in Allegheny Township, Westmoreland County.

1.2 Previous Wastewater Planning

Kiskiminetas Township original Act 537 was completed and approved in June 1980. A small portion of the township was gravity sewered along Old State Road at Jackson Road and Sugar Road approximately 2,500 feet SW of the intersection with Eckman Road, and the general area of McKinstry Hill Road east to the Kiskiminetas River and Apollo Borough. This area services approximately 145 residential homes, business, and churches or 310 EDUs. A map of the existing sanitary sewer system is provided in Appendix B.

1.3 Proposed Service Area

1.3.1 The proposed service area of this plan covers unsewered areas of the Township in the Orchard Hill and Spring Church Areas along and surrounding Old State Road and State Route 56. Within the proposed service area, approximately 720 single family homes currently utilizing onlot septic systems will be provided with public sewer service. An additional 215 lots within the Pine Valley Mobile Home Park; as well as, the Apollo-Ridge Schools, where sewage is currently collected and treated in two separate small package plants, will have their sewage flows captured by the collection and conveyance system proposed in this plan. A planning area map is provided in Appendix B2. This proposed update to the Act 537 Plan has been reviewed and noted as compliant with the Armstrong County Comprehensive Plan. A copy of the County Planning Commission and Farmland Preservation review letters are provided in Appendix C.

1.3.2 The proposed lots to be served under this plan update currently use individual onlot septic systems, except as noted above. The densely populated area that is currently unsewered was determined to have significant failing and suspected to be failing onlot systems; a certified sewage enforcement officer conducted an evaluation of each system by completing a door-to-door survey and performed testing on select onlot systems. Chapter 4 summarizes the operations of these individual on-lot septic systems. Additional results of the on-lot septic system survey can be found in Appendix D.

1.4 Public Sewers Alternatives

Based on topography, natural, and manmade features within the updated planning area, four alternative public sewer collection and conveyance systems were evaluated.

1.4.1 **Alternative One**: Would consist of gravity sewers extending from the existing sanitary system terminus along Old State Road near Kirkman Lane up to and along Patterson Road. Gravity sewers would also be extended along all major roads within the proposed plan extension:

- Jackson Road to the southeast.
- Wright Road,
- Kings Road,
- Sugar Hollow Road,
- Eckman Road, and
- Metzer Road.

The Pine Valley mobile home park is located on the northern-western portion of the project area and will also be connected into the proposed system. The topography indicates that a pump station will be needed at a low point near the intersection of Jackson Road and Kings Road. It is proposed that a four-inch force main will pump sewage to a manhole located northwest of the pump station, where sewage would then flow by gravity to the existing Township system.

Additional gravity sewers would run along Old State Road just before the intersection with State Route 56. Sewers would extend along State Route 56 and surrounding areas including Elwood Lane, Balsiger Road, Sportsman Road, Gi Road, Lutheran Church Road and Cole Road as well as Ridge Road, Birch Street, Oak Street, Evergreen Road, and Maple Drive.

A second and third pump stations with a forcemains, estimated to be approximately 4-inch in diameter, is proposed in this phase to convey the wastewater to the gravity sewer on State Route 56 near the intersection with Ridge Road and at the Apollo Ridge School.

Due to topography in the far eastern section of the planning area, individual grinder pumps are proposed along Ridge Road, Laurel Way, and Ross Lane to provide public sewers in these areas.

A general layout schematic shown in a map provided in Appendix B. Estimated costs are also provided in Appendix B.

Total Costs of Alternative One

Total costs for Alternative One include $34.245M in construction without contingency ($41.094M w/contingency) and $4.923M in soft costs (administration, debt service, legal, engineering, permitting, and construction observation and administration); totaling $46.017M with contingency.

1.4.2 **Alternative Two**: Would be similar to Alternative One with the extension of gravity sewers in the western and central sections of the planning area, but with the following differences:

- To minimize stream and wetland impacts along Rattle Run, the north central area around Elwood Lane would be serviced with lower pressure grinder pump systems, as well as,
- The eastern section of State Route 56 (starting just east of Ridge Road) includes Clark Street, Elm Street, Birch Street, Oak Street, Maple Drive. Ross Lane, and Laurel Way will also be serviced by lower pressure grinder systems.

- A second pump station just south of State Route 56 and west of Clark Street would be eliminated in this alternative, the pumpstation at the School would remain.

A general layout schematic shown in a map provided in Appendix B. Estimated costs are also provided in Appendix B.

Total Cost of Alternative Two

Total costs for Alternative One include $32.601M in construction without 20% contingency ($39.121M w/contingency) and $4.709M in soft costs (administration, debt service, legal, engineering, permitting, and construction observation and administration); totaling $43.830M with contingency.

1.4.3 **Alternative Three**: Alternate Three is a hybrid of Alternative One. The gravity sewers, lower pressure system along Laurel Way, and both pump stations as described for Alternative One would also be present in Alternative 3 with the exception of the gravity sewer servicing the Elwood Lane area and running along Rattling Run would be eliminated and the low-pressure grinder system. Three pumpstations would still be required in this alternative.

A general layout schematic shown in a map provided in Appendix B. Estimated costs are also provided in Appendix B.

Total Cost of Alternative Three

Total costs for Alternative Three include $33.206M in construction without contingency ($39.845M w/contingency) and $4.787M in soft costs (administration, debt service, legal, engineering, permitting, and construction observation and administration); totaling $44.634M with contingency.

1.4.4 **Alternative Four**: Alternate Four would consist of limited gravity sewer in the north-western and eastern portion of the planning area and utilizing lower pressure sewer systems within the remainder of the planning area.

A general layout schematic shown in a map provided in Appendix B. Estimated costs are also provided in Appendix B.

Total Cost of Alternative Four

Total costs for Alternative One include $36.571M in construction without contingency ($43.886M w/contingency) and $5.225M in soft costs (administration, debt service, legal, engineering, permitting, and construction observation and administration); totaling $49.111M with contingency.

1.5 Comparison of Alternatives

A comparison of the cost associated with the four alternatives is summarized in Table 1 below. All the alternatives are feasible with respect to providing public sewer to the communities within the planning area. Alternatives One and four were eliminated based on high construction costs.

Alternative Two did provide some benefit to the Authority by removing a pumpstation to operate and maintain, and had lower construction costs than Alternatives Three, but higher O&M costs. Alternatives Two and Three have comparable hard and soft costs, but Alternative Two has a significantly lower twenty year present worth and provides for a reasonable balance of utilizing low pressure system compared to overall collection and

conveyance system. Alternate 2 is the recommended option as it has the lowest 20 year present worth, yields the lower monthly user fee, as well as provides for a reduced environmental impacts and permitting requirements, as the portion of the gravity collection/conveyance system along Rattling Run is eliminated.

TABLE 1.51
Alternative Cost Comparison

Alternative	Total Cost (w/Cont.) (Millions)	Estimate O&M (Millions)	20 Year Present Worth (Millions)	Uniform Annual Cost (Millions)	Estimated User Costs ($/EDU)
1	$46.017	$0.145	$47.750	$4.00	$143
2	$43.830	$0.181	$45.997	$3.85	$139
3	$44.634	$0.150	$46.421	$3.88	$139
4	$49.111	$0.227	$51.825	$4.34	$156

Notes:

1.- Estimated User costs are based on a PENNVEST 30-year loan @1.00%, no grant funding, and 1,245 EDUs within the planning area.

2.- Discount Rate of 5.50 was used to determine Present Worth

Table 1.5.2
Summary of Benefits and Detractions

Alternative	Benefit	Detraction
1	• Mostly Gravity Sewer • Less Residential Grinder Pumps • Lowest O&M Costs	• Highest Construction Costs • Topography Dependent • Three PS to Maintain
2	• Lowest Construction Cost • Lower Stream Impacts • Two Pump Station (PS) • Balance Total Grinder Pumps	• Higher O&M • Topography Dependent • Forcemain at School (Idle in summer)
3	• Lower O&M Costs • Lower Stream Impacts	• Three PS to Maintain • Topography Dependent
4	• Lower Construction Costs • Least Topography Dependent • Lowest Stream Impacts	• Highest O&M Costs • Three PS to Maintain • Highest Grinder Pump Usage

Based on these analyses, the preferred option is Alternative Two.

1.6 Proposed Funding Method and User Costs

1.6.1 For this Plan, financing from Pennsylvania Infrastructure Investment Authority (PENNVEST) is proposed. This agency coordinates the needs with the PA Department of Environmental Protection. Loan rates are established based on median household income in

Armstrong County and non-repayable funds will most likely be offered to make the project feasible.

1.6.2 With the assumption that financial assistance will be secured from PENNVEST, a user rate of $65.00 per EDU per month will be targeted as shown in Table 8-2 in Appendix B, as this will cover O&M costs and provide for adequate surplus for unforeseen projects.

1.6.3 These user rates could change to some extent depending upon (a) non-repayment amounts, (b) the interest rate on the assistance offered by PENNVEST, (c) term for repayment of loan, and (d) amount of initial contribution (tap-in fee).

1.6.4 Connection and Taps Fees: Currently, Township residents that are required or elect to connect to the existing or proposed sanitary collection and conveyance system are required to pay the following connection, distribution, inspection, and capacity (set by KVWPCA) fees:

- Connection - $2,125
- Distribution - $1,250
- Inspection - $ 125 per inspection pass/fail
- Capacity - $ 851 (KVWPCA fee)

Total due at TAP permit request - $4,226

1.7 Institutional Arrangements

1.7.1 The Township already owns and maintains an existing sanitary sewer system. The existing system has adequate hydraulic capacity to handle sewage (wastewater) flows as described in Chapter 5 of this plan.

1.7.2 With the proposed project, all the flows produced from this project will be collected/ conveyed from the Townships' collection system into the KVWPCA's collection/ conveyance system.

1.7.3 Treatment of collected wastewater will occur at the existing regional wastewater treatment plant, which is owned and operated by the KVWPCA (operating under NPDES Permit #PA0027626).

1.7.4 A legal service agreement between the Township and the KVWPCA has been in place for several years. KVWPCA has provided letter of available capacity and Operational Year 2023 Chapter 94 report, both are found in Appendix G.

1.7.5 An Authority has been organized (May 2022) to implement the project and existing system. The Authority will need to secure interim financing to prepare the design of the system (through professional Engineers), secure required permits, obtain bids, secure final financing, and construct the proposed project. The Authority will also need to secure legal counsel to secure easements and/or required properties for the pump stations.

1.7.6 The Authority will have to prepare an adequate budget for the operation and maintenance of the existing and new sewers. This budget will include the debt service payments as well as the services of needed personnel costs, utilities, and some professional services such as engineering, accounting, insurances and legal, etc.

1.7.7 Based on the actual final financing offer, the Authority will revise the current rates for the existing customers and new sewer customers. The rates will be sufficient to generate adequate revenue to meet the budgetary needs and provide some reserve.

1.8 Municipal Adoption

The Township has adopted a Resolution to establish their commitment to pursue the recommendations in this report. The adopted Resolution is located Appendix E.

30 Day Public Comment

The Township placed a Public Notice in the Leader Times on ____. The Act 537 Plan was on display for public view at the Township Business office for a period of 45 days. Proof of advertisement and summary of public comments are provided in Appendix E.

Implementation Schedule (Phase I of multiple Phase Project)

The following outlines the anticipated time frame for the implementation of the chosen alternative.

ITEM:	Approximate Date:
▪ Establishment of Sanitary Authority	May 2022
▪ Advertise Plan for Public Comment	JANUARY 2025
▪ Adoption of Plan by Township	MARCH 2025
▪ Submission of Revised Plan to PA DEP	APRIL 2025
▪ Plan Approval by PA DEP	JANUARY 2026
▪ Interims Design Loan Closing PHASE I	FEBRUARY 2026
▪ Authorization by Authority to begin Surveys & Design	February 2026
▪ Complete Preliminary Design PHASE I	September 2026
▪ Review by the Authority	October 2026
▪ Complete Final Design and submit to PA DEP	December 2026
▪ Approval of plans by PA DEP and Issuance of Permits	July 2027
▪ Submit Application to PENNVEST for Financing	October 2027
▪ Receive and accept PENNVEST offer.	January 2028
▪ Secure Right of Ways	January 2028
▪ Advertise for Bids	March 2028
▪ Receive Bids	April 2028
▪ Complete Financing	May 2028
▪ Start Construction	June 2028
▪ Complete Construction	June 2029
▪ Begin Operation (start connections)	June 2029

The above milestones are subject to change should the project be constructed in phases due to funding restrictions and/or requirements.

Chapter 2: Consistency with Previous Sewage Facilities Planning

All previous wastewater plans, which involved Kiskiminetas Township (Township), are briefly reviewed below.

2.1 Armstrong County Comprehensive Plan (2005)

2.1.1 Kiskiminetas Township originally adopt the previous Act 537 Plan June 1, 1980. After that plan was accepted and approved, the existing gravity sewer system was constructed. No municipal authority was formed, and the sewers are operated and maintained by Kiski Valley Water Pollution Control Authority. The act has not been amended since, until the present revision. In Spring 2022, the Township formed the Kiski Township Sewage Authority that will be responsible for implementing the revised Plan.

2.1.2 The Armstrong County Planning Department reviewed this plan and found that it was in compliance with the goals and objectives that were developed in the Armstrong County Comprehensive Plan that was adopted in 2005. A copy of the letter from the Armstrong County Planning Department is in Appendix C.

2.2 Consistency with Other Municipal & County Planning Documents

2.2.1 The Pennsylvania Municipalities planning code, Act 274 of 1968, as amended, establishes the basic authority for the exercise of municipal land use controls in Pennsylvania. It enables the communities to plan for community development through preparation of a comprehensive development plan and to govern such development using land control devices.

2.2.2 There are commonly two types of land use control devices within a municipality: zoning and subdivision regulations. Of the two, zoning regulations most directly affect land use patterns, while subdivision regulations affect the way new land is physically prepared for development.

2.2.3 The Township has an adopted zoning ordinance and uses Armstrong County's subdivision regulations.

2.2.4 As this project is simply a sewerage extension project with no structures/facilities (except pump stations) to be constructed, the sections under land use are not applicable in this case. The only ordinance that may be influenced by the construction of this project is the Ordinance section which governs lot sizes.

2.25 The County Farmland Preservation Coordinator (Appendix C) has reviewed the proposed plan and deemed that the project is consistent with their program as long as farmland is not permanently impacted. The two areas (called out as ASA 8 and 9 on the provided map, Appendix F) are transected by gravity sewer lines.

The two segments in ASA 8 follow an existing access road/driveway or parallels the northern fork Rattling Run neither impact farmland. The Northwest section of ASA 9 has two segments that transect this area, but these segments are within residential areas and no farmland is impacted. The eastern section of ASA 9 parallels Balsiger Road and sections of southern form of Rattling Run. This area is forested and as such no impacts to farmland can be noted.

Chapter 3: Physical & Demographic Analysis

3.1 Identification of the Planning Area

3.1.1 The planning area is the densely populated areas along and surrounding Old State Road and State Road 56 in Kiskiminetas Township (Township). The majority of the planning area consist of single-family homes, several churches, a few small businesses (along the SR 56 corridor), a mobile-home park and the Apollo Ridge School District. There are no industries in the proposed service area.

3.1.2 The area starts at the intersection of Old State Road and Jackson Road (from the terminus of the existing sewer) and continues northeast across the Orchard Hills Area of the Township along Old State Road and SR-56 and ends at the Apollo Ridge schools. The planning area branches off the two main roads along the way.

3.1.3 The planning area is clearly identified on a map provided in Appendix B2.

3.2 Physical Characteristics

3.2.1 The area is moderately sloping. A major portion drains to a low point on Jackson Road near the intersection with Kings Road.

3.2.2 The Pine Valley mobile home park located on the north side of the project area will be connected into the system.

3.2.3 Homes along Laurel Way slope away from the main direction of gravity flow and therefore, will need to be served by a low-pressure sewer system (i.e., grinder pumps).

3.2.4 The Apollo Ridge School District (elementary, middle, and high school facilities) are all planned to be collected into the proposed sanitary sewer system.

3.3 Topography

3.3.1 Elevations in the planning area range from about 1,500 at the northeast end of the area near the schools to low points of 1,100 along Kings Road and SR-56.

3.4 Physiology & Geology

3.4.1 The entire planning area drains into the Kiskiminetas River. Rattling Run and Roaring Run, along with their associated unnamed tributaries, are the two main streams that drain the planning area. Both Runs are classified as Cold-Water Fisheries. Erosion and Sedimentation Control BMPs will be implemented to protect the streams during construction. Eliminating the failing onlot systems will stop degradation of the local streams and improve water quality.

3.5 Soil Types in the Planning Area

3.5.1 The PASDA database was used to collect soil information for the planning area in the Township. A map depicting the soils found in the project area and relevant soil information can be found in Appendix F.

3.5.2 The USGS web soil survey was utilized to determine the suitability of soils for specific types of on-lot sewage disposal. The planning area is identified as having a very limited capacity to function as an in-ground bed septic system. The soils in the planning area have a slight to very limited capacity to function in a spray irrigation system. Much of the planning area is identified

as having soils that are very limited capacity to function as a sand mound system. Overall, the soils in the planning area are not considered to be well suited for use for on-lot systems. Information from USGS web soil survey can be found in Appendix F.

3.5.3 Several of the soil types found within the planning area are considered to be soils consistent with Prime Farmland or Farmland of Statewide Importance as defined in the Federal Register, Vol. 43, No. 21, January 31, 1978. A general NRCS soils map depicting soils and conditions that are conducive to agriculture and farming is provided in Appendix F. There are several parcels within the planning area that are in an Agricultural Security Area and one parcel classified as a Preserved Farm area. A map of the Agricultural Security Areas and Preserved Farm area within the planning area in Appendix F. A letter for the Armstrong County Farmland Preservation Program as well as additional information on the above features can be found in Appendix C.

3.5.4 On-lot septic system surveys were evaluated and assessed by Rebecca Rupurt, Certified Sewage Enforcement Officer from June to November 2023. Per PA DEP requirements the surveyed system encompassed slightly over 20% of the planning area. Out of 434 properties surveyed, 191 properties show confirmed malfunction of the existing on-lot sewage disposal systems. A summary of the findings can be found in Appendix D.

3.5.5 The results of the on-lot septic system survey indicate that a proper public sewage collection and treatment system is severely needed for the area.

3.6 Potable Water Supplies

3.6.1 The majority of the planning area is served by private wells, as well as a public water system owned and operated by the Municipal Authority of Westmoreland County; service area map provided in Appendix F.

3.7 Wetlands/Floodplains

3.7.1 There are several small streams in the planning area.

3.7.2 Wetlands in the planning area will be avoided where possible. A detailed wetland delineation study will be conducted as part of the design and permitting portion of each phase of construction for the selected alternative of this plan. Should wetlands be affected, all proposed work in the wetland will be designed in accordance with current state and federal standards and regulations. A national wetlands inventory map is provided in Appendix F.

3.7.3 There will be areas that will be within the 100-year flood elevation. That may be considered wetlands. F.I.R.M maps are provided in Appendix F.

3.7.4 Except for the pump station and manholes, no other structures will be located in or near the floodplain areas. Sewer lines located in wetlands areas will be backfilled and restored to prior wetland status as before construction. Permits necessary for such work will be secured.

Chapter 4: Existing Sewage Facilities & Needs

4.1 Existing Facilities in the Project Area

4.1.1 Existing residential systems in the project area generally comprise of a septic tank and seepage/leach beds. Based on soils mapping for the proposed service area, the soils are either very limited and not recommended for standard septic and sand mound systems and limited with spray irrigation. The repair of the failed/failing onlot systems is not considered a viable alternative.

4.1.2 Currently, the Pine Valley mobile home park and the Apollo Ridge School District are the two public sewage disposal facilities in the planning area. All other structures utilize on-lot sewage disposal systems. Based on the on-lot septic system survey conducted by the Armstrong County Sewage Enforcement Agency, a few property owners are using holding tanks as temporary facilities until public sewers become available in the planning area. There are 12 known wildcat sewers within the surveyed portion of the planning area.

The Pine Valley Wastewater Treatment Plant permitted for 0.050 MGD and operates under NPDES Permit No. PA 0091898. The plant can serve up to 215 available lots in the mobile home park. Roughly 159 of the lots are currently occupied. The treatment plant was constructed in the early 1980's. The treatment facility discharges into unnamed tributary of Rattling Run near 40°35'33.6"N, 79°31'57.0"W.

4.1.3 The Apollo Ridge School District Wastewater Treatment Plant operates under NPDES Permit No. PA0219045. The Apollo Ridge School District treatment plant is currently permitted to treat up to ~0.0267 MGD. CWM Environmental (CWM) is the plant operator. Flow information for year 2019 provided by CWM. Average daily flows range from 374 GPD to 3,530 GPD. The low flows are observed during the summer months while the higher flows are observed during the school year. The treatment facility discharges into an unnamed tributary of Roaring Run near 40°36'06.2"N, 79°28'35.7"W.

4.2 Problems with Existing Systems

4.2.1 Residential Systems

4.2.1.1 An on-lot septic system survey conducted by Certified Sewage Enforcement Officers from June 2021 through October 2023 showed the following. In compliance with the PA DEP minimum 20% random sampling requirements slightly over 50% of the planning area was surveyed and assessed. Out of 434 properties surveyed, 191 properties (44.0%) were deemed to have malfunctioning existing on-lot sewage disposal systems that were not providing adequate sanitary water treatment. A summary spreadsheet and mapping of the findings, and copies of the completed survey forms can be found in Appendix D.

4.2.1.2 The survey assessment indicates that the existing on-lot systems are detrimental to surface and groundwater resources.

4.2.1.3 Many small lots had been subdivided off prior to the Pennsylvania's Onlot Sanitary Regulations, and as such do not have adequate area for an existing absorption field nor the potential for a "backup" area for future absorption area. The soils within the study area are all not conducive to use of standard onlot absorption beds/trenches, and intermittently acceptable for sand mound system use.

4.2.1.4 Details of types of soils in the area and their suitability for on-lot systems are indicated in Chapter 3 and Appendix F. The majority of the soils are very limited for the treatment of septic tank effluent and gray water.

4.2.1.5 This leads to the conclusion that the existing systems cannot be upgraded or improved to meet PA DEP regulations and some type of public collection and disposal system is needed for the planning area.

4.2.2 Pine Valley Wastewater Treatment Plant

4.2.2.1 As mentioned previously, the treatment plant was constructed in the early 1980's. and has been updated in 2023 -2024 and appears to be operating without issues.

4.2.3 Apollo Ridge School District Treatment Plant

4.2.3.1 Through conversation with the Apollo Ridge School District Superintendent/staff and CWM Environmental (plant operator) there are no current issues with the plant. However, the school district is interested and in favor of connecting into the proposed public sanitary sewer systems.

4.3 Water Supply Survey

4.3.1 As mentioned in Chapter 3, the majority of the planning area is served by a public water system owned and operated by the Municipal Authority of Westmoreland County. Therefore, no water surveys were conducted. The public water service area map for Kiskiminetas Township is provided in Appendix F.

4.4 Operation and Maintenance

4.4.1 At this time, there are no specific operation and maintenance requirements of on-lot systems except those provided in Ch. 73 of PA DEP's Regulations, nor do they maintain records of septage disposal methods, capacities, or transportation methods.

4.5 Septage Disposal

4.5.1 Information about quantities septage and place of disposal is not currently available. It is presumed that any haulers currently being used by residents in the planning area deliver the contents to an approved disposal site (STP).

4.6 Extended Service Area

4.6.1 Additional areas are shown outside the proposed service area that would benefit from connecting into a public collection/conveyance system. However, due to homes/ businesses becoming more and more spaced apart, it is not cost effective to provide these structures with a public connection. If any of these areas become more densely populated, then the Township would re-evaluate this plan and determine if providing public service becomes economically feasible.

Chapter 5: Future Growth and Land Development

5.1 Current Planning Documents

5.1.1 Kiskiminetas Township does have a Land Use and Zoning Ordinance. The planning area for this plan update is mostly residential and agricultural use. There are a few commercial establishments within the area consisting of small "family" owned stores. There are no industrial facilities within the area.

5.2 Floodplain Limitations

5.2.1 A review of Flood Insurance Rate Maps (F.I.R.M.) located in Appendix F shows the areas which are within the 100-year flood elevation. All new developments will have to consider this limitation.

5.3 Stormwater Management

5.3.1 Neither Armstrong County nor the Township has any Stormwater Management Ordinance; therefore, there are no specific limitations. However, any proposed projects will comply with all state requirements for stormwater management.

5.4 Existing Plotted Subdivisions

5.4.1 There are no specific plotted subdivisions. The area has not grown significantly for the last several years, as such no consideration for local comprehensive plan or creating a municipal subdivision regulation have been considered.

5.5 Future Growth Areas and Population Growth

5.5.1 The Southwestern Pennsylvania Commission's Cycle 11 Forecast of Population, Households, and Employment by Municipality, 2015-2045 and the 2020 Census provided the following population numbers for the Township.

Year	Population
2020 (Census)	4,605 persons
2025 (Est.)	4,358 persons
2030 (Est.)	4,310 persons
2035 (Est.)	4,325 persons
2040 (Est.)	4,348 persons
2045(Est.)	4,351 persons
2050(Est.)	

5.5.2 Number of Equivalent Dwelling Units (EDUs) in the project is roughly 935 of those 720 EDUs will be onlot systems, 205 within Pine Valley Mobile Home Park, and 10 for the School System.

5.5.3 Based on the Southwestern Pennsylvania Commission's Population Forecast, it appears that the planning area will experience little future growth.

5.6 Estimated Sewage Flows

5.6.1 According to the U.S. Census Bureau, the average household size in the Township is 2.35 from the last census survey in 2020.

5.6.2 The flows will be calculated as follows:

- Households including the Pine Valley Mobile Home Park (total available lots), churches and small businesses. (Due to their size, churches and small business were counted as 1 EDU each. There are no industries in the planning area).
- Apollo Ridge School District

5.6.3 Households:

- There are approximately 935 EDUEDUs in project area.
- Assume an average daily per capita flow of 100 gallons per day 2.35 person per household (per U.S. Census Bureau) per EDU
- 935 EDUs X 2.35 persons X 100 gallons/person/day = 219,725gallons/ day.
- 222,100 gallons/day X 7 days/week X 52 weeks/year = 79,979,900 gallons/year

5.6.4 School District

Apollo Ridge School District currently has a sewage treatment plant that serves the High School, Middle School, and Elementary School. The treatment plant is permitted for 26,700 gallons per day. CWM Environmental (CWM) operates and maintains the school district's plant. Based on the 2019 flow data provided by CWM the total annual flow to the treatment plant is 900,300 gallons. Average daily flows range from 374 GPD (during the summer months) to 3,530 GPD (during the school year). Using the daily flow information provided by CWM for each month, the average daily flow spread over a one-year period is ~2,500 GPD (900,300 gal./yr.)/(12 mo./yr.)/30 days/mo.)

Therefore, the number of EDUs calculated for the school district facilities is 10 EDUs (2,500GPD)/235 gallons per EDU)

5.6.5 Total EDUs - Therefore, total number of EDUs for the planning area is estimated at 925 (residential, churches, small business) + 10 (School District) = **935 EDUs**.

5.7 Other Regulatory Considerations

5.7.1 There are no other Township or County regulations which affect the following:

- Public ground/surface water supplies
- Recreational water use areas
- Industrial water use
- Wetlands

Chapter 6: Alternatives for Improved Facilities

6.1 Reasonable Alternatives to be Considered

6.1.1 A need for improved waste disposal facilities has already been established.

6.1.2 Following basic alternatives could be considered for this study. They are briefly described with reasons for their acceptance or elimination.

- No action alternative
- Continued use of on-lot subsurface systems (Sewage Management)
- Use of retaining (holding) tanks
- Pressure sewers
- Small diameter gravity sewers
- Conventional gravity sewers

6.2 No Action Alternative

6.2.1 This alternative cannot be considered for the following reasons.

- Potential impact of malfunctioning systems on surface and ground water resources.
- Restrictions on any future growth in Kiskiminetas Township (Township). Soil conditions would hinder issuance of permits for on-lot disposal systems.
- Negative impact on any recreational developments in the area.

6.3 Continued and Future Use of On-Lot Subsurface Systems (Sewage Management)

6.3.1 The Township does not currently, nor does it plan to, own or operate individual onlot systems, SFTFs, or other non-municipal facilities. The role of the Township in these systems has been and will remain to be administrative and regulatory as outlined in the Township Sewage System Ordinance, a copy of which can be found in Appendix E. While the Ordinance does provide inspection schedules and requirements for some types of sewage systems, there are no provisions for regular inspection of small onlot systems. The significant number of onlot systems currently in use make an annual or even biannual inspection of each system unfeasible. If a majority of the systems were to be abandoned in favor of a larger municipally owned regional or community-based system, regular inspection of remaining systems would be more feasible. Currently, maintenance of onlot systems is the responsibility of the property owner and repairs are made on an as-needed basis, normally after a failure is found. The reduction of onlot systems would allow the Township to adopt a more pro-active operation and maintenance ordinance for the remaining systems. Reference Appendix E for a detailed description of the existing Township requirements for permitting, inspection, and testing of SFTFs, sanitary sewers, and retaining tanks.

6.3.2 This alternative is not feasible since the survey of existing systems indicates many malfunctioning and suspected malfunctioning systems. The soil conditions in the proposed service area also clearly indicate that the soils have slow to very slow percolation rates, therefore, have severe limitations for such systems.

6.3.3 A more detailed description of soil types and their limitations is in Chapter 3 of this plan. The types of soils existing in the planning area along with their associated limitations indicate that repairs to existing systems is also not feasible. Typical property size and natural geological

features (slope, streams, wetlands) reduce the likelihood of homeowners being able to increase their absorption fields. Also, cost would be expected to be prohibitive to install sand mound systems were soils characteristics may be favorable.

6.3.4 The Township will consider developing a Septage Maintenance Plan (SMP) to ensure that the remaining and future onlot septic systems outside the existing and proposed public sanitary service area will be required to have scheduled and documented operation inspections and maintenance. The ordinance will mandate inspections, require all onlot septic systems to be pumped out on a 2–3-year cycle, and testing of the absorption field to verify proper functionality. The ordinance will further impose penalties on homeowners that fail to comply. New onlot systems will be required to establish bonding or escrow account in an amount established by the Township to cover the O&M costs.

6.4 Use of Retaining (Holding Tanks)

6.4.1 Retaining Tanks have been utilized in commercial applications were expected flows are estimated to be less than 800 gallons per day or if an existing on-lot system needs repaired and there is no other viable option. They can also be used during the interim period between funding and construction completion of a public sewer system. The use of retaining tanks is not to be considered a long-term viable alternative under this Plan Update.

6.5 Use of Small Flow Treatment Facilities

6.5.1 The use of such facilities is not considered a cost-effective alternative for the following reasons.

- Costs to the individual property owner.
- Requires continuous operation and maintenance.
- Requires permits, monitoring and testing, and submitting reports.
- An existing public sewage collection system is available nearby.

6.5.2 With these reasons, this alternative is not considered.

6.6 Use of Pressure Sewer System

6.6.1 These sewer systems are generally used where conventional gravity sewers are very expensive.

6.6.2 In these systems, each home uses a small pump to convey sewage to a pressurized main. The pump may be (a) a grinder pump which grinds sewage to a slurry for pumping or (b) a pump which pumps effluent from a septic tank (STEP). In the latter type, solids are trapped in the septic tank and clear liquid is pumped. This system still requires septic tank inspection and solids removal maintenance.

6.6.3 The discharge pipes and sewer mains are usually small and can be laid relatively shallow (42-48” below grade, below the regional frost line).

6.6.4 The disadvantages of the system are:

- Question about ownership of pumps, private or public.
- Operation of the pump, malfunctions, and power failures.
- Maintenance of septic tanks (for STEP system).
- A 220-240-volt power supply is needed at each location for the operation of a grinder pump.

6.7 Small Diameter Gravity Sewers

6.7.1 These sewers are designed to convey the effluent from an existing septic tank (or a separate retaining tank) located ahead of each connection to a public sewer. Since floatable and large solids are separated, the public sewer can be somewhat smaller in size and could be laid at flatter grades. Therefore, costs could be somewhat lower than conventional sewers.

6.7.2 A major disadvantage of this alternative is the cost of updating existing septic tanks (or constructing new tanks) and cleaning them out on a regular schedule.

6.7.3 For this reason, this alternative is not considered.

6.8 Conventional Gravity Sewers

6.8.1 These sewers are governed by a minimum size of sewer (usually 8") installed at a certain grade required to obtain a self-cleaning velocity. Access manholes are needed at every change of grade, a change in direction, or junction of two sewers.

6.8.2 These sewers are usually designed to serve the basement of a residence or structure by gravity. Therefore, these sewers can sometimes be deep below ground.

6.8.3 Depending upon topography, pump stations may be needed to lift sewage from low areas up to a point from where sewage will flow by gravity.

6.8.4 Due to the factors stated above, this type of system is usually more expensive than other systems, especially when structures are apart from each other and length of sewer per residence becomes large.

6.8.5 The advantage of this system is that with few exceptions, each residence or structure is served by gravity. Backup pumps and standby power is usually provided at lift stations and maintenance personnel are familiar with operations.

6.8.6 Therefore, this system is preferred by the municipalities and the customers unless it is very expensive compared to other systems.

6.9 Alternatives Considered

6.9.1 Based on the explanation above, the following alternatives were considered for the planning area described in Chapter 3 of this plan.

- Alternative 1 - Conventional gravity sewer system (with small localize area of low-pressure system along Ridge Road, Laurel Way, and Ross Lane).
- Alternative 2 – Combination conventional gravity sewer system and low-pressure system.
- Alternative 3 – Conventional Gravity with additional low-pressure systems to decrease impacts to Rambling Run.
- Alternative 4 – Hybrid expanded low-pressure sewer to keep sewer system almost completely with public right of way.

6.9.2 Alternatives 1, 2, 3, 4 are shown on the maps provided in Appendix B.

6.9.3 Each alternative will include these three components: collection, conveyance, an treatment. Treatment will be provided by KVWPCA.

6.9.4 Potential for Regional Planning: This applies to each alternative since a portion of the Township is already serviced by a Regional Facility owned and operated by Kiski Valley Water Pollution Control Authority (KVWPCA). The new system would flow through the

Authority's collection/conveyance system and eventually end up at the KVWPCA treatment facility.

6.9.5 Extension of existing system: This also applies to each alternative. Existing collection system can be easily extended to serve the proposed service area with treatment provided at the Regional Facility mentioned above.

6.9.6 Constructing new facility: This also applies to each alternative. Malfunctions of existing on-lot systems have been documented and repairs are not feasible due to unsuitable soil conditions (Soils maps Appendix F). Therefore, a new public collection system will be needed. Collection/conveyance within Township boundary will be provided by the Sewer Authority. Conveyance system and treatment (outside the Township) will be provided at the Regional Facility owned and operated by Kiski Valley Water Pollution Control Authority.

Chapter 7: Evaluation of Reasonable Alternatives

7.1 Alternatives

7.1.1 No-Action

This alternative would leave the collection, treatment, and disposal of sanitary wastewater to the current onlot systems. The current count of failing or suspect failing onlot systems will increase over time multiplying the risk of undesirable environmental and public health impacts. Failure to address the immediate and present risks to the environment and public health is unreasonable and irresponsible. Due to the large number of confirmed, potential, and suspected malfunctioning onlot systems, this alternative was not considered.

7.1.2 Conventional Gravity Sewers Alternative 1

- Gravity sewers would be extended from the existing sanitary system terminus along Old State Road near Kirkman Lane. Gravity sewers would also be extended on all populated areas surrounding Old State Road including areas along Jackson Road, Wright Road, Kings Road, Sugar Hollow Road, and Metzer Road; State Route 56 and surrounding areas including Elwood Road, Balsiger Road, Sportsman Road, GI Road, Lutheran Church Road and Cole Road; as well as Birch Street, Oak Street, Evergreen Road and Maple Drive.
- The Pine Valley mobile home park is located on the northern portion of the project area and will also be connected into the proposed system.
- The topography dictates that pump stations will be required at low points near the intersection of Jackson Road and Kings Road, and State Route 56 near the intersection with Ridge Road. Four-inch force mains will pump sewage to a proposed manhole located northwest and north of the pump stations, respectively, where sewage would then flow by gravity to the existing Township system.
- Due to topography, individual grinder pumps are proposed along Laurel Way to provide public sewers in this area.

Based on the area mapping and except for the small area of lower pressure sewers along Laurel Way and the two pump stations, it appears feasible that the entire service area can be serviced with gravity collection and conveyance system. The Engineer's opinion of probable costs estimates that the total soft and hard construction costs are $46.017 M.

7.1.3 Gravity Sewers and Low Pressure Forcemains Alternative 2 (Recommened Option)

- Gravity sewers would be extended from the existing sanitary system terminus along Old State Road near Kirkman Lane. Gravity sewers would also be extended on all populated areas surrounding Old State Road including areas along Jackson Road, Wright Road, Kings Road, Sugar Hollow Road, and Metzer Road; State Route 56 and surrounding areas including Balsiger Road, Sportsman Road, GI Road, Lutheran Church Road, and Cole Road.
- Low pressure forcemains would be installed in the Elwood Lane area, the private road NE of Elwood Lane, Section of State Route 56 from Ridge Road running to the NE, Elm Street, Birch Street, Oak Street, Maple Drive, Laurel Way, and Ross Lane, as well as the Apollo Ridge Elementary and High Schools.
- The Pine Valley mobile home park is located on the northern portion of the project area and will also be connected by gravity to the proposed system.
- The topography dictates that a pump station will be required at a low points near the intersection of Jackson Road and Kings Road. A four-inch force main will pump sewage to a proposed manhole located northwest of the pump station where sewage would then flow by gravity to the existing Township system.

Based on the area mapping and except for the small area of lower pressure sewers along Laurel Way and Elwood Lane area and the two pump stations, it appears feasible that the entire service area can be serviced with gravity collection and conveyance system. This option presents with slightly less environmental impacts as a section of the gravity sewer along Rattling Run is removed. The Engineer's opinion of probable costs estimates that the total soft and hard construction costs are slightly higher at $43.830 M.

7.1.4 Conventional Gravity Sewers and Hybrid Low Pressure Sewer Alternative 3

- Gravity sewers would be extended from the existing sanitary system terminus along Old State Road near Kirkman Lane. Gravity sewers would also be extended on all populated areas surrounding Old State Road including areas along Jackson Road, Wright Road, Kings Road, Sugar Hollow Road, and Metzer Road; State Route 56 and surrounding areas including Balsiger Road, Sportsman Road, GI Road, Lutheran Church Road, and Cole Road; as well as Birch Street, Oak Street, Evergreen Road, and Maple Drive.
- The Pine Valley mobile home park is located on the northern portion of the project area and will also be connected into the proposed system.
- The topography dictates that pump stations will be required at low points near the intersection of Jackson Road and Kings Road, and State Route 56 near the intersection with Ridge Road. Four-inch force mains will pump sewage to a proposed manhole located northwest and north of the pump stations, respectively, where sewage would then flow by gravity to the existing Township system.
- Due to topography, individual grinder pumps are proposed along Laurel Way and in the Elwood Lane area to provide public sewers in these areas.

Based on the area mapping and except for the small area of lower pressure sewers along Laurel Way and Elwood Lane area, and the two pump stations, it appears feasible that the entire service area can be serviced with gravity collection and conveyance system. The Engineer's opinion of probable costs estimates that the total soft and hard construction costs are $44.634 M.

7.1.5 Low Pressure Sewers and Forcemains – Alternative 4

- Gravity Sewers would be installed from the connection with the existing sewer at Old State Road and Jackson Road; and extend approximately 1,500 feet SE on Jackson Road, 3,000 feet NE on Old State Road to Patterson and 1,000 feet along Patterson, and 650 feet along Wright Road NE of Jackson Road.
- The remainder of the proposed service area, including the Pine Valley Mobile Home Park and the Apollo – Ridge Schools, would attempt to use low pressure forcemains.

This alternative was evaluated and the ability of pumping from the eastern side of the service to the existing gravity sewer in the western side of the township, based on the limitations of the grinder pumps and the distances to reach from the eastern edge of the service are to the existing gravity sewer connection (20,000 ft) is questionably feasible. The Engineer's opinion of probable cost for this alternative is $49.11M is deemed not reasonable.

7.2 Existing Onlot System Abandonment

Upon each residential connection to the proposed public sanitary sewer, subsequent inspection, and acceptance by the Authority; the existing onlot septic tank (all connections removed) will have all septic contents removed by vacuum truck and disposed of at a PADEP permitted treatment plant, the tank will be high-pressure water cleaned, the floor of the tank will be cracked and the tank filled with gravel or sand, prior to reburying. The tank can also be fully removed after cleaning, concrete disposed of in accordance with state law, and the void backfilled.

7.3 Consistency Determination

As mentioned in Chapter 6, the proposed alternatives considered for the planning area are a pressure sewer system and conventional gravity sewer system. All technically feasible alternatives must be evaluated for consistency with the requirements of Pennsylvania Code Title 25, §71.21.a.5. These are discussed in the following sections.

7.3.1 Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act

Each of the proposed alternatives aims to improve human health and water quality in the region by reducing the number of onlot system and privately owned treatment facilities in the planning area. Each alternative is considered consistent with Sections 4 and 5 of the Clean Streams Law and Section 208 of the Clean Water Act.

7.3.2 PA Code Title 25, Chapter 94

All alternatives involve sending flows to the KVWPCA wastewater treatment facility. KVWPCA has confirmed that their system has the capacity to accept the flow from this project. A copy of their letter is provided in Appendix G. The KVWPCA Chapter 94 Wasteload Management Report does not report a hydraulic or organic overload, nor does it project one over the next 5 years. A copy of KVWPCA's Operational Year 2023 - Chapter 94 report is also provided in Appendix G.

7.3.3 Title II of the Clean Water Act or Titles II and VI of the Water Quality Act

Each of the proposed alternatives improves water quality in the planning area by reducing the number of onlot system and privately owned treatment facilities. All alternatives are considered consistent with Title II of the Clean Water Act and Title II and VI of the Water Quality Act.

7.3.4 Local and County Comprehensive Plans

The Municipality (Kiskiminetas Township, Armstrong County) is a large Township and does not have a Comprehensive Plan. Armstrong County Department of Planning and Development adopted a County Comprehensive Plan in 2005. A letter from the Armstrong County Department of Planning (attached in Appendix C) indicates this plan complies with the goals and objectives of the 2005 plan.

7.3.5 PA Code Title 25 Chapters 93, 95 and 102 Antidegradation Requirements

Rattling Run and Roaring Run flow through the majority of the planning area and are both designated as a Cold-Water Fishery (CWF). They are not classified as a High Quality or Exceptional Value waterbody. An unnamed tributary to the Kiski River is located to the western end of the project area and is designated as a warm water fishery (WWF). All required permits (i.e., NPDES, General Permit, etc.) will be obtained as part of the design of the selected alternative.

7.3.6 State Water Plans

Each of the proposed alternatives improves water quality in the planning area by reducing the number of onlot systems and privately owned treatment facilities. Also, the alternatives do not involve any stream discharges in the planning area. All alternatives are considered consistent with the State Water Plans.

7.3.7 PA Prime Agricultural Land

A map of the planning area was provided to the Armstrong County Farmland Preservation Program (ACFPP) for review. ACFPP indicated Kiski Township does have an Agricultural Security Area (ASA) and a Preserved Farm. There a several land parcels that are ASA within and adjoining the planning area. The Patterson Farm is a Preserved Farm that adjoins the planning area. A copy of ACFPP response letter is provided in Appendix C. A map of the ASA and Preserved Farm parcels is also provided at the end of Chapter 3. Proposed sewers will be designed to avoid the Patterson Farm and Farmland in the ASA parcels or designing them in an existing road right of way. If it is determined during the design stage that sewers need to impact ASA parcels, directional boring can be proposed in these areas. See Appendix F.

7.3.8 County and Local Stormwater Management Plans

Neither Armstrong County nor the Township has stormwater management plans. All designs, however, will be in accordance with state regulations and best management practices.

7.3.9 Wetland Protection

A wetlands map has been provided at the end of Chapter 3 of this plan. A wetlands delineation study (WDS) will be conducted during the design stage of the selected alternative. Proposed facilities will be designed to avoid any wetlands determined during the WDS. A Joint Water Obstruction and Encroachment Permit will be applied as part of the design should any wetlands be impacted. The design and construction will be consistent with all applicable local, commonwealth, and federal regulations.

7.3.10 Protection of rare, endangered or threatened plant and animal species

A Large Project Pennsylvania Natural Diversity Inventory (PNDI) search was conducted for the planning area. PNDI results are provided in Appendix H). No impacts were anticipated.

7.3.11 Historical and archaeological resource protection

The Bureau for Historical Preservation indicated there is a high probability that National Register significant archeological sites are present within the project area. A Phase I archeological survey was recommended. See Appendix I for a copy of the response. A Phase I archeological study will be conducted in the preliminary design stage of the selected alternative. Based on the findings of the initial survey, more intense study may be required.

7.4 Cost Estimate

7.4.1 The total costs of the three alternatives discussed above are provided in Tables 7-1, 7-2, 7-3, and 7-4 in Appendix B.

7.4.2 In addition to the actual costs of construction, soft costs for engineering (design, permitting, bidding and project supervision/management), legal costs (for acquisition of rights-of-way & property and review of all legal documents), interest during construction and contingencies are provided as well.

7.4.3 Kiskiminetas Township has formed a sanitary authority to operate and maintain the existing and new sanitary sewer system proposed in this Plan. Table 7-4 in Appendix B provides anticipated costs that will be incurred for operation and maintaining the new sanitary sewer system by the Authority.

7.4.4 Kiskiminetas Valley Water Pollution Control Authority (KVWPCA) currently treats sewage from approximately 310 EDUs in the Township. All alternatives propose to extend the existing sanitary sewer system, and utilize the KVWPCA wastewater treatment plant to treat the sewage from the existing and proposed planning area. The projected number of users from the planning area is 935 EDUs. Therefore, the total EDUs is 1245 (310 existing + 215 Pine Valley and School + 720 new). The current fees from KVWPCA are as follows: $15.00 per EDU/mo. (Debt Service) + $5.25/1,000 gallons (Treatment)

7.5 Funding Evaluation

There were three main sources considered to finance each of the alternatives: PENNVEST, Rural Utility Service (RUS), and municipal bonds.

7.5.1 Pennsylvania Infrastructure Investment Authority (PENNVEST)

This state authority offers long-term loans at low interest for projects, which are reviewed by PA DEP and certified for priority funding. The rates of interest are based on the median income in the County in which the project is located. Small grants may be offered in some cases to make the project feasible.

7.5.2 Rural Utility Service (RUS)

This federal agency offers some grants and loans for projects in rural areas. The rate of interest on a loan is generally below 5%. If the PENNVEST method of funding did not come to fruition, RUS would be the second option for funding. This federal agency typically offers 40-year debt service terms. The debt service is calculated based on the median income of the project area. Grants of up to 75% of the project are attainable depending on the need, median

income, and available funds at the time the project is accepted for funding.

7.5.3 Public Financing

This method involves issuing tax-free Municipal (or Authority) Bonds in which the public can invest usually through an investment firm (or firms). Rates of interest depend upon the prevailing market for tax-free bonds.

7.5.4 A summary of preliminary funding terms and interest rates are shown in Table 7.5.1. When considering the available funding alternatives, it must be noted that PENNVEST has an $11 million limit on projects that only serve a single municipality. There are two viable funding alternatives considered in this Plan Update as outlined in Table 7.5.2.

Table 7.5.1

SOURCE	INTEREST RATE	LOAN TERM
PENNVEST (1) (blended rate)	1.545%	20
PENNVEST (2)	1.000%	30
RUS	3.250%	40
Bond	4.000%	30

Table 7.5.2

Annual Debt Service by Funding Source

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Total Cost	$ 46,016,500	$ 43,830,313	$ 44,633,600	$ 49,110,600
Financed Amount	$ 46,016,500	$ 43,830,313	$ 44,633,600	$ 49,110,600
PENNVEST (1)	$2,692,000	$2,564,000	$2,611,000	$2,873,000
PENNVEST (2)	$1,783,000	$1,698,000	$1,729,000	$1,903,000
RUS	$2,072,000	$1,974,000	$2,010,000	$2,211,000
Bond	$2,661,000	$2,535,000	$2,581,000	$2,840,000

Table 7.5.3

Total Repayment Costs by Funding Source

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Total Cost	$ 46,016,500	$ 43,830,313	$ 44,633,600	$ 49,110,600
Financed Amount	$ 46,016,500	$ 43,830,313	$ 44,633,600	$ 49,110,600
PENNVEST (1)	$53,840,000	$51,280,000	$52,220,000	$57,460,000
PENNVEST (2)	$53,490,000	$50,940,000	$51,870,000	$57,090,000
RUS	$82,880,000	$78,960,000	$80,400,000	$88,440,000
Bond	$79,830,000	$76,050,000	$77,430,000	$85,200,000

As noted in Table 7.5.2, Alternative 2 is the preferred alternative cost-wise. Four funding alternatives were investigated. The analysis shows the RUS provides a longer length loan period. However, further analysis indicates roughly 28 million more dollars in interest would be spent over the length of the RUS loan when compared to PENNVEST(2). Based on the median income for Kiskiminetas Township, PENNVEST indicated the affordable customer user rate would be $65.00 per month. Due to the low interest rates, potential for grant funding and four funding rounds per year, PENNVEST is the preferred funding option for this project, however, all funding options will be considered and reviewed again when design is completed and updated cost estimates (based on design) are generated.

7.6 Implementation Method

The recommended alternative may potentially be constructed in a minimum of 4 phased projects depending on overall project cost and funding availability when design is completed.

7.7 Administrative and Legal Authority Requirements

The Township currently has the necessary administrative and legal authority for plan implementation. They currently employ two full-time secretary/treasurer positions. Professional services are provided by a retained solicitor, consulting engineer, and auditor. The Township has the legal authority and administrative capability to form a new municipal authority to implement the planning recommendations, onlot septic O&M activities, set user fees, and purchase equipment and materials, enforce ordinances, establish, and maintain funding for proposed system O&M costs, and negotiate agreements.

Chapter 8: Costs of Alternatives

8.1 Total Project Costs

8.1.1 The total costs of the three considered alternatives discussed in Chapter 6 of this Plan are provided in Tables 7-1, 7-2, 7-3, and 7-4 within Appendix B.

8.1.2 In addition to the actual costs of construction, soft costs for engineering (design, permitting, bidding and project supervision), legal costs (for acquisition of rights-of-way & property and review of all legal documents), financing costs and contingencies are provided as well.

8.2 Estimated Operation and Maintenance Costs (Less Pump Stations)

8.2.1 Kiskiminetas Township Sanitary Authority

8.2.1.1 The Kiskiminetas Township (Township) formed a sanitary authority in May 2022 to operate and maintain the existing and new system proposed in this Plan. Table 8-1 (Appendix B) provides anticipated costs that will be required for operating and maintaining the new sanitary sewer system by the Authority.

8.2.2 Kiskiminetas Valley Water Pollution Control Authority (KVWPCA)

8.2.2.1 As discussed prior, KVWPCA currently treats sewage from roughly 310 EDUs in the Township. The selected alternative proposes to extend off of the existing sanitary sewer system and KVWPCA to treat the sewage from the planning area as well. The projected number of users from the planning area is 720 EDUs. Therefore, the total EDUs is 1,245 (310 existing + 215 Pine Valley and School+ 720 new). The current fees from KVWPCA are as follows:

- Treatment Cost - $5.25 per 1000 gallons
- Debt Service Fee - $15.00 per month
- Capacity Fee - $851.00 per EDU (initial connection fee)

8.2.3 Total Annual O&M Cost (Less Pump Stations) = $ 128,100

From Table 7-5 (Appendix B):

- Alternative 1 Pump Station O&M = $ 16,900 – Total O&M = $145,000
  - 20 Year Present Worth = $46,017,000
- Alternative 2 Pump Station O&M = $ 53,200 – Total O&M = $181,300
  - 20 Year Present Worth = $43,830,000
- Alternative 3 Pump Station O&M = $13,700 – Total O&M = $149,600
  - 20 Year Present Worth = $44,634,000
- Alternative 4 Pump Station O&M = $91,200 – Total O&M = $227,100
  - 20 Year Present Worth = $49,111,000

8.3 Sources of Funding and User Rate Analysis

8.3.1 At this time it is considered that funding will be obtained from Pennsylvania Infrastructure Investment Authority (PENNVEST) and alternative of RUS.

8.3.2 Based on the information provided by PENNVEST, the affordable rate for the Township is currently $65.00 per EDU. PENNVEST can offer various interest rates depending on the

affordable rate of a municipality. Table 8-2 shows the calculated user rate based on the various interest rates available by PENNVEST. Table 8-2 is provided in Appendix B.

8.3.3 Based on the calculation shown in Table 8-2, a 30-year loan at 1% interest with significant grant funding will be needed to achieve the affordable user rate for the Township.

Chapter 9: Institutional Evaluation, Implementation Schedule, Justification

9.1 Proposed Institutional Alternative

9.1.1 The proposed institutional alternative for sewage and management in Kiskiminetas Township (Township) is the creation of a new municipal authority. The new authority will maintain and operate the existing/new sanitary sewers and pump stations in the Township. A new authority would be able to effectively finance, obtain easements, construct, own, manage, and maintain the proposed sewage facilities within the Township boundary. KVWPCA will be responsible for treating the sewage from the planning area.

9.2 Authority Powers

9.2.1 The Authority has the following powers as per Pennsylvania Municipal Authority's Act as amended:

- To construct, improve, maintain, repair, and operate projects.
- To enter into contracts of every name and nature necessary for its business.
- To have power of eminent domain.
- To charge cost of construction of any sewer or water main constructed by the Authority to properties benefited.
- To fix, alter, charge, and collect rates and other charges in the area served by its facilities at reasonable and uniform rates to meet the payment of the expenses of the Authority in administration, construction, and maintenance of the projects.
- Negotiate agreements with other parties.

9.2.2 More detailed description of the Powers of Authorities is available in the Act.

9.3 Administrative and Legal Activities Necessary to Implement the Plan

9.3.1 Adoption of this Facilities Plan: The Township has adopted the plan as per Resolution No. ___ provided in Appendix E

9.3.2 Incorporation of Authority: This will be completed after this Plan is approved by PA DEP.

9.3.3 Development and adoption of necessary ordinances and regulations: These ordinances and regulations will be adopted by the new Authority that is established after the Plan is approved.

9.3.4 Secure rights-of-way, easements, and acquisition of lands for the project: These will be arranged with the help of engineering consultants and the Authority Solicitor as soon as the design is completed, and exact needs are determined.

9.3.5 Provide adequate financing to conduct all the activities needed to bring the project to completion: This will be pursued after construction bids are received and more accurate needs are determined.

9.3.6 Enact an ordinance to establish user rates to meet administration, operation, and maintenance

of the project: This will be enacted after the new rates are determined.

9.4 Implementation Schedule

9.4.1 The following outlines the anticipated time frame for the implementation of the chosen alternative:

Implementation Schedule (Phase I of multiple Phase Project)

ITEM:	Approximate Date:
▪ Establishment of Sanitary Authority	May 2022
▪ Advertise Plan for Public Comment	JANUARY 2025
▪ Adoption of Plan by Township	MARCH 2025
▪ Submission of Revised Plan to PA DEP	APRIL 2025
▪ Plan Approval by PA DEP	JANUARY 2026
▪ Interims Design Loan Closing PHASE I	FEBRUARY 2026
▪ Authorization by Authority to begin Surveys & Design	February 2026
▪ Complete Preliminary Design PHASE I	September 2026
▪ Review by the Authority	October 2026
▪ Complete Final Design and submit to PA DEP	December 2026
▪ Approval of plans by PA DEP and Issuance of Permits	July 2027
▪ Submit Application to PENNVEST for Financing	October 2027
▪ Receive and accept PENNVEST offer.	January 2028
▪ Secure Right of Ways	January 2028
▪ Advertise for Bids	March 2028
▪ Receive Bides	April 2028
▪ Complete Financing	May 2028
▪ Start Construction	June 2028
▪ Complete Construction	June 2029
▪ Begin Operation (start connections)	June 2029

The above milestones are subject to change should the project be constructed in phases due to funding restrictions and/or requirements.

9.5 Public Comments

APPENDIX A

UNIFORM ENVIRONMENTAL REPORT

(SEE SEPARATE STAND ALONE DOCUMENT)

APPENDIX B

B1 - EXISTING SANITARY SEWER
B2 - PROPOSED AREA PLANNING MAP
B3 - SCHEMATIC OF ALTERNATIVES 1, 2, 3 AND 4
B4 - COSTING COMPARISONALTERNATIVES 1, 2, 3, and 4

APPENDIX B1

Legend

- PS — PumpStations
- WTP — Existing Treatment Plant
- Sanitary Manhole
- Existing Sanitary Sewer
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

EXISTING SANITARY SEWERS

MAP DATE: 11/3/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

SENATE ENGINEERING
Geographic Information Systems
1-HWBC, 425 Wilson Fitt Way
Pittsburgh, PA 15236-1330
P (412) 856-5454 • F (412) 826-5458
senate@senateengineering.com
www.senateengineering.com

Pine Valley Mobile Home Park
Wastewater Treatment Plant

Apollo-Ridge School District
Wastewater Treatment Plant

WTP

TALMADGE AVE
CASELLA LN
STATE ROUTE 56
ECKMAN RD
MOORE
CRAVENER RD
CLARKS HOLLOW RD
OHIO ST
HOLLY DR
PINE CIR
FLORIDA AVE
PENNSYLVANIA AVE
CALIFORNIA AVE
COULTER RD
SUGAR HOLLOW RD
OLD STATE RD
PATTERSON RD
KIRKMAN LN
WRIGHT RD
KINGS RD
GARVERS FERRY RD
ELWOOD LN
BALSIGER RD
JACKSON RD
RADIO STATION LN
COLE RD
ELKS LODGE DR
SPRING DR
LUTHERAN CHURCH RD
SPORTSMEN RD
GI RD
RIDGE RD
FRAIN RD
WOODLAKE LN
KINGS RD
QUEENS LN
PEARL LN
BRENHAVEN LN
LAUREL WAY
MAPLE DR
ELM ST
BIRCH ST
OAK ST
ROSS LN
EDMON RD
MCCARTNEY RD
BLACKS HOLLOW RD
MARTIN RD
STONEY LONESOME RD
ROARING RUN LN
RUMBAUGH RD
HILTY RD
RIFFER RD
BOLLINGER RD
BROWNSTOWN RD

DRAFT
08/21/2024

USGS The National Map: National Bou
Land Cover Database, National Struct
Road Data; Natural Earth Data; U.S. D
Relief Model. Data refreshed February

APPENDIX B2

Legend

- WTP Existing Treatment Plant
- Paved Road
- Unpaved Road
- Stream
- Building Footprint
- Tax Parcel
- Municipal Boundary
- Project Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

PLANNING AREA

MAP DATE: 6/2/20

SENATE # 12147

0 1,000 2,000
Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 825-5454 • F (412) 826-5458
senate@senateengineering.com
www.senateengineering.com

H:\GIS\Clients\Kiski\arcview\MXDs\12147_Planning_Area_20200602.m

Pine Valley Mobile Home Park
Wastewater Treatment Plant
(To be Abandoned)

Apollo-Ridge School District
Wastewater Treatment Plant
(To be Abandoned)

- Manholes (Total: 343)
- Sanitary Line Total: (121,164 LF)
- Force Main (5,034 LF)
- Low Pressure Pipe (2,785 LF)

STATE ROUTE 56
SUGAR HOLLOW RD
ECKMAN RD
OHIO ST
HOLLY DR
PINE CIR
FLORIDA AVE
PENNSYLVANIA AVE
CALIFORNIA AVE
COULTER RD
CRAVENER RD
OLD STATE RD
PATTERSON RD
KIRKMAN LN
WRIGHT RD
JACKSON RD
KINGS RD
RADIO STATION LN
GARVERS FERRY RD
ELWOOD LN
BALSIGER RD
COLE RD
WOODLAKE LN
QUEENS LN
PEARL LN
BRENHAVEN LN
ELKS LODGE DR
SPRING DR
SPORTSMEN RD
LUTHERAN CHURCH RD
RIDGE RD
FRAIN RD
GI RD
LAUREL WAY
MAPLE DR
ELM ST
BIRCH ST
OAK ST
ROSS LN
EDMON RD
MCCARTNEY RD
BLACKS HOLLOW RD
STONEY LONESOME RD
MARTIN RD
HILTY RD
RIFFER RD
BOLLINGER RD
BROWNSTOWN RD
PS
WTP

DRAFT
08/21/2024

APPENDIX B3.1

Legend

- PS — PumpStations
- WTP — Existing Treatment Plant
- Sanitary Manhole
- Sanitary Sewer Pipe
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATIVE 1

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 826-5151 · F (412) 826-5158
senate@senateengineering.com
www.senateengineering.com

Manholes (Total: 269)
Sanitary Line Total: (97,224 LF)
Force Main (3,170 LF)
Low Presesure Pipe (24,146 LF)

Pine Valley Mobile Home Park
Wastewater Treatment Plant
(To be Abandoned)

Apollo-Ridge School District
Wastewater Treatment Plant
(To be Abandoned)

DRAFT
08/21/2024

APPENDIX B3.2

Legend

- PS — Pump Station
- WTP — Existing Treatment Plant
- Sanitary Manhole
- Sanitary Sewer Pipe
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATIVE 2

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 826-5151 · F (412) 826-5158
senate@senateengineering.com
www.senateengineering.com

Manholes (Total: 343)
Sanitary Line Total: (121,164 LF)
Force Main (5,034 LF)
Low Pressure Pipe (2,785 LF)

Pine Valley Mobile Home Park
Wastewater Treatment Plant
(To be Abandoned)

Apollo-Ridge School District
Wastewater Treatment Plant
(To be Abandoned)

DRAFT
08/21/2024

APPENDIX B3.3

Legend

- PS — PumpStations
- WTP — Existing Treatment Plant
- Sanitary Manhole
- Sanitary Sewer Pipe
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATIVE 3

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 826-5151 · F (412) 826-5158
senate@senateengineering.com
www.senateengineering.com

Pine Valley Mobile Home Park
Wastewater Treatment Plant

Apollo-Ridge School District
Wastewater Treatment Plant

WTP

ECKMAN RD
MOORE RD
CRAVENER RD
CLARKS HOLLOW RD
STATE ROUTE 4
SUGAR HOLLOW RD
OHIO ST
HOLLY DR
PINE CIR
FLORIDA AVE
PENNSYLVANIA AVE
COULTER RD
OLD STATE RD
CALIFORNIA AVE
PATTERSON RD
KIRKMAN LN
WRIGHT RD
KINGS RD
GARVERS FERRY RD
ELWOOD LN
BALSIGER RD
JACKSON RD
RADIO STATION LN
COLE RD
ELKS LODGE DR
SPRING DR
LUTHERAN CHURCH RD
RIDGE RD
FRAIN RD
WOODLAKE LN
KINGS RD
QUEENS LN
PEARL LN
BRENHAVEN LN
SPORTSMEN RD
GI RD
LAUREL WAY
MAPLE DR
ELM ST
BIRCH ST
OAK ST
ROSS LN
EDMON RD
MCCARTNEY RD
BLACKS HOLLOW RD
MARTIN RD
STONEY LONESOME RD
ROARING RUN LN
RUMBAUGH RD
HILTY RD
RIFFER RD
BOLLINGER RD
BROWNSTOWN RD

DRAFT
08/21/2024

USGS The National Map: National Bou
Land Cover Database, National Structu
Road Data; Natural Earth Data; U.S. D
Relief Model. Data refreshed February

APPENDIX B3.4

Legend

- WTP Existing Treatment Plant
- Paved Road
- Unpaved Road
- Stream
- Building Footprint
- Tax Parcel
- Municipal Boundary
- Project Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATE 4

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 826-5454 • F (412) 826-5458
senate@senateengineering.com
www.senateengineering.com

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

APPENDIX B4.1

ALTERNATIVE 1

PROJECT ESTIMATE COST

Prepared By: Senate Engineers and Surveyors/LSSE Date: JULY 2024

SENATE/LSSE # 654-007-23

No	DESCRIPTION	UNIT	ENGINEER'S ESTIMATE QUANTITY	UNIT PRICE	TOTAL PRICE
1	MOBILATION/DEMOBILIZATION	LS	1	$213,300	$213,300
2	8" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	87,000	$125	$10,875,000
3	12" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	42,000	$140	$5,880,000
4	BORING (8" PVC Pipe x 16" Casing)	LF	300	$475	$142,500
5	BORING (12" PVC Pipe x 24" Casing)	LF	150	$600	$90,000
6	MANHOLES (TO 12 FT DEPTH) W/FRAME & COVER	EA	336	$7,500	$2,520,000
7	SERVICE CONNECTIONS/CLEANOUTS	EA	682	$350	$238,700
8	6" SDR 35 SERVICE LATERALS	LF	27,280	$85	$2,318,800
9	CONNECTIONS TO EXISTING SYSTEMS	EA	3	$2,500	$7,500
10	PUMP STATION (2 LOCATIONS)	LS	3	$400,000	$1,200,000
11	4 INCH FORCEMAINS (HDPE)	LF	5,400	$75	$405,000
12	RESIDENTIAL GRINDER PUMPS	EA	38	$24,000	$912,000
13	LOWER PRESSURE FORCEMAINS (HDPE)	LF	3,400	$60	$204,000
14	SELECT BACKFILLE 2A - (NOT PIPE BEDDING)	CY	47,370	$45	$2,131,700
15	STREAM RESTORATION	LF	350	$450	$157,500
16	PAVING RESTORATION				
A	25 mm BINDER - 5" DEPTH	TONS	28,300	$150	$4,245,000
B	19 mm BINDER - 3" DEPTH	TONS	16,900	$150	$2,535,000
C	9.5 mm WEARING - 1½" DEPTH	SY	44,289	$15	$664,300
17	DRIVEWAY RESTORATION				
A	BITUMINUS - 8" 25mm BINDER	SY	3,900	$75	$292,500
B	CONCRETE	CY	450	$250	$112,500
18	TRAFFICE CONTROL	LS	1	$45,000	$45,000
19	PROJECT TRAILER	LS	1	$18,000	$18,000
20	LAWN/UNDEVELOPED ROW RESTORATION	LF	120,000	$4	$480,000
21	E&S PLAN IMPLEMENTATION AND MAINT.	LS	1	$75,000	$75,000
	TOTAL - CONSTRUCTION				$35,763,300
	CONTINGENCIES = 20%				$7,152,700
	TOTAL				$42,916,000
A	ADMINISTRATIVE COSTS	LS	1	$70,000	$70,000
B	INTEREST DURING CONSTRUCTION	LS	1	$150,000	$150,000
C	LEGAL FEES (ASSUMES LAGUDA & ROWS)	LS	1	$250,000	$250,000
D	ENGINEERING (8.0%)	LS	1	$2,861,000	$2,861,000
E	CONSTRUCTION ADMINISTRATION (5.0%)	LS	1	$1,789,000	$1,789,000
	TOTAL - SOFT COSTS				$5,120,000
	GRAND TOTAL				$48,036,000

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

APPENDIX B4.2

ALTERNATIVE 2

PROJECT ESTIMATE COST

Prepared By: Senate Engineers and Surveyors/LSSE

Date: JULY 2024

SENATE/LSSE # 654-007-23

No	DESCRIPTION	UNIT	ENGINEER'S ESTIMATE QUANTITY	UNIT PRICE	TOTAL PRICE
1	MOBILATION/DEMOBILIZATION	LS	1	$199,300	$199,300
2	8" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	65,000	$125	$8,125,000
3	12" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	34,000	$140	$4,760,000
4	BORING (8" PVC Pipe x 16" Casing)	LF	300	$475	$142,500
5	BORING (12" PVC Pipe x 24" Casing)	LF	150	$600	$2,175,000
6	MANHOLES (TO 12 FT DEPTH) W/FRAME & COVER	EA	290	$7,500	$199,150
7	SERVICE CONNECTIONS/CLEANOUTS	EA	569	$350	$1,934,600
8	6" SDR 35 SERVICE LATERALS	LF	22,760	$85	$7,500
9	CONNECTIONS TO EXISTING SYSTEMS	EA	3	$2,500	$800,000
10	PUMP STATION	LS	2	$400,000	$637,500
11	4 INCH FORCEMAINS (HDPE)	LF	8,500	$75	$3,624,000
12	RESIDENTIAL GRINDER PUMPS	EA	151	$24,000	$1,290,000
13	LOWER PRESSURE FORCEMAINS (HDPE)	LF	21,500	$60	$1,749,083
14	SELECT BACKFILLE 2A - (NOT PIPE BEDDING)	CY	38,869	$45	$81,000
15	STREAM RESTORATION	LF	180	$450	
16	PAVING RESTORATION				
A	25 mm BINDER - 5" DEPTH	TONS	24,400	$150	$3,660,000
B	19 mm BINDER - 3" DEPTH	TONS	14,700	$150	$2,205,000
C	9.5 mm WEARING - 1½" DEPTH	SY	63,144	$15	$947,167
17	DRIVEWAY RESTORATION				
A	BITUMINUS - 8" 25mm BINDER	SY	3,900	$75	$292,500
B	CONCRETE	CY	300	$250	$75,000
18	TRAFFICE CONTROL	LS	1	$45,000	$45,000
19	PROJECT TRAILER	LS	1	$18,000	$18,000
20	LAWN/UNDEVELOPED ROW RESTORATION	LF	95,000	$4	$380,000
21	E&S PLAN IMPLEMENTATION AND MAINT.	LS	1	$75,000	$75,000
	TOTAL - CONSTRUCTION				$33,422,300
	CONTINGENCIES - 20%				$6,684,460
	TOTAL				$40,106,760
A	ADMINISTRATIVE COSTS	LS	1	$70,000	$70,000
B	INTEREST DURING CONSTRUCTION	LS	1	$150,000	$150,000
C	LEGAL FEES (ASSUMES LAGUDA & ROWS)	LS	1	$250,000	$250,000
D	ENGINEERING (8.0%)	LS	1	$2,674,000	$2,674,000
E	CONSTRUCTION ADMINISTRATION (5.0%)	LS	1	$1,672,000	$1,672,000
	TOTAL - SOFT COSTS				$4,816,000
	GRAND TOTAL				$44,922,760

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

APPENDIX B4.3

ALTERNATIVE 3
PROJECT ESTIMATE COST

Prepared By: Senate Engineers and Surveyors/LSSE
SENATE/LSSE # 654-007-23

Date: JULY 2024

No	DESCRIPTION	UNIT	ENGINEER'S ESTIMATE QUANTITY	UNIT PRICE	TOTAL PRICE
1	MOBILATION/DEMOBILIZATION	LS	1	$206,800	$206,800
2	8" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	80,800	$125	$10,100,000
3	12" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	39,800	$140	$5,572,000
3	BORING (8" PVC Pipe x 16" Casing)	LF	300	$475	$142,500
4	BORING (12" PVC Pipe x 24" Casing)	LF	150	$600	$90,000
4	MANHOLES (TO 12 FT DEPTH) W/FRAME & COVER	EA	309	$7,500	$2,317,500
5	SERVICE CONNECTIONS/CLEANOUTS	EA	663	$350	$232,050
6	6" SDR 35 SERVICE LATERALS	LF	26,520	$85	$2,254,200
7	CONNECTIONS TO EXISTING SYSTEMS	EA	2	$2,500	$5,000
8	PUMP STATION (2 LOCATIONS)	LS	3	$400,000	$1,200,000
9	4 INCH FORCEMAINS (HDPE)	LF	5,400	$75	$405,000
10	RESIDENTIAL GRINDER PUMPS	EA	57	$24,000	$1,368,000
11	LOWER PRESSURE FORCEMAINS (HDPE)	LF	6,810	$60	$408,600
12	SELECT BACKFILLE 2A - (NOT PIPE BEDDING)	CY	44,830	$45	$2,017,350
13	STREAM RESTORATION	EA	9	$450	$4,050
14	PAVING RESTORATION				
A	25 mm BINDER - 5" DEPTH	TONS	26,200	$150	$3,930,000
B	19 mm BINDER - 3" DEPTH	TONS	15,800	$150	$2,370,000
C	9.5 mm WEARING - 1½" DEPTH	SY	70,870	$15	$1,063,050
15	DRIVEWAY RESTORATION				
A	BITUMINUS - 8" 25mm BINDER	SY	3,900	$75	$292,500
B	CONCRETE	CY	300	$250	$75,000
16	TRAFFICE CONTROL	LS	1	$45,000	$45,000
17	PROJECT TRAILER	LS	1	$18,000	$18,000
18	LAWN/UNDEVELOPED ROW RESTORATION	LF	121,200	$4	$484,800
19	E&S PLAN IMPLEMENTATION AND MAINT.	LS	1	$75,000	$75,000
		TOTAL - CONSTRUCTION			$34,676,400
		CONTINGENCIES - 20%			$6,935,280
		TOTAL			$41,611,680
A	ADMINISTRATIVE COSTS	LS	1	$70,000	$70,000
B	INTEREST DURING CONSTRUCTION	LS	1	$150,000	$150,000
C	LEGAL FEES (ASSUMES LAGUDA & ROWS)	LS	1	$250,000	$250,000
D	ENGINEERING (8.0%)	LS	1	$2,774,000	$2,774,000

E	**CONSTRUCTION ADMINISTRATION (5.0%)**	**LS**	**1**	**$1,734,000**	**$1,734,000**
			TOTAL - SOFT COSTS		**$4,978,000**
			GRAND TOTAL		**$46,589,680**

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

APPENDIX B4.4

ALTERNATIVE 4
PROJECT ESTIMATE COST

Prepared By: Senate Engineers and Surveyors/LSSE Date: JULY 2024

SENATE/LSSE # 654-007-23

No	DESCRIPTION	UNIT	ENGINEER'S ESTIMATE QUANTITY	UNIT PRICE	TOTAL PRICE
1	MOBILATION/DEMOBILIZATION	LS	1	$210,100	$210,100
2	8" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	28,480	$125	$3,560,000
3	12" SDR26 PVC GASKETED PIPE (8-12 FT)	LF	14,030	$140	$1,964,200
4	BORING (8" PVC Pipe x 16" Casing)	LF	450	$475	$213,800
5	BORING (12" PVC Pipe x 24" Casing)	LF	450	$600	$270,000
6	MANHOLES (TO 12 FT DEPTH) W/FRAME & COVER	EA	405	$7,500	$3,037,500
7	SERVICE CONNECTIONS/CLEANOUTS	EA	340	$350	$119,000
8	6" SDR 35 SERVICE LATERALS	LF	13,600	$85	$1,156,000
9	CONNECTIONS TO EXISTING SYSTEMS	EA	3	$2,500	$7,500
10	PUMP STATION (2 LOCATIONS)	EA	3	$400,000	$1,200,000
11	4 INCH FORCEMAINS (HDPE)	LF	68,000	$75	$5,100,000
12	RESIDENTIAL GRINDER PUMPS	EA	380	$24,000	$9,120,000
13	LOWER PRESSURE FORCEMAINS (HDPE)	LF	33,000	$60	$1,980,000
14	SELECT BACKFILLE 2A - (NOT PIPE BEDDING)	CY	36,477	$45	$1,641,500
15	STREAM RESTORATION	LF	350	$450	$157,500
16	PAVING RESTORATION				
A	25 mm BINDER - 5" DEPTH	TONS	16,500	$150	$2,475,000
B	19 mm BINDER - 3" DEPTH	TONS	9,900	$150	$1,485,000
C	9.5 mm WEARING - 1½" DEPTH	SY	37,500	$15	$562,500
17	DRIVEWAY RESTORATION				
A	BITUMINUS	SY	3,900	$75	$292,500
B	CONCRETE	SY	600	$250	$150,000
18	TRAFFICE CONTROL	LS	1	$45,000	$45,000
19	PROJECT TRAILER	LS	1	$18,000	$18,000
20	LAWN/UNDEVELOPED ROW RESTORATION	LF	97,300	$4	$389,200
21	E&S PLAN IMPLEMENTATION AND MAINT.	LS	1	$75,000	$75,000
	TOTAL - CONSTRUCTION				$35,229,300
	CONTINGENCIES - 20%				$7,045,900
	TOTAL				$42,275,200
A	ADMINISTRATIVE COSTS	LS	1	$70,000	$70,000
B	INTEREST DURING CONSTRUCTION	LS	1	$150,000	$150,000
C	LEGAL FEES (ASSUMES LAGUDA & ROWS)	LS	1	$250,000	$250,000
D	ENGINEERING (8.0%)	LS	1	$2,818,000	$2,818,000
E	CONSTRUCTION INSPECTION (5.0%)	LS	1	$1,762,000	$1,762,000
	TOTAL - SOFT COSTS				$5,050,000
	GRAND TOTAL				$47,325,200

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

TABLE 8-1

ESTIMATED OPERATION AND MAINTENANCE COST
(Less Pump Stations) ALTERNATIVE 1, 2, 3, and 4
SENATE/LSSE # 654-007-23
JULY 2024

Item Description:		Notes
Administration		
Secretary Wages	$ 18,000.00	A
Insurance(Major Medical, Vision and Dental)	$ 2,500.00	
Costs: (SS and Vacation)	$ 1,975.00	B
Part Time Operator	$ 20,800.00	C
Insurance(Major Medical, Vision and Dental)	n/a	
Costs: (SS and Vacation)	n/a	
Maintenance Person	n/a	D
Licensed back-up Plant Operator	n/a	E
Property Insurance	$ 5,000.00	
Liability Insurance	$ 2,500.00	
(Postage; computer supplies, etc.)	$ 7,300.00	F
Plant, Pump Stations and System O&M	$ 42,000.00	
Utilities (Electric, gas and water)	$ 2,400.00	
Laboratory Expenses (Outside Lab.)	n/a	
Vehicle Expenses	$ 1,200.00	
Plant Supplies (chemicals, etc.)	n/a	
Electrical Supplies	n/a	
Sludge Disposal	n/a	
Pump Stations O&M	n/a	
Professional Services		
Engineer Attending Monthly Meetings	$ 2,400.00	
Engineering Services (Ch.94 and Annual Reports)	$ 2,500.00	
Legal Services	$ 5,000.00	
Accounting (Audit Report)	$ 12,000.00	
Miscellaneous	$ 2,500.00	
Total Yearly Operation and Maintenance Costs	$128,100.00	

A. Secretarial work and billing (4hr/day X 5days/wk X 52wk/yr X $12.50/hr)
B. Social Security @ 7.5% Gross wage plus 2 weeks paid vacation
C. Plant Operator (2 hr./day X 5days/wk X 52wk/yr. X $20.00/hr.)
D. Maintenance Person (20 hr./wk X 52wk/yr. X $16.50/hr.)
E. Licensed back-up Plant Operator ($200/month x 12 months/yr.)
F. Postage @$0.50/stamp X # of customers X 12 months/yr.)

KISKIMINETAS TOWNSHIP

ORCHARD HILLS ACT 537 PLAN

TABLE 7-5

20 YEAR PRESENT WORTH ANALYSIS
SENATE/LSSE # 654-007-23
JULY 2024

Supplier	Estimated Capital Cost (USD)	Estimated Annual O&M Cost (USD)	Estimated 20 YEAR Present Worth (USD)
Alternative 1	$48,036,000	$ 141,980	$ 49,732,715
Alternative 2	$44,922,760	$ 157,460	$ 46,804,467
Alternative 3	$46,589,680	$ 145,020	$ 48,322,724
Alternative 4	$47,325,200	$ 196,700	$ 49,675,840

Annual Rate 0.055 NCRS 2024 Discount Rate

T	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Capital @ t=0	$ 48,036,000	$ 44,922,760	$46,589,680	$47,325,200
20	$ 1,696,715	$ 1,881,707	$ 1,733,044	$ 2,350,640
	$ 49,732,715	$ 46,804,467	$48,322,724	$49,675,840

P/A, 5.50%, 20) $P/A = \frac{(1+i)^n - 1}{i(1+i)^n}$

Based on 2021 Costing
Assumes no system expansion within 20 years
Assumes constant maintenance cost over 20 years

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN

TABLE 8-2

USER COST ANALYSIS FOR STUDY AREAS
SENATE/LSSE # 654-007-23
July 1, 2024

		PENNVEST FUNDING OFFER:	ALTERNATIVE 1	ALTERNATIVE 2	ALTERNATIVE 3	ALTERNATIVE 4	30 YR LOAN 1% RATE (NO GRANT)	30 YR LOAN 1% RATE (W/GRANT)
1		**Total Projects Costs**	**$ 48,036,000**	**$ 44,922,760**	**$ 46,589,680**	**$ 47,325,200**	**$ 44,922,760**	**$ 44,922,760**
2		**Proposed Financing Arrangements**						
	A.	PennVEST Grants (90%)	$ -	$ -	$ -	$ -	$ -	$ 40,430,484
	B.	PennVEST Loan	$ 48,036,000	$ 44,922,760	$ 46,589,680	$ 47,325,200	$ 44,922,760	$ 4,492,276
	C.	**Total of Financing**	**$ 48,036,000**	**$ 44,922,760**	**$ 46,589,680**	**$ 47,325,200**	**$ 44,922,760**	**$ 4,492,276**
3		**Annual Revenue Needed**						
	A.	Debt Service Payment (20 years @ 1.54825% Blended Rate)	$ 2,794,370	$ 2,613,260	$ 2,710,230	$ 2,753,020		
	B.	Debt Service Payment (20 years @ 1.0% Rate)						
	C.	Debt Service Payment (30 years @ 1.0% Rate)	$ 1,854,040	$ 1,733,870	$ 1,798,210	$ 1,826,600	$ 1,733,870	
	D.	Debt Service Payment (30 years @ 1.0% Rate)						$ 173,390
	E.	Kiski Twp Authority. Annual O &M Costs (Est. O/M - See Table 7-5 and 8-1)	$ 141,980	$ 157,460	$ 145,020	$ 196,700	$ 141,980	$ 157,460
	F.	Annual Treatment Cost (KVWPCA) [*1] (1245 EDU's x {$15.00 +$15.00}	$ 497,970	$ 497,970	$ 497,970	$ 497,970	$ 497,970	$ 497,970
	G.	**Total Annual Revenue Needed**	**$ 2,493,990**	**$ 2,389,300**	**$ 2,441,200**	**$ 2,521,270**	**$ 2,373,820**	**$ 828,820**
4		**User Costs**						
	A.	Total Annual Income Needed	**$ 2,493,990**	**$ 2,389,300**	**$ 2,441,200**	**$ 2,521,270**	**$ 2,373,820**	**$ 828,820**
	B.	Number of Users	$ 1,245	$ 1,245	$ 1,245	$ 1,245	$ 1,245	$ 1,245
	C.	Estimated Required Annual User Costs	$ 2,000	$ 1,920	$ 1,960	$ 2,030	$ 1,910	$ 670
	D.	Estimated Required Monthly User Costs	$ 167	$ 160	$ 163	$ 169	$ 159	$ 56
	E.	Estimated Annual User Cost @ 90%	$ 2,226	$ 2,132	$ 2,179	$ 2,250	$ 2,119	$ 740
		Estimated Monthly User Rate @ 90%	$ 186	$ 178	$ 182	$ 188	$ 177	$ 62
	F.	**Proposed Monthly User Rate**	**$ 190**	**$ 160**	**$ 185**	**$ 190**	**$ 160**	**$ 65**
	G.	Estimated Annual Income	$ 2,554,740	$ 2,151,360	$ 2,487,510	$ 2,554,740	$ 2,151,360	$ 873,990
	H.	Estimated Annual Surplus	$ 60,750	$ (237,940)	$ 46,310	$ 33,470	$ (222,460)	$ 45,170

[*1] KVWPCA - $15.00 per EDU/mo. (Debt Service) + $5.25/1,000 gallons (Treatment) - Assume 3,333 gallons/EDU used

KISKIMINETAS TOWNSHIP
ORCHARD HILL ACT 537 PLAN
Table 8-3
Funding Alternatives and Cost

	Interest Rate	Loan Term (Years)
PENNVEST County Cap	1.545%	20
PENNVEST	1.000%	30
RUS	3.250%	40
Bond	4.000%	30
Grant % Funding	0.00%	
# of Users	1245	

	Alternative 1	Alternative 2	Alternative 3	Alternative 4
Project Cost	$ 48,036,000	$ 44,922,760	$ 46,589,680	$ 47,325,200
Financed Amount	$ 48,036,000	$ 44,922,760	$ 46,589,680	$ 47,325,200
Funding Alternatives (Yearly Debt Service)				
PENNVEST County Cap	$ 2,810,000	$ 2,628,000	$ 2,726,000	$ 2,769,000
PENNVEST	$ 1,861,000	$ 1,741,000	$ 1,805,000	$ 1,834,000
RUS	$ 2,163,000	$ 2,023,000	$ 2,098,000	$ 2,131,000
Bond	$ 2,778,000	$ 2,598,000	$ 2,694,000	$ 2,737,000
Funding Alternatives (Total Loan Amount)				
PENNVEST County Cap	$ 56,200,000	$ 52,560,000	$ 54,520,000	$ 55,380,000
PENNVEST	$ 55,830,000	$ 52,230,000	$ 54,150,000	$ 55,020,000
RUS	$ 86,520,000	$ 80,920,000	$ 83,920,000	$ 85,240,000
Bond	$ 83,340,000	$ 77,940,000	$ 80,820,000	$ 82,110,000

APPENDIX C

C1 - COUNTY OF ARMSTRONG PLANNING COMMISSION LETTER

C2 – COUNTY OF ARMSTRONG FARMLAND PRESERVATION PROGRAM LETTER

Darin D. Alviano
Executive Director

402 Market Street, Kittanning, PA 16201
724-548-3223 Phone • 724-545-7050 Fax
planning@co.armstrong.pa.us

Department of Planning and Development

COUNTY OF ARMSTRONG

LETTER OF CONCURRENCE

It is the understanding of the Armstrong County Planning Commission that Kiskiminetas Township, as part of its Act 537 Plan, is proposing an extension of a gravity sewer system in the township's Orchard Hills area.

The gravity sewers will connect to the existing sanitary sewer system and extend along SR 56 and surrounding roads to the Apollo Ridge Schools, serving approximately 865 residential customers and the Apollo Ridge Schools. With the construction of the new public sewer system, the existing treatment plants in Pine Valley Mobile Home Park and Apollo Ridge Schools will be decommissioned.

The Armstrong County Planning Commission finds the proposed project/Act 537 Plan to be consistent with the Armstrong County Comprehensive Plan (2005). Therefore, the Armstrong County Planning Commission concurs with the proposed project.

1/13/2020
Date

Harry Breski, Chairman
Armstrong County Planning Commission

Armstrong County Farmland Preservation Program

120 S. Grant Ave, Ste. 2
Kittanning, PA 16201
Phone: 724-545-3628

November 21, 2019

Michael Malak
Senate Engineering Company
420 William Pitt Way
Pittsburgh, PA 15238

Re: Orchard Hill Area Act 537 Plan Study

Dear Mr. Malak:

I have reviewed your proposal for the Orchard Hill Area Act 537 Plan Study as shown on the Kiskiminetas Township-Feasibility Study Area (Phases 1, 2, and 3 Breakdown) Map dated 12/31/2018 on behalf of the Armstrong County Agricultural Land Preservation (ACALP) Board. Kiskiminetas Township does have an Agricultural Security Area and a Preserved Farm. There are multiple tax map parcels that are in the Agricultural Security Area that are within and adjoin your project area. The Patterson Farm is preserved and adjoins your project area. I have highlighted these areas on the map that you provided. Your project is consistent with the Armstrong County Agricultural Land Preservation Program as long as the project does not affect these properties that are preserved or in agricultural security areas by impacting any farmland. I will discuss this project with the ACALP Board on January 8, 2020.

Sincerely,

Jessica Schaub
ACALP Program Coordinator

APPENDIX D

D1- ONLOT SEPTIC SURVEY ANALYSES SUMMARY MAP

D2 - SEO COMMUNITY NEEDS REPORT AND COMPLETED INDIVIDUAL RESIDENTIAL SURVEYS

(SEE SEPARATE STAND ALONE DOCUMENT)

Pine Valley Mobile Home Park
Wastewater Treatment Plant

Apollo-Ridge School District
Wastewater Treatment Plant

WTP

TALMADGE AVE
CASELLA LN
STATE ROUTE 56
ECKMAN RD
OHIO ST
HOLLY DR
PINE CIR
FLORIDA AVE
PENNSYLVANIA AVE
CALIFORNIA AVE
OLD STATE RD
PATTERSON RD
KIRKMAN LN
WRIGHT RD
JACKSON RD
KINGS RD
RADIO STATION LN
SUGAR HOLLOW RD
COULTER RD
MOORE
CRAVENER RD
CLARKS HOLLOW RD
GARVERS FERRY RD
ELWOOD LN
BALSIGER RD
ELKS LODGE DR
SPRING DR
SPORTSMEN RD
LUTHERAN CHURCH RD
RIDGE RD
FRAIN RD
GI RD
LAUREL WAY
MAPLE DR
ELM ST
BIRCH ST
OAK ST
ROSS LN
COLE RD
WOODLAKE LN
QUEENS LN
PEARL LN
BRENHAVEN LN
EDMON RD
MCCARTNEY RD
BLACKS HOLLOW RD
MARTIN RD
HILTY RD
STONEY LONESOME RD
ROARING RUN LN
RUMBAUGH RD

DRAFT
08/21/2024

ONLOT SYSTEM DETERMINATIONS
BASED ON SURVEYS AND SITE EVALUATIONS

- * - MALFUNCTIONING SYSTEM
- * - SUSPECTED MALFUNCTIONING SYSTEM
- * - POTENTIALLY MALFUNCTION SYSTEM

Legend

- WTP Existing Treatment Plant
- Paved Road
- Unpaved Road
- Stream
- Building Footprint
- Tax Parcel
- Municipal Boundary
- Project Boundary

USGS The National Map: National Bou
Land Cover Database, National Struct
Road Data; Natural Earth Data; U.S. D
Relief Model. Data refreshed February

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ONLOT SURVEY DETERMINATIONS

MAP DATE: 6/2/20

SENATE # 12147

0 1,000 2,000
Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 429 William Pitt Way
Pittsburgh, PA 15238-1336
P (412) 826-5454 • F (412) 826-5458
senate@senateengineering.com
www.senateengineering.com

APPENDIX D1

H:\GIS\Clients\Kiski\arcview\MXDs\12147_Planning_Area_20200602.m

APPENDIX E

E1 - VERIFICATION OF PUBLIC ADVERTISEMENT
E2 - TOWNSHIP RESOLUTION
E3 – TOWNSHIP SEWAGE ORDINANCE

APPENDIX E3

TOWNSHIP OF KISKIMINETAS
ARMSTRONG COUNTY, PENNSYLVANIA

ORDINANCE NO. 7-73

AN ORDINANCE OF THE TOWNSHIP OF KISKIMINETAS AUTHORIZING AND GRANTING TO KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY ITS SUCCESSORS, LESSEES AND ASSIGNS, THE RIGHT AND PRIVILEGE TO INSTALL, CONSTRUCT, MAINTAIN, USE, REPAIR AND REPLACE AND REMOVE SANITARY SEWER LINES AND THE APPURTENANCES THEREOF, IN, ALONG, UNDER AND ACROSS STREETS, ROADS, ALLEYS AND RIGHTS-OF-WAY OF THE TOWNSHIP OF KISKIMINETAS

BE IT ORDAINED AND ENACTED by the Board of Supervisors of the Township of Kiskiminetas . and it hereby is ordained and enacted by authority of the same as follows:

SECTION 1. Kiski Valley Water Pollution Control Authority, and its successors, lessees and assigns, is hereby granted the right, privilege, franchise and authority to enter upon and to therein install, lay, construct, maintain, use, repair, replace and remove in the streets, roads, alleys and rights-of-way of the said Township the necessary sanitary sewer lines and the required appurtenances thereto to complete the erection and construction and thereafter to operate a sanitary sewage transportation and treatment system pursuant to the plans and specifications and reports prepared by The Chester Engineers, Inc., Consulting Engineers, of Coraopolis, Pennsylvania, the Consulting Engineers for said Authority's proposed Initial Construction Project.

SECTION 2. All such sanitary sewer lines shall be laid and

in a safe and secure manner and at such depth beneath the surface of said streets, roads, alleys and rights-of-way and in such manner as not to interfere with the grading, paving or improvement and the proper drainage and the occupancy of other utility facilities in said streets, roads, alleys and rights-of-way, and in the event of any future change of grade in said streets, roads, alleys and rights-of-way or parts thereof, said Authority, its successors, lessees or assigns, shall promptly lower or raise the tops of manholes and other structures to such depths that they will not thereafter interfere with the grading, paving or improvement of said streets, roads, alleys or rights-of-way.

SECTION 3. It shall be the duty of Kiski Valley Water Pollution Control Authority, its successors, lessees and assigns, to complete any such work commenced as promptly as practicable and to provide and maintain at all times during the continuance of such work or any future repair or maintenance thereof proper and adequate guards, barriers and lights in connection therewith. Said Authority, its successors, lessees and assigns, shall not at any time unnecessarily obstruct said streets, roads, alleys and rights-of-way.

SECTION 4. It shall be the duty of Kiski Valley Water Pollution Control Authority, its successors, lessees and assigns, after causing any opening or excavation to be made, to thoroughly and completely fill the same in accordance with the requirements of the applicable Township Ordinance, or by puddling or tamping so as to prevent any settling thereafter, and replacing the surface of the thoroughfare as it was before the opening at the proper grade and with the same subsurface and surface covering as the part of the thoroughfare adjoining the opening, without ridges or depressions, and to maintain the surface replaced in as good condition as it was prior to the opening or excavation, at the established grade and with the same kind and density of material, until the said replacements have been approved by the Township.

SECTION 5. If the work in opening or in filling or maintaining the surface of said streets, roads, alleys and rights-of-way shall not be promptly or shall be unskillfully or improperly or incompletely done, the Township reserves the right to cause the same to be done in the manner it deems proper and the expense thereof shall be charged to Kiski Valley Water Pollution Control Authority, its successors, lessees or assigns.

SECTION 6. The Kiski Valley Water Pollution Control Authority, its successors, lessees and assigns, shall at all times be subject to and be governed by all the lawful rules, regulations and ordinances of the Township now in force or which may hereafter be passed or enacted insofar as the same affect or appertain to the use and occupation of, and excavating in or upon the aforesaid streets, roads, alleys and rights-of-way.

SECTION 7. The Kiski Valley Water Pollution Control Authority, its successors, lessees and assigns, shall save, indemnify and keep harmless the Township of and from any and all damages which may accrue against the Township by reason of any such work or occupation of the said streets, roads, alleys and rights-of-way as authorized hereunder.

SECTION 8. All ordinances or resolutions or parts of ordinances or resolutions not in accord with this Ordinance are hereby repealed insofar as they affect this Ordinance.

ORDAINED AND ENACTED into law by the Board of Supervisors of the Township of Kiskiminetas in lawful session assembled this 13th day of July, 1973.

TOWNSHIP OF KISKIMINETAS

By H R Beers
Chairman,
Board of Supervisors

(TOWNSHIP SEAL)

Attest:

Ray J Patterson
Township Secretary

TOWNSHIP OF KISKIMINETAS
ARMSTRONG COUNTY, PENNSYLVANIA

ORDINANCE NO. 8-73

AN ORDINANCE OF THE TOWNSHIP OF KISKIMINETAS DIRECTING AND REQUIRING THE CONNECTION OF ALL OCCUPIED BUILDINGS WITH PUBLIC SANITARY SEWERS IN THE TOWNSHIP ON PREMISES ACCESSIBLE THERETO; DIRECTING AND REQUIRING THE ABANDONMENT OF PRIVY VAULTS, CESSPOOLS AND SEPTIC TANKS ON SUCH PREMISES; PROHIBITING THE ERECTION AND CONSTRUCTION OF PRIVY VAULTS, CESSPOOLS AND SEPTIC TANKS IN AND UPON SUCH PREMISES; PROVIDING FOR THE METHOD OF CONNECTION BETWEEN OCCUPIED BUILDINGS AND SAID SANITARY SEWERS AND FOR THE INSPECTION THEREOF; PROVIDING FOR THE ISSUANCE OF PERMITS AND THE PAYMENT OF TAP CHARGES THEREFOR; DEFINING UNACCEPTABLE SANITARY SEWAGE; AND PROVIDING PENALTIES FOR VIOLATION HEREOF.

BE IT ORDAINED AND ENACTED by the Board of Supervisors of the Township of Kiskiminetas, and it is hereby ordained and enacted by authority of the same as follows:

SECTION 1. Every owner of property in the Township of Kiskiminetas whose property abuts upon any public sanitary sewer presently in existence or to be constructed in the future and which connects to or whose property abuts upon any sewer constructed or to be constructed by Kiski Valley Water Pollution Control Authority shall connect, at its own cost, the house, building or other structures located on said property with the aforementioned public sanitary sewers or Authority sewers for the purpose of disposing of all acceptable sanitary sewage emanating from said property.

SECTION 2. It shall be unlawful for any owner, lessee or occupier of any property in the Township abutting upon any aforementioned public sanitary sewer to employ any means, either by septic tank, cesspool, privy vault, mine hole or otherwise, for the disposal of acceptable sanitary sewage other than into and through said public sanitary sewers.

SECTION 3. Where any house, building or structure in the Township abutting upon any aforementioned public sanitary sewer is now or hereafter may be using any method for the disposal of acceptable sanitary sewage other than through said public sanitary sewers, it shall be the duty of the Township Secretary or the authorized

representative of Kiski Valley Water Pollution Control Authority (hereinafter called the "Authority") to notify the owner, lessee or occupier of such structure in writing, either by personal service, certified mail or registered mail, to disconnect the same and make proper connection for the discharge and disposal of all acceptable sanitary sewage through the said public sanitary sewers, as herein provided, within sixty (60) days after receipt of such notice. Any owner or lessee or occupier of a structure who cannot comply with the provisions of this Section as to connection within the sixty (60) day period stipulated above due to causes beyond his control shall apply to the Township or the Authority within said sixty (60) day period for a time extension of up to six (6) months in duration. Said application shall be made on a form to be furnished by the Township or the Authority and shall contain a voluntary agreement on the part of the applicant under which the applicant shall agree to commence paying the regular monthly sewer rates immediately even though actual connection to the public sanitary sewers will not be accomplished until some stated later date within the said six (6) months' extension period.

SECTION 4. No privy vault, cesspool, septic tank, mine hole or similar receptacle for human excrement shall at the present time or at any time hereafter be connected with the aforesaid public sanitary sewers.

SECTION 5. It shall be unlawful for any person, firm or corporation connected to any aforementioned public sanitary sewers to connect any roof drain thereto or permit any roof drain to remain connected thereto, or to permit, allow or cause to enter into said public sanitary sewers any storm water, foundation drain water, spring water, surface water, or any sewage or industrial waste from any property other than that for which a permit is issued. These provisions do not apply to combination (sanitary and storm) sewers.

SECTION 6. No person, firm or corporation shall make or cause to be made any connection with any of the aforementioned public sanitary sewers until he has fulfilled all of the following conditions:

(a) He shall make application to the Township or the Authority, as the Township's agent, upon a permit form to be formulated and supplied by the Township

or the Authority for permission to connect to the aforementioned public sanitary sewers. Among other things, the applicant must state the character and use of each structure located upon his property.

(b) He shall pay to the Township or the Authority the required tap connection fee of $10.00 for each building or structure on each property connected to the aforementioned public sanitary sewers at the time of making application for permission to make such connection or connections.

(c) No work shall commence before the payment of the aforesaid tap connection fee and issuance of the aforementioned connection permit.

(d) He shall give the designated Inspector of the Township or the Authority at least twenty-four (24) hours' notice of the time when such connection shall be made in order that said Inspector can be present to inspect and approve the work of connection. The Inspector shall signify his approval of the connection by endorsing his name and the date of approval on the aforementioned connection permit in the possession of the permittees.

(e) At the time of inspection of the connection, the owner or owners of properties shall permit the Inspector full and complete access to all sanitary and drainage arrangements and facilities in each building and in and about all parts of the property. No building sewer line shall be covered over, or in any manner concealed, until after it is inspected and approved by said Inspector.

SECTION 7. The construction and number and size of all building sewer lines or house service sewers shall be done in accordance with the specifications, plans and procedures established by the Township and the Authority in the Sewage Disposal System Rules and Regulations, as the same may be from time to time published and amended, copies of which, upon adoption, shall be maintained on file with the Township Secretary and the Authority.

SECTION 8. If the owner or owners of any occupied houses, buildings or structures in the Township shall neglect or refuse to comply with the provisions of this Ordinance or the written notice as prescribed in Section 3 hereof, the Township or the Authority may perform or cause to be performed such work and labor and furnish or cause to be furnished such material as may be necessary to comply with the provisions

of this Ordinance at the cost and expense of such owner or owners, together with ten (10%) per cent additional thereof and all charges and expenses incidental thereto, which sum shall be collected from said owner or owners for the use of the Township or the Authority as debts are by law collectible, or the Township or the Authority, as its agent, may, by its proper officer, file a municipal claim or lien therefor against said premises as provided by law.

SECTION 9. Unacceptable sanitary sewage and other terms used herein for purposes of this Ordinance shall have the same definitions as those which are set forth in the Sewage Disposal System Rules and Regulations, said Rules and Regulations to be applicable to all users of the aforementioned public sanitary sewers.

SECTION 10. In addition to any penalty hereinabove prescribed, any person, firm or corporation failing to make a proper connection within the time specified after receipt of proper notice as provided in Section 3 hereof shall, upon conviction thereof before a justice of the peace, pay a fine or penalty of Fifty ($50.00) Dollars for each day in violation hereof, and violating any of the other provisions of this Ordinance shall pay a fine or penalty of not less than Five ($5.00) Dollars nor more than One Hundred ($100.00) Dollars, and in default of payment of either thereof, be sentenced to undergo an imprisonment of not less than five (5) days nor more than thirty (30) days in the county jail.

SECTION 11. It is hereby declared as the legislative intent that the invalidity of any section, clause, sentence or provision of this Ordinance shall not affect the validity of any other part of this Ordinance which can be given effect without such invalid part or parts.

SECTION 12. All ordinances or resolutions or parts of ordinances or resolutions not in accord with this Ordinance are hereby repealed insofar as they affect this Ordinance.

ORDAINED AND ENACTED into law by the Board of Supervisors of the Township of Kiskiminetas in lawful session assembled this 13th day of July, 1973.

TOWNSHIP OF KISKIMINETAS

(TOWNSHIP SEAL)

By A R Beers
Chairman,
Board of Supervisors

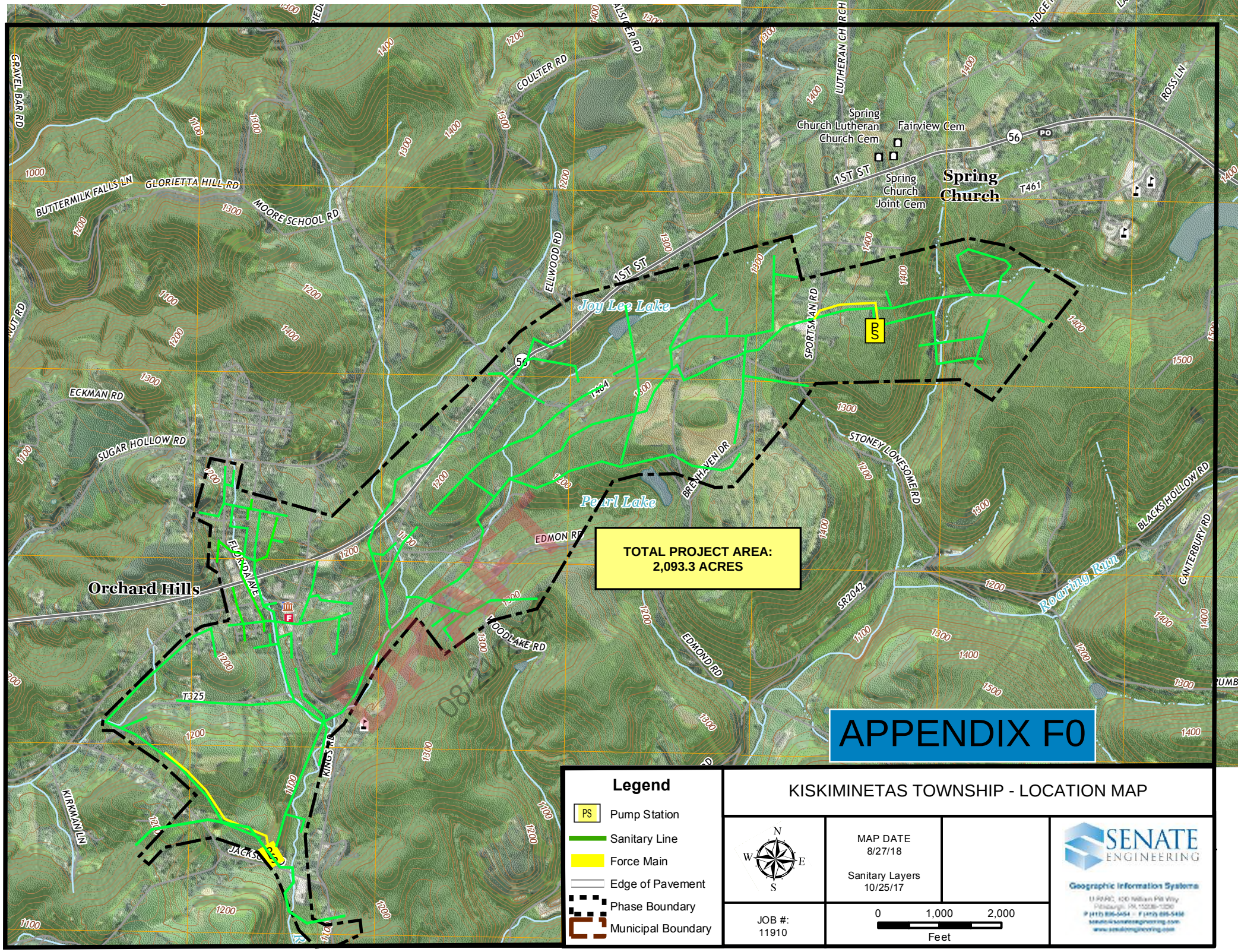
Attest:

Ray J Patterson
Township Secretary

APPENDIX F

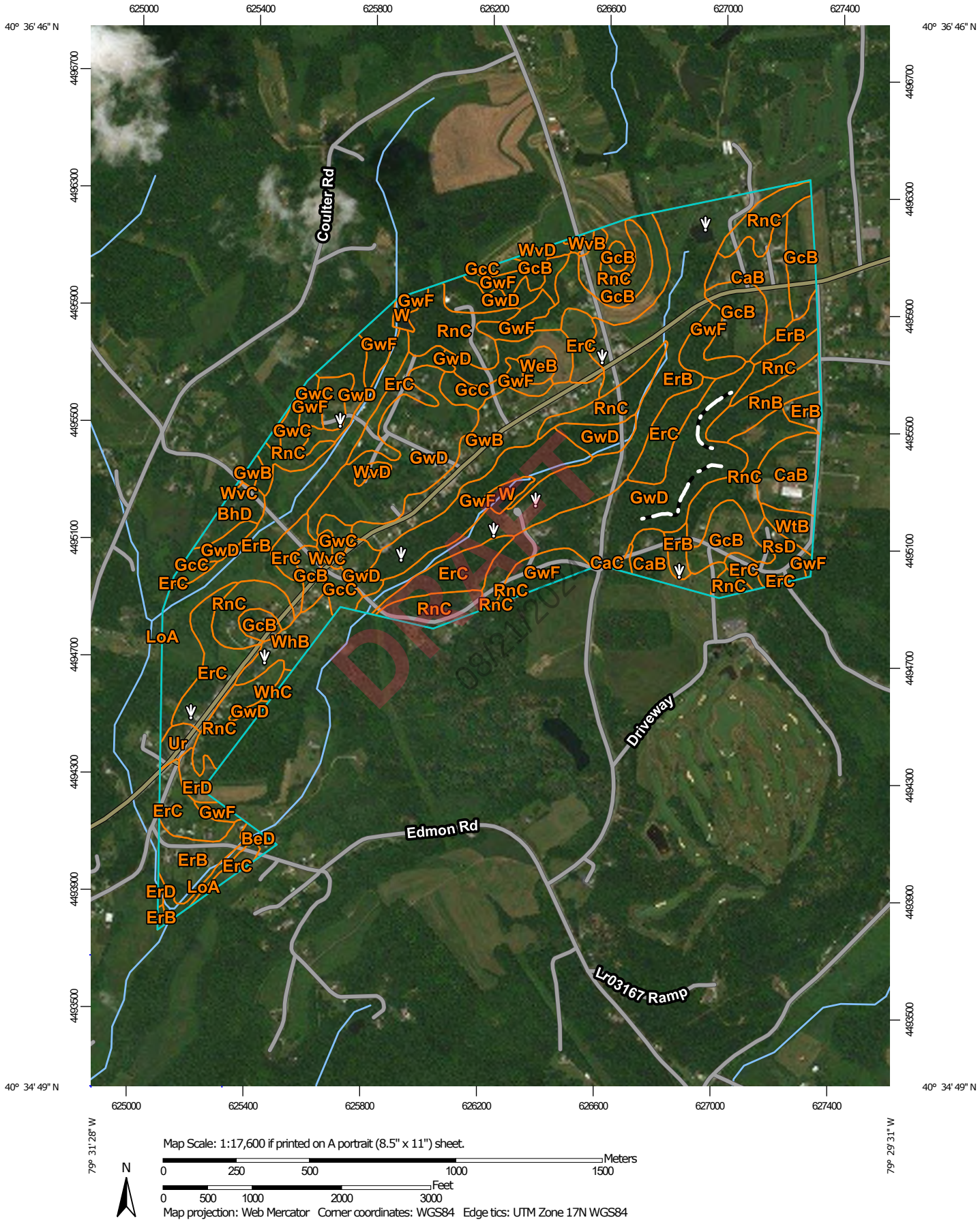
MAPS AND INFORMATION

F0 - GENERAL LOCATION MAP
F1 - NRCS GENERAL SOILS
F2 - NRCS FARMLAND - AGRICULTURAL AREAS
F3 - NRCS SUITABILITY FOR ONLOT SANITARY SYSTEMS
(CONVENTIONAL SEPTIC, SAND MOUND, & SPRAY IRRIGATION)
F4 - NATIONAL WETLAND INVENTORY
F5 - F.I.R.M. FLOODPLAIN
F6 – COUNTY AGRICULTURE PRESERVED AND SECURITY AREAS
F7 - MAWC PUBLIC WATER SERVICE AREA


TOTAL PROJECT AREA:
2,093.3 ACRES
APPENDIX F0
Legend
PS Pump Station
Sanitary Line
Force Main
Edge of Pavement
Phase Boundary
Municipal Boundary
KISKIMINETAS TOWNSHIP - LOCATION MAP
MAP DATE
8/27/18
Sanitary Layers
10/25/17
JOB #:
11910
0 1,000 2,000
Feet
SENATE ENGINEERING
Geographic Information Systems
Joy Lee Lake
Pearl Lake
Spring Church
Orchard Hills
1ST ST
COULTER RD
GLORIETTA HILL RD
MOORE SCHOOL RD
ELLWOOD RD
SPORTSMAN RD
ECKMAN RD
SUGAR HOLLOW RD
BRENHAVEN DR
STONEY LONESOME RD
BLACKS HOLLOW RD
CANTERBURY RD
EDMON RD
WOODLAKE RD
EDMOND RD
SR2042
Roaring Run
KIRKMAN LN
KINGS RD
T325
T461
T464

APPENDIX F1.1

Soil Map—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - CENTER)



Map Scale: 1:17,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

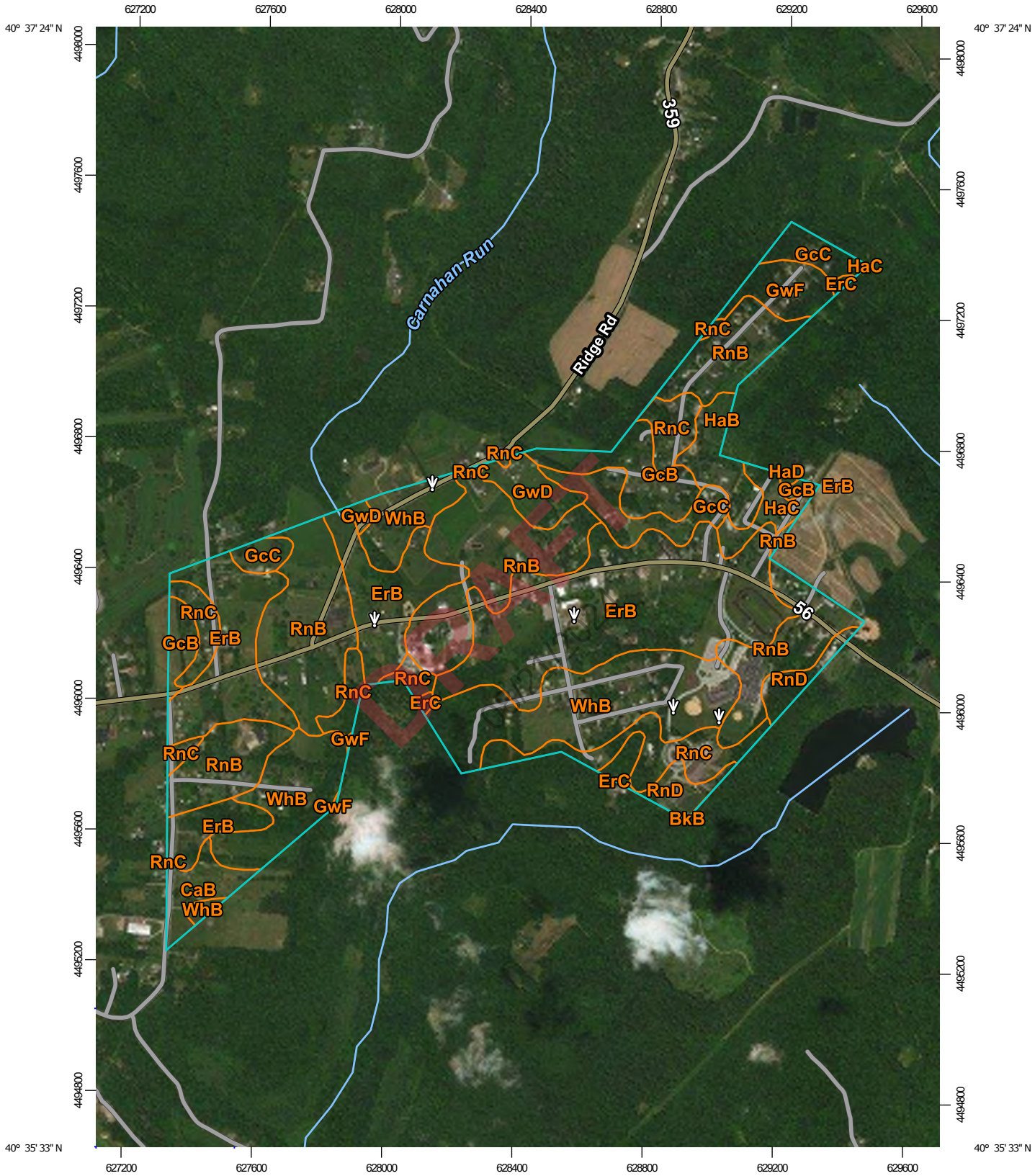
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	1.4	0.2%
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	5.7	0.9%
CaB	Cavode silt loam, 3 to 8 percent slopes	32.1	5.0%
CaC	Cavode silt loam, 8 to 15 percent slopes	0.6	0.1%
ErB	Ernest silt loam, 3 to 8 percent slopes	125.4	19.4%
ErC	Ernest silt loam, 8 to 15 percent slopes	62.5	9.7%
ErD	Ernest silt loam, 15 to 25 percent slopes	3.8	0.6%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	47.7	7.4%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	10.5	1.6%
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	28.2	4.4%
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	9.3	1.4%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	116.7	18.1%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	55.4	8.6%
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	2.7	0.4%
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	9.8	1.5%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	98.8	15.3%
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	6.2	1.0%
Ur	Urban land	3.2	0.5%
W	Water	3.8	0.6%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	3.0	0.5%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
WhB	Wharton silt loam, 3 to 8 percent slopes	8.6	1.3%
WhC	Wharton silt loam, 8 to 15 percent slopes	0.7	0.1%
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	4.1	0.6%
WvB	Wharton-Vandergrift complex, 3 to 8 percent slopes	0.6	0.1%
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	2.2	0.3%
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	2.0	0.3%
Totals for Area of Interest		**645.1**	**100.0%**

APPENDIX F1.2

Soil Map—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - EAST)



Map Scale: 1:16,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 200 400 800 1200

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BkB	Brinkerton silt loam, 3 to 8 percent slopes	0.0	0.0%
CaB	Cavode silt loam, 3 to 8 percent slopes	8.9	1.8%
ErB	Ernest silt loam, 3 to 8 percent slopes	141.8	28.5%
ErC	Ernest silt loam, 8 to 15 percent slopes	1.1	0.2%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	21.3	4.3%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	23.3	4.7%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	10.2	2.1%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	10.1	2.0%
HaB	Hazleton channery loam, 3 to 8 percent slopes	11.4	2.3%
HaC	Hazleton channery loam, 8 to 15 percent slopes	7.2	1.4%
HaD	Hazleton channery loam, 15 to 25 percent slopes	0.4	0.1%
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	125.7	25.3%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	38.5	7.7%
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	13.5	2.7%
WhB	Wharton silt loam, 3 to 8 percent slopes	83.9	16.9%
Totals for Area of Interest		**497.4**	**100.0%**

APPENDIX F1.3

Soil Map—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - WEST)

Map Scale: 1:17,900 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

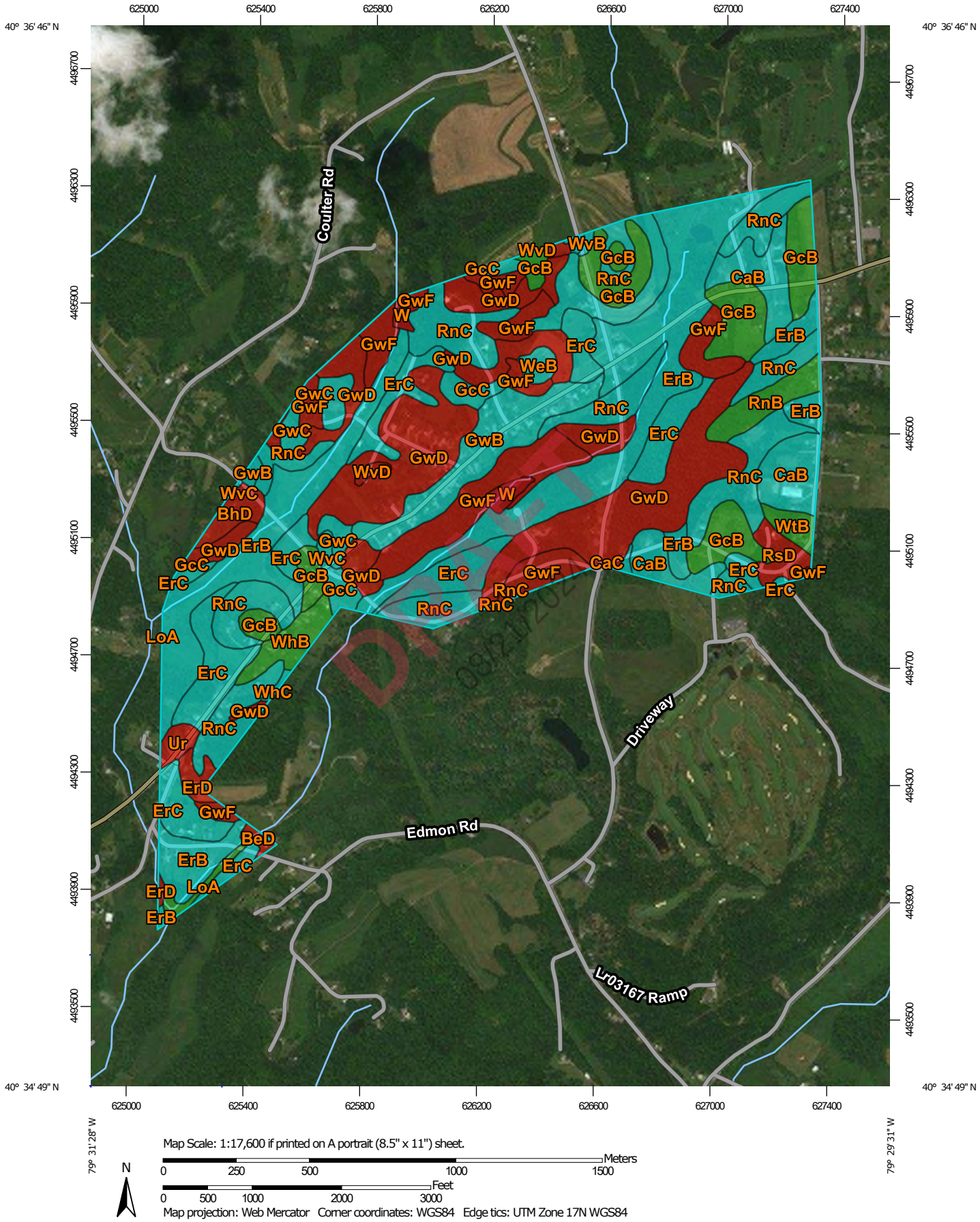
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	3.1	0.4%
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	1.8	0.2%
CaB	Cavode silt loam, 3 to 8 percent slopes	41.4	5.1%
CaC	Cavode silt loam, 8 to 15 percent slopes	30.3	3.8%
CaD	Cavode silt loam, 15 to 25 percent slopes	7.9	1.0%
ErB	Ernest silt loam, 3 to 8 percent slopes	141.8	17.6%
ErC	Ernest silt loam, 8 to 15 percent slopes	161.6	20.1%
ErD	Ernest silt loam, 15 to 25 percent slopes	11.8	1.5%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	35.0	4.3%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	16.1	2.0%
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	6.4	0.8%
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	14.3	1.8%
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	5.2	0.6%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	95.3	11.8%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	26.3	3.3%
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	26.1	3.2%
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	10.3	1.3%
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	44.2	5.5%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	44.5	5.5%
UdB	Udorthents, 0 to 8 percent slopes	3.1	0.4%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ur	Urban land	0.8	0.1%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	4.1	0.5%
WeC	Weikert channery silt loam, 8 to 15 percent slopes	3.3	0.4%
WhB	Wharton silt loam, 3 to 8 percent slopes	18.0	2.2%
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	22.6	2.8%
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	29.2	3.6%
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	0.7	0.1%
Totals for Area of Interest		**805.3**	**100.0%**

APPENDIX F2.1

Farmland Classification—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - CENTER)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Not prime farmland	1.4	0.2%
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	Not prime farmland	5.7	0.9%
CaB	Cavode silt loam, 3 to 8 percent slopes	Farmland of statewide importance	32.1	5.0%
CaC	Cavode silt loam, 8 to 15 percent slopes	Farmland of statewide importance	0.6	0.1%
ErB	Ernest silt loam, 3 to 8 percent slopes	Farmland of statewide importance	125.4	19.4%
ErC	Ernest silt loam, 8 to 15 percent slopes	Farmland of statewide importance	62.5	9.7%
ErD	Ernest silt loam, 15 to 25 percent slopes	Not prime farmland	3.8	0.6%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	All areas are prime farmland	47.7	7.4%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance	10.5	1.6%
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Farmland of statewide importance	28.2	4.4%
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance	9.3	1.4%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Not prime farmland	116.7	18.1%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not prime farmland	55.4	8.6%
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	All areas are prime farmland	2.7	0.4%
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	All areas are prime farmland	9.8	1.5%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance	98.8	15.3%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	Not prime farmland	6.2	1.0%
Ur	Urban land	Not prime farmland	3.2	0.5%
W	Water	Not prime farmland	3.8	0.6%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Farmland of statewide importance	3.0	0.5%
WhB	Wharton silt loam, 3 to 8 percent slopes	All areas are prime farmland	8.6	1.3%
WhC	Wharton silt loam, 8 to 15 percent slopes	Farmland of statewide importance	0.7	0.1%
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	All areas are prime farmland	4.1	0.6%
WvB	Wharton-Vandergrift complex, 3 to 8 percent slopes	Farmland of statewide importance	0.6	0.1%
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	Farmland of statewide importance	2.2	0.3%
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	Not prime farmland	2.0	0.3%
Totals for Area of Interest			**645.1**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

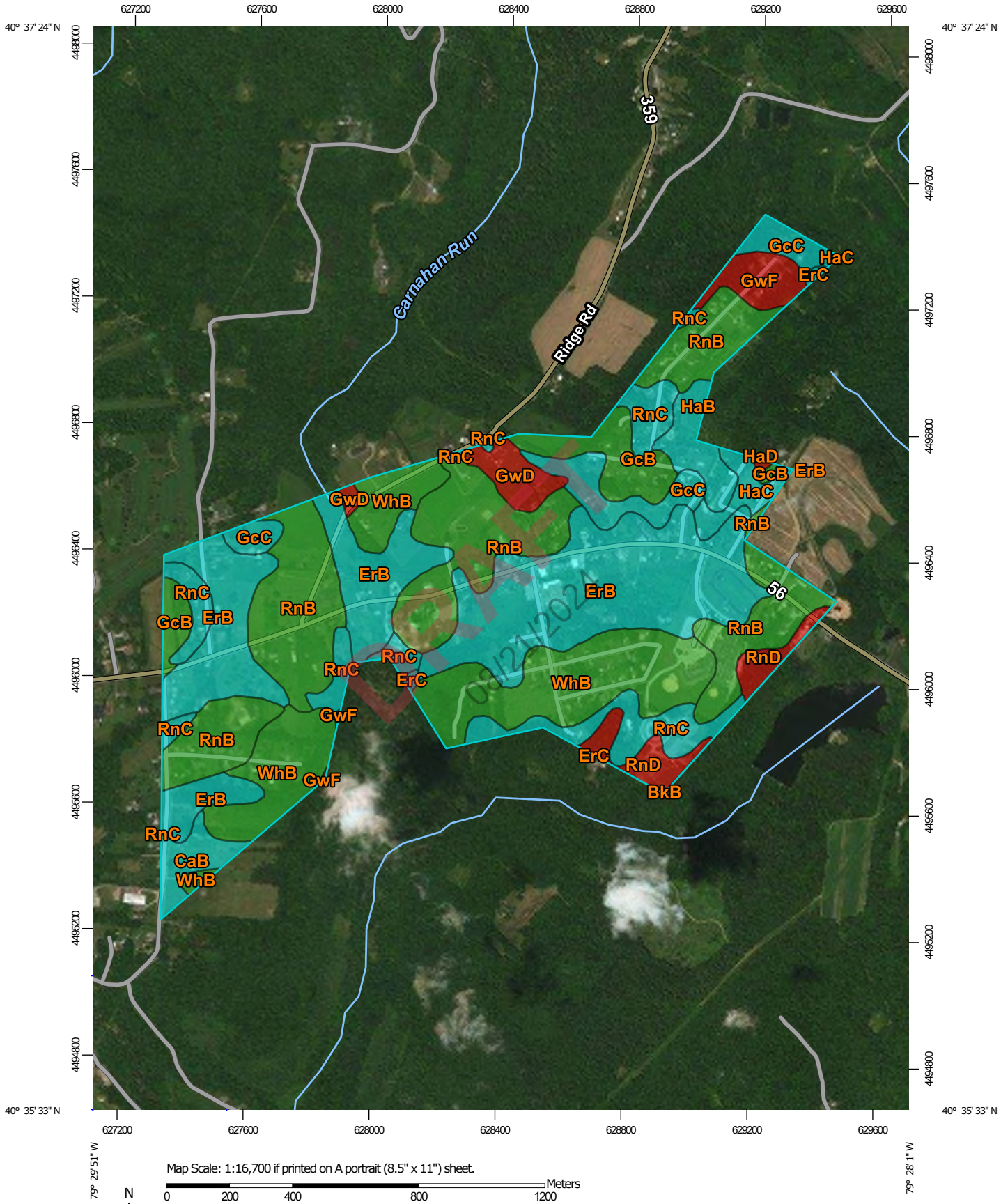
Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

APPENDIX F2.2

Farmland Classification—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - EAST)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Not prime farmland	0.0	0.0%
CaB	Cavode silt loam, 3 to 8 percent slopes	Farmland of statewide importance	8.9	1.8%
ErB	Ernest silt loam, 3 to 8 percent slopes	Farmland of statewide importance	141.8	28.5%
ErC	Ernest silt loam, 8 to 15 percent slopes	Farmland of statewide importance	1.1	0.2%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	All areas are prime farmland	21.3	4.3%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance	23.3	4.7%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Not prime farmland	10.2	2.1%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not prime farmland	10.1	2.0%
HaB	Hazleton channery loam, 3 to 8 percent slopes	Farmland of statewide importance	11.4	2.3%
HaC	Hazleton channery loam, 8 to 15 percent slopes	Farmland of statewide importance	7.2	1.4%
HaD	Hazleton channery loam, 15 to 25 percent slopes	Not prime farmland	0.4	0.1%
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	All areas are prime farmland	125.7	25.3%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance	38.5	7.7%
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	Not prime farmland	13.5	2.7%
WhB	Wharton silt loam, 3 to 8 percent slopes	All areas are prime farmland	83.9	16.9%
Totals for Area of Interest			**497.4**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

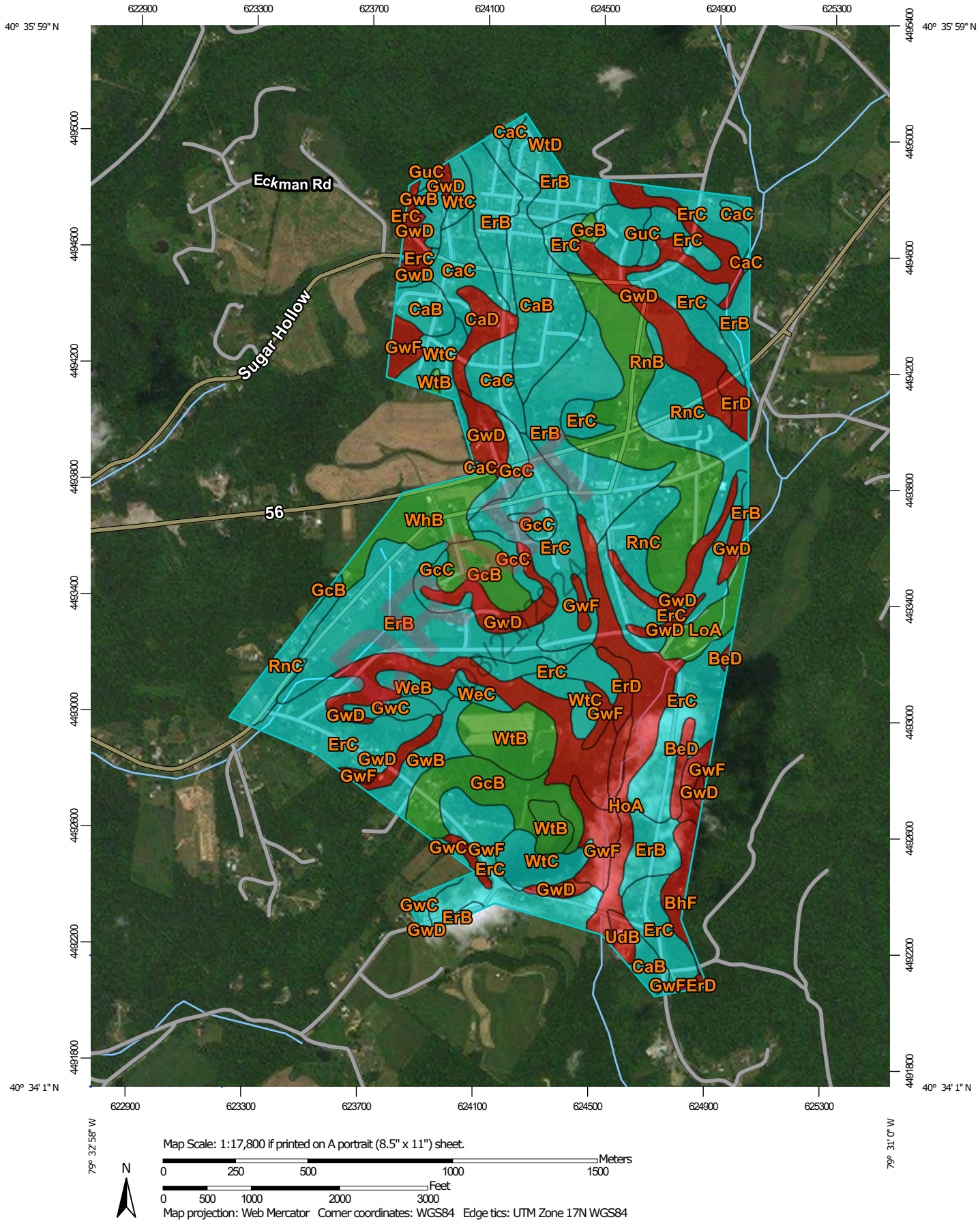
Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

APPENDIX F2.3

Farmland Classification—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - WEST)



MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of statewide importance, if drained
- Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated
- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Soil Rating Lines

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

- Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if irrigated and drained
- Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
- Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
- Farmland of statewide importance, if warm enough
- Farmland of statewide importance, if thawed
- Farmland of local importance
- Farmland of local importance, if irrigated
- Farmland of unique importance
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Not prime farmland	3.5	0.4%
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	Not prime farmland	6.4	0.8%
CaB	Cavode silt loam, 3 to 8 percent slopes	Farmland of statewide importance	40.6	5.1%
CaC	Cavode silt loam, 8 to 15 percent slopes	Farmland of statewide importance	27.0	3.4%
CaD	Cavode silt loam, 15 to 25 percent slopes	Not prime farmland	7.9	1.0%
ErB	Ernest silt loam, 3 to 8 percent slopes	Farmland of statewide importance	129.4	16.1%
ErC	Ernest silt loam, 8 to 15 percent slopes	Farmland of statewide importance	169.6	21.1%
ErD	Ernest silt loam, 15 to 25 percent slopes	Not prime farmland	11.7	1.5%
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	All areas are prime farmland	34.8	4.3%
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance	16.1	2.0%
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	Farmland of statewide importance	8.1	1.0%
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Farmland of statewide importance	14.1	1.8%
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance	7.6	0.9%
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Not prime farmland	98.9	12.3%
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not prime farmland	23.9	3.0%
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland	26.6	3.3%
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	All areas are prime farmland	9.3	1.2%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	All areas are prime farmland	44.2	5.5%
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance	42.9	5.3%
UdB	Udorthents, 0 to 8 percent slopes	Not prime farmland	2.8	0.4%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Farmland of statewide importance	4.1	0.5%
WeC	Weikert channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance	3.3	0.4%
WhB	Wharton silt loam, 3 to 8 percent slopes	All areas are prime farmland	18.4	2.3%
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	All areas are prime farmland	22.2	2.8%
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	Farmland of statewide importance	28.6	3.6%
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	Not prime farmland	0.0	0.0%
Totals for Area of Interest			**802.0**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Prime and other Important Farmlands

This table lists the map units in the survey area that are considered important farmlands. Important farmlands consist of prime farmland, unique farmland, and farmland of statewide or local importance. This list does not constitute a recommendation for a particular land use.

In an effort to identify the extent and location of important farmlands, the Natural Resources Conservation Service, in cooperation with other interested Federal, State, and local government organizations, has inventoried land that can be used for the production of the Nation's food supply.

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil quality, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. The water supply is dependable and of adequate quality. Prime farmland is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

For some of the soils identified in the table as prime farmland, measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures.

A recent trend in land use in some areas has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops, such as citrus, tree nuts, olives, cranberries, and other fruits and vegetables. It has the special combination of soil quality, growing season, moisture supply, temperature, humidity, air drainage, elevation, and aspect needed for the soil to economically produce sustainable high yields of these crops when properly managed. The water supply is dependable and of adequate quality. Nearness to markets is an additional consideration. Unique farmland is not based on national criteria. It commonly is in areas where there is a special microclimate, such as the wine country in California.

In some areas, land that does not meet the criteria for prime or unique farmland is considered to be *farmland of statewide importance* for the production of food, feed, fiber, forage, and oilseed crops. The criteria for defining and delineating farmland of statewide importance are determined by the appropriate State agencies. Generally, this land includes areas of soils that nearly meet the requirements for prime farmland and that economically produce high yields of crops when treated and managed according to acceptable farming methods. Some areas may produce as high a yield as prime farmland if conditions are favorable. Farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

In some areas that are not identified as having national or statewide importance, land is considered to be *farmland of local importance* for the production of food, feed, fiber, forage, and oilseed crops. This farmland is identified by the appropriate local agencies. Farmland of local importance may include tracts of land that have been designated for agriculture by local ordinance.

Report—Prime and other Important Farmlands

Prime and other Important Farmlands–Armstrong County, Pennsylvania		
Map Symbol	**Map Unit Name**	**Farmland Classification**
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Not prime farmland
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	Not prime farmland
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	Not prime farmland
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Not prime farmland
CaB	Cavode silt loam, 3 to 8 percent slopes	Farmland of statewide importance
CaC	Cavode silt loam, 8 to 15 percent slopes	Farmland of statewide importance
CaD	Cavode silt loam, 15 to 25 percent slopes	Not prime farmland
ErB	Ernest silt loam, 3 to 8 percent slopes	Farmland of statewide importance
ErC	Ernest silt loam, 8 to 15 percent slopes	Farmland of statewide importance
ErD	Ernest silt loam, 15 to 25 percent slopes	Not prime farmland
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	All areas are prime farmland
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	Farmland of statewide importance

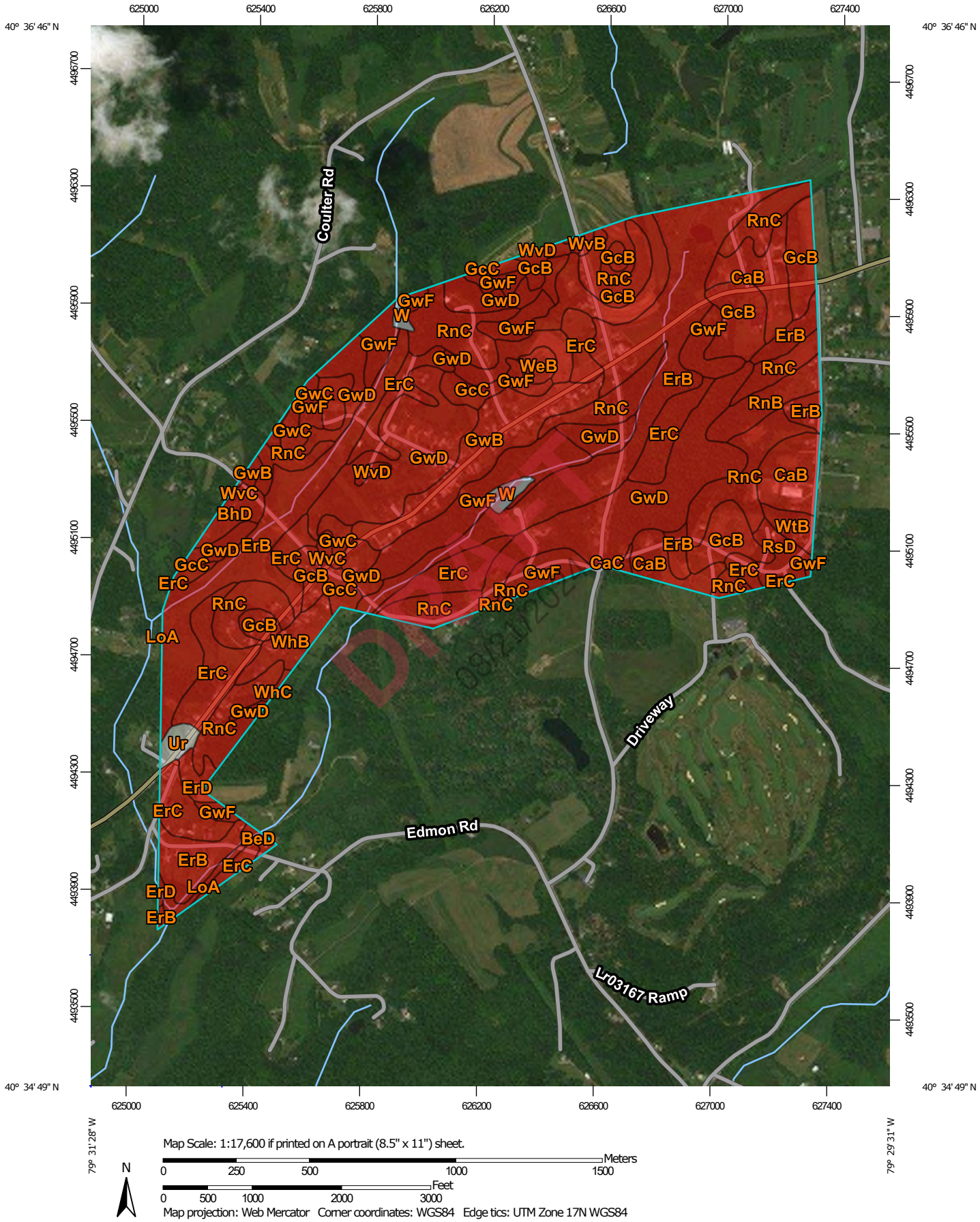
Prime and other Important Farmlands–Armstrong County, Pennsylvania		
Map Symbol	**Map Unit Name**	**Farmland Classification**
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Farmland of statewide importance
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Not prime farmland
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not prime farmland
HaB	Hazleton channery loam, 3 to 8 percent slopes	Farmland of statewide importance
HaC	Hazleton channery loam, 8 to 15 percent slopes	Farmland of statewide importance
HaD	Hazleton channery loam, 15 to 25 percent slopes	Not prime farmland
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Not prime farmland
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	All areas are prime farmland
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	All areas are prime farmland
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Farmland of statewide importance
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	Not prime farmland
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	Not prime farmland
UdB	Udorthents, 0 to 8 percent slopes	Not prime farmland
Ur	Urban land	Not prime farmland
W	Water	Not prime farmland
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Farmland of statewide importance
WeC	Weikert channery silt loam, 8 to 15 percent slopes	Farmland of statewide importance
WhB	Wharton silt loam, 3 to 8 percent slopes	All areas are prime farmland
WhC	Wharton silt loam, 8 to 15 percent slopes	Farmland of statewide importance
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	All areas are prime farmland
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	Farmland of statewide importance
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	Not prime farmland
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	Farmland of statewide importance
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	Not prime farmland

Data Source Information

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 12, Sep 18, 2018

APPENDIX F3.1.1

Septic System In-Ground Bed (Conventional) (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - CENTER)



Map Scale: 1:17,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System In-Ground Bed (Conventional) (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	1.4	0.2%
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Potential karst (0.30)		
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	Very limited	Bethesda, unstable fill (85%)	Too steep (1.00)	5.7	0.9%
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Potential karst (0.30)		
			Sewell, unstable fill (3%)	Too steep (1.00)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Seasonal high water table (1.00)	32.1	5.0%
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
CaC	Cavode silt loam, 8 to 15 percent slopes	Very limited	Cavode (85%)	Seasonal high water table (1.00)	0.6	0.1%
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	125.4	19.4%
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Buchanan (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	62.5	9.7%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Buchanan (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (1.00)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	3.8	0.6%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Shelocta (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	47.7	7.4%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Wharton (10%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	10.5	1.6%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Very limited	Gilpin (55%)	Bedrock, above 60" (1.00)	28.2	4.4%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Weikert (30%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
			Wharton (5%)	Seasonal high water table (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Hazleton (5%)	Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
				Too steep (0.88)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Very limited	Gilpin (55%)	Bedrock, above 60" (1.00)	9.3	1.4%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (30%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Hazleton (5%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Bedrock, above 60" (1.00)	116.7	18.1%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (40%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Bedrock, above 60" (1.00)	55.4	8.6%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (35%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Seasonal high water table (1.00)	2.7	0.4%
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.13)		
			Orrville (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.89)		
				Slope (0.13)		
			Holly (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.96)		
				Slope (0.13)		
			Melvin (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.13)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Very limited	Rayne (45%)	Bedrock, above 60" (1.00)	9.8	1.5%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Gilpin (40%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slight voided fragments (0.01)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
				Potential bedrock near 60" (0.27)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Very limited	Rayne (46%)	Too steep (1.00)	98.8	15.3%
				Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
			Gilpin (44%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	Very limited	Rayne (50%)	Too steep (1.00)	6.2	1.0%
				Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
			Gilpin (35%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slight voided fragments (0.00)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
Ur	Urban land	Not rated	Urban land (90%)		3.2	0.5%
W	Water	Not rated	Water (100%)		3.8	0.6%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Very limited	Weikert (85%)	Bedrock, above 60" (1.00)	3.0	0.5%
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
			Gilpin (15%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Seasonal high water table (1.00)	8.6	1.3%
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Cavode (8%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Gilpin (7%)	Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
WhC	Wharton silt loam, 8 to 15 percent slopes	Very limited	Wharton (80%)	Seasonal high water table (1.00)	0.7	0.1%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
			Rarden (5%)	Seasonal high water table (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (1.00)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Very limited	Wharton (51%)	Seasonal high water table (1.00)	4.1	0.6%
				Slow percolation >12" (1.00)		
				Slope (0.72)		
				Potential bedrock near 60" (0.27)		
			Gilpin (49%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
				Slight voided fragments (0.01)		
WvB	Wharton-Vandergrift complex, 3 to 8 percent slopes	Very limited	Wharton (50%)	Seasonal high water table (1.00)	0.6	0.1%
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Vandergrift (35%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential bedrock near 60" (0.44)		
				Potential karst (0.30)		
			Cavode (10%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	Very limited	Wharton (45%)	Seasonal high water table (1.00)	2.2	0.3%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Vandergrift (40%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.44)		
				Potential karst (0.30)		
			Cavode (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	Very limited	Wharton (45%)	Seasonal high water table (1.00)	2.0	0.3%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Vandergrift (40%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.44)		
				Potential karst (0.30)		
			Cavode (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
Totals for Area of Interest					**645.1**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	638.1	98.9%
Null or Not Rated	7.0	1.1%
Totals for Area of Interest	**645.1**	**100.0%**

Description

This is a system of subsurface lines that distribute effluent from a septic tank into the natural soil. The distribution lines are at a minimum depth of 12 inches. Only the part of the soils between depths of 0 and 60 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this

interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

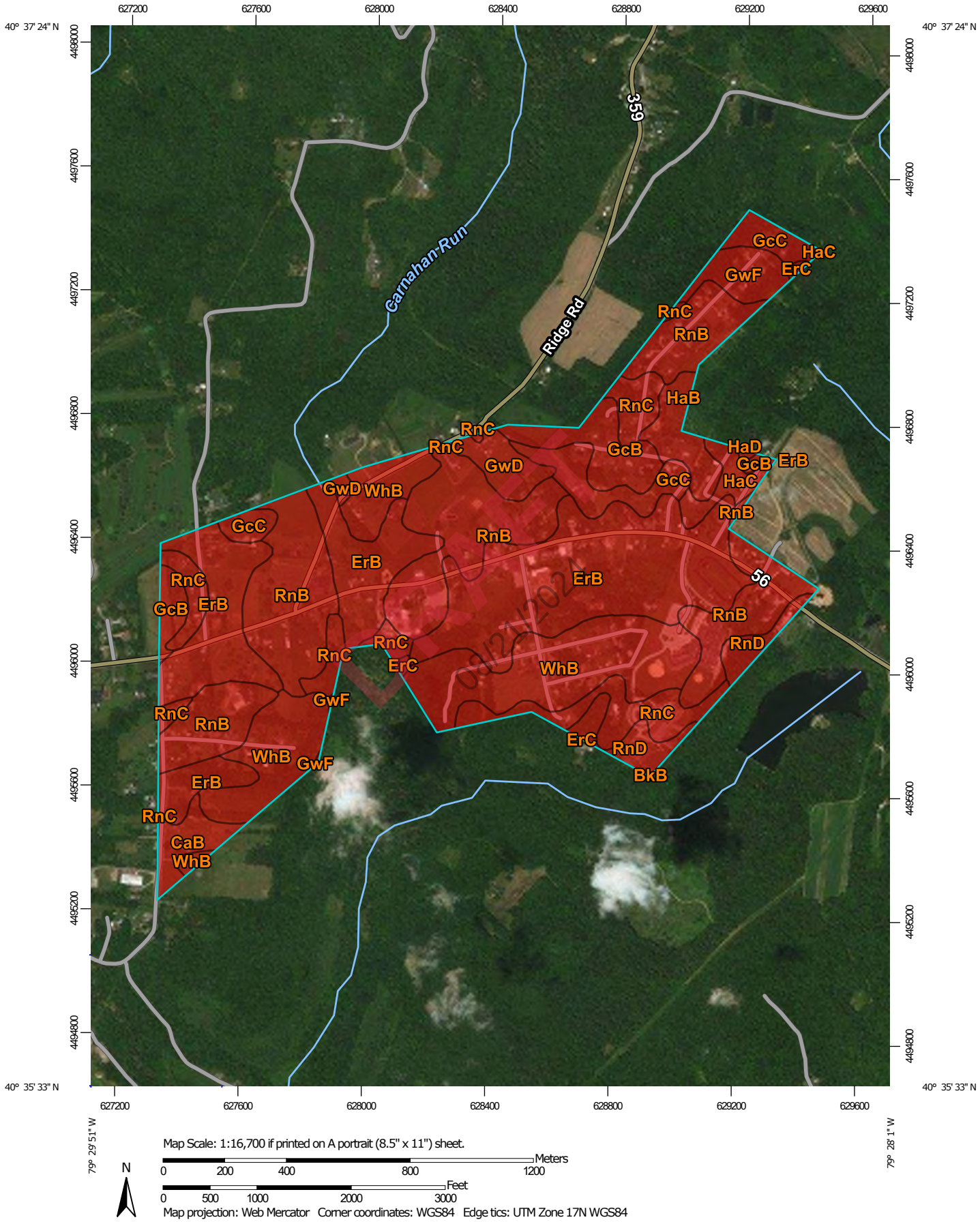
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.1.2

Septic System In-Ground Bed (Conventional) (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - EAST)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System In-Ground Bed (Conventional) (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Very limited	Brinkerton (80%)	Seasonal high water table (1.00)	0.0	0.0%
				Slow percolation >12" (1.00)		
				Slope (0.72)		
			Ernest (15%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Lobdell (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.03)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Seasonal high water table (1.00)	8.9	1.8%
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	141.8	28.5%
				Slow percolation >12" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Too steep (0.88)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Buchanan (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	1.1	0.2%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Buchanan (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	21.3	4.3%
				Slow percolation >12" (0.89)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Too steep (0.88)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	23.3	4.7%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Bedrock, above 60" (1.00)	10.2	2.1%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (40%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Bedrock, above 60" (1.00)	10.1	2.0%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (35%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
HaB	Hazleton channery loam, 3 to 8 percent slopes	Very limited	Hazleton (85%)	Bedrock, above 60" (1.00)	11.4	2.3%
				Fast percolation >12" (1.00)		
				Slope (0.72)		
			Cookport (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slope (0.72)		
			Germano (5%)	Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Westmoreland (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Slope (0.72)		
HaC	Hazleton channery loam, 8 to 15 percent slopes	Very limited	Hazleton (85%)	Too steep (1.00)	7.2	1.4%
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Cookport (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Germano (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
			Westmoreland (5%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
HaD	Hazleton channery loam, 15 to 25 percent slopes	Very limited	Hazleton (85%)	Too steep (1.00)	0.4	0.1%
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Westmoreland (5%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
			Germano (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Guernsey (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Very limited	Rayne (45%)	Bedrock, above 60" (1.00)	125.7	25.3%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Gilpin (40%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
				Slight voided fragments (0.01)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
				Potential bedrock near 60" (0.27)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
RnC	Rayne-Gilpin channery silt	Very limited	Rayne (46%)	Too steep (1.00)	38.5	7.7%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	loams, 8 to 15 percent slopes			Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
			Gilpin (44%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	Very limited	Rayne (55%)	Too steep (1.00)	13.5	2.7%
				Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
			Gilpin (35%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slight voided fragments (0.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Seasonal high water table (1.00)	83.9	16.9%
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Cavode (8%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Gilpin (7%)	Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
Totals for Area of Interest					**497.4**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	497.4	100.0%
Totals for Area of Interest	**497.4**	**100.0%**

Description

This is a system of subsurface lines that distribute effluent from a septic tank into the natural soil. The distribution lines are at a minimum depth of 12 inches. Only the part of the soils between depths of 0 and 60 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this

interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

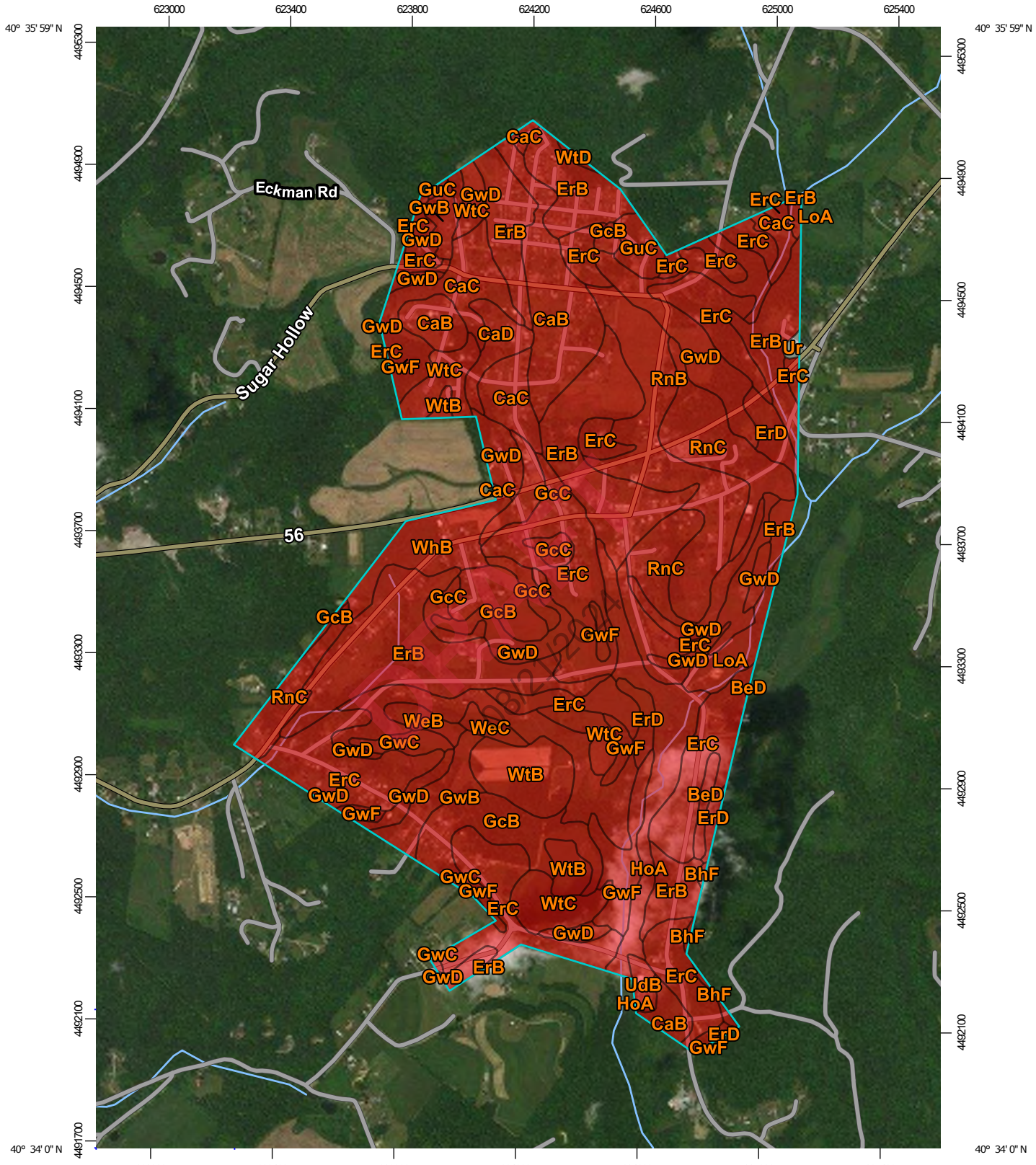
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.1.3

Septic System In-Ground Bed (Conventional) (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - WEST)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System In-Ground Bed (Conventional) (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	3.1	0.4%
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Potential karst (0.30)		
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	1.8	0.2%
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
			Fairpoint, unstable fill (5%)	Too steep (1.00)		
				Potential karst (0.30)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Seasonal high water table (1.00)	41.4	5.1%
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
CaC	Cavode silt loam, 8 to 15 percent slopes	Very limited	Cavode (85%)	Seasonal high water table (1.00)	30.3	3.8%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Bedrock, above 60" (1.00)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
CaD	Cavode silt loam, 15 to 25 percent slopes	Very limited	Cavode (80%)	Seasonal high water table (1.00)	7.9	1.0%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Gilpin (10%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	141.8	17.6%
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Buchanan (5%)	Seasonal high water table (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	161.6	20.1%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Buchanan (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Very limited	Ernest (85%)	Seasonal high water table (1.00)	11.8	1.5%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Shelocta (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Gilpin (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	35.0	4.3%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Very limited	Gilpin (85%)	Bedrock, above 60" (1.00)	16.1	2.0%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Wharton (10%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential bedrock near 60" (0.27)		
			Weikert (5%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	Very limited	Gilpin (45%)	Bedrock, above 60" (1.00)	6.4	0.8%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Upshur (35%)	Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Potential karst (0.30)		
			Wharton (20%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Very limited	Gilpin (55%)	Bedrock, above 60" (1.00)	14.3	1.8%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Weikert (30%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential bedrock near 60" (0.27)		
			Hazleton (5%)	Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
				Too steep (0.88)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Very limited	Gilpin (55%)	Bedrock, above 60" (1.00)	5.2	0.6%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (30%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
			Hazleton (5%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Fast percolation >12" (1.00)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Bedrock, above 60" (1.00)	95.3	11.8%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (40%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Bedrock, above 60" (1.00)	26.3	3.3%
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
			Weikert (35%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.90)		
			Hazleton (10%)	Too steep (1.00)		
				Bedrock, above 60" (1.00)		
				Fast percolation >12" (1.00)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (1.00)		
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Very limited	Holly (75%)	Seasonal high water table (1.00)	26.1	3.2%
				Flooding (1.00)		
				Slope (0.03)		
				Potential slow percolation >12" (0.01)		
			Lobdell (15%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.03)		
			Ernest (10%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.13)		
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Seasonal high water table (1.00)	10.3	1.3%
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.13)		
			Orrville (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.89)		
				Slope (0.13)		
			Holly (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.96)		
				Slope (0.13)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Melvin (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
				Slow percolation >12" (0.90)		
				Slope (0.13)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Very limited	Rayne (45%)	Bedrock, above 60" (1.00)	44.2	5.5%
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
			Gilpin (40%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
				Slight voided fragments (0.01)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Slope (0.72)		
				Potential bedrock near 60" (0.27)		
			Cavode (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Slope (0.72)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Very limited	Rayne (46%)	Too steep (1.00)	44.5	5.5%
				Bedrock, above 60" (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation >12" (0.89)		
			Gilpin (44%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
			Ernest (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
			Wharton (5%)	Seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
UdB	Udorthents, 0 to 8 percent slopes	Very limited	Udorthents, unstable fill (100%)	Miscellaneous area (1.00)	3.1	0.4%
				Slope (0.72)		
Ur	Urban land	Not rated	Urban land (90%)		0.8	0.1%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Very limited	Weikert (85%)	Bedrock, above 60" (1.00)	4.1	0.5%
				Slow percolation >12" (0.90)		
				Too steep (0.88)		
			Gilpin (15%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		
WeC	Weikert channery silt loam, 8 to 15 percent slopes	Very limited	Weikert (85%)	Bedrock, above 60" (1.00)	3.3	0.4%
				Too steep (1.00)		
				Slow percolation >12" (0.90)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Gilpin (15%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Seasonal high water table (1.00)	18.0	2.2%
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
				Potential bedrock near 60" (0.27)		
			Cavode (8%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Gilpin (7%)	Bedrock, above 60" (1.00)		
				Too steep (0.88)		
			Brinkerton (5%)	Seasonal high water table (1.00)		
				Slow percolation >12" (1.00)		
				Too steep (0.88)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Very limited	Wharton (51%)	Seasonal high water table (1.00)	22.6	2.8%
				Slow percolation >12" (1.00)		
				Slope (0.72)		
				Potential bedrock near 60" (0.27)		
			Gilpin (49%)	Bedrock, above 60" (1.00)		
				Slow percolation >12" (0.89)		
				Too steep (0.88)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slight voided fragments (0.01)		
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	Very limited	Wharton (51%)	Seasonal high water table (1.00)	29.2	3.6%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Gilpin (49%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	Very limited	Wharton (55%)	Seasonal high water table (1.00)	0.7	0.1%
				Too steep (1.00)		
				Slow percolation >12" (1.00)		
				Potential bedrock near 60" (0.27)		
			Gilpin (45%)	Bedrock, above 60" (1.00)		
				Too steep (1.00)		
				Slow percolation >12" (0.89)		
				Slight voided fragments (0.01)		
Totals for Area of Interest					**805.3**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	804.5	99.9%
Null or Not Rated	0.8	0.1%
Totals for Area of Interest	**805.3**	**100.0%**

Description

This is a system of subsurface lines that distribute effluent from a septic tank into the natural soil. The distribution lines are at a minimum depth of 12 inches. Only the part of the soils between depths of 0 and 60 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this

interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

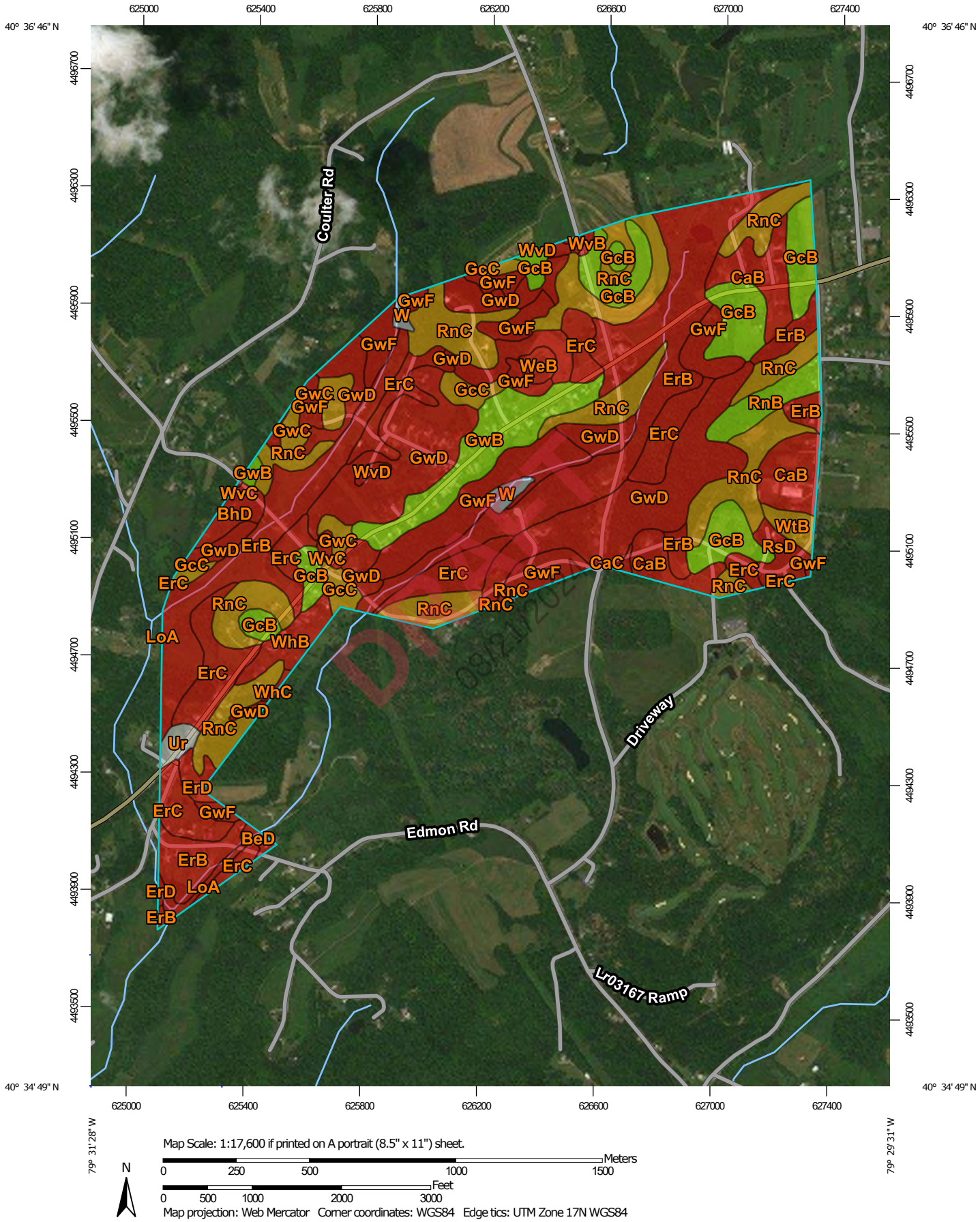
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.2.1

Septic System Sand Mound Bed or Trench (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - CENTER)



Map Scale: 1:17,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Sand Mound Bed or Trench (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	1.4	0.2%
				Slow percolation 12-20" (1.00)		
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
				Potential karst (0.30)		
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	Very limited	Bethesda, unstable fill (85%)	Too steep (1.00)	5.7	0.9%
				Slow percolation 12-20" (1.00)		
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
				Potential karst (0.30)		
			Sewell, unstable fill (3%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Potential seasonal high water table (1.00)	32.1	5.0%
				Slow percolation 12-20" (1.00)		
				Slope (0.35)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
CaC	Cavode silt loam, 8 to 15 percent slopes	Very limited	Cavode (85%)	Potential seasonal high water table (1.00)	0.6	0.1%
				Slow percolation 12-20" (1.00)		
				Too steep (0.85)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	125.4	19.4%
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	62.5	9.7%
				Too steep (0.85)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	3.8	0.6%
				Too steep (1.00)		
			Shelocta (5%)	Too steep (1.00)		
				Low potential seasonal high water table (0.01)		
			Wharton (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation 12-20" (0.58)		
			Gilpin (5%)	Too steep (1.00)		
				Potential bedrock near 20" (0.27)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope (0.40)	47.7	7.4%
				Potential bedrock near 20" (0.27)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Moderately limited	Gilpin (85%)	Too steep (0.85)	10.5	1.6%
				Potential bedrock near 20" (0.27)		
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Slightly limited	Gilpin (55%)	Slope (0.40)	28.2	4.4%
				Potential bedrock near 20" (0.16)		
			Hazleton (5%)	Slope (0.40)		
				Potential fast percolation 12-20" (0.26)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Moderately limited	Gilpin (55%)	Too steep (0.85)	9.3	1.4%
				Potential bedrock near 20" (0.16)		
			Hazleton (5%)	Too steep (0.85)		
				Potential fast percolation 12-20" (0.26)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Too steep (1.00)	116.7	18.1%
				Potential bedrock near 20" (0.16)		
			Weikert (40%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Wharton (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slow percolation 12-20" (0.58)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Too steep (1.00)	55.4	8.6%
				Potential bedrock near 20" (0.16)		
			Weikert (35%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Ernest (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Potential seasonal high water table (1.00)	2.7	0.4%
				Flooding (1.00)		
				Slope (0.18)		
			Orrville (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
			Holly (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
			Melvin (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope (0.40)	9.8	1.5%
			Gilpin (40%)	Slope (0.40)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential bedrock near 20" (0.35)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Moderately limited	Rayne (46%)	Too steep (0.85)	98.8	15.3%
			Gilpin (44%)	Too steep (0.85)		
				Potential bedrock near 20" (0.35)		
			Wharton (5%)	Too steep (0.85)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	Very limited	Rayne (50%)	Too steep (1.00)	6.2	1.0%
			Gilpin (35%)	Too steep (1.00)		
				Potential bedrock near 20" (0.35)		
			Weikert (5%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
				Slight voided fragments (0.00)		
			Ernest (5%)	Potential seasonal high water table (1.00)		
				Slope (0.60)		
			Wharton (5%)	Too steep (1.00)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
Ur	Urban land	Not rated	Urban land (90%)		3.2	0.5%
W	Water	Not rated	Water (100%)		3.8	0.6%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Very limited	Weikert (85%)	Bedrock, above 20" (1.00)	3.0	0.5%
				Slope (0.40)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Potential seasonal high water table (1.00)	8.6	1.3%
				Slow percolation 12-20" (0.58)		
				Slope (0.40)		
			Cavode (8%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
WhC	Wharton silt loam, 8 to 15 percent slopes	Very limited	Wharton (80%)	Potential seasonal high water table (1.00)	0.7	0.1%
				Too steep (0.85)		
				Slow percolation 12-20" (0.58)		
			Ernest (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
			Rarden (5%)	Slow percolation 12-20" (1.00)		
				Too steep (0.85)		
				Low potential seasonal high water table (0.50)		
				Potential bedrock near 20" (0.45)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Moderately limited	Wharton (51%)	Slow percolation 12-20" (0.79)	4.1	0.6%
				Low potential seasonal high water table (0.67)		
				Slope (0.35)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
WvB	Wharton-Vandergrift complex, 3 to 8 percent slopes	Very limited	Vandergrift (35%)	Slow percolation 12-20" (1.00)	0.6	0.1%
				Potential seasonal high water table (0.98)		
				Slope (0.40)		
				Potential karst (0.30)		
			Cavode (10%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Slope (0.35)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	Very limited	Vandergrift (40%)	Slow percolation 12-20" (1.00)	2.2	0.3%
				Potential seasonal high water table (0.98)		
				Too steep (0.85)		
				Potential karst (0.30)		
			Cavode (10%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Too steep (0.85)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	Very limited	Wharton (45%)	Too steep (1.00)	2.0	0.3%
				Slow percolation 12-20" (0.79)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Low potential seasonal high water table (0.67)		
			Vandergrift (40%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
				Potential seasonal high water table (0.98)		
				Potential karst (0.30)		
			Cavode (10%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Too steep (0.85)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		
Totals for Area of Interest					**645.1**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	429.7	66.6%
Moderately limited	122.7	19.0%
Slightly limited	85.7	13.3%
Null or Not Rated	7.0	1.1%
Totals for Area of Interest	**645.1**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a mound with sand under aggregate. The mound is placed on top of the mineral soil surface. About 1 to 4 feet of sand could be placed on the mineral soil surface in a sand mound system. Only the part of the soils between depths of 0 and 20 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be

viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

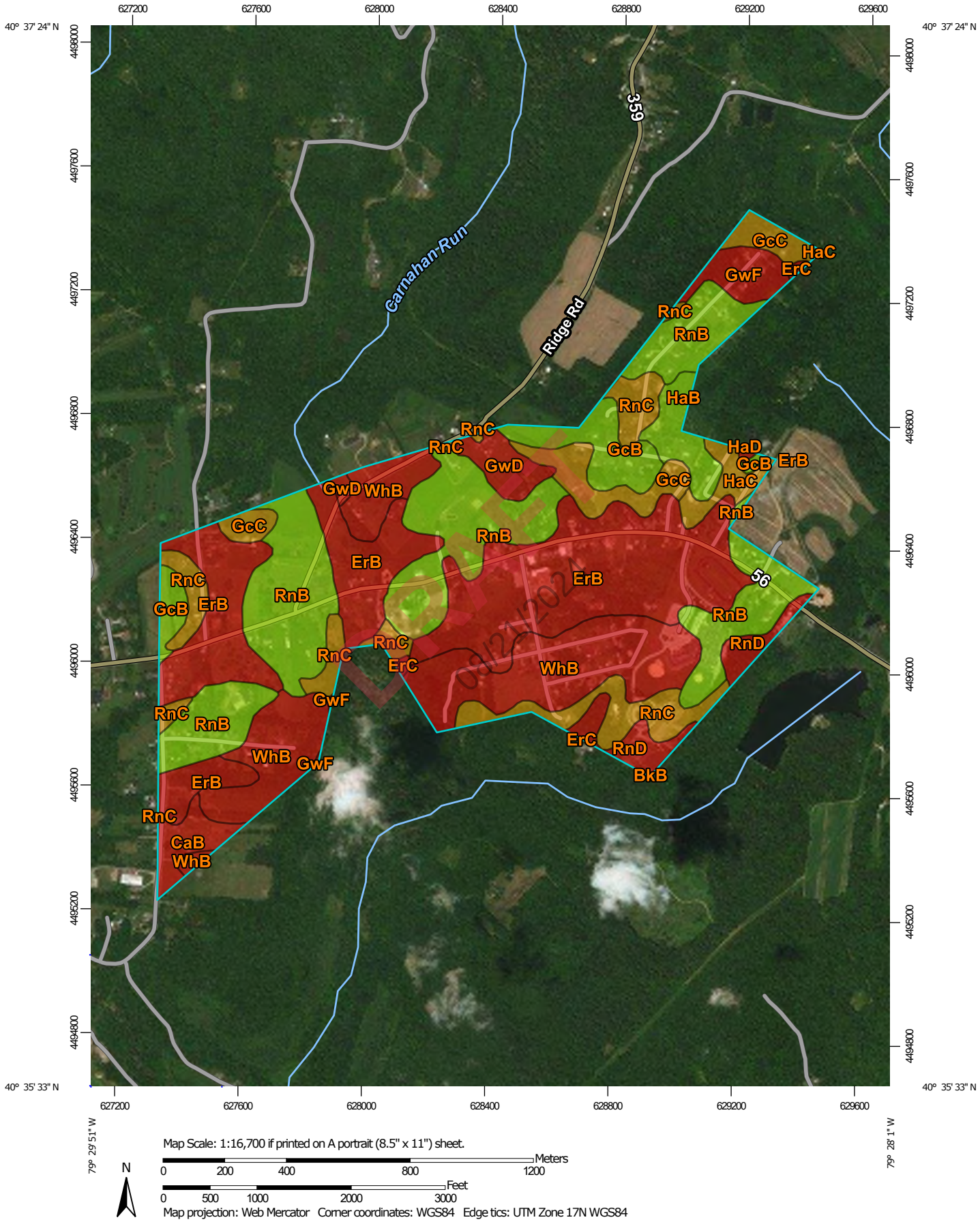
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.2.2

Septic System Sand Mound Bed or Trench (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - EAST)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Sand Mound Bed or Trench (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Very limited	Brinkerton (80%)	Potential seasonal high water table (1.00)	0.0	0.0%
				Slope (0.35)		
			Ernest (15%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
			Lobdell (5%)	Flooding (1.00)		
				Potential seasonal high water table (0.98)		
				Slope (0.09)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Potential seasonal high water table (1.00)	8.9	1.8%
				Slow percolation 12-20" (1.00)		
				Slope (0.35)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	141.8	28.5%
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	1.1	0.2%
				Too steep (0.85)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope (0.40)	21.3	4.3%
				Potential bedrock near 20" (0.27)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Moderately limited	Gilpin (85%)	Too steep (0.85)	23.3	4.7%
				Potential bedrock near 20" (0.27)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Too steep (1.00)	10.2	2.1%
				Potential bedrock near 20" (0.16)		
			Weikert (40%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Wharton (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation 12-20" (0.58)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Too steep (1.00)	10.1	2.0%
				Potential bedrock near 20" (0.16)		
			Weikert (35%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Ernest (5%)	Potential seasonal high water table (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Too steep (1.00)		
HaB	Hazleton channery loam, 3 to 8 percent slopes	Slightly limited	Hazleton (85%)	Slope (0.35)	11.4	2.3%
				Potential fast percolation 12-20" (0.26)		
			Germano (5%)	Slope (0.35)		
				Potential bedrock near 20" (0.20)		
			Westmoreland (5%)	Slope (0.35)		
HaC	Hazleton channery loam, 8 to 15 percent slopes	Moderately limited	Hazleton (85%)	Too steep (0.85)	7.2	1.4%
				Potential fast percolation 12-20" (0.26)		
			Germano (5%)	Too steep (0.85)		
				Potential bedrock near 20" (0.20)		
			Westmoreland (5%)	Too steep (0.85)		
HaD	Hazleton channery loam, 15 to 25 percent slopes	Very limited	Hazleton (85%)	Too steep (1.00)	0.4	0.1%
				Potential fast percolation 12-20" (0.26)		
			Westmoreland (5%)	Too steep (1.00)		
			Germano (5%)	Too steep (1.00)		
				Potential bedrock near 20" (0.20)		
			Guernsey (5%)	Too steep (1.00)		
				Potential seasonal high water table (0.94)		
				Slow percolation 12-20" (0.58)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope (0.40)	125.7	25.3%
			Gilpin (40%)	Slope (0.40)		
				Potential bedrock near 20" (0.35)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Moderately limited	Rayne (46%)	Too steep (0.85)	38.5	7.7%
			Gilpin (44%)	Too steep (0.85)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential bedrock near 20" (0.35)		
			Wharton (5%)	Too steep (0.85)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	Very limited	Rayne (55%)	Too steep (1.00)	13.5	2.7%
			Gilpin (35%)	Too steep (1.00)		
				Potential bedrock near 20" (0.35)		
			Weikert (5%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
				Slight voided fragments (0.00)		
			Wharton (5%)	Too steep (1.00)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Potential seasonal high water table (1.00)	83.9	16.9%
				Slow percolation 12-20" (0.58)		
				Slope (0.40)		
			Cavode (8%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Totals for Area of Interest					**497.4**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	270.0	54.3%
Slightly limited	158.4	31.8%
Moderately limited	68.9	13.9%
Totals for Area of Interest	**497.4**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a mound with sand under aggregate. The mound is placed on top of the mineral soil surface. About 1 to 4 feet of sand could be placed on the mineral soil surface in a sand mound system. Only the part of the soils between depths of 0 and 20 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be

viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

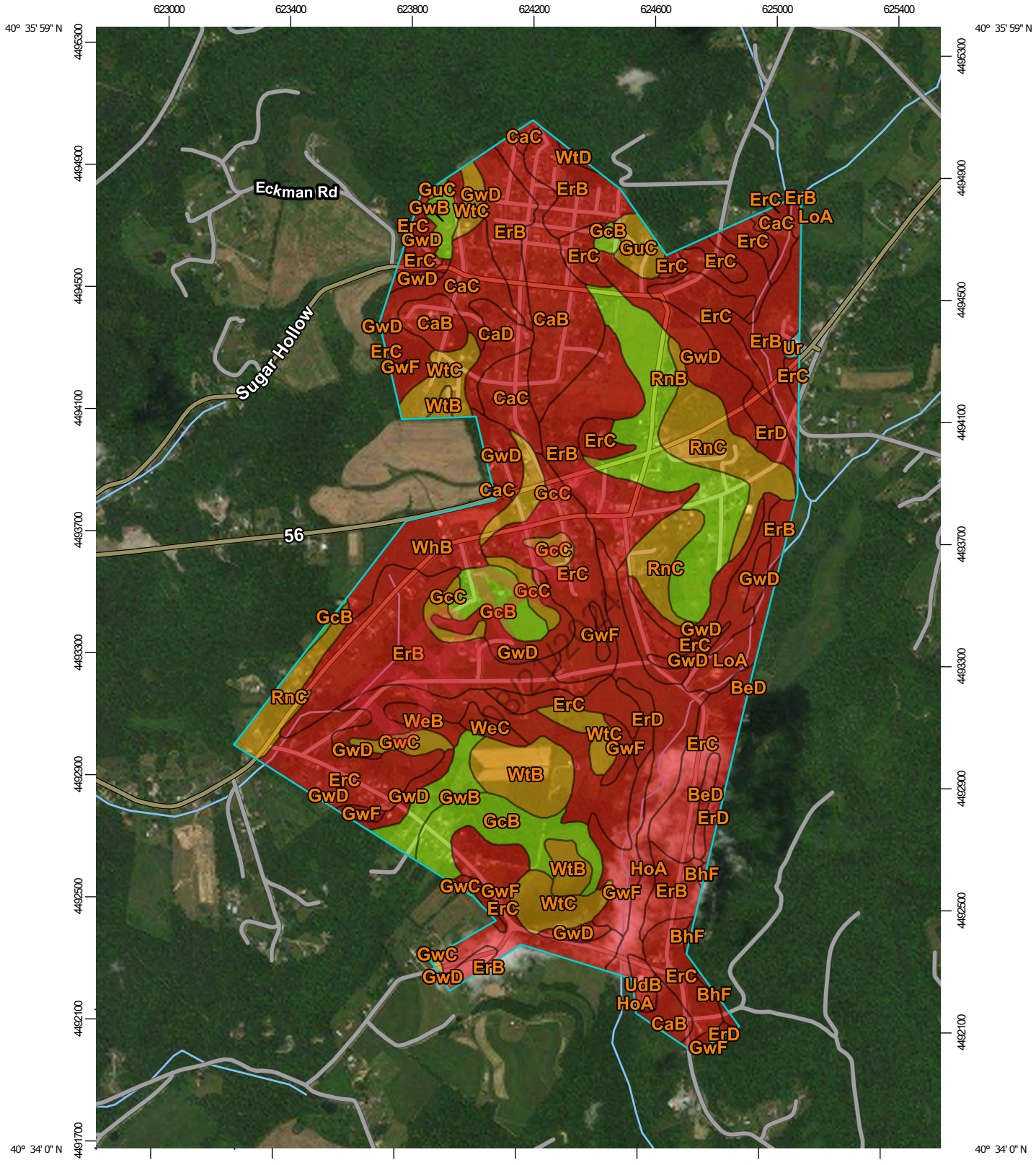
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.2.3

Septic System Sand Mound Bed or Trench (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - WEST)



Map Scale: 1:17,900 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Sand Mound Bed or Trench (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	3.1	0.4%
				Slow percolation 12-20" (1.00)		
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
			Fairpoint, unstable fill (4%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
				Potential karst (0.30)		
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	Very limited	Bethesda, unstable fill (90%)	Too steep (1.00)	1.8	0.2%
				Slow percolation 12-20" (1.00)		
			Bethesda, loam, unstable fill (5%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
			Fairpoint, unstable fill (5%)	Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
				Potential karst (0.30)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Very limited	Cavode (85%)	Potential seasonal high water table (1.00)	41.4	5.1%
				Slow percolation 12-20" (1.00)		
				Slope (0.35)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.35)		
CaC	Cavode silt loam, 8 to 15 percent slopes	Very limited	Cavode (85%)	Potential seasonal high water table (1.00)	30.3	3.8%
				Slow percolation 12-20" (1.00)		
				Too steep (0.85)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
CaD	Cavode silt loam, 15 to 25 percent slopes	Very limited	Cavode (80%)	Potential seasonal high water table (1.00)	7.9	1.0%
				Too steep (1.00)		
				Slow percolation 12-20" (1.00)		
			Wharton (10%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation 12-20" (0.58)		
			Gilpin (10%)	Too steep (1.00)		
				Potential bedrock near 20" (0.27)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	141.8	17.6%
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	161.6	20.1%
				Too steep (0.85)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Too steep (0.85)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Very limited	Ernest (85%)	Potential seasonal high water table (1.00)	11.8	1.5%
				Too steep (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Shelocta (5%)	Too steep (1.00)		
				Low potential seasonal high water table (0.01)		
			Wharton (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation 12-20" (0.58)		
			Gilpin (5%)	Too steep (1.00)		
				Potential bedrock near 20" (0.27)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope (0.40)	35.0	4.3%
				Potential bedrock near 20" (0.27)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Moderately limited	Gilpin (85%)	Too steep (0.85)	16.1	2.0%
				Potential bedrock near 20" (0.27)		
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	Moderately limited	Gilpin (45%)	Too steep (0.85)	6.4	0.8%
				Potential bedrock near 20" (0.26)		
			Wharton (20%)	Too steep (0.85)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Slightly limited	Gilpin (55%)	Slope (0.40)	14.3	1.8%
				Potential bedrock near 20" (0.16)		
			Hazleton (5%)	Slope (0.40)		
				Potential fast percolation 12-20" (0.26)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Moderately limited	Gilpin (55%)	Too steep (0.85)	5.2	0.6%
				Potential bedrock near 20" (0.16)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Hazleton (5%)	Too steep (0.85)		
				Potential fast percolation 12-20" (0.26)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Very limited	Gilpin (45%)	Too steep (1.00)	95.3	11.8%
				Potential bedrock near 20" (0.16)		
			Weikert (40%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Wharton (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
				Slow percolation 12-20" (0.58)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Very limited	Gilpin (50%)	Too steep (1.00)	26.3	3.3%
				Potential bedrock near 20" (0.16)		
			Weikert (35%)	Bedrock, above 20" (1.00)		
				Too steep (1.00)		
			Hazleton (10%)	Too steep (1.00)		
				Potential fast percolation 12-20" (0.26)		
			Ernest (5%)	Potential seasonal high water table (1.00)		
				Too steep (1.00)		
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Very limited	Holly (75%)	Potential seasonal high water table (1.00)	26.1	3.2%
				Flooding (1.00)		
				Slope (0.09)		
			Lobdell (15%)	Flooding (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Potential seasonal high water table (0.98)		
				Slope (0.09)		
			Ernest (10%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (0.79)		
				Slope (0.18)		
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Potential seasonal high water table (1.00)	10.3	1.3%
				Flooding (1.00)		
				Slope (0.18)		
			Orrville (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
			Melvin (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
			Holly (5%)	Potential seasonal high water table (1.00)		
				Flooding (1.00)		
				Slope (0.18)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope (0.40)	44.2	5.5%
			Gilpin (40%)	Slope (0.40)		
				Potential bedrock near 20" (0.35)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Moderately limited	Rayne (46%)	Too steep (0.85)	44.5	5.5%
			Gilpin (44%)	Too steep (0.85)		
				Potential bedrock near 20" (0.35)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Wharton (5%)	Too steep (0.85)		
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
UdB	Udorthents, 0 to 8 percent slopes	Very limited	Udorthents, unstable fill (100%)	Miscellaneous area (1.00)	3.1	0.4%
				Slow percolation 12-20" (0.50)		
				Slope (0.35)		
Ur	Urban land	Not rated	Urban land (90%)		0.8	0.1%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Very limited	Weikert (85%)	Bedrock, above 20" (1.00)	4.1	0.5%
				Slope (0.40)		
WeC	Weikert channery silt loam, 8 to 15 percent slopes	Very limited	Weikert (85%)	Bedrock, above 20" (1.00)	3.3	0.4%
				Too steep (0.85)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Very limited	Wharton (80%)	Potential seasonal high water table (1.00)	18.0	2.2%
				Slow percolation 12-20" (0.58)		
				Slope (0.40)		
			Cavode (8%)	Potential seasonal high water table (1.00)		
				Slow percolation 12-20" (1.00)		
				Slope (0.40)		
			Brinkerton (5%)	Potential seasonal high water table (1.00)		
				Slope (0.40)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Moderately limited	Wharton (51%)	Slow percolation 12-20" (0.79)	22.6	2.8%
				Low potential seasonal high water table (0.67)		
				Slope (0.35)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	Moderately limited	Wharton (51%)	Too steep (0.85)	29.2	3.6%
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
			Gilpin (49%)	Too steep (0.85)		
				Potential bedrock near 20" (0.26)		
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	Very limited	Wharton (55%)	Too steep (1.00)	0.7	0.1%
				Slow percolation 12-20" (0.79)		
				Low potential seasonal high water table (0.67)		
			Gilpin (45%)	Too steep (1.00)		
				Potential bedrock near 20" (0.27)		
Totals for Area of Interest					**805.3**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Very limited	586.9	72.9%
Moderately limited	124.1	15.4%
Slightly limited	93.5	11.6%
Null or Not Rated	0.8	0.1%
Totals for Area of Interest	**805.3**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a mound with sand under aggregate. The mound is placed on top of the mineral soil surface. About 1 to 4 feet of sand could be placed on the mineral soil surface in a sand mound system. Only the part of the soils between depths of 0 and 20 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be

viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

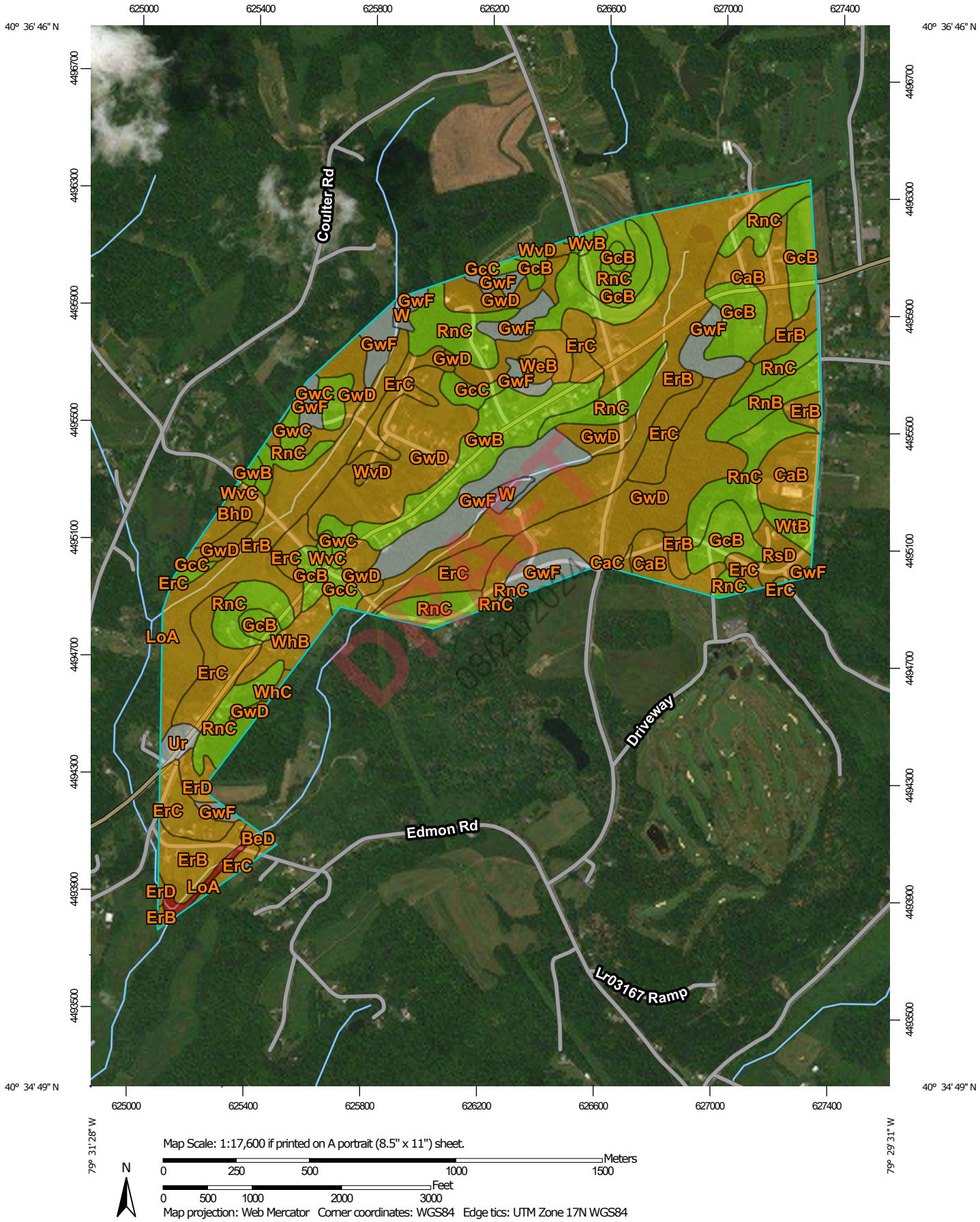
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.3.1

Septic System Spray Irrigation (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - CENTER)



Map Scale: 1:17,600 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 250 500 1000 1500

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Spray Irrigation (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Moderately limited	Bethesda, unstable fill (90%)	Slope 0-25%; see land cover criteria (0.75)	1.4	0.2%
			Bethesda, loam, unstable fill (5%)	Slope 0-25%; see land cover criteria (0.75)		
			Fairpoint, unstable fill (4%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential karst (0.30)		
BhD	Bethesda very channery silt loam, 8 to 25 percent slopes, very stony	Moderately limited	Bethesda, unstable fill (85%)	Slope 0-25%; see land cover criteria (0.75)	5.7	0.9%
			Bethesda, loam, unstable fill (5%)	Slope 0-25%; see land cover criteria (0.75)		
			Fairpoint, unstable fill (4%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential karst (0.30)		
			Sewell, unstable fill (3%)	Slope 0-25%; see land cover criteria (0.75)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Moderately limited	Cavode (85%)	Potential seasonal high water table (0.86)	32.1	5.0%
				Slope 0-12%; see land cover criteria (0.50)		
CaC	Cavode silt loam, 8 to 15 percent slopes	Moderately limited	Cavode (85%)	Potential seasonal high water table (0.86)	0.6	0.1%
				Slope 0-12%; see land cover criteria (0.50)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	125.4	19.4%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slope 0-12%; see land cover criteria (0.50)		
			Brinkerton (5%)	Seasonal high water table (0.94)		
				Slope 0-12%; see land cover criteria (0.50)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	62.5	9.7%
				Slope 0-12%; see land cover criteria (0.50)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	3.8	0.6%
				Slope 0-25%; see land cover criteria (0.75)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.73)		
			Gilpin (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.25)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	47.7	7.4%
				Potential bedrock near 16" (0.25)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	10.5	1.6%
				Potential bedrock near 16" (0.25)		
GwB	Gilpin-Weikert channery silt	Slightly limited	Gilpin (55%)	Slope 0-12%; see land cover criteria (0.50)	28.2	4.4%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	loams, 3 to 8 percent slopes			Potential bedrock near 16" (0.17)		
			Hazleton (5%)	Slope 0-12%; see land cover criteria (0.50)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Slightly limited	Gilpin (55%)	Slope 0-12%; see land cover criteria (0.50)	9.3	1.4%
				Potential bedrock near 16" (0.17)		
			Hazleton (5%)	Slope 0-12%; see land cover criteria (0.50)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Moderately limited	Gilpin (45%)	Slope 0-25%; see land cover criteria (0.75)	116.7	18.1%
				Potential bedrock near 16" (0.17)		
			Weikert (40%)	Bedrock, above 16" (0.95)		
				Slope 0-25%; see land cover criteria (0.75)		
			Hazleton (10%)	Slope 0-25%; see land cover criteria (0.75)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.73)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not rated	Gilpin (50%)		55.4	8.6%
			Weikert (35%)			
			Rock outcrop (0%)			
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Flooding (1.00)	2.7	0.4%
				Low potential seasonal high water table (0.50)		
			Orrville (5%)	Flooding (1.00)		
				Seasonal high water table (0.94)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Holly (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
			Melvin (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope 0-12%; see land cover criteria (0.50)	9.8	1.5%
			Gilpin (40%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Slightly limited	Rayne (46%)	Slope 0-12%; see land cover criteria (0.50)	98.8	15.3%
			Gilpin (44%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
RsD	Rayne-Gilpin channery silt loams, 8 to 25 percent slopes, very stony	Moderately limited	Rayne (50%)	Slope 0-25%; see land cover criteria (0.75)	6.2	1.0%
			Gilpin (35%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.30)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Weikert (5%)	Potential bedrock near 16" (0.78)		
				Slope 0-25%; see land cover criteria (0.75)		
				Slight voided fragments (0.00)		
			Ernest (5%)	Low potential seasonal high water table (0.52)		
				Slope 0-12%; see land cover criteria (0.50)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.19)		
Ur	Urban land	Not rated	Urban land (90%)		3.2	0.5%
W	Water	Not rated	Water (100%)		3.8	0.6%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Moderately limited	Weikert (85%)	Potential bedrock near 16" (0.78)	3.0	0.5%
				Slope 0-12%; see land cover criteria (0.50)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Moderately limited	Wharton (80%)	Low potential seasonal high water table (0.73)	8.6	1.3%
				Slope 0-12%; see land cover criteria (0.50)		
			Cavode (8%)	Potential seasonal high water table (0.86)		
				Slope 0-12%; see land cover criteria (0.50)		
WhC	Wharton silt loam, 8 to 15 percent slopes	Moderately limited	Wharton (80%)	Low potential seasonal high water table (0.73)	0.7	0.1%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slope 0-12%; see land cover criteria (0.50)		
			Ernest (5%)	Low potential seasonal high water table (0.52)		
				Slope 0-12%; see land cover criteria (0.50)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Slightly limited	Wharton (51%)	Slope 0-12%; see land cover criteria (0.50)	4.1	0.6%
				Low potential seasonal high water table (0.19)		
			Gilpin (49%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.24)		
WvB	Wharton-Vandergrift complex, 3 to 8 percent slopes	Slightly limited	Wharton (50%)	Slope 0-12%; see land cover criteria (0.50)	0.6	0.1%
				Low potential seasonal high water table (0.19)		
			Vandergrift (35%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.47)		
				Potential karst (0.30)		
WvC	Wharton-Vandergrift complex, 8 to 15 percent slopes	Slightly limited	Wharton (45%)	Slope 0-12%; see land cover criteria (0.50)	2.2	0.3%
				Low potential seasonal high water table (0.19)		
			Vandergrift (40%)	Slope 0-12%; see land cover criteria (0.50)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Low potential seasonal high water table (0.47)		
				Potential karst (0.30)		
WvD	Wharton-Vandergrift complex, 15 to 25 percent slopes	Moderately limited	Wharton (45%)	Slope 0-25%; see land cover criteria (0.75)	2.0	0.3%
				Low potential seasonal high water table (0.19)		
			Vandergrift (40%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.47)		
				Potential karst (0.30)		
			Cavode (10%)	Potential seasonal high water table (0.86)		
				Slope 0-12%; see land cover criteria (0.50)		
Totals for Area of Interest					**645.1**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderately limited	368.9	57.2%
Slightly limited	211.2	32.7%
Very limited	2.7	0.4%
Null or Not Rated	62.4	9.7%
Totals for Area of Interest	**645.1**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a sand filter tank and chlorination system and then through spray heads that disperse the effluent onto the surface of the soil. Only the part of the soils between depths of 0 and 16 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

These ratings do not preclude the need for onsite investigation to determine the limitations affecting system placement.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

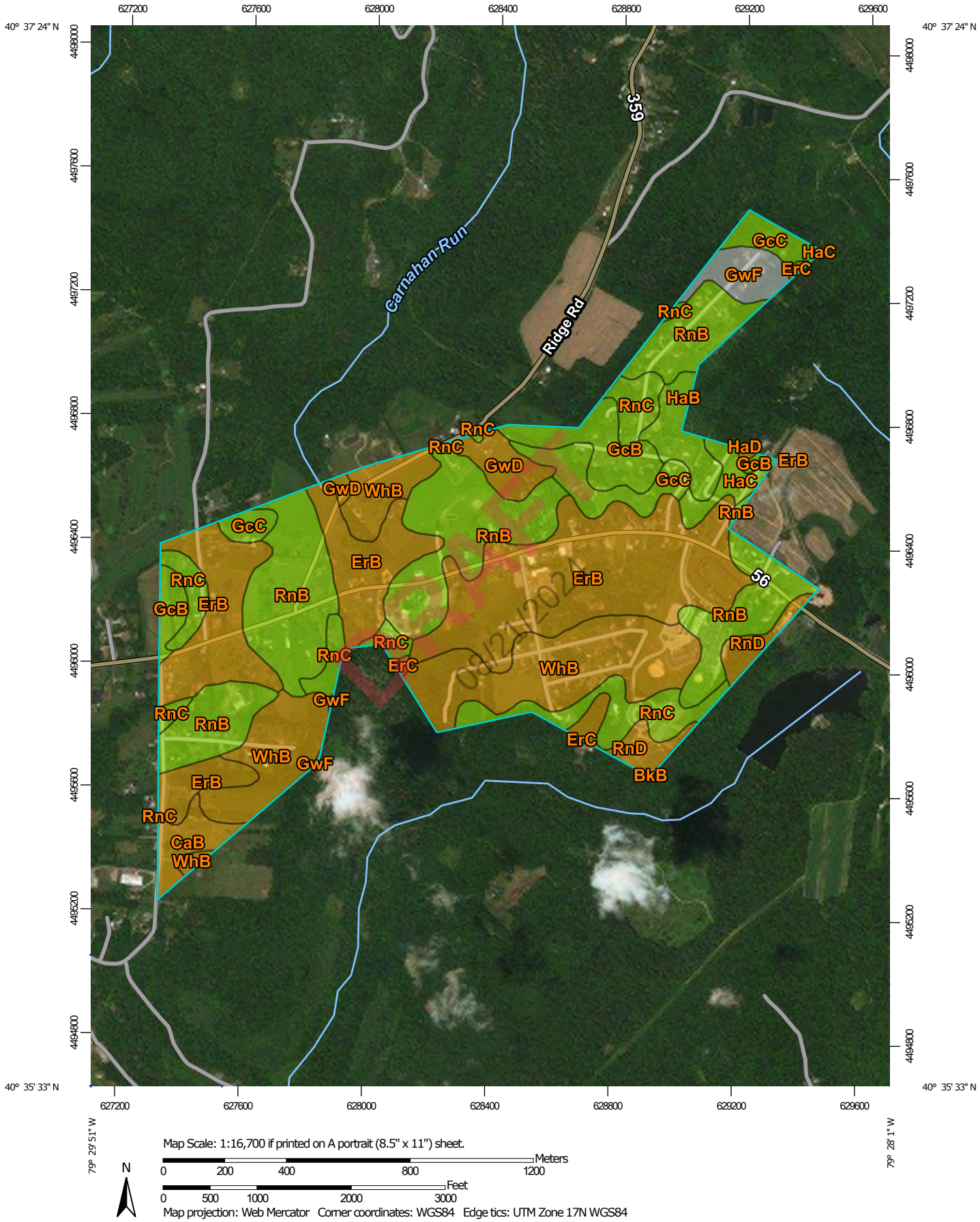
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.3.2

Septic System Spray Irrigation (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - EAST)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Spray Irrigation (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Very limited	Brinkerton (80%)	Seasonal high water table (1.00)	0.0	0.0%
				Slope 0-12%; see land cover criteria (0.50)		
			Lobdell (5%)	Flooding (1.00)		
				Low potential seasonal high water table (0.47)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Moderately limited	Cavode (85%)	Potential seasonal high water table (0.86)	8.9	1.8%
				Slope 0-12%; see land cover criteria (0.50)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	141.8	28.5%
				Slope 0-12%; see land cover criteria (0.50)		
			Brinkerton (5%)	Seasonal high water table (0.94)		
				Slope 0-12%; see land cover criteria (0.50)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	1.1	0.2%
				Slope 0-12%; see land cover criteria (0.50)		
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	21.3	4.3%
				Potential bedrock near 16" (0.25)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	23.3	4.7%
				Potential bedrock near 16" (0.25)		
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Moderately limited	Gilpin (45%)	Slope 0-25%; see land cover criteria (0.75)	10.2	2.1%
				Potential bedrock near 16" (0.17)		
			Weikert (40%)	Bedrock, above 16" (0.95)		
				Slope 0-25%; see land cover criteria (0.75)		
			Hazleton (10%)	Slope 0-25%; see land cover criteria (0.75)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.73)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not rated	Gilpin (50%)		10.1	2.0%
			Weikert (35%)			
			Rock outcrop (0%)			
HaB	Hazleton channery loam, 3 to 8 percent slopes	Slightly limited	Hazleton (85%)	Slope 0-12%; see land cover criteria (0.50)	11.4	2.3%
			Cookport (5%)	Low potential seasonal high water table (0.50)		
				Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.00)		
			Germano (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.20)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Westmoreland (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.01)		
HaC	Hazleton channery loam, 8 to 15 percent slopes	Slightly limited	Hazleton (85%)	Slope 0-12%; see land cover criteria (0.50)	7.2	1.4%
			Cookport (5%)	Low potential seasonal high water table (0.50)		
				Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.00)		
			Germano (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.20)		
			Westmoreland (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.01)		
HaD	Hazleton channery loam, 15 to 25 percent slopes	Moderately limited	Hazleton (85%)	Slope 0-25%; see land cover criteria (0.75)	0.4	0.1%
			Westmoreland (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.01)		
			Germano (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.20)		
			Guernsey (5%)	Slope 0-25%; see land cover criteria (0.75)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Low potential seasonal high water table (0.42)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope 0-12%; see land cover criteria (0.50)	125.7	25.3%
			Gilpin (40%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Slightly limited	Rayne (46%)	Slope 0-12%; see land cover criteria (0.50)	38.5	7.7%
			Gilpin (44%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
RnD	Rayne-Gilpin channery silt loams, 15 to 25 percent slopes	Moderately limited	Rayne (55%)	Slope 0-25%; see land cover criteria (0.75)	13.5	2.7%
			Gilpin (35%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.30)		
			Weikert (5%)	Potential bedrock near 16" (0.78)		
				Slope 0-25%; see land cover criteria (0.75)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Slight voided fragments (0.00)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.19)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Moderately limited	Wharton (80%)	Low potential seasonal high water table (0.73)	83.9	16.9%
				Slope 0-12%; see land cover criteria (0.50)		
			Cavode (8%)	Potential seasonal high water table (0.86)		
				Slope 0-12%; see land cover criteria (0.50)		
Totals for Area of Interest					**497.4**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderately limited	260.0	52.3%
Slightly limited	227.3	45.7%
Very limited	0.0	0.0%
Null or Not Rated	10.1	2.0%
Totals for Area of Interest	**497.4**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a sand filter tank and chlorination system and then through spray heads that disperse the effluent onto the surface of the soil. Only the part of the soils between depths of 0 and 16 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

These ratings do not preclude the need for onsite investigation to determine the limitations affecting system placement.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

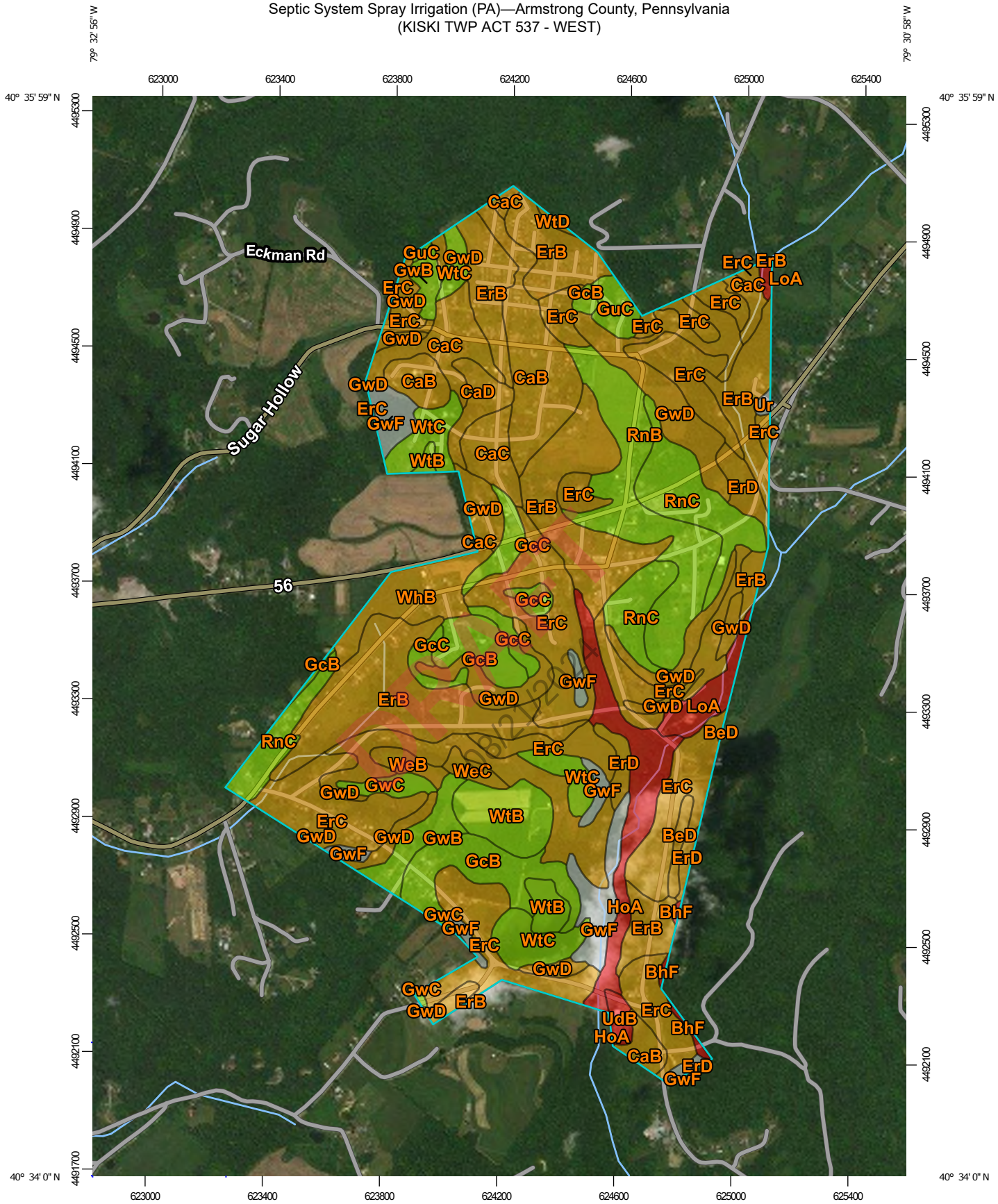
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

APPENDIX F3.3.3

Septic System Spray Irrigation (PA)—Armstrong County, Pennsylvania
(KISKI TWP ACT 537 - WEST)



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Lines
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Soil Rating Points
- Very limited
- Moderately limited
- Slightly limited
- Not limited
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Armstrong County, Pennsylvania
Survey Area Data: Version 14, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 7, 2012—Mar 23, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Septic System Spray Irrigation (PA)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Moderately limited	Bethesda, unstable fill (90%)	Slope 0-25%; see land cover criteria (0.75)	3.1	0.4%
			Bethesda, loam, unstable fill (5%)	Slope 0-25%; see land cover criteria (0.75)		
			Fairpoint, unstable fill (4%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential karst (0.30)		
BhF	Bethesda very channery silt loam, 25 to 75 percent slopes, very stony	Very limited	Bethesda, unstable fill (90%)	Slope > 25% too steep (1.00)	1.8	0.2%
			Bethesda, loam, unstable fill (5%)	Slope > 25% too steep (1.00)		
			Fairpoint, unstable fill (5%)	Slope > 25% too steep (1.00)		
				Potential karst (0.30)		
CaB	Cavode silt loam, 3 to 8 percent slopes	Moderately limited	Cavode (85%)	Potential seasonal high water table (0.86)	41.4	5.1%
				Slope 0-12%; see land cover criteria (0.50)		
CaC	Cavode silt loam, 8 to 15 percent slopes	Moderately limited	Cavode (85%)	Potential seasonal high water table (0.86)	30.3	3.8%
				Slope 0-12%; see land cover criteria (0.50)		
CaD	Cavode silt loam, 15 to 25 percent slopes	Moderately limited	Cavode (80%)	Potential seasonal high water table (0.86)	7.9	1.0%
				Slope 0-25%; see land cover criteria (0.75)		
			Wharton (10%)	Slope 0-25%; see land cover criteria (0.75)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Low potential seasonal high water table (0.73)		
			Gilpin (10%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.25)		
ErB	Ernest silt loam, 3 to 8 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	141.8	17.6%
				Slope 0-12%; see land cover criteria (0.50)		
			Brinkerton (5%)	Seasonal high water table (0.94)		
				Slope 0-12%; see land cover criteria (0.50)		
ErC	Ernest silt loam, 8 to 15 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	161.6	20.1%
				Slope 0-12%; see land cover criteria (0.50)		
ErD	Ernest silt loam, 15 to 25 percent slopes	Moderately limited	Ernest (85%)	Potential seasonal high water table (0.80)	11.8	1.5%
				Slope 0-25%; see land cover criteria (0.75)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.73)		
			Gilpin (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.25)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
GcB	Gilpin channery silt loam, 3 to 8 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	35.0	4.3%
				Potential bedrock near 16" (0.25)		
GcC	Gilpin channery silt loam, 8 to 15 percent slopes	Slightly limited	Gilpin (85%)	Slope 0-12%; see land cover criteria (0.50)	16.1	2.0%
				Potential bedrock near 16" (0.25)		
GuC	Gilpin-Upshur silt loams, 8 to 15 percent slopes	Slightly limited	Gilpin (45%)	Slope 0-12%; see land cover criteria (0.50)	6.4	0.8%
				Potential bedrock near 16" (0.24)		
			Upshur (35%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential karst (0.30)		
			Wharton (20%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
GwB	Gilpin-Weikert channery silt loams, 3 to 8 percent slopes	Slightly limited	Gilpin (55%)	Slope 0-12%; see land cover criteria (0.50)	14.3	1.8%
				Potential bedrock near 16" (0.17)		
			Hazleton (5%)	Slope 0-12%; see land cover criteria (0.50)		
GwC	Gilpin-Weikert channery silt loams, 8 to 15 percent slopes	Slightly limited	Gilpin (55%)	Slope 0-12%; see land cover criteria (0.50)	5.2	0.6%
				Potential bedrock near 16" (0.17)		
			Hazleton (5%)	Slope 0-12%; see land cover criteria (0.50)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
GwD	Gilpin-Weikert channery silt loams, 15 to 25 percent slopes	Moderately limited	Gilpin (45%)	Slope 0-25%; see land cover criteria (0.75)	95.3	11.8%
				Potential bedrock near 16" (0.17)		
			Weikert (40%)	Bedrock, above 16" (0.95)		
				Slope 0-25%; see land cover criteria (0.75)		
			Hazleton (10%)	Slope 0-25%; see land cover criteria (0.75)		
			Wharton (5%)	Slope 0-25%; see land cover criteria (0.75)		
				Low potential seasonal high water table (0.73)		
GwF	Gilpin-Weikert channery silt loams, 25 to 70 percent slopes	Not rated	Gilpin (50%)		26.3	3.3%
			Weikert (35%)			
			Rock outcrop (0%)			
HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Very limited	Holly (75%)	Seasonal high water table (1.00)	26.1	3.2%
				Flooding (1.00)		
			Lobdell (15%)	Flooding (1.00)		
				Low potential seasonal high water table (0.47)		
LoA	Lobdell silt loam, 0 to 3 percent slopes, occasionally flooded	Very limited	Lobdell (85%)	Flooding (1.00)	10.3	1.3%
				Low potential seasonal high water table (0.50)		
			Orrville (5%)	Flooding (1.00)		
				Seasonal high water table (0.94)		
			Holly (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Melvin (5%)	Seasonal high water table (1.00)		
				Flooding (1.00)		
RnB	Rayne-Gilpin channery silt loams, 3 to 8 percent slopes	Slightly limited	Rayne (45%)	Slope 0-12%; see land cover criteria (0.50)	44.2	5.5%
			Gilpin (40%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
RnC	Rayne-Gilpin channery silt loams, 8 to 15 percent slopes	Slightly limited	Rayne (46%)	Slope 0-12%; see land cover criteria (0.50)	44.5	5.5%
			Gilpin (44%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.30)		
			Wharton (5%)	Slope 0-12%; see land cover criteria (0.50)		
				Low potential seasonal high water table (0.19)		
UdB	Udorthents, 0 to 8 percent slopes	Very limited	Udorthents, unstable fill (100%)	Miscellaneous area (1.00)	3.1	0.4%
				Slope 0-12%; see land cover criteria (0.50)		
Ur	Urban land	Not rated	Urban land (90%)		0.8	0.1%
WeB	Weikert channery silt loam, 3 to 8 percent slopes	Moderately limited	Weikert (85%)	Potential bedrock near 16" (0.78)	4.1	0.5%
				Slope 0-12%; see land cover criteria (0.50)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
WeC	Weikert channery silt loam, 8 to 15 percent slopes	Moderately limited	Weikert (85%)	Potential bedrock near 16" (0.78)	3.3	0.4%
				Slope 0-12%; see land cover criteria (0.50)		
WhB	Wharton silt loam, 3 to 8 percent slopes	Moderately limited	Wharton (80%)	Low potential seasonal high water table (0.73)	18.0	2.2%
				Slope 0-12%; see land cover criteria (0.50)		
			Cavode (8%)	Potential seasonal high water table (0.86)		
				Slope 0-12%; see land cover criteria (0.50)		
WtB	Wharton-Gilpin silt loams, 3 to 8 percent slopes	Slightly limited	Wharton (51%)	Slope 0-12%; see land cover criteria (0.50)	22.6	2.8%
				Low potential seasonal high water table (0.19)		
			Gilpin (49%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.24)		
WtC	Wharton-Gilpin silt loams, 8 to 15 percent slopes	Slightly limited	Wharton (51%)	Slope 0-12%; see land cover criteria (0.50)	29.2	3.6%
				Low potential seasonal high water table (0.19)		
			Gilpin (49%)	Slope 0-12%; see land cover criteria (0.50)		
				Potential bedrock near 16" (0.24)		
WtD	Wharton-Gilpin silt loams, 15 to 25 percent slopes	Moderately limited	Wharton (55%)	Slope 0-25%; see land cover criteria (0.75)	0.7	0.1%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
				Low potential seasonal high water table (0.19)		
			Gilpin (45%)	Slope 0-25%; see land cover criteria (0.75)		
				Potential bedrock near 16" (0.25)		
Totals for Area of Interest					**805.3**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderately limited	519.4	64.5%
Slightly limited	217.5	27.0%
Very limited	41.2	5.1%
Null or Not Rated	27.2	3.4%
Totals for Area of Interest	**805.3**	**100.0%**

Description

This is a system of pressurized lines that distribute effluent from a septic tank into a sand filter tank and chlorination system and then through spray heads that disperse the effluent onto the surface of the soil. Only the part of the soils between depths of 0 and 16 inches is considered when the soils are rated.

The soil properties and site features considered are those that affect absorption of the effluent and construction and maintenance of the system and those that may affect public health. These include depth to a water table, depth to bedrock, content of rock fragments, flooding, slope, and saturated hydraulic conductivity (Ksat). Flooding is a serious problem because it can result in improper treatment of the effluent and contamination of ground water or surface water. If Ksat is too fast or too slow, if the content of rock fragments is too high, or if the water table is too close to the surface, the effluent can contaminate the ground water. If this system is improperly installed on the steeper slopes, the effluent could flow along the surface of the soils. Additional grading may be needed in areas downslope from the system.

The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Slightly limited" indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and low maintenance can be expected. "Moderately limited" indicates that the soil has features that are somewhat favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

These ratings do not preclude the need for onsite investigation to determine the limitations affecting system placement.

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen, which is displayed on the report. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the Selected Soil Interpretations report with this interpretation included from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.

Rating Options

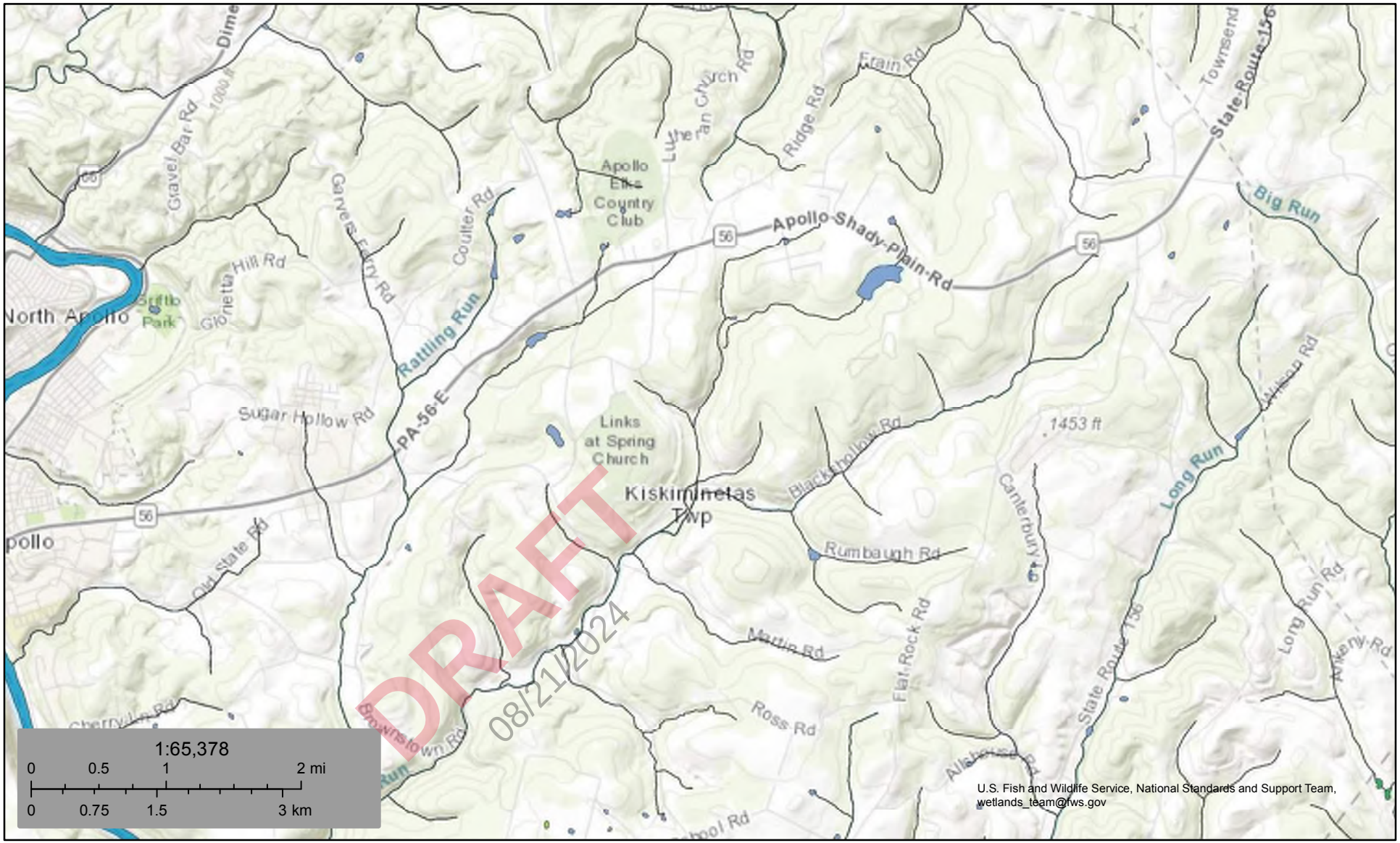
Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

U.S. Fish and Wildlife Service
National Wetlands Inventory

KISKIMINETAS TWP APPENDIX F4



December 10, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Pine Valley Mobile Home Park
Wastewater Treatment Plant
(To be Abandoned)

Apollo-Ridge School District
Wastewater Treatment Plant
(To be Abandoned)

Manholes (Total: 343)
Sanitary Line Total: (121,164 LF)
Force Main (5,034 LF)
Low Pressure Pipe (2,785 LF)

DRAFT
08/21/2024
Township of Kiskiminetas
421209

APPENDIX F5

Legend

- PumpStations
- Existing Treatment Plant
- Sanitary Manhole
- Sanitary Sewer Pipe
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATIVE 3 W/ FEMA FIRM OVERLAY

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U.PARC, 429 William Pitt Way
Pittsburgh, PA 15238-1336
P (412) 826-5454 · F (412) 826-5458
senate@senateengineering.com
www.senateengineering.com

Pine Valley Mobile Home Park
Wastewater Treatment Plant
(To be Abandoned)

Apollo-Ridge School District
Wastewater Treatment Plant
(To be Abandoned)

- Manholes (Total: 343)
- Sanitary Line Total: (121,164 LF)
- Force Main (5,034 LF)
- Low Pressure Pipe (2,785 LF)
- Agricultural Preserved Area
- Agricultural Security Area

AS PROVIDED BY ARMSTRONG COUNTY FARMLAND PRESERVATION PROGRAM COORDINATOR - NOVEMBER 21, 2019

APPENDIX F6

Legend

- PumpStations
- Existing Treatment Plant
- Sanitary Manhole
- Sanitary Sewer Pipe
- Stream
- Paved Road
- Unpaved Road
- Building Footprint
- Tax Parcel
- Municipal Boundary

KISKIMINETAS TOWNSHIP ACT 537 PLAN STUDY

ALTERNATIVE 3 W/ AG PROTECTED AND SECURITY AREAS

MAP DATE: 6/22/20

SANITARY LAYERS CURRENT TO: 10/25/17

SENATE # 12,147

0 1,000 2,000

Scale in Feet

SENATE ENGINEERING
Geographic Information Systems
U-PARC, 420 William Pitt Way
Pittsburgh, PA 15238-1330
P (412) 826-5151 • F (412) 826-5158
senate@senateengineering.com
www.senateengineering.com

APPENDIX F7

EXISTING M.A.W.C. WATERMAINS

APPENDIX G

G1 - CAPACITY LETTER FROM KVWPCA
G2 - CURRENT YEAR CHAPTER 94 REPORT

Kiski Valley Water Pollution Control Authority
1361 SCHOOL ROAD • LEECHBURG PA 15656
PHONE: (724) 568-3655 FAX: (724) 568-3554
WEBSITE: KVWPCA.COM EMAIL: GENERAL@KVWPCA.COM

August 6, 2024

Senate Engineering Company
U-PARC
420 William Pitt Way
Pittsburgh, PA 15238-1330
Attn: Richard Lenhart

Subject: Available Capacity
Kiskiminetas Township, Orchard Hill Area
Act 537 Plan - Certification of Capacity

Dear Mr. Malak:

The Kiski Valley Water Pollution Control Authority (KVWPCA) received your written request for confirmation of available capacity for approximately eight hundred seventy five (875) EDUs for the Orchard Hill Drainage Area, Kiskiminetas Township, Pennsylvania. Based on this information the KVWPCA conveyance and treatment plant facilities have sufficient capacity to receive sanitary wastewater from this location without causing overloads currently or through a projected five (5) year period.

Sincerely,
Kiski Valley Water Pollution Control Authority

Dennis J Duryea, P.E.
Authority Manager

KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY

Armstrong and Westmoreland Counties, Pennsylvania

MUNICIPAL WASTELOAD MANAGEMENT REPORT

OPERATING YEAR 2023

NPDES Permit No. PA0027626

March 14, 2024

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF POINT AND NON-POINT SOURCE MANAGEMENT

CHAPTER 94 MUNICIPAL WASTELOAD MANAGEMENT ANNUAL REPORT

For Calendar Year: 2023

☒ Permittee is owner and/or operator of a POTW or other sewage treatment facility
☐ Permittee is owner and/or operator of a collection system tributary to a POTW not owned/operated by permittee

GENERAL INFORMATION			
Permittee Name:	**kiski Valley Water Pollution Control Authority**	Permit No.:	**PA0027626**
Mailing Address:	**1361 School Road**	Effective Date:	**February 1, 2012**
City, State, Zip:	**Leechburg, PA 15656**	Expiration Date:	**January 31, 2017**
Contact Person:	**Dennis J Duryea, P.E.**	Renewal Due Date:	**August 4, 2016**
Title:	**Authority/Plant Manager**	Municipality:	**Allegheny Township**
Phone:	**(724) 568-3655**	County:	**Westmoreland**
Email:	**dduryea@kvwpca.com**	Consultant Name:	**N/A**

CHAPTER 94 REPORT COMPONENTS

1. Attach to this report a line graph depicting the monthly average flows (expressed in MGD) for each month for the past 5 years and projecting the flows for the next 5 years. The graph must also include a line depicting the hydraulic design capacity per the WQM permit. (25 Pa. Code § 94.12(a)(1))

   Check the appropriate boxes:
   ☐ Line graph for flows attached (**Attachment**)
   ☒ DEP Chapter 94 Spreadsheet used (**Attachment A**)
   ☐ Section 1 is not applicable (report is for a collection system).

2. Attach to this report a line graph depicting the monthly average organic loads (express as lbs BOD5/day) for each month for the past 5 years and projecting the organic loads for the next 5 years. The graph must also include a line depicting the organic design capacity of the treatment plant per the WQM permit. (25 Pa. Code § 94.12(a)(2))

   Check the appropriate boxes:
   ☐ Line graph for organic loads attached (**Attachment**)
   ☒ DEP Chapter 94 Spreadsheet used (**Attachment B**)
   ☐ Section 2 is not applicable (report is for a collection system).

3. If the DEP Chapter 94 Spreadsheet was not used to determine projections, discuss the basis for the hydraulic and organic projections. In all cases, include a description of the time needed to expand the plant to meet the load projections, if necessary, and data used to support the projections should be included in an appendix to this report. (25 Pa. Code § 94.12(a)(3))

DEP Chapter 94 Spreadsheet Utilized

4. Attach a map showing all sewer extensions constructed within the past calendar year, sewer extensions approved or exempted in the past year in accordance with Act 537 and Chapter 71, but not yet constructed, and all known proposed projects which require public sewers but are in the preliminary planning stages. The map must be accompanied by a list summarizing each extension or project and the population to be served by the extension or project. If a sewer extension approval or proposed project includes schedules describing how the project will be completed over time, the listing should include that information and the effect this build-out-rate will have on populations served. (25 Pa. Code § 94.12(a)(4))

Check the appropriate boxes:

- ☐ Map showing sewer extensions constructed, approved/exempted but not yet constructed, and proposed projects attached (**Attachment**)
- ☒ List summarizing each extension or project attached (**Attachment**)
- ☐ Schedules describing how each project will be completed over time and effects attached (**Attachment**)

Comments:

Allegheny Township has a sewer extension proposed along LaBelle Vue Road as required by PADEP to correct faulty septic systems. This extension would include fifteen (15) connections. Site plan drawings are not yet available.

5. Discuss the permittee's program for sewer system monitoring, maintenance, repair and rehabilitation, including routine and special activities, personnel and equipment used, sampling frequency, quality assurance, data analyses, infiltration/inflow monitoring, and, where applicable, maintenance and control of combined sewer regulators during the past year. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(5))

All thirteen (13) municipalities within the Authority conduct their own sewer maintenance, repair, flow monitoring and I/I reduction (Wasteload Management Reports from all municipalities are attached). KVWPCA is developing a plan (to be financially supported) to inspect (CCTV) main sanitary conveyance lines on a scheduled routine basis. See attached description of maintenance peformed by KVWPCA and Authority Member Municipalities . (See Attachment C)

6. Discuss the condition of the sewer system including portions of the system where conveyance capacity is being exceeded or will be exceeded in the next 5 years and portions where rehabilitation or cleaning is needed or is underway to maintain the integrity of the system and prevent or eliminate bypassing, CSOs, SSOs, excessive infiltration and other system problems. Attach a separate sheet if necessary. (25 Pa. Code § 94.12(a)(6))

Check the appropriate boxes:

☒ System experienced capacity-related bypassing, SSOs or surcharging during the report year. On a separate sheet, list the date, location, and reason for each bypass, SSO or surcharge event.

☐ System did not experience capacity-related bypassing, SSOs or surcharging during the report year.

Comments:

A CSO Summary of events is included in this report for overflows in the Vandergrift portion of the system.

7. Attach a discussion on the condition of sewage pumping (pump) stations. Include a comparison of the maximum pumping rate with present maximum flows and the projected 2-year maximum flows for each station. (25 Pa. Code § 94.12(a)(7))

Check the appropriate boxes:

☐ The collection system does not contain pump stations

☐ The collection system does contain pump stations (Number –)

☒ Discussion of condition of each pump station attached (**Attachment D**)

8. If the sewage collection system receives industrial wastes (i.e., non-sanitary wastes), attach a report with the information listed below. (25 Pa. Code § 94.12(a)(8))

a. A copy of any ordinance or regulation governing industrial waste discharges to the sewer system or a copy of amendments adopted since the initial submission of the ordinance or regulation under Chapter 94, if it has not previously been submitted.

b. A discussion of the permittee's or municipality's program for surveillance and monitoring of industrial waste discharges into the sewer system during the past year.

c. A discussion of specific problems in the sewer system or at the plant, known or suspected to be caused by industrial waste discharges and a summary of the steps being taken to alleviate or eliminate the problems. The discussion shall include a list of industries known to be discharging wastes which create problems in the plant or in the sewer system and action taken to eliminate the problem or prevent its recurrence. The report may describe pollution prevention techniques in the summary of steps taken to alleviate current problems caused by industrial waste dischargers and in actions taken to eliminate or prevent potential or recurring problems caused by industrial waste dischargers.

Check the appropriate boxes:

☐ Industrial waste report as described in 8 a., b. and c. attached (**Attachment**)

☒ Industrial pretreatment report as required in an NPDES permit attached (**Attachment E**)

9. Existing or Projected Overload.

Check the appropriate boxes:

- ☐ This report demonstrates an existing hydraulic overload condition.
- ☐ This report demonstrates a projected hydraulic overload condition.
- ☐ This report demonstrates an existing organic overload condition.
- ☐ This report demonstrates a projected organic overload condition.

If one or more boxes above have been checked, attach a Corrective Action Plan (CAP) to reduce or eliminate present or projected overloaded conditions under §§ 94.21 and/or 94.22 (relating to existing overload and projected overload). (25 Pa. Code § 94.12(a)(9))

☐ Corrective Action Plan attached (**Attachment**)

10. Where required by the NPDES permit, attach a Sewage Sludge Management inventory that demonstrates a mass balance of solids coming in and leaving the facility over the previous calendar year.

☒ Sewage Sludge Management Inventory attached (**Attachment F**)

11. For facilities with CSOs and where required by the NPDES permit, attach an Annual CSO Report (including satellite combined sewer systems).

☒ Annual CSO Report attached (**Attachment G**)

12. For POTWs, attach a calibration report documenting that flow measuring, indicating and recording equipment has been calibrated annually. (25 Pa. Code § 94.13(b))

☒ Flow calibration report attached (**Attachment H**)

RESPONSIBLE OFFICIAL CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Anthony J. Bione, Authority Board Chairman	Anthony J Bione
Name of Responsible Official	Signature
(724) 568-3655	**March 14, 2024**
Telephone No.	Date

PREPARER CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared by me or otherwise under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowledge of violations. See 18 Pa. C.S. § 4904 (relating to unsworn falsification).

Dennis J Duryea, P.E.	
Name of Preparer	Signature
724-568-3655	**March 14, 2024**
Telephone No.	Date

ATTACHMENT A

2023

MONTHLY AVERAGE FLOWS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2023

Facility Name: Kiski Valley Water Pollution Control Authority

Permit No.: PA0027626

Persons/EDU: 2.4

Existing Hydraulic Design Capacity: 7 MGD
Upgrade Planned in Next 5 Years? NO Year:
Future Hydraulic Design Capacity: MGD

Existing Organic Design Capacity: 11,700 lbs BOD5/day
Upgrade Planned in Next 5 Years? NO Year:
Future Organic Design Capacity: lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2019	2020	2021	2022	2023
January	4.5681	4.5726	3.4245	4.1444	5.4896
February	6.3011	5.9403	3.8535	7.3308	3.2173
March	3.2659	5.5324	4.5369	4.0107	3.8249
April	3.6521	4.3752	2.8612	4.5508	2.6429
May	5.5832	3.2086	3.7082	5.5403	2.4224
June	4.5092	2.325	3.3416	2.6915	2.431
July	3.2687	2.3128	3.1305	2.6352	3.1449
August	2.3965	2.5615	3.2313	2.962	3.5199
September	2.935	2.0445	3.6756	2.7632	2.3105
October	3.5905	2.3874	2.8286	2.2815	2.4076
November	3.229	2.6066	2.51843	3.1059	2.6336
December	4.175	3.7951	4.6328	3.5358	2.7993
Annual Avg	3.9562	3.4718	3.478594	3.796	3.0703
Max 3-Mo Avg	4.7117	5.3484	3.9383	5.3693	4.1773
Max : Avg Ratio	1.19	1.54	1.13	1.41	1.36
Existing EDUs	13,921.0	13,955.0	13,955.0	14,590.0	14,602.0
Flow/EDU (GPD)	284.2	248.8	249.3	260.2	210.3
Flow/Capita (GPD)	118.4	103.7	103.9	108.4	87.6
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2019	2020	2021	2022	2023
January	3,680	4,058	4,340	4,463	6,476
February	4,519	4,102	5,380	6,356	4,164
March	3,454	4,923	5,323	3,703	4,130
April	3,675	3,258	3,852	4,310	3,684
May	4,696	3,700	3,799	5,328	4,206
June	3,281	3,481	4,261	3,708	4,610
July	3,779	4,595	3,892	4,114	3,959
August	4,370	4,053	4,525	4,117	3,896
September	5,170	2,552	4,997	3,301	4,015
October	4,642	3,474	4,594	3,279	3,693
November	3,357	3,600	3,221	4,115	3,570
December	4,669	4,229	4,881	4,626	3,741
Annual Avg	4,109	3,835	4,422	4,285	4,177
Max Mo Avg	5,170	4,923	5,380	6,356	6,476
Max : Avg Ratio	1.26	1.28	1.22	1.48	1.55
Existing EDUs	13,921	13,955	13,955	14,590	14,602
Load/EDU	0.295	0.275	0.317	0.294	0.286
Load/Capita	0.123	0.115	0.132	0.122	0.119
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2024	2025	2026	2027	2028
New EDUs	12.0	10.0	25.0	20.0	80.0
New EDU Flow	0.003	0.0025	0.0063	0.005	0.02
Proj. Annual Avg	3.55758	3.56008	3.56638	3.57138	3.59138
Proj. Max 3-Mo Avg	4.72351	4.72683	4.7352	4.74183	4.76839
Proj. Overload?	NO	NO	NO	NO	NO

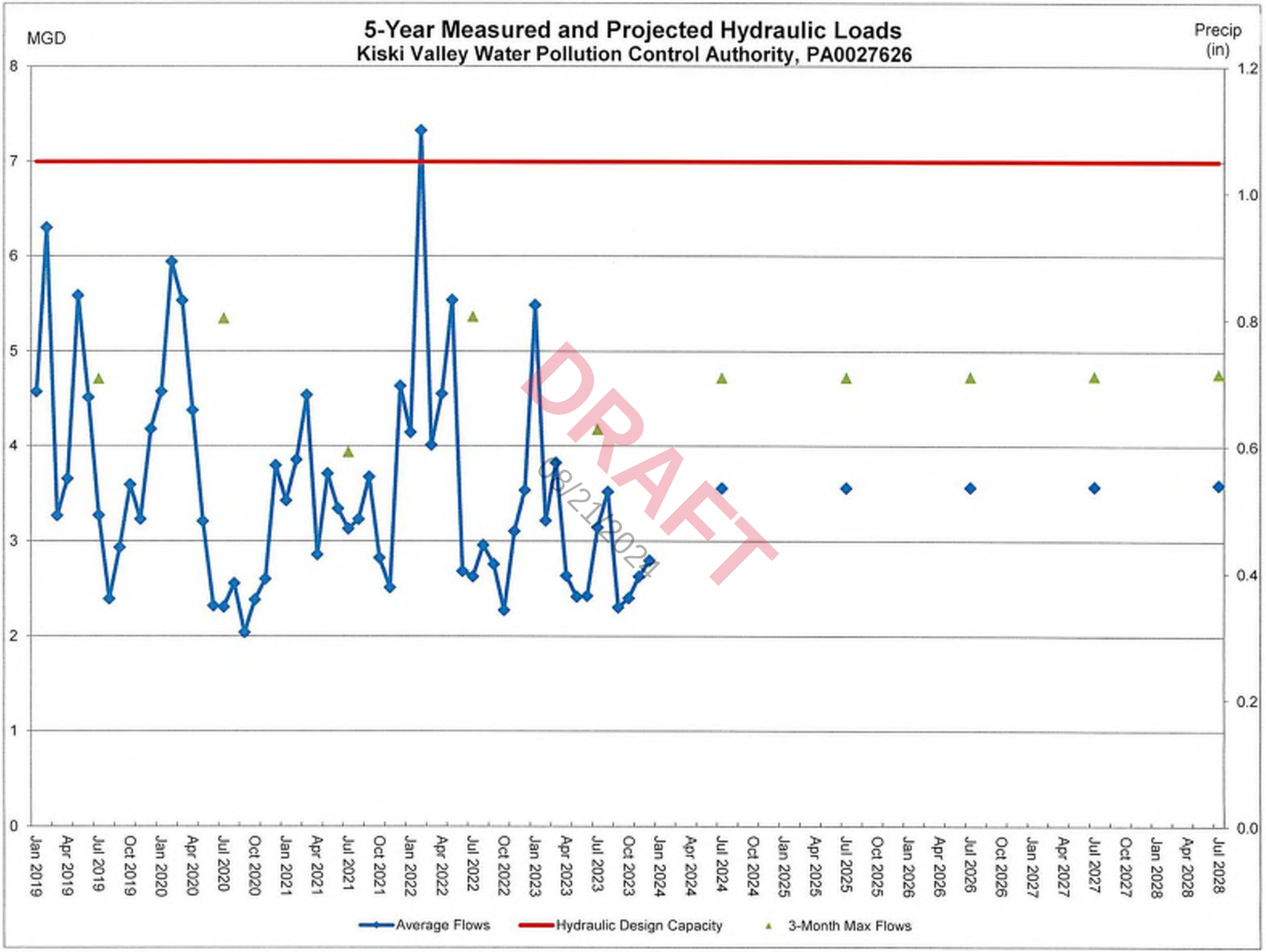
Projected BOD5 Loads for Next Five Years (lbs/day)

	2024	2025	2026	2027	2028
New EDUs	12	10	25	20	80
New EDU Load	3.520	2.933	7.333	5.866	23.466
Proj. Annual Avg	4,169	4,172	4,179	4,185	4,209
Proj. Max Avg	5,664	5,668	5,677	5,685	5,717
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2019	2020	2021	2022	2023
January	3.21	3.12	1.78	2.16	4.5
February	4.53	3.97	3.25	7.06	1.57
March	1.95	3.52	3.58	2.7	3.48
April	3.92	4.7	2.89	3.42	1.14
May	8.54	2.88	3.48	6.45	1.6
June	5.78	2.31	5.92	3.47	3.43
July	3.82	3.09	5.11	5.82	6.93
August	2.68	4.6	7.34	6.26	5.56
September	4.48	1.08	4.28	4.3	1.65
October	6.9	3.5	3.37	1.46	2.71
November	2.01	3.57	1.39	3.0	2.35
December	3.52	3.01	5.19	1.95	2.65


5-Year Measured and Projected Hydraulic Loads
Kiski Valley Water Pollution Control Authority, PA0027626
MGD
Precip (in)
8
7
6
5
4
3
2
1
0
1.2
1.0
0.8
0.6
0.4
0.2
0.0
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Oct 2025
Jan 2026
Apr 2026
Jul 2026
Oct 2026
Jan 2027
Apr 2027
Jul 2027
Oct 2027
Jan 2028
Apr 2028
Jul 2028
Average Flows
Hydraulic Design Capacity
3-Month Max Flows
DRAFT
08/21/2024

ATTACHMENT B

2023

MONTHLY ORGANIC LOADS

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

PADEP Chapter 94 Spreadsh
Sewage Treatment Plar

Reporting Year: 2023

Facility Name: Kiski Valley Water Pollution Control Authority

Permit No.: PA0027626

Persons/EDU: 2.4

Existing Hydraulic Design Capacity:	7	MGD		Existing Organic Design Capacity:	11,700	lbs BOD5/day
Upgrade Planned in Next 5 Years?	NO	Year:		Upgrade Planned in Next 5 Years?	NO	Year:
Future Hydraulic Design Capacity:		MGD		Future Organic Design Capacity:		lbs BOD5/day

Monthly Average Flows for Past Five Years (MGD)

Month	2019	2020	2021	2022	2023
January	4.5681	4.5726	3.4245	4.1444	5.4896
February	6.3011	5.9403	3.8535	7.3308	3.2173
March	3.2659	5.5324	4.5369	4.0107	3.8249
April	3.6521	4.3752	2.8612	4.5508	2.6429
May	5.5832	3.2086	3.7082	5.5403	2.4224
June	4.5092	2.325	3.3416	2.6915	2.431
July	3.2687	2.3128	3.1305	2.6352	3.1449
August	2.3955	2.5615	3.2313	2.962	3.5199
September	2.935	2.0445	3.6756	2.7632	2.3105
October	3.5905	2.3874	2.8286	2.2815	2.4076
November	3.229	2.6066	2.51843	3.1059	2.6336
December	4.175	3.7951	4.6328	3.5358	2.7993
Annual Avg	3.9562	3.4718	3.478594	3.796	3.0703
Max 3-Mo Avg	4.7117	5.3484	3.9383	5.3693	4.1773
Max : Avg Ratio	1.19	1.54	1.13	1.41	1.36
Existing EDUs	13,921.0	13,955.0	13,955.0	14,590.0	14,602.0
Flow/EDU (GPD)	284.2	248.8	249.3	260.2	210.3
Flow/Capita (GPD)	118.4	103.7	103.9	108.4	87.6
Exist. Overload?	NO	NO	NO	NO	NO

Monthly Average BOD5 Loads for Past Five Years (lbs/day)

Month	2019	2020	2021	2022	2023
January	3,680	4,058	4,340	4,463	6,476
February	4,519	4,102	5,380	6,356	4,164
March	3,454	4,923	5,323	3,703	4,130
April	3,675	3,258	3,852	4,310	3,664
May	4,696	3,700	3,799	5,328	4,206
June	3,281	3,481	4,261	3,708	4,610
July	3,779	4,595	3,892	4,114	3,959
August	4,370	4,053	4,525	4,117	3,896
September	5,170	2,552	4,997	3,301	4,015
October	4,642	3,474	4,594	3,279	3,693
November	3,367	3,600	3,221	4,115	3,570
December	4,669	4,229	4,881	4,626	3,741
Annual Avg	4,109	3,635	4,422	4,285	4,177
Max Mo Avg	5,170	4,923	5,380	6,356	6,476
Max : Avg Ratio	1.26	1.28	1.22	1.48	1.55
Existing EDUs	13,921	13,955	13,955	14,590	14,602
Load/EDU	0.295	0.275	0.317	0.294	0.286
Load/Capita	0.123	0.115	0.132	0.122	0.119
Exist. Overload?	NO	NO	NO	NO	NO

Projected Flows for Next Five Years (MGD)

	2024	2025	2026	2027	2028
New EDUs	12.0	10.0	25.0	20.0	80.0
New EDU Flow	0.003	0.0025	0.0063	0.005	0.02
Proj. Annual Avg	3.55758	3.56008	3.56638	3.57138	3.59138
Proj. Max 3-Mo Avg	4.72351	4.72683	4.7352	4.74183	4.76839
Proj. Overload?	NO	NO	NO	NO	NO

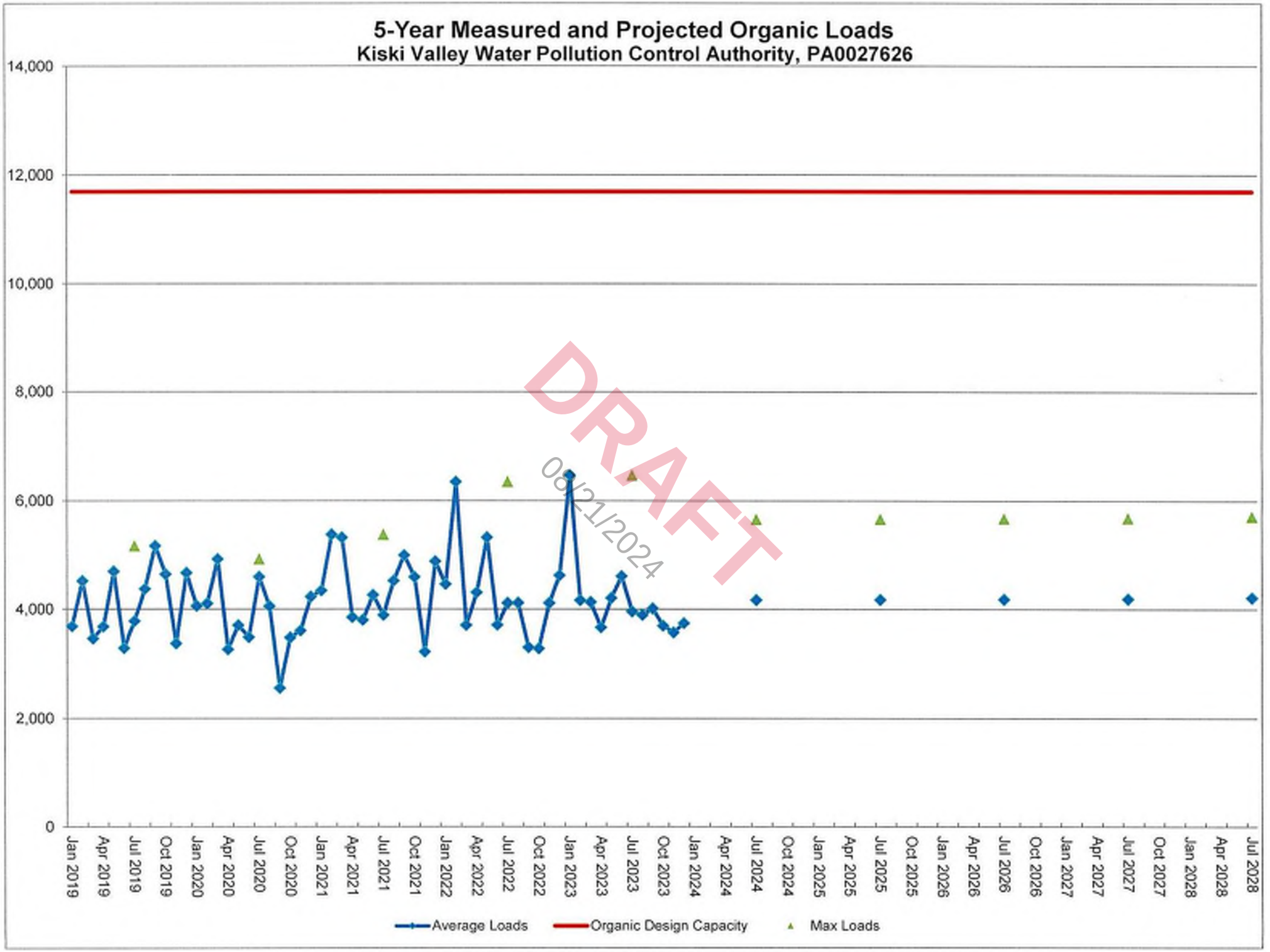
Projected BOD5 Loads for Next Five Years (lbs/day)

	2024	2025	2026	2027	2028
New EDUs	12	10	25	20	80
New EDU Load	3.520	2.933	7.333	5.866	23.466
Proj. Annual Avg	4,169	4,172	4,179	4,185	4,209
Proj. Max Avg	5,664	5,668	5,677	5,685	5,717
Proj. Overload?	NO	NO	NO	NO	NO

Show Precipitation Data on Hydraulic Graph?

Total Monthly Precipitation for Past Five Years (Inches)

Month	2019	2020	2021	2022	2023
January	3.21	3.12	1.78	2.16	4.5
February	4.53	3.97	3.25	7.06	1.57
March	1.95	3.52	3.58	2.7	3.48
April	3.92	4.7	2.89	3.42	1.14
May	8.54	2.88	3.48	6.45	1.6
June	5.78	2.31	5.92	3.47	3.43
July	3.82	3.09	5.11	5.82	6.93
August	2.68	4.6	7.34	6.26	5.56
September	4.48	1.08	4.28	4.3	1.65
October	6.9	3.5	3.37	1.46	2.71
November	2.01	3.57	1.39	3.0	2.35
December	3.52	3.01	5.19	1.95	2.65


5-Year Measured and Projected Organic Loads
Kiski Valley Water Pollution Control Authority, PA0027626
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
DRAFT
08/21/2024
Jan 2019
Apr 2019
Jul 2019
Oct 2019
Jan 2020
Apr 2020
Jul 2020
Oct 2020
Jan 2021
Apr 2021
Jul 2021
Oct 2021
Jan 2022
Apr 2022
Jul 2022
Oct 2022
Jan 2023
Apr 2023
Jul 2023
Oct 2023
Jan 2024
Apr 2024
Jul 2024
Oct 2024
Jan 2025
Apr 2025
Jul 2025
Oct 2025
Jan 2026
Apr 2026
Jul 2026
Oct 2026
Jan 2027
Apr 2027
Jul 2027
Oct 2027
Jan 2028
Apr 2028
Jul 2028
Average Loads
Organic Design Capacity
Max Loads

ATTACHMENT C

NORMAL SEWER INSPECTION AND MAINTENANCE

KVWPCA AND AUTHORITY MEMBER MUNICIPALITIES

NORMAL SEWER INSPECTION AND MAINTENANCE

KVWPCA employs a four-man maintenance crew consisting of an Operation and Maintenance Superintendent, Lead Mechanic, Mechanic and Laborer. The crew coordinates and performs all normal system maintenance activities.

All interceptor sewers within the system are cleaned on an "as-needed" basis with high pressure jet cleaning equipment (the Authority purchased a Jet/Vac truck in 2015 to facilitate sewer cleaning activity). Maintenance of pump stations is conducted on a regularly scheduled basis (twice weekly) to ensure continuous reliable operation. Pump station operation is also monitored continuously through a telemetry system. When a malfunction alarm is triggered at one of the pump stations, the telemetry system notifies the Plant Manager, Operation and Maintenance Superintendent and Lead Operator who in turn initiate procedures to correct the issue.

KVWPCA continues to inspect the 25 miles of gravity conveyance lines on a regular schedule. Repairs are made as required.

A major renovation project of all eight (8) pump stations ($8.2M) was completed in 2022. Pumps were replaced with new more efficient pumps in six (6) pump stations.

ALLEGHENY TOWNSHIP

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as may be necessary.

1. Name of Municipality: **Municipal Authority of Allegheny Township**

Address **136 Community Building Road**

Leechburg, PA 15656

Phone: **724-845-9355**

Name and phone number of person completing response: **Connor Tuttle**

Title or Company **KLH Engineers, Inc.**

Address: **5173 Campbells Run Rd, Pittsburgh, PA 15205**

Phone: **412-494-0510 x119**

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers[1]	Population[2]	Estimated Flow (gpd)[3]	Estimated Raw Sewage BOD (lb/day)[4]
2023 Actual	**2946**	**7365**	**333,830**	**1252**
2024 Estimated	**2946**	**7365**	**333,830**	**1252**
2025 Estimated	**2946**	**7365**	**333,830**	**1252**
2026 Estimated	**2946**	**7365**	**333,830**	**1252**
2027 Estimated	**2946**	**7365**	**333,830**	**1252**
2028 Estimated	**2946**	**7365**	**333,830**	**1252**

[1] **The values presented for "Residential Customers" is the total EDUs in the MAAT system.**

[2] **Population served is based on 2.5 people per household in Allegheny Township multiplied by the number of EDUs.**

[3] **Estimated Flow is based on annual average daily water consumption.**

[4] **Estimated Raw Sewage BOD is based on service population multiplied by 0.17 lb/day/capita per the PADEP Domestic Wastewater Facilities Manual.**

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

_____ YES **X** NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

N/A

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: **Good**

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. **None**

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

The Municipal Authority of Allegheny Township contracts with CWM Environmental for system maintenance. The Authority uses Knepshield Excavating to investigate areas of suspected high flow and blockage repair.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

CWM Environmental conducts inspection and routine maintenance at all pump stations twice per week.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

Based on the methodology described in items C and D above, the Authority continues to locate and address sources of I/I.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
Chartiers (No. 1)	**Good**	**560**	**396**	**408**
Markle (No. 2)	**Fair**	**575**	**408**	**421**
Melwood (No. 3)	**Fair**	**575**	**440**	**452**
Westberry	**Good**	**67**	**30**	**31**
Grossheimer	**Good**	**182**	**154**	**157**
Bagdad	**Good**	**225**	**42**	**43**

***Based on CWM monthly reports.**

The Authority is currently in the design phase for upgrades to the Chartiers and Markle Pump Stations. The Melwood Pump Station will be eliminated.

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
LaBelle Vue Road Sewer Extension	**15**	**Proposed**

APOLLO BOROUGH

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Apollo Borough
   Address: PO Box 306
   Apollo, PA 15613
   Phone: 724-478-4201
   Name and phone number of person completing response: Dominic Garofola (Engineering contact)
   Title or Company: Gibson-Thomas Engineering
   Address: 1004 Ligonier Street, Latrobe, PA 15650
   Phone: 724-539-8562

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	904	1481 (census)	148,100	
2024 Estimated	904	1481	148,100	
2025 Estimated	904	1481	148,100	
2026 Estimated	904	1481	148,100	
2027 Estimated	904	1481	148,100	
2028 Estimated	904	1481	148,100	

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
   _____ YES _____X_____ NO

   A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

N/A

   B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A

   C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

   A. Sewer system conditions: **The mainline pipes are all newer plastic pipes that were installed in 2009 & 2010. The private lines are a combination of plastic and terracotta**

   B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. **Pipe sections could be exceeded along N. 11th Street**

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

N/A

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

N/A

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

N/A

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
N/A				

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
No extensions completed in 2023		

EAST VANDERGRIFT BOROUGH

2023

MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: East Vandergrift Borough
Address: 254 Kennedy Ave, PO Box 460
East Vandergrift, PA 15629
Phone: 724-567-7213
Name and phone number of person completing response: Kristen L. Sarno
Title or Company: Secretary/Treasurer
Address: (Same as above)
Phone:

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	369	602		
2024 Estimated	369	602		
2025 Estimated	400	650		
2026 Estimated	400	650		
2027 Estimated	400	650		
2028 Estimated	400	650		

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
_____ YES X NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

We have no industries / industrial waste within Borough limits

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: N/A

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. N/A

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

We require dye testing of houses with every sale

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

N/A

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A - separated

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

Monitoring for infiltration

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
East Vandergrift Pump Station				

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
N/A		

GILPIN TOWNSHIP

2023

CHAPTER 94 MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as may be necessary.

1. Name of Municipality:	Gilpin Township Municipal Authority
Address	874 State Route 66 Leechburg, PA 15656 Phone: 724-845-9574
Name and phone number of person completing response:	William F. Braun, P.E.
Title or Company	Senate Engineering Company
Address:	420 William Pitt Way, Pittsburgh, PA 15238 Phone: 412-826-5454

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	748	1728	172,788	294
2024 Estimated	748	1728	172,788	294
2025 Estimated	749	1730	173,019	294
2026 Estimated	750	1733	173,250	295
2027 Estimated	751	1735	173,481	295
2028Estimated	753	1739	173,943	296

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

_____ YES _____X_____ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

N/A - Monitoring industrial waste is not required since the public sewer system services primarily residential properties.

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A - There are no reported problems caused by discharge of industrial waste.

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions:

Good to very good.

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years.

The Authority does not anticipate any sections of sewer to exceed capacity in the next five years.

C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

The Authority currently does not conduct flow monitoring. Any reports of excessive flow based on flow monitoring conducted by the KVWPCA will be investigated and if issues are found they will be addressed by the Authority.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

The Sober Road pump station is routinely inspected.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

There are no combined sewers in the sanitary sewer system.

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

There was no work completed during 2023 to reduce infiltration/inflow or extraordinary sewer rehabilitation work performed.

5. SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
Sober Road	Good	105	105	105

6. SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
N/A		

HYDE PARK BOROUGH

2023
MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Borough of Hyde Park
Address: Po Box 222
Hyde Park PA 15641
Phone: 724-845-4931
Name and phone number of person completing response: Tiffanie Gagen, Manager
Title or Company: Same
Address:
Phone:

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	224	500		
2024 Estimated	↓	↓		
2025 Estimated				
2026 Estimated				
2027 Estimated				
2028 Estimated				

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
_____ YES ___X___ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:
Public Works Monitors dee manholes + outflows near any industrial buildings (2)

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:
N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: Good

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. N/A

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

Peradic dye testing in sewers, camera testing, jetting and cleaning lines

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

1 full time employee - Dumptruck & Backhoe
routine inspections - dye testing - jetting & cleaning

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

all seperated

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

jetting & cleaning - routine camera testing

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)

KISKIMINETAS TOWNSHIP

LSSE
Civil Engineers and Surveyors
Est. 1985

LSSE: (412) 264-4400
Rabell: (814) 756-4384
Senate: (412) 826-5454
www.lsse.com

LSSE ● **Rabell** ● **Senate**

February 8, 2024
S. O. No. 655-005

VIA EMAIL

Dennis Duryea, Manager
KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY
1361 School Road
Leechburg, PA 15656

Subject: ANNUAL WASTE LOAD MANAGEMENT REPORT – 2023
KISKI TOWNSHIP SEWAGE AUTHORITY

Dear Mr. Duryea:

LSSE is providing the following:

COPIES	DATE	NO.	DESCRIPTION
1			2023 Municipal Waste Load Management Sewer System and Pump Station Information
Remarks:			As requested and for your use.

Should you have any questions, please contact me directly (724-333-5584).

Sincerely,

Richard Lenhart, Jr., P.E.

Attachments: 2023 Chapter 94 Report

cc/att: Kiski Township Sewage Authority (EMAIL)

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Kiskiminetas Township Sewer Authority
Address: 1222C Old State Road, Apollo, PA 15613
Phone: 724-596-4019

Name and phone number of person completing response: Richard L. Lenhart, P.E.
Title or Company: LSSE - Senate Engineers and Surveyors
Address: 420 William Pitt Way, Pittsburgh, PA 15238
Phone: 412-826-5454

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 ACTUAL	351	828	82,836	141
2024 Estimated	351	828	82,836	141
2025 Estimated	349	824	82,364	140
2026 Estimated	347	819	81,892	139
2027 Estimated	347	819	81,892	139
2028 Estimated	347	819	81,892	139

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
_____ YES _____X_____ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:
N/A

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:
N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.
N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions:

The public sanitary sewer system has been in service for approximately 40-60 years and is generally in good operating condition. Rose Street Sanitary Sewer Project Phase I was completed in September 2023. The project replaced delapidated VCP sewer and laterals, as well as two existing manholes. The Project installed the following: 614.5 LF of 8" PVC sewer main, two (2) precast concrete manholes (frames and covers), 202.5 LF of 6" PVC service laterals, and ten (10) service cleanout/ inspection ports. Phase II will replace the remainder of the sewer once funding has been secured. The KTSA will continue to assess the existing sanitary sewer system and make repairs as required.

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years.

The Authority does not anticipate any sections of sewer to exceed capacity in the next five years.

C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

The Authority currently does not conduct flow monitoring since the sanitary sewer system has a small service area that serves a minimum number of units. The Authority inspects all new lateral

connections to prevent illegal storm connections, plans in the near future to implement routine inspections, smoke and dye testing to verify that no illegal connections have taken place since initial construction. Any reports of excessive flow based on flow monitoring conducted by the KVWPCA will be investigated and if issues are found they will be addressed by the Authority.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

The Authority was established in 2021, and as such is reliant on the Township to assist with maintenance of the sanitary sewer system until such time the Authority is able to establish it's own work crews. The Township employs a three man road crew (full time). The Authority has no equipment of its own to perform maintenance, and as such will have to rely on the Township for assistance in performing inspections and routine maintenance. The maintenance is on an as-needed basis.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

There are no combined sewers in the Kiskiminetas Township sanitary sewer system.

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

Work on Rose Street was completed in September 2023 to correct infiltration and inadequate collection/conveyance system.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
N/A				

6. SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
N/A		

Note: the Township is currently updating their Act 537 Plan. It is anticipated that within 7-8 years the sewer service area will be expanded.

7. SEWER TAPS: Provide the following information for each TAP.

Address	Number of Taps	Status
Near 1017 Sugarhollow Road	1	Tap installed along road, not connect as of yet
901 Old State Road	1	Tap Permit issued to Rocco Family not installed

LEECHBURG BOROUGH

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Leechburg Borough

Address: 260 Market Street

Leechburg, PA 15656

Phone: 724-842-8511

Name and phone number of person completing response: Nathan Guntrum E.I.T., C.B.S.I.

Title or Company: Senate Engineering - A Division of LSSE

Address: 250 South Jefferson Street, Kittanning, PA 16201

Phone: 412-906-2389

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	1258	2031	203,100	345
2024 Estimated	1258	2050	203,100	347
2025 Estimated	1258	2050	203,100	347
2026 Estimated	1258	2050	203,100	347
2027 Estimated	1258	2050	203,100	347
2028 Estimated	1258	2050	203,100	347

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

_____ YES __x__ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

N/A

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: **Commensurate with age.**

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. **We don't anticipate exceeding capacity in the next 5 years.**

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

Smoke and dye testing was completed within the limits of the Phase I sewer seperation project.

KVWPCA has completed flow monitoring within the borough limits, which showed a decrease in flows.

The borough adopted a dye testing ordinance: Ordinance No. 6 of 2013.

Additional smoke testing of the entire system has been completed as well as dye testing performed for a portion of the borough.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

Employees: Tom Foster and Paul Rich (both full time)

Inspections and Spot Repairs are completed on an as needed basis.

Equipment - N/A

Spot Repairs are contracted out.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

Notices are sent to property owners to remove downspouts from the sanitary sewer system. The borough conducts downspout dye testing to confirm compliance.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)

NORTH APOLLO BOROUGH

2023

MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: North Apollo Borough
Address: P.O. Box 501
North Apollo, PA 15673

Name and phone number of person completing response: Edward L. Stitt
Title or Company: Borough Secretary
Address: Same as above
Phone: Same as above ~~724 478 4802~~

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	606	1250	125000	
2024 Estimated	607	1252	125200	
2025 Estimated	608	1255	125500	
2026 Estimated	610	1265	126500	
2027 Estimated	612	1270	127000	
2028 Estimated	614	1275	127500	

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
_____ YES ___X___ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:
The Boroughs population is mostly residential. Few commercial facilities could contribute industrial waste. Most applicable is oil which is generally containerized and removed

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:
No specific industrial waste problems are known at this time

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: Sewage is treated at the KVVPCA treatment plant which handles sewage from 13 communities. Sewers are now separated and only a very few residents lack access to our sewers

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. None are known at this time. Storm inflows into sanitary sewers are eliminated as they are found

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

All roof gutters were dyetested and corrected as needed as part of our sewer separation project of 2006. Work is ongoing to find and correct any storm inflows. The Borough requires both indoor and outdoor dyetesting of sewer lines whenever a property is sold

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

The Borough has a part time public works crew which handles periodic sewer cleaning and maintenance. A sewer recovery fee is charged with part of the funds used for sewer maintenance which is handled as needed. No equipment is used exclusively for sewer maintenance

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

The Borough is unaware of any remaining combined sewers Public Works employees also handle catch basin cleaning and repairs All incorrectly connected drains have been corrected to the best of the Boroughs knowledge

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

No extraordinary sewer rehab has been performed in the last year. Work to find and correct improperly connected to the best of the Boroughs knowledge

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)

OKLAHOMA BOROUGH

RECEIVED
FEB 16 2024
By

2023
MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Oklahoma Borough
Address 170 Thorn Street
Apollo PA 15613
Phone: 7245475727

Name and phone number of person completing response:
Title or Company Alecia Sherbondy, Secretary
Address: Same
Phone: Same

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	380	809	80900	137
2024 Estimated	380	809	80900	137
2025 Estimated	380	809	80900	137
2026 Estimated	380	809	80900	137
2027 Estimated	380	809	80900	137
2028 Estimated	380	809	80900	137

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
_____ YES ___X___ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

KVWPCA provides monitoring.

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

n/a

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: good

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. none known

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

dye testing as needed and visual inspecting during wet weather.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

Visual inspections during wet conditions as needed. all necessary maintenance work is contracted as needed.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/a

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

all real estate transfers must be dye tested. I/I study in progress managed by Scnale Engineering.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
N/a				

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
N/a		

PARKS TOWNSHIP

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as may be necessary.

1. Name of Municipality: Parks Township Municipal Authority
   Address: 1106 Highland Avenue, Vandergrift, PA 15690, Phone: 412-567-7301

   Name and phone number of person completing response: Randy L. Krause
   Title or Company Address: Bankson Engineers, Inc., 267 Blue Run Road, Suite 200, Cheswick, PA 15024, Phone: 412-767-5100

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb./day)
2023 Actual	611	1,442	72,100	246
2024 Estimated	613	1,447	72,350	246
2025 Estimated	615	1,451	72,550	247
2026 Estimated	617	1,456	72,800	248
2027 Estimated	619	1,461	73,050	249
2028 Estimated	621	1,466	73,300	250

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

X YES _____ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

Leading Technologies' industrial waste is monitored by Kiski Valley Authority.

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: Good

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years.

None

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

No flow monitoring was performed during 2023. PTMA conducted cleaning and televising inspection, including smoke and dye testing of the entire collection system tributary to the Airport Road Sewage Pump Station, through contracted services from Pipe-Eye Sewer Services in April 2014. Any connection found to fail the dye test or suspected of having a sump pump connection to the collection system was visually inspected and verified not to be connected.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

Maintenance is provided on an as-needed basis, by Authority personnel and contractors. Basic hand tools are available. Sewer cleaning equipment is leased. Other equipment is furnished by contractors.

During 2023, sewers on Elk Avenue and Armstrong Avenue were cleaned. Two manholes on Alternate Route 66 in North Vandergrift were repaired.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

None

5. SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
PTMA Airport Road Pump Station	Good	30	15	15

6. SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
None		

VANDERGRIFT BOROUGH

Michael Bove, PE, PLS, SEO, STPO
President Emeritus & Founder

Emil Bove, PLS, SEO, EIT
President

Lucien Bove, PE, CBSI
Secretary / Treasurer

BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8201 ROUTE 819
GREENSBURG, PA 15601
724-925-9269
FAX: 724-925-1216

Providing Civil Engineering and Consulting Services to Municipalities and Developers Since 1969

February 24, 2024

Kiski Valley Water Pollution Control Authority
1361 School Road
Leechburg, Pennsylvania 15656
Attention: Dennis J. Duryea, Manager

Reference: Annual Wasteload Management Report for Operating Year 2023
Vandergrift Borough

Dear Mr. Duryea:

On behalf of the Borough of Vandergrift, Bove Engineering Company is pleased to submit the Borough's Annual Wasteload Management Report for the Operating Year 2023.

If you have any questions or require any additional information, please feel free to contact me. Thank you.

Respectfully submitted,
BOVE ENGINEERING COMPANY

Lucien Bove, P.E.
Borough Consulting Engineer

LMB:lb
Attachments
copy: Vandergrift Borough Council, Attn. Stephen J. DelleDonne, Secretary

2012-503: VANDERGRIFT - 2023 Wasteload Management Report

2023

MUNICIPAL WASTE LOAD MANAGEMENT
SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: **Vandergrift Borough**
   Address **109 Grant Avenue**
   Vandergrift, PA 15690
   Phone:
   Name and phone number of person completing response: **Lucien Bove, PE**
   Title or Company **Bove Engineering Co., Inc.**
   Address: **8201 Route 819 Greensburg, PA 15601**
   Phone: **724-925-9269**

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	**2257**	**5016**	**501,600**	**853**
2024 Estimated	**2250**	**5100**	**510,000**	**867**
2025 Estimated	**2250**	**5150**	**515,000**	**876**
2026 Estimated	**2250**	**5175**	**517,500**	**880**
2027 Estimated	**2250**	**5200**	**520,000**	**884**
2028 Estimated	**2250**	**5250**	**525,000**	**893**

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?
   _____ YES ___X___ NO

   A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

   N/A

   Note: ATI is connected directly to the KVWPCA interceptor along the Kiskiminetas River.

   B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

   N/A

   C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

   The Borough's Industrial Waste regulations refer to the Authority's rules and regulations governing industrial sewer use (see attached Ordinance).

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

   A. Sewer system conditions: **Phase 1 & 2 Watersheds = Good**
   Phase 3 & 4 Watersheds = Fair (combined)
   (See Exhibit "A")

   B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. **The Phase 3 & 4 Watershed areas (where the sewers are combined). There are 3 Existing Diversion Chambers in this area which are connected to 2 CSO's constructed and operated by KVWPCA.**

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

Monitoring is done visually. Dye testing is performed when problems are reported or suspected. In the Phase 1 & 2 Separate Sewer Areas, the Borough continues to follow-up on enforcement of lateral line I&I and suspected illicit or roof drain connections. The Borough has worked with the KVWPCA on the monitoring and gauging of flows at points of connection.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

Manholes and sewerlines are checked periodically. The Borough crew does minor repairs and cleaning work. The Borough has dump trucks and a backhoe with operator(s) capable of doing excavation work to access the sewer lines, and a video push-camera to inspect short sections of lines. For extensive cleaning requiring a sewer jet/vac truck, the Borough utilizes KVA crew/equipment when available and subcontractors to clean/inspect longer sections.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

Sewerage Watershed Areas 1 and 2 have separate sewers. The Sewers in Watershed Areas 3 and 4 are Combined. Street Clean is currently done manually with brooms. Minor Catch Basin cleaning is also done manually. This work is done as the weather permits in the Spring and late Summer and after major Rainfall events. For extensive catch basin cleaning, the Borough utilizes KVA crew/equipment when available. In March of 2022, the Borough appliedfor a DCED Statewide Local Share Grant to purchase a Mini-Tractor with Broom and other attachments to be used to clean the streets, sidewalks and walkways.

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

Enforcement of suspected lateral line I&I and roof drain separation in Sewerage Watershed Areas 1 and 2.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
LaBelle Vue Road Pump Station	**Good**	*	*	*
	*** The pump station is maintained by the MAAT which services 5 EDU's in Vandergrift Borough as well as the Vandergrift Pool (for 3 months out of the year) and 8 dwellings in Allegheny Township.**			

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
None in 2023	**N/A**	**N/A**

ARTICLE II

Industrial Sewer Users of Facilities of Kiski Valley Water Pollution Control [Adopted 10-1-1984 by Ord. No. 7-1984 (Ch. XIX, Part 2, of the 1970 Code of Ordinances)]

§ 382-11. Findings.

A. The Borough of Vandergrift and the Boroughs of Apollo, East Vandergrift, Hyde Park, Leechburg, North Apollo, Oklahoma and West Leechburg and the Townships of Allegheny, Gilpin, Kiskiminetas, Parks and Washington (hereinafter referred to as the "municipalities") have duly incorporated the Kiski Valley Water Pollution Control Authority, hereinafter referred to as the "Authority," under the provisions of the Municipality Authorities Act of 1945, approved May 2, 1945, P.L. 382, as amended,[1] and charged the Authority with the responsibility to exercise all powers and control over the operation and use of the sewage transportation and treatment facilities serving the municipality; and

B. The Authority has been ordered by the United States Environmental Protection Agency to develop and submit for approval a pretreatment program in accordance with the requirements of the General Pretreatment Regulations (40 CFR Part 403); and

C. An approvable pretreatment program must establish police powers, including the authority to enforce criminal penalties against industrial users that violate federal or local pretreatment standards or requirements; and

D. The Borough of Vandergrift desires to cooperate with the Authority in developing and implementing an approvable pretreatment program.

§ 382-12. Definitions.

The following words, terms and phrases shall be construed in this article to have the following meanings, except in those instances where the context clearly indicates otherwise:

INDUSTRIAL WASTES — Any liquid, gaseous or waterborne wastes from industrial processes or commercial establishments as distinct from sanitary sewage.

PERSON — Includes any individual, partnership, copartnership, firm, company, corporation, association, or any other legal entity, or their legal representatives, agents or assigns.

SANITARY SEWAGE — The normal water-carried household and toilet wastes from residences, business establishments, institutions, industries and commercial establishments, exclusive of stormwater runoff, surface water, groundwater and industrial wastes.

---

1. Editor's Note: The Municipality Authorities Act of 1945 (53 P.S. § 301 et seq.) was repealed by Act 22 of 2001 (June 19, 2001, P.L. 287, No. 22). See now the Municipality Authorities Act, 53 Pa.C.S.A. § 5601 et seq.

§ 382-13. Conformity with rules and regulations governing industrial sewer use required.

No person shall contribute, cause to be contributed, or discharge any industrial wastes to the public sanitary sewage facilities of the Kiski Valley Water Pollution Control Authority, except in accordance with the Rules and Regulations Governing Industrial Sewer Use that have been adopted or may hereafter be adopted by the Authority.

§ 382-14. Penalties for failure to comply with rules and regulations.

Any person who is found to have violated or willfully or negligently fails to comply with any provision of the Rules and Regulations Governing Industrial Sewer Use adopted by the Authority or any order, regulation, service contract or permit issued by the Authority shall, upon conviction, be subject to pay a fine of not less than $100 nor more than $300 and costs of prosecution and, in default of payment of fine and costs, to undergo imprisonment for not more than 30 days. Each day's continuance of a violation shall constitute a separate offense.

§ 382-15. Penalties for falsification of records or tampering with monitoring devices or methods.

Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to the Authority's Rules and Regulations Governing Industrial Sewer Use, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required pursuant to the Authority's Rules and Regulations Governing Industrial Sewer Use, shall, upon conviction, be subject to a fine of not more than $300 and costs of prosecution and, in default of payment of fine and costs, to imprisonment for not more than 30 days.

VANDERGRIFT BOROUGH
WESTMORELAND COUNTY

EXHIBIT "A"

Work Done to Reduce Infiltration/Inflow
and
Sewer Line Separation - Phases 1 & 2

1. SEWER SYSTEM CONDITION

In the Borough of Vandergrift, the entire sewer system originally consisted of combination sewers. Even where sections were separate, the sewer systems were combined at the bottom of the watersheds. Therefore, in the early 1970's when the KVWPCA connected the sewer lines to their interceptor sewer to transport sewage to the treatment plant, they constructed six Diversion Chambers on the combination sewer lines and five CSO's in order to collect only the required flow during rains to satisfy the Department of Environmental Protection. The sewer lines were mostly 6-inches, 8-inches etc. terracotta pipe installed 50 to 100 years ago and therefore many are in poor condition.

Prior to the combined sewer separation projects, some improvement work was done using new PVC sewer lines to replace the old terracotta pipe. This work was limited to areas where problems were reported (*i.e.* Franklin Avenue from Walnut Street to Monroe Avenue; 31st Street from Wallace to Hancock Avenue and 26th Street through private property from 26th Street to Franklin Avenue). The LaBelle Vue Road sewer line extension was constructed with a pump station working to handle the flow from approximately 20 new customers, including the public swimming pool used in the summer months. The original sewer lines are terracotta pipe. The Borough is planning to replace the terracotta pipes in poor condition with PVC sewer lines to remove sources of infiltration from the sanitary sewers, including removing roof drains.

2. MAINTENANCE PROGRAM AND FLOW REDUCTION

The work on Phases 1 & 2 is completed with many problems being resolved. The Borough has replaced poor terracotta pipe with PVC pipe to reduce infiltration into the lines. Roof drains were identified and property owners were directed to remove them from the sanitary sewer lines. This work resulted in the closing of three diversion chambers: one at Longfellow Street Extension in Phase 1 and two in Phase 2, both located within Allegheny Ludlum property, one below the American Legion in front of the Plant Building and one near the Vandergrift Pump Station. The sanitary sewer separated from Phases 1 and 2 will flow to the Kiski Valley Water Pollution Control Authority pump station (Vandergrift pump station) located within Allegheny Ludlum property from sewer lines on and below Custer Avenue (SR 0056). Originally, there was no sewer line from Custer Avenue to the KVWPCA pump station. The 15-inch PVC sewer line from Custer Avenue to the pump station constructed in Phase 1 also collects all separated flow from Phase 2.

3. FUTURE PROJECTS

We are hoping that the sewer separation projects can continue until the entire Borough of Vandergrift is completely separated. Phases 3 and 4 include the downtown area. Catch basins are also tied to these combination sewer lines. The sanitary sewer lines in Phase 3 consist of 6-inch and 8-inch terracotta pipes in poor condition which were connected by PennDOT to 18 and 24-inch concrete combination sewer lines located on SR 0056 when the new highway was built. There are 2 Diversion Chambers in the Phase 3 Area, one in front of the gate to Allegheny Ludlum, and one inside the gate. During dry weather this flow goes to the Vandergrift pump station. During wet weather, overflows from both Diversion Chambers flow under the railroad tracks to the same CSO (exact location unknown). Phase 4, the smallest of all phases, goes to First Street and then through the MSI Plant (formerly Wean United) to a diversion chamber and CSO located at Wean United Pump Station.

Allegheny Township is contemplating an extension of Vandergrift Borough's Upper West Vandergrift sewer along LaBelle Vue Road (SR 4054) to service 6 to 8 residential homes with malfunctioning septic systems if possible.

4. 2019 SEWER CLEANING INSPECTION AND INTERNAL LINING

This work included cleaning, televising and root cutting as needed on Lincoln Avenue from Custer Avenue to the Diversion Structure within ATI Plant, Pennsylvania Avenue from Virginia Avenue toward the end of the line, Washington Avenue from Columbia Avenue to Grant Avenue and a portion of 13th Street from Lincoln Avenue 300 feet South and also included cleaning, televising and sectional lining of the line under a house from 28th Street to Emerson Street where extensive infiltration was observed.

5. 912 HOLLAND STREET MAINLINE CLEANING & INSPECTION (2020)

This work included cleaning and televising of the main sewer line which flows through a Right-of-Way through private property from Holland Street to Longfellow Street Extension. The line is 8" AC pipe up to 21.5' deep. Large grease deposits were removed and 256 LF of line was cleaned and inspected and the line is in good condition.

6. 227 WHITTIER STREET MAINLINE SEWER CLEANING (2020 - 2023)

Routine cleaning of this line is done annually starting in 2020. This section of line is very flat (+/-0.5% slope) and due to the low flow, requires routine (annual) cleaning to prevent backup in the line and backup into the laterals.

WASHINGTON TOWNSHIP

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: Municipal Authority of Washington Twp.

Address: 283 Pine Run Church Rd

Apollo PA 15613

Phone: 724-727-3515

Name and phone number of person completing response: Jennifer Bombalski

Title or Company

Address:

Phone: 724-727-5881

2. Sewered population and projected hydraulic and organic load:

Customers reported in EDUs*

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2022 Actual	2940	6850	611,520	1169
2023 Estimated	2955	6885	614,640	1175
2024 Estimated	2970	6920	617,760	1181
2025 Estimated	2980	6943	619,840	1185
2026 Estimated	2985	6955	620,880	1187
2027 Estimated	2990	6967	621,920	1189

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

X YES _____ NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

The KVWPCA monitors industrial waste discharge per its regulatory permitting requirements.

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

None

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

N/A

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: See Attached Notes

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. Conveyance capacity will not be exceeded in the next five years.

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

See attached notes.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

See attached notes.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

N/A

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

See attached notes.

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
Chapeldale	Excellent	98	6.15	7
Upper Burrell	Excellent	150	37.43	44
Camp Joann	Excellent	428	101.03	125
Camp Nancy	Excellent	450	129.38	158

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
No new sewer extensions have been constructed		
or proposed		

Municipal Authority of Washington Township
283 Pine Run Church Road, Apollo PA 15613

2023
Municipal Waste Load Management
Sewer System and Pump Station Information
Supplemental Information

4. System Condition

A. Sewer system conditions:

Paulton Sewer District is ± 43 years old and is in good condition. Portions of the system were televised in November 2013. Remediation was completed in June 2014 on areas noted to be in poor condition. System manholes were inspected in 2016 and remediation completed where needed. Portions of the KVWPCA Interceptor, which connect with the Paulton Sewer System, were televised in 2022 and repairs to the major issues were made in 2023.

Lower Beaver Sewer District Phase I is ± 19 years old and is in excellent condition. system manholes were inspected in 2016 and remediation completed where needed.

Lower Beaver Sewer District Phase II is ± 17 years old and is in excellent condition. System manholes were inspected in 2017 and remediation completed where needed.

Pine Run Sewer District Phase I is ± 13 years old and is in excellent condition. System manholes were inspected in 2018 and remediation completed where needed.

Upper Pine Run Sewer District Phase II is ± 12 years old and is in excellent condition.

Pucketa Creek Sewer District Phase III is ± 13 years old and is in excellent condition. Manhole inspections and repairs were completed in 2023 in a portion of the Washington Acres section of the Pucketa Creek Sewer District, which was an existing sewer system from a development constructed in the 1980s. Additional repairs are planned for 2024.

All MAWT Sewers are separate systems, i.e., no combined sewers are permitted within the MAWT system.

C. Flow monitoring:

The MAWT maintains 4 permanent Telog Flow Meters within the Township located in areas before the sewage flows into other Municipalities. The meters are calibrated quarterly, and the data is analyzed quarterly. In addition to the permanent meters the MAWT has 5 movable flow meters to monitor specific sections of the collection system.

I&I testing is also required when real estate is transferred or re-financed. The MAWT completes the testing through the use of smoke and a camera inspection.

D. Routine maintenance:

All maintenance work for the MAWT is contracted out. CWM Environmental inspects and maintenances the 4 pump stations on a weekly basis. Our 4 permanent flow meters are calibrated quarterly and maintained by Drnach Environmental. All other maintenance items or repairs are contracted to Allegheny Sewer and Plumbing, LLC.

Additionally, the MAWT started a summer manhole inspection project. The majority of the manholes in the Paulton, Lower Beaver I, Lower Beaver II Sewer District and Pine Run Phase I were inspected and GPS located between 2016 -2018. Several minor repairs were completed. The MAWT plans to continue the GPS project of inspecting and GPS locating manholes until the entire system is completed.

F. Reduce I&I:

Through the use of temporary flow meters, the MAWT has been able to locate areas of high I&I. When needed the line is televised to determine the cause of I&I. The MAWT has found poor lateral conditions and required the homeowners to make the necessary repairs. In 2019 the MAWT started a random smoke and dye testing program. Random locations are selected throughout the sewer system. If defects are found the homeowners are notified to complete the required repairs.

In 2023, the MAWT was award a Pennsylvania Small Water and Sewer Grant to remediate deteriorating manholes on the Washington Acres area of the sewer collection system. Repairs will be completed in 2024.

WEST LEECHBURG BOROUGH

Michael Bove, PE, PLS, SEO, STPO
President Emeritus & Founder

Emil Bove, PLS, SEO, EIT
President

Lucien Bove, PE, CBSI
Secretary / Treasurer

BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8201 ROUTE 819
GREENSBURG, PA 15601
724-925-9269
FAX: 724-925-1216

Providing Civil Engineering and Consulting Services to Municipalities and Developers Since 1969

February 24, 2023

Kiski Valley Water Pollution Control Authority
1361 School Road
Leechburg, Pennsylvania 15656
Attention: Dennis J. Duryea, Manager

Reference: Annual Wasteload Management Report for Operating Year 2023
West Leechburg Borough

Dear Mr. Duryea:

On behalf of the Borough of West Leechburg, Bove Engineering Company is pleased to submit the Borough's Annual Wasteload Management Report for the Operating Year 2023.

If you have any questions or require any additional information, please feel free to contact me. Thank you.

Respectfully submitted,
BOVE ENGINEERING COMPANY

Lucien Bove, P.E.
Borough Consulting Engineer

LMB:lb
Attachments
copy: Kayla Visnovsky, West Leechburg Borough Secretary

2012-551: WEST LEECHBURG 2023 Wasteload Management Report

2023

MUNICIPAL WASTE LOAD MANAGEMENT

SEWER SYSTEM AND PUMP STATION INFORMATION

Instructions: Please provide information as completely as possible. Additional pages may be attached to complete a response as maybe necessary.

1. Name of Municipality: **West Leechburg Borough**

Address **1015 Plazak Street**

West Leechburg, PA 15656

Phone:

Name and phone number of person completing response: **Lucien Bove, PE**

Title or Company **Bove Engineering Co., Inc.**

Address: **8201 Route 819 Greensburg, PA 15601**

Phone: **724-925-9269**

2. Sewered population and projected hydraulic and organic load:

Year	Residential Customers	Population	Estimated Flow (gpd)	Estimated Raw Sewage BOD (lb/day)
2023 Actual	540	1300	130,000	221
2024 Estimated	543	1305	130,500	222
2025 Estimated	546	1310	131,000	223
2026 Estimated	549	1315	131,500	224
2027 Estimated	552	1320	132,000	224
2028 Estimated	555	1325	132,500	225

3. INDUSTRIAL WASTE SURVEY: Are industrial wastes discharged into your sewer system?

_____ YES **X** NO

A. Discuss your municipality's program for surveillance and monitoring of industrial waste discharged into the sewer system during the last year:

There are no industrial waste customers within the West Leechburg Borough's sanitary sewer lines.

Allegheny Ludlum has a separate sanitary sewer line which is not connected to the Borough's system.

B. Describe specific problems in the sewer system known to be caused by industrial waste discharge and summarize any steps being taken to alleviate or eliminate the problems:

N/A

C. Please attach a copy of the ordinance or regulation governing industrial waste discharges to the sewer system or a copy of the amendments adopted during the past year if it has not been previously permitted.

The Borough's Ordinance refers to the KVWPCA's Rules and Regulations (see attached)

4. SYSTEM CONDITION: Provide the following information concerning your sewer system.

A. Sewer system conditions: **The system is fully functional. Most lines are in good condition.**

B. Describe sections of sewer where capacity is exceeded or will be exceeded in the next five years. **No section of sewer is expected to exceed capacity during dry weather.**

Steps are taken to remove sources of infiltration where suspected.

4 C. Describe your program for monitoring flows in the sewers. State if it included periodic flow gauging or smoke and dye testing in sewers suspected of having illegal storm connections.

Monitoring is done visually. Dye testing is performed when problems are observed or reported.
Internal inspection is done periodically to observe the conditions of the lines and any infiltration problems.
Area by area dye testing program is on-going to enforce removal of downspout connections.

D. Describe your routine maintenance programs. Indicate if on a regular basis or as-needed. List the number of employees (full and part time) and provide a list of the equipment available for inspection and maintenance work.

Manholes are opened, checked for condition and cleaned as needed. Borough workers have received proper training to perform routine maintenance work. Unsafe conditions are reported. Proper repairs are made by the two fulltime employees for normal depths. A dump truck and a backhoe with equipment operators perform excavation and access the sewer lines for repairs and maintenance. Outside Contractors used for deep sewers and/or poor soil conditions.

E. If your community has combined sewers, briefly describe your program for street and catch basin cleaning. Please attach cleaning schedule also.

With the completion of the Hillville Combined Sewer Separation Project in 2009, all sanitary sewers are separate to the best of our knowledge and belief.

F. Describe any work being performed to reduce infiltration/inflow, or any extraordinary sewer rehabilitation during the past year.

See attached Exhibit "A"

5 SEWAGE PUMP STATIONS: Provide the following information for each pump station:

Name	Condition	Design Capacity (gpm)	Present Maximum Flow (gpm)	Projected 2-year Maximum Flow (gpm)
Patricktown	**Good**	**52**	**52**	**52**

6 SEWER EXTENSIONS: Provide the following information for each sewer system extension. Attach a copy of the plot plan or a map of each sewer extension.

Development/Extension Name	Population Served	Status (Constructed, Approved for Construction, Proposed)
None in 2023	**N/A**	**N/A**

Borough of West Leechburg, PA
Tuesday, January 24, 2023

Chapter 225. Sewers and Sewage Disposal

Article IV. Pretreatment Program

[Adopted 10-10-1984 by Ord. No. 210 (Ch. XVIII, Part 4, of the 1970 Code)]

§ 225-20. Need for enactment; purpose.

A. Whereas, the Borough of West Leechburg, and the Boroughs of Apollo, East Vandergrift, Hyde Park, Leechburg, North Apollo, Oklahoma, and Vandergrift and the Townships of Allegheny, Gilpin, Kiskiminetas, Parks and Washington (hereinafter referred to as the "municipalities") have duly incorporated the Kiski Valley Water Pollution Control Authority, hereinafter referred to as the "Authority," under the provisions of the Municipality Authorities Act of 1945, approved May 2, 1945, P.L. 382, as amended,[1] and charged the Authority with the responsibility to exercise all powers and control over the operation and use of the sewage transportation and treatment facilities serving the municipality; and

[1] *Editor's Note: See 53 P.S. § 10101 et seq.*

B. Whereas, the Authority has been ordered by the United States Environmental Protection Agency to develop and submit for approval a pretreatment program in accordance with the requirements of the general pretreatment regulations (40 CFR Part 403); and

C. Whereas, an approvable pretreatment program must establish police powers including the authority to enforce criminal penalties against industrial users which violate federal or local pretreatment standards or requirements; and

D. Whereas, the Borough of West Leechburg desires to cooperate with the Authority in developing and implementing an approvable pretreatment program.

§ 225-21. Definitions.

The following words, terms, and phrases shall be construed in this article to have the following meanings except in those instances where the context clearly indicates otherwise:

INDUSTRIAL WASTES
Any liquid, gaseous or waterborne wastes from industrial processes or commercial establishments as distinct from sanitary sewage.

PERSON
Includes any individual, partnership, copartnership, firm, company, corporation, association, or any other legal entity, or their legal representatives, agents or assigns.

SANITARY SEWAGE
The normal water-carried household and toilet wastes from residences, business establishments, institutions, industries and commercial establishments, exclusive of stormwater runoff, surface water, groundwater and industrial wastes.

§ 225-22. Unlawful to fail to comply with Authority rules and regulations.

[Amended 2-9-1994 by Ord. No. 244]
No person shall contribute, cause to be contributed, or discharge any industrial wastes to the public sanitary sewage facilities of the Kiski Valley Water Pollution Control Authority, except in accordance with the rules and regulations governing industrial sewer use that have been adopted, or may hereafter be adopted, by the Authority.

§ 225-23. Violations and penalties: failure to comply with industrial sewer use rules and regulations.

[Amended 2-9-1994 by Ord. No. 244]
Any person who is found to have violated or willfully or negligently fails to comply with any provision of the rules and regulations governing industrial sewer use adopted by the Authority or any order, regulation, service contract, or permit issued by the Authority, shall, upon conviction, be subject to pay a fine of not less than $1,000 and costs of prosecution, and, in default of payment of fine and costs, to undergo imprisonment for not more than 30 days. Each day's continuance of a violation shall constitute a separate offense.

§ 225-24. Violations and penalties: falsification of records or tampering with monitoring devices or methods.

Any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained pursuant to the Authority's rules and regulations governing industrial sewer use, or who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required pursuant to the Authority's rules and regulations governing industrial sewer use shall, upon conviction, be subject to a fine of not more than $300 and costs of prosecution, and, in default of payment of fine and costs, to imprisonment for not more than 30 days.

§ 225-25. Severability.

[Amended 2-9-1994 by Ord. No. 244]
If any provision, paragraph, word or section of this article shall be invalidated by any court of competent jurisdiction, the remaining provisions, paragraphs, words, and sections shall not be affected and shall continue in full force and effect.

§ 225-26. Adoption by reference of revised local discharge limits.

[Added 2-9-1994 by Ord. No. 244]
The Borough of West Leechburg shall adopt the revised local discharge limits as adopted by the Kiski Valley Water Pollution Control Authority, substantially in the form of Resolution 1992-1 which was presented at this meeting and is made a part hereof by reference only and is on file with the Borough Secretary.

WEST LEECHBURG BOROUGH
WESTMORELAND COUNTY

Exhibit "A"

History of Work Done to Date to:
Separate Combined Sewers, Reduce Infiltration/Inflow, and
Repair and Rehabilitate Sewers

Main Street Sewer (Separation Project done in 1999)

The purpose of this project was to install a new sanitary sewer line along the left side of Main Street for two reasons: First, to service some homes not tied into the sewer on the left side of Main Street looking from First to Fifth Streets; and second, to connect into this 10-inch PVC line and the 8- and 10-inch V.C. pipes servicing the residents at Willow Lane, Third Street, Walnut Lane, Fourth Street and Fifth Street. These 8-inch V.C. lines need to be checked for condition with a video camera. The new line is tied into existing Manhole No.4A on First Street, where an existing 10-inch V.C. line exists and is tied into the manhole above the diversion chamber.

New Sewer line for Apple Lane and Jantosik Street (2002)

A project funded with CDBG funds was constructed to remove existing taps from the combination sewer line (24-inch V.C. pipe) at Apple Lane and Jantosik Street, tying these taps into a new 8-inch PVC line along these streets. This line connects to the existing manhole on First Street where a new 10-inch PVC sewer line has been installed to the Pump Station manhole to bypass the diversion chamber. For the time being, the line on First Street will not connect to the 10-inch line and will continue to flow to the diversion chamber. It needs monitored for flow volume during rains.

Second Street (2003)

A new line was installed for Second Street to remove the taps from the combination line located on Second Street.

Pleasant Hill Road (2003)

On Pleasant Hill Road between Main Street and the intersection with Bell Avenue, the borough constructed a new sewer line to remove the flow contribution from three catch basins along Pleasant Hill Road which was previously tied into the combination sewer line which flows to Bell Avenue and South Avenue.

Sewer Cleaning and Inspection (2003)

In 2003, 4,500 L.F. of sewer lines were cleaned and inspected in the Giron Street area.

Sewer Cleaning and Inspection (2005)

In 2005 the borough conducted an extensive sewer cleaning and inspection program, including over 12,000 L.F. of sewers, with the hope of completing a first round of inspections of all the lines in the borough within the next several years. The reports and tapes are being evaluated to determine priorities for repairs to lines in poor condition and repairs needed to reduce infiltration.

Main Street from Fifth Street to Eighth Street (1999)

The borough separated the storm sewers that were connected to this branch of the system making this branch no longer a combined line and therefore eliminating the need to extend a new line from Fifth Street to Eighth Street.

In 2009, as part of the Hillville Combined Sewer Separation Project, we connected the existing 10-inch line (which is no longer combined) above Fifth Street to the new sanitary sewer below Fifth Street which was installed in 1999.

Hillville Area (2009)

In 2006 we started working on the planning and design of the Hillville Area Combined Sewer Separation Project. In 2007 the design was complete. In 2008 we applied for the required permits, and on behalf of the borough we applied for a PennVEST loan in the amount of $400,000 and a Competitive CDBG grant also in the amount of $400,000. We received the CDBG grant commitment, and closed on the PennVEST loan on March 10, 2009. The borough committed $65,000 toward the project for a total design and construction cost of $865,000. Bids were opened in December 2008 and awarded in January 2009. Construction was completed in 2009, and restoration and removal of the overflow on First Street was completed in 2010.

Dye Testing Program (2005 - Present)

Over the past several years, the Borough has conducted an area-by-area dye testing program to identify improper downspout and drain connections.

The borough has identified many residences in the Gosser/Edgewood Drive area whose roof drains or other storm drains are connected into the sanitary sewer. Letters have been sent directing owners to disconnect their storm drains from the system. To date, the majority of homeowners in this area have complied and removed their storm drains from the system.

Other areas are being tested and enforcement letters are sent when improper connections are identified. This program is being conducted in-house by borough employees and Arnold Plumbing.

Flow Monitoring (2017)

The Borough has cooperated with and participated in the KVA flow monitoring study.

Internal Inspection (2018)

The Borough planned for a Sewer Inspection Program to include several key sewer lines which have not been inspected.

Internal Inspection (2019)

Quotations were sought and the work was assigned to the lowest bidder. Various sewers were cleaned, inspected and internally televised on Edgewood Drive, Circle Drive, portions of Jantosik Street, Poplar Lane to 5th Street and Plum Lane.

CDBG Grant Application (2020)

The Borough applied for CDBG funds to perform mainline replacement of sections of the sewers on Circle Drive and Bosin Street. These pipes are terra cotta with some broken sections and are suspected to be contributing to the infiltration of water during heavy rain. Circle Drive was approved by the County for pipe replacement in 2021, however, Bosin Street was not approved by the County. The project was advertised for bids and only one bid was received which was almost double the estimated cost which was rejected. The project was re-bid in 2022.

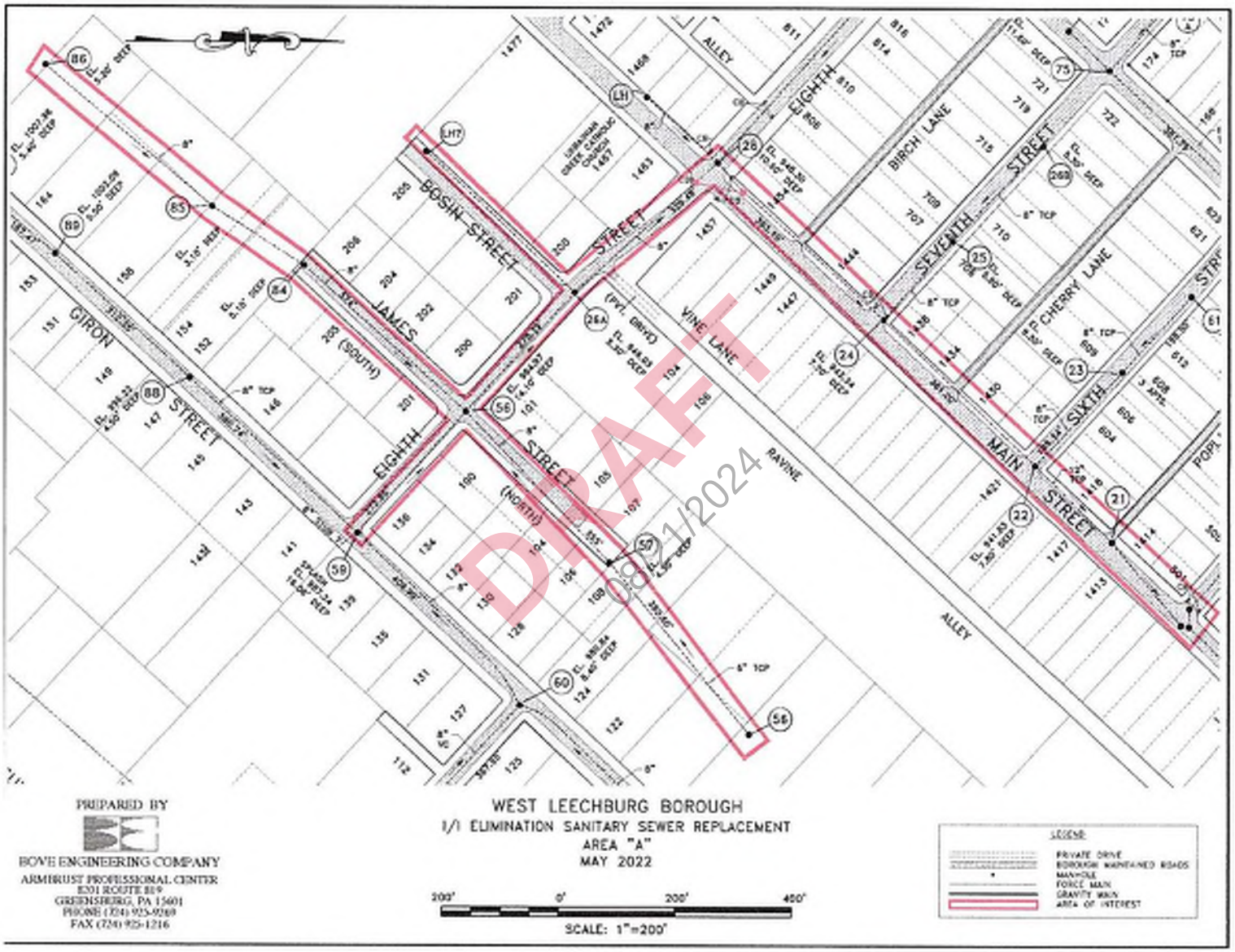
Circle Drive I&I Elimination Project - CDBG
The Borough advertised and re-bid the project in 2022 with options to replace, slip line or internally line using CIP liner. The lowest cost was for the Internal Lining using CIP pipe. The project was completed in 2002 (Final Construction Cost $57,500).

I&I Elimination Sanitary Sewer Replacement Cost Estimates (May 2022)
The Borough identified 3 key areas which have been identified as major contributors of I&I defined as areas "A", "B" and "C" (see attached location maps). Area "A" is the largest area and includes the sewers on Main Street from Fifth Street to Eighth Street, Eighth Street from Main Street to Giron Street, James Street (north and south) including the lines in the sewer rights-of-ways, and Bosin Street. Area "B" includes sewers on Gosser Street from the Lamp Hole at the end of the line to MH No. 46. Area "C" includes sewers on Shirley Drive, Graham Place and the line through the woods from Shirley Drive down to MH No. 50C behind the homes on Deerfield Drive. The cost for total replacement including design and construction inspection is estimated at roughly 2.8 million dollars.

DCED Local Share Account Fund Category 4 Program Grant Application (Sept. 2022)
In September, the Borough applied for a grant to fully replace the sanitary sewers in Area "A", the largest of the 3 areas identified for I&I abatement. See attached Location Maps for all 3 areas. The Area "A" project includes the replacement of approximately 4,040 LF of Sanitary Sewers, 42 Wye Connections, 1,235 LF of Service Sewers, 16 Manholes, 48 Inspection Stacks, 3,447CY of 2A Stone Backfill, Replacement of 732 SF of Concrete Sidewalks and Driveways, 1,211 SY of Trench Pavement Restoration, 6,310 SY of Wearing Course Replacement, 5,600 SY of Lawn Restoration, 50 LF of Encasement at Waterline Crossings, 263 Tons of Temporary Asphalt Surfacing, Removal and Replacement of 5 Trees, and Core Drilling of Concrete Manholes. The estimated cost is $1,823,420. This particular grant program requires No Local Matching Funds commitment. The meeting at which these applications were to be reviewed by the CFA has been postponed. The CFA Board meeting was finally re-scheduled March 16, 2023 at which time, West Leechburg Borough's application was unfortunately not awarded.

DCED Covid-19 ARPA PA Small Water and Sewer Program Grant Application (Dec. 2022)
The Brough realizes that the chance for approval of a large amount of funds (such as the above-mentioned grant application) is very slim. In December, after seeing the success of the Circle Drive Internal Lining Project, the Borough applied for a PA Small Water and Sewer Grant to internally line a small portion of the sanitary sewers in Area "A", those being the Sewer on South James Street (including the line through the woods), Bosin Street and the replacement of MH No. 26 which causes a flow restriction due to opposing sewers entering the manhole at the same elevation. See the attached Location Map for this paired down project. This particular grant program requires a 15% Local Funding Match, and therefore, the size of the project and the cost was determined by the amount of funds that the Borough can afford without other funding assistance or loans. The total cost of this project is $248,000 with a local match of $37,400. Again, the meeting at which these applications were to be reviewed by the CFA was postponed several times. The CFA Board meeting was finally re-scheduled December 19, 2023 at which time, West Leechburg Borough's application was unfortunately not awarded.

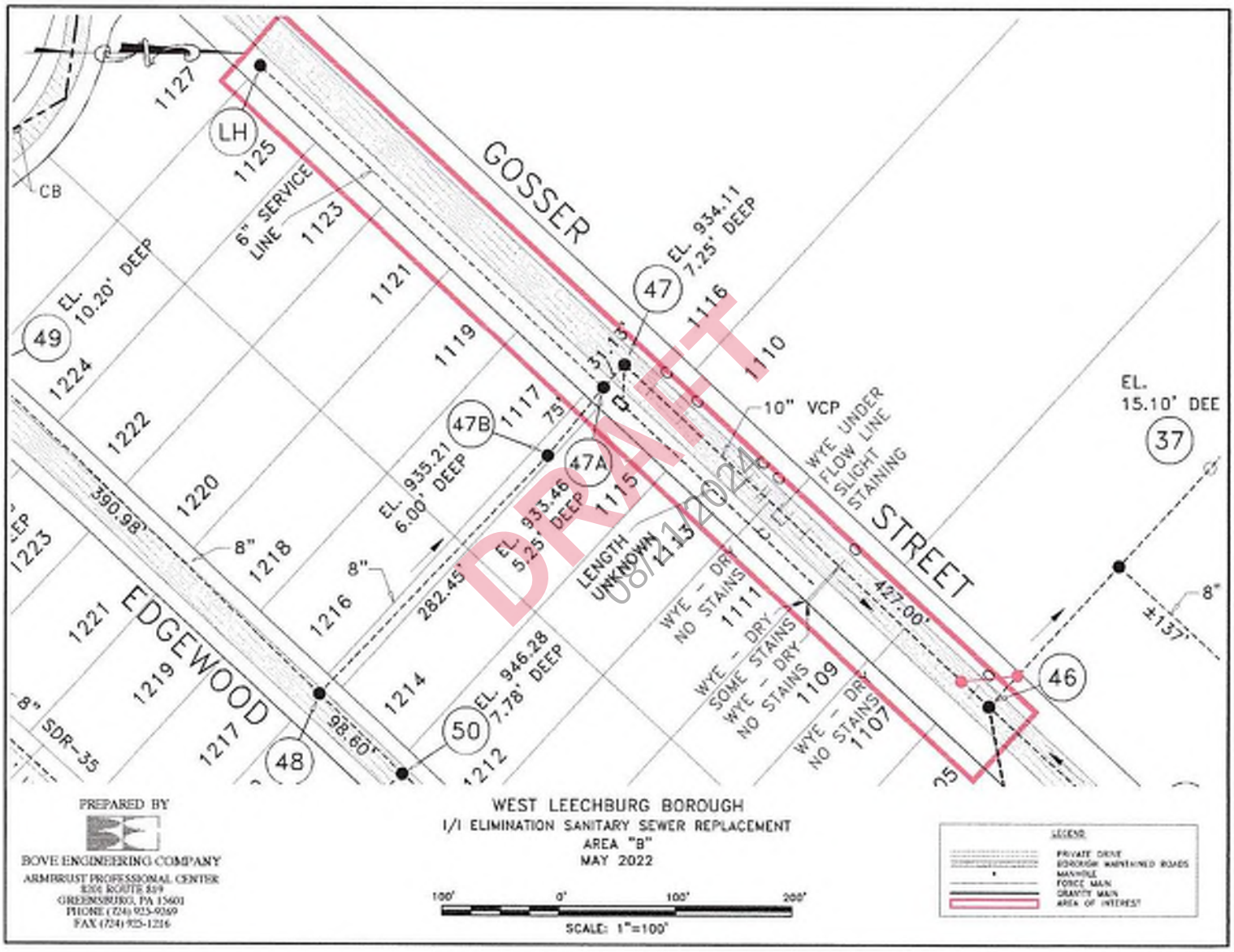
2024 CDBG Grant Application
In 2023, the Borough applied for 2024 CDBG funds to perform mainline replacement of sections of the sewer on Ninth Street where there are terra cotta pipes with some broken sections and are suspected to be contributing to the infiltration of water during heavy rain and minor sags.

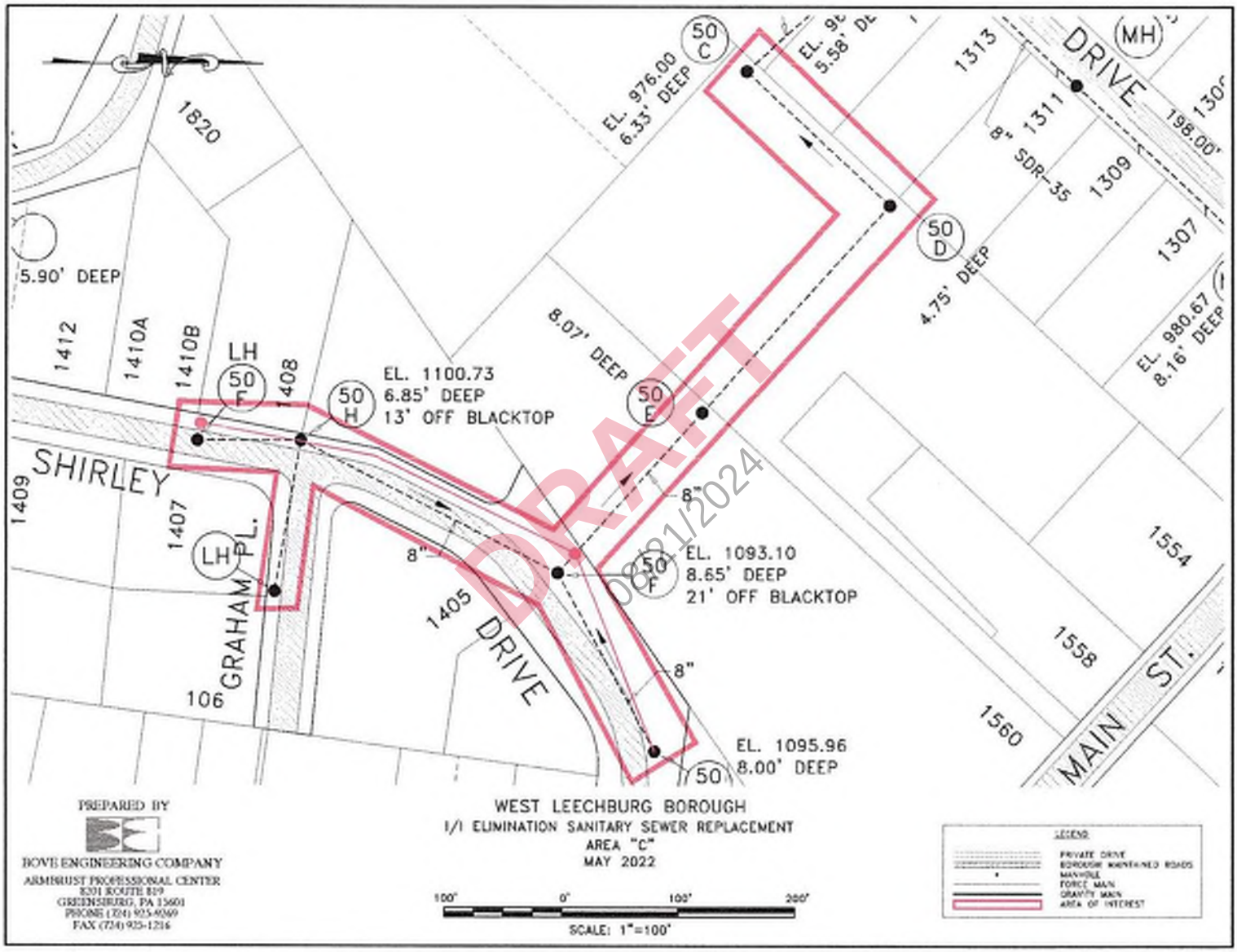


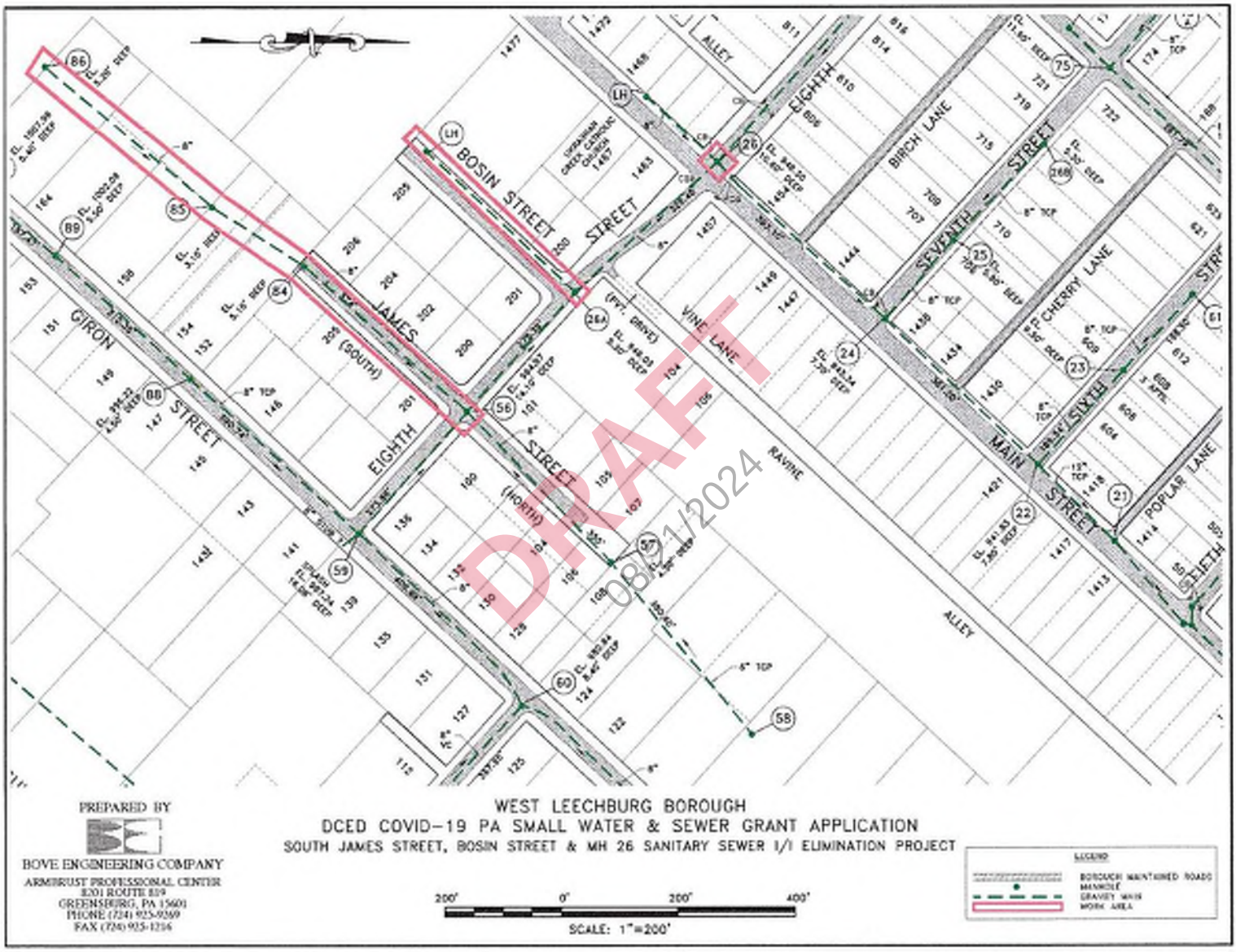
PREPARED BY

BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8201 ROUTE 819
GREENSBURG, PA 15601
PHONE (724) 925-9260
FAX (724) 925-1216

WEST LEECHBURG BOROUGH
I/I ELIMINATION SANITARY SEWER REPLACEMENT
AREA "A"
MAY 2022


GOSSER STREET
EDGEWOOD
LH
CB
6" SERVICE LINE
EL. 10.20' DEEP
EL. 934.11 7.25' DEEP
EL. 935.21 6.00' DEEP
EL. 933.46 5.25' DEEP
EL. 946.28 7.78' DEEP
EL. 15.10' DEE
10" VCP
WYE UNDER FLOW LINE SLIGHT STAINING
LENGTH UNKNOWN
WYE - DRY NO STAINS
WYE - DRY SOME STAINS
WYE - DRY NO STAINS
WYE - DRY NO STAINS
390.98'
282.45'
427.00'
98.60'
±137'
8"
8" SDR-35
DRAFT
08/21/2024
PREPARED BY
BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8306 ROUTE 819
GREENSBURG, PA 15601
PHONE (724) 925-9369
FAX (724) 925-1216
WEST LEECHBURG BOROUGH
I/I ELIMINATION SANITARY SEWER REPLACEMENT
AREA "B"
MAY 2022
100' 0' 100' 200'
SCALE: 1"=100'
LEGEND
PRIVATE DRIVE
BOROUGH MAINTAINED ROADS
MANHOLE
FORCE MAIN
GRAVITY MAIN
AREA OF INTEREST


50 C
EL. 976.00
6.33' DEEP
EL. 9
5.58' DE
1313
DRIVE
MH
198.00'
1311
8" SDR-35
1309
1307
50 D
4.75' DEEP
EL. 980.67
8.16' DEEP
1820
5.90' DEEP
1412
1410A
1410B
LH
50 G
1408
50 H
EL. 1100.73
6.85' DEEP
13' OFF BLACKTOP
8.07' DEEP
50 E
1409
SHIRLEY
1407
LH
PL.
GRAHAM
106
8"
1405
DRIVE
50 F
EL. 1093.10
8.65' DEEP
21' OFF BLACKTOP
8"
8"
EL. 1095.96
8.00' DEEP
50
1554
1558
1560
MAIN ST.
DRAFT
08/21/2024
PREPARED BY
BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8201 ROUTE 819
GREENSBURG, PA 15601
PHONE (724) 925-9369
FAX (724) 925-1216
WEST LEECHBURG BOROUGH
I/I ELIMINATION SANITARY SEWER REPLACEMENT
AREA "C"
MAY 2022
100' 0' 100' 200'
SCALE: 1"=100'
LEGEND
PRIVATE DRIVE
BOROUGH MAINTAINED ROADS
MANHOLE
FORCE MAIN
GRAVITY MAIN
AREA OF INTEREST



PREPARED BY

BOVE ENGINEERING COMPANY
ARMBRUST PROFESSIONAL CENTER
8201 ROUTE 819
GREENSBURG, PA 15601
PHONE (724) 925-9269
FAX (724) 925-1256

WEST LEECHBURG BOROUGH
DCED COVID-19 PA SMALL WATER & SEWER GRANT APPLICATION
SOUTH JAMES STREET, BOSIN STREET & MH 26 SANITARY SEWER I/I ELIMINATION PROJECT

200' 0' 200' 400'
SCALE: 1"=200'

LEGEND
BOROUGH MAINTAINED ROADS
MANHOLE
GRAVITY MAIN
WORK AREA

ATTACHMENT D

SEWAGE PUMP STATIONS

PUMP STATIONS

Eight (8) pump stations in the conveyance system assist in delivering wastewater to the KVWPCA treatment facility. All of the pump stations are equipped with telemetry and alarm systems to alert operations personnel in the event of a malfunction. The Pump Stations and capacities of each are listed in Table 4.

Table 4
Pump Stations – Capacities

Pump Station Designation	Maximum Capacity (MGD)
Beaver Run	4.00
East Vandergrift	1.20
Elder Run	2.50
Guffy Run	10.00
Leechburg	8.00
Penn Run	2.50
Vandergrift	9.00
Wean United	0.50

All pump stations operated below the maximum capacity during 2023. The pump stations are maintained on a regular basis and are in excellent operating condition. Seven (7) of the eight (8) pump stations controls were upgraded during 2005 and the Beaver Run pump station was upgraded in 2009. An engineering evaluation of seven (7) pump stations (Beaver Run was excluded) was completed in 2016 which provided the design basis for the upgrade of the seven (7) pump stations. The pump station upgrade project (which included replacing all pumps, electrical equipment and controls) was completed in May 2022 as a cost of $8M.

COMBINED SEWER OVERFLOWS

As a result of sewer separation projects throughout the Authority municipalities, only three (3) diversion chambers and two (2) Combined Sewer Overflows remain in operation as Vandergrift still has a portion of sewers which are combined sewers. The KVWPCA treatment plant expansion project, completed in 2015, provides sufficient capacity to treat the full volume of the remaining flows from all thirteen (13) communities.

ATTACHMENT E

2023

INDUSTRIAL PRETREATMENT REPORT

Kiski Valley Water Pollution Control Authority

1361 SCHOOL ROAD • LEECHBURG PA 15656
PHONE: (724) 568-3655 FAX: (724) 568-3554
WEBSITE: KVWPCA.COM EMAIL: GENERAL@KVWPCA.COM

February 12, 2024

Attn: U.S. EPA Region 3 Pretreatment [3WD41]
Four Penn Center
1600 John F Kennedy Blvd
Philadelphia, PA 19103-2852

Subject: Kiski Valley Water Pollution Control Authority
2023 Annual Pretreatment Report and Monitoring Data

To Whom It May Concern:

Please find enclosed the 2023 Annual Pretreatment report signature certification page for the Kiski Valley Water Pollution Control Authority (KVWPCA). Included with the report are the requested data spreadsheet and all analytical data from quarterly and annual monitoring. The data spreadsheet has also been sent electronically as requested.

Should you have any questions, or require any additional information, please contact me by email at dduryea@kvwpca.com or by phone at 724-568-3655.

Sincerely,
Kiski Valley Water Pollution Control Authority

Dennis J Duryea, P.E.
Authority/Plant Manager

Email File to EPA Region 3

The signature certification page must be printed, signed, and sent in hard copy to U.S. EPA Region 3 at the address below. The QR code must be visible.

Attn: U.S. EPA Region 3 Pretreatment [3WD41]
Four Penn Center
1600 John F Kennedy Blvd
Philadelphia, PA 19103-2852

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Facility Name: Kiski Valley Water Pollution Control Authority; Permit Number: PA0027626; Reporting

Authorized Signatory Official

02/11/2024
Date

Dennis J Ducyea, Authority / Plant Manager
Print or type name and title

Note: The Signatory Official is the person authorized by the POTW to sign the Annual Report (see 40 CFR Section 403.12(m)).

The following documents may be attached to the email or hard copies can be mailed to US EPA Region 3

1. A copy of the newspaper notice identifying all IUs which were in SNC during the reporting period. The notice must show the name of the paper and the date of publication.
2. The results of all influent monitoring results that were performed as required in the Pretreatment section of your state issued NPDES permit. The results must include the name of the pollutant, measured concentration, analytical method used, detection
3. The results of all effluent monitoring results from the monitoring required by the Pretreatment section of your state issued NPDES permit. Provide monitoring results for those pollutants that were reported above the detection limit. The results must include the
4. The results of all monitoring results for biosolids (sludge) monitoring for any pollutants listed in 40 CFR Part 122, Appendix D, Table II, III, and V. This is for final sludge to disposal only. This monitoring may have been required by your state issued NPDES permit, or

Time Stamp:
User Stamp:

KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY

ARMSTRONG AND WESTMORELAND COUNTIES, PENNSYLVANIA

NPDES PERMIT NO. PA0027626

ANNUAL PRETREATMENT REPORT
OPERATING YEAR 2023

FEBRUARY 12, 2024

SUBMITTED BY:
KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY
1361 SCHOOL ROAD
LEECHBURG, PENNSYLVANIA 15656
(724) 568-3655

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

Reporting Period

January 1 to December 31 of year	2023

POTW Contacts

Control Authority Name	Kiski Valley Water Pollution Control Authority
NPDES Permit No	PA0027626
Permit Issuance Date	2/1/2012
Permit Expiration Date	1/31/2017
Facility Name	Kiski Valley Water Pollution Control Authority
Facility Address1	1361 School Road
Facility Address2	
Facility City	Leechburg
Facility County	Westmoreland
Facility State	PA
Facility Zip	15656

Pretreatment Contact(s) - List all Pretreatment Personnel

	Name	Title	Email
01	Dennis J. Duryea, P.E.	Authority/Plant Manager	dduryea@kvwpca.com
02	Beth Westlake	Lead Operator	bwestlake@kvwpca.com
03			
04			
05			
06			

Permit Signatory	Dennis J Duryea
Permit Signatory Title	Authority/Plant Manager
Contact Phone	(724) 568-3655
Contact Email	dduryea@kvwpca.com
POTW Site Address	1361 School Road, Leechburg, PA 15656

Additional Information

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

POTW Information

Status of local limits	Approved
NPDES Effluent Violations?	No
Date of Violations	
Cause of NPDES permit violations?	
Sludge Disposal Method 1	LANDFILL
Sludge Disposal Method 2	
Sludge Disposal Method 3	
Highest Treatment Level	

Parameter(s):

Treatment Types

Primary Clarification?	No	Lagoon?	No
Secondary Clarification?	Yes	Anaerobic Digestion?	No
Activated Sludge?	Yes	Aerobic Digestion?	Yes
Trickling Filter?	No	Chlorination?	No
Oxidation Ditch?	No	Dechlorination?	No
Biotowers?	No	UV Disinfection?	Yes
Rotating Biological Contacts?	No	BNR?	Yes
Other?			

POTW Design Flow (mgd)	7
POTW Actual Flow (mgd)	3.0764
Total SIU Flow (mgd)	0.06
% Industrial Flow	2 %
POTW Organic (BOD) Design Capacity (lbs/day)	11700
POTW TSS Design Capacity (lbs/day)	
POTW Ammonia (NH3) Design Capacity (lbs/day)	
Actual or Estimated total Flow for Commercial (Non-SIU) Dischargers (mgd)	0.307

Additional Information

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

Program Implementation

Number of Permitted Industrial Users as of December 31

CIUs	2	
Total SIUs	2	*Includes CIUs, but excludes NSCIUs*
Other Permitted IUs	0	
Zero-Discharge CIUs	0	
Permitted Zero-Discharge CIUs	0	
Middle-Tier CIUs	0	
Non-Significant CIUs	0	

SIUs with No/Expired Permit as of December 31	0
SIUs with Administratively Extended Permits >180 Days	0
Number of SIUs with current control mechanisms	0
Number of NSCIUs that have violated any pretreatment standard	0

Number of SIUs in significant non-compliance (SNC) as of December 31

	CIUs	Non Categorical SIUs	Total SIUs
SNC Self-monitoring	0	0	0
SNC Reporting	0	0	0
SNC PT Standards	0	0	0
SNC Prohibitions	0	0	0
SNC Compliance Schedule	0	0	0
SNC Pass Through/Interference	0	0	0
SNC Other SNC Violations	0	0	0

Number of SIUs in significant non-compliance (SNC) at any time	0
Number of non-SIUs in significant non-compliance (SNC) at any time	0
Number of SIUs in SNC during the previous calendar year	0
SNC during the July to December period	0

# Permitted Non-SIUs With Unknown Compliance Status	0
# SIUs With Unknown Compliance Status	0
Does the ERP include escalating enforcement actions for SNC	Yes

	CIUs	Non Categorical SIUs	Total SIUs
Number of SIUs with compliance schedule as of December 31	0	0	0

Additional Information

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

Enforcement Actions

	Non-SIUs	SIUs
Number of NOVs	0	0
Number of Formal Enforcement Actions	0	0
Number of different IUs with Formal Enforcement Actions	0	0
Number of SIUs on formal compliance schedule	0	0

Formal actions at any time during the reporting year including administrative orders, show cause hearings, out-of-court settlements that are formal settlements, termination of service, formal compliance schedules, penalty actions EXCEPT civil or criminal suits.

	Civil	Criminal	Total
Number of suits filed against SIUs	0	0	0

	Non-SIUs	SIUs
Number of Different IUs From Whom Penalties Were Collected	0	0
Total Penalties Collected	$ -	$ -

Number of IUs Published As Being In SNC	0

Additional Information

Facility Name: Kiski Valley Water Pollution Control Autl
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Autl

Return to Home

Compliance Monitoring

	Non-SIU	SIU
Number of individual permits issued	0	2
Number of general permits issued	0	0
Number of inspections in the reporting year	0	2

Overview description of Non-SIU inspections	Not Applicable in 2023
Number of SIUs not inspected during the reporting year	0
Number of SIUs that submitted required Self-Monitoring Reports	2
Number of SIUs not sampled during the reporting year	0
Number of SIUs in SNC With Self-Monitoring Requirements That Were Not Inspected or Sampled	0
Number of annual certification statements received by NSCIUs	0

Additional Information

Facility Name: Kiski Valley Water Pollutio
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollutio

Return to Home

Program Implementation - Resources

Number of Pretreatment FTEs	0
Significant Changes (+/- 20%) to The POTW's Pretreatment Program Budget or Staffing?	No
Source of Budget	Ratepayers
Total Pretreatment Program Budget	$ 10,000

Number of Jurisdictions Covered By Pretreatment Program	13
Adequate delegation in each jurisdiction?	Yes
Miscellaneous Developments and Special Initiatives?	No

FOG removal is monitored by each municipality. PFAS monitoring was performed duirng one (1) event in 2023.

e.g., Fats, Oils, and Grease (FOG) program, PFAS monitoring

Additional Information

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

Program Implementation - Hauled Waste

Does the POTW receive any discharges of

Receive Groundwater From Hydrocarbon Cleanup Site?	No
Receive Hauled Septage (Domestic Only)?	No
Receive Hauled Waste From Industrial Sources?	No
Receive Hauled Waste From Commercial Sources?	No
Receive Hauled Categorical Waste?	No
Receive Hauled Grease Interceptor/Trap Waste?	No
Receive Landfill Leachate?	No
Receive CERCLA Cleanup Wastes?	No
Receive Hazardous (RCRA) Waste?	No
RV Dump Stations In Service Area?	No
Receive Other Unique Waste?	No
Receive Oil & Gas Waste from Stripper wells?	No

As defined at 40 CFR Part 261 and delivered by truck, rail or dedicated pipeline

If you accept any trucked or hauled waste, indicate all of the following that apply to your POTW

Legal Authority To Control Hauled Waste?	
POTW Issues Permits For Hauled Wastes?	
POTW Has A Designated Disposal Site For Hauled Wastes?	
POTW Controls Access At The Designated Disposal Station?	
POTW Uses A Manifest System To Track/Control Hauled Wastes?	
POTW Believes That Illegal Dumping May Be Occurring In Its Jurisdiction?	

What parameter if any do you surcharge

Surcharge for BOD?	Yes
Surcharge for TSS?	No
Surcharge for Oil and Grease?	No
Surcharge for Flow?	No
Surcharge for Ammonia?	No
Surcharge for COD?	No
Surcharge for TKN?	No
Surcharge for Other Parameters?	No

Additional Information

Facility Name: Kiski Valley Water Pollutior
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollutior

Return to Home

Program Implementation - Pass/INTF

Instances Of Interference At The POTW?	No
Instances Of Pass Through At The POTW?	No

Receive Notification Of The Discharge Of Any Hazardous Waste?	No

If so, names of IUs

01	
02	
03	
04	
05	
06	
07	
08	
09	
10	
11	

Additional Information

Attachment A: List of CIUs/SIUs

IU	Permit Dates				Address (Number, Street, City, State, ZIP Code)	NPDES Permit No. of POTW discharged to	Last Date				Entity Type	NAICS	Jurisdiction	SIC Code1	SIC Code2	NAICS Code	Categorical Standard	Total Average Process Flow (gpd)	Total Average Facility Flow (gpd)	MTCIU or NSCIU	Justification	Discharge Status	Description	EAD?
	Issued	Effective	Expires	Permit Type			Sampled	Inspected	NVs	# of off [illegible] conducted/ required														
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]			[illegible]	[illegible]	[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]			[illegible]	[illegible]	[illegible]					

Facility Name: Kiski Valley Water Pollution Control Authority
Permit Number: PA0027626
Reporting Period: 2023
POTW Name: Kiski Valley Water Pollution Control Authority

Return to Home

Attachment H: Influent/Effluent and Biosolids Monitoring

Influent Monitoring Results Submitted or Attached?	Yes	*Includes priority pollutant scan where applicable*
Effluent Monitoring Results Submitted or Attached?	Yes	
Biosolids Monitoring Results Submitted or Attached?	Yes	*Includes priority pollutant scan where applicable*

Additional Information

2023

SPREADSHEET OF ANALYTICAL RESULTS

Influent, Effluent, Sludge

Facility Name:	KISKI VALLEY WPCA						
Facility ID:	PAP027626	UNITS:	MG/L				
Location:	INFLUENT			Date	Date	Date	Date
	Pollutant	Goals	Frequency	2/15/2023	5/17/2023	8/16/2023	11/15/2023
01002	ARSENIC- TOTAL	0.0056	4	<0.005	<0.005	<0.005	<0.005
00310	BOD- 5-DAY	330.867	0	154	212	137	165
01027	CADMIUM- TOTAL	0.0036	4	<0.002	<0.002	<0.002	<0.002
01034	CHROMIUM- TOTAL	1	4	<0.02	<0.02	<0.02	<0.02
01042	COPPER- TOTAL	0.1163	4	0.05	0.07	0.04	0.08
00720	CYANIDE- TOTAL	0.1	4	<0.050	<0.050	<0.050	<0.050
01051	LEAD- TOTAL	0.0303	4	<0.02	<0.02	<0.02	<0.02
71900	MERCURY- TOTAL	0.0017	4	<0.0002	<0.0002	<0.0002	<0.0002
01062	MOLYBDENUM- TOTAL	0.0325	4	<0.005	0.015	0.005	<0.005
01067	NICKEL- TOTAL	0.0727	4	0.15	0.02	0.02	<0.02
00610	NITROGEN- AMMONIA	480	0	19.3	22.1	16.1	21.5
01147	SELENIUM- TOTAL	0.0123	4	<0.005	<0.005	<0.005	<0.005
01077	SILVER- TOTAL	0.074	4	<0.005	<0.005	0.011	<0.005
00530	SOLIDS- TOTAL SUSPENDED	330.867	0	168	269	174	258
01092	ZINC- TOTAL	0.2929	4	0.11	0.13	0.09	0.16

Facility Name:	KISKI VALLEY WPCA						
Facility ID:	PAP027626	**UNITS:**	MG/L				
Location:	**EFFLUENT**			Date	Date	Date	Date
	Pollutant	Goals	Frequency	2/15/2023	5/17/2023	8/16/2023	11/15/2023
01002	ARSENIC- TOTAL	0.3986	4	<0.005	<0.005	<0.005	<0.005
00310	CBOD- 5-DAY	No Goal	0	<3.0	<3.0	<3.0	<3.0
01027	CADMIUM- TOTAL	0.0157	4	<0.002	<0.002	<0.002	<0.002
01034	CHROMIUM- TOTAL	Monitor	4	<0.02	<0.02	<0.02	<0.02
01042	COPPER- TOTAL	0.0625	4	0.01	<0.01	<0.01	<0.01
00720	CYANIDE- TOTAL	0.1454	4	<0.050	<0.050	<0.050	<0.050
01051	LEAD- TOTAL	0.2408	4	<0.02	<0.02	<0.02	<0.02
71900	MERCURY- TOTAL	0.002	4	<0.0002	<0.0002	<0.0002	<0.0002
01062	MOLYBDENUM- TOTAL	Monitor	4	<0.005	0.006	<0.005	<0.005
01067	NICKEL- TOTAL	1.925	4	0.06	<0.02	<0.02	<0.02
00610	NITROGEN- AMMONIA	No Goal	0	0.35	0.49	0.24	0.35
01147	SELENIUM- TOTAL	0.1993	4	<0.005	<0.005	<0.005	<0.005
01077	SILVER- TOTAL	0.0595	4	<0.005	<0.005	<0.005	<0.005
00530	SOLIDS- TOTAL SUSPENDED	No Goal	0	<3.0	<3.0	<3.0	<3.0
01092	ZINC- TOTAL	0.5101	4	0.06	0.07	0.02	0.06

Facility Name:	KISKI VALLEY WPCA						
Facility ID:	PAP027626	**UNITS:**	MG/KG DRY WT	Date	Date	Date	Date
Location:	**SLUDGE**			2/15/2023	5/17/2023	8/16/2023	11/15/2023
	Pollutant	Goals	Frequency				
01002	ARSENIC- TOTAL	41	4	<6.92	<7.40	<6.47	<6.89
00310	BOD- 5-DAY	No Goal	0				
01027	CADMIUM- TOTAL	39	4	<6.92	<7.40	<6.47	<6.89
01034	CHROMIUM- TOTAL	Monitor	4	39.4	30.0	54.4	16.6
01042	COPPER- TOTAL	1500	4	524	689	702	270
00720	CYANIDE- TOTAL	Monitor	4	<5.00	<5.00	<5.00	<5.00
01051	LEAD- TOTAL	300	4	72.6	65.3	77.4	40.4
71900	MERCURY- TOTAL	17	4	<1.93	<1.72	1.84	<1.56
01062	MOLYBDENUM- TOTAL	75	4	<10.4	9.47	15.2	<12.9
01067	NICKEL- TOTAL	420	4	61.1	91.6	86.1	23.00
00610	NITROGEN- AMMONIA	No Goal	0				
01147	SELENIUM- TOTAL	100	4	29.8	59.6	40.9	9.8
01077	SILVER- TOTAL	Monitor	4	10.6	20.6	29.9	<6.89
00530	SOLIDS- TOTAL SUSPENDED	No Goal	0				
01092	ZINC- TOTAL	2800	4	591	770	962	434

ATTACHMENT F

2023

SEWAGE SLUDGE MANAGEMENT INVENTORY

Solids Management (Sludge) Calculator

This worksheet calculates the expected sludge volume that should be produced by various treatment processes over a one-year period. Enter data into green cells - hit the Tab key to move between cells. Red cells are calculated.

Facility Name: Kiski Valley Water Pollution Control Authorit Permit No.: PA0027626

Evaluation Period: 1/1/2023 (Enter Date) to 12/31/2023 (Enter Date)

Design Flow: 7 MGD Actual Annual Average Flow: 3.070379 MGD

Type of Biological Treatment Process: Sequencing Batch Reactor Treatment Factor: 0.65

Type of Digestion Process: Aerobic Digestion, HDT = 20 Digestion Factor: 0.7

Total Population Served by Treatment Plant: 29,600

Average Annual Influent BOD5 Load (per Ch. 94 Report):	4,179.5	lbs/day
Average Annual Influent BOD5 Load (Expected based on Population):	5,032.0	lbs/day *(Population x 0.17)*
% of Influent BOD5 Load per Ch. 94 Report / Influent Load Expected:	83.1%	*(Influent Load per Ch. 94 Report / Influent Load based on Population)*
Average Annual Effluent Concentration of CBOD5 :	3	mg/L ***Assume 3.6 mg/L BOD5***
Average Annual Pounds (lbs) of BOD5 Discharged:	92.19	lbs/day *(Actual Flow x Effluent BOD5 Concentration x 8.34)*
Influent BOD5 Load per Person per Day (based on Ch. 94):	0.141	*(Influent BOD5 Load per Ch. 94 Report / Population - 0.17 to 0.22 is typical)*
Pounds of BOD5 Removed (based on Ch. 94):	4,087.3	lbs/day *(Influent BOD5 Load per Ch. 94 Report - BOD5 Discharged)*
Pounds of BOD5 Removed (based on Population):	4,939.8	lbs/day *(Influent BOD5 Load Expected based on Population - BOD5*
Sludge Removed from Treatment Plant (Previous Year):	383.2 Dry Tons	= 766,400 Dry lbs

Sludge Production and Wasting Calculations

	Based on Chapter 94 Report		*Based on Population*
	4,087.3	BOD5 Removed / Day (lbs)	4,939.8
X	0.65	Treatment Factor	0.65
	2,656.75	Daily Solids Production (lbs)	3,210.88
X	0.7	Digestion Factor	0.7
	1,859.73	Daily Digested Solids (lbs)	2,247.62
X	365	Days per Year	365
	678,801	Solids Generated / Year (lbs)	820,380
-	766,400	Solids Actually Wasted / Year (lbs)	766,400
	-87,599	Difference (lbs)	*53,980*
	113%	% of Expected Volume Wasted *(85 - 115% is generally acceptable)*	93%
	1.9%	Percent Solids of Wasted Solids	1.9%
	4,239,114	Volume of Solids to Remove Annually (gallons)	5,123,275
-	4,786,171	Volume of Solids Actually Removed Annually (gallons)	4,786,171
	-547,057	Difference (gallons)	*337,104*

Kiski Valley Water Pollution Control Authority								
Solids Management Inventory								
Operating Year 2023								
Month	Flow (mgd)	Influent BOD Load (lbs/month)	Influent TSS Load (lbs/month)	Total Influent Load (lbs/month)	Total Effluent CBOD Load (lbs/month)	Total Effluent TSS Load (lbs/month)	Total Effluent Load (lbs/month)	Sludge Produced (dry tons/month)
January	170.178060	200,762	63,685	**264,447**	5,305	10,737	**16,042**	29.63
February	90.084525	116,594	40,241	**156,835**	2,282	2,539	**4,821**	27.95
March	118.574886	128,033	37,881	**165,914**	3,071	4,129	**7,200**	41.88
April	79.289097	109,932	31,171	**141,103**	2,226	2,147	**4,373**	26.09
May	75.095947	130,396	56,440	**186,836**	1,912	1,981	**3,893**	29.87
June	72.931298	138,300	54,222	**192,522**	2,099	2,482	**4,581**	33.13
July	97.493581	122,717	42,346	**165,063**	2,461	3,002	**5,463**	20.44
August	109.118080	120,765	37,491	**158,256**	2,904	3,779	**6,683**	39.38
September	69.316828	120,461	41,747	**162,208**	2,125	1,791	**3,916**	23.79
October	74.637239	114,467	33,954	**148,421**	1,889	1,902	**3,791**	30.24
November	79.010557	107,102	58,210	**165,312**	2,420	6,432	**8,852**	32.08
December	86.780851	115,981	45,379	**161,360**	2,286	4,328	**6,614**	45.34
TOTALS	1,122.5109	1,525,510	542,767	**2,068,277**	30,980	45,249	**76,229**	379.82

ATTACHMENT G

2023

ANNUAL CSO REPORT

KISKI VALLEY WATER POLLUTION CONTROL AUTHORITY

2023 CSO SUMMARY

MONTH	Overflow Volume	Overflow Duration	Overflow Occurances
	(Mgal)	(HRS)	(#)
January	1.1775	71.64	11
February	0.4592	21.23	6
March	1.6901	87.85	15
April	0.1954	14.85	5
May	0.4481	40.08	5
June	1.0771	53.86	12
July	2.1947	87.37	13
August	1.9593	64.02	17
September	0.4821	31.09	10
October	1.0057	80.87	7
November	0.6368	31.18	5
December	0.6910	51.46	8
TOTAL	12.0170	635.50	114
AVERAGE	1.0014	52.96	10

ATTACHMENT H

2023

FLOW METER CALIBRATION REPORT

KROHNE

GS 8 B On-Site Verification Record

GS 8 B STANDARD SETTINGS

This spreadsheet is protected, thus entry is only allowed in accesible fields, drop-down boxes & bright green cells.
To use this calculator, you will only need to input requested information in the bright green cells from your data tags.
The Converter type, engineering units, diameter and frequency have drop down boxes, allowing the user to simply choose from the list.
This spreadsheet will automatically choose inch or metric (depending upon the converter), and state which GK(L) to use.
Printing of the programming results is allowed by simply choosing "Print" through your File menu.

Important: If there is a flowrate value present at the GS8 B zero flow setting, you must compensate to obtain proper evaluation values.
Either manually set converter zero value entry(record original for restoration) or zero converter (zero calibration to be redone for reconnect with primary head).
If unable to manually set zero value entry or redo zero calibration after reconnecting, then use the offset-compensated tables on second sheet of this spreadsheet (Calculator + Zero Compensation). Be aware for possible low flow cutoff setting effects.

Date Recorded: 07/18/2023
Flow Tube Model #: Optiflux
Serial #: S13314445
Commission #:
Tag #: HW-FIT-101
Tested by: Tyler Perone

		DATA INPUT AREAS (in green)	
INPUT VARIABLES			
Converter	=	IFC 300(GK)	
Q Fullscale	=	7000	USGal/min
Select Meter Dia.	=	Inch mm 18 / 450	
DN	=	450	mm
Diameter	=	18	inch (ref only)
$I_{0\%}$	=	4	mA
$I_{100\%}$	=	20	mA
$P_{100\%\ (Hz)}$	=		Hz
GK	=	3.4606	<use GK
GKL	=		<do not use
K	=	Value automatically chosen from K value table	

$$X = \frac{Q_{100\%} * K * F}{GK(L) * DN^2} = \frac{1844824.583}{700771.5} = 2.633$$

Y_{MAX} = 2.0

Max Knob Setting: C

Output Current	$Iloop_{Max}$ =	16.155 mA
Output Frequency	$Freq_{Max}$ =	
Output Flow Rate	Q_{Max} =	5318.013 USGal/min

GS 8 B Knob Setting	Calculated Current Output (mA)	Calculated Frequency Hz	Calculated Flowrate (USGal/min)	Observed Selected I/O Flow Rate	Deviation Evaluation Flow Rate
0	4.000	-	0.00	0.000	0.000
A	7.039	-	1329.50	1329.400	-0.01%
B	10.078	-	2659.01	2658.800	-0.01%
C	16.155	-	5318.01	5320.000	0.04%
D		-			
E		-			

Version: Rev 1.3.4-USA

KROHNE

GS 8 B On-Site Verification Record

GS 8 B STANDARD SETTINGS

This spreadsheet is protected, thus entry is only allowed in accesible fields, drop-down boxes & bright green cells.
To use this calculator, you will only need to input requested information in the bright green cells from your data tags.
The Converter type, engineering units, diameter and frequency have drop down boxes, allowing the user to simply choose from the list.
This spreadsheet will automatically choose inch or metric (depending upon the converter), and state which GK(L) to use.
Printing of the programming results is allowed by simply choosing "Print" through your File menu.

Important: If there is a flowrate value present at the GS8 B zero flow setting, you must compensate to obtain proper evaluation values.
Either manually set converter zero value entry(record original for restoration) or zero converter (zero calibration to be redone for reconnect with primary head).
If unable to manually set zero value entry or redo zero calibration after reconnecting, then use the offset-compensated tables on second sheet of this spreadsheet (Calculator + Zero Compensation). Be aware for possible low flow cutoff setting effects.

Date Recorded: 07/18/2023
Flow Tube Model #: Optiflux
Serial #: S13314446
Commission #:
Tag #: HW-FIT-102
Tested by: Tyler Perone

		DATA INPUT AREAS (in green)	
INPUT VARIABLES			
Converter	=	IFC 300(GK)	
Q Fullscale	=	7000	USGal/min
Select Meter Dia.	=	Inch mm	
		18 / 450	
DN	=	450	mm
Diameter	=	18	inch (ref only)
$I_{0\%}$	=	4	mA
$I_{100\%}$	=	20	mA
$P_{100\%\ (Hz)}$	=		Hz
GK	=	3.5126	<use GK
GKL	=		<do not use
K	=	Value automatically chosen from K value table	

$$X = \frac{Q_{100\%} * K * F}{GK(L) * DN^2} = \frac{1844824.583}{711301.5} = 2.594$$

Y_{MAX} = 2.0 (Max Knob Setting: C)

Output Current	$Iloop_{Max}$ =	16.338 mA
Output Frequency	$Freq_{Max}$ =	
Output Flow Rate	Q_{Max} =	5397.923 USGal/min

GS 8 B Knob Setting	Calculated Current Output (mA)	Calculated Frequency Hz	Calculated Flowrate (USGal/min)	Observed Selected I/O Flow Rate	Deviation Evaluation Flow Rate
0	4.000	-	0.00	0.000	0.000
A	7.085	-	1349.48	1350.500	0.08%
B	10.169	-	2698.96	2698.500	-0.02%
C	16.338	-	5397.92	5399.000	0.02%
D		-			
E		-			

Version: Rev 1.3.4-USA

KROHNE

GS 8 B On-Site Verification Record

GS 8 B STANDARD SETTINGS

This spreadsheet is protected, thus entry is only allowed in accesible fields, drop-down boxes & bright green cells.
To use this calculator, you will only need to input requested information in the bright green cells from your data tags.
The Converter type, engineering units, diameter and frequency have drop down boxes, allowing the user to simply choose from the list.
This spreadsheet will automatically choose inch or metric (depending upon the converter), and state which GK(L) to use.
Printing of the programming results is allowed by simply choosing "Print" through your File menu.

Important: If there is a flowrate value present at the GS8 B zero flow setting, you must compensate to obtain proper evaluation values.
Either manually set converter zero value entry(record original for restoration) or zero converter (zero calibration to be redone for reconnect with primary head).
If unable to manually set zero value entry or redo zero calibration after reconnecting, then use the offset-compensated tables on second sheet of this spreadsheet (Calculator + Zero Compensation). Be aware for possible low flow cutoff setting effects.

Date Recorded: 07/18/2023
Flow Tube Model #: Optiflux

Serial #: s13314485
Commission #:

Tag #: HW-FIT-103
Tested by: Tyler Perone

		DATA INPUT AREAS (in green)	
INPUT VARIABLES			
Converter	=	IFC 300(GK)	
Q Fullscale	=	25000	USGal/min
Select Meter Dia.	=	Inch mm 36 / 900	
DN	=	900	mm
Diameter	=	36	inch (ref only)
$I_{0\%}$	=	4	mA
$I_{100\%}$	=	20	mA
$P_{100\%\ (Hz)}$	=		Hz
GK	=	3.7584	<use GK
GKL	=		<do not use
K	=	Value automatically chosen from K value table	

$$X = \frac{Q_{100\%} * K * F}{GK(L) * DN^2} = \frac{6588659.226}{3044304} = 2.164$$

Y_{MAX} = 2.0

Max Knob Setting: C

Output Current	$Iloop_{Max}$ =	18.786 mA
Output Frequency	$Freq_{Max}$ =	
Output Flow Rate	Q_{Max} =	23102.606 USGal/min

GS 8 B Knob Setting	Calculated Current Output (mA)	Calculated Frequency Hz	Calculated Flowrate (USGal/min)	Observed Selected I/O Flow Rate	Deviation Evaluation Flow Rate
0	4.000	-	0.00	0.000	0.000
A	7.696	-	5775.65	5776.000	0.01%
B	11.393	-	11551.30	11552.000	0.01%
C	18.786	-	23102.61	23104.000	0.01%
D		-			
E		-			

Version: Rev 1.3.4-USA

APPENDIX H

H1 - PNDI SEARCH RESULTS

1. PROJECT INFORMATION

Project Name: **Kiskiminetas Township Act 537 Plan Revision**
Date of Review: **8/6/2024 09:25:31 AM**
Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewage module/Act 537 plan**
Project Area: **2,225.98 acres**
County(s): **Armstrong**
Township/Municipality(s): **KISKIMINETAS TOWNSHIP**
ZIP Code:
Quadrangle Name(s): **AVONMORE; VANDERGRIFT**
Watersheds HUC 8: **Kiskiminetas; Middle Allegheny-Redbank**
Watersheds HUC 12: **Crooked Creek-Allegheny River; Kiskiminetas River-Allegheny River; Roaring Run-Kiskiminetas River**
Decimal Degrees: **40.593746, -79.512010**
Degrees Minutes Seconds: **40° 35' 37.4849" N, 79° 30' 43.2355" 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	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 no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

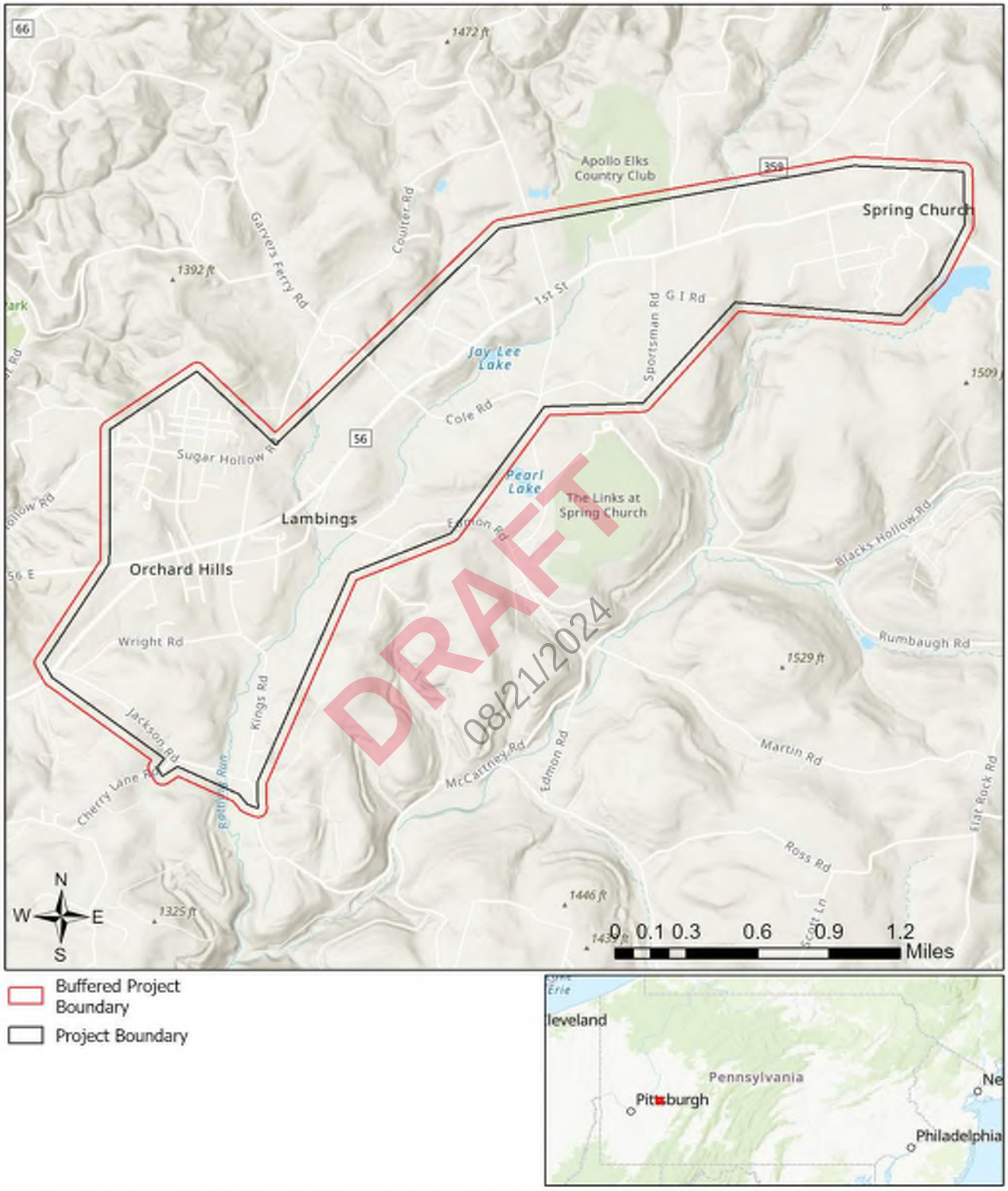
Kiskiminetas Township Act 537 Plan Revision

Buffered Project Boundary

Project Boundary

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

Kiskiminetas Township Act 537 Plan Revision



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project occur within an existing building, parking lot, driveway, road, street, or maintained (periodically mowed) lawn?
Your answer is: Yes

Q2: Is tree removal, tree cutting or forest clearing necessary to implement all aspects of this project?
Your answer is: No

Q3: How many acres of woodland, forest, forested fencerows and trees will be cut, cleared, removed, disturbed or flooded (inundated) as a result of carrying out all aspects or phases of this project? [Round acreages UP to the nearest acre (e.g., 0.2 acres = 1 acre).]
Your answer is: zero acres

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.

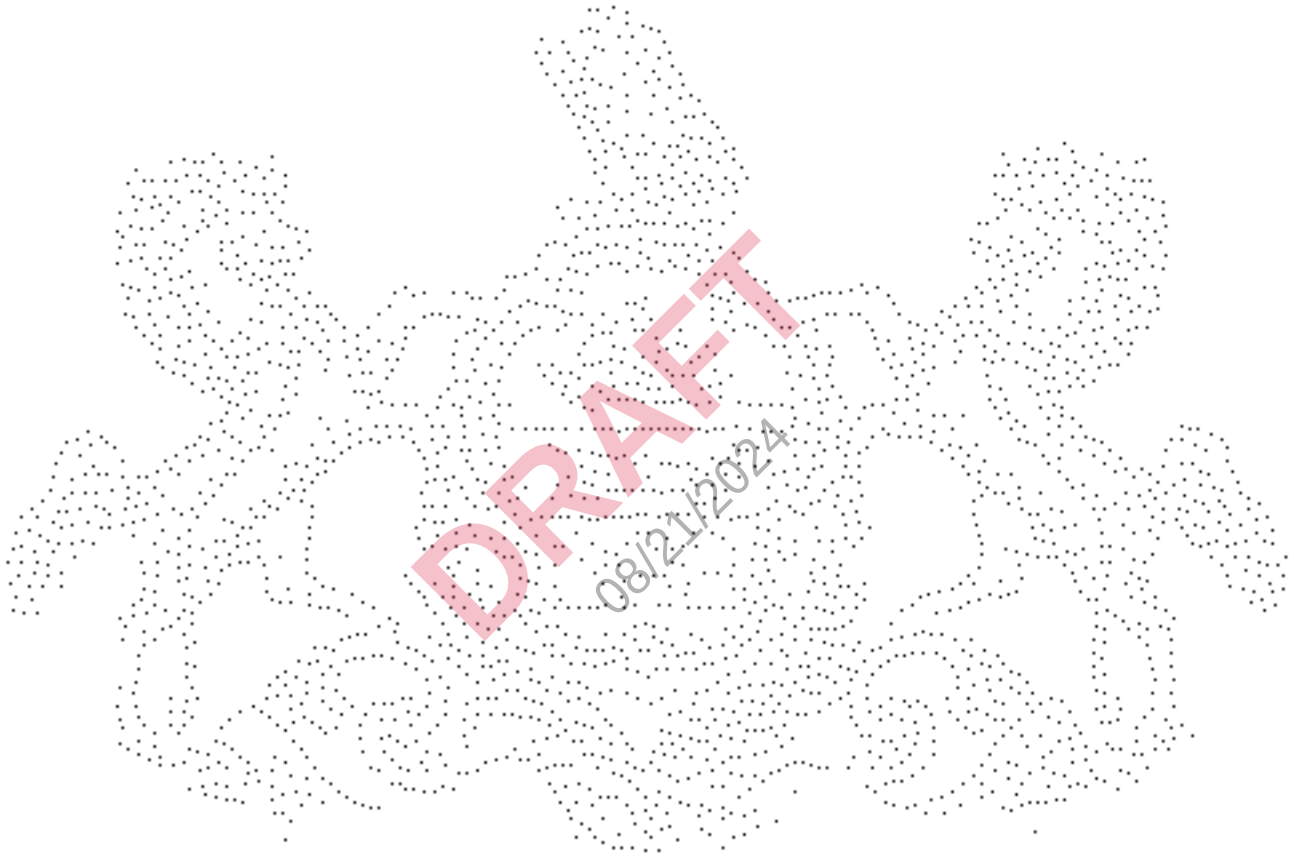
PA Department of Conservation and Natural Resources
RESPONSE:
No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:
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.

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. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.



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
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
Email: IR1_ESPenn@fws.gov
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Management
Division of Environmental Review
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Richard Lenhart, P.E.
Company/Business Name: Senate Engineers and Surveyors
Address: 420 William Pitt Way
City, State, Zip: Pittsburgh, PA 15238
Phone: (412) 826 - 5454 Fax: ( )
Email: RLenhart@LSSE.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

08/07/2024
date

APPENDIX I

PHMC RESPONSE LETTER

Pennsylvania Historical & Museum Commission

PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY	Reviewers: ____/____
DATE RECEIVED:	DATE DUE:
ER NUMBER:	HRSF: _____

REV: 06/2018

SECTION A: PROJECT NAME & LOCATION

Is this a new submittal? (•) YES ( ) NO **OR** ( ) **This is additional information for ER Number:**

Project Name: Orchard Hills Area Sanitary System | County: Armstrong | Municipality: Kiskiminetas Twp.

Project Address: Orchard Hills Area around Old State Road | City/State/ Zip: Apollo | Pa

SECTION B: CONTACT INFORMATION & MAILING ADDRESS

Name: Bob Roach | Phone: (412) 826-5454

Company: Senate Engineering | Fax: (412) 826-5458

Street/PO Box: 420 William Pitt Way | Email: Rjroach@senateengineering.com

City/State/Zip: Pittsburgh PA 15238

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 providing funds, permits, licenses.

Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)
State	PADEP	Part II Permit, General Permit, Joint Permit
State	PENNVEST	Potential loan

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: 2,093 | Total acres of earth disturbance: 10

Are there any buildings or structures within the project area? (•) Yes ( ) No | Approximate age of buildings: 1-100+ yrs old

Does this project involve properties listed in or eligible for the National Register of Historic Places, or designated as historic by a local government?	Yes	No	Unsure	Name of historic property or historic districts
	( )	(•)	( )	

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

- ☑ **Map –** 7.5' USGS quad showing project boundary and Area of Potential Effect
- ☑ **Description/Scope –** Describe the project, including any ground disturbance and previous land use
- ☑ **Site Plans/Drawings –** Indicate past and present land use, location and dates of buildings, and proposed improvements
- ☐ **Photographs –** Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

- ☐ There are **NO HISTORIC PROPERTIES** in the Area of Potential Effect
- ☐ The project will have **NO EFFECT** on historic properties
- ☐ The project will have **NO ADVERSE EFFECTS** on historic properties:
- ☐ The project will have **NO ADVERSE EFFECTS WITH CONDITIONS** (see attached)
- ☐ **SHPO REQUESTS ADDITIONAL INFORMATION** (see attached)

SHPO REVIEWER: _____ **DATE:** _____

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

11 October 2018

Bob Roach
Senate Engineering
420 William Pitt Way
Pittsburgh, PA 15238

Re: ER 2018-2290-005-A
PennVest: Orchard Hills Area Sanitary System, Kiskiminetas Township, Armstrong County, Pennsylvania

Dear Mr. Roach:

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) 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.

Archaeological Resources

Based on an evaluation by our staff, including a review of the Statewide Pre-Contact Predictive Model, there is a high probability that National Register significant archaeological sites are present within this project area. These resources could be adversely affected by project activities. Our review considers the locations of known archaeological resources, soil type, topographic setting, slope direction and distance to water, among other regionally specific predictive factors for archaeological site locations. It is our opinion that a Phase I archaeological survey should be conducted to locate potentially significant resources. Guidelines and instructions for conducting all phases of archaeological survey in Pennsylvania are available on our website http://www.phmc.pa.gov/Preservation/About/Documents/SHPO-Guidelines-Archaeological-Investigation.pdf.

The PASHPO will keep the information you provided for this submission and any subsequent submission on file. Please provide a copy of this letter and any other project-related correspondence to your state or federal permitting or funding agency.

Above Ground Resources

There may be above ground historic properties within the project area of potential effect. However, in our opinion the project as proposed will have no effect on historic properties, should they exist. Should the scope and/or nature of the project change the PA SHPO should be contacted immediately.

If you need further information regarding archaeological resources, please contact Steven McDougal at smcdougal@pa.gov or (717) 772-0923. If you need further information regarding above ground resources, please contact Cheryl Nagle at chnagle@pa.gov or (717) 772-4519.

Sincerely,

Douglas C. McLearen, Chief
Division of Environmental Review

DCM/srm

APPENDIX J

PUBLIC COMMENTS AND TOWNSHIP RESPONSES