

**MON VALLEY SEWAGE AUTHORITY  
WASHINGTON AND WESTMORELAND COUNTIES, PENNSYLVANIA**

**CSO FACILITIES PLANNING  
OFFICIAL SEWAGE FACILITIES PLAN  
UPDATE/SPECIAL STUDY**

**SERVING**

**City of Monessen, Borough of Donora and Portions of Carroll Township**

**JULY 2013**



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**Pittsburgh, Pennsylvania**

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## PLAN SUMMARY

The Pennsylvania Sewage Facilities Act (Act 537) requires that every municipality within the Commonwealth develop and maintain an up-to-date sewage facilities plan. This Plan was required by the Pennsylvania Department of Environmental Protection (PaDEP) upon submission of the Water Quality Management Permit Part II for Phase II of the Long Term Control Plan (LTCP).

This Plan was prepared in accordance with Act 537 as described in PaDEP's "Guide for Preparing Act 537 Update Revisions," dated January 7, 2003. This Plan is divided into five chapters with supporting documentation and mapping provided in the appendices. Major issues addressed include development of Combined Sewer Overflow (CSO) Control Alternatives, evaluation of the alternatives, and selection of a recommended approach to meet the requirements in the National CSO Policy (CSOP).

The Mon Valley Sewage Authority (Authority) sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP). Monessen, Donora, and Carroll Authority currently maintain their own individual sewage collection systems. The construction of these collection systems, with the exception of the Carroll Authority system, predates the inception of the Authority with much of the sewer systems dating to the early 1900's. Both systems were constructed as combined sewer systems (CSS).

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority owns and operates the 17 CSOs along the main interceptor, it is obligated to meet the

requirements of the CSOP first adopted by the United States Environmental Protection Agency (EPA) in 1994.

These CSO structures are located along the Monongahela River and are designed to activate when hydraulic conditions in the CSS exceed 350% of the average dry weather flow. These conditions occur only during wet weather events when these overflows discharge dilute sewage to the Monongahela River.

The CSOP identifies two general approaches for the attainment of Water Quality Standards: the Demonstration Approach and the Presumption Approach. The Presumption Approach was used in developing alternatives for CSO control because this approach provides quantitative performance criteria that could be applied to flow monitoring data.

Concepts used in developing CSO control alternatives included interaction with the Nine Minimum Controls, interaction with other collection and treatment system objectives, and creative thinking. Thirty-five alternatives were developed to meet the CSOP. The LTCP summarized the alternatives in Tables 3-1 through 3-35. A copy of these tables IS included in Appendix D.

The CSO Control Alternatives were divided into two Main CSO Control Alternative categories based on proposed modifications to the collection system: Main CSO Control Alternative I-Partial Sewer Separation and Main CSO Control Alternative II-Complete Sewer Separation.

The partial sewer separation main alternative includes separation of combined sewers in selected sub-sewersheds. The selection of sub-sewersheds designated for separation of sewers was based on anticipated dry and wet weather peak flows, the cost of sewer separation compared with treatment or storage of the associated CSO, and previously planned collection system upgrade projects. The complete sewer separation main alternative includes the separation of all combined sewers in the collection system.

In the Main CSO Control Alternative I-Partial Sewer Separation, the CSO Control Strategy proposed to achieve the CSO Control Goal consists of constructing satellite treatment facilities at selected CSO locations. The final set of 33 CSO Control Alternatives was based on two CSO Disinfection Alternatives, five CSO Sub-Alternatives, and five Levels of CSO Control.

Under Main Alternative II-Complete Sewer Separation, all CSOs would be eliminated. Two Complete Sewer Separation Alternatives were identified to include necessary system upgrades associated with operating and maintaining a dedicated sanitary sewer collection, conveyance, and treatment system.

In each main alternative, there is a set of proposed collection and conveyance system upgrades common to each sub-alternative within the main alternative. There is also a set of upgrades common to both main alternatives. These sets of proposed upgrades comprise the Collection System Base Plans.

In the LTCP, a summary of opinions of probable projects costs for each CSO Control Alternative was included in Table 3-24. Tables 3-25 through 3-35 provided a detailed summary of component costs, construction costs, and project costs for each CSO Control Alternative. These tables are also included in Appendix D.

In order to meet the requirements of the National CSO Policy via the most cost effective means, the Authority has selected Alternative IB-4b. Alternative IB-4b was a slightly modified version of previously developed Alternatives that came about as a result of the May 16, 2007 meeting with PaDEP. Alternative IB-4b implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in Alternative IB-1 in favor of a larger equalization tank. This concept adheres to the idea of maximizing flow to the WWTP, where the Authority is conveying as much flow to the WWTP as economically feasible.

Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15<sup>th</sup> Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the

City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project cost for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Financing alternatives were evaluated for Phases II and III. The recommended financing alternative for Phase II was a bond issue. The estimated increase to the monthly user fee for Phase II based on a bond issue and 2013 dollars is \$24.00 for a total estimated monthly user fee of \$59.00. The recommended financing alternative for Phase III was a Pennvest loan. The estimated increase in monthly user fee for Phase III based on a Pennvest loan and 2013 dollars is \$23.00 for a total estimated monthly user fee of \$82.00.

The majority of the institutional arrangements necessary for implementation of this Plan already exist. The remaining item that needs to be addressed is the adjustment of sewer user fees for the additional operation and maintenance and debt service for Phases II and III. These will be done during the construction of each Phase. The Authority will be responsible for the design, permitting and obtaining financing for Phases II and III.



Tentative Schedule For The Recommended Alternatives

Task or Milestone	Target Completion Date
Submit Task Activity Report (TAR) to PaDEP for approval	Completed May 30, 2013
Start Act 537 Plan	May 2013
Submit Draft Act 537 Plan to Planning Agencies, MVSA, and Municipalities	August 2013
Close on Initial Phase II Bond Issue	August 2013
Comments Received on Act 537 Plan	December 2013
Finalize Report	December 2013
Adopt Final Act 537 Plan by Official Resolution of MVSA, City of Monessen, Borough of Donora and Carroll Township	January 2014
Submit Final Act 537 Plan to PaDEP	January 2014
Receive Approval of the Act 537 Plan	March 2014
Resubmit Part II Permits for Phase II (E&S approval already received.)	April 2014
Receive Part II Permits	July 2014
Open Bids	August 2014
Apply for Additional Funds	August 2014
Start Construction Phase II	September 2014
End Construction Phase II	September 2016
Evaluate Satellite Facility	September 2017
Start Design of Phase III	March 2017
Submit Permits for Phase III	March 2019
Receive Permits	June 2019
Apply for Additional Funds	August 2019
Start Construction Phase III	September 2019
End Construction Phase III	September 2022

## **2.0 DESCRIPTION OF PLANNING AREA**

### **Introduction**

This report is a special study relating to the construction of wet weather facilities identified in the Long Term Control Plan.

The Pennsylvania Department of Environmental Protection (PaDEP) administers the Act 537 program. PaDEP has produced “A Guide for Preparing Act 537 Update Revisions”, dated October 2012, which includes the Act 537 Plan Content and Environmental Assessment Checklist. This Plan has been prepared in conformance with Act 537 and the PaDEP checklist. A completed copy of the PaDEP Checklist indicating where each required item can be found within the Plan is included in Appendix A.

### **2.1 Planning Area**

The Mon Valley Sewage Authority (Authority) sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP). Monessen, Donora, and Carroll Authority currently maintain their own individual sewage collection systems. The construction of these collection systems, with the exception of the Carroll Township system, predates the inception of the Authority with much of the sewer systems dating to the early 1900's. Both systems were constructed as combined sewer systems (CSS). The NPDES Permit issued on October 2, 2002 approved re-rating of the WWTP from 3.66 MGD to 4.96 MGD.

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority

and operates the 17 combined sewer overflows (CSOs) along the main interceptor, it is obligated to meet the requirements of the National CSO Policy (CSOP) first adopted by the United States Environmental Protection Agency (EPA) in 1994. The Plan Area is shown on Exhibit 2-1.

## 2.2 Physical Characteristics

The Monongahela River and Unnamed Tributaries to the Monongahela River are located in the Planning Area as shown on Exhibit 2-1.

## 2.3 Soils

The soils in the Planning Area are as follows:

1. Culleoka silt loam, CaD, 15 to 25 percent slopes. Moderately deep well drained soils formed from interbedded shale, siltstone, sandstone, and limestone. They are on upland slopes. They have moderate or moderately rapid permeability, a moderate available water capacity and normally have no seasonal high water table. Slope and depth to bedrock are the main restrictions of this soil.
2. Dormont-Culleoka silt loams, DtF, 25 to 50 percent slopes. This soil is moderately well drain to well drained, deep to moderately deep, and has moderately slow to moderately rapid permeability. High to moderate available water capacity and runoff is rapid. Slope, seasonally high water table, and depth to bedrock are the main restrictions of this soil.
3. Gilpin-Rock outcrop complex, GoF, 45 to 100 percent slopes. Gilpin soils make up 45 percent of the map unit. This component is typically found on the shoulder position of hillslopes. The parent material consists of residuum weathered from acid fine-grained sandstone, siltstone, and shale. The runoff class is high. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). This soil is well drained. The slowest soil permeability within a depth of 60 inches is moderate. Available water capacity to a depth of 60 inches is low, and shrink swell potential is low. Annual flooding is none, and annual ponding is none. The minimum depth to a water table is greater than 6 feet. The assigned Kw erodibility factor is .24. It is nonirrigated land capability subclass 7e. This soil is not suitable for cultivated crops. This component is not a hydric soil.
4. Glenford silt loam, GdB, 3 to 8 percent slopes, and GdC 8 to 15 percent slopes. Deep, moderately well drained soils formed from stratified stream deposited material. They are on stream terrace positions above the floodplains. They have moderately slow permeability, a high available water capacity, and a seasonal high water table at 24 to 28 inches of the surface during wet periods of the year. No major restrictions are expected in this soil.
5. Guernsey silt loam, GeD, 15 to 25 percent slopes. Deep and moderately well drained. Permeability is slow to moderately slow, and the runoff is rapid with a high available water capacity. Main restrictions are high water table and slow permeability.

- high available water capacity. Main restrictions are high water table and slow permeability.
6. Lowell-Culleoka complex, LxF, 25 to 80 percent, very rocky. Well drained, moderately low to moderately high permeability, high available water capacity, runoff is rapid. Limited by the slopes and rapid runoff.
  7. Urban land, UdA, 0 to 3 percent slopes. This unit consists of areas where more than 85% of the surface is covered by asphalt, concrete, buildings, and other impervious surfaces. Examples are parking lots, shopping centers, and industrial parks. . Onsite investigation is needed to determine the suitabilities and potentials for any use.
  8. Urban land-Culleoka complex, UeB, 0 to 8 percent slopes. Monongahela soils make up 40 percent of the map unit. The parent material consists of old alluvium derived from sandstone and shale. The runoff class is low. The depth to a restrictive feature is 25 to 35 inches to a fragipan. This soil is moderately well drained. The slowest soil permeability within a depth of 60 inches is slow. Available water capacity to a depth of 60 inches is moderate, and shrink swell potential is low. Annual flooding is none, and annual ponding is none. The minimum depth to the top of the seasonal high water table is at 21 inches. The assigned Kw erodibility factor is .43. It is nonirrigated land capability subclass 2e. This soil is not suitable for cultivated crops. This component is not a hydric soil.
  9. Urban land-Guernsey complex, UhD, 8 to 25 percent slopes. Moderately well drained, runoff is rapid, permeability is slow, available water capacity is moderate. Limitations of this soil are the rapid runoff and slow permeability.
  10. Urban land-Monongahela complex, UmB, 0 to 8 percent slopes. Moderately well drained, runoff is slow, permeability is slow, available water capacity is moderate. Limitations is the slow permeability.
  11. Urban land, Us. This unit consists of areas where more than 85% of the surface is covered by asphalt, concrete, buildings, and other impervious surfaces. Examples are parking lots, shopping centers, and industrial parks. . Onsite investigation is needed to determine the suitabilities and potentials for any use.
  12. Weikert-Culleoka complex, WeD, 15 to 25 percent slopes. This map unit is a combination of a) Weibert-Shallow, well drained soils formed from shale, siltstone, and limestone. They are on upland slopes. They have moderately rapid permeability, a low available water capacity, and normally have no seasonal high water table and; b) Culleoka-Moderately deep, well drained soils formed from interbedded shale, siltstone, sandstone, and limestone. They have moderate or moderately rapid permeability, a moderate available water capacity, and normally have no seasonal high water table. Slope, depth to bedrock, gravel and large stone content are the main restrictions of this soil.

A copy of the soil maps is located in Appendix B.

## 2.4 Geologic Features

A review of the Greater Pittsburgh Region Geologic Map, compiled by W.R. Wagner, J.L. Craft, L. Heyman and J.A. Harper dated 1975 shows the majority of the plan area located in

the Monongahela Group Formation. The formation is cyclic sequences of shale, limestone, sandstone and coal and contains Pittsburgh coal bed at the base. Water quality is affected by calcium bicarbonate content. Dissolved solids range from 272 to 610 mg/l and iron ranges from 0.08 to 35 mg/l.

Conemaugh – Casselman Group Formation is also located in the plan area in the area of the Monongahela River. This formation is cyclic sequence of sandstone, shale, red beds and thin limestone and coal. Dissolved solids range from 99 to 722 mg/l, hardness ranges from 10 to 263 mg/l, and iron ranges from 0.08 to 23.2 mg/l.

Dunkard – Waynesburg Group Formation is also located in small portions in the plan area. This formation is cyclic sequence of sandstone, shale, limestone and coal and contains Waynesburg coal bed at the base. This has generally good quality water, moderately hard.

## **2.7 Wetlands**

A wetland field investigation was conducted during design of Phase I and Phase II of the LTCP which showed no wetlands in the project area. A copy of the wetland field investigation is located in Appendix C. Based on the National Wetlands Inventory Maps, there are no wetlands shown in the areas of the proposed facilities for Phase III. A copy of the wetland maps is also located in Appendix C.

## **5.0 ALTERNATIVES TO PROVIDE NEW OR IMPROVED WASTEWATER DISPOSAL FACILITIES**

### **Identified Needs**

The Monessen and Donora collection systems reportedly do not experience overflows within their respective systems. Therefore, the City of Monessen and the Borough of Donora are not required to obtain NPDES Permits (PA CSO General Permit PAG-6). Because the Authority owns and operates the 17 combined sewer overflows (CSOs) along the main interceptor, it is obligated to meet the requirements of the National CSO Policy (CSOP) first adopted by the United States Environmental Protection Agency (EPA) in 1994. The Long Term Control Plan was developed that evaluated feasible alternatives available to the Authority to continue to successfully comply with the provisions of the CSOP.

### **5.1 Alternatives to Provide Improved Wastewater Disposal Facilities**

#### **5.1.2, 5.1.3, 5.1.4 & 5.1.6 Conventional Collection, Conveyance, Treatment and Discharge Alternatives**

##### **Development of Alternatives for CSO Control**

Concepts used in developing CSO control alternatives include interaction with the Nine Minimum Controls, interaction with other collection and treatment system objectives, and creative thinking.

##### **Interaction with Nine Minimum Controls**

The Nine Minimum Controls include technology based actions or measures to reduce CSOs and their effect on receiving water quality. The two controls that have the largest impact on LTCP development are maximization of flow to the WWTP for treatment and pollution prevention programs to reduce contaminants in CSOs.

In recent years, collection system operating procedures have been aimed at maximizing flow into and through the interceptor to the WWTP. Therefore, data obtained during the extensive flow metering program is reflective of peak flows that may be observed during precipitation events. Pollution prevention programs include street sweeping and a public awareness program (catch basin stenciling). These pollution prevention efforts will improve the effectiveness of potential CSO

treatment facilities.

### **Interactions with Other Collection and Treatment System Objectives**

The Authority completed a system mapping project that identified sewershed areas, separate and combined sections of the system, and CSO outfall locations and developed a hydraulic model of the interceptor. In addition, the Authority conducted a program to clean and internally inspect all the collection sewers within the Monessen and Donora systems. These projects are part of the Authority's continuing effort to characterize and maintain the integrity of the collection system, interceptor, and pump stations. Information obtained during these projects, in conjunction with the flow metering program data, was utilized to identify and evaluate areas of sewer separation, storage facility location and sizing, treatment facility location and sizing, and WWTP upgrade and improvement alternatives.

### **Creative Thinking**

Numerous approaches for integrating the existing conveyance and treatment systems and proposed CSO control facilities were identified and evaluated during LTCP development. The plan proposes innovative methods to integrate the existing collection and conveyance system with state of the art technologies while maximizing the capabilities of the existing WWTP.

### **Definition of Water Quality and CSO Control Goals**

The ultimate goal of the LTCP is compliance with the requirements of the Clean Water Act (CWA), within the framework provided by the CSO Control Policy. The LTCP was developed based on the "Presumption Approach". Accordingly, it is presumed that if the minimum performance criteria (no more than 4-6 annual overflows and/or capture for treatment of 85% by volume of combined sewage) are met then an adequate level of control to meet water quality based requirements of the CWA is provided. However, numerous upstream point and non-point pollution sources can potentially prevent attainment of water quality standards and designated uses. Therefore, based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

- To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

CSO Control Goals refer to specific levels of pollution control for CSO sources. CSO Control Goals are established with the objective of providing the means to allow attainment of the Water Quality Goal. The following CSO Control Goals were established.

1. To provide a sufficient level of control so that remaining CSO discharges will not prevent attainment of Water Quality Standards or contribute to impairment of the Monongahela River.
2. To eliminate the impacts of the Authority's CSOs on the Monongahela River.

The CSO Control Goals provide two levels of CSO Control.

- Level 1: CSO Control Goal No. 1 allows limited CSO discharges consistent with the CSO Control Policy Presumption Approach.
- Level 2: CSO Control Goal No. 2 seeks to meet the Water Quality Goal by minimizing untreated CSOs or completely eliminating all CSOs.

### **Approaches to Structuring CSO Control Alternatives**

The first step in identifying CSO control alternatives to provide the means to meet the CSO control goals was to review the operation of the existing collection and conveyance systems. The collection system consists of a network of combined sewer and dedicated sanitary sewer sub-sewersheds. The majority of the sub-sewersheds drain to diversion structures upstream of the main interceptors (Monessen Interceptor and Donora Interceptor). Normal flows are directed to the interceptors. Excess flows are diverted to combined sewer overflow outfalls. Several small pump stations are located along the interceptors. The interceptor sewers terminate at the two main pump stations, Monessen Pump Station and Donora Pump Station. Sewage from the two main pump stations is pumped directly to the WWTP. Sewage from Carroll Township is pumped to the WWTP via a pump station owned and operated by Carroll Township.



The existing collection system is extensive with the majority of the system being combined sewers constructed prior to the Monessen and Donora interceptor sewers. The existing Monessen and Donora interceptor sewers and diversion structures were designed to accommodate the pre-existing collection system and topography along the interceptor sewer routes, which parallel the Monongahela River. Pump stations along the interceptor were located and designed based upon anticipated sewage flows and proposed interceptor sewer elevations.

The flow metering data analysis provided estimates of average dry weather flow for the combined sewer sub-sewersheds. Other methods were used to estimate the average dry weather flow for sewersheds with existing or proposed dedicated sanitary sewer systems. To maximize flow to the WWTP, CSO Control Alternatives were based on

- conveying 350% of the average dry weather flow to the interceptor sewers for combined sewer sewersheds located in Donora,
- conveying 350% or greater than 350% of the average dry weather flow to the interceptor sewers for combined sewer sewersheds located in Monessen, and
- conveying 400% of the average dry weather flow to the interceptor sewers for sewersheds with existing or proposed separate sanitary sewer systems (Monessen and Donora areas).

For the majority of the combined sewer sub-sewersheds, the flow metering data analysis also provided an estimate of the peak combined sewage flow rate received at the existing diversion structure. Any CSO control facilities would be expected to handle these peak flow rates. Therefore, the peak observed flow rates were used to size potential CSO control facilities. The analysis of average annual flow volume and overflow occurrence provided estimates of individual CSO satellite treatment facility capacity necessary to achieve the CSO Control Goals. The analysis provided estimated satellite treatment facility capacity needed to

- provide capture and treatment of 100% of the wet weather flow entering the combined sewer system on an average annual basis,
- provide capture and treatment of 85% of the wet weather flow entering the combined sewer system on an average annual basis,

- limit combined sewer overflow events to 4 to 6 events per year,
- provide treatment of the wet weather flow entering the combined sewer system on an average annual basis corresponding to the percent capture representing the “point of diminishing returns” or knee of curve for treatment facility capacity, and
- provide treatment of the wet weather flow entering the combined sewer system on an average annual basis corresponding to the number of annual combined sewer overflow events representing the “point of diminishing returns” or knee of curve for treatment facility capacity.

Using the methodology described above, CSO Control Alternatives were developed with the goal of integrating as much of the existing sewer system infrastructure as technically and economically feasible and utilizing the capabilities of the existing WWTP to the maximum possible extent.

A total of 35 CSO Control Alternatives were selected for evaluation. The CSO Control Alternatives were shown graphically on Figure 3-1 and summarized in Tables 3-1 through 3-35 as part of the LTCP and are included in Appendix D.

The CSO Control Alternatives are divided into two Main CSO Control Alternative categories based on proposed modifications to the collection system: Main CSO Control Alternative I-Partial Sewer Separation and Main CSO Control Alternative II-Complete Sewer Separation.

The partial sewer separation main alternative includes separation of combined sewers in selected sub-sewersheds. Sub-sewersheds are shown on Exhibits 2-2 and 2-3. The selection of sub-sewersheds designated for separation of sewers was based on anticipated dry and wet weather peak flows, the cost of sewer separation compared with treatment or storage of the associated CSO, and previously planned collection system upgrade projects. The complete sewer separation main alternative includes the separation of all combined sewers in the collection system.

In the Main CSO Control Alternative I-Partial Sewer Separation, the CSO Control Strategy proposed to achieve the CSO Control Goal consists of constructing satellite treatment facilities at selected CSO locations. The final set of 33 CSO Control Alternatives is based on two CSO

Disinfection Alternatives, five CSO Sub-Alternatives, and five Levels of CSO Control. These Disinfection Alternatives, CSO Sub-Alternatives, and Levels of CSO Controls are described below.

Under Main Alternative II-Complete Sewer Separation, all CSOs would be eliminated. Two Complete Sewer Separation Alternatives were identified to include necessary system upgrades associated with operating and maintaining a dedicated sanitary sewer collection, conveyance, and treatment system.

In each main alternative, there is a set of proposed collection and conveyance system upgrades common to each sub-alternative within the main alternative. There is also a set of upgrades common to both main alternatives. These sets of proposed upgrades comprise the Collection System Base Plans.

Two planned and now completed as Phase I of the LTCP were collection system improvement projects. These collection system improvements are common to all the alternatives. The first was a stream separation project in the Seneca Street area of Monessen (Exhibit 2-2, Map Area 7). The Seneca Street project included removing stream flow from the combined sewer system. A new trunk sewer was constructed in Seneca Street to collect the adjacent combined sewersheds. The stream was routed directly to the Monongahela River via the existing combined sewer piping. The project involved approximately 5,500 feet of a new combined trunk sewer and 460 feet of sanitary sewers.

The Authority also constructed a dedicated sanitary sewer system in the 15<sup>th</sup> Street area of Donora (Exhibit 2-3, Map Area 21). This project removed the 15<sup>th</sup> Street stream from the Authority's system, provided sewer service to customers that were not presently sewerred, and eliminated CSO 021. The project consisted of 1,700 feet of new sanitary sewers.

## 5.8 No-Action Alternative

### 5.8.1 Water Quality/Public Health

*The National CSO Control Strategy developed by the EPA recommended that all CSOs be identified and categorized according to their status of compliance with these requirements. It also set forth three objectives:*

- *Ensure that if CSOs occur, they are only as a result of wet weather*
- *Bring all wet weather CSO discharge points into compliance with the technology based and water quality-based requirements of the CWA*
- *Minimize the impacts of CSOs on water quality, aquatic biota, and human health.*

Based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

- To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

If the recommended alternative is not implemented, the Authority will not meet the requirements of the CSOP and Water Quality Goal that was established. Both the short term and long term impact is that CSO discharges will not be reduced and impacts will continue to water quality, aquatic biota, and human health.

### 5.8.2 Growth Potential

The recommended alternative includes collection system improvement projects and upgrading of interceptor sewers. These projects alleviate overloads to the system which allows growth in the area. If the recommended alternative was not constructed overload conditions will continue and the short and long term impact is tap restrictions by PaDEP on the system which will limit any growth in the municipalities.

### **5.8.3 Community Economic Conditions**

Infrastructure, such as public sanitary sewage treatment facilities, is critical for growth and development. Vacant land becomes more attractive for development if an adequate sewage system is available. If tap restrictions are in place for the system, then development cannot occur on vacant land. The short and long-term impact of no-action is if there is no growth and development, then businesses start to fail causing the economics in the community to drop.

### **5.8.4 Recreational Opportunities**

Recreational opportunities downstream of the CSOs are negatively impacted by raw sewage entering into the streams. The short and long-term impact of no-action is the closure of areas for swimming, fishing, and other recreational activities.

### **5.8.5 Drinking Water Sources**

CSO discharges of untreated sewage in the streams can affect drinking water intakes downstream of the CSO. The short and long-term impact of no-action is problems for drinking water systems resulting in contamination and boil water notices for the users served by the drinking water system.

### **5.8.6 Other Environmental Concerns**

The no-action alternative would continue to allow numerous CSO discharges of untreated sewage into the waters of the Commonwealth. This untreated sewage affects not only the streams but the aquatic, animal and human life. The no-action alternative is not a viable option for any other environmental concern.

## **6.0 EVALUATION OF ALTERNATIVES**

### **6.1 Consistency Analysis**

Wastewater management alternatives developed as part of the Act 537 planning process must be evaluated in terms of their relationship to the goals and objectives of various planning, environmental, and natural resource laws and policies of the Commonwealth of Pennsylvania. Chapter 71.21(a) (5) of PaDEP's regulations requires that the Act 537 Plan address the consistency of each wastewater management alternative with 11 of the Commonwealth's goals and policies. If a recommended alternative is determined to conflict with or is inconsistent with one of the goals and objectives, the conflict and inconsistencies must be resolved before PaDEP will approve the alternative.

The following sections discuss the eight evaluation categories and the consistency analysis. Consistency analyses were performed only for the recommended alternative, Alternative IB-4b, Phases II and III since Phase I is complete. Based on the following analysis, the alternatives are consistent with all eight criteria.

#### **6.1.2 Municipal Wasteload Management Plans**

The Authority annually submits a Chapter 94 Municipal Wasteload Management Report to PaDEP for its WWTP and Conveyance System. The 2012 Chapter 94 Report indicates that the plant was not hydraulically or organically overloaded and is not projected to be overloaded within the next five years. As part of the Chapter 94 report, the Authority is to provide the annual CSO Status Report. The report provides information on the overflows in frequency, duration, and volume. The report also provides the operational status of the overflows, any water quality impacts, overflows associated with dry or wet weather, inspection and maintenance on the diversion manholes and regulator structures and if there is a chronic or continuous discharge.

The recommended alternative was developed to meet the requirements of the CSOP and the Authority will continue to provide the annual CSO Status Report as part of the Municipal Wasteload Management Report.

#### **6.1.4 Comprehensive Planning**

*The Washington County Comprehensive Plan, adopted November 23, 2005*, indicated that the Borough of Donora and part of the eastern section of Carroll Township is in Sewerage District #23. This district was identified as a concern area for Combined Sewer Overflows and is considered a high priority area by PaDEP.

The Westmoreland County Comprehensive Plan, dated January 2005 indicated that separation of sewers in those areas with combined sewers would provide further capacity to accommodate growth.

The proposed alternative is consistent with the Comprehensive Plans in that it will reduce the CSOs and meet the requirement of the CSOP and it will separate sewers in selected areas with combined sewers.

#### **6.1.5 Chapter 93, 95, and 102 Antidegradation Requirements**

Chapters 93 and 95 under Pennsylvania's Clean Streams Law classifies all surface waters according to use which shall be protected and establishes water quality criteria which need to be maintained in the surface waters.

The Combined Sewer Overflow (CSO) Control Policy identified two general approaches for the attainment of Water Quality Standards: the Demonstration Approach and the Presumption Approach.

The LTCP was developed based on the "Presumption Approach." Based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal was established.

- To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

The proposed alternative is consistent with the water quality goal.

Chapter 102 requires a soil erosion and sedimentation control plan be prepared and followed for any construction activity impacting greater than one acre. The project will be completed in compliance with necessary erosion and sedimentation control plans.

#### **6.1.7 Prime Agricultural Land Policy**

The policy was established to protect prime agricultural land from irreversible conversions to uses that result in the loss of the land as an environmental or essential food source resource. The sewer separation projects are in the built-up areas of the City of Monessen and the Borough of Donora. The location of the satellite and screening facilities are located in the industrial areas of the City of Monessen and the Borough of Donora.

#### **6.1.8 County Stormwater Management Plans**

The recommended alternative is consistent with the County Stormwater Management Plans. Under the Phase II projects, the Authority has obtained NPDES Permits for Stormwater Discharged During Construction Activities. NPDES Permits for Stormwater Discharged During Construction Activities will be obtained for Phase III of the Plan.

#### **6.1.9 Wetlands**

A wetland delineation to identify and define the actual location of wetlands and their boundaries was performed during the design phase of the LTCP of Phase II. No palustrine wetlands were identified in the project areas. A copy of the field investigation is located in Appendix C. Wetland Maps were generated from the U.S. Fish and Wildlife Service National Wetlands Inventory of digital map data for Phase III. Based on the generated wetland maps, there are no wetlands in the locations of the proposed satellite or bar screen facilities. If wetland encroachment cannot be avoided, PaDEP and U.S. Army Corps of Engineers approval will be needed. Construction through wetlands, if permitted, may require the use of a U.S. Army Corps of Engineers Nationwide Permit 12 and a PaDEP General Permit BDWM-GP-5. Temporary road crossings through wetlands or streams may require a PaDEP General Permit BDWM-GP-8.



#### **6.1.10 Pennsylvania Natural Diversity Inventory**

Pennsylvania Natural Diversity Inventory (PNDI) maintains a database containing site information on regulated plant and animal species, outstanding geological features, and significant natural communities. A PNDI Project Environmental Review Receipt was completed for Phase II and Phase III facilities. A PNDI review was not done for facilities already constructed under Phase I. The receipts indicate there are no known impacts of threatened and endangered species in the project area. Copies of the receipts are included in Appendix E.

#### **6.1.11 Historical and Archeological Resource Protection**

Pennsylvania Title 37, Section 507 requires cooperation between public officials and the Pennsylvania Historical and Museum Commission. A cultural resource notice request was sent to the Bureau of Historic Preservation (BHP) for a list of known historical sites and potential impacts on known archeological and historic sites on the site of the WWTP. On August 27, 2013, PHMC responded that the project should have no effect on historic buildings, structures and/or archaeological resources. A copy of the Pennsylvania Historical and Museum Commission's letter is located in Appendix F.

### **6.2 Resolution of Inconsistencies**

Based on the above analyses, it does not appear there are any inconsistencies, at the planning stage, between the alternatives and the various goals and objectives of the planning, environmental and natural resource laws and policies of the Commonwealth of Pennsylvania.

### **6.3 Evaluate Alternative With Respect to Water Quality Standards, Effluent Limitation and Other Technical, Legislative or Legal Requirements**

The CSOP indicates that if the Presumption Approach is followed, it is presumed that Water Quality Standards will be met. Alternative IB-4b creates the most cost effective means to achieve at least 85% capture (actually 86% capture and 83 overflows per year). This meets the presumption approach of the CSOP.

As stated in Chapter 5, and previously under 6.1.5 Chapter 93, 95, and 102 Antidegradation Requirements, based on the ultimate goal of the LTCP, provisions of the CSO Control Policy, and the reality of wet weather water pollution in the receiving body, the following Water Quality Goal

was established.

- To attain applicable Water Quality Standards in the Monongahela River at all times, provided all non-CSO and other upstream pollution sources are adequately controlled by others so as to allow this attainment.

The CSO Control Goals provide two levels of CSO Control.

- Level 1: CSO Control Goal No. 1 allows limited CSO discharges consistent with the CSO Control Policy Presumption Approach.
- Level 2: CSO Control Goal No. 2 seeks to meet the Water Quality Goal by eliminating untreated CSOs or completely eliminating all CSOs.

The recommended alternative meets that goal.

#### **6.4 Cost Estimates for the Alternatives**

As part of the LTCP, an evaluation of the CSO Control alternatives was done based on project cost, performance, non-monetary factors, environmental issues/impacts, technical issues, and implementation issues. Opinions of probable construction and project costs were developed for the alternatives as Tables 3-24 through 3-35 in the LTCP. Copies of these tables are located in Appendix D. Table 3-24 is a summary of opinions of probable projects costs for each CSO Control Alternative. Tables 3-25 through 3-35 provide a detailed summary of component costs, construction costs, and project costs for each CSO Control Alternative. The opinion of probable project costs for the evaluated alternatives range from approximately \$36.5 million to \$66.5 million. The opinion of probable project costs for Alternative IA (1-3) – Partial Sewer Separation with disinfection of all combined sewage not entering the interceptor ranges from approximately \$54.9 to \$61.7 million. The opinion of probable project costs for Alternative IB (1-6) – Partial Sewer Separation with disinfection of only combined sewage receiving high rate clarification ranges from approximately \$36.5 to \$61.7 million. The opinion of probable project costs for Alternative II A and IIB– Complete Sewer Separation ranges from approximately \$63.9 to \$66.5 million. (All in 2007 dollars.)

Each of the 35 alternatives evaluated in the development of the LTCP had the potential to provide the Authority the means to achieve the CSO Control Goals. Each of the alternatives

presented unique technical challenges and financial impacts. A present worth analysis was not done as part of the LTCP to determine the chosen alternative. Several factors were used to evaluate the alternatives. These factors were project costs, performance and non-monetary. The selected alternative was based on providing a cost effective set of system upgrades and operating procedures that should provide compliance with the requirements of the CWA, within the framework provided by the CSO Control Policy.

In order to meet the requirements of the National CSO Policy via the most cost effective means, the Authority has selected Alternative IB-4b. The opinion of probable construction and project cost for Alternative IB-4 in year 2007 dollars is \$28,306,000 (including 20% contingency) and \$36,562,000, respectively. Alternative IB-4b was a slightly modified version of previously developed Alternatives that came about as a result of the May 16, 2007 meeting with DEP. Alternative IB-4b implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in Alternative IB-1 in favor of a larger equalization tank. This concept adheres to the idea of maximizing flow to the WWTP, where the Authority is conveying as much flow to the WWTP as economically feasible.

Alternative IB-4b was broken down into three phases. Phase I is Collection and Conveyance Upgrades and Equalization; Phase II is Sewer Separation Projects and Seneca Street Satellite Facility; and Phase III is Remaining Screening and Satellite Facilities. The breakdown of construction and project cost for each phase in the LTCP is provided below in Table 6-1:

**TABLE 6-1**  
**MON VALLEY SEWAGE AUTHORITY**  
**LONG TERM CONTROL PLAN**  
**ESTIMATED CONSTRUCTION AND PROJECT COST (2007 DOLLARS)**

Phase	Construction Cost	Project Cost
I	\$4,595,000	\$5,937,000
II	\$8,362,000	\$10,801,000
III	\$13,026,000	\$16,825,000
Total	\$25,983,000	\$33,563,000*

❖ Note: \$3.0 million difference from previous page is the cost of the Donora Place Plan Sewer Project completed by Donora Borough.

Please note that Phase I of the LTCP has been completed. The actual cost for this project is shown in the following Table 6-2:

**TABLE 6-2**  
**MON VALLEY SEWAGE AUTHORITY**  
**LONG TERM CONTROL PLAN**  
**PHASE I ACTUAL PROJECT COSTS (2012 DOLLARS)**

Contract	Contract Name	Contractor	Cost
One	General Construction of the Pump Station Improvements	Lone Pine Construction	\$1,074,025
Two	Electrical Construction of the Pump Station Improvements	David W. Jones Company	\$714,700
Three A/B & Four	Equalization Tank and Headworks Upgrade (General and Electrical)	Three A – Natgun Corporation Three B – Lone Pine Construction Four – A-1 Electric, Inc.	\$1,731,600 <sup>(1)</sup> \$1,779,900 \$391,000
Five	Donora Force Main Relocation / Replacement and Interceptor Improvements	Greenland Construction	\$692,735 <sup>(2)</sup>
Six	Donora Stream Separation and North Interceptor South Improvements	Carl P. Fekula, Inc.	\$442,990
Seven	Donner Avenue Wet Weather Force Main and Donner Avenue Interceptor Improvements	Greenland Construction	\$1,981,635
Eight	Monessen Stream Separation	JR Contracting	\$2,599,076 <sup>(3)</sup>
Associated Project Costs	Engineering, Legal, Property Acquisition, Financing	Multiple	\$2,000,000
<b>Phase I Total</b>			<b>\$13,408,000</b>

(1) EQ Tank size was increased from LTCP.

(2) Donora Force Main replacement was not part of original LTCP.

(3) Monessen Stream Separation Project cost was increased to accommodate unforeseen conditions during LTCP preparation.

Phases II and III project costs were updated to 2013 dollars. The estimated project cost for Phase II is \$21,500,000 and for Phase III is \$21,600,000. The updated total revised cost of Alternative IB-4b is as follows in Table 6-3:

**TABLE 6-3**  
**MON VALLEY SEWAGE AUTHORITY**  
**LONG TERM CONTROL PLAN**  
**UPDATED PROJECT COST OF ALTERNATIVE IB-4b**  
**(2013 DOLLARS)**

Phase	Project Cost
I	\$13,408,000
II	\$21,500,000
III	\$21,600,000 <sup>(1)</sup>
Total	\$56,508,000

(1) Project scope increased due to existing hydraulics, site conditions, and zoning regulations.

**6.5 Funding Methods**

PaDEP guidelines for preparation of Act 537 Plans specify that an analysis be made of funding methods available to finance the proposed improvements/expansion. Financing alternatives will be developed for the recommended Alternative IB-4b.

**6.5.1 Funding Sources Available**

The upward spiraling of construction costs has made it exceedingly difficult for small municipalities to construct major capital improvements. Brief descriptions of various financing methods which may apply to this project are set forth in the following sections.

**a. Grants-in-Aid**

The first method of financing available to alleviate partial construction costs is grants-in-aid.

A grant is a monetary award to a project without provision for reimbursement. The grant programs which may apply to this project are discussed below.

**(1) Washington County/Westmoreland County Community Development Block Grant**

Community Development Block Grants are awarded to communities within the County for various public works projects. These grants are awarded on an individual project basis to service areas of low and moderate income. This funding is for municipalities only and would not be available to MVSA unless it could be obtained through the City of Monessen, Borough of Donora or Carroll Township to fund portions of the overall LTCP.

**(2) Pennsylvania Infrastructure Investment Authority (PENNVEST)**

PENNVEST has been capitalized by State and Federal Funds to provide an innovative approach to financing local infrastructure in Pennsylvania. The PENNVEST Board meets several times each year to consider funding applications and award funds to water and sewage infrastructure development projects. This is usually a grant and loan program. Worthy projects may receive PENNVEST grant awards in conjunction with a loan offer for additional project funds. Grant fund availability differs each fiscal year.

**(3) Department of Community and Economic Development (DCED)**

DCED has funds available under the Community Revitalization Program. The Community Revitalization Program supports local projects that improve the stability of communities and enhance local economic conditions. Eligible projects include construction or rehabilitation of infrastructure. Assistance from this program is in the form of a grant.

**b. Loans**

Loans are repaid at an agreed upon rate of return over a stipulated time period. The loan programs which may apply to private as well as public facilities are discussed below.

**(1) Commercial or Bank Loans**

Bank financing is readily accessible and requires a much shorter interval from project

start to construction. This loan option requires less administrative costs than expected with a bond issue. The main disadvantage to a bank loan is that the term usually does not extend beyond 15 years.

**(2) Pennsylvania Infrastructure Investment Authority (PENNVEST)**

PENNVEST has been capitalized by State and Federal funds to provide an innovative approach to financing local infrastructure in Pennsylvania. The interest rates for this program are determined based on prevailing economic conditions. A number of grants have also been awarded under this program.

**(3) Rural Utility Service (RUS)**

The RUS loan and supplemental grant program was established to provide human amenities, alleviate health hazards, and promote the orderly growth of rural areas by meeting the need for new and improved water and waste disposal systems. Restrictions with regard to population of the area, financing capability, and project administration must be met. RUS usually provides a combination grant/loan. The projected population in the MVSA service area exceeds 10,000 therefore this project would not be eligible for RUS funding.

**(4) Bond Issues**

Bond issues are a common method by which municipalities and authorities obtain money to fund projects. Revenue bond issues are normally calculated to achieve a level annual payment for each year of the issue and are presently issued for a maximum term of 30 years at prevailing interest rates. A 20 year term is more common. The annual payment for debt service (interest and principal) is made from annual operating revenues. Bond Issues normally require 10 to 20 percent coverage on top of the average annual debt service cost.

The costs for legal services and printing of bonds are substantial. As a rule, bond issues may be considered for total project costs in excess of \$500,000.



### 6.5.2 Cost-Effectiveness of Funding Options

Pennvest was created by the Pennsylvania Legislature to provide financing for public water, wastewater, and storm water facilities. Pennvest also provides loans to private individuals for repair of on-lot septic systems. Securing Pennvest financing is a competitive process whereby the applicant competes against others for the limited available funds. Priority among eligible projects is established according to the applicant's accumulation of points for the following factors: public health and safety, environmental impact, economic development, compliance, and social impact. The projects with the highest accumulated points are awarded financing. Projects providing public sewer service to older communities with a very high percentage of documented septic system malfunctions and where the properties rely on private wells for drinking water, usually receive sufficient points to be awarded financing. Once financing is awarded, Pennvest calculates the anticipated user fee (debt service and projected total system operation and maintenance costs), compares this fee to the community's median household income, then selects the resultant financing package. Pennvest primarily provides financing in the form of low-interest loans, but will provide some supplemental grant funding when the resultant user fee for the project exceeds a certain percentage of the municipality's median household income. Pennvest also considers other available funding sources; such as state grant money, and the municipality's existing sewer system capital reserves, when awarding financing. Preparation of a Pennvest financing application is a relatively lengthy and somewhat expensive process, and will require MVSA to undertake certain environmental assessments not required for a normal bank loan. Pennvest funding is typically a 20-year loan, with a reduced interest rate for the first 5 years. Pennvest's current rate for Washington County is 1.484% for years 1 thru 5 and 2.049 for years 6 thru 20. The blended interest rate is 1.908% for Washington County. Pennvest's current rate for Westmoreland County is 1.414% for years 1 thru 5 and 2.014% for years 6 thru 20. The blended interest rate for Westmoreland County is 1.864%.

The second funding scenario uses a standard Sewer Revenue Bond at an assumed interest rate of 4.50% over a 20-year period. A bond issue can usually be obtained much faster than Pennvest funding and does not carry the high application and ongoing administrative fees associated with a Pennvest loan.

Project phasing is required to technically and operationally implement the Long Term Control Plan. Therefore, the Authority will investigate funding alternatives for each phase of the plan as it is implemented over several years. Potential funding sources include rate increases, bond issues, low interest loans via state or Federal sources, or grants including innovative technology grants from state, Federal, or private sources. It is likely that a combination of these funding sources will be utilized to implement the Long Term Control Plan. For the purpose of the Act 537 Plan, the financing alternatives to be compared will be the Pennvest Loan versus the Bond Issue. These financing alternatives will be compared for Phase II and Phase III separately. The Authority has already obtained a \$10,000,000 bond issue for part of Phase II. This will be shown in the financing table for Phase II. A copy of the financing tables are located in Appendix G. The estimated additional monthly user fee based on the financing alternative and the Phase is presented in the Table 6-4 below:

**TABLE 6-4  
ADDITIONAL MONTHLY USER CHARGE PER EDU  
PER FINANCING ALTERNATIVE**

Financing Alternative	Phase II	Phase III
Pennvest	\$22.00	\$24.00
Bond Issue	\$23.00	\$34.00

As shown in Table 6-4, the additional monthly user charge per EDU for Pennvest versus Bond Issue for Phase II is comparable. Since the Authority has already obtained a bond issue towards this phase, it is recommended to obtain another bond issue for the remaining amount. A bond issue involves less time during the construction period for processing requests and change orders.

Based on Table 6-4, the Pennvest financing alternative for Phase III is more cost effective than the Bond Issue.

**6.6 Evaluate Administrative Organization and Legal Authority for Plan Implementation**

The functions of the Authority and municipalities will remain as they are now. The Authority will be responsible for design, permits and financing of the recommended alternative.

## **7.0 INSTITUTIONAL EVALUATION**

### **7.1 Existing Wastewater Authorities**

The Authority was formed on June 24, 1963 under the Municipality Authorities Act of 1945, its supplements and amendments by the City of Monessen, Borough of Charleroi and the Borough of Donora. The Authority was formed to construct facilities necessary to furnish and treat the sewage wastes from the municipalities. The Borough of Charleroi subsequently withdrew from participation in the Authority. The Authority's sewerage system was constructed in 1968-70 to intercept and treat wastewater from the Combined Sewer Systems (CSS) owned and operated by the City of Monessen (Monessen), in Westmoreland County, and the Borough of Donora (Donora), in Washington County. In the mid-1970s, part of the Separate Sanitary Sewer System (SSS) owned and operated by the Carroll Township Authority (Carroll Authority), Washington County, was connected to the Authority system. The Authority system consists of 17 CSOs, 27,000 linear feet of gravity sewer, 7 sewage pumping stations, 19,000 linear feet of force main, and a 4.96 MGD wastewater treatment plant (WWTP).

#### **7.1.1 Financial and Debt Status**

In accordance with the Trust Indenture and Agreements between the Authority and the City of Monessen and the Borough of Donora, the Authority prepares an annual Sewage Disposal System Report. The report reviews the operations of the system for the prior year, capital additions done in the prior year; recommendations of capital improvements for the next year and an estimate of revenue required for the next year based on the sewer rental rates in effect and projected expenses and capital improvements. Based on the Sewage Disposal System Annual Report dated November 2012, the current rates are adequate for the projected 2013 budget. At the end of November 2011, the Authority had approximately \$18 million in bonds and loans outstanding.

#### **7.1.2 Available Staff and Administrative Resources**

The Authority has operated and maintained the system since the completion of construction in 1970. The Authority has maintained adequate staff and that staff will continue to operate and

maintain the system with the additional satellite facilities. The Authority will also continue to utilize their administrative resources for billing and collection and notification as they have done in the past.

### **7.1.3 Existing Authority to:**

#### **7.1.3.1 Implement wastewater planning recommendations**

The Authority has implemented wastewater planning recommendations in the past.

#### **7.1.3.2 Implement system-wide operation and maintenance activities**

The Authority, as stated previously, has operated and maintained the system since its completion in 1970. They have over the years implemented many system-wide operation and maintenance activities.

#### **7.1.3.3 Set user fees and take purchasing actions**

Under the trust indentures, the Authority prepares an Annual Report that reviews the past year expenditures, revenues and capital additions and projects the next year's budget. The budget requirements are compared to the existing user fees and determined if adequate. If not adequate, the Authority increases the user fees as they have done in the past. The Authority has in the past condemned property for their facilities.

#### **7.1.3.4 Take enforcement actions against ordinance violators**

The Authority has in the past taken enforcement actions against ordinance violators.

#### **7.1.3.5 Negotiate agreements with other parties**

In the past, the Authority has negotiated agreements with other parties.

#### **7.1.3.6 Raise capital for construction and operation and maintenance of facilities**

The Authority in the past has obtained grants from Pennvest and Redevelopment Authority of Washington County, loans from Pennvest and Bond Issues for construction, operation and maintenance of facilities.

## **7.2 Institutional Alternatives Necessary to Implement Plan**

### **7.2.2 Functions of existing and proposed organizations**

The functions of the Authority, the Borough, City and Township are anticipated to remain the same.

## **7.3 Administrative and Legal Activities Necessary to Implement Plan**

**7.3.2 Development of all required ordinances, regulations, standards and inter-municipal agreements**

The Authority and the municipalities have existing ordinances, regulations, and standards pertaining to their sewer systems.

**7.3.3 Timeline for Administrative and Legal Activities**

Not Applicable. As stated previously, the Authority and the municipalities have existing ordinances, regulations, and standards pertaining to their sewer systems.

**7.4 Proposed Institutional Alternative for Implementing the Chosen Technical Wastewater Disposal Alternative**

No new municipal departments or municipal authorities are required to implement the recommended project. As stated previously, the functions of the Authority, the Borough, City and Township are anticipated to remain the same.

## **8.0 SELECTED ALTERNATIVES**

### **8.1 Selected Wastewater Disposal Alternative**

#### **8.1.1 Existing Wastewater Disposal Needs**

Alternative IB-4b will continue to provide treatment of the existing wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 85% capture.

#### **8.1.2 Future Wastewater Disposal Needs**

Alternative IB-4b will provide treatment of future wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 85% capture.

#### **8.1.3 Operation and Maintenance Considerations**

The Authority's personnel will continue to operate and maintain the recommended facilities under the Phases for Alternative IB-4b.

#### **8.1.4 Cost Effectiveness**

Alternative IB-4b creates the most cost effective means to achieve at least 85% capture (actually 86% capture and 83 overflows per year).

#### **8.1.5 Available Management and Administrative Systems**

The Authority's existing management and administrative systems will remain in place for Alternative IB-4b.

#### **8.1.6 Available Financing Method**

Pennvest and Bond Issue financing methods are available for Alternative IB-4b.

#### **8.1.7 Environmental Soundness and Compliance With Natural Resource Planning and Preservation Programs**

The ultimate goal of the LTCP is compliance with the requirements of the CWA, within the

framework provided by the CSO Control Policy. Alternative IB-4b will provide treatment of future wastewater disposal needs and will meet the requirements of the National CSO Policy by achieving 86% capture.

## **8.2 Selected Capital Financing Plan**

Funds will be needed to finance the recommended project. The Authority has already obtained a \$10,000,000 bond issue for a portion of Phase II. This amount was shown on the financing tables as well as the debt service for the bond. Based on the financing tables for Phase II, the difference in the additional monthly user charge per EDU between the Pennvest loan and the bond issue is minimal. The selected financing approach for Phase II is a bond issue with the Pennvest loan as the back-up financing plan. User rates for all users must be adjusted to provide adequate revenue to pay for additional debt service and operation and maintenance costs associated with Phase II.

Based on the financing tables for Phase III, the Pennvest loan is more cost-effective. The Pennvest loan is recommended with the bond issue as the back-up financing plan. User rates for all users must be adjusted to provide adequate revenue to pay for additional debt service and operation and maintenance costs associated with Phase II.

## **8.4 Implementation**

There are no known critical public health hazards in the MVSA service area associated with wastewater that need to be addressed; however, a potential health hazard exists with the discharge of untreated sewage to the waters of the Commonwealth. The tentative completion schedule for Alternative IB-4b is shown in Table 8-1



**TABLE 8-1  
TENTATIVE SCHEDULE FOR THE RECOMMENDED ALTERNATIVE**

Task or Milestone	Target Date
Submit Task Activity Report (TAR) to PaDEP for approval	Completed May 30, 2013
Start Act 537 Plan	May 2013
Submit Draft Act 537 Plan to Planning Agencies, MVSA, and Municipalities	August 2013
Close on Initial Phase II Bond Issue	August 2013
Comments Received on Act 537 Plan	December 2013
Finalize Report	December 2013
Adopt Final Act 537 Plan by Official Resolution of MVSA, City of Monessen, Borough of Donora and Carroll Township	January 2014
Submit Final Act 537 Plan to PaDEP	January 2014
Receive Approval of the Act 537 Plan	March 2014
Resubmit Part II Permits for Phase II (E&S approval already received.)	April 2014
Receive Part II Permits	July 2014
Open Bids	August 2014
Apply for Additional Funds	August 2014
Start Construction Phase II	September 2014
End Construction Phase II	September 2016
Evaluate Satellite Facility	September 2017
Start Design of Phase III	March 2017
Submit Permits for Phase III	March 2019
Receive Permits	June 2019
Apply for Additional Funds	August 2019
Start Construction Phase III	September 2019
End Construction Phase III	September 2022

**APPENDIX A**

**ACT 537 PLAN CONTENT AND  
ENVIRONMENTAL ASSESSMENT CHECKLIST**



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

## Act 537 Plan Content and Environmental Assessment Checklist

### PART 1 GENERAL INFORMATION

#### A. Project Information

1. Project Name Official Act 537 Sewage Facilities Update for the City of Monessen, Borough of Donora and Carroll Township

2. Brief Project Description An update to the municipalities planning documents for additions and modifications to the Mon Valley Sewage Authority's sewage facilities to accommodate wet weather flows in accordance with the approved Long Term Control Plan.

#### B. Client (Municipality) Information

Municipality Name	County	City	Boro	Twp
Mon Valley Sewage Authority	Washington/Westmoreland	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Municipality Contact Individual - Last Name	First Name	MI	Suffix	Title
Additional Individual Last Name	First Name	MI	Suffix	Title

Municipality Mailing Address Line 1 20 S. Washington Stree	Mailing Address Line 2
Address Last Line -- City Donora	State ZIP+4 PA 15033
Phone + Ext. 724-379-4141	FAX (optional) 724-379-4690
	Email (optional) salak@verizon.net

#### C. Site Information

Site (or Project) Name	(Municipal Name) Act 537 Plan
Site Location Line 1	Site Location Line 2

#### D. Project Consultant Information

Last Name McBride	First Name Jason	MI J	Suffix
Title Project Manager	Consulting Firm Name Gannett Fleming, Inc.		
Mailing Address Line 1 Foster Plaza 3	Mailing Address Line 2 601 Holiday Drive		
Address Last Line -- City Pittsburgh	State PA	ZIP+4 15220	Country USA
Email jmcbride@gfnet.com	Phone + Ext. 412-922-5575	FAX 412-922-3717	

PART 2 ADMINISTRATIVE COMPLETENESS CHECKLIST		
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DEP Use Only	Indicate Page #(s) in Plan	In addition to the main body of the plan, the plan must include items one through eight listed below to be accepted for formal review by the department. Incomplete Plans will be returned unless the municipality is clearly requesting an advisory review.
_____	<u>i-iii</u>	1. <b>Table of Contents</b>
_____	<u>PS-1</u>	2. <b>Plan Summary</b>
_____	<u>PS-3</u>	A. Identify the proposed service areas and major problems evaluated in the plan. (Reference - Title 25, §71.21.a.7.i).
_____	<u>PS-4</u>	B. Identify the alternative(s) chosen to solve the problems and serve the areas of need identified in the plan. Also, include any institutional arrangements necessary to implement the chosen alternative(s). (Reference Title 25 §71.21.a.7.ii).
_____	<u>PS-4</u>	C. Present the estimated cost of implementing the proposed alternative (including the user fees) and the proposed funding method to be used. (Reference Title 25, §71.21.a.7.ii).
_____	<u>PS-4</u>	D. Identify the municipal commitments necessary to implement the Plan. (Reference Title 25, §71.21.a.7.iii).
_____	<u>PS-5</u>	E. Provide a schedule of implementation for the project that identifies the MAJOR milestones with dates necessary to accomplish the project to the point of operational status. (Reference Title 25, §71.21.a.7.iv).
_____	<u>App. H</u>	3. <b>Municipal Adoption: Original</b> , signed and sealed Resolution of Adoption by the municipality which contains, at a minimum, alternatives chosen and a commitment to implement the Plan in accordance with the implementation schedule. (Reference Title 25, §71.31.f) Section V.F. of the Planning Guide.
_____	<u>App. I</u>	4. <b>Planning Commission / County Health Department Comments:</b> Evidence that the municipality has requested, reviewed and considered comments by appropriate official planning agencies of the municipality, planning agencies of the county, planning agencies with area wide jurisdiction (where applicable), and any existing county or joint county departments of health. (Reference-Title 25, §71.31.b) Section V.E.1 of the Planning Guide.
_____	<u>App. J</u>	5. <b>Publication:</b> Proof of Public Notice which documents the proposed plan adoption, plan summary, and the establishment and conduct of a 30 day comment period. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>App. K</u>	6. <b>Comments and Responses:</b> Copies of ALL written comments received and municipal response to EACH comment in relation to the proposed plan. (Reference-Title 25, §71.31.c) Section V.E.2 of the Planning Guide.
_____	<u>PS-5</u>	7. <b>Implementation Schedule:</b> A complete project implementation schedule with milestone dates specific for each existing and future area of need. Other activities in the project implementation schedule should be indicated as occurring a finite number of days from a major milestone. (Reference-Title 25, §71.31.d) Section V.F. of the Planning Guide. Include dates for the future initiation of feasibility evaluations in the project's implementation schedule for areas proposing completion of sewage facilities for planning periods in excess of five years. (Reference Title 25, §71.21.c).
_____	<u>N/A</u>	8. <b>Consistency Documentation:</b> Documentation indicating that the appropriate agencies have received, reviewed and concurred with the method proposed to resolve identified inconsistencies within the proposed alternative and consistency requirements in 71.21.(a)(5)(i-iii). (Reference-Title 25, §71.31.e). Appendix B of the Planning Guide.

**PART 3 GENERAL PLAN CONTENT CHECKLIST**

DEP Use Only	Indicate Page #(s) in Plan	Item Required
_____	<u>N/A</u>	<b>I. Previous Wastewater Planning</b>
		A. Identify, describe and briefly analyze all past wastewater planning for its impact on the current planning effort:
_____	<u>N/A</u>	1. Previously undertaken under the Sewage Facilities Act (Act 537). (Reference-Act 537, Section 5 §d.1).
_____	<u>N/A</u>	2. Has not been carried out according to an approved implementation schedule contained in the plans. (Reference-Title 25, §71.21.a.5.i.A-D). Section V.F of the Planning Guide.
_____	<u>N/A</u>	3. Is anticipated or planned by applicable sewer authorities or approved under a Chapter 94 Corrective Action Plan. (Reference-Title 25, §71.21.a.5.i.A&B). Section V.D. of the Planning Guide.
_____	<u>N/A</u>	4. Through planning modules for new land development, planning "exemptions" and addenda. (Reference-Title 25, §71.21.a.5.i.A).
_____	<u>N/A</u>	
_____	<u>2-1</u>	<b>II. Physical and Demographic Analysis utilizing written description and mapping</b>
		(All items listed below require maps, and all maps should show all current lots and structures and be of appropriate scale to clearly show significant information).
_____	<u>2-1</u>	A. Identification of planning area(s), municipal boundaries, Sewer Authority/Management Agency service area boundaries. (Reference-Title 25, §71.21.a.1.i).
_____	<u>2-2</u>	B. Identification of physical characteristics (streams, lakes, impoundments, natural conveyance, channels, drainage basins in the planning area). (Reference-Title 25, §71.21.a.1.ii).
_____	<u>2-2</u>	C. Soils - Analysis with description by soil type and soils mapping for areas not presently served by sanitary sewer service. Show areas suitable for in-ground onlot systems, elevated sand mounds, individual residential spray irrigation systems, and areas unsuitable for soil dependent systems. (Reference-Title 25, §71.21.a.1.iii). Show Prime Agricultural Soils and any locally protected agricultural soils. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>2-3</u>	D. Geologic Features - (1) Identification through analysis, (2) mapping and (3) their relation to existing or potential nitrate-nitrogen pollution and drinking water sources. Include areas where existing nitrate-nitrogen levels are in excess of 5 mg/L. (Reference-Title 25, §71.21.a.1.iii).
_____	<u>N/A</u>	E. Topography - Depict areas with slopes that are suitable for conventional systems; slopes that are suitable for elevated sand mounds and slopes that are unsuitable for onlot systems. (Reference-Title 25, §71.21.a.1.ii).
_____	<u>N/A</u>	F. Potable Water Supplies - Identification through mapping, description and analysis. Include public water supply service areas and available public water supply capacity and aquifer yield for groundwater supplies. (Reference-Title 25 §71.21.a.1.vi). Section V.C. of the Planning Guide.
_____	<u>2-4</u>	G. Wetlands-Identify wetlands as defined in Title 25, Chapter 105 by description, analysis and mapping. Include National Wetland Inventory mapping and potential wetland areas per USDA, SCS mapped hydric soils. Proposed collection, conveyance and treatment facilities and lines must be located and labeled, along with the identified wetlands, on the map. (Reference-Title 25, §71.21.a.1.v).
_____	<u>App. B</u>	
_____	<u>App. C</u>	

- \_\_\_\_\_ N/A III. **Existing Sewage Facilities in the Planning Area - Identifying the Existing Needs**
- A. Identify, map and describe municipal and non-municipal, individual and community sewerage systems in the planning area including:
  - \_\_\_\_\_ N/A 1. Location, size and ownership of treatment facilities, main intercepting lines, pumping stations and force mains including their size, capacity, point of discharge. Also include the name of the receiving stream, drainage basin, and the facility's effluent discharge requirements. (Reference-Title 25, §71.21a.2.i.A).
  - \_\_\_\_\_ N/A 2. A narrative and schematic diagram of the facility's basic treatment processes including the facility's NPDES permitted capacity, and the Clean Streams Law permit number. (Reference-Title 25, §71.21.a.2.i.A).
  - \_\_\_\_\_ N/A 3. A description of problems with existing facilities (collection, conveyance and/or treatment), including existing or projected overload under Title 25, Chapter 94 (relating to municipal wasteload management) or violations of the NPDES permit, Clean Streams Law permit, or other permit, rule or regulation of DEP. (Reference-Title 25, §71.21.a.2.i.B).
  - \_\_\_\_\_ N/A 4. Details of scheduled or in-progress upgrading or expansion of treatment facilities and the anticipated completion date of the improvements. Discuss any remaining reserve capacity and the policy concerning the allocation of reserve capacity. Also discuss the compatibility of the rate of growth to existing and proposed wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.i & ii).
  - \_\_\_\_\_ N/A 5. A detailed description of the municipality's operation and maintenance requirements for small flow treatment facility systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).
  - \_\_\_\_\_ N/A 6. Disposal areas, if other than stream discharge, and any applicable groundwater limitations. (Reference-Title 25, §71.21.a.4.i & ii).
- B. Using DEP's publication titled *Sewage Disposal Needs Identification*, identify, map and describe areas that utilize individual and community onlot sewage disposal and, unpermitted collection and disposal systems ("wildcat" sewers, borehole disposal, etc.) and retaining tank systems in the planning area including:
  - \_\_\_\_\_ N/A 1. The types of onlot systems in use. (Reference-Title 25, §71.21.a.2.ii.A).
  - \_\_\_\_\_ N/A 2. A sanitary survey complete with description, map and tabulation of documented and potential public health, pollution, and operational problems (including malfunctioning systems) with the systems, including violations of local ordinances, the Sewage Facilities Act, the Clean Stream Law or regulations promulgated thereunder. (Reference-Title 25, §71.21.a.2.ii.B).
  - \_\_\_\_\_ N/A 3. A comparison of the types of onlot sewage systems installed in an area with the types of systems which are appropriate for the area according to soil, geologic conditions, topographic limitations sewage flows, and Title 25 Chapter 73 (relating to standards for sewage disposal facilities). (Reference-Title 25, §71.21.a.2.ii.C).
  - \_\_\_\_\_ N/A 4. An individual water supply survey to identify possible contamination by malfunctioning onlot sewage disposal systems consistent with DEP's *Sewage Disposal Needs Identification* publication. (Reference-Title 25 §71.21.a.2.ii.B).
  - \_\_\_\_\_ N/A 5. Detailed description of operation and maintenance requirements of the municipality for individual and small volume community onlot systems, including the status of past and present compliance with these requirements and any other requirements relating to sewage management programs. (Reference-Title 25, §71.21.a.2.i.C).

- \_\_\_\_\_ N/A C. Identify wastewater sludge and septage generation, transport and disposal methods. Include this information in the sewage facilities alternative analysis including:
- \_\_\_\_\_ N/A 1. Location of sources of wastewater sludge or septage (Septic tanks, holding tanks, wastewater treatment facilities). (Reference-Title 25 §71.71).
- \_\_\_\_\_ N/A 2. Quantities of the types of sludges or septage generated. (Reference-Title 25 §71.71).
- \_\_\_\_\_ N/A 3. Present disposal methods, locations, capacities and transportation methods. (Reference-Title 25 §71.71).
  
- \_\_\_\_\_ N/A **IV. Future Growth and Land Development**
- \_\_\_\_\_ N/A A. Identify and briefly summarize all municipal and county planning documents adopted pursuant to the Pennsylvania Municipalities Planning Code (Act 247) including:
- \_\_\_\_\_ N/A 1. All land use plans and zoning maps that identify residential, commercial, industrial, agricultural, recreational and open space areas. (Reference-Title 25, §71.21.a.3.iv).
- \_\_\_\_\_ N/A 2. Zoning or subdivision regulations that establish lot sizes predicated on sewage disposal methods. (Reference – Title 25§71.21.a.3.iv).
- \_\_\_\_\_ N/A 3. All limitations and plans related to floodplain and stormwater management and special protection (Ch. 93) areas. (Reference-Title 25 §71.21.a.3.iv) Appendix B, Section II.F of the Planning Guide.
- \_\_\_\_\_ N/A B. Delineate and describe the following through map, text and analysis.
- \_\_\_\_\_ N/A 1. Areas with existing development or plotted subdivisions. Include the name, location, description, total number of EDU's in development, total number of EDU's currently developed and total number of EDU's remaining to be developed (include time schedule for EDU's remaining to be developed). (Reference-Title 25, §71.21.a.3.i).
- \_\_\_\_\_ N/A 2. Land use designations established under the Pennsylvania Municipalities Planning Code (35 P.S. 10101-11202), including residential, commercial and industrial areas. (Reference-Title 25,§71.21.a.3.ii). Include a comparison of proposed land use as allowed by zoning and existing sewage facility planning. (Reference-Title 25, §71.21.a.3.iv).
- \_\_\_\_\_ N/A 3. Future growth areas with population and EDU projections for these areas using historical, current and future population figures and projections of the municipality. Discuss and evaluate discrepancies between local, county, state and federal projections as they relate to sewage facilities. (Reference-Title 25, §71.21.a.1.iv). (Reference-Title 25, §71.21.a.3.iii).
- \_\_\_\_\_ N/A 4. Zoning, and/or subdivision regulations; local, county or regional comprehensive plans; and existing plans of any other agency relating to the development, use and protection of land and water resources with special attention to: (Reference-Title 25, §71.21.a.3.iv).
  - public ground/surface water supplies
  - recreational water use areas
  - groundwater recharge areas
  - industrial water use
  - wetlands
- \_\_\_\_\_ N/A 5. Sewage planning necessary to provide adequate wastewater treatment for five and ten year future planning periods based on projected growth of existing and proposed wastewater collection and treatment facilities. (Reference-Title 25, §71.21.a.3.v).

- |       |                   |           |   |
|-------|-------------------|-----------|---|
| _____ | <u>5-1</u>        | <b>V.</b> | <b>Identify Alternatives to Provide New or Improved Wastewater Disposal Facilities</b>  |
|       |                   | <b>A.</b> | Conventional collection, conveyance, treatment and discharge alternatives including:  |
| _____ | <u>N/A</u>        |           | 1. The potential for regional wastewater treatment. (Reference-Title 25, §71.21.a.4).   |
| _____ | <u>5-3 to 5-6</u> |           | 2. The potential for extension of existing municipal or non-municipal sewage facilities to areas in need of new or improved sewage facilities. (Reference-Title 25, §71.21.a.4.i).      |
| _____ | <u>5-3 to 5-6</u> |           | 3. The potential for the continued use of existing municipal or non-municipal sewage facilities through one or more of the following: (Reference-Title 25, §71.21.a.4.ii).              |
| _____ | <u>5-3 to 5-6</u> |           | a. Repair. (Reference-Title 25, §71.21.a.4.ii.A).   |
| _____ | <u>5-3 to 5-6</u> |           | b. Upgrading. (Reference-Title 25, §71.21.a.4.ii.B).  |
| _____ | <u>5-3 to 5-6</u> |           | c. Reduction of hydraulic or organic loading to existing facilities. (Reference-Title 25, §71.71).  |
| _____ | <u>N/A</u>        |           | d. Improved operation and maintenance. Reference-Title 25, §71.21.a.4.ii.C).  |
| _____ | <u>N/A</u>        |           | e. Other applicable actions that will resolve or abate the identified problems. (Reference-Title 25, §71.21.a.4.ii.D).  |
| _____ | <u>5-6</u>        |           | 4. Repair or replacement of existing collection and conveyance system components. (Reference-Title 25, §71.21.a.4.ii.A).  |
| _____ | <u>N/A</u>        |           | 5. The need for construction of new community sewage systems including sewer systems and/or treatment facilities. (Reference-Title 25, §71.21.a.4.iii).                                 |
| _____ | <u>5-3 to 5-6</u> |           | 6. Use of innovative/alternative methods of collection/conveyance to serve needs areas using existing wastewater treatment facilities. (Reference-Title 25, §71.21.a.4.ii.B).           |
| _____ | <u>N/A</u>        | <b>B.</b> | The use of individual sewage disposal systems including individual residential spray irrigation systems based on:   |
| _____ | <u>N/A</u>        |           | 1. Soil and slope suitability. (Reference-Title 25, §71.21.a.2.ii.C).   |
| _____ | <u>N/A</u>        |           | 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).   |
| _____ | <u>N/A</u>        |           | 3. The establishment of a sewage management program. (Reference-Title 25, §71.21.a.4.iv). See also Part "F" below.  |
| _____ | <u>N/A</u>        |           | 4. The repair, replacement or upgrading of existing malfunctioning systems in areas suitable for onlot disposal considering: (Reference-Title 25, §71.21.a.4).                          |
| _____ | <u>N/A</u>        |           | a. Existing technology and sizing requirements of Title 25 Chapter 73. (Reference-Title 25, §73.31-73.72).  |
| _____ | <u>N/A</u>        |           | b. Use of expanded absorption areas or alternating absorption areas. (Reference-Title 25, §73.16).  |
| _____ | <u>N/A</u>        |           | c. Use of water conservation devices. (Reference-Title 25, §71.73.b.2.iii).   |
| _____ | <u>N/A</u>        | <b>C.</b> | The use of small flow sewage treatment facilities or package treatment facilities to serve individual homes or clusters of homes with consideration of: (Reference-Title 25, §71.64.d). |
| _____ | <u>N/A</u>        |           | 1. Treatment and discharge requirements. (Reference-Title 25, §71.64.d).  |
| _____ | <u>N/A</u>        |           | 2. Soil suitability. (Reference-Title 25, §71.64.c.i).  |



- \_\_\_\_\_ N/A 3. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.64.c.2).
- \_\_\_\_\_ N/A 4. Municipal, Local, Agency or other controls over operation and maintenance requirements through a Sewage Management Program. (Reference-Title 25, §71.64.d). See Part "F" below.
- \_\_\_\_\_ N/A D. The use of community land disposal alternatives including:
- \_\_\_\_\_ N/A 1. Soil and site suitability. (Reference-Title 25, §71.21.a.2.ii.C).
- \_\_\_\_\_ N/A 2. Preliminary hydrogeologic evaluation. (Reference-Title 25, §71.21.a.2.ii.C).
- \_\_\_\_\_ N/A 3. Municipality, Local Agency or Other Controls over operation and maintenance requirements through a Sewage Management Program (Reference-Title 25, §71.21.a.2.ii.C). See Part "F" below.
- \_\_\_\_\_ N/A 4. The rehabilitation or replacement of existing malfunctioning community land disposal systems. (See Part "V", B, 4, a, b, c above). See also Part "F" below.
- \_\_\_\_\_ N/A E. The use of retaining tank alternatives on a temporary or permanent basis including: (Reference- Title 25, §71.21.a.4).
- \_\_\_\_\_ N/A 1. Commercial, residential and industrial use. (Reference-Title 25, §71.63.e).
- \_\_\_\_\_ N/A 2 Designated conveyance facilities (pumper trucks). (Reference-Title 25, §71.63.b.2).
- \_\_\_\_\_ N/A 3. Designated treatment facilities or disposal site. (Reference-Title 25, §71.63.b.2).
- \_\_\_\_\_ N/A 4. Implementation of a retaining tank ordinance by the municipality. (Reference-Title 25, §71.63.c.3). See Part "F" below.
- \_\_\_\_\_ N/A 5. Financial guarantees when retaining tanks are used as an interim sewage disposal measure. (Reference-Title 25, §71.63.c.2).
- \_\_\_\_\_ N/A F. Sewage Management Programs to assure the future operation and maintenance of existing and proposed sewage facilities through:
- \_\_\_\_\_ N/A 1. Municipal ownership or control over the operation and maintenance of individual onlot sewage disposal systems, small flow treatment facilities, or other traditionally non-municipal treatment facilities. (Reference-Title 25, §71.21.a.4.iv).
- \_\_\_\_\_ N/A 2. Required inspection of sewage disposal systems on a schedule established by the municipality. (Reference-Title 25, §71.73.b.1.).
- \_\_\_\_\_ N/A 3. Required maintenance of sewage disposal systems including septic and aerobic treatment tanks and other system components on a schedule established by the municipality. (Reference-Title 25, §71.73.b.2).
- \_\_\_\_\_ N/A 4. Repair, replacement or upgrading of malfunctioning onlot sewage systems. (Reference-Title 25, §71.21.a.4.iv) and §71.73.b.5 through:
- \_\_\_\_\_ N/A a. Aggressive pro-active enforcement of ordinances that require operation and maintenance and prohibit malfunctioning systems. (Reference-Title 25, §71.73.b.5).
- \_\_\_\_\_ N/A b. Public education programs to encourage proper operation and maintenance and repair of sewage disposal systems.
- \_\_\_\_\_ N/A 5. Establishment of joint municipal sewage management programs. (Reference-Title 25, §71.73.b.8).
- \_\_\_\_\_ N/A 6. Requirements for bonding, escrow accounts, management agencies or associations to assure operation and maintenance for non-municipal facilities. (Reference-Title 25, §71.71).

- \_\_\_\_\_ N/A G. Non-structural comprehensive planning alternatives that can be undertaken to assist in meeting existing and future sewage disposal needs including: (Reference-Title 25, §71.21.a.4).
  - 1. Modification of existing comprehensive plans involving:
    - a. Land use designations. (Reference-Title 25, §71.21.a.4).
    - b. Densities. (Reference-Title 25, §71.21.a.4).
    - c. Municipal ordinances and regulations. (Reference-Title 25, §71.21.a.4).
    - d. Improved enforcement. (Reference-Title 25, §71.21.a.4).
    - e. Protection of drinking water sources. (Reference-Title 25, §71.21.a.4).
  - 2. Consideration of a local comprehensive plan to assist in producing sound economic and consistent land development. (Reference-Title 25, §71.21.a.4).
  - 3. Alternatives for creating or changing municipal subdivision regulations to assure long-term use of on-site sewage disposal that consider lot sizes and protection of replacement areas. (Reference-Title 25, §71.21.a.4).
  - 4. Evaluation of existing local agency programs and the need for technical or administrative training. (Reference-Title 25, §71.21.a.4).
- \_\_\_\_\_ 5-6 H. A no-action alternative which includes discussion of both short-term and long-term impacts on: (Reference-Title 25, §71.21.a.4).
  - 1. Water Quality/Public Health. (Reference-Title 25, §71.21.a.4).
  - 2. Growth potential (residential, commercial, industrial). (Reference-Title 25, §71.21.a.4).
  - 3. Community economic conditions. (Reference-Title 25, §71.21.a.4).
  - 4. Recreational opportunities. (Reference-Title 25, §71.21.a.4).
  - 5. Drinking water sources. (Reference-Title 25, §71.21.a.4).
  - 6. Other environmental concerns. (Reference-Title 25, §71.21.a.4).
- \_\_\_\_\_ 5-6
- \_\_\_\_\_ 5-7
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- \_\_\_\_\_ 5-8
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- \_\_\_\_\_ 5-8
- \_\_\_\_\_ 6-1 VI. **Evaluation of Alternatives**
  - A. Technically feasible alternatives identified in Section V of this check-list must be evaluated for consistency with respect to the following: (Reference-Title 25, §71.21.a.5.i.).
    - 1. Applicable plans developed and approved under **Sections 4 and 5 of the Clean Streams Law or Section 208 of the Clean Water Act** (33 U.S.C.A. 1288). (Reference-Title 25, §71.21.a.5.i.A). Appendix B, Section II.A of the Planning Guide.
    - 2. Municipal wasteload management **Corrective Action Plans or Annual Reports** developed under PA Code, Title 25, Chapter 94. (Reference-Title 25, §71.21.a.5.i.B). The municipality's recent Wasteload Management (Chapter 94) Reports should be examined to determine if the proposed alternative is consistent with the recommendations and findings of the report. Appendix B, Section II.B of the Planning Guide.
    - 3. Plans developed under **Title II of the Clean Water Act** (33 U.S.C.A. 1281-1299) or **Titles II and VI of the Water Quality Act of 1987** (33 U.S.C.A. 1251-1376). (Reference-Title 25, §71.21.a.5.i.C). Appendix B, Section II.E of the Planning Guide.
- \_\_\_\_\_ N/A

- |       |            |   |
|-------|------------|---|
| _____ | <u>6-1</u> | 4. <b>Comprehensive plans</b> developed under the Pennsylvania Municipalities Planning Code. (Reference-Title 25, §71.21.a.5.i.D). The municipality's comprehensive plan must be examined to assure that the proposed wastewater disposal alternative is consistent with land use and all other requirements stated in the comprehensive plan. Appendix B, Section II.D of the Planning Guide.  |
| _____ | <u>6-1</u> | 5. <b>Antidegradation requirements</b> as contained in PA Code, Title 25, Chapters 93, 95 and 102 (relating to water quality standards, wastewater treatment requirements and erosion control) and the Clean Water Act. (Reference-Title 25, §71.21.a.5.i.E). Appendix B, Section II.F of the Planning Guide.   |
| _____ | <u>N/A</u> | 6. <b>State Water Plans</b> developed under the Water Resources Planning Act (42 U.S.C.A. 1962-1962 d-18). (Reference-Title 25, §71.21.a.5.i.F). Appendix B, Section II.C of the Planning Guide.  |
| _____ | <u>6-3</u> | 7. <b>Pennsylvania Prime Agricultural Land Policy</b> contained in Title 4 of the Pennsylvania Code, Chapter 7, Subchapter W. Provide narrative on local municipal policy and an overlay map on prime agricultural soils. (Reference-Title 25, §71.21.a.5.i.G). Appendix B, Section II.G of the Planning Guide.   |
| _____ | <u>6-3</u> | 8. <b>County Stormwater Management Plans</b> approved by DEP under the Storm Water Management Act (32 P.S. 680.1-680.17). (Reference-Title 25, §71.21.a.5.i.H). Conflicts created by the implementation of the proposed wastewater alternative and the existing recommendations for the management of stormwater in the county Stormwater Management Plan must be evaluated and mitigated. If no plan exists, no conflict exists. Appendix B, Section II.H of the Planning Guide.   |
| _____ | <u>6-3</u> | 9. <b>Wetland Protection.</b> Using wetland mapping developed under Checklist Section II.G, identify and discuss mitigative measures including the need to obtain permits for any encroachments on wetlands from the construction or operation of any proposed wastewater facilities. (Reference-Title 25, §71.21.a.5.i.I) Appendix B, Section II.I of the Planning Guide.  |
| _____ | <u>6-4</u> | 10. <b>Protection of rare, endangered or threatened plant and animal species</b> as identified by the Pennsylvania Natural Diversity Inventory (PNDI). (Reference-Title 25, §71.21.a.5.i.J). Provide DEP with a copy of the completed Request For PNDI Search document. Also provide a copy of the response letter from the Department of Conservation and Natural Resources' Bureau of Forestry regarding the findings of the PNDI search. Appendix B, Section II.J of the Planning Guide.   |
| _____ | <u>6-4</u> | 11. <b>Historical and archaeological resource protection</b> under P.C.S. Title 37, Section 507 relating to cooperation by public officials with the Pennsylvania Historical and Museum Commission. (Reference-Title 25, §71.21.a.5.i.K). Provide the department with a completed copy of a Cultural Resource Notice request of the Bureau of Historic Preservation (BHP) to provide a listing of known historical sites and potential impacts on known archaeological and historical sites. Also provide a copy of the response letter from the BHP. Appendix B, Section II.K of the Planning Guide. |
| _____ | <u>6-4</u> | B. Provide for the resolution of any inconsistencies in any of the points identified in Section VI.A. of this checklist by submitting a letter from the appropriate agency stating that the agency has received, reviewed and concurred with the resolution of identified inconsistencies. (Reference-Title 25, §71.21.a.5.ii). Appendix B of the Planning Guide.   |
| _____ | <u>6-4</u> | C. Evaluate alternatives identified in Section V of this checklist with respect to applicable water quality standards, effluent limitations or other technical, legislative or legal requirements. (Reference-Title 25, §71.21.a.5.iii).  |

- \_\_\_\_\_ 6-5 D. Provide cost estimates using present worth analysis for construction, financing, on going administration, operation and maintenance and user fees for alternatives identified in Section V of this checklist. Estimates shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of plan submission. (Reference-Title 25, §71.21.a.5.iv).
- \_\_\_\_\_ 6-9 E. Provide an analysis of the funding methods available to finance the proposed alternatives evaluated in Section V of this checklist. Also provide documentation to demonstrate which alternative and financing scheme combination is the most cost-effective; and a contingency financial plan to be used if the preferred method of financing cannot be implemented. The funding analysis shall be limited to areas identified in the plan as needing improved sewage facilities within five years from the date of the plan submission. (Reference-Title 25, §71.21.a.5.v).
- \_\_\_\_\_ N/A F. Analyze the need for immediate or phased implementation of each alternative proposed in Section V of this checklist including: (Reference-Title 25, §71.21.a.5.vi).
- \_\_\_\_\_ N/A 1. A description of any activities necessary to abate critical public health hazards pending completion of sewage facilities or implementation of sewage management programs. (Reference-Title 25, §71.21.a.5.vi.A).
- \_\_\_\_\_ N/A 2. A description of the advantages, if any, in phasing construction of the facilities or implementation of a sewage management program justifying time schedules for each phase. (Reference-Title 25, §71.21.a.5.vi.B).
- \_\_\_\_\_ 6-14 G. Evaluate administrative organizations and legal authority necessary for plan implementation. (Reference - Title 25, §71.21.a.5.vi.D.).
- \_\_\_\_\_ 7-1 **VII. Institutional Evaluation**
- \_\_\_\_\_ 7-1 A. Provide an analysis of all existing wastewater treatment authorities, their past actions and present performance including:
  - \_\_\_\_\_ 7-1 1. Financial and debt status. (Reference-Title 25, §71.61.d.2).
  - \_\_\_\_\_ 7-1 2. Available staff and administrative resources. (Reference-Title 25, §71.61.d.2)
  - \_\_\_\_\_ 7-2 3. Existing legal authority to:
    - \_\_\_\_\_ 7-2 a. Implement wastewater planning recommendations. (Reference-Title 25, §71.61.d.2).
    - \_\_\_\_\_ 7-2 b. Implement system-wide operation and maintenance activities. (Reference-Title 25, §71.61.d.2).
    - \_\_\_\_\_ 7-2 c. Set user fees and take purchasing actions. (Reference-Title 25, §71.61.d.2).
    - \_\_\_\_\_ 7-2 d. Take enforcement actions against ordinance violators. (Reference-Title 25, §71.61.d.2).
    - \_\_\_\_\_ 7-2 e. Negotiate agreements with other parties. (Reference-Title 25, §71.61.d.2).
    - \_\_\_\_\_ 7-2 f. Raise capital for construction and operation and maintenance of facilities. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 7-2 B. Provide an analysis and description of the various institutional alternatives necessary to implement the proposed technical alternatives including:
  - \_\_\_\_\_ N/A 1. Need for new municipal departments or municipal authorities. (Reference-Title 25, §71.61.d.2).
  - \_\_\_\_\_ 7-2 2. Functions of existing and proposed organizations (sewer authorities, onlot maintenance agencies, etc.). (Reference-Title 25, §71.61.d.2).
  - \_\_\_\_\_ N/A 3. Cost of administration, implementability, and the capability of the authority/agency to react to future needs. (Reference-Title 25, §71.61.d.2).

- \_\_\_\_\_ 7-2 C. Describe all necessary administrative and legal activities to be completed and adopted to ensure the implementation of the recommended alternative including:
- \_\_\_\_\_ N/A 1. Incorporation of authorities or agencies. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 7-3 2. Development of all required ordinances, regulations, standards and inter-municipal agreements. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ N/A 3. Description of activities to provide rights-of-way, easements and land transfers. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ N/A 4. Adoption of other municipal sewage facilities plans. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ N/A 5. Any other legal documents. (Reference-Title 25, §71.61.d.2).
- \_\_\_\_\_ 7-3 6. Dates or timeframes for items 1-5 above on the project's implementation schedule.
- \_\_\_\_\_ 7-3 D. Identify the proposed institutional alternative for implementing the chosen technical wastewater disposal alternative. Provide justification for choosing the specific institutional alternative considering administrative issues, organizational needs and enabling legal authority. (Reference-Title 25, §71.61.d.2).
  
- \_\_\_\_\_ 8-1 **VIII. Implementation Schedule and Justification for Selected Technical & Institutional Alternatives**
- \_\_\_\_\_ 8-1 A. Identify the technical wastewater disposal alternative which best meets the wastewater treatment needs of each study area of the municipality. Justify the choice by providing documentation which shows that it is the best alternative based on:
- \_\_\_\_\_ 8-1 1. Existing wastewater disposal needs. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 2. Future wastewater disposal needs. (five and ten years growth areas). (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 3. Operation and maintenance considerations. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 4. Cost-effectiveness. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 5. Available management and administrative systems. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 6. Available financing methods. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-1 7. Environmental soundness and compliance with natural resource planning and preservation programs. (Reference-Title 25, §71.21.a.6).
- \_\_\_\_\_ 8-2 B. Designate and describe the capital financing plan chosen to implement the selected alternative(s). Designate and describe the chosen back-up financing plan. (Reference-Title 25, §71.21.a.6)
- \_\_\_\_\_ 8-2 C. Designate and describe the implementation schedule for the recommended alternative, including justification for any proposed phasing of construction or implementation of a Sewage Management Program. (Reference – Title 25 §71.31d)
  
- \_\_\_\_\_ App. L **IX. Environmental Report (ER) generated from the Uniform Environmental Review Process (UER)**
- \_\_\_\_\_ App. L A. Complete an ER as required by the UER process and as described in the DEP Technical Guidance 381-5511-111. Include this document as "Appendix A" to the Act 537 Plan Update Revision. Note: *An ER is required only for Wastewater projects proposing funding through any of the funding sources identified in the UER.*

**APPENDIX B**

**SOIL MAPS**

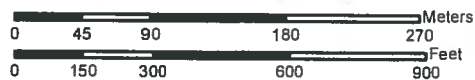
Soil Map—Westmoreland County, Pennsylvania  
(Monessen - Area 2)



79° 54' 9"



Map Scale 14 810 if printed on A size (8 5" x 11") sheet



AREA 5 - City of Monessen

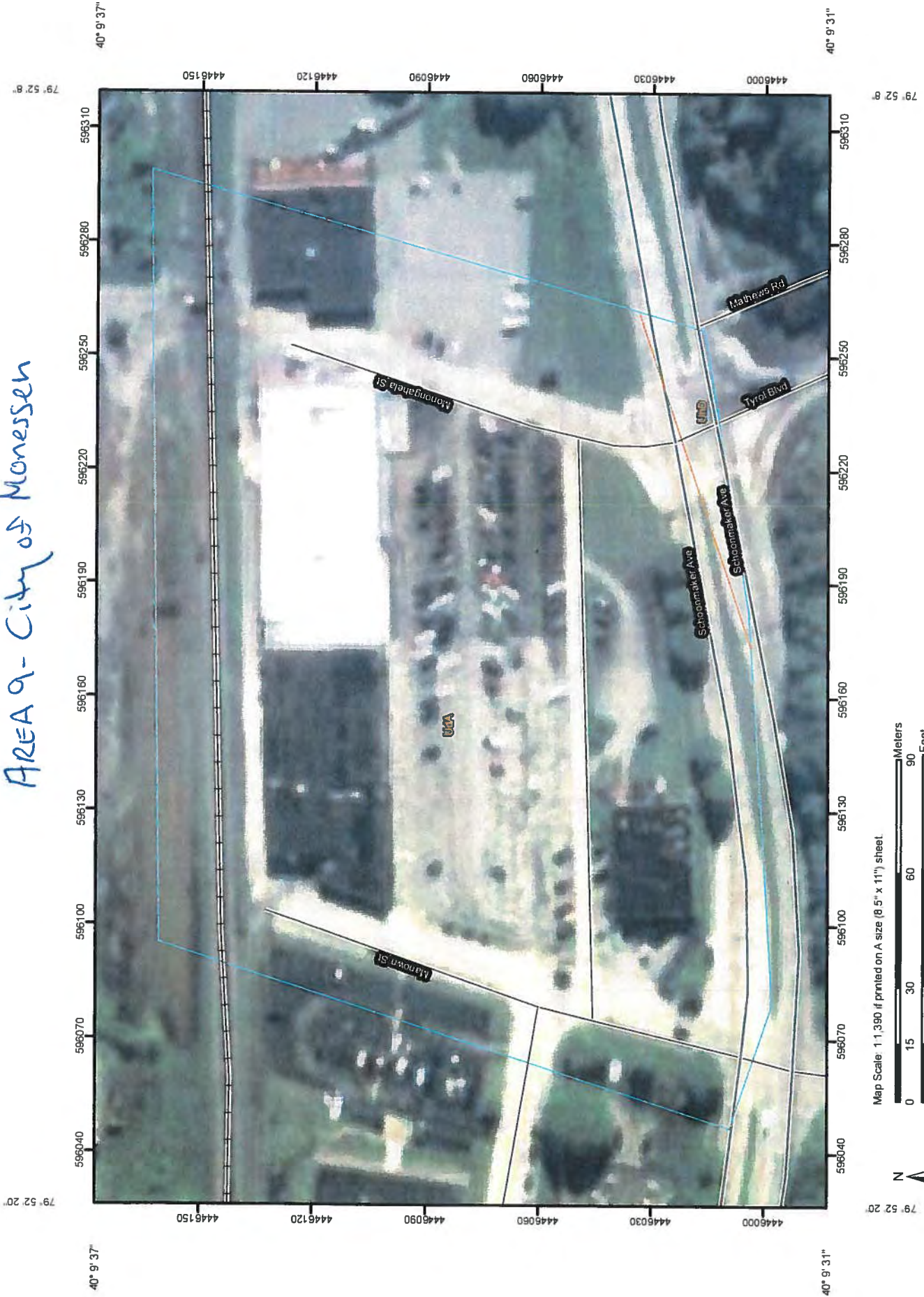


Map Scale: 17,260 if printed on A size (8 1/2" x 11") sheet.





AREA 9- City of Monessen



Map Scale: 1:1,390 if printed on A size (8.5" x 11") sheet.



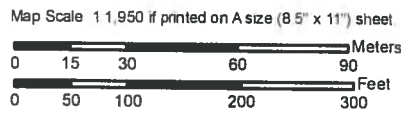
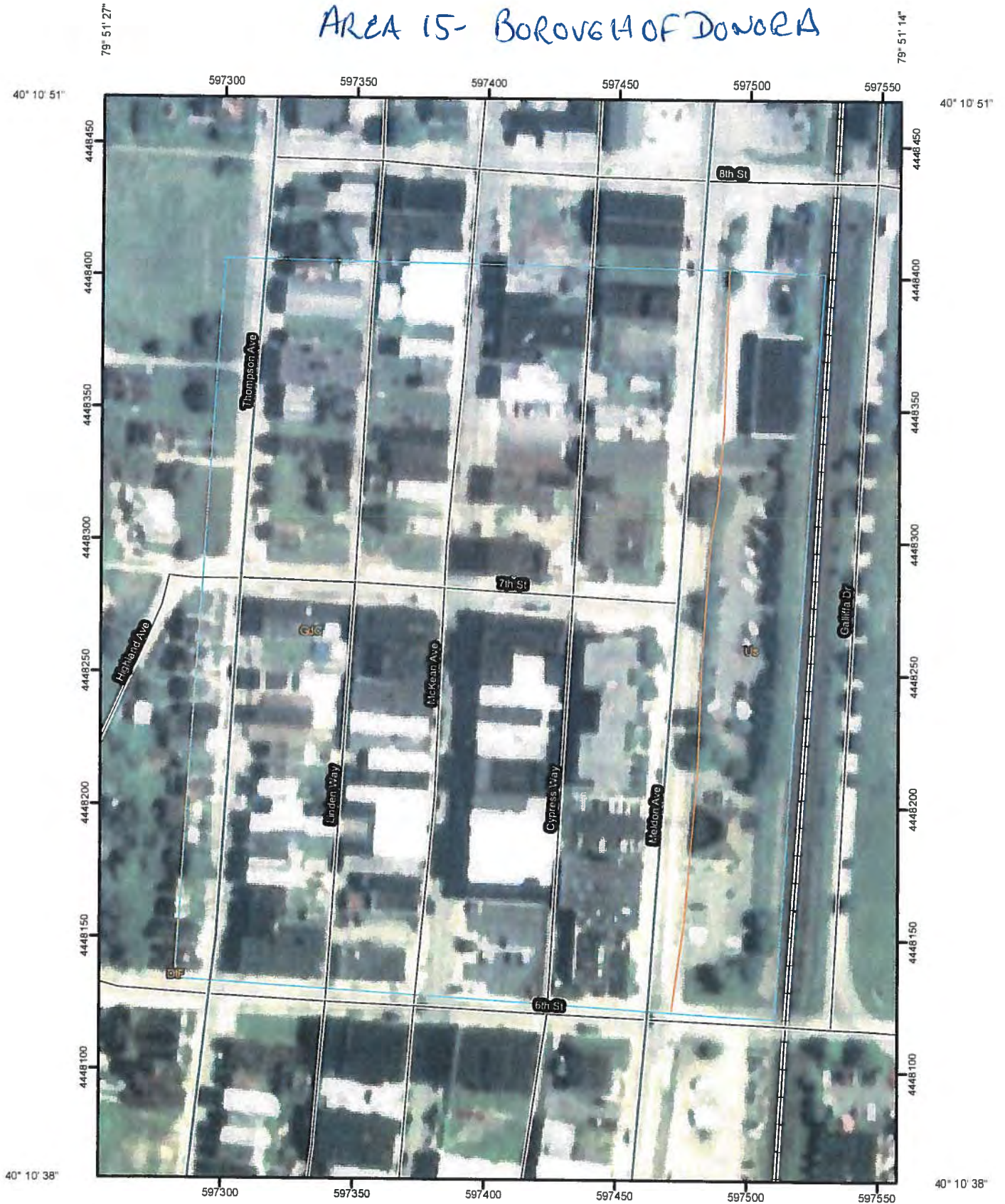
AREA 13 - BOROUGH OF DONORA



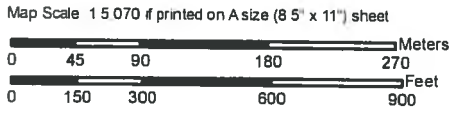
Map Scale: 1:3,330 (if printed on A size (8.5" x 11") sheet)



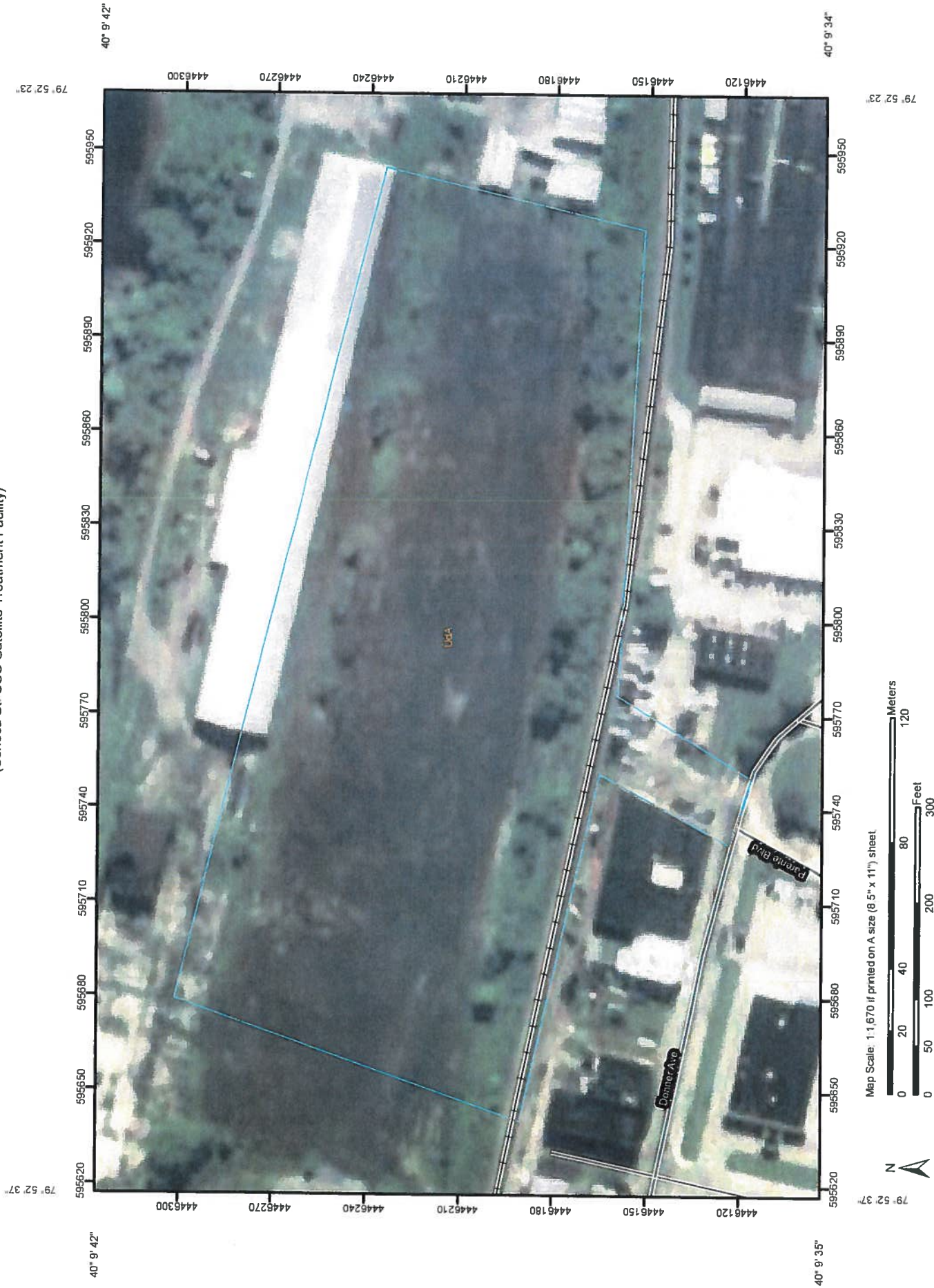
# AREA 15- BOROUGH OF DONORA



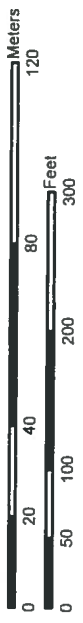
# AREAS 18-22 - BOROUGH OF DONORA



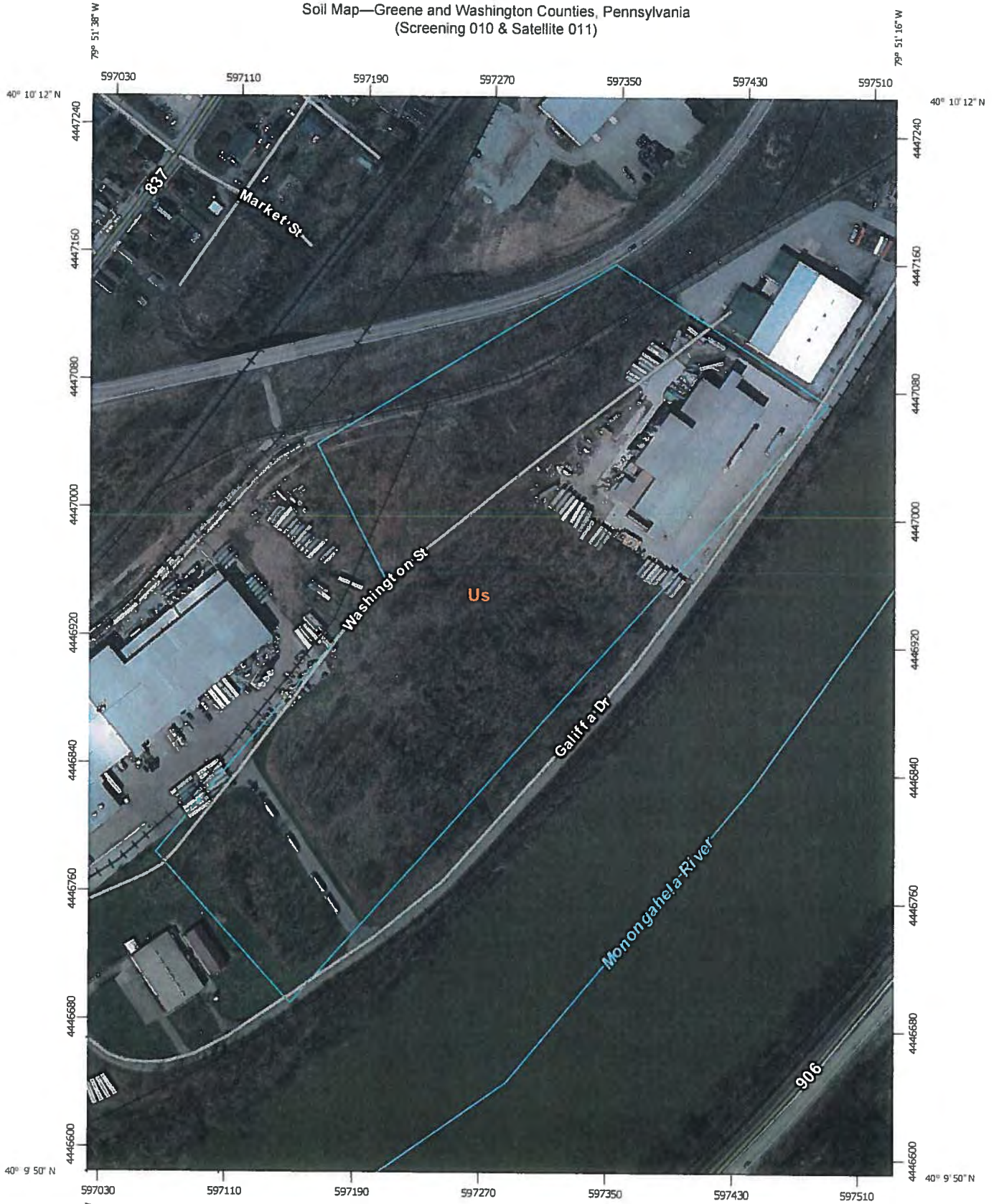
Soil Map—Westmoreland County, Pennsylvania  
(Seneca St. CSO Satellite Treatment Facility)



Map Scale: 1:1,670 if printed on A size (8.5" x 11") sheet



Soil Map—Greene and Washington Counties, Pennsylvania  
(Screening 010 & Satellite 011)



Map Scale: 1:3,280 if printed on A portrait (8.5" x 11") sheet.



Soil Map—Greene and Washington Counties, Pennsylvania  
(Satellite Facilities - 014 & 016)



Map Scale: 1:3,270 if printed on A portrait (8.5" x 11") sheet.



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

Soil Map—Greene and Washington Counties, Pennsylvania  
(Screening Facility - 017)



Map Scale: 1:3,580 if printed on A portrait (8.5" x 11") sheet.



Natural Resources  
Conservation Service

Web Soil Survey  
National Cooperative Soil Survey

7/17/2013  
Page 1 of 3



Soil Map—Westmoreland County, Pennsylvania  
(~~Sabatine~~ Facility Monessen 003)

Screening



Map Scale: 1:1,390 if printed on A landscape (11" x 8.5") sheet.



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

Soil Map—Westmoreland County, Pennsylvania  
(Satellite Facilities Monessen 004 & 005)

Screening



Map Scale: 1:3,250 if printed on A landscape (11" x 8.5") sheet.



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

**APPENDIX C**

**WETLAND FIELD INVESTIGATION AND WETLAND MAPS**

May 29, 2012

**Mon Valley Sewage Authority  
Long Term Control Plan – Phase II  
Donora and Monessen Sewer Separation  
Wetland Field Investigation**

A wetland field investigation was conducted on May 25, 2012 for the Mon Valley Sewage Authority within the Borough of Donora, Washington County and the City of Monessen, Westmoreland County. The purpose of the investigation was to determine if jurisdictional wetlands (as defined by the 1987 Federal Manual for Identifying and Delineating Wetlands and the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region) were located within the project area for the construction of a proposed sewer line. The investigation was conducted for a 40-foot wide study area centered on the alignment. The proposed sewer lines that were investigated in detail are highlighted in green on the attached plan sheets. Jared Govi of Gannett Fleming, Inc. conducted the wetland investigation.

After completing the investigation, no palustrine wetlands were identified within the proposed project area. The project areas consisted of upland forest and residential areas. Copies of the upland test pit data forms (one for the Donora sewer line and one for the Monessen sewer line) are attached.

Furthermore, one intermittent stream (unnamed tributary to the Monongahela River) was identified within the project area (Monessen area). However, no assessments were completed on the physical characteristics or the functional analysis of the project area stream. The project area stream was hand drawn on the project area mapping which is attached to this report.

## WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Long Term Control Plan - Phase II City/County: Westmoreland Sampling Date: 5/25/2012  
 Applicant/Owner: Mon Valley Sewage Authority State: Pennsylvania Sampling Point: Upland Test Pit  
 Investigator(s): Jared Govi - Gannett Fleming, Inc. Section, Township, Range: \_\_\_\_\_ City of Monessen  
 Landform (hillslope, terrace, etc.): Upland Forest Local relief (concave, convex, none): \_\_\_\_\_ Slope (%) 50  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Gilpin - Rock outcrop complex, 45 to 100 percent slopes (GoF) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? present? If needed, explain in remarks.

### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes \_\_\_\_\_ No X  
 Hydric Soil Present? Yes \_\_\_\_\_ No X Is the Sampled Area within a Wetland? Yes \_\_\_\_\_ No X  
 Wetland Hydrology Present? Yes \_\_\_\_\_ No X

Remarks: The area was determined to be upland.

### HYDROLOGY

#### Primary Indicators (minimum of one is required; check all that apply)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Algal Mats or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water-Stained Leaves (B9)	

#### Secondary Indicators (minimum of two required)

<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Microtopographic Relief (D4)
<input type="checkbox"/> FAC-Neutral Test (D5)

#### Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches):	N/A	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u>	Depth (inches):	N/A	
Saturation Present? Yes _____ No <u>X</u> (includes capillary fringe)	Depth (inches):	N/A	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No primary or secondary indicators of hydrology were observed.

VEGETATION (Four Strata) - Use scientific names of plants.					Sampling Point: Upland Test Pit														
<b>Tree Stratum</b> (Plot size: <u>25' radius</u> )					<b>Dominance Test Worksheet:</b> Numbers of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)														
1.	<u><i>Ulmus rubra</i></u>	2	No	FAC															
2.	<u><i>Prunus serotina</i></u>	2	No	FACU															
3.	<u><i>Acer rubrum</i></u>	1	No	FAC															
4.	_____																		
5.	_____																		
6.	_____																		
7.	_____																		
		<u>5</u>	= Total Cover																
<b>Sapling/Shrub Stratum</b> (Plot size: _____ )					<b>Prevalence Index Worksheet:</b>  <table style="width:100%; border: none;"> <tr> <td style="width: 50%;"><u>Total % Cover of:</u></td> <td style="width: 50%;"><u>Multiply by:</u></td> </tr> <tr> <td>OBL species _____</td> <td>x1 _____</td> </tr> <tr> <td>FACW species _____</td> <td>x2 _____</td> </tr> <tr> <td>FAC species _____</td> <td>x3 _____</td> </tr> <tr> <td>FACU species _____</td> <td>x4 _____</td> </tr> <tr> <td>UPL species _____</td> <td>x5 _____</td> </tr> <tr> <td>Column Totals: _____</td> <td>(A) _____ (B) _____</td> </tr> </table> Prevalence Index = B/A _____	<u>Total % Cover of:</u>	<u>Multiply by:</u>	OBL species _____	x1 _____	FACW species _____	x2 _____	FAC species _____	x3 _____	FACU species _____	x4 _____	UPL species _____	x5 _____	Column Totals: _____	(A) _____ (B) _____
<u>Total % Cover of:</u>	<u>Multiply by:</u>																		
OBL species _____	x1 _____																		
FACW species _____	x2 _____																		
FAC species _____	x3 _____																		
FACU species _____	x4 _____																		
UPL species _____	x5 _____																		
Column Totals: _____	(A) _____ (B) _____																		
1.	<u>N/A</u>																		
2.	_____																		
3.	_____																		
4.	_____																		
5.	_____																		
6.	_____																		
7.	_____																		
		<u>N/A</u>	= Total Cover																
<b>Herb Stratum</b> (Plot size: <u>5' radius</u> )					<b>Hydrophytic Vegetation Indicators:</b> <table style="width:100%; border: none;"> <tr> <td style="width: 50%;"><u>Rapid Test for Hydrophytic Vegetation</u></td> <td style="width: 50%;"></td> </tr> <tr> <td><input checked="" type="checkbox"/> <u>Dominance Test is &gt;50%</u></td> <td></td> </tr> <tr> <td><input type="checkbox"/> <u>Prevalence Index is ≤3.0<sup>1</sup></u></td> <td></td> </tr> <tr> <td><input type="checkbox"/> <u>Morphological Adaptations<sup>1</sup></u> (Provide supporting data in Remarks or on a separate sheet)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> <u>Problematic Hydrophytic Vegetation<sup>1</sup></u> (Explain)</td> <td></td> </tr> </table> <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	<u>Rapid Test for Hydrophytic Vegetation</u>		<input checked="" type="checkbox"/> <u>Dominance Test is &gt;50%</u>		<input type="checkbox"/> <u>Prevalence Index is ≤3.0<sup>1</sup></u>		<input type="checkbox"/> <u>Morphological Adaptations<sup>1</sup></u> (Provide supporting data in Remarks or on a separate sheet)		<input type="checkbox"/> <u>Problematic Hydrophytic Vegetation<sup>1</sup></u> (Explain)					
<u>Rapid Test for Hydrophytic Vegetation</u>																			
<input checked="" type="checkbox"/> <u>Dominance Test is &gt;50%</u>																			
<input type="checkbox"/> <u>Prevalence Index is ≤3.0<sup>1</sup></u>																			
<input type="checkbox"/> <u>Morphological Adaptations<sup>1</sup></u> (Provide supporting data in Remarks or on a separate sheet)																			
<input type="checkbox"/> <u>Problematic Hydrophytic Vegetation<sup>1</sup></u> (Explain)																			
1.	<u><i>Urtica dioica</i></u>	75	Yes	FACU															
2.	<u><i>Polygonum cuspidatum</i></u>	10	No	FACU															
3.	<u><i>Parthenocissus quinquefolia</i></u>	5	No	FACU															
4.	<u><i>Phytolacca americana</i></u>	5	No	FACU															
5.	<u><i>Phlox pilosa</i></u>	1	No	FACU															
6.	<u><i>Rhus radicans</i></u>	1	No	FAC															
7.	_____																		
8.	_____																		
9.	_____																		
10.	_____																		
11.	_____																		
12.	_____																		
		<u>97</u>	= Total Cover																
<b>Woody Vine Stratum</b> (Plot size: <u>10' radius</u> )					<b>Definitions of Vegetation Strata:</b> <b>Tree</b> - Woody plants (excluding vines) 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. <b>Sapling/shrub</b> - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. <b>Herb</b> - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. <b>Woody vines</b> - All woody vines greater than 3.28 ft in height														
1.	<u><i>Vitis sp.</i></u>	2	No	NI															
2.	_____																		
3.	_____																		
4.	_____																		
		<u>2</u>	= Total Cover																
<b>Remarks:</b> (Include photo numbers here or on a separate sheet.)					<b>Hydrophytic Vegetation Present?</b> Yes _____ No _____ X														

**SOIL** **Sampling Point: Upland Test Pit**

**Profile Description: (Describe the the depth needed to document the indicator or confirm the absense of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 7	10YR 5/3	100					Silt loam	
7 to 10	10YR 6/4	100					Silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histlic Epipedon (A2) <input type="checkbox"/> Black Histlic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (LLR R, MLRA 149B) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19)(MLRA 136, 147) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain In Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_ Tree roots and rock

Depth (Inches): \_\_\_\_\_ At 10 inches

**Hydric Soil Present?**  
Yes \_\_\_\_\_ No  X

Remarks:

## WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Long Term Control Plan - Phase II City/County: Washington Sampling Date: 5/25/2012  
 Applicant/Owner: Mon Valley Sewage Authority State: Pennsylvania Sampling Point: Upland Test Pit  
 Investigator(s): Jared Govi - Gannett Fleming, Inc. Section, Township, Range: Borough of Donora  
 Landform (hillslope, terrace, etc.): Upland hillslope Local relief (concave, convex, none): \_\_\_\_\_ Slope (%) 10  
 Subregion (LRR or MLRA): \_\_\_\_\_ Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: \_\_\_\_\_  
 Soil Map Unit Name: Glenford silt loam, 8 to 15 percent slopes (GdC) NWI classification: N/A  
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No \_\_\_\_\_ (If no, explain in Remarks.)  
 Are Vegetation No, Soil No, or Hydrology No significantly disturbed? Are "Normal Circumstances" Yes X No \_\_\_\_\_  
 Are Vegetation No, Soil No, or Hydrology No naturally problematic? present? If needed, explain in remarks.

### SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes \_\_\_\_\_ No X  
 Hydric Soil Present? Yes \_\_\_\_\_ No X Is the Sampled Area within a Wetland? Yes \_\_\_\_\_ No X  
 Wetland Hydrology Present? Yes \_\_\_\_\_ No X

Remarks: The area was determined to be upland.

### HYDROLOGY

#### Primary Indicators (minimum of one is required; check all that apply)

- |  |   |
|--|---|
| <input type="checkbox"/> Surface Water (A1)                        | <input type="checkbox"/> Aquatic Fauna (B13)                        |
| <input type="checkbox"/> High Water Table (A2)                     | <input type="checkbox"/> True Aquatic Plants (B14)                  |
| <input type="checkbox"/> Saturation (A3)                           | <input type="checkbox"/> Hydrogen Sulfide Odor (C1)                 |
| <input type="checkbox"/> Water Marks (B1)                          | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Sediment Deposits (B2)                    | <input type="checkbox"/> Presence of Reduced Iron (C4)              |
| <input type="checkbox"/> Drift Deposits (B3)                       | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Algal Mats or Crust (B4)                  | <input type="checkbox"/> Thin Muck Surface (C7)                     |
| <input type="checkbox"/> Iron Deposits (B5)                        | <input type="checkbox"/> Other (Explain in Remarks)                 |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) |   |
| <input type="checkbox"/> Water-Stained Leaves (B9)                 |   |

#### Secondary Indicators (minimum of two required)

- |  |
|--|
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)   |
| <input type="checkbox"/> Surface Soil Cracks (B6)                  |
| <input type="checkbox"/> Drainage Patterns (B10)                   |
| <input type="checkbox"/> Moss Trim Lines (B16)                     |
| <input type="checkbox"/> Dry-Season Water Table (C2)               |
| <input type="checkbox"/> Crayfish Burrows (C8)                     |
| <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Stunted or Stressed Plants (D1)           |
| <input type="checkbox"/> Geomorphic Position (D2)                  |
| <input type="checkbox"/> Shallow Aquitard (D3)                     |
| <input type="checkbox"/> Microtopographic Relief (D4)              |
| <input type="checkbox"/> FAC-Neutral Test (D5)                     |

#### Field Observations:

Surface Water Present? Yes _____ No <u>X</u>	Depth (inches): N/A	Wetland Hydrology Present? Yes _____ No <u>X</u>
Water Table Present? Yes _____ No <u>X</u>	Depth (inches): N/A	
Saturation Present? Yes _____ No <u>X</u> (includes capillary fringe)	Depth (inches): N/A	

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No primary or secondary indicators of hydrology were observed.



**VEGETATION (Four Strata) - Use scientific names of plants.**

**Sampling Point:** Upland Test Pit

**Tree Stratum** (Plot size: \_\_\_\_\_ )

Absolute % Cover      Dominant Species?      Indicator Status

**Dominance Test Worksheet:**

Numbers of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index Worksheet:**

Total % Cover of:      Multiply by:

OBL species      \_\_\_\_\_ x1 \_\_\_\_\_

FACW species      \_\_\_\_\_ x2 \_\_\_\_\_

FAC species      \_\_\_\_\_ x3 \_\_\_\_\_

FACU species      \_\_\_\_\_ x4 \_\_\_\_\_

UPL species      \_\_\_\_\_ x5 \_\_\_\_\_

Column Totals:      \_\_\_\_\_ (A)      \_\_\_\_\_ (B)

Prevalence Index = B/A \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

Rapid Test for Hydrophytic Vegetation

Dominance Test is >50%

Prevalence Index is ≤3.0<sup>1</sup>

Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants (excluding vines) 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation**

Present?      Yes \_\_\_\_\_ No

1. N/A
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

N/A = Total Cover

**Sapling/Shrub Stratum** (Plot size: \_\_\_\_\_ )

1. N/A
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

N/A = Total Cover

**Herb Stratum** (Plot size: 5' radius )

1. Polygonum cuspidatum
2. Phytolacca americana
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_
8. \_\_\_\_\_
9. \_\_\_\_\_
10. \_\_\_\_\_
11. \_\_\_\_\_
12. \_\_\_\_\_

100 = Total Cover

**Woody Vine Stratum** (Plot size: \_\_\_\_\_ )

1. N/A
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

N/A = Total Cover

Remarks: (Include photo numbers here or on a separate sheet.)

**SOIL** Sampling Point: Upland Test Pit

Profile Description: (Describe the the depth needed to document the indicator or confirm the absense of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 to 5	10YR 4/3	100					Loam	
5 to 15	10YR 5/4	100					Silt loam	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. <sup>2</sup>Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils <sup>3</sup> :
<input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (LLR R, MLRA 149B) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depresslons (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19)(MLRA 136, 147) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):  
 Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?  
 Yes \_\_\_\_\_ No    X

Remarks:



JOB No. 54306  
 DATE FEBRUARY 2012  
 SHEET No. 1

**SUB BASIN 2 PLAN**  
 LONG TERM CONTROL PLAN - PHASE II  
 CONTRACT BWR 2 - MOHESSEN SEWER REPAIRATION

MON VALLEY SEWERAGE AUTHORITY  
 CITY OF SHERIDAN, WESTMORLAND COUNTY, PENNSYLVANIA  
 CONTRACT BWR 2 - MOHESSEN SEWER REPAIRATION

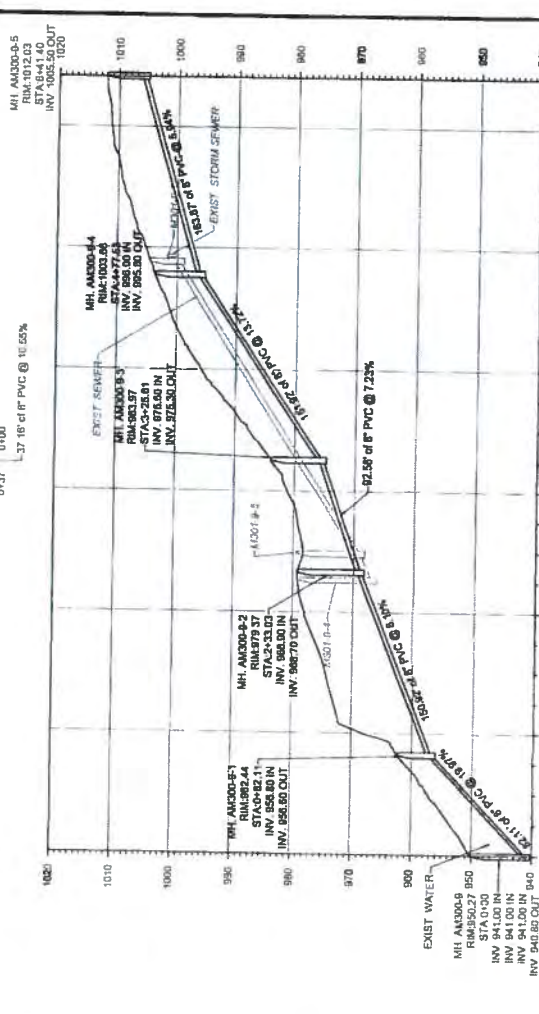
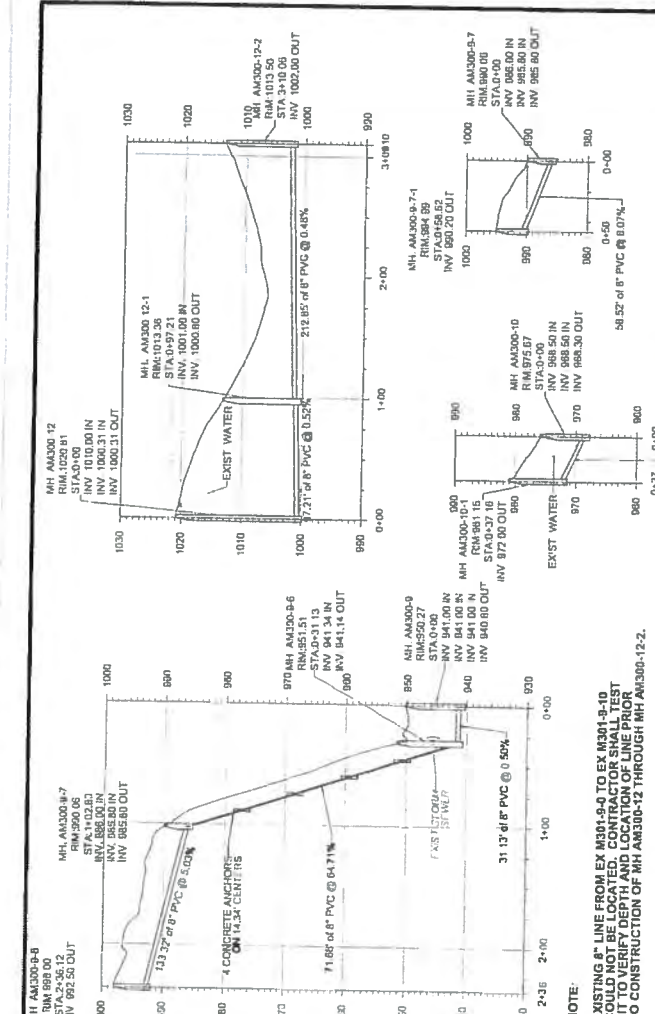
**Gannett Fleming**  
 PITTSBURGH, PENNSYLVANIA

SCALE	DATE	BY	CHKD	AS NOTED
D.I.G.	J.F.V.	J.F.V.	J.F.V.	J.F.V.
D.I.G.	J.J.M.	J.J.M.	J.J.M.	J.J.M.

NO.	DATE	BY	CHKD	REVISION

**PRELIMINARY**

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NOTE:  
 EXISTING 8" LINE FROM EX M301-9-0 TO EX M301-3-10  
 COULD NOT BE LOCATED. CONTRACTOR SHALL TEST  
 AND LOCATE LINE PRIOR  
 TO CONSTRUCTION OF MH AN300-12 THROUGH MH AN300-15-2.

PROJECT NO. 15484 - TWP. PLANK KILN PROJECT WASTEWATER FACILITY CADD/CONTRACT SWR ZONE 2 2/15/2012 9:15AM

DATE: FEBRUARY 2012

5

54385

CITY OF MONROE, WESTMORELAND COUNTY, PENNSYLVANIA

LONG TERM CONTROL PLAN - PHASE II

CONTRACT SWR 2 - MONROE SEWER SEWER SEPARATION

MON VALLEY BRIDGE ACTIVITY

CONTRACT SWR 2 - MONROE SEWER SEWER SEPARATION

**Gannett Fleming**

PITTSBURGH, PENNSYLVANIA

SCALE: AS NOTED

DATE: J.F.V.

APPROVED: J.J.M.

DATE: G.A.N.

APPROVED: D.J.G.

50' 0 50' 100'

1" = 50'-0" HORIZONTAL

10' 5' 0 10' 20'

1" = 10'-0" VERTICAL

**PRELIMINARY**

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# U.S. Fish and Wildlife Service National Wetlands Inventory

MVSA - Phase 3

Jun 6, 2013

## Wetlands

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



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.

User Remarks:



# U.S. Fish and Wildlife Service National Wetlands Inventory

MVSA - Phase 3  
part 2

Jun 6, 2013

## Wetlands

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



This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currency 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.

User Remarks:

**APPENDIX D**

**FIGURE 3-1 AND TABLES 3-1 TO 3-35**



MON VALLEY SEWAGE AUTHORITY  
LONG TERM CONTROL PLAN  
SUMMARY OF CSO CONTROL ALTERNATIVES

MAIN CSO CONTROL ALTERNATIVE

CSO CONTROL STRATEGY AND  
DISINFECTION ALTERNATIVE

CSO CONTROL SUB-ALTERNATIVE

LEVEL OF CSO CONTROL

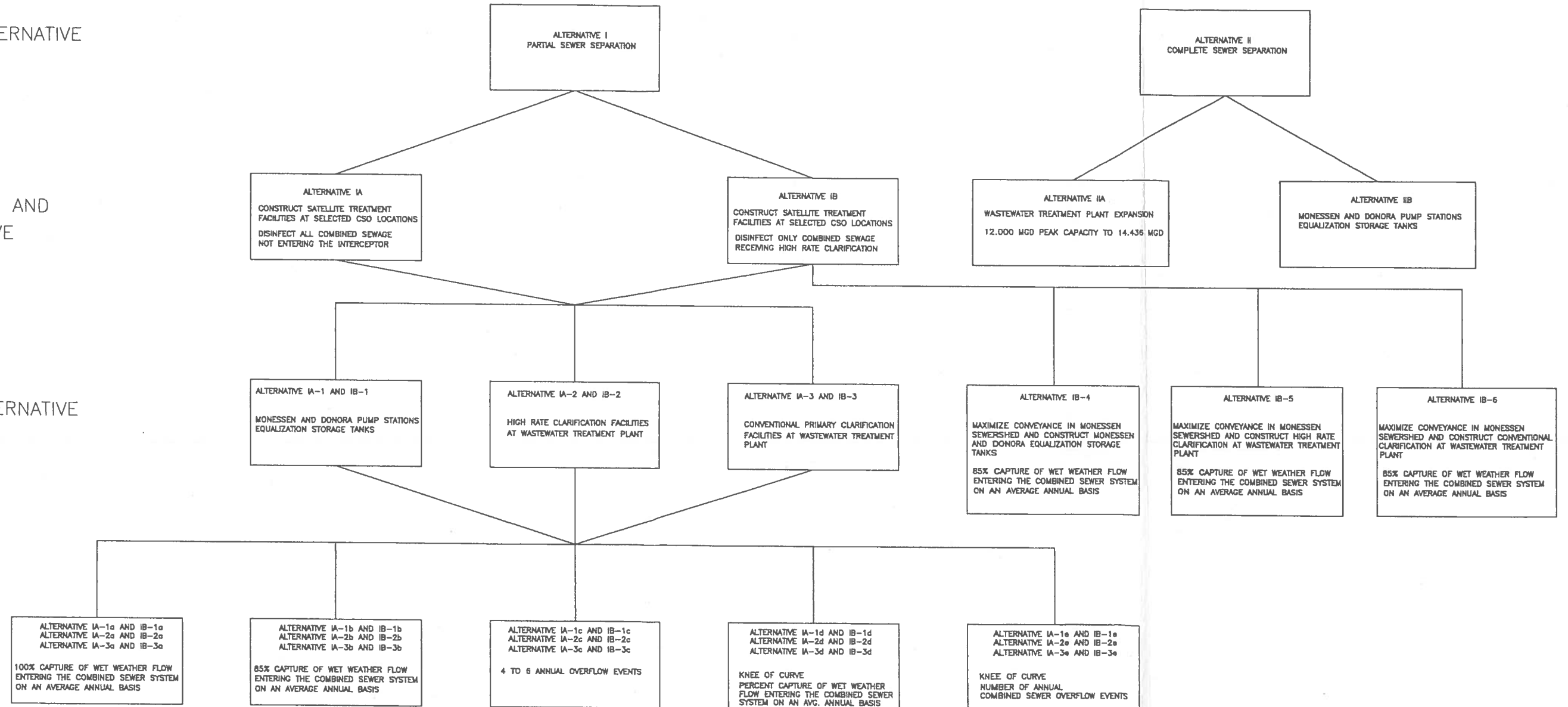


FIGURE 3-1 SUMMARY OF CSO CONTROL ALTERNATIVES



Table 3.2

Summary of Estimated Peak Combined Sewage and Peak Sanitary Flows for Main CSO Control Alternative I-Partial Sewer Separation  
Monessen Sewershed

CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Peak Sanitary Flow (mgd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Combined Flow (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
The Aubrey Ejector Station Force Main Terminates at MH 304 at Schoonmaker Ave.													
			Aubrey EJ										0.072
002	DIV MH 300A	South Int.			17th Street	2	South	0.086				0.072	
		South Int.										0.158	
					South Pump Station Peak Inflow							0.158	
					South Pump Station Proposed Flow Capacity							0.239	
The South Pump Station Force Main Terminates at an Existing MH at Morgan Street													
003	REG MH 202A	Donner Int.				3	Donner		0.713	3.5	2.496		0.259
					Donner Pump Station Peak Inflow							2.755	
					Donner Pump Station Proposed Flow Capacity							2.755	
CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Peak Sanitary Flow (mgd) <td>Average Dry Weather Flow (mgd) <td>Peaking Factor</td> <td>Peak Combined Flow (mgd) <td>Peak Flow In D.S. Interceptor (mgd) <td>Peak Flow In Force Main (mgd)</td> </td></td></td>	Average Dry Weather Flow (mgd) <td>Peaking Factor</td> <td>Peak Combined Flow (mgd) <td>Peak Flow In D.S. Interceptor (mgd) <td>Peak Flow In Force Main (mgd)</td> </td></td>	Peaking Factor	Peak Combined Flow (mgd) <td>Peak Flow In D.S. Interceptor (mgd) <td>Peak Flow In Force Main (mgd)</td> </td>	Peak Flow In D.S. Interceptor (mgd) <td>Peak Flow In Force Main (mgd)</td>	Peak Flow In Force Main (mgd)
			Donner FM										2.755
The Donner Pump Station Force Main Terminates at MH126 at Ninth Street													
004	DIV MH 117A	Monessen Int.			5th Street	5	Monessen					2.755	
005	REG MH 113A	Monessen Int.			3rd Street	4	Monessen		0.857	3.5	3.000	2.755	
					2nd Street	5	Monessen		0.170	3.5	0.595	5.754	
006	DIV MH 110A	Monessen Int.			River Street	5	Monessen					6.349	
0070	DIV MH 106B	Monessen Int.			Seneca Street	7A	Monessen		0.082	3.5	0.287	6.349	
00700	DIV MH 106A	Monessen Int.			Seneca Street	7B	Monessen		0.019	3.5	0.067	6.636	
007	REG MH 107A	Monessen Int.			Seneca Street	7	Monessen		0.364	3.5	1.274	6.703	
					Mainown Street	9	Monessen					7.977	
					Momongahela St	M101	Monessen	0.111				7.977	
												8.088	
												8.088	
Monessen Pump Station Peak Inflow													

Table 3-3  
Donora Sewershed  
Summary of Estimated Peak Combined Sewage and Peak Sanitary Flows for Main CSO Control Alternative 1 Partial Sewer Separation

CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Sanitary Flow (mgd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Combined Flow (mgd)	Peak Flow In Force Main (mgd)	Peak Flow In D.S. Interceptor (mgd)
022	REG MH 207A	North Int.			Boundary Alley	22	North	0.006	-4.0	0.024					
021	REG MH 205A	North Int.			15th Street	21	North			0.104				0.128	0.128
	DIV MH 202B	North Int.			Lansig Alley	20	North			0.099				0.137	0.137
					North Pump Station (Subtotal)										
017	DIV MH 211A	North Int.			11th Street	17	North			0.037	0.137	3.5	0.480	0.516	0.516
	MH 212	North Int.			12th Street	D212	North			0.061					
018	DIV MH 211A	North Int.				18	North			0.018				0.577	0.577
019	DIV MH 208A	North Int.			5th Street	19	North			0.018				0.595	0.595
					North Pump Station (Subtotal)										
					North Pump Station Peak Inflow										
					North Pump Station Proposed Flow Capacity										
CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Sanitary Flow (mgd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Combined Flow (mgd)	Peak Flow In Force Main (mgd)	Peak Flow In D.S. Interceptor (mgd)
					North PM									0.749	0.749
All Main Terminate at MH D116 at 8th Street															
016	DIV MH 116A	Donora-N			8th Street	16	Donora			0.030	0.150	3.5	0.525		
015	DIV MH 114A	Donora-N			7th Street	15	Donora	0.062	4.0	0.248			1.304		
0140	REG MH 111A	Donora-N			6th Street	140	Donora				0.274	3.5	0.959	1.552	1.552
014	REG MH 106A	Donora-N			5th Street	14	Donora			0.062	0.311	3.5	0.809	2.311	2.311
013	DIV MH 100A	Donora-N			Donora PS	13	Donora			0.022			3.381	3.381	3.381
					Donora Pump Station (Subtotal)										
010	DIV MH 123A	Donora-S			Walnut Street	10+D123	Donora			0.018	0.158	3.5	0.553	3.403	3.403
011	DIV MH 121A	Donora-S			Locus Street	11+10-D123	Donora				0.042	3.5	0.147	0.571	0.571
0110	DIV MH 118A	Donora-S			Chestnut Street	110	Donora				0.030	3.5	0.105	0.718	0.718
					Donora Pump Station (Subtotal)									0.823	0.823
					Donora Pump Station Peak Inflow									4.226	4.226

Summary of Estimated Peak Combined Sewage and Peak Sanitary Flows for 85% Annual Capture, Maximize Conveyance in Monessen Sewershed

CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Peak Sanitary Flow (mgd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Combined Flow (mgd)	Or at 85% Cap. (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
The Aubrey Ejector Station Force Main Terminates at MH 204 at Schoenmaker Ave														
		South Int.	Aubrey EJ											
002	DIV MH 100A	South Int.			17th Street	2	South	0.086					0.072	
The South Pump Station Force Main Terminates at an Existing MH at Morgan Street														
		Donner Int.												
003	REG MH 202A	Donner Int.				3	Donner	0.713		3.5	2.496	0.750	3.505	
Donner Pump Station Peak Inflow Donner Pump Station Proposed Flow Capacity														
CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Peak Sanitary Flow (mgd)	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Combined Flow (mgd)	Or at 85% Cap. (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
The Donner Pump Station Force Main Terminates at MH126 at Ninth Street														
		Monessen Int.												
004	DIV MH 117A	Monessen Int.			5th Street	5	Monessen						1.505	
005	REG MH 113A	Monessen Int.			3rd Street	4	Monessen	0.857		3.5	3.000	0.200	3.505	
006	DIV MH 111A	Monessen Int.			2nd Street	5	Monessen	0.170		3.5	0.595	0.300	6.704	
0070	DIV MH 110A	Monessen Int.			River Street	5	Monessen						7.599	
00700	DIV MH 106B	Monessen Int.			Seneca Street	7A	Monessen	0.082		3.5	0.287		7.599	
007	REG MH 106A	Monessen Int.			Seneca Street	7H	Monessen	0.019		3.5	0.067		7.884	
	DIV MH 107A	Monessen Int.			Seneca Street	7	Monessen	0.364		3.5	1.274		7.953	
	MH 101	Monessen Int.			Manawa Street	9	Monessen						9.227	
		Monessen Int.			Monongahela St	M101	Monessen	0.111					9.227	
Monessen Pump Station Peak Inflow														
													9.338	9.338

Mon Valley Sewage Authority  
Long Term Control Plan  
Table 3-5

Monessen Seweraged  
Summary of Estimated Peak Sanitary Sewage Flows for Main CSO Control Alternative II-Complete Sewer Separation

CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Sanitary Flow (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
The Aubrey Ejector Station Force Main Terminates at MH 304 at Schoonmaker Ave.												
			Aubrey EJ									0.072
002	DIV MH 300A	South Int.			17th Street	2	South			0.086	0.072	
		South Int.										
The South Pump Station Force Main Terminates at an Existing MH at Morgan Street												
			South PM									0.259
003	REG MH 202A	Donner Int.				3	Donner	0.713	4.0	2.852	3.111	
The Donner Pump Station Peak Inflow												
			Donner PM									3.111
			Donner PM									3.111
			Donner PM									3.111
The Donner Pump Station Force Main Terminates at MH126 at Ninth Street												
			Monessen Int.									
	DIV MH 117A	Monessen Int.			5th Street	5	Monessen				3.111	
004	REG MH 113A	Monessen Int.			3rd Street	4	Monessen	0.857	4.0	3.428	3.111	
005	DIV MH 111A	Monessen Int.			2nd Street	5	Monessen	0.170	4.0	0.680	6.539	
006	DIV MH 110A	Monessen Int.			River Street	5	Monessen				7.219	
0070	DIV MH 106B	Monessen Int.			Seneca Street	7A	Monessen	0.082	4.0	0.328	7.219	
00700	DIV MH 106A	Monessen Int.			Seneca Street	7B	Monessen	0.019	4.0	0.076	7.547	
007	REG MH 107A	Monessen Int.			Seneca Street	7	Monessen	0.364	4.0	1.456	7.633	
	DIV MH 102A	Monessen Int.			Manown Street	9	Monessen				9.079	
	MH 101	Monessen Int.			Monongahela St.	M101	Monessen			0.111	9.079	
											9.190	
											9.190	
Monessen Pump Station Peak Inflow												
											9.190	

Donora Sewershed  
 Summary of Estimated Peak Sanitary Sewage Flows for Main CSO Control Alternative II-Complete Sewer Separation

CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Sanitary Flow (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
022	REG MH 207A	North Int.			Boundary Alley	22	North	0.006	4.0	0.024	0.024	
021	REG MH 205A	North Int.			15th Street	21	North			0.104	0.128	
	DIV MH 202B	North Int.			Lusig Alley	20	North			0.009	0.137	
											0.137	
017	DIV MH 213A	North Int.			11th Street	17	North	0.137	4.0	0.585	0.585	
	MH 212				12th Street	D212	North			0.061	0.646	
018	DIV MH 211A	North Int.			18th Street	18	North			0.018	0.663	
019	DIV MH 208A	North Int.			Scot Street	19	North			0.018	0.681	
										0.818	0.818	
										0.818	0.818	
CSO ID	MH ID	Interceptor ID	Force Main ID	Pump Station ID	Location	Sub-Sewershed/Map Area	Pump Station	Average Dry Weather Flow (mgd)	Peaking Factor	Peak Sanitary Flow (mgd)	Peak Flow In D.S. Interceptor (mgd)	Peak Flow In Force Main (mgd)
			North FM									0.818
												0.818
												0.818
The North Pump Station Force Main Terminates at MH D116 at 8th Street												
016	DIV MH 116A	Donora-N			8th Street	16	Donora	0.150	4.0	0.650	1.447	
015	DIV MH 114A	Donora-N			7th Street	15	Donora	0.062	4.0	0.248	1.695	
0140	REG MH 111A	Donora-N			6th Street	140	Donora	0.274	4.0	1.096	2.791	
014	REG MH 106A	Donora-N			5th Street	14	Donora	0.231	4.0	0.986	3.777	
013	DIV MH 100A	Donora-N			Donora PS	13	Donora			0.022	3.799	
											3.799	
010	DIV MH 123A	Donora-S			Walnut Street	10+D123	Donora	0.158	4.0	0.650	0.650	
011	DIV MH 121A	Donora-S			Locust Street	11+10+D123	Donora	0.042	4.0	0.168	0.168	
0110	DIV MH 118A	Donora-S			Chestnut Street	110	Donora	0.030	4.0	0.120	0.818	
											0.938	
											0.938	
											4.737	

Table 3-6

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-7  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IA-1a, IA-1b, IA-1c, IA-1d, IA-1e

Main CSO Control Alternative I Partial Sewer Separation  
 CSO Control Strategy A Satellite Treatment Facilities at Selected CSO Locations  
 CSO Disinfection Alternative i Disinfect All Combined Sewage Not Entering the Interceptor  
 CSO Control Sub-Alternative j Monessen and Donora Pump Station Equalization Storage Tanks  
 Level of CSO Control a-e

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50 000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5 000	0.083	1 611	0 611	0.944
Grit Removal Capacity	(mgd)	5 000	0.083	1 611	0 611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2 496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44 654	44.654	44 654	44 654	44.654
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.465	0.465	0.465	0.465
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18 889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1 889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1 889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3 000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16 531	16.531	16.531	16.531	16.531
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.172	0.172	0.172	0.172
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8 333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7 288	7.288	7.288	7.288	7.288
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.076	0.076	0.076	0.076
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48 333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4 833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4 833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1 628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41 211	41.211	41.211	41.211	41.211
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.429	0.429	0.429	0.429
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Peak Velocity	(ft/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow Capacity to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	7.501	7.501	7.501	7.501	7.501
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	8.3	8.3	8.3	8.3	8.3
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station EQ Tank</b>						
Monessen Pump Station Equalization Tank Vol.	(min)	0.587	0.587	0.587	0.587	0.587



Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-8  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IA-1a, IA-1b, IA-1c, IA-1d, IA-1e

Main CSO Control Alternative 1 Partial Sewer Separation  
 CSO Control Strategy I Satellite Treatment Facilities at Selected CSO Locations  
 CSO Disinfection Alternative A Disinfect All Combined Sewage Not Entering the Interceptor  
 CSO Control Sub-Alternative 1 Monessen and Donora Pump Station Equalization Storage Tanks  
 Level of CSO Control a-e

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	5.651	5.651	5.651	5.651
Minimum Chlorine Contact Volume	(Mgal)	0.059	0.059	0.059	0.059	0.059
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	9.455	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	15.455	15.455	15.455	15.455
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.161	0.161	0.161	0.161
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	51.786	51.786	51.786	51.786
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.539	0.539	0.539	0.539
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	0.000	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	16.383	16.383	16.383	16.383
Minimum Chlorine Contact Volume	(mgd)	0.171	0.171	0.171	0.171	0.171
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	2.681	2.681	2.681	2.681
Minimum Chlorine Contact Volume	(mgd)	0.028	0.028	0.028	0.028	0.028
<b>North Pump Station</b>						
Exist Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow Capacity	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(ft/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow Capacity	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist Force Main	(mgd)	3.865	3.865	3.865	3.865	3.865
Existing Force Main Size	(in)	16	16	16	16	16
Exist Force Main Velocity at Peak Flow	(ft/s)	4.3	4.3	4.3	4.3	4.3
Replace Exist Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station EQ Tank</b>						
Donora Pump Station Equalization Tank Vol.	(min)					
	(Mgal)	0.361	0.361	0.361	0.361	0.361

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-9  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IA-2a, IA-2b, IA-2c, IA-2d, IA-2e

Main CSO Control Alternative	I	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	A	Disinfect All Combined Sewage Not Entering the Interceptor
CSO Control Sub-Alternative	2	High Rate Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44.654	44.654	44.654	44.654	44.654
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.465	0.465	0.465	0.465
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16.531	16.531	16.531	16.531	16.531
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.172	0.172	0.172	0.172
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8.333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7.288	7.288	7.288	7.288	7.288
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.076	0.076	0.076	0.076
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48.333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41.211	41.211	41.211	41.211	41.211
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.429	0.429	0.429	0.429
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Peak Velocity	(ft/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	8.088
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	9.0	9.0	9.0	9.0	9.0
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct High Rate Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	1.052	1.052	1.052	1.052	1.052
Underflow Pumping Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Grit Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-10  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IA-2a, IA-2b, IA-2c, IA-2d, IA-2e

Main CSO Control Alternative	1	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	A	Disinfect All Combined Sewage Not Entering the Interceptor
CSO Control Sub-Alternative	2	High Rate Clarification at Wastewater Treatment Plant
Level of CSO Control	a e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	5.651	5.651	5.651	5.651
Minimum Chlorine Contact Volume	(Mgal)	0.059	0.059	0.059	0.059	0.059
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	9.455	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	15.455	15.455	15.455	15.455
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.161	0.161	0.161	0.161
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	51.786	51.786	51.786	51.786
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.539	0.539	0.539	0.539
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	-	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	16.383	16.383	16.383	16.383
Minimum Chlorine Contact Volume	(mgd)	0.171	0.171	0.171	0.171	0.171
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	2.681	2.681	2.681	2.681
Minimum Chlorine Contact Volume	(mgd)	0.028	0.028	0.028	0.028	0.028
<b>North Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow Capacity	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist. Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(ft/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow Capacity	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist. Force Main	(mgd)	4.226	4.226	4.226	4.226	4.226
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	4.7	4.7	4.7	4.7	4.7
Replace Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct High Rate Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	1.052	1.052	1.052	1.052	1.052
Underflow Pumping Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Grit Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-11  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives 1A-3a, 1A-3b, 1A-3c, 1A-3d, 1A-3e

Main CSO Control Alternative	1	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	A	Disinfect All Combined Sewage Not Entering the Interceptor
CSO Control Sub-Alternative	3	Conventional Primary Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44.654	44.654	44.654	44.654	44.654
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.465	0.465	0.465	0.465
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16.531	16.531	16.531	16.531	16.531
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.172	0.172	0.172	0.172
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8.333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7.288	7.288	7.288	7.288	7.288
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.076	0.076	0.076	0.076
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48.333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41.211	41.211	41.211	41.211	41.211
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.429	0.429	0.429	0.429
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Peak Velocity	(ft/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow Capacity to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	8.088
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	9.0	9.0	9.0	9.0	9.0
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct Conventional Primary Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	0.947	0.947	0.947	0.947	0.947
Underflow Pumping Capacity	(mgd)	NA	NA	NA	NA	NA
Grit Removal Capacity	(mgd)	NA	NA	NA	NA	NA
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-12  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IA-3a, IA-3b, IA-3c, IA-3d, IA-3e

Main CSO Control Alternative	I	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	A	Disinfect All Combined Sewage Not Entering the Interceptor
CSO Control Sub-Alternative	3	Conventional Primary Clarification at Wastewater Treatment Plant
Level of CSO Control	a e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	5.651	5.651	5.651	5.651
Minimum Chlorine Contact Volume	(Mgal)	0.059	0.059	0.059	0.059	0.059
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	9.455	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	15.455	15.455	15.455	15.455
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.161	0.161	0.161	0.161
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	51.786	51.786	51.786	51.786
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.539	0.539	0.539	0.539
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	-	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	16.383	16.383	16.383	16.383
Minimum Chlorine Contact Volume	(mgd)	0.171	0.171	0.171	0.171	0.171
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	2.681	2.681	2.681	2.681
Minimum Chlorine Contact Volume	(mgd)	0.028	0.028	0.028	0.028	0.028
<b>North Pump Station</b>						
Exist. Peak Flow	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist. Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(f/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist. Force Main	(mgd)	4.226	4.226	4.226	4.226	4.226
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(f/s)	4.7	4.7	4.7	4.7	4.7
Replace Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct Conventional Primary Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	0.947	0.947	0.947	0.947	0.947
Underflow Pumping Capacity	(mgd)	NA	NA	NA	NA	NA
Grit Removal Capacity	(mgd)	NA	NA	NA	NA	NA
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

Mon Valley Sewage Authority  
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 Table 3-13  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IB-1a, IB-1b, IB-1c, IB-1d, IB-1e

Main CSO Control Alternative I Partial Sewer Separation  
 CSO Control Strategy I Satellite Treatment Facilities at Selected CSO Locations  
 CSO Disinfection Alternative B Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment  
 CSO Control Sub-Alternative I Monessen and Donora Pump Station Equalization Storage Tanks  
 Level of CSO Control a e

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	14.500	5.500	8.500
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	0.151	0.057	0.089
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16.531	0.200	14.500	3.500	6.000
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.002	0.151	0.036	0.063
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8.333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7.288	0.300	4.000	1.500	2.000
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.003	0.042	0.016	0.021
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48.333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41.211	3.750	19.500	8.500	13.000
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.039	0.203	0.089	0.135
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Peak Velocity	(ft/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	7.501	7.501	7.501	7.501	7.501
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	8.3	8.3	8.3	8.3	8.3
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station EQ Tank</b>						
Monessen Pump Station Equalization Tank Vol. (min)	(Mgal)	0.587	0.587	0.587	0.587	0.587

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-14  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives 1B-1a, 1B-1b, 1B-1c, 1B-1d, 1B-1e

Main CSO Control Alternative	I	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	B	Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
CSO Control Sub-Alternative	1	Monessen and Donora Pump Station Equalization Storage Tanks
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	-	0.500	0.500	0.500
Minimum Chlorine Contact Volume	(Mgal)	0.059	-	0.005	0.005	0.005
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	9.455	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	3.500	10.500	6.000	7.500
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.036	0.109	0.063	0.078
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	2.200	15.500	10.500	9.000
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.023	0.161	0.109	0.094
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	-	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	1.900	8.000	4.500	5.500
Minimum Chlorine Contact Volume	(mgd)	0.171	0.020	0.083	0.047	0.057
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	-	1.750	0.500	1.000
Minimum Chlorine Contact Volume	(mgd)	0.028	-	0.018	0.005	0.010
<b>North Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow Capacity	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist. Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(ft/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow Capacity	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist Force Main	(mgd)	3.865	3.865	3.865	3.865	3.865
Existing Force Main Size	(in)	16	16	16	16	16
Exist Force Main Velocity at Peak Flow	(ft/s)	4.3	4.3	4.3	4.3	4.3
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station EQ Tank</b>						
Donora Pump Station Equalization Tank Vol.	(min)					
	(Mgal)	0.361	0.361	0.361	0.361	0.361

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-15  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives 1B-2a, 1B-2b, 1B-2c, 1B-2d, 1B-2e

Main CSO Control Alternative	1	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	B	Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
CSO Control Sub-Alternative	2	High Rate Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	14.500	5.500	8.500
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	0.151	0.057	0.089
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16.531	0.200	14.500	3.500	6.000
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.002	0.151	0.036	0.063
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8.333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7.288	0.300	4.000	1.500	2.000
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.003	0.042	0.016	0.021
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48.333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41.211	3.750	19.500	8.500	13.000
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.039	0.203	0.089	0.135
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow Capacity	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow Capacity	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Pk Velocity	(ft/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow Capacity to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	8.088
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	9.0	9.0	9.0	9.0	9.0
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct High Rate Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	1.052	1.052	1.052	1.052	1.052
Underflow Pumping Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Grit Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010



Mon Valley Sewage Authority  
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 Table 3-16  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IB-2a, IB-2b, IB-2c, IB-2d, IB-2e

Main CSO Control Alternative	I	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	B	Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
CSO Control Sub-Alternative	2	High Rate Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	-	0.500	0.500	0.500
Minimum Chlorine Contact Volume	(Mgal)	0.059	-	0.005	0.005	0.005
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	4.955	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	3.500	10.500	6.000	7.500
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.036	0.109	0.063	0.078
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	2.200	15.500	10.500	9.000
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.023	0.161	0.109	0.094
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	-	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	1.900	8.000	4.500	5.500
Minimum Chlorine Contact Volume	(mgd)	0.171	0.020	0.083	0.047	0.057
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	-	1.750	0.500	1.000
Minimum Chlorine Contact Volume	(mgd)	0.028	-	0.018	0.005	0.010
<b>North Pump Station</b>						
Exist Peak Flow	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(ft/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist. Force Main	(mgd)	4.226	4.226	4.226	4.226	4.226
Existing Force Main Size	(in)	16	16	16	16	16
Exist Force Main Velocity at Peak Flow	(ft/s)	4.7	4.7	4.7	4.7	4.7
Replace Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct High Rate Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	1.052	1.052	1.052	1.052	1.052
Underflow Pumping Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Grit Removal Capacity	(mgd)	0.105	0.105	0.105	0.105	0.105
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

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 Table 3-17  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IB-3a, IB-3b, IB-3c, IB-3d, IB-3e

Main CSO Control Alternative	I	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	B	Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
CSO Control Sub-Alternative	3	Conventional Primary Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No of Overflows Knee of Curve
<b>CSO 003</b>						
Treatment Unit Capacity	(mgd)	50.000	0.833	16.111	6.111	9.444
Underflow Pumping Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Grit Removal Capacity	(mgd)	5.000	0.083	1.611	0.611	0.944
Interceptor Flow Pumping Capacity	(mgd)	2.496	2.496	2.496	2.496	2.496
Coarse Screening Capacity	(mgd)	-	43.904	30.154	39.154	36.154
Peak Flow to Be Disinfected	(mgd)	44.654	0.750	14.500	5.500	8.500
Minimum Chlorine Contact Volume	(Mgal)	0.465	0.008	0.151	0.057	0.089
<b>CSO 004</b>						
Treatment Unit Capacity	(mgd)	18.889	0.222	16.111	3.889	6.667
Underflow Pumping Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Grit Removal Capacity	(mgd)	1.889	0.022	1.611	0.389	0.667
Interceptor Flow Pump	(mgd)	3.000	3.000	3.000	3.000	3.000
Coarse Screening Capacity	(mgd)	-	16.331	2.031	13.031	10.531
Peak Flow to Be Disinfected	(mgd)	16.531	0.200	14.500	3.500	6.000
Minimum Chlorine Contact Volume	(Mgal)	0.172	0.002	0.151	0.036	0.063
<b>CSO 005</b>						
Treatment Unit Capacity	(mgd)	8.333	0.333	4.444	1.667	2.222
Underflow Pumping Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Grit Removal Capacity	(mgd)	0.833	0.033	0.444	0.167	0.222
Interceptor Flow Pump	(mgd)	0.595	0.595	0.595	0.595	0.595
Coarse Screening Capacity	(mgd)	-	6.988	3.288	5.788	5.288
Peak Flow to Be Disinfected	(mgd)	7.288	0.300	4.000	1.500	2.000
Minimum Chlorine Contact Volume	(Mgal)	0.076	0.003	0.042	0.016	0.021
<b>CSO 007</b>						
Treatment Unit Capacity	(mgd)	48.333	4.167	21.667	9.444	14.444
Underflow Pumping Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Grit Removal Capacity	(mgd)	4.833	0.417	2.167	0.944	1.444
Interceptor Flow Pump	(mgd)	1.628	1.628	1.628	1.628	1.628
Coarse Screening Capacity	(mgd)	-	37.461	21.711	32.711	28.211
Peak Flow to Be Disinfected	(mgd)	41.211	3.750	19.500	8.500	13.000
Minimum Chlorine Contact Volume	(Mgal)	0.429	0.039	0.203	0.089	0.135
<b>Aubrey Ejector Station</b>						
Exist. Peak Flow	(mgd)	0.072	0.072	0.072	0.072	0.072
Proposed Peak Flow	(mgd)	0.072	0.072	0.072	0.072	0.072
Replace Force Main		NO	NO	NO	NO	NO
<b>South Pump Station</b>						
Exist. Peak Flow	(mgd)	0.259	0.259	0.259	0.259	0.259
Limit Peak Flow to	(mgd)	0.259	0.259	0.259	0.259	0.259
Replace Force Main		NO	NO	NO	NO	NO
<b>Donner Pump Station</b>						
Exist. Peak Flow	(mgd)	2.448	2.448	2.448	2.448	2.448
Proposed Peak Flow	(mgd)	2.755	2.755	2.755	2.755	2.755
Existing Force Main Size	(in)	12	12	12	12	12
Force Main Pk Velocity	(f/s)	5.4	5.4	5.4	5.4	5.4
Replace Force Main		NO	NO	NO	NO	NO
<b>Monessen Pump Station</b>						
Exist. Peak Flow	(mgd)	4.982	4.982	4.982	4.982	4.982
Increase Pump Station Peak Flow to	(mgd)	8.088	8.088	8.088	8.088	8.088
Peak Flow in Exist. Force Main	(mgd)	8.088	8.088	8.088	8.088	8.088
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(f/s)	9.0	9.0	9.0	9.0	9.0
Replace Exist. Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct Conventional Primary Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	0.947	0.947	0.947	0.947	0.947
Underflow Pumping Capacity	(mgd)	NA	NA	NA	NA	NA
Grit Removal Capacity	(mgd)	NA	NA	NA	NA	NA
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

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 Table 3-18  
 Donora Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternatives IB-3a, IB-3b, IB-3c, IB-3d, IB-3e

Main CSO Control Alternative	1	Partial Sewer Separation
CSO Control Strategy		Satellite Treatment Facilities at Selected CSO Locations
CSO Disinfection Alternative	B	Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment
CSO Control Sub-Alternative	3	Conventional Primary Clarification at Wastewater Treatment Plant
Level of CSO Control	a-e	

Facility		Level of CSO Control				
		a- 100% Annual Capture	b- 85% Annual Capture	c- 4-6 Annual Overflows	d- Percent Capture Knee of Curve	e- No. of Overflows Knee of Curve
<b>CSO 017</b>						
Treatment Unit Capacity	(mgd)	6.667	-	0.556	0.556	0.556
Underflow Pumping Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Grit Removal Capacity	(mgd)	0.667	-	0.056	0.056	0.056
Interceptor Flow Pumping Capacity	(mgd)	0.480	0.480	0.480	0.480	0.480
Coarse Screening Capacity	(mgd)	-	5.651	5.151	5.151	5.151
Peak Flow to Be Disinfected	(mgd)	5.651	-	0.500	0.500	0.500
Minimum Chlorine Contact Volume	(Mgal)	0.059	-	0.005	0.005	0.005
<b>CSO 016</b>						
Treatment Unit Capacity	(mgd)	17.222	3.889	11.667	6.667	8.333
Underflow Pumping Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Grit Removal Capacity	(mgd)	1.722	0.389	1.167	0.667	0.833
Interceptor Flow Pumping Capacity	(mgd)	0.525	0.525	0.525	0.525	0.525
Coarse Screening Capacity	(mgd)	-	11.955	4.955	9.455	7.955
Peak Flow to Be Disinfected	(mgd)	15.455	3.500	10.500	6.000	7.500
Minimum Chlorine Contact Volume	(Mgal)	0.161	0.036	0.109	0.063	0.078
<b>CSO 014</b>						
Treatment Unit Capacity	(mgd)	58.333	2.444	17.222	11.667	10.000
Underflow Pumping Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Grit Removal Capacity	(mgd)	5.833	0.244	1.722	1.167	1.000
Interceptor Flow Pump	(mgd)	1.768	1.768	1.768	1.768	1.768
Coarse Screening Capacity	(mgd)	-	49.586	36.286	41.286	42.786
Peak Flow to Be Disinfected	(mgd)	51.786	2.200	15.500	10.500	9.000
Minimum Chlorine Contact Volume	(Mgal)	0.539	0.023	0.161	0.109	0.094
<b>CSO 011</b>						
Treatment Unit Capacity	(mgd)	18.611	2.111	8.889	5.000	6.111
Underflow Pumping Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Grit Removal Capacity	(mgd)	1.861	0.211	0.889	0.500	0.611
Interceptor Flow Pump	(mgd)	0.252	0.252	0.252	0.105	0.252
Coarse Screening Capacity	(mgd)	-	14.483	6.328	8.828	8.328
Peak Flow to Be Disinfected	(mgd)	16.383	1.900	8.000	4.500	5.500
Minimum Chlorine Contact Volume	(mgd)	0.171	0.020	0.083	0.047	0.057
<b>CSO 010</b>						
Treatment Unit Capacity	(mgd)	3.333	-	1.944	0.556	1.111
Underflow Pumping Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Grit Removal Capacity	(mgd)	0.333	-	0.194	0.056	0.111
Interceptor Flow Pump	(mgd)	0.553	0.553	0.553	0.553	0.553
Coarse Screening Capacity	(mgd)	-	2.681	0.931	2.181	1.681
Peak Flow to Be Disinfected	(mgd)	2.681	-	1.750	0.500	1.000
Minimum Chlorine Contact Volume	(mgd)	0.028	-	0.018	0.005	0.010
<b>North Pump Station</b>						
Exist. Peak Flow Capacity	(mgd)	0.468	0.468	0.468	0.468	0.468
Proposed Peak Flow Capacity	(mgd)	0.749	0.749	0.749	0.749	0.749
Exist. Force Main Size	(in)	8	8	8	8	8
Force Main Peak Velocity	(ft/s)	3.3	3.3	3.3	3.3	3.3
Replace Force Main		NO	NO	NO	NO	NO
<b>Donora Pump Station</b>						
Existing Peak Flow	(mgd)	3.600	3.600	3.600	3.600	3.600
Increase Pump Station Peak Flow to	(mgd)	4.226	4.226	4.226	4.226	4.226
Peak Flow in Exist Force Main	(mgd)	4.226	4.226	4.226	4.226	4.226
Existing Force Main Size	(in)	16	16	16	16	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	4.7	4.7	4.7	4.7	4.7
Replace Force Main		NO	NO	NO	NO	NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>						
Construct Headworks Flow Separation Facility (mgd)		12.313	12.313	12.313	12.313	12.313
Construct Conventional Primary Clarification and Disinfection Facilities						
Treatment Unit Capacity	(mgd)	0.947	0.947	0.947	0.947	0.947
Underflow Pumping Capacity	(mgd)	NA	NA	NA	NA	NA
Grit Removal Capacity	(mgd)	NA	NA	NA	NA	NA
Peak Flow to Be Disinfected	(mgd)	0.947	0.947	0.947	0.947	0.947
Minimum Chlorine Contact Volume	(Mgal)	0.010	0.010	0.010	0.010	0.010

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 Long Term Control Plan  
 Table 3-19  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternative 1B-4b

- Main CSO Control Alternative 1 Partial Sewer Separation  
 CSO Control Strategy B Satellite Treatment Facilities at Selected CSO Locations  
 CSO Disinfection Alternative 4 Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment  
 CSO Control Sub-Alternative 4 Maximize Conveyance at 85% Capture in Monessen Sewershed and Construct Monessen and Donora Pump Station Equalization Storage Tanks  
 Level of CSO Control b 85% Capture on an Average Annual Basis

Monessen Sewershed		Level of CSO Control b- 85% Annual Capture	Donora Sewershed		Level of CSO Control b- 85% Annual Capture
Facility			Facility		
<b>CSO 003</b>			<b>CSO 017</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	-
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	-
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	-
Interceptor Flow Pumping Capacity	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	-
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	0.480
Peak Flow to Be Disinfected	(mgd)	43.904	Peak Flow to Be Disinfected	(mgd)	5.651
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	-
<b>CSO 004</b>			<b>CSO 016</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	-
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	3.889
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.389
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	0.389
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	0.525
Peak Flow to Be Disinfected	(mgd)	16.331	Peak Flow to Be Disinfected	(mgd)	11.955
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	3.500
<b>CSO 005</b>			<b>CSO 014</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	-
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	2.444
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.244
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pump	(mgd)	0.244
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	1.768
Peak Flow to Be Disinfected	(mgd)	6.988	Peak Flow to Be Disinfected	(mgd)	49.586
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	2.200
<b>CSO 007</b>			<b>CSO 011</b>		
Treatment Unit Capacity	(mgd)	4.167	Treatment Unit Capacity	(mgd)	2.111
Underflow Pumping Capacity	(mgd)	0.417	Underflow Pumping Capacity	(mgd)	0.211
Grit Removal Capacity	(mgd)	0.417	Grit Removal Capacity	(mgd)	0.211
Interceptor Flow Pump	(mgd)	1.628	Interceptor Flow Pump	(mgd)	0.252
Coarse Screening Capacity	(mgd)	37.461	Coarse Screening Capacity	(mgd)	14.483
Peak Flow to Be Disinfected	(mgd)	3.750	Peak Flow to Be Disinfected	(mgd)	1.900
Minimum Chlorine Contact Volume	(Mgal)	0.039	Minimum Chlorine Contact Volume	(mgd)	0.020
<b>Aubrey Ejector Station</b>			<b>CSO 010</b>		
Exist. Peak Flow Capacity	(mgd)	0.072	Treatment Unit Capacity	(mgd)	-
Proposed Peak Flow Capacity	(mgd)	0.072	Underflow Pumping Capacity	(mgd)	-
Replace Force Main		NO	Grit Removal Capacity	(mgd)	-
<b>South Pump Station</b>			Interceptor Flow Pump	(mgd)	-
Exist. Peak Flow Capacity	(mgd)	0.259	Coarse Screening Capacity	(mgd)	0.553
Limit Peak Flow to	(mgd)	0.259	Peak Flow to Be Disinfected	(mgd)	2.681
Replace Force Main		NO	Minimum Chlorine Contact Volume	(mgd)	-
<b>Donner Pump Station</b>			<b>North Pump Station</b>		
Exist. Peak Flow Capacity	(mgd)	2.448	Exist. Peak Flow Capacity	(mgd)	0.468
Proposed Peak Flow Capacity	(mgd)	3.505	Proposed Peak Flow Capacity	(mgd)	0.749
Existing Force Main Size	(in)	12	Exist. Force Main Size	(in)	8
Force Main Peak Velocity	(ft/s)	6.9	Force Main Peak Velocity	(ft/s)	3.3
Replace Force Main		NO	Replace Force Main		NO
<b>Monessen Pump Station</b>			<b>Donora Pump Station</b>		
Exist. Peak Flow Capacity	(mgd)	4.982	Existing Peak Flow Capacity	(mgd)	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	9.338	Increase Pump Station Peak Flow Capacity to	(mgd)	4.226
Peak Flow in Exist. Force Main	(mgd)	7.501	Peak Flow in Exist. Force Main	(mgd)	3.865
Existing Force Main Size	(in)	16	Existing Force Main Size	(in)	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	8.3	Exist. Force Main Velocity at Peak Flow	(ft/s)	4.3
Replace Exist. Force Main		NO	Replace Exist. Force Main		NO
<b>Monessen Pump Station EQ Tank</b>			<b>Donora Pump Station EQ Tank</b>		
Monessen Pump Station Equalization Tank Vol. (min)	(Mgal)	1.837	Donora Pump Station Equalization Tank Vol. (min)	(Mgal)	0.361

Mon Valley Sewer Authority  
 Long Term Control Plan  
 Table 3-20  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternative 1B-5b

- |                              |   |  |
|------------------------------|---|--|
| Main CSO Control Alternative | I | Partial Sewer Separation   |
| CSO Control Strategy         | B | Satellite Treatment Facilities at Selected CSO Locations   |
| CSO Disinfection Alternative | B | Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment                |
| CSO Control Sub-Alternative  | S | Maximize Conveyance at 85% Capture in Monessen Sewershed and   |
| Level of CSO Control         | b | Construct High Rate Clarification Facilities at Wastewater Treatment Plant<br>85% Capture on an Average Annual Basis |

Monessen Sewershed		Level of CSO Control b- 85% Annual Capture	Donora Sewershed		Level of CSO Control b- 85% Annual Capture
Facility			Facility		
<b>CSO 003</b>			<b>CSO 017</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	-
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	-
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	-
Interceptor Flow Pumping Capacity	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	-
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	0.480
Peak Flow to Be Disinfected	(mgd)	43.904	Peak Flow to Be Disinfected	(mgd)	5.651
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	-
<b>CSO 004</b>			<b>CSO 016</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	3.889
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	0.389
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.389
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	0.525
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	11.955
Peak Flow to Be Disinfected	(mgd)	16.331	Peak Flow to Be Disinfected	(mgd)	3.500
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	0.036
<b>CSO 005</b>			<b>CSO 014</b>		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	2.444
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	0.244
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.244
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pump	(mgd)	1.768
Coarse Screening Capacity	(mgd)	-	Coarse Screening Capacity	(mgd)	49.586
Peak Flow to Be Disinfected	(mgd)	6.988	Peak Flow to Be Disinfected	(mgd)	2.200
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	0.023
<b>CSO 007</b>			<b>CSO 011</b>		
Treatment Unit Capacity	(mgd)	4.167	Treatment Unit Capacity	(mgd)	2.111
Underflow Pumping Capacity	(mgd)	0.417	Underflow Pumping Capacity	(mgd)	0.211
Grit Removal Capacity	(mgd)	0.417	Grit Removal Capacity	(mgd)	0.211
Interceptor Flow Pump	(mgd)	1.628	Interceptor Flow Pump	(mgd)	0.252
Coarse Screening Capacity	(mgd)	37.461	Coarse Screening Capacity	(mgd)	14.483
Peak Flow to Be Disinfected	(mgd)	3.750	Peak Flow to Be Disinfected	(mgd)	1.900
Minimum Chlorine Contact Volume	(Mgal)	0.039	Minimum Chlorine Contact Volume	(mgd)	0.020
<b>Aubrey Ejector Station</b>			<b>CSO 010</b>		
Exist. Peak Flow Capacity	(mgd)	0.072	Treatment Unit Capacity	(mgd)	-
Proposed Peak Flow Capacity	(mgd)	0.072	Underflow Pumping Capacity	(mgd)	-
Replace Force Main		NO	Grit Removal Capacity	(mgd)	-
<b>South Pump Station</b>			Interceptor Flow Pump	(mgd)	-
Exist. Peak Flow Capacity	(mgd)	0.239	Coarse Screening Capacity	(mgd)	0.553
Limit Peak Flow to	(mgd)	0.239	Peak Flow to Be Disinfected	(mgd)	2.681
Replace Force Main		NO	Minimum Chlorine Contact Volume	(mgd)	-
<b>Denner Pump Station</b>			<b>North Pump Station</b>		
Exist. Peak Flow Capacity	(mgd)	2.448	Exist. Peak Flow Capacity	(mgd)	0.468
Proposed Peak Flow Capacity	(mgd)	3.505	Proposed Peak Flow Capacity	(mgd)	0.749
Existing Force Main Size	(in)	12	Exist. Force Main Size	(in)	8
Force Main Peak Velocity	(ft/s)	6.9	Force Main Peak Velocity	(ft/s)	3.3
Replace Force Main		NO	Replace Force Main		NO
<b>Monessen Pump Station</b>			<b>Donora Pump Station</b>		
Exist. Peak Flow Capacity	(mgd)	4.982	Exist. Peak Flow Capacity	(mgd)	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	9.338	Increase Pump Station Peak Flow Capacity to	(mgd)	4.226
Peak Flow in Exist. Force Main	(mgd)	9.338	Peak Flow in Exist. Force Main	(mgd)	4.226
Existing Force Main Size	(in)	16	Existing Force Main Size	(in)	16
Exist. Force Main Velocity at Peak Flow	(ft/s)	10.3	Exist. Force Main Velocity at Peak Flow	(ft/s)	4.7
Replace Exist. Force Main		YES	Replace Exist. Force Main		NO
<b>Satellite Treatment at Wastewater Treatment Plant</b>					
Construct Headworks Flow Separation Facility (mgd)		13.563			
Construct High Rate Clarification and Disinfection Facilities					
Treatment Unit Capacity	(mgd)	2.441			
Underflow Pumping Capacity	(mgd)	0.241			
Grit Removal Capacity	(mgd)	0.244			
Peak Flow to Be Disinfected	(mgd)	2.197			
Minimum Chlorine Contact Volume	(Mgal)	0.023			

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-21  
 Monessen Sewershed  
 Summary of Proposed Facilities and System Upgrades  
 Alternative 1B-6b

- Main CSO Control Alternative I Partial Sewer Separation  
 CSO Control Strategy Satellite Treatment Facilities at Selected CSO Locations  
 CSO Disinfection Alternative B Disinfect Only Combined Sewage That is Diverted from the Interceptor and Receives Satellite Treatment  
 CSO Control Sub-Alternative 6 Maximize Conveyance at 85% Capture in Monessen Sewershed and Construct Conventional Primary Clarification at Wastewater Treatment Plant  
 Level of CSO Control b 85% Capture on an Average Annual Basis

Monessen Sewershed		Level of CSO Control b- 85% Annual Capture	Donora Sewershed		Level of CSO Control b- 85% Annual Capture
Facility			Facility		
CSO 003			CSO 017		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	-
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	-
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	-
Interceptor Flow Pumping Capacity	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	-
Coarse Screening Capacity	(mgd)	43 904	Coarse Screening Capacity	(mgd)	0.48
Peak Flow to Be Disinfected	(mgd)	-	Peak Flow to Be Disinfected	(mgd)	5.65
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	-
CSO 004			CSO 016		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	3.89
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	0.39
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.39
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pumping Capacity	(mgd)	0.53
Coarse Screening Capacity	(mgd)	16 331	Coarse Screening Capacity	(mgd)	11.96
Peak Flow to Be Disinfected	(mgd)	-	Peak Flow to Be Disinfected	(mgd)	3.50
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	0.036
CSO 005			CSO 014		
Treatment Unit Capacity	(mgd)	-	Treatment Unit Capacity	(mgd)	2.44
Underflow Pumping Capacity	(mgd)	-	Underflow Pumping Capacity	(mgd)	0.24
Grit Removal Capacity	(mgd)	-	Grit Removal Capacity	(mgd)	0.24
Interceptor Flow Pump	(mgd)	-	Interceptor Flow Pump	(mgd)	1.77
Coarse Screening Capacity	(mgd)	6 988	Coarse Screening Capacity	(mgd)	49.59
Peak Flow to Be Disinfected	(mgd)	-	Peak Flow to Be Disinfected	(mgd)	2.20
Minimum Chlorine Contact Volume	(Mgal)	-	Minimum Chlorine Contact Volume	(Mgal)	0.023
CSO 007			CSO 011		
Treatment Unit Capacity	(mgd)	4.167	Treatment Unit Capacity	(mgd)	2.11
Underflow Pumping Capacity	(mgd)	0.417	Underflow Pumping Capacity	(mgd)	0.21
Grit Removal Capacity	(mgd)	0.417	Grit Removal Capacity	(mgd)	0.21
Interceptor Flow Pump	(mgd)	1.628	Interceptor Flow Pump	(mgd)	0.25
Coarse Screening Capacity	(mgd)	37.461	Coarse Screening Capacity	(mgd)	14.48
Peak Flow to Be Disinfected	(mgd)	3.750	Peak Flow to Be Disinfected	(mgd)	1.90
Minimum Chlorine Contact Volume	(Mgal)	0.039	Minimum Chlorine Contact Volume	(mgd)	0.020
Aubrey Ejector Station			CSO 010		
Exist. Peak Flow Capacity	(mgd)	0.072	Treatment Unit Capacity	(mgd)	-
Proposed Peak Flow Capacity	(mgd)	0.072	Underflow Pumping Capacity	(mgd)	-
Replace Force Main		NO	Grit Removal Capacity	(mgd)	-
South Pump Station			Interceptor Flow Pump	(mgd)	0.55
Exist. Peak Flow Capacity	(mgd)	0.259	Coarse Screening Capacity	(mgd)	2.68
Limit Peak Flow to	(mgd)	0.259	Peak Flow to Be Disinfected	(mgd)	-
Replace Force Main		NO	Minimum Chlorine Contact Volume	(mgd)	-
Donner Pump Station			North Pump Station		
Exist. Peak Flow Capacity	(mgd)	2.448	Exist. Peak Flow Capacity	(mgd)	0.468
Proposed Peak Flow Capacity	(mgd)	3.505	Proposed Peak Flow Capacity	(mgd)	0.749
Existing Force Main Size	(in)	12	Exist. Force Main Size	(in)	8
Force Main Peak Velocity	(f/s)	6.9	Force Main Peak Velocity	(f/s)	3.3
Replace Force Main		NO	Replace Force Main		NO
Monessen Pump Station			Donora Pump Station		
Exist. Peak Flow Capacity	(mgd)	4.982	Existing Peak Flow Capacity	(mgd)	3.600
Increase Pump Station Peak Flow Capacity to	(mgd)	9.338	Increase Pump Station Peak Flow Capacity to	(mgd)	4.236
Peak Flow in Exist. Force Main	(mgd)	9.338	Peak Flow in Exist. Force Main	(mgd)	4.236
Existing Force Main Size	(in)	16	Existing Force Main Size	(in)	16
Exist. Force Main Velocity at Peak Flow	(f/s)	10.3	Exist. Force Main Velocity at Peak Flow	(f/s)	4.7
Replace Exist. Force Main		YES	Replace Exist. Force Main		NO
Satellite Treatment at Wastewater Treatment Plant					
Construct Headworks Flow Separation Facility (mgd)		13 563			
Construct Conventional Primary Clarification and Disinfection Facilities					
Treatment Unit Capacity	(mgd)	2.197			
Underflow Pumping Capacity	(mgd)	NA			
Grit Removal Capacity	(mgd)	NA			
Peak Flow to Be Disinfected	(mgd)	2.197			
Minimum Chlorine Contact Volume	(Mgal)	0.023			

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-22  
 Summary of Proposed Facilities and System Upgrades  
 Alternative I/A

Main CSO Control Alternative II Complete Sewer Separation  
 Complete Sewer Separation Alternative A Wastewater Treatment Plant Expansion

Monessen Sewershed		Donora Sewershed	
Facility	Proposed Upgrades	Facility	Proposed Upgrades
Aubrey Ejector Station		North Pump Station	
Exist. Peak Flow Capacity (mgd)	0.072	Exist. Peak Flow Capacity (mgd)	0.468
Proposed Peak Flow Capacity (mgd)	0.072	Proposed Peak Flow Capacity (mgd)	0.818
Replace Force Main	NO	Exist. Force Main Size (in)	8
South Pump Station		Exist. Force Main Peak Velocity (ft/s)	3.6
Exist. Peak Flow Capacity (mgd)	0.259	Replace Force Main	NO
Limit Peak Flow to (mgd)	0.259		
Replace Force Main	NO	Donora Pump Station	
Donner Pump Station		Exist. Peak Flow Capacity (mgd)	2.448
Exist. Peak Flow Capacity (mgd)	2.448	Proposed Peak Flow Capacity (mgd)	3.111
Proposed Peak Flow Capacity (mgd)	3.111	Exist. Pump Station Peak Flow Capacity to Peak Flow in Force Main (mgd)	12
Existing Force Main Size (in)	12	Exist. Force Main Peak Velocity (ft/s)	6.1
Force Main Peak Velocity (ft/s)	6.1	Replace Force Main	NO
Replace Force Main	NO		
Monessen Pump Station		Monessen Pump Station	
Exist. Peak Flow Capacity (mgd)	4.982	Exist. Peak Flow Capacity (mgd)	4.982
Increase Pump Station Peak Flow Capacity to Peak Flow in Force Main (mgd)	9.190	Increase Pump Station Peak Flow Capacity to Peak Flow in Force Main (mgd)	9.190
Existing Force Main Size (in)	16	Existing Force Main Size (in)	16
Exist. Force Main Velocity at Peak Flow (ft/s)	10.2	Replace Exist. Force Main	YES
Replace Exist. Force Main	YES	Proposed Force Main Size (in)	20
Proposed Force Main Size (in)	20	Proposed Force Main Velocity at Peak Flow (ft/s)	6.5
Wastewater Treatment Plant		Wastewater Treatment Plant	
Existing WWTP Peak Capacity (mgd)	12.000	Existing WWTP Peak Capacity (mgd)	12.000
Proposed WWTP Peak Capacity (mgd)	14.560	Proposed WWTP Peak Capacity (mgd)	14.560

Table 3-22

Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-23  
 Summary of Proposed Facilities and System Upgrades  
 Alternative IIB

Main CSO Control Alternative II Complete Sewer Separation  
 Complete Sewer Separation Alternative B Main Pump Station Equalization Tanks

Monessen Sewershed		Donora Sewershed	
Facility	Proposed Upgrades	Facility	Proposed Upgrades
<b>Aubrey Ejector Station</b>		<b>North Pump Station</b>	
Exist. Peak Flow Capacity	(mgd) 0.072	Exist. Peak Flow Capacity	(mgd) 0.468
Proposed Peak Flow Capacity	(mgd) 0.072	Proposed Peak Flow Capacity	(mgd) 0.818
Replace Force Main	NO	Exist. Force Main Size	(in) 8
<b>South Pump Station</b>		Force Main Peak Velocity	(f/s) 3.6
Exist. Peak Flow Capacity	(mgd) 0.259	Replace Force Main	NO
Limit Peak Flow to	(mgd) 0.259		
Replace Force Main	NO	<b>Donora Pump Station</b>	
<b>Donora Pump Station</b>		Exist. Peak Flow Capacity	(mgd) 3.600
Exist. Peak Flow Capacity	(mgd) 2.448	Increase Pump Station Peak Flow Capacity to	(mgd) 4.737
Proposed Peak Flow	(mgd) 3.111	Peak Flow in Force Main	(mgd) 3.865
Existing Force Main Size	(in) 12	Exist. Force Main Size	(in) 16
Force Main Peak Velocity	(f/s) 6.1	Replace Force Main	(f/s) 4.3
Replace Force Main	NO		
<b>Monessen Pump Station</b>			
Exist. Peak Flow Capacity	(mgd) 4.982	<b>Donora Pump Station EQ Tank</b>	
Increase Pump Station Peak Flow Capacity to	(mgd) 9.190	Donora PS EQ Tank Vol. (min)	(Mgal) 0.872
Peak Flow in Force Main	(mgd) 7.501		
Existing Force Main Size	(in) 16		
Exist. Force Main Velocity at Peak Flow	(f/s) 8.3		
Replace Exist. Force Main	NO		
Proposed Force Main Size	(in) NA		
Proposed Force Main Velocity at Peak Flow	(f/s) NA		
<b>Monessen Pump Station EQ Tank</b>			
Monessen PS EQ Tank Vol. (min)	(Mgal) 1.689		

Table 3-23



Mon Valley Sewage Authority  
 Long Term Control Plan  
 Table 3-24

Summary of Probable Opinions of Project Costs

CSO Control Alternative	Main CSO Control Alternative	CSO Control Strategy	CSO Disinfection Alternative	CSO Control Sub-Alternative or Complete Sewer Separation Alternative	Range of Project Costs (millions of dollars)	Cost Table Reference
IA-1	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect All Combined Sewage not Entering Interceptor	Equalization Tanks	\$ 53.4 to \$ 61.7	Table 3-25
IA-2	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect All Combined Sewage not Entering Interceptor	High Rate Clarification at WWTP	\$ 54.9 to \$ 61.2	Table 3-26
IA-3	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect All Combined Sewage not Entering Interceptor	Conventional Clarification at WWTP	\$ 55.0 to \$ 61.2	Table 3-27
IB-1	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	Equalization Tanks	\$ 44.0 to \$ 61.7	Table 3-28
IB-2	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	High Rate Clarification at WWTP	\$ 43.5 to \$ 61.2	Table 3-29
IB-3	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	Conventional Clarification at WWTP	\$ 43.6 to \$ 61.2	Table 3-30
IB-4b	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	Maximize Conveyance at 85% Capture in Monessen Sewershed-Equalization Tanks	\$ 34.8	Table 3-31
IB-5b	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	Maximize Conveyance at 85% Capture in Monessen Sewershed-High Rate Clarification at WWTP	\$ 35.4	Table 3-32
IB-6b	Partial Sewer Separation	Satellite Treatment Facilities	Disinfect Only Combined Sewage Receiving High Rate Clarification	Maximize Conveyance at 85% Capture in Monessen Sewershed-Conventional Clarification at WWTP	\$ 35.7	Table 3-33
IIA	Complete Sewer Separation	NA	NA	WWTP Expansion	\$ 66.5	Table 3-34
IIB	Complete Sewer Separation	NA	NA	Monessen and Donora Pump Station Equalization Tanks	\$ 63.9	Table 3-35

Notes:

(1) Costs are presented in 2007 dollars.

Main CSO Control Alternative		Main Sewer Separation		Sub-Sewerbed Area		Sewer Separation		Upgrade		Total		Notes
CSO Control Alternative	Sub-Sewerbed Area	Sewer Separation	Upgrade Cost	Sub-Sewerbed Area	Total Cost	Sewer Separation	Upgrade Cost	Sub-Sewerbed Area	Total Cost	Sewer Separation	Upgrade Cost	
1	1	1	1	1	1	1	1	1	1	1	1	
2	2	2	2	2	2	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
7	7	7	7	7	7	7	7	7	7	7	7	
8	8	8	8	8	8	8	8	8	8	8	8	
9	9	9	9	9	9	9	9	9	9	9	9	
10	10	10	10	10	10	10	10	10	10	10	10	
<b>Summary of Construction and Project Costs</b>												
CSO Control Alternative		IA-1a		IA-1b		IA-1c		IA-1d		IA-1e		
Construction Subtotal		17,741,000		35,731,000		19,715,000		7,641,000		3,141,000		
Construction Subtotal		3,937,000		7,830,000		4,100,000		1,603,000		657,000		
Project Costs (10% of Construction Subtotal)		3,937,000		7,830,000		4,100,000		1,603,000		657,000		
<b>Total Project Cost</b>		<b>21,678,000</b>		<b>43,561,000</b>		<b>23,815,000</b>		<b>9,244,000</b>		<b>3,804,000</b>		

Notes:  
 (1) Costs are presented in 2007 dollars.







Item	Total Sewer Separation			Sub-Sewered Area			Sewer Separation			Total Cost
	Sub-Sewered Area	Upgrade Cost	Total Cost	Sub-Sewered Area	Upgrade Cost	Total Cost	Sub-Sewered Area	Upgrade Cost	Total Cost	
1	663,300	\$	663,300	21	\$	90,000	21	\$	90,000	
2	5,000	\$	5,000	21	\$	90,000	21	\$	90,000	
3	2,000	\$	2,000	21	\$	90,000	21	\$	90,000	
4	50,000	\$	50,000	21	\$	90,000	21	\$	90,000	
5	18,100	\$	18,100	21	\$	90,000	21	\$	90,000	
6	147,000	\$	147,000	21	\$	90,000	21	\$	90,000	
7	2,760	\$	2,760	21	\$	90,000	21	\$	90,000	
8	475,000	\$	475,000	21	\$	90,000	21	\$	90,000	
9	18,100	\$	18,100	21	\$	90,000	21	\$	90,000	
10	31,100	\$	31,100	21	\$	90,000	21	\$	90,000	
11	248,100	\$	248,100	21	\$	90,000	21	\$	90,000	
12	1,318,600	\$	1,318,600	21	\$	90,000	21	\$	90,000	
13	142,000	\$	142,000	21	\$	90,000	21	\$	90,000	
14	142,000	\$	142,000	21	\$	90,000	21	\$	90,000	
15	3,000	\$	3,000	21	\$	90,000	21	\$	90,000	
16	5,000	\$	5,000	21	\$	90,000	21	\$	90,000	
17	30,500	\$	30,500	21	\$	90,000	21	\$	90,000	
18	4,000	\$	4,000	21	\$	90,000	21	\$	90,000	
19	11,000	\$	11,000	21	\$	90,000	21	\$	90,000	
20	173,000	\$	173,000	21	\$	90,000	21	\$	90,000	
21	873,000	\$	873,000	21	\$	90,000	21	\$	90,000	
22	5,221,800	\$	5,221,800	21	\$	90,000	21	\$	90,000	
23	678,600	\$	678,600	21	\$	90,000	21	\$	90,000	
24	574,800	\$	574,800	21	\$	90,000	21	\$	90,000	
25	5,803,600	\$	5,803,600	21	\$	90,000	21	\$	90,000	
26	2,118,000	\$	2,118,000	21	\$	90,000	21	\$	90,000	
27	3,685,600	\$	3,685,600	21	\$	90,000	21	\$	90,000	
28	26,511,000	\$	26,511,000	21	\$	90,000	21	\$	90,000	
29	16,870,000	\$	16,870,000	21	\$	90,000	21	\$	90,000	
30	6,996,000	\$	6,996,000	21	\$	90,000	21	\$	90,000	
31	11,831,000	\$	11,831,000	21	\$	90,000	21	\$	90,000	
32	17,831,000	\$	17,831,000	21	\$	90,000	21	\$	90,000	
33	58,033,600	\$	58,033,600	21	\$	90,000	21	\$	90,000	
34	51,118,000	\$	51,118,000	21	\$	90,000	21	\$	90,000	
35	22,106,200	\$	22,106,200	21	\$	90,000	21	\$	90,000	

Item	7b-14	7b-18	7b-19	7b-20	7b-21	7b-22	7b-23	7b-24	7b-25	7b-26	7b-27	7b-28	7b-29	7b-30	7b-31	7b-32	7b-33	7b-34	7b-35
1	4,807,000	\$	3,064,000	\$	3,983,000	\$	3,337,000	\$	3,337,000	\$	3,337,000	\$	3,337,000	\$	3,337,000	\$	3,337,000	\$	3,337,000
2	3,627,000	\$	2,780,000	\$	1,742,000	\$	1,687,000	\$	1,687,000	\$	1,687,000	\$	1,687,000	\$	1,687,000	\$	1,687,000	\$	1,687,000
3	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000	\$	1,572,000
4	15,730,000	\$	11,450,000	\$	14,577,000	\$	12,535,000	\$	12,535,000	\$	12,535,000	\$	12,535,000	\$	12,535,000	\$	12,535,000	\$	12,535,000
5	1,115,000	\$	1,420,000	\$	1,573,000	\$	1,355,000	\$	1,355,000	\$	1,355,000	\$	1,355,000	\$	1,355,000	\$	1,355,000	\$	1,355,000
6	5,840,000	\$	3,217,000	\$	3,667,000	\$	3,393,000	\$	3,393,000	\$	3,393,000	\$	3,393,000	\$	3,393,000	\$	3,393,000	\$	3,393,000
7	4,061,000	\$	3,255,000	\$	4,810,000	\$	4,326,000	\$	4,326,000	\$	4,326,000	\$	4,326,000	\$	4,326,000	\$	4,326,000	\$	4,326,000
8	1,584,000	\$	138,000	\$	1,446,000	\$	1,446,000	\$	1,446,000	\$	1,446,000	\$	1,446,000	\$	1,446,000	\$	1,446,000	\$	1,446,000
9	17,151,000	\$	10,160,000	\$	15,102,000	\$	14,075,000	\$	14,075,000	\$	14,075,000	\$	14,075,000	\$	14,075,000	\$	14,075,000	\$	14,075,000
10	32,895,800	\$	21,618,000	\$	29,483,800	\$	26,511,000	\$	26,511,000	\$	26,511,000	\$	26,511,000	\$	26,511,000	\$	26,511,000	\$	26,511,000
11	19,460,000	\$	18,078,000	\$	16,150,000	\$	14,870,000	\$	14,870,000	\$	14,870,000	\$	14,870,000	\$	14,870,000	\$	14,870,000	\$	14,870,000
12	17,800,000	\$	5,610,000	\$	7,340,000	\$	6,996,000	\$	6,996,000	\$	6,996,000	\$	6,996,000	\$	6,996,000	\$	6,996,000	\$	6,996,000
13	11,023,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000	\$	9,925,000
14	61,168,800	\$	43,521,800	\$	58,033,600	\$	51,118,000	\$	51,118,000	\$	51,118,000	\$	51,118,000	\$	51,118,000	\$	51,118,000	\$	51,118,000

Table 1.29



Alternative	CSO Control Alternative	Partial Sewer Separation	Sewerage Treatment Facilities at Service of CSO Line (m3)	Other Sewerage Treatment Facilities	Sum of Alternative Sewerage Treatment Facilities	Total Cost	Notes
1	a	667,500	1	667,500	1	667,500	
2	b	5,000	1	5,000	2	10,000	
3	c	50,000	1	50,000	3	150,000	
4	d	3,000	1	3,000	4	12,000	
5	e	5,000	1	5,000	5	25,000	
6	f	20,000	1	20,000	6	100,000	
7	g	24,000	1	24,000	7	96,000	
8	h	50,000	1	50,000	8	250,000	
9	i	20,000	1	20,000	9	100,000	
10	j	5,000	1	5,000	10	25,000	
11	k	5,000	1	5,000	11	25,000	
12	l	20,000	1	20,000	12	100,000	
13	m	20,000	1	20,000	13	100,000	
14	n	5,000	1	5,000	14	25,000	
15	o	5,000	1	5,000	15	25,000	
16	p	5,000	1	5,000	16	25,000	
17	q	5,000	1	5,000	17	25,000	
18	r	5,000	1	5,000	18	25,000	
19	s	5,000	1	5,000	19	25,000	
20	t	5,000	1	5,000	20	25,000	
21	u	5,000	1	5,000	21	25,000	
22	v	5,000	1	5,000	22	25,000	
23	w	5,000	1	5,000	23	25,000	
24	x	5,000	1	5,000	24	25,000	
25	y	5,000	1	5,000	25	25,000	
26	z	5,000	1	5,000	26	25,000	
27	aa	5,000	1	5,000	27	25,000	
28	ab	5,000	1	5,000	28	25,000	
29	ac	5,000	1	5,000	29	25,000	
30	ad	5,000	1	5,000	30	25,000	
31	ae	5,000	1	5,000	31	25,000	
32	af	5,000	1	5,000	32	25,000	
33	ag	5,000	1	5,000	33	25,000	
34	ah	5,000	1	5,000	34	25,000	
35	ai	5,000	1	5,000	35	25,000	
36	aj	5,000	1	5,000	36	25,000	
37	ak	5,000	1	5,000	37	25,000	
38	al	5,000	1	5,000	38	25,000	
39	am	5,000	1	5,000	39	25,000	
40	an	5,000	1	5,000	40	25,000	
41	ao	5,000	1	5,000	41	25,000	
42	ap	5,000	1	5,000	42	25,000	
43	aq	5,000	1	5,000	43	25,000	
44	ar	5,000	1	5,000	44	25,000	
45	as	5,000	1	5,000	45	25,000	
46	at	5,000	1	5,000	46	25,000	
47	au	5,000	1	5,000	47	25,000	
48	av	5,000	1	5,000	48	25,000	
49	aw	5,000	1	5,000	49	25,000	
50	ax	5,000	1	5,000	50	25,000	
51	ay	5,000	1	5,000	51	25,000	
52	az	5,000	1	5,000	52	25,000	
53	ba	5,000	1	5,000	53	25,000	
54	bb	5,000	1	5,000	54	25,000	
55	bc	5,000	1	5,000	55	25,000	
56	bd	5,000	1	5,000	56	25,000	
57	be	5,000	1	5,000	57	25,000	
58	bf	5,000	1	5,000	58	25,000	
59	bg	5,000	1	5,000	59	25,000	
60	bh	5,000	1	5,000	60	25,000	
61	bi	5,000	1	5,000	61	25,000	
62	bj	5,000	1	5,000	62	25,000	
63	bk	5,000	1	5,000	63	25,000	
64	bl	5,000	1	5,000	64	25,000	
65	bm	5,000	1	5,000	65	25,000	
66	bn	5,000	1	5,000	66	25,000	
67	bo	5,000	1	5,000	67	25,000	
68	bp	5,000	1	5,000	68	25,000	
69	bq	5,000	1	5,000	69	25,000	
70	br	5,000	1	5,000	70	25,000	
71	bs	5,000	1	5,000	71	25,000	
72	bt	5,000	1	5,000	72	25,000	
73	bu	5,000	1	5,000	73	25,000	
74	bv	5,000	1	5,000	74	25,000	
75	bw	5,000	1	5,000	75	25,000	
76	bx	5,000	1	5,000	76	25,000	
77	by	5,000	1	5,000	77	25,000	
78	bz	5,000	1	5,000	78	25,000	
79	ca	5,000	1	5,000	79	25,000	
80	cb	5,000	1	5,000	80	25,000	
81	cc	5,000	1	5,000	81	25,000	
82	cd	5,000	1	5,000	82	25,000	
83	ce	5,000	1	5,000	83	25,000	
84	cf	5,000	1	5,000	84	25,000	
85	cg	5,000	1	5,000	85	25,000	
86	ch	5,000	1	5,000	86	25,000	
87	ci	5,000	1	5,000	87	25,000	
88	cj	5,000	1	5,000	88	25,000	
89	ck	5,000	1	5,000	89	25,000	
90	cl	5,000	1	5,000	90	25,000	
91	cm	5,000	1	5,000	91	25,000	
92	cn	5,000	1	5,000	92	25,000	
93	co	5,000	1	5,000	93	25,000	
94	cp	5,000	1	5,000	94	25,000	
95	cq	5,000	1	5,000	95	25,000	
96	cr	5,000	1	5,000	96	25,000	
97	cs	5,000	1	5,000	97	25,000	
98	ct	5,000	1	5,000	98	25,000	
99	cu	5,000	1	5,000	99	25,000	
100	cv	5,000	1	5,000	100	25,000	
101	cw	5,000	1	5,000	101	25,000	
102	cx	5,000	1	5,000	102	25,000	
103	cy	5,000	1	5,000	103	25,000	
104	cz	5,000	1	5,000	104	25,000	
105	da	5,000	1	5,000	105	25,000	
106	db	5,000	1	5,000	106	25,000	
107	dc	5,000	1	5,000	107	25,000	
108	dd	5,000	1	5,000	108	25,000	
109	de	5,000	1	5,000	109	25,000	
110	df	5,000	1	5,000	110	25,000	
111	dg	5,000	1	5,000	111	25,000	
112	dh	5,000	1	5,000	112	25,000	
113	di	5,000	1	5,000	113	25,000	
114	dj	5,000	1	5,000	114	25,000	
115	dk	5,000	1	5,000	115	25,000	
116	dl	5,000	1	5,000	116	25,000	
117	dm	5,000	1	5,000	117	25,000	
118	dn	5,000	1	5,000	118	25,000	
119	do	5,000	1	5,000	119	25,000	
120	dp	5,000	1	5,000	120	25,000	
121	dq	5,000	1	5,000	121	25,000	
122	dr	5,000	1	5,000	122	25,000	
123	ds	5,000	1	5,000	123	25,000	
124	dt	5,000	1	5,000	124	25,000	
125	du	5,000	1	5,000	125	25,000	
126	dv	5,000	1	5,000	126	25,000	
127	dw	5,000	1	5,000	127	25,000	
128	dx	5,000	1	5,000	128	25,000	
129	dy	5,000	1	5,000	129	25,000	
130	dz	5,000	1	5,000	130	25,000	
131	ea	5,000	1	5,000	131	25,000	
132	eb	5,000	1	5,000	132	25,000	
133	ec	5,000	1	5,000	133	25,000	
134	ed	5,000	1	5,000	134	25,000	
135	ee	5,000	1	5,000	135	25,000	
136	ef	5,000	1	5,000	136	25,000	
137	eg	5,000	1	5,000	137	25,000	
138	eh	5,000	1	5,000	138	25,000	
139	ei	5,000	1	5,000	139	25,000	
140	ej	5,000	1	5,000	140	25,000	
141	ek	5,000	1	5,000	141	25,000	
142	el	5,000	1	5,000	142	25,000	
143	em	5,000	1	5,000	143	25,000	
144	en	5,000	1	5,000	144	25,000	
145	eo	5,000	1	5,000	145	25,000	
146	ep	5,000	1	5,000	146	25,000	
147	eq	5,000	1	5,000	147	25,000	
148	er	5,000	1	5,000	148	25,000	
149	es	5,000	1	5,000	149	25,000	
150	et	5,000	1	5,000	150	25,000	
151	eu	5,000	1	5,000	151	25,000	
152	ev	5,000	1	5,000	152	25,000	
153	ew	5,000	1	5,000	153	25,000	
154	ex	5,000	1	5,000	154	25,000	
155	ey	5,000	1	5,000	155	25,000	
156	ez	5,000	1	5,000	156	25,000	
157	fa	5,000	1	5,000	157	25,000	
158	fb	5,000	1	5,000	158	25,000	



Main CSD Control Alternatives	Pump Station Upgrade		Total Cost		Sub-Sewerbed Area		Sewer Separation		Upgrade Cost		Total Cost	
	CSO Control Strategy	CSO Collection Alternative	Sub-Sewerbed Area (ft²)	Total Cost (\$)	Sub-Sewerbed Area (ft²)	Total Cost (\$)	Sewer Separation (ft)	Upgrade Cost (\$)	Sewer Separation (ft)	Upgrade Cost (\$)	Total Cost (\$)	Notes
1	1	1	661,330	661,330	21	5,000	1	84,000	1	5,000	5,000	
2	2	2	661,330	661,330	21	5,000	1	84,000	1	5,000	5,000	
3	3	3	51,000	51,000	21	5,000	1	84,000	1	5,000	5,000	
4	4	4	50,000	50,000	21	5,000	1	84,000	1	5,000	5,000	
5	5	5	31,000	31,000	19	3,000	1	27,000	1	3,000	3,000	
6	6	6	31,000	31,000	19	3,000	1	27,000	1	3,000	3,000	
7	7	7	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
8	8	8	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
9	9	9	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
10	10	10	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
11	11	11	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
12	12	12	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
13	13	13	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
14	14	14	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
15	15	15	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
16	16	16	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
17	17	17	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
18	18	18	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
19	19	19	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
20	20	20	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
21	21	21	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
22	22	22	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
23	23	23	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
24	24	24	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
25	25	25	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
26	26	26	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
27	27	27	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
28	28	28	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
29	29	29	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
30	30	30	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
31	31	31	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
32	32	32	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
33	33	33	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
34	34	34	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
35	35	35	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
36	36	36	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
37	37	37	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
38	38	38	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
39	39	39	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
40	40	40	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
41	41	41	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
42	42	42	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
43	43	43	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
44	44	44	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
45	45	45	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
46	46	46	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
47	47	47	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
48	48	48	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
49	49	49	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
50	50	50	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
51	51	51	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
52	52	52	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
53	53	53	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
54	54	54	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
55	55	55	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
56	56	56	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
57	57	57	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
58	58	58	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
59	59	59	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
60	60	60	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
61	61	61	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
62	62	62	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
63	63	63	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
64	64	64	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
65	65	65	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
66	66	66	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
67	67	67	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
68	68	68	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
69	69	69	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
70	70	70	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
71	71	71	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
72	72	72	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
73	73	73	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
74	74	74	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
75	75	75	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
76	76	76	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
77	77	77	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
78	78	78	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
79	79	79	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
80	80	80	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
81	81	81	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
82	82	82	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
83	83	83	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
84	84	84	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
85	85	85	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
86	86	86	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
87	87	87	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
88	88	88	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
89	89	89	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
90	90	90	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
91	91	91	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
92	92	92	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
93	93	93	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
94	94	94	31,000	31,000	18	2,000	1	17,000	1	2,000	2,000	
95	95	95	31,000	31,000	18	2,000						







**APPENDIX E**

**PNDI REVIEW RECEIPTS**

### 1. PROJECT INFORMATION

Project Name: **MVSA - Sat Fac 004**  
 Date of review: **6/21/2013 2:53:05 PM**  
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**  
 Project Area: **1.4 acres**  
 County: **Westmoreland Township/Municipality: Monessen**  
 Quadrangle Name: **MONONGAHELA ~ ZIP Code: 15062**  
 Decimal Degrees: **40.161785 N, -79.879325 W**  
 Degrees Minutes Seconds: **40° 9' 42.4" N, -79° 52' 45.6" 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.



## 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: **1. Yes**

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** 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. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application





should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.



**5. ADDITIONAL INFORMATION**

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

**6. AGENCY CONTACT INFORMATION**

**PA Department of Conservation and Natural Resources**

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

**U.S. Fish and Wildlife Service**

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

**PA Fish and Boat Commission**

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

**PA Game Commission**

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

**7. PROJECT CONTACT INFORMATION**

Name: Debbie Sappie  
 Company/Business Name: Gannett Fleming, Inc  
 Address: Forster Plaza 3 601 Holiday Dr  
 City, State, Zip: Pittsburgh, PA 15220  
 Phone: (412) 922-5570 Fax: (412) 922-3717  
 Email: dsappie@gfnet.com

**8. CERTIFICATION**

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Debbie Sappie  
 applicant/project proponent signature

6/27/2013  
 date



# 1. PROJECT INFORMATION

Project Name: **MVSA - Proposed location of Sat Fac 011 & Screening 010**

Date of review: **6/19/2013 1:38:22 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**

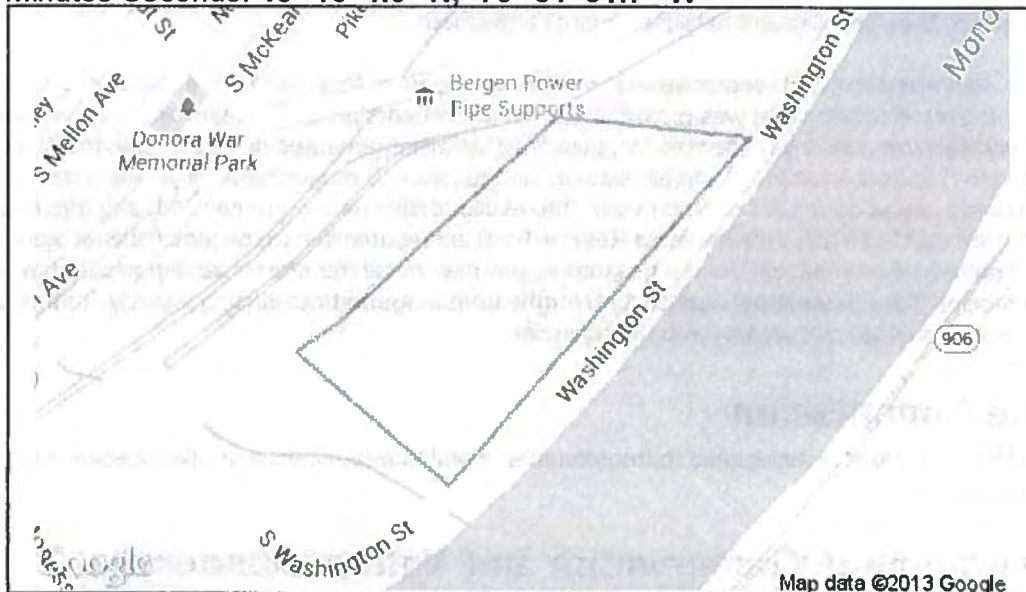
Project Area: **15.1 acres**

County: **Washington Township/Municipality: Donora**

Quadrangle Name: **DONORA ~ ZIP Code: 15033**

Decimal Degrees: **40.167944 N, -79.858812 W**

Degrees Minutes Seconds: **40° 10' 4.6" N, -79° 51' 31.7" 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.

## 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: **1. Yes**

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** 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. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

should not be submitted until the impact has been resolved. For cases where "Potential Impact" to special concern species and resources has been identified before the application has been submitted, the application should be submitted to DEP along with the PNDI receipt. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. DEP and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <http://www.naturalheritage.state.pa.us>.





### 1. PROJECT INFORMATION

Project Name: **MVSA Sat 014**

Date of review: **6/19/2013 1:49:27 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**

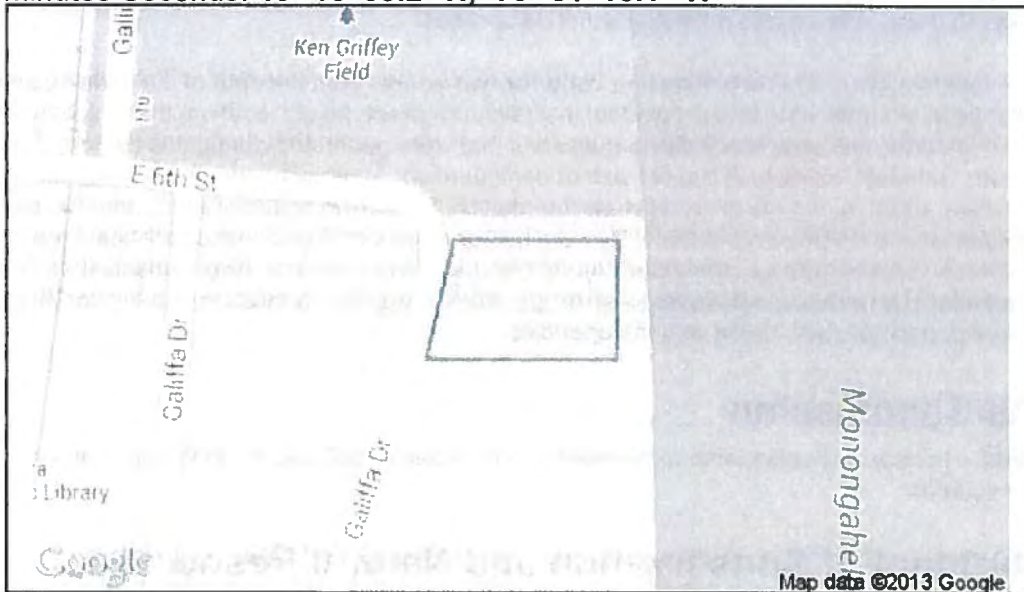
Project Area: **1.1 acres**

County: **Washington Township/Municipality: Donora**

Quadrangle Name: **DONORA ~ ZIP Code: 15012, 15033**

Decimal Degrees: **40.177565 N, -79.852793 W**

Degrees Minutes Seconds: **40° 10' 39.2" N, -79° 51' 10.1" 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.

## 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: **1. Yes**

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** 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

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### 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

### 6. AGENCY CONTACT INFORMATION

**PA Department of Conservation and Natural Resources**  
Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

**U.S. Fish and Wildlife Service**  
Endangered Species Section  
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NO Faxes Please

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Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

### 7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie  
Company/Business Name: Gannett Fleming, Inc  
Address: Foster Plaza 3, 601 Holiday Drive  
City, State, Zip: Pittsburgh, PA 15220  
Phone: (412) 922-5575 Fax: (412) 922-3717  
Email: dsappie@gfnet.com

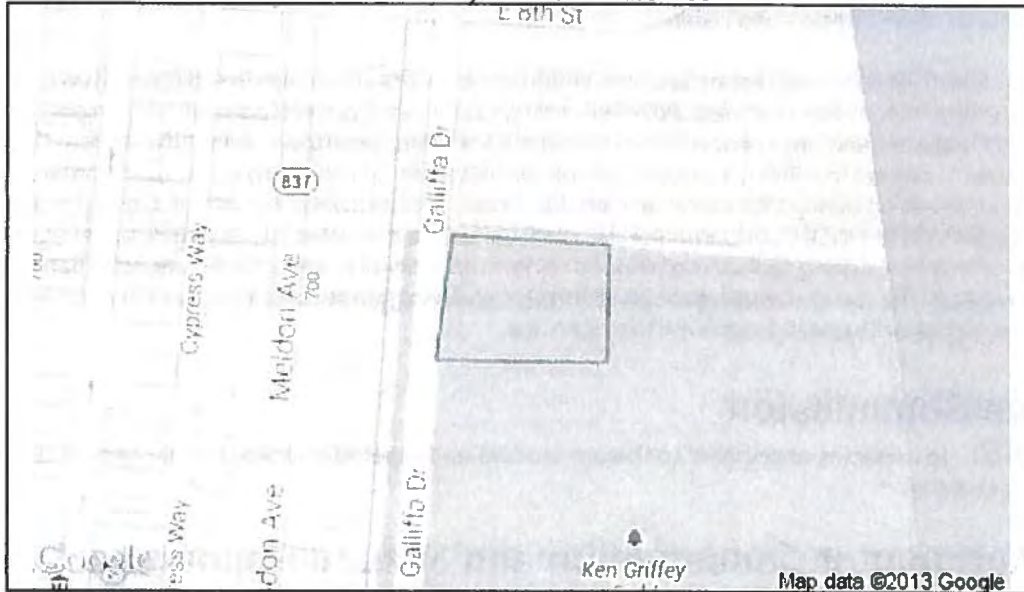
### 8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Debbie Sappie 6/19/2013  
applicant/project proponent signature date

### 1. PROJECT INFORMATION

Project Name: **MVSA Sat 016**  
 Date of review: **6/19/2013 1:59:10 PM**  
 Project Category: **Waste Transfer, Treatment, and Disposal,Liquid waste/Effluent,Wastewater treatment plant (construction, expansion or modification)**  
 Project Area: **1.1 acres**  
 County: **Washington Township/Municipality: Donora**  
 Quadrangle Name: **DONORA ~ ZIP Code: 15033**  
 Decimal Degrees: **40.179622 N, -79.853571 W**  
 Degrees Minutes Seconds: **40° 10' 46.6" N, -79° 51' 12.9" 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.

## 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: 1. Yes

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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#### PA Game Commission

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#### PA Department of Conservation and Natural Resources

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#### U.S. Fish and Wildlife Service

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**5. ADDITIONAL INFORMATION**

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**6. AGENCY CONTACT INFORMATION**

**PA Department of Conservation and Natural Resources**

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400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

**U.S. Fish and Wildlife Service**

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please

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Division of Environmental Services  
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NO Faxes Please

**PA Game Commission**

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

**7. PROJECT CONTACT INFORMATION**

Name: Debbie Sappie  
Company/Business Name: Gannett Fleming, Inc.  
Address: Foster Plaza 3, 601 Holiday Drive  
City, State, Zip: Pittsburgh, PA 15220  
Phone: (412) 922-5575 Fax: (412) 922-3717  
Email: dsappie@gfnet.com

**8. CERTIFICATION**

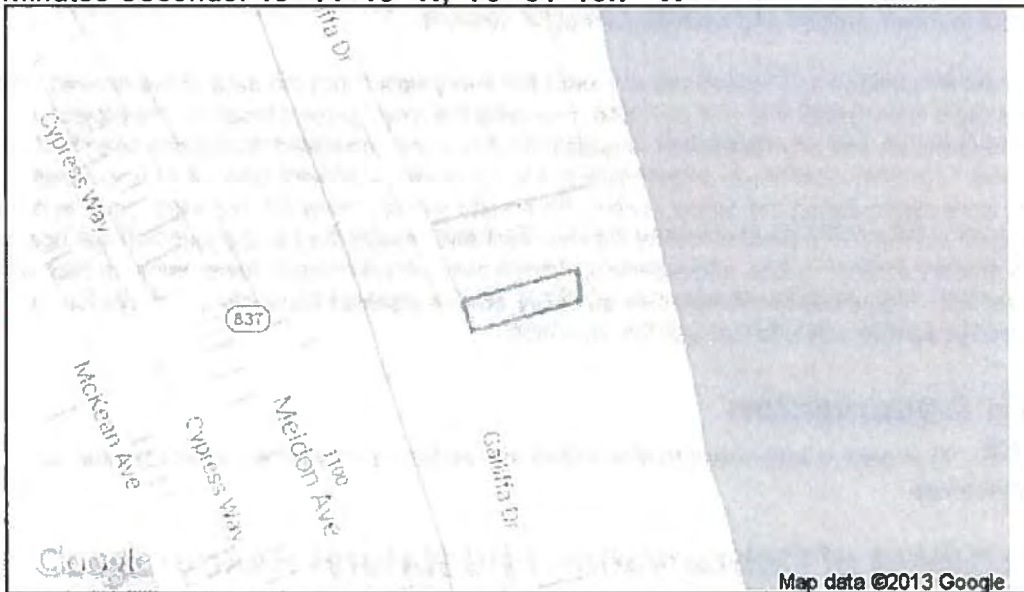
I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

Debbie Sappie  
applicant/project proponent signature

6/19/2013  
date

### 1. PROJECT INFORMATION

Project Name: **MVSA sat 017**  
 Date of review: **6/19/2013 3:07:44 PM**  
 Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**  
 Project Area: **0.2 acres**  
 County: **Washington Township/Municipality: Donora**  
 Quadrangle Name: **DONORA ~ ZIP Code: 15033**  
 Decimal Degrees: **40.186108 N, -79.854368 W**  
 Degrees Minutes Seconds: **40° 11' 10" N, -79° 51' 15.7" 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.

## 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: 1. Yes

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

**RESPONSE:** 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. For cases where a "Potential Impact" to threatened and endangered species has been identified before the application has been submitted to DEP, the application

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### 5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

### 6. AGENCY CONTACT INFORMATION

#### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

#### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

#### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

#### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

### 7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie  
Company/Business Name: Gannett Fleming, Inc.  
Address: Foster Plaza 3, 601 Holiday Drive  
City, State, Zip: Pittsburgh, PA, 15220  
Phone: (412) 922-5555 Fax: (412) 922-3717  
Email: dsappie@gfnet.com

### 8. CERTIFICATION

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Debbie Sappie applicant/project proponent signature      6/19/2013 date

### 1. PROJECT INFORMATION

Project Name: **MVSA Phase II - Donora**

Date of review: **6/19/2013 3:16:53 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**

Project Area: **185.7 acres**

County: **Washington Township/Municipality: Donora**

Quadrangle Name: **DONORA ~ ZIP Code: 15033**

Decimal Degrees: **40.185602 N, -79.859949 W**

Degrees Minutes Seconds: **40° 11' 8.2" N, -79° 51' 35.8" 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

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### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** 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.

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### 5. ADDITIONAL INFORMATION

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For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page ([www.naturalheritage.state.pa.us](http://www.naturalheritage.state.pa.us)). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

### 6. AGENCY CONTACT INFORMATION

**PA Department of Conservation and Natural Resources**

Bureau of Forestry, Ecological Services Section  
 400 Market Street, PO Box 8552, Harrisburg, PA.  
 17105-8552  
 Fax:(717) 772-0271

**U.S. Fish and Wildlife Service**

Endangered Species Section  
 315 South Allen Street, Suite 322, State College, PA.  
 16801-4851  
 NO Faxes Please.

**PA Fish and Boat Commission**

Division of Environmental Services  
 450 Robinson Lane, Bellefonte, PA. 16823-7437  
 NO Faxes Please

**PA Game Commission**

Bureau of Wildlife Habitat Management  
 Division of Environmental Planning and Habitat Protection  
 2001 Elmerton Avenue, Harrisburg, PA. 17110-9797  
 Fax:(717) 787-6957

### 7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie  
 Company/Business Name: Gannett Fleming, Inc.  
 Address: Foster Plaza 3, 601 Holiday Drive  
 City, State, Zip: Pittsburgh, PA 15220  
 Phone: (412) 922-5575 Fax: (412) 922-3717  
 Email: dsappie@gfnet.com

### 8. CERTIFICATION

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Debbie Sappie 6/19/2013  
 applicant/project proponent signature date





## 1. PROJECT INFORMATION

Project Name: **MVSA EQ tank**

Date of review: **6/21/2013 12:57:58 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**

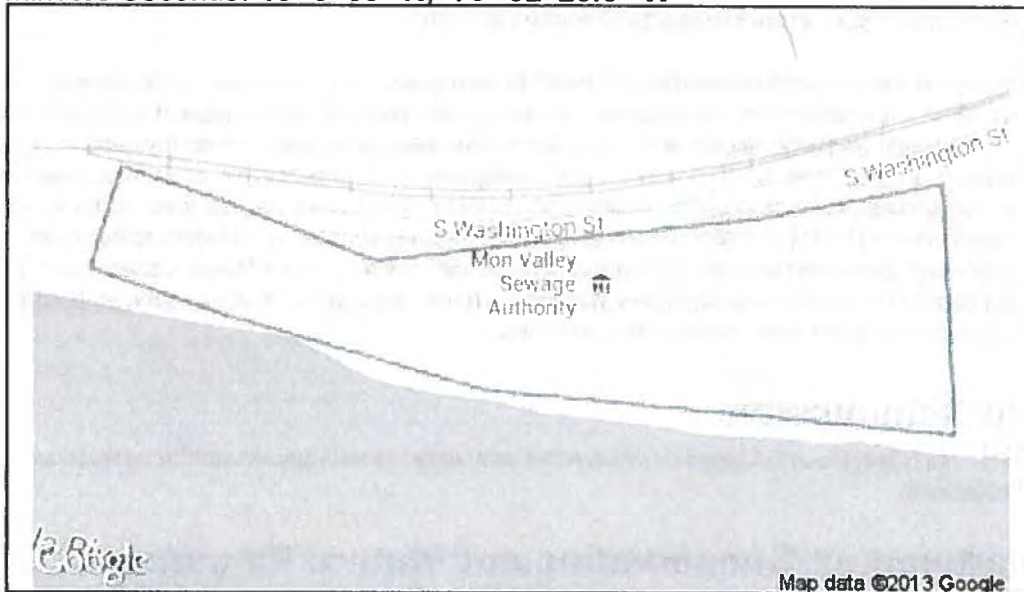
Project Area: **7.1 acres**

County: **Washington Township/Municipality: Carroll**

Quadrangle Name: **DONORA ~ ZIP Code: 15063**

Decimal Degrees: **40.163897 N, -79.872394 W**

Degrees Minutes Seconds: **40° 9' 50" N, -79° 52' 20.6" 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

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## 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: 1. Yes

### 3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Department of Conservation and Natural Resources

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

#### PA Fish and Boat Commission

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### 5. ADDITIONAL INFORMATION

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### 6. AGENCY CONTACT INFORMATION

#### PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section  
400 Market Street, PO Box 8552, Harrisburg, PA.  
17105-8552  
Fax:(717) 772-0271

#### U.S. Fish and Wildlife Service

Endangered Species Section  
315 South Allen Street, Suite 322, State College, PA.  
16801-4851  
NO Faxes Please.

#### PA Fish and Boat Commission

Division of Environmental Services  
450 Robinson Lane, Bellefonte, PA. 16823-7437  
NO Faxes Please

#### PA Game Commission

Bureau of Wildlife Habitat Management  
Division of Environmental Planning and Habitat Protection  
2001 Elmerston Avenue, Harrisburg, PA. 17110-9797  
Fax:(717) 787-6957

### 7. PROJECT CONTACT INFORMATION

Name: Debbie Sappie  
Company/Business Name: Gangett Fleming, Inc.  
Address: Foster Plaza 3, 601 Holiday Drive  
City, State, Zip: Pittsburgh, PA 15220  
Phone: (412) 922-5575 Fax: (412) 922-3717  
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Abbie Sappie  
applicant/project proponent signature

6/21/2013  
date

### 1. PROJECT INFORMATION

Project Name: **MVSA Monessen sewers**

Date of review: **6/19/2013 3:24:22 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Sewer line maintenance-repair, replacement of existing line**

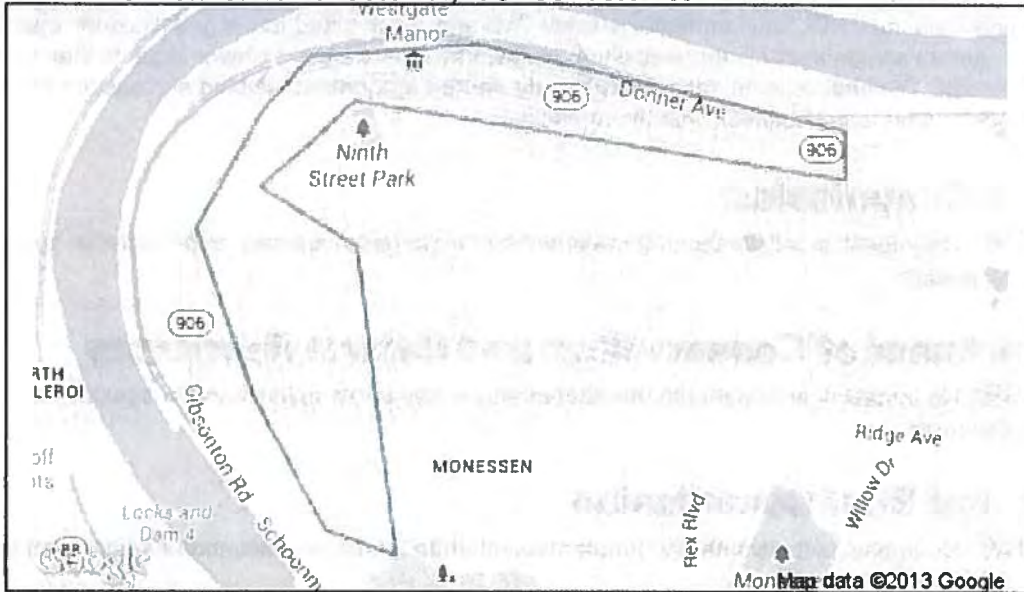
Project Area: **273.4 acres**

County: **Westmoreland Township/Municipality: Monessen**

Quadrangle Name: **MONONGAHELA ~ ZIP Code: 15062**

Decimal Degrees: **40.148142 N, -79.887911 W**

Degrees Minutes Seconds: **40° 8' 53.3" N, -79° 53' 16.5" W**



### 2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	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.

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#### PA Game Commission

**RESPONSE:** No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

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### 1. PROJECT INFORMATION

Project Name: **MVSA - Seneca St. Sat Fac**

Date of review: **6/21/2013 12:52:51 PM**

Project Category: **Waste Transfer, Treatment, and Disposal, Liquid waste/Effluent, Wastewater treatment plant (construction, expansion or modification)**

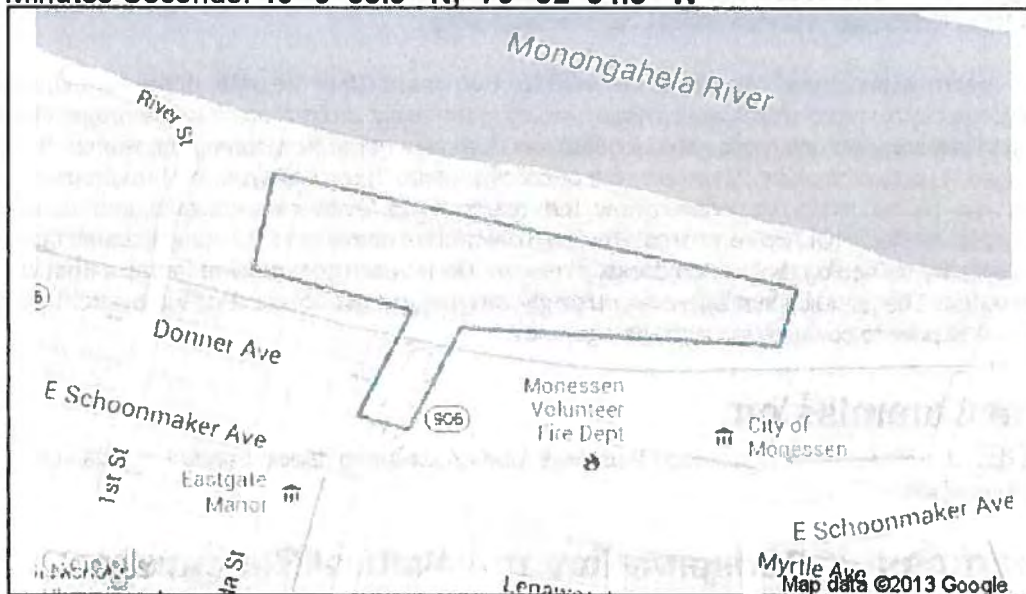
Project Area: **11.8 acres**

County: **Westmoreland Township/Municipality: Monessen**

Quadrangle Name: **MONONGAHELA ~ ZIP Code: 15062**

Decimal Degrees: **40.159967 N, -79.876195 W**

Degrees Minutes Seconds: **40° 9' 35.9" N, -79° 52' 34.3" 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

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## 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: 1. Yes

### 3. AGENCY COMMENTS

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**APPENDIX F**

**PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION  
RESPONSE**



Commonwealth of Pennsylvania  
Pennsylvania Historical and Museum Commission  
**Bureau for Historic Preservation**  
Commonwealth Keystone Building, 2<sup>nd</sup> Floor  
400 North Street  
Harrisburg, PA 17120-0093  
[www.phmc.state.pa.us](http://www.phmc.state.pa.us)

27 August 2013

Deborah A. Sappie  
Gannett Fleming  
Foster Plaza III, Suite 200  
601 Holiday Drive  
Pittsburgh, PA 15220-2728

RE: ER# 2013-1864-042-A  
DEP: Mon Valley Sewage Authority Sewage Facilities Plan Update/Special Study,  
Combined Sewer Overflow Control, Donora and Monessen, Washington and  
Westmoreland Counties.

Dear Ms. Sappie:

The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, and the regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation as revised in 1999 and 2004, and under the authority of 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). These requirements include consideration of project potential effects upon both historic and archaeological resources.

There may be historic buildings, structures, and/or archaeological resources located in or near the project area. In our opinion, the activities described in your proposal should have no effect on these resources. Should the scope and/or nature of the project activities change, the Bureau for Historic Preservation should be contacted immediately.

If you need further information in this matter please consult Ann Safley at (717) 787-9121.

Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas C. McLearn'.

Douglas C. McLearn, Chief  
Division of Archaeology & Protection

DCMcL/ras

**APPENDIX G**

**FINANCING TABLES**



**MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN  
 Conventional Funding Formula - Pennvest  
 PHASE II**

	Year 2013 Alternative IB-4b
Construction Costs	
Seneca Street Satellite Facility (CSO 007)	\$12,700,000
Donora Borough Sewer Separation	\$3,000,000
City of Monessen Sewer Separation	\$2,200,000
Total Construction Cost	<u>\$17,900,000</u>
Related Project Costs (20%)	\$3,580,000
Estimated Total Project Cost	\$21,500,000
Existing Bond Issue for Phase II	\$10,000,000
Pennvest Loan Amount	\$11,500,000

**SYSTEM COSTS**

Annual Costs			
Debt Service			\$697,074
Averaged Periodic Interest Rate		1.9%	
Number of Payment Periods		20 years	
Existing Bond Issue Debt Service and Coverage			\$661,000
Additional Operation and Maintenance Cost			\$90,000
Total Annual Costs			\$1,448,074

**SYSTEM REVENUES**

Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,448,074
Estimated Annual User Charge per EDU	\$263
<b>PROPOSED MONTHLY INCREASE PER EDU PER PHASE II</b>	<b>\$22</b>
<b>EXISTING MONTHLY MVSA CHARGE PER MONTH</b>	<b>\$30</b>
<b>AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE</b>	<b>\$5</b>
<b>TOTAL MVSA MONTHLY SEWAGE FEE PER EDU</b>	<b>\$57</b>

**MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN  
 Conventional Funding Formula - Bond Issue  
 PHASE II**

	Year 2013 Alternatives IB-4b
Construction Costs	
Seneca Street Satellite Facility (CSO 007)	\$12,700,000
Donora Borough Sewer Separation	\$3,000,000
City of Monessen Sewer Separation	\$2,200,000
Total Construction Cost	<u>\$17,900,000</u>
Related Project Costs (20%)	\$3,580,000
Estimated Total Project Cost	\$21,500,000
Existing Bond Issue for Phase II	\$10,000,000
Bond Issue Amount	\$11,500,000

**SYSTEM COSTS**

Annual Costs			
Debt Service			\$748,092
Averaged Periodic Interest Rate	5.0%		
Number of Payment Periods	30 years		
Debt Service Coverage (15% of Annual Debt Service Payment)			\$112,214
Existing Bond Issue Debt Service and Coverage			\$661,000
Additional Operation and Maintenance Cost			\$90,000
Total Annual Costs			\$1,611,305

**SYSTEM REVENUES**

Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,611,305
Estimated Annual User Charge per EDU	\$293
<b>PROPOSED MONTHLY INCREASE PER EDU FOR PHASE II</b>	<b>\$24</b>
<b>EXISTING MONTHLY MVSA CHARGE PER MONTH</b>	<b>\$30</b>
<b>AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE</b>	<b>\$5</b>
<b>TOTAL MVSA MONTHLY SEWAGE FEE PER EDU</b>	<b>\$59</b>

**MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN  
 Conventional Funding Formula - Pennvest  
 PHASE III**

	Year 2013 Alternative IB-4b
<b>Construction Costs</b>	
Locust Street Satellite Facility (CSO 011)	\$4,700,000
5th/6th Street Satellite Facility (CSO 014)	\$5,100,000
8th Street Satellite Facility (CSO 016)	\$4,500,000
Donora CSO Screening Facilities (CSO 010 & 017)	\$800,000
Monessen CSO Screening Facilities (CSO 003, 004, 005)	\$1,500,000
<b>Total Construction Cost</b>	<b>\$16,600,000</b>
 Related Project Costs (30%)	 \$4,980,000
 Estimated Total Project Cost	 \$21,600,000
 Pennvest Loan Amount	 \$21,600,000

**SYSTEM COSTS**

<b>Annual Costs</b>	
Debt Service	\$1,309,286
Averaged Periodic Interest Rate	1.9%
Number of Payment Periods	20 years
 Additional Operation and Maintenance Cost	 \$220,000
 <b>Total Annual Costs</b>	 <b>\$1,529,286</b>

**SYSTEM REVENUES**

Number of EDUs	5,500
Required Annual Sewer Revenue	\$1,529,286
Estimated Annual User Charge per EDU	\$278
 <b>PROPOSED MONTHLY INCREASE PER EDU FOR PHASE III</b>	 <b>\$23</b>
 <b>EXISTING MONTHLY MVSA CHARGE PER MONTH</b>	 <b>\$30</b>
 <b>AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE</b>	 <b>\$5</b>
 <b>MONTHLY INCREASE PER EDU FOR PHASE II</b>	 <b>\$24</b>
 <b>TOTAL MVSA MONTHLY SEWAGE FEE PER EDU</b>	 <b>\$82</b>

**MON VALLEY SEWAGE AUTHORITY - ACT 537 PLAN  
 Conventional Funding Formula - Bond Issue  
 PHASE III**

	Year 2013 Alternatives IB-4b
<b>Construction Costs</b>	
Locust Street Satellite Facility (CSO 011)	\$4,700,000
5th/6th Street Satellite Facility (CSO 014)	\$5,100,000
8th Street Satellite Facility (CSO 016)	\$4,500,000
Donora CSO Screening Facilities (CSO 010 & 017)	\$800,000
Monessen CSO Screening Facilities (CSO 003, 004, 005)	\$1,500,000
<b>Total Construction Cost</b>	<u>\$16,600,000</u>
<b>Related Project Costs (30%)</b>	\$4,980,000
<b>Estimated Total Project Cost</b>	\$21,600,000
<b>Bond Issue Amount</b>	\$21,600,000

**SYSTEM COSTS**

<b>Annual Costs</b>	
<b>Debt Service</b>	\$1,733,240
Averaged Periodic Interest Rate	5.0%
Number of Payment Periods	20 years
Debt Service Coverage (15% of Annual Debt Service Payment)	\$259,986
Additional Operation and Maintenance Cost	\$220,000
<b>Total Annual Costs</b>	\$2,213,226

**SYSTEM REVENUES**

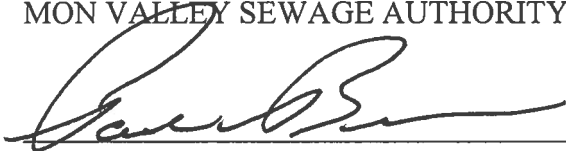
Number of EDUs	5,500
Required Annual Sewer Revenue	\$2,213,226
Estimated Annual User Charge per EDU	\$402
<b>PROPOSED MONTHLY INCREASE PER EDU FOR PHASE III</b>	<b>\$34</b>
<b>EXISTING MONTHLY MVSA CHARGE PER MONTH</b>	<b>\$30</b>
<b>AVG EXISTING CITY OF MONESSEN/BOROUGH OF DONORA SEWER LINE MAINTENANCE FEE</b>	<b>\$5</b>
<b>MONTHLY INCREASE PER EDU FOR PHASE II</b>	<b>\$24</b>
<b>TOTAL MVSA MONTHLY SEWAGE FEE PER EDU</b>	<b>\$93</b>

**APPENDIX H**  
**RESOLUTIONS**

CERTIFICATION

I, Paul Berardelli, Secretary, Board of Mon Valley Sewage Authority, hereby certify that the foregoing is a true copy of the Authority's Resolution No. 2 of 2014, adopted this 13th day of January, 2014.

MON VALLEY SEWAGE AUTHORITY

  
SECRETARY

AUTHORITY SEAL





## RESOLUTION FOR PLAN REVISION

### RESOLUTION 2 OF 2014

RESOLUTION OF THE BOARD OF MON VALLEY SEWAGE AUTHORITY, WASHINGTON AND WESTMORELAND COUNTIES, PENNSYLVANIA (hereinafter "the authority").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the **Pennsylvania Code**, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewage Facilities Plan Update/Special Study, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I - Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.

Phase II - Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III - Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.






NOW, THEREFORE, BE IT RESOLVED that the Board of the MVSA hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. MVSA hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

ATTEST:



Secretary

MON VALLEY SEWAGE AUTHORITY

By:   
Chairman



## RESOLUTION FOR PLAN REVISION

RESOLUTION OF THE BOARD OF SUPERVISORS OF CARROLL TOWNSHIP,  
WASHINGTON COUNTY, PENNSYLVANIA (hereinafter "the township").

WHEREAS, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, requires the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

WHEREAS, the Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewage Facilities Plan Update, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I - Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.

Phase II - Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III - Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.



NOW, THEREFORE, BE IT RESOLVED that the Board of Supervisors of Carroll Township hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. Carroll Township hereby assures the Department of the MVSA's complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Sharon Cramer, Secretary, Board of Supervisors of Carroll Township, hereby certify that the foregoing is a true copy of Carroll Township's Resolution No. 2014-785, adopted this 6th day of January, 2014

CARROLL TOWNSHIP

TOWNSHIP SEAL



Sharon Cramer  
SECRETARY

By: CARROLL TOWNSHIP BOARD OF SUPERVISORS

Thomas Rapp  
Thomas Rapp, Chairman

James D. Harrison  
James D. Harrison, Vice Chairman

Gary Lenzi  
Gary Lenzi, Member



**RESOLUTION NO. 2013 - 11**

**BOROUGH OF DONORA  
WASHINGTON COUNTY, PENNSYLVANIA**

**RESOLUTION FOR PLAN REVISION**

A RESOLUTION OF THE COUNCIL MEMBERS OF THE BOROUGH OF DONORA, WASHINGTON COUNTY, COMMONWEALTH OF PENNSYLVANIA (hereinafter "the borough").

**WHEREAS**, Section 5 of the Act of January 24, 1966, P.L. 1535, No. 537, known as the "Pennsylvania Sewage Facilities Act," as amended, and the Rules and Regulations of the Department of Environmental Protection (hereinafter "the department") adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, requires the Borough of Donora to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revise said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, the Mon Valley Sewage Authority (hereinafter "MVSA") has prepared an Act 537 Sewage Facilities Plan Update/Special Study, which provides for the construction of Combined Sewer Outflow (hereinafter "CSO") facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, the Borough of Donora, and Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

**WHEREAS**, the Borough of Donora finds that the Act 537 Sewage Facilities Plan Update described above conforms to applicable zoning, subdivision, other ordinances, and plans of the Borough of Donora and to a comprehensive program of pollution control and water quality management; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I - Two stream separations, interceptor upgrades, five pump station upgrades and an equalization facility.

Phase II - Sewer separation projects consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III - Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the





Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is \$21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a PENNVEST loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

**NOW, THEREFORE, BE IT RESOLVED** that the Council of the Borough of Donora hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. The Borough of Donora hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Dennis C. Fisher, Borough of Donora Administrator, Treasurer, and Secretary for the Council of the Borough of Donora, hereby certify the foregoing is a true copy of the Borough of Donora's Resolution Number 2013 - 11, adopted this 26<sup>th</sup> day of December, 2013.

BOROUGH OF DONORA



SECRETARY

BOROUGH SEAL



**DULY ADOPTED** at, and recorded in the minutes of, a properly constituted meeting of the Governing Body of the Borough of Donora held on the date set forth herein.



**ENACTED AND RESOLVED** this 26<sup>th</sup> day of December, A.D., 2013.

ATTEST:

BOROUGH OF DONORA



*Dennis Charles Fisher*

Administrator/Treasurer/Secretary

*Karen Polkable*

President of the Council  
Of the Borough of Donora

**EXAMINED AND APPROVED** this 26<sup>th</sup> day of December, A.D., 2013.

*Dennis Charles Fisher*



**RESOLUTION NO.:** 1 of 2014  
**INTRODUCED BY:** Mayor Louis Mavrakis  
**ENACTED:** January 15, 2014

**CITY OF MONESSEN**  
**WESTMORELAND COUNTY, PENNSYLVANIA**

**RESOLUTION FOR PLAN REVISION**

**RESOLUTION OF THE COUNCIL OF THE CITY OF MONESSEN,  
WESTMORELAND COUNTY, PENNSYLVANIA (hereinafter “the city”).**

**WHEREAS**, Section 5 of the Act of January 24, 1066, P.L. 1535, No. 537, known as the “Pennsylvania Sewage Facilities Act, “ as amended, and the Rules and Regulations of the Department of Environmental Protection (Department) adopted there under, Chapter 71 of Title 25 of the Pennsylvania Code, required the municipality to adopt an Official Sewage Facilities Plan providing for sewage services adequate to prevent contamination of waters and/or environmental health hazards with sewage wastes, and to revised said plan whenever it is necessary to meet the sewage disposal needs of the municipality; and

**WHEREAS**, THE Mon Valley Sewage Authority (MVSA) has prepared an Act 537 Sewages Facilities Plan Update, which provides for the construction of CSO facilities and sewer separations that will provide treatment of the existing and future wastewater disposal needs from the City of Monessen, Borough of Donora, Carroll Township and will meet the requirements of the National CSO Policy by achieving 85% capture; and

**WHEREAS**, the City of Monessen finds that the Act 537 Sewage Facilities Plan Update/Special Study described above conforms to applicable zoning, subdivision, other ordinances and plans of the City of Monessen and to a comprehensive program of pollution control and water quality management; and

The alternative of choice to be implemented is Alternative IB-4b. Alternative IB-4b consists of following three phases:

Phase I – Two stream separations, interceptor upgrades, five (5) pump stations upgrades and an equalization facility.

Phase II – Sewer separation projects consisting of approximately 15,000 lineal feet of 8”, 10” and 18” gravity sanitary sewer and appurtenances in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania and the Seneca Street CSO Satellite Treatment Facility located in the City of Monessen.

Phase III – Construction of three CSO Satellite Treatment Facilities all in the Borough of Donora and five Bar Screen Facilities of which two are located in the Borough of Donora and three in the City of Monessen.

The estimated total project cost for Phase I was \$13,408,000. This phase is complete. The estimated total project cost for Phase II is \$21,500,000 and Phase III is 21,600,000. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

Based on the financing calculations in 2013 dollars, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan.

MVSA is responsible for the key implementation activities/dates which include design, permits and financing for the recommended alternative.

**NOW, THEREFORE, BE IT RESOLVED** THAT THE Council of the City of Monessen hereby adopts the above referenced Act 537 Sewage Facilities Plan Update/Special Study. The City of Monessen hereby assures the Department of the complete and timely implementation of the said plan as required by law. (Section 5, Pennsylvania Sewage Facilities Act as amended).

I, Holly Minno, City Clerk to Council of the City of Monessen, hereby certify that the foregoing is a true copy of the City of Monessen's Resolution No. 1 of 2014, adopted this 15<sup>th</sup> day of January, 2014.

BY: Louis Mavrakis  
LOUIS MAVRAKIS, MAYOR

ATTEST:

Holly Minno  
HOLLY MINNO, CITY CLERK

**APPENDIX I**

**PLANNING COMMISSION NOTIFICATIONS AND RESPONSES**





*Excellence Delivered **As Promised***

August 28, 2013

City of Monessen Planning Commission  
Monessen Municipal Complex  
1 Wendell Ramey Lane, Suite 400  
Monessen, PA 15062

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Re: Mon Valley Sewage Authority  
Washington and Westmoreland Counties, Pennsylvania  
Official Sewage Facilities Plan Update/Special Study  
GF 54305

Ladies/Gentlemen:

We have enclosed one (1) copy of the draft Act 537 Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. This Plan Update/Special Study incorporates CSO Control Alternatives evaluated in the Long Term Control Plan that was approved by the Pennsylvania Department of Environmental Protection.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15<sup>th</sup> Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in August 2014 and end construction in August 2016. Phase III is scheduled to begin construction in June 2020 and end construction in June 2023.

Gannett Fleming, Inc.

Foster Plaza III • Suite 200 • 601 Holiday Drive • Pittsburgh, PA 15220-2728  
t: 412.922.5575 • f: 412.922.3717  
[www.gannettfleming.com](http://www.gannettfleming.com)

***Gannett Fleming***

August 28, 2013

Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

A handwritten signature in black ink, appearing to read "Jason J. McBride".

JASON J. MCBRIDE, P.E.  
Project Manager

Enclosures

cc: MVSA  
City of Monessen, (w/c)



*Excellence Delivered **As Promised***

August 28, 2013

Borough of Donora Planning Commission  
601 Meldon Avenue  
Donora, PA 15033

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Re: Mon Valley Sewage Authority  
Washington and Westmoreland Counties, Pennsylvania  
Official Sewage Facilities Plan Update/Special Study  
GF 54305

Ladies/Gentlemen:

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The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15<sup>th</sup> Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

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***Gannett Fleming***

August 28, 2013

Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

A handwritten signature in black ink, appearing to read "Jason J. McBride". The signature is fluid and cursive, with the first name "Jason" and last name "McBride" clearly distinguishable.

JASON J. MCBRIDE, P.E.  
Project Manager

Enclosures

cc: MVSA  
Borough of Donora, (w/c)



*Excellence Delivered **As Promised***

August 28, 2013

Carroll Township Planning Commission  
130 Baird Street  
Monongahela, PA 15063

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Re: Mon Valley Sewage Authority  
Washington and Westmoreland Counties, Pennsylvania  
Official Sewage Facilities Plan Update/Special Study  
GF 54305

Ladies/Gentlemen:

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The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15<sup>th</sup> Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in August 2014 and end construction in August 2016. Phase III is scheduled to begin construction in June 2020 and end construction in June 2023.

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[www.gannettfleming.com](http://www.gannettfleming.com)

August 28, 2013

Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

A handwritten signature in black ink, appearing to read "Jason J. McBride".

JASON J. MCBRIDE, P.E.  
Project Manager

Enclosures

cc: MVSA  
Carroll Township, (w/c)



**Gannett Fleming**

*Excellence Delivered **As Promised***

August 28, 2013

Westmoreland County Planning Commission  
Fifth Floor, Suite 520  
40 N. Pennsylvania Ave.  
Greensburg, PA 15601

**CERTIFIED MAIL**  
**RETURN RECEIPT REQUESTED**

Re: Mon Valley Sewage Authority  
Washington and Westmoreland Counties, Pennsylvania  
Official Sewage Facilities Plan Update/Special Study  
GF 54305

Ladies/Gentlemen:

We have enclosed one (1) copy of the draft Act 537 Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. This Plan Update/Special Study incorporates CSO Control Alternatives evaluated in the Long Term Control Plan that was approved by the Pennsylvania Department of Environmental Protection.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15<sup>th</sup> Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the Seneca Street satellite facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project costs for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in August 2014 and end construction in August 2016. Phase III is scheduled to begin construction in June 2020 and end construction in June 2023.

Gannett Fleming, Inc.

Foster Plaza III • Suite 200 • 601 Holiday Drive • Pittsburgh, PA 15220-2728  
t: 412.922.5575 • f: 412.922.3717  
[www.gannettfleming.com](http://www.gannettfleming.com)

***Gannett Fleming***

August 28, 2013

Page 2

Please provide written comments to our office by September 30, 2013. If you have any questions, please contact us.

Sincerely,

GANNETT FLEMING, INC.

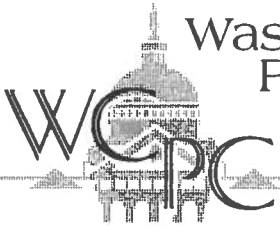
A handwritten signature in black ink, appearing to read "J. McBride", written in a cursive style.

JASON J. MCBRIDE, P.E.  
Project Manager

Enclosures

cc: MVSA





Washington County  
Planning Commission

100 West Beau Street, Suite 701  
Washington, PA 15301-4470

Phone: 724-228-6811  
Fax: 724-250-4110

County Commissioners:

Larry Maggi  
Chairman  
Diana Irey Vaughan  
Vice - Chairman  
Harlan G. Shober, Jr.

Executive Director:  
Lisa L. Cessna

Board Members:  
Charles A. Crouse  
Thomas Jennings  
R. Christopher Wheat, P.E.  
Kenneth J. Kulak II, AIA  
David B. Miller  
Richard Burig  
Leslie P. Midla

October 24, 2013

Jason J. McBride, P.E.  
Project Manager  
Gannett Fleming, Inc.  
Foster Plaza III, Suite 200  
601 Holiday Drive  
Pittsburgh, Pennsylvania 15220-2728

**RE:** Mon Valley Sewage Authority

Dear Mr. McBride:

The Washington County Planning Commission has received and reviewed the ***Draft Mon Valley Sewage Authorities CSO Facilities Planning Official Sewage Facilities Plan Update/Special Study*** (dated July 2, 2013). The Plan provides for the orderly implementation of Alternative 1B-4b of the LTCP. Phase I has been completed and Phase II & III will be permitted and constructed over the next 10 years.

The Plan is consistent with the objectives and strategies of the 2005 Washington County Comprehensive Plan. Maintaining and replacing our existing infrastructure, "Fix-it-First" concept, is a high priority throughout the Washington County Comprehensive Plan.

We have no direct comments on the Draft Plan. If you require future assistance or comment please feel free to contact the Planning Commission office at 724-228-6811.

Sincerely,

Jeffery W. Leithauser  
Development Manager

JWL/ds  
xc: File

**APPENDIX J**

**PROOF OF PUBLICATION**



# LEGAL

## Proof of Publication of Notice Under the Act of July 9,

Commonwealth of Pennsylvania

County of Westmoreland } SS:

ROBERT HAMMOND, Division Manager of the Trib Total Media with places of business in Greensburg, Westmoreland County being duly sworn, deposes and says that the **Valley Independent** Westmoreland County, Pennsylvania, and elsewhere, published 1902, and issued every day since that date. A copy of the printed

viz: LEGAL# 5721048, RE: PUBLIC NOTICE FOR MON VAL

Affiant further deposes that she/ he is an officer duly sworn of the **Valley Independent**, to verify the foregoing statement under oath that the subject matter of the aforesaid notice of publication is true, and the time, place and character of publication are true.

Division Manager  
Trib Total Media, Inc.

### Statement of Advertising Costs

MON VALLEY SEWAG AUTHORITY  
20 SOUTH WASHINGTON STREET  
DONORA, PA 15033

To Trib Total Media, Inc.

For Publishing the notice or advertisement attached hereto on the above stated dates	\$	358.69
Probating Same	\$	
Total	\$	<u>358.69</u>

### Publisher's Receipt for Advertising Costs

The **Trib Total Media, Inc.**, publisher of The **Valley Independent**, a newspaper of general circulation, hereby acknowledges a receipt of the aforesaid advertising and publication costs, and certifies the same have been fully paid.

**Trib Total Media Inc.**, Publisher  
of The **Valley Independent**, a Newspaper.

Legals Legals

**PUBLIC NOTICE FOR  
MON VALLEY SEWAGE AUTHORITY**

**OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY FOR CITY OF MONESSEN, BOROUGH OF DONORA AND CARROLL TOWNSHIP**

NOTICE IS HEREBY GIVEN that the Mon Valley Sewage Authority has developed an Official Sewage Facilities Plan Update/Special Study for Combined Sewer Overflow (CSO) Control Alternatives. The Plan/Special Study incorporates the approved Long Term Control Plan that was developed to meet the requirements of the National CSO Policy.

The Plan was developed in accordance with Act 537, enacted January 24, 1966, P.L. 1535 (35 P.S. 750.1), known as Pennsylvania Sewage Facilities Act, as amended, and the Rules and Regulations of the Pennsylvania Department of Environmental Protection, Chapter 71 of Title 25 of the Pennsylvania Code. The proposed Plan contains a description of the planning area, identification of planning alternatives, alternative evaluation and implementation, selected alternative, financing of the project, and arrangements for implementation.

The recommended alternative is Alternative IB-4b. Alternative IB-4b consists of three phases. Phase I consists of the Seneca Street stream separation, 15th Street stream separation, conveyance upgrades, pump station upgrades and construction of an equalization tank. Phase II consists of the CSO Seneca Street Satellite Facility in the City of Monessen and a sewer separation project consisting of approximately 15,000 lineal feet of 8", 10" and 18" gravity sanitary sewer in the Borough of Donora, Washington County, and the City of Monessen, Westmoreland County, Pennsylvania. The estimated project cost for Phase II in 2013 dollars is \$21,500,000. Phase III consists of the construction of three additional CSO satellite treatment facilities all located in the Borough of Donora. Five mechanical bar screen facilities intended for solids and floatables removal will also be constructed as part of Phase III. Two are located in the Borough of Donora and three are located in the City of Monessen. The estimated project cost for Phase III is \$21,600,000. It should be noted that Phase I was completed under the approval of the Long Term Control Plan.

Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

This notice begins the required 30-day public comment period for the Plan. The Plan is available for review at the Mon Valley Sewage Authority's office, 20 S. Washington Street, Donora, PA 15033, Borough of Donora, 601 Meldon Avenue, Donora, PA 15033, City of Monessen, 1 Wendell Ramey Lane, Suite 400, Monessen, PA 15062 and Carroll Township, 130 Baird Street, Monongahela, PA 15063 during normal office hours. Comments must be written and may be mailed to Gannett Fleming, Inc., Foster Plaza 3, 601 Holiday Drive, Pittsburgh, PA 15220, to the attention of Jason J. McBride, P.E. or hand delivered or mailed to the Authority's Office.

Mon Valley Sewage Authority  
Mr. Thomas Salak, General Manager  
11/22

By \_\_\_\_\_



# LEGAL

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Commonwealth of Pennsylvania

County of Westmoreland } SS:

**ROBERT HAMMOND**, Division Manager of the Trib Total Media, with places of business in Greensburg, Westmoreland County, being duly sworn, deposes and says that the **Valley Independent**, Westmoreland County, Pennsylvania, and elsewhere, published 1902, and issued every day since that date. A copy of the printed

viz: LEGAL# 5721048, RE: PUBLIC NOTICE FOR MON VAL

Affiant further deposes that she/ he is an officer duly **Valley Independent**, to verify the foregoing statement under the subject matter of the aforesaid notice of publication, time, place and character of publication are true.

Division Manager  
Trib Total Media, Inc.

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20 SOUTH WASHINGTON STREET  
DONORA, PA 15033

To Trib Total Media, Inc.

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Legals Legals

**PUBLIC NOTICE FOR  
MON VALLEY SEWAGE AUTHORITY**

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Mon Valley Sewage Authority  
Mr. Thomas Salak, General Manager  
11/22

Sworn to and subscribed before me this  
day of , 2013

NOV 26 2013

Notary Public

COMMONWEALTH OF PENNSYLVANIA

Notarial Seal

Regina M. Stefan, Notary Public  
City of Monessen, Westmoreland County  
My Commission Expires Aug. 2, 2016

MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

By \_\_\_\_\_

PUBLIC NOTICE

FOR

MON VALLEY SEWAGE AUTHORITY

OFFICIAL SEWAGE FACILITIES PLAN UPDATE/SPECIAL STUDY FOR CITY OF  
MONESSEN, BOROUGH OF DONORA AND CARROLL TOWNSHIP

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Based on the financing analysis for Phases II and III, the additional monthly user charge per EDU for Phase II is \$24.00 based on a bond issue and the additional monthly user charge per EDU for Phase III is \$23.00 based on a Pennvest loan. Phase II is scheduled to begin construction in September 2014 and end construction in September 2016. Phase III is scheduled to begin construction in September 2019 and end construction in September 2022.

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Mon Valley Sewage Authority  
Mr. Ton Salak, General Manager

**APPENDIX K**

**COMMENTS RECEIVED AND RESPONSES**

# Mon Valley Sewage Authority

20 S. Washington Street

Donora, PA 15033

Phone 724-379-4141

December 27, 2013

Attn: Jason McBride, P.E.  
Gannett Fleming, Inc.  
601 Holiday Drive  
Pittsburgh, PA 15220-2728

Dear Mr. McBride:

The 30-day public comment period has ended for the Official Sewage Facilities Plan Update/Special Study as part of the Act 537 for the Borough of Donora, City of Monessen and Carroll Township. During this time, no public comments were received by the Mon Valley Sewage Authority.

If you have any questions, please notify me at the Office.

Very truly yours,  
Mon Valley Sewage Authority



Thomas A. Salak  
General Manager

TS/kat



*Excellence Delivered **As Promised***

November 15, 2013

Mr. Robert Nedzesky  
W.E.C. Engineers, Inc.  
1370 Washington Pike  
Bridgeville, PA 15017

Re: Mon Valley Sewage Authority  
Washington and Westmoreland Counties, Pennsylvania  
Official Sewage Facilities Plan Update/Special Study  
GF 54305

Dear Mr. Nedzesky:

On behalf of the Mon Valley Sewage Authority, we are responding to your comments on the draft Official Sewage Facilities Plan Update/Special Study for the Borough of Donora, City of Monessen and Carroll Township. Listed below are our responses in order of your comments:

1. We concur that the City was requested to respond with comments by September 30, 2013.
2. The implementation schedule on pages PS-5 and 8-3 has been revised with adoption of the revised plan by the City of Monessen in January 2014.
3. We concur that the general concept of the plan are satellite treatment facilities and equalization facilities to handle peak wet weather flows. The adopted Long Term Control Plan (LTCP) Alternative IB-4b eliminates three satellite treatment facilities identified in Alternative IB-1 for a larger equalization tank located at the Mon Valley Sewage Authority's Wastewater Treatment Plant.
4. We concur that the plan's recommended alternative is the most cost effective alternative that will achieve at least 85% capture (actually 86% capture and 83 overflows per year).
5. We have estimated disturbance of one acre for each of the five mechanical bar screen facilities proposed in Phase III.
6. Not applicable. This comment was directed to the City of Monessen's Planning Commission.
7. Enclosed are copies of the requested water quality sample results.

Gannett Fleming, Inc.

Foster Plaza III • Suite 200 • 601 Holiday Drive • Pittsburgh, PA 15220-2728  
t: 412.922.5575 • f: 412.922.3717  
[www.gannettfleming.com](http://www.gannettfleming.com)



***Gannett Fleming***

Mr. Robert Nedzesky

November 15, 2013

Page 2

8. Invitations to attend and participate in the pre-bid and preconstruction meetings for the Phase II and Phase III contracts will be extended to the City of Monessen and their engineer.
9. Exhibit 2-2 was revised to include the City's Grand Boulevard Sanitary Sewer Replacement project.
10. The Mon Valley Sewage Authority will obtain applicable City permits and pay the appropriate fees.
11. The National Combined Sewer Overflow Policy allows for the identification of alternatives to limit combined sewer overflow events to 4 to 6 events per year OR provide capture and treatment of 85% of the wet weather flow entering the combined sewer system on an average annual basis,

Based on the alternatives, Alternative IB-4b created the most cost effective means to meet CSO Policy by achieving at least 85% capture (actually 86% capture and 83 overflows per year). As indicated in the Long Term Control Plan, the cost to achieve 99% capture (6 overflows per year) was not economically viable for the Authority.

12. We concur. According to Pennsylvania Department of Environmental Protection (PaDEP) Chapter 94 Municipal Wasteload Management, a ban on connections will be imposed by PaDEP whenever, PaDEP determines that the sewerage facilities or any portion thereof are either hydraulically or organically overloaded or that discharge from the plant causes actual or potential pollution of the waters of the Commonwealth.
13. The plan evaluated eight categories of the goals and objectives of various planning, environmental and natural resource laws and policies of the Commonwealth. Based on the evaluation, it did not appear that any inconsistencies at the planning stage existed between the alternatives and the goals and objectives.
14. We concur. There is no known critical public health hazards that need addressed immediately. Discharges of untreated CSO into the Monongahela River are being addressed by the LTCP approved by PaDEP. The Act 537 Plan includes a schedule for the completion of the recommended alternative in Phases.
15. We concur that a Chapter 106 permit will be required from PaDEP for the satellite facility.
16. We concur that other screening facilities within Monessen are located in an area designated as Other Flood Areas.

***Gannett Fleming***

Mr. Robert Nedzesky

November 15, 2013

Page 3

If you have any questions, please do not hesitate to contact us.

Sincerely,

GANNETT FLEMING, INC.

A handwritten signature in blue ink, appearing to read "Jason J. McBride".

JASON J. MCBRIDE, P.E.

Cc: MVSA  
City of Monessen

# Summary

## MVSA Sewage Facilities Act 537 Plan

### Updated July 2013

September 23, 2013

**Alternative IB-4b** – Partial Sewer Separation; maximize conveyance in Monessen; construct Donora equalization tank, and 85% capture of wet weather flow entering the combined sewer system on an average annual basis limiting overflows to 4 to 6 events per year. Goal is to completely eliminate all overflows.

#### **Phase I** – Completed

- Seneca Street stream separation;
- 15<sup>th</sup> Street stream separation;
- conveyance upgrades;
- pump station upgrades; and
- construct equalization tank.

#### **Phase II** – Construction August 2014 – August 2016

- Seneca Street satellite facility; and
- 15,000 lf of sewer separation in Donora and Monessen.
  
- Cost \$21.5 million (2013 dollars) – Bond issue
- Additional monthly user charge per EDU is \$24.00 (total \$59/month).

#### **Phase III** – Construction June 2020 – June 2023

- 3 additional CSO satellite facilities in Donora;
- 2 mechanical bar screen facilities in Donora; and
- 3 mechanical bar screen facilities in Monessen.
  
- Cost \$21.6 million (2013 dollars)
- Additional monthly user charge per EDI is \$23.00 (total \$82/month)

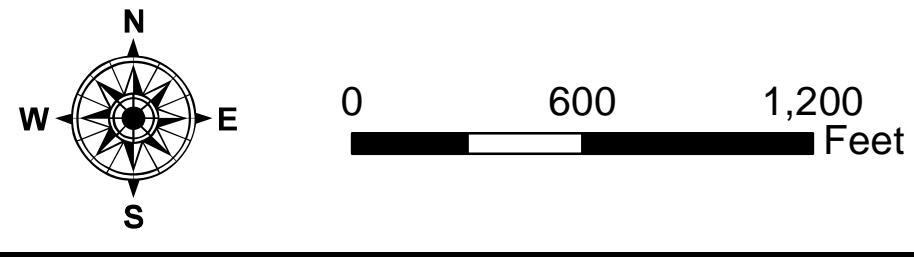
Comments:

1. The City is requested to respond with comments by September 30, 2013;
2. In accordance with the tentative schedule on page PS-5, Monessen is to adopt the revised plan by resolution by December 2013 (the resolution is in Appendix H);
3. Slightly modified from 2007 Plan. Implements the general concept of satellite treatment facilities and equalization facilities to handle peak wet weather flows, but eliminates three satellite treatment facilities previously identified in favor of a larger equalization tank in Donora. This concept maximizes flows to the wastewater treatment plan as much as economically feasible;
4. Will achieve at least 85% capture (actually 86% capture and 83 overflows per year) assuming upstream flow is controlled (page 8-1);
5. The three proposed mechanical bar screens are located within the mill site (refer to Plan Exhibit 2-2 at the back of the Study; approximately one acre will be disturbed for each facility);
6. The Planning Commission should verify the Act 537 Sewage Facilities Plan Update/Special Study conforms to applicable zoning, subdivision, and other ordinances and plans of the City and make a recommendation to Council for approval;
7. Request copies of the results of the water quality samples from location 103, 401 and 501 located in Monessen;
8. Request invitations to attend and participate in the pre-bid and preconstruction meetings for the Phase II and Phase III contracts;
9. Exhibit 2-2 should be revised to reflect completion of the City's Grand Boulevard Sanitary Sewer Replacement Project showing the sewer shed as now completely separated;
10. Remind MVSA that contractor's must obtain City permit and pay appropriate fees as establish by Ordinance;
11. The Combined Sewer Overflow (CSO) Control Goals analysis provided estimated satellite treatment facility capacity limiting combined sewer overflow events to 4 to 6 events per year;
12. The report states that the projects alleviate overloads to the system which allows growth in the area. If not constructed overload conditions will continue with tap restrictions by PaDEP which will limit growth in the City. Development of vacant land cannot occur with tap restrictions;
13. According to the report there does not appear to be any inconsistencies with the various goals and objectives of PA planning, environmental and natural resources laws;
14. The report states that there are no known critical public health hazards in the MVSA service area associated with wastewater that needs to be address; however, a potential health hazard exists with the discharge of untreated sewage into the Monongahela River;
15. The Seneca Street CSO Satellite Facility is located in the 100-year floodplain; the first floor elevation is 1 ½' above the 100-year flood elevation and requires a Chapter 106 Permit from DEP;
16. The other satellite facilities within Monessen are located in an area designated as Other Flood Areas.

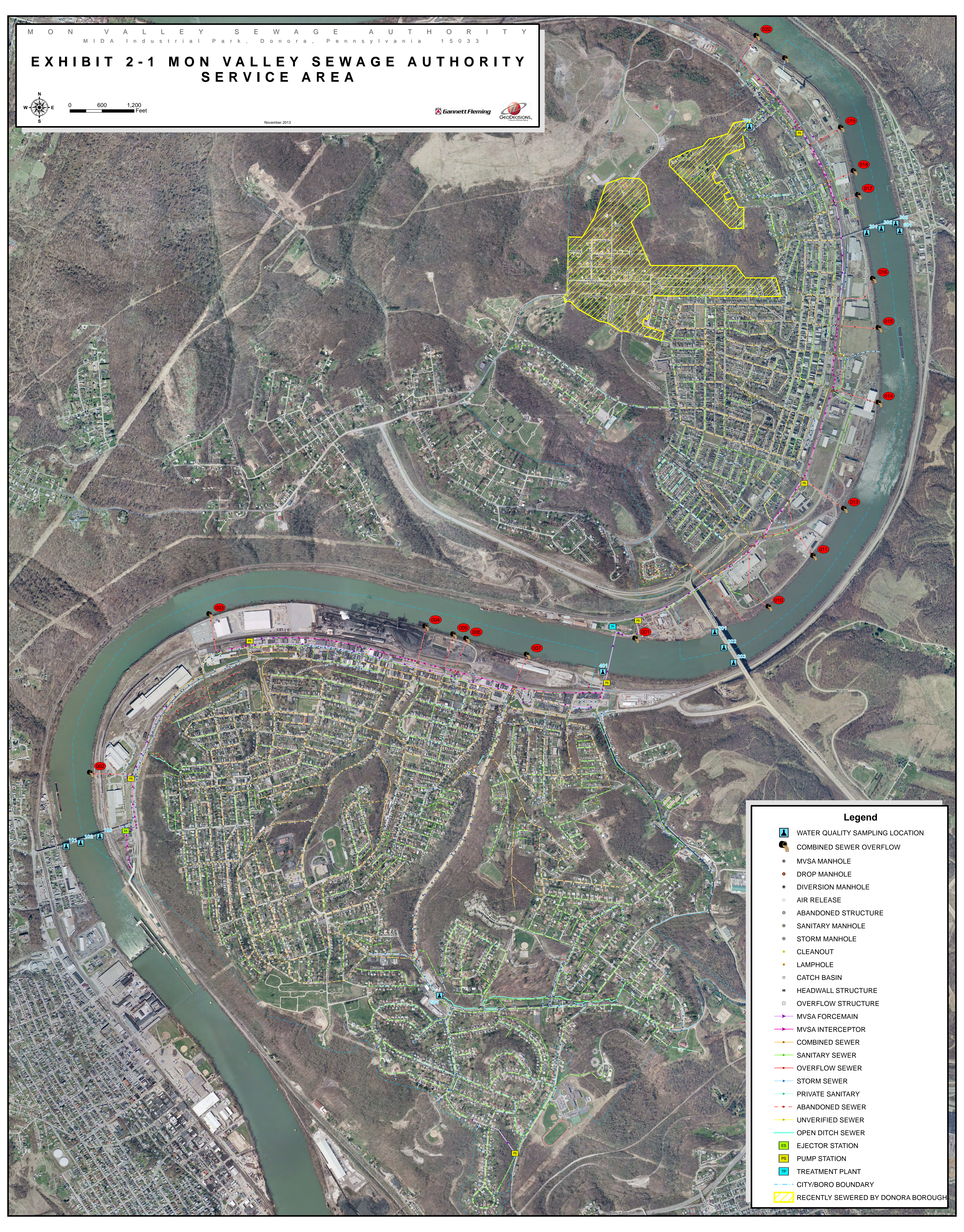
**APPENDIX L**

**UNIFORM ENVIRONMENTAL REPORT  
(BOUND SEPARATELY)**

# EXHIBIT 2-1 MON VALLEY SEWAGE AUTHORITY SERVICE AREA

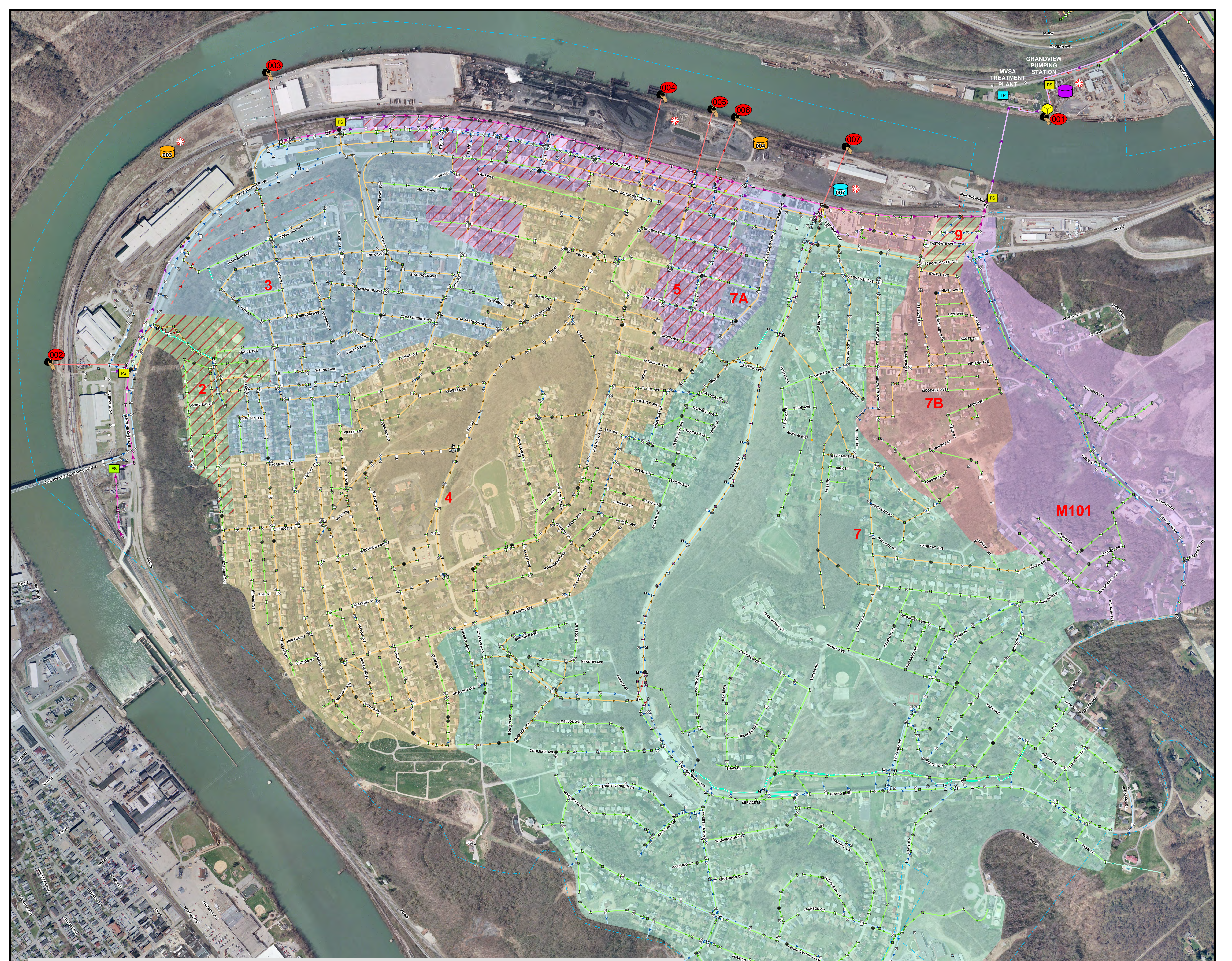


November 2013



### Legend

- WATER QUALITY SAMPLING LOCATION
- COMBINED SEWER OVERFLOW
- MVSA MANHOLE
- DROP MANHOLE
- DIVERSION MANHOLE
- AIR RELEASE
- ABANDONED STRUCTURE
- SANITARY MANHOLE
- STORM MANHOLE
- CLEANOUT
- LAMPHOLE
- CATCH BASIN
- HEADWALL STRUCTURE
- OVERFLOW STRUCTURE
- MVSA FORCEMAIN
- MVSA INTERCEPTOR
- COMBINED SEWER
- SANITARY SEWER
- OVERFLOW SEWER
- STORM SEWER
- PRIVATE SANITARY
- ABANDONED SEWER
- UNVERIFIED SEWER
- OPEN DITCH SEWER
- EJECTOR STATION
- PUMP STATION
- TREATMENT PLANT
- CITY/BORO BOUNDARY
- RECENTLY SEWERED BY DONORA BOROUG



M O N V A L L E Y S E W A G E A U T H O R I T Y  
 MIDA Industrial Park, Donora, Pennsylvania 15033

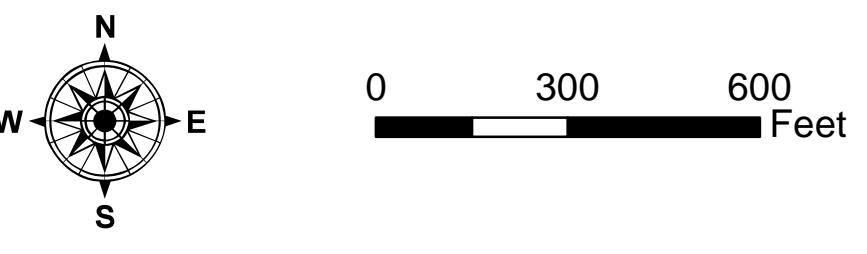
**EXHIBIT 2-2 ACT 537 PLAN**  
**CITY OF MONESSEN**

- |   |  |                                   |
|---|--|-----------------------------------|
| PROPOSED TREATMENT FACILITIES AT WWTP   | PROPOSED SATELLITE TREATMENT FACILITIES    | PROPOSED BAR SCREEN FACILITIES    |
| PROPOSED SATELLITE TREATMENT FACILITIES | FACILITIES IN RECOMMENDED ALTERNATIVE IB-4 | PROPOSED AREA OF SEWER SEPARATION |
| COMBINED SEWER OVERFLOW                 | MVSA MANHOLE                               | MVSA FORCEMAIN                    |
| EJECTOR STATION                         | DROP MANHOLE                               | MVSA INTERCEPTOR                  |
| PUMP STATION                            | DIVERSION MANHOLE                          | COMBINED SEWER                    |
| TREATMENT PLANT                         | BACKWATER STRUCTURE                        | SANITARY SEWER                    |
|   | WEIR WALL                                  | OVERFLOW SEWER                    |
|   | AIR RELEASE                                | STORM SEWER                       |
|   | ABANDONED STRUCTURE                        | PRIVATE SANITARY                  |
|   | HEADWALL STRUCTURE                         | ABANDONED SEWER                   |
|   | OVERFLOW STRUCTURE                         | UNVERIFIED SEWER                  |
|   |  | OPEN DITCH SEWER                  |



**EXHIBIT 2-3 ACT 537 PLAN  
 BOROUGH OF DONORA**

PROPOSED TREATMENT FACILITIES AT WWTP	PROPOSED SATELLITE TREATMENT FACILITIES	PROPOSED BAR SCREEN FACILITIES
PROPOSED EQUALIZATION TANK FACILITY	FACILITIES IN RECOMMENDED ALTERNATIVE IB-4	PROPOSED AREA OF SEWER SEPARATION
COMBINED SEWER OVERFLOW	SANITARY MANHOLE	MVSA FORCEMAIN
STORM SEWER OUTFALL	STORM MANHOLE	MVSA INTERCEPTOR
EJECTOR STATION	CLEANOUT	COMBINED SEWER
PUMP STATION	LAMPHOLE	SANITARY SEWER
TREATMENT PLANT	WEIR WALL	OVERFLOW SEWER
ABANDONED STRUCTURE	AIR RELEASE	STORM SEWER
	ABANDONED STRUCTURE	PRIVATE SANITARY
		ABANDONED SEWER
		UNVERIFIED SEWER
		OPEN DITCH SEWER
		RECENTLY SEWERED BY DONORA BOROUGH



November 2013

