

EAST GOSHEN MUNICIPAL AUTHORITY

September 11, 2017

6:00 PM - Meet at Ridley Creek Sewer Treatment Plant

~7:00 PM – Regular meeting at Township Building.

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/MOMENT OF SILENCE
 - a. Ask if anyone will be taping the meeting

2. CHAIRMAN'S REPORT/OTHER MEMBERS REPORTS

3. SEWER REPORTS

- a. Director of Public Works Report
- b. Pennoni Engineer's Report
- c. Big Fish Environmental Inc. Report

4. APPROVAL OF MINUTES
 - a. August 7, 2017

5. APPROVAL OF INVOICES

- a. Pennoni Invoice #763591 \$ 80.25
- b. Pennoni Invoice #763593 \$1,205.75
- c. Pennoni Invoice #763595 \$6,222.00
- d. Pennoni Invoice #763596 \$3,647.50
- e. Gawthrop Invoice #184952 \$ 440.00

6. LIAISON REPORTS

7. FINANCIAL REPORTS

- a. August Financial Report

8. OLD BUSINESS

- a. Reservoir Road Pump Station – On August 31, 2017 we received the **final** permit we need for the pump station.

9. GOALS

- a. Operate the Ridley Creek Sewer Treatment Plant in compliance with NPDES Permit requirements. *January, May, June, July*
- b. Continue to implement the formal Inflow (surface water) & Infiltration (ground water), (collectively "I&I") Plan to reduce the amount of I&I into the sewer system.
- c. Respond to capacity requests within 45 days.
- d. Develop an operation manual for Ridley Creek Sewer Treatment Plant and pump stations. *Currently under review by staff. Completed on August 7, 2017*
- e. Submit topical articles of interest for the East Goshen newsletter. *May*
- f. Attend West Goshen Municipal Authority meetings to keep informed of planned capital expenditures and operation compliance. *January, February, March, April, May, June, July*

10. NEW BUSINESS

11. CAPACITY REQUESTS

12. ANY OTHER MATTER

- a. Discuss replacement of new probes and controller for the plant (Mark)
- b. Discuss Supplee Valley Sewer System Analysis

13. CORRESPONDENCE AND REPORTS OF INTEREST

14. PUBLIC COMMENT

15. ADJOURNMENT

EAST GOSHEN MUNICIPAL AUTHORITY
EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE, WEST CHESTER, PA 19380-6199

September 8, 2017

To: Municipal Authority

From: Mark Miller

Re: August 2017 Monthly Report
Mark will not be at the meeting!

Monthly Flows: The average daily flow to West Goshen was 670,000 gallons per day.

Meters: Meters were read on a daily basis. We have not had any problems.

C.C. Collection: The pump stations were visited on a daily basis. Lenni Electric is currently doing the PM at the plant and pump stations. We are scheduled to pull the pumps this month.

R.C. Collection: Pump Stations were visited on a daily basis with no problems to report.

R.C. Plant: The plant was visited by Public Works. George and I were at the plant on Monday. We noticed the roto-mat was making noise. Upon further investigation we found the screen spray nozzles were blocked. We were able to get them cleaned.

Lateral Repairs: Four lateral repairs for the month of August.

Alarms: We responded to 27 alarms for August, most of them were for power outages.

PA One Calls: We received 68 PA One calls in August.

**EAST GOSHEN MUNICIPAL AUTHORITY
ENGINEER'S REPORT
September 8, 2017**

Invoices

- Invoices with summaries are provided under separate cover.

Ridley Creek Sewage Treatment Plant (RCSTP)

- Caustic soda pilot study –
 - We previously calculated the estimated caustic soda feed rate to be 5-6 gallons/hour when the pilot study SBR tank is in a Fill cycle. We previously recommended a 7.7-gallon/hour pump be acquired for the study. We have obtained pricing for a larger ± 19.9 gallon/hour pump as requested by the Municipal Authority in the event the recommended pump is found to be inadequate during the trial. Two 350-gallon totes should allow for a 2.5-3 week trial. We previously sent our recommendations to the plant operator for review and are awaiting a response.
 - A pilot study sampling plan was previously requested from Big Fish, and we are awaiting a response.
 - The pilot study can begin once the tap is installed and the operator provides a sampling plan and confirms the caustic soda feed rate.
 - In order to progress this project, we propose to set up a meeting within the next week at the RCSTP with the Public Works Department, Pennoni, the operator, and the controls consultant to resolve outstanding questions and concerns (i.e. chemical feed control during fill-decant phase) and establish a definitive schedule to begin the trial.
- SBR tanks CIM coatings –
 - Our structural engineers and leakage consultant performed a visual and non-destructive evaluation of the SBR #1 concrete walls on August 23. Two concrete cores were taken from the SBR #1 walls the same day. The cores have been tested, and we expect to receive a laboratory report with results on September 11. A verbal update will be provided at the Municipal Authority meeting on September 11. Upon receipt of the lab report, we will evaluate the results in conjunction with our field visit and background research, and we expect to submit a report to the Township by the end of September.

Reservoir Road Pump Station

- We received the Army Corps of Engineers (USACE) special conditions permit for the proposed force main creek crossings on August 17. WE NOW HAVE ALL PERMITS IN HAND!!!!
- The bid document will be finalized to incorporate the remaining USACE permit, and a final set of plans and specifications will be provided to the Township within the next two weeks.
- A listing of the permits, expiration dates, and renewal deadlines will also be provided.

RCSTP and Pump Stations' O&M Manual

- Completed. No further action.

Supplee Valley Pipe Lining

- We received the missing videos of the sewer mains and completed our review, prioritization, scoping, and cost estimating. A recommendation letter was sent to the Township.

White Chimneys Manhole Lining

- We completed a 1-year warranty visual observation of the manholes that were lined in 2016 in White Chimneys and along Cornwallis Drive. No deficiencies were observed with the liners. However, apparent sulfuric acid (from hydrogen sulfide) is present on the liners near the bottoms of some of the manholes. We have recommended that the Public Works Department clean those liners.

New Connections

- Knauer Property, 1680 East Boot Road – *No activity since our last report.* We previously reviewed a revised plan submission for a proposed sewer connection to be installed with fewer lateral pipes at less-than-minimum slopes, and we provided comments to the Township and developer.
- Brakman Property, 1420 East Strasburg Road – We continued to perform construction observation of the new gravity sewer main across East Strasburg Road and the new manhole on the subject property as well as providing shop drawings reviews and responses to questions from the contractor and developer.

West Goshen Sewer System Consultation

- No activity since last report.



**RCSTP Monthly Operations
Report:
August 2017**

Executive Summary

The Ridley Creek sewage treatment plant outfall 001 achieved compliance with the permitted discharge limitations during the month of July 2017. Discharge to Applebrook remained off line. Chemical usage utilized for total phosphorus removal, pH and total alkalinity remained consistent with previous months. No mechanical or operational issues were observed during operation of sludge dewatering equipment or SBR treatment process.

Treatment Process Operation

The total phosphorus monthly average was reported as 0.25 mg/L as compared to the permitted limitation of 0.50 mg/L. Total phosphorus discharge concentrations ranged from 0.14 to 0.47 mg/L. The ammonia as nitrogen monthly concentration was reported as 0.169 mg/L as compared to the permit discharge limitation of 2.5 mg/L. The ammonia as N weekly maximum was 0.243 mg/L. The total suspended solids (TSS) monthly concentration was reported as 3 mg/L as compared to the permit discharge limitation of 10 mg/L. The weekly maximum concentration was 4 mg/L as compared to the permit discharge limitation of 15 mg/L.

Table 1 illustrates the final effluent composite sample data reported for the July 2017 DMR. Discharge to Applebrook, Outfall 002, remained discontinued during and July. The discharge to Applebrook was initiated during August.

The monthly average influent wastewater pollutant concentrations and loading entering the wastewater treatment facility remained within the design concentrations. Composite samples are collected at the influent doghouse manhole and influent wet well. The influent flow meter reading is collected from the influent flow meter located prior to the Screening Building, excluding the internal recycle flows.

Table 2 presents the available pollutant data for the influent wastewater collected at the doghouse manhole during July 2017.



**RCSTP Monthly Operations
Report:
August 2017**

Table 1

July 2017 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD₅		TSS		NH₄-N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	10	131	2.5	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
July 6, 2017	0.320	2.0	5.3	1	2.7	0.119	0.32	0.19	0.51	1	0.0000
July 11, 2017	0.263	2.7	5.9	4	8.8	0.135	0.30	0.21	0.46	1	0.0000
July 18, 2017	0.282	2.0	4.7	1	2.4	0.243	0.57	0.14	0.33	1	0.0000
July 25, 2017	0.338	3.6	10.1	4	11.3	0.178	0.50	0.47	1.32	5	0.6990
Average	0.301	2.6	6.5	3	6.3	0.169	0.42	0.25	0.66	1	0.1747
Minimum	0.263	2.0	4.7	1	2.4	0.119	0.30	0.14	0.33	1	0.0000
Maximum	0.338	3.6	10.1	4	11.3	0.243	0.57	0.47	1.32	5	0.6990

Table 2

July 2017 - Influent Wastewater											
Design Basis	Flow	BOD₅		TSS		NH₄-N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
	Sample Date										
July 5, 2017	0.392	243	794	222	726	35.8	4	51.4	168	6.9	22.6
July 11, 2017	0.348	186	608	410	1,340	43.5	142	49.9	145	6.1	19.9
July 18, 2017	0.357	111	363	56	183	42.3	138	44.7	133	5.1	16.7
July 25, 2017	0.33	280	915	374	1,223	38.8	127	37.5	103	4.5	14.7
Average	0.357	205	670	266	868	40.1	103	45.9	137	5.7	18.5
Minimum	0.330	111	363	56	183	35.8	4	37.5	103	4.5	14.7
Maximum	0.392	280	915	410	1340	43.5	142	51.4	168	6.9	22.6

Table 3 presents the available Outfall 001 final effluent data for the month as of August 8, 2017. The total phosphorus concentrations were elevated during the first



**RCSTP Monthly Operations
Report:
August 2017**

three (3) weeks of the month. Maintenance and corrective actions included removal and cleaning of the static mixer injector, increased flushing of the alum chemical piping to the SBRs and weekly draining and cleaning of the disc filters. The alum feed to the SBRs was frequently increased to improve the total phosphorus removal. Lastly, additional samples were collected for analysis by the certified laboratory.

The facility is anticipated to achieve compliance with the discharge permit limitations during the month of August.

Table 3

August 2017 - Final Effluent - Out Fall 001											
NPDES Permit Discharge Limitations	Flow	CBOD₅		TSS		NH₄-N		Phosphorus, Total , mg/L		Fecal Coliform	
	MGD Average	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	mg/L	lbs/ month	Geo Mean	Geo Mean
	0.75	20	125	10	131	2.5	44	0.5	3	200	1,000
	Instantaneous Maximum	40		42							
Sample Date											
August 1, 2017	0.261	2.0	4.4	5	10.9	0.160	0.35	0.51	1.11	4	0.6021
August 8, 2017	0.276	4.0	9.2	3	6.9	0.330	0.76	0.67	1.54	1	0.0000
August 15, 2017	0.314							0.52	1.36		
August 22, 2017	0.223										
August 29, 2017	0.181										
Average	0.251	3.0	6.8	4	8.9	0.245	0.55	0.57	1.34	2	0.3010
Minimum	0.181	2.0	4.4	3	6.9	0.160	0.35	0.51	1.11	1	0.0000
Maximum	0.314	4.0	9.2	5	10.9	0.330	0.76	0.67	1.54	4	0.6021

During August, the presence of foam conditions on the surface of the SBRs began to decrease with foam concentrations ranging from 50% to 70% of the area. Reduction of filled decants and adjustments to the SBR dissolved oxygen control set points to ensure adequate aeration for nitrification assisted to sustain the final effluent water quality.

There are no anticipated exceedances of the permitted limitations for Outfall 001 for August 2017. There was no discharge from outfall 002. Split sampling of the composite sample collected by Applied Laboratory Services (ALS) is ongoing for comparative analysis and daily results.



**RCSTP Monthly Operations
Report:
August 2017**

Table 4

August 2017 - Influent Wastewater											
Design Basis	Flow	BOD ₅		TSS		NH ₄ -N		TKN, mg/L		Phosphorus, Total, mg/L	
		mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day
	MGD Average	335	2,098	320	2,001	32	200	48	301	9.1	57
Sample Date											
August 1, 2017	0.319	264	702	246	654	33.3	88.6	56.5	150	8.6	22.9
August 8, 2017	0.307	100		280		23.3	59.7	34.5	88	7.2	19.2
August 15, 2017	0.385										
August 22, 2017	0.323										
August 29, 2017	0.376										
Average	0.342	182	702	263	654	28.3	74.1	45.5	119	7.9	21.0
Minimum	0.307	100	702	246	654	23.3	59.7	34.5	88	7.2	19.2
Maximum	0.385	264	702	280	654	33.3	88.6	56.5	150	8.6	22.9

Sequencing batch reactors (SBRs) numbered 2, 3 and 4 were in service during July and August. Process monitoring of each SBR included ammonia as N, nitrite as N, Nitrate as N, COD, SSV, MLSS and total phosphorus. Daily analysis of the final effluent flow equalization grab sample is total phosphorus is ongoing. Sample collection and analysis of the influent wastewater collected at the influent pump station wet well is ongoing.

Addition of aluminum sulfate solution to the SBRs to assist with phosphorus removal continued. Soda ash assists towards maintaining SBR pH concentrations above 7.0 standard units and assists to replenish alkalinity consumed during the nitrification process and aluminum sulfate solution addition.

Significant Storm/Hydraulic Loading Events

During August there was one (1) storm events resulting in a daily precipitation amount equal to or greater than 0.5 inches measured during a 24-hour period. A total of 1.98 inches of rainfall measured during the month. This event occurred on:

August 5th 0.50inches



**RCSTP Monthly Operations
Report:
August 2017**

Plant operations were adjusted to manage the precipitation to prevent exceedances of the permitted discharge limitations for Outfall 001. Adjustments included reading aeration minutes per cycle, extending decant minutes per cycle and reducing settling times. The facility experienced several filled decant cycles during the rain events.

PA DEP

No activity.

Minor Repairs and Preventative Maintenance

Flushed chemical feed lines to the SBRs.

Organized supply

Cleaned piping within SBR building

Look Ahead Preventative Maintenance Activities

Overhaul centrifuge drive gear boxes and evaluation of bearings for replacement.
Gathering information for parts.

DRAFT
EAST GOSHEN TOWNSHIP MUNICIPAL AUTHORITY
MEETING MINUTES
August 7, 2017

The East Goshen Township Municipal Authority held their regular public meeting on Monday, August 7, 2017 at 7:00 pm at the East Goshen Township building. Members in attendance were: Chairman Ed McAssey, Jack Yahraes, Dana Pizarro, and Kevin Cummings. Also in attendance were: Rick Smith (Township Manager), Carmen Battavio (Township Supervisor), Mark Miller (Public Works Director), Mike Ellis (Pennoni), Patrick McKenna (Attorney), Walter Wujcik, (Conservancy Board) and Scott Towler (BFES).

COMMON ACRONYMS:

<i>BFES – Big Fish Environmental Services</i>	<i>MA- Municipal Authority</i>
<i>BOS – Board of Supervisors</i>	<i>NPDES – National Pollutant Discharge Elimination System</i>
<i>CB – Conservancy Board</i>	<i>PC – Planning Commission</i>
<i>DEP – Department of Environmental Protection</i>	<i>PM – Prevention Maintenance</i>
<i>EPA – Environmental protection Agency</i>	<i>PR – Park & Recreation Board</i>
<i>HC – Historical Commission</i>	<i>RCSTP – Ridley Creek Sewer Treatment Plant</i>
<i>I&I – Inflow & Infiltration</i>	<i>SBR – Sequencing Batch Reactor</i>
<i>LCSTP – Lockwood Chase Sewer Treatment Plant</i>	<i>SSO – Sanitary System Overflow</i>
	<i>WAS – Waste Activated Sludge</i>

Call to Order & Pledge of Allegiance

Ed called the meeting to order at 7:00 pm and led those present in the Pledge of Allegiance. There was a moment of silence to remember our troops and first responders.
Ed asked if anyone would be recording the meeting. There was no response.

Chairman's Report

Ed reported that he attended the West Goshen meeting. They made some changes to the proposed by-laws. Westtown and West Whiteland have not signed the agreement yet. Mike Moffa, Waste Water Manager, recommended getting a new digester.

Sewer Reports

1. Director of Public Works, Mark Miller's report for July:

Monthly Flows: The average daily flow to West Goshen was 719,000 gallons per day.

Meters: Meters were read on a daily basis with no problems.

C.C. Collection: The pump stations were visited on a daily basis with no problems to report. We replaced all of the castings and lids along Reservoir Road, Meadow Drive and Hollyberry Lane.

R.C. Collection: Pump stations were visited on a daily basis with no problems to report.

R.C. Plant: No problems to report.

Alarms: We responded to 20 alarms for July.

PA One Calls: We received 78 PA One calls for July.

2. Pennoni Engineer's Report for June

Mike Ellis provided the following report.

Invoices

- Invoices with summaries are provided under separate cover.

Ridley Creek Sewage Treatment Plant (RCSTP)

- Caustic soda pilot study –
 - We previously calculated the estimated caustic soda feed rate to be 5-6 gallons/hour when the pilot study SBR tank is in a Fill cycle. We previously recommended a 7.7-gallon/hour pump be acquired for the study. We are obtaining pricing for a larger ± 19.9 gallon/hour pump as requested by the Municipal Authority in the event the recommended pump is found to be inadequate during the trial. Two 350-gallon totes should allow for a 2.5-3 week trial. We previously sent our recommendations to the plant operator for review and are awaiting a response.
 - A pilot study sampling plan was previously requested from Big Fish, and we are awaiting a response.
 - We provided recommendations to Public Works on the chemical feed tapping location to the influent SBR ductile iron piping including injection quill and ball valve.
 - The pilot study can begin once the tap is installed and the operator provides a sampling plan and confirms the caustic soda feed rate.
- SBR tanks CIM coatings –
 - We researched the history of the SBR tanks' structural design, construction, and CIM coating bubbling and peeling issues. A summary of findings and structural condition assessment testing alternatives will be provided at the August MA meeting.

Reservoir Road Pump Station

- We submitted revised plans to the Army Corps of Engineers (USACE) to address their last set of minor comments, and we are hopeful that this final permit will be issued by the end of August.
- The bid document will be finalized and submitted upon receipt of the remaining USACE permit.
- We will complete a listing of the permits, expiration dates, and renewal deadlines once the USACE permit is issued.

RCSTP and Pump Stations' O&M Manual

- We received comments on the near-final O&M Manual submission from Mark Miller. The comments were addressed, and the Manual has been finalized. We reproduced 22 bound, hard

copies for the Public Works staff and other Township staff. We recommend the Manual be revisited in one year to determine if further updates are needed.

Supplee Valley Pipe Lining

- We reviewed several videos of the sewer mains and began prioritizing sewers for rehabilitation. Additional missing videos have been requested from the CCTV contractor so that we can complete the prioritization, scoping, and cost estimating.

New Connections

- Knauer Property, 1680 East Boot Road – We reviewed a revised plan submission for a proposed sewer connection to be installed with fewer lateral pipes at less-than-minimum slopes, and we provided comments to the Township and developer.
- Brakman Property, 1420 East Strasburg Road – We reviewed sanitary sewer shop drawings, attended a sewer pre-construction meeting, and performed construction observation of the horizontal directional drilling of the new gravity sewer main across East Strasburg Road.

West Goshen Sewer System Consultation

- We prepared and issued a Self-Liquidating Debt Certification for the portion of the upcoming bond issuance that will be used to pay East Goshen's portion of West Goshen's plant and sewer system upgrades.

Mike mentioned that Costars has 8 companies that do relining. The estimated cost is \$40-50/linear foot. He will contact some of them and should have a recommendation next month. Pennoni is requesting additional funds for general services totaling \$8,500. Jack moved to approve additional funds not to exceed \$9,000. Dana seconded the motion. The motion passed unanimously.

3. Big Fish Environmental Services – Scott's report for July showed that the Ridley Creek sewage treatment plant outfall 001 achieved compliance with the permitted discharge limitations during the month of June 2017. Discharge to Applebrook remained off line. Chemical usage utilized for total phosphorus removal, pH and total alkalinity remained consistent with previous months. No mechanical or operational issues were observed during operation of sludge dewatering equipment or SBR treatment process.

Jack commented on the discharge to Applebrook. Mark said the pump is on now.

Approval of Minutes

The minutes of the July 10, 2017 meeting were approved as corrected.

Approval of Invoices

1. Jack moved to approve payment of the following Pennoni invoices:

- | | | |
|----|-----------------|------------|
| a. | Pennoni #759081 | \$2,589.25 |
| b. | Pennoni #759083 | \$ 269.25 |
| c. | Pennoni #759084 | \$2,621.25 |

Dana seconded the motion. The motion passed unanimously.

2. Jack moved to approve payment of Gawthrop Invoice #182042 for \$940.00. Dana seconded the motion. The motion passed unanimously.

Liaison Report

Conservancy Board - Walter reported that the BOS approved a study of the ponds to be done by the Natural Lands Trust. The results of the study will determine what will be done with the trees in Marydell. Ed complemented the CB on the work they have done on Clymer's Woods.

Board of Supervisors – Carmen reported that, in addition to the bond sale and NLT study, they approved the engineering for the Paoli Pike Trail.

Financial Reports

Jon Altshul provided the following written report:

In July 2017, the Municipal Authority recorded \$5,982 in interest income (mostly from the \$5,000 transfer from the sewer fund) and \$5,893 in expenses for a positive variance of \$90. Expenses included \$3,167 for general engineering and \$2,726 for Reservoir Road Pump Station engineering. As of June 30, the fund balance was \$1,182,067 of which \$1,142,761 is in the main construction account (most of which represents the 2013 note).

The July 11th bond sale was very successful. Six investment banks made 59 bids on the bonds over the course of 30 minutes. The low bid came from Janney Montgomery Scott with a yield (effective interest rate) of 2.778%. The closing will occur on August 15th at which point the funds will be wired to the bank.

Goals

Goals for 2017 were reviewed.

Old Business

SBR tanks CIM coatings - Mike provided photos of SBR Tank #1 and #2 which were taken on July 18, 2017. SBR #1 was off line. He explained that the liner is on the interior walls only. The top peeling is a new issue. There is a 10 year warranty on the coating through Dutchland and they have been making the repairs. Kevin suggested taking samples. Scott commented that there are no problems with the exterior walls. He explained the structure composition. Mike mentioned that Pennoni has structural engineers who can take cores from the walls and test it. He estimates the cost to be \$10,000-15,000. After further discussion about the testing process, Kevin moved to authorize Pennoni to take 2 cores and do the testing not to exceed \$15,000. Jack seconded the motion. The motion passed unanimously.

New Business

New Probes and controller - Mark explained that there are 3 probes in the SBRs that are 8-10 years old. Cost to replace them and the controller for the plant will be \$14,000 and it will come out of Capital Reserve. Jack moved to authorize Mark to purchase the 3 replacement probes and controller. Dana seconded the motion. The motion passed unanimously.

1 **Any Other Matter**

2 Mark commented to Scott that he appreciates the daily reports the staff sends to him. Scott explained
3 the processing at the plant.
4

5
6 **Adjournment**

7 There being no further business, Dana moved to adjourn the meeting. Jack seconded the motion. The
8 meeting was adjourned at 8:10 p.m. The next regular meeting will be held on Monday, September
9 11, 2017 at 7:00 pm.
10

11 Respectfully submitted,
12
13
14

15 Ruth Kiefer
16 Recording Secretary



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 763591
Invoice Date : 08/24/2017
Project : EGMA1504
Project Name : Reservoir Rd PS Design &
Permitting

For Services Rendered through: 8/13/2017

Correspondence with Army Corps of Engineers in response to additional permitting questions.

Phase : 12 -- Permitting

Total Phase : 12 -- Permitting

Labor :	80.25
Expense :	0.00
Phase Total :	80.25

Amount Due This Invoice

\$80.25

Phase : 12 -- Permitting

Labor

Class

Hours/
Units

Rate

Amount

Authority Engineer

0.25

119.00

29.75

Sr. Environmental Scientist

0.50

101.00

50.50

Labor Total:

0.75

80.25

Total Phase : 12 -- Permitting

Labor : \$80.25

Expense : \$0.00

Total Project : EGMA1504 -- Reservoir Rd PS Design & Permitting

Labor : \$80.25

Expense : \$0.00

OK RS
9-8-17

East Goshen Municipal Authority
EGMA1504 Invoice Summary
Invoice Date 8/24/2017

Project: EGMA1504
Pennoni Job No.: Reservoir Rd PS Design & Permitting
Invoice No: 763591
Invoice Period: 7/17/2017 to 8/13/2017
Initial Authorization: \$ 167,120.00 **Date:** 8/24/2017
Contract Amount: \$ 193,200.00
Previously Invoiced: \$ 192,351.25
Current Invoice: \$ 80.25
Invoiced to Date (\$): \$ 192,431.50
Invoiced to Date (%): 99.60%
Remaining Budget (\$): \$ 768.50
Remaining Budget (%): 0.40%

Budget by Phase:

Phase Name:	Permitting	Phase 12
Phase Budget:	\$ 50,940.25	
Previously Invoiced:	\$ 50,348.25	
Current Invoice:	\$ 80.25	
Invoiced to Date (\$):	\$ 50,428.50	
Invoiced to Date (%):	99.00%	
Remaining Budget (\$):	\$ 511.75	
Remaining Budget (%):	1.00%	

Comments: Correspondence with Army Corps of Engineers in response to additional permitting questions.

Reservoir Road Pump Station Design & Permitting

INVOICE SUMMARY

For Services Rendered through: 8/13/2017

Task No.	Activity	Contract Amount*	Invoiced Effort thru 3/19/2017	Remaining Budget (\$)	Remaining Budget (%)	Completed?
1	Concept Design	\$13,655.75	\$13,655.75	-	-	Yes
2	DEP WQM Pre-App. Meeting	\$1,300.00	\$1,300.00	-	-	Yes
3	Existing Conditions Survey	\$22,783.75	\$22,783.75	-	-	Yes
4	Sewer Stakeout in Easements	\$0.00	\$0.00	-	-	Scope eliminated
5	1636 Bow Tree Dr. Boundary Survey & Easement	\$4,020.00	\$4,020.00	-	-	Yes
6	Additional Boundary Surveys & Easements	\$0.00	\$0.00	-	-	Scope eliminated
7	Geotechnical Borings	\$4,000.00	\$4,000.00	-	-	Yes
8	Install Permanent Survey Benchmarks	\$0.00	\$0.00	-	-	Scope eliminated
9	Progress Design	\$29,450.00	\$29,450.00	-	-	Yes
10	Infiltration Testing	\$1,800.00	\$1,800.00	-	-	Yes
11	Final Design	\$65,170.25	\$64,993.50	\$176.75	0.3%	No**
12	Permitting	\$50,940.25	\$50,428.75	\$511.50	1%	No***
TOTAL		\$193,120.00	\$192,431.75	\$688.25	0.4%	

*After 12/14/2015 approved re-allocation of task budgets, 5/9/2016 approval of \$7,000 supplement, 7/11/16 approval of \$4,000 supplement, 11/14/16 approval of \$5,000 supplement, 4/10/17 approval of \$4,000 supplement, and 6/12/17 approval of \$6,000 supplement.

**Need to complete Bid Form and assemble full bid document package for Township once remaining permits are issued.

*** All permit applications have been submitted, and we are awaiting issuance of one remaining permit as of 8/13/2017: Army Corps of Engineers federal authorization on the Chester Creek Small Projects Joint Permit.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 763593
Invoice Date : 08/24/2017
Project : EGMA1505
Project Name : RCSTP and Pump Station O&M Manual

For Services Rendered through: 8/13/2017

FINAL INVOICE

Final review of O&M Manual with PW Director; final updates to Manual; and reproduction and binding of 22 hard copies for Township staff.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	1,205.75
Expense :	0.00
Phase Total :	1,205.75

Amount Due This Invoice

\$1,205.75

Fee :	15,500.00
Prior Billings :	13,433.25
Current Billings :	1,205.75
Total Billings :	14,639.00

Phase : **** -- Professional Services

Labor

Class	Hours/ Units	Rate	Amount
Authority Engineer	1.75	119.00	208.25
Senior Professional	8.75	114.00	997.50
Labor Total:	10.50		1,205.75

Total Phase : **** -- Professional Services

Labor :	\$1,205.75
Expense :	\$0.00

Total Project : EGMA1505 -- RCSTP and Pump Station O&M Manual

Labor :	\$1,205.75
Expense :	\$0.00

OLC RS 9-8-17

East Goshen Municipal Authority
EGMA1505 Invoice Summary
Invoice Date 8/24/2017

Project: EGMA1505
Pennoni Job No.: RCSTP & Pump Station O&M Manual
Invoice No: 763593
Invoice Period: 6/19/2017 to 8/13/2017
Initial Authorization: \$ 12,500.00 **Date:** 8/24/2017
Contract Amount: \$ 15,500.00
Previously Invoiced: \$ 13,433.25
Current Invoice: \$ 1,205.75
Invoiced to Date (\$): \$ 14,639.00
Invoiced to Date (%): 94%
Remaining Budget (\$): \$ 861.00
Remaining Budget (%): 6%

Budget by Phase:

Phase Name: RCSTP & Pump Station O&M Manual
Phase Budget: \$ 15,500.00
Previously Invoiced: \$ 13,433.25
Current Invoice: \$ 1,205.75
Invoiced to Date (\$): \$ 14,639.00
Invoiced to Date (%): 94%
Remaining Budget (\$): \$ 861.00
Remaining Budget (%): 6%

Comments: FINAL INVOICE
Final review of O&M Manual with PW Director; final updates to Manual; and reproduction and binding of 22 hard copies for Township staff.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 763595
Invoice Date : 08/24/2017
Project : EGMA1701
Project Name : 2017 General Services

For Services Rendered through: 8/13/2017

Prepared August Engineer's Report, reviewed August RCSTP operator's report, and attended August MA meeting. Prepared and submitted self-liquidating debt financial analysis and certification report for bond issuance. Performed one-year warranty inspection of Spraywall liners in 6 manholes in White Chimneys.

RCSTP SBR Tanks CIM Coatings - Field visit by Authority Engineer to observe SBR #1 coating; structural engineers initiated concrete condition assessment recommendations by reviewing documentation on history of coatings including installation rationale, correspondence, deficiencies, design plans, shop drawings, and warranty information and also prepared assessment recommendations memo.

RCSTP Caustic Soda Pilot Study - Further evaluation of caustic feed tap location; continued coordination with plant operator for sampling plan and review of chemical feed rate calculations; and obtained price quote for larger feed pump.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	6,222.00
Expense :	0.00
Phase Total :	6,222.00

Amount Due This Invoice

\$6,222.00

Fee :	21,700.00
Prior Billings :	12,516.00
Current Billings :	6,222.00
Total Billings :	18,738.00

olc R S 9-8-17

Continued on next page...

INVOICES DUE ON RECEIPT. Invoices outstanding over 30 days will have a Service Charge of 1 1/2% per month.

...Continued from previous page

Phase : **** -- Professional Services

Labor			
<i>Class</i>	<i>Hours/ Units</i>	<i>Rate</i>	<i>Amount</i>
Authority Engineer	20.00	119.00	2,380.00
Senior Professional	30.25	114.00	3,448.50
Associate Professional	2.00	88.00	176.00
Senior Engineering Technician	2.50	87.00	217.50
Labor Total:	54.75		6,222.00

Total Phase : **** -- Professional Services

Labor : \$6,222.00

Expense : \$0.00

Total Project : EGMA1701 -- 2017 General Services

Labor : \$6,222.00

Expense : \$0.00

East Goshen Municipal Authority
EGMA1701 Invoice Summary
Invoice Date 8/24/2017

Project: EGMA1701
Pennoni Job No.: 2017 General Services
Invoice No: 763595
Invoice Period: 7/17/2017 to 8/13/2017
Initial Authorization: \$ 12,700.00 **Date:** 8/24/2017
Contract Amount: \$ 21,700.00
Previously Invoiced: \$ 12,516.00
Current Invoice: \$ 6,622.00
Invoiced to Date (\$): \$ 19,138.00
Invoiced to Date (%): 88%
Remaining Budget (\$): \$ 2,562.00
Remaining Budget (%): 12%

Budget by Phase:

Phase Name: 2017 General Services
Phase Budget: \$ 21,700.00
Previously Invoiced: \$ 12,516.00
Current Invoice: \$ 6,622.00
Invoiced to Date (\$): \$ 19,138.00
Invoiced to Date (%): 88%
Remaining Budget (\$): \$ 2,562.00
Remaining Budget (%): 12%

Comments: Prepared August Engineer's Report, reviewed August RCSTP operator's report, and attended August MA meeting. Prepared and submitted self-liquidating debt financial analysis and certification report for bond issuance. Performed one-year warranty inspection of Spraywall liners in 6 manholes in White Chimneys.
RCSTP SBR Tanks CIM Coatings - Field visit by Authority Engineer to observe SBR #1 coating; structural engineers initiated concrete condition assessment recommendations by reviewing documentation on history of coatings including installation rationale, correspondence, deficiencies, design plans, shop drawings, and warranty information and also prepared assessment recommendations memo.
RCSTP Caustic Soda Pilot Study - Further evaluation of caustic feed tap location; continued coordination with plant operator for sampling plan and review of chemical feed rate calculations; and obtained price quote for larger feed pump.



INVOICE

Newark, DE
302-655-4451 Fax: 302-654-2895

Remit Payment To:
Pennoni
P.O. Box 827328
Philadelphia, PA 19182-7328

East Goshen Municipal Authority
1580 Paoli Pike
West Chester, PA 19380-6199
Attention: Louis F. Smith, Twp Mgr.

Invoice # : 763596
Invoice Date : 08/24/2017
Project : EGMA1704
Project Name : Supplee Valley Pipe Lining & MH
Reh

For Services Rendered through: 8/13/2017

Reviewed and analyzed CCTV videos of sewers; prepared rehabilitation scope recommendations, cost estimates, exhibits, and multi-year construction programming approach; and evaluated Costars vs. public bidding contracting alternatives.

Phase : **** -- Professional Services

Total Phase : **** -- Professional Services

Labor :	3,647.50
Expense :	0.00
Phase Total :	3,647.50

Amount Due This Invoice

\$3,647.50

Fee :	7,000.00
Prior Billings :	0.00
Current Billings :	3,647.50
Total Billings :	3,647.50

Phase : **** -- Professional Services

Labor

Class	Hours/ Units	Rate	Amount
Authority Engineer	5.00	119.00	595.00
Senior Professional	6.25	114.00	712.50
Graduate Professional	29.25	80.00	2,340.00
Labor Total:	40.50		3,647.50

Total Phase : **** -- Professional Services

Labor :	\$3,647.50
Expense :	\$0.00

Total Project : EGMA1704 -- Supplee Valley Pipe Lining & MH Reh

Labor :	\$3,647.50
Expense :	\$0.00

OK 25 9-8-17

East Goshen Municipal Authority
EGMA1704 Invoice Summary
Invoice Date 8/24/2017

Project: EGMA1704
Pennoni Job No.: Suplee Valley Pipe Lining & MH Reh
Invoice No: 763596
Invoice Period: NTP to 8/13/2017
Initial Authorization: \$ 7,000.00 **Date:** 8/24/2017
Contract Amount: \$ 7,000.00
Previously Invoiced: \$ -
Current Invoice: \$ 3,647.50
Invoiced to Date (\$): \$ 3,647.50
Invoiced to Date (%): 52%
Remaining Budget (\$): \$ 3,352.50
Remaining Budget (%): 48%

Budget by Phase:

Phase Name: Suplee Valley Pipe Lining & MH Reh
Phase Budget: \$ 7,000.00
Previously Invoiced: \$ -
Current Invoice: \$ 3,647.50
Invoiced to Date (\$): \$ 3,647.50
Invoiced to Date (%): 52%
Remaining Budget (\$): \$ 3,352.50
Remaining Budget (%): 48%

Comments: Reviewed and analyzed CCTV videos of sewers; prepared rehabilitation scope recommendations, cost estimates, exhibits, and multi-year construction programming approach; and evaluated Costars vs. public bidding contracting alternatives.



Gawthrop Greenwood, PC
Attorneys at Law

17 East Gay Street, Suite 100 | (p) 610-696-8225
West Chester, PA 19381-0562 | (f) 610-344-0922
gglaw@gawthrop.com | www.gawthrop.com

East Goshen Municipal Authority
1580 Paoli Pike
West Chester PA 19380

Page: 1
09/06/2017
Client No: 6604-001R
Invoice No. 184952

General Authority Services

Fees

		Hours	
08/07/2017			
PMM	Emails from/to R Smith regarding cancellation of sewer plant tour; Review and analyze meeting packet in preparation for Board meeting.	0.60	
PMM	Attend Board meeting.	1.60	
	For Current Services Rendered	2.20	440.00

		Recapitulation		
Timekeeper		Hours	Hourly Rate	Total
Patrick M. McKenna		2.20	\$200.00	\$440.00

Previous Balance	\$1,460.00
Total Current Charges	440.00

08/14/2017	Payment	-940.00
08/14/2017	Payment	-520.00
	Total Payments	-1,460.00
	Balance Due	<u>\$440.00</u>

OK RS
9-8-17

To ensure proper credit, please write client number on
your check when returning payment. Thank You.
A finance charge of 1.25% per month (15% annually) may be
charged on balances not paid 60 days after the invoice date.

Memo

To: Municipal Authority
From: Jon Altshul
Re: MA August Financial Report
Date: September 6, 2017

In August, the Municipal Authority recorded \$2,981 in income (mostly from a \$2,000 tap-in fee for 1418 Strasburg) and \$6,940 in expenses, for a negative variance of \$3,959. Expenses included \$2,589 for Reservoir Road Pump Station engineering; \$269 for West Goshen engineering (capital); \$2,621 for general engineering and \$1,460 for legal services.

As of August 31st, the fund balance was \$1,178,108 of which \$1,140,872 is in the main construction account (most of which represents the 2013 note).

On September 6, the Board of Supervisors approved fraud protection services for Township bank accounts. Specifically, for the Municipal Authority Bank account, it is recommended that the Authority have a service called "ACH Monitor" to prevent unauthorized electronic withdrawals. The cost of this service is \$15 per month.

Recommended motion: I authorize the Township to establish fraud protection services on the Municipal Authority account.

Finally, it is my understanding that the MA increased its engineering budget by \$9,000 at its last meeting. I went ahead and increased the line item in our financial system as well as the transfer from the sewer operating fund by \$9,000 to offset this expense, so that the MA budget remains balanced. On the Township side, the Sewer Operating Side is doing very well this year. As a result, the BOS approved a motion on August 15th, to increase the transfer to the Municipal Authority by \$9,000. This was offset by a reduction in the O&M line-item for West Goshen, which is coming in under budget.

EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE
WEST CHESTER, PA
Municipal Authority
AUGUST 2017

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
MUNICIPAL AUTHORITY BEGINNING FUND BALANCE - CAPITAL				
MUNICIPAL AUTHORITY BEGINNING FUND BALANCE - 2013 NOTES (FULTON BANK)			1,176,189.08	
MUNICIPAL AUTHORITY BEGINNING FUND BALANCE DNB CAPITAL ACCOUNT			1,142,761.14	
			33,427.94	
CAPITAL:				
REVENUE				
INTEREST EARNED - CONSTRUCTION	07341 1020	3,250	980.51	6,350.05
TOTAL REVENUE		3,250	980.51	6,350.05
EXPENSES				
C.C. CAPITAL - COLLECTION	07424 7420	212,486	0.00	0.00
RESERVOIR PUMP STATION - ENGINEER	07428 1000	0	2,589.25	16,304.75
RESERVOIR PUMP STATION CONSTRUCTION	07428 2000	0	0.00	0.00
WEST GOSHEN CAPITAL	07429 6100	0	269.25	269.25
TOTAL EXPENSES		212,486	2,858.50	16,574.00
NET CAPITAL		(209,236)	(1,877.99)	(10,223.95)
MUNICIPAL AUTHORITY ENDING FUND BALANCE - CAPITAL				
MUNICIPAL AUTHORITY ENDING FUND BALANCE - 2013 NOTES (FULTON BANK)			1,174,311.09	
MUNICIPAL AUTHORITY ENDING FUND BALANCE DNB CAPITAL ACCOUNT			1,140,871.79	
			33,439.30	

EAST GOSHEN TOWNSHIP
1580 PAOLI PIKE
WEST CHESTER, PA
Municipal Authority
AUGUST 2017

Account Title	Acct #	Annual Budget	Month To Date Actual	Year To Date Actual
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OPERATING:

MUNICIPAL AUTHORITY BEGINNING FUND BALANCE - OPERATING (BB&T) 5,878.02

REVENUE

INTEREST EARNINGS	07341 1000	10	0.13	7.10
C.C. TAPPING FEES	07364 1100	14,296	2,000.00	6,000.00
CONNECTION FEES - SEWER	07364 1130	0	0.00	1,692.00
TRANSFER FROM SEWER OPERATING	07392 0500	109,755	0.00	70,000.00

TOTAL REVENUE

		124,061	2,000.13	77,699.10
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EXPENSES

ADMINISTRATIVE WAGES	07424 1400	31,620	0.00	15,448.00
MISCELLANEOUS EXPENSE	07424 3000	2,500	0.00	2,207.52
MUNIC.AUTH.-AUDITING	07424 3110	9,078	0.00	9,200.00
ENGINEERING SERVICES	07424 3130	46,500	2,621.25	43,933.50
LEGAL SERVICES	07424 3140	9,250	1,460.00	11,563.16
M.C.-DVRFA-DEBT SERVICE	07471 1000	26,320	0.00	0.00
M.C.-DVRFA-INTEREST PAYMN	07472 1010	2,043	0.00	0.00

TOTAL EXPENSES

		127,311	4,081.25	82,352.18
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NET OPERATING

		(3,250)	(2,081.12)	(4,653.08)
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MUNICIPAL AUTHORITY ENDING FUND BALANCE - OPERATING 3,796.90

MUNICIPAL AUTHORITY ENDING FUND BALANCE CAPITAL + OPERATING 1,178,107.99

Report Date 09/06/17

GL Transaction Details

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MGRP18 run by BRIAN

12 : 48 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000	INTEREST	EARNINGS				0.00				
	1701	JE	56730		0.23		02/03/17	INTEREST		INTEREST EARNED JANUARY 2017 07 FUND
	1701			0.00	0.23	-0.23				
	1702		57134		0.06		03/06/17	INTEREST		INTEREST EARNED FEBRUARY 2017 07 FUND
	1702			0.00	0.06	-0.29				
	1703		57173		3.23		03/08/17	INTEREST		ADD'L INTEREST ADDED FROM JAN. 2017
			57549		0.61		04/05/17	INTEREST		INTEREST EARNED MARCH 2017 07 FUND
	1703			0.00	3.84	-4.13				
	1704		57927		1.06		05/03/17	INTEREST		INTEREST EARNED APRIL 2017 07 FUND
	1704			0.00	1.06	-5.19				
	1705		58423		0.96		06/02/17	INTEREST		INTEREST EARNED MAY 2017 07 FUND
	1705			0.00	0.96	-6.15				
	1706		58876		0.66		07/03/17	INTEREST		INTEREST EARNED JUNE 2017 07 FUND
	1706			0.00	0.66	-6.81				
	1707		59333		0.16		08/01/17	INTEREST		INTEREST EARNED JULY 2017 07 FUND
	1707			0.00	0.16	-6.97				
	1708		59780		0.13		09/01/17	INTEREST		INTEREST EARNED AUGUST 2017 07100.1000
	1708			0.00	0.13	-7.10				

Report Date 09/06/17

GL Transaction Details

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MGRP18 run by BRIAN

12 : 48 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1000	****	***	****	0.00	7.10	-7.10				
07341-1020	INTEREST	EARNED	- CONSTRUCTION		0.00					
1701	56730			594.59			02/03/17	INTEREST		INTEREST EARNED JANUARY 2017 07 FUND
1701				0.00	594.59	-594.59				
1702	57134			536.20			03/06/17	INTEREST		INTEREST EARNED FEBRUARY 2017 07 FUND
1702				0.00	536.20	-1,130.79				
1703	57549			743.58			04/05/17	INTEREST		INTEREST EARNED MARCH 2017 07 FUND
1703				0.00	743.58	-1,874.37				
1704	57927			854.28			05/03/17	INTEREST		INTEREST EARNED APRIL 2017 07 FUND
1704				0.00	854.28	-2,728.65				
1705	58423			815.38			06/02/17	INTEREST		INTEREST EARNED MAY 2017 07 FUND
1705				0.00	815.38	-3,544.03				
1706	58876			843.23			07/03/17	INTEREST		INTEREST EARNED JUNE 2017 07 FUND
1706				0.00	843.23	-4,387.26				
1707	59333			982.28			08/01/17	INTEREST		INTEREST EARNED JULY 2017 07 FUND
1707				0.00	982.28	-5,369.54				
1708	59796			980.51			09/05/17	INTEREST		INTEREST EARNED AUGUST 2017 07 FUND
1708				0.00	980.51	-6,350.05				

East Goshen Township General Ledger

Report Date 09/06/17

GL Transaction Details

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MGRP18 run by BRIAN

12 : 48 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07341-1020	****	***	****	0.00	6,350.05	-6,350.05				
07364-1100	C.C.		TAPPING FEES			0.00				
	1704		57798		2,000.00		04/25/17	RECLASS		RECLASS TAP IN FEE
		RE	57797		2,000.00		04/25/17	57797 1		SEWER TAP IN - 5 SCHOOL LN
										C.C. TAPPING FEES
	1704			0.00	4,000.00	-4,000.00				
	1708		59745		2,000.00		08/31/17	CK105		TAP IN FEE-1418 E. STRASBRG
										C.C. TAPPING FEES
	1708			0.00	2,000.00	-6,000.00				
07364-1100	****	***	****	0.00	6,000.00	-6,000.00				
07364-1110	R.C.		TAPPING FEES			0.00				
	1704	JE	57798	2,000.00			04/25/17	RECLASS		RECLASS TAP IN FEE
		RE	57795		2,000.00		04/25/17	57795 1		SEWER TAP IN - 3 SCHOOL LN
	1704			2,000.00	2,000.00	0.00				
07364-1110	****	***	****	2,000.00	2,000.00	0.00				
07364-1130	CONNECTION FEES - SEWER					0.00				
	1702	CR	56762		423.00		02/07/17	125 25	10162	1 JACOBS, ROBERT & CHERYL
			56823		423.00		02/13/17	125 26	10160	1 GEORGE SMITH & CHRISTINA CONLE
					423.00		02/13/17	125 27	10161	1 STOFFLET, MICHAEL
		**		0.00	846.00	***				
	1702			0.00	1,269.00	-1,269.00				
	1703		57212		423.00		03/09/17	125 54	10163	1 PAPPANO, JOSEPH & PATRICIA
	1703			0.00	423.00	-1,692.00				
07364-1130	****	***	****	0.00	1,692.00	-1,692.00				

East Goshen Township General Ledger

Report Date 09/06/17

GL Transaction Details

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MGRP18 run by BRIAN

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Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07392-0500		TRANSFER FROM SEWER OPERATING			0.00				
		JE 57171		25,000.00		03/08/17	DEPOSIT		DEPOSIT FR: SEWER TO MUNICIPAL
1703			0.00	25,000.00	-25,000.00				
1704		57579		40,000.00		04/06/17	DEPOSIT		DEPOSIT TO MA ACCT.7100.1000
1704			0.00	40,000.00	-65,000.00				
1707		59229		5,000.00		07/26/17	XFER		XFER \$ FROM 05 TO 07 OPERATING
1707			0.00	5,000.00	-70,000.00				
07392-0500	****	*** ****	0.00	70,000.00	-70,000.00				
07424-1400		ADMINISTRATIVE WAGES			0.00				
		1703 CD 57378	7,724.00			03/22/17	3048		425 EAST GOSHEN TOWNSHIP - GENERAL QTR.1 2017 REIMBURSEMENT FROM MA
1703			7,724.00	0.00	7,724.00				
1706		58848	7,724.00			06/30/17	3059		425 EAST GOSHEN TOWNSHIP - GENERAL 2017 QTR.2 REIMBURSEMENT FROM MA
1706			7,724.00	0.00	15,448.00				
07424-1400	****	*** ****	15,448.00	0.00	15,448.00				
07424-3000		MISCELLANEOUS EXPENSE			0.00				
		1701 56280	984.30			01/04/17	3040		2132 PENNSYLVANIA MUNICIPAL AUTHORITIES ASSOC 2017 ACTIVE MEMBERSHIP DUES
		56424	3.22			01/13/17	3041		425 EAST GOSHEN TOWNSHIP - GENERAL CORRECT BB&T DEPOSIT OF REMAININ BALANCE OF CLOSED ACCT.1100.1010 07100.1000
1701			987.52	0.00	987.52				
1706		58814	1,220.00			06/29/17	3058		3871 DELAWARE RIVER BASIN COMMISSION D-1984-056 CP ANNUAL FEE - WATER DISCHARGE

East Goshen Township General Ledger

Report Date 09/06/17

GL Transaction Details

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MGRF18 run by BRIAN

12 : 48 PM

Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
1706			1,220.00	0.00	2,207.52				
07424-3000	****	*** ****	2,207.52	0.00	2,207.52				
07424-3110	MUNIC.AUTH.-AUDITING				0.00				
1703		57470	4,600.00			03/30/17	3049	808	MAILLIE FALCONIERO & CO. PROGRESS BILLING 2016 MUN.AUTH.
1703			4,600.00	0.00	4,600.00				
1704		57655	4,600.00			04/13/17	3052	808	MAILLIE FALCONIERO & CO. 2016 EXAM. FINAN. STMTS. MUN.AUT
1704			4,600.00	0.00	9,200.00				
07424-3110	****	*** ****	9,200.00	0.00	9,200.00				
07424-3130	ENGINEERING SERVICES				0.00				
1701		56425	4,399.50			01/13/17	3042	1052	PENNONI ASSOCIATES INC. SERVICES THRU 10/16/16 RCSTP & P STATION
1701			4,399.50	0.00	4,399.50				
1702		56874	2,044.00			02/17/17	3045	1052	PENNONI ASSOCIATES INC. SERVICES THRU 1/15/17 2016 CHAP
1702			2,044.00	0.00	6,443.50				
1703		57328	7,962.00			03/17/17	3047	1052	PENNONI ASSOCIATES INC. SERV.THUR 2/12/17 2017 GEN.SERV
1703			7,962.00	0.00	14,405.50				
1704		57510	5,416.50			04/03/17	3050	1052	PENNONI ASSOCIATES INC. SERV.THUR 12/11/16 2016 GEN.SERV
		57655	7,306.50			04/13/17	3053	1052	PENNONI ASSOCIATES INC. SERVICE THRU 3/19/17 RCSTP PERMI
1704			12,723.00	0.00	27,128.50				

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07424-3130	1705	CD	58070	8,211.75			05/11/17	3054	1052	PENNONI ASSOCIATES INC. SERVICE THRU 4/16/17 RCSTP & PUM STATION
1705				8,211.75	0.00	35,340.25				
1706		58614		2,805.25			06/14/17	3057	1052	PENNONI ASSOCIATES INC. SERVICES THRU 5/14/17 RCSTP PERM
1706				2,805.25	0.00	38,145.50				
1707		58978		3,166.75			07/12/17	3060	1052	PENNONI ASSOCIATES INC. SERVICES THRU 6/18/17 WHITE CHIM
1707				3,166.75	0.00	41,312.25				
1708		59496		2,621.25			08/11/17	3063	1052	PENNONI ASSOCIATES INC. SERVICES THRU 7/16/17-2017 GEN.S
1708				2,621.25	0.00	43,933.50				
07424-3130	****	***	****	43,933.50	0.00	43,933.50				
07424-3140	LEGAL SERVICES					0.00				
1701		56550		940.00			01/25/17	3043	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE - DEC. 2016 GEN.AU
1701				940.00	0.00	940.00				
1702		56874		597.50			02/17/17	3044	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE - JAN.2017 GEN.AUT
1702				597.50	0.00	1,537.50				
1703		57328		655.00			03/17/17	3046	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERV. FEB.2017 GEN.AUTHORI
1703				655.00	0.00	2,192.50				
1704		57655		2,140.00			04/13/17	3051	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE - MARCH 2017 GEN.A

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Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
1704				2,140.00	0.00	4,332.50				
1705		58187		2,407.41			05/19/17	3055	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE 4/4-4/28/17 GEN.AU
1705				2,407.41	0.00	6,739.91				
1706		58614		1,640.00			06/14/17	3056	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERV. - MAY 2017 GEN.AUTH.
				1,723.25			06/14/17	3057	1052	PENNONI ASSOCIATES INC. SERVICES THRU 5/14/17 2017 GEN.S
		**		3,363.25	0.00	***				
1706				3,363.25	0.00	10,103.16				
1708		59496		1,460.00			08/11/17	3062	528	GAWTHROP GREENWOOD & HALSTED LEGAL SERVICE JUNE 2017 - GEN.AU
1708				1,460.00	0.00	11,563.16				
07424-3140	****	***	****	11,563.16	0.00	11,563.16				
07428-1000	RESERVOIR PUMP STATION - ENGINEER					0.00				
1701		56426		2,546.50			01/13/17	22002	1052	PENNONI ASSOCIATES INC. SERVICE THRU 10/16/16 RESERV.RD
		56551		375.00			01/25/17	22003	263	CHESTER COUNTY CONSERVATION DISTRICT RESERVOIR RD. NPDES PLAN REVIEW
1701				2,921.50	0.00	2,921.50				
1702		56875		1,422.75			02/17/17	22004	1052	PENNONI ASSOCIATES INC. SERVICES THRU 1/15/17 RESERV.RD
1702				1,422.75	0.00	4,344.25				
1704		57511		1,784.25			04/03/17	22005	1052	PENNONI ASSOCIATES INC. SERV.THUR 12/11/17 RESERVOIR RD.
		57656		1,516.50			04/13/17	22006	1052	PENNONI ASSOCIATES INC. SERV.THUR 3/19/17 RESERV.RD PS
1704				3,300.75	0.00	7,645.00				

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MGRF18 run by BRIAN

12 : 48 PM

Acct #	Per	Src	Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07428-1000	1705	CD	58071	1,261.50			05/11/17	22007	1052	PENNONI ASSOCIATES INC. SERVICES THRU 4/16/17 RESERV.RD
	1705			1,261.50	0.00	8,906.50				
	1706	58616		2,083.00			06/14/17	22009	1052	PENNONI ASSOCIATES INC. SERVICE THRU 5/24/17 RESERV.RD P
	1706			2,083.00	0.00	10,989.50				
	1707	58979		2,726.00			07/12/17	22010	1052	PENNONI ASSOCIATES INC. SERVICE THRU 6/18/17 RESERV.RD P
	1707			2,726.00	0.00	13,715.50				
	1708	59495		2,589.25			08/11/17	22011	1052	PENNONI ASSOCIATES INC. SERVICE THRU 7/16/17 RESERVOR RD
	1708			2,589.25	0.00	16,304.75				
07428-1000	****	***	****	16,304.75	0.00	16,304.75				
07429-6100	WEST GOSHEN CAPITAL					0.00				
	1705	58071		705.00			05/11/17	22007	1052	PENNONI ASSOCIATES INC. SERV. THRU 4/16/17 W.GOSHEN SEWE
				220,814.48			05/11/17	22008	3843	WEST GOSHEN SEWER AUTHORITY PROJECT COSTS RE: CONSTRUCTION, LABOR, PARTS, ENGINEERING, LEGAL TESTING
	**			221,519.48	0.00	***				
	1705			221,519.48	0.00	221,519.48				
	1706	58616		1,146.00			06/14/17	22009	1052	PENNONI ASSOCIATES INC. SERVICE THRU 5/24/17 W.GOSHEN SE
	1706			1,146.00	0.00	222,665.48				
	1708	59495		269.25			08/11/17	22011	1052	PENNONI ASSOCIATES INC. SERVICE THRU 7/16/17 W.GOSH SEWE
	1708			269.25	0.00	222,934.73				

East Goshen Township General Ledger

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Acct #	Per	Src Trx #	Debits	Credits	Beg/End Bal	Date	Check/Ref #	ID #	Name/Description
07429-6100	****	***	****	222,934.73	0.00	222,934.73			
Grand Total			323,591.66	86,049.15	237,542.51				

Source	Debits	Credits
JE	2,000.00	78,357.15
RE	0.00	6,000.00
CR	0.00	1,692.00
CD	321,591.66	0.00
	323,591.66	86,049.15



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY

PHILADELPHIA DISTRICT CORPS OF ENGINEERS
WANAMAKER BUILDING, 100 PENN SQUARE EAST
PHILADELPHIA, PENNSYLVANIA 19107-3390

AUG 17 2017

Regulatory Branch
Application Section II

SUBJECT: CENAP-OP-R-2017-0205-46 (PASPGP-5)
Project Name: RESERVOIR ROAD FORCE MAIN
PADEP #: E15-877 (Chester Creek) and GPs-051515327 and 081515309 (Ridley Creek)
Start Decimal Latitude: 39.972528° Longitude: -75.548231°
End Decimal Latitude: 39.985215° Longitude: -75.528128°

Mr. Louis Smith
East Goshen Municipal Authority
1580 Paoli Pike
West Chester, Pennsylvania 19380



Dear Mr. Smith:

Reference is made to your request for Department of the Army approval for the Reservoir Road Force Main and Pump Station project as described in a letter from your consultant, Pennoni Associates, dated April 18, 2017. The approved work includes the following activities:

A) Chester Creek – 8" force main open-cut trenching - 25 feet of waterway impacting a total of 490 square feet of area below the ordinary high water mark for both force main placement (75 square feet of permanent impact) and temporary impacts from sandbag dewatering and a temporary rock covered culvert vehicle access; and

B) Ridley Creek – 8" force main open cut trenching - 32 feet of waterway impacting a total of 725 square feet of area below the ordinary high water mark for both force main placement (96 square feet of permanent impact) and temporary impacts from sandbag dewatering and a temporary rock covered culvert vehicle access; or

C) Ridley Creek – 8" force main directional drilling (non-regulated) – beneath 32 feet of waterway and including a total of 375 square feet of area below the ordinary high water mark for temporary impacts from a temporary rock covered culvert vehicle access (regulated).

All such work is part of the subject 1.7 mile long force main and pump station project starting at the northeastern corner of the intersection of Strasburg and Reservoir Roads and ending at a point approximately 1700 linear feet from intersection of Bow Tree Drive and Beaumont Circle, in East Goshen Township, Chester County, Pennsylvania.

We have determined that your proposed work, if accomplished in accordance with the enclosed terms and conditions, is authorized by the Pennsylvania State Programmatic General Permit-5 (PASPGP-5 – Enclosure 1). This PASPGP-5 verification provides federal authorization pursuant to Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. This authorization may be subject to modification, suspension, or revocation if

any of the information contained in the application, including the plans, is later found to be in error. The following conditions must be followed for purposes of the PASPGP-5. A PASPGP-5 Permit Compliance, Self-Certification Form must be completed and returned to the appropriate U.S. Army Corps of Engineers office upon completion of construction (Enclosure 2).

You are hereby authorized by the U.S. Army Corps of Engineers to conduct the above referenced work under the authority of the enclosed PASPGP-5 (Enclosure 1). Please note that you must conduct the authorized work in accordance with the requirements and conditions of the PASPGP-5 and the special conditions on the following page.

Special Conditions:

1. All work done in association with the above noted project shall be conducted in accordance with Sheets 1-4, 6, 11, 12, 17, and 19-23 of a 37-page project plan set prepared by Pennoni Associates, Incorporated and entitled "RESERVOIR ROAD PUMP STATION ANDS FORCE MAIN PERMIT PLANS, East Goshen Township, Chester County, Pennsylvania, September 2015, Last Revised: July 2017, Prepared For: East Goshen Municipal Authority, 1580 Paoli Pike, West Chester, PA 19380, (610) 692-7171," Project EGMA 1504, last revised 07/24/2017.
2. Construction activities shall not result in the temporary disturbance or alteration of greater than the following (including permanent impacts as identified):
 - A) 490 square feet of waters of the United States below the ordinary high water mark of Chester Creek associated with the discharge of dredged and/or fill materials in the waterway for open-cut trenching of the force main (75 square feet of permanent impact) and temporary construction of sandbag diversion dam, and rock-covered culverted vehicle access; and
 - B) 725 square feet of waters of the United States below the ordinary high water mark of Ridley Creek associated with the discharge of dredged and/or fill materials in the waterway for open-cut trenching of the force main (96 square feet of permanent impact) and temporary construction of sandbag diversion dam and rock-covered culverted vehicle access; or.
 - C) 375 square feet of waters of the United States below the ordinary high water mark of Ridley Creek associated with the discharge of dredged and/or fill materials in the waterway for temporary construction a rock-covered culverted vehicle access for directional drilling of the force main beneath the creek.
3. Any deviation in construction methodology or project design from that shown on the above noted drawings must be approved by this office, in writing, prior to performance of the work. This includes modifications deemed necessary by the contractor at the time of construction. All modifications to the above noted project plans shall be approved, in writing, by this office. No work shall be performed prior to written approval of this office.
4. This office shall be notified within 10 days of the completion of the authorized work by completing and signing the enclosed "PASPGP-5 PERMIT COMPLIANCE, SELF CERTIFICATION FORM" (Enclosure 2). All notifications required by this condition shall be in writing and shall be transmitted to this office by registered or electronic mail. Oral notifications are not acceptable. Similar notification is required each time maintenance work is to be done under the terms of this Corps of Engineers permit.

5. That this authorization for the Chester Creek crossing shall become invalid should the PADEP permit E15-877 expire. This authorization will become valid upon extension of said PADEP permit or issuance of a new permit for the subject work.

6. That the permittee shall comply with all requirements of the letter from the U.S. Fish and Wildlife Service dated November 14, 2014 to insure that the project will not be likely to adversely affect bog turtles [*Glyptemys (Clemmys) muhlenbergii*]. If any individuals are noted during any project phase, you are required to stop all work at that portion of the project and immediately notify this office and the U.S. Fish and Wildlife Service in State College, Pennsylvania. No work at that location may commence until this office has determined, in coordination with the U.S. Fish and Wildlife Service, that the project shall continue to have no likely adverse effects to listed species within the Corps' action area.

7. That this approval does not include the discharge of dredged and/or fill materials in regulated waters or wetlands associated with the remediation of inadvertent returns of fluids associated with horizontal directional drilling without prior approval of this office.

If you should have any questions regarding this matter, please contact David Caplan of this office at (215) 656-6731 or write to the above address.

Sincerely,

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

Edward E. Bonner
Chief, Regulatory Branch

Enclosures



Christiana Executive Campus
121 Continental Drive, Suite 207
Newark, DE 19713
T: 302-655-4451
F: 302-654-2895

www.pennoni.com

September 8, 2017

EGMA1704

East Goshen Municipal Authority

Attn: Mark Miller, Public Works Director
1580 Paoli Pike
West Chester, PA 19380

**RE: Supplee Valley Sewer System Analysis
East Goshen Municipal Authority**

Dear Mr. Miller:

We have analyzed sanitary sewer televised videos from Supplee Valley conducted by Pipe Data View in the spring of 2015, and we have prepared the following condition assessment, prioritizations, and rehabilitation recommendations. Our analysis is based upon the understanding that all heavy flows from laterals have already been addressed and that deficiencies in the sewer between manholes C042M and C042L have also been addressed. The attached "Exhibit #1 - Supplee Valley Condition Assessment" map shows the priority rankings of the sewer lines as either High Priority, Medium Priority, or Good Condition based on our analysis of the videos. We have used the term Good Condition to describe sewer lines that did not have any observed deficiencies. However, these asbestos cement pipes are likely to become subject to similar deficient conditions as the high and medium priority pipes over time, so they should be considered for rehabilitation after all High and Medium Priority lines have been addressed. A breakdown of the analysis is provided in the attached table, "Supplee Valley Sanitary Sewer Deficiency Prioritization".

We recommend that a total of 4,860 linear feet of sanitary sewer be rehabilitated with cured-in-place pipe lining, and manholes C042FF and C384 should be rehabilitated with pressure grouting to eliminate infiltration. Due to the large quantity of sanitary sewers to be lined and budget limitations, a 3-year rehabilitation program could be implemented as shown in the "Exhibit #2 - Supplee Valley Phasing" map and as further described in the table below. Each year's rehabilitation program maximizes the number of high priority pipes, from the "Supplee Valley Sanitary Sewer Deficiency Prioritization" table, while including certain upstream or downstream Medium Priority pipes that may be able to be lined continuous with High Priority pipes directly through a manhole.

<i>Street Name</i>	<i>Upstream Manhole</i>	<i>Downstream Manhole</i>	<i>Pipe Length (feet)</i>	<i>Pipe Dia. (inches)</i>	<i>No. Laterals</i>	<i>Estimated Cost</i>
YEAR ONE						
Mark Drive	C042K	C042J	251	8	4	\$13,525
Mark Drive	C042J	C042F	257	8	3	\$13,595
Easement	C042FF	C042D	281	8	2	\$14,555
Baldwin Drive	C042D	C042C	396	8	5	\$21,070
Baldwin Drive	C042C	C042B	256	8	4	\$13,775
Baldwin Drive	C042B	C041A	285	8	3	\$15,000
Baldwin Drive	C041A	C041	89	8	0	\$4,470
Manhole C384 and C042FF Pressure Grouting						\$5,000
Total			1,815	-	21	\$100,990

<i>Street Name</i>	<i>Upstream Manhole</i>	<i>Downstream Manhole</i>	<i>Pipe Length (feet)</i>	<i>Pipe Dia. (inches)</i>	<i>No. Laterals</i>	<i>Estimated Cost</i>
YEAR TWO						
Easement	C402	C401	395	8	4	\$20,765
Easement	C401	C400	357	8	3	\$18,580
Margaret Lane	C407	C406	159	8	4	\$8,935
Easement	C406	C405	291	8	5	\$15,820
Easement	C405	C404	371	8	0	\$18,555
Easement	C411	C410	145	8	2	\$7,740
Easement	C384	C040	163	8	0	\$8,155
Total			1,881	-	18	\$98,550
YEAR THREE						
Reservoir Road	C394	C385	318	8	4	\$16,920
Baldwin Drive	C417	C416	262	8	5	\$14,365
Mark Drive	C042I	C042H	278	8	5	\$15,170
Mark Drive	C042G	C042F	305	8	5	\$16,485
Total			1,163	-	19	\$62,940

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

Sincerely,

PENNONI ASSOCIATES INC.



Michael J. Ellis, PE
Authority Engineer

Attachments: Suplee Valley Sanitary Sewer Deficiency Prioritization
Exhibit #1 - Suplee Valley Condition Assessment
Exhibit #2 - Suplee Valley Phasing Exhibit

cc: Rick Smith, Township Manager

W:\Projects\EGMA\EGMA1704-Suplee Valley Pipe Lining MH Rehab\DOCUMENTS\Suplee Valley 2017 Analysis.docx

East Goshen Municipal Authority
Supplee Valley Sanitary Sewer Deficiency Prioritization

	Deficiency Ranking	Street Name	Upstream Manhole	Downstream Manhole	Estimated Length (feet)	No. Laterals	Pipe Dia. (inches)	Pipe Material	Notes
High Priority	1 (Worst)	Mark Drive	C042K	C042J	251	4	8	Asbestos Cement	(50.8') CC-1 (140.3') JSM-1 (143.3) FC-2 (158.5') HSV-5 (167.5') HSV-5 (176.3') FC-2 (176.3') HSV-5 (176.3) ID-3 (204.8) H-5 (218.5) H-3 (218.5) ID-3
	2	Baldwin Drive	C042C	C042B	256	4	8	Asbestos Cement	(0.5') FC-2 (31.3') FC-2 (83.0') CC-1 (87.1') Possible pipe intrusion (87.4') FC-2
	3	Mark Drive	C042J	C042F	257	3	8	Asbestos Cement	(2.9') H-5 (2.9') IR-4
	4	Katherine Lane ROW	C401	C400	357	3	8	Asbestos Cement	(248.5' - 250.1') RTJ-4 (266.7') HSV-5
	5	Katherine Lane ROW	C402	C401	395	4	8	Asbestos Cement	(257.7') External patch expanded into pipe; RPPD-4 (351.6') H-3 (351.6') RFB-2 (368.3') H-5 (368.2) RFB-2
	6	Mark Dr. - Baldwin Dr. Easement	C042FF	C042D	281	2	8	Asbestos Cement	(114.8') FC-2 (114.8') RTJ-2 (114.8') CC-1 (134.8') FC-2 (135.1') IR-4 (237.2') IR-4
	7	Reservoir Road ROW	C384	C040	163	0	8	Asbestos Cement	(0.0') ID-5 (0.1' - 3.2') RPRD-4 (157.8' - 163.1') RPRD-4 (160.9) Pipe turns; RPRD-4
	8	Mark Drive	C411	C410	145	2	8	Asbestos Cement	(74.5') External patch expanded into pipe; RPPD-4 (75.7') External patch expanded into pipe; RPPD-4
	9	Baldwin Drive	C417	C416	262	5	8	Asbestos Cement	(99.8') External patch expanded into pipe; RPPD-4 (116.6') External patch expanded into pipe; RPPD-4 (163.7') IS-0
	10	Baldwin Drive	C042B	C041A	285	3	8	Asbestos Cement	(100' to 130.5') MWLS-4
Medium Priority	11	Margaret Lane	C406	C405	291	5	8	Asbestos Cement	(41.5') Liner Frayed; LFDE-3 (80.6') Liner Frayed; LFDE-3 (234' - 238.9') RPRD-4
	12	Baldwin Lane Easement	C405	C404	371	0	8	Asbestos Cement	(194.9' - 228.6') MWLS-2 (253.6' - 272.6') MWLS-5
	13	Margaret Lane	C407	C406	159	4	8	Asbestos Cement	(152.1') Liner Frayed; LFDE-3 (157.0') Liner Frayed; LFDE-3
	14	Reservoir Road	C394	C385	318	4	8	Asbestos Cement	(248.1) RMC-3
	15	Baldwin Drive	C041A	C041	89	0	8	Asbestos Cement	(85.8') LFDE-3
	16	Mark Drive	C042I	C042H	278	5	8	Asbestos Cement	(85.7') FC-2 (155.5') FC-2
	17	Baldwin Drive	C042D	C042C	396	5	8	Asbestos Cement	(131.9') JSM-1 (393) JSM-1
	18	Mark Drive	C042G	C042F	305	5	8	Asbestos Cement	(225.1) JSM-1
Total					4,860	58			

Legend:

CC - Crack Circumferential
 FC - Fractured Circumferential
 H - Hole
 HSV - Hole Soil Visible
 ID - Infiltration Dripper

IR - Infiltration Runner
 IS - Infiltration Stain
 JSM - Joint Separation Medium
 LFDE - Liner Defective at End
 MWLS - Sag in Line Water Level > 50% of Pipe

RFB - Root Intrusion Fine in Pipe
 RMC - Root Intrusion Medium at Lateral Connection
 RPPD - Point Repair Patch Defective
 RPRD - Point Repair Pipe Defective
 RTJ - Root Intrusion at Joint

Note(s):

(1) The numbers after each designation are based on the PAPC Guideline rating system. The rating system goes from 1 to 5, where 5 is the worst condition.

