

Administrative Order CWA-03-2009-0313DN

Five-Year Summary of Activities

Respondent: **Hanover Township/City of Allentown Sewer**

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Date: September 4, 2014

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City of Allentown sewer map

Section 1: Progress Toward System Characterization

[Use each row in the tables in this section to describe the activities performed to characterize the system. Add or delete rows as necessary, if information regarding studies or results has not yet been presented to EPA, include that information in an appendix.]

Table 1-1: Flow Monitoring and Rehabilitation Effectiveness	
Flow Metering	3 Manholes – Above grade wet weather sewer observation
Rehabilitation Effectiveness Metering	No apparent reduction
Rehabilitation Effectiveness Results	N/A
Model Recalibration Metering	Meter subtraction

[Include any SSES activities performed to date, add or delete rows as needed]

Table 1-2: Sanitary Sewer Evaluation Study Summary			
SSES Activities	SSES Activity	Catchments Completed	Catchments Identified for SSES
	Nighttime Weiring		
	Smoke Testing	City of Allentown 3-31-10 4-1-10 4-6-10	
	Basement Inspections	8 of 11 homes inspected	
	Above Grade Storm Water	Entire tributary area	
	Wet weather observation	City of Allentown MH1-A on 6-25-12 MH5 on 6-25-12 MH3-7 on 6-25-12	
Manhole Inspections	67 Manholes		
CCTV Inspections	Completed 1-11-10 12,145 Linear Feet Main Line 78 Laterals		

[Include information about any system modeling done to date, add or delete rows as needed.]

Table 1-3: Hydraulic Modeling	
Model Development	N/A
Level of Service Analyses	N/A
Current System Upsizing	N/A

[Include any other engineering activities that have occurred since the AO was issued.
Examples include AO planning, workplans, trainings, studies, etc.]

Table 1-4: Other Engineering Activities
Allendale sewer main replacement
Allendale sewer manhole replacement
Wet weather observation of MH 5, MH 1-A and MH 3-7
Misc. spot repairs shown on included map
Lateral repairs shown on included map

Section 2: Progress Toward Eliminating Inflow

[Provide information on inflow sources removed, quantify sources removed to date. The page can be adjusted to landscape to make information fit. Add or delete rows or columns as needed.]

Table 2-1: Inflow Sources Removed					
Number of Basement Disconnections	Number of Manhole Dishes Installed	Number of Manhole Frame and Covers Reset/Replaced	Cleanout Repair / Cap Replacement	Roof Drains Disconnected	Other Lateral Repairs
N/A	32	2/0	10	NONE CONNECTED	12

Section 3: Progress Toward Eliminating Infiltration

[Provide information on infiltration sources removed, quantify sources removed to date. The page can be adjusted to landscape to make information fit. Add or delete rows or columns as needed.]

Table 3-1: Infiltration Sources Removed					
Number of Manhole Chimney Seals Repaired	Number of Manholes Lined	Number of Manholes Grouted	Cured-in-Place Pipe Line (LF)	Lateral Replacement (to Right-of-way)	Sewer Line Replacement (LF)
22	0	0	80 LFT	NONE	0
Sewer manholes replaced: 8 Mainline sewer replaced 742 LFT All work completed between 12-6-10 to 12-21-10					

Section 4: Other Related Projects

[Include any other projects related to the AO that were not outlined above. Add or delete rows as needed.]

Table 4-1: Other Related Projects
None

Section 5: Progress Toward Cooperative Management of Flows

[Include any information about cooperation with other utilities under the AO, examples include partnerships, meetings, joint operations, etc. Add or delete rows as needed.]

Table 5-1: Progress Toward Cooperative Management of Flows
Signatory meetings

Section 6: Funding

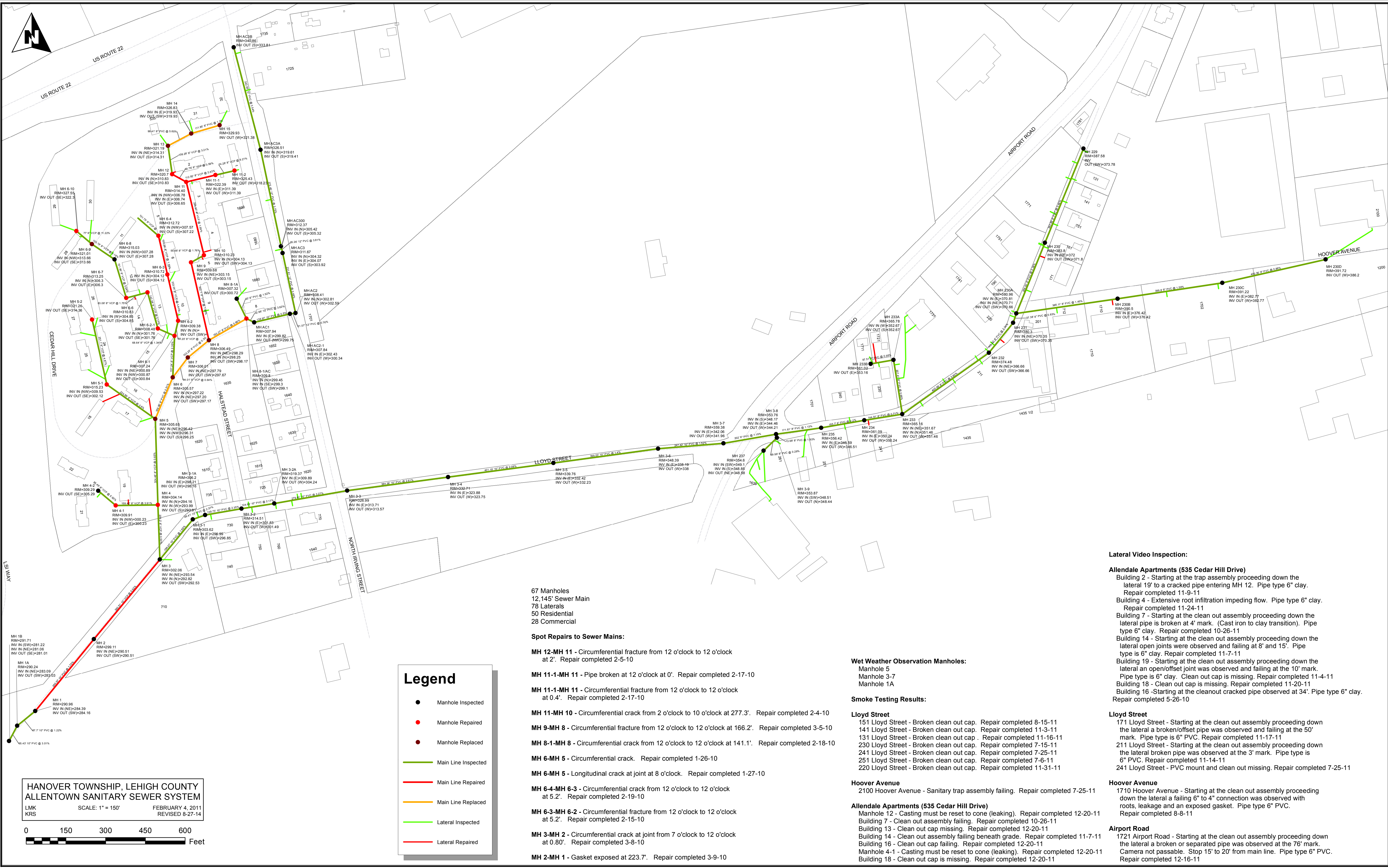
[Include costs of meeting the AO to date and anticipated future costs.]

Table 6-1: Financial Reports	
Cost of AO to Date	Construction and Engineering: \$257,465
Anticipated Costs to Eliminate SSOs	None at this time.

Section 7: Future Activities

[Include all activities remaining that will need to be completed to eliminate SSOs and meet the AO requirements. Include a schedule for these activities. Add or delete rows as needed.]

Table 7-1: Future Activities and Schedule	
Activity	Estimated Completion Date
N/A	



67 Manholes
 12,145' Sewer Main
 78 Laterals
 50 Residential
 28 Commercial

Spot Repairs to Sewer Mains:

- MH 12-MH 11** - Circumferential fracture from 12 o'clock to 12 o'clock at 2'. Repair completed 2-5-10
- MH 11-1-MH 11** - Pipe broken at 12 o'clock at 0'. Repair completed 2-17-10
- MH 11-1-MH 11** - Circumferential fracture from 12 o'clock to 12 o'clock at 0.4'. Repair completed 2-17-10
- MH 11-MH 10** - Circumferential crack from 2 o'clock to 10 o'clock at 277.3'. Repair completed 2-4-10
- MH 9-MH 8** - Circumferential fracture from 12 o'clock to 12 o'clock at 166.2'. Repair completed 3-5-10
- MH 8-1-MH 8** - Circumferential crack from 12 o'clock to 12 o'clock at 141.1'. Repair completed 2-18-10
- MH 6-MH 5** - Circumferential crack. Repair completed 1-26-10
- MH 6-MH 5** - Longitudinal crack at joint at 8 o'clock. Repair completed 1-27-10
- MH 6-4-MH 6-3** - Circumferential crack from 12 o'clock to 12 o'clock at 5.2'. Repair completed 2-19-10
- MH 6-3-MH 6-2** - Circumferential fracture from 12 o'clock to 12 o'clock at 5.2'. Repair completed 2-15-10
- MH 3-MH 2** - Circumferential crack at joint from 7 o'clock to 12 o'clock at 0.80'. Repair completed 3-8-10
- MH 2-MH 1** - Gasket exposed at 223.7'. Repair completed 3-9-10

Wet Weather Observation Manholes:

- Manhole 5
- Manhole 3-7
- Manhole 1A

Smoke Testing Results:

- Lloyd Street**
- 151 Lloyd Street - Broken clean out cap. Repair completed 8-15-11
 - 141 Lloyd Street - Broken clean out cap. Repair completed 11-3-11
 - 131 Lloyd Street - Broken clean out cap. Repair completed 11-16-11
 - 230 Lloyd Street - Broken clean out cap. Repair completed 7-15-11
 - 241 Lloyd Street - Broken clean out cap. Repair completed 7-25-11
 - 251 Lloyd Street - Broken clean out cap. Repair completed 7-6-11
 - 220 Lloyd Street - Broken clean out cap. Repair completed 11-31-11

- Hoover Avenue**
- 2100 Hoover Avenue - Sanitary trap assembly failing. Repair completed 7-25-11

- Allendale Apartments (535 Cedar Hill Drive)**
- Manhole 12 - Casting must be reset to cone (leaking). Repair completed 12-20-11
 - Building 7 - Clean out assembly failing. Repair completed 10-26-11
 - Building 13 - Clean out cap missing. Repair completed 12-20-11
 - Building 14 - Clean out assembly failing beneath grade. Repair completed 11-7-11
 - Building 16 - Clean out cap failing. Repair completed 12-20-11
 - Manhole 4-1 - Casting must be reset to cone (leaking). Repair completed 12-20-11
 - Building 18 - Clean out cap is missing. Repair completed 12-20-11

Lateral Video Inspection:

- Allendale Apartments (535 Cedar Hill Drive)**
- Building 2 - Starting at the trap assembly proceeding down the lateral 19' to a cracked pipe entering MH 12. Pipe type 6" clay. Repair completed 11-9-11
 - Building 4 - Extensive root infiltration impeding flow. Pipe type 6" clay. Repair completed 11-24-11
 - Building 7 - Starting at the clean out assembly proceeding down the lateral pipe is broken at 4' mark. (Cast iron to clay transition). Pipe type 6" clay. Repair completed 10-26-11
 - Building 14 - Starting at the clean out assembly proceeding down the lateral open joints were observed and failing at 8' and 15'. Pipe type is 6" clay. Repair completed 11-7-11
 - Building 19 - Starting at the clean out assembly proceeding down the lateral an open/offset joint was observed and failing at the 10' mark. Pipe type is 6" clay. Clean out cap is missing. Repair completed 11-4-11
 - Building 18 - Clean out cap is missing. Repair completed 11-20-11
 - Building 16 - Starting at the cleanout cracked pipe observed at 34'. Pipe type 6" clay. Repair completed 5-26-10

- Lloyd Street**
- 171 Lloyd Street - Starting at the clean out assembly proceeding down the lateral a broken/offset pipe was observed and failing at the 50' mark. Pipe type is 6" PVC. Repair completed 11-17-11
 - 211 Lloyd Street - Starting at the clean out assembly proceeding down the lateral broken pipe was observed at the 3' mark. Pipe type is 6" PVC. Repair completed 11-14-11
 - 241 Lloyd Street - PVC mount and clean out missing. Repair completed 7-25-11

- Hoover Avenue**
- 1710 Hoover Avenue - Starting at the clean out assembly proceeding down the lateral a failing 6" to 4" connection was observed with roots, leakage and an exposed gasket. Pipe type 6" PVC. Repair completed 8-8-11

- Airport Road**
- 1721 Airport Road - Starting at the clean out assembly proceeding down the lateral a broken or separated pipe was observed at the 76' mark. Camera not passable. Stop 15' to 20' from main line. Pipe type 6" PVC. Repair completed 12-16-11

**HANOVER TOWNSHIP, LEHIGH COUNTY
 ALLENTOWN SANITARY SEWER SYSTEM**
 LMK KRS SCALE: 1" = 150' FEBRUARY 4, 2011
 REVISED 8-27-14

0 150 300 450 600 Feet

Legend

- Manhole Inspected
- Manhole Repaired
- Manhole Replaced
- Main Line Inspected
- Main Line Repaired
- Main Line Replaced
- Lateral Inspected
- Lateral Repaired