



May 11, 2009

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Frankfort, KY 40601

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Washington, DC 20005
DOJ Case No. 90-5-1-1-08591

Chief, Water Program Enforcement Branch
Water Management Division
U.S. Environmental Protection Agency, Region 4
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

Re: Consent Decree Case No. 2:05-cv-00199-WOB

Dear Gentlemen:

Pursuant to the above-referenced Consent Decree, Sanitation District No. 1 (SD1) is required to submit an annual report on the implementation of the Pump Station Overflow Elimination Plan, which received regulatory approval on May 14, 2008.

38. Pump Station Plan. The District shall provide an annual report within twelve months of approval of the Pump Station Plan on implementation of these watershed projects. Thereafter and until such projects are complete, the District shall provide an annual report on its implementation progress within sixty days after each anniversary date of the initial report.

A certification as required by the Consent Decree is also enclosed (Consent Decree paragraph 38).

I am confident in the integrity of the enclosed document, and I am certain that the projects detailed in this report help further the mission and vision of SD1 by protecting water resources and enhancing the quality of life in Northern Kentucky.

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May 11, 2009

If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by email at jeger@sd1.org.

Best regards,



Jeffrey A. Eger
General Manager

JAE/mf
Enclosures

Pump Station Overflow Elimination 2009 Annual Report

Sanitation District No. 1
May 11, 2009



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CERTIFICATION

Pump Station Overflow Elimination 2009 Annual Report
Consent Decree Case No. 2:05-cv-00199-WOB

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering such information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



Jeffery A. Eger
General Manager

May 11, 2009

Date

COMMONWEALTH OF KENTUCKY

COUNTY OF Kenton)ss.

The foregoing instrument was acknowledged before me this 11 day of May, 2009 by Jeffery A. Eger, General Manager of Sanitation District No. 1.



NOTARY PUBLIC
State Large County, Kentucky

My commission expires: May 9, 2010

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PUMP STATION OVERFLOW ELIMINATION

- 2009 ANNUAL REPORT -

May 11, 2009



Sanitation District No. 1

1045 Eaton Drive
Ft. Wright, KY 41017

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LIST OF ACRONYMS AND ABBREVIATIONS

CCTV	Closed Circuit Television
I/I	Inflow/Infiltration
MGD	Million Gallons Per Day
PSOEP	Pump Station Overflow Elimination Plan
SD1	Sanitation District No. 1
SSES	Sanitary Sewer Evaluation Survey
WRF	Water Reclamation Facility

SECTION 1: INTRODUCTION

1.1 Report Purpose

One of the requirements of SD1's Consent Decree was to develop a Pump Station Overflow Elimination Plan (PSOEP) that identifies watershed projects to eliminate SSOs at specified pump stations throughout the service area. The names of the pump stations that were required to be included in this plan and their respective deadlines for elimination are contained in Exhibit E of the Consent Decree and can also be found in Table 1.1 of this report. The PSOEP was submitted in 2007 and received regulatory approval on May 14, 2008. Now that the PSOEP has been approved, the Consent Decree requires SD1 to provide an annual report on implementation of the watershed projects included in the original plan. This document serves as the first annual update on implementation of the PSOEP.

1.2 Solutions & Status Summary

Each pump station overflow identified in the PSOEP has its own unique set of circumstances and is being addressed differently to meet the requirements of the Consent Decree. Each pump station is at a different point along the path to overflow elimination. The intent of this section is to summarize the schedules and solutions for each pump station. Detailed information for each pump station is provided throughout the subsequent sections of this report.

Table 1.1 PSOEP Solutions & Status Summary

Pump Station	Required Overflow Elimination Date*	Solution Summary	Current Status
Harrison Harbor	December 31, 2010	Remove this station from the Exhibit E list, as monitoring and documentation show no overflow activity.	Complete
Taylorport	December 31, 2010	Overflow elimination through pump station upgrades to convey wet weather flows.	Complete
Alex-Licking	December 31, 2010	Overflow elimination through replacement of the station with a new pump station sized to convey peak wet weather flows.	Complete

Pump Station	Required Overflow Elimination Date*	Solution Summary	Current Status
South Hampton	March 31, 2013	Overflow elimination through pump station removal. Flows will be conveyed to the new Western Regional WRF by a new gravity sewer sized to convey peak wet weather flows under ultimate build-out conditions.	Design of new gravity sewer (Frogtown) 50% complete. Pump station overflow will be eliminated when Western Regional improvements are complete and in service in 2013.
Kentucky Aire	December 31, 2013	Overflow elimination through pump station removal. Flows will be conveyed to the new Western Regional WRF by a new gravity sewer sized to convey peak wet weather flows under ultimate build-out conditions.	Pump station overflow will be eliminated when Western Regional improvements are complete and in service in 2013.
Highland Acres	December 31, 2010	Overflow elimination through pump station removal. Peak wet weather flows will be conveyed to the Kentucky Aire Pump Station through a new gravity sewer. Once the Western Regional system improvements are completed in 2013, flow from the Kentucky Aire Pump Station will be conveyed via a new gravity sewer sized to convey peak wet weather flows under ultimate build-out conditions.	Preliminary design has begun on selected alternative.
Union	March 31, 2013	Overflow elimination through pump station removal. Flows will be conveyed to the new Western Regional WRF by the new Union gravity sewer sized to convey peak wet weather flows under ultimate build-out conditions.	Construction of the new Union sewer is complete. Pump station overflow will be eliminated when Western Regional improvements are complete and in service in 2013.

Pump Station	Required Overflow Elimination Date*	Solution Summary	Current Status
Allen Fork	December 31, 2014	A final alternative to eliminate the overflow will be determined once work to remove I/I is complete. A part of this overflow elimination alternative will be redirection of flows from the Allen Fork Pump Station to the Western Regional Tunnel via redirection of the Burlington Pump Station flows. This redirection work will be completed once the Western Regional improvements are in service in 2013.	SSES work is currently being conducted and expected to be complete in 2009. I/I removal will then be designed and implemented.
Lakeview	3 years after startup of the Western Regional WRF but no later than December 31, 2013	Alternatives to overflow elimination are continuing to be evaluated. Alternatives analysis and selected alternative to be completed by June 30, 2009 for inclusion in SD1 Watershed Plans	Alternatives analysis is ongoing and final selection of alternative to be developed by June 30, 2009.
Riley Road No.1	December 31, 2010	Overflow elimination through pump station removal. The new Riley Road Pump Station eliminates both the existing Riley Road No. 1 and Riley Road No. 2 stations.	New Riley Road Pump Station construction is complete. New pumps are experiencing excessive vibration issues. Investigation work to resolve these issues is currently underway. Pump station expected to be in operation summer 2009.
Sunset	December 31, 2010	Overflow elimination through pump station removal. A new gravity sewer will be constructed to eliminate the Sunset Pump Station and convey flows to a new pump station (Arcadia) to be constructed in coordination with a planned development. A new force main will be constructed from the Arcadia Pump Station to convey flows	New Arcadia Pump Station is currently under design.

Pump Station	Required Overflow Elimination Date*	Solution Summary	Current Status
		to a gravity sewer tributary to the new Alex-Licking Pump Station.	
Ripple Creek	December 31, 2010	<p>Overflow elimination through pump station removal. A new gravity sewer will convey peak dry and wet weather flows to the existing Wolpert Pump Station. Storage will be constructed at the Wolpert Pump Station to store excess wet weather flow to ensure capacity is not exceeded during wet weather.</p> <p>Additionally, targeted I/I removal and rehabilitation of the existing sewers upstream of the Ripple Creek Pump Station will be conducted.</p>	Design expected to begin by summer 2009.
South Park	December 31, 2010	<p>SSES and flow monitoring work concluded that there are no dry or wet weather capacity-related issues at this station. To date, only two overflows have occurred at the South Park Pump Station and both were due to power outages. To eliminate any potential future overflows due to power outages, a generator will be installed at this pump station.</p>	Design and procurement of a generator will be initiated in 2009, and the generator will be installed and in operation by the deadline of December 31, 2010.
Crestview	December 31, 2014	Final solution yet to be determined.	SSES work to continue and will include private property dye testing to help characterize the I/I getting into the system.

*As of PSOEP approval on May 14, 2007.

SECTION 2: COMPLETED PROJECTS

2.1 Harrison Harbor

As stated in the PSOEP, SD1 has reviewed historical records and has found evidence of only one overflow at this pump station. This overflow occurred when the Ohio River was at flood stage and the station was shutdown. Aside from this isolated instance, there is no additional evidence of overflows based on SD1's records and field investigations. In addition, operational changes were made after the past overflow event to keep this pump station in service during Ohio River flood events.

Given the lack of recorded overflow activity, SD1 has been closely monitoring the station to identify if there is any potential for wet weather overflow activations. Flow monitors were installed in all of the incoming sewers to verify that there are no wet weather capacity issues at the pump station. The meters were installed from September 2007 to June 2008. There were very low flows recorded by the meters throughout the entire monitoring period, including during wet weather. The station does operate infrequently, however the meters were unable to detect a reliable flow due to the small flows tributary to the pump station. The spill records in Appendix A demonstrate that there were no overflows from this pump station during calendar year 2008.

Therefore, it has been clearly demonstrated that this pump station does not have an overflow, and the planned solution is to remove this station from the Exhibit E list. A portable generator hookup will be provided as part of SD1's Pump Station Backup Power Plan to ensure no overflows occur due to power outages.

2.2 Taylorsport

As stated in the PSOEP, the constructed overflow at the Taylorsport Pump Station was eliminated with the pump station capacity upgrade in 2004 to convey peak wet weather flows. Additionally, the pump station now has an onsite generator for backup power. Therefore, the work to eliminate the overflow at this station has been completed.

Appendix A shows that there was one discharge occurrence during the 1st Quarter 2008 and there were three discharge occurrences during the 2nd Quarter 2008. The 1st Quarter occurrence occurred on March 18, 2008. This was the result of an extreme rainfall event that was similar to a design storm with a 10- to 25-year return period and a duration of 24-48 hours. In addition, work began to fix an electrical failure of a bubbler level controller for this pump station the same day as the March 18 storm. Both the storm and the bubbler failure contributed to this overflow event.

The 2nd Quarter discharge occurrences occurred on April 4, May 15, and June 4, 2008. All three events occurred during wet weather events; however, during the April 4

occurrence the same bubbler failure from the March 18 event, described above, was still being fixed and lead to improper operation of the pumps at the station. This bubbler was repaired on April 10.

During the May 15 and June 4 occurrences, Pump No.3 was out-of-service because a seal failure allowed the motor to fill with sewage. This pump was removed on May 5, 2008, was rebuilt, and returned to service on July 3, 2008.

To prevent further overflows due to pump failure, SD1 has since purchased a backup pump for this station to expedite returning the pump station to full capacity. Since the electrical and pump repairs have been completed, there have been no other overflows at the Taylorsport Pump Station. Additional flow reduction will occur at Taylorsport Pump Station once flows from the Allen Fork, Burlington, and Gunpowder pump stations are redirected to the Western Regional System after 2013.

2.3 Alex-Licking

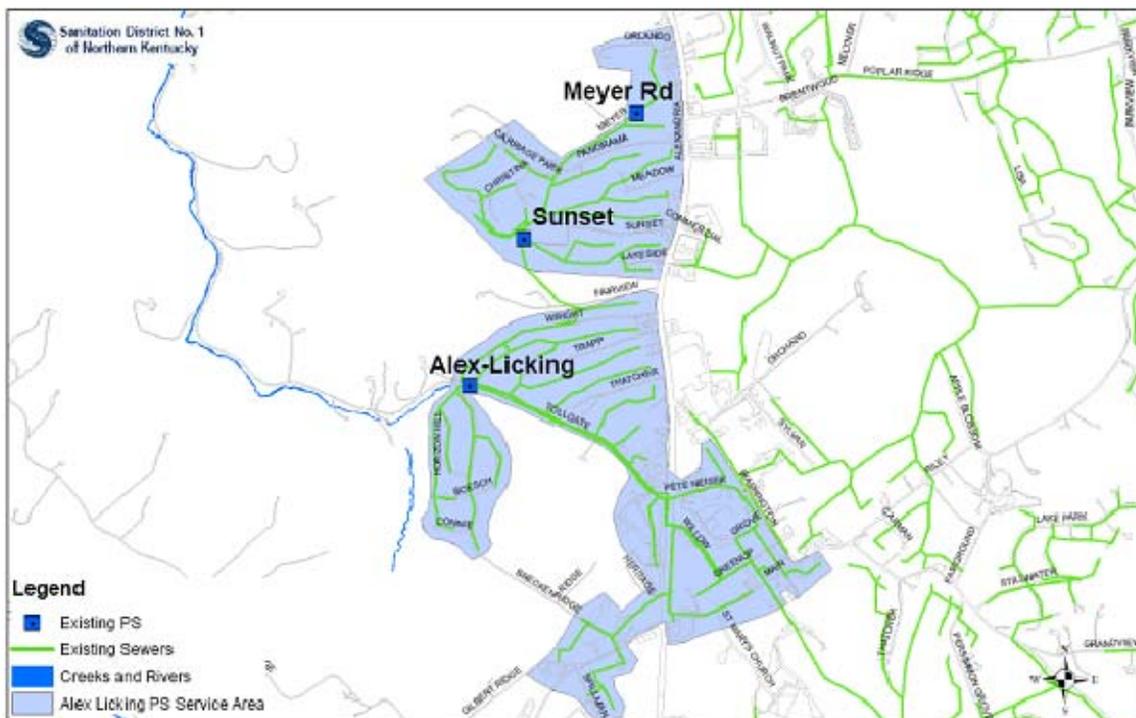
The Alex-Licking Pump Station was replaced in 2008 with a new pump station with a peak capacity of 5.2 million gallons per day (MGD). This is a significant capacity increase over the previous pump station capacity of 1.1 MGD. The new pump station, which has an onsite generator for backup power, has eliminated the bypass and will provide dry and wet weather capacity for current and future growth tributary to the pump station. See Figure 2.1 for a picture of the new station and Figure 2.2 for the current service area to the Alex-Licking Pump Station.

Prior to final implementation of this solution, the Alex-Licking Pump Station had a total of 12 discharge occurrences with a total estimated spill volume of 782,000 gallons during calendar year 2008 (as shown in Appendix A). Two of these discharges (9,500 gallons) were due to mechanical failures during dry weather. No overflows have occurred at the new pump station since start-up.

Figure 2.1 New Alex-Licking Pump Station



Figure 2.2 Alex-Licking Pump Station Service Area

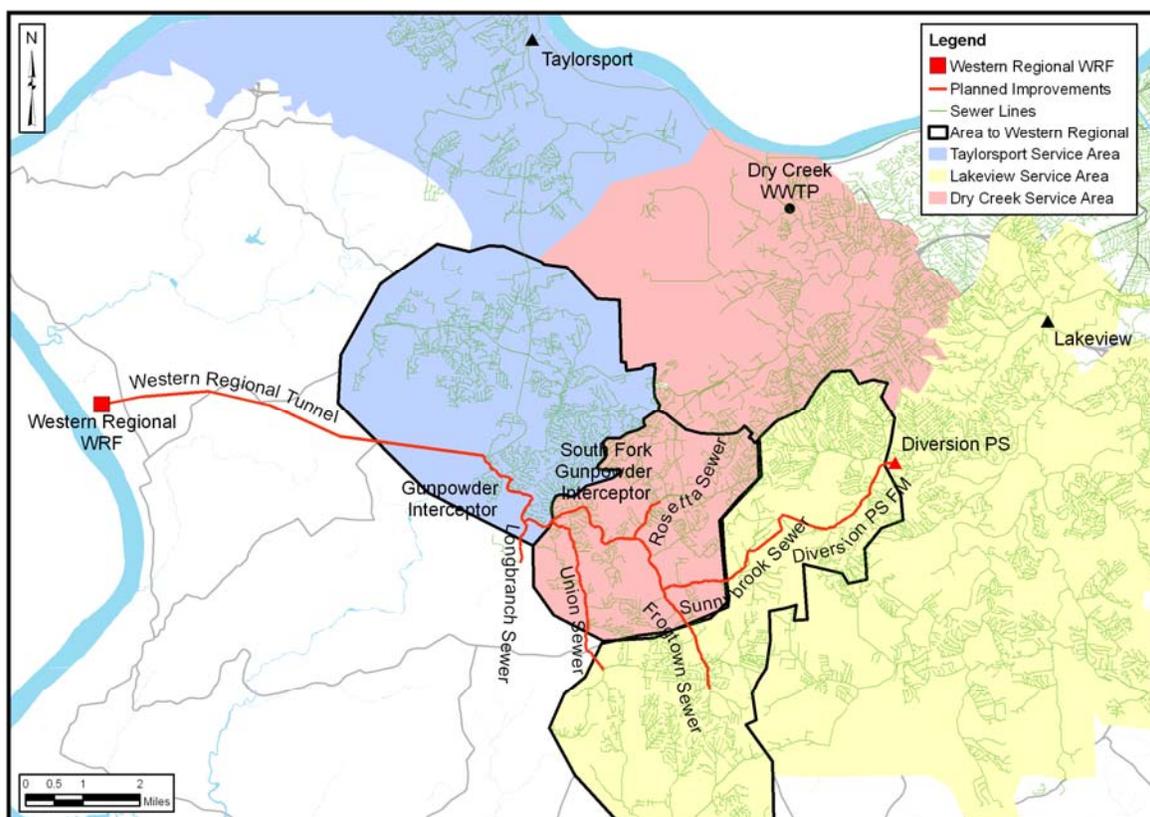


SECTION 3: WESTERN REGIONAL IMPROVEMENTS

Several overflows at the pump stations included in the PSOEP are being eliminated by the new Western Regional Conveyance System and Water Reclamation Facility (WRF). Descriptions for each station affected by the Western Regional improvements are described in this section.

All of the Western Regional improvements are shown in Figure 3.1. The outlined areas on the map are areas that are currently tributary to the Dry Creek Wastewater Treatment Plant that will be rerouted to the Western Regional WRF following the completion of the Western Regional improvements. The current schedule is for all Western Regional improvements to be completed by 2013.

Figure 3.1 Proposed Western Regional Conveyance System and Water Reclamation Facility



3.1 South Hampton

The elimination of the South Hampton Pump Station and overflow through gravity sewer construction, as identified in the PSOEP, is the planned overflow elimination solution for this station. The new Frogtown sewer will be constructed to convey peak dry and wet weather flows under ultimate build-out conditions to the new Western Regional WRF.

Following completion of the Western Regional sewer conveyance system and WRF, the South Hampton Pump Station service area will be able to drain through this new collection system. Once the new Western Regional Collection System and WRF are in service (scheduled for 2013), a connection to the new Frogtown sewer will be made to eliminate the South Hampton Pump Station and overflow, and the existing tributary sewers will be connected to the new Frogtown sewer. Design of the Frogtown sewer is approximately 50% complete and construction is anticipated to begin in 2010. This project is currently on schedule to be completed by the March 31, 2013 date approved in the PSOEP, well ahead of the Consent Decree deadline of December 31, 2015.

The South Hampton Pump Station had a total of 9 discharge occurrences with a total estimated spill volume of 149,000 gallons during calendar year 2008 (as shown in Appendix A). One of these discharges (1,000 gallons) was due to a power failure during dry weather.

3.2 Union

The elimination of the Union Pump Station and overflow through gravity sewer construction, as identified in the PSOEP, is the planned overflow elimination solution for this station. The new 36" Union sewer will convey peak dry and wet weather flows under ultimate build-out conditions to the new Western Regional WRF. Following completion of the Western Regional trunk sewer conveyance system and WRF, the Union Pump Station service area will be able to drain through this new collection system. Once the new Western Regional Collection System and WRF are in service (scheduled for 2013), a connection to the new Union sewer will be made to eliminate the Union Pump Station and overflow, and the existing tributary sewers will be connected to the new Union sewer. Construction of the Union sewer began in 2006 and is complete. This project is currently on schedule to be completed by the March 31, 2013 date approved in the PSOEP, well ahead of the Consent Decree deadline of December 31, 2015.

The Union Pump Station had a total of 1 discharge occurrence with a total estimated spill volume of 1,000 gallons during calendar year 2008 (as shown in Appendix A).

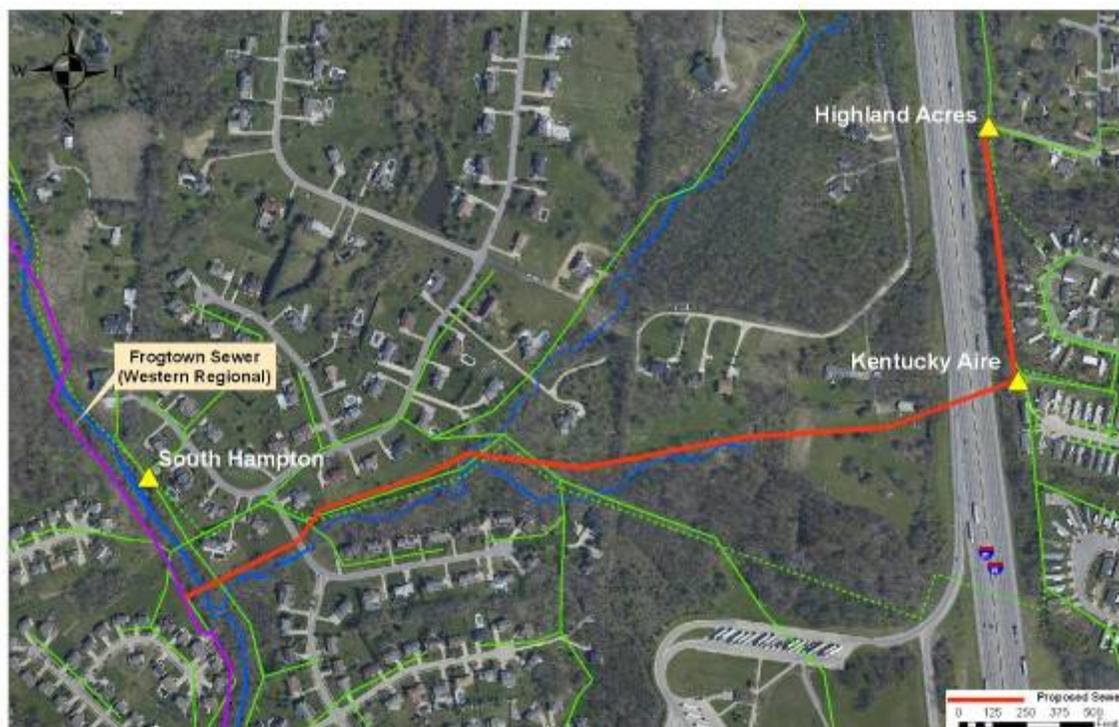
3.3 Kentucky Aire

In the PSOEP, SD1 described a number of alternatives that would be analyzed to identify an ultimate solution for the overflow at the Kentucky Aire Pump Station by the December 31, 2015 deadline specified in the Consent Decree. As part of the Watershed Plans, SD1 reviewed available alternatives for Kentucky Aire and selected construction of a new gravity sewer to the proposed Frogtown Gravity Sewer as the proposed alternative.

Once the Western Regional WRF is on line in 2013, the flow from the Kentucky Aire Pump Station will be conveyed via a gravity sewer to the proposed Frogtown Sewer, which will flow to the Western Regional WRF. The Frogtown Sewer and new WRF were both sized to handle peak flows from this region. Conveying flow from this area to the Western Regional system will reduce flows to the Lakeview sanitary system, which experiences capacity issues during wet weather events. Not only is there a benefit to the Lakeview system, but implementing the gravity conveyance to eliminate the Kentucky Aire Pump Station results in energy cost and operation and maintenance savings to SD1.

Potential layouts for the proposed gravity sewers from Highland Acres and Kentucky Aire Pump Stations are shown in Figure 3.2.

Figure 3.2 Proposed Kentucky Aire and Highland Acres Gravity Sewers



After the South Hampton Pump Station is redirected to the Frogtown Sewer as described in Section 3.1, a gravity sewer from the Kentucky Aire Pump Station will eliminate any remaining overflows at the pump station. The alignment of the gravity sewer will require trenchless construction under Interstate 75. After the highway is crossed, the remaining alignment may be constructed via traditional open-cut methods along an existing waterway; however, this alignment will require acquisition of property easements. Once this project is complete and the new Western Regional Collection System and WRF are in service (scheduled for 2013), the Kentucky Aire Pump Station

and overflow will be eliminated. SD1 is currently on schedule to eliminate the overflow by December 31, 2013 as stated in the approved PSOEP.

In addition to the recent alternatives analysis and selection of the final solution, SD1 also performed the following upgrades at the Kentucky Aire Pump Station since submission of the PSOEP in September 2007:

- Some of the valves and piping were replaced in the fall of 2007 to address high priority maintenance issues at the station.
- Installation of a backup generator in February 2008, which also included an upgrade of the electrical panel to accommodate the new generator.

The Kentucky Aire Pump Station had a total of 14 discharge occurrences with a total estimated spill volume of 592,000 gallons during calendar year 2008 (as shown in Appendix A). One of these discharges (1,000 gallons) was due to a power failure during dry weather prior to the installation of a backup generator at this station.

3.4 Highland Acres

In the PSOEP, SD1 described a number of alternatives that would be analyzed over the past year to identify an ultimate solution for the overflow at the Highland Acres Pump Station by the December 31, 2010 deadline specified in the Consent Decree.

The Highland Acres Pump Station is located near the Western Regional improvements (and specifically the Frogtown sewer). Once the Western Regional WRF is on line in 2013, the flow from Highland Acres could be conveyed via gravity sewer to the proposed Frogtown Gravity Sewer, which flows to the Western Regional WRF. The Frogtown Sewer and new plant were both sized to handle peak flows from this region. Conveying flow from this area to the Western Regional system would reduce flows to the Lakeview sanitary system, which experiences capacity issues during wet weather events. However, because the deadline for eliminating the overflow from Highland Acres occurs earlier than the Western Regional improvements planned completion, the following three alternatives for controlling the overflow in the interim were evaluated:

- Storage – inline versus tank
- Pump station upgrade
- Gravity sewer to Kentucky Aire

In order to maximize SD1's investment, the most cost-effective option was determined to be the construction of a gravity sewer to the Kentucky Aire Pump Station in the near-term to meet the Consent Decree deadline of December 31, 2010. The downstream impact of conveying additional flow to the Kentucky Aire Pump Station is minimal, as the peak flows from the drainage areas do not always reach the pump station at the same time. Within the model simulation of the typical year period, the overflow volume at Kentucky Aire was essentially unchanged with the addition of the gravity sewer, due to

the fact that the sewer provided some attenuation of peaks relative to the peak capacity of the pump station in some events.

When the Western Regional planned improvements are complete in 2013, the flow from the Kentucky Aire system may then be conveyed via gravity to the Western Regional system (see Figure 3.2 for the layout of the Kentucky Aire gravity sewer). Not only does eliminating both the Kentucky Aire and Highland Acres pump stations by gravity flow reduce the energy and operation and maintenance costs commonly associated with pump stations, but it also redirects flow that is currently being conveyed to the Lakeview system. A reduction in flow imposed upon the Lakeview system will benefit the SSOs within the Lakeview tributary system as well as the Lakeview Pump Station.

The new gravity sewer will eliminate the Highland Acres Pump Station and overflow. The project is currently scheduled to be completed ahead of the December 31, 2010 deadline specified in the approved PSOEP.

The Highland Acres Pump Station had a total of 5 discharge occurrences with a total estimated spill volume of 31,000 gallons during calendar year 2008 (as shown in Appendix A).

3.5 Allen Fork

As described in the PSOEP, SD1 has already begun the steps necessary to eliminate the Allen Fork Pump Station overflow at MH 2390002. SD1 has or is currently implementing the following overflow reducing actions.

- **Allen Fork Collection System Improvements – Phase I:** This construction project was completed in 2007. This project constructed the Burlington Pump Station and new upstream sewers to provide additional dry and wet weather capacity and reduce inflow/infiltration (I/I). The Allen Fork Pump Station was rerouted to the new Burlington Pump Station, thereby lowering the discharge head of the Allen Fork Pump Station. The lower head increased the capacity of the station.
- **Allen Fork Collection System Improvements – Phase II:** This Sanitary Sewer Evaluation Survey (SSES) project began during the 2007-2008 system-wide flow monitoring to identify additional I/I sources and develop a plan to reduce the I/I. SD1's current program includes ten flow monitors and two rain gauges, originally installed during the 2007-2008 system-wide flow monitoring program. These methods, along with manhole inspection and closed circuit television (CCTV) inspection, will continue until the pump station overflow elimination alternative is selected. SD1 is currently inspecting sewers using CCTV and checking manholes to identify locations where I/I could be entering the collection system. SD1 has plans to perform smoke and dye testing of areas suspected of having I/I

connections or leaking laterals. These areas will be identified from the current flow monitoring program.

A portion of the solution for the MH 2390002 overflow involves the Western Regional improvements. Once the Western Regional Conveyance System and WRF are brought on line in 2013, the Gunpowder Pump Station will be eliminated with a gravity sewer to the Western Regional Conveyance system, and the Burlington Pump Station will be redirected to this new gravity sewer and taken off of the Taylorsport Pump Station service area. Burlington Pump Station's new discharge route will lower its discharge head, thereby increasing its capacity. Once Burlington Pump Station increases its capacity, the Allen Fork Pump Station will also be able to increase its' capacity by installing larger impellers in its pumps.

The Western Regional improvements and the redirection of the Allen Fork and Burlington pump station flows will substantially reduce and possibly eliminate the overflows at MH 2390002. As previously described, SD1 will also be performing I/I removal projects upstream of the Allen Fork Pump Station to ensure the Allen Fork PSOEP deadline of December 31, 2014 is met. The station also has an onsite generator for backup power. SD1 will continue to evaluate the need for additional solutions to eliminate the Allen Fork Pump Station overflow. Overflow elimination work as detailed in the PSOEP is on schedule.

The Allen Fork Pump Station had a total of 1 discharge occurrence with a total estimated spill volume of 5,000 gallons during calendar year 2008 (as shown in Appendix A). Note that the "pump station overflow" does not occur at the station itself; the overflow occurs several manholes upstream of the pump station at a low manhole location (MH 2390002).

SECTION 4: LAKEVIEW PUMP STATION

SD1 has been proactive in implementing improvements for the Lakeview Pump Station to reduce the amount of overflow volume. The details of this effort were outlined in the PSOEP and include descriptions of the following improvements:

- 2005 Pump Station Capacity Upgrade (completed 2005)
- Brookwood I/I Study (completed 2005)
- Fort Wright Sanitary Sewer Rehabilitation (completed 2007)
- South Hills Outfall Sewer (completed 2007)
- Western Regional Collection System and Western Regional WRF (projected completion – 2013)

Using the available hydraulic models, SD1 predicts that the completion of all of the above projects will result in at least a 90% reduction in overflow volume within a typical year at the Lakeview Pump Station.

A comparison of current and historical bypass statistics has revealed that the information included in Table 8.1 for years 2004 and 2005 (pg 43) of the September 14, 2007 PSOEP was incorrect. The correct values for the historical discharge volume for 2004 and 2005 should have read:

Lakeview Release Report Summary

Year	Total Approximate Recorded Volume (MG)
2004	44.1
2005	19.3
2006	7.1

It should be noted that the overflow volume for 2006 remains unchanged, and the lower volume is attributed to the replacement of the pumps as described in Section 8.3.2 of the original PSOEP.

In 2007 and 2008, the annual reported overflow volume increased from the reported overflow volume in 2006. While this can be partially attributed to differences in the rainfall and frequency of long-duration storm events, the increase can also be attributed to a decrease in pump capacity. As part of the frequent assessment of pump station performance and system capacity evaluations conducted by SD1, it was determined that the high operating pressures led to premature wearing of the pumps installed in 2005. This resulted in a drop in pump station capacity and a corresponding increase in overflow volume. SD1 plans to replace these pumps with new, more reliable equipment, returning the total capacity of the station to 22.5 MGD. Based on modeling projections, SD1 anticipates that this upgrade would have reduced overflow volumes from 33.5 MG in 2008 to approximately 13 MG.

As detailed in the PSOEP, an ongoing assessment of alternatives is being evaluated for the elimination of the Lakeview Pump Station overflow. Alternatives analysis and the selected alternative will be completed by June 30, 2009 for inclusion in the Watershed Plans.

The Lakeview Pump Station had a total of 21 discharge occurrences with a total estimated spill volume of 33,452,000 gallons during calendar year 2008 (as shown in Appendix A).

SECTION 5: RILEY ROAD NO. 1 PUMP STATION

As previously described in the PSOEP, the Riley Road No. 2 Pump Station, which currently discharges to Riley Road No. 1, is being replaced with a new Riley Road Pump Station that is being constructed next to the existing Riley Road No. 2 Pump Station. The new Riley Road Pump Station is designed to convey peak dry and wet weather flows and will eliminate the Riley Road No. 1 and Riley Road No. 2 stations and associated overflow. The new pump station has an onsite generator for backup power.

Figure 5.1 shows a picture of the new pump station adjacent to the existing pump station. As the picture shows, the new pump station is a significant upgrade and investment. The new Riley Road Pump Station construction is complete, and the pumps are undergoing startup and testing. The new pumps are currently experiencing excessive vibration issues. Investigation work with the pump manufacturer, design engineer, and contractor to resolve these issues is currently ongoing. The Riley Road Pump Station is expected to be in operation in the summer of 2009, well ahead of the PSOEP deadline of December 31, 2010.

Figure 5.1 New Riley Road Pump Station

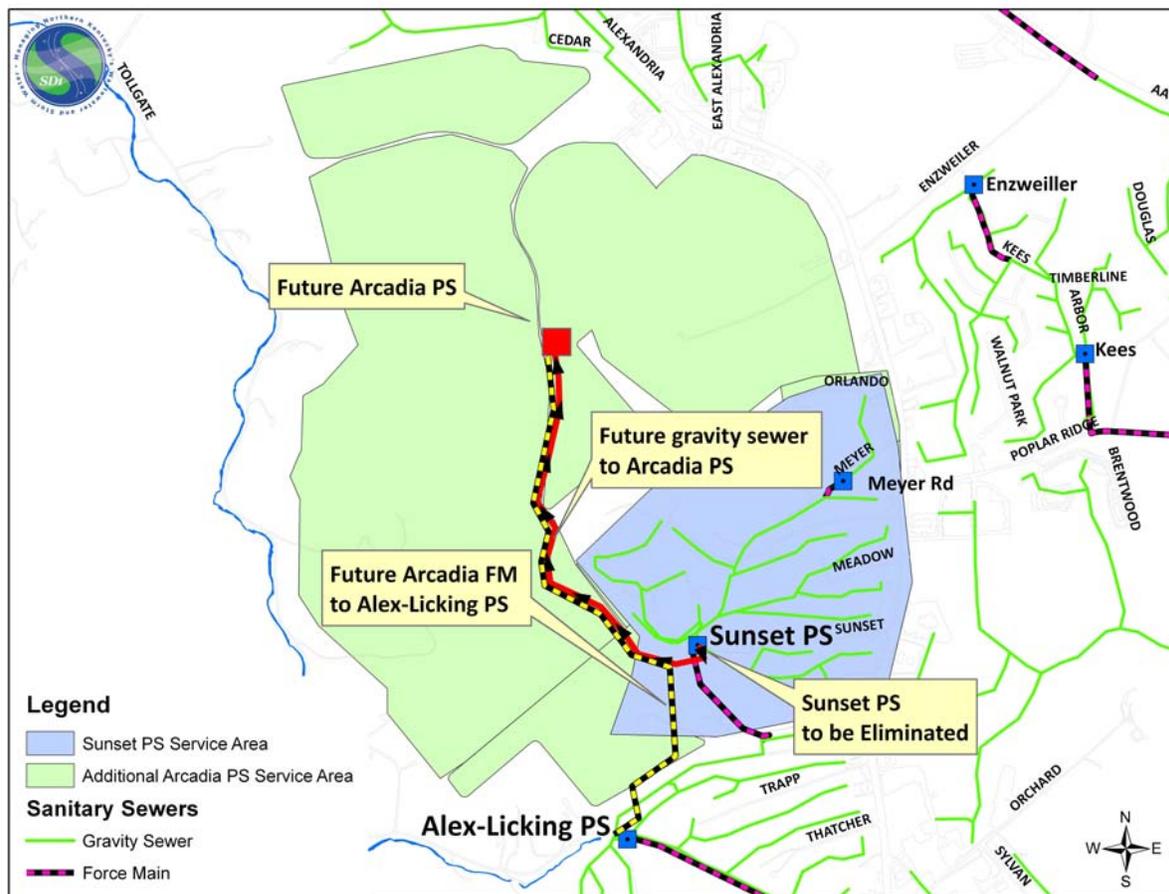


The Riley Road No. 1 Pump Station had a total of 20 discharge occurrences with a total estimated spill volume of 565,000 gallons during calendar year 2008 (as shown in Appendix A). One of these discharges (60 gallons) was due to power failure during dry weather.

SECTION 6: SUNSET PUMP STATION

The original plan for the Sunset Pump Station was to replace the current pump station with a new 0.77 MGD pump station at the existing site. Since the original plan was developed, a private developer has proposed to partner with SD1 to construct a new pump station farther north to serve a new development as well as the existing Sunset Pump Station area. This revised approach was described in the Addendum to the PSOEP dated November 11, 2007.

The new pump station (Arcadia Pump Station) will eliminate the Sunset Pump Station and overflow and will have a firm capacity of 1.3 MGD to provide capacity to convey peak dry and wet weather flows for current and future conditions. The new Arcadia Pump Station will discharge to a gravity sewer tributary to the new Alex-Licking Pump Station. The new Arcadia Pump Station and associated gravity sewer and force main are currently under design. The original schedule provided in the PSOEP stated construction would be complete by spring of 2009. Due to the collapse of the economy and the housing and lending markets, SD1's partnership with the developer to construct the new pump station has been delayed. At this point in time, SD1 is optimistic that the economy will recover and the partnership will be restored in order to complete the new pump station construction and Sunset Pump Station overflow elimination by the Consent Decree deadline of December 31, 2010. Figure 6.1 shows the planned location of the Arcadia Pump Station and its service area.

Figure 6.1 Sunset Pump Station Elimination with Arcadia Pump Station

The Sunset Pump Station had a total of 14 discharge occurrences with a total estimated spill volume of 459,000 gallons during calendar year 2008 (as shown in Appendix A). Five of these discharges (73,700 gallons) were due to power failures during dry weather.

SECTION 7: RIPPLE CREEK PUMP STATION

In the PSOEP, SD1 described potential alternatives that could be analyzed to identify an ultimate solution for the overflow at the Ripple Creek Pump Station by the December 31, 2010 deadline specified in the Consent Decree. The following control alternatives were selected and evaluated over the past year to eliminate this overflow:

- New 0.45 MGD pump station and 1,900 linear feet of 6-inch forcemain
- Eliminate pump station with 1,720 linear feet of new gravity sewer to Wolpert Pump Station and add storage at Wolpert Pump Station

In addition to the solutions above, SD1 conducted SSES activities to see if I/I removal could eliminate the pump station overflow. The SSES activities included CCTV, smoke testing, and private property dye testing. The SSES work did not reveal many connections to the sanitary sewer. Only three properties were found to be connected, which does not account for very much potential I/I removal from private property. Flow monitoring in the pipe downstream of these connections also showed very little wet weather response. However, there is clearly I/I entering the system during very wet conditions. The sewer coming from the north is adjacent to a creek and the pipe is in relatively poor condition. Since almost no private sources were found, the I/I is likely coming from the pipe trench. Therefore, targeted rehabilitation to this sewer will be performed to reduce the I/I.

Table 7.1 shows the preliminary capital costs associated with each alternative sized to eliminate the overflow in a typical year.

Table 7.1 Capital Costs for Ripple Creek Pump Station Overflow Elimination

Alternative	Cost
New 0.45 MGD Pump Station and 1,900 LF 6" Forcemain	\$1,490,000
1,720 LF of 8" Gravity Sewer + Storage at Wolpert PS	\$730,000

The costs above show that the gravity sewer option is the most cost-effective alternative for eliminating the overflow at the Ripple Creek Pump Station. The new 8-inch gravity sewer will have adequate capacity to convey peak dry and wet weather flows, and the storage at the Wolpert Pump Station will ensure that wet weather flows from Ripple Creek do not cause capacity problems at the Wolpert Pump Station. In addition to the conveyance and storage improvements, targeted sewer rehabilitation will be conducted upstream of the Ripple Creek Pump Station with the goal of improving the structural performance of gravity sewers in poor condition and to eliminate any I/I entering the older portions of the sewer from ground water. This combined plan, when implemented, will achieve the stated goal of eliminating the overflow at the Ripple Creek Pump Station by the December 31, 2010 Consent Decree deadline. The design for the new gravity sewer is expected to begin by summer 2009.

The Ripple Creek Pump Station had a total of 19 discharge occurrences with a total estimated spill volume of 1,136,000 gallons during calendar year 2008 (as shown in Appendix A). Five of these discharges (12,400 gallons) were due to power failures during dry weather.

SECTION 8: SOUTH PARK PUMP STATION

SD1 has completed the SSES program for the South Park Pump Station tributary area described in the PSOEP. The SSES program concluded that there are no capacity related issues at the pump station during wet weather events. The pump station has a relatively large wet well, with correctly sized pumps. The upstream sewers were CCTV inspected, smoke tested, and their flows were monitored for a one-year period from 2007-2008. The sewers were in good structural condition, the smoke testing did not show illegal connections, and the flow monitoring showed wet weather peaking factors well within the Ten States Standards for sewer lines and within the pump station's current capacity.

To date, only two overflows have occurred at the South Park Pump Station and both were due to power outages. Overflows due to power outages will be eliminated using an onsite generator by 2010 in conjunction with SD1's approved Pump Station Backup Power Plan. Therefore, the proposed solution to eliminate the overflow at the South Park Pump Station will be installation of a generator at the pump station. The generator will be installed and in operation by the deadline of December 31, 2010.

The South Park Pump Station had zero discharge occurrences during calendar year 2008 (as shown in Appendix A).

SECTION 9: CRESTVIEW PUMP STATION

Several flowmeters have been installed upstream of the pump station to characterize the I/I entering the pump station. In addition to flow monitoring, smoke testing and CCTV inspection has been conducted on the tributary sewers to identify I/I sources and condition of the sewers. The flow monitoring data was used to calibrate the pump station in SD1's sewer system model. SD1 is currently reviewing the smoke testing and inspection data gathered to-date to determine the most cost effective course of action to eliminate the overflow at the pump station and meet the Consent Decree overflow elimination deadline of December 31, 2014.

Given this timeframe and the required time to select, design, and implement a solution, SD1 is still on schedule with what was proposed in the PSOEP (Table 9.1)

Table 9.1 Crestview Pump Station Bypass Elimination Schedule

Date	Milestone
June 12, 2008	Calibrate Hydraulic Model and Develop Future Condition Models (Complete)
April 1, 2010	Complete SSES-Related Improvements
April 1, 2010 – January 1, 2011	Monitor Effectiveness of SSES Rehabilitation
January 1, 2012	Select Alternative for Design
December 31, 2014	Construction Completion Date

The Crestview Pump Station had a total of 1 discharge occurrence with a total estimated spill volume of 20,000 gallons during calendar year 2008 (as shown in Appendix A). This discharge was due to a power failure during dry weather.

APPENDIX A:

Pump Station Spill Records (January 2008 – December 2008)

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Discharges from Consent Decree Pump Stations
(January 1, 2008 - December 31, 2008)

Name of Pump Station	1st Quarter (January - March)		2nd Quarter (April - June)		3rd Quarter (July - September)		4th Quarter (October - December)		2008 Total		2008 Comparison	
	Number of Discharge Occurrences	Total Estimated Volume (gallons)	Number of Discharge Occurrences	Total Estimated Volume (gallons)	Number of Discharge Occurrences	Total Estimated Volume (gallons)	Number of Discharge Occurrences	Total Estimated Volume (gallons)	Number of Discharge Occurrences	Total Estimated Volume (gallons)	Percentage of Total 2008 Discharge Occurrences	Percentage of Total 2008 Volume
Alex-Licking	8	638,000	4	144,000	0	0	0	0	12	782,000	9.92%	2.10%
Allen-Fork	0	0	0	0	1	5,000	0	0	1	5,000	0.83%	0.01%
Crestview	0	0	0	0	1	20,000	0	0	1	20,000	0.83%	0.05%
Harrison Harbor	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
Highland Acres	0	0	5	31,000	0	0	0	0	5	31,000	4.13%	0.08%
Kentucky Aire	6	325,000	7	216,000	0	0	1	51,000	14	592,000	11.57%	1.59%
Lakeview	10	21,354,000	8	9,425,000	1	83,000	2	2,590,000	21	33,452,000	17.36%	89.67%
Riley Road	7	239,000	8	256,000	3	2,000	2	68,000	20	565,000	16.53%	1.51%
Ripple Creek	8	1,060,000	6	61,000	4	6,000	1	9,000	19	1,136,000	15.70%	3.05%
South Hampton	5	85,000	4	64,000	0	0	0	0	9	149,000	7.44%	0.40%
South Park	0	0	0	0	0	0	0	0	0	0	0.00%	0.00%
Sunset	3	137,000	6	250,000	4	62,000	1	10,000	14	459,000	11.57%	1.23%
Taylorport	1	29,000	3	84,000	0	0	0	0	4	113,000	3.31%	0.30%
Union	0	0	1	1,000	0	0	0	0	1	1,000	0.83%	0.00%
TOTAL	48	23,867,000	52	10,532,000	14	178,000	7	2,728,000	121	37,305,000		