SANITATION DISTRICT NO. 1

December 14, 2007

Acting Director of the Division of Enforcement
Department for Environmental Protection
300 Fair Oaks Lane
Frankfort, KY 40601

Chief, Environmental Enforcement Section
Environmental and Natural Resources Division
U.S. Department of Justice
601 D street NW
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 Sanitation District No. 1's (District) Consent Decree, a Pump Station Operation Plan for Backup Power is required to be submitted by April 18, 2008 as one component of the District's overall Capacity, Management, Operations, and Maintenance (CMOM) Program:

> **36(b). SPECIFIC CMOM PROGRAM DEVELOPMENT – PUMP STATION OPERATION PLAN FOR BACKUP POWER.** In addition to the Self-Assessment provided above, the District shall also specifically submit to the Cabinet/EPA for review and joint approval within twelve months of entry of this Consent Decree a Pump Station Operation Plan for Backup Power that evaluates the District's pump stations and includes schedules for providing backup power or other appropriate measures for addressing power outages at the District's pump stations as soon as practicable; provided, however, that such schedules shall not extend beyond December 31, 2015.

1045 EATON DRIVE • FT. WRIGHT, KENTUCKY 41017-9681 • PH: (859) 578-7450 • FAX: (859) 331-2436

The District has completed the Pump Station Operation Plan for Backup Power and has enclosed this submittal for your review and approval. A certification as required by the Consent Decree is also enclosed (Consent Decree paragraph 38). The Cabinet and EPA have 90 days from receipt to review submittals unless the District receives notification before the expiration of the 90-day period that review will take longer (Consent Decree paragraph 44).

I am confident in the integrity of the enclosed document, and I am certain that its content not only satisfies regulatory requirements, but also helps further the mission and vision of the District by establishing aggressive, proactive, achievable measures to protect water resources and enhance the quality of life in Northern Kentucky.

I look forward to receiving your comments in the near future. If you have any questions or concerns, do not hesitate to contact me at 859-578-7465 or by e-mail at jeger@sd1.org.

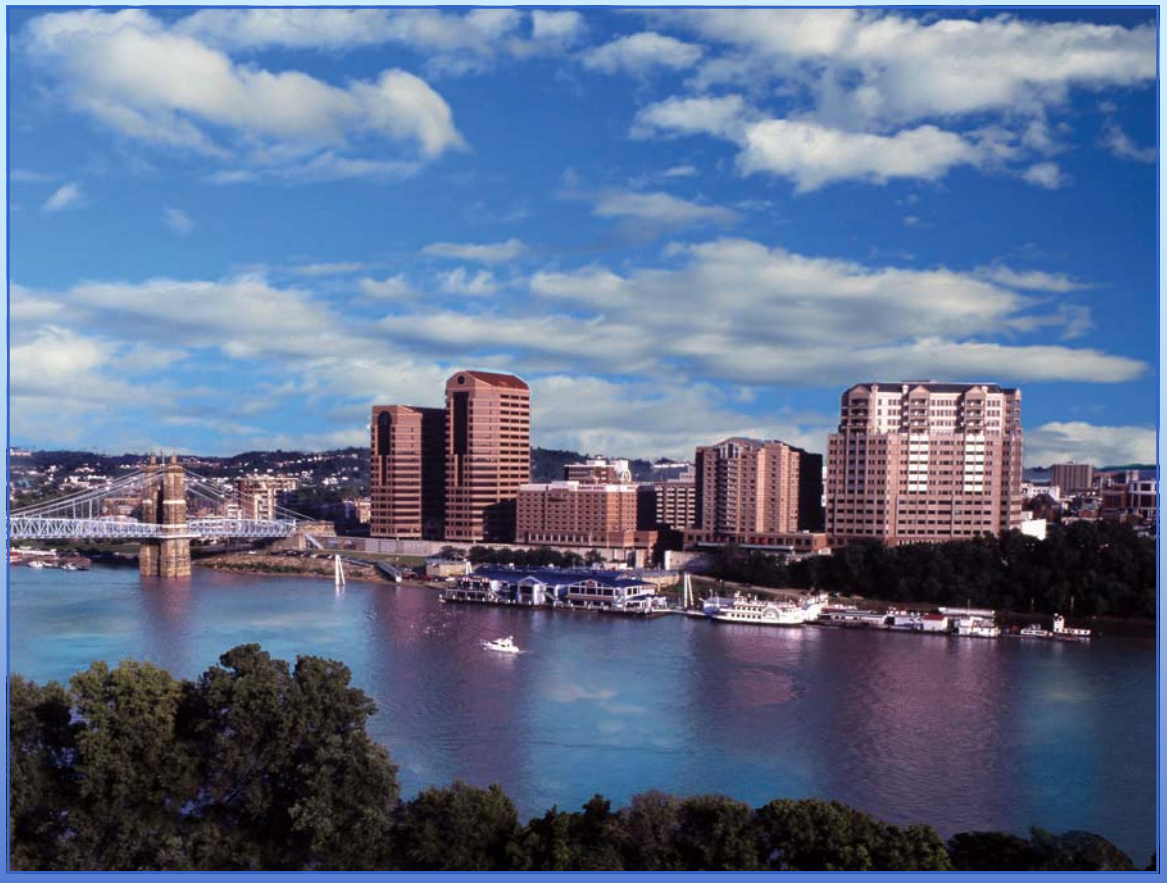
Best regards,

Jeffery A. Eger
General Manager

JAE/mm
Enclosures

Pump Station Operation Plan for Backup Power

Sanitation District No. 1
December 14, 2007



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CERTIFICATION

Pump Station Operation Plan for Backup Power
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

12/14/07
Date

COMMONWEALTH OF KENTUCKY

)ss.

COUNTY OF Kenton

The foregoing instrument was acknowledged before me this 14 day of December, 2007 by Jeffery A. Eger, General Manager of Sanitation District. No. 1.

Linda Hamberg
NOTARY PUBLIC

State-at-Large County, Kentucky

My commission expires: May 9, 2010

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PUMP STATION OPERATION PLAN FOR BACKUP POWER

December 14, 2007

Sanitation District No. 1
1045 Eaton Drive
Ft. Wright, KY 41017

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TABLE OF CONTENTS

FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

CCTV	Closed Circuit Television
CD	Consent Decree
CMMS	Computerized Maintenance Management System
CSO	Combined Sewer Overflow
CSS	Combined Sewer System
District	Sanitation District No. 1
ERWRF	Eastern Regional Water Reclamation Facility
IC	Infrastructure Consultant
I/I	Inflow and Infiltration
KPDES	Kentucky Pollutant Discharge Elimination System
O&M	Operation & Maintenance
PS	Pump Station
PSs	Pump Stations
ROW	Right-of-way
SSO	Sanitary Sewer Overflow
SSS	Sanitary Sewer System
US EPA	United States Environmental Protection Agency
WRWRF	Western Regional Water Reclamation Facility

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EXECUTIVE SUMMARY

The definition of the Pump Station Operation Plan for Backup Power, as stated in the Consent Decree, is a plan that "…evaluates the District's pump stations and includes schedules for providing backup power or other appropriate measures for addressing power outages at the District's pump stations as soon as practicable; provided however, that such schedules shall not extend beyond December 31, 2015." This plan achieves the goals listed in this description, and documents the District's immediate and aggressive implementation work to procure and install backup generators simultaneously with the development of this plan.

The Sanitation District No. 1 of Northern Kentucky (District) currently owns and operates 127 pump stations (PSs) across the District's service area within Campbell, Kenton and Boone Counties. The District began evaluating each of these PSs in late 2006. To efficiently analyze each of these PSs, the District divided the work based on the four Watershed basins defined in the Consent Decree (North, West, Central and East) and assigned these basins to three Infrastructure Consultants (ICs) as follows: Malcolm Pirnie - North; Metcalf & Eddy – West & Central; Hazen and Sawyer - East. Each of these ICs evaluated and studied each pump station in their respective basin using a consistent methodology to determine the best plan for implementing a backup power solution.

After initial data gathering and location visits, the District prioritized all the PSs from most critical to least critical for implementing a backup power solution and created an overall Pump Station Backup Power Prioritization List. This list is included in Appendix B. A schedule for expeditiously implementing backup power at all of our PSs was then developed based on the Prioritization List.

The determination of how critical the need to get backup power at a PS and therefore the associated schedule was generated through the answers to the following questions:

- Does the PS have a constructed bypass?
- How accessible is an overflow from the PS to the public?
- How much wastewater could overflow from the PS?
- What is the type of wastewater at the PS?
- Are there other upstream PSs depending on the PSs functionality?
- How often does this PS lose power historically?

A weighted scoring system for the answers to these questions generated a metric by which all PSs could be compared. A high weighted score is more critical than a low weighted score.

In addition to tracking priority, the Prioritization List subdivides each PS into one of six categories. These categories are described in Table E.1 below.

Table E.1 Pump Station Classification Summary

Category	Description	Number of Stations
1	PSs with backup power in place, in design, or in construction	21
2	PSs slated for elimination prior to December 31, 2015	21
3	Initial Action Pump Stations (1)	24
4	Pumps stations without wet weather capacity issues (2)	50
5	Pump stations with wet weather capacity issues and with recorded history of power outages (3)	6
6	Pump stations with wet weather capacity issues but without recorded history of power failures (3)	5
	Total Pump Stations	**127**

Notes:

(1) Category 3 are the PSs whose backup power solutions are being implemented simultaneously with the development of this Plan. As of the submission of this Plan, the District has received bids on all 24 of these generators and they are at various stages of their manufacture, delivery and installation. See Section 5 for additional details.

(2) Category 4 are PSs that have no known wet weather capacity issues, and, therefore, the District is able to proceed with implementation of a backup power solution.

(3) Category 5 and Category 6: Based upon the data collected, all PSs in these categories generally have insufficient pumping capacity during wet weather conditions. It is necessary for the District to fully understand the magnitude of the capacity problem at these locations prior to proceeding with a backup power project. Backup power alone at these PSs will not resolve the observed lack of pumping capacity during wet weather and the potential for overflows.

In general, the categories and scores from the Prioritization List will determine the order in which a backup power solution will be implemented. The categories are also a means of keeping track of the progress going forward. The concept is that PSs in Categories 3, 4, 5 & 6 will progressively move into Category 1 or be eliminated on or before December 31, 2015.

The schedule of implementing backup power solutions is included in Table E.2 below. The District plans to implement 10 to 14 backup power solutions per year. This schedule has been coordinated with other backup power solutions that are already planned and/or under construction. The rate of 10 to 14 backup power solutions implemented per year represents the most expeditious schedule that the District can implement while balancing the planning, design, and implementation of other major capital projects to be implemented over the same time frame. All PSs will have backup power solutions in place no later than December 31, 2015.

Based on our experience to-date with the first four generator procurement projects, the current generator manufacturers have a high backlog due to the worldwide demand for generators which is causing extended lead-times (on the order of several months) to obtain generators. The manufacturers have indicated to us that this demand outpacing

supply is forecasted to continue for several years. This lead-time for generators has affected our current schedule for the Initial Action PSs and has been considered in developing the schedule below.

Also, based on our experience to-date, easements and additional right of way, proximity of the PSs to houses and neighbors, steep slopes, and poor access, are making placement and installation of backup power solutions difficult and are requiring significant coordination effort and time to implement. We are experiencing these issues at over 30 of the PS locations.

The schedule has been organized by PS category and a discussion for each category is presented in Section 9 of this plan. The schedules presented assume that unknowns beyond the District's control do not arise during the course of the work that could cause delays in meeting these schedules. If unknowns occur beyond the District's control that cause delays in meeting the ultimate backup power implementation dates shown, the District reserves the right to seek an extension to the schedule for PS backup power implementation at the affected PS(s) up to, but not beyond the December 15, 2015 Consent Decree deadline**,** pursuant to paragraph 82 of the Consent Decree as a non-material modification.

Table E.2 Pump Station Implementation Schedule

		Implementation Year								
Category	**PS/Category**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
1	21	Already Implemented or Under Construction Completed by 2009								
2	21	1		2			4	4 2	4	4
3	24	4	20							
4	50			12	12	12	4	3	7	
5	6				1		2	1	1	1
6	5						2	1	1	1
	127	5	20	14	13	12	12	11	13	6

The staging by category has been developed to allow some flexibility on a year by year basis. Also, for the solutions implemented in a given year, significant time and effort is spent leading up to the actual implementation. For example, several of the 5 solutions implemented in 2007 began prior to 2004. The 20 Category 3 solutions to be implemented in 2008 were planned and designed in 2007.

As the simple table-based schedule above was developed, the impact of category, the steps that lead to final implementation, as well as the manageable rate of 10 to 14 solutions per year were evaluated. All Category 1 and 3 stations and seven Category 2 stations (that are highlighted in blue in Table 9.1) are already planned or under development and can not be accelerated. This accounts for 52 of the 127 stations. The scheduling process for the remaining 75 stations is detailed in Section 9 of this plan.

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SECTION 1. INTRODUCTION

1.1 Background and Consent Decree Requirements

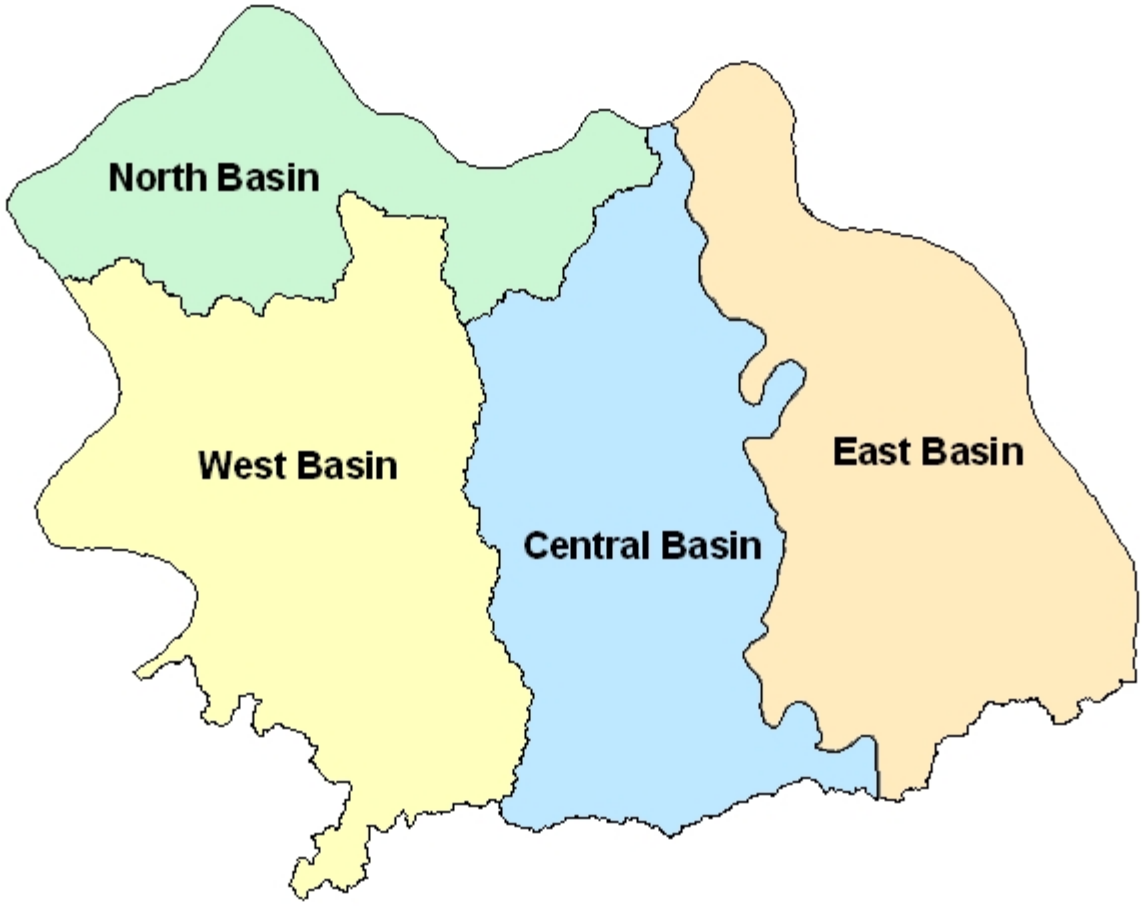
A Consent Decree between the Sanitation District No. 1 of Northern Kentucky and the United States Environmental Protection Agency (US EPA) and the Commonwealth of Kentucky was entered by a Federal court on April 18, 2007, that requires the District to finalize, develop, submit, and implement plans for the continued improvement of the separate sanitary sewer system (SSS), combined sewer system (CSS), and the District's water reclamation facilities (WRFs). The Consent Decree addresses sanitary sewer overflows (SSOs) and discharges from the combined sewer overflow (CSO) outfalls which are currently identified or will be identified in the future in any Kentucky Pollutant Discharge Elimination System (KPDES) permit issued to the District.

As part of this agreement, the District was tasked to develop a PS Operation Plan for Backup Power (paragraph 36b in the Consent Decree) within 12 months of entry of the Consent Decree to address utility power outages. This plan "…evaluates the District's pump stations and includes schedules for providing backup power or other appropriate measures for addressing power outages at the District's pump stations as soon as practicable; provided however, that such schedules shall not extend beyond December 31, 2015."

This PS Operation Plan for Backup Power is designed to address all of the requirements as stated in the Consent Decree for all of the District's sanitary PSs and documents the District's immediate and aggressive implementation work to procure and install backup generators simultaneously with the development of this plan (i.e. Initial Action List). This plan was not intended to address the flood PSs operated by the District as part of the Army Corp of Engineer's flood protection system. These flood PSs in the river cities already have multiple source power feeds through the Duke Energy electric grid to provide backup power, if needed.

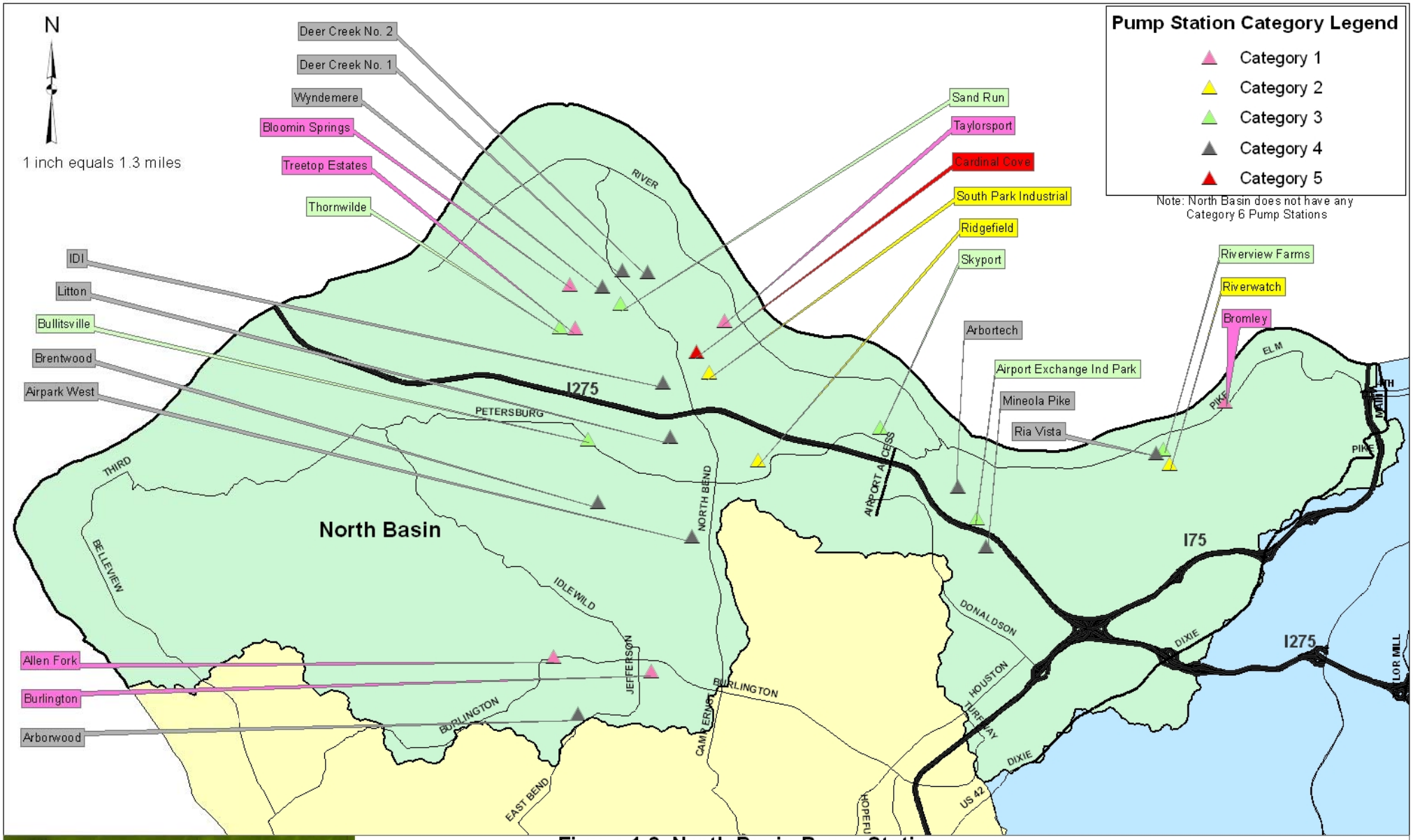
1.2 Pump Station Locations

The District currently owns and operates 127 PSs across the District's service area within Campbell, Kenton and Boone Counties. The District began evaluating each of these PSs in late 2006. To efficiently analyze each of these PSs, the District divided the work based on the four Watershed basins defined in the Consent Decree (North, West, Central and East) and assigned these basins to three Infrastructure Consultants (ICs) as follows: Malcolm Pirnie - North; Metcalf & Eddy – West & Central; Hazen and Sawyer - East. Each of these ICs evaluated and studied each PS in their respective basin using a consistent methodology to determine the best plan for implementing a backup power solution. Figure 1.1 on the following page shows the delineation of the four Watershed basins. Figures 1.2, 1.3, 1.4, and 1.5 on the following pages show the individual basins along with PS locations color coded by the six categories of classification.



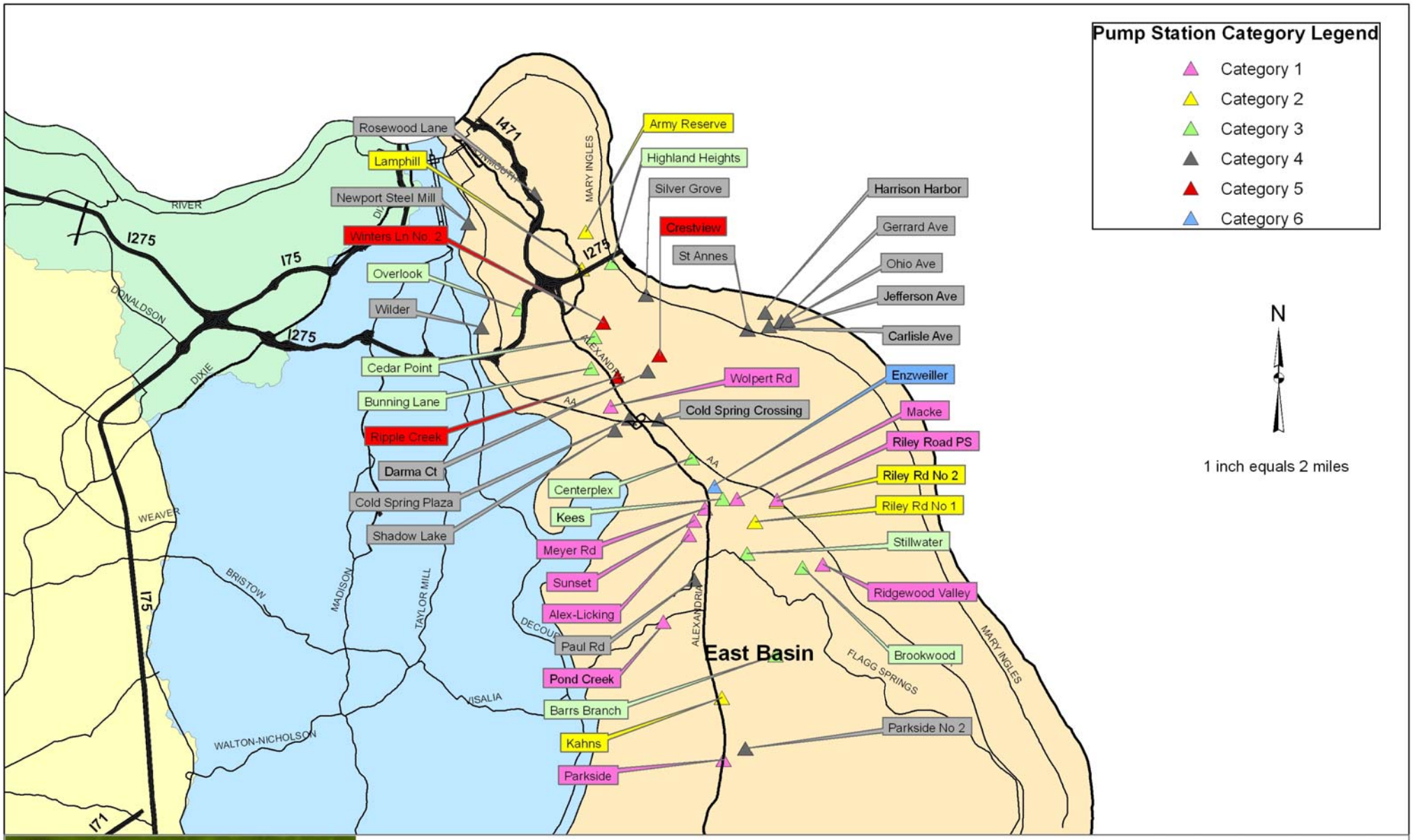
Sanitation District No.1

Figure 1.1 - Basin Delineation
Pump Station Operation Plan for Backup Power



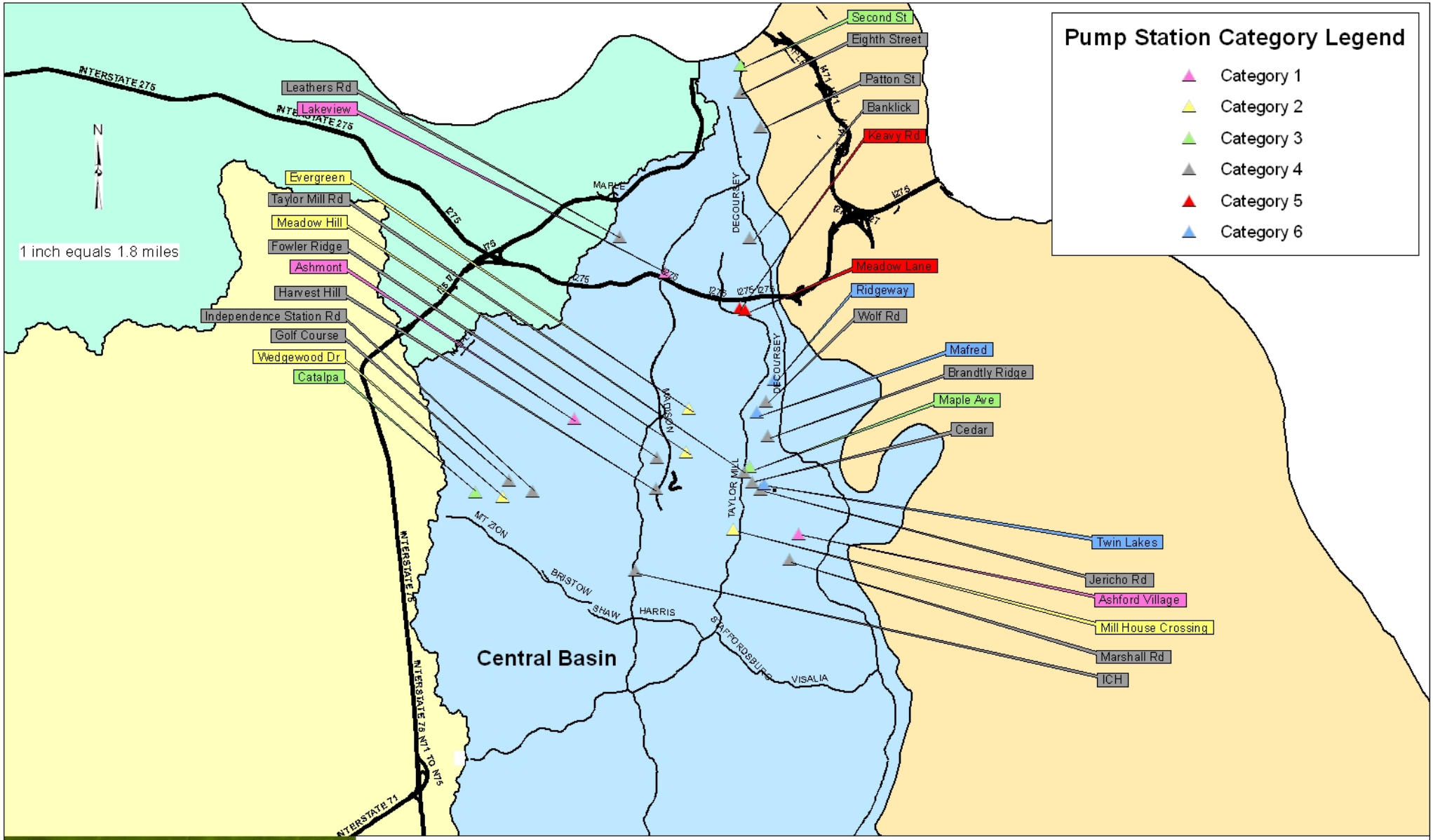
SanitationDistrict No.1

Figure 1.2 North Basin Pump Stations
Pump Station Operation Plan for Backup Power



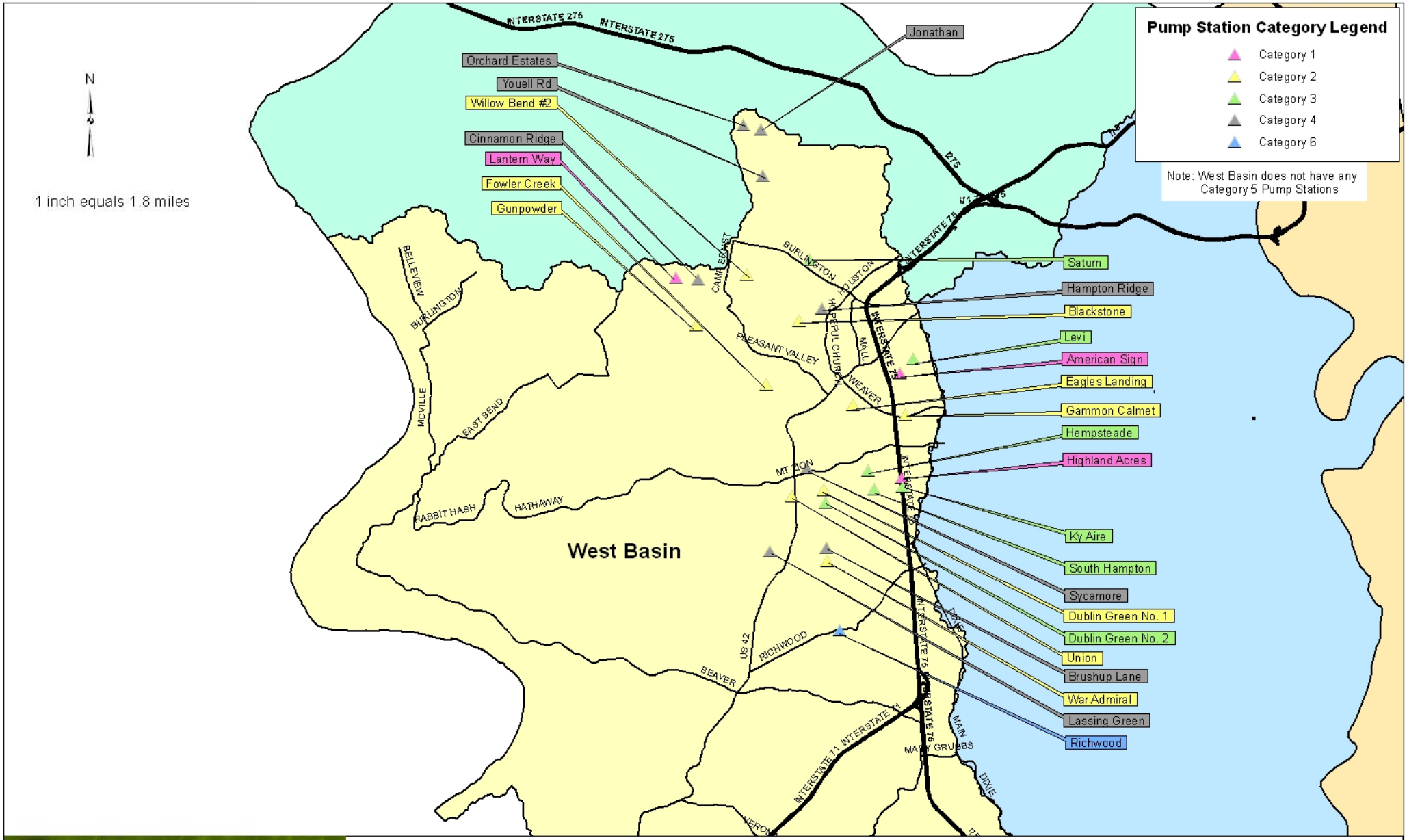
SanitationDistrict No.1

Figure 1.3 East Basin Pump Stations
Pump Station Operation Plan for Backup Power



SanitationDistrict No.1

Figure 1.4 Central Basin Pump Stations
Pump Station Operation Plan for Backup Power



SanitationDistrictNo.1

Figure 1.5 West Basin Pump Stations
Pump Station Operation Plan for Backup Power

1.3 Backup Power Plan Approach

The District's approach to developing a backup power solution for each of their 127 PSs is summarized in the following six steps:

Step 1: Gather information: The electronic and hard copy reports for overflows and power outages dating back to 1997 were reviewed. Information regarding PS operations and maintenance (O&M) was gathered to obtain a historical perspective regarding which PSs are more troublesome than others with respect to frequency of power outages. In addition, telemetry data and work order histories were reviewed to assess whether past historical overflows were actually caused by a power outage or if it was caused by another issue. All of this data was then used in the prioritization and categorization of the PSs.

Step 2: Visit pump station sites: Each PS was visited and electrical, mechanical, and site plan information were recorded. The current PS site condition was also documented with digital photographs. The consistency of the information gathered for each PS location was ensured by the use of standardized data logging sheets. These data sheets were then transferred to Excel in data tables that will then be imported in the District's Computerized Maintenance Management System (CMMS) as appropriate for permanent records of the recorded data for future reference. The PS data sheets which were completed during the site visits are attached as Appendix A.

Step 3: Develop a prioritization and categorization methodology: A PS Backup Power Prioritization List was developed utilizing the information gathered from steps 1 and 2 for the scoring and priority ranking of PSs for backup power solution implementation. The prioritized PSs were then divided into categories depending on if a backup power solution was already in-place, scheduled to be in-place or a solution was needed. The prioritization and categorization methodology is discussed in further detail in Section 2, Prioritization and Categorization Methodology.

Step 4: Develop backup power solutions: Each PS was evaluated and a potential backup power solution for the station was determined from the list below. This list is arranged in the order of preference:

1) Eliminate the PS with gravity sewers.
2) Provide a separate dual utility power feed.
3) Install a permanent generator.
4) Install a gas driven pump.
5) Dispatch a portable solution (portable pump or portable generator) at the time of loss of power.

Each of these solutions is discussed below. The backup power solution for each PS is discussed in further detail in Sections 3 to 8, organized by category.

1) **Eliminate the PS with gravity sewers:** The preferred alternative is elimination of a PS by construction of gravity sewers. Eliminating a PS not only relieves the need for backup power, but it also eases the demands upon the District's operation and maintenance personnel and reduces O&M costs.

   Eliminating a PS requires the station's flow be rerouted through new gravity sewers that connect to existing downstream sewers that have sufficient dry and wet weather capacity to accept the eliminated PS flows. The next step for those PSs identified for potential elimination, is to perform a detailed feasibility study to confirm the viability of elimination.

   This study will include alignment development, lifecycle cost comparisons and easement determinations. If, based on this study, a 30-year pay back is possible based on the installation of a gravity sewer and associated O&M costs versus the installation of a permanent backup power solution and the continued O&M of the PS and the backup power solution, the PS elimination will move into detailed design, followed by construction. If the study concludes that it is not cost effective to eliminate the PS, then the PS will move into Category 4 and the backup power solution will be phased as appropriate.

2) **Provide a separate dual utility power feed:** This backup power alternative does not require mechanical maintenance of the backup power solution. A PS will qualify for this alternative on a case-by-case basis. Duke Energy and Owen Electric, the two electric utilities in the area, were given an overall map of the District's PSs. These utilities then identified areas where dual power feed may be feasible. This data was then used to assess the feasibility and costs for providing dual power feeds to the applicable PSs.

3) **Install a permanent generator:** The next preferred alternative is installation of a permanent generator. A natural gas fueled generator was generally preferred over a diesel generator due to cleaner emissions, less concern of being affected by future emission regulations, and its continuous fuel supply.

   Duke Energy, the single natural gas utility provider within the District's service area, was given an overall map of the District's PSs. Duke highlighted the areas where natural gas lines are in the vicinity of the PSs. Each PS on the Initial Action List of PSs has already been investigated on a case-by-case basis. A natural gas generator was pursued if the anticipated cost for the natural gas generator along with the cost of extending the natural gas service to the PS was approximately equal to the cost of an equivalent diesel generator.

4) **Install a gas driven pump:** This option was considered if a generator could not be used at a PS location. Installing a gas driven pump would require the purchasing of another pump and motor and would require wetwell modifications. For these reasons, it was typically easier and more cost-

effective to install a generator rather than install a gas driven pump. No PSs have been selected to receive a gas driven pump to-date.

5) **Dispatch a portable solution:** This option was considered in a scenario where installation of a permanent generator or pump was not feasible because of the vicinity to homes or due to its likely submergence due to location in a flood plain. The District currently has one 200 kW Bridgeway Cummins portable generator that could be used at some locations. The District's intent during investigations is to purchase the appropriate size portable generator or pump and have it available for use on an as-needed basis.

   In general, a portable solution was deemed not acceptable if the wet well storage capacity was less than two hours at average daily flow (Reference: Kentucky Division of Water's "Wastewater Treatment and Collection Design Checklists" under the Pump Station Section, Emergency Operation). Ten States Standard's also states "…sufficient storage capacity with alarm system shall be provided to allow time for detection of pump station failure and transportation and connection of generating equipment." These criteria limited this alternative to a few locations.

Step 5: Develop schedule: Once the prioritization score and ranking, PS categories, and backup power solution were developed, an implementation schedule was developed. The schedule is organized by PS category and is presented in Section 9 Implementation Plan.

Step 6: Develop Pump Station Operation Plan for Backup Power: The final step was to present the methodology, results, and schedules from all previous steps in this comprehensive plan.

1.4 Accelerated Backup Power Implementation

Before the Consent Decree was entered in April 2007, the District had already taken a proactive approach to providing a backup power solution at its PSs. The District began the PS ranking process in 2006 and began developing drawings and specifications for procuring and installing generators at several PSs. These PSs are referred to as the "Initial Action List" and make up the PSs in Category 3 as discussed in Section 2 of this plan.

The District's goal in developing the Initial Action List was to implement a plan that provided a backup power solution to as many high priority PSs as possible, as quickly as possible. To achieve this goal, the District developed a series of fast-track generator procurement packages. The intent of the procurement stage is to formally purchase a package of generators while the site designs and constraints are being addressed. Beginning with procurement allowed the District to reduce the implementation schedule by several months. The traditional bid-build contracting method would have added time

as the contract drawing development, easement acquisition, bid and contract award would precede generator procurement. With the implemented strategy, the generators are being procured, manufactured, and delivered while the other issues are being finalized. Contractor services for the installation of the generators are then obtained separately while the generators are being manufactured.

The Initial Action List is comprised of PSs with the following characteristics:

- The stations have a history of power failure.
- Generator installation is fairly straightforward given the site conditions.
- The stations ranked high on the prioritization list.

A total of 24 PSs were included in the Initial Action List. Four procurement packages were prepared and bid. The packages were staggered such that the delivery of the subsequent set of generators would follow as closely as possible the installation of the previously procured package. This is key as there are many issues associated with this volume of construction, including material storage, protection, and warrantee terms.

More details on the Category 3 PSs are included in Section 5 Category 3 Pump Stations and Section 9 Implementation Plan.

SECTION 2. PRIORITIZATION AND CATEGORIZATION METHOLOGY

Creating a plan that ensures backup power will be available at all 127 PSs within the District's service area on or before December 31, 2015 required a systematic approach and methodology. The approach consisted of the development of a prioritization ranking, and categorization for all of the PSs. The detailed analysis of the prioritization methodology is summarized as a table in Appendix B. Appendix C summarizes an alphabetical listing of the PSs along with their ranking, categories and recommended backup power solution.

2.1 Prioritizing the Pump Stations

The PSs were prioritized by identifying several important criteria and then developing a weighted scoring system for these criteria. The scoring system was applied to each PS to determine its relative priority. The scoring system used in the Prioritization List is a combination of objective and subjective criteria that generate a score between 0 and 5 for each PS. These criteria are as follows:

- **Presence of Constructed Bypass:**
  A constructed bypass is an outfall pipe that relieves the wet well during a sewage backup scenario by discharging excess or backed up flows to an adjacent stream or creek. Most of these bypass pipes were originally installed by the developer or

local city to protect against basement backups upstream should excess flow or a mechanical failure or power outage occur at the PS. Since the bypass pipe discharges sewage to the environment, high priority was given to identify and eliminate the bypass pipe at these PSs. The scoring system utilized for each PS is presented below:

- o If PS is listed in Consent Decree as having a constructed bypass, then assigned score = 5;
- o If PS is not listed in Consent Decree, but has a constructed bypass, then assigned score = 3;
- o If manhole upstream of PS has relief pipe (or) PS has no constructed bypass, then assigned score = 0.

- **Consequence of PS Power Failure – Public Access:**
  This criterion was included to account for proximity of a PS to public access (example: residential homes). The scoring system utilized for each PS is presented below:
  - o If there was a potential for a basement backup should the PS wetwell fill-up or overflow, then assigned score = 5;
  - o If overflow occurs close to a major street (or) in close proximity to residential homes, then assigned score = 4;
  - o If overflow occurs, not in close proximity to residential homes, but could, impact, an adjacent creek or stream, then assigned score = 3;
  - o If overflow occurs in an industrial neighborhood with no potential impact to a creek or stream, then assigned score = 2;
  - o If overflow occurs in a remote area with no potential impact to a creek or stream, then assigned score =1.

- **Consequence of PS Power Failure – Overflow Volume:**
  This criterion was included to give priority to PSs that have a higher pumping capacity, on the assumption that a PS power failure would cause a higher volume discharge and greater impact to the surrounding area. The scoring system for this criterion utilized for each PS is presented below:
  - o If PS Flow > 1,400 GPM, then assigned score = 5;
  - o If 1,400 GPM >PS Flow > 700 GPM, then assigned score = 3;
  - o If PS Flow<700 GPM, then assigned score = 1.

- **Consequence of PS Power Failure - Composition of Overflow:**
  This criterion was included to provide higher priority to PSs that receive high-strength waste (example: industrial effluent, etc.) as compared to strictly residential flows and hence would have a potentially higher detrimental effect to the surrounding area in the event of PS power failure. The scoring system utilized for this criterion is presented below:
  - o If wastewater is primarily industrial, then assigned score = 5;
  - o If wastewater is mixture of residential and industrial, then assigned score = 3;
  - o If wastewater is primarily residential, then assigned score = 1.

- **Consequence of PS Power Failure - Upstream Influence:**
  This criterion captures the importance of downstream PSs that receive significant flow from upstream PSs (example: Sand Run PS which receives flow from several upstream PSs). If the upstream PSs received backup power before the Sand Run PS this could cause larger potential overflows at the Sand Run PS from a power outage. The scoring in this category assigns higher priority to such downstream PSs that receive a substantial portion of flow from upstream PSs. The scoring system utilized for this criterion is presented below:
  - If ≥70,% of influent is from upstream PSs, then assigned score = 5;
  - If flow from upstream PSs is between 40% and 70% of total flow to PS, then assigned score = 3;
  - If flow from upstream PSs is < 40% of total flow to PS, then assigned score = 1;
  - If no flow is received from upstream PSs, then assigned score = 0.

- **Reliability of Primary Power Feed - History of Power Failures:**
  This criterion assigns high priority to PSs with repeated power outage histories. The scoring system utilized for this criterion is presented below:
  - If there are greater than 3 power outages per year, then assigned score = 5;
  - If there are power outage incidents between 1 and 3 per year, then assigned score = 3;
  - If there is only one power outage incident per year, then assigned score = 1;
  - If there is no history of power outages, then assigned score = 0.

After the scoring was completed for each PS, each criterion was assigned a weight such that the sum of the weights for all criteria added to 100%. The weighting was used to differentiate between the criteria that were deemed most important to the District in prioritizing PSs for a backup power solution. Table 2.1 below presents the criteria and weights selected. The criteria that were given the highest weights were “History of Power Failure” and “Consequence of Power Failure – Public Access.” The District identified the PSs that have a documented history of power failures and overflows that could affect the public. The District believes PSs with this history and public access risk should receive backup power before PSs that did not have these characteristics. The weight was multiplied by the score for each criterion to develop a weighted score for each criterion. The weighted score for each criterion was then summed to develop a total weighted score for each PS. The total weighted score is also referred to as the “Prioritization Score” and is the tool that allowed the District to prioritize (i.e. Rank) the order in which a backup power solution will be implemented at the PSs,

In addition to the total weighted score for each PS, the District needed the flexibility to consider other non-scoring criteria. For example, if a PS was scheduled for upgrade or replacement in the near future, the District would likely prefer to implement backup power as part of the upgrade project regardless of the weighted score. Conversely, the District may implement backup power at a low scoring PS because of repeated power outages, negative public perception relating to power outages, ease of installation of a backup power solution, etc. The Prioritization List is a tool that will be continuously

used by the District to help plan and track the backup power implementation for all PSs. The Prioritization List for all 127 PSs is included in Appendix B.

Table 2.1 Prioritization Characteristic Weights

Criteria	Weight
Does PS have constructed bypass?	15%
Consequence of Power Failure	
Public Access	25%
Overflow Volume	10%
Composition of Overflow	10%
Upstream Influence	10%
Reliability of Primary Power	
History of Power Failures	30%
Total	**100%**

The following Table 2.2 is a representative example of this prioritization process for a PS:

Table 2.2 Sample Pump Station Prioritization

Criteria	Weight	Score	Weighted Score
Does PS have constructed bypass?	15%	5	0.75
Consequence of Power Failure			
Public Access Ranking	25%	1	0.25
Overflow Volume Ranking	10%	3	0.30
Composition of Overflow Ranking	10%	1	0.10
Upstream Influence Ranking	10%	0	0.00
Reliability of Primary Power			
History of Power Failures	30%	5	1.50
Total	**100%**		**2.90**

2.2 Categorizing the Pump Stations

The District's 127 PSs were classified into 6 categories based on several criteria and implementation factors. The selected backup power solution and Prioritization List provided information to categorize the PSs. Table 2.3 below presents each of these categories as well as the number of the District's PSs within each category. The PSs in these categories are discussed in further detail in Sections 3 through 8.

Table 2.3 Pump Station Classification Summary

Category	Description	Number of Stations
1	PSs with backup power in place, in design, or in construction	21
2	PSs slated for elimination prior to December 31, 2015	21
3	Initial Action Pump Stations (1)	24
4	Pumps stations without wet weather capacity issues (2)	50
5	Pump stations with wet weather capacity issues and with recorded history of power outages (3)	6
6	Pump stations with wet weather capacity issues but without recorded history of power failures (3)	5
	Total Pump Stations	**127**

Notes:

(4) Category 3 are the PSs whose backup power solutions are being implemented simultaneously with the development of this Plan. As of the submission of this Plan, the District has received bids on all 24 of these generators and they are at various stages of their manufacture, delivery and installation. See Section 5 for additional details.

(5) Category 4 are PSs that have no known wet weather capacity issues, and, therefore, the District is able to proceed with implementation of a backup power solution.

(6) Category 5 and Category 6: Based upon the data collected, all PSs in these categories generally have insufficient pumping capacity during wet weather conditions. It is necessary for the District to fully understand the magnitude of the capacity problem at these locations prior to proceeding with a backup power project. Backup power alone at these PSs will not resolve the observed lack of pumping capacity during wet weather and the potential for overflows.

SECTION 3. CATEGORY 1 PUMP STATIONS

Category 1 PSs (21 of the 127) have a backup power solution either already in place or being implemented as part of PS construction. This includes PSs with an installed generator or dual utility power feeds. Some of these PSs (Alex Licking, American Sign, Meyer, and Riley Road) are currently under construction for generator installation. These locations presented in the following table are deemed complete with respect to the backup power requirements of the Consent Decree:

Table 3.1 Category 1 Pump Stations

Number	PS Name	Backup Power Solution Type	Status
1	Alex Licking	Permanent Generator (Diesel)	PS currently under construction. Generator will be installed and operational in July 2008
2	Allen Fork	Permanent Generator (Diesel)	Complete
3	American Sign	Permanent Generator (Diesel)	PS currently under construction. Generator will be installed and operational in March 2008
4	Ashford Village	Permanent Generator (Diesel)	Complete
5	Ashmont	Permanent Generator (Diesel)	Complete
6	Bloomin Springs	Permanent Generator (Diesel)	Complete
7	Bromley	Dual Utility Power Feed	Complete
8	Burlington	Permanent Generator (Diesel)	Complete
9	Highland Acres	Permanent Generator (Diesel)	Complete
10	Lakeview	Dual Utility Power Feed	Complete
11	Lantern Way	Permanent Generator (Diesel)	Complete
12	Macke	Permanent Generator (Diesel)	Complete
13	Meyer Rd	Permanent Generator (Diesel)	Complete
14	Parkside	Permanent Generator (Diesel)	Complete
15	Pond Creek	Permanent Generator (Diesel)	Complete
16	Ridgewood Valley	Permanent Generator (Diesel)	Complete
17	Riley Rd	Permanent Generator (Diesel)	PS currently under construction. Generator will be installed and operational in February 2009
18	Sunset	Permanent Generator (Diesel)	PS currently under design for upgrade. Generator will be installed and operational in June 2009
19	Taylorsport	Permanent Generator (Diesel)	Complete
20	Treetop Estates	Permanent Generator (Diesel)	Complete
21	Wolpert Rd	Permanent Generator (Diesel)	Complete

SECTION 4. CATEGORY 2 PUMP STATIONS

Category 2 PSs (21 of the 127) include PSs that are being considered for elimination through gravity sewer connection. The backup power alternative analysis indicated that the District's preferred alternative is the elimination of the PS by extension of gravity sewers. Eliminating a PS not only relieves the need for backup power but it also eases the demand upon the District's O&M personnel.

Category 2 is further divided into two sub-categories depending on the stage of the elimination process. These two sub-categories are described below:

- **Category 2A:** This subcategory includes PSs that are already planned for elimination by construction of gravity sewers as part of the Western and Eastern Regional Water Reclamation Facility Projects. There are 7 PSs in this category as shown below in Table 4.1.

Table 4.1 Category 2A - Pump Stations Planned for Elimination

Pump Station Name	Status
Fowler Creek	PSs to be eliminated by gravity sewer as part of the Western Regional Collection System & Water Reclamation Facility Projects. Estimated completion by March 31, 2013.
Gammon Calmet	
Gunpowder	
Union	
Kahns	PS to be eliminated by gravity sewer as part of the Eastern Regional Collection System & Water Reclamation Facility Projects. Completed October 2007.
Riley Road No. 1	PSs to be eliminated by gravity sewer as part of the Eastern Regional Collection System & Water Reclamation Facility Projects. Estimated completion by March 31, 2009.
Riley Road No. 2	

- **Category 2B:** This subcategory includes PSs that have the potential to be eliminated by gravity sewer construction. A preliminary analysis was performed to study potential PS elimination for all of the PSs as part of this plan. Under this preliminary analysis, the topography, and the location and capacity of nearby gravity sewers were examined along with planning level costs where gravity sewer elimination was a potential option. This analysis revealed the 14 PSs listed in Table 4.2.

Table 4.2 Category 2B - Pump Stations with Potential to be Eliminated by Gravity Sewer

Pump Station Name	Approximate Design Firm Capacity (GPM)	Rank
Meadow Hill	250	22
Willow Bend No. 2	83	30
Evergreen	150	41
Ridgefield	300	45
Mill House Crossing	300	49
Dublin Green No. 1	36	53
Eagles Landing	30	54
Army Reserve	150	57
Blackstone	150	61
Lamphill	130	86
Wedgewood Dr	150	90
South Park Industrial	200	95
Riverwatch	450	96
War Admiral	250	101

The next step in the PS elimination process for Category 2B is to perform a detailed feasibility study for PS elimination. This study will include alignment development, lifecycle cost comparisons and easement determinations. If, based on this study, a 30-year pay back is reasonable based on the installation of a gravity sewer and associated O&M costs versus the installation of a backup power solution and the continued O&M costs for the PS and backup power solution, the PS elimination will move into detailed design, followed by construction. If the study concludes that it is not cost effective to eliminate the PS, then the PS will move into Category 4 and will be phased as per the schedule shown in Section 9 Implementation Plan. The anticipated solution implementation schedule for the Category 2B PSs is listed in Table 4.3.

Table 4.3 Category 2B Pump Station Solution Implementation Schedule

Task	Estimated Duration (Months)
Feasibility Study	2
Preliminary Design	3
Final Design (1)	12
Bid/Award	2
Construction	8
Total Project Duration	2 years 3 months

(1) Includes up to 6 months for easement acquisition. Permitting will be completed during the easement acquisition.

SECTION 5. CATEGORY 3 PUMP STATIONS

Category 3 PSs (24 of the 127) were identified by the District as high priority stations. The categorization is based on work the District began in 2006 and the prioritization process described above. All stations within this category will have permanent generators installed. The generator may be fueled by either diesel or natural gas. The preferred type of fuel to be used will be confirmed based on the availability of natural gas to the site and the cost difference between natural gas and diesel powered generators. A natural gas fueled generator is generally preferred over a diesel generator due to cleaner emissions, less concern of being affected by future emission regulations, and its continuous fuel supply.

The District's goal in developing the Initial Action List was to implement a plan that provided a backup power solution to as many high priority PSs as possible as quickly as possible. To achieve this goal, the District utilized a series of fast-track generator procurement packages. The intent of the procurement stage is to formally purchase a package of generators while the site designs and constraints are being addressed Beginning with procurement allowed the District to reduce the implementation schedule by several months. The traditional bid-build contracting method would have added time as the contract drawing development, easement acquisition, bid and contract award would precede generator procurement. With the implemented strategy, the generators are being procured, manufactured, and delivered while the other issues are being finalized. Contractor services for the installation of the generators are then obtained separately while the generators are being manufactured.

The Initial Action List is comprised of PSs with the following characteristics:

- The stations have a history of power failure.
- Generator installation is fairly straightforward given the site conditions.
- The stations ranked high on the prioritization list.

A total of 24 PSs were included on the Initial Action List. Four procurement packages were prepared and bid. The packages were staggered such that the delivery of the subsequent set of generators would follow the installation of the previously procured package. This is key as there are many issues associated with this volume of construction, including material storage, protection, and warrantee terms.

The details of the four procurement packages are included in Table 5.1. While reviewing the table, it is important to note that Project No. 1 was determined prior to the formal prioritization process and finalized ranking. Therefore, these PSs were not officially scored and prioritized since a generator was already planned for these locations. More information on the implementation schedule for the Category 3 PSs is included in Section 9 Implementation Plan.

Table 5.1 Category 3 Pump Stations

PS Name	Backup Power Solution Type	Rank	Status
Project No. 1			
Levi	Permanent Generator (Diesel)	---	The need for backup power for these PSs were identified in 2006 prior to the prioritization process so no rank was performed. Generators will be installed and operational in early 2008.
Ky Aire	Permanent Generator (Diesel)	---	
South Hampton	Permanent Generator (Diesel)	---	
Centerplex	Permanent Generator (Diesel)	---	
Project No. 2			
Bullitsville	Permanent Generator (Diesel)	1	Generators will be installed and operational in 2008
Highland Heights	Portable Generator (Diesel)	3	
Hempsteade	Portable Generator (Diesel)	5	
Barrs Branch	Permanent Generator (Diesel)	6	
Second Street	Permanent Generator (Diesel)	7	
Skyport	Permanent Generator (Diesel)	9	
Thornwilde	Permanent Generator (Diesel)	11	
Project No. 3			
Sand Run	Permanent Generator (Diesel)	2	Generators will be installed and operational in 2008
Brookwood	Permanent Generator (Natural Gas)	4	
Dublin Green No. 2	Permanent Generator (Natural Gas)	8	
Maple Ave	Permanent Generator (Natural Gas)	12	
Catalpa	Permanent Generator (Natural Gas)	16	
Project No. 4			
Saturn	Permanent Generator	10	Generators will be installed

	(Natural Gas)		
Airport Exchange Ind. Park	Permanent Generator (Natural Gas)	13	
Stillwater	Permanent Generator (Natural Gas)	14	
Overlook	Permanent Generator (Natural Gas)	15	and operational in 2008
Riverview Farms	Permanent Generator (Natural Gas)	17	
Kees	Permanent Generator (Natural Gas)	18	
Cedar Point	Permanent Generator (Natural Gas)	19	
Bunning Lane	Permanent Generator (Natural Gas)	---	

SECTION 6. CATEGORY 4 PUMP STATIONS

Category 4 PSs (50 of the 127) include PSs that are ready for backup power procurement without the need for further studies as they do not have any known wet weather capacity or power outage issues.

The Category 4 PSs are listed in Table 6.1 below. As the table shows, it is likely that most of these PSs will utilize generators to provide backup power. However, due to site restrictions, onsite installed generators may not be feasible at some locations and other backup power solutions may need to be considered. These PSs will be evaluated further as part of future backup power installation projects to confirm the most feasible backup power solution for each PS.

The scheduled window of solution implementation for all Category 4 PSs will be from 2008 to 2014. The District plans to implement backup power solutions for Category 4 PSs at the rate of approximately 9 PSs per year. The selection of the stations will be based on the rank. It is anticipated that the implementation will follow a procurement, design, construct approach similar to the Category 3 PSs.

The schedule for solution implementation for certain Category 4 PSs will be contingent on addressing some unique challenges. Such challenges include:

- Several PSs do not have well defined property easements. In such cases, easements may need to be procured.
- Several PSs are located in close vicinity to homes. The District wants to remain a good neighbor and minimize disturbance with generator installation and maintenance.

These implementation difficulties are further discussed in Section 9.2. The proposed schedule for all PSs is discussed in Section 9 Implementation Plan.

Table 6.1 Category 4 Pump Stations

PS Name	Rank	Potential Solution (1)	Status
Carlisle Ave	20	Permanent Generator	Permanent generators will be installed at an average of 9 stations per year. These are 9 of the 10 to 14 solutions total planned per year. Anticipate completion by year 2014 For detailed implementation schedule, please refer to Section 9
Banklick	23	Permanent Generator	
Shadow Lake	24	Permanent Generator	
Brentwood	25	Permanent Generator	
Fowler Ridge	26	Permanent Generator	
Darma Ct	27	Permanent Generator	
Rosewood Lane	28	Permanent Generator	
Arborwood	32	Permanent Generator	
Hampton Ridge	33	Permanent Generator	
Mineola Pike	34	Permanent Generator	
ICH	35	Permanent Generator	
Wolf Road	36	Permanent Generator	
Silver Grove	37	Permanent Generator	
IDI	38	Permanent Generator	
Orchard Estates	39	Permanent Generator	
Deer Creek No. 1	40	Permanent Generator	
Cedar	46	Permanent Generator	
Independence Station Rd	47	Permanent Generator	
Brandtly Ridge	48	Permanent Generator	
Leathers Rd	50	Permanent Generator	
Brushup Lane	51	Permanent Generator	
Jonathan	52	Permanent Generator	
Parkside No. 2	55	Permanent Generator	
Paul Rd	56	Permanent Generator	
Ohio Ave	58	Permanent Generator	
Harrison Harbor	59	Permanent Generator	
Wyndemere	63	Permanent Generator	
Litton	64	Permanent Generator	
Youell Road	65	Permanent Generator	
Marshall Rd	66	Permanent Generator	
St Annes	67	Permanent Generator	
Deer Creek No. 2	68	Permanent Generator	
Ria Vista	69	Permanent Generator	

PS Name	Rank	Potential Solution (1)	Status
Jericho Rd	70	Permanent Generator	Permanent generators will be installed at an average of 9 stations per year. These are 9 of the 10 to 14 solutions total planned per year. Anticipate completion by year 2014 For detailed implementation schedule, please refer to Section 9
Taylor Mill Rd	71	Permanent Generator	
Golf Course	72	Permanent Generator	
Harvest Hill	73	Permanent Generator	
Cinnamon Ridge	74	Permanent Generator	
Sycamore	75	Permanent Generator	
Wilder	76	Permanent Generator	
Arbortech	78	Permanent Generator	
Air Park West	79	Permanent Generator	
Lassing Green	80	Permanent Generator	
Cold Spring Crossing	81	Permanent Generator	
Gerrard Ave	82	Permanent Generator	
Jefferson Ave	83	Permanent Generator	
Newport Steel Mill	84	Permanent Generator	
Cold Spring Plaza	85	Permanent Generator	
Patton Street	88	Dual Utility Power Feed	
Eighth Street	93	Dual Utility Power Feed	

(1) As the table shows, it is likely that most of these PSs will utilize generators to provide backup power. However, due to site restrictions, onsite installed generators may not be feasible at some locations and other backup power solutions may need to be considered. These PSs will be evaluated further as part of future backup power installation projects to confirm the most feasible backup power solution for each PS.

SECTION 7. CATEGORY 5 PUMP STATIONS

Category 5 PSs (6 of the 127) are characterized by having a history of wet weather issues as well as a history of power outages. For the purpose of this analysis, a wet weather issue is defined as insufficient pumping capacity during wet weather as indicated by either extended runtime during and after wet-weather events and/or recorded wet-weather overflows. Simply implementing a backup power solution at these PSs will not eliminate the possibility of an overflow from the PS. In order to address all potential overflows at these PSs, backup power solutions will be linked to the wet-weather solutions being developed under the District's Watershed Plans in the Consent Decree. The schedule for the initial Watershed Plans being submitted in June 2009 and the subsequent 5-year implementation cycle (2014) allows for the desired coordination of wet-weather and backup power solutions at these PSs in order to address all overflows at these PSs and meet the Consent Decree deadline of December 31, 2015, for backup power implementation.

Therefore, the approach at Category 5 PSs is to integrate backup power needs into the established Watershed Planning process. This process will proceed as follows:

- Wet-weather solutions at these PSs will be developed as part of the District's Watershed Planning process.
- Development of wet-weather solutions will include assessment of capacity increases, wet-weather equalization, I/I reduction, and potential for PS elimination.
- Once the optimal wet-weather solution is identified, the appropriate backup power solution will be defined and included as part of the PS improvement plan.

The Category 5 PSs are listed in Table 7.1 below. The schedule status of these PSs is discussed in Section 9 Implementation Plan.

Table 7.1 Category 5 Pump Stations

PS Name	Rank
Winters Lane No. 2	21
Keavy	29
Cardinal Cove	42
Meadow Lane	43
Ripple Creek	87
Crestview	91

The District is currently conducting a comprehensive analysis of wet-weather collection system issues. This analysis is a component of the first stage of the Watershed Planning Process, which will result in detailed Watershed Plans in June 2009. These initial Watershed Plans will identify specific capital improvement projects that the District will implement over the 2009-2014 period. Given that Category 5 PSs experience wet-weather issues, they are a focus of the District's wet-weather collection system analysis.

As a first step in developing a better understanding of wet-weather issues, the District has deployed 245 flow monitors across their collection system to collect continuous flow data for a 12-month period. In addition to providing real-time insight into collection system performance, this flow data will be used to calibrate the District's system-wide collection system models. Once the models are calibrated, they will be used to analyze potential collection system improvements to resolve wet-weather issues. Some PSs may not currently be part of the existing flow monitoring program. These stations (Winters Lane No. 2, Keavy, Cardinal Cove, and Meadow Lane) will be investigated with flow monitoring as necessary to characterize their wet-weather issues.

Specific to the Category 5 PSs, the District's wet-weather analysis will examine a range of potential wet-weather solutions:

- Capacity increases
- Wet-weather equalization
- I/I reduction
- Potential for PS elimination

Each of these solutions has implications on the local system, as well as potential upstream and downstream impacts. The collection system models will be used to help identify the optimal wet-weather solution to address pump-station specific issues. Once the solution is identified, the District will understand the long-term PS requirements and define an appropriate back-up power solution.

The following discussion presents the current understanding of the issues and potential solution types at each Category 5 PS. The ultimate understanding of PS issues and the selection of the final definition of the preferred wet-weather solution and appropriate back-up power solution will emerge from the watershed planning process described above.

Winters Lane No. 2:
The Winters Lane No. 2 PS has 2 pumps rated at 20 horsepower each. In year 2001 there were 2 recorded overflows due to power failure. Winters Lane is an older PS located next to a small creek. The PS is suspected to receive I/I during wet weather and is being evaluated for capacity issues with the need to install an emergency generator properly sized for capacity increases as established during the watershed planning.

Keavy:
The Keavy PS has 2 pumps rated at 5 horsepower each. The PS has had 3 power outages between 2002 and 2007. The PS is also suspected of having wet weather issues due to extended pump run times during and after rain events. There is little chance the PS can be eliminated by connection to an existing sanitary sewer. Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred wet-weather and back-up power solution required.

Cardinal Cove:
The Cardinal Cove PS has an approximate pumping capacity of 185 GPM. Over the past 10 years the station has had only one recorded overflow. This PS has had a utility power loss once over the last two years. Cardinal Cove has previously been investigated for elimination by gravity sewer. Although physically possible, the financial and construction difficulties disqualified this station for elimination. This station is planned to receive a generator properly sized for capacity increases as established during the watershed planning.

Meadow Lane:
The Meadow Lane PS has 2 pumps rated at 5 horsepower each. This PS has a total of 4 recorded wet weather overflows in 2005 and 2006. There is little chance the PS can be eliminated by connection to an existing sanitary sewer. Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred solution required.

Ripple Creek:
The Ripple Creek PS has two pumps, each rated at 100 GPM. The PS has had 4 recorded power outages during the time frame of years 2002 through 2006. Seventeen overflows were recorded since year 2004. The PS utilizes a converted manhole as a wetwell with dry pit pumps connected by piping, located in an adjacent below grade chamber. It is judged that the converted manhole does not provide adequate storage capacity and contributes to the PS having overflows. The wetwell is also located in the middle of a paved street, which restricts access. This PS is under evaluation as part of the PS Overflow Elimination Plan specified in the Consent Decree to develop a solution to eliminate the overflow. The back-up power solution will be coordinated and implemented with the selected overflow elimination solution. From the PS Overflow Elimination Plan, preliminary and detailed design of the selected solution as well as land acquisition and bidding are currently scheduled to occur from December 2008 until September 2009. Construction is expected to begin after design and bidding and will last approximately 15 months, until December 2010, inline with the Exhibit E deadline of December 31, 2010.

Crestview:
The Crestview PS has two submersible pumps, each rated at 250 GPM. Power outages have occurred in 2004, 2006, and 2007. The PS has a constructed bypass and a history of overflows. An evaluation of the operating history of the PS determined a priority concern with excessive flows that were above the design hydraulic rating of the installed pumps. This PS is under evaluation as part of the PS Overflow Elimination Plan specified in the Consent Decree to develop a solution to eliminate the overflow. The back-up power solution will be coordinated to be implemented with the selected overflow elimination solution. From the PS Overflow Elimination Plan, the design, land acquisition, bidding, and construction for the final solution are currently scheduled to be completed by December 31, 2014, which is a full year ahead of the required Consent Decree deadline of December 31, 2015.

SECTION 8. CATEGORY 6 PUMP STATIONS

Category 6 PSs (5 of the 127) are characterized by having wet weather issues but without a history of power outages. Therefore, as with the Category 5 PSs, backup power solutions at these PSs are being linked to the wet-weather solutions being developed under the District's Watershed Plans. As noted previously, the schedule for initial Watershed Plans and subsequent 5-year implementation cycle allows for desired coordination of wet-weather and backup power solutions at these stations.

As with the Category 5 PSs, the approach at Category 6 PSs is to integrate backup power needs into the established Watershed Planning process. This process will proceed as follows:

- Wet-weather solutions at these PSs will be developed as part of the District's Watershed Planning process. Additional flow monitoring may be needed for Twin Lakes, Mafred, Enzweiller, and Ridgeway PSs.
- Development of wet-weather solutions will include assessment of capacity increases, wet-weather equalization, I/I reduction, and potential for PS elimination.
- Once the optimal wet-weather solution is identified, the appropriate backup power solution will be defined and included as part of the PS improvement plan.

The Category 6 PSs are listed in Table 8.1 below. The schedule status of these PSs is discussed in Section 9 Implementation Plan.

Table 8.1 Category 6 Pump Stations

PS Name	Rank
Twin Lakes	31
Mafred	60
Enzweiller	62
Ridgeway	77
Richwood	97

Integrating backup power needs at these stations into the Watershed Planning Process will proceed as described in Section 7 above. The following discussion presents the current understanding of the issues and potential solution types at each Category 6 PS. The ultimate understanding of PS issues and the selection of the final definition of the preferred wet-weather solution and appropriate back-up power solution will emerge from the watershed planning process described above.

Twin Lakes:
The Twin Lakes PS has 2 pumps each rated at 25 horsepower. The PS is suspected of having wet weather issues due to extended pump run times during and after rain events. The PS is located in the Latonia Lakes subdivision and has the Jericho and Cedar PSs tributary to it. The PS location is difficult to access as there is no proper access road. Latonia Lakes was originally developed as a fishing camp with narrow roads and small houses. Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred wet-weather and back-up power solution required.

Mafred:
The Mafred PS has 2 pumps rated at 10 horsepower each. This PS has a total of 5 recorded wet weather overflows in 2005 and 2006. There is little chance the PS can be eliminated by connection to an existing sanitary sewer. There are approximately 36 homes tributary to the PS and this area will be evaluated for I/I as part of wet weather improvements. Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred wet-weather and back-up power solution required.

Enzweiller:
The Enzweiller PS has 2 pumps each rated at 10 horsepower. The Enzweiller PS has a history of overflow problems with 4 recorded events in year 2005 involving a direct discharge into an adjacent creek. The creek flows through a residential area with the potential for public access during or shortly after the overflow condition. A review of electrical records did not list a problem with power outages and the overflow problems seem related to higher wet weather flows that affect the pumping capacity of the pumps. The Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred wet-weather and back-up power solution required.

Ridgeway:
The Ridgeway PS has 2 pumps rated at 10 horsepower each. This PS has a total of 6 recorded wet weather overflows in 2005 and 2006. This PS is located at the end of a ridge with no chance of connecting to an existing sanitary sewer. Flow monitoring and hydraulic modeling will provide insight as to the magnitude of the wet weather overflow issues and the preferred solution required.

Richwood:
The Richwood PS has 2 pumps rated for 1,000 GPM each and a third low flow pump rated at 750 GPM. The PS is suspected of having wet weather issues due to extended pump run times during and after rain events. The long-term plan for this PS is to upgrade the PS capacity and reroute the force main for discharge into the new Western Regional interceptor sewers.

SECTION 9. IMPLEMENTATION PLAN

9.1 Schedule Overview

A planning schedule was developed to document the plan for backup power solution implementation for the 127 PSs. The implementation schedule is presented in Table 9.1 and shows the anticipated number of PS backup power solutions to be implemented per year. The schedule has been coordinated with backup power projects that are currently planned and/or under construction. The plan is to implement 10 to 14 backup power solutions per year which represents the most expeditious schedule that the District can implement while balancing the planning, design and implementation of other major capital projects to be implemented over the same time frame along with any implementation challenges.

In addition, based on our experience to-date with the first four generator procurement projects, the current generator manufacturers have a high backlog due to the worldwide demand for generators which is causing extended lead-times (on the order of several months) to obtain generators. The manufacturers have indicated to us that this demand outpacing supply is forecasted to continue for several years. This lead-time for

generators has affected our current schedule for the Initial Action PSs and has been considered in developing the schedule below.

Also, based on our experience to-date, easements and additional right of way, proximity of the PSs to houses and neighbors, steep slopes, and poor access, are making placement and installation of backup power solutions difficult and are requiring significant coordination effort and time to implement. We are experiencing these issues at over 30 of the PS locations. These issues are described in Section 9.2 below.

The schedule has been organized by PS category and a discussion for each category is presented in Section 9.3. The schedules presented assume that unknowns beyond the District's control do not arise during the course of the work that could cause delays in meeting these schedules. If unknowns occur beyond the District's control that cause delays in meeting the ultimate backup power implementation dates shown, the District reserves the right to seek an extension to the schedule for PS backup power implementation at the affected PS(s) up to, but not beyond the December 15, 2015 Consent Decree deadline**,** pursuant to paragraph 82 of the Consent Decree as a non-material modification. The District has been proactive and thoughtful in preparing this schedule to allow for some flexibility, keeping in mind that the schedule is aggressive.

Table 9.1 – Pump Station Implementation Schedule

		Implementation Year								
Category	**PS/Category**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**
1	21	Already Implemented or Under Construction Completed by 2009								
2	21	1		2			4	4 2	4	4
3	24	4	20							
4	50			12	12	12	4	3	7	
5	6				1		2	1	1	1
6	5						2	1	1	1
	127	5	20	14	13	12	12	11	13	6

Considering that the rate of implementation of 10 to 14 generators per year is the basis of this schedule, the solutions implemented in a given year require significant time and effort leading up to the actual implementation. For example, several of the 5 solutions implemented in 2007 began prior to 2006. The 20 Category 3 solutions to be implemented in 2008 were planned and designed in 2007.

The PSs in each category and the steps that lead to final implementation were also evaluated. All Category 1 and 3 stations and 7 Category 2 stations (that are highlighted in blue in Table 9.1) are already planned or under development and cannot be accelerated. This accounts for 52 of the 127 stations. The scheduling process for the remaining 75 stations is explained in the following paragraphs.

Implementation of the remaining 14 Category 2 PSs (i.e. PS elimination with gravity sewers) is approximately a 2.5 year process per PS, as described in Section 4, Table

4.3, that would begin in 2008 and is currently projected to be completed by 2015. Given the time frame to complete the design, land acquisition, bidding, and construction of the solution for Category 4 PSs, an implementation schedule distributed at a rate of 2 to 4 per year has been developed.

The main driver for the timing of Category 5 and 6 PSs is the development of the Watershed Plans. As the Watershed Plans will be submitted in June 2009, the planning, design, land acquisition, bidding and construction process for Category 5 and 6 solutions will take approximately 3.5 to 5 years. Therefore, the earliest Category 5 and 6 solutions are estimated to begin to be in place is by the end 2012. It is also anticipated that the solutions impacting Category 5 and 6 stations may involve larger projects that need to be phased from an affordability standpoint. Given these constraints for Category 5 and 6 solutions, an implementation schedule distributed at a rate of 2 per year beginning in 2012 has been developed.

Category 4 PSs are ready for backup power procurement without the need for further studies as they do not have any known wet weather capacity or power outage issues. There are implementation challenges (described in Section 9.2) that are expected to impact the final completion of several stations. Given the above constraints and the target rate of 10 to 14 solutions per year, the Category 4 solutions were distributed within the schedule as needed. The schedule is front loaded with Category 4 solutions for several reasons, including PSs in other Categories may move to Category 4 towards the end of the implementation schedule, and implementation challenges may delay implementation of solutions for several PSs. The front end loading of the Category 4 PSs allows the schedule to accommodate some of these issues, while maintaining an aggressive rate of 10 to 14 solutions per year.

9.2 Implementation Challenges

Based on the District's Initial Action PS work to-date, sizing and procurement of a backup generator can be a straightforward process. However, other aspects of the project such as property access, placement, and installation of the generator at locations with property issues are going to require significant coordination effort and time to implement.

Examples of implementation challenges for backup power that the District will be facing are as follows:

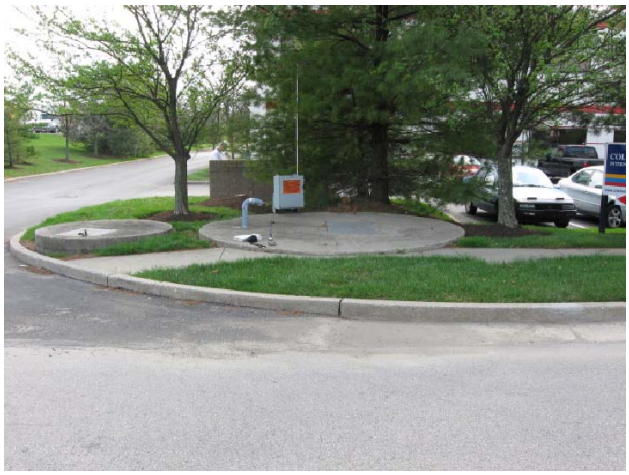
- Easements and right-of-way (ROW) Issues: In 1995, the District took over responsibility for sanitary sewer systems and associated PSs from the local cities, with little or no documentation from the original owner on easements. As such, it has been discovered through deed and courthouse research that some PSs do not have easements, access rights, or adequate easements in place in order to install a generator or other backup power solution within the footprint of the existing PS. Therefore, the District is finding that installation of a backup power solution onsite will require new easements. These

easements will take time and additional monies to acquire. Some PSs will require the backup power solution to be installed within the ROW due to site constraints. Encroachment permits then need to be obtained from the road jurisdictions.

Figure 9.1 Airport Exchange Pump Station

The Airport Exchange PS represents some of the easement / ROW issues the District is facing at some PSs.

Approximately 10 - 15 PSs have easement / ROW issues to overcome.



- Proximity to Neighbors: Several PSs are in close proximity to residential neighbors. The additional traffic and noise related to generator exercising, use, maintenance, and refueling, will be unpopular with the local neighbors. Some of these locations coincide with easement issues which makes property access negotiation more difficult and time consuming.

Figure 9.2 Overlook Pump Station

The Overlook PS represents a PS in close proximity to residents

Approximately 15 - 20 PSs have proximity issues to overcome.

- Site Constraints: Several stations are located on steep slopes with no access drives, others are located in residential cul-de-sac sidewalks, and others are located within flood plains and floodways. All of these issues add conditions to backup power solution implementation that require additional time, money, and planning.

Figure 9.3 Stillwater Pump Station

The Stillwater PS is located in a cul-de-sac sidewalk.

Approximately 17 PSs have site constraint issues to overcome.

In addition, other unanticipated conditions may impact the installation of generators at PS sites, including code changes. Future changes in the Kentucky Building Code, International Building Code, National Electric Code, and other codes and statutes may impact the proposed implementation plan. The table below list PSs with challenges known at this time.

Table 9.2 Pump Stations with Implementation Challenges To Date

PS Name	Cat	Rank	Description
Highland Heights	3	3	PS area has a history of flooding
Saturn	3	10	In parking lot landscaping in curb of road
Airport Ex. Ind. Park	3	13	Easement boundary needs to be confirmed. Other site constraints
Stillwater	3	14	Very little area to install a generator, PS located in sidewalk, next to houses
Overlook	3	15	Constrained site next to houses
Riverview Farms	3	17	Property easement is not well defined. Located next to houses
Barr's Branch	3	6	Easement boundary needs to be confirmed. Located next to houses
Catalpa	3	16	Easement boundary needs to be confirmed. Located next to houses

PS Name	Cat	Rank	Description
Cedar Point	3	19	PS ground elevation is sloped making access extremely difficult
Carlisle	4	20	PS located inside the flood levee
Keavy	5	29	At foot of earthen dam, no access road
Willow Bend No. 2	2	30	Near road and house in front yard
Twin Lakes	6	31	No access road, close to house
Hampton Ridge	4	33	Between entrance feature and residential fence
Meadow Lane	6	43	~200 feet down hillside, no access road
Ridgefield	2	45	Constrained site
Cedar	4	46	Close to road and house in front yard
Leathers Rd	4	50	Long, steep gravel access drive, near houses
Jonathan	4	52	Near road and house in front yard
Dublin Green No. 1	2	53	Close to house in back yard
Eagles Landing	2	54	Near road and house in front yard
Paul Road	4	56	PS in backyard
Ohio	4	58	PS located inside the flood levee
Mafred	6	60	~200 feet down hillside, no access road
Blackstone	2	61	Near road, driveway and house in front yard
Litton	4	64	Property easement is not well defined. ~100 feet from Litton Road
Ria Vista	4	69	Steeply sloped gravel access road. Close to a small creek.
Golf Course	4	72	500 feet from road, no access road
Ridgeway	6	77	~200 feet down hillside, no access road
Jefferson Ave	4	83	PS located inside the flood levee
Lamphill	2	86	PS in residential backyard
Ripple Creek	5	87	PS in street
Wedgewood Dr	2	90	Close to road and house in front yard

9.3 Status and Plan by Pump Station Category

Category 1 – Pump Stations with Backup Power Solution in Place

As part of the Pump Station Operation Plan for Backup Power, the District has completed installation of backup power at 17 of the 21 PSs in this category. Only Alex-Licking, American Sign, Riley Road, and Sunset PSs remain. These PSs are scheduled to be replaced in 2008 – 2009 and will include backup power as part of the new PS. As such, no further evaluation related to backup power at these PSs is necessary. The PSs, backup power solution, and schedule are summarized in Table 3.1 Category 1 PSs.

Category 2 – Pump Station Elimination

The District has identified 21 PSs to-date that are candidates to be eliminated by gravity sewer extension. Seven of the 21 PSs are currently scheduled to be eliminated by gravity sewer through Initial Watershed Projects listed in the Consent Decree. It is the District's intention to proceed with preliminary engineering effort at the remaining 14 locations to confirm the constructability and cost of eliminating these PSs by gravity sewer extension. The PS elimination study will be completed by end of 2008.

If cost and constructability support PS elimination, design and construction will proceed accordingly with construction completed by 2015. If cost and constructability do not support PS elimination, the PS will be moved to Category 4 and will be provided with means for backup power per the schedule reflected in Table 9.1 above. The schedule for elimination of the currently identified 7 of 10 PSs with gravity sewer extension is presented in Table 9.3 below.

Table 9.3 Category 2 Pump Stations Schedule Summary

PS Name	Initial Watershed Project to Eliminate PS	Current Schedule for Elimination
Fowler Creek	Western Regional Union Sewer	March 31, 2013
Gammon Calmet	WR Frogtown Sewer	March 31, 2013
Gunpowder	WR Gunpowder Interceptor	March 31, 2013
Kahns	Eastern Regional Contract 2	October 2007
Riley Road No. 1	ER Contract 3 & Riley Road PS	March 31, 2009
Riley Road No. 2	ER Contract 3 & Riley Road PS	March 31, 2009
Union	WR Union Sewer	March 31, 2013

Category 3 – Initial Action Pump Stations

The District felt that the time required to develop the Pump Station Operation Plan for Backup Power could also be used to implement backup power solutions at many PSs. Therefore, the District has begun an aggressive schedule to install backup generators at 24 high priority locations, guided by the Prioritization List presented in Section 2 of this report. These locations have been termed the Initial Action List PSs. The locations were divided into four (4) generator procurement projects. Installation of the generators at all 24 PSs is currently scheduled to be completed in 2008. The current generator manufacturers have a high backlog due to the worldwide demand for generators which is causing extended lead-times (on the order of several months) to obtain generators. The manufacturers have indicated to us that this demand outpacing supply is forecasted to continue for several years. This lead-time for generators has affected our current schedule for the Initial Action PSs. Their status is as follows:

- **Project No. 1:** This project included procurement of four diesel generators. Shop drawing review is complete. The District has begun receiving shipment of the generators and associated electrical equipment and construction activity is underway. The generators are currently scheduled to be installed and operational in early 2008.
- **Project No. 2:** This project included procurement of seven diesel generators. Shop drawing review is complete and the District is currently awaiting delivery of the generators and electrical equipment. The generators are currently scheduled to be delivered, installed and operational within the first half of 2008.
- **Project No. 3:** This project included procurement of one diesel and four natural gas generators. Bids were received on August 7, 2007, and the project was awarded on August 28, 2007. The District is currently reviewing shop drawings from the generator manufacturer. The generators are currently scheduled to be delivered, installed and operational within the third quarter of 2008.
- **Project No. 4:** This project included procurement of eight natural gas generators. Bids were received on September 14, 2007. The project was awarded on September 25, 2007. The District is currently awaiting receipt of shop drawings from the generator manufacturer. The generators are currently scheduled to be delivered, installed and operational by the end of 2008.

The PSs, procurement project and schedule are summarized in Table 5.1, Category 3 PSs.

Category 4 – Backup Power Pump Stations

The District intends on implementing backup power at the currently identified 50 Category 4 locations, in order of priority, at a rate of approximately 12 locations per year. This process will begin at the beginning of 2009, following the estimated completion period for the Category 3 – Initial Action locations. All Category 4 locations are currently scheduled to have a backup power solution in place by December 31, 2014, one full year ahead of the Consent Decree deadline of December 31, 2015.

Categories 5 and 6 – Pump Stations With Wet Weather Issues

Based upon the data collected, the 11 PSs in these two categories generally have insufficient pumping capacity during wet weather conditions. Category 5 locations (6) have a history of at least one power outage while Category 6 locations (5) do not have a history of power outages. It is necessary for the District to fully understand the magnitude of the capacity problems at these locations prior to proceeding with a backup power solution because backup power alone will not resolve the lack of pumping capacity and potential for overflows at these PSs.

Prior to the implementation of any Categories 5 and 6 recommendations, the District's hydraulic models of their combined and separate sanitary sewer systems will be

updated and calibrated based on data collected during the 2007-2008 flow and rainfall monitoring program. In addition to the development of the collection system models, future condition models will be created to simulate the impacts of future growth on the collection system at various time horizons. Once completed, the District will use these models along with additional flow monitoring as needed to refine their understanding of wet weather problems at these PSs culminating in specific recommendations to address wet weather flows and a backup power solution for each PS.
The first set of Watershed Plans for the Consent Decree will be submitted in June 2009, and will identify wet-weather improvement projects to be implemented over the subsequent 5 years (by June 2014). Per the schedule in Figure 9.1 above, most Categories 5 and 6 PSs will be included in the first 5-year improvement cycle and sequenced according to several factors:

- PSs in priority watersheds identified in the first-round of Watershed Plans will be scheduled first.
- Category 5 stations will receive higher priority than Category 6 due to recorded power outage issues.

Backup power solutions for any remaining Categories 5 and 6 PSs will be implemented no later than December 31, 2015.

The Categories 5 & 6 PS names, category and their schedule are summarized in Table 9.5 below.

Table 9.4 Categories 5 & 6 Pump Station Schedule Summary

PS Name	Category	Potential Solution	Schedule
Cardinal Cove	5	Permanent Generator	By Year 2015
Crestview	5	Permanent Generator	
Enzweiler	6	Permanent Generator	
Keavy	5	Permanent Generator	
Meadow Lane	5	Permanent Generator	
Ripple Creek	5	Permanent Generator	By Year 2010
Winters Lane No. 2	5	Permanent Generator	By Year 2015
Mafred	6	Permanent Generator	
Richwood	6	Permanent Generator	
Ridgeway	6	Permanent Generator	
Twin Lakes	6	Permanent Generator	

The overall implementation schedule of this plan meets the requirements of the Consent Decree (completion by no later than December 31, 2015) while expeditiously implementing backup power solutions at all of the District's PSs as described in the Sections above.

APPENDIX A:

Pump Station Data

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Air Park West			PS Number:	2370PS5
Location:	Lot adjacent to Wright Blvd.			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad mounted		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		L&G AXS4 53993	55421832#2
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disc. Sw.	200/100
Is there a receptacle for a generator?:	No			FRS100R
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Check flood plain maps- creek nearby			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					
Pump No:	1	2	3	4	HOMA # AM444-260/20
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	20	20			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	25.9	25.9			
Breaker Size:	40	40			
Controller Type:	Telemecaneque				
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry ; Recept.				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Air Park West			PS Number:	2370PS5
Location:	Lot adjacent to Wright Blvd.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
	PS Name:	Airport Exchange			PS Number:	2130PS1
	Location:	1895 Airport Exchange Blvd.			Basin:	North

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground			
	Transformer Location (pole / pad mounted):	Pad		Size (KVA):	75
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	1
	Primary Voltage:	12470		Secondary Voltage:	480
	Meter Information (location, type, model):	Location		Type	Model
		@ Transformer		Sangamo 38829	NA
	Service Entrance (location, type, size):	Location		Type	Size
		@ Privacy wall		Disconnected Switch	60/40
	Is there a receptacle for a generator?:	No		FRS-K-40	
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Owen		(Duke or Owen)	
	Is Redundant Power Source an Option?:	Not likely			
	Is Natural Gas Available in the Area?:	Yes;Please refer Duke Drawing S01W0232			
	Is Site Suitable for Generator Installation?:	No	Front area between road and parking lot.		
	If NO, explain constraints:	Space is tight. Landscaping changes might be necessary.			
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	Site would need to be reconfigured to install generator. Landscaping changes			
		may be needed. Could involve changes for existing building related services etc.			

Load Requirements	No. of Pumps:	2				Notes:
	Pump Station Type:	Duplex Submersible				Flygt CP3127
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	600	600			
	Head at Rated Flow, ft:	32	32			
	Motor Hp:	10	10			
	Voltage:	460	460			
	Phase:	3	3			
	Service Factor:	1.15	1.15			
	Full Load Amps:	13	13			
	Breaker Size:	30	30			
	Controller Type:	Klockner Moeller ZOO16				DILOM
	Controller Location:	Mounted on wall adjacent to PS				
	Ancillary Load Info:	None				

Controls	Control Type/Description:	Duplex HOA w/ ALT.
	Control Devices:	Flygt Bulbs
	Telemetry Type:	Radio 175 MHZ
	Notes:	Transformer located in landscaped area between sidewall and parking lot. Surrounded by
		trees and bushes. Probably feeds other equipment in the area. (Lights etc.)

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	Airport Exchange			PS Number:	2130PS1
Location:	1895 Airport Exchange Blvd.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	ArborTech			PS Number:	2130PS3
Location:	2195 Arbor Tech Drive			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground				
Transformer Location (pole / pad mounted):	Pad			Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:		NA
Meter Information (location, type, model):	Location		Type		Model
	@ PS		L&G AXS4 58233673		56014
Service Entrance (location, type, size):	Location		Type		Size
	@ PS		Disconnect Switch		60
Is there a receptacle for a generator?:	No				FLSR1001D (AL)
Is there an existing Control Building?:	No				
Electric Service Provider:	Owen				(Duke or Owen)
Is Redundant Power Source an Option?:	No				
Is Natural Gas Available in the Area?:	No				
Is Site Suitable for Generator Installation?:	Yes				
If NO, explain constraints:					
Is Site Accessible for Fuel Delivery?:	Yes				
Site Notes:	Industrial site / complex				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				HOMA
Pump Information					AM 434-220/15E
Pump No:	1	2	3	4	
Rated Flow, gpm:	280	280			
Head at Rated Flow, ft:	62.6	62.6			
Motor Hp:	15	15			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	16.7	16.7			
Breaker Size:	40	40			
Controller Type:	Telemechanique LC1DC2510				
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry; Receptacle				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio 175 MHZ
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	ArborTech			PS Number:	2130PS3
Location:	2195 Arbor Tech Drive			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	Arborwood			PS Number:	2390PS3
Location:	6700 Edgewood Drive			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground				
Transformer Location (pole / pad mounted):	Pad			Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P		# of xfmrs	2
Primary Voltage:	NA			Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type		Model
	@ PS		Siemens AXS4 72058		84104824
Service Entrance (location, type, size):	Location		Type		Size
	@ PS		Disconnect Switch		100 A
Is there a receptacle for a generator?:	No				
Is there an existing Control Building?:	No				
Electric Service Provider:	Owen		(Duke or Owen)		
Is Redundant Power Source an Option?:	No				
Is Natural Gas Available in the Area?:	No				
Is Site Suitable for Generator Installation?:	Yes				
If NO, explain constraints:	Location of pump station is right in front of lot.				
Is Site Accessible for Fuel Delivery?:	Yes				
Site Notes:	Pump station located in front area of vacant lot with stockade fence.				
	This is not an optimal location.				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					HOMA AM434-200/8A
Pump No:	1	2	3	4	
Rated Flow, gpm:	162	162			
Head at Rated Flow, ft:	54	54			
Motor Hp:	7.4	7.4			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	19	19			
Breaker Size:	40	40			
Controller Type:	Telemechanique LC1D25				
Controller Location:	@ PS				
Ancillary Load Info:	Radio Telemetry				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio (175 MHZ)
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	Arborwood			PS Number:	2390PS3
Location:	6700 Edgewood Drive			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary &Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Army Reserve			PS Number:	0850PS1
Location:	Carmel Manor			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	overhead			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	2
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Pole, 30' away		GE	
Service Entrance (location, type, size):	Location		Type	Size
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes , but may be approx. 20 feet away			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes , but may be approx. 20 feet away			
Site Notes:	Feeder - Wilder 46			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Dry Pit Centrifugal (can type)				
Pump Information					
Pump No:	1	2	3	4	FLA 10
Rated Flow, gpm:					HZ 60
Head at Rated Flow, ft:					
Motor Hp:	3.4	3.4			
Voltage:	230	230			
Phase:	3	3			Transformer # 0130-2154-01
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	None
Notes:	Low flow. Pumps very infrequently

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary &Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Army Reserve			PS Number:	0850PS1
Location:	Carmel Manor			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf & Eddy	Date:	3.30.07
PS Name:	Banklick			PS Number:	1850PS1
Location:	Old Covington Land Fill			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole	1	Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Outside Wall			Vectren
Service Entrance (location, type, size):	Location		Type	Size
	Inside Building		Fused Disconnect	125 amps
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	Yes			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes - plenty of room around the PS			
If NO, explain constraints:	Possible Flooding Issues			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	ACOE built the station in the 1950's, new screening room early 2000's?			
	Built in the Old Covington Landfill			

Load Requirements

No. of Pumps:	2 Goulds				Notes:
Pump Station Type:	Dry well, Wet Well				Deep >50 Feet
Pump Information					
Pump No:	1	2	3	4	Hour Meter
Rated Flow, gpm:	1000	1000			Date time
Head at Rated Flow, ft:	76	76			29-Jan 14.6
Motor Hp:	30	30			1-Feb 9.7
Voltage:	460	460			5-Feb 13.7
Phase:	3	3			9-Feb 12.2
Service Factor:					12-Feb 9.3
Full Load Amps:	36.2	36.2			15-Feb 27
Breaker Size:					20-Feb 29.2
Controller Type:	FVNR	FVNR			26-Feb 31.7
Controller Location:	MCC				
Ancillary Load Info:	Screen - 5 hp, 1/3 hp wall fan, sump pump hp?,				

Controls

Control Type/Description:	Bubbler - No Floats
Control Devices:	
Telemetry Type:	SD1 Standard
Notes:	built in the landfill

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	M&E	Date:	3.30.07
PS Name:	Banklick			PS Number:	1850PS1
Location:	Old Covington Land Fill			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradlley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Barrs Branch			PS Number:	2270PS1
Location:	411 Barrs Branch			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	50
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Rear of Panel		Schumberger	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 39
Rated Flow, gpm:	25	25			HZ 60
Head at Rated Flow, ft:	15	15			
Motor Hp:	2	2			
Voltage:	230	230			
Phase:	1	1			Trans. Acct # 7350-0800-21
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradlley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Barrs Branch			PS Number:	2270PS1
Location:	411 Barrs Branch			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Blackstone			PS Number:	2440PS5
Location:	Subdivision Front Yard			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	230
Meter Information (location, type, model):	Location		Type	Model
	CP Rack		General Electric	
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	in front yard, see photos			
Is Site Accessible for Fuel Delivery?:				
Site Notes:				

Load Requirements

No. of Pumps:	2	Flygt			Notes:
Pump Station Type:					230 v (243)
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	26	26		15	Flygt combination thermal
Breaker Size:		not sure			overload contractors
Controller Type:	FVNR	FVNR			
Controller Location:	cp				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	Unknown bypass, very difficult

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Blackstone			PS Number:	2440PS5
Location:	Subdivision Front Yard			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	Bloomin Springs			PS Number:	2400PS3
Location:	1475 Bloomin Spring Ct.			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		L&G RXRS4 55791	49253498
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch.	NA
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Not applicable			
Is Site Suitable for Generator Installation?:	Already has generator			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Generator installed at PS			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					
Pump No:	1	2	3	4	Myers R4H
Rated Flow, gpm:	115	115			480VAC/30
Head at Rated Flow, ft:					grounded "B" 0
Motor Hp:	10	10			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	14.8	14.8			
Breaker Size:	40	40			
Controller Type:	Telemechanique LC1D18				
Controller Location:	@ PS				
Ancillary Load Info:	NA				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/27/2007
PS Name:	Bloomin Springs			PS Number:	2400PS3
Location:	1475 Bloomin Spring Ct.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Brandtly Ridge			PS Number	2020PS9
Location:	Driveway off cul-de-sac			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	at XFRMR		GE	M-90
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused Disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes-inside ex. Fence			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	large fenced			
	incoming flow hitting the pump			

Load Requirements

No. of Pumps: 2 Homa

Pump Station Type: submersible

Notes:
voltage 460
Hour meter
2-21: 4.3
2-32: 1.2
2-27: 3.0
3-06: 4.6
3-09: 1.6
3-13: 2.2

Pump Information				
Pump No:	1	2	3	4
Rated Flow, gpm:	311	311		
Head at Rated Flow, ft:	87.8	87.8		
Motor Hp:	20	20		
Voltage:	460	460		
Phase:	3	3		
Service Factor:				
Full Load Amps:	25.9	25.9		
Breaker Size:	60	60	20	20
Controller Type:	FVNR	FVNR		
Controller Location:	CP			
Ancillary Load Info:				

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	panel needs to be mounted of bolts and has dry wall screws

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Brandtly Ridge			PS Number:	2020PS9
Location:	Driveway off cul-de-sac			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Brentwood			PS Number:	2370PS3
Location:	3633 McCall Place			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad Mounted		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	@ PS		Siemans AXS4 56067	80726661
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnected Switch	200/150
Is there a receptacle for a generator?:	No			FTR150R
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes; Please refer Duke Drawing SIW3-15			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	Tight wooden fence			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Wooden fencing may need repair			

Load Requirements

Notes: 250/246/250 VAC

Barnes Pump 4SEL 1134L

Pump Information				
Pump No:	1	2	3	4
Rated Flow, gpm:	100	100		
Head at Rated Flow, ft:	70	70		
Motor Hp:	11.3	11.3		
Voltage:	230	230		
Phase:	3	3		
Service Factor:	1.15	1.15		
Full Load Amps:	28	28		
Breaker Size:	70	70		
Controller Type:	Furnas	Furnas	21FF32A Size F	
Controller Location:	@ PS			
Ancillary Load Info:	None			

Controls

Control Type/Description:	Duplex MS HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	None
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Brentwood			PS Number:	2370PS3
Location:	3633 McCall Place			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/23/2007
PS Name:	Brookwood			PS Number:	2250PS1
Location:	12 Bellewood			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase		# of xfmrs	2
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Seimans	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Owen County			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 38.5
Rated Flow, gpm:	190	190			
Head at Rated Flow, ft:	83.5	83.5			
Motor Hp:	15	15			
Voltage:	230	230			
Phase:	3	3			Trans. Acct # 1640127
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	None
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/23/2007
PS Name:	Brookwood			PS Number:	2250PS1
Location:	12 Bellewood			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Brushup Lane			PS Number:	2320PS5
Location:	Concrete drive behind houses subdivision			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	2
Primary Voltage:			Secondary Voltage:	230
Meter Information (location, type, model):	Location		Type	Model
	Cp Rack		Siemens	
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused Disconnect	150 amp
Is there a receptacle for a generator?:				
Is there an existing Control Building?:				
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	yes			
Is Site Suitable for Generator Installation?:	Yes, possible fl0od problem			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, a little tuff on turnaround			
Site Notes:				

Load Requirements

No. of Pumps:	2	Flygt	3127		Notes:
Pump Station Type:					Hour meter
Pump Information					1-2-07: 9.2
Pump No:	1	2	3	4	1-10-07: 12.1
Rated Flow, gpm:					1-23-07: 5.9
Head at Rated Flow, ft:					1-29-07: 8.5
Motor Hp:	10	10			2-05-07: 11.2
Voltage:	230	230			Votage
Phase:	3	3			246
Service Factor:					Disconnect 150 amp
Full Load Amps:					1 AWG
Breaker Size:	70	70	15		
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 STD
Notes:	Furnas motor starters Z1FF32A

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Brushup Lane			PS Number:	2320PS5
Location:	Concrete drive behind houses subdivision			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Bullitsville			PS Number:	2370PS1
Location:	Petersburg & Graves Rd.			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Poles		Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	1
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		GE M-90AE	90096599
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	400/225
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	Likely			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Next to creek, check flood plain. There could be flooding issue.			

Load Requirements

No. of Pumps:	3				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	520	520	520		
Head at Rated Flow, ft:	145	145	145		
Motor Hp:	50	50	50		
Voltage:	480	480	480		
Phase:	3	3	3		
Service Factor:	1.15	1.15	1.15		
Full Load Amps:	63	63	63		
Breaker Size:	250	250	250		
Controller Type:	SQD	SQD	SQD	Size A	
Controller Location:	@ PS				
Ancillary Load Info:	Chemical Feed, Telemetry, Recept.(Outside)				

Controls

Control Type/Description:	Duplex, HOA w/ ALT.
Control Devices:	Multi Trode
Telemetry Type:	Radio Zetron 2
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Bullitsville			PS Number:	2370PS1
Location:	Petersburg & Graves Rd.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Bunning Lane			PS Number:	1920PS2
Location:	13 Bunning Lane			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	240
Meter Information (location, type, model):	Location	Type		Model
	Pole, 60yds away	Vectron		Vectron
Service Entrance (location, type, size):	Location	Type		Size
	Pole			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	area is small & not very much room			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Meter is approx 60 yards from PS			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	105	105			
Head at Rated Flow, ft:	95	95			
Motor Hp:	15	15			
Voltage:	230	230			
Phase:	3	3			Trans Acct # 8710-0712-22
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Bunning Lane			PS Number:	1920PS2
Location:	13 Bunning Lane			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	Dave Camarda	Company:	MPI		Date:	3/13/2007
	PS Name:	Cardnial Cove				PS Number:	2360PS2
	Location:	1889 Cardinal Way				Basin:	North

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground				
	Transformer Location (pole / pad mounted):	Pad Mounted		Size (KVA):	NA	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3	# of xfmrs	1	
	Primary Voltage:	NA		Secondary Voltage:	240	
	Meter Information (location, type, model):	Location		Type	Model	
		@ Pump Station		L&G	55848	
	Service Entrance (location, type, size):	Location		Type	Size	
		@ Pump Station		Disconnect Switch	200A	
	Is there a receptacle for a generator?:	No				
	Is there an existing Control Building?:	No				
	Electric Service Provider:	Owen		(Duke or Owen)		
	Is Redundant Power Source an Option?:	No				
	Is Natural Gas Available in the Area?:	Yes; Refer Duke Drawing No SIW3-75				
	Is Site Suitable for Generator Installation?:	Yes - Needs regrading and may have storm				
	If NO, explain constraints:	runoff issues				
	Is Site Accessible for Fuel Delivery?:	No				
	Site Notes:	May have 2 power sources. Two pad mounted transformers uphill.				
		Check with Owen power.				

Load Requirements	No. of Pumps:	2				Notes:
	Pump Station Type:	Packaged				
	Pump Information					Flygt 3152
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	185	185			
	Head at Rated Flow, ft:	119	119			
	Motor Hp:	20	23			
	Voltage:	230	230			
	Phase:	3	3			40-45 Runnavg A
	Service Factor:	1.15	1.15			
	Full Load Amps:	58	58			
	Breaker Size:	100	100			
	Controller Type:	Magnet.	Magnet.			ABB
	Controller Location:	NA				
	Ancillary Load Info:	None				

Controls	Control Type/Description:	NA
	Control Devices:	NA
	Telemetry Type:	None
	Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Cardnial Cove			PS Number:	2360PS2
Location:	1889 Cardinal Way			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Carlisle Ave.			PS Number:	0010PS6
Location:	16 Shadow Lake Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	2
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Pole		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes, but must be flood protected			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, if area is not flooded			
Site Notes:	Ps in Ohio River flood area			
	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 35
Rated Flow, gpm:	180	180			HZ 60
Head at Rated Flow, ft:	70	70			
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			Trans acct # 8620-2012-02
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Carlisle Ave.			PS Number:	0010PS6
Location:	16 Shadow Lake Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Catalpa			PS Number	2180PS1
Location:	In the woods			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	PAD	2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	in a box		locked	
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused Disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, Needs new access road			
Site Notes:	Pipe found (6" clay) possible former bypass did not appear active.			

Load Requirements

No. of Pumps:	2	Flygt	3127. 180 2997		Notes:
Pump Station Type:	Submersible				IMP 484
Pump Information					SN 9840713
Pump No:	1	2	3	4	Voltage 248
Rated Flow, gpm:					248
Head at Rated Flow, ft:					248
Motor Hp:	10	10			
Voltage:	230	230			Wire Size
Phase:	3	3			AWG 4 or 6
Service Factor:					
Full Load Amps:	25	25			
Breaker Size:	50	50	15	15	No seal offs
Controller Type:	fvnr				
Controller Location:	cp				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	upgraded 4 or 5 years ago. Old 3Φ transformer onsite.
	possible bypass at manhole upstream of station

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Catalpa			PS Number:	2180PS1
Location:	In the woods			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cedar Point			PS Number:	1920PS4
Location:	12 Cedar Point Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Difficult - Long narrow driveway			
Site Notes:	Area is not tight & not ideal for a generator			
	Feeder - Cold Spring 42			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	1	1			Trans. Acct # 2500-0719-22
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	Listed as a good PS with no history of problems

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cedar Point			PS Number:	1920PS4
Location:	12 Cedar Point Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Cedar			PS Number	2020PS6
Location:	Latonia Lakes			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead(residential 230 v, 1 transformer feeds many)			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	pole			
Service Entrance (location, type, size):	Location		Type	Size
	same as meter		fused	60 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	marginal-site may have land acquisition issues			
If NO, explain constraints:	maybe by old lot? Or across street			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2 Myers				Notes:
Pump Station Type:	Submersible				Hour meter
Pump Information					2-06: 6.0
Pump No:	1	2	3	4	2-12: 12.2
Rated Flow, gpm:	20	20			2-15: 11.4
Head at Rated Flow, ft:	37	37			2-21: 20.4
Motor Hp:	2	2			2-23; 6.0
Voltage:	230	230			2-27: 20.4
Phase:	1	1			3-02: 16.0
Service Factor:					
Full Load Amps:	12	12			
Breaker Size:	60	60			
Controller Type:	fvnr	fvnr			
Controller Location:	cp				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Cedar			PS Number:	2020PS6
Location:	Latonia Lakes			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Centerplex			PS Number:	2230PS1
Location:	970 E. Alexandria Pike - Village Green Center			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	150
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Pole, 50' away		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	Pole			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	Yes			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Metre is aprox 50 ft from control panel			

Load Requirements					
No. of Pumps:	4				Notes:
Pump Station Type:	Tandum - 2 sub to 2 dry pit boosters				
Pump Information					
Pump No:	1	2	3	4	FLA 82.6
Rated Flow, gpm:	225	225	225	225	
Head at Rated Flow, ft:	109	109	218	218	
Motor Hp:	27	27	30	30	
Voltage:	480	480	480	480	
Phase:	3	3	3	3	Trans. Act. # 7020-2003-02
Service Factor:	1.1.	1.1.	1.1	1.1	
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level control
Control Devices:	Bubbler system
Telemetry Type:	Radio Signal
Notes:	Two booster pumps can not be operated at the same time

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Centerplex			PS Number:	2230PS1
Location:	970 E. Alexandria Pike - Village Green Center			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
	PS Name:	Cinnamon Ridge			PS Number:	2390PS7
	Location:	Concrete Drive in back of subdivision			Basin:	West

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground			
	Transformer Location (pole / pad mounted):	Pole		2 Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		CP Rack		in locked cabinet	
	Service Entrance (location, type, size):	Location		Type	Size
		Cp Rack		Fused disconnect	100 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Owen		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	Yes, 200+ feet			
	Is Site Suitable for Generator Installation?:	Yes, may require retoning wire			
	If NO, explain constraints:				
	Is Site Accessible for Fuel Delivery?:				
	Site Notes:	Open Delta 3 phase			

Load Requirements	No. of Pumps:	2	Homa			Notes:
	Pump Station Type:					Vytec
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	304	304			
	Head at Rated Flow, ft:	87.6	87.6			
	Motor Hp:	19.7	19.7			
	Voltage:	460	460			
	Phase:	3	3			
	Service Factor:					
	Full Load Amps:	25.9	25.9			
	Breaker Size:	60	60	15	15	
	Controller Type:	FVNR	FVNR			
	Controller Location:	CP				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	Possible flood? Property issue and some earth retaining
		Obviuous sheet flow across station

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Cinnamon Ridge			PS Number:	2390PS7
Location:	Concrete Drive in back of subdivision			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cold Spring Crossing			PS Number:	192PS11
Location:				Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	150
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/4 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	480/277
Meter Information (location, type, model):	Location		Type	Model
	Rear of Panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 89
Rated Flow, gpm:	412	412			HZ 60
Head at Rated Flow, ft:	214	214			
Motor Hp:	60	60			
Voltage:	460	460			
Phase:	3	3			Trans. Acct # 0670-2239-01-8
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Multi Trobe
Telemetry Type:	Radio Signal
Notes:	Listed as a good Ps with few problems

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cold Spring Crossing			PS Number:	192PS11
Location:				Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cold Spring Plaza			PS Number:	192PS12
Location:				Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/4 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	208/120
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	Yes			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Good site for a generator			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 59
Rated Flow, gpm:	199	199			HZ 60
Head at Rated Flow, ft:	77.9	77.9			
Motor Hp:	13	13			
Voltage:	230	230			
Phase:	3	3			Trans. Acct # 7910-2217-01-8
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Cold Spring Plaza			PS Number:	192PS12
Location:				Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Crestview			PS Number:	2150PS1
Location:	38 Pinehill Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
			GE	
Service Entrance (location, type, size):	Location		Type	Size
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Not Convenient - narrow gravel road			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Dry Pit Centrifugal (can type)				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	250	250			
Head at Rated Flow, ft:	157	157			
Motor Hp:	40	40			
Voltage:	230	230			
Phase:	3	3			trans. Acct. # 7900-0686-22
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Crestview			PS Number:	2150PS1
Location:	38 Pinehill Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Darma Court			PS Number:	2150PS2
Location:	5 Darma Court			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	50
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120
Meter Information (location, type, model):	Location		Type	Model
	Rear of Panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes, but not good spacing			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, but narrow private driveway			
Site Notes:	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 83
Rated Flow, gpm:	80	80			HZ 60
Head at Rated Flow, ft:	42	42			
Motor Hp:	5	5			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 9660-0250-21
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	Has experienced little problems since recent upgrade

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Darma Court			PS Number:	2150PS2
Location:	5 Darma Court			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Deer Creek # 1			PS Number:	2490PS1
Location:	Meadowbrook Court			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		NA	NA
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	100A
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	Not likely			
Is Natural Gas Available in the Area?:	Yes; Refer to Duke Drawing N01W0322			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					Database incorrect
Pump No:	1	2	3	4	Pump data here is correct.
Rated Flow, gpm:	NA	NA			
Head at Rated Flow, ft:	NA	NA			Homa AM444260/20E pumps
Motor Hp:	15	15			(SD1 Data)
Voltage:	460	460			
Phase:	3	3			
Service Factor:	NA	NA			Bob's Data ---> 240/15E
Full Load Amps:	19.3	19.3			
Breaker Size:	40	40			
Controller Type:	TM	TM			
Controller Location:	@ PS Controller Panel				
Ancillary Load Info:	Telemetry panel/ recept on outside ?				

Controls

Control Type/Description:	Mag. MS, HOA with auto alternators
Control Devices:	FLYGT bulbs
Telemetry Type:	Radio
Notes:	OEC has two transformers at pump station. Open delta connection?

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Deer Creek # 1			PS Number:	2490PS1
Location:	Meadowbrook Court			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Deer Creek # 2			PS Number:	2490PS2
Location:	Deer Creek Sub-Division off of Canyon Court			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		L & G	55421835
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	NA
Is there a receptacle for a generator?:	No			3 #1 AWG (Alum) to
Is there an existing Control Building?:	No			PS Control panel
Electric Service Provider:	Owen			(Duke or Owen)
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Wet site - large area available			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					HOMA Model #
Pump No:	1	2	3	4	AM444260/20E
Rated Flow, gpm:	163	163			
Head at Rated Flow, ft:	106.1	106.1			
Motor Hp:	19.7	19.7			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	25.9	25.9			
Breaker Size:	60	60			
Controller Type:	NA	NA			
Controller Location:	Next to wet well				
Ancillary Load Info:	Outside recept. and telemetry panel				

Controls

Control Type/Description:	NA
Control Devices:	NA
Telemetry Type:	NA
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Deer Creek # 2			PS Number:	2490PS2
Location:	Deer Creek Sub-Division off of Canyon Court			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Dublin Green 1			PS Number:	2420PS4
Location:	Asphalt Drive between houses			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):				
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on rack		Sculemberger	
Service Entrance (location, type, size):	Location		Type	Size
	on rack w/meter		Circuit Breakers	
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:				
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes, in fence			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2	Goulds			Notes:
Pump Station Type:	6E+07				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	115	115			
Head at Rated Flow, ft:	36	36			
Motor Hp:	2	2			Hour meter
Voltage:	230	230			12-14: 2.6
Phase:	1	1			12-18: 3.1
Service Factor:					12-21: 2.1
Full Load Amps:	15	15			12-27: 2.2
Breaker Size:	30	30	15	Everything	1-02-07: 5.1
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Dublin Green 1			PS Number:	2420PS4
Location:	Asphalt Drive between houses			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Dublin Green 2			PS Number:	2420PS9
Location:	paved acces drive			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	150
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	480y/277
Meter Information (location, type, model):	Location		Type	Model
	CP Rack			
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused Disconnect	100 amp
Is there a receptacle for a generator?:	No, and seimens double throw switch for hot wire			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes, maybe in ex fence			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	long road			

Load Requirements

No. of Pumps:	2 Flygts				Notes:
Pump Station Type:	Submersible				Hour meter
Pump Information					3-20-07: 2.8 hours, not sure
Pump No:	1	2	3	4	of time period only data at station
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	5	5			
Voltage:	460	460			
Phase:	3	3			NWI install
Service Factor:					
Full Load Amps:	6.8	6.8			
Breaker Size:	15	15	15	other lods	
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	2nd 3 position switch, for possible portable generator

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Dublin Green 2			PS Number:	2420PS9
Location:	paved acces drive			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
	PS Name:	Eagles Landing			PS Number:	2440PS4
	Location:	2' off street in Cul de Sac			Basin:	West

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground			
	Transformer Location (pole / pad mounted):	PAD		Size (KVA):	AE2042
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	AE2041
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		CP Rack			
	Service Entrance (location, type, size):	Location		Type	Size
		CP Rack		Fused Disconnect	100 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Owen		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	Yes			
	Is Site Suitable for Generator Installation?:	There is empty lot.			
	If NO, explain constraints:				
	Is Site Accessible for Fuel Delivery?:				
	Site Notes:				

Load Requirements	No. of Pumps:	2	Flygt			Notes:
	Pump Station Type:					No vavle vaulrt
	Pump Information					check vertical (covers against wall)
	Pump No:	1	2	3	4	voltage 242
	Rated Flow, gpm:					246
	Head at Rated Flow, ft:					245
	Motor Hp:	5	5			
	Voltage:	230	230			Combination
	Phase:	3	3			circuit broader/overload
	Service Factor:					Hour meter
	Full Load Amps:	14	14			12-07: 0.5
	Breaker Size:					12-13: 0.4
	Controller Type:	FVNR	FVNR			12-21: 0.5
	Controller Location:	CP				
	Ancillary Load Info:	Transformer mounted on side of control panel, 3.7 kw				

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	3 x 100 amp fuses, probably only 10 horses, former Sunnybrook/old station new location.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Eagles Landing			PS Number:	2440PS4
Location:	2' off street in Cul de Sac			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
	PS Name:	Eighth Street			PS Number	1420PS1
	Location:	Covington			Basin:	Central

Site Electrical Conditions	Service Type (Overhead or Underground):	overhead			
	Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1	# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		in building		Vectron	
	Service Entrance (location, type, size):	Location		Type	Size
		in MCC		circuit breaker	600 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	Yes			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	?			
	Is Site Suitable for Generator Installation?:	Yes-area around stabd-local/easement			
	If NO, explain constraints:	between the levee			
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	very similar to Patton ACOE			
		300 HP on the flood side, 30,000 gpm, 1600 amp on flood			

Load Requirements	No. of Pumps:	4 Gould				Notes:
	Pump Station Type:	dry well/wet well horizontal pumps				
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	4000	4000	4000	4000	
	Head at Rated Flow, ft:	30	30	30	30	
	Motor Hp:	40	40	40	40	
	Voltage:	460	460	460	460	
	Phase:	3	3	3	3	
	Service Factor:					
	Full Load Amps:	53.3	53.3	53.3	53.3	
	Breaker Size:					
	Controller Type:	FVNR	FVNR	FVNR	FVNR	
	Controller Location:	MCC				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Bubbler
	Telemetry Type:	Std SD1
	Notes:	

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
PS Name:	Eighth Street			PS Number:	1420PS1
Location:	Covington			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Enzweiler			PS Number:	2210PS2
Location:	87 Enzweiler Rd			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	2
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	10' from panel		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Difficult - long narrow gravel road			
Site Notes:	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 26
Rated Flow, gpm:					HZ 60
Head at Rated Flow, ft:					
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			Trans. Acct. # 1760-0867-21
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Enzweiler			PS Number:	2210PS2
Location:	87 Enzweiler Rd			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Evergreen			PS Number:	2020PS3
Location:	Subdivision			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	mounted on panel rack			
Service Entrance (location, type, size):	Location		Type	Size
	of meter		circuit breaker	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes-will need grading and could be land acquisition.			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Infiltration at lid concrete and barrel concrete			
	flooding and runoff problems			

Load Requirements

No. of Pumps:	Homa				Notes:
Pump Station Type:					
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	16.8	16.8			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	38.6	38.6			
Breaker Size:					
Controller Type:	fvnr	fvnr			
Controller Location:	cp				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	floats
Telemetry Type:	SD1 Standard
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Evergreen			PS Number:	2020PS3
Location:	Subdivision			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.23.07
PS Name:	Fowler Creek			PS Number:	2440PS3
Location:	down very long gravel road			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	OHE			
Transformer Location (pole / pad mounted):	Poles		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	2
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	CP Rack		Landis and Gyr	
Service Entrance (location, type, size):	Location		Type	Size
	Cp Rack		fused disconnect	100 amp
Is there a receptacle for a generator?:	no			
Is there an existing Control Building?:	no			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	yes			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Possible Flooding			

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	155	155			
Head at Rated Flow, ft:	71	71			
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	27.7	27.7			
Breaker Size:	50	50			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.23.07
PS Name:	Fowler Creek			PS Number:	2440PS3
Location:	down very long gravel road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Fowler Ridge			PS Number	2300PS4
Location:	Driveway off Cul de Sac			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on panel rack		Siemens	
Service Entrance (location, type, size):	Location		Type	Size
	on panel rack		Circuit Breaker	20 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	YES			
Is Site Suitable for Generator Installation?:	land acquisition			
If NO, explain constraints:	possible grading/retaining			
Is Site Accessible for Fuel Delivery?:				
Site Notes:				

Load Requirements

No. of Pumps:	2 HOMA				Notes:
Pump Station Type:	submersible				Open Delta
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	8	8			
Voltage:	460	460			
Phase:	3	3			
Service Factor:					
Full Load Amps:	9.15	9.15			
Breaker Size:	20	20	2x20		
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	short cycling pumps, run for 30 seconds

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Fowler Ridge			PS Number:	2300PS4
Location:	Driveway off Cul de Sac			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007	
	PS Name:	Gammon Calmet			PS Number:	1030PS1	
	Location:	Gravel Driveway near Kellogs			Basin:	West	

Site Electrical Conditions	Service Type (Overhead or Underground):					
	Transformer Location (pole / pad mounted):			Size (KVA):		
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	x	1	# of xfmrs	3 Φ
	Primary Voltage:			Secondary Voltage:		
	Meter Information (location, type, model):	Location		Type		Model
		locked on pole				
	Service Entrance (location, type, size):	Location		Type		Size
		CP Rack		Fused Disconnect		400 amp
	Is there a receptacle for a generator?:	No				
	Is there an existing Control Building?:					
	Electric Service Provider:	Duke		(Duke or Owen)		
	Is Redundant Power Source an Option?:	Maybe				
	Is Natural Gas Available in the Area?:	Don't know				
	Is Site Suitable for Generator Installation?:	Yes				
	If NO, explain constraints:					
	Is Site Accessible for Fuel Delivery?:	Yes				
	Site Notes:	Disconnect fuese 400 amp, A6D4004 time delay				
		Culter Hammer				

Load Requirements	No. of Pumps:	3 Pupm EX				Notes:
	Pump Station Type:	Submersible				Bob G has spare pump slop
	Pump Information					Voltage 480
	Pump No:	1	2	3	4	483
	Rated Flow, gpm:	900	900	900		485
	Head at Rated Flow, ft:	137	137	137		Hour meter
	Motor Hp:	98	98	98		3-05: 19.3
	Voltage:	480	480	480		3-07: 10.1
	Phase:	3	3	3		3-12: 25.0
	Service Factor:					3-16: 19.8
	Full Load Amps:	92	92			3-19: 13.3
	Breaker Size:	250	250	250	20 amp	
	Controller Type:	FVNR	FVNR	FVNR		
	Controller Location:	CP				
	Ancillary Load Info:	1 x outlet, timers, voltage monitor				
		2 legs to feed transformer				

Controls	Control Type/Description:	Floats
	Control Devices:	
	Telemetry Type:	Starters XLEAH4
	Notes:	Out when western regional 2 x 310 wires at L1, L2, L3
		way back the gravel road behind Kellogg through guard post

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Gammon Gammon Calmet			PS Number:	1030PS1
Location:	Gravel Driveway near Kellogs			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Gerrard Ave			PS Number:	0010PS4
Location:	Gerrard Ave. - Melbourne			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	10
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Pole		Lavis & Gry	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes, if flood protected			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	If not flooded			
Site Notes:	Ohio River Flood Area			
	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 36
Rated Flow, gpm:	80	80			
Head at Rated Flow, ft:	29	29			
Motor Hp:	3	3			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 7050-2012-02
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	Radio signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Gerrard Ave			PS Number:	0010PS4
Location:	Gerrard Ave. - Melbourne			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Golf Course			PS Number:	2060PS1
Location:	500 feet off road no access road			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	OHE			
Transformer Location (pole / pad mounted):	Ploe		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		3	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole		sangamo	
Service Entrance (location, type, size):	Location		Type	Size
	CP rack		Fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes, land acquisition and maintainance access issues			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:				
Site Notes:	Rain Gauge			

Load Requirements

No. of Pumps:	Flygt				Notes:
Pump Station Type:	Submersible		2 10 hp		Hour meter
Pump Information					2-23: 5.4
Pump No:	1	2	3	4	2-27: 12.5
Rated Flow, gpm:					3-02: 13.8
Head at Rated Flow, ft:					3-09: 8.3
Motor Hp:	10	10			3-07: 4.7
Voltage:	230	230			
Phase:	3	3			20 amp signal from fluke
Service Factor:					
Full Load Amps:	25-26	25-26			
Breaker Size:	50	50	15		
Controller Type:	FVNR	FVNR	station load		
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Golf Course			PS Number:	2060PS1
Location:	500 feet off road no access road			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Gunpowder			PS Number:	2380PS1
Location:	Across from Camp Ernst			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead to pole undergo to prevent flooding			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
1	XFMR		Siemens	
Service Entrance (location, type, size):	Location		Type	Size
Real 3 phase	MCC		Citcuit Breaker	800 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	Yes			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes, plenty of land			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	possible flooding issue			

Load Requirements

No. of Pumps:	2	Yoemans			Notes:
Pump Station Type:					Soft starts
Pump Information					Disconnect; 800 amp
Pump No:	1	2	3	4	actual= 2200 gpm
Rated Flow, gpm:	2700	2700			
Head at Rated Flow, ft:	240	240			
Motor Hp:	250	250			
Voltage:	480	480			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	283	283			
Breaker Size:					
Controller Type:	RVNR	RVNR			
Controller Location:	MCC				
Ancillary Load Info:					

Controls

Control Type/Description:	Square D PLC
Control Devices:	
Telemetry Type:	SD1 STD - there is a flow meter - does it send data?
Notes:	Big sewer gas smell

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Gunpowder			PS Number:	2380PS1
Location:	Across from Camp Ernst			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Hampton Ridge			PS Number:	2440PS6
Location:	Between road and Entrance feature			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Pole far away from the drop			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	2	# of xfmrs	
Primary Voltage:	Schlumberger		Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	CP RACK		Fused disconnect	150 amp
Service Entrance (location, type, size):	Location		Type	Size
	CP RACK			
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	See photos			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	No basement flooding reports, but a homeowner reported			
	"basement comode not working'			

Load Requirements

No. of Pumps:	Flygt 2				Notes:
Pump Station Type:	Submersible				Hour meter
Pump Information					12-27: 5.7
Pump No:	1	2	3	4	01-05: 5.1
Rated Flow, gpm:	100	100			01-09: 1.6
Head at Rated Flow, ft:	35	35			01-16: 5.7
Motor Hp:	3.9	3.9			01-23: 3.2
Voltage:	230	230			
Phase:	1	1			
Service Factor:					
Full Load Amps:	16	16			
Breaker Size:	40	40	15		
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	FLOATS
Telemetry Type:	SD1 Std
Notes:	very difficult- see photos

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Hampton Ridge			PS Number:	2440PS6
Location:	Between road and Entrance feature			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Harrison Harbor (Anderson			PS Number:	0010PS5
Location:	Ohio Ave - Melbourne			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Pole		Schlumberger	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Must Flood Protect			
If NO, explain constraints:	In Ohio River Flood Area			
Is Site Accessible for Fuel Delivery?:	Not If Flooded			
Site Notes:	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 36
Rated Flow, gpm:	45	45			
Head at Rated Flow, ft:	24	24			
Motor Hp:	3	3			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 4810-2013-02
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Harrison Harbor (Anderson			PS Number:	0010PS5
Location:	Ohio Ave - Melbourne			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Harvest Hill			PS Number:	2300PS3
Location:	>500' down hill behind houses			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	overhead				
Transformer Location (pole / pad mounted):	pole		Size (KVA):		
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	2	2	# of xfmrs	
Primary Voltage:			Secondary Voltage:		
Meter Information (location, type, model):	Location		Type		Model
	on panel rack		Landis and Gyr		
Service Entrance (location, type, size):	Location		Type		Size
	of meter		fused disconnect		100 amp
Is there a receptacle for a generator?:	No				
Is there an existing Control Building?:	No				
Electric Service Provider:	Owen		(Duke or Owen)		
Is Redundant Power Source an Option?:	?				
Is Natural Gas Available in the Area?:	>400' from house w/ gas				
Is Site Suitable for Generator Installation?:	land acquisition-plenty of room				
If NO, explain constraints:					
Is Site Accessible for Fuel Delivery?:	marginal-very steep and long access road				
Site Notes:	next to KY 17 may have access to gas service				

Load Requirements

No. of Pumps:	2	HOMA	GPR78		
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	10	10			
Voltage:	460	460			
Open Delta Phase:	3	3			
Service Factor:					
Full Load Amps:	12.2	12.2			
Breaker Size:	30 amp	30 amp			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Notes:
Hour meter

	1	2
23-Jan	10.2	20.7
26-Jan	4	9.4
29-Jan	6.5	11
6-Feb	15.4	24
22-Feb	37.3	63.1
23-Feb	11.9	3.5

Bob will check on pump sizes

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 STD
Notes:	chopper pumps

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Harvest Hill			PS Number:	2300PS3
Location:	way the h >500' down hill behind houses			Basin:	Central

Open

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Hempsteade			PS Number:	2420PS5
Location:	Between Road and Creek			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead-real 3 phase			
Transformer Location (pole / pad mounted):	Poles		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		3	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole			
Service Entrance (location, type, size):	Location		Type	Size
	on meter pole		fused disconnect	150 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes, would need to be mounted on stand fllod plain			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	yes			
Site Notes:				

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	Sumersuble				Voltage 469
Pump Information					470
Pump No:	1	2	3	4	485
Rated Flow, gpm:	810	810			Hour meter
Head at Rated Flow, ft:	35	35			11-08: 4.6
Motor Hp:	15	15			11-15: 5.0
Voltage:	460	460			11-17: 2.1
Phase:	3	3			11-22: 3.7
Service Factor:					11-30: 6.4
Full Load Amps:	38	38			12-07: 5.2
Breaker Size:	60	60			
Controller Type:	FVNR	FVNR			
Controller Location:	disconnect has 150 amp				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Multitrode pressure/w high well float, other floats there.
Telemetry Type:	SD1 Std
Notes:	Very Bad corrosion in the Control Panel - also in disconnect/also flooding
	panel has holes all the way through

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Hempsteade			PS Number:	2420PS5
Location:	Between Road and Creek			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Highland Heights			PS Number:	0050PS1
Location:	616 River Road			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Feeder - Wilder 45			

Load Requirements					
No. of Pumps:	3				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 52
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	40	40	40		
Voltage:	460	460	460		
Phase:	3	3	3		Trans. Acct # 8540-0284-20
Service Factor:	1.15	1.15	1.15		
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Multitrode
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3?20/07
PS Name:	Highland Heights			PS Number:	0050PS1
Location:	616 River Road			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	IDI			PS Number:	2370PS4
Location:	2165 Global Way			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground		# 7BN275	
Transformer Location (pole / pad mounted):	Pad mounted		Size (KVA):	150
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	1
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		GE M-90	734X1G235
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	200/200
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	Likely			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:					
Pump Information					
Pump No:	1	2	3	4	HOMA # AM 644-310/65G
Rated Flow, gpm:	1250	1250			
Head at Rated Flow, ft:	96.3	96.3			
Motor Hp:	57	57			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	130	130			
Breaker Size:	100 A	100 A			
Controller Type:	SQD	SQD			
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry and Receptacle				

Controls

Control Type/Description:	Duplex HOA with ALT
Control Devices:	Flygt Bulbs
Telemetry Type:	
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	IDI			PS Number:	2370PS4
Location:	2165 Global Way			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Independence Courthouse (ICH)			PS Number:	2310PS2
Location:				Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pole ?		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2 # of xfmrs	maybe
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	back of panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	back of panel		fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes-land acquisition possibly			
If NO, explain constraints:	some grading for site			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2	Homa	AM4444 18078A		Notes:
Pump Station Type:	submersible				
Pump Information					230 v
Pump No:	1	2	3	4	
Rated Flow, gpm:					Not sure where power originates
Head at Rated Flow, ft:	58.6	58.6			It appears to be 2 xfmrs on pole
Motor Hp:	8	8	check		
Voltage:	230	230			
maybe real Phase:	3	3			
Service Factor:					
Full Load Amps:	18.3	18.3			
Breaker Size:	30	30			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	control interface was OEM on panel.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Independence Courthouse (ICH)			PS Number:	2310PS2
Location:				Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Independence Station Road			PS Number:	2300PS1
Location:				Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	CP Rack		Lam and Gyr	
Service Entrance (location, type, size):	Location		Type	Size
Very loosing on mounting	next to station		Fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes, possible in Ex fence			
If NO, explain constraints:	Yes, long fairly steep drive			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	lots of space inside existing security fence			

Load Requirements

No. of Pumps:	Myers ?				Notes:
Pump Station Type:					Running, 17 amp
Pump Information					
Pump No:	1	2	3	4	Hour meter
Rated Flow, gpm:					3-5: 1.5
Head at Rated Flow, ft:	58.6	58.6	on the		3-7: 1.2
Motor Hp:	7.5	7.5	to pull list		3-13: 4.3
Voltage:	230	230			3-16: 1.4
Phase:	3	3			3-19: 1.3
Service Factor:					
Full Load Amps:	26	26			
Breaker Size:	50	50	15		
Controller Type:			control		
Controller Location:					
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	
Notes:	Needs new panel, corrosion in panel
	Repaired recently, check repair tickets

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Independence Station Road			PS Number:	2300PS1
Location:				Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Jefferson Ave.			PS Number:	0010PS2
Location:	200 Jefferson Ave. - Melbourne			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	10
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Pole		Landis & Gry	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes, but must flood Protect			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	If not Flooded			
Site Notes:	Ohio river Flood Area			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 12
Rated Flow, gpm:	10	10			
Head at Rated Flow, ft:	18	18			
Motor Hp:	2	2			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 1760-2015-02
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Jefferson Ave.			PS Number:	0010PS2
Location:	200 Jefferson Ave. - Melbourne			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Jericho road			PS Number:	2020PS8
Location:	Latonia Lakes Fishing camp-off the road			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	overhead-1 transformer for 4 or 5 houses			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole		Schlumberger	
Service Entrance (location, type, size):	Location		Type	Size
	on pole w/ meter		fused	60
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes-land acquisition- empty lot			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Latonia lakes (fishing camp) at the back of the habitat houses			

Load Requirements

No. of Pumps:	2 Myer				Notes:
Pump Station Type:	submersible				230 v
Pump Information					Hour meter
Pump No:	1	2	3	4	2-21: 6.2
Rated Flow, gpm:	22	22			2-23: 2.1
Head at Rated Flow, ft:	32	32			2-27: 4.4
Motor Hp:	2	2			3-02: 4.5
Voltage:	230	230			3-06: 2.4
Phase:	1	1			3-09: 1.6
Service Factor:					3-13: 2.3
Full Load Amps:	5	5			
Breaker Size:	25	25			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Jericho road			PS Number:	2020PS8
Location:	Latonia Lakes Fishing camp-off the road			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.23.07
PS Name:	Jonathan			PS Number:	2360PS6
Location:	Front Yard			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	UGE			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	CP Rack		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		Fused Disconnect	70 amp
Is there a receptacle for a generator?:	no			
Is there an existing Control Building?:	no			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	yes			
Is Site Suitable for Generator Installation?:	Yes - VERY close to house			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Appears to be an empty lot next door			

Load Requirements

No. of Pumps:	2 Homa				Notes:
Pump Station Type:	Submersible				
Pump Information					Hour Meter
Pump No:	1	2	3	4	12-Mar 3.8
Rated Flow, gpm:	175	175			20-Mar 5.6
Head at Rated Flow, ft:	28.6	28.6			
Motor Hp:	4	4			
Voltage:	230	230			
Real Phase:	3	3			
Service Factor:					
Full Load Amps:	9.8	9.8			
Breaker Size:	20	20	15	15	
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	HAS FLOODED BASEMENT, HOUSE REC'D BFP

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.23.07
PS Name:	Jonathan			PS Number:	2360PS6
Location:	Front Yard			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Kahns			PS Number:	2330PS6
Location:	Eagle Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	enclosed & locked			
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	NO			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	350	350			
Head at Rated Flow, ft:	45	45			
Motor Hp:	20	20			
Voltage:	460	460			
Phase:	3	3			Trans, Acct # 9960-0687-21
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Kahns			PS Number:	2330PS6
Location:	Eagle Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007	
	PS Name:	Keavy Road			PS Number:	2010PS1	
	Location:	Toe of slope off raod			Basin:	Central	

Site Electrical Conditions	Service Type (Overhead or Underground):	OH			
	Transformer Location (pole / pad mounted):			Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	2
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		Pole			
	Service Entrance (location, type, size):	Location		Type	Size
		Pole w/ meter		Fused disconnect	100 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	?			
	Is Site Suitable for Generator Installation?:	Yes, room- basement flood issue			
	If NO, explain constraints:				
	Is Site Accessible for Fuel Delivery?:	no access road			
	Site Notes:	No access road			
		Keavey Road above PS is dam for pond - appears to be failing			

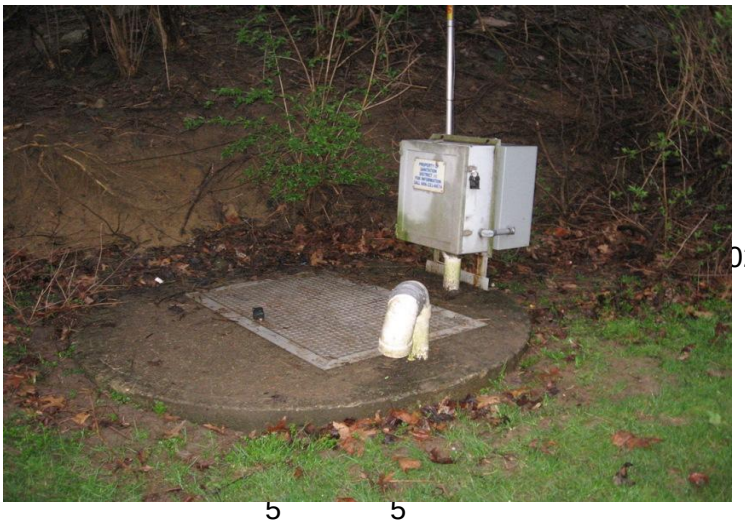
Load Requirements	No. of Pumps:	2	Flygt	3102.181		Notes:
	Pump Station Type:					Voltage ckeck
	Pump Information					230 v
	Pump No:	1	2	3	4	
	Rated Flow, gpm:					Meter hour
	Head at Rated Flow, ft:					3-2: 4.7
	Motor Hp:	5	5			3-13: 2.6
	Voltage:	230	230			3-16: 2.0
	Phase:	3	3			3-21: 3.3
	Service Factor:					
	Full Load Amps:					
	Breaker Size:	?	?	15 control		
	Controller Type:	FVNR	FVNR			
	Controller Location:	CP				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 STD
	Notes:	Existing Cotrol Panel is a nightmare

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Keavy Road			PS Number:	2010PS1
Location:	Toe of slope off raod			Basin:	Central



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Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Kees			PS Number:	2210PS1
Location:	96 Poplar Ridge			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Vectron	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					2 Different Kinds of pumps
Pump No:	1	2	3	4	
Rated Flow, gpm:		600			
Head at Rated Flow, ft:		81			FLA 56
Motor Hp:	20	30			
Voltage:	230	230			
Phase:	3	3			Trans. Acct # 9370-0252-21
Service Factor:		1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Kees			PS Number:	2210PS1
Location:	96 Poplar Ridge			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Lakeview			PS Number:	1950PS1
Location:				Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	OHE			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
Service Entrance (location, type, size):	Location		Type	Size
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	Yes			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	2 sources from the GIKV			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:				
If NO, explain constraints:	May have to pot in parking lot.			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	screens, E/F corps			

Load Requirements

No. of Pumps:	8 ITT-AC 1977				Notes:
Pump Station Type:	Dry Well, Wet Well				23 mgd
Pump Information					
Pump No:	1&2	3&4	5&6	7&8	
Rated Flow, gpm:	3800	3800	3800	3800	69 KV, alt
Head at Rated Flow, ft:	228	228	228	228	132, alt
Motor Hp:	350				30" FM
Voltage:	480	480	480	480	
Phase:	3	3	3	3	
Service Factor:					
Full Load Amps:	375?				
Breaker Size:	8				
Controller Type:	MCC				
Controller Location:					
Ancillary Load Info:	lots				

Controls

Control Type/Description:	
Control Devices:	Bubbler/float back up
Telemetry Type:	
Notes:	800 amp starter,
	8 operate at wet weather

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Lakeview			PS Number:	1950PS1
Location:				Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Lamphill			PS Number:	0050PS2
Location:	40 Livingston Lane			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	100
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	120/208
Meter Information (location, type, model):	Location		Type	Model
	Rear of Panel		Schlumberger	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, but private driveway			
Site Notes:	Ps is behind a house & difficult to deliver fuel			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	130	130			
Head at Rated Flow, ft:	31.1	31.1			
Motor Hp:	3.7	3.7			
Voltage:	230	230			
Phase:	1	1			Trans. Acct . # 1020-2066-03
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	NoneS
Notes:	SD1 Staff noted as good operating PS

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Lamphill			PS Number:	0050PS2
Location:	40 Livingston Lane			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Lassing Green			PS Number:	2420PS1
Location:	20 feet off road			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	1
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	cp rack			
Service Entrance (location, type, size):	Location		Type	Size
	cp rack		Fused Disconnect	150 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2 Homa				Notes:
Pump Station Type:					Voltage
Pump Information					230
Pump No:	1	2	3	4	Hour meter
Rated Flow, gpm:	215	215			1-04: 4.3
Head at Rated Flow, ft:	114	114			1-10: 10.4
Motor Hp:	22	22			1-16: ?
Voltage:	230	230			1-29: 20.0
Phase:	3	3			2-05: 9.7
Service Factor:					2-23: 31.1
Full Load Amps:	51	51			
Breaker Size:	90	90			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	Sd1 Std
Notes:	Redstone Village has another pump station.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Lassing Green			PS Number:	2420PS1
Location:	20 feet off road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.30.07	
	PS Name:	Leathers Road			PS Number:	1570PS1	
	Location:	Steep gravel drive			Basin:	Central	

Site Electrical Conditions	Service Type (Overhead or Underground):	Overhead				
	Transformer Location (pole / pad mounted):	Pole		Size (KVA):		
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2	# of xfmrs	
	Primary Voltage:			Secondary Voltage:		
	Meter Information (location, type, model):	Location		Type		Model
		On Pole				
	Service Entrance (location, type, size):	Location		Type		Size
		On Panel Rack		Fused Disconnect		200 amp
	Is there a receptacle for a generator?:	No				
	Is there an existing Control Building?:	No				
	Electric Service Provider:	Duke		(Duke or Owen)		
	Is Redundant Power Source an Option?:	?				
	Is Natural Gas Available in the Area?:	Yes				
	Is Site Suitable for Generator Installation?:	No				
	If NO, explain constraints:	Not much area, close to houses, steep gravel access				
	Is Site Accessible for Fuel Delivery?:					
	Site Notes:	Severly corroded Wet Well, apparently high I/I - possibly from new and old lakes				
		New construction has put PS in a hole - bad situation				

Load Requirements	No. of Pumps:	2 Flygt				Notes:
	Pump Station Type:	Submersible				Voltage 230
	Pump Information					
	Pump No:	1	2	3	4	Hour Meters (P2 @ 20% higher)
	Rated Flow, gpm:					date time
	Head at Rated Flow, ft:					17-Jan 14.6
	Motor Hp:	10	10			23-Jan 5.9
	Voltage:	230	230			31-Jan 6.2
	Open Delta Phase:	3	3			5-Feb 2.9
	Service Factor:					21-Feb 14.7
	Full Load Amps:	20	20			14-Mar 2.53
	Breaker Size:	50	50			20-Mar 4.7
	Controller Type:	FVNR	FVNR			
	Controller Location:	CP				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	bad I/I from lake?
		new construction has put PS into hole.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.30.07
PS Name:	Leathers Road			PS Number:	2020PS7
Location:	Steep gravel drive			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Litton			PS Number:	2370PS2
Location:	Litton Lane			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pole Mtd		Size (KVA):	10
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	@ PS		Vectron	104110544
Service Entrance (location, type, size):	Location		Type	Size
	NA		NA	NA
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes; Please refer Duke Drawing SIW3-20-21-29			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	Need to check easement; no fenced area			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Open area near Litton road; small creek nearby; Industrial park area;			
	new building nearby			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Packaged- not submerged				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	80	80			
Head at Rated Flow, ft:	54	54			
Motor Hp:	7.5	7.5			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	20.8	20.8			
Breaker Size:	50	50			
Controller Type:	West	West			
Controller Location:	@ PS				
Ancillary Load Info:	Vacuum pumps with Exhaust Fans				

Controls

Control Type/Description:	Vacuum prime/HOA/with ALT.
Control Devices:	Flygt bulbs
Telemetry Type:	
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Litton			PS Number:	2370PS2
Location:	Litton Lane			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Mafred			PS Number:	2010PS4
Location:	down steep hill			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		3	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	CP Rack			
Service Entrance (location, type, size):	Location		Type	Size
	CP Rack		fused disconnect	200 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	Probabely no			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	Very steep slope			
Is Site Accessible for Fuel Delivery?:	Hose down to station			
Site Notes:	Tucked into hillside			
	city of Taylor Mill installed			

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	submersible				Voltage 230(240-250)
Pump Information					Hour meter
Pump No:	1	2	3	4	2-06: 3.2
Rated Flow, gpm:					2-15: 6.9
Head at Rated Flow, ft:					2-21: 11.0
Motor Hp:	10	10			2-22: 5.8
Voltage:	230	230			2-27: 7.1
Real Phase:	3	3			
Service Factor:					
Full Load Amps:	15	15			
Breaker Size:	50	50	amp		
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	Floats
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	Bypass

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Mafred			PS Number:	2010PS4
Location:	down steep hill			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Maple Avenue			PS Number:	2020PS4
Location:				Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	overhead			
Transformer Location (pole / pad mounted):	pole about 100'		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole			
Service Entrance (location, type, size):	Location		Type	Size
	on pole of meter		fused disconnect	
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Plenty land-land acquisition issues			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:				
Site Notes:	station piping is SCHEO glued-coming apart			

Load Requirements

No. of Pumps:	2 Myers				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	250	250			
Head at Rated Flow, ft:	103	103			
Motor Hp:	25	25			
Voltage:	230	230			
Real Phase:	3	3			
Service Factor:					
Full Load Amps:	76	76			
Breaker Size:	100	100	15	20	20 (3 breakers for non-pump)
Controller Type:	FVNR	FVNR			main 225
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	STD SD1
Notes:	everything from Latonia lakes comes here

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Maple Avenue			PS Number:	2020PS4
Location:				Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Marshall			PS Number:	2350PS2
Location:	used to be trailer lot (1 trailer)			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	overhead			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on contral panel			
Service Entrance (location, type, size):	Location		Type	Size
	in the MCC cabnet		fused	350 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes-may need pedestad or fill to get out of flood			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	between creek and road			

Load Requirements

No. of Pumps:	2 ABS				Notes:
Pump Station Type:	Submersible				used to use reduce voltage
Pump Information					starters, now across the line
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	115	98			
Voltage:	460	460			
Phase:	3	3			
Service Factor:					
Full Load Amps:	127				
Breaker Size:	200 amp fuses not breakers				
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	multitrode of float backup
Telemetry Type:	STD SD1
Notes:	odors
	there are exisitng RV starters not in use

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Marshall			PS Number:	2350PS2
Location:	used to be trailer lot (1 trailer)			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Meadow Hill			PS Number:	2020PS2
Location:	next to road			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	OHE			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	2
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole			
Service Entrance (location, type, size):	Location		Type	Size
need new disconnect	pole w/ meter		fused	200 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	did not see meters, no			
Is Site Suitable for Generator Installation?:	land acquisition-close to house			
If NO, explain constraints:	marginal			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	close to road (3')			
	close to house			

Load Requirements

No. of Pumps:	2	Flygt			Notes:
Pump Station Type:	Submersible				250 Voltage check
Pump Information					
Pump No:	1	2	3	4	Hour meter
Rated Flow, gpm:					3-12: 3.6
Head at Rated Flow, ft:					3-16: 2.3
Motor Hp:	20	20			3-19: 1.6
Voltage:	230	230			3-22: 1.6
Phase:	3	3			3-26: 2.4
Service Factor:					3-29: 1.7
Full Load Amps:	54	54			
Breaker Size:	100	100			
Controller Type:	FVNR	FVNR			
Controller Location:	Cp				
Ancillary Load Info:					

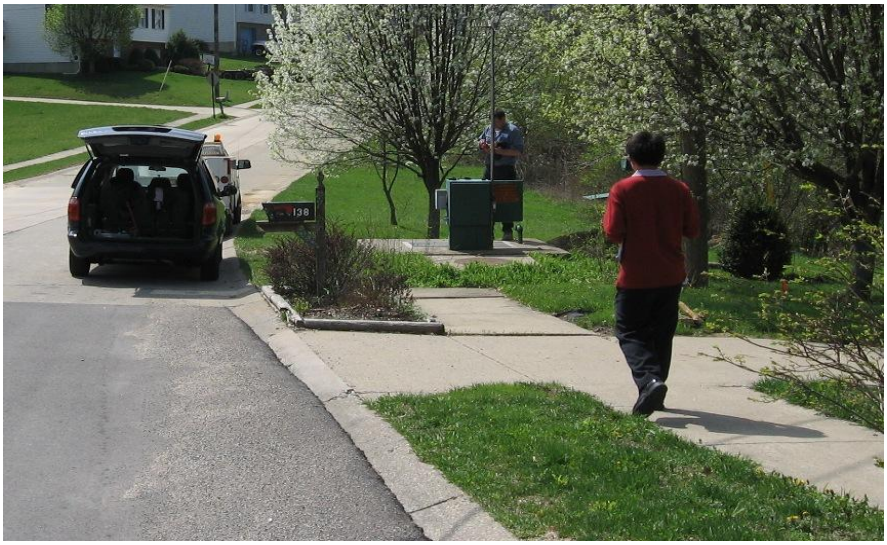
Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 STD
Notes:	has constructed bypass - 8" PVC pipe in wet well directed to drainage swail

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Meadow Hill			PS Number:	2020PS2
Location:	next to road			Basin:	Central



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Meadow Lane			PS Number:	2010PS2
Location:	in swail behind house			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground from pole on street			
Transformer Location (pole / pad mounted):	pole on street		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	pole			
Service Entrance (location, type, size):	Location		Type	Size
	pole next to PS		fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Cinergy		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Space-land acquisition issues			
If NO, explain constraints:	No-very far 200' feet from road			
Is Site Accessible for Fuel Delivery?:	needs road			
Site Notes:				

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	?				
Head at Rated Flow, ft:	?				
Motor Hp:	5	5			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	13	13			
Breaker Size:	30	30			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	Floats
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	6' dia wet well, 4' x 5' VV

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Meadow Lane			PS Number:	2010PS2
Location:	in swail behind house			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
	PS Name:	Mill House Crossing			PS Number:	2350PS3
	Location:				Basin:	Central

Site Electrical Conditions	Service Type (Overhead or Underground):	underground			
	Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		CP Rack			2
	Service Entrance (location, type, size):	Location		Type	Size
		CP Rack		fused disconnect	200 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	Yes			
	Is Site Suitable for Generator Installation?:	Yes-possibly extended fence			
	If NO, explain constraints:				
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	Ex transformor blocks entrance			
		Evidence of high level to hatch at ww			

Load Requirements	No. of Pumps:	2 Homa				Notes:
	Pump Station Type:	submersible				460 v
	Pump Information					Hour meter
	Pump No:	1	2	3	4	3-20: 1.7
	Rated Flow, gpm:	300	300			3-22: 0.9
	Head at Rated Flow, ft:	62	62			3-26: 1.7
	Motor Hp:	10	10			
	Voltage:	460	460			
	real Phase:	3	3			
	Service Factor:					
	Full Load Amps:	12.9	12.9			
	Breaker Size:	30	30			
	Controller Type:	FVNR	FVNR			
	Controller Location:	CP				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Mill House Crossing			PS Number:	2350PS3
Location:				Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/28/2007
PS Name:	Mineola Pike			PS Number:	2130PS2
Location:	Olympic Blvd.			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	@ PS		L&G AXS4 49252	55744
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	200/150
Is there a receptacle for a generator?:	No			ECW-150
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	Likely			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes; Please refer Duke Drawing S02W0225			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Large open site next to Marriot Courtyard Hotel just off main road.			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					Flygt 3152.000?
Pump No:	1	2	3	4	
Rated Flow, gpm:	650	650			
Head at Rated Flow, ft:	55	55			
Motor Hp:	20	20			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	54	54			
Breaker Size:	57	57			
Controller Type:	Telemechanique LC1D8011				
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio 175 MHZ
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/28/2007
PS Name:	Mineola Pike			PS Number:	2130PS2
Location:	Olympic Blvd.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Newport Steel Mill			PS Number:	2190PS1
Location:	On SR 9 in Wilder			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	15
Configuration (1-P, 3-P, # of xfmrs, etc.)			# of xfmrs	
Primary Voltage:	480		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes, but located within private industrial property			
Site Notes:	Security guard on access gate			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Summersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	200	200			FLA 36
Head at Rated Flow, ft:	18	18			
Motor Hp:	3	3			
Voltage:	230	230			Site flooded in 1997
Phase:	3	3			
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Newport Steel Mill			PS Number:	2190PS1
Location:	On SR 9 in Wilder			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Ohio Ave.			PS Number:	000091
Location:	Melbourne - SR 8, east of St. Phillip ball field			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 - phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Pole		Schlumberger	
Service Entrance (location, type, size):	Location		Type	Size
	Panel rack			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Must be elevated to protect from flood area			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Ohio River Flood Area			
Site Notes:	Feeder - Cold Spring 49			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	10	10			
Head at Rated Flow, ft:	18	18			
Motor Hp:	2	2			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 3810-2013-02
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:	Panel				
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	None
Notes:	Low volume flow with lots of wetwell storage capacity

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Ohio Ave.			PS Number:	000091
Location:	Melbourne - SR 8, east of St. Phillip ball field			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Orchard Estates			PS Number:	2360PS5
Location:	about 50 feet off the road			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	From on pole underground to PS			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1	2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on panel rack			GE M-90
Service Entrance (location, type, size):	Location		Type	Size
Service corrosion	on panel rack		circuit breaker	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	land acquisition			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	No proper electrical sealoffs			

Load Requirements

No. of Pumps:	2	old RC	New Yoeman		Notes:
Pump Station Type:	submersible				Bob G Cleck
Pump Information					230 V
Pump No:	1	2	3	4	Runtime
Rated Flow, gpm:					3-12: 5.0
Head at Rated Flow, ft:					3-20: 8.6
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	26.7	26.7			
Breaker Size:	Combo circuit breaker 30 amp				
Controller Type:					
Controller Location:	CP				
Ancillary Load Info:	Combination circuit breaker				

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	manifolds with the gunpower creek FM

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Orchard Estates			PS Number:	2360PS5
Location:	about 50 feet off the road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Overlook			PS Number:	0150PS1
Location:	30 Overlook Circle			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	50
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Schlumberger	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes, but tight between houses			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Paved roads to PS are very steep & may be slick			
Site Notes:	Feeder - Marshall 41			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Sunmersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	4	4			
Voltage:	230	230			
Phase:	3	3			Trans. Acct. # 9480-2022-02
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Overlook			PS Number:	0150PS1
Location:	30 Overlook Circle			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Parkside 2			PS Number:	2430PS2
Location:	9 Sugar Mill Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)			# of xfmrs	2
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Landis & Gyr	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Owen County			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	286.5	286.5			
Head at Rated Flow, ft:	53	53			
Motor Hp:	9.8	9.8			
Voltage:	480	480			
Phase:	3	3			Trans. Acct. # 1640134
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radiuo Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Parkside 2			PS Number:	2430PS2
Location:	9 Sugar Mill Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
	PS Name:	Patton Street			PS Number:	0960PS1
	Location:	bewteen levee and street			Basin:	Central

Site Electrical Conditions	Service Type (Overhead or Underground):	overhead			
	Transformer Location (pole / pad mounted):	pole		Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		in building			
	Service Entrance (location, type, size):	Location		Type	Size
		in building		circuit breaker	600 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	yes			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	?			
	Is Site Suitable for Generator Installation?:	No-maybe roof design?			
	If NO, explain constraints:	Flood wall, street, mobile home			
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	Flood and sanitary separate pumps			
		Flood pumps-3x200 HP,XFRMR on 6 round for F.P			

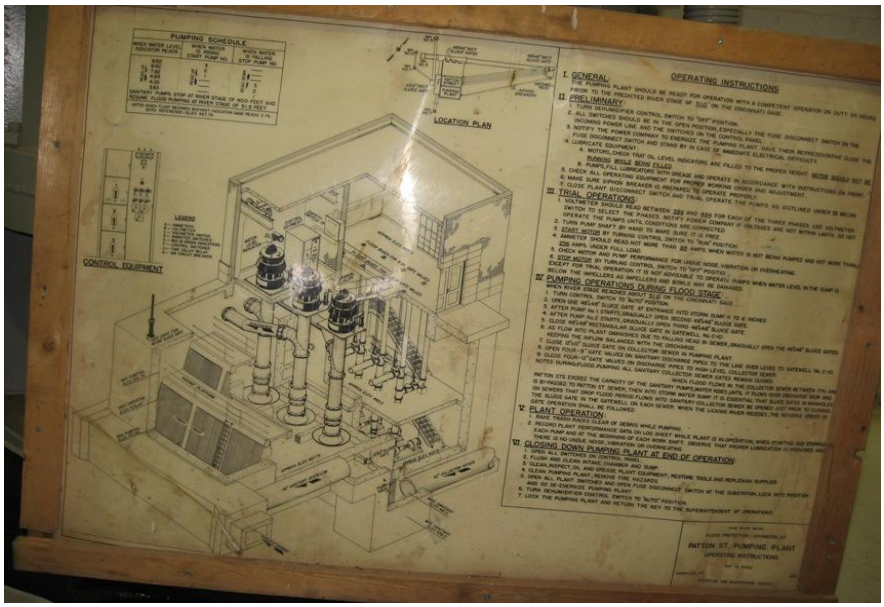
Load Requirements	No. of Pumps:	4 Gould				Notes:
	Pump Station Type:	dry well/wet well horizontal pumps				
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	2000	2000	2000	2000	
	Head at Rated Flow, ft:	27	27	27	27	
	Motor Hp:	25	25	25	25	
	Voltage:	460	460	460	460	
	Phase:	3	3	3	3	
	Service Factor:	1	1	1	1	
	Full Load Amps:	53.3	53.3	53.3	53.3	38.1 amps on name plate
	Breaker Size:					
	Controller Type:					
	Controller Location:					
	Ancillary Load Info:	Sump pump 1 or 2 HP, roof exhaust				
		Bar screen 5 HP, 230/460, 13/6.5, unit heaters				

Controls	Control Type/Description:	
	Control Devices:	PLC, Bubber (both sides work of the 1 bubbler system)
	Telemetry Type:	
	Notes:	sides-flood sation side
		sewage station side

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
PS Name:	Patton Street			PS Number:	0960PS1
Location:	bewteen levee and street			Basin:	Central



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Paul Road			PS Number:	2260PS2
Location:	51 Paul Lane			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 - phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Westington	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	PS located downhill in back of house			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Difficult due to PS location			
Site Notes:	Feeder - Claryville 42			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	25	25			
Head at Rated Flow, ft:	30	30			
Motor Hp:	2	2			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 1780-0828-20-1
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	None
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Paul Road			PS Number:	2260PS2
Location:	51 Paul Lane			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Ria Vista			PS Number:	1810PS2
Location:	2082 Vina			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	@ PS		Schlumberger	SV2SR
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	100/80
Is there a receptacle for a generator?:	No			FRN R80
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes; Please refer to Duke Drawing S1W1-5			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	Property adjacent is for sale			
Is Site Accessible for Fuel Delivery?:	Maybe			
Site Notes:	Meter & Disc.			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				242/243/241
Pump Information					
Pump No:	1	2	3	4	3127.180 (Flygt)
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	20.5	20.5			
Breaker Size:	50 A	50 A			
Controller Type:	LC1D3210	CL04.a.III.T1			Telemecanique AGUT
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry Panel				

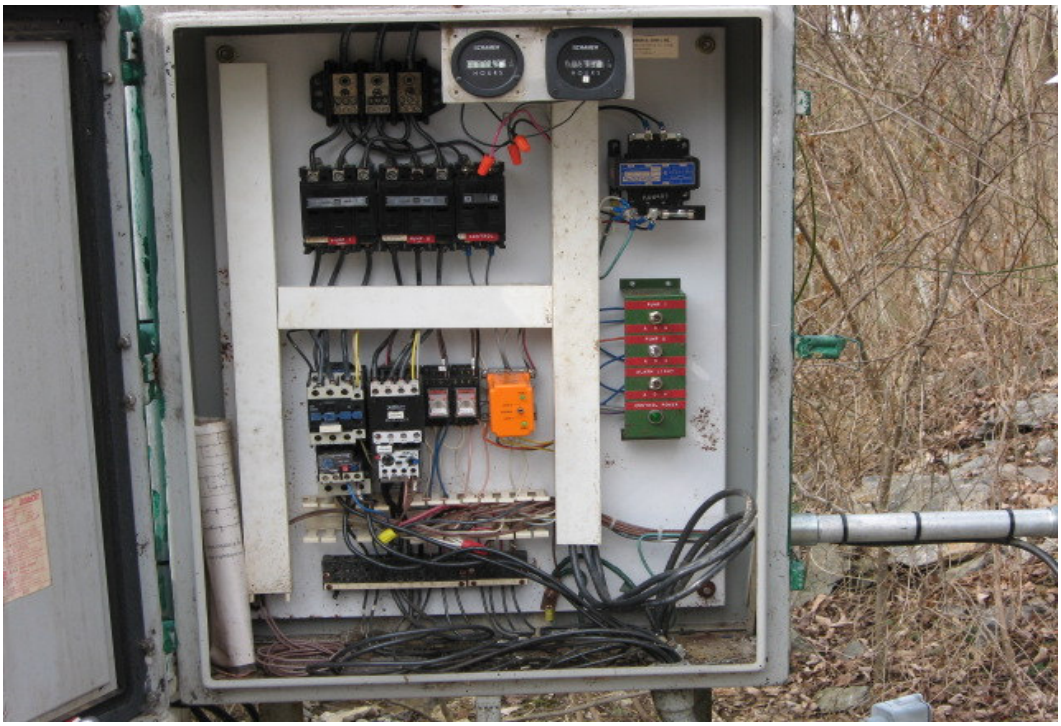
Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Ria Vista			PS Number:	1810PS2
Location:	2082 Vina			Basin:	North



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
	PS Name:	Richwood			PS Number:	2320PS3
	Location:	Between creek and road			Basin:	West

Site Electrical Conditions	Service Type (Overhead or Underground):				
	Transformer Location (pole / pad mounted):			Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
	Service Entrance (location, type, size):	Location		Type	Size
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	Yes			
	Electric Service Provider:			(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	?			
	Is Site Suitable for Generator Installation?:	Yes			
	If NO, explain constraints:				
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	Possible flooding issues			

Load Requirements	No. of Pumps:	3 - 2 large, 1 Jockey				Notes:
	Pump Station Type:	Horizontal Dry well				ITT-AC - 2 large pumps
	Pump Information					Fairbanks-Morse - jockey
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	750	1000	1000		
	Head at Rated Flow, ft:	187	215	215		Bypass duckbill on bypass line
	Motor Hp:	75	150	150		installed 90 degree off center
	Voltage:	460	460	460		
	Phase:	3	3	3		
	Service Factor:					
	Full Load Amps:					
	Breaker Size:	500				
	Controller Type:	FVNR	FVNR	FVNR		
	Controller Location:	MCC				
	Ancillary Load Info:	Fan/Unit heater				
		2 x 1/2 HP, 1 Sump				

Controls	Control Type/Description:	
	Control Devices:	
	Telemetry Type:	SD1 Std
	Notes:	This is a large station, would require a more detail site visit.
		It has Oxygen injection system, 7.5 hp pump, 1991. Constructed bypass

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Richwood			PS Number:	2320PS3
Location:	Between creek and road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Ridgefield			PS Number:	2360PS4
Location:	2688 Berwood Lane			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad Mtd.		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	240
Meter Information (location, type, model):	Location		Type	Model
	@ PS		SANGAMO DK-5	58505944
Service Entrance (location, type, size):	Location		Type 33671	Size
	@ PS		Disc. Sw.	100/100
Is there a receptacle for a generator?:	No			TR100R
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes; SIW3-45-46			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	Need to change fencing/ small site			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Check flood plain maps; creek nearby			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				251/249/248
Pump Information					HOMA AM 434 230/10E
Pump No:	1	2	3	4	
Rated Flow, gpm:	300	300			
Head at Rated Flow, ft:	95	95			
Motor Hp:	11.4	11.4			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	257	257			
Breaker Size:	50	50			
Controller Type:	MS	MS	Telemecanique LC1D3210		
Controller Location:	@ PS				
Ancillary Load Info:	None				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	None
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Ridgefield			PS Number:	2360PS4
Location:	2688 Berwood Lane			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Ridgeway			PS Number:	2010PS3
Location:	way back behind houses			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	underground			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1	2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	on pole near pond			
Service Entrance (location, type, size):	Location		Type	Size
	pole near PS		fused disconnect	150 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:				
If NO, explain constraints:	200' down hill to PS			
Is Site Accessible for Fuel Delivery?:	very steep, no access road			
Site Notes:	192' back from road			

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	Submersible				230 v
Pump Information					
Pump No:	1	2	3	4	Meter hour
Rated Flow, gpm:					2-27: 6.6
Head at Rated Flow, ft:					3-02: 6.0
Motor Hp:	10	10			3-06: 2.4
Voltage:	230	230			3-09: 1.1
Phase:	3	3			3-13: 1.6
Service Factor:					3-16: 1.2
Full Load Amps:	25	25			
Breaker Size:					
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Standard
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Ridgeway			PS Number:	2010PS3
Location:	way back behind houses			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Ripple Creek			PS Number:	1900PS3
Location:	Ripple Creek Road			Basin:	East

Site Electrical Conditions			
Service Type (Overhead or Underground):	Overhead		
Transformer Location (pole / pad mounted):	Pole	Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire	# of xfmrs	1
Primary Voltage:	12470	Secondary Voltage:	240
Meter Information (location, type, model):	Location	Type	Model
	Pole	GE	
Service Entrance (location, type, size):	Location	Type	Size
	Panel		
Electrical Building Available?:	No		
Electric Service Provider:	Duke Energy		
Is Redundant Power Source an Option?:	No		
Is Natural Gas Available in the Area?:	Yes		
Is Site Suitable for Generator Installation?:	Yes		
If NO, explain constraints:			
Is Site Accessible for Fuel Delivery?:	Yes		
Site Notes:	Wetwell is manhole located in the street. Very little storage capacity		
	Feeder - Cold Spring 49		

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	submersible				
Pump Information					
Pump No:	1	2	3	4	Generator may offer little help
Rated Flow, gpm:	100	100			
Head at Rated Flow, ft:	75	75			
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			Trans. Acct # 4620-0068-21
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control
Control Devices:	Mercoid Floats
Telemetry Type:	Radio signal
Notes:	Possible replacement may offer better solution

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Ripple Creek			PS Number:	1900PS3
Location:	Ripple Creek Road			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Riverview Farms			PS Number:	1810PS1
Location:	2030 River Vista Court			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground				
Transformer Location (pole / pad mounted):	Pad			Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	NA		# of xfmrs	NA
Primary Voltage:	NA		Secondary Voltage:		240
Meter Information (location, type, model):	Location		Type		Model
	@ PS		GE M-90AE 90096448		716X001301
Service Entrance (location, type, size):	Location		Type		Size
	@ PS		Disconnect Switch		100 A
Is there a receptacle for a generator?:	No				FRN100
Is there an existing Control Building?:	No				
Electric Service Provider:	Duke				(Duke or Owen)
Is Redundant Power Source an Option?:	No				
Is Natural Gas Available in the Area?:	Yes; Refer to Duke Drawing S01W0113				
Is Site Suitable for Generator Installation?:	No, site not suitable				
If NO, explain constraints:	May be possible to locate small size generator				
Is Site Accessible for Fuel Delivery?:	Yes				
Site Notes:	Pump Station is located near street back of corner lot; near front				
	of adjacent property				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				241/241/242V
Pump Information					
Pump No:	1	2	3	4	Flygt 3127.180
Rated Flow, gpm:	100	100			
Head at Rated Flow, ft:	95	95			
Motor Hp:	10	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	26	26			
Breaker Size:	50 A	50 A			
Controller Type:	SQD	SQD	Size 2		
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio (173 MHZ) Zetron 2
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Riverview Farms			PS Number:	1810PS1
Location:	2030 River Vista Court			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Riverwatch			PS Number:	1810PS3
Location:	977 Riverwatch Drive			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground				
Transformer Location (pole / pad mounted):	Pad Mtd.			Size (KVA):	80
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:		240
Meter Information (location, type, model):	Location		Type		Model
	@ PS		Schlumberger	104810211	SV2SR
Service Entrance (location, type, size):	Location		Type		Size
	@ PS		Disconnect Switch		60/50
Is there a receptacle for a generator?:	No				
Is there an existing Control Building?:	No				
Electric Service Provider:	Duke		(Duke or Owen)		
Is Redundant Power Source an Option?:	No				
Is Natural Gas Available in the Area?:	Yes; Refer Duke Drawing S01W0114				
Is Site Suitable for Generator Installation?:	No				
If NO, explain constraints:	Pump Station in property front yard				
Is Site Accessible for Fuel Delivery?:	Yes				
Site Notes:	Pump Station is near street / side walk; SE corner of property; near common shared driveway with houses behind.				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					
Pump No:	1	2	3	4	Flygt 3126.180
Rated Flow, gpm:	NA	NA			" " 3127.000
Head at Rated Flow, ft:	NA	NA			
Motor Hp:	9.4	10			
Voltage:	230	230			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	25.6	27	8.5kW		
Breaker Size:	NA	NA			
Controller Type:	NA	NA			
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry Panel				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio (173 MHZ) Zetron 1
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Riverwatch			PS Number:	1810PS3
Location:	977 Riverwatch Drive			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	2/20/2007
PS Name:	Rosewood Lane			PS Number:	0250PS1
Location:	38 Rosewood Lane			Basin:	East

Site Electrical Conditions			
Service Type (Overhead or Underground):	Underground		
Transformer Location (pole / pad mounted):	Pad	Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire	# of xfmrs	1
Primary Voltage:	12470	Secondary Voltage:	240
Meter Information (location, type, model):	Location	Type	Model
	Near street	Vectron	
Service Entrance (location, type, size):	Location	Type	Size
	Panel		
Electrical Building Available?:	No		
Electric Service Provider:	Duke Energy		
Is Redundant Power Source an Option?:			
Is Natural Gas Available in the Area?:	Yes		
Is Site Suitable for Generator Installation?:	Yes		
If NO, explain constraints:			
Is Site Accessible for Fuel Delivery?:	Difficult due to PS being located in low area		

Site Notes:	PS located at bottom of hill
	Feeder - Wilder 41

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	80	80			
Head at Rated Flow, ft:	90	90			
Motor Hp:	15	15			
Voltage:	230	230			
Phase:	3	3			Trans. Acct # 8740-0789-21
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	2/20/2007
PS Name:	Rosewood Lane			PS Number:	0250PS1
Location:	38 Rosewood Lane			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	Dave Camarda	Company:	MPI			Date:	3/13/2007
	PS Name:	Sand Run					PS Number:	2400PS1
	Location:	North Bend and Sand Run					Basin:	North

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground				
	Transformer Location (pole / pad mounted):	Pad Mounted		Size (KVA):		NA
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P		# of xfmrs	2
	Primary Voltage:	NA		Secondary Voltage:		480
	Meter Information (location, type, model):	Location		Type		Model
		@ PS		w/Ct's/PTS	45506	NA
	Service Entrance (location, type, size):	Location		Type		Size
		@ PS		3P Disconnect Switch		400A
	Is there a receptacle for a generator?:	No				250 F
	Is there an existing Control Building?:	No				
	Electric Service Provider:	Owen		(Duke or Owen)		
	Is Redundant Power Source an Option?:	NA				
	Is Natural Gas Available in the Area?:	Yes; Refer Duke Drawing Number N01W0315				
	Is Site Suitable for Generator Installation?:	Yes				
	If NO, explain constraints:					
	Is Site Accessible for Fuel Delivery?:	Yes				
	Site Notes:	Area of old chan. feed sufficient for generator and equipment				

Load Requirements	No. of Pumps:	3				Notes:
	Pump Station Type:	Main Station				
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	800	800	800		
	Head at Rated Flow, ft:	142	142	142		
	Motor Hp:	60	60	60		
	Voltage:	460	460	460		
	Phase:	3	3	3		
	Service Factor:	1.15	1.15	1.15		
	Full Load Amps:	68	68	68		
	Breaker Size:	250	250	250		
	Controller Type:	Mag	Mag	Mag	Size A	SQD
	Controller Location:	@ PS				
	Ancillary Load Info:	Telemetry a chan feed (20A)				

Controls	Control Type/Description:	Multi trode HOA lead / lag w/ ALT
	Control Devices:	
	Telemetry Type:	Radio
	Notes:	Two one phase open delta - corner ground

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Sand Run			PS Number:	2400PS1
Location:	North Bend and Sand Run			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
	PS Name:	Saturn			PS Number:	2410PS1
	Location:	2" from back of curb			Basin:	West

Site Electrical Conditions	Service Type (Overhead or Underground):	underground			
	Transformer Location (pole / pad mounted):	Ground		Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		on the panel rack			
	Service Entrance (location, type, size):	Location		Type	Size
	Real 3 phase	on the panel rack		Fused disconnect	100 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	?			
	Is Site Suitable for Generator Installation?:	Not really			
	If NO, explain constraints:	Not much area - everything developed			
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	See pictures			
		very deep wet wells			

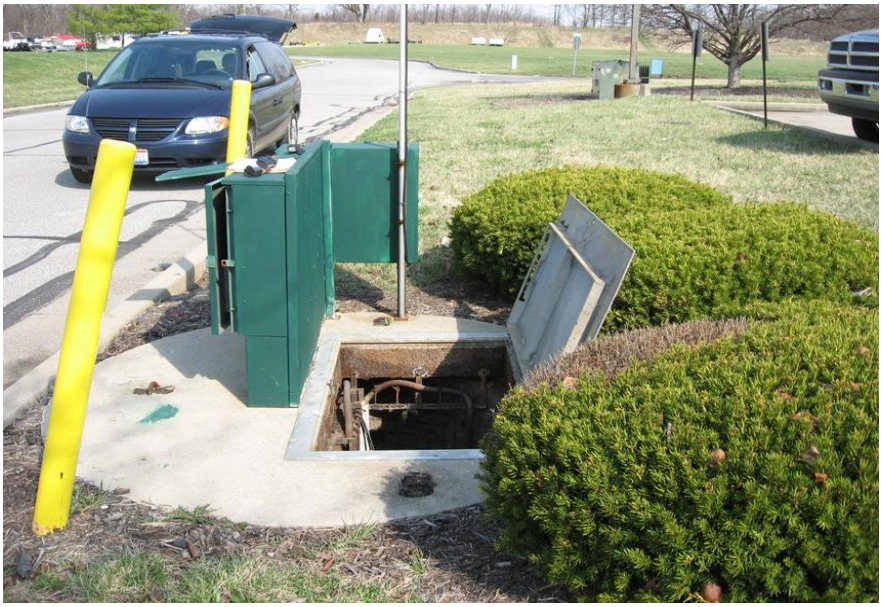
Load Requirements	No. of Pumps:	2 Flygt				Notes:
	Pump Station Type:	submersible				
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:					
	Head at Rated Flow, ft:					
	Motor Hp:	7.4	7.4			
	Voltage:	230	230			
	Phase:	3	3			
	Service Factor:					
	Full Load Amps:	20	20			
	Breaker Size:	50	50	15		
	Controller Type:	FVNR	FVNR			
	Controller Location:	MCC				
	Ancillary Load Info:					

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	very difficult for backup.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Saturn			PS Number:	2410PS1
Location:	2" from back of curb			Basin:	West



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
	PS Name:	Second Street			PS Number:	14402ST
	Location:	Covington Histric District @ Ohio and Licking			Basin:	Central

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground			
	Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1	# of xfmrs	
	Primary Voltage:			Secondary Voltage:	
	Meter Information (location, type, model):	Location		Type	Model
		outside backwall			
	Service Entrance (location, type, size):	Location		Type	Size
		in building		circuit breaker	600 amp
	Is there a receptacle for a generator?:	No			
	Is there an existing Control Building?:	Yes			
	Electric Service Provider:	Duke		(Duke or Owen)	
	Is Redundant Power Source an Option?:	?			
	Is Natural Gas Available in the Area?:	Yes			
	Is Site Suitable for Generator Installation?:	At the Ohio/Licking river confluence			
	If NO, explain constraints:	No			
	Is Site Accessible for Fuel Delivery?:				
	Site Notes:	round shift ACOE-1950's			
		No wetwell-pump short cycle			

Load Requirements	No. of Pumps:	3 ITT-AC				Notes:
	Pump Station Type:	Dry Well, Wet Well, Horizontal				
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	4000	4000	4000		
	Head at Rated Flow, ft:	55	55	55		
	Motor Hp:	75	75	75		
	Voltage:	460	460	460		
	Phase:	3	3	3		
	Service Factor:					
	Full Load Amps:	95	95	95		
	Breaker Size:					
	Controller Type:	FVNR	FVNR	FVNR		
	Controller Location:	MCC				
	Ancillary Load Info:	sump pump-15 to 20 elevator, gas furnase				
		unit heater, vent' fan				

Controls	Control Type/Description:	
	Control Devices:	Transducer
	Telemetry Type:	
	Notes:	Dry pit-submersible-back to dry

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	4/5/2007
PS Name:	Second Street			PS Number:	14402ST
Location:	Covington Histric District @ Ohio and Licking			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Shadow Lake			PS Number:	1920PS6
Location:	16 Shadow Lake Drive			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 phase		# of xfmrs	1
Primary Voltage:	12470		Secondary Voltage:	120/240
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		Sangamo	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	NO			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Tight fenced area to loacte a generator			
	Feeder - Cold Spring 42			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 19.25
Rated Flow, gpm:	240	240			
Head at Rated Flow, ft:	77.7	77.7			
Motor Hp:	14.9	14.9			
Voltage:	480	480			
Phase:	3	3			Trans. Acct. # 6350-2134-02
Service Factor:					
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Shadow Lake			PS Number:	1920PS6
Location:	16 Shadow Lake Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Silver Grove			PS Number:	0020PS1
Location:	Mary Ingles Highway, south side of SR 8			Basin:	East

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead		
Transformer Location (pole / pad mounted):	Pole	Size (KVA):	75
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire	# of xfmrs	1
Primary Voltage:	12470	Secondary Voltage:	480
Meter Information (location, type, model):	Location	Type	Model
	Back of Panel	Vectron	
Service Entrance (location, type, size):	Location	Type	Size
	Panel		
Electrical Building Available?:	No		
Electric Service Provider:	Duke Energy		
Is Redundant Power Source an Option?:	No		
Is Natural Gas Available in the Area?:			
Is Site Suitable for Generator Installation?:	Yes		
If NO, explain constraints:			
Is Site Accessible for Fuel Delivery?:	Yes		
Site Notes:	Ps near main highway		
	Feeder - Cold Spring 49		

Load Requirements

No. of Pumps:	3				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	2 Flygt pumps FLA 31
Rated Flow, gpm:	681	684	676		1 KSB pump FLA 25
Head at Rated Flow, ft:	82	85	81		
Motor Hp:	23	33	33		
Voltage:	460	460	460		
Phase:	3	3	3		Trans. Acct. # 7580-0802-20
Service Factor:	1.1	1.1	1.1		
Controller Type:	Magnetic				
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry

Control Type/Description:	Level Control H-O-A
Control Devices:	Multi Trobe
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Silver Grove			PS Number:	0020PS1
Location:	Mary Ingles Highway, south side of SR 8			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Skyport			PS Number:	2360PS7
Location:	2355 Progress Drive			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	NA		Size (KVA):	NA
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	NA	# of xfmrs	NA
Primary Voltage:	12470/7200		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		4E#706X16G85	M-90
Service Entrance (location, type, size):	Location		Type	Size
	@ PS		Disconnect Switch	400/300
Is there a receptacle for a generator?:	No			TRS300R
Is there an existing Control Building?:	No			
Electric Service Provider:	Duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes; SIW2-12 & 13			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:	None			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Low Area; Check flood plain; creek nearby			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex Submersible				
Pump Information					Fairbanks Morse D5434MV
Pump No:	1	2	3	4	UO75D2324D1X
Rated Flow, gpm:	900	900			U31A
Head at Rated Flow, ft:	195	195			SN 109735-0 (motor)
Motor Hp:	75	75			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	85	85			
Breaker Size:	125	125			
Controller Type:	Furnas	14IP32A81 Max Amp115; Size 3-1/2			
Controller Location:	@ PS				
Ancillary Load Info:	Telemetry, Receptacle (Inside Cover)				

Controls

Control Type/Description:	Duplex HOA w/ ALT.
Control Devices:	Flygt Bulbs
Telemetry Type:	Radio (173.395 MHZ) 30 Watts
Notes:	Need to come back to locate primary xfrmr location, size, etc.

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Skyport			PS Number:	2360PS7
Location:	2355 Progress Drive			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	South Park Industrial			PS Number:	2360PS3
Location:	Inverness Drive-Highway 237 & I-275 (North East Quadrant)			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead to Transformer -Underground to PS			
Transformer Location (pole / pad mounted):	Pole Mounted		Size (KVA):	15
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	3-P	# of xfmrs	3
Primary Voltage:			Secondary Voltage:	460
Meter Information (location, type, model):	Location		Type	Model
	@ Service Pole			
Service Entrance (location, type, size):	Location		Type	Size
			Overhead	
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	Not likely			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	Needs additinnal fencing work and easement			
Is Site Accessible for Fuel Delivery?:	Difficult terrain			
Site Notes:				

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex-Submersible				
Pump Information					FLYGT 896 Pumps
Pump No:	1	2	3	4	HOA 30A; 3-P;Disconnect Switch
Rated Flow, gpm:	--	--			
Head at Rated Flow, ft:	--	--			
Motor Hp:	10	10			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	--	--			
Full Load Amps:	13	13			
Breaker Size:	--	--			
Controller Type:	Magnetic Starter				Auto Alternation
Controller Location:	@ Pump Station				
Ancillary Load Info:	None				

Controls

Control Type/Description:	Flygt Bulbs
Control Devices:	
Telemetry Type:	None Observed
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	South Park Industrial			PS Number:	2360PS3
Location:	Inverness Drive-Highway 237 & I-275 (North East Quadrant)			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley		Company:	Hazen and Sawyer		Date:	3/21/2007
PS Name:	St. Annes				PS Number:		0010PS3
Location:	316 Mary Ingles Highway - Mellbourne				Basin:		East
Site Electrical Conditions							
Service Type (Overhead or Underground):			Overhead				
Transformer Location (pole / pad mounted):			Pole		Size (KVA):		25
Configuration (1-P, 3-P, # of xfmrs, etc.)			3 phase/3 wire		# of xfmrs		1
Primary Voltage:			12470		Secondary Voltage:		240
Meter Information (location, type, model):			Location		Type		Model
			Pole		Vectron		
Service Entrance (location, type, size):			Location		Type		Size
			Panel				
Electrical Building Available?:			No				
Electric Service Provider:			Duke Energy				
Is Redundant Power Source an Option?:							
Is Natural Gas Available in the Area?:							
Is Site Suitable for Generator Installation?:			Yes, but must be flood protected				
If NO, explain constraints:							
Is Site Accessible for Fuel Delivery?:			Yes				
Site Notes:	PS area has flooded						
	Feeder - Cold Spring 49						

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 24.8
Rated Flow, gpm:	70	70			
Head at Rated Flow, ft:	55	55			
Motor Hp:	5	5			
Voltage:	230	230			
Phase:	3	3			Trans. Acct. # 8660-2009-02
Service Factor:	1.1	1.1			
Controller Type:	Magnetic				
Controller Location:	Panel				
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	PS control panel is elevated

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	St. Annes			PS Number:	0010PS3
Location:	316 Mary Ingles Highway - Mellbourne			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Stillwater			PS Number:	2250PS2
Location:	111 Stillwater Drive			Basin:	East

Site Electrical Conditions			
Service Type (Overhead or Underground):	Underground		
Transformer Location (pole / pad mounted):	Pad	Size (KVA):	50
Configuration (1-P, 3-P, # of xfmrs, etc.)	1 - phase	# of xfmrs	
Primary Voltage:	12470	Secondary Voltage:	120/240
Meter Information (location, type, model):	Location	Type	Model
	Rear of panel	Schlumberger	
Service Entrance (location, type, size):	Location	Type	Size
	Panel		
Electrical Building Available?:	No		
Electric Service Provider:	Duke Energy		
Is Redundant Power Source an Option?:			
Is Natural Gas Available in the Area?:			
Is Site Suitable for Generator Installation?:	PS is located in sidewalk near houses. Tight fit.		
If NO, explain constraints:			
Is Site Accessible for Fuel Delivery?:	Yes		
Site Notes:	Feeder - Claryville 42		

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					Potential basement flooding
Pump No:	1	2	3	4	
Rated Flow, gpm:	160	160			
Head at Rated Flow, ft:	42	42			
Motor Hp:	4	3.2			
Voltage:	230	230			
Phase:	1	1			Trans. Acct. # 4040-2003-02
Service Factor:	1.1	1.1			
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/21/2007
PS Name:	Stillwater			PS Number:	2250PS2
Location:	111 Stillwater Drive			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Sycamore			PS Number:	2420PS8
Location:	Buch road			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pole at MT ZION 500'		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	rack next to CP		vectron	
Service Entrance (location, type, size):	Location		Type	Size
	rack next to CP		fused disconnect	30 amp
Is there a receptacle for a generator?:	YES			
Is there an existing Control Building?:	no			
Electric Service Provider:	Cinergy		(Duke or Owen)	
Is Redundant Power Source an Option?:	Has pigtail and transformer switch			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

Load Requirements

No. of Pumps:	2 Flygt				Notes:
Pump Station Type:	Submersible				Voltage
Pump Information					480
Pump No:	1	2	3	4	
Rated Flow, gpm:					Pigtail
Head at Rated Flow, ft:					Cooper industries
Motor Hp:	3	3			30 amp, 3 wire, 4 pole
Voltage:	480	480			AR 342, S22, model M3
Phase:	3	3			
Service Factor:					
Full Load Amps:	3.7	3.7			
Breaker Size:	30	30			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	Flygt multiitrode duplex W/HMI/PLC
Control Devices:	
Telemetry Type:	SD1 Std
Notes:	30 amp fuses on disconnect
	HPT w/control works

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Sycamore			PS Number:	2420PS8
Location:	Buch road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.30.07
PS Name:	Taylor Mill Road			PS Number:	2020PS5
Location:	used to be trailer lot (1 trailer)			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	overhead			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	pole mounted			
Service Entrance (location, type, size):	Location		Type	Size
	pole of meter		fused	60 amp (2)
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	duke		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	Yes-site access			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	would need to construct road (gravel ok)			

Load Requirements

No. of Pumps:	2 Myers				Notes:
Pump Station Type:	Submersible grinder				120 Volt
Pump Information					
Pump No:	1	2	3	4	Hour meter
Rated Flow, gpm:	35	35			3-09: 0.5
Head at Rated Flow, ft:	71	71			3-13: 0.3
Motor Hp:	2	2			3-16: 0.9
Voltage:	230	230			3-21: 0.8
Phase:	1	1			3-27: 0.5
Service Factor:					
Full Load Amps:	12.5	12.5			
Breaker Size:	30	30	20	15	
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	4' wet well

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3.30.07
PS Name:	Taylor Mill Road			PS Number:	2020PS5
Location:	used to be trailer lot (1 trailer)			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Thornwilde			PS Number:	2400PS2
Location:	1600 Williams Rd.			Basin:	North

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Poles		Size (KVA):	25
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1-P	# of xfmrs	2
Primary Voltage:	NA		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	@ PS		L&G AXS4 55994	55421831
Service Entrance (location, type, size):	Location		Type	Size
	@ PS			200 A
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Nearby creek; Check flood plain.			

Load Requirements

No. of Pumps:	2				Notes:
Pump Station Type:	Duplex				
Pump Information					
Pump No:	1	2	3	4	Homa AMX644 330/53F
Rated Flow, gpm:	500	500			
Head at Rated Flow, ft:	129.4	129.4			
Motor Hp:	50	50			
Voltage:	460	460			
Phase:	3	3			
Service Factor:	1.15	1.15			
Full Load Amps:	63	63			
Breaker Size:	100	100			
Controller Type:	LC1D8011 Telemecanique				
Controller Location:	@ PS				
Ancillary Load Info:	Chemical pump, outside recept.				

Controls

Control Type/Description:	Duplex, HOA w/ ALT.
Control Devices:	Flygt bulbs
Telemetry Type:	Radio 173 MHZ
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/14/2007
PS Name:	Thornwilde			PS Number:	2400PS2
Location:	1600 Williams Rd.			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Twin Lakes			PS Number:	2020PS7
Location:	In the back of Latonia Lakes			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	pole			
Service Entrance (location, type, size):	Location		Type	Size
	pole water meter		fused disconnect	200
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Cinergy		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Near			
Is Site Suitable for Generator Installation?:	Yes, land acqisition			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Nightmare			
Site Notes:				

Load Requirements

No. of Pumps:	2 Myers				Notes:
Pump Station Type:	Submersible				230 v
Pump Information					Hour meter
Pump No:	1	2	3	4	2-02: 2.3
Rated Flow, gpm:					2-06: 4.3
Head at Rated Flow, ft:					2-12: 4.0
Motor Hp:	25	25			2-15: 2.5
Voltage:	230	230			2-21: 5.6
Phase:	3	3			2-23: 2.0
Service Factor:					
Full Load Amps:	60	60			
Breaker Size:	100	100			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/30/2007
PS Name:	Twin Lakes			PS Number:	2020PS7
Location:	In the back of Latonia Lakes			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
	PS Name:	Union			PS Number:	2420PS3
	Location:	Sewers under construction in area			Basin:	West

Site Electrical Conditions	Service Type (Overhead or Underground):	Overhead				
	Transformer Location (pole / pad mounted):			Size (KVA):		
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	x	1	# of xfmrs	
	Primary Voltage:			Secondary Voltage:		
	Meter Information (location, type, model):	Location		Type		Model
		Pole				
	Service Entrance (location, type, size):	Location		Type		Size
		Pole		fused disconnect		300 amp
	Is there a receptacle for a generator?:	yes				
	Is there an existing Control Building?:	No				
	Electric Service Provider:	Duke		(Duke or Owen)		
	Is Redundant Power Source an Option?:	?				
	Is Natural Gas Available in the Area?:	?				
	Is Site Suitable for Generator Installation?:	Yes				
	If NO, explain constraints:					
	Is Site Accessible for Fuel Delivery?:	Yes				
	Site Notes:					

Load Requirements	No. of Pumps:	3 Flygts 3201.180				Notes:
	Pump Station Type:	Submersible SN 9150076				Disconnect
	Pump Information					3 x 300 amp
	Pump No:	1	2	3	4	
	Rated Flow, gpm:					pumps to station Hampton
	Head at Rated Flow, ft:					then to Ky Aire
	Motor Hp:	47	47	47		
	Voltage:	460	460	460		
	Phase:	3	3	3		
	Service Factor:					
	Full Load Amps:	56	56	56		
	Breaker Size:	150a	150a	150a	15a	
	Controller Type:	FVNR	FVNR	FVNR		
	Controller Location:	CP				
	Ancillary Load Info:					
		NEMA 3 starter				

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	Sd1 std
	Notes:	wires-250 KCMIL
		Hemp/Ky Aire/Union,

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Union			PS Number:	2420PS3
Location:	Sewers under construction in area			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	War Admiral			PS Number:	2320PS4
Location:	20 feet off road			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	PAD		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		2	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Cp Rack			
Service Entrance (location, type, size):	Location		Type	Size
	Cp Rack		Fused disconnect	150
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Close to houses			

Load Requirements

No. of Pumps:	2	Flygt	3152.18		Notes:
Pump Station Type:					460 voltage, 150 amp fuses
Pump Information					in disconnect
Pump No:	1	2	3	4	
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	20	20			
Voltage:	460	460			
Phase:	3	3			
Service Factor:					
Full Load Amps:	54	54			
Breaker Size:	50	50			
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Multitrode/floats
Telemetry Type:	Sd1 Std
Notes:	basement flood recent, basement corrosion

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	War Admiral			PS Number:	2320PS4
Location:	20 feet off road			Basin:	West

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Wedgewood			PS Number:	2180PS2
Location:	Front Yard			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	UG			
Transformer Location (pole / pad mounted):	Poles		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	1	# of xfmrs	3
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	On CP			
Service Entrance (location, type, size):	Location		Type	Size
	On CP		Fused Disconnect	60 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	No			
If NO, explain constraints:	Front yard			
Is Site Accessible for Fuel Delivery?:				
Site Notes:	real 3 phase			

Load Requirements

No. of Pumps:	2	Flygt	3127.180 6183		Notes:
Pump Station Type:	Submersible				1 amp 483
Pump Information					Basements?
Pump No:	1	2	3	4	SN-9860057
Rated Flow, gpm:					Run times
Head at Rated Flow, ft:					1-08: 7.6 1-5 hours/day
Motor Hp:	10	10			1-10: 4.8
Voltage:	230	230			1-15: 22.6
Phase:	3	3			
Service Factor:					Voltage 248 60 amp
Full Load Amps:	25.6	25.6			248
Breaker Size:	40	40			248
Controller Type:	FVNR	FVNR			
Controller Location:	CP				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	SD1 Std
Notes:	Fused disconnect
	Starter siemens CXL 240

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/20/2007
PS Name:	Wedgewood			PS Number:	2180PS2
Location:	Front Yard			Basin:	Central

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Wilder			PS Number:	2340PS1
Location:	150 Banklick Road			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Overhead			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	40
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 Phase/3 wire		# of xfmrs	
Primary Voltage:	12470		Secondary Voltage:	480
Meter Information (location, type, model):	Location		Type	Model
	Rear of panel		GE	
Service Entrance (location, type, size):	Location		Type	Size
	Panel			
Electrical Building Available?:				
Electric Service Provider:	Dule Eneergy			
Is Redundant Power Source an Option?:				
Is Natural Gas Available in the Area?:	Yes			
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Difficult, tight steep access road			
Site Notes:	Feeder - Wilder 44			

Load Requirements					
No. of Pumps:	3				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 36
Rated Flow, gpm:	700	700	700		
Head at Rated Flow, ft:	78	78	78		
Motor Hp:	30	30	30		
Voltage:	460	460	460		
Phase:	3	3	3		Trans. Acct. # 0060-086620-6
Service Factor:					
Controller Type:					Area has flooded by 5 -6 ft
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Multi Trobe
Telemetry Type:	Radio Signal
Notes:	SD1 Staff listed PS as very reliable

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/22/2007
PS Name:	Wilder			PS Number:	2340PS1
Location:	150 Banklick Road			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Willow Bend 2			PS Number:	2380PS2
Location:	Front Yard			Basin:	West

Site Electrical Conditions

Service Type (Overhead or Underground):	from overhead then underderground to PS			
Transformer Location (pole / pad mounted):	Pole		Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	Pole	1	# of xfmrs
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Cp Rack			
Service Entrance (location, type, size):	Location		Type	Size
	Cp Rack		Fused disconnect	100 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Owen		(Duke or Owen)	
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:	No, did not see meters on house			
Is Site Suitable for Generator Installation?:	No, off curb > 30' from house			
If NO, explain constraints:	PS in front yard			
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:				

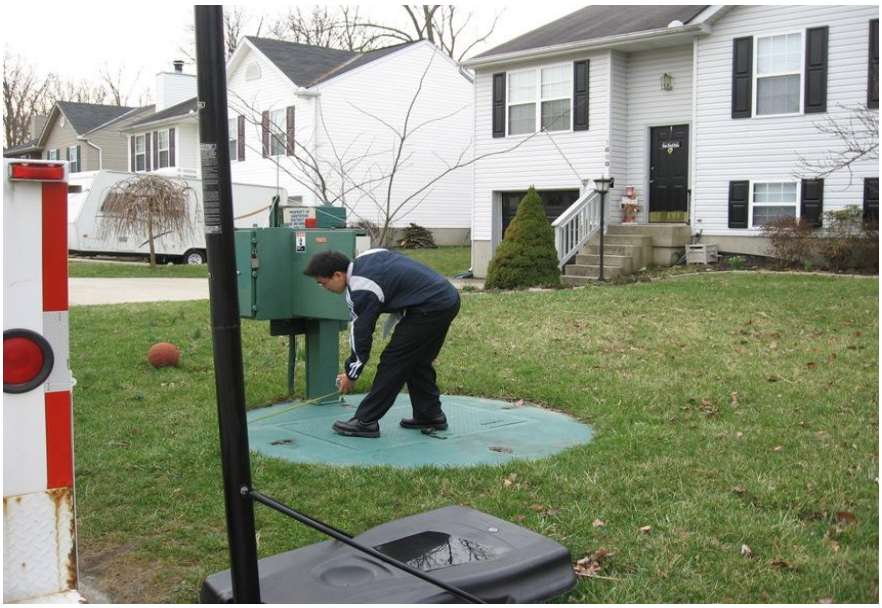
Load Requirements

No. of Pumps:	3	Myers			Notes:
Pump Station Type:					No valve vault check
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	83	83	83		
Head at Rated Flow, ft:	29	29	29		
Motor Hp:	3	3	3		
Voltage:	230	230	230		
Phase:	1	1	1		
Service Factor:					
Full Load Amps:	17.5	17.5	17.5		
Breaker Size:	40	40			
Controller Type:	Cap'trs	Cap'trs			
Controller Location:	in the panel				
Ancillary Load Info:					

Controls

Control Type/Description:	
Control Devices:	FLOATS
Telemetry Type:	SD1 Std
Notes:	ARCS over the capacity and shutdown
	Floods the basement, straeffer panel

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Willow Bend 2			PS Number:	2380PS2
Location:	Front Yard			Basin:	West



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Winters Lane #2			PS Number:	1920PS3
Location:	319 Winters Lane			Basin:	East

Site Electrical Conditions				
Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):	Pad	Size (KVA):		
Configuration (1-P, 3-P, # of xfmrs, etc.)	3 phase/3 wire	# of xfmrs	1	
Primary Voltage:	12470	Secondary Voltage:	240	
Meter Information (location, type, model):	Location	Type	Model	
	Rear of panel	GE		
Service Entrance (location, type, size):	Location	Type	Size	
	Panel			
Electrical Building Available?:	No			
Electric Service Provider:	Duke Energy			
Is Redundant Power Source an Option?:	No			
Is Natural Gas Available in the Area?:				
Is Site Suitable for Generator Installation?:	Yes			
If NO, explain constraints:				
Is Site Accessible for Fuel Delivery?:	Yes			
Site Notes:	Feeder - Cold Spring 42			

Load Requirements					
No. of Pumps:	2				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	FLA 55
Rated Flow, gpm:					
Head at Rated Flow, ft:					
Motor Hp:	20	20			
Voltage:	460	460			
Phase:	3	3			Trans. Acct. # 5470-0283-21
Service Factor:					
Controller Type:					
Controller Location:					
Ancillary Load Info:					

Controls & Telemetry	
Control Type/Description:	Level Control H-O-A
Control Devices:	Mercoid Floats
Telemetry Type:	Radio Signal
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

Inspector:	McClary & Bradley	Company:	Hazen and Sawyer	Date:	3/20/2007
PS Name:	Winters Lane #2			PS Number:	1920PS3
Location:	319 Winters Lane			Basin:	East

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Wolf Road			PS Number:	2010PS5
Location:	gravel drive			Basin:	Central

Site Electrical Conditions

Service Type (Overhead or Underground):	Underground			
Transformer Location (pole / pad mounted):			Size (KVA):	
Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles		# of xfmrs	
Primary Voltage:			Secondary Voltage:	
Meter Information (location, type, model):	Location		Type	Model
	Panel rack			
Service Entrance (location, type, size):	Location		Type	Size
	Panel rack		circuit breaker	200 amp
Is there a receptacle for a generator?:	No			
Is there an existing Control Building?:	No			
Electric Service Provider:	Cinergy		(Duke or Owen)	
Is Redundant Power Source an Option?:	?			
Is Natural Gas Available in the Area?:	?			
Is Site Suitable for Generator Installation?:	could need land and retaining wall			
If NO, explain constraints:	not much room			
Is Site Accessible for Fuel Delivery?:	difficult ~200' gravel access			
Site Notes:				

Load Requirements

No. of Pumps:	2 Homa				Notes:
Pump Station Type:	Submersible				
Pump Information					
Pump No:	1	2	3	4	
Rated Flow, gpm:	250	250			
Head at Rated Flow, ft:	100.5	100.5			
Motor Hp:	20	20			
Voltage:	230	230			
Phase:	3	3			
Service Factor:					
Full Load Amps:	51.8	51.8			
Breaker Size:	90 amp	90 amp			
Controller Type:	FVNR	FVNR			
Controller Location:	panel on back of CP rack				
Ancillary Load Info:					

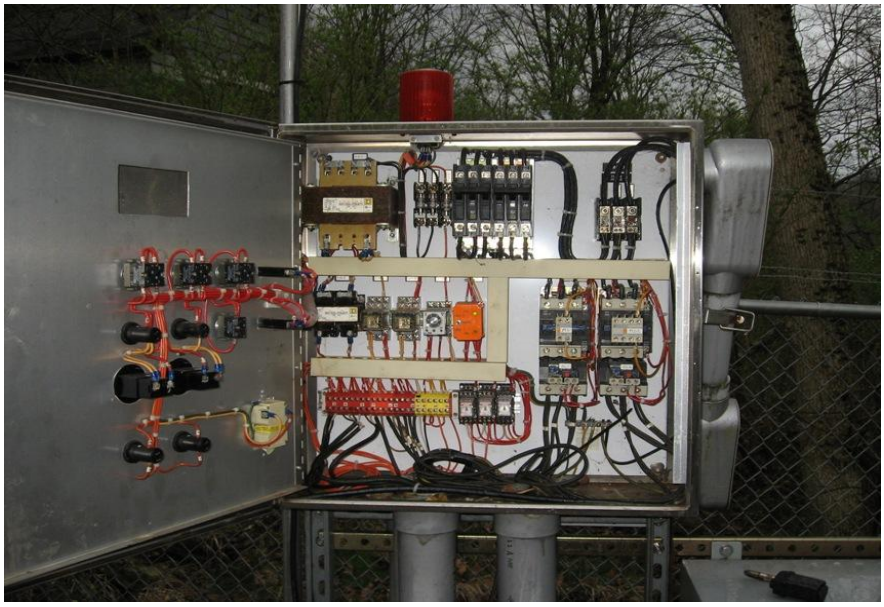
Controls

Control Type/Description:	
Control Devices:	Floats
Telemetry Type:	STD SD1
Notes:	

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/28/2007
PS Name:	Wolf Road			PS Number:	2010PS5
Location:	gravel drive			Basin:	Central



Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	Dave Camarda	Company:	MPI		Date:	3/13/2007
	PS Name:	Wyndemere				PS Number:	2480PS1
	Location:	North Bend Road				Basin:	North

Site Electrical Conditions	Service Type (Overhead or Underground):	Underground			
	Transformer Location (pole / pad mounted):	NA		Size (KVA):	NA
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	NA	# of xfmrs	NA
	Primary Voltage:			Secondary Voltage:	480
	Meter Information (location, type, model):	Location		Type	Model
		@ PS		26437	1640102
	Service Entrance (location, type, size):	Location		Type	Size
		@ PS		Disc. Sw.	200/150
	Is there a receptacle for a generator?:	No			FRS-150R
	Is there an existing Control Building?:	No			
	Electric Service Provider:	Owen		(Duke or Owen)	
	Is Redundant Power Source an Option?:	No			
	Is Natural Gas Available in the Area?:	No			
	Is Site Suitable for Generator Installation?:	Yes			
	If NO, explain constraints:	May need to move fencing			
	Is Site Accessible for Fuel Delivery?:	Yes			
	Site Notes:	Need to check flood plain for generator fencing			

Load Requirements	No. of Pumps:	2				Notes:
	Pump Station Type:	Duplex Submersible				Pump station has storage
	Pump Information					tunnel within wet well
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	700	700			
	Head at Rated Flow, ft:	49.2	49.2			
	Motor Hp:	30	30			
	Voltage:	460	460			
	Phase:	3	3			
	Service Factor:	1.15	1.15			
	Full Load Amps:	37.1	37.1			
	Breaker Size:					
	Controller Type:	LC1D4001				
	Controller Location:	Controller Panel				
	Ancillary Load Info:	Telemetry and outside recept.				

Controls	Control Type/Description:	Duplex HOA with ALT
	Control Devices:	Flygt Bulbs
	Telemetry Type:	Radio (NM License - 900 MHZ)
	Notes:	Need to follow up with OEC to locate primary service transformers (location, size, etc.)

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	Dave Camarda	Company:	MPI	Date:	3/13/2007
PS Name:	Wyndemere			PS Number:	2480PS1
Location:	North Bend Road			Basin:	North

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

General	Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007	
	PS Name:	Youell Road			PS Number:	2390PS8	
	Location:	just off road			Basin:	West	

Site Electrical Conditions	Service Type (Overhead or Underground):	Overhead from				
	Transformer Location (pole / pad mounted):	Pole		Size (KVA):		
	Configuration (1-P, 3-P, # of xfmrs, etc.)	Poles	2	2	# of xfmrs	
	Primary Voltage:			Secondary Voltage:		
	Meter Information (location, type, model):	Location		Type		Model
		Cp Rack				
	Service Entrance (location, type, size):	Location		Type		Size
		Cp Rack		Fused Disconnect		175 amp
	Is there a receptacle for a generator?:	No				
	Is there an existing Control Building?:	No				
	Electric Service Provider:	Owen		(Duke or Owen)		
	Is Redundant Power Source an Option?:	?				
	Is Natural Gas Available in the Area?:	?				
	Is Site Suitable for Generator Installation?:	Yes, maybe in Ex fence				
	If NO, explain constraints:					
	Is Site Accessible for Fuel Delivery?:					
	Site Notes:	Close to airport				

Load Requirements	No. of Pumps:	2 Homa				Notes:
	Pump Station Type:	Submersible				Youell has 3/O for
	Pump Information					
	Pump No:	1	2	3	4	
	Rated Flow, gpm:	215	215			
	Head at Rated Flow, ft:	88.2	88.2			
	Motor Hp:	16.8	16.8			
	Voltage:	230	230			
	Open Delta Phase:	3	3			
	Service Factor:					
	Full Load Amps:	38.6	38.6			
	Breaker Size:	80	80			
	Controller Type:	FVNR	FVNR			
	Controller Location:	CP				
	Ancillary Load Info:	2 transformers 120 v				

Controls	Control Type/Description:	
	Control Devices:	Floats
	Telemetry Type:	SD1 Std
	Notes:	Real sealoffs, good, Galv pipe Bnd
		Breakers and service oversized

Sanitation District No. 1 of Northern Kentucky
Infrastructure Characterization - Task 3 Pump Station Operation Plan for Backup Power
Pump Station Field Survey Photos

CONFIDENTIAL PRELIMINARY WORKING DRAFT
Watershed Consent Decree

Inspector:	GEW	Company:	Metcalf and Eddy, Inc	Date:	3/23/2007
PS Name:	Youell Road			PS Number:	2390PS8
Location:	just off road			Basin:	West

APPENDIX B:

Prioritization Spreadsheet

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
44	Ridgewood Valley		East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0		0		No		0	4	1	1	0	0	Low	No			1	1.20	1.20	PS has a generator
92	Lakeview	1950PS1	Central	PS Listed in CD as having a constructed bypass	Industrial Neighborhood Discharge impacts creek	>1400 gpm	Equal Mixture	40 to 70%	KY Aire, Gammon Calmet, Richwood, American Sign	0	3800/350; 3800/350; 3800/350; 3800/350	No		5	3	5	3	3	0	High	No			1	2.60	0.00	has dual power feed which needs to be confirmed as acceptable backup by regulators
103	Bloomin Springs	2400PS3	North	PS has no constructed bypass							115/10; 115/10	Not Likely												1	0.00	0.00	Pump station has generator
104	Bromley	1730PS1	North						Riverview Farms, Ria Vista & River Watch												No			1	0.00	0.00	Pump Station has dual power feeds
105	Allen Fork	2390PS1	North	PS Listed in CD as having a constructed bypass					Arborwood, Lanternway, Cinnamon Ridge, Youell Road												No			1	0.00	0.00	Pump station has generator. No bypass at PS, but manhole upstream overflows. Need to address in overflow elimination plan.
106	Taylorsport	2360PS1	North	PS Listed in CD as having a constructed bypass					Cove, IDI, Bullitsville, South Park, Ridgefield, Skyport, Orchard Estates												No			1	0.00	0.00	Pump station has generator. Bypass at PS eliminated.
107	Treetop Estates	2400PS4	North																					1	0.00	0.00	Based on SD1's input on August 10, 2007 meeting, Treetops pump station has generator
108	Burlington	239PS10	North																					1	0.00	0.00	Pump station has generator.
109	Ashmont	2050PS1	Central																					1	0.00	0.00	Pump Station has Generator
110	Ashford Village	2350PS5	Central																					1	0.00	0.00	Pump Station has Generator
111	Lantern Way	2390PS9	West																					1	0.00	0.00	Pump station has generator
112	American Sign	1030PS3	West																					1	0.00	0.00	Pump Station has generator planned
113	Highland Acres	2280PS1	West	PS Listed in CD as having a constructed bypass																				1	0.00	0.00	Pump station has generator
114	Meyer Rd	2450PS1	East																					1	0.00	0.00	Pump station planned to have generator
115	Wolpert Rd	1920PS7	East						Shadow Lake, Cold Spring Plaza, Cold Spring Crossing															1	0.00	0.00	Pump Station has Generator
116	Parkside	2430PS1	East						Parkside 2		286.5/9.8; 286.5/9.8													1	0.00	0.00	Pump Station has Generator
117	Sunset	2450PS2	East	PS Listed in CD as having a constructed bypass					Meyer Rd.															1	0.00	0.00	Pump Station has generator planned
118	Alex Licking	2200PS1	East	PS Listed in CD as having a constructed bypass					Sunset PS															1	0.00	0.00	Pump station planned to have generator
119	Macke	2220PS1	East																					1	0.00	0.00	Pump station has generator planned

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
126	Pond Creek		East																					1			Pump station has a standby power solution (generator) in place
127	Riley Road PS		East																					1			Pump station has a standby power solution (generator) in place
22	Meadow Hill	2020PS2	Central	PS not listed in CD but has constructed by pass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	250/20; 250/20	No	Eliminate pump station by gravity sewer	3	4	1	1	0	0	Medium	Yes	Yes	No	2	1.65	1.65	Space available behind pump station. By pass from wetwell was observed and not listed in the consent decree. Meadow Hill PS is slated for a pump station elimination feasibility study.
30	Willow Bend #2	2380PS2	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	83/3; 83/3	No	Eliminate pump station by gravity sewer	0	4	1	1	0	1	High	Yes	Yes	Yes	2	1.50	1.50	Pump station on front yard - severe land issues. Willow Bend 2 PS is slated for a pump station elimination feasibility study.
41	Evergreen	2020PS3	Central	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	1	150/16.8; 150/16.8	No	Eliminate pump station by gravity sewer	0	3	1	1	0	1	Medium	Yes	No	Yes	2	1.25	1.25	May require grading and retaining wall. Evergreen PS is slated for a pump station elimination feasibility study.
45	Ridgefield	2360PS4	North	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	300/11,4; 300/11.4	Not Likely	Eliminate pump station by gravity sewer	0	4	1	1	0	0	High	Yes	No	No	2	1.20	1.20	The site has a small area and space is tight. Need to change fencing. There is no recorded overflow history for this pump station. Ridgefield PS is slated for a pump station elimination feasibility study.
49	Mill House Crossing	2350PS3	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	300/10; 300/10	No	Eliminate pump station by gravity sewer	0	4	1	1	0	0	Low	Yes	No	No	2	1.20	1.20	May have sufficient space inside exisitng fence - possible move transformer. Mill House Crossing PS is slated for a pump station elimination feasibility study.
53	Dublin Green No. 1	2420PS4	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	115/2; 115/2	No	Eliminate pump station by gravity sewer	0	4	1	1	0	0	Low	Yes	No	No	2	1.20	1.20	Very close to houses - possibly extend exisitng fence. Dublin Green No 1 PS is slated for a pump station elimination feasibility study.
54	Eagles Landing	2440PS4	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	30/5; 30/5	No	Eliminate pump station by gravity sewer	0	4	1	1	0	0	Low	Yes	No	No	2	1.20	1.20	Empty lot owned by neighboring landowner. Pump station is in front yard. Eagles Landing PS is slated for a pump station elimination feasibility study.
57	Army Reserve	0850PS1	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	150/3.4; 150/3.4	No	Eliminate pump station by gravity sewer	0	4	1	1	0	0	Medium	Yes	No	No	2	1.20	1.20	Overflow point is near a school running track. PS area is located in a bushy area. There is very low flow to this PS. Army Reserve PS is slated for a pump station elimination feasibility study.
61	Blackstone	2440PS5	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	150/10; 150/10	No	Eliminate pump station by gravity sewer	0	4	1	1	0	0	High	Yes	Yes	No	2	1.20	1.20	Pump station in front yard near driveway in subdivision - severe land issues. Blackstone PS is slated for a pump station elimination feasibility study.
86	Lamphill	0050PS2	East	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	0	None	0	130/3.7; 130/3.7	No	Eliminate pump station by gravity sewer	0	1	1	1	0	0	Medium	Yes	No	No	2	0.45	0.45	Difficult access due to long narrow driveway. Lamp Hill PS is slated for a pump station elimination feasibility study.
90	Wedgewood Dr	2180PS2	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	> 3	150/10; 150/10	No	Eliminate pump station by gravity sewer	0	4	1	1	0	5	High	Yes			2	2.70	0.00	Pump station in front yard, difficult generator siting. Pump station has frequent power outages but does not always result in overflows. SD1 indicated that this pump station would be on the revised intial action list. SD1 indicated that the IC should do a preliminary level feasibility analysis as to whether this station could be eliminated by laying a gravity sewer. Based on 08102007 meeting with SD1, Wedgewood pump station is slated for a pump station elimination feasibility study.
94	Union	2420PS3	West	PS Listed in CD as having a constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	>1400 gpm	Equal Mixture	< 40 %	Lassing Green	0	-/47; -/47; -/47	No	Eliminate pump station by gravity sewer	5	3	5	3	1	0	Low	Yes			2	2.40	0.00	General Comment: PS slated for elimination by 2013 Adjusted Score Comment: SD1 indicated that this pump station should be held off of the initial action list.

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
95	South Park Industrial	2360PS3	North	PS Listed in CD as having a constructed bypass	Industrial Neighborhood Discharge impacts creek	< 700 gpm	Equal Mixture	0	None	1	-/10; -/10	Certainly	Eliminate pump station by gravity sewer	5	3	1	3	0	1	High	Yes	No	Yes	2	2.20	0.00	General Score Comment: Although listed on CD as having a constructed by pass, no by pass was observed during field visit. PS site has space constaints. Needs additional fencing work. Difficult to access. Back up power may reduce only overflows that were triggered by power outages. Adjusted Score Comment: SD1 indicated that this pump station will be dealt with as part of the overflow elimination plan. Hence the adjusted score is made zero. South Park Industrial is slated for a pump station elimination feasibility study.
96	Riverwatch	1810PS3	North	PS not listed in CD but has constructed by pass	Potential Basement Backup	< 700 gpm	Residential	0	None	0	450/9,4; 450/10	Not Likely	Eliminate pump station by gravity sewer	3	5	1	1	0	0	High	Yes			2	1.90	0.00	Site constraints. Pump station located close to front yard of home. There is no fence around the station. This pump station is easily accesible. There is no recorded overflow history for this pump station. SD1 indicated that this pump station would be in the revised pump station initial action list as long there are no difficult issues regarding property ownership and community perception. Based on 08102007 meeting with SD1, Riverwatch pump station is slated for a pump station elimination study.
98	Gunpowder	2380PS1	West	PS has no constructed bypass	Remote Area	>1400 gpm	Residential	< 40 %	Willow Bend 2, Fowler Creek, Saturn	2 or 3	2700/250; 2700/250	No	Eliminate pump station by gravity sewer	0	1	5	1	1	3	Low	Yes			2	1.85	0.00	General Comment: Space available in existing fence. Adjusted Score Comment: SD1 indicated that there is a possibility that this station could be eliminated by 2013. Hence hold off pump station from the initital action list by adjusting the score to zero.
99	Kahns	2330PS6	East	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	700-1400 gpm	Industrial	0	None	1	350/20; 350/20	Yes	Eliminate pump station by gravity sewer	0	3	3	5	0	1	Low	Yes			2	1.85	0.00	Adjusted Score Comment: Pump station planned for elimination as part of the Eastern Regional Collection System and Water Reclamation Facility Projects. SD1 indicated that this station would be held off of the initial action list
100	Gammon Calmet	1030PS1	West	PS has no constructed bypass	Industrial Neighborhood	>1400 gpm	Industrial	0	None	1	900/98; 900/98; 900/98	No	Eliminate pump station by gravity sewer	0	2	5	5	0	1	Low	Yes			2	1.80	0.00	General Comment: Pump station slated for elimination under Western Regional Collection System and Water Reclamation Facility Projects. Adjusted Score Comment: SD1 indicated that talk need to be initiated with the City of Florence regarding this pump station. SD1 indicated that score can be adjusted to move PS down the list
101	War Admiral	2320PS4	West	PS has no constructed bypass	Potential Basement Backup	< 700 gpm	Residential	< 40 %	Brushup	0	250/20; 250/20	No	Eliminate pump station by gravity sewer	0	5	1	1	1	0	Low	Yes			2	1.55	0.00	General Comment: Space available for generator Adjusted Score Comment: SD1 indicated that though there is no constructed by pass, power failure at this station would cause severe backups upstream. This station would be in the revised intial action list. Based on 08102007 meeting, War Admiral pump station is slated for elimination through gravity sewer construction.
102	Fowler Creek	2440PS3	West	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	155/10; 155/10	No	Eliminate pump station by gravity sewer	0	3	1	1	0	0	Medium	Yes	Yes	No	2	0.95	0.00	Based on SD1's input at 08102007, Fowler Creek pump station is slated to be eliminated by 2013.
120	Riley Road No. 2	2230PS2	East						Centerplex				Eliminate pump station by gravity sewer								Yes			2	0.00	0.00	Pump station slated for elimination by 2009.
121	Riley Rd No.1		East	PS Listed in CD as having a constructed bypass					Riley Rd No.2 PS				Eliminate pump station by gravity sewer								Yes			2	0.00	0.00	Pump station slated for elimination by 2009
1	Bullitsville	2370PS1	North	PS has no constructed bypass	Close to a Major Street	>1400 gpm	Equal Mixture	< 40 %	Brentwood, Litton & Air Park West	> 3	520/50; 520/50; 520/50	Not Likely	Generator	0	4	5	3	1	5	Low	No			3	3.40	3.40	Need to check flood plain elevation. There is no recorded overflow history for this pump station. Pump station can be taken off of Initial Action List. Low Difficulty Level-Site has space and is accesible.Check flood plain elevation. SD1 indicated that this pump station would be in the revised pump station initial action list

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
2	Sand Run	2400PS1	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	>1400 gpm	Residential	> 70%	Thornwilde, Wyndemere, Deer Creek 1 & Treetops	> 3	800/60; 800/60; 800/60	Not Likely	Generator	0	3	5	1	5	5	Low	No			3	3.35	3.35	Back up power may reduce only overflows that were triggered by power outages. Low level of difficulty. Site has space and is easily accesible. SD1 indicated that this pump station would be in the revised pump station initial action list
3	Highland Heights	0050PS1	East	PS not listed in CD but has constructed by pass	Remote Area	700-1400 gpm	Equal Mixture	> 70%	Silver Grove, Lamphill PS	> 3	-/40; -/40; -/40	No	Generator	3	1	3	3	5	5	Medium	No			3	3.30	3.30	PS is located in an area prone to flooding. SD1 indicated that this pump station would be in the revised intial action list.
4	Brookwood	2250PS1	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	40 to 70%	Ridgewood Valley	> 3	190/15; 190/15	No	Generator	0	4	1	1	3	5	Medium	No			3	3.00	3.00	PS located at rear of two houses with residential driveway. Neighbors have complained of overflow problems. SD1 indicated that this pump station would be on the revised intial action list.
5	Hempsteade	2420PS5	West	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	>1400 gpm	Residential	< 40 %	Dublin Green No.2	> 3	810/15; 810/15	No	Generator	0	3	5	1	1	5	Medium	Yes			3	2.95	2.95	Pump station originally slated for elimination under CIP. SD1 indicated that this station need to move forward now with installation of generator because of residential issues. SD1 indicated that this pump station would be on the revised intial action list.
6	Barrs Branch	2270PS1	East	PS has no constructed bypass	Potential Basement Backup	< 700 gpm	Residential	0	None	> 3	25/2; 25/2	No	Generator	0	5	1	1	0	5	Low	No			3	2.95	2.95	House located at lower elevation with possible backup. SD1 indicated that this pump station would be on the revised intial action list.
7	Second Street	14402ST	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	>1400 gpm	Equal Mixture	0	None	2 or 3	4000/75; 4000/75; 4000/75	No	Generator or connection to grid system	0	4	5	3	0	3	High	No			3	2.70	2.70	Pump station not on grid system. There is a historical society adjacent to the pump station. SD1/ M&E indicated that there is a need to educate the historical society so that there are no concerns whatsoever regarding the generator installation. Pump station close to grid system. Hence connection to power grid will be considered as a possible option. SD1 indicated that this pump station would be on the revised intial action list.
8	Dublin Green No. 2	2420PS9	West	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	< 40 %	Dublin Green No.1	> 3	-/5; -/5	No	Generator	0	3	1	1	1	5	Low	No			3	2.55	2.55	Possibly space for generator in exisitng fence. SD1 indicated that this pump station would be on the revised intial action list.
9	Skyport	2360PS7	North	PS has no constructed bypass	Industrial Neighborhood Discharge impacts creek	>1400 gpm	Equal Mixture	0	None	2 or 3	900/75; 900/75	Not Likely	Generator	0	3	5	3	0	3	Low	No			3	2.45	2.45	The site has space and is accessible.Need to check flood plain elevation. Low Area. Site has moisture. Need to followup with Owen/Duke to findout information about primary size transformers (location, size etc). Back up power may reduce only overflows that were triggered by power outages. SD1 indicated that this pump station would be in the revised pump station initial action list
10	Saturn	2410PS1	West	PS has no constructed bypass	Potential Basement Backup	< 700 gpm	Equal Mixture	0	None	0	-/7.4; -/7.4	No	Generator	0	5	1	3	0	0	Medium	No			3	1.65	2.40	General Comment: Pump station in landscaping strip between parking and road - may have to remote locate generator. Adjusted Score Comment: SD1 indicated that though there is no constructed by pass, power failure at this station would cause backups in a child care center located upstream. Hence it was decided that a 0.75 score would be added to the weighted score. This station would be in the revised intial action list
11	Thornwilde	2400PS2	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	700-1400 gpm	Residential	< 40 %	Blooming Springs	2 or 3	500/53; 500/53	Not Likely	Generator	0	3	3	1	1	3	Low	No			3	2.15	2.15	Need to check flood plain elevation. There is no recorded overflow history for this pump station. Site has space available and is accessible. Please note Blooming Springs PS that discharges to Thornwilde has a generator. SD1 indicated that this pump station would be in the revised pump station initial action list
12	Maple Ave	2020PS4	Central	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	< 40 %	Taylor, Twin Lakes	2 or 3	250/25; 250/25	No	Generator	0	3	1	1	1	3	Low	No			3	1.95	1.95	Has space for generator. SD1 indicated that this pump station would be on the revised intial action list.

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SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
13	Airport Exchange Ind Park	2130PS1	North	PS has no constructed bypass	Close to a Major Street	700-1400 gpm	Equal Mixture	40 to 70%	Arbortech	0	600/10; 600/10	Not Likely	Generator	0	4	3	3	3	0	High	No			3	1.90	1.90	Site would need to be reconfigured to install generator. Site would need landscaping changes. Need to make changes to any adjacent building related service lines that are buried underneath. Pump station is easily accesible. There is no recorded overflow history for this pump station. SD1 indicated that this pump station would be in the revised pump station initial action list as long there are no difficult issues regarding property ownership.
14	Stillwater	2250PS2	East	PS not listed in CD but has constructed by pass	Potential Basement Backup	< 700 gpm	Residential	0	None	0	160/4; 160/3.2	No	Generator	3	5	1	1	0	0	High	No			3	1.90	1.90	Inspection discovered a constructed bypass in residential backyard. The overflow point is a dedicated manhole. SD1 indicated that this pump station would be in the revised pump station initial action list as long there are no difficult issues regarding property ownership and community perception.
15	Overlook	0150PS1	East	PS not listed in CD but has constructed by pass	Potential Basement Backup	< 700 gpm	Residential	0	None	0	-/4; -/4	No	Generator	3	5	1	1	0	0	Medium	No			3	1.90	1.90	Main access highways are very steep & could be slick in winter. Area near PS is ok for generator., but there are concerns with fuel delivery in winter. Possible natural gas supply. SD1 indicated that this pump station would be on the revised intial action list.
16	Catalpa	2180PS1	Central	Manhole upstream of PS has relief pipe	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	2 or 3	-/10; -/10	No	Generator	0	3	1	1	0	3	Medium	No			3	1.85	1.85	Pump Station was rebuilt ~5 years ago, access road may need to be improved. SD1 indicated that this pump station would be on the revised intial action list.
17	Riverview Farms	1810PS1	North	Manhole upstream of PS has relief pipe	Potential Basement Backup	< 700 gpm	Residential	0	None	1	100/10; 100/10	Not Likely	Generator	0	5	1	1	0	1	High	No			3	1.75	1.75	Overflow pipe in upstream manhole. Pump station is located near street back of corner lot near front of adjacent property and close to street. There is no fencing around and station is in close proximity to homes. Site is accesible. Back up power may reduce only overflows that were triggered by power outages. SD1 indicated that this pump station would be in the revised pump station initial action list as long there are no difficult issues regarding property ownership and community perception.
18	Kees	2210PS1	East	PS has no constructed bypass	Potential Basement Backup	700-1400 gpm	Residential	< 40 %	Ensweiller	0	-/20; 600/30	No	Generator	0	5	3	1	1	0	Low	No			3	1.75	1.75	Located at cul-de-sac. SD1 indicated that this pump station would be on the revised initial action list
19	Cedar Point	1920PS4	East	PS not listed in CD but has constructed by pass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	1	-/10; -/10	No	Generator	3	3	1	1	0	1	Medium	No	No	No	3	1.70	1.70	Narrow access road. SD1 indicated that this pump station would be on the revised initial action list
89	Bunning Lane	1920PS2	East	PS not listed in CD but has constructed by pass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	> 3	105/15: 105/15	No	Generator	3	3	1	1	0	5	Medium	No			3	2.90	0.00	Tight area to install a generator. Drainage ditch runs adjacent to the PS. SD1 indicated that this pump station would be on the intial action list. SD1 decided on 09/05/2007 that this pump station will be eliminated by gravity sewer construction. SD1'S recent investigation concluded that pump station elimination by gravity sewer construction was not feasible and recommended generator installation for this pump station. Hence based on this latest SD1 input, this PS was moved back to the revised initial action list.
122	Levi	1030PS2	West																					3	0.00	0.00	Pump Station has generator planned
123	Ky Aire	2280PS2	West	PS Listed in CD as having a constructed bypass																				3	0.00	0.00	Pump station planned to have generator
124	South Hampton	2420PS6	West	PS Listed in CD as having a constructed bypass																				3	0.00	0.00	Pump station planned to have generator

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
125	Centerplex	2230PS1	East						0		225/27; 225/27; 225/30; 225/30										No			3	0.00	0.00	Pump station planned to have generator
20	Carlisle Ave	0010PS6	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	> 70%	Harrison Harbor,Gerrard	0	180/10; 180/10	No	Generator	0	4	1	1	5	0	High	No	No	No	4	1.70	1.70	PS located in Ohio River flood zone. Electrical power is turned off during a flood event.
23	Banklick	1850PS1	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	>1400 gpm	Residential	0	None	0	1000/30; 1000/30	No	Generator	0	4	5	1	0	0	Low	No	No	No	4	1.60	1.60	Overflows occur at diversions before PS overflows. Pump station may be on or near power grid system
24	Shadow Lake	1920PS6	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	< 40 %	3 Private PS's	1	240/14.9; 240/14.9	No	Generator	0	4	1	1	1	1	Low	No	No	Yes	4	1.60	1.60	Overflow point on a upstream manhole is into a lake surrounded by condos. Nice residential area.
25	Brentwood	2370PS3	North	Manhole upstream of PS has relief pipe	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	100/11.3; 100/11.3	Not Likely	Generator	0	4	1	1	0	1	Medium	No	No	Yes	4	1.50	1.50	Space is tight but site is assessible. Overflow Pipe in manhole upstream. Wooden fencing for privacy. Fencing may need repair.Back up power may reduce only overflows that were triggered by power outages.
26	Fowler Ridge	2300PS4	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	-/8; -/8	No	Generator	0	4	1	1	0	1	Low	No	No	No	4	1.50	1.50	Extend exisitng fence for generator. SD1 indicated that this station has no constructed bypass. Based on this the score and the rank have been revised.
27	Darma Ct	2150PS2	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	80/5; 80/5	No	Generator	0	4	1	1	0	1	Medium	No	No	Yes	4	1.50	1.50	No driveway access to PS. Ps is located in rear of two houses.
28	Rosewood Lane	0250PS1	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	80/15; 80/15	No	Generator	0	4	1	1	0	1	Medium	No	No	Yes	4	1.50	1.50	PS is located in a depression with no immediate access road
32	Arborwood	2390PS3	North	PS has no constructed bypass	Potential Basement Backup	< 700 gpm	Residential	0	None	0	162/7.4; 162/7.4	Not Likely	Generator	0	5	1	1	0	0	High	No	No	No	4	1.45	1.45	Pump station located in front of vacant lot. This is not an optimal location for a generator. Pump station is easily accesible. There is no recorded overflow history for this pump station
33	Hampton Ridge	2440PS6	West	PS has no constructed bypass	Potential Basement Backup	< 700 gpm	Residential	0	None	0	100/3.9; 100/3.9	No	Generator	0	5	1	1	0	0	High	No	No	No	4	1.45	1.45	Severe space issues - possibly locate generator across the street
34	Mineola Pike	2130PS2	North	PS has no constructed bypass	Industrial Neighborhood	700-1400 gpm	Equal Mixture	0	None	1	650/20; 650/20	Not Likely	Generator	0	2	3	3	0	1	Low	No	Yes	Yes	4	1.40	1.40	Pump station has space and is easily accesible. Back up power may reduce only overflows that were triggered by power outages. Switched to Category 4 on meeting with SD1 on August 27, 2007.
35	ICH	2310PS2	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Equal Mixture	0	None	0	-/8; -/8	No	Generator	0	4	1	3	0	0	Medium	No	No	No	4	1.40	1.40	may have to grade location for generator
36	Wolf Rd	2010PS5	Central	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	0	None	2 or 3	250/20; 250/20	No	Generator	0	1	1	1	0	3	High	No	No	Yes	4	1.35	1.35	May be able to put generator on chemical tank pad, may have grading issues
37	Silver Grove	0020PS1	East	PS has no constructed bypass	Remote Area	700-1400 gpm	Equal Mixture	> 70%	St. Annes, Carlisle	0	681/23; 684/33; 676/33	No	Generator	0	1	3	3	5	0	High	No	No	No	4	1.35	1.35	PS is located in an area prone to flood waters. Ps received a high volume of flow from upstream PS's.
38	IDI	2370PS4	North	PS has no constructed bypass	Industrial Neighborhood	>1400 gpm	Equal Mixture	0	None	0	1250/57; 1250/57	Not Likely	Generator	0	2	5	3	0	0	Low	No	No	No	4	1.30	1.30	There is no recorded overflow history for this pump station. Site has space and is easily accesible.Site conditions and accessebility favor the installation of generator.
39	Orchard Estates	2360PS5	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	< 40 %	Jonathan	0	-/10; -/10	No	Generator	0	4	1	1	1	0	Low	No	No	No	4	1.30	1.30	Space for generator
40	Deer Creek # 1	2490PS1	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	40 to 70%	Deer Creek # 2	0	-/15; -/15	Not Likely	Generator	0	3	1	1	3	0	Low	No	No	No	4	1.25	1.25	There is no recorded overflow history for this pump station. Site conditions and accessebility favor the installation of generator.

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History	Other Factors					Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
46	Cedar	2020PS6	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	20/2; 20/2	No	Generator	0	4	1	1	0	0	Medium	No	Yes	No	4	1.20	1.20	Land issues - possibly a single generator to supply all of Latonia Lakes PSs. Switched to Category 4 based on discussions with SD1.
47	Independence Station Rd	2300PS1	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	-/7.5; -/7.5	No	Generator	0	4	1	1	0	0	Medium	No	No	No	4	1.20	1.20	Long and steep driveway - possibly space within ex fence with regrading.
48	Brandtly Ridge	2020PS9	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	311/20; 311/20	No	Generator	0	4	1	1	0	0	Low	No	No	No	4	1.20	1.20	Has large fenced area suitable for generator
50	Leathers Rd	1570PS1	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	4	1	1	0	0	High	No	Yes	No	4	1.20	1.20	Land issues - access is narrow and steep gravel road. Switched to Category 4 on discussions with SD1 on August 27, 2007 meeting.
51	Brushup Lane	2320PS5	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	4	1	1	0	0	Low	No	No	No	4	1.20	1.20	Space available for generator
52	Jonathan	2360PS6	West	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	175/4; 175/4	No	Generator	0	4	1	1	0	0	Low	No	No	No	4	1.20	1.20	Extend exsiting fence for generator
55	Parkside 2	2430PS2	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	286.5/9.8; 286.5/9.8	No	Generator	0	4	1	1	0	0	Low	No	No	No	4	1.20	1.20	Open area to install generator
56	Paul Road	2260PS2	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	25/2; 25/2	No	Generator	0	4	1	1	0	0	Medium	No	No	No	4	1.20	1.20	PS is located downhill between two residential backyards. It is actually located in a depression.
58	Ohio Ave	0010PS1	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	10/2; 10/2	No	Generator	0	4	1	1	0	0	High	No	No	No	4	1.20	1.20	PS is located in Ohio River flood zone. Electrical power is turned off during a flood event.
59	Harrison Harbor	0010PS5	East	PS Listed in CD as having a constructed bypass	Remote Area	< 700 gpm	Residential	0	None	0	45/3; 45/3	No	Generator	5	1	1	1	0	0	High	No	No	No	4	1.20	1.20	PS is located in Ohio river flood area. Electrical power is turned off during a flood event. Listed as having a constructed bypass, but could not locate.
63	Wyndemere	2480PS1	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	700-1400 gpm	Residential	0	None	0	700/30; 700/30	Not Likely	Generator	0	3	3	1	0	0	Medium	No	No	No	4	1.15	1.15	Site has space. Accessibility is difficult. Site could have storm water flooding as it is in a low lying area.Need to check flood plain elevation. Need to followup with Owen/Duke to findout information about primary size transformers (location, size etc).There is no recorded overflow history for this pump station. The wet well has storage pipe that may have capacity to store flows up to 2 hrs. There is no telemetry in this station. This station can be taken off of Initital Action List
64	Litton	2370PS2	North	PS has no constructed bypass	Industrial Neighborhood	< 700 gpm	Industrial	0	None	0	80/7.5; 80/7.5	Not Likely	Generator	0	2	1	5	0	0	Low	No	No	No	4	1.10	1.10	Need to check easement as there was no fence. Pump station was located in a open area near a street. Site is easily accesible. There is no recorded overflow history for this pump station
65	Youell Rd	2390PS8	West	PS has no constructed bypass	Industrial Neighborhood	< 700 gpm	Industrial	0	None	0	215/16.8; 215/16.8	No	Generator	0	2	1	5	0	0	Low	No	No	No	4	1.10	1.10	Possibly space for generator in exisitng fence
66	Marshall Rd	2350PS2	Central	PS has no constructed bypass	Remote Area	700-1400 gpm	Residential	< 40 %	Ashford village	1	-/115; -/98	No	Generator	0	1	3	1	1	1	Medium	No	No	Yes	4	1.05	1.05	Generator may fit in exisitng fence, possible flooding issues.
67	St Annes	0010PS3	East	Manhole upstream of PS has relief pipe	Remote Area	< 700 gpm	Residential	40 to 70%	Carlisle	1	70/5; 70/5	No	Generator	0	1	1	1	3	1	High	No	No	Yes	4	1.05	1.05	A designated manhole is located prior to the PS to serve as an overflow.
68	Deer Creek # 2	2490PS2	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	163/19.7; 163/19.7	Not Likely	Generator	0	3	1	1	0	0	Low	No	No	No	4	0.95	0.95	Wet site. Site conditions and accessebility favor the installation of generator. There is no recorded overflow history for this pump station

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

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Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
69	Ria Vista	1810PS2	North	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	-/10; -/10	Not Likely	Generator	0	3	1	1	0	0	Medium	No	No	No	4	0.95	0.95	Site accesibility is difficult. Creek runs real close to meter.Property adjacent to pump station for sale. There is no recorded overflow history for this pump station
70	Jericho Rd	2020PS8	Central	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	22/2; 22/2	No	Generator	0	3	1	1	0	0	Medium	No	No	No	4	0.95	0.95	Has space for generator - possibly a single generator to supply all of Latonia Lakes PSs
71	Taylor Mill Rd	2020PS5	Central	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	35/2; 35/2	No	Generator	0	3	1	1	0	0	Low	No	No	Yes	4	0.95	0.95	Has space for generator - possibly a single generator to supply all of Latonia Lakes PSs
72	Golf Course	2060PS1	Central	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	3	1	1	0	0	High	No	Yes	No	4	0.95	0.95	Pump station is `500 feet from road with no access road, may have to grade spot for pad. Switched to Category 4 based on dicussions with SD1.
73	Harvest Hill	2300PS3	Central	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	3	1	1	0	0	Medium	No	No	No	4	0.95	0.95	Possibly extend exisitng fence - access is very steep - second access of KY17?
74	Cinnamon Ridge	2390PS7	West	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	304/19.7; 304/19.7	No	Generator	0	3	1	1	0	0	Low	No	No	No	4	0.95	0.95	Extend existing fence for generator, may require grading
75	Sycamore	2420PS8	West	PS has no constructed bypass	Residential Area- but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	-/3; -/3	No	Generator	0	3	1	1	0	0	Low	No	No	No	4	0.95	0.95	Pump Station may have space in existing fence for generator
76	Wilder	2340PS1	East	PS has no constructed bypass	Remote Area	700-1400 gpm	Equal Mixture	< 40 %	2 Private PS's	0	700/30; 700/30; 700/30	No	Generator	0	1	3	3	1	0	High	No	No	No	4	0.95	0.95	Very steep & narrow access road which makes delivery of generator fuel very difficult.
78	Arbortech	2130PS3	North	PS has no constructed bypass	Industrial Neighborhood	< 700 gpm	Equal Mixture	0	None	0	280/15; 280/15	Not Likely	Generator	0	2	1	3	0	0	Low	No	No	No	4	0.90	0.90	Pump station has space and is easily accesible. There is no recorded overflow history for this pump station.
79	Air Park West	2370PS5	North	PS has no constructed bypass	Remote Area	< 700 gpm	Industrial	0	None	0	-/20; -/20	Not Likely	Generator	0	1	1	5	0	0	Low	No	No	No	4	0.85	0.85	Site has space and is assesible. Need to check flood plain elevation. There is no recorded overflow history for this pump station
80	Lassing Green	2420PS1	West	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	0	None	1	215/22; 215/22	No	Generator	0	1	1	1	0	1	Low	No	No	Yes	4	0.75	0.75	grading issues
81	Cold Spring Crossing	192PS11	East	PS has no constructed bypass	Remote Area	700-1400 gpm	Residential	0	None	0	412/60; 415/60	No	Generator	0	1	3	1	0	0	Low	No	No	No	4	0.65	0.65	Sufficient area to install a generator New PS with sufficient capacity for future commercial flows.
82	Gerrard Ave	0010PS4	East	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	< 40 %	Jefferson	0	80/3; 80/3	No	Generator	0	1	1	1	1	0	High	No	No	No	4	0.55	0.55	PS located in Ohio River flood zone. Electrical power is turned off during a flood event.
83	Jefferson Ave	0010PS2	East	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	< 40 %	Ohio	0	10/2; 10/2	No	Generator	0	1	1	1	1	0	High	No	No	No	4	0.55	0.55	PS located in Ohio River flood zone electrical power is turned off during a flood event.

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

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84	Newport Steel Mill	2190PS1	East	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	0	None	0	200/3; 200/3	No	Generator	0	1	1	1	0	0	Medium	No	No	No	4	0.45	0.45	PS is located in gated & gaurded area which could make emergency access difficult.
85	Cold Spring Plaza	192PS12	East	PS has no constructed bypass	Remote Area	< 700 gpm	Residential	0	None	0	199/13; 199/13	No	Generator	0	1	1	1	0	0	Low	No	No	No	4	0.45	0.45	Sufficient area to install a generator
88	Patton Street	0960PS1	Central	PS not listed in CD but has constructed by pass	Residential Area-Close proximity to homes	>1400 gpm	Equal Mixture	0	None	2 or 3	2000/25; 2000/25; 2000/25; 2000/25	No	Connect to Grid System	3	4	5	3	0	3	High	No	No	Yes	4	3.15	0.00	General Comment:Connect to grid system. Pump station close to grid system. Adjusted Score Comment: SD1 noted that the option of connecting the pump station to the grid system needs to be considered. Hence hold pump station off of the revised initial action list by making the adjusted score as zero.
93	Eighth Street	1420PS1	Central	PS not listed in CD but has constructed by pass	Residential Area-Close proximity to homes	>1400 gpm	Equal Mixture	0	None	1	4000/30; 4000/30; 4000/30; 4000/30	No	Connect to Grid System	3	4	5	3	0	1	High	No	No	Yes	4	2.55	0.00	General Comment: Connect to grid system. Pump station close to grid system. Adjusted Score Comment: SD1 noted that the option of connecting the pump station to the grid system needs to be considered. Hence hold pump station off of the revised initial action list by making the adjusted score as zero.
21	Winters Lane 2	1920PS3	East	PS not listed in CD but has constructed by pass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	1	-/20; -/20	No	Generator	3	3	1	1	0	1	Low	No	No	Yes	5	1.70	1.70	Access road needs improvement. This pump stations is in poor condition and is in need of a rehabilitation. SD1 has to reevaluate design capacity while such rehabilitation will be done. Hence this pump station is moved to Category 5 as a study may be performed to reevaluate pump station design capcity.
29	Keavy	2010PS1	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	1	-/5; -/5	No	Generator	0	4	1	1	0	1	High	No	Yes	Yes	5	1.50	1.50	Pump station at the foot of earthern dam that appears to be failing. Land issues.
42	Cardinal Cove	2360PS2	North	PS has no constructed bypass	Residential Area-But Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	185/20; 185/23	Not Likely	Generator	0	3	1	1	0	1	Medium	No	Yes	Yes	5	1.25	1.25	Site needs regrading and might have storm runoff issues.
43	Meadow Lane	2010PS2	Central	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	1	-/5; -/5	No	Generator	0	3	1	1	0	1	High	No	Yes	Yes	5	1.25	1.25	Near road in front yard of residence in subdivision - generator maybe in backyard would require access road.
87	Ripple Creek	1900PS3	East	PS Listed in CD as having a constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	> 3	100/10; 100/10	No	Generator	5	3	1	1	0	5	Low	No	Yes	Yes	5	3.20	0.00	General Comment:Very limited wetwell capacity. Pump Station needs major upgrade. PS has history of overflows at very low flows. Based on SD1's input on 08102007 meeting. PS will be relocated and not eliminated…adjusted score went to 0.
91	Crestview	2150PS1	East	PS Listed in CD as having a constructed bypass	Remote Area	< 700 gpm	Residential	0	None	> 3	250/40; 250/40	No	Generator	5	1	1	1	0	5	High	No	Yes	Yes	5	2.70	0.00	General Comment: Long narrow access road. Very difficult for fuel delivery. Pump Station needs major upgrade. PS has 2 overflow bypass points. Adjusted Score Comment: SD1 indicated that this station needs to be held off of the initial action list. Hence the score is adjused to zero
31	Twin Lakes	2020PS7	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	40 to 70%	Cedar, Jericho	0	-/25; -/25	No	Generator	0	4	1	1	3	0	High	No	Yes	No	6	1.50	1.50	Land Issues - possibly a single generator to supply all of Latonia Lakes PSs
60	Mafred	2010PS4	Central	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	4	1	1	0	0	High	No	Yes	No	6	1.20	1.20	Pump Station is on side of hill with retaining wall - generator will require retaining wall. 200 feet from road difficult access even on foot. No Access Road.

APPENDIX B

SANITATION DISTRICT NO. 1 PUMP STATION OPERATION PLAN FOR BACKUP POWER

PRIORITIZATION SPREADSHEET

																				Other Factors							
														Constructed Bypass	Public Access	Overflow Volume	Overflow Composition	Upstream Influence	Power Failure History						Weighted Score	Adjusted Score	Comments
Rank	Pump Station Name	Manhole Number	Basin	Constructed Bypass	Public Access	Pump Flow Capacity	Overflow Compostion	Upstream Influence	Upstream Pump Stations	Power Failure History	Rated Pump Capacity (GPM) / HP	Upgrade within 5 years	Likely Backup Power Solution	15%	25%	10%	10%	10%	30%	Difficulty to Install/ Construct Generator at Pump Station	Is Pump Station Slated for Elimination by 2015?	Does Pump Station have Wet Weather Overflows? (Reference Spreads 3 & 4)	Does Pump Station have Overflows because of Power Failure? (Reference Spread 5)	Current Coded Status of Pump Station1			
62	Enzweiller	2210PS2	East	PS has no constructed bypass	Residential Area-Close proximity to homes	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	4	1	1	0	0	Medium	No	Yes	No	6	1.20	1.20	Ps is located at end of steep gravel road. Access could cause difficulty with fuel delivery.
77	Ridgeway	2010PS3	Central	PS has no constructed bypass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	< 700 gpm	Residential	0	None	0	-/10; -/10	No	Generator	0	3	1	1	0	0	High	No	Yes	No	6	0.95	0.95	Pump Station is down hill in backyard with no access road.
97	Richwood	2320PS3	West	PS not listed in CD but has constructed by pass	Residential Area-but Not in Close proximity to homes. Discharge impacts creek	>1400 gpm	Residential	< 40 %	War Admiral	0	750/75; 1000/150; 1000/150	No	Generator	3	3	5	1	1	0	Medium	No	No	No	6	1.90	0.00	General Comment: Space available - possible flooding issues. Pump Station is suspected of having wet weather issues due to extended pump times during and after rain events. Adjusted Score Comment: SD1 indicated this pump station could be upgraded separately. Hence this station should be held off of the initial action list. The score is adjusted to zero.

Summary

Coded Status	Description	Number of Stations
1	PSs with backup power in place, in design, or in construction	21
2	PSs slated for elimination prior to December 31, 2015	21
3	Initial Action Pump Stations	24
4	Pumps stations without wet weather capacity issues	50
5	Pump stations with wet weather capacity issues and with recorded history of power outages	6
6	Pump stations with wet weather capacity issues but without recorded history of power failures	5
	Total Pump Stations	127

APPENDIX C:

Pump Station Major Data Listed Alphabetically

Appendix C: Pump Station Major Data Listed Alphabetically

Pump Station	Basin	Category	Potential Solution	Rank	Completion Date
Air Park West	North	4	Permanent Generator	79	By Year 2014
Airport Exchange Ind Park	North	3	Permanent Generator	13	Year 2008
Alex Licking	East	1	Permanent Generator	118	Year 2008
Allen Fork	North	1	Permanent Generator	105	Currently Operational
American Sign	West	1	Permanent Generator	112	Year 2008
Arbortech	North	4	Permanent Generator	78	By Year 2014
Arborwood	North	4	Permanent Generator	32	By Year 2014
Army Reserve	East	2	PS Elimination Study	57	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Ashford Village	Central	1	Permanent Generator	110	Currently Operational
Ashmont	Central	1	Permanent Generator	109	Currently Operational
Banklick	Central	4	Permanent Generator	23	By Year 2014
Barrs Branch	East	3	Permanent Generator	6	Year 2008
Blackstone	West	2	PS Elimination Study	61	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Bloomin Springs	North	1	Permanent Generator	103	Currently Operational
Brandtly Ridge	Central	4	Permanent Generator	48	By Year 2014
Brentwood	North	4	Permanent Generator	25	By Year 2014
Bromley	North	1	Dual Utility Power Feed	104	Currently Operational
Brookwood	East	3	Permanent Generator	4	Year 2008
Brushup Lane	West	4	Permanent Generator	51	By Year 2014
Bullitsville	North	3	Permanent Generator	1	Year 2008
Bunning Lane	East	3	Permanent Generator	89	Year 2008
Burlington	North	1	Permanent Generator	108	Currently Operational
Cardinal Cove	North	5	Permanent Generator	42	By Year 2015
Carlisle Ave	East	4	Permanent Generator	20	By Year 2014
Catalpa	Central	3	Permanent Generator	16	Year 2008
Cedar	Central	4	Permanent Generator	46	By Year 2014
Cedar Point	East	3	Permanent Generator	19	Year 2008
Centerplex	East	3	Permanent Generator	125	Year 2008
Cinnamon Ridge	West	4	Permanent Generator	74	By Year 2014
Cold Spring Crossing	East	4	Permanent Generator	81	By Year 2014
Cold Spring Plaza	East	4	Permanent Generator	85	By Year 2014
Crestview	East	5	PS Elimination Study	91	By Year 2015
Darma Ct	East	4	Permanent Generator	27	By Year 2014
Deer Creek No. 1	North	4	Permanent Generator	40	By Year 2014
Deer Creek No. 2	North	4	Permanent Generator	68	By Year 2014

Pump Station	Basin	Category	Potential Solution	Rank	Completion Date
Dublin Green No. 1	West	2	PS Elimination Study	53	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Dublin Green No. 2	West	3	Permanent Generator	8	Year 2008
Eagles Landing	West	2	PS Elimination Study	54	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Eighth Street	Central	4	Connect to Grid Power	93	By Year 2014
Enzweiller	East	6	Permanent Generator	62	By Year 2015
Evergreen	Central	2	PS Elimination Study	41	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Fowler Creek	West	2	PS Elimination	102	Year 2013
Fowler Ridge	Central	4	Permanent Generator	26	By Year 2014
Gammon Calmet	West	2	PS Elimination	100	Year 2013
Gerrard Ave	East	4	Permanent Generator	82	By Year 2014
Golf Course	Central	4	Permanent Generator	72	By Year 2014
Gunpowder	West	2	PS Elimination	98	Year 2013
Hampton Ridge	West	4	Permanent Generator	33	By Year 2014
Harrison Harbor	East	4	Permanent Generator	59	By Year 2014
Harvest Hill	Central	4	Permanent Generator	73	By Year 2014
Hempsteade	West	3	Portable Generator	5	Year 2008
Highland Acres	West	1	Permanent Generator	113	Currently Operational
Highland Heights	East	3	Portable Generator	3	Year 2008
ICH	Central	4	Permanent Generator	35	By Year 2014
IDI	North	4	Permanent Generator	38	By Year 2014
Independence Station Rd	Central	4	Permanent Generator	47	By Year 2014
Jefferson Ave	East	4	Permanent Generator	83	By Year 2014
Jericho Rd	Central	4	Permanent Generator	70	By Year 2014
Jonathan	West	4	Permanent Generator	52	By Year 2014
Kahns	East	2	PS Elimination	99	Year 2007
Keavy	Central	5	Permanent Generator	29	By Year 2015
Kees	East	3	Permanent Generator	18	Year 2008
Ky Aire	West	3	Permanent Generator	123	Year 2008
Lakeview	Central	1	Dual Utility Power Feed	92	Currently Operational
Lamphill	East	2	PS Elimination Study	86	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Lantern Way	West	1	Permanent Generator	111	Currently Operational
Lassing Green	West	4	Permanent Generator	80	By Year 2014
Leathers Rd	Central	4	Permanent Generator	50	By Year 2014

Pump Station	Basin	Category	Potential Solution	Rank	Completion Date
Levi	West	3	Permanent Generator	122	Year 2008
Litton	North	4	Permanent Generator	64	By Year 2014
Macke	East	1	Permanent Generator	119	Currently Operational
Mafred	Central	6	Permanent Generator	60	By Year 2015
Maple Ave	Central	3	Permanent Generator	12	Year 2008
Marshall Rd	Central	4	Permanent Generator	66	By Year 2014
Meadow Hill	Central	2	PS Elimination Study	22	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Meadow Lane	Central	5	Permanent Generator	43	By Year 2015
Meyer Rd	East	1	Permanent Generator	114	Currently Operational
Mill House Crossing	Central	2	PS Elimination Study	49	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Mineola Pike	North	4	Permanent Generator	34	By Year 2014
Newport Steel Mill	East	4	Permanent Generator	84	By Year 2014
Ohio Ave	East	4	Permanent Generator	58	By Year 2014
Orchard Estates	West	4	Permanent Generator	39	By Year 2014
Overlook	East	3	Permanent Generator	15	Year 2008
Parkside	East	1	Permanent Generator	116	Currently Operational
Parkside No. 2	East	4	Permanent Generator	55	By Year 2014
Patton Street	Central	4	Dual Utility Power Feed	88	By Year 2014
Paul Rd	East	4	Permanent Generator	56	By Year 2014
Pond Creek	East	1	Permanent Generator	126	Currently Operational
Ria Vista	North	4	Permanent Generator	69	By Year 2014
Richwood	West	6	Permanent Generator	97	By Year 2015
Ridgefield	North	2	PS Elimination Study	45	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Ridgeway	Central	6	Permanent Generator	77	By Year 2015
Ridgewood Valley	East	1	Permanent Generator	44	Currently Operational
Riley Road No. 1	East	2	PS Elimination	121	Year 2009
Riley Road No. 2	East	2	PS Elimination	120	Year 2009
Riley Road	East	1	Permanent Generator	127	Year 2009
Ripple Creek	East	5	Permanent Generator	87	By Year 2010
Riverview Farms	North	3	Permanent Generator	17	Year 2008
Riverwatch PS	North	2	PS Elimination Study	96	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Rosewood Lane	East	4	Permanent Generator	28	By Year 2014
Sand Run	North	3	Permanent Generator	2	Year 2008

Pump Station	Basin	Category	Potential Solution	Rank	Completion Date
Saturn	West	3	Permanent Generator	10	Year 2008
Second Street	Central	3	Permanent Generator	7	Year 2008
Shadow Lake	East	4	Permanent Generator	24	By Year 2014
Silver Grove	East	4	Permanent Generator	37	By Year 2014
Skyport	North	3	Permanent Generator	9	Year 2008
South Hampton	West	3	Permanent Generator	124	Year 2008
South Park Industrial	North	2	PS Elimination Study	95	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
St Annes	East	4	Permanent Generator	67	By Year 2014
Stillwater	East	3	Permanent Generator	14	Year 2008
Sunset	East	1	Permanent Generator	117	Year 2009
Sycamore	West	4	Permanent Generator	75	By Year 2014
Taylor Mill Rd	Central	4	Permanent Generator	71	By Year 2014
Taylorsport	North	1	Permanent Generator	106	Currently Operational
Thornwilde	North	3	Permanent Generator	11	Year 2008
Treetop Estates	North	1	Permanent Generator	107	Currently Operational
Twin Lakes	Central	6	Permanent Generator	31	By Year 2015
Union	West	2	PS Elimination	94	Year 2013
War Admiral	West	2	PS Elimination Study	101	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Wedgewood Dr	Central	2	PS Elimination Study	90	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Wilder	East	4	Permanent Generator	76	By Year 2014
Willow Bend No. 2	West	2	PS Elimination Study	30	PS Elimination Study By Year 2008 and Solution Implementation By Year 2015
Winters Lane No. 2	East	5	Permanent Generator	21	By Year 2015
Wolf Rd	Central	4	Permanent Generator	36	By Year 2014
Wolpert Rd	East	1	Permanent Generator	115	Currently Operational
Wyndemere	North	4	Permanent Generator	63	By Year 2014
Youell Rd	West	4	Permanent Generator	65	By Year 2014