

STATE OF ILLINOIS
ILLINOIS COMMERCE COMMISSION

Aqua Illinois, Inc.	:	
	:	06-0655
	:	
Petition for Approval of Certificate of	:	
Public Convenience and Necessity to	:	
Operate a Water Supply and Distribution	:	
System; and for a Variance From Main	:	
Extension Deposit Rules to Expand	:	
System Development Charges.	:	

STIPULATED DATA REQUEST RESPONSES

Staff and Aqua have stipulated that the following data request responses should be entered into the evidentiary record in the instant rate case proceedings:

- 1. WD 4.03
- 2. WD 9.04
- 3. WD 9.05
- 4. Staff Data Request 1.02

Respectfully submitted,



JANIS E. VON QUALEN
JAMES V. OLIVERO

Counsel for the Staff of the Illinois
Commerce Commission

September 18, 2008

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ILLINOIS COMMERCE COMMISSION
STAFF DATA REQUEST

Utility Company: AQUA ILLINOIS, INC.

Docket No. 06-0655

Date Submitted: 1/19/2007

Submitted By: Terry J. Rakocy, President, Aqua Illinois (815) 935-6535 ext. 531

WD 4.03 If Aqua must serve Monee, Aqua has discussed its options for sewer capacity in response to WD 2.01. Since responding to WD 2.01, has Aqua settled on a short-term and long-term solution to address its inadequate sewer capacity? Provide any other relevant information that could alleviate any concerns the Commission may have for granting a certificate when the Aqua WWTP does not have sufficient sewer capacity to serve all of the proposed residential units as they are built.

Response: Aqua has reached a decision on a short term solution with its filing with NIPC for a plant capacity rerating. As for a long term solution, Aqua has discussed options for treatment with the Thorn Creek Basin Sanitary District, including a 1,000,000 gallon per day capacity agreement. However, no final arrangements have been agreed to.

ILLINOIS COMMERCE COMMISSION
STAFF DATA REQUEST

Utility Company: AQUA ILLINOIS, INC.

Docket No. 06-0655

Date Submitted: June 11, 2008

Submitted By: Terry J. Rakocy, President, Aqua Illinois (815) 935-6535 ext. 531

WD 9.04 Page 4 of Mr. Rakocy's surrebuttal testimony stated that Aqua had a hydraulic load of 98.9% which was based upon a May 17, 2007 calculation (Attachment TJR 4.1 to Mr. Rakocy's surrebuttal testimony). Mr. Rakocy's most recent testimony (Aqua Exhibit 5.1-Supplemental Surrebuttal Testimony) identifies a hydraulic load of 86%, which is based upon a May 6, 2008 calculation. Within approximately one year, the hydraulic load shifted from 98.9% to 86%, a shift of over 12%. If there is a significant shift in the hydraulic load in a short time period, as occurred between 2007 and 2008, such that 100% hydraulic load is attained, what plans does the Company have in place to ensure that individuals or developers within the existing certificated service area who request sewer service receive sewer service as required by 5/8-101 of the Public Utilities Act?

Response: Aqua objects to this request to the extent it calls for a legal conclusion with regard to the requirements of Section 5/8-101 of the Public Utilities Act. Subject to and without waiving this objection, Aqua responds as follows. Given the circumstances leading to the hydraulic load rating of 86% as discussed in Mr. Rakocy's supplemental surrebuttal, Aqua would not expect a significant shift in hydraulic load in the near future that would lead to a hydraulic load rating of 100%. If the hydraulic load approaches 100%, the re-rating of the sewer treatment plant will adequately ensure that individuals and developers within the certificated service area will be served. The re-rating of the plant is estimated to take one to two years from beginning design to construction completion. This window provides ample time to perform the necessary improvements considering the current state of the economy and the downturn in the local housing market. The IEPA establishes the available capacity of the University Park facility based on the average of the three low flow months within a rolling 12 month period. Aqua has and continues to pursue the removal of inflow and infiltration in the system, which should further reduce the hydraulic load on the treatment plant and increases the available capacity to be used by customers. In addition, as discussed in Mr. Rakocy's supplemental surrebuttal, Aqua expects to have sufficient time to develop whatever solution is needed, including expansion of the University Park WWTP, to address capacity concerns for the area

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Submitted By: Terry J. Rakocy, President, Aqua Illinois (815) 935-6535 ext. 531

WD 9.05 In response to Staff Data Request WD 1.25, Aqua provided evidence, such as documentation, memos, letters, etc. that indicated developers in the proposed expanded area requested service. If other interested developers have provided documentation indicating interest in service since the December 4, 2006 response date for Staff Data Request WD 1.25, provide an updated list of developers along with documentation. Also include an updated color map similar to the one provided in response to Staff Data Request WD 1.26, Page 1 of 2, that identifies the proposed developments in their associated Platt Sections.

Response: There has been one additional developer who has inquired about service in the expanded area. Green Garden Baptist Church's request is attached as Attachment #1. Below is the full list of requests for service. Please refer to WD 1.25 for copies of those requests.

1. MCZ Development	Letter from Aqua
2. Westbury Phase I	Letter from Aqua
3. Westbury Phase II	Letter from Aqua
4. Ted Development	Letter from Developer
5. Veridian	Letter from Developer
6. Shafter Parcel	Letter from Developer
7. Mill Creek Development	Letter from Developer
8. Belle Meade	Letter from Developer
9. George Street	Verbal contact only
10. Hidden Lake	Letter from Developer
11. Green Garden Baptist Church	Letter from Developer

Refer to Attachment #2 for an updated map.



M. GINGERICH, GEREAX
& ASSOCIATES

April 25, 2008

Aqua Illinois, Inc.
1000 S. Schuyler Avenue
Kankakee, Illinois 60901

Re: Green Garden Baptist Church-Phase 1
Center Road / County Highway 19
Final Engineering, revised 04/17/08
MG²A Project No.: 07-141

Attn: Dale Brown

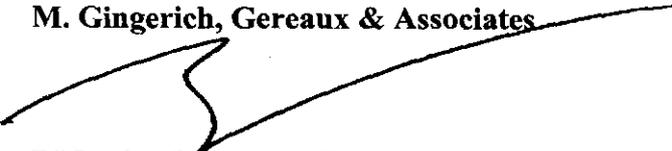
Dear Dale,

Please find enclosed two (2) sets of the Final Engineering Site Improvement Plans for the Green Garden Baptist Church-Phase 1 for review. The plans represent the first phase of the development consisting of a portion of the church building and related facilities based on the approved Preliminary Plan. The first phase of the development is estimated to produce an average daily sanitary sewer flow of 12.5 PE based on 250 seats at 0.05 PE per seat. The church hereby requests your review of the Phase 1 sanitary sewer and water service improvements.

Thank you for your consideration. If you have any questions or need any additional information, please feel free to contact this office at 815-478-9680.

Sincerely,

M. Gingerich, Gereaux & Associates


BRIAN P. HERTZ, P.E.
Principal Engineer – MG2A Manhattan

Enclosures

Cc: Pastor Bruce Humbert (e-mail)
Pastor Jayson Workman (e-mail)
Jim Paul (e-mail)
File 07-141

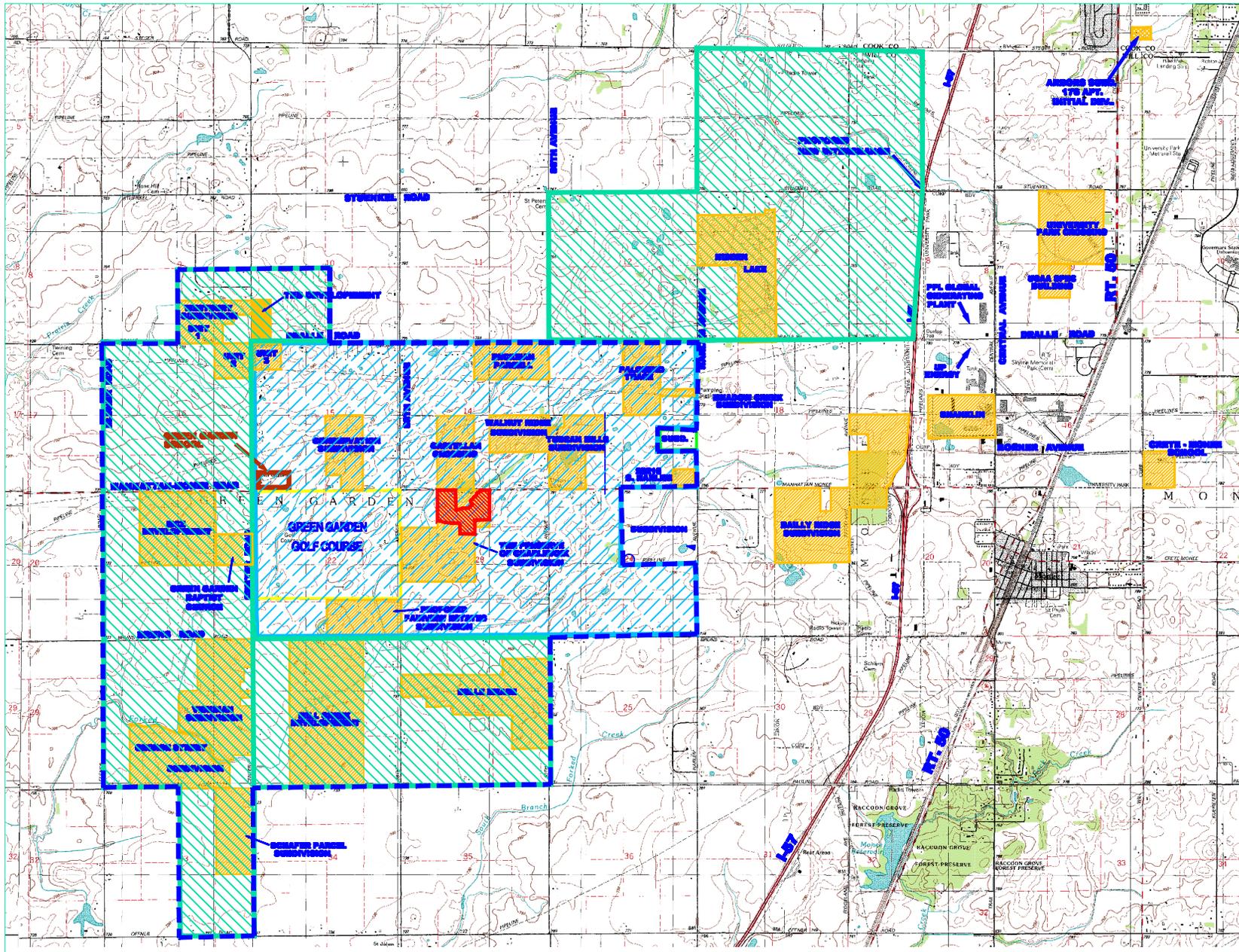


Z:\PROJECTS\2007\07-141 Baptist Church\Transmittals\07-141 - Aqua Ph 1 FE Submittal 04-25-08.doc

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Page 1 of 1
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- EXISTING SDCA AREA**
- PROPOSED SDCA EXPANSION AREAS**
- TOTAL PROPOSED SDCA AREA BOUNDARY**

AQUA ILLINOIS, INC.
UNIVERSITY PARK DIVISION
GREEN GARDEN TOWNSHIP EXPANSION
SYSTEM DEVELOPEMENT CHARGE AREAS REVISIONS

ATTACHMENT 2 DATA RESPONSE WD 9.05

ILLINOIS COMMERCE COMMISSION
STAFF DATA REQUEST

Utility Company: AQUA ILLINOIS, INC.

Docket No. 06-0655

Date Submitted: March 20, 2007

Submitted By: Terry J. Rakocy, President, Aqua Illinois (815) 935-6535 ext. 531

Staff 1.02 Referring to the reference to rerating the WWTP at lines 59-61 of Aqua Ex. 2.0:

1. Does Mr. Rakocy believe that the IEPA will rerate the WWTP for the additional 0.260 mgd of treatment capacity?
2. When did Aqua decide to seek the rerating?
3. What is the basis for a rating change? Please give a detailed summary for any changes to the plant or any other reasons why the current rating is not accurate.
4. When did or will Aqua seek the rerating and when does Aqua expect a response from the IEPA?
5. If the WWTP were rerated as requested, would Aqua have sufficient capacity to serve both the Expanded Area and the Monee area without being placed on the IEPA's critical Review Status? Please explain.
6. Please provide the IEPA's criteria for rerating the WWTP. Please include supporting documentation in the response.
7. Please provide the cost to Aqua in connection with requesting the IEPA to rerate the WWTP.

Response:

1. Yes. I expect the IEPA to rerate the wastewater plant for an additional 0.260 mgd.
2. The decision to file for a rerating was made in February 2006. that is when Aqua requested the engineering study from CDM.
3. Please see Attachment to Data Response Staff 1.02(3) which is the actual filing requesting the rerating from IEPA.
4. Aqua filled the request of rerating on March 19, 2007. Aqua expects IEPA to act on the filing within 8 weeks.
5. No. Aqua will remain on Critical Review Status. A larger expansion of the wastewater treatment plant is required for Aqua to be removed from the Critical Review Status. Aqua is considering a plant expansion of approximately 1.47 mgd which would take the rated treatment capacity of the treatment plant to 3.64 mgd. If that expansion was constructed then Aqua would be removed from Critical Review Status.
6. Please see Attachment to Data Response Staff 1.02(6) which is the criteria used by IEPA for rerating.

7. The cost consists of an engineering study performed by Rogina & Associates, LTD., an engineering firm, which current expended cost is \$4,000. Additional cost may be incurred depending on additional requests from IEPA.

**University Park Wastewater Treatment Plant
Request for Capacity Re-rating**

Rogina & Associates, Ltd.
March 2007

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Section 1.01 *Executive Summary and Recommendation*

Aqua Illinois, Inc. is proposing an interim upgrade of the University Park Wastewater Treatment Plant to allow continued growth in the service area.

The University Park Wastewater Treatment Plant is currently meeting discharge limits, but is operating near capacity. The plant is currently permitted to discharge 2.17 million gallons per day.

An interim upgrade is proposed to increase the plant capacity to 2.43 million gallons per day. This upgrade will include additional air diffusion facilities, chemical phosphorus removal, additional sludge digestion and storage and associated sludge pumping facilities.

A request for additional facilities planning area and plant upgrades to 5.03 million gallons per day is pending before the Northeastern Illinois Planning Commission.

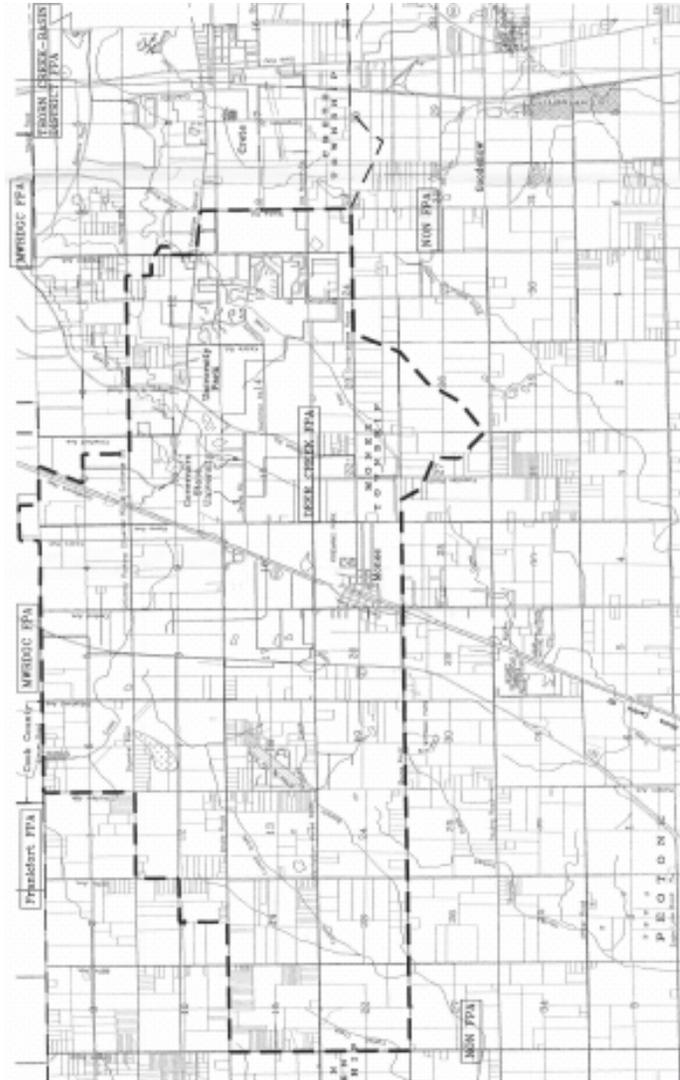
The University Park Wastewater Treatment Plant discharges to Deer Creek. Deer Creek is on the list of impaired waters due to ammonia nitrogen. The approval of this interim upgrade will increase the loading of ammonia to Deer Creek by 3.0-9.0 pounds per day. Phosphorus loadings will be decreased by this interim proposal by approximately 34 pounds per day by the approval of this request.

Section 1.02 *Current facilities and service area*

The University Park Wastewater Treatment Plant currently serves the Village of University Park Wastewater Treatment Plant and the Village of Monee and surrounding unincorporated area.. The University Park Facilities Planning area is shown in Figure 1

The Village of Monee has terminated the service agreement with Aqua Illinois, Inc. Wastewater from the Village of Monee continues to be treated at the University Park Wastewater Treatment Plant until Monee makes alternate arrangements.

Deer Creek Facilities Planning Area Served by University Park Wastewater Treatment Plant



Section 1.03 *Proposed design period and projected population*

The re-rating of the plant is intended as an interim measure to allow the approval of the planning process and design of additional capacity improvements.

The design period for the capacity made available by re-rating the plant is approximately two years. The projected population is 20,200 at the end of the period.

After the end of the two year design period, an additional plant upgrade or other service arrangements will be necessary to provide for the anticipated growth.

Section 1.04 *Anticipated wastewater flows*

The University Park Wastewater Treatment Plant is currently rated at 2.17 million gallons per day. The anticipated flow is expected to increase to 5.38 million gallons per day by 2030.

The re-rating requested in this report is anticipated to serve flow to 2.43 million gallons per day. It is based on maximizing the existing facilities while planning is completed for future service.

Additional planning is underway. Aqua Illinois has requested an addition to the Deer Creek Facilities Planning area and a plant upgrade to 5.38 million gallons per day by 2030. The request is currently under review by the Northeastern Illinois Planning Commission.

Section 1.05 Scope and nature of collection system

The collection system served by the University Park Wastewater Treatment Plant is extensive. The system consists of large diameter gravity sewers near the treatment plant to pumping stations with six and eight inch diameter forcemains.

The flows from the service area west of I-57 are re-pumped three times prior to reaching the wastewater plant.

Infiltration and inflow to the plant was studied by Aqua Illinois, Inc. in 2005 was determined to be approximately 410,000 gallons per day.

Section 1.06 *Discussion of Treatment Alternatives*

There are a limited number of treatment alternatives to provide capacity immediately. As will be discussed in the detailed basis of design, the plant has the capacity to serve additional users without major construction. Additional air input to the aeration facilities and additional sludge handling is required. The expansion of a plant rated at greater than 1.0 m. g. d. requires the construction of additional facilities to provide phosphorus removal.

Two phosphorus removal methods are available. Biological phosphorus removal would require construction of additional tanks for creation of an anaerobic zone and an anoxic zone in the aeration facilities.

Chemical phosphorus removal requires chemical addition and generates additional sludge.

Biological phosphorus removal facilities would require tank construction. It is not reasonable to construct biological phosphorus removal facilities for a small increment of capacity.

The immediate small increase in capacity at this plant is the current need. The quickest way to provide the additional capacity is to construct chemical phosphorus removal facilities and pay the additional operating expenses while a longer term solution is implemented.

Section 1.07 Basis of design

The University Park Wastewater Treatment Plant currently is rated at 2.17 million gallons per day. Most of the unit processes at the plant are capable of treating wastewater at a higher rate. The following basis of design compares the unit processes to the design criteria in the Illinois Recommended Standards and identifies those processes that require modification.

The anticipated influent loadings for the requested flow condition of 2.43 million gallons per day are as follows

Daily Average Flow	2.43 m. g. d.	Daily Maximum Flow	6.435 m. g. d.
BOD5	3,434 lbs per day		169 mg/l
SS	4,040 lbs per day		199 mg/l
NH3	450 lbs per day		22 mg/l
Phosphorus	122 lbs per day		6 mg/l

Raw Pumping

The pumping station has a rated capacity of 10.0 m. g. d. This is adequate to meet the daily maximum flow of 6.435 m. g. d.

Bar Screen

The existing stationary bar screen is manually cleaned and has $\frac{3}{4}$ inch bar spacing.

Influent Flow Measurement

Parshall flume located downstream of the bar screen in the oxidation ditch influent channel

Grit Removal

Existing piston grit removal system is not operating.

Oxidation Ditch

Loading

The volume of the existing aeration tanks is 1,137,439 gallons
152,064 cubic feet
The BOD applied is 3,434 lbs

The resulting loading is 22 lbs per 1,000 cubic feet

The Illinois Recommended Standard is 15 lbs per 1000, cu. ft.

The proposed loading exceeds the recommended standard. Experience at wastewater plants in Northern Illinois indicates that nitrification successfully occurs at loadings as high as 22 lbs per cubic ft. Similar experience is anticipated at University Park

Detention Time

Daily average flow 2,430,000 gallons per day

Aeration Tank Volume 1,137,439 gallons

Detention Time 11.23 hours

Illinois Recommended Standard 8 hours

The proposed detention time exceeds the standard.

Aeration

Six submerged 20 hp mixers provide a rotational velocity of 1 fps in the ditch. Air is currently provided by submerged aerators with a rated capacity of 4800 c. f. m. The required air flow is 7958 c. f. m.

It is proposed that the air requirement be met by the installation of 2-200 hp mixers that will provide 8,400 c. f. m. each. This will meet the air requirement for the aeration system

Clarifiers

The existing clarifier is 120 ft diameter. It has a surface area of 11,310 square ft. The settling rate is 884 gallons per day per square ft.. This is less than the required 1000 gallons per day

Filters

The existing filters have a rated capacity of 7.0 m. g. d. This capacity is greater the peak flow rate of 6.435 m. g. d.

No additional filters are required.

Phosphorus Removal

Chemical phosphorus removal is proposed for the University Park Wastewater Treatment Plant. Chemical feed equipment is sized based on the removal of 5.1 mg/l of phosphorus to meet 1.0 discharge standard.

53 gallons per hour of alum will be required to remove the phosphorus. Chemical feed equipment will be provided to meet this requirement. For 30 days chemical storage, 40,000 gallons of chemical storage will be provided.

Aerobic Digestion

IEPA regulations require aerobic digestion based on 4.5 cubic feet per P.E. . Due to the phosphorus removal by alum addition, additional sludge is generated. The IEPA required volume is 90,900 cubic feet @ 2% solids. The additional sludge generated is 14,464 cubic feet @ 2%. This is total requirement of 105,354 cubic feet.

The existing aerobic digesters have a volume of the 67,604 cubic feet using 4 of the 6 segments in the existing tank. The remaining two segments are currently used for sludge storage.

The volume of the remaining two segments is 33,802. This results in a total volume of 101,406 cubic feet. This is less than the required 105,354 cubic feet (2% solids). This is sufficient volume if the concentration of sludge can be increased to 2.1%. The increased concentration is already occurring in the plant.

Sludge Storage and Disposal

The plant has been using land application of liquid sludge. The implementation of the use of a contract belt filter press, liquid sludge can be converted to sludge cake on a regular basis without the need for the 150 days storage required for liquid operations

IEPA regulations require 0.13 cu.ft. per P.E per day. Based on 45 days storage, a volume of 883,911 gallons is required.

A new 900,000 gallon storage tank is proposed.

Summary of required construction

Addition of 2 slow speed 200 hp mixers to add air to the oxidation ditch

Additional return activated sludge pumping capacity

Provide chemical feed equipment for phosphorus removal

Convert two tank segments currently used for sludge storage to aerobic digestion= requires installation of air piping and diffusers

Sludge pumping station (to transfer sludge from digestion to sludge storage or filter press

Construct 900,000 gallon sludge storage tank

Contract for belt filter press/sludge disposal

Section 1.08 Compliance and Impact on Receiving Stream

The University Park Wastewater Treatment Plant is meeting the current effluent standards.

The facilities proposed will allow the plant to continue to meet current effluent limits. Since the plant has rated capacity greater than 1.0 million gallons per day, phosphorus removal must be provided.

The Plant discharges to Deer Creek. Deer Creek is listed as impaired due to ammonia nitrogen and phosphorus.

Ammonia Nitrogen

There will be an incremental increase in ammonia nitrogen to the receiving stream. The plant is already removing nitrogen as required by the permit. During the anti-degradation review, the impact of the additional ammonia nitrogen loadings of approximately 3.0-9.0 lbs per day will have to be compared to the economic benefit of the construction of additional homes.

Phosphorus

Phosphorus must be treated differently than ammonia nitrogen. Since phosphorus removal facilities are being provided, loadings of phosphorus in Deer Creek will be reduced.

Based on the limited data available, it is estimated that phosphorus of 3.0-6.0 mg/l are being discharged to Deer Creek. This represents a loading of 54-127 pounds per day. At 2.43 million gallons per day, the amount of phosphorus discharged will be 20 pounds per day. At the 2030 plant capacity of 5.08 million gallons per day, the amount of phosphorus discharged at 1.0 mg/l is 42 pounds per day. This is a reduction in the current phosphorus loading that will not occur without the construction of the plant upgrade.

TMDL

Thorn Creek is proposed for a TMDL study. Deer Creek should be included in this study.

Section 1.09 Recommendations

The recommended improvements to the University Park Wastewater Treatment Plant to allow an increase in the rated capacity to 2.43 million gallons per day are as follows:

- Additional 200 hp mixers in the oxidation ditch to provide air for treatment
- Chemical feed equipment for chemical phosphorus removal
- Conversion of existing sludge storage to aerobic digestion by adding air piping and diffusers
- Construction of a 900,000 gallon sludge storage tank
- Associated return activated sludge pumping equipment
- Associated waste sludge and digested sludge pumping equipment.

TITLE 35: ENVIRONMENTAL PROTECTION

SUBTITLE C: WATER POLLUTION

CHAPTER II: ENVIRONMENTAL PROTECTION AGENCY

PART 370

ILLINOIS RECOMMENDED STANDARDS FOR SEWAGE WORKS

SUBPART A: INTRODUCTION

Section

370.100 Purpose

370.110 Scope and Applicability

370.115 Incorporations by Reference

SUBPART B: ENGINEERING REPORTS, PLANS AND SPECIFICATIONS

Section

370.200 General

370.210 Engineering Report

b) Content

The engineering report shall:

- 1) Prescribe design period and projected population.
- 2) Describe the specific service area for immediate consideration and indicate possible extensions and ultimate use.
- 3) Present data and information on anticipated quantities of flow and wastewater constituents. Data from comparable existing installations may be used to develop the design basis of the proposed facilities if data for the project under design cannot be obtained in accordance with procedures set forth in Subparts C, D and E of these standards.
- 4) Specify the scope and nature of collection system including pump stations and force mains for immediate and ultimate service areas.
- 5) Discuss various treatment alternatives with reference to optimum treatability and other relevant factors.
- 6) Develop a detailed basis of design for the recommended treatment process.
- 7) Indicate compliance with applicable effluent limitations and discuss the impact of the project on receiving waters.

d) New Discharges

Any person whose discharge will begin after the effective date of this Subpart A or any person having an NPDES Permit issued by the U.S. Environmental Protection Agency for an existing discharge which will

substantially change in nature, or increase in volume or frequency, must apply for an NPDES Permit either:

- 1) No later than 180 days in advance of the date on which such NPDES Permit will be required; or
- 2) In sufficient time prior to the anticipated commencement of the discharge to insure compliance with the requirements of Section 306 of the Clean Water Act (CWA) (33 U.S.C. 1251 et seq), or with any other applicable water quality standards and applicable effluent standards and limitations.