



August 11, 2017

City of Waukee
Attn: John Gibson
805 University Avenue
Waukee, IA 50263

RE: I-80 West Industrial Park Lift Station
Waukee, Iowa
DNR Project No. S2018-0037A

Subject: Variance Request from Design Standards Sections 13.4.3

Dear Mr. Gibson:

After careful and thorough consideration, the Department has **approved** your August 4, 2017 request for a variance from Iowa Administrative Code Subrule IAC 64.2(9a) and Chapter 13, 13.4.3 (Pump Clogging Protection) of the Iowa Wastewater Facilities Design Standards, which requires that lift station pumps, other than grinder pumps, have the capability to pass a 3-inch spherical solid.

Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of a variance for the installation of a lift station pump that has the capacity to pass a 1.6-inch spherical solid installed with a trash basket with 1.5-inch openings. The requested variance is deemed to be reasonable and necessary pursuant to the Iowa Code section 455B.181.

The facts presented for the project present unique circumstances and the variance is therefore justified to provide the narrowest exception possible to the provisions of the rule in accordance with Rule 561 IAC 10.5. Since the project planning and construction may last more than one year, the variance is considered to be of a permanent nature. The validity of this variance approval shall last for a period of one year from the date of the construction permit in accordance with Rule 561 IAC 10.5.

This decision is based on our review of justification presented to support the request. Our concurrence with the request is based on the Department's finding that the resulting project will provide substantially equivalent effectiveness as would be provided by technical compliance with the design standard on this issue.

Please contact Marty Jacobs at 515-725-8419 or email martin.jacobs@dnr.iowa.gov if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Tack", is written over a light blue horizontal line.

Jon Tack
Water Quality Bureau Chief

cc: Veenstra & Kimm, Inc., Attn: Sara Kappos, P.E.
DNR FO 5
DNR Sewage File 6-77-27-0-01

**VEENSTRA & KIMM, INC.**

3000 Westown Parkway • West Des Moines, Iowa 50266-1320

515-225-8000 • 515-225-7848 (FAX) • 800-241-8000 (WATS)

August 4, 2017

Director
c/o Satya Chennupati
Wastewater Engineering Section Supervisor
Iowa Department of Natural Resources
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319

WAUKEE, IOWA
I-80 WEST INDUSTRIAL PARK LIFT STATION AND WATER MAIN EXTENSION
WASTEWATER CONSTRUCTION PERMIT
VARIANCE REQUEST

In accordance with 561 Iowa Administrative Code (IAC) Chapter 10 the City of Waukee is requesting a variance to the Iowa Department of Natural Resources (IDNR) Wastewater Facilities Design Standards for the I-80 West Industrial Park Lift Station. The applicable construction permit applications, fee form and permit application fee were submitted to the Iowa Department of Natural Resources on July 28, 2017.

The following information is being provided in accordance with IDNR's variance request guidance document.

1. Name, address and telephone number of entity requesting the variance:
 - a. City of Waukee, Iowa
805 University Avenue
Waukee, Iowa 50263
Telephone: 515-978-7920
2. Description and citation of specific rule from which a variance is requested:
 - a. A variance is requested from Chapter 13, Section 4.3 of the IDNR Wastewater Facility Design Standards.

- g. For the size of pump used for the I-80 West Industrial Park Lift Station there are no acceptable manufacturer's with a pump capable of passing a 3-inch solid.
 - h. The design of pumps and pump impellers has evolved significantly since the design standards were approved in 1985 and the use of pumps with a smaller opening non-clog impeller is now considered industry standard practice.
 - i. The impact of not granting a variance would be to require the City to purchase a new pump that was a much less desirable wastewater pump in lieu of a pump that the City already owns that has a proven record of operational capability even though it does not have the ability to pass a 3-inch solid.
- 5. Contact history with the Department:
 - a. There are no known prior contacts between the City of Waukee and the Department within the last five years regarding this variance request, including any notices of violation, administrative orders, contested case proceedings and/or law suits that would be relevant to this request.
- 6. Known Departments treatment of similar cases:
 - a. The engineer and City of Waukee understand the Department has issued variances from Chapter 13, Section 4.3 on several occasions. Specifically, a variance request was granted to the City of Granger for the Twin Eagles Point Lift Station in a very similar circumstance last year.
- 7. Name, address and telephone number of any public agency or political subdivision that might be affected by the granting of the variance:
 - a. None
- 8. Name, address and telephone number of any person or entity that might be affected by granting the variance:
 - a. None


3. Specific variance requested, scope and operative period for which the variance will extend:
 - a. A variance request is requested from the provisions of Chapter 13, Section 4.3 requiring pumps capable of passing a 3-inch diameter sphere.
 - b. The scope of the variance relates to the two pumps to be relocated from an existing lift station and installed in the new pump station.
 - c. The variance will extend indefinitely as once the pumps are installed the pumps will remain in service for the life of the lift station or will be replaced with a comparable pump.
4. Relevant facts justifying the variance:
 - a. Since the design standards for pump stations were approved in 1985 the design of pump impellers has evolved to a non-clog design that utilizes a smaller opening with an impeller configuration less prone to plugging.
 - b. The City is proposing the use of a Flygt pump capable of passing solids up to 1.6-inch in diameter.
 - c. The City is proposing a trash basket with a maximum opening size of 1.5 inches.
 - d. With the trash basket proposed by the City any solids larger than the size that can be passed by the pump impeller will be captured in the trash basket and will not enter the pump.
 - e. Even if a slightly larger solid were able to pass through the trash basket the design of the non-clog impeller is such that the pump will pass the solids satisfactorily.
 - f. The pumps in question have been in use in the City of Waukees Little Walnut Creek Lift Station for over 3 years. There are numerous other examples of pumps similar to the Flygt pump that have been in operation for many years without experiencing plugging. Even though the trash basket has an opening larger than 1.6 inches. Operation experience has shown this type of impeller rarely plugs.

9. Identify of those having knowledge of relevant facts concerning the variance request:

- a. Sara Kappos, P.E.
Veenstra & Kimm, Inc.
3000 Westown Parkway
West Des Moines, Iowa 50266

10. Signed release:

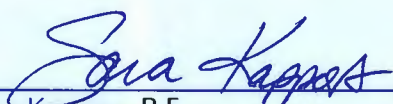
I attest to the accuracy of the facts provided in this petition and the reasons as listed to justify issuance of the variance request:

By: 
Rudy Koester
Asst. Public Works Director - Engineering
City of Waukee, Iowa

I attest to the accuracy of the facts in this variance petition and the reasons as listed to justify issuance of the variance request:

Signed:

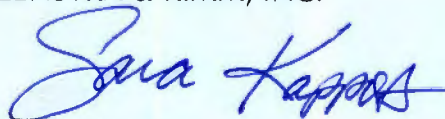
Date:

 8/4/17
Sara Kappos, P.E.
Iowa License No. 22275
My license renewal date is December 31, 2017



If you have any questions or need additional information concerning this variance request, please contact the writer at 225-8000, or at skappos@v-k.net.

VEENSTRA & KIMM, INC.


Sara Kappos

SKK
275285

cc: Marty Jacobs, Iowa Department of Natural Resources
John Gibson, City of Waukee

VARIANCE REQUEST
Iowa Department of Natural Resources

<p>1. Date: August 8, 2017</p> <p>2. Reviewer/Engr.: Marty Jacobs</p> <p>3. Date Received: August 8, 2017</p> <p>4. Facility Name: Des Moines WRF</p> <p>5. Facility Number: 6-22-27-0-01</p> <p>6. County Number: 25 (Dallas)</p> <p>7. Program Area: CP (Wastewater)</p> <p>8. Facility Type: C01 (Collection/Transport)</p> <p>9. Subject Area: 344 (Pump Clogging Protection)</p> <p>10. Rule Reference: 567-64.2(9)a</p> <p>11. Design Std. Ref.: 13.4.3</p> <p>12. Consulting Engr.: Veenstra & Kimm</p> <p>13. Variance Rule: 567-64.2(9)c</p>	<p>14a. Decision: Approval Date: 8/11/17</p> <p>14b. Expiration Date (if any):</p> <p>15. Appealed: Date:</p>
<p>16. Description of Variance Request: The City of Waukee is requesting variance from the Iowa Wastewater Facilities Design Standards Chapter 13.4.3 – Wastewater Pumping Stations and Force Mains – 13.4.3 (Pump Openings) for installing a submersible lift station pump that does not pass a 3-inch spherical solid. (This project is in the portion of Waukee that flows to WRA.)</p>	
<p>17. Applicant's/Consulting Engineer's Justification: Since the design standards for pump stations were approved in 1985 the design of pump impellers has evolved to a non-clog design that utilizes a smaller opening with an impeller configuration less prone to plugging. The City is proposing the use of a Flygt pump capable of passing solids up to 1.6-inch in diameter. The City is proposing a trash basket with a maximum opening size of 1.5 inches. With the trash basket proposed by the City any solids larger than the size that can be passed by the pump impeller will be captured in the trash basket and will not enter the pump. Even if a slightly larger solid were able to pass through the trash basket the design of the non-clog impeller is such that the pump will pass the solids satisfactorily. The pumps to be used at this site have been in use in the City of Waukee's Little Walnut Creek Lift Station for over 3 years. There are numerous other examples of pumps similar to the Flygt pump that have been in operation for many years without experiencing plugging even though the trash basket has an opening larger than 1.6 inches. Operation experience has shown this type of impeller rarely plugs.</p>	
<p>18. Department's Justification: Recommend variance approval.</p> <p>The proposed pump is able to pass a 1.6-inch solid (confirmed with product data from Flygt). As discussed among DNR staff, a trash basket with an opening of 1.5-inches or less is expected to provide an approvable level of protection for the proposed pump. This is expected to provide equivalent effectiveness to an installation meeting the requirements of 13.4.3. The Field Office Compliance Database doesn't report clogging or overflow incidents for the lift station where the pumps were installed.</p>	
<p>19. Precedents Used: Granger - 8/2/16; Waukee - 4/8/16; Slater - 2/6/17</p>	
<p>20. Staff Reviewer: <i>Walter J. Smith</i> Date: 8-8-17</p>	
<p>21. Supervisor: <i>Satyachandran</i> Date: 8/10/17</p>	
<p>22. Authorized by: <i>J. C. Kimm</i> Date: 8/11/17</p>	

VARIANCE REQUEST NOTIFICATION
Iowa Department of Natural Resources

All Fields are Required

1.	Reviewer/Engr.: <u>Marty Jacobs</u>	7.	Decision: <u>Approval</u>
2.	Date Received: <u>8/8/17</u>		
3.	Facility Name: <u>Des Moines WRF</u>		
4.	Program Area: <u>CP Wastewater</u>		
5.	Subject Area: <u>344 Pump Clogging Protection</u>		
6.	Rule Reference: <u>567-64.2(9)a - Design Std Ref 13.4.3</u>		

8. Description of Variance Request: **Summarize (250 characters)**

The City of Waukee is requesting variance from the Wastewater Facilities Design Standards Chapter 13.4.3 – Wastewater Pumping Stations and Force Mains – 13.4.3 (Openings) for installing a lift station pump that doesn't pass a 3-inch spherical solid.

9. Department's Justification: **Summarize (250 characters)**

The pump is able to pass a 1.6-inch solid. A trash basket with an opening of 1.5-inches is expected to provide an approvable level of protection. This is expected to provide equivalent effectiveness to an installation meeting the requirements.

10. Type name:

Jon Tack

Supervisor/Bureau Chief/DA

8/11/17

Date

*The original, approvals, letters, code and other supporting documentation is to be maintained by the program in accordance with the [Records Retention Schedule](#).

To Submit: Attach this form to an email and send it to Webmaster@dnr.iowa.gov with the subject line: Variance Submittal (542-0541)



Jacobs, Martin <martin.jacobs@dnr.iowa.gov>

Waukee I-80 West Industrial Park Lift Station and Water Main Extension Variance Request

1 message

Sara K. Kappos <skappos@veenstrakimm.onmicrosoft.com>

Tue, Aug 8, 2017 at 10:00 AM

To: "Satya.Chennupati@dnr.iowa.gov" <Satya.Chennupati@dnr.iowa.gov>, "Jacobs, Martin" <martin.jacobs@dnr.iowa.gov>

Cc: "Forrest S. Aldrich" <faldrich@v-k.net>, Jordan Kappos <jkappos@v-k.net>, Rudy Koester <rkoester@waukee.org>, John Gibson <JGibson@waukee.org>, Tim Royer <troyer@waukee.org>

Satya,

Last Friday I mailed you the attached variance request for the Waukee I-80 West Industrial Park Lift Station and Water Main Extension project. It has since come to my attention that the information in paragraph 5a is not entirely accurate. Please amend my request by deleting paragraph 5 and replacing with the following.

"5. Contact history with the Department:

a. The City of Waukee was previously issued a variance from Chapter 13, Section 4.3 on April 11, 2016 for the Bluestem Lift Station #14 Improvements project."

Please let me know if you have any additional questions or concerns regarding this request.

Thank you,

Sara Kappos, P.E.

**VEENSTRA & KIMM, INC.**

3000 Westown Parkway
West Des Moines, Iowa 50266
Ph: (515) 225-8000
Fax: (515) 225-7848

Waukee Variance Request.pdf
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