



# STATE OF IOWA

TERRY E. BRANSTAD, GOVERNOR  
KIM REYNOLDS, LT. GOVERNOR

DEPARTMENT OF NATURAL RESOURCES  
CHUCK GIPP, DIRECTOR

April 1, 2015

City of Strawberry Point  
Attn: Mayor Ron Highland  
111 Commercial St  
PO Box 279  
Strawberry Point, IA 52076

RE: Strawberry Point Disinfection Project  
DNR Project No. S2015-0213

Subject: Variance Request from 567 IAC 64.2(9) and Design Standards Section 20.11.11

Dear Mayor Highland:

After careful and thorough consideration, the Department has approved your March 24, 2015 request for a variance from Iowa Administrative Code Subrule 64.2(9) and Chapter 20.11.11 of the Iowa Wastewater Facilities Design Standards, which requires UV disinfection systems to have 100% peak hour wet weather flow redundancy for facilities with year round e. coli limits.

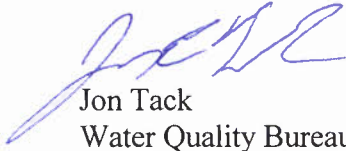
Based on the documentation presented by your Engineer, it is the determination of this Department that satisfactory justification has been presented to warrant the granting of a variance for sizing the UV disinfection system as though it had seasonal disinfection limits which only requires 50% redundancy. 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 feel free to call Laura Knispel at 515-725-8423 or email her at [laura.knispel@dnr.iowa.gov](mailto:laura.knispel@dnr.iowa.gov) if you have any further questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jon Tack', is positioned above the printed name.

Jon Tack  
Water Quality Bureau Chief

Cc: Fehr Graham – Manchester (Lucas Elsbernd)  
DNR FO #1  
DNR Sewage File 6-22-79-0-01

**VARIANCE REQUEST**  
**Iowa Department of Natural Resources**

1. Date: 1 April 2015 2. Reviewer/Engr.: Laura Knispel 3. Date Received: 24 March 2015 4. Facility Name: Strawberry Point STP 5. Facility Number: 6-22-79-0-01 6. County Number: 22 (Clayton) 7. Program Area: CP (Wastewater) 8. Facility Type: C08 (Disinfection) 9. Subject Area: 371b (UV Disinfection) 10. Rule Reference: 567-64.2(9) a 11. Design Std. Ref.: 20.11.11 12. Consulting Engr.: Fehr Graham 13. Variance Rule: 567-64.2(9) c	14a. Decision: <i>Approved</i> Date: <i>4/1/15</i> Expiration Date (if any):  14b.  15. Appealed: Date:
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16. Description of Variance Request:

The City of Strawberry Point received a new NPDES permit with year round disinfection limits. The nonrecreation season (Dec-Feb) limits are quite high (393,187 #/100 mL) compared to the recreation season (Apr-Nov) limits (158 #/100 mL).

The City is proposing to construct a UV disinfection system but size it for seasonal limits instead of the full 100% PHWW flow redundancy that is required for year round limits, which would require a variance from Iowa Wastewater Facility Design Standards section 20.11.11.

17. Applicant's/Consulting Engineer's Justification:

The nonrecreation season limits are high and the City is confident that the plant will be able to meet the specified limit even without disinfection. The City performed an effluent e. coli test in February 2015 and the result was 1730 #/100 mL - well below the limit of 393,187 #/100 mL.

Installing a UV disinfection system sized for seasonal limits to treat the recreation season limits (2 banks in series each sized to dose 1/2 of the PHWW flow) allows for maintenance to occur without taking the entire system offline which provides system redundancy.

18. Department's Justification:

Recommend Variance Approval:

Approval is recommended based on the equivalent effectiveness of disinfection that would result by sizing the UV system for seasonal disinfection limits instead of year round disinfection limits. In this case, the high nonrecreation season limits can be met without disinfection, and system redundancy is provided by the layout required of a seasonal disinfection system.

A performance review of two aerated lagoons (without disinfection facilities) in Iowa was performed in 1990-1991 that assessed several water quality parameters of the effluent (Aerated Lagoon Study - Report No. 92-4). E. coli levels were measured in one facility's effluent which had a high value of 370 #/100 mL. Fecal coliforms were measured in the other facility's effluent and a high value of 17,000 #/100 mL. It is reasonable to assume that a covered aerated lagoon that is properly operated would treat to similar effluent levels. The E. coli/fecal coliform levels observed in the effluent of these facilities provide support for the claim that Strawberry Point's WWTF will meet the nonrecreation season E. coli limits without disinfection.

The facility shall perform testing during the nonrecreation season to confirm that the facility is in compliance with E. coli permit limits.

19. <u>Precedents Used:</u> None	
20. Staff Reviewer: <i>L. Krissel . Eng Wm Li</i>	Date: <i>4/1/15</i>
21. Supervisor: <i>Satyaj Chennupati</i>	Date: <i>4/1/2015</i>
22. Authorized by: <i>J. C. H. R.</i>	Date: <i>4/1/15</i>

**FEHR GRAHAM**

ENGINEERING &amp; ENVIRONMENTAL

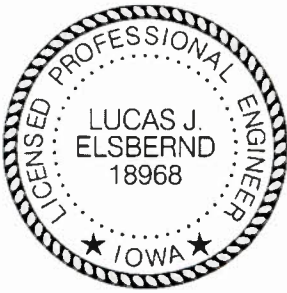
March 16, 2015

Mr. Chuck Gipp, Director  
 c/o: Mr. Satya Chennupati, P.E.  
 Iowa Department of Natural Resources  
 502 E 9<sup>th</sup> Street  
 Des Moines, IA 50131

Enclosed is a Uniform Form for Petitions for Waivers from Administrative Rules (waiver request) submitted on behalf of the City of Strawberry Point for the Wastewater Disinfection System project.

Chapter 20, Section 20.11 of the Iowa Wastewater Facilities Design Standards states, "Where disinfection is required for the entire year, multiple units (including controls and electrical gear) shall be provided so that with the largest unit out of service the remaining units shall have the capacity to handle the PHWW flow." Strawberry Point's NPDES permit requires year round disinfection, but the winter limits of 393,187 #/100 mL can be met by the plant without disinfection. The City of Strawberry Point requests a waiver to the above requirement so that the system can be sized based on seasonal disinfection in order to save cost. Granting of the waiver will not affect the treatment plant's ability to achieve compliance.

This letter also certifies the technical and engineering portion of the enclosed waiver request.

	<p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p><u>Lucas J. Elsbernd</u> <u>3/16/15</u>        Lucas J. Elsbernd, P.E. Date        License Number 18968        My license renewal date is December 31, 2015.        Pages covered by this seal: All Sheets</p>
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Feel free to contact me if you have any questions.

Sincerely,

Lucas J. Elsbernd

Lucas J. Elsbernd, P.E.  
 Project Engineer

Cc: Laura Knispel, E.I.T., IDNR Wastewater Permits Section

RECEIVED MAR 24 2015



**DEPARTMENT OF NATURAL RESOURCES  
ENVIRONMENTAL SERVICES DIVISION  
502 EAST 9TH STRET- DES MOINES, IOWA 50319-0034  
Telephone: 515-242-5851; 515-281-8986  
Fax: 515-281-8895**

**UNIFORM FORM FOR  
PETITIONS FOR WAIVERS FROM ADMINISTRATIVE RULES**

This form may be used to seek a waiver or variance from an administrative rule adopted by the Department listed above. A waiver, if granted, may excuse the petitioner from the requirements of a rule in its entirety or in part, or may modify the requirements of a rule, for a period of time or permanently. The process for seeking a waiver from an administrative rule and the standards under which the petition will be evaluated are described in 561 IAC Chapter 10. Please keep in mind that the Department is not allowed to waive or alter a statutory duty or requirement.

**Criteria for a waiver includes clear and convincing evidence that:**

1. The application of the rule would impose undue hardship on the person for whom the waiver is requested;
2. The waiver from the requirements of the rule in the specific case would not prejudice the substantial legal rights of any person;
3. The provisions of the rule subject to the petition for a waiver are not specifically mandated by statute or another provision of law; and
4. Substantially equal protection of public health; safety, and welfare will be afforded by a means other than that prescribed in the particular rule for which the waiver was requested.

**PETITION INFORMATION**

(please type or print clearly)

Your Name: Ron Highland, Mayor Business Telephone: (563) 933-4482  
 Address: City of Strawberry Point Residence Telephone: \_\_\_\_\_  
111 Commercial St. PO Box 279  
 City, State, Zip: Strawberry Point, IA 52076

List the number and a description of the rule from which you are requesting a waiver: (i.e. 567 IAC Chapter 100-123) Iowa Wastewater Facilities Design Standards for Sanitary Sewer Improvements; Chapter 20, Section 20.11 (Ultra-violet Radiation) part 11. The rule is "Where disinfection is required for the entire year, multiple units (including controls and electrical gear) shall be provided so that with the largest unit out of service the remaining units shall have the capacity to handle the PHWW flow."

**WAIVER REQUESTED**

Briefly describe the nature of the waiver that you are requesting and the period of time you want the waiver to last. **The City requests a waiver to the requirement that multiple units be provided so that with the largest unit out of service the remaining units have the capacity to handle the PHWW flow. The waiver would allow sizing to be based on seasonal disinfection which includes at least two banks with the total system sized to handle the PHWW flow. The waiver is requested for the design life of the improvements which is 20 years.**

### SPECIFIC INFORMATION ABOUT THE WAIVER YOU ARE REQUESTING

What are the facts and reasons that, in your opinion, provide "clear and convincing evidence" supporting a waiver of the rule? Be sure to explain in your answer why you feel the rule poses an undue hardship on you.

**Strawberry Point's NPDES permit requires year-round disinfection with summer disinfection season E. coli limits of 158 #/100 mL and winter disinfection season E. coli limits of 393,187 #/100 mL. Winter limits are high and will be able to be met by the treatment plant even without disinfection. An effluent E. coli test in February 2015 resulted in 1730 #/100 mL.**

**Because of the high level of the winter E. coli limits, sizing the ultra-violet disinfection system for seasonal disinfection would provide adequate treatment and redundancy for year-round disinfection. A minimum of 2 banks allows maintenance to occur without taking the ultra-violet system off-line. In the event that the entire ultra-violet system needed to be taken off line during the winter season for repair the treatment plant would not violate permit limits.**

**The rule poses an undue hardship by requiring the ultra-violet disinfection system to be essentially doubled in size because year-round disinfection is required even though the plant can meet winter E. coli limits without disinfection.**

List the name, address and telephone number of any person or entity that would be adversely affected by the granting of this waiver.

No person or entity would be adversely affected by the granting of this waiver.

List the name, address and telephone number of any other state or federal boards or agencies, or local governmental bodies, such as a city or county, which also regulates the area in question, or which might be affected by the granting of this waiver.

None.

How will the public health, safety and welfare be protected if your request for a waiver is granted?

Public health is protected if the waiver is granted by providing year-round disinfection and meeting NPDES permit limits. Granting the waiver only changes the size/redundancy requirement of an ultra-violet system.

Provide a history of any prior contacts between you and the Department relating to the regulated activity or permit affected by the proposed waiver, including a description of each affected permit held by you, any notices of violation, contested case hearings, or investigative reports relating to the regulated activity or permit within the past five years.

None

Do you know how the Department has treated similar situations? ☐ Yes ☒ No  
If yes, describe how similar situations were handled.

List the name, address and telephone number of any persons with knowledge of the relevant facts relating to the proposed waiver.

Lucas Elsbernd, P.E.

Fehr Graham

1919 210<sup>th</sup> Street

Manchester, IA 52057

563-927-2060

elsbernd@fehr-graham.com

#### SIGNATURE

I attest to the accuracy and truthfulness of the information contained in this petition. I authorize any persons with knowledge of the relevant facts relating to the requested waiver to release any information to the Department to which this petition is directed.

  
Signature

3-11-15  
Date