STATE OF IOWA
TERRY E. BRANSTAD, GOVERNOR
DEPARTMENT OF NATURAL RESOURCES
LARRY J. WILSON, DIRECTOR

April 30, 1998

Mr. Kurt A. Rueckel
City Administrator
410 Sixth Street
P.O. Box P
Waukee, Iowa 50263-0720

REF: Variance Request
Waukee Wastewater Facility Upgrade
Waukee, Iowa

CS 192115 01

Dear Mr. Rueckel:

This letter is in reference to item 1 of your consultant's letter dated April 22, 1998. The letter requested a variance from Iowa Wastewater Facilities design Standard 14.5.2.3(4) which require that multiple number of clarifier units shall be provided such that with the largest unit out of service, the remaining units shall have a design load capacity of at least 75% of the total design loading to that unit operation.

Considering the fact that the two compartments in each of the clarifier provides somewhat additional reliability to the clarifier in addition to having a holding lagoon which can provide storage for a minimum of ten days, we feel that the arrangement meets the equivalent effectiveness criteria. Under the unique circumstances your variance request is approved.

Please make sure that all the instructions are included in the Operation and Maintenance (O&M) manual of how the flows shall be directed when one of the basin/clarifier is off line.

Should you have any question, please call Mike Hameed at 515/242-6199. My telephone number is 515/281-8869.

Sincerely,

Darrell McAllister, Chief
Water Quality Bureau

cc: V&K Inc. 3000 Westown Parkway - W. Des Moines - Iowa 50266-1320
Field Office 5

DPT ✓ 9-8-06

VARIANCE REQUEST

Iowa Department of Natural Resources

1.	Date: April 30, 1998	13.	**Decision:** Approved
2.	Review Engineer: Mike Hameed		Date: 5/1/98
3.	Date Received: April 22, 1998		
4.	County Number: 25	14.	**Appeal:**
5.	Facility Name: Waukee		Date:
6.	Program Area: CP (Wastewater)		
7.	Facility Type: CO5		
8.	Subject Area: 321		
9.	Rule Reference: 900-64.2(9)a		
10.	Design Stds Ref: 14.5.2.3(4)		
11.	Consulting Engr: Veenstra & Kimm.		
12.	Variance Rule: 900-64.2(9)c		

15. Description of Variance Request:

In this scenario existing aerated lagoons are being retrofitted with Biolac ® activated sludge system. The proposed clarifiers are integral part of the aeration basin structure and are separated by a concrete curtain wall. The City of Waukee has requested variance from Design Standard 14.5.2.3(4) which requires that multiple units of clarifiers shall be provided of a size such that with the largest unit out of service, the remaining units shall have a design load capacity of at least 75% of the total design loading to that unit operation. In a case where a basin/clarifier is down, the plant as proposed will meet the 75% reliability by routing the flow above the clarifier's capacity to a storage lagoon.

16. Consulting Engineer's Justifications

If one basin/clarifier unit is down, the remaining clarifier would have a total surface area of 2,050 s.f. At the design criteria loading rate for extended aeration plants, the allowable plant flow with one clarifier out of service would be 2.73 mgd. If one basin/clarifier unit would be removed from service during the worst case flow period, maximum wet weather flow, the excess flow would be directed to the stormwater pond for storage. The maximum wet weather flow for this facility is 3.265 mgd. At maximum wet weather flow, 0.535 mgd would be directed to the stormwater pond. The stormwater pond would provide ten days of storage at this rate. In actuality the storage capability would be greater than ten days because the daily flows encountered around the maximum day flow would be less than 3.265 mgd. The average wet weather flow for the facility is 1.515 mgd.

17. Department's Justifications

In addition to consulting engineer's justification. The proposed two clarifiers are further subdivided into two sections and to an extent act as individual clarifiers (housed in the same structure). Most of the parts of the clarifiers can be accessed and serviced without dewatering the clarifier. If one section in a clarifier is down, that section can be isolated while the other remains on line and the plant would only loose 3% of its total capacity. This feature provides somewhat additional reliability in addition to having

reasonable storage capacity.
18. Precedents Used NONE
19. Staff Reviewer: [signature] Date: April 30, 1998 20. Supervisor: [signature] Date: 4/30/98 21. Authorized by: [signature] Date: 5/1/98