

**Kansas Eligibility Determination for Wastewater Lagoon Variance - Ammonia
May 16, 2023**

Prepared by: _____

Date Prepared: _____

Reviewed by: _____

Date accepted: _____

Name of Interested City: _____

County City Resides in: _____

1. Assess:

- a. Review NPDES permit to determine if the discharger can meet the new ammonia criteria.
- b. Assess the historical ammonia effluent data and compare to the projected 2013 ammonia criteria limits; compare the data sets to determine if the discharger can meet the required ammonia limitations. If the sample data presents >1 violations over the period of record compared to the relative 2013 ammonia limits, then the facility can proceed to the financial eligibility calculation, if not then reissue the permit with new limits based on the 2013 ammonia criteria.
- c. The discharger can meet the new ammonia criteria: Yes No More data needed.

If the historical effluent data from the period of record exceeds the projected 2013 ammonia criteria limits in two or more samples, then complete this form in its entirety.

2. Go to the US Census Bureau's website (below) to locate the following information

<https://data.census.gov/cedsci>.

- a. City Population: _____ Date of Census: _____
- b. Median Household Income (MHI) under the income tab on the right: \$ _____
Date of Census: _____
- c. State MHI: _____

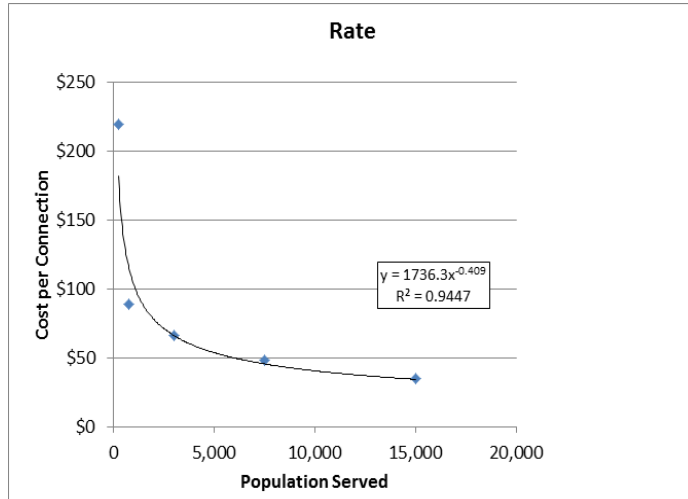
3. Calculate cost of mechanical plant: \$ _____ per connection per month

$$y = 1736.3x^{-0.409} \text{ where } x \text{ is the population of the town}$$

The equation used to calculate the cost of a new mechanical plant as derived from a set of cost data provided by Tetra Tech in their Report *Kansas Lagoon Upgrades to Meet Water Quality Standards*

for Ammonia. KDHE utilized the cost per facility (Located in Table 15 within the report) and plotted that against the population serviced by that sized facility. Calculating the cost per connection by population serviced gives a more accurate and reliable expense that will be incurred by the rate payers. The result can be found in Figure 1.

Figure 1: Rate Curve



Inflated cost of mechanical plant*: _____

***Due to recent inflation and the Tetra Tech study cost based on August 2015 dollars, the cost of mechanical plant has been inflated to the 2020 dollars. This cost was calculated using the U.S. Census Bureau CPI Calculator, https://www.bls.gov/data/inflation_calculator.htm.**

CPI Inflation Calculator

\$

in

has the same buying power as

in

- Calculate the percent of (the city's annual) MHI that city sewer utility residential customers would be paying to fund a new mechanical plant (this is the municipal primary screener): _____%

$$\frac{(\text{Cost of mechanical plant (step 3)} \times 12)}{\text{MHI}} \times 100\% = \text{Cost of new plant as a Percent of MHI}$$

If the municipal primary screener exceeds 4.0% then you may stop here and not continue on to calculate the secondary indicators. Proceed to calculate alternative ammonia effluent limit (go to step 17). Table 2.2 – Assessment of the Substantial Impacts Matrix – if the Economic Guidance (see section 16 of this form) indicates that the primary indication (% of MHI) exceeds 2%, for towns with average economic indicators, substantial economic impact will be felt. Even with the strongest economic indicators, the guidance says it is unclear if the economic impact is tolerable. Therefore, a level of 100% greater than the 2% MHI will be utilized. The 4% value represents a threshold level where completion of the secondary economic test is expected to be unnecessary expenditure of resources.

5. First (to find the county unemployment) go to <https://klic.dol.ks.gov/vosnet/Default.aspx> and select the most recent month available. This will direct you to a map of Kansas with all unemployment rates for each county as a whole. Find the county in which the city of interest resides.

a. County Unemployment rate: _____ % Date: _____ / _____

Go to <http://data.bls.gov/timeseries/LNS14000000> and scroll to the bottom and find the unemployment rate for the month and year that matches the most recent KS County data you obtained above.

b. National Unemployment rate: _____ % Date: _____ / _____

6. Go to the Department of Administration’s website (below) and click on the link for the “Cities” most recent **completed** fiscal year’s municipal budgets <https://admin.ks.gov/offices/accounts-reports/local-government/municipal-services/municipal-budgets> chose the city you’re working with and download their budget. If you cannot find their budget, you may need to go back one fiscal year. Open/Save the file and look for the following data:

a. Total assessed valuation: \$ _____ Date: _____

- b. The assessed valuation is typically 14% of the Full Market Value of Taxable Property in a small Kansas town.

Calculate Full Market Value of Taxable Property: \$ _____

$$\frac{\text{Total Assessed Valuation}}{0.14} = \text{Full Market Value of Taxable Property}$$

- c. Property Tax: To calculate the property tax value use the Property Tax spreadsheet form in the Master Flow Template and county tax levy sheet found at <https://admin.ks.gov/offices/accounts-reports/local-government/municipal-services/county-tax-levy-sheets> for the most recent year and correct county:

\$ _____ Date: _____

d. Delinquent Tax Rate: _____ % Date: _____

e. Total Bond Value (if any can be found under the Statement of Indebtedness): \$ _____

- i. Bond Value: \$ _____ Year of Issue: _____ Bond Type: _____
- ii. Bond Value: \$ _____ Year of Issue: _____ Bond Type: _____
- iii. Bond Value: \$ _____ Year of Issue: _____ Bond Type: _____
- iv. Bond Value: \$ _____ Year of Issue: _____ Bond Type: _____

f. Total Debt (usually on the last page found in the NOTICE OF HEARING at the bottom):

\$ _____ Date: _____

Within the budget if the town holds any bonds or other debt or school district debts you will need to go through step 8 and find if the town has a bond rating. If they do not have a bond rating check the box in 8b and proceed to step 9.

7. Bond Rating: Go to <https://kansas.municipalbonds.com/bonds/recent/> and type the city name into the search bar and click search and/or review the general list provided on the web page to see if a bond rating is posted in the description. The search will only return a link if the city holds any bonds. If a bond rating is not posted on this site assess any audit on the city/county, annual budgets, or do google searches for issued bonds.

a. Overall Bond Rating: _____ Date: _____

b. No Bond Issue Information Provided

8. Calculate the number of rate payers: _____

$$\text{rate payers} = \text{population} \div 2.5$$

9. Calculate the percent difference between the State MHI (2c) and City's MHI (2b): _____ %
 When the percent difference value is greater than 10% below the State MHI and is a positive value, it is representing a City MHI below State MHI. When the percent difference value is greater than 10% above the State MHI the value will be negative, and it is representing a City MHI above the State MHI.

$$\frac{\text{State MHI} - \text{City MHI}}{\text{State MHI}} \times 100\% = \text{Percent Difference}$$

10. Calculate the difference between County's unemployment rate (5a) and the National unemployment rate (5b): _____ %

$$\text{County Unemployment} - \text{National Unemployment} = \text{Difference}$$

11. Calculate Property tax as a percent of full market value of all taxable property: _____ %

$$\frac{\text{Property Tax (6c)}}{\text{Full Market Value of Taxable Properties (6b)}} \times 100\% = \text{Property tax as a percent of Valuation}$$

12. Calculate overall debt as a percentage to full market value of all taxable property: _____ %

$$\frac{\text{Overall Debt (6f)}}{\text{Full Market Value of Taxable Property (6b)}} \times 100\% = \text{Debt as a percent of Full Market Value of Taxable Property}$$

13. Calculate Property Tax Collection Rate: _____%

$$100\% - \text{Delinquent Tax Rate (6d)} = \text{Property Tax Collection Rate}$$

14. *Economics Test: All the calculations have been completed; take the values calculated and see where they fall on the table below to find the secondary indicators.*

Find where the calculated values fall on each of the rows, follow the column down to the bottom of the table and the large value (1, 2, or 3) below is the secondary indicator. Record the secondary indicator in the space provided below. If the value does not fall anywhere in the table provided (i.e.: no bond rating) give the item a secondary indicator of zero (0).

When a bond rating is not available, this indicator should not be included in the analysis of substantial impacts. When available, the rating for the most recent general obligation bond should be used. If a general obligation bond has not been issued recently the most recent rating for a sewer bond should be used. Recent bond rating is included in municipal bond reports from rating agencies (e.g., *Moody's Bond Record, Standard and Poor's Corporation*).

See next page for Secondary Indicators tables and calculations.

15. *Assessment of Substantial Impacts (Matrix): Use below provided table to determine the feasibility of proposing a mechanical plant.*

Use calculated Annual User Charge per Residential Customer Percent of MHI value (Step 13) to find where the value falls within the three vertical columns and the average the secondary score (calculated above) to find where which row applies to the city of choice.

ASSESSMENT OF SUBSTANTIAL IMPACTS MATRIX

Secondary Score	Municipal Preliminary Screener		
	Less than 1.0 Percent	Between 1.0 and 2.0 Percent	Greater than 2.0 Percent
Less than 1.5	?	X	X
Between 1.5 and 2.5	✓	?	X
Greater than 2.5	✓	✓	?

Secondary Score: _____

Key:

? Uncertain, studies need to be performed. The facility could possibly afford the new mechanical plant. Permits will be issued requiring additional ammonia effluent monitoring along with a Schedule of Compliance, to assess compliance with limits based on the new ammonia criteria, including an economic study and summary that provides additional evidence on the affordability of wastewater treatment modifications. Additionally, the permit will be issued with a Pollutant Minimization Plan (PMP). Based on the resulting information from the facility, their next NPDES permit will either be issued with the applicable ammonia limits or qualify for the MDV. If the facility qualifies for the MDV, KDHE will issue the subsequent permit with the Highest Attainable Condition (HAC) in accordance with the MDV requirements.

During the subsequent renewal of the permit, new information gathered from the Schedule of Compliance and economic study and summary shall be used to reevaluate the eligibility of the facility under the NH₃ MDV. If the subsequent NPDES permit assesses under the uncertain category again, the EPA’s Interim Economic Guidance for Water Quality Standards Workbook’s Appendix M shall be followed, where ‘For communities that fall into the “?” category, if the results of both the Secondary Test and the Municipal Preliminary Screener are borderline, then the community should move into the category closest to it. Take, for example, a community that falls into the center box, with a cumulative assessment score of between 1.5 and 2.5 and a percent of median household income (MHI) between 1.0 and 2.0. If the cumulative score was 1.6 and the percent of MHI was 1.8, then the community should be considered to fall into one of the adjacent “X” categories. If the results are not borderline, other factors such as the impact on low or fixed income households, the presence of a failing local industry, and other projects the community would have to forgo in order to comply with water quality standards should be considered. Relevant additional information might include information collected from interviews with municipal financial officers, special reports on industry trends that may affect local employers, and specific financial and economic indicators. The State/discharger should provide any additional information they feel is relevant. This additional information will be critical where the matrix results are not conclusive.’

No, the city cannot afford the proposed mechanical plant and the variance can be granted.

Yes, the city can afford the proposed mechanical plant and no variance will be granted and the city is not eligible for the multiple-discharger variance (MDV). A city or facility found not to be eligible for the MDV may initiate, on its own, a request for an individual variance and will provide specific documentation that it is not financially capable of constructing and operating a mechanical plant. Further studies may consist of more in-depth engineering evaluations, or financial and economic factors that may affect affordability.

Conclusion: The City (check the answer that best applies):

- can afford the proposed mechanical treatment facility
- cannot afford the proposed mechanical treatment facility
- it is uncertain a city can afford the proposed mechanical treatment facility; additional studies are needed.

If the City cannot afford the proposed mechanical treatment facility, then proceed to step 17 calculating the alternative ammonia effluent limits.

16. When a discharger cannot meet the EPA 2013 ammonia criteria limits calculate the highest attainable condition (HAC) alternate limits. Alternate ammonia HAC limits will be derived as the 99th percentile or the highest value of recent historical effluent discharge data, whichever is lower. The procedure to calculate the alternate ammonia HAC limits are presented in the Master Flow template on worksheet E. Information from section 1 of this form may be used in this section.

17. Include a pollution minimization plan (PMP) in each NPDES permit for dischargers who qualify for the Ammonia MDV, or which later qualify for an individual variance after further studies are performed. See the Kansas Variance Register and the Kansas Surface Water Implementation Procedure for details on the PMP.