

**North Dakota Department of Environmental Quality Public Notice
Reissue of an NDPDES Permit**

Public Notice Date: 5/17/2022

Public Notice Number: ND-2022-006

Purpose of Public Notice

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 11/19/2021

Application Number: ND0020729

Applicant Name: Glen Ullin City Of

Mailing Address: PO Box 70, Glen Ullin, ND 58631-0070

Telephone Number: 701.348.3683

Proposed Permit Expiration Date: 6/30/2027

Facility Description

The reapplication is for four waste stabilization ponds which service the City of Glen Ullin. The discharge facility is located in the SW1/4, SW1/4, Section 29, Township 139 North, Range 88 West. Any discharge would be to Big Muddy Creek, a Class II stream via outfall 001.

Tentative Determinations

Proposed effluent limitations and other permit conditions have been made by the Department. They assure that State Water Quality Standards and applicable provisions of the FWPCAA will be protected.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by June 18, 2022 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

Permit No: ND0020729
Effective Date: July 1, 2022
Expiration Date: June 30, 2027

AUTHORIZATION TO DISCHARGE UNDER THE
NORTH DAKOTA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with Chapter 33.1-16-01 of the North Dakota Department of Environmental Quality rules as promulgated under Chapter 61-28 (North Dakota Water Pollution Control Act) of the North Dakota Century Code,

the City of Glen Ullin

is authorized to discharge from its wastewater stabilization ponds

to Big Muddy Creek, a Class II stream,

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,
June 30, 2027.

Signed this _____ day of _____, _____.

Karl H. Rockeman, P.E.
Director
Division of Water Quality

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DEFINITIONS Standard Permit BP 2019.05.29

1. **“Act”** means the Clean Water Act.
2. **“Average monthly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. **“Average weekly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. **“Best management practices”** (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **“Composite”** sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. **“Daily discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. **“Department”** means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. **“DMR”** means discharge monitoring report.
10. **“EPA”** means the United States Environmental Protection Agency.
11. **“Geometric mean”** means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. **“Grab”** for monitoring requirements, means a single “dip and take” sample collected at a representative point in the discharge stream.
13. **“Instantaneous”** for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.
14. **“Maximum daily discharge limitation”** means the highest allowable “daily discharge.”
15. **“Salmonid”** means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

16. “**Sanitary Sewer Overflows (SSO)**” means untreated or partially treated sewage overflows from a sanitary sewer collection system.
17. “**Severe property damage**” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
18. “**Total drain**” means the total volume of effluent discharged.
19. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

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OUTFALL DESCRIPTION

Outfall 001. Active. Final.			
Latitude: 46.8232688903	Longitude: -101.8165359497	County: Morton	
Township: 139N	Range: 88W	Section: 29	QQ: CC
Receiving Stream: Big Muddy Creek		Classification: Class II	
Outfall Description: The treated effluent flows from the waste stabilization ponds to Big Muddy Creek, a Class II stream.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Frequency	First Submittal Date
001A	Discharge Monitoring Report	Semi-Annual	January 31, 2023
Application Renewal	NPDES Application Renewal	1/permit cycle	December 31, 2022

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I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfall as specified to the following: **Big Muddy Creek, a Class II Stream.**

No discharge shall occur from the lagoons until all pre-discharge parameters have been reviewed by the department. After the review process has been completed the permittee shall comply with the limitations of this permit. All samples shall be taken prior to leaving the wastewater stabilization pond system or entering the receiving stream.

This permit authorizes the discharge of only those pollutants resulting from facility processes, waste streams, and operations that have been clearly identified in the permit application process.

B. Effluent Limitations and Monitoring

The permittee must limit and monitor all discharges as specified below:

Effluent Limitations and Monitoring Requirements for Outfall 001					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
Biological Oxygen Demand (BOD ₅)	25 mg/l	45 mg/l	*	1/Week	Grab
pH ^a	Shall remain between 6.0 to 9.0 s.u. ^a			1/Week	Grab
Total Suspended Solids (TSS)	45 mg/l	65 mg/l	*	1/Week	Grab
Ammonia as N, mg/l	Refer to the Ammonia Table below			1/Week	Grab
<i>Escherichia coli</i> (<i>E. coli</i>) ^b	126 organisms /100 ml	*	409 organisms /100 ml	1/Week	Grab
Temperature, °C ^c	*	*	*	1/Week	Instantaneous
Total Flow, MGD	*	Report Weekly Average	Report Daily Max	1/Event	Calculated
Total Drain, MG	*	*	Report Monthly Total	1/Event	Calculated

Notes:

* This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.

a. The pH, an instantaneous limitation, shall be between 6.0 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation.

b. The limit for *E. coli* shall apply only during the recreational season, April 1 to October 31. Monitoring for *E. coli* shall be in effect only during the recreational season. The department

Effluent Limitations and Monitoring Requirements for Outfall 001					
Parameter	Effluent Limitations			Monitoring Requirements	
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Sample Frequency	Sample Type
<p>reserves the right to change the parameters, monitoring, and/or limit for <i>E. coli</i>. Averages for <i>E. coli</i> shall be determined as a geometric mean.</p> <p>c. Shall be measure the same day as the effluent sample is collected. Temperature shall be measured in the field.</p> <p>Stipulations:</p> <p>A pre-discharge sample must be analyzed and reported to the department prior to the start of any discharge. A grab sample shall be tested for BOD₅, TSS, Ammonia as N, <i>E. coli</i> and pH and shall represent the first week discharge sample. An additional grab sample of the actual sample shall be taken and analyzed on a weekly basis for the duration of the discharge.</p> <p>Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum, and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.</p> <p>The department may require the permittee to provide additional sampling and monitoring as deemed necessary to assure adequate operation of the treatment system and the water quality standards are met during the discharge period.</p>					

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Ammonia Effluent Limitations Outfall 001			
Parameter	Effluent Limitations		
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡
<p>1/ Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.</p> <p>† Chronic Standard (Average Monthly Limit) The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:</p> $0.8876 \times \left(\frac{0.0278}{1 + 10^{7.688-pH}} + \frac{1.1994}{1 + 10^{pH-7.688}} \right) \times (2.126 \times 10^{0.028 \times (20 - \text{MAX}(T,7))})$ <p style="text-align: center;">Effluent a pH and Temperature is used for the calculation</p> <p>‡ Acute Standard (Daily Maximum Limit) The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:</p> $0.7249 \times \left(\frac{0.0114}{1 + 10^{7.204-pH}} + \frac{1.6181}{1 + 10^{pH-7.204}} \right) \times \text{MIN}(51.93, 23.12 \times 10^{0.036 \times (20-T)})$ <p style="text-align: center;">Effluent a pH and Temperature is used for the calculation</p>			
Stipulations			
The effluent limitation shall be met at end-of-pipe.			

II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2021.09.09

A. Representative Sampling (Routine and Non-Routine Discharges)

All samples and measurements taken shall be representative of the monitored discharge.

In order to ensure that the effluent limits set forth in this permit are not violated at times other than when routine samples are taken, the permittee must collect additional samples at the appropriate outfall whenever any discharge occurs that may reasonably be expected to cause or contribute to a violation that is unlikely to be detected by a routine sample. The permittee must analyze the additional samples for those parameters limited under **Part I Effluent Limitations and Monitoring** requirements of this permit that are likely to be affected by the discharge.

The permittee must collect such additional samples as soon as the spill, discharge, or bypassed effluent reaches the outfall. The samples must be analyzed in accordance with **B. Test Procedures**. The permittee must report all additional monitoring in accordance with **D. Additional Monitoring**.

B. Test Procedures

The collection and transportation of all samples shall conform with EPA preservation techniques and holding times found in 40 CFR 136. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified in this permit or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

C. Recording of Results

Records of monitoring information shall include:

1. the date, exact place and time of sampling or measurements;
2. the name(s) of the individual(s) who performed the sampling or measurements;
3. the name of the laboratory;
4. the date(s) and time(s) analyses were performed;
5. the name(s) of the individual(s) who performed the analyses;
6. the analytical techniques or methods used; and
7. the results of such analyses.

D. Additional Monitoring

If the discharge is monitored more frequently than this permit requires, all additional results, if in compliance with B. Test Procedures, shall be included in the summary on the Discharge Monitoring Report.

E. Reporting of Monitoring Results

1. Monitoring results shall be summarized and reported to the department using Discharge Monitoring Reports (DMRs). If no discharge occurs during a reporting period, "No Discharge" shall be reported. The permittee must submit DMRs electronically using the electronic information reporting system unless requirements in subsection 3 are met.
2. Prior to December 21, 2025, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2025, the permittee must report the following using the electronic reporting system:
 - a. General permit reports [e.g., notices of intent (NOI); notices of termination (NOT); no exposure certifications (NOE)];
 - b. Municipal separate storm sewer system program reports;
 - c. Pretreatment program reports;
 - d. Sewer overflow/bypass event reports; and
 - e. Clean Water Act 316(b) annual reports
3. The permittee may seek a waiver from electronic reporting. To obtain a waiver, the permittee must complete and submit an Application for Temporary Electronic Reporting Waiver form (SFN 60992) to the department. The department will have 120 days to approve or deny the waiver request. Once the waiver is approved, the permittee may submit paper versions of monitoring data and reports to the department.
 - a. One of the following criteria must be met in order to obtain a waiver. The department reserves the right to deny any waiver request, even if they meet one of the criteria below.
 1. No internet access,
 2. No computer access,
 3. Annual DMRs (upon approval of the department),
 4. Employee turnover (3-month periods only), or
 5. Short duration permits (upon approval of the department)

All reports must be postmarked by the last day of the month following the end of each reporting period. All original documents and reports required herein shall be signed and submitted to the department at the following address:

ND Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck ND 58503-1324

F. Records Retention

All records and information (including calibration and maintenance) required by this permit shall be kept for at least three years or longer if requested by the department or EPA.

III. COMPLIANCE RESPONSIBILITIES

A. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

B. Proper Operation and Maintenance

The permittee shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. If necessary to achieve compliance with the conditions of this permit, this shall include the operation and maintenance of backup or auxiliary systems.

C. Planned Changes

The department shall be given advance notice of any planned changes at the permitted facility or of an activity which may result in permit noncompliance. Any anticipated facility expansions, production increase, or process modifications which might result in new, different, or increased discharges of pollutants shall be reported to the department as soon as possible. Changes which may result in a facility being designated a "new source" as determined in 40 CFR 122.29(b) shall also be reported.

D. Duty to Provide Information

The permittee shall furnish to the department, within a reasonable time, any information which the department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the department, upon request, copies of records required to be kept by this permit. When a permittee becomes aware that it failed to submit any relevant facts or submitted incorrect information in a permit application or any report, it shall promptly submit such facts or information.

E. Signatory Requirements

All applications, reports, or information submitted to the department shall be signed and certified.

All permit applications shall be signed by a responsible corporate officer, a general partner, or a principal executive officer or ranking elected official.

All reports required by the permit and other information requested by the department shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

The authorization is made in writing by a person described above and submitted to the department; and

The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility, such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters.

If an authorization under E. Signatory Requirements is no longer accurate for any reason, a new authorization satisfying the above requirements must be submitted to the department prior to or together with any reports, information, or applications to be signed by an authorized representative.

Any person signing a document under this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is,

to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

F. Twenty-four Hour Notice of Noncompliance Reporting

1. The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally as soon as possible, but no later than twenty-four (24) hours from the time the permittee first became aware of the circumstances. The following occurrences of noncompliance shall be included in the oral report to the department at 701.328.5210:
 - a. Any lagoon cell overflow or any unanticipated bypass which exceeds any effluent limitation in the permit under G. Bypass of Treatment Facilities;
 - b. Any upset which exceeds any effluent limitation in the permit under H. Upset Conditions; or
 - c. Violation of any daily maximum effluent or instantaneous discharge limitation for any of the pollutants listed in the permit.
2. A written submission shall also be provided within five days of the time that the permittee became aware of the circumstances. The written submission shall contain:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. The estimated time noncompliance is expected to continue if it has not been corrected; and
 - d. Steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

Reports shall be submitted to the address in Part II.E. Reporting of Monitoring Results. The department may waive the written report on a case by case basis if the oral report has been received within 24 hours by the department at 701.328.5210 as identified above.

All other instances of noncompliance shall be reported no later than at the time of the next Discharge Monitoring Report submittal. The report shall include the four items listed in this subsection.

G. Bypass of Treatment Facilities

1. Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to any of the following provisions in this section.
2. Bypass exceeding limitations-notification requirements.
 - a. Anticipated Bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of bypass.
 - b. Unanticipated Bypass. The permittee shall submit notice of an unanticipated bypass as required under F. Twenty-four Hour Notice of Noncompliance Reporting.
3. Prohibition of Bypass. Bypass is prohibited, and the department may take enforcement action against a permittee for bypass, unless:
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c. The permittee submitted notices as required under the 1. Anticipated Bypass subsection of this section.

The department may approve an anticipated bypass, after considering its adverse effects, if the department determines that it will meet the three (3) conditions listed above.

H. Upset Conditions

An upset constitutes an affirmative defense to an action brought for noncompliance with technology-based permit effluent limitations if the requirements of the following paragraph are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An upset occurred and the permittee can identify its cause(s);
2. The permitted facility was, at the time being, properly operated;
3. The permittee submitted notice of the upset as required under F. Twenty-four Hour Notice of Noncompliance Reporting and
4. The permittee complied with any remedial measures required under I. Duty to Mitigate.

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

I. Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. The permittee, at the department's request, shall provide accelerated or additional monitoring as necessary to determine the nature and impact of any discharge.

J. Removed Materials

Collected screenings, grit, solids, sludges, or other pollutants removed in the course of treatment shall be buried or disposed of in such a manner to prevent any pollutant from entering any waters of the state or creating a health hazard. Sludge/digester supernatant and filter backwash shall not be directly blended with or enter either the final plant discharge and/or waters of the state. The permit issuing authority shall be contacted prior to the disposal of any sewage sludges. At that time, concentration limitations and/or self-monitoring requirements may be established.

K. Duty to Reapply

Any request to have this permit renewed should be made six months prior to its expiration date.

IV. GENERAL PROVISIONS

A. Inspection and Entry

The permittee shall allow department and EPA representatives, at reasonable times and upon the presentation of credentials if requested, to enter the permittee's premises to inspect the wastewater treatment facilities and monitoring equipment, to sample any discharges, and to have access to and copy any records required to be kept by this permit.

B. Availability of Reports

Except for data determined to be confidential under 40 CFR Part 2, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the department and EPA. As required by the Act, permit applications, permits, and effluent data shall not be considered confidential.

C. Transfers

This permit is not transferable except upon the filing of a Statement of Acceptance by the new party and subsequent department approval. The current permit holder should inform the new controller, operator, or owner of the existence of this permit and also notify the department of the possible change.

D. New Limitations or Prohibitions

The permittee shall comply with any effluent standards or prohibitions established under Section 306(a), Section 307(a), or Section 405 of the Act for any pollutant (toxic or conventional) present in the discharge or removed substances within the time identified in the regulations even if the permit has not yet been modified to incorporate the requirements.

E. Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

F. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

G. State Laws

Nothing in this permit shall be construed to preclude the institution of legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation preserved under Section 510 of the Act.

H. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under Section 311 of the Act.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations.

J. Severability

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

V. BENEFICIAL REUSES BP 2015.09.03

A. Irrigation

Only wastewater that has received secondary or tertiary treatment may be used for irrigation provided soil and water compatibility testing confirms the water is suitable for irrigation. Wastewater used for irrigation shall be applied at a rate which would allow complete infiltration and not result in ponding or runoff from the irrigated area.

Agricultural land may be irrigated provided the crop is not used for human consumption. Forage crops used for livestock consumption or pastures irrigated with wastewater shall not be harvested or grazed within 30 days of a wastewater application.

Public properties such as golf courses or parks may be irrigated provided the treated wastewater meets the following quality criteria.

Parameter	Discharge Limitations	Monitoring Frequency	
		Measurement Frequency	Sample Type
	Daily Max		
BOD ₅ (mg/l)	30.0	1 per 14 days	Grab
TSS (mg/l)	45.0	1 per 14 days	Grab
<i>E. Coli</i> (number/100 ml)	126	Weekly	Grab

Whenever possible, irrigation shall take place during hours when the public does not have access to the area being irrigated. If the public has constant access to an area, signs must be posted in visible areas during irrigation and for two hours after irrigation is completed. The signs must advise people that the water could pose a health concern and to avoid the irrigated area.

Worker and public contact with treated wastewater should be minimized. Where frequent contact is likely, a higher level of disinfection should be provided such as achieving *E. coli* counts less than 14 colonies per 100 ml.

Avoid application within 100 feet of areas which have unlimited access (i.e., yards) or within 300 feet of potable water supply wells.

Runoff that occurs from irrigated areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage (e.g., park or agricultural) of the land being irrigated, the dates irrigation occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

B. Construction

Treated domestic wastewater may be used for construction purposes such as soil compaction, dust suppression and washing aggregate, provided the following conditions are met.

The wastewater intended for use in construction, must at a minimum, receive secondary treatment.

Prior to using treated wastewater a sample from the prospective source must be tested and meet the criteria set below. In addition the test results for *E. coli* must be provided to the department prior to use. Results from samples up to two (2) weeks old will be considered valid. The water quality limitations and minimum sampling frequencies recommended for wastewater used in construction are provided in the following table.

Parameter	Limitations (Maximum)	Measurement Frequency	Sample Type
BOD ₅ (mg/l)	30	Monthly	Grab
TSS (mg/l)	100	Monthly	Grab
<i>E. Coli</i> (number/100 ml)	126	Weekly	Grab

In some systems chlorination is available. Chlorination is particularly desirable when frequent worker contact with the treated wastewater is likely or when the public may have constant access to areas where the wastewater is being used. Maintaining a chlorine residual of at least 0.1 mg/l is recommended.

While the conventional methods for treating domestic wastewater are generally effective in reducing infectious agents (bacteria, viruses, parasites) to acceptable levels, direct reuse of treated wastewater can pose a health concern. Additional precautions to consider are:

1. Worker and public contact with treated wastewater should be minimized.
2. Where frequent worker contact is likely a higher level of disinfection should be provided, such as achieving *E. coli* counts less than 14/100 ml.
3. Work closely with the treatment system operator to ensure treated wastewater quality is suitable when it is drawn for construction purposes.
4. Apply the treated wastewater in a manner that does not result in runoff or ponding.

Runoff that occurs from application areas shall be monitored at the frequencies and with the types of measurements described in Part I(B).

The permittee shall maintain monitoring records indicating the location and usage of the land where application occurs, the dates application occurred, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

C. Oil and Gas Production (including Hydraulic Fracturing)

The specific user of the wastewater may determine the specific treatment requirements for receiving wastewater.

The permittee shall maintain monitoring records indicating the specific user, the amount of wastewater used, and the total flow. In addition, monitoring records must include results from collected samples.

D. Other Uses as Approved

The permittee must consult with the department before beneficially reusing wastewater for purposes not identified in this permit.

**FACT SHEET FOR NDPDES PERMIT
ND0020729**

PERMIT REISSUANCE

**CITY OF GLEN ULLIN
GLEN ULLIN, ND**

DATE OF THIS FACT SHEET – May 2022

INTRODUCTION

The Federal Clean Water Act (CWA, 1972, and later amendments in 1977, 1981, and 1987, etc.) established water quality goals for the navigable (surface) waters of the United States. One mechanism for achieving the goals of the CWA is the National Pollutant Discharge Elimination System (NPDES), which the US Environmental Protection Agency (EPA) oversees. In 1975, the State of North Dakota was delegated primacy of the NPDES program by EPA. The North Dakota Department of Environmental Quality, hereafter referred to as "department", has been designated the state water pollution control agency for all purposes of the Federal Water Pollution Control Act, as amended [33 U.S.C. 1251, et seq.], and is authorized to take all action necessary or appropriate to secure to this state the benefits of the act and similar federal acts. The department's authority and obligations for the wastewater discharge permit program is in the North Dakota Administrative Code (NDAC) 33.1-16 which was adopted under North Dakota Century Code (NDCC) chapter 61-28. In North Dakota, these permits are referred to as the North Dakota Pollutant Discharge Elimination System (NDPDES) permits.

The following rules or regulations apply to NDPDES permits:

- Procedures the department follows for issuing NDPDES permits (NDAC chapter 33.1-16-01),
- Standards of Quality for Waters of the State (NDAC chapter 33.1-16-02.1).

These rules require any treatment facility operator to obtain an NDPDES permit before discharging wastewater to state waters. They also define the basis for limits on each discharge and for other requirements imposed by the permit.

According to NDAC section 33.1-16-01-08, the department must prepare a draft permit and accompanying fact sheet and make it available for public review. The department must also publish an announcement (public notice) during a period of thirty days, informing the public where a draft permit may be obtained and where comments regarding the draft permit may be sent (NDAC section 33.1-16-01-07). For more information regarding preparing and submitting comments about the fact sheet and permit, please see **Appendix A – Public Involvement**. Following the public comment period, the department may make changes to the draft NDPDES permit. The department will summarize the responses to comments and changes to the permit in **Appendix D – Response to Comments**.

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BACKGROUND INFORMATION

Table 1: General Facility Information	
Applicant:	City of Glen Ullin
Facility Name and Address:	City of Glen Ullin PO Box 70, Glen Ullin ND 58631-0070
Permit Number:	ND0020729
Permit Type:	Minor Municipality - Renewal
Type of Treatment:	Waste Stabilization Pond
SIC Code:	4952 – Sewerage Systems
NAICS Code:	221320 – Sewage Treatment Facilities
Discharge Location:	Big Muddy Creek, Class II Stream Latitude: 46.8232688903 Longitude: -101.8165359497
Hydrologic Code:	10130203 – Lower Heart River
Population:	732 – Per permit application



Figure 1: Aerial Photograph of the City of Glen Ullin – Glen Ullin, ND (Google Earth 2022)

FACILITY DESCRIPTION

History

The reapplication is for a four-cell waste stabilization pond system which services the City of Glen Ullin. Glen Ullin receives water from the Southwest Pipeline. Per the submitted application, the City of Glen Ullin has a population of 732 people. According to department records, the first cell has a surface area of 6.5 acres, the second cell has a surface area of 4.6 acres, the third cell has a surface area of 6.8 acres, and the fourth cell has a surface area of 9.75 acres. The discharge facility is located in the SW ¼, SW ¼, Section 29, Township 139 North, Range 88 West in Morton County. Any discharge would be to the Big Muddy Creek, a Class II stream.

The city currently beneficially reuses treated wastewater for irrigating the neighboring golf course. Irrigation water comes from cell three which provides treatment equivalent to secondary treatment.

Treatment Processes

Raw wastewater (sewage) is sent to cell one to facilitate the breakdown of organic matter. From there the wastewater is transferred to cell two where detention time is used to continue the wastewater treatment process. Cell three is used as a polishing cell for wastewater treatment. Discharges typically occur from cell four. The facility is an intermittent discharger. This treatment process provides secondary treatment.

Outfall Description

The authorization to discharge provided under this permit is limited to those outfalls specifically designated below as discharge locations. Discharges at any location not authorized under a NDPDES permit is a violation of the Clean Water Act (CWA) and could subject the person(s) responsible for such discharge to penalties under section 309 of the CWA. Knowingly discharging from an unauthorized location or failing to report an unauthorized discharge within the specified timeframe outlined in this permit could subject such person(s) to criminal penalties as provided under the CWA.

Outfall 001. Active. Final.			
Latitude: 46.8232688903	Longitude: -101.8165359497	County: Morton	
Township: 139N	Range: 88W	Section: 29	QQ: CC
Receiving Stream: Big Muddy Creek		Classification: Class II	
Outfall Description: The treated effluent flows from the waste stabilization ponds to Big Muddy Creek, a Class II stream.			

PERMIT STATUS

The department issued the previous permit for this facility on July 1, 2017. The previous permit placed effluent limits on Biochemical Oxygen Demand (BOD₅), Total Suspended Solids (TSS), Ammonia as N, *E. coli*, and pH.

The department has been in contact with the City of Glen Ullin to obtain information to reissue this permit. The department received EPA form 2A application on November 19, 2021. The application was accepted by the department on November 19, 2021. Effluent sample data has been provided to the department through official laboratory reports, discharge monitoring reports, and the permit application.

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

The last non-sampling compliance inspection was conducted on June 5, 2019. The facility was found to be in compliance with the permit at the time of inspection. The department's assessment of the compliance is based on review of the facility's Discharge Monitoring Reports (DMRs) and inspections conducted by department staff.

Past Discharge Data

The concentration of pollutants in the discharge was reported in discharge monitoring report forms. According to department records, the city of Glen Ullin discharged once from July 1, 2017 through March 2022 for 7 days.

The effluent is characterized as shown in **Table 2**.

Table 2: City of Glen Ullin (July 2017-March 2022)					
Parameter	Units	Range	Average	Permit Limit	Number of Exceedances
<i>Effluent – Outfall 001</i>					
BOD5	mg/l	6	6	25 ^{30 day avg} 45 ^{7 day max}	0
TSS	mg/l	6	6	45 ^{30 day avg} 65 ^{7 day max}	0
pH	SU	9.08	NA	6.0 to 9.0	1
<i>E. coli</i>	#/100 ml	No data*	No data*	126 ^{30 day avg} 409 ^{daily max}	0
Ammonia as N	mg/l	0.100	0.100	WQS	0
Drain	MGAL	9.555	9.555	NA	NA
Notes:					
*The facility did not sample for <i>E. coli</i> for the one discharge that occurred.					

PROPOSED PERMIT LIMITS

Technology-Based Effluent Limits

The City of Glen Ullin is subject to the secondary treatment standards. Federal and state regulations define technology-based effluent limits for municipal wastewater treatment plants. These effluent limits are given in 40 CFR 133 and in NDAC Section 33.1-16-01-30. These regulations are performance standards that constitute all known, available, and reasonable methods of prevention, control, and treatment for municipal wastewater.

NDAC Section 33.1-16-01-30 incorporates by reference 40 CFR 133 which list the following technology-based limits for BOD₅, TSS, and pH:

Table 3: 40 CFR 133.102 Secondary Treatment Limits		
Parameter	30 Day Average	7 Day Average
BOD5	30 mg/l	45 mg/l
TSS	30 mg/l	45 mg/l
pH	Remain between 6.0 to 9.0	
Percent Removal	85% BOD ₅ and TSS	

The department acknowledges that 40 CFR 133 requires an 85% removal for BOD₅ and TSS. The percent removal rate in 40 CFR 133 is dependent upon the influent and effluent samples being taken at the approximate same time. Waste stabilization pond systems have a hydraulic residency time of greater than 30 days. Therefore, the influent and effluent samples are not representative of the same wastewater. The department has determined not to include the percent removal requirements in the proposed permit for Outfall 001 based on the infeasibility to determine percent removal.

NDAC 33.1-16-01-14 (3)(c)(1) allows for adjustment of the secondary treatment criteria to reflect site specific considerations. A five-day biochemical oxygen demand limit of twenty-five milligrams per liter (consecutive thirty-day average) may be applied in instances in which limits expressed in terms of secondary treatment standards would be impractical or deemed inappropriate to protect receiving waters.

40 CFR 133.105, Treatment equivalent to secondary treatment, allows states to adjust the maximum allowable BOD and TSS concentration for waste stabilization ponds to conform achievable TSS concentrations. To qualify for treatment equivalent to secondary treatment are those facilities whose biochemical oxygen demand (BOD) and suspended solid (SS) effluent concentrations are 1) consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of effluent quality in §133.102(a) and §133.102(b), 2) A trickling filter or waste stabilization pond is used as the principal process, and 3) whose treatment works provides significant biological treatment of municipal waste.

Parameter	30 Day Average	7 Day Average
BOD5	45 mg/l	65 mg/l
TSS	45 mg/l	65 mg/l
pH	Remain between 6.0 to 9.0	

Effluent Limitations

The following limitations are based on promulgated guidelines as outlined in the Code of Federal Regulations (40 CFR), the North Dakota Administrative Code (NDAC), the North Dakota Standards of Quality for Waters of the State (WQS) and Best Professional Judgment (BPJ), as determined by the North Dakota Department of Environmental Quality (department). The effluent limitations applied to each lagoon cell discharge reflect secondary treatment standards outlined in 40 CFR Part 133.102 and NDAC 33.1-16-14(3)(1).

The proposed effluent limitations shall take effect once the permit becomes active. Prior to discharging, a review of pre-discharge parameters must be made with the department. Sampling shall be performed before a discharge and weekly during the discharge. The effluent limitations and monitoring requirements are listed in **Table 5**.

Table 5: Effluent Limitations for Outfall 001				
Effluent Parameter	Average Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit	Basis ^a
BOD ₅ , mg/l	25	45	*	40 CFR 133.102(a) NDAC 33-16-01-14(3)(c)(1) Previous Permit
Total Suspended Solids (TSS), mg/l	45	65	*	40 CFR 133.105 (b) Previous Permit
pH, S.U. ^b	Shall remain between 6.0 to 9.0			WQS Previous Permit
<i>Escherichia coli</i> (<i>E. coli</i>) #/100 ml ^c	126	*	409	WQS Previous Permit
Ammonia as N	Refer to Table 6: Ammonia Effluent Limitations			WQS Previous Permit
Notes:				
*	This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.			
a.	<p>The basis of the effluent limitations is given below:</p> <p>“Previous Permit” refers to limitations in the previous permit. The NPDES regulations 40 CFR Part 122.44(1)(1) Reissued permits require that when a permit is renewed or reissued, interim limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards, or conditions in the previous permit unless the circumstances on which the previous permit was issued have materially and substantially changed since the previous permit was issued and would constitute cause for permit modification or revocation and reissuance under 40 CFR Part 122.62.</p> <p>“WQS” refers to effluent limitations based on the State of North Dakota’s “Standards of Quality for Waters of the State”, NDAC Chapter 33.1-16-02.1.</p> <p>“BPJ” refers to best professional judgment.</p>			
b.	The pH, an instantaneous limitation, shall be between 6.0 S.U. and 9.0 S.U. Any single analysis and/or measurement outside this limitation shall be considered a violation.			
c.	The limitation for <i>E. coli</i> shall be in effect for discharges which may occur from April 1 through October 31. Averages for <i>E. coli</i> shall be determined as a geometric mean.			
Stipulations:				
Best Management Practices (BMPs) are to be utilized so that there shall be no discharge of floating debris, oil, scum, and other floating materials in sufficient amounts to be unsightly or deleterious, or oil wastes that produce a visible sheen on the surface of the receiving water.				

Table 6: Ammonia Effluent Limitations Outfall 001			
Parameter	Effluent Limitations		
	Avg. Monthly Limit	Avg. Weekly Limit	Daily Maximum Limit
Ammonia 1/	†	*	‡
<p>1/ Calculations must be performed for each discharge sample. If an exceedance is detected on any single sample, the exceedance must be reported on the DMR.</p> <p>† Chronic Standard (Average Monthly Limit) The 30-day average concentration of total ammonia (expressed as N in mg/L) does not exceed, more often than once every three years on the average, the numerical value given by the following formula and the highest 4-day average concentration of total ammonia within the 30-day averaging period does not exceed 2.5 times the numerical value given by the following formula:</p> $0.8876 \times \left(\frac{0.0278}{1 + 10^{7.688 - pH}} + \frac{1.1994}{1 + 10^{pH - 7.688}} \right) \times (2.126 \times 10^{0.028 \times (20 - \text{MAX}(T, 7))})$ <p style="text-align: center;">Effluent a pH and Temperature is used for the calculation</p> <p>‡ Acute Standard (Daily Maximum Limit) The one-hour average concentration of total ammonia (expressed as N in mg/l) does not exceed, more often than once every three years on the average, the numerical value given by the following formula:</p> $0.7249 \times \left(\frac{0.0114}{1 + 10^{7.204 - pH}} + \frac{1.6181}{1 + 10^{pH - 7.204}} \right) \times \text{MIN}(51.93, 23.12 \times 10^{0.036 \times (20 - T)})$ <p style="text-align: center;">Effluent a pH and Temperature is used for the calculation</p>			
Stipulations			
The effluent limitation shall be met at end-of-pipe.			

SELF-MONITORING REQUIREMENTS

All effluent shall be sampled at a point following the treatment system but prior to entering waters of the state.

Table 7: Monitoring Requirements for Outfall 001.		
Effluent Parameter	Frequency	Sample Type ^a
BOD ₅ , mg/l ^b	Weekly	Grab
TSS, mg/l ^b	Weekly	Grab
<i>E. coli</i> , #/100 ml ^{b, c}	Weekly	Grab
pH, SU ^b	Weekly	Grab
Ammonia as N, mg/l	Weekly	Grab
Temperature, °C ^d	Weekly	Instantaneous
Flow, MGD ^e	Weekly	Calculated
Total Drain, MG ^e	Per Event	Calculated
Notes:		
a.	Refer to Appendix B for definitions.	
b.	Sampling shall consist of one (1) grab sample to be taken and analyzed prior to any discharge. This analysis shall be reported to the department and used for the first week of discharge. In addition, one (1) grab sample of the actual discharge shall be taken and analyzed on a weekly basis for the duration of the discharge.	
c.	The monitoring requirements for <i>E. coli</i> shall be in effect for discharges which may occur from April 1 through October 31.	
d.	Shall be measure the same day as the effluent sample is collected. Temperature shall be measured in the field.	
e.	The total amount of water discharge shall be determined either by using a flow-measuring device or by recording the water level drop in the pond.	

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

The North Dakota State Water Quality Standards (NDAC Chapter 33.1-16-02.1) are designed to protect existing water quality and preserve the beneficial uses of North Dakota's surface waters. Wastewater discharge permits must include conditions that ensure the discharge will meet the surface water quality standards. Water quality-based effluent limits may be based on an individual waste load allocation or on a waste load allocation developed during a basin wide total maximum daily load (TMDL) study. TMDLs result from a scientific study of the water body and are developed in order to reduce pollution from all sources.

The receiving stream is not listed in the North Dakota 2018 Integrated Section 305(b) Water Quality Assessment Report and Section 303(d) List of Waters Needing Total Maximum Daily Loads as impaired or as needing a TMDL.

The Big Muddy Creek is a Class II stream. Under NDAC 33.1-16-02.1-09(d), the quality of waters in this class shall be the same as the quality of class I streams, except that additional treatment may be required to meet the drinking water requirements of the department. Streams in this classification may be intermittent in nature which would make these waters of limited value for beneficial uses such as municipal water, fish life, irrigation, bathing or swimming.

Numerical Criteria for the Protection of Aquatic Life and Recreation

Numerical water quality criteria for the protection of aquatic life and recreation are listed in the water quality standards for surface waters (NDAC Chapter 33.1-16-02.1). They specify the maximum levels of pollutants allowed in receiving water to protect aquatic life and recreation in and on the water. The department uses numerical criteria along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limits, the discharge must meet the water quality-based limits.

Numerical Criteria for the Protection of Human Health

The U.S. EPA has published numeric water quality criteria for the protection of human health that are applicable to dischargers. These criteria are designed to protect humans from exposure to pollutants linked to cancer and other diseases, based on consuming fish and shellfish and drinking contaminated surface waters. The Water Quality Standards also include radionuclide criteria to protect humans from the effects of radioactive substances.

Narrative Criteria

Narrative water quality criteria (NDAC Section 33.1-16-02.1-08) limit concentrations of pollutants from exceeding applicable standards of the receiving waters. The department adopted a narrative biological goal solely to provide an additional assessment method that can be used to identify impaired surface waters.

Antidegradation

The purpose of North Dakota's Antidegradation Policy (NDAC Chapter 33.1-16-02(Appendix IV)) is to:

- Provide all waters of the state one of three levels of antidegradation protection.
- Determine whether authorizing the proposed regulated activity is consistent with antidegradation requirements.

The department's fact sheet demonstrates that the existing and designated uses of the receiving water will be protected under the conditions of the proposed permit.

Mixing Zones

The department's WQS contain a Mixing Zone and Dilution Policy and Implementation Procedure, NDAC Chapter 33.1-16-02.1 (Appendix III). This policy addresses how mixing and dilution of point source discharges with receiving waters will be addressed in developing chemical-specific and whole effluent toxicity discharge limitations for point source discharges. Depending upon site-specific mixing patterns and environmental concerns, some pollutants/criteria may be allowed a mixing zone or dilution while others may not. In all cases, mixing zone and dilution allowances shall be limited, as necessary, to protect the integrity of the receiving water's ecosystem and designated uses.

EVALUATION OF SURFACE WATER QUALITY-BASED EFFLUENT LIMITS FOR NUMERIC CRITERIA

BOD₅

The department has reviewed the BOD₅ data and the sampling frequency. No exceedances occurred for this parameter during the current permit. The department proposes to continue with 25 mg/l as an average monthly limit, and 45 mg/l as an average weekly limit, with a sampling frequency of weekly.

TSS

The current permit contains effluent limitations equivalent to secondary treatment standards for TSS. This determination is based on past performance of the treatment works through proper operation and maintenance.

Secondary treatment standards described in 40 CFR 133.102 must be achieved except as provided in § 133.105. This section (§ 133.105) describes the minimum level of effluent quality for facilities eligible for treatment equivalent to secondary treatment. Facilities eligible for treatment equivalent to secondary treatment are those facilities whose biochemical oxygen demand (BOD) and suspended solid (SS) effluent concentrations are 1) consistently achievable through proper operation and maintenance of the treatment works exceed the minimum level of effluent quality in §133.102(a) and §133.102(b), 2) A trickling filter or waste stabilization pond is used as the principal process, and 3) whose treatment works provides significant biological treatment of municipal waste.

For BOD and SS, effluent concentrations consistently achievable through proper operation and maintenance (§§133.101(f)) are: 1) the 95th-percentile value of the 30-day average concentrations achieved by the treatment works in a period of at least two years excluding values attributable to upsets, bypasses, operational errors, or other unusual conditions, and 2) a 7-day average equal to 1.5 times the 95th-percentile value of the 30-day average.

Effluent data collected from July 2002 to March 2022 was reviewed. During that time frame, eight (8) discharges occurred. The department determined the 30-day average 95th percentile to be 61 mg/l and the 7-day average calculation (1.5 X 61) to be 91.5 mg/l (**Appendix C**). Under § 133.102(b), the 30-day average for SS is 30 mg/l and the 7-day average is 45 mg/l. Based upon the calculations of 61 mg/l (30-day average) and 91.5 mg/l (7-day average), the facility meets the requirement of effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceeding the minimum level of effluent quality set forth in §§ 133.102(b). The facility also meets the second requirement of waste stabilization ponds being the principal treatment process.

The department has determined that the significant biological treatment requirement is not applicable due to it requiring 65% removal of BOD and the department only reviewed TSS. Furthermore, the percent removal rate is dependent upon the influent and effluent samples being taken at the approximate same time. Waste stabilization pond systems have a hydraulic residency time of greater than 30 days. Therefore, the influent and effluent samples are not representative of the same wastewater.

Based on the above information the facility meets the requirements for treatment equivalent to secondary treatment. The department proposes to continue the TSS limitations equivalent to secondary treatment as provided in §§133.105(b). The proposed limitations are 45 mg/L for a 30-day average and 65 mg/L for a 7-day average, with a sample frequency of weekly. The department will re-evaluate whether the facility can be allowed the equivalent limitations during the next permit renewal.

pH

Based on the WQS, Class II streams shall have a pH between 6.0 s.u. and 9.0 s.u. The department has reviewed the pH data and sampling frequency, and one exceedance occurred for this parameter during the current permit. The department proposes to continue with the limitation of shall remain between 6.0 s.u. and 9.0 s.u. with a sampling frequency of weekly.

E. coli

The limitation for *E. coli* shall be not to exceed 126 organisms per 100 ml as a geometric mean of representative samples collected during any 30-day consecutive period. For assessment purposes, the 30-day consecutive period shall follow the calendar month. This standard shall apply only during the recreation season April 1 to October 31.

Although, the facility did discharge during the previous permit cycle, *E. coli* was not sampled for. Therefore, the department does not have any data to review. The department proposes to continue with a limit of 126 organisms per 100 ml as a monthly geometric mean and 409 organisms per 100 ml as a daily maximum limit, with a sampling frequency of weekly.

Ammonia as Nitrogen

According to department records, this facility has discharged during the previous permit cycle. No permit limitation exceedance occurred. The department proposes to continue the current permit limitation for this parameter based on NDAC 33.1-16-02.1.

Ammonia presents both acute and chronic toxicity to aquatic life at variable levels depending on in stream conditions (pH, temperature, and ammonia). Federal regulations (40 CFR 122.44) require the department to place limits in NDPDES permits on pollutants in an effluent whenever there is a reasonable potential for those pollutants to cause an excursion of the surface water quality criteria. The department conducted a reasonable potential analysis for this parameter and determined that there was reasonable potential to cause an excursion of the WQS (**Appendix C**).

The permittee will need to comply with the ammonia as N water quality standard at the end-of-pipe. The department and the permittee will verify compliance with the state water quality standard using an ammonia spreadsheet. Any ammonia as N effluent values exceeding the applicable ammonia as N calculation shall be reported on the DMR submitted to the department. It is the intent of the department to ensure that state water quality standards are not violated, and the permittee optimizes the efficiency of its treatment facility.

The department proposes that using the 4-day chronic standard over the 30-day average standard is appropriate for determining compliance. This facility usually discharges for less than seven days and is a controlled discharger and thus a 30-day average was deemed impracticable.

Human Health

North Dakota's water quality standards include numeric human health-based criteria that the department must consider when writing NDPDES permits. These criteria were established in 1992 by the U.S. EPA in its National Toxics Rule (40 CFR 131.36). The National Toxics Rule allows states to use mixing zones to evaluate whether discharges comply with human health criteria. The department determined the applicant's discharge is unlikely to contain chemicals regulated to protect human health. The department will re-evaluate this discharge for impacts to human health at the next permit reissuance.

Biosolids

Currently the department does not have the authority to regulate biosolids. Therefore, the permittee is required under the Direct Enforceability provision of 40 CFR §503.3(b) to meet the applicable requirements of the regulation.

Monitoring Requirements

The department requires monitoring, recording, and reporting (NDAC Chapter 33.1-16-01-(21 through 23) and 40 CFR 122.41) to verify that the treatment process is functioning correctly and that the discharge complies with the permit's limits.

The permittee must notify the department prior to any discharge. Approximately two weeks prior to a planned discharge, a representative pre-discharge grab sample must be collected from the settling basin and analyzed for the parameters listed in Table 3. The pre-discharge sample results must be provided when notifying the department of a planned discharge.

The permittee shall collect one grab sample of the discharge every calendar week and have it analyzed while discharging.

Test Procedures

The collection and transportation of all samples shall conform to EPA preservation techniques and holding times. All laboratory tests shall be performed by a North Dakota certified laboratory in conformance with test procedures pursuant to 40 CFR 136, unless other test procedures have been specified or approved by EPA as an alternate test procedure under 40 CFR 136.5. The method of determining the total amount of water discharged shall provide results within 10 percent of the actual amount.

OTHER PERMIT CONDITIONS

Beneficial Reuses

Wastewater that has met secondary or tertiary treatment standards may be beneficially reused in lieu of discharging. The proposed permit contains conditions for the beneficial reuse of wastewater for irrigation, construction, and oil and gas production.

PERMIT ISSUANCE PROCEDURES

Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause. This includes the establishment of limitations or prohibitions based on changes to Water Quality Standards, the development and approval of waste load allocation plans, the development or revision to water quality management plans, changes in sewage sludge practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or sewage sludges. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

Proposed Permit Issuance

This proposed permit meets all statutory requirements for the department to authorize a wastewater discharge. The permit includes limits and conditions to protect human health and aquatic life, and the beneficial uses of waters of the State of North Dakota. The department proposes to issue this permit for a term of five (5) years.

DRAFT

APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to reissue a permit to the **City of Glen Ullin**. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and the department's reasons for requiring permit conditions.

The department will place a Public Notice of Draft on **May 17, 2022**, in the **Bismarck Tribune** to inform the public and to invite comment on the proposed draft North Dakota Pollutant Discharge Elimination System permit and fact sheet.

The Notice –

- Indicates where copies of the draft Permit and Fact Sheet are available for public evaluation.
- Offers to provide assistance to accommodate special needs.
- Urges individuals to submit their comments before the end of the comment period.
- Informs the public that if there is significant interest, a public hearing will be scheduled.

You may obtain further information from the department by telephone, 701.328.5210, or by writing to the address listed below.

North Dakota Department of Environmental Quality
Division of Water Quality
4201 Normandy Street
Bismarck, ND 58503

The primary author of this permit and fact sheet is Patrick Schuett.

**North Dakota Department of Environmental Quality Public Notice
Reissue of an NDPDES Permit**

Public Notice Date: 5/17/2022 Public Notice Number: ND-2022-006

Purpose of Public Notice

The Department intends to reissue the following North Dakota Pollutant Discharge Elimination System (NDPDES) Discharge Permit under the authority of Section 61-28-04 of the North Dakota Century Code.

Permit Information

Application Date: 11/19/2021 Application Number: ND0020729

Applicant Name: Glen Ullin City Of
Mailing Address: PO Box 70, Glen Ullin, ND 58631-0070
Telephone Number: 701.348.3683

Proposed Permit Expiration Date: 6/30/2027

Facility Description

The reapplication is for four waste stabilization ponds which service the City of Glen Ullin. The discharge facility is located in the SW1/4, SW1/4, Section 29, Township 139 North, Range 88 West. Any discharge would be to Big Muddy Creek, a Class II stream via outfall 001.

Tentative Determinations

Proposed effluent limitations and other permit conditions have been made by the Department. They assure that State Water Quality Standards and applicable provisions of the FWPCA will be protected.

Information Requests and Public Comments

Copies of the application, draft permit, and related documents are available for review. For further information on making public comments/public comment tips please visit: <https://deq.nd.gov/PublicCommentTips.aspx>. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 4201 Normandy Street, Bismarck ND 58503-1324 or by calling 701.328.5210.

All comments received by June 18, 2022 will be considered prior to finalizing the permit. If there is significant interest, a public hearing will be scheduled. Otherwise, the Department will issue the final permit within sixty (60) days of this notice. If you require special facilities or assistance relating to a disability, call TDD at 1.800.366.6868.

APPENDIX B – DEFINITIONS

DEFINITIONS Standard Permit BP 2019.05.29

1. **“Act”** means the Clean Water Act.
2. **“Average monthly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar month, calculated as the sum of all “daily discharges” measured during a calendar month divided by the number of “daily discharges” measured during that month.
3. **“Average weekly discharge limitation”** means the highest allowable average of “daily discharges” over a calendar week, calculated as the sum of all “daily discharges” measured during a calendar week divided by the number of “daily discharges” measured during that week.
4. **“Best management practices”** (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
5. **“Bypass”** means the intentional diversion of waste streams from any portion of a treatment facility.
6. **“Composite”** sample means a combination of at least 4 discrete sample aliquots, collected over periodic intervals from the same location, during the operating hours of a facility not to exceed a 24 hour period. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of Standard Methods for the Examination of Water and Wastewater.
7. **“Daily discharge”** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the “daily discharge” is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the “daily discharge” is calculated as the average measurement of the pollutant over the day.
8. **“Department”** means the North Dakota Department of Environmental Quality, Division of Water Quality.
9. **“DMR”** means discharge monitoring report.
10. **“EPA”** means the United States Environmental Protection Agency.
11. **“Geometric mean”** means the n^{th} root of a product of n factors, or the antilogarithm of the arithmetic mean of the logarithms of the individual sample values.
12. **“Grab”** for monitoring requirements, means a single "dip and take" sample collected at a representative point in the discharge stream.

13. “**Instantaneous**” for monitoring requirements, means a single reading, observation, or measurement. If more than one sample is taken during any calendar day, each result obtained shall be considered.

14. “**Maximum daily discharge limitation**” means the highest allowable “daily discharge.”

15. “**Salmonid**” means of, belonging to, or characteristic of the family Salmonidae, which includes the salmon, trout, and whitefish.

16. “**Sanitary Sewer Overflows (SSO)**” means untreated or partially treated sewage overflows from a sanitary sewer collection system.

17. “**Severe property damage**” means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

18. “**Total drain**” means the total volume of effluent discharged.

19. “**Upset**” means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

APPENDIX C – DATA AND TECHNICAL CALCULATIONS

DFLOW

USGS gage station 06347500 on the Big Muddy Creek was used to determine critical low flows using the USGS SW Toolbox. Data used for these calculations ranged from April 01, 1946, through March 31, 2021.

RESULTS: USGS 06347500 BIG MUDDY CREEK NEAR ALMONT, ND

File Edit View Help

All available years of data are included in analysis. Display Options: 06347500 Copy to Clipboard

Climatic year defined as Apr 1 - Mar 31.

Seasonal Calculation?	No		
Season Or Year Start	1-Apr		
Season Or Year End	31-Mar		
Years Included in Calculations	1946~2021		
Start	1946		
End	2021		
Flow Statistic	Flow Value	Percentile	x-day avg. Excur. per 3 yr.
1B3	NaN	0.00%	0
4B3	NaN	0.00%	0
30B3	0.42854	8.06%	0.92
30B10	0.10811	3.09%	0.28
Flow Statistic	Flow Value	Percentile	1-day Excur. per 3 yr.
1Q10	0	0.00%	0.2
7Q10	0	0.00%	0.2
Harmonic Mean	1.3166	27.90%	N/A
Harmonic Mean, Adjusted	0.74654	14.81%	N/A

Double-click on biological flow value (xBy column) to view excursion analysis result for a gage

Reasonable Potential Analysis

The department utilized the available data from USGS gage station 06347500 (02/20/1991 - 10/21/2021). The department utilized the 90th percentile of the receiving stream temperature, pH and ammonia to determine the 1-hour acute and 4-day chronic ammonia water quality standard.

FACT SHEET FOR NDPDES PERMIT ND0020729

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Flow Variable				Calculated Effluent Ammonia Concentrations in mg/l		Estimated		
Discharger:	Glen Ullin, City of		Enter the upstream ammonia in mg/l:		90th %	0.17		
Stream:	Big Muddy Creek		Enter the receiving stream pH:		No	8.60		
Enter receiving stream flow (CFS):		0	Enter the receiving stream temperature in Deg 74 F		Yes	23.60		
Mixing Zone Percentage/CFS:	10%	0.0	Enter the effluent drain rate (MGD):		Yes			
Enter increments to calculate stream flow:				Enter increments to calculate drain rate:		0.1		
					Mixing Zone Dilution Rate:	#DIV/0!		
					Overall Dilution Rate:	#DIV/0!		
Maximum allowable ammonia in mg/l								
Water Quality Standard:		0.9135	Water Quality Standard:		0.5821	Water Quality Standard:		0.2328
Intermittent 1hr Acute		Intermittent 4 Day Chronic		Continuous 30 Day Chronic				

The department determined that the 1-hour Acute WQS to be 0.9 mg/l and the 4-day chronic to be 0.6 mg/l. These values were utilized for the acute and chronic WQS in the reasonable potential analysis.

Ammonia

The reasonable potential determination for ammonia is provided below. The determination is conducted utilizing the Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991 (TSD; March 1991). The department utilized ammonia data from DMRs submitted to the department from July 01, 2002, through March 31, 2022. The coefficient of variation used was the default of 0.6 and n=7.

**Receiving Water Concentration (RWC)
 Reasonable Potential (RP)
 Determination**

Technical Support Document (TSD) For Water Quality-based Toxics Control
 EPA/505/2-90-001; March 1991

Facility Name:	Glen Ullin	Receiving Stream:	Big Muddy Creek
NDPDES Permit:	ND0020729	1Q10 Acute	0 cfs
Daily Maximum Flow (mgd):	1.90	1B3 Acute	0 cfs
Daily Average Flow (mgd):	1.44	7Q10 Chronic	0 cfs
Stream Design Mixing:	10.0%	30B10 Chronic	0.1 cfs
Statistical Multiplier:	2.0		
Upstream Concentration:	0.1700	mg/l	Parameter:
Effluent Concentration (max):	3.5400	mg/l	Ammonia
			Outfall:
			001
RWC	$\frac{(StatQ_eC_e)+(C_s(pmf)Q_s)}{Q_e+(pmf)Q_s}$		

RWC = Receiving water concentration, the resultant magnitude of concentration in the receiving water after effluent discharge concentration (also known as the in-stream waste concentration)
 Stat = Statistical multiplier for effluent parameter (Table 3-1 and 3-2; page 57 of the TSD)
 Q_e = Effluent Design Flow
 C_e = Highest effluent concentration reported.
 pmf = Partial mix factor, percent of Q_s allowed for mixing by State authority.
 Q_s = Receiving Water Flow (1Q10 or 1B3 for acute and 7Q10 or 4B3 for chronic)
 C_s = Background concentration of the receiving water.

Q _e - Acute	1.90	mgd	Q _s - 1Q10	0.00	mgd
Q _e - Chronic	1.44	mgd	Q _s - 1B3	0.00	mgd
C _e	3.5400	mg/l	Q _s - 7Q10	0.00	mgd
C _s	0.1700	mg/l	Q _s - 30B10	0.06	mgd
Stat	2.00				
pmf	10.0%				

Acute RP			Chronic RP		
RWC - 1Q10	7.0800	mg/l	RWC - 7Q10	7.0800	mg/l
RWC - 1B3	7.0800	mg/l	RWC - 30B10	7.0491	mg/l
Criterion Maximum Concentration (CMC)			Criterion Continuous Concentration (CCC)		
Acute Criterion	0.9	mg/l	Chronic Criterion	0.6000	mg/l

If the calculated RWC is greater than its respective criterion then there is RP and if RWC is less than the criterion then there is no RP.

CMC RP Present:		CCC RP Present:	
1Q10 Acute OR	YES	7Q10 Chronic OR	YES
1B3 Acute	YES	30B10 Chronic	YES

The North Dakota State Water Quality Standards (WQS) Chapter 33-16-02.1 use biologically based design and harmonic mean flows to determine Water Quality Based Effluent Limits (WQBELs) and Whole Effluent Toxicity (WET) limits.

The analysis shows that there is a reasonable potential for the discharge to cause an exceedance of the WQS for ammonia. Due to the critical low flow being 0.1 cfs, the department has determined that the ammonia limitation shall be met at the end-of-pipe.

Determination for Eligibility for treatment equivalent to secondary treatment

The department determined the 95th percentile of the TSS DMR data from July 01, 2002, through March 31, 2022. There were eight (8) data points for the twenty (20) year period. Below is the calculation which was performed using an Excel spreadsheet.

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TSS	95th Percentile of 30-day Avg	7-day Determination
5	61	91.5
6		
10		
13		
24		
34		
35		
75		

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APPENDIX D – RESPONSE TO COMMENTS

Any comments received by the department during the public comment period will be addressed here.

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