

North Dakota Department of Environmental Quality Public Notice Issue of an NDPDES Permit

Public Notice Date: 3/23/2020

Purpose of Public Notice

The Department intends to issue 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

Public Notice Number: ND-2020-012

Application Date: 4/5/2019 Application Number: ND0026964

Applicant Name: Red River Valley Water Supply Project

Mailing Address: PO Box 140, Carrington, ND 58421

Telephone Number: 800.532.0074

Proposed Permit Expiration Date: 6/30/2025

Facility Description

The application is for a water supply project that will pump water from the Missouri River to eastern and central North Dakota; primarily in the event of severe drought conditions. The Missouri River intake will be located in the NE1/4, SW1/4, Section 5, Township 143N, Range 83W southeast of Washburn, ND. The water treatment plant will be located in the SW1/4, NW1/4, Section 3, Township 143N, Range 83W southeast of Washburn, ND. The transmission pipeline extends from the Missouri River intake to the Sheyenne River, a Class IA stream, southeast of Cooperstown, ND. Treated water will discharge from the Sheyenne River outfall which will be located in the NW1/4, NE1/4, Section 22, Township 145N, Range 58W. Water that does not meet treatment targets will be diverted to one of two discharge points. One point will be located in the SW1/4, NW1/4, Section 3, Township 143N, Range 83W southeast of Washburn, ND and discharge to Painted Woods Creek, a Class III stream. The other point will be located in the SE1/4, SE1/4, Section 2, Township 145N, Range 64W east of Carrington, ND and discharge to the James River, a Class IA stream.

MEETING PURPOSE AND LOCATION

UPDATE:

The North Dakota Department of Environmental Quality had scheduled a public hearing for the proposed Red River Valley Water Supply Project. This public hearing was to be held May 12, 2020 at 1:00 p.m. at the North Dakota State University Memorial Union. The public hearing will now be held remotely due to COVID-19.

The public hearing is still scheduled for May 12, 2020 at 1:00 p.m., however the public hearing will now be held via telephone. Instructions for this meeting will be available no later than May 6, 2020 on the department's website <https://deq.nd.gov> or by contacting the department.

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.

Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by May 21, 2020 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.

**FACT SHEET FOR NDPDES PERMIT
ND-0026964**

RED RIVER VALLEY WATER SUPPLY PROJECT

DATE OF THIS FACT SHEET – MARCH 2019

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 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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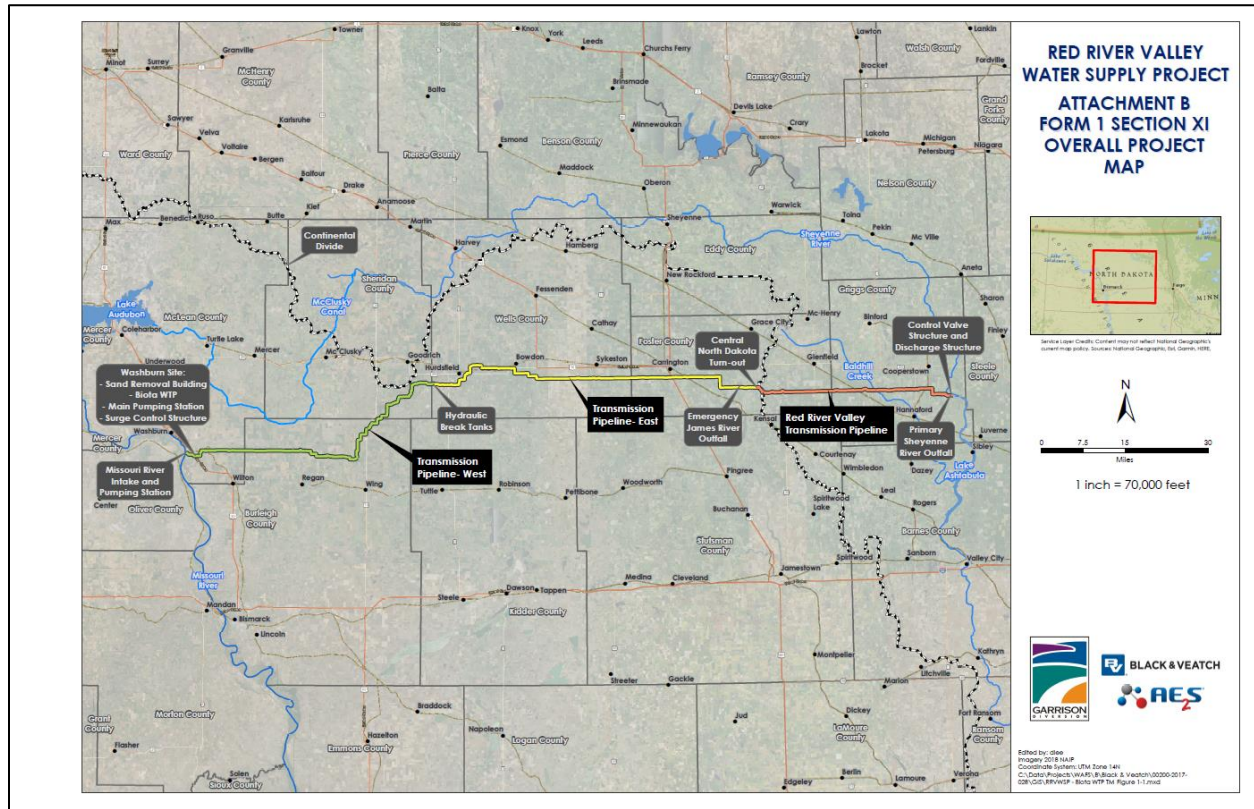
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BACKGROUND INFORMATION

Table 1 – General Facility Information

Applicant:	Garrison Diversion Conservancy District
Facility Name and Address:	Red River Valley Water Supply Project PO Box 140, Carrington, ND 58421
Permit Number:	ND-0026964
Permit Type:	Minor, Permit Issuance
Type of Treatment:	Screening, Sand/Grit Removal, Disinfection (Chlorine), Dechlorination, Discharge to Surface Water, Landfill
SIC Code:	4941 – Water Supply
Discharge Location:	001: Sheyenne River, Class IA stream Latitude: 47.36667 Longitude: -98.03750 002: James River, Class IA stream Latitude: 47.40000 Longitude: -98.79583 003: Painted Woods Creek, Class III stream Latitude: 47.22944 Longitude: -100.92694
Hydrologic Code:	09020203 – Middle Sheyenne 10160001 – James River Headwaters 10130101 – Painted Woods-Square Butte

Figure 1: Project Map, Red River Valley Water Supply Project (NDPDES Permit Application, 2019)



FACILITY DESCRIPTION

The Red River Valley Water Supply Project (RRVWSP) is a supplemental water supply project that will pump water from the Missouri River to eastern and central North Dakota; primarily in the event of severe drought conditions. The RRVWSP also would provide water to industries and augment natural stream flow during severe droughts. The RRVWSP will be operated and maintained by the Garrison Diversion Conservancy District. This proposed facility is not projected to be in operation before 2029.

Water will be taken from the Missouri River, treated, and sent 167 miles through a 72-inch diameter pipeline to the Sheyenne River near Cooperstown, ND. Water that does not meet turbidity requirements will be discharged to Painted Woods Creek east of Washburn, ND. Water that does not meet disinfection requirements will be discharged to the James River east of Carrington, ND. When in use, the project will have an average discharge rate of 145 cubic feet per second (cfs), with a maximum discharge rate of 165 cfs. When not in use, the project will maintain a base flow rate of 4 cfs.

Raw water will enter the system through a conventional intake structure in the Missouri River, approximately six miles south of Washburn, ND. The passive intake structure includes screens that exclude material and aquatic organisms from entering the pumps and piping. The screen

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opening sizes are approximately 0.125 inches (3 millimeters or 3,000 microns) and have a maximum design flow inlet velocity of 0.25 feet per second. The top of the screens will be submerged a minimum of 4 feet below the average water surface elevation. The screen cleaning system will either backflush or wipe debris off the screen face and back into the river.

Screened water flows 1,500 feet to the Missouri River Pumping Station and is then pumped to the Washburn Site. The Washburn Site contains the Sand/Grit Removal Building, Biota Water Treatment Plant (WTP), Main Pumping Station, and Surge Control Structure.

Sand/grit removal will be the first treatment process at the Washburn Site. The process is designed to remove 95 percent of all sand/grit greater than or equal to 100 microns at peak flow based on a specific gravity of 2.1 or higher. Aquatic species similar in size and density also would be removed. Material that is removed will be passively dried in drying beds or mechanically dewatered before disposal. Clarified water created during the dewatering process is cycled back to the headworks of the Biota Water Treatment Plant. Dried residuals that are removed during the process will be disposed in an inert landfill within the Missouri River Basin.

Following sand/grit removal, treated supply water passes through chlorine disinfection. A serpentine-style disinfection contact basin (DCB) in conjunction with the 72-inch conveyance pipeline will be used to provide the necessary chlorine contact time needed for chlorine disinfection. When flows are below 25 cfs, disinfection occurs in the DCB. For flows higher than 25 cfs, a portion of the 72-inch conveyance pipeline (7 miles at a maximum) is used along with the DCB to provide the required disinfection. Disinfection compliance will be computed automatically by measurement of the water temperature, residual chlorine, pH, and the flow in the system.

The RR/VWSP is designed to provide disinfection equivalent to 3-log inactivation of *Giardia lamblia* (*Giardia*) and 4-log inactivation of viruses. Log inactivation is used as a measurement of the disinfection capability of a treatment system. For example, 3-log inactivation of *Giardia* means that 99.9 percent of the *Giardia* present in the water would be inactivated at the end of treatment, and 4-log inactivation of viruses means that 99.99 percent of viruses would be inactivated. Inactivation requirements of other organisms are compared to the log inactivation capabilities of the treatment system to determine if these organisms will be inactivated by the system.

After the addition of chlorine, treated supply water is pumped from the Main Pumping Station to the Hydraulic Break Tanks (HBTs) near Hurdsfield, ND. The HBTs provide a point where pumped water switches to gravity flow. Water from the HBTs gravity flows to the Control Valve Structure (CVS) located southeast of Cooperstown, ND. The CVS provides flow rate control and reduces the pressure of the flowing water. A chlorine residual will be carried from the HBTs to the CVS. From the CVS, water then flows to the Pipeline Discharge Infrastructure where the energy of the water is dispersed before ultimately discharging to the Sheyenne River southeast of Cooperstown, ND.

Dechlorination occurs naturally as treated water flows through the pipeline to the point of discharge. It is likely that some residual chlorine may be present at the point of discharge without further treatment. Sodium bisulfite will be added at the CVS to remove residual chlorine prior to treated supply water reaching the discharge structure and outfall to the Sheyenne River.

Treated water flowing through the 167-mile long, 72-inch diameter pipeline will have a low dissolved oxygen (DO) concentration by the time it reaches the end of the pipeline due to a long residence time within the pipeline (e.g., 1.7 days at 165 cfs, 72 days at 4 cfs). Reoxygenation of the treated water will occur as water exits the control weir of the CVS. Additional reoxygenation will occur as treated water passes through the energy dissipation structure at the Sheyenne River discharge.

The RRVWSP will maintain a minimum chlorine residual of 3 mg/L at the Main Pumping Station for flows up to 25 cfs, and to a location seven miles from the Main Pumping Station for flows greater than 25 cfs.

The RRVWSP will include continuous water quality monitoring for turbidity, residual chlorine, water temperature, pH, and flow rate. Analyzers will be placed throughout the system. Outputs and measurements will be displayed locally and connected to the RRVWSP Supervisory Control and Data Acquisition (SCADA) system. Periodic grab samples will be collected for quality control, and analyzer maintenance and calibration. Pumping units and mainline isolation valves also will be controlled using the SCADA system.

In addition to physical and chemical treatment, the RRVWSP will incorporate an operational strategy. The RRVWSP will not be operated when turbidity exceeds 10 Nephelometric Turbidity Units (NTU) downstream of the sand/grit removal process.

The RRVWSP has two diversion points used to discharge supply water that does not meet treatment targets. The first diversion discharge point is at the Biota WTP. If treated water turbidity at the Biota WTP exceeds 10 NTU, the water will be dechlorinated and evacuated from the Biota WTP basins and piping. The water will be directed back to the Missouri River via an unnamed tributary of Painted Woods Creek. Any discharge from this diversion point must meet the effluent limitations of the proposed permit.

The second diversion discharge point is at the point the RRVWSP crosses the James River in the Missouri River Basin. If treated water does not meet disinfection targets by the time it reaches the HBTs, the water will be dechlorinated and the pipeline will be flushed. Any discharge from this diversion point also must meet the effluent limitation in the proposed permit.

Flows from the two diversion points could range from 4 cfs to 165 cfs depending on the type of flow through the RRVWSP at the time treatment targets could not be met.

Inspection, operation and maintenance, and capital replacement plans will be developed for the RRVWSP to minimize the potential for facility degradation and breakdowns. In addition, an Asset Management Plan will be developed that will catalog all assets along with their maintenance requirements, maintenance schedule, and life expectancy. A Capital Improvement Plan also will be developed and updated periodically to identify assets that are nearing their life expectancy and require replacement or refurbishment.

The RRVWSP's application states that the facility will be equipped with controls, contingency plans, and emergency response procedures prior to start up to ensure only properly treated water is conveyed from the Missouri River Basin to the Hudson Bay Basin. The RRVWSP's application discusses how to manage water that is not properly treated. As stated previously,

these controls include shutting down the system when treated water turbidity exceeds 10 NTU and diverting water before it crosses the continental divide.

Discharge Outfall

There are three active discharge outfalls associated with the facility. The description of the outfalls is provided below:

Outfall 001. Active. Final.			
Latitude: 47.36667	Longitude: -98.03750	County: Griggs	
Township: 145N	Range: 58W	Section: 22	QQ: ABC
Receiving Stream: Sheyenne River		Classification: Class IA	
Outfall Description: Only treated supply water that meets permit limits will be discharged at this outfall. All discharges will flow through an energy dissipation device before entering the Sheyenne River.			

Outfall 002. Active. Final.			
Latitude: 47.40000	Longitude: -98.79583	County: Foster	
Township: 145N	Range: 64W	Section: 2	QQ: CCC
Receiving Stream: James River		Classification: Class IA	
Outfall Description: This outfall will divert all water that does not meet permit specifications before reaching the Hydraulic Break Tanks. The discharge is to the James River which is in the Missouri River Basin and does not cross the continental divide.			

Outfall 003. Active. Final.			
Latitude: 47.22944	Longitude: -100.92694	County: McLean	
Township: 143N	Range: 81W	Section: 3	QQ: DCC
Receiving Stream: Painted Woods Creek		Classification: Class III	
Outfall Description: Discharges from this outfall only occur when the supply water exceeds 10 nephelometric turbidity units (NTUs) at the Biota Water Treatment Plant located near Washburn.			

PERMIT STATUS

The Red River Valley Water Supply Project – Sheyenne River Discharge is a new minor facility. This is the first proposed issuance of this permit. The proposed permit has effluent monitoring requirements for total suspended solids (TSS), pH, total residual chlorine (TRC), and special monitoring and reporting conditions for aquatic invasive species. The permit will expire on June 30, 2025.

SUMMARY OF COMPLIANCE WITH PREVIOUS PERMIT ISSUED

This is the first issuance of this proposed permit. No past discharge data is available.

PROPOSED PERMIT LIMITS

EFFLUENT LIMITATIONS

Discharges from water supply facilities are not regulated by national effluent guidelines. In the absence of a federal standard, limitations may be generated using Best Professional Judgment (BPJ) to ensure reasonable control technologies are used to prevent potential harmful effects of the discharge. In addition, the department must consider and include limitations necessary to protect water quality standards applicable to the receiving waters.

Using BPJ, the department determined that a daily maximum limitation of 90 mg/L for TSS is appropriate for this type of facility. Other facilities that treat and distribute water have similar limitations.

The department determined that a Daily Maximum limitation of 0.019 mg/L and 30 Consecutive Day Average limitation of 0.011 mg/L for TRC is appropriate for this type of facility. The limitations are based on the acute and chronic standards found in the Standards of Quality for Waters of the State (WQS) located at North Dakota Administrative Code (NDAC) chapter 33.1-16-02.1. The department included a footnote in the proposed permit requiring the method used to analyze TRC to have an equivalent or lower method detection limit than EPA Method 4500-CI G, Spectrophotometric, DPD. The method, found in 40 CFR 136.3, Table 1B, has a lower detection limit of at least 0.05 mg/L. Because the analytical reliability of TRC detection decreases as lower detection limits decrease, the department determined that the minimum detection limit of analytical reliability for TRC is 0.05 mg/L. Any concentration less than 0.05 mg/L will be considered in compliance with the permit. Other facilities that analyze for TRC have similar minimum detection limits.

The proposed effluent limitations shall take effect once the proposed permit becomes effective. The effluent limitations and the basis for the limitations are provided in Table 2.

Table 2: Comparison of Effluent Limits for Outfalls 001, 002 and 003

Effluent Parameter	Average Monthly	Daily Maximum	Basis ^a
Total Suspended Solids (TSS)	*	90 mg/L	BPJ
Chlorine, Total Residual (TRC) ^{b,c}	0.011 mg/L	0.019 mg/L	BPJ, WQS
pH	**		BPJ, WQS
The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.			BPJ, WQS
The facility shall maintain in effective and good working order all treatment systems, controls, contingency plans, and response procedures to ensure aquatic invasive species are not discharged from the Missouri River Basin to the Hudson Bay Basin or from the Hudson Bay Basin to the Missouri River Basin.			BMP
Internal Limit			

Table 2: Comparison of Effluent Limits for Outfalls 001, 002 and 003

Chlorine, Total Residual (TRC) ^d	*	3 mg/L Daily Minimum	BPJ
Turbidity (NTU) ^e	*	10 NTU Daily Maximum	BPJ
Notes:			
a.	<p>The basis of the effluent limitations is given below:</p> <p>“BMP” refers to best management practice.</p> <p>“BPJ” refers to best professional judgment.</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>		
b.	<p>The minimum limit of analytical reliability for TRC is considered to be 0.05 mg/L. The analysis for TRC shall be conducted using reliable devices equivalent to EPA Method 4500-Cl G, Spectrophotometric, DPD. The method achieves a method detection limit of less than 0.05 mg/L. For purposes of the permit and reporting on the DMR form, analytical values less than 0.05 mg/L shall be considered in compliance with the permit.</p>		
c.	<p>In the calculation of average TRC concentrations, analytical results that are less than the method detection limit shall be considered the value of the detection limit for calculation purposes. If all analytical results used in the calculation are below the method detection limit, then the method detection limit shall be reported on the DMR; otherwise report the calculated average value.</p>		
d.	<p>Sampling shall take place at the Biota Treatment plant when flows are 25 cfs or less. When flows are greater than 25 cfs sampling shall take place a maximum of 7 pipeline miles downstream of the Biota Treatment plant.</p>		
e.	<p>Sampling shall take place downstream of the sand/grit removal process but prior to chlorination.</p>		
*	<p>This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.</p>		
**.	<p>Discharges to the Sheyenne River and James River shall have an instantaneous pH limitation between 7.0 (s.u.) and 9.0 (s.u.). Discharges to Painted Woods Creek shall be between 6.0 (s.u.) and 9.0 (s.u.).</p>		

SELF-MONITORING REQUIREMENTS

Effluent parameters for outfalls 001, 002, and 003 must be representative of the supply water in the transmission pipeline following dechlorination and are sampled at a point prior to leaving the RRVWSP and before entering a water of the state.

Table 3: Self-Monitoring Requirements for Outfalls 001, 002, and 003

Effluent Parameter	Frequency	Sample Type ^a
Total Suspended Solids (TSS)	1/Week	Grab
Chlorine, Total Residual (TRC)	1/Day	Grab
pH	1/Week	Instantaneous
Flow, mgd	1/Day	Calculated
Total Flow, Mgal	1/Month	Calculated
Internal Point		
Chlorine, Total Residual (TRC) ^b	1/Day	Grab
Turbidity (NTU)	1/Day	Grab
Notes:		
a.	Refer to Appendix B for definitions.	
b.	Sampling shall take place at the Biota Treatment plant when flows are 25 cfs or less. When flows are greater than 25 cfs sampling shall take place a maximum of 7 pipeline miles downstream of the Biota Treatment plant.	

SURFACE WATER QUALITY-BASED EFFLUENT LIMITS

The North Dakota State WQS (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 Sheyenne River and James River are listed as class IA streams in the WQS. The quality of water in class IA streams must be suitable for the propagation and/or protection of resident fish species and other aquatic biota, and for swimming, boating, and other water recreation. The quality also must be suitable for irrigation, stock watering, and wildlife without injurious effects. The Sheyenne River in this area is not classified for municipal or domestic use.

Painted Woods Creek is not specifically mentioned in the WQS and is considered a class III stream. The quality of water in class III streams must be suitable for agricultural and industrial uses. Streams in this class generally have low average flows with prolonged periods of no flow. During periods of no flow, they are of limited value for recreation, and fish and aquatic biota. The quality of these waters must be maintained to protect secondary contact recreation uses (e.g., wading), fish and aquatic biota, and wildlife uses.

A TMDL allocation for *Escherichia coli* (*E. coli*) bacteria was finalized for the Sheyenne River in the area of Outfall 001 in 2012 (*E. coli* Bacteria TMDLs for the Sheyenne River in Nelson and Griggs Counties, North Dakota, August 2012). The department identified the recreational use of the Sheyenne River as not supported due to *E. coli* bacteria (*E. coli* bacteria are used as an indicator of recreational use risk). As a result, a TMDL for *E. coli* bacteria was developed for the river. The TMDL is intended to reduce *E. coli* bacteria counts in the Sheyenne River to meet the beneficial use of the creek.

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E. coli bacteria count reductions described in the TMDL have generally been allotted to non-point sources of pollution (e.g., failing septic systems, livestock, etc.). The TMDL prescribes BMPs such as livestock management to achieve load reductions for non-point sources of pollution. A wasteload allocation for *E. coli* bacteria was not given to point sources of pollution in the watershed, such as this facility. The facility is not expected to contribute *E. coli* to the Sheyenne River; therefore the department is not adding effluent limitations or loading requirements for *E. coli* bacteria to the proposed permit.

The James River in the area of Outfall 002 and Painted Woods Creek is not listed as impaired in the 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List). There currently are no TMDLs for the particular segment of the James River or Painted Woods Creek.

Numerical Criteria for the Protection of Aquatic Life and Recreation

Numerical water quality criteria 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.

Biota Transfer

The transfer of invasive aquatic biota from the Missouri River Basin to the Hudson Bay Basin is a concern of the facility. As part of the application process, 39 aquatic invasive species (AIS) of concern were identified as possibly being transferred from the Missouri River Basin to the Hudson Bay Basin without adequate treatment. The list of concern was narrowed down to 13 AIS based on the presence of an AIS in each basin and whether an AIS is known to exist in either basin. The list was further narrowed down to two AIS based on the log inactivation requirements for each AIS compared to the log inactivation capabilities of the RRVWSP (i.e., 3-log inactivation of *Giardia* and 4-log inactivation of viruses).

After review, two AIS were identified as having the possibility of affecting the operation of the RRVWSP. A full review of the department's rationale regarding biota may be found in Appendix E.

The RRVWSP will be equipped with controls, contingency plans, and emergency response procedures to ensure only properly treated water is conveyed from the Missouri River Basin to the Hudson Bay Basin. In the event that supply water does not meet turbidity or disinfection treatment standards, the supply water will be intentionally diverted to one of two points within the Missouri River Basin. The Painted Woods Creek discharge point located near Washburn, ND will be used when turbidity standards cannot be met. The James River discharge point located near Carrington, ND will be used when disinfection standards cannot be met. The controls, plans, and response procedures, as well as the diversion of supply water that does not meet treatment targets within the Missouri River Basin will safeguard against the transfer of biota to the Hudson Bay Basin.

Antidegradation

The purpose of North Dakota's Antidegradation Policy (NDAC chapter 33.1-16-02.1 (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.

The department determined outfall-specific mixing zones were not necessary in the proposed permit based on the type of pollutants present. All effluent limitations described in the proposed permit must be met at the point of compliance for each outfall and before entering the respective receiving stream.

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

Total Residual Chlorine (TRC)

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Discharges from the facility have the potential to exceed the WQS for TRC. Based on the WQS, the department has determined that a TRC limitation of 0.011 mg/L as an average monthly and 0.019 mg/L as a daily maximum is appropriate for this type of facility.

An internal limit of 3 mg/l daily minimum for TRC is being proposed. This limitation was determined by reviewing the application and the level of chlorination required to maintain a 4-log inactivation dosage for aquatic invasive species (AIS) listed.

Because the analytical reliability of TRC decreases with lower detection limits, the department determined that the minimum limit of analytical reliability for TRC is 0.05 mg/L. The analysis must be conducted using reliable devices that have a minimum detection limit equivalent to EPA Method 4500-Cl G, Spectrophotometric, DPD which achieves a minimum detection limit of less than 0.05 mg/L.

Turbidity

An internal limit of 10 Nephelometric Turbidity Units (NTUs) is being proposed. This limitation was determined by reviewing the application. A determination was made the turbidity shall not exceed 10 NTUs to ensure the chlorination dosage efficiency is not degraded for the inactivation of AIS.

pH

The WQS state that discharges to Class IA streams shall have an instantaneous pH limitation between 7.0 (s.u.) and 9.0 (s.u.). Discharges to Class III shall be between 6.0 (s.u.) and 9.0 (s.u.).

WHOLE EFFLUENT TOXICITY

Testing requirements and limitations for whole effluent toxicity (WET) testing are specified in 40 CFR 122.44(d)(1)(iv) & (v) for discharges that may have the reasonable potential to contribute to an in-stream excursion above a numeric or narrative criterion for whole effluent toxicity. The state water quality standards include a narrative standard related to whole effluent toxicity. The narrative standard listed in NDAC section 33-16-02.1-08(1)(a)(4) states that waters of the state shall be "free from substances attributable to municipal, industrial or other discharges or agricultural practices in concentrations which are toxic or harmful to humans, animals, plants or resident aquatic biota. For surface water this standard will be enforced in part through appropriate whole effluent toxicity requirements in North Dakota pollutant discharge elimination system permits." The department determined no toxic effects are expected by the discharge of treated supply water. There are also no industrial waste streams being created at this facility.

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 has not identified any chemicals in the applicant's discharges for

regulation based on the human health criteria. The department will re-evaluate this discharge for impacts to human health at the next permit reissuance.

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.

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

The proposed permit requires the permittee to submit an annual certification statement and report regarding the presence of aquatic invasive species in the Missouri River Basin and Hudson Bay Basin that may affect the RRVWSP. The report must summarize any accepted literature that identifies the presence of aquatic invasive species in the Missouri River Basin and Hudson Bay Basin that may affect the RRVWSP. If the information contained in the previous statement is still relevant, then the facility may state that in the certification statement. The department will evaluate new information received from the permittee or other reliable sources to determine the appropriate action to incorporate the information, including modification of permit conditions if deemed appropriate.

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 sludge. 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.

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APPENDIX A – PUBLIC INVOLVEMENT INFORMATION

The department proposes to issue a permit to **Garrison Diversion Conservancy District – Red River Valley Water Supply Project** located near Washburn, Cooperstown, and Carrington, North Dakota. The permit includes treated water 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 or around March **23, 2020** in the following papers: Bismarck Tribune, Foster County Independent, Griggs County Courier, The Forum, McLean County Independent, Grand Forks Herald, The Herald-Press, Jamestown Sun, McClusky Gazette, and Valley City Times-Record 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 Health
Division of Water Quality
918 East Divide Avenue, 4th Floor
Bismarck, ND 58501

The primary authors of this permit and fact sheet are Dallas Grossman and Marty Haroldson.

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

Public Notice Date: 3/23/2020

Public Notice Number: ND-2020-012

Purpose of Public Notice

The Department intends to issue 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: 4/5/2019

Application Number: ND0026964

Applicant Name: Red River Valley Water Supply Project

Mailing Address: PO Box 140, Carrington, ND 58421

Telephone Number: 800.532.0074

Proposed Permit Expiration Date: 6/30/2025

Facility Description

The application is for a water supply project that will pump water from the Missouri River to eastern and central North Dakota; primarily in the event of severe drought conditions. The Missouri River intake will be located in the NE1/4, SW1/4, Section 5, Township 143N, Range 83W southeast of Washburn, ND. The water treatment plant will be located in the SW1/4, NW1/4, Section 3, Township 143N, Range 83W southeast of Washburn, ND. The transmission pipeline extends from the Missouri River intake to the Sheyenne River, a Class IA stream, southeast of Cooperstown, ND. Treated water will discharge from the Sheyenne River outfall which will be located in the NW1/4, NE1/4, Section 22, Township 145N, Range 58W. Water that does not meet treatment targets will be diverted to one of two discharge points. One point will be located in the SW1/4, NW1/4, Section 3, Township 143N, Range 83W southeast of Washburn, ND and discharge to Painted Woods Creek, a Class III stream. The other point will be located in the SE1/4, SE1/4, Section 2, Township 145N, Range 64W east of Carrington, ND and discharge to the James River, a Class IA stream.

MEETING PURPOSE AND LOCATION

The Department will be holding a public hearing on the proposed facility, in which the Department invites oral comments on the application and review of the proposed water supply project.

The public hearing will be held May 12, 2020 at 1:00 p.m. at the North Dakota State University Memorial Union, with the location listed below:

North Dakota State University
Memorial Union
1401 Administration Avenue
Room Badlands
Fargo, ND 58102

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. Comments or requests should be directed to the ND Dept of Env Quality, Div of Water Quality, 918 East Divide Ave, Bismarck ND 58501-1947 or by calling 701.328.5210.

All comments received by May 21, 2020 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.

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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

The development of the permit did not require technical calculations by the North Dakota Department of Environmental Quality. The department reviewed applicable water quality standards for class IA and III streams to determine the appropriate requirements to be placed in the permit. In addition, the department reviewed Total Maximum Daily Load information for the Sheyenne River and the department's 2018 North Dakota Section 303(d) List of Waters Needing Total Maximum Daily Loads (303(d) List).

Comparison of Missouri River Water Quality at Washburn to Sheyenne River at near Cooperstown

Data reviewed includes U.S. Geological Survey (USGS) published results from the Missouri River at Washburn, North Dakota and all water quality data collected by the N.D. Department of the Environmental Quality (DEQ) from the Sheyenne River near Cooperstown, North Dakota. A list of parameters and concentrations reviewed are also found in Attachment E of the application. Only matching parameters were compared.

All matching analytes were found in a lower concentration on average and at maximum in the Missouri than the Sheyenne. Some of these trace elements are substantially lower. Both rivers are sulfate dominated, however the average concentration of sulfate in the Sheyenne River is double the Missouri River.

APPENDIX D – RESPONSE TO COMMENTS

Comments received during the public comment period will be reviewed and addressed here.

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APPENDIX E – BIOTA TRANSFER

Transfer of invasive biota from the Missouri River Basin (MRB) to the Hudson Bay Basin (HBB) has been of concern to Garrison Diversion (GD) and the North Dakota Department of Environmental Quality (department) staff from the outset of the permitting process. As a starting point, GD used a list of thirty-nine (39) aquatic invasive species (AIS) provided in the Northwest Area Water Supply (NAWS) Project Supplemental Environmental Impact Statement (SEIS) that could potentially be transferred from the MRB to the HBB. Of these 39, GD determined the documented location of each species, separating species by whether they were present, or their presence was unknown in either basin. Presence or absence was mostly cited within the NAWS report, though there were some additional resources used by GD. Of these 39, GD determined that six (6) were not found in the HBB or MRB and they were *Novirhabdovirus spp.* – Infectious hematopoietic necrosis virus and Viral hemorrhagic septicemia virus, *Ictalurid Herpesvirus 1* – Channel catfish virus, *Rhabdovirus carpio* – Spring viremia of carp virus, and *Isavirus spp.* – Infectious salmon anemia virus. Twenty-two (22) species were found globally through the MRB and HBB and thus are currently not considered too meet treatment of AIS, and they were *Streptococcus faecalis* – Strep, *Pseudomonas aeruginosa*, *Mycobacterium spp.* – tuberculosis or leprosy, *Yersinia ruckeri* – Enteric redmouth disease, *Escherichia coli*, *Legionella spp.* – Legionnaire’s disease, *Salmonella spp.* – Salmonella, *Dreissena polymorpha* – Zebra mussel, *Actheres pimelodi* – Parasitic copepod, *Ergasilus spp.* – Parasitic copepod, *Giardia lamblia* – Backpacker’s diarrhea, *Entamoeba histolytica*, *Cryptosporidium parvum*, *Ichthyophthirius multifiliis* – Ich or white spot disease, *Ichthyophonus hoferi* – Ichthyophonosis, *Branchiomyces spp.* – Branchiomycosis, *Saproleginia spp.* – Saprolegniosis or winter fungus disease, *Exophiala spp.* – Black yeast, *Phoma herbarum*, *Annabaena flos-aquae* – Blue-green algae, and *Microcystis aeruginosa* – Blue-green algae. Four (4) AIS were not known to be present in the MRB but known to be present in the HBB and they were *Aquabirnavirus spp.* – Infectious pancreatic necrosis virus, *Aeromonas salmonicida* – Furunculosis, *Flavobacterium columnare* – Columnaris disease, and *Edwardsiella spp.* No further consideration is required for these AIS.

Four (4) AIS were detected in the MRB and HBB, however, their presence cannot be verified as “global” or “throughout” the basin and thus needed further review. These AIS were *Renibacterium salmoninarum* – Bacterial kidney disease, *Polypodium hydriforme* – Intracellular parasitic cnidarian, *Myxobolus cerebralis* – Whirling disease, and *Corallotaenia minutia* – Parasitic tapeworm. These four AIS have been found to be treatable between the sand/grit removal and 4-log inactivation level of the proposed facility. This can be verified in Appendix E “Transbasin Effects Analysis Technical Report” from the U.S. Bureau of Reclamation for the Northwest Area Water Supply Project, (Pascho, R.J. M.L. Landolt, and J. E. Ongerth, 1995, Inactivation of *Renibacterium salmoninarum* by free chlorine, *Aquaculture*, Volume 131, issue 3-4), (Hoffman, G.L., and J.J. O’Grodnick. 1977. Control of whirling disease (*Myxosoma cerebralis*): effects of drying, and disinfection with hydrated lime or chlorine. *Journal of Fish Biology* 10:175-179), and (Ershath, M.M., Namazi, M.A., Saeed, M.O., 2019, *Effect of Cooling Water Chlorination on Entrained Selected Copepods Species*, *Biocatalysis and Agricultural Biotechnology*, Vol. 17, Jan. 2019, page 129-134; Latimer, D.L., Brooks, A.S., Beeton, A.M., 2011 *Toxicity of 30-minute Exposures of Residual Chlorine to the Copepods *Limnocalanus macrurus* and *Cyclops Biscupidatus thomasi**, *Journal of Fisheries Research Board of Canada*, 1975:32(12) page 2495-25011). This was documented in a letter from the Garrison Diversion Conservancy District dated February 10, 2020.

Three (3) AIS are known to be present in the MRB but not in the HBB and they were *Dreissena rostriformis bugensis* – Quagga mussel, *Potamopyrgus antipodarum* – New Zealand mudsnail, and *Icelanonchohaptor microcotyle* – Parasitic flatworm. As documented in the application treatment of the larvae Quagga mussel by chlorine and adult Quagga mussel by the proposed sand/grit removal system will ensure this AIS is not transferred into the HBB via the proposed pipeline. Two species listed in table 1-5 of the application that GD was unable to determine effectiveness for were the New Zealand mudsnail (*Potamopyrgus antipodarum*) and a parasitic flatworm (*Icelanonchohaptor microcotyle*).

According to the cited documents provided in the application, the New Zealand mudsnail is found in western waters of the United States but has not been found in North Dakota. Documented information on the parasitic flatworm shows this organism has been identified to be in the MRB, however, this organism looks to be limited by physical exclusion. The department has determined the facility will need to do a literature review of these two organisms. This literature review will be done on an annual basis. Should either organism be found in the MRB within North Dakota and continue to be unknown within the HBB during the literature review, the department will work with the facility to identify possible upgrades to the treatment process to ensure these organisms do not pass through the treatment plant and be discharged into the HBB.

The department will also require the facility to include a literature review of the other 11 species identified in table 1-3 of the application. This is to ensure no new information has been found that might lead to a possible biota transfer from the MRB to the HBB via the facility pipeline.

The department may also act to address biota if it becomes aware of pertinent new information from other reliable sources.

Below is a more detailed summary of the New Zealand mudsnail and the parasitic flatworm.

As of the date of this rationale, the New Zealand mudsnail (hereafter, NZM) has been restricted to the upper reaches and tributaries of the Missouri River in Montana and Wyoming. The only new observation in 2019 was at a private fish hatchery near the Bitterroot River near Missoula, Montana. In 2018, there were only two new observations reported near Bozeman, Montana. Though found in the Missouri and Yellowstone Rivers, there has been little to no reported downstream movement in recent years. Databases should be followed, and literature review should continue to occur throughout the Missouri River to ensure that the NZM does not move downstream from either the Missouri or Yellowstone Rivers into Lake Sakakawea and the downstream reach of the river (with an interest in the water intake).

The distribution of *Icelanonchohaptor microcotyle* was studied by Kritsky et al. (1972) in the Missouri River. The species was found to have infected river carpsucker at Lake Sakakawea near Williston, Lake Sakakawea in the Little Missouri Bay and in the Moreau River in South Dakota. The species was found in small numbers on individual fish during the study and was theorized to be found throughout the Upper Missouri River system. At the time of this rationale, the species has only been found to impact river carpsucker with little to no deleterious effect to the fish. To date, state records indicate no river carpsucker have been found in the Red River Basin. The permittee did find one record of river carpsucker in the Red River, but it is unknown if the identification was confirmed. This species requires a copepod intermediate host in which to develop before it enters the viscera of its fish host, typically a catfish (Befus and Freeman

1972; Rosas-Valdez et al. 2004). Based on the size of these organisms, particle filtration or microfiltration would be effective methods for physical exclusion.

This parasitic flatworm has eluded characterization due to its apparent scarcity (both presence throughout and abundance within hydrologic basins). For these reasons, the potential consequences of an introduction of this organism, no matter what the source of introduction, would not be expected (Appendix A, Constructed Project Components) from the Northwest Area Water Supply Project Supplemental Environmental Impact Statement.

Neither species were found in the National Rivers and Streams database from 2013 – 2014.

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Permit No: ND0026964
Effective Date: July 1, 2020
Expiration Date: June 30, 2025

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,

Garrison Diversion Conservancy District

is authorized to discharge from the Red River Valley Water Supply Project

to the Sheyenne River, James River, and Painted Woods Creek

provided all the conditions of this permit are met.

This permit and the authorization to discharge shall expire at midnight,
June 30, 2025.

Signed this _____ day of _____, _____.

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

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DEFINITIONS

DEFINITIONS Standard Permit BP 2019.05.29

1. “**Act**” means the Clean Water Act.
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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.

OUTFALL DESCRIPTION

Outfall 001. Active. Final.			
Latitude: 47.36667	Longitude: -98.03750	County: Griggs	
Township: 145N	Range: 58W	Section: 22	QQ: ABC
Receiving Stream: Sheyenne River		Classification: Class IA	
Outfall Description: Only treated supply water that meets permit limits will be discharged at this outfall. All discharges will flow through an energy dissipation device before entering the Sheyenne River.			

Outfall 002. Active. Final.			
Latitude: 47.40000	Longitude: -98.79583	County: Foster	
Township: 145N	Range: 64W	Section: 2	QQ: CCC
Receiving Stream: James River		Classification: Class IA	
Outfall Description: This outfall will divert all water that does not meet permit specifications before reaching the Hydraulic Break Tanks. The discharge is to the James River which is in the Missouri River Basin and does not cross the continental divide.			

Outfall 003. Active. Final.			
Latitude: 47.22944	Longitude: -100.92694	County: McLean	
Township: 143N	Range: 81W	Section: 3	QQ: DCC
Receiving Stream: Painted Woods Creek		Classification: Class III	
Outfall Description: Discharges from this outfall only occur when the supply water exceeds 10 nephelometric turbidity units (NTUs) at the Biota Water Treatment Plant located near Washburn.			

PERMIT SUBMITTALS SUMMARY

Coverage Point	Submittal	Monitoring Period	Submittal Frequency	First Submittal Date
001A	Discharge Monitoring Report	Monthly	Monthly	August 31, 2020
002A	Discharge Monitoring Report	Monthly	Monthly	August 31, 2020
003A	Discharge Monitoring Report	Monthly	Monthly	August 31, 2020
Red River Valley Water Supply Project	Annual Certification Statement and Report	Annual	Annual	July 31, 2021
Application Renewal	NPDES Application Renewal	None	1/permit cycle	January 1, 2025

SPECIAL CONDITIONS

The permittee shall review literature pertaining to the spread of aquatic invasive species that may be present in the Missouri River Basin (MRB) and Hudson Bay Basin (HBB) that may affect the Red River Valley Water Supply Project facility. The review shall be conducted annually by the permittee. The permittee shall submit an annual certification statement and report regarding the literature reviewed.

If the reviewed literature identifies any aquatic invasive species present in the MRB that may affect the Red River Valley Water Supply Project facility, the permittee shall provide a summary of the literature in the report. The report also shall include any changes to the information about the aquatic invasive species listed in the NPDES application for this permit. If the information contained in the previous year's report is still pertinent, the permittee shall state as such in the annual certification statement.

New information presented to the department in the annual report will be evaluated. In addition, at any time, the department may evaluate new information from reliable sources on its own initiative. This evaluation may be an internal department review or the department may solicit review from external agencies to aid in the evaluation of the new information. Once the evaluation of new information has been completed, the department will determine the appropriate actions to incorporate this information, which may include action under Part IV(E) with appropriate notice, opportunity for input, and opportunity to conduct further evaluations of the studies or literature relied upon. Any action taken is to ensure this facility maintains or reduces biota transfer potential into the HBB.

The annual certification statement shall be signed in accordance with Part III(E) of this permit.

I. LIMITATIONS AND MONITORING REQUIREMENTS

A. Discharge Authorization

During the effective period of this permit, the permittee is authorized to discharge pollutants from the outfalls as specified to the following: **Sheyenne River, James River, and Painted Woods Creek**

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

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

Table 1: Effluent Limitations and Monitoring Requirements Outfalls 001, 002, and 003				
Parameter	Effluent Limitations		Monitoring Requirements	
	30 Consecutive Day Average	Daily Maximum	Sample Frequency	Sample Type
Total Suspended Solids (TSS)	*	90 mg/L	1/Week	Grab
Chlorine, Total Residual (TRC) ^{a,b}	0.011 mg/L	0.019 mg/L	1/Day	Grab
pH	**		1/Week	Instantaneous
Flow, mgd	Report Monthly Average	Report Max. Daily Value	1/Day	Calculated
Total Flow, Mgal	N/A	Report Monthly Total	1/Month	Calculated
Internal Limit				
Chlorine, Total Residual (TRC) ^c	*	3 mg/l Daily Minimum	1/Day	Grab
Turbidity (NTUs) ^d	*	10 NTU Daily Maximum	1/Day	Grab
Notes:				
N/A Not Applicable				
*. This parameter is not limited. However, the department may impose limitations based on sample history and to protect the receiving waters.				
**. Discharges to the Sheyenne River and James River shall have an instantaneous pH limitation between 7.0 (s.u.) and 9.0 (s.u.). Discharges to Painted Woods Creek shall be between 6.0 (s.u) and 9.0 (s.u.).				
a. The minimum limit of analytical reliability for TRC is considered to be 0.05 mg/L. The analysis for TRC shall be conducted using reliable devices equivalent to EPA Method 4500-Cl G, Spectrophotometric, DPD. The method achieves a method detection limit of less than 0.05 mg/L. For purposes of this permit and reporting on the DMR form, analytical values less than 0.05 mg/L shall be considered in compliance with this permit.				
b. In the calculation of average TRC concentrations, analytical results that are less than the method detection limit shall be considered the value of the detection limit for calculation				

Table 1: Effluent Limitations and Monitoring Requirements Outfalls 001, 002, and 003	
	purposes. If all analytical results used in the calculation are below the method detection limit, then the method detection limit shall be reported on the DMR; otherwise report the calculated average value.
c.	Sampling shall take place at the Biota Treatment plant when flows are 25 cfs or less. When flows are greater than 25 cfs sampling shall take place a maximum of 7 pipeline miles downstream of the Biota Treatment plant.
d.	Sampling shall take place downstream of the sand/grit removal process but prior to chlorination.
Stipulations:	
	The permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce sheen on the surface of the receiving water.
	The facility shall maintain in effective and good working order all treatment systems, controls, contingency plans, and response procedures to ensure aquatic invasive species are not discharged from the Missouri River Basin to the Hudson Bay Basin or from the Hudson Bay Basin to the Missouri River Basin.
	All effluent parameters shall be sampled at a point leaving Outfall 001, 002, or 003 but prior to leaving plant property or entering waters of the state.

II. MONITORING, RECORDING, AND REPORTING REQUIREMENTS BP 2019.05.29

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, 2020, the permittee may elect to electronically submit the following compliance monitoring data and reports instead of mailing paper forms. Beginning December 21, 2020, 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
918 East Divide Ave
Bismarck ND 58501-1947

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 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 sludge handling practices, or the establishment of prohibitions or more stringent limitations for toxic or conventional pollutants and/or 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.