Nebraska Department of Water, Energy, and Environment

NPDES and State Permits Section

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Fact Sheet
Behlen Mfg. Co.
Columbus, Platte County, Nebraska
NPDES/NPP NE0000647 / DWEE ID 38724

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A. Proposed Action – Tentative Determination

On the basis of a preliminary staff review, the Nebraska Department of Water, Energy, and Environment (DWEE) has made a tentative determination to reissue, with change, the NPDES/NPP Permit Number NE0000647 to Behlen Mfg. Co. for discharge of single-pass noncontact cooling water and stormwater (Outfall 001 and Outfall 002) and process wastewater (Outfall 003) to the Loup River Canal, Segment LP1-21800, in the Lower Platte River Basin. Outfall 004 provides an alternate discharge of the pretreated process wastewater to the Loup River, Segment LO1-10000, in the Loup River Basin, via the City of Columbus Publicly Owned Treatment Works (POTW) when required.

B. Applicant and Facility Information

Applicant	Behlen Mfg. Co.
Facility	Behlen Mfg. Co.
Mailing Address	4025 E 23rd Street, Columbus, Nebraska 68601
Facility Location	4025 E 23rd Street, Columbus, Nebraska 68601
Legal Description	NW ¼, NE ¼, Section 23 Township 17 N Range 1 E, Platte County, NE
SIC Number(s)	3448, 3496, 3499, 3542
Other Information	Behlen Mfg. Co. manufactures prefabricated metal building construction parts and agricultural equipment.

C. Segment, Use Designations, and Impairment

Non-process wastewater is discharged through Outfall 001 and Outfall 002, and process wastewater is discharged through Outfall 003, to the Loup River Canal, Segment LP1-21800, in the Lower Platte River Basin. Pretreated wastewater is also discharged through Outfall 004 to the Loup River, Segment LO1-10000, in the Loup River Basin, via the City of Columbus Publicly Owned Treatment Works (POTW). Segment, basin, and use designation are set forth in DWEE Title 117, Chapter 5, *Nebraska Surface Water Quality Standards*. Impairments and pollutants for designated waterbodies are from the DWEE *2022 Water Quality Integrated Report*. Key species may include endangered, threatened, and/or sensitive species.

Outfall 001, Outfall 002, and Outfall 003

Receiving Stream	Loup River Canal
Basin / Segment	LP1-21800 in the Lower Platte River Basin

Water Quality Usage Designations for Loup River Canal

State Resource Water	No
Recreation	Yes
Aquatic Life	Warmwater A
Public Drinking Water Supply	No
Agriculture Water Supply	A
Industrial Water Supply	Yes
Aesthetics	Yes
Key Species	*Lake sturgeon, Pallid sturgeon, Sturgeon chub, Flathead chub, Plains minnow, Western silvery minnow, Channel catfish, Flathead catfish*

Impairments and Parameters of Concern for Loup River Canal

Impairments (Causes)	None Known
TMDL	None
Comments/Actions	Fish Consumption Assessment completed

Outfall 004

Receiving Stream Loup River

Basin / Segment LO1-10000 in the Loup River Basin

Water Quality Usage Designations for Loup River

State Resource Water	No
Recreation	Yes
Aquatic Life	Warmwater A
Public Drinking Water Supply	No
Agriculture Water Supply	A
Industrial Water Supply	No
Aesthetics	Yes
Key Species	*Lake sturgeon, Pallid sturgeon, Sturgeon chub, Flathead chub, Plains minnow, Western silvery minnow, Channel catfish*

Impairments and Parameters of Concern for Loup River

Impairments (Causes)	Recreation (*E. coli*)
TMDL	*E. coli*
Comments/Actions	*E. coli* TMDL approved 1/06, Fish Consumption Assessment completed

D. Description of Discharge, Compliance History and Potential Pollutants

1. Description of Discharge

a. Outfall 001

The discharge from Outfall 001 to the Loup River Canal consists of single-pass, noncontact cooling water from the chiller units used for the office air conditioners as well as rainwater from the office roof drains and the east portion of the plant building roof drains. Outfall 001 also discharges cooling water from the backup air compressor cooling unit for approximately 4 weeks per year. The median monthly average discharge flow as determined from facility Discharge Monitoring Reports (DMRs) is 0.0315 million gallons per day (MGD). Source water for cooling is from two on-site wells.

b. Outfall 002

The discharge from Outfall 002 to the Loup River Canal consists of single-pass, noncontact cooling water from the west tube mill cooling unit and rainwater from the west portion of the plant building roof drains. The median monthly average discharge flow as determined from facility DMRs is 0.018 MGD. Source water for cooling is from the chlorinated, potable, municipal water supply system.

c. Outfall 003

The discharge from Outfall 003 to the Loup River Canal consists of metal finishing process wastewater from the manufacture of sheeting and structural frames for prefabricated metal buildings and the manufacture of farm, ranch, and industrial products such as watering tanks, fence panels, gates, loading chutes, grain dryers, and other various metal products. The discharge also includes

noncontact cooling water from a rotomolder used to manufacture polypropylene shapes; the water is used to keep the rotomolder parts cool while in operation. Cooling water used for the rotomolder is sent to the on-site wastewater treatment plant building prior to discharge. The median monthly average discharge flow as determined from facility DMRs is 0.034 MGD. Source water is from the chlorinated, potable, municipal water supply system. Wastewater from the manufacturing processes is treated in the facility's wastewater treatment system with lime and flocculant and discharged through Outfall 003 to the Loup River Canal.

d. Outfall 004

This outfall replaces Outfall 003 during periods when maintenance is being performed on the Behlen wastewater treatment system or flow is below 18 cubic feet per second (cfs) in the Loup River Canal (see Part G.7.b of this fact sheet). During these periods, metal finishing process wastewater discharges to the City of Columbus sanitary sewer system and are categorically regulated under the pretreatment standards for new sources (PSNS) set forth in 40 CFR Section 433.17 and the prohibited discharge standards set forth in DWEE Title 119. The pretreated wastewater is discharged to the Loup River via the Columbus POTW. Outfall 004 was not used during the last permit term but is assumed to have similar flow rate to Outfall 003.

2. Compliance History

The last inspection at the facility occurred on April 14, 2026. The inspection found the facility was operating as intended. During the permit term the facility received a letter of noncompliance for zinc exceedance. None of the findings will have an impact on the permit.

3. Potential Pollutants

The primary pollutants of concern for non-process wastewater include temperature, hydrocarbons, and pH. The primary pollutants of concern for the process wastewater discharges are cadmium, chromium, copper, lead, nickel, silver, zinc, cyanide, total toxic organics (TTO), oil and grease, total suspended solids (TSS), and pH.

E. Existing Permit Limits

Listed below is a summary of the existing permit monitoring requirements and limitations for the effluent discharged by the facility.

Table FS – 1. Behlen Mfg. Co. Existing Monitoring Requirements for Outfall 001

Parameter	Monthly Average	Maximum	Monitoring Frequency
Flow	Report	Report	Quarterly
Temperature	Report	90°F	Quarterly
Total Extractable Hydrocarbons	Report	10.0 mg/L	Quarterly
pH	6.5 – 9.0 Standard Units (S.U.)		Quarterly

Table FS – 2. Behlen Mfg. Co. Existing Monitoring Requirements for Outfall 002

Parameter	Monthly Average	Maximum	Monitoring Frequency
Flow	Report	Report	Quarterly
Temperature	Report	90°F	Quarterly
Total Extractable Hydrocarbons	Report	10.0 mg/L	Quarterly
pH	6.5 – 9.0 Standard Units (S.U.)		Quarterly

Table FS – 3. Behlen Mfg. Co. Existing Monitoring Requirements for Outfall 003			
Parameter	**Monthly Average**	**Maximum**	**Monitoring Frequency**
Flow	Report	Report	Daily
Total Cadmium	0.26 mg/L	0.69 mg/L	Quarterly
Total Trivalent Chromium	1.71 mg/L	2.77 mg/L	Quarterly
Spring Dissolved Hexavalent Chromium	1.84 mg/L	3.69 mg/L	Quarterly
Summer Dissolved Hexavalent Chromium	1.71 mg/L	3.42 mg/L	Quarterly
Winter Dissolved Hexavalent Chromium	0.68 mg/L	1.37 mg/L	Quarterly
Total Copper	2.07 mg/L	3.38 mg/L	Quarterly
Total Lead	0.43 mg/L	0.69 mg/L	Quarterly
Total Nickel	2.38 mg/L	3.98 mg/L	Quarterly
Total Silver	0.24 mg/L	0.43 mg/L	Quarterly
Total Zinc	1.48 mg/L	2.61 mg/L	Monthly
Total Cyanide	0.65 mg/L	1.20 mg/L	Quarterly
Total Toxic Organics	-	2.13 mg/L	Annually
HEM	Report	10 mg/L	Monthly
TSS	31 mg/L	60 mg/L	Quarterly
Spring Acute Toxicity *Pimephales promelas*	-	17.67 TUa	Annually
Spring Acute Toxicity *Ceriodaphnia sp.*	-	17.67 TUa	Annually
Summer Acute Toxicity *Pimephales promelas*	-	8.83 TUa	Annually
Summer Acute Toxicity *Ceriodaphnia sp.*	-	8.83 TUa	Annually
Winter Acute Toxicity *Pimephales promelas*	-	8.74 TUa	Annually
Winter Acute Toxicity *Ceriodaphnia sp.*	-	8.74 TUa	Annually
pH	6.5 – 9.0 Standard Units (S.U.)		Weekly

Table FS – 4. Behlen Mfg. Co. Existing Monitoring Requirements for Outfall 004			
Parameter	**Monthly Average**	**Maximum**	**Monitoring Frequency**
Flow	Report	Report	Daily
Total Cadmium	0.07 mg/L	0.11 mg/L	Quarterly
Total Chromium	1.71 mg/L	2.77 mg/L	Quarterly
Total Copper	2.07 mg/L	3.38 mg/L	Quarterly
Total Lead	0.43 mg/L	0.69 mg/L	Quarterly
Total Nickel	2.38 mg/L	3.98 mg/L	Quarterly
Total Silver	0.24 mg/L	0.43 mg/L	Quarterly
Total Zinc	1.48 mg/L	2.61 mg/L	Monthly
Total Cyanide	0.65 mg/L	1.20 mg/L	Quarterly
Total Toxic Organics	-	2.13 mg/L	Annually
pH	6.5 – 9.0 Standard Units (S.U.)		Weekly

F. Summary of the Proposed Changes in the Draft Permit

The highlights of the proposed draft permit requirements are summarized below. See the attached permit for specific information on the permit conditions.

1. Metal limits and testing frequency for Outfall 003 are updated.
2. Metal testing frequency for Outfall 004 are updated.
3. Clarification to minimum canal flow rate for diversion of wastewater flow.
4. References to Title 119 have been updated to 40 CFR.
5. General updates to *Other Requirements and Conditions*, and the standard conditions in Appendix A.

G. Basis for Requirements in the Draft Permit

1. Overview of Permit Requirements

When developing effluent limits for an NPDES permit, DWEE considers limits based on both the technology available to treat the pollutants (technology-based effluent limits) and limits that are protective of the designated uses of the receiving water (water quality-based effluent limits). Technology-based effluent limits for facilities are derived from secondary treatment standards. The intent of technology-based effluent limitations is to require a minimum level of treatment for point source based on currently available treatment technology. Water quality-based effluent limits are developed by the State of Nebraska to protect the beneficial uses of the receiving waters. The water quality-based effluent limits involve a site-specific evaluation of the effluent discharge and its effect on the receiving water. Permit limits are developed by a comprehensive assessment of both technology-based limits and water quality-based limits.

a. Technology-Based Effluent Limits

Behlen Mfg. Co. is a metal fabricator for building construction and agricultural equipment and products that discharges treated metal finishing process wastewater to the Loup River Canal. The facility is subject to categorically defined standards in 40 CFR Part 433 - *Metal Finishing Point Source Category*, Subpart A - Metal Finishing Subcategory, §433.13 Effluent limitations representing the degree of effluent reduction attainable by applying the best practicable control technology currently available (BPT). The technology-based parameters are cadmium, chromium, copper, lead, nickel, silver, zinc, cyanide, total toxic organics (TTO), oil and grease, total suspended solids (TSS), and pH.

b. Water Quality-Based Effluent Limits

Water quality monitoring and limitations are included in the permit to protect the receiving stream from the discharge of toxic substances in toxic amounts. If there is a reasonable potential to cause an in-stream excursion of the water quality criteria for a parameter, then limitations are included in the NPDES permit. The permit limitations are established from the WLAs according to the procedures given in the *Technical Support Document for Water Quality-based Toxics Control* (TSD).

c. Best Professional Judgment

Best professional judgment (BPJ) is the method used by permit writers to develop technology based NPDES permit conditions when effluent guidelines and standards do not include limitations for an industrial category or subcategory. BPJ based limits are developed on a case-by-case basis using all reasonably available and relevant data. Technology-based treatment requirements, including BPJ, are adopted and incorporated by reference in 40 CFR Section 125.3(a)(2)(i)(B).

d. Reasonable Potential

Reasonable potential, in accordance with 40 CFR Section 122.44(d), is the likelihood a pollutant could lead to an excursion above an applicable water quality standard. A reasonable potential calculation is applied to determine whether there is a reasonable potential for the effluent from the

facility to cause an exceedance of in-stream criteria. If the results of this calculation indicate there is no reasonable potential to exceed in-stream criteria, report only monitoring may be included in the permit for that pollutant. If the results of this calculation indicate a reasonable potential to exceed in-stream criteria, a limit is included in the permit.

e. Anti-backsliding

Anti-backsliding is a statutory provision that prohibits the renewal, reissuance, or modification of an existing NPDES permit that contains effluent limitations, permit conditions, or standards that are less stringent than those established in the previous permit. Anti-backsliding provisions and exceptions are promulgated in 40 CFR Section 122.44(l)(1). If any of the limitations are less stringent than limitations on the same pollutant or narrative in the previous NPDES permit, the permit writer then conducts an anti-backsliding analysis and, if necessary, revises the limitations accordingly.

2. Antidegradation Review

An antidegradation review was performed for purposes of developing the permit pursuant to 40 CFR Section 131.12. The results of the evaluation indicate that the Loup River Canal and Loup River, the receiving water bodies of the discharges addressed by the permit, are habitats for aquatic life. The designated uses of, and the water quality criteria applicable to, both the Loup River Canal and Loup River were considered during permit development. The limitations in the draft permit are protective of the Clean Water Act Section 101(a)(2) fishable/swimmable goals and ensure the existing quality of water in the receiving stream is not lowered.

3. Outfall 001 – Basis for Monitoring and Limitations

Outfall 001 is the discharge of single-pass, noncontact cooling water from the chiller units used for the office air conditioners, the rainwater from the office roof drains and the east portion of the plant building roof drains, and cooling water from the backup air compressor cooling unit. The basis for permit monitoring requirements and limitations is specified below.

a. Basis for Flow Monitoring

40 CFR Section 122.44(i)(1)(ii) requires facilities to monitor the volume of effluent from each outfall. The median flow rate from the facility will be used in subsequent permits to determine water quality-based limits. Monitoring frequency is maintained as quarterly in order to obtain accurate discharge data.

b. Basis for Temperature Limits and Monitoring

Temperature monitoring is included in the permit. Temperature standards to protect aquatic life are set forth in DWEE Title 117 *Nebraska Surface Water Quality Standards* Chapter 4 – *General Criteria for Aquatic Life*. According to the requirements of Title 117, the temperature of a receiving water shall not be increased by a total of more than 5° F. For warm waters, the maximum limit is 90° F. Therefore, a maximum limit of 90° F is maintained in the permit. Due to the effluent flow rate of 0.0315 MGD, quarterly temperature monitoring is maintained in the permit.

c. Basis for Total Extractable Hydrocarbons Monitoring and Limits

DWEE Title 117, Chapter 4 sets forth an aquatic life criteria for petroleum oil of 10 mg/L. Therefore, an effluent limit of 10 mg/L for total extractable hydrocarbons shall be maintained in the permit based on the water quality criteria for petroleum oil. Due to the effluent flow rate of 0.0315 MGD, quarterly monitoring is maintained in the permit.

d. Basis for pH Discharge Limits and Monitoring

According to DWEE Title 117, hydrogen ion concentrations, expressed as pH, shall be maintained between 6.5 to 9.0 standard units (S.U.) in order to ensure water quality is not impacted. Therefore, the pH limits for the facility are maintained in the permit in the range of "6.5 to 9.0" based on Title

117, DWEE permitting procedures, and the water quality standard. Quarterly monitoring is maintained in the permit due to the effluent flow rate of 0.0315 MGD.

4. Outfall 002 – Basis for Monitoring and Limitations

Outfall 002 is the discharge of single-pass, noncontact cooling water from the west tube mill cooling unit and rainwater from the west portion of the plant building roof drains. The basis for permit monitoring requirements and limitations is specified below.

a. Basis for Flow Monitoring

40 CFR Section 122.44(i)(1)(ii) requires facilities to monitor the volume of effluent from each outfall. The median flow rate from the facility will be used in subsequent permits to determine water quality-based limits. Monitoring frequency is maintained as quarterly in order to obtain accurate discharge data.

b. Basis for Temperature Limits and Monitoring

Temperature monitoring is included in the permit. Temperature standards to protect aquatic life are set forth in DWEE Title 117 *Nebraska Surface Water Quality Standards* Chapter 4 – *General Criteria for Aquatic Life*. According to the requirements of Title 117, the temperature of a receiving water shall not be increased by a total of more than 5° F. For warm waters, the maximum limit is 90° F. Therefore, a maximum limit of 90° F is maintained in the permit. Due to the effluent flow rate of 0.018 MGD, quarterly temperature monitoring is maintained in the permit.

c. Basis for Total Extractable Hydrocarbons Monitoring and Limits

DWEE Title 117, Chapter 4 sets forth an aquatic life criteria for petroleum oil of 10 mg/L. Therefore, an effluent limit of 10 mg/L for total extractable hydrocarbons shall be maintained in the permit based on the water quality criteria for petroleum oil. Due to the effluent flow rate of 0.018 MGD, quarterly monitoring is maintained in the permit.

d. Basis for pH Discharge Limits and Monitoring

According to DWEE Title 117, hydrogen ion concentrations, expressed as pH, shall be maintained between 6.5 to 9.0 standard units (S.U.) in order to ensure water quality is not impacted. Therefore, the pH limits for the facility are maintained in the permit in the range of "6.5 to 9.0" based on Title 117, DWEE permitting procedures, and the water quality standard. Quarterly monitoring is maintained in the permit due to the effluent flow rate of 0.018 MGD.

5. Outfall 003 – Basis for Monitoring and Limitations

Outfall 003 is the discharge of treated metal finishing process wastewater and the noncontact cooling water from the rotomolder. The basis for permit monitoring requirements and limitations is specified below.

a. Basis for Flow Monitoring

40 CFR Section 122.44(i)(1)(ii) requires facilities to monitor the volume of effluent from each outfall. The median flow rate from the facility will be used in subsequent permits to determine water quality-based limits. Monitoring frequency is maintained as daily in order to obtain accurate discharge data.

b. Basis for Metals Limits and Monitoring

In DWEE Title 117 *Nebraska Surface Water Quality Standards*, the water quality criteria for dissolved metals are determined as acute and chronic criteria. Seasonal (spring, summer, winter) wasteload allocations (WLAs) are developed to ensure that the effluent discharge from the end of the pipe of the treatment system does not exceed these criteria. The WLAs are developed to protect the assigned beneficial uses of the stream. The calculation of the WLAs from the dissolved metals criteria is based on stream design flows, receiving stream parameters, effluent flow design parameters, and receiving stream information and is chosen using the most protective long-term average. DWEE Title

117, Chapter 2 requires that all mixing zones be based on critical condition of minimum dilution, which have been defined as the 1Q10 and 7Q10 flows (design flows).

Effluent flow rates for Behlen Manufacturing were obtained by calculating seasonal median effluent flows based on facility discharge monitoring reports (DMRs) for 2021-2026. The DWEE Station number 00082100 at the Loup River Canal near the facility was used to obtain receiving streamflow. The USGS station on the Loup River Canal at Genoa (06792500) was used to obtain width, depth, and river velocity, as there was no stream characteristics data for Station number 00082100. A default coefficient of variation (CV) of 0.6 was used for chromium III, lead, cyanide, and silver, as there was not enough data or variation in data to calculate a CV. For cadmium, copper, nickel, and zinc, a coefficient of variation was calculated using facility DMRs.

Outfall 003 will have limits calculated for dissolved cadmium, chromium III, copper, lead, nickel, silver, zinc, and cyanide. This result was compared against the total limit for the metal found in 40 CFR Section 433.13. The decision was made to consider total and dissolved metals as comparable because Title 117 criteria are dissolved, the technology-based effluent limits are total, and due to the minimum amounts of metals in background data.

The dissolved metal permit limits are calculated from the WLAs according to the procedures given in the TSD for permit limit derivation from two-value, steady-state outputs for acute and chronic protection. Some metals have limits that are chronically based, while others are acute based. Silver only has acute criteria in DWEE Title 117, so limits are acute based. Please see each wasteload allocation to determine if limits are chronically or acutely based by the lower long-term average. The calculation of projected dissolved metal limits are presented in Table FS-5 below

The WLAs for Behlen Mfg. Co. are presented below and in the CORMIX modeling memo (Document #20260122875).

Table FS-5. Behlen Mfg. Co. Projected Limits for Outfall 003		
Parameter	**Monthly Average**	**Daily Maximum**
Spring Cadmium	0.36 mg/L	0.65 mg/L
Summer Cadmium	0.26 mg/L	0.48 mg/L
Winter Cadmium	0.09 mg/L	0.17 mg/L
Spring Chromium III	65.60 mg/L	131.60 mg/L
Summer Chromium III	49.10 mg/L	98.50 mg/L
Winter Chromium III	11.30 mg/L	22.67 mg/L
Spring Copper	2.29 mg/L	3.03 mg/L
Summer Copper	1.71 mg/L	2.27 mg/L
Winter Copper	0.63 mg/L	0.83 mg/L
Spring Lead	6.59 mg/L	13.22 mg/L
Summer Lead	3.86 mg/L	7.74 mg/L
Winter Lead	0.38 mg/L	0.76 mg/L
Spring Nickel	64.50 mg/L	104.10 mg/L
Summer Nickel	48.27 mg/L	77.90 mg/L
Winter Nickel	8.31 mg/L	13.41 mg/L
Spring Silver	0.43 mg/L	0.86 mg/L
Summer Silver	0.32 mg/L	0.64 mg/L
Winter Silver	0.11 mg/L	0.23 mg/L
Spring Zinc	16.98 mg/L	26.00 mg/L
Summer Zinc	10.50 mg/L	19.50 mg/L
Winter Zinc	4.46 mg/L	7.10 mg/L
Spring Cyanide	4.43 mg/L	8.89 mg/L
Summer Cyanide	3.31 mg/L	6.65 mg/L
Winter Cyanide	1.22 mg/L	2.45 mg/L

The projected dissolved metals limits are based on the receiving stream hardness, stream flow characteristics, and effluent flow rate. The following proposed limits are lower than the current permits and are implemented to be protective of the water quality of the Loup River Canal: cadmium spring and summer daily max, cadmium winter monthly average and daily max, copper spring daily max, copper summer and winter monthly average and daily max, lead winter monthly average, silver winter monthly average and daily max. Monitoring frequency for zinc is maintained as monthly to be protective of water quality. Monitoring frequency for all other metals is reduced to semiannual as they have consistently tested at or below detection limits during the permit term, at the request of the facility, and because at the amount reported at on discharge monitoring reports is protective of water quality.

c. Basis for Hexavalent Chromium Discharge Limits

A CORMIX model was ran for the pollutant to determine the dissolved metal limit (Document

#20260122875). Criteria was taken from DWEE Title 117. The proposed limits are lower than the former permit limits. Therefore, the proposed permit limits are implemented. Monitoring frequency is maintained as quarterly based on the effluent flow rate of 0.034 MGD and to be protective of water quality. The WLAs for Behlen Mfg. Co. are presented below.

Table FS-6. Behlen Mfg. Co. Projected Limits for Outfall 003

Parameter	Monthly Average	Daily Maximum
Spring Chromium VI	1.73 mg/L	3.47 mg/L
Summer Chromium VI	1.29 mg/L	2.59 mg/L
Winter Chromium VI	0.47 mg/L	0.95 mg/L

d. Basis for Total Toxic Organics Limits

The monthly average and daily maximum limitations specified in the permit are based on the best practicable control technology currently available (BPT) promulgated in 40 CFR Section 433.13. Monitoring frequency is maintained as annually based on the effluent flow rate of 0.034 MGD. The facility may submit a toxic organic management plan in lieu of some testing during the permit term.

e. Basis for Oil and Grease, Hexane Extractable Method (HEM), Discharge Limits

Limitations specified in the permit are based on the aquatic life criteria for petroleum oil set forth in DWEE Title 117, Chapter 4 003.01D. The daily maximum limit of 10 mg/L is more restrictive than the limits based on the best practicable control technology currently available (BPT) promulgated in 40 CFR Section 433.13. Therefore, the a daily maximum of 10 mg/L is maintained in the permit. Monitoring frequency is maintained as monthly based on the effluent flow rate of 0.034 MGD**.**

f. Basis for Total Suspended Solids (TSS) Discharge Limits

The monthly average and daily maximum limitations specified in the permit are based on the best practicable control technology currently available (BPT) promulgated in 40 CFR Section 433.13. Monitoring frequency is maintained as quarterly based on the effluent flow rate of 0.034 MGD**.**

g. Basis for Whole Effluent Toxicity (WET) Monitoring and Limitations

Acute whole effluent toxicity (WET) monitoring is included in the permit to determine if the effluent from Behlen Mfg. Co. will cause toxicity in the receiving stream. Whole effluent toxicity limits are included in the permit because toxicity to aquatic life shall not be allowed at any time outside of either an acute or chronic mixing zone. According to Title 117, the pollutant levels or concentrations of wastewaters, which contain unknown or complex mixtures or, potentially, additive or synergistic toxic pollutants, shall not exceed 0.3 acute toxic units (TUa) or 1.0 chronic toxic units (TUc). The permit limitations are established from the acute toxic criteria according to the procedures given in the Technical Support Document for Water Quality-based Toxics Control (TSD) and are documented in the CORMIX model memo (Document #20260122875) (with metal calculations).

The proposed limits calculated in the wasteload allocation are less stringent than the existing limits in all seasons. Therefore, the current WET limits will be maintained to comply with anti-backsliding requirements. Monitoring frequency is maintained as annually based on the effluent flow rate of 0.034 MGD.

h. Basis for pH Discharge Limits and Monitoring

According to DWEE Title 117, hydrogen ion concentrations, expressed as pH, shall be maintained between 6.5 to 9.0 standard units (S.U.) in order to ensure water quality is not impacted. Therefore, the pH limits for the facility are maintained in the permit in the range of "6.5 to 9.0" based on Title 117, DWEE permitting procedures, and the water quality standard. Weekly monitoring is maintained in the permit due to the effluent flow rate of 0.034 MGD.

i. Basis for Reapplication Sampling Requirements

The Department is adding the requirement for sampling and analysis for reapplication according to the requirements set forth in 40 CFR Section 122.21(g). DWEE is implementing this sampling to replace the pollutant scan parameter in the permit. These requirements are included to determine if the facility is discharging any of the listed pollutants in amounts that have reasonable potential to violate water quality or may cause harm to the designated uses of the receiving stream.

Once per permit term testing is implemented for all parameters located in 40 CFR Section 122.21(g)(7)(iii); biochemical oxygen demand, chemical oxygen demand, total organic carbon, total suspended solids, ammonia as nitrogen, temperature (both winter and summer), and pH. If the facility is already sampling for parameters that are required by 40 CFR Section 122.21(g)(7)(iii) as part of regular discharge monitoring, those results should be submitted in NetDMR as required by the permit, which may be more frequently than once per permit term. Those same results should also be submitted with the facility's renewal application to fulfill the reapplication sampling requirements. Additional requirements and guidance are included in Part IV of the permit.

6. Outfall 004 – Basis for Monitoring and Limitations

Outfall 004 is the discharge of treated metal finishing process wastewater and the noncontact cooling water from the rotomolder to the City of Columbus POTW. The basis for permit monitoring requirements and limitations is specified below.

a. Basis for Flow Monitoring

40 CFR Section 122.44(i)(1)(ii) requires facilities to monitor the volume of effluent from each outfall. The median flow rate from the facility will be used in subsequent permits to determine water quality-based limits. Monitoring frequency is maintained as daily in order to obtain accurate discharge data.

b. Basis for Cadmium Limits and Monitoring

The average and daily maximum limitations for cadmium specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

c. Basis for Chromium Discharge Limits

The average and daily maximum limitations for chromium specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

d. Basis for Copper Discharge Limits

The average and daily maximum limitations for copper specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

e. Basis for Lead Discharge Limits

The average and daily maximum limitations for lead specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

f. Basis for Nickel Discharge Limits

The average and daily maximum limitations for nickel specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17.

Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

g. Basis for Silver Discharge Limits

The average and daily maximum limitations for silver specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

h. Basis for Zinc Discharge Limits

The average and daily maximum limitations for zinc specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is maintained as monthly based on the average daily flow rate of 0.034 MGD.

i. Basis for Cyanide Discharge Limits

The average and daily maximum limitations for cyanide specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

j. Basis for Total Toxic Organics Limits

The average and daily maximum limitations for total toxic organics specified in the draft permit are based on the pretreatment standards for existing sources (PSNS) promulgated in 40 CFR Section 433.17. Monitoring frequency is reduced to semiannual based on the average daily flow rate of 0.034 MGD, and at the request of the facility.

k. Basis for pH Limits and Monitoring

The pretreatment requirements for pH are established in 40 CFR Section 403.5(b)(2). In no case shall there be a pH lover than 5.0 standard units (S.U.). DWEE may also consider local requirements. The City of Columbus maintains limits of 6.5 to 9.0 S.U. as set forth in its municipal code Chapter 51: Sewers, Article 51.002. This limit is maintained in the permit. Weekly monitoring is maintained to due to the average daily flow rate of 0.034 MGD.

7. Other Requirements and Conditions

The *Other Requirements and Conditions* section has been updated. Method detection limit reporting requirements, additional monitoring, permit attachments, and permit modification and reopening requirements are included in Appendix A. These requirements are removed from Part V of the permit to reduce duplicative sections.

a. Narrative Limits

The narrative limits on toxicity, noxious odors, objectionable materials, and undesirable aquatic life are in accordance with water quality criteria in DWEE Title 117.

b. Loup River Canal Flow

DWEE is maintaining a requirement to discharge to the City to be protective of the receiving canal. The existing permit required the facility to discharge to the City when the canal water is not flowing or maintenance was being performed on the treatment system. DWEE is clarifying the no flow requirements. Wastewater discharge from Outfall 003 shall be diverted to the City of Columbus sanitary sewer system (Outfall 004) or terminated at any time that there is no flow in the Loup River Canal flow or maintenance is being performed on the Behlen wastewater treatment system. Behlen Manufacturing shall divert to the City if the daily average flow at Gage 00082100 goes to zero. The facility shall also divert to the City no flow is visually observed in the canal. This flow requirement is updated to ease compliance and be protective of the receiving canal.

c. Certified Operator Requirement

The requirement that the wastewater treatment plant is to be operated and maintained by certified operators is in accordance with DWEE Title 197.

d. Sludge Disposal

Behlen Mfg. Co. shall dispose of all solid wastes and sludges in accordance with State and Federal Regulations, including those in 40 CFR Part 257.

e. Whole Effluent Toxicity Corrective Actions

If the whole effluent toxicity tests results exceed the toxicity limitations in this permit, this is a permit violation and the Department may require the permittee to initiate Toxicity Identification Evaluation/Toxicity Reduction Evaluation (TIE/TRE) studies. The permittee must initiate TIE/TRE studies according to the *United States Environmental Protection Agency Methods for Aquatic Toxicity Evaluations and Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs)*.

f. Prohibited Discharge Standards

Discharges from the facility that include fire hazards, corrosive damage, obstruction to flow, interference with the treatment facility, heat, toxic gases, petroleum oil, and hauled pollutants are prohibited based on the requirements in 40 CFR Section 403.5. Notification to the POTW of potential problems, including slug loads, is according to the requirements set forth in 40 CFR Section 403.12(f).

g. Dilution of Wastewater

The use of process wastewater or other dilution as a partial or total substitute for adequate treatment is prohibited in accordance with 40 CFR Section 403.6(d).

h. Notification of Additional Pollutant Potential

The requirement to report to the DWEE and the POTW notification of system changes, production increases and/or the use of new chemicals or additives that may result in a significant increase in the discharge of pollutants is according to 40 CFR Section 403.6(a)(1).

i. 90-Day Compliance Report

The requirement to submit a 90-day compliance report is according to the requirements set forth in 40 CFR Section 403.12(d).

H. Supporting Documentation

The following documents and regulations were used in the preparation of the draft permit.

1. DWEE Title 117, *Nebraska Surface Water Quality Standards*, June 24, 2019.
2. DWEE Title 118, *Ground Water Quality Standards and Use Classifications*, September 20, 2023.
3. DWEE Title 119, *Rules and Regulations Pertaining to the Issuance of Permits under the National Pollutant Discharge Elimination System*, September 20, 2023.
4. DWEE Title 197, *Rules and Regulations for the Certification of Wastewater Treatment Facility Operators in Nebraska*, April 6, 2020
5. DWEE, *2022 Water Quality Integrated Report*, August 2, 2023.
6. *Technical Support Document for Water Quality-based Toxic Control* (EPA 505/2-90-001 PB91-127415, March 1991.
7. EPA's 40 CFR – *Code of Federal Regulations.*
8. CORMIX modeling memo; DWEE Document #20260122875.

9. Permit application form from Behlen Mfg. Co. received on June 25, 2026.

10. DMR data and facility file data for Behlen Mfg. Co.; NPDES NE0000647; DWEE ID 38724.

I. Information Requests

Inquiries concerning the draft permit, its basis or the public comment process may be directed to:

Kim Bubb Telephone: (402) 471-8830 Fax: (402) 471-2909

Individuals requiring special accommodations or alternate formats of materials should notify the Department by calling (402) 471-2186. TDD users should call (800) 833-7352 and ask the relay operator to call the Department at (402) 471-2186.

Copies of the application and other supporting material used in the development of the permit are available for review and copying at the Department's office between 8:00 A.M. and 5:00 P.M. on weekdays.

Location Address: 245 Fallbrook Boulevard, Lincoln, Nebraska

Mailing Address: NPDES and State Permits Section
Nebraska Department of Water, Energy, and Environment
245 Fallbrook Boulevard, Suite 100
Lincoln, Nebraska 68521

J. Submission of Formal Comments or Requests for Hearing

The date on which the public comment period ends is specified in the public notice. During the public notice period, the public may submit formal comments or objections, and/or petition the Department to hold a public hearing concerning the issuance of the draft permit. All such requests need to: be submitted in written form, state the nature of the issues to be raised, and present arguments and factual grounds to support them. The Department shall consider all written comments, objections and/or hearing petitions, received during the public comment period, in making a final decision regarding permit issuance.

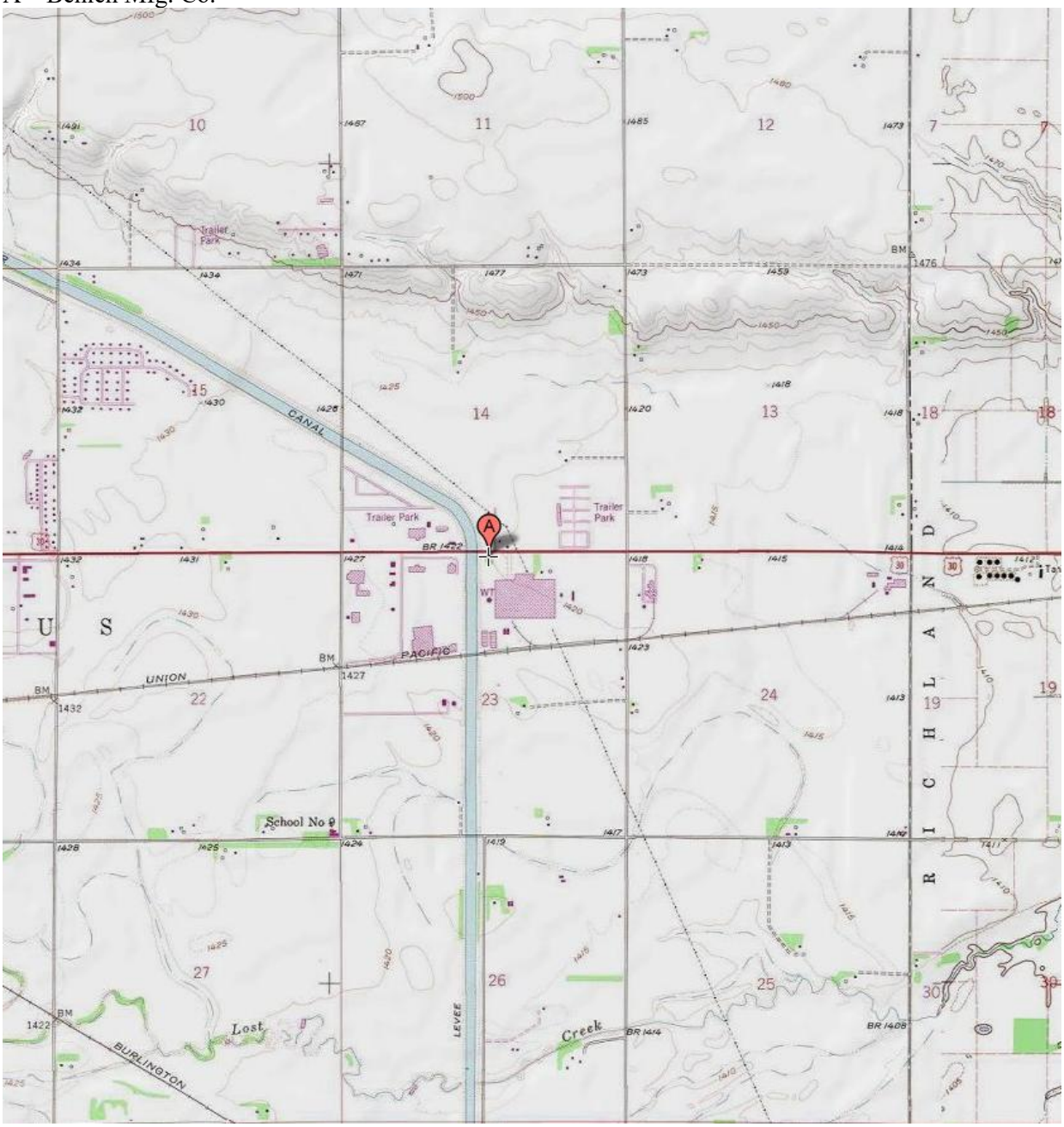
Formal comments, objections and/or hearing requests need to be submitted to:

Kim Bubb; NPDES and State Permits Section

Location Address: 245 Fallbrook Boulevard, Lincoln, Nebraska

Mailing Address: Nebraska Department of Water, Energy, and Environment
245 Fallbrook Boulevard, Suite 100
Lincoln, Nebraska 68521

Attachment 1 – Site Maps
Map 1 – Topographic Map
A – Behlen Mfg. Co.



Attachment 1 – Site Maps
Map 2 – Aerial Photograph
A – Behlen Mfg. Co.

