STATE OF MISSOURI

DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION

CONSTRUCTION PERMIT

The Missouri Department of Natural Resources hereby issues a permit to:

NEHAI PROPERTY OWNERS ASSOCIATION, INC.
Stanley Monnig
1000 Lake Drive,
Keytesville, MO 65261

for the construction of (described facilities):

See attached.

Permit Conditions:

See attached.

Construction of such proposed facilities shall be in accordance with the provisions of the Missouri Clean Water Law, Chapter 644, RSMo, and regulation promulgated thereunder, or this permit may be revoked by the Department of Natural Resources (department).

As the department does not examine structural features of design or the efficiency of mechanical equipment, the issuance of this permit does not include approval of these features.

A representative of the department may inspect the work covered by this permit during construction. Issuance of a permit to operate by the department will be contingent on the work substantially adhering to the approved plans and specifications.

This permit applies only to the construction of water pollution control components; it does not apply to other environmentally regulated areas.

March 25, 2025
Effective Date

March 24, 2027
Expiration Date

John Hoke, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction of a pump station at the existing wastewater treatment facility site, a forcemain to a new earthen storage basin and a new land application system. The existing discharge will be eliminated as the system is converting to land application only. The design average flow is 10,000 gallons per day (gpd).

A closure plan will need to be submitted to the Northeast Regional Office for review and approval prior to any closure activities.

This project will also include general site work appropriate to the scope and purpose of the project and all necessary appurtenances to make a complete and usable wastewater treatment facility.

II. COST ANALYSIS FOR COMPLIANCE

Pursuant to Section 644.145, RSMo, when issuing permits under this chapter that incorporate a new requirement for discharges from publicly owned combined or separate sanitary or storm sewer systems or publicly owned treatment works, or when enforcing provisions of this chapter or the Federal Water Pollution Control Act, 33 U.S.C. 1251 et seq., pertaining to any portion of a publicly owned combined or separate sanitary or storm sewer system or [publicly owned] treatment works, the Department of Natural Resources shall make a "finding of affordability" on the costs to be incurred and the impact of any rate changes on ratepayers upon which to base such permits and decisions, to the extent allowable under this chapter and the Federal Water Pollution Control Act. This process is completed through a cost analysis for compliance. Permits that do not include new requirements may be deemed affordable.

The department is not required to complete a cost analysis for compliance because the facility is not a combined or separate sanitary sewer system for a publically-owned treatment works.

III. CONSTRUCTION PERMIT CONDITIONS

The permittee is authorized to construct subject to the following conditions:

1. This construction permit does not authorize discharge.

2. All construction shall be consistent with plans and specifications signed and sealed by Tyler Shoemaker, P.E. with Allstate Consultants and as described in this permit.

3. The department must be contacted in writing prior to making any changes to the plans and specifications that would directly or indirectly have an impact on the capacity, flow, system layout, or reliability of the proposed wastewater treatment facilities or any design parameter that is addressed by 10 CSR 20-8, in accordance with 10 CSR 20-8.110(11).

4. State and federal law does not permit bypassing of raw wastewater, therefore steps must be taken to ensure that raw wastewater does not discharge during construction. If a sanitary sewer overflow or bypass occurs, report the appropriate information to the department's Northeast Regional Office per 10 CSR 20-7.015(9)(G).

5. The completed project shall be field tested to verify the system is delivering the design flow rate utilizing the system flow meter and a coverage test will be completed to ensure uniform coverage of the irrigation area with minimal dry spots over the specified radius.

6. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of one acre or more to obtain a Missouri state operating permit to discharge stormwater. The permit requires best management practices sufficient to control runoff and sedimentation to protect waters of the state. Land disturbance permits will only be obtained by means of the department's ePermitting system available online at https://dnr.mo.gov/data-e-services/missouri-gateway-environmental-management-mogem. See https://dnr.mo.gov/data-e-services/water/electronic-permitting-epermitting for more information.

7. In accordance with 10 CSR 20-6.010(12), a full closure plan shall be submitted to the department's Northeast Regional Office for review and approval of any permitted wastewater treatment system being replaced. The closure plan must meet the requirements outlined in Standard Conditions Part I & II of the Missouri State Operating Permit No. MO-0088510. Closure shall not commence until the submitted closure plan is approved by the department. Form J – *Request for Termination of a State Operating Permit*, shall be submitted to the Water Protection Program for termination of any existing Missouri state operating permit, once closure is completed in accordance with the approved closure plan.

8. All construction must adhere to applicable 10 CSR 20-8 (Chapter 8) requirements listed below.

- Vacuum testing, if specified for concrete sewer manholes, shall conform to the test procedures in ASTM C1244 – 11(2017) *Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test Prior to Backfill*, as approved and published April 1, 2017, or the manufacturer's recommendation. 10 CSR 20-8.120(4)(F)1.

- Exfiltration testing, if specified for concrete sewer manholes, shall conform to the test procedures in ASTM C969 – 17 *Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Precast Concrete Pipe Sewer Lines*, as approved and published April 1, 2017. 10 CSR 20-8.120(4)(F)2.

- Flood protection shall apply to new construction and to existing facilities undergoing major modification. The wastewater facility structures, electrical equipment, and mechanical equipment shall be protected from physical damage by not less than the 100-year flood elevation. 10 CSR 20-8.140(2)(B), 10 CSR 20-8.130(3)(A)

- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D), 10 CSR 20-8.130(3)(B)

- Adequate provisions shall be made to effectively protect facility personnel and visitors from hazards. The following shall be provided to fulfill the particular needs of each wastewater treatment facility: 10 CSR 20-8.130(3)(C), 10 CSR 20-8.140(8)
    - Fencing. Enclose the facility site with a fence designed to discourage the entrance of unauthorized persons and animals*;* 10 CSR 20-8.140(8)(A)

- The distance between wastewater pumping stations and all potable water sources shall be at least 50 feet in accordance with 10 CSR 23-3.010(1)(B). 10 CSR 20-8.130(3)(D)

- Multiple pumps shall be provided except for design average flows of less than 1,500 gpd. 10 CSR 20-8.130(4)(B) 1.

- Electrical equipment. Electrical equipment shall be provided with the following requirements:
    - 10 CSR 20-8.130(4)(B)2.A. Electrical equipment must comply with 10 CSR 20-8.140(7)(B);
    - Utilize corrosive resistant equipment located in the wet well; 10 CSR 20-8.130(4)(B)2.B.
    - Provide a watertight seal and separate strain relief for all flexible cable; 10 CSR 20-8.130(4)(B)2.C.
    - Install a fused disconnect switch located above ground for the main power feed for all pumping stations. 10 CSR 20-8.130(4)(B)2.D.
    - When such equipment is exposed to weather, it shall comply with the requirements of weather proof equipment; enclosure NEMA 4; NEMA 4X where necessary; and *NEMA Standard 250-2014*, published December 15, 2014. 10 CSR 20-8.130(4)(B)2.E.
    - Install lightning and surge protection systems; 10 CSR 20-8.130(4)(B)2.F.
    - Install a one hundred ten volt (110 V) power receptacle inside the control panel located outdoors to facilitate maintenance; 10 CSR 20-8.130(4)(B)2.G.
    - Provide Ground Fault Circuit Interruption (GFCI) protection for all outdoor receptacles. 10 CSR 20-8.130(4)(B)2.H.

- Water level controls must be accessible without entering the wet well. 10 CSR 20-8.130(4)(C)

- Valves shall not be located in the wet well unless integral to a pump or its housing. 10 CSR 20-8.130(4)(D)

- Covered wet wells shall have provisions for air displacement to the atmosphere, such as an inverted and screened "j" tube or other means. 10 CSR 20-8.130(4)(E).

- Submersible pump stations shall meet the applicable requirements under section (3) of this rule, except as modified in this section. 10 CSR 20-8.130(6)
    - Pump Removal. Submersible pumps shall be readily removable and replaceable without personnel entering, dewatering, or disconnecting any piping in the wet well. 10 CSR 20-8.130(6)(A)
    - 10 CSR 20-8.130(6)(B) Valve Chamber and Valves. Valves required under subsection (4)(D) of this rule shall be located in a separate valve chamber.
    - A minimum access hatch dimensions of 24 inches by 36 inches shall be provided. 10 CSR 20-8.130(6)(B)1.

- A portable pump connection on the discharge line with rapid connection capabilities shall be provided. 10 CSR 20-8.130(6)(B)2.

- Alarm systems with an uninterrupted power source shall be provided for pumping stations. 10 CSR 20-8.130(7)

- An audiovisual alarm or a more advanced alert system, with a self-contained power supply, capable of monitoring the condition of equipment whose failure could result in a violation of the operating permit, shall be provided for all wastewater treatment facilities. 10 CSR 20-8.140(7)(C)

- Emergency Operation. Pumping stations shall be capable of operating during emergencies to prevent the discharge of raw wastewater. In addition to the required emergency means of operation and a storage/detention basin or tank, at least one (1) of the following shall be provided: 10 CSR 20-8.130(8)

    - With sufficient engineering justification, designers may propose an alternative method to address emergency operations. At a minimum, this includes a reasonable amount of retention along with a dedicated generator of sufficient capacity capable of automatic start-up during power outages. All emergency equipment must be designed such that its operations can be tested on a regular schedule. Where independent electrical feeds are used for emergency power, each separate electrical feed shall be capable of starting and operating the pump station at its rated capacity. 10 CSR 20-8.130(8)(C)

- Force main system shall be designed to withstand all pressures (including water hammer and associated cyclic reversal of stresses), and maintain a velocity of at least two feet per second. 10 CSR 20-8.130(9)(A)

- Unless another distance is determined by the Missouri Geological Survey or by the department's Public Drinking Water Branch, the minimum distance between wastewater treatment facilities and all potable water sources shall be at least three hundred feet (300'). 10 CSR 20-8.140(2)(C)1.

- No treatment unit with a capacity of 22,500 gpd or less shall be located closer than the minimum distance of 200 feet to a neighboring residence and 50 feet to property line for lagoons. See 10 CSR 20-2.010(68) for the definition of a residence. 10 CSR 20-8.140(2)(C)2

- Facilities shall be readily accessible by authorized personnel from a public right–of-way at all times. 10 CSR 20-8.140(2)(D)

- Electrical systems and components in raw wastewater or in enclosed or partially enclosed spaces where hazardous concentrations of flammable gases or vapors that are normally present, shall comply with the NFPA 70 *National Electric Code (NEC)* (2017 Edition), as approved and published August 24, 2016, requirements for Class I, Division 1, Group D locations. 10 CSR 20-8.140(7)(B)

- A means of flow measurement shall be provided at all wastewater treatment facilities. 10 CSR 20-8.140(7)(E)

- All wastewater treatment facilities must have a screening device, comminutor, or septic tank for the purpose of removing debris and nuisance materials from the influent wastewater. 10 CSR 20-8.150(2)

- All screening devices and screening storage areas shall be protected from freezing. 10 CSR 20-8.150(4)(A)1.

- Provisions shall be made for isolating or removing screening devices from their location for servicing. 10 CSR 20-8.150(4)(A)2.

- Lagoon design for BOD_5 loadings shall not exceed 34 pounds per day per acre (lbs/day/acre) at the 3-foot operating depth in the primary cells. 10 CSR 20-8.200(4)(A)1.

- Treatment prior to surface irrigation shall provide performance equivalent to that obtained from a primary wastewater lagoon cell designed and constructed in accordance with 10 CSR 20-8.200(4), except that the lagoon depth may be increased to include wastewater storage in addition to the primary volume. 10 CSR 20-8.200(4)(B).

- Lagoon berms shall be constructed of relatively impervious material and compacted to at least 95 percent maximum dry density test method to form a stable structure. 10 CSR 20-8.200(5)(A)1.

- The minimum berm width shall be eight feet to permit access of maintenance vehicles. 10 CSR 20-8.200(5)(A)2.

- Minimum freeboard shall be two feet. 10 CSR 20-8.200(5)(A)3.

- An emergency spillway shall be provided that—
    - Prevents the overtopping and cutting of berms; 10 CSR 20-8.200(5)(A)4.A.
    - Is compacted and vegetated or otherwise constructed to prevent erosion; 10 CSR 20-8.200(5)(A)4.B. and

  - Has the ability for a representative sample to be collected, if discharging. 10 CSR 20-8.200(5)(A)4.C.

- The soil of the lagoon bottom shall be compacted with the moisture content between 2 percent below and 4 percent above the optimum water content and compacted to at least 95 percent maximum dry density test method. 10 CSR 20-8.200(5)(B)

- The lagoon shall be sealed to ensure that seepage loss is as low as possible and has a design permeability not exceeding 1.0 x 10-7 cm/sec. 10 CSR 20-8.200(5)(C)1.

- The minimum thickness of the compacted clay liner must be twelve inches (12"). For permeability coefficients greater than 1.0 × 10-7 cm/sec or for heads over five feet (5') such as an aerated lagoon system, the following formula shall be used to determine minimum seal thickness, Equation 200-1 per 10 CSR 20-8.200(5)(C)2.:

  Equation 200-1

$$t = \frac{H \times K}{5.4 \times 10^{-7\ \mathrm{cm/sec}}}$$

  where:
  K = the permeability coefficient of the soil in question;
  H = the head of water in the lagoon; and
  t = the thickness of the soil seal.

- Seep collars shall be provided on drainpipes where they pass through the lagoon seal. 10 CSR 20-8.200(5)(C)4.

- Unlined corrugated metal pipe shall not be used for influent lines due to corrosion problems. 10 CSR 20-8.200(5)(D)1.

- A manhole shall be installed with its invert at least six inches (6") above the maximum operating level of the lagoon, prior to the entrance into the primary cell, and provide sufficient hydraulic head without surcharging the manhole. 10 CSR 20-8.200(5)(D)2.

- The influent line(s) shall be located along the bottom of the lagoon so that the top of the pipe is just below the average elevation of the lagoon seal; however, there shall be an adequate seal below the pipe. 10 CSR 20-8.200(5)(D)3.

- The wetted application area of a surface irrigation system must be located
  - Outside of flood-prone areas having a flood frequency greater than once every 10 years; 10 CSR 20-8.200(7)(B)1.
  - At least 150 feet from existing dwellings or public use areas, excluding roads or highways; 10 CSR 20-8.200(7)(B)2.A.
  - At least 50 feet inside the property line; 10 CSR 20-8.200(7)(B)2.B.
  - At least 300 feet from any sinkhole, losing stream, or other structure or physiographic feature that may provide direct connection between the ground water table and the surface; 10 CSR 20-8.200(7)(B)2.C.
  - At least 300 feet from any existing potable water supply well not located on the property. Adequate protection shall be provided for wells located on the application site; 10 CSR 20-8.200(7)(B)2.D.

- One hundred feet to wetlands, ponds, gaining streams (classified or unclassified; perennial or intermittent); 10 CSR 20-8.200(7)(B)2.E. and

- The wetted application area of a surface irrigation system must be Fenced, or if not fenced, provide in the construction permit application or the facility plan, the—
  - Suitable barriers in place, 10 CSR 20-8.200(7)(B)3.B. or
  - Details on how public access is limited and not expected to be present. 10 CSR 20-8.200(7)(B)3.C.

- At a minimum, treatment prior to irrigation shall provide performance equivalent to that obtained from a primary wastewater lagoon cell and include 105 days wastewater storage in addition to the primary volume. 10 CSR 20-8.200(7)(C)

- An automatic notification alarm system shall be installed on the pressure monitoring system, on each pivot and pump system, and be capable of notifying an on-call operator when a fault occurs in the system. 10 CSR 20-8.200(7)(G)

9. Upon completion of construction:

   A. The NEHAI PROPERTY OWNERS ASSOCIATION, INC. will become the continuing authority for operation and maintenance of these facilities;

   B. Submit an electronic copy of the as-built engineering plans if the project was not constructed in accordance with previously submitted plans and specifications; and

   C. Submit the Statement of Work Completed form to the department in accordance with 10 CSR 20-6.010(5)(N) (https://dnr.mo.gov/document-search/wastewater-construction-statement-work-completed-mo-780-2155) and request the facility be converted to the MOG823257 general operating permit.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

The Nehai Property Owners Association, Inc. (NPOA) was issued an Abatement Order on Consent (AOC), which was effective and enforceable as of November 2, 2018. As part of the AOC, NPOA was required to submit an engineering report prepared by a professional engineer to the department that evaluated the existing plant and recommended operational changes and/or upgrades to maintain compliance with the Missouri Clean Water Law.

The engineering report was completed in April 2019 and recommended conversion to a subsurface drip irrigation system, but a subsequent soil morphology study determined the soils would not perform adequately. A revised engineering report was completed in September 2022 and approved by the department in October 2022, recommended a surface spray irrigation system. This project will eliminate the continuous effluent discharge.

2. FACILITY DESCRIPTION

The existing wastewater treatment facility includes septic tanks, a bar screen, an extended aeration package plant, chlorination, dechlorination with sludge land applied or disposed by a contract hauler. These will be eliminated after construction of the new no-discharge system.

The existing Lake Nehai Tonkayea WWTP is located at 0.1 miles NW of Lake Dr. and Tweetie Ln intersection, north of Keytesville, in Chariton County, Missouri. The facility currently has a design average flow of 9,000 gpd and serves a design population equivalent of approximately 90 people.

The new land application site will be located at located at 0.1 miles N of Lake Dr. and Lake View Cir intersection, north of Keytesville, in Chariton County, Missouri with a legal description of ¼ NE, Sec 12, T 55N, R 18W, Chariton County.

3. COMPLIANCE PARAMETERS

The existing facility is currently under a site-specific operating permit MO-0088510 with Ammonia as N limits. The proposed project will be required to meet the conditions of MOG823000 with an expiration date of August 24, 2027. The facility will be required to monitor storage basin freeboard, daily precipitation, daily volume land applied, application area, and application rate.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing major components that will remain in use include the following:

- The existing chlorine contact basin will be converted into a pump station.
- The rest of the treatment plant will be decommissioned in accordance with a closure plan.

Construction will cover the following items:

- Components are designed for a Population Equivalent of 90 based on hydraulic loading to the system.

- A doghouse manhole and approximately 35 lf of 8-inch PVC gravity line will be constructed on the existing influent line to bypass the extended aeration package plant and flow to the newly converted pumping station.
- Influent Pump Station – Conversion of a chlorine contact basin into a duplex influent pump station with two, 10 HP submersible pump capable of operating at 50 gpm at 150 feet of TDH.

- Force main – Construction of approximately 9,500 lf of 3-inch SDR 21 PVC force main with air release valves from the influent pump station to the influent manhole of the new earthen storage basin.

- Emergency Power – A 22-kW standby propane/natural gas generator and automatic transfer switch will be provided to operate the influent lift station in event of power failure.

- Flow Measurement – Installation of accurate flow measurement devices will give the treatment facility a means of improved data analysis.
  - Electromagnetic Meters –
    - An electromagnetic 4-inch flow meter shall measure influent flow out of the influent pump station.
    - An electromagnetic 8-inch flow meters shall measure effluent flow out of the land application pump station.

- Screening – Installation of screening devices removes nuisance inorganic materials from raw wastewater.
  - Trash Rack – A coarse manual trash rack will be located at the inlet to the influent pump station.

- A storage basin will be constructed and sealed with a 2 foot thick seal of the native clay rich soils at the basin site. A 12 inch rock liner of six inch clean/crushed limestone will be placed on the berm on top of the clay liner. The basin will have 3:1 sloping walls, the depth from the top of the berms to the lagoon floor will be 11 feet, including 2 feet as the sludge storage depth and clay seal protection, 2 feet of freeboard, 1 foot for the emergency spillway, and an operating depth of 6 feet. The basin is non-aerated and has a surface area of 1.8 acres and a wastewater volume of approximately 3,041,460 gallons. This provides approximately 201 days of retention at the proposed dry-weather design flow and 105 days including the 1-in-10-year rainfall minus evaporation for the proposed storage period. The berm width will be 10 feet.

- Land Application Pump Station – Construction of a land application pump station to transfer treated wastewater from the new earthen storage basin directly to the six fixed land application site sprinklers with a 50 HP pump capable of operating at 660 gpm at 194 feet of TDH.

- The storage basin and the Land Application Pump Station will be surrounded by a fence to restrict access.

- Land Application Site – The land application site is in the vicinity of the intersection of Lake Dr. and Lake View Cir., north of Keytesville, Chariton County. The land application site is owned by NPOA and is approximately 7.31 acres planted with grass/hay. This site is unfenced; however, the site is not accessible to the public due to natural topography, ditches, and road side barriers. Additionally, the access drive will have a lockable access gate and signage along the perimeter to further restrict access. Maximum application rates are 0.5 inches/hour, 1 inch/day, 3 inches/week, and 24 inches/year.

- Wastewater Irrigation –
  - Solid Set Sprinklers – The distribution includes 6 sprinklers. The sprinklers will be Nelson Big Gun 100 Series or equal. The sprinklers will be set with a height four feet above existing grade and have a nozzle size of 0.7 inch. There will be approximately 340 lf of 8-inch PVC SDR-21 force main, 240 lf of 6-inch PVC SDR-21 forcemain, and 910 lf of 4-inch PVC 21 force main constructed to distribute flow throughout the sprinkler system.

5. OPERATING PERMIT

The facility is converting to a no-discharge land application system, so the MOG823000 general permit will be applicable and a site specific operating permit will be no longer be necessary. After completion of construction project, submit: statement of work completed, and as-builts if the project was not constructed in accordance with previously submitted plans and specifications. A Missouri State Operating Permit, General Permit MO-G823257, will be issued after receipt of the above documents.

V. NOTICE OF RIGHT TO APPEAL

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Section 621.250 RSMo. To appeal, you must file a petition with the AHC within 30 days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Any appeal should be directed to:

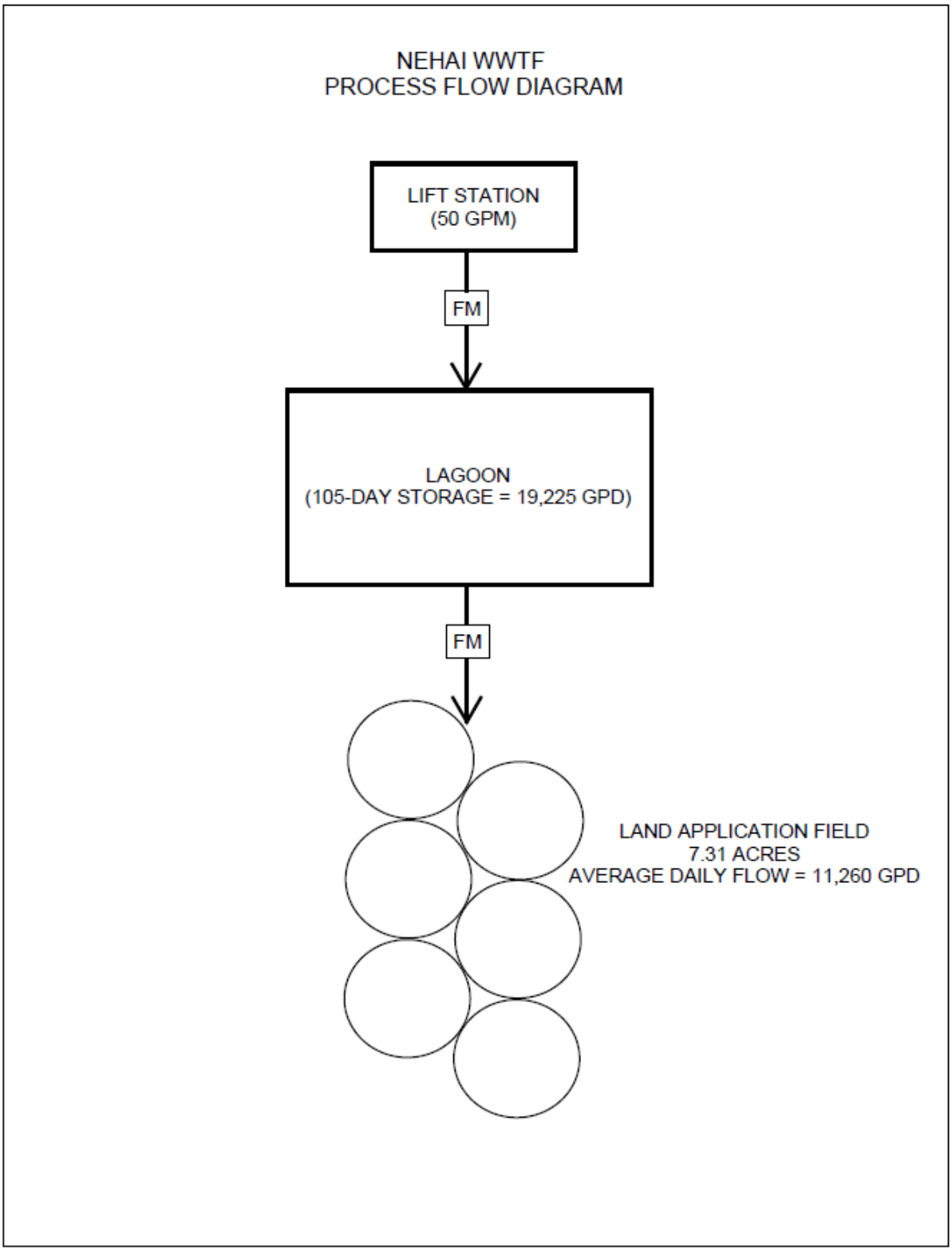
Administrative Hearing Commission
U.S. Post Office Building, Third Floor
131 West High Street, P.O. Box 1557
Jefferson City, MO 65102-1557
Phone: 573-751-2422
Fax: 573-751-5018
Website: https://ahc.mo.gov

Andrew Sell
Engineering Section
andrew.sell@dnr.mo.gov

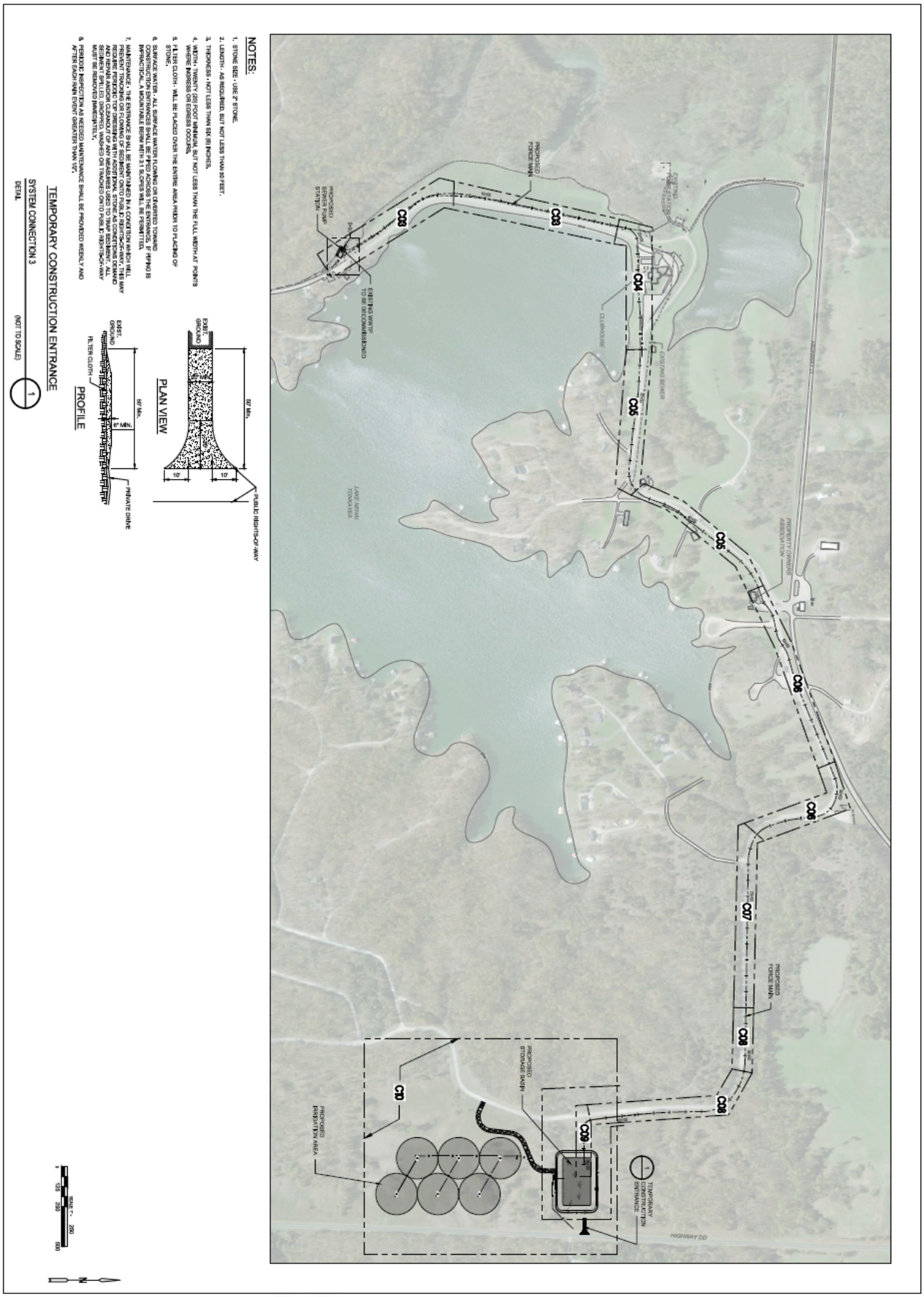
Chia-Wei Young, P.E.
Engineering Section
chia-wei.young@dnr.mo.gov

APPENDICES

- **Process Flow Diagram**



- **Overall Site Plan**



ALLSTATE CONSULTANTS
3510 LAKERIDGE PARKWAY, BLVD.
COLUMBIA, MO 65201
(573) 815-5700
FAX (573) 815-5706
WWW.ALLSTATECONSULTANTS.COM
KANSAS CITY, MISSOURI
(660) 376-3941
1405 SE TUDOR DR., SUITE 100C
LEES SUMMIT, MO 64082
(816) 524-3310

MISSOURI STATE CERTIFICATE OF AUTHORITY #2007000424

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MISSOURI.

WASTEWATER SYSTEM IMPROVEMENTS
NEHAI PROPERTY OWNERS ASSOCIATION

OVERALL SITE PLAN

DATE: JANUARY 2024

ISSUED:	
ISSUED FOR BID REVIEW	1-27-2024
ISSUED FOR CONSTRUCTION REVIEW	2-27-2025

JOB NUMBER: 21075.01
SCALE: AS SHOWN
SHEET: G01

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MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM

APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITY

FOR DEPARTMENT USE ONLY	
APP NO.	CP NO.
FEE RECEIVED 4,000	CHECK NO. 1054
DATE RECEIVED 10.2.24 - MH	

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Treatment Facility form has been developed in a modular format and consists of Part A and B. **All applicants must complete Part A.** Part B should be completed for applicants who currently land-apply wastewater or propose land application for wastewater treatment. **Please read the accompanying instructions before completing this form. Submittal of an incomplete application may result in the application being returned.**

PART A – BASIC INFORMATION

1.0 APPLICATION INFORMATION (Note – If any of the questions in this section are answered NO, this application may be considered incomplete and returned.)

1.1 Is this a Federal/State funded project? ☐ YES ☑ N/A Funding Agency: _____ Project #: _____

1.2 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☐ YES Date of Approval: _____ ☑ N/A

1.3 Has the department approved the proposed project's facility plan*?
☑ YES Date of Approval: 10/05/22 ☐ NO (If No, complete No. 1.4.)

1.4 [Complete only if answered No on No. 1.3.] Is a copy of the facility plan* for wastewater treatment facilities included with this application?
☐ YES ☐ NO ☐ Exempt because _____

1.5 Is a copy of the appropriate plans* and specifications* included with this application?
☑ YES Denote which form is submitted: ☑ Hard copy ☑ Electronic copy (See instructions.) ☐ NO

1.6 Is a summary of design* included with this application? ☑ YES ☐ NO

1.7 Has the appropriate operating permit application (A, B, or B2) been submitted to the department?
☐ YES Date of submittal: _____
☐ Enclosed is the appropriate operating permit application and fee submittal. Denote which form: ☐ A ☐ B ☐ B2
☑ N/A: However, In the event the department believes that my operating permit requires revision to permit limitation such as changing equivalent to secondary limits to secondary limits or adding total residual chlorine limits, please share a draft copy prior to public notice? ☐ YES ☐ NO

1.8 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☑ YES ☐ NO

1.9 Is the appropriate fee or JetPay confirmation included with this application? ☑ YES ☐ NO
See Section 7.0

* Must be affixed with a Missouri registered professional engineer's seal, signature and date.

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT
Wastewater System Improvements

2.2 ESTIMATED PROJECT CONSTRUCTION COST
$ 950,000

2.3 PROJECT DESCRIPTION
Construction of a pump station at the existing WWTP site, a forcemain to a new earthen storage basin, and a spray irrigation field.

2.4 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION
Lagoon Storage

2.5 DESIGN INFORMATION

A. Current population: _____; Design population: 90

B. Actual Flow: 5,000 gpd; Design Average Flow: 10,0[illegible] gpd;
Actual Peak Daily Flow: 23,0[illegible] gpd; Design Maximum Daily Flow: 40,0[illegible] gpd; Design Wet Weather Event: 40,0[illegible]

2.6 ADDITIONAL INFORMATION

A. Is a topographic map attached? ☑ YES ☐ NO

B. Is a process flow diagram attached? ☑ YES ☐ NO

3.0 WASTEWATER TREATMENT FACILITY

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Lake Nehai Tonkayea WWTP	660-222-3453	office@lakenehai.com

ADDRESS (PHYSICAL)	CITY	STATE	ZIP CODE	COUNTY
1000 Lake Dr.	Keytesville	MO	65261	Chariton

Wastewater Treatment Facility: Mo-0088510 (Outfall 1 Of 1)

3.1 Legal Description: _____ ¼, _____ ¼, _____ ¼, Sec. 11, T 55N, R 18W
(Use additional pages if construction of more than one outfall is proposed.)

3.2 UTM Coordinates Easting (X): 509365 Northing (Y): 4382024
For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)

3.3 Name of receiving streams: Tributary to Mussel Fork

4.0 PROJECT OWNER

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Nehai Property Owners Association	660-222-3453	office@lakenehai.com

ADDRESS	CITY	STATE	ZIP CODE
1000 Lake Dr.	Keytesville	MO	65261

5.0 CONTINUING AUTHORITY:
A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements.

NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Nehai Property Owners Association	660-222-3453	office@lakenehai.com

ADDRESS	CITY	STATE	ZIP CODE
1000 Lake Dr.	Keytesville	MO	65261

5.1 A letter from the continuing authority, if different than the owner, is included with this application. ☐ YES ☐ NO ☑ N/A

5.2 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A MISSOURI PUBLIC SERVICE COMMISSION REGULATED ENTITY.

A. Is a copy of the certificate of convenience and necessity included with this application? ☐ YES ☑ NO

5.3 COMPLETE THE FOLLOWING IF THE CONTINUING AUTHORITY IS A PROPERTY OWNERS ASSOCIATION.

A. Is a copy of the as-filed restrictions and covenants included with this application? ☐ YES ☑ NO

B. Is a copy of the as-filed warranty deed, quitclaim deed or other legal instrument which transfers ownership of the land for the wastewater treatment facility to the association included with this application? ☐ YES ☑ NO

C. Is a copy of the as-filed legal instrument (typically the plat) that provides the association with valid easements for all sewers included with this application? ☐ YES ☑ NO

D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? ☐ YES ☑ NO

6.0 ENGINEER

ENGINEER NAME / COMPANY NAME	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Tyler Shoemaker / Allstate Consultants LLC	660-376-2941	tshoemaker@allstate75.com

ADDRESS	CITY	STATE	ZIP CODE
30601 Highway 5	Marceline	MO	64658

7.0 APPLICATION FEE

☑ CHECK NUMBER 1054 ☐ JETPAY CONFIRMATION NUMBER

8.0 PROJECT OWNER: 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.

PROJECT OWNER SIGNATURE: Stanley J Monnig

PRINTED NAME	DATE
Stanley Monnig	9-25-2024

TITLE OR CORPORATE POSITION	TELEPHONE NUMBER WITH AREA CODE	E-MAIL ADDRESS
Manager	660-788-1821	

Mail completed copy to:
MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
P.O. BOX 176
JEFFERSON CITY, MO 65102-0176

END OF PART A.
REFER TO THE APPLICATION OVERVIEW TO DETERMINE WHETHER PART B NEEDS TO BE COMPLETE.

PART B – LAND APPLICATION ONLY
(Submit only if the proposed construction project includes land application of wastewater.)

8.0 FACILITY INFORMATION

8.1 Type of wastewater to be irrigated: ☑ Domestic ☐ State/National Park ☐ Seasonal business
☐ Municipal ☐ Municipal with a pretreatment program or significant industrial users
☐ Other (explain) _____

8.2 Months when the business or enterprise will operate or generate wastewater:
☑ 12 months per year ☐ Part of the year (list months): _____

8.3 This system is designed for:
☑ No-discharge.
☐ Partial irrigation when feasible and discharge rest of time.
☐ Irrigation during recreational season, April – October, and discharge during November – March.
☐ Other (explain) _____.

9.0 STORAGE BASINS

9.1 Number of storage basins: 1 (Use additional pages if greater than three basins.)

9.2 Type of basins: ☐ Steel ☐ Concrete ☐ Fiberglass ☑ Earthen ☐ Earthen with membrane liner

9.3 Storage basin dimensions at inside top of berm (feet). Report freeboard as feet from top of berm to emergency spillway or overflow pipe.

	Length	Width	Depth	Freeboard	Depth	Safety	% Slope
Basin #1:	366	241	11	2		1	33
Basin #2:							
Basin #3:							

9.4 Storage Basin operating levels (report as feet below emergency overflow level).

Basin #1:	Maximum operating water level	10 ft	Minimum operating water level	2 ft
Basin #2:	Maximum operating water level	____ ft	Minimum operating water level	____ ft
Basin #3:	Maximum operating water level	____ ft	Minimum operating water level	____ ft

9.5 Design depth of sludge in storage basins.
Basin #1: 2 ft Basin #2: _____ ft Basin #3: _____ ft

9.6 Existing sludge depth, if the basins are currently in operation.
Basin #1: _____ ft Basin #2: _____ ft Basin #3: _____ ft

9.7 Total design sludge storage: 138 dry tons and 110,808 cubic feet (wet)

10.0 LAND APPLICATION SYSTEM

10.1 Number of irrigation sites 1 Total Acres 7.31 Maximum % field slopes 8

Location:	____ ¼,	____ ¼,	NE ¼,	12 Sec.	55N T	18W R	CHAR County	7.31 Acres
Location:	____ ¼,	____ ¼,	____ ¼,	____ Sec.	____ T	____ R	____ County	____ Acres
Location:	____ ¼,	____ ¼,	____ ¼,	____ Sec.	____ T	____ R	____ County	____ Acres

(Use additional pages if greater than three irrigation sites.)

10.2 Type of vegetation: ☑ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe) _____

10.3 Wastewater flow (dry weather) gallons per day: Average annual 5,000 Seasonal _____ Off-season _____

10.4 Land application rate (design flow including 1-in-10 year storm water flows):

Design:	24 inches/year	0.20 inches/hour	1 inches/day	3 inches/week
Actual:	____ inches/year	____ inches/hour	____ inches/day	____ inches/week

10.5 Total irrigation per year (gallons): Design (allowable): 4,109,900 gal Actual: 1,825,000 gal

10.6 Actual months used for irrigation (check all that apply):
☑ Jan ☑ Feb ☑ Mar ☑ Apr ☑ May ☑ Jun ☑ Jul ☑ Aug ☑ Sep ☑ Oct ☑ Nov ☑ Dec

10.7 Land application rate is based on:
☑ Hydraulic Loading ☐ Other (describe) _____
☐ Nutrient Management Plan (N&P) If N&P is selected, is the plan included? ☐ YES ☐ NO

INSTRUCTIONS FOR COMPLETING
APPLICATION FOR CONSTRUCTION PERMIT – WASTEWATER TREATMENT FACILITIES

All blanks must be filled in when the application is submitted to the Missouri Department of Natural Resources. This includes the **required signature**.

Note: Use the form Application for Construction Permit – Sewer Extension, MO 780-1632, if only collection system component(s) are to be constructed.

A land disturbance permit is required if construction will result in the disturbance of one or more acres of land. A land disturbance permit is available through the department's ePermitting system at dnr.mo.gov/env/wpp/epermit/help.htm. A permit fee in accordance with 10 CSR 20-6.011 is required.

After receiving a complete application, the Department enters the application information into the Missouri Clean Water Information System. You may search for the status of a construction permit online at dnr.mo.gov/mocwis_public/applicationInprocessSearch.do.

Part A – Basic Application Information

1.0 If the answer to any of the questions in this section is no, this application may be considered incomplete and returned to the applicant.

1.1 Check the appropriate box. If the project is funded with federal or state monies, supply the funding agency name and project number.

1.2 Check the appropriate box. Provide the date of department approval for the antidegradation report. Include a copy of the approved *Water Quality and Antidegradation Review* with this application. Not every construction project may require an antidegradation review. For more information, guidance documents and forms concerning antidegradation visit dnr.mo.gov/env/wpp/permits/antideg-implementation.htm.

1.3 Check the appropriate box and provide the date of department approval. Per 10 CSR 20-8.110(2), a facility plan must be submitted to the department prior to the submittal of a construction permit application. The department has developed a fact sheet to aid in the development of an approvable facility plan, Facility Plan Guidance for Wastewater Treatment Facilities, Fact Sheet--PUB2416.

1.4 Complete only if No. 1.3 is answered No. Check the appropriate box. Include the exemption reason from 10 CSR 20-6.010(4)(B).

1.5 Check the appropriate box. Provide a copy of the appropriate plans and specifications for department review when applying for a construction permit per 10 CSR 20-8.110 and 10 CSR 20-6.010. A Missouri registered professional engineering seal, signature and date is required on each sheet of the plans and the cover of the technical specifications. An electronic copy of the construction permit application and the information listed below in Portable Document Format (PDF) searchable format or department approved equivalent per 10 CSR 20-6.010(5)(G), along with one (1) paper copy for projects not seeking department funding or two (2) paper copies for projects seeking department funding under 10 CSR 20-4.

1.6 Check the appropriate box. A summary of design shall accompany the plans and specifications when applying for a construction permit per 10 CSR 20-6.010(5)(G) and10 CSR 20-8.110(8). The department has developed a fact sheet to aid in the development of an acceptable summary of design. This document is available online at dnr.mo.gov/pubs/pub2417.htm.

1.7 Check the appropriate box if an operating permit modification is needed. Include the applicable operating permit application. New outfalls, discharges, projects converting to land application, or a lagoon upgrade require an operating permit modification application. Contact the Department for clarification. Projects that may not need an operating permit modification check the N/A box and indicate whether you want to review the draft prior to public notice should the Department determine a modification is required. The Department can modify your operating permit without an application for projects that are adding chlorine disinfection, constructing to meet current operating permit limits, or constructing to meet limits in a schedule of compliance.

- Form A is available online at dnr.mo.gov/forms/780-1479-f.pdf.
- Form B is available online at dnr.mo.gov/forms/780-1512-f.pdf.
- Form B2 is available online at dnr.mo.gov/forms/780-1805-f.pdf.

1.8 Check the appropriate box. More information about the Compliance and Enforcement Water Protection Program is available online at dnr.mo.gov/env/wpp/enf/index.html.

1.9 Check the appropriate box. Include payment or payment confirmation for the fee with your application. See 10 CSR 20-6.011(2) and Wastewater Treatment Facility Permit Fees -- PUB2564.

Note: The department returns incomplete construction permit applications and related engineering documents and the application forfeits the fees. See 10 CSR 20-6.011(5)(A). The applicant forfeits the fees when the applicant withdraws construction applications. See 10 CSR 20-6.011(5)(B).

2.1 Provide the name of the proposed construction project.

2.2 Provide the estimated project construction cost. The estimated and final project construction cost will be useful to the department in conducting affordability analyses.

2.3 Briefly describe the construction project by providing the number and capacity of each new unit.

2.4 Briefly describe the method of sludge handling, use and disposal at the treatment facility.

2.5 Provide the project design information and when required in the units specified.

A. Provide the current population and the design population to be served by the wastewater treatment facility.

B. Provide the estimated design flow information in accordance with 10 CSR 20-8.110(3).

2.6 Provide the additional project information in accordance with 10 CSR 20-8.110(5).

A. Attach a topographic map of the area extending at least one mile beyond the facility property boundaries. This map must show the outline of the facility and the following information. A topographic map is available online at dnr.mo.gov/internetmapviewer or from the Department of Natural Resources' Missouri Geological Survey in Rolla, Mo., at 573-368-2125. (Submittals of more than one map may be necessary to show the entire area.)

1. The area surrounding the wastewater treatment facility, including all unit processes.
2. The major pipes or other structures through which wastewater enters the treatment facility and the pipes or other structures through which treated wastewater is discharged from the treatment facility. Include outfalls from bypass piping, if applicable.
3. The actual point of discharge.
4. Wells, springs, other surface water bodies and drinking water wells that are: 1) within ¼ mile of the property boundaries of the treatment facility and 2) listed in public record or otherwise known to the applicant.
5. Any areas where biosolids produced by the treatment facility are treated, stored, or disposed.
6. If the treatment facility receives waste classified as hazardous under the Resource Conservation and Recovery Act, or RCRA, by truck, rail, or special pipe, show on the map where hazardous waste enters the treatment works and where it is treated, stored or disposed.
7. Outline any wastewater land application sites.

B. Provide a process flow diagram with the influent and effluent design average flow and peak flow capabilities. Also, depict all of the treatment facility components and the corresponding hydraulic capacities of each component. In addition, include all recycle flows in the diagram. If land application is used, depict all irrigation equipment and application sites.

3.0 Complete the Wastewater Treatment Facility information. Include the Missouri State Operation Permit number, outfall number, physical location, and other appropriate contact information.

3.1 Provide the project legal description. The department's mapping system is available online at dnr.mo.gov/internetmapviewer.

3.2 A Global Positioning System, or GPS, is a satellite-based navigation system. The department prefers that a GPS receiver is used and the displayed coordinates submitted. If access to a GPS receiver is not available, use a mapping system to approximate the coordinates.

3.3 Provide the name of the receiving stream(s) to which the discharge is directed and any subsequent tributary until a continuous flowing stream is reached.

4.0 Complete Project Owner information. Include the legal name, address, phone number with area code and email address.

5.0 Complete Continuing Authority contact information. If same as the Project Owner, write "Same as above". A continuing authority is a company, business, entity or person(s) that will be operating the facility and/or ensuring compliance with the permit requirements. A continuing authority is not, however, an entity or individual that is contractually hired by the permittee to sample or operate and maintain the system for a defined time period, such as a certified operator or analytical laboratory. To access the regulatory requirement regarding continuing authority, 10 CSR 20-6.010(2), please visit https://s1.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-6.pdf. A continuing authority's name must be listed exactly as it appears on the Missouri Secretary of State's (SoS's) webpage: https://bsd.sos.mo.gov/BusinessEntity/BESearch.aspx?SearchType=0, unless the continuing

authority is an individual(s), government, or otherwise not required to register with the SoS. See 10 CSR 20-6.010(2) for the regulatory requirement regarding continuing authority.

5.1 Check the appropriate box. Include a letter signed by the continuing authority (if not same as the project owner) stating they will "accept, operate and maintain" the wastewater treatment facility after successful construction.

If the continuing authority will not accept and agree to operate and maintain the wastewater treatment facility, this application will be considered incomplete.

5.2 Complete if the continuing authority is a Missouri Public Service Commission, or PSC, regulated entity. See 10 CSR 20-6.010(2)(B)3 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with a PSC entity as owner and continuing authority.

5.3 Complete if the continuing authority is a property owners association. See 10 CSR 20-6.010(2)(B)5 for more information. This information is not necessary for existing wastewater treatment facilities currently permitted with the property owners association as owner and continuing authority.

6.0 Complete Engineer contact information.

7.0 Check the appropriate box and include check or confirmation number. Applicants can pay fees online by credit card or eCheck through a system called JetPay.

- Per Section 37.001, RSMo, a transaction fee will be included. The transaction fee is paid to the third party vendor JetPay, not the Department of Natural Resources.
- Be sure to select the correct fee type and corresponding URL to ensure your payment is applied appropriately. If you are unsure what type of fee to pay, please contact the Water Protection Program's Budget, Fees, and Grants Management Unit by phone at (573) 522-1485 for assistance.
- Upon successful completion of your payment, JetPay provides a payment confirmation. Submit this form with a copy of the payment confirmation if requesting a new permit or a permit modification. For permit renewals of active permits, the Department will invoice fees annually in a separate request.
- If you are unable to make your payment online, but want to pay with credit card, you may email your name, phone number, and invoice number, if applicable, WPPFEES@dnr.mo.gov. The Budget, Fees, and Grants Management Unit will contact you to assist with the credit card payment. **Please do not include your credit card information in the email.**
- Applicants can find fee rates in 10 CSR 20-6.011 and Wastewater Treatment Facility Permit Fees -- PUB2564 (https://dnr.mo.gov/pubs/pub2564.htm).

WP 04 Construction Permits: https://magic.collectorsolutions.com/magic-ui/payments/mo-natural-resources/592/

8.0 The owner of the construction project must sign the application.

Part B – Land Application

Complete Part B only if the proposed construction project includes land application of wastewater from a treatment facility.

8.0 Provide the applicable Facility Information land application information. Check the appropriate boxes.

9.0 Provide the applicable Storage Basins information. Check the appropriate boxes.

- Freeboard – The depth from the top of the berm to the emergency spillway. Minimum depth • is one foot.
- Safety Volume – The depth to contain the 25-year, 24-hour storm event. Minimum depth is • one foot.
- Maximum Operating Water Level – The water level at the bottom of the safety volume. • Minimum depth is two feet below the top of the berm.
- Minimum Operating Water Level – The water level above the bottom of the lagoon basin for • seal protection. Minimum depth is two feet and may be greater when additional treatment volume is included.
- Total Depth is from the top of the berm to the bottom of the lagoon basin including freeboard.•

10.0 Provide the applicable Land Application System information. Check the appropriate boxes.

10.7 Check the appropriate box. If the land application rate is based on a Nutrient Management Plan, or N and P, include the plan with this application for department review.

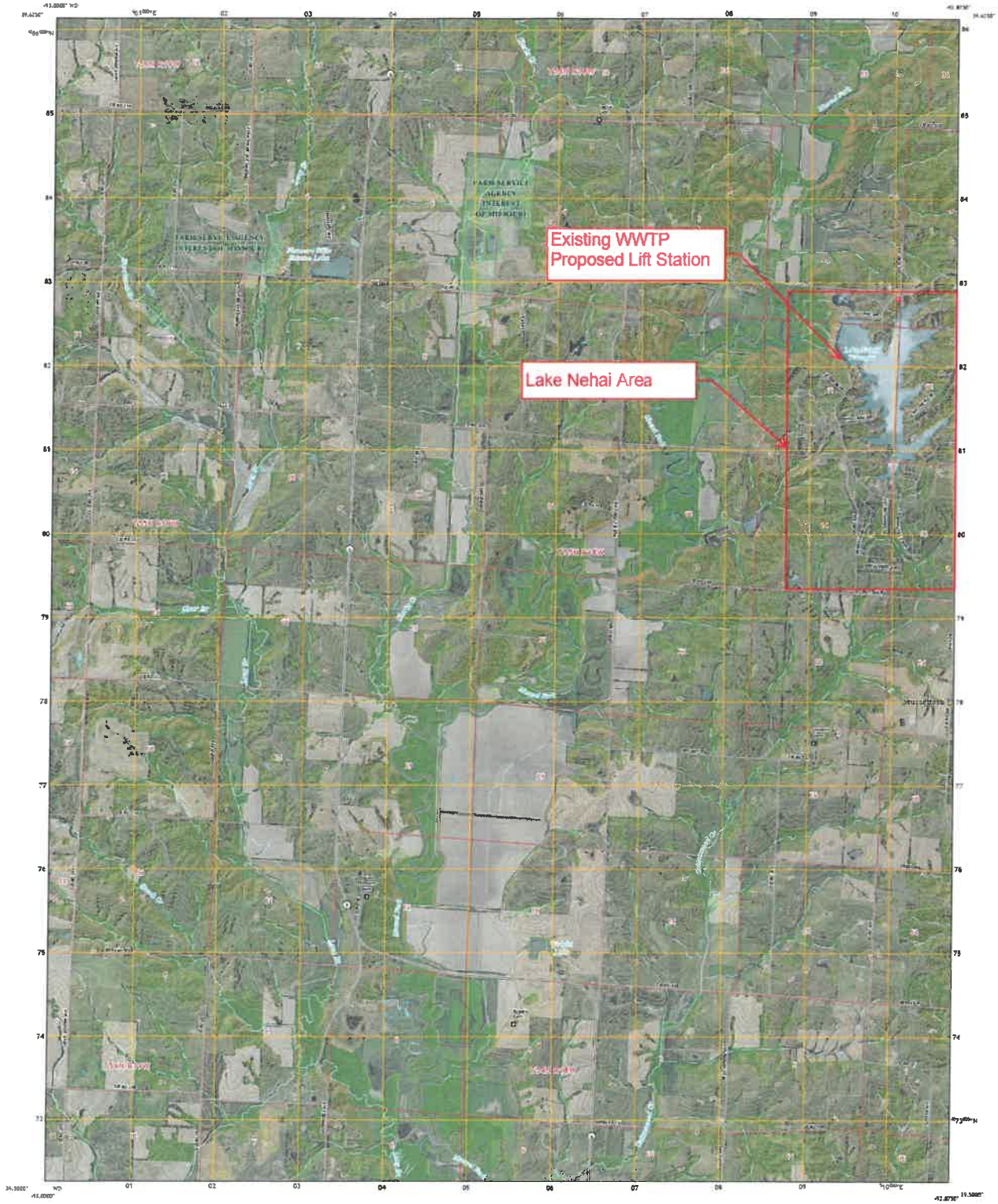
Mail the completed form and applicable fee to the department.

If there are any questions concerning this form, please contact the Department of Natural Resources, Water Protection Program at 800-361-4827 or 573-751-1300 or visit dnr.mo.gov/env/wpp.

USGS
U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

MIKE QUADRANGLE
MISSOURI - CHARITON COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey

SCALE 1:24 000

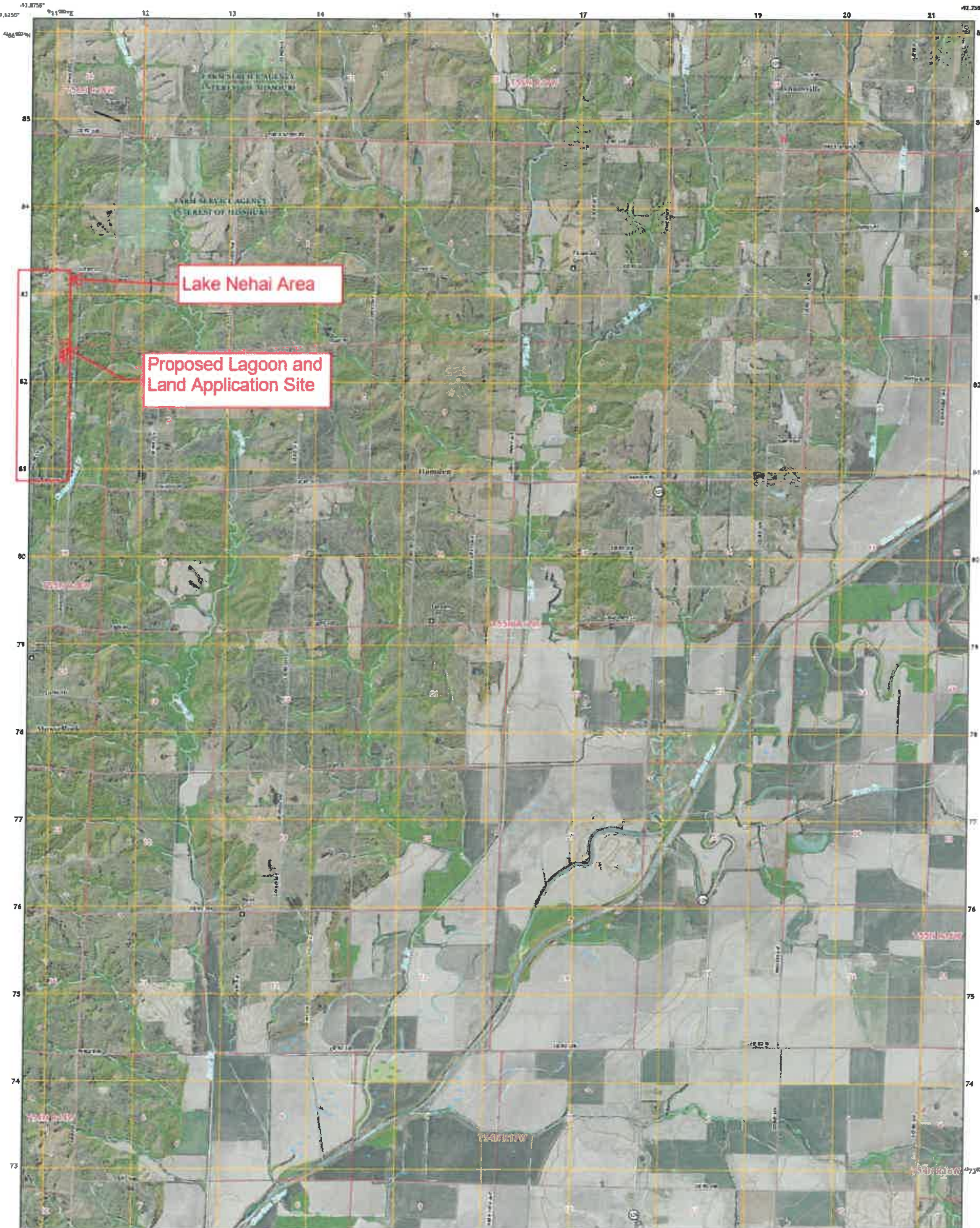
ROAD CLASSIFICATION

MIKE, MO
2017

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map
US Topo

BYNUMVILLE QUADRANGLE
MISSOURI - CHARITON COUNTY
7.5-MINUTE SERIES



BYNUMVILLE, MO
2017

NEHAI WWTF
PROCESS FLOW DIAGRAM