

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

Heartland Creamery and Community
6417 Shelby 150 CR, Suite A
LaBelle, MO 63434

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.

April 18, 2019
Effective Date

April 17, 2021
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

Construction of headworks screening, a manhole, a lift station, forcemain, a peracetic acid disinfection system, and a gravity recirculation sewer line.

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 in accordance with the plans and specifications submitted by McClure Engineering Co. on November 19, 2018.
3. The Department must be contacted in writing prior to making any changes to the approved 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(8).

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)(E)2.
5. In addition to the requirements for a construction permit, 10 CSR 20-6.200 requires land disturbance activities of 1 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 dnr.mo.gov/env/wpp/epermit/help.htm. See dnr.mo.gov/env/wpp/stormwater/sw-land-disturb-permits.htm for more information.
6. A United States (U.S.) Army Corps of Engineers (COE) permit (404) and a Water Quality Certification (401) issued by the Department or permit waiver may be required for the activities described in this permit. This permit is not valid until these requirements are satisfied. If construction activity will disturb any land below the ordinary high water mark of jurisdictional waters of the U.S. then a 404/401 will be required. Since the COE makes determinations on what is jurisdictional, you must contact the COE to determine permitting requirements. You may call the Department's Water Protection Program at 573-751-1300 for more information. See dnr.mo.gov/env/wpp/401/ for more information.
7. Upon completion of construction:
 - A. Submit an electronic copy of the as built if the project was not constructed in accordance with previously submitted plans and specifications; and
 - B. Submit the eDMR permit Holder and Certifier Registration, Form--MO 780-2204 to comply with your operating permit; and
 - C. Submit the enclosed form Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.

IV. REVIEW SUMMARY

1. CONSTRUCTION PURPOSE

Construction is to install components that will improve treatment and provide disinfection for meeting permit limits. The intent of the construction is also to maintain a system that is simple to operate and maintain with some flexibility in discharge options.

2. FACILITY DESCRIPTION

This is an existing facility with a lagoon system in need of upgrades to meet permit limits on ammonia and *E. coli*. The Heartland Creamery and Community is located near LaBelle, in Knox County, Missouri. The facility has a design average flow of 166,360 gpd and serves a population equivalent of approximately 1164 people.

3. COMPLIANCE PARAMETERS

The proposed project is required to meet final effluent limits of 45 mg/l and 30 mg/l for both BOD and TSS for Daily Maximums and Monthly Averages, respectively, and a Peracetic Acid residual of 1 mg/l as established in Operating Permit MO-0119130.

4. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Existing major components which will remain in use with some modification to the 6 cell lagoon system. Lagoon Cell Nos. 1 and 2 will be partitioned with a curtain baffle to segregate mixing zones; cell 1 will have complete mixing whereas cell 2 will have partial mixing.

Construction will cover installation of a manual coarse bar screen that will be housed in a small building. It will have 1/4" x 1 3/4" bars at variable spacings along the length of the removable grate. Influent will flow to a 5' manhole to be installed or bypass to existing lagoon cell 5.

A duplex influent pump station with each 5.5 HP suction pump capable of operating at 43 gpm at 48 feet of TDH will be installed and positioned after the new manhole. Wet well volume will provide 1900 gallons of storage for a total of 2 hours of storage.

The existing curtain baffle will be relocated decreasing the effective size of Cell 1 and increasing the length of Cell 2 by 140'. Cell 1 will have 2 anchor cables for suspending four 7.5 hp surface aerators. These lines will be spaced 13' between the baffle and each other; Cell 2 will have cable lines on 100' spacings with three 5 hp surface aerators. The line closest to the baffle will be spaced at 40'.

Wastewater will flow through the system through existing interconnected piping and drawdown structures (Cells 5 & 6). A recirculation pipe will be installed extending from Cell 5 to the new manhole at the headworks structure. A gravity sewer line will be installed from the drawdown structure in Cell 5 to the existing outfall line.

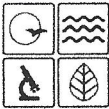
An effluent electromagnetic flow meter will be installed below the drawdown structure in cell 6 to measure the treated wastewater prior to being disinfected and discharged from Outfall No. 001.

A PAA skid for dosing will be installed above two 6' x 12' pre-cast contact chambers as part of the peracetic acid disinfection system. Chambers will allow for a 50:1 length to width ratio creating a 30-minute contact time during a peak flow of 288,000 gallons per day.

A dedicated irrigation forcemain exists with pumps located at Cell 4 and Cell 6 to center pivots in the land application fields.

5. OPERATING PERMIT

Operating permit MO-0119130 will require a modification to reflect the construction activities. The modified permit was successfully public noticed from March 15, 2019 to April 15, 2026 with no comments received. Submit the Statement of Work Completed to the Department in accordance with 10 CSR 20-6.010(5)(D) and request the operating permit modification be issued.



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM
**APPLICATION FOR CONSTRUCTION PERMIT –
WASTEWATER FACILITY**

| FOR DEPARTMENT USE ONLY | |
|-------------------------|-----------|
| APP NO. | CP NO. |
| FEE RECEIVED | CHECK NO. |
| DATE RECEIVED | |

APPLICATION OVERVIEW

The Application for Construction Permit – Wastewater Facility form is for construction pertaining to domestic wastewater treatment facilities, agrichemical facilities, and components thereof. This 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 Is this an application for an agrichemical? ☐ YES (See instructions.) ☒ N/A
- 1.3 Has the Missouri Department of Natural Resources approved the proposed project's antidegradation review?
☒ YES Date of Approval: In MDNR files
- 1.4 Has the department approved the proposed project's facility plan*?
☐ YES Date of Approval: _____ ☒ NO ☐ N/A (If Not Applicable, complete No. 1.5.)
- 1.5 [Complete only if answered Not Applicable on No. 1.4] Is a copy of the engineering report* for wastewater treatment facilities with a design flow less than 22,500 gpd included with this application?
☐ YES ☐ NO
- 1.6 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
- 1.7 Is a summary of design* included with this application? ☒ YES ☐ NO
- 1.8 Is a general operating permit applicable?
☐ YES Submit the appropriate operating permit application to the Regional Office at least 60 days prior to operation.
☒ NO Enclose the appropriate operating permit application and fee submittal. Denote which form: ☐ B ☒ B2
- 1.9 Is the facility currently under enforcement with the department or the Environmental Protection Agency? ☐ YES ☒ NO
- 1.10 Is the appropriate fee included with this application? ☒ YES ☐ NO (See instructions for appropriate fee.)

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

2.0 PROJECT INFORMATION

2.1 NAME OF PROJECT

Heartland Wastewater Treatment Lagoon System - Upgrade

2.2 PROJECT DESCRIPTION

Making changing to meeting discharge limits by July 1, 2020 as per NPDES Operating Permit

2.3 SLUDGE HANDLING, USE AND DISPOSAL DESCRIPTION

Biosolids Management Plan is being prepared for approval by MDNR; to conduct land application of solids on farmland owned by Permittee at agronomic rates.

2.4 DESIGN INFORMATION


- A. Current population: 280 _____; Design population: 1,664 _____
- B. Actual Flow: 36,000 _____ gpd; Design Average Flow: 166,360 _____ gpd;
Actual Peak Daily Flow: _____ gpd; Design Maximum Daily Flow: _____ gpd;
Design Wet Weather Event: _____

2.5 ADDITIONAL INFORMATION

- A. Is a topographic map attached? ☒ YES ☐ NO
- B. Is a process flow diagram attached? ☒ YES ☐ NO

2.6 ESTIMATED PROJECT CONSTRUCTION COST

\$

| | | | | |
|--|-----------------|---|-------------------|---|
| 3.0 WASTEWATER TREATMENT FACILITY | | | | |
| NAME Heartland WWTLS | | TELEPHONE NUMBER WITH AREA CODE (660) 284-6212 | | EMAIL ADDRESS agboone@adams.net |
| ADDRESS (PHYSICAL) 6417 Shelby 150 CR, Suite A | CITY LaBelle | STATE MO | ZIP CODE 63434 | COUNTY Shelby |
| Wastewater Treatment Facility: Mo- 0119130 (Outfall 001 Of 004) | | | | |
| 3.1 Legal Description: SW ¼, NE ¼, SW ¼, Sec. 35 , T 60N , R 10W (Use additional pages if construction of more than one outfall is proposed.) | | | | |
| 3.2 UTM Coordinates Easting (X): 586734 Northing (Y): 4423229 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83) | | | | |
| 3.3 Name of receiving streams: Tributary to Little Fabius River | | | | |
| 4.0 PROJECT OWNER | | | | |
| NAME Sharpe Holdings, Inc. | | TELEPHONE NUMBER WITH AREA CODE (660) 284-6212 | | EMAIL ADDRESS agboone@adams.net |
| ADDRESS 6417 Shelby 150 CR, Suite A | CITY Bethel | STATE MO | ZIP CODE 63434 | |
| 5.0 CONTINUING AUTHORITY: Permanent organization that will serve as the continuing authority for the operation, maintenance and modernization of the wastewater collection system. | | | | |
| NAME Sharpe Holdings, Inc. | | TELEPHONE NUMBER WITH AREA CODE (660) 284-6212 | | EMAIL ADDRESS agboone@adams.net |
| ADDRESS 6417 Shelby 150 CR, Suite A | CITY Bethel | STATE MO | ZIP CODE 63434 | |
| 5.1 A letter from the continuing authority, if different than the owner, is included with this application. <input type="checkbox"/> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> 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? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | | |
| D. Is a copy of the Missouri Secretary of State's nonprofit corporation certificate included with this application? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO | | | | |
| 6.0 ENGINEER | | | | |
| ENGINEER NAME / COMPANY NAME Philip R. Wilson / McClure | | TELEPHONE NUMBER WITH AREA CODE (660) 385-6441 | | EMAIL ADDRESS PWilson@mecresults.com |
| ADDRESS 107 Butler Street | CITY Macon | STATE MO | ZIP CODE 63552 | |
| 7.0 PROJECT OWNER: I hereby certify that I am familiar with the information contained in this application and to the best of my knowledge and belief such information is true, complete, and accurate, and if granted this permit, I agree to abide by the Missouri Clean Water Law and all rules, regulations, orders, and decisions, subject to any legitimate appeal available to applicant under Missouri Clean Water Law. I also understand the issuance of the construction permit does not guarantee the proposed wastewater treatment will meet the required effluent limitations of the issued Missouri State Operating Permit for this facility. | | | | |
| PROJECT OWNER SIGNATURE  | | | | |
| PRINTED NAME Robert Hambelton | | | DATE 11/14/18 | |
| TITLE OR CORPORATE POSITION General Manager | | TELEPHONE NUMBER WITH AREA CODE (660) 284-6212 | | EMAIL ADDRESS robert.hambelton@hlcommunity.org |
| 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. | | | | |

FACILITY DESCRIPTION (continued)

Permitted Feature #001 – Creamery / Church / Residential Housing / Auto Repair & Body Shop / Desktop Publishing & Design Company / School / College / Laundromat & Dry Cleaner / Medical Center / Car Wash / Museum / Country Store / Lodge / Telecommunication Company / Restaurants / Hair Salon / Thrift Store – SIC #2022, 8661, 7538, 7532, 7336, 8211, 8221, 7215, 8031, 7542, 8412, 5399, 7011, 4813, 5812, 7231, 5932

Six-cell lagoon / aerated 1st, 2nd, and 5th cells / partial wastewater irrigation from 4th and 6th cells / sludge is retained in lagoon.

Design population equivalent is 1,664.
Design flow is 166,360 gallons per day
Actual flow is 36,000 gallons per day.
Design sludge production is 59.5 dry tons per year.

Legal Description: SW ¼, NE ¼, SW ¼, Sec. 35, T60N, R10W, Knox County
UTM Coordinates: X=586734, Y=4423229
Receiving Stream: Tributary to Little Fabius River
First Classified Stream and ID: 8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.: (07110003-0303)

Facility Type:

Partial discharge lagoon and irrigation system

| Cell | Freeboard (below emergency overflow) | Storage Volume (minimum to maximum water levels) | Days of storage |
|------------------------------|--|--|----------------------------------|
| One and Two (aeration cells) | one foot | ~ 4,700,000 gallons | ✧ |
| Three (polishing cell) | one foot | ~ 1,400,000 gallons | ✧ |
| Four (storage cell) | one foot | ~ 17,900,000 gallons | ~ 365 days (creamery wastewater) |
| Five (aerated) | one foot | ~ 4,939,000 gallons | ~ 30 (entire design flow) |
| Six (aerated polishing) | one foot | ~ 1,690,000 gallons | ~ 10 (entire design flow) |

✧ The volume was not used to calculate available days of storage. The water level is not designed to fluctuate.

Land Application: (partial discharge)

Irrigation areas: 237 acres total available
October – May: Application rates: 0.5 inch/hour; 1.0 inch/day; 3 inches/week; 24 inches/year
June - September: Application rates: 1.0 inch/day; 3 inches/week; 24 inches/year
Field slopes: less than 10 percent
Equipment type: center pivot
Vegetation: grass hay and row crops
Application rate is based on: hydraulic loading rate

FACILITY DESCRIPTION (continued)

Permitted Feature #002– Center Pivot Land Application Field

| | |
|---------------------------------|---|
| Legal Description: | NE ¼, Sec. 2, T59N, R10W, Shelby County |
| UTM Coordinates: | X=587331, Y=4422369 |
| Receiving Stream: | Tributary to Little Fabius River |
| First Classified Stream and ID: | 8-20-13 MUDD V1.0 (C) (3960) |
| USGS Basin & Sub-watershed No.: | (07110003-0303) |

Permitted Feature #003– Center Pivot Land Application Field

| | |
|---------------------------------|---|
| Legal Description: | SW ¼, Sec. 2, T59N, R10W, Shelby County |
| UTM Coordinates: | X=586575, Y=4421480 |
| Receiving Stream: | Tributary to Tiger Fork |
| First Classified Stream and ID: | Tiger Fork (C) (82) |
| USGS Basin & Sub-watershed No.: | (07110004-0103) |

Permitted Feature #004– Center Pivot Land Application Field

| | |
|---------------------------------|---|
| Legal Description: | SE ¼, Sec. 2, T59N, R10W, Shelby County |
| UTM Coordinates: | X=587369, Y=4421474 |
| Receiving Stream: | Tributary to Tiger Fork |
| First Classified Stream and ID: | Tiger Fork (C) (82) |
| USGS Basin & Sub-watershed No.: | (07110004-0103) |

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 ☐ Subsurface
☒ 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: ⁴_____ (Use additional pages if greater than two 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.
Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____
Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Depth _____ Safety _____ % Slope _____

9.4 Storage Basin operating levels (report as feet below emergency overflow level).
Basin #1: Maximum operating water level _____ ft Minimum operating water level _____ ft
Basin #2: Maximum operating water level _____ ft Minimum operating water level _____ ft

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

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

9.7 Total design sludge storage: _____ dry tons and _____ cubic feet

10.0 LAND APPLICATION SYSTEM

10.1 Type of land application: ☐ Fixed Head Sprinklers ☒ Center Pivot ☐ Traveling Gun ☐ Drip Dispersal
☐ Subsurface Low Pressure Pipe ☐ Other (describe) _____

10.2 Number of irrigation sites _____ Total Acres _____ Maximum % field slopes _____
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ 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.)

10.3 Type of vegetation: ☐ Grass hay ☐ Pasture ☐ Timber ☐ Row crops
☐ Other (describe)

10.4 Wastewater flow (dry weather) gallons per day: Average annual _____
Seasonal _____ Off-season _____

10.5 Land application rate (design flow including 1-in-10 year storm water flows):
Design: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week
Actual: _____ inches/year _____ inches/hour _____ inches/day _____ inches/week

10.6 Total irrigation per year (gallons): Design: _____ gal Actual: _____ gal

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

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