

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



CONSTRUCTION PERMIT

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

City of Hornersville
ATTN: William Foresythe, Mayor
PO Box 219
Hornersville, MO 63855

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.

November 3, 2014
Effective Date

November 2, 2016
Expiration Date


Sara Parker Pauley, Director, Department of Natural Resources


John Madras, Director, Water protection Program

CONSTRUCTION PERMIT

I. CONSTRUCTION DESCRIPTION

This is the reissuance of Construction Permit Number CP0001358, which was issued on June 6, 2013 and expired on June 5, 2014. No changes in the project; just delayed.

Sewer extension: 530 linear feet of four-inch PVC pipe; three cleanouts; 1200 linear feet of eight-inch PVC pipe; three manholes; one – six feet diameter by 19 feet deep duplex lift station with each one horsepower pump designed for 80 gallons per minute at 20 feet of total dynamic head; 1478 linear feet of four-inch PVC pressure pipe; inspection and repair of existing sewers; replacement of electrical components and pumps at Mulberry Lift Station – two - five-horsepower pumps designed for 220 gallons per minute at 43 feet of total dynamic head; and all the necessary appurtenances to make sewer complete and usable.

Treatment Facility: Wastewater treatment system modifications to include relocation of inlet with 41 linear feet of six-inch ductile iron pipe; four foot diameter by two foot deep inlet manhole; 31 linear feet of ten-inch ductile iron pipe; converting existing lagoon system to no-discharge by installation of a depth gauge and rip-rap; two – 50-horsepower irrigation pumps – each designed for 1100 gallons per minute at 104 feet of total dynamic head; disc filters; 9870 linear feet of ten-inch PVC pipe; 1250 foot center pivot with 150-foot end gun; 56.15 acres of crop land for irrigation; and all necessary appurtenances to make the facility complete and usable. The wastewater treatment facility to serve the City of Hornersville with an average daily dry weather flow is 80,000 gallons per day and a population equivalent (PE) of 686. The total flow with 1 in 10 year rainfall-evaporation flow is 128,725 gallons per day.

II. FINDING OF AFFORDABILITY

Pursuant to Section 644.145, RSMo, the Department is required to determine whether a permit or decision is affordable and make a finding of affordability for each permit or decision.

The Finding of Affordability is not applicable. This construction permit does not include new environmental requirements beyond what are already required by an existing compliance schedule.

III. CONSTRUCTION PERMIT CONDITIONS

1. This construction permit does not authorize discharge.
2. All construction shall be in accordance with the plans and specifications submitted by Richard Cochran of Waters Engineering, Inc.
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 Southeast Regional Office per 10 CSR 20-7.015(9)(E)2.
5. This Construction Permit is invalid for projects required to comply with the requirements contained in 10 CSR 20-4, "Grants and Loans".
6. Protection of drinking water supplies shall be in accordance with 10 CSR 20-8.120(10). "There shall be no physical connections between a public or private potable water supply system and a sewer, or appurtenance thereto which would permit the passage of any wastewater or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole."
7. Sewers in relation to water works structures shall meet the requirements of 10 CSR 23-3.010 with respect to minimum distances from public water supply wells or other water supply sources and structures.
 - A. Sewer mains shall be laid at least ten feet horizontally from any existing or proposed water main. The distances shall be measured edge-to-edge. In cases where it is not practical to maintain a ten foot separation, the Department may allow a deviation on a case-by-case basis, if supported by data from the design engineer. Such a deviation may allow installation of the sewer closer to a water main, provided that the water main is in a separate trench or on an undisturbed earth shelf located on either side of the sewer and at an elevation so the bottom of the water main is at least 18 inches above the top of the sewer. If it is impossible to obtain proper horizontal and vertical separation as described above for sewers, the sewer must be constructed of slip-on or mechanical joint pipe or continuously encased and be pressure tested to 150 pounds per square inch to assure water tightness.
 - B. Manholes should be located at least ten feet horizontally from any existing or proposed water main.
 - C. Sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the outside of the water main and the outside of the sewer. This shall be the case where the water main is either above or below the sewer. The crossing shall be arranged so that the sewer joints will be equidistant and as far as possible from the water main joints. Where a water main crosses under a sewer, adequate structural support shall be provided for the sewer to maintain line and grade. When it is impossible to obtain proper vertical separation as stipulated above, one of the following methods must be specified:
 - a. The sewer shall be designed and constructed equal to the water pipe and shall be pressure tested to assure water tightness prior to backfilling; or

IV. REVIEW SUMMARY

1. AMMONIA

The Water Protection Program is providing this notice to inform permittees that EPA's published ammonia criteria for aquatic life protection is lower than the current Missouri criteria. The department has initiated stakeholder discussions on this topic and at this time, there is no firm target date for starting the rulemaking to adopt new standards. More information can be found at <http://dnr.mo.gov/pubs/pub2481.pdf>.

The proposed facility is no-discharge with irrigation; effluent limitations for ammonia are not applicable.

2. CONSTRUCTION PURPOSE

Convert existing discharge lagoon with no-discharge system including irrigation.

3. FACILITY DESCRIPTION

Conversion of existing single-cell discharge lagoon to a no-discharge lagoon system with a proposed pumpdown storage volume of approximately 13.7 million gallons. Center pivot irrigation is proposed.

4. COMPLIANCE PARAMETERS

Facility has been referred to enforcement due to failure to comply with the Schedule of Compliance for upgrading the wastewater treatment system. Facility determined that a no-discharge alternative was better than construction of a discharging system with disinfection and a potential future upgrade for ammonia.

5. REVIEW of MAJOR TREATMENT DESIGN CRITERIA

Lagoon with center-pivot irrigation onto a hay field. Maximum operating level is proposed as two-foot below top of berm with a one-foot deep spillway.

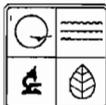
This is the reissuance of Construction Permit Number CP0001358, which was issued on June 6, 2013 and expired on June 5, 2014. No changes in the project; just delayed.

6. OPERATING PERMIT MODIFICATION

Operating permit MO-0055123 will require a modification to reflect the construction activities. Upon construction completion, submit a modification fee and Form B - Application for an Operating Permit for Domestic or Municipal Wastewater ($\leq 100,000$ gallons per day).

CP000068
 AP18062 C13557

JUL 15 2014



MISSOURI DEPARTMENT OF NATURAL RESOURCES
 WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
FORM B - APPLICATION FOR CONSTRUCTION OR OPERATING PERMIT FOR FACILITIES WHICH RECEIVE PRIMARILY DOMESTIC WASTE (≤100,000 gallons per day) UNDER MISSOURI CLEAN WATER LAW

| FOR AGENCY USE ONLY | |
|---------------------|---------------|
| CHECK NUMBER | |
| DATE RECEIVED | FEE SUBMITTED |
| 1-15-14 | 0 |

JS

NOTE ► PLEASE READ THE ACCOMPANYING INSTRUCTIONS BEFORE COMPLETING THIS FORM

1. This application is for:

- An operating permit and antidegradation review public notice.
- A construction permit following an appropriate operating permit and antidegradation review public notice.
- A construction permit and a concurrent operating permit and antidegradation review public notice.
- A construction permit (submitted before Aug. 30, 2008 or antidegradation review is not required).
- An operating permit for a new or unpermitted facility. Construction Permit # _____
- An operating permit renewal: Permit #MO-_____ Expiration Date _____
- An operating permit modification: Permit #MO-_____ Reason: _____

1.1 Is this a Federal/State Funded Project? YES NO Funding Agency/Project #: USD
 1.2 Is the appropriate fee included with the application (See instructions for appropriate fee)? YES NO

2. FACILITY (Outfall 1 of 1)

| | | | |
|--|----------------------|--|-------------------|
| NAME Hornersville Municipal Wastewater Treatment Facility | | TELEPHONE WITH AREA CODE (573) 737-2616 | |
| ADDRESS (PHYSICAL) Hornersville Airport, Co Rd 620 | CITY Hornersville | STATE MO | ZIP CODE 63855 |

2.1 LEGAL DESCRIPTION: ¼, ¼, NW ¼, Sec. 17, T 16, R 9E Dunklin County
 2.2 UTM Coordinates Easting (X): _____ Northing (Y): _____
 For Universal Transverse Mercator (UTM), Zone 15 North referenced to North American Datum 1983 (NAD83)
 2.3 Name of receiving stream: _____

3. OWNER

| | | | |
|------------------------------|----------------------|--------------------------------|--|
| NAME City of Hornersville | | E-MAIL ADDRESS coh@vip1.net | TELEPHONE WITH AREA CODE (573) 737-2616 |
| ADDRESS P.O. Box 219 | CITY Hornersville | STATE MO | ZIP CODE 63855 |

3.1 Request review of draft permit prior to Public Notice? YES NO

4. CONTINUING AUTHORITY: Permanent organization which will serve as the continuing authority for the operation, maintenance and modernization of the facility.

| | | | |
|-----------------------|------|--------------------------|----------|
| NAME Same as above | | TELEPHONE WITH AREA CODE | |
| ADDRESS | CITY | STATE | ZIP CODE |

5. OPERATOR

| | | |
|-----------------------|----------------------------|--|
| NAME Randy Gardner | CERTIFICATE NUMBER 3767 | TELEPHONE WITH AREA CODE (573) 738-2346 |
|-----------------------|----------------------------|--|

6. FACILITY CONTACT

| | | |
|---------------------------|----------------|--|
| NAME William Foresythe | TITLE Mayor | TELEPHONE WITH AREA CODE (573) 737-2616 |
|---------------------------|----------------|--|

7.0 ADDITIONAL FACILITY INFORMATION

7.1 Description of facilities (Attach additional sheet if required). Attach a 1" = 2,000' scale U.S. Geological Survey topographic map showing location of all outfalls and downstream landowners. (See Item 9.)

7.2 Facility SIC code: 4952; Discharge SIC code: _____; Facility NAICS code: _____; Discharge NAICS code: _____.

7.3 Number of people presently connected or population equivalent (P.E.) _____ Design P.E. 810
 Number of units presently connected: Homes 301 Trailers _____ Apartments _____ Other _____
 Design flow for this outfall: 81000 Total design flow for the facility: 81000 Actual flow for this outfall: 34000
 Commercial Establishment: Daily number of employees working _____ Daily number of customers/guests _____

7.4 Length of pipe in the sewer collection system? 4.5 feet/miles (Please denote which unit is appropriate.)

7.5 Does any bypassing occur in the collection system or at the treatment facility? Yes No (If yes, attach explanation.)

7.6 Does significant infiltration occur in the collection system? Yes No (If yes, attach explanation and proposed repair.)

7.7 Is industrial waste discharged to the facility identified in Item 2? Yes No (If yes, see instructions.)

7.8 Will the discharge be continuous through the year? Yes No
 a. Discharge will occur during the following months: None
 b. How many days of the week will the discharge occur? None

7.9 Is wastewater land applied? Yes No (If yes, attach Form I.)

7.10 Will chlorine be added to the effluent? Yes No
 a. If chlorine is added, what is the resulting residual? _____ µg/l (micrograms per liter)

7.11 Does this facility discharge to a losing stream or sinkhole? Yes No

7.12 Attach a flow chart showing all influents, treatment facilities and outfalls.

7.13 Has a waste load allocation study been completed for this facility? Yes No

7.14 List all permit violations, including effluent limit exceedances in the last five years. Attach a separate sheet if necessary. If none, write none. Under current AOC

8. SLUDGE HANDLING, USE AND DISPOSAL

8.1 Is the sludge a hazardous waste as defined by 10 CSR 25? Yes No

8.2 Sludge Production, including sludge received from others: 12.2 Design Dry Tons/Year 5.2 Actual Dry Tons/Year

8.3 Capacity of sludge holding structures:
 Sludge storage provided: _____ cubic feet; _____ days of storage; _____ average percent solids of sludge;
 No sludge storage is provided.

8.4 Type of Storage: Holding tank Building Other (Please describe) In Lagoon
 Basin Other (Please describe) In Lagoon
 Concrete Pad

8.5 Sludge Treatment:
 Anaerobic Digester Lagoon Composting
 Storage Tank Aerobic Digester Other (Attach description)
 Lime Stabilization Air or Heat Drying

8.6 Sludge Use or Disposal:
 Land Application Surface Disposal (Sludge Disposal Lagoon, Sludge held for more than two years)
 Contract Hauler Incineration
 Hauled to Another Treatment Facility Sludge Retained in Wastewater treatment lagoon
 Solid Waste Landfill Other _____ Attach explanation sheet.

8.7 **PERSON RESPONSIBLE FOR HAULING SLUDGE TO DISPOSAL FACILITY**
 By Applicant By Others (complete below)

NAME _____

| | | | |
|----------------------|--------------------------------|----------------------|----------------|
| ADDRESS _____ | CITY _____ | STATE _____ | ZIP CODE _____ |
| CONTACT PERSON _____ | TELEPHONE WITH AREA CODE _____ | PERMIT NO. MO- _____ | |

8.8 **SLUDGE USE OR DISPOSAL FACILITY**
 By Applicant By Others (Please complete below.)

NAME _____

| | | | |
|----------------------|--------------------------------|----------------------|----------------|
| ADDRESS _____ | CITY _____ | STATE _____ | ZIP CODE _____ |
| CONTACT PERSON _____ | TELEPHONE WITH AREA CODE _____ | PERMIT NO. MO- _____ | |

8.9 Does the sludge or biosolids disposal comply with federal sludge regulations under 40 CFR 503?
 Yes No (Please attach explanation)

9. DOWNSTREAM LANDOWNER (S). ATTACH ADDITIONAL SHEETS AS NECESSARY. SEE INSTRUCTIONS.

NAME
 Bond & Bettye Rouse

| | | | |
|----------------------------------|----------------------|-------------|-------------------|
| ADDRESS 14238 County Road 620 | CITY Hornersville | STATE MO | ZIP CODE 63855 |
|----------------------------------|----------------------|-------------|-------------------|

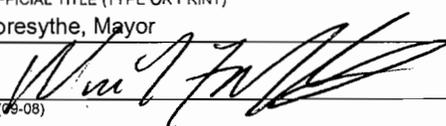
10. DRINKING WATER SUPPLY INFORMATION

10.1 WHAT IS THE SOURCE OF YOUR DRINKING WATER SUPPLY:
 A. Public supply (municipal or water district water) Yes
 If public, please give name of the public supply Hornersville
 B. Private well _____
 C. Surface water (lake, pond or stream) _____

10.2 Does your drinking water source serve at least 25 people at least 60 days per year (not necessarily consecutive days)?
 Yes No

10.3 Does your supply serve housing which is occupied year round by the same people? This does not include housing which is occupied seasonally?
 Yes No

11. I certify that I am familiar with the information contained in the application, that 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 the Missouri Clean Water Law.

| | |
|--|--|
| NAME AND OFFICIAL TITLE (TYPE OR PRINT) William Foresythe, Mayor | TELEPHONE WITH AREA CODE (573) 737-2616 |
| SIGNATURE  | DATE SIGNED 7/6/14 |

JUL 15 2014



MISSOURI DEPARTMENT OF NATURAL RESOURCES
WATER PROTECTION PROGRAM, WATER POLLUTION BRANCH
(SEE MAP FOR APPROPRIATE REGIONAL OFFICE)
**FORM I – PERMIT APPLICATION FOR CONSTRUCTION AND
OPERATION OF WASTEWATER IRRIGATION SYSTEMS**

FOR AGENCY USE ONLY

PERMIT NUMBER

MO -

DATE RECEIVED

INSTRUCTIONS: The following forms must be submitted with Form I: FORM B for domestic wastewater. Submit FORMS E and G for land disturbance permit if construction areas total one acre or more.

1.00 FACILITY INFORMATION

1.10 Facility Name

Hornersville Municipal Wastewater Treatment Facility

1.20 Application for: Construction Permit (attach Engineering report, Plans and Specifications per 10 CSR 20-8)

Operating Permit (if no construction permit, attach engineering documents)

Date Irrigation System Began Operation: _____

Operating Permit Renewal

1.30 Type of wastewater to be irrigated: Domestic Municipal State/National Park Seasonal business

Municipal with Pretreatment Program or Significant Industrial Users Other (explain) _____

SIC Codes (list all that apply, in order of importance) 4952

1.40 Months when the business or enterprise will operate or generate wastewater:

12 months per year Part of year (list Months): _____

1.50 This system is designed for:

No-discharge Partial irrigation when feasible and discharge rest of time.

Irrigation during recreation season (April – October) and discharge during November – March.

Other (explain) _____

1.60 List the Facility outfalls which will be applicable to the irrigation system from outfalls listed on Form B.

Outfall Nos. 1 _ _ _ _ _

2.00 STORAGE BASINS

2.10 Number of storage basins: 1 Type of basin: Steel Concrete Fiberglass Earthen

Earthen with membrane liner

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

(Complete Attachment A: Profile Sketch)

Basin #1: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____

Basin #2: Length _____ Width _____ Depth _____ Freeboard _____ Berm Width _____ % Slope _____

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

Basin #1: Maximum water level _____ ft. Minimum operating water level _____ ft.

Basin #2: Maximum water level _____ ft. Minimum operating water level _____ ft.

2.40 Depth of sludge in lagoons and storage basins 2 ft.

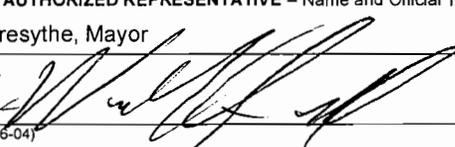
Total sludge stored _____ dry tons _____ cu. ft.

3.00 LAND APPLICATION SYSTEM

3.10 Number of irrigation sites 1 Total Acres _____ Maximum % field slopes 1

Location: _____ ¼, _____ ¼, SE _____ ¼, 12 _____ Sec. 16 _____ T 8E _____ R _____ Dunk _____ County _____ Acres

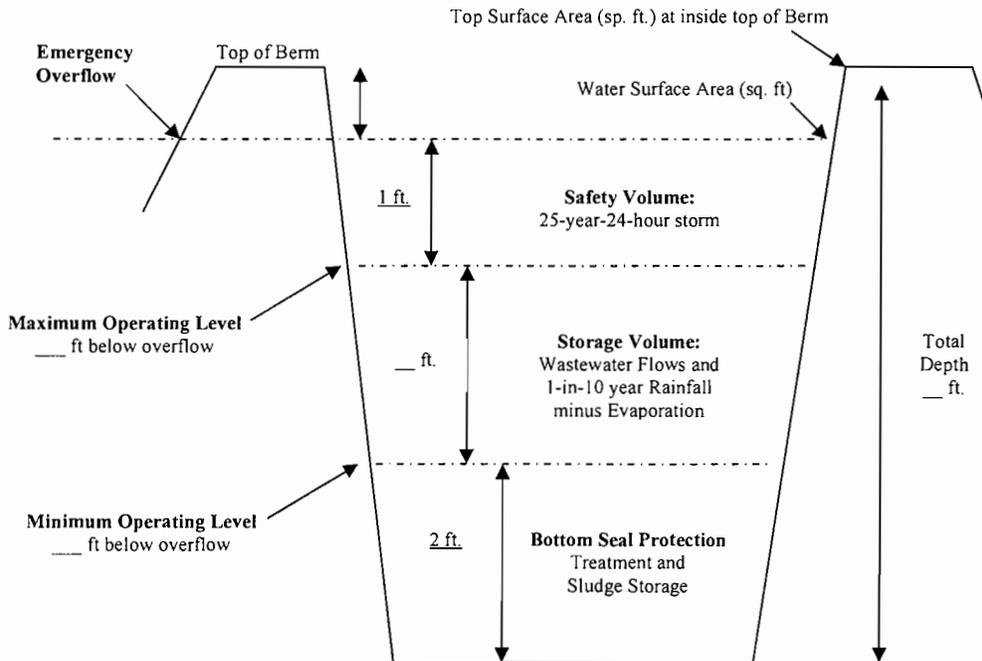
Location: _____ ¼, _____ ¼, _____ ¼, _____ Sec. _____ T _____ R _____ County _____ Acres

| | |
|--|---|
| 3.11 | Type of vegetation: <input type="checkbox"/> Grass hay <input type="checkbox"/> Pasture <input type="checkbox"/> Timber <input checked="" type="checkbox"/> Row crops <input type="checkbox"/> Other (describe) _____ |
| 3.20 | Wastewater flow (dry weather) gallons/day: Average annual: <u>.081</u> Seasonal _____ Off-season _____ Months of seasonal flow: _____ Human Population Equivalent: <u>810</u> |
| 3.21 | Land Application rate per acre (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 Total Irrigation per year (gallons): _____ Design _____ Actual Actual months used for Irrigation (check): <input checked="" type="checkbox"/> Jan <input checked="" type="checkbox"/> Feb <input checked="" type="checkbox"/> Mar <input checked="" type="checkbox"/> Apr <input checked="" type="checkbox"/> May <input checked="" type="checkbox"/> Jun <input checked="" type="checkbox"/> Jul <input checked="" type="checkbox"/> Aug <input checked="" type="checkbox"/> Sep <input checked="" type="checkbox"/> Oct <input checked="" type="checkbox"/> Nov <input checked="" type="checkbox"/> Dec |
| 3.22 | Land Application Rate is based on: <input type="checkbox"/> Nutrient Management Plan (N&P) <input checked="" type="checkbox"/> Hydraulic Loading <input type="checkbox"/> Other (describe) _____ |
| 3.30 | Equipment type: <input type="checkbox"/> Sprinklers <input type="checkbox"/> Gated pipe <input checked="" type="checkbox"/> Center pivot <input type="checkbox"/> Traveling gun <input type="checkbox"/> Other (describe) _____ Equipment Flow Capacity: <u>.066</u> Gallons per hour _____ Total hours of operation per year |
| 3.40 | Public Access Restrictions for irrigation sites: <input type="checkbox"/> Site is Fenced <input type="checkbox"/> Wastewater disinfection prior to irrigation <input checked="" type="checkbox"/> Other (describe): <u>located off roadway on private ground</u> |
| 3.50 | Separation distance (in feet) from the outside edge of the wetted irrigation area to down gradient features: _____ Permanent flowing stream _____ Losing Stream <u>50</u> Intermittent (wet weather) stream _____ Lake or pond <u>50</u> Property boundary _____ Dwellings _____ Water supply well _____ Other (describe) _____ |
| 3.60 | SOILS INFORMATION: Use information from the County Soil Survey, NRCS, or professional soil scientist. Soil Series Name <u>Dubs</u> Depth of bedrock <u>na</u> Feet Depth of water table <u>3</u> Feet Soil Infiltration rate in inches/hour (in/hr) for most restrictive layer within the following soil depth ranges: <u>1.3</u> In/hr for 0-12 in soil depth <u>1.3</u> In/hr for 12-24 inch soil depth <u>1.3</u> In/hr for 24-60 inch soil depth |
| 3.70 | Include a recent Geologic Report by the Department's Geological Survey and Resource Assessment Division with your construction permit. |
| 3.80 | Attach a current copy of the Operation and Maintenance (O&M) Plan for the irrigation system. Date of O&M Plan: _____ |
| 3.81 | Attach a site map showing topography, storage basins, irrigation sites, property boundary, streams, wells, roads, dwellings and other pertinent features. |
| 3.82 | Attach a facility sketch showing treatment units, storage basins, pipelines, irrigation equipment, application sites and other features. |
| 4.00 CERTIFICATION | |
| I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine or imprisonment. | |
| CONSULTING ENGINEER – Name, Official Title and Engineering Firm (TYPE OR PRINT) Richard Cochran, Jr. | TELEPHONE NUMBER (area code and number) (573) 471-5680 |
| SIGNATURE | DATE SIGNED |
| OWNER OR AUTHORIZED REPRESENTATIVE – Name and Official Title (TYPE OR PRINT) William Foresythe, Mayor | TELEPHONE NUMBER (area code and number) (573) 737-2616 |
| SIGNATURE  | DATE SIGNED 7/6/14 |

ATTACHMENT A

(To be included with Form I)

**Lagoon or Storage Basin
PROFILE SKETCH**



DEFINITION OF TERMS (REFER TO THE PROFILE SKETCH ABOVE).

- a. Freeboard is depth from top of berm to emergency spillway (minimum 1 foot);
- b. Safety Volume is depth for 25-year, 24-hour storm (minimum of 1 foot);
- c. Maximum Operating Level is at bottom of the safety volume (minimum of 2 feet below top of berm).
- d. Minimum Operating Level is 2 feet above bottom of lagoon for seal protection per 10 CSR 20-8.
The minimum operating level may be greater than 2 feet when additional treatment volume is included.
- e. Storage Volume and days storage are based on the volume between Minimum and Maximum Operating Levels.
- f. Total Depth is from top of berm to bottom of basin including freeboard.