

Draft

GROUND WATER DISCHARGE PERMIT

Permit Number: 19-DP-3460

Effective Date:

Expiration Date:

Pursuant to the provisions of Title 9 of the Environment Article, Annotated Code of Maryland, and regulations promulgated thereunder, the Department of the Environment, hereinafter referred to as "the Department," hereby authorizes:

Town of Trappe
P.O. Box 162
Trappe, Maryland 21673

And

Trappe East Holding Business Trust
1960 Gallows Road
Suite 300
Vienna, VA 22182

hereinafter referred to as "Permittee," to discharge treated wastewater via spray irrigation as described herein from

The Trappe East Wastewater Facility
East End of Backtown Road
Trappe, Talbot County, MD 21673

to ground waters of the State in accordance with the following special and general conditions, including the attached maps made a part hereof.

I. Special Conditions

A. Waste and Wastewater Limitations

1. The Permittee is authorized to discharge treated wastewater via spray irrigation onto designated areas shown on the attached Map A.
2. Prior to discharge to the storage pond, all wastewaters shall be treated to produce an effluent which does not exceed the following maximum limitations.

Parameter Code (STORET)	Parameter Description	Effluent Limitations		Concentration	Monitoring Frequency	Sample Type
		Yearly Average	Monthly Average			
00310	BOD ₅	N/A	N/A	10 mg/l	Weekly	8 hr. Comp
00530	Suspended Solids	N/A	N/A	10 mg/l	Weekly	8 hr. Comp
50050	Flow ⁽¹⁾	N/A	540,000 ⁽²⁾ gpd (Ultimate Permitted Flow) 37,500 gpd (Permitted Flow at Phase I.A.)	N/A	Continuous	Recorded
00600	Total Nitrogen ⁽¹⁾	N/A	N/A	8 mg/l	Weekly	8 hr. Comp
	Total Phosphorus ⁽¹⁾	N/A	N/A	3 mg/l	Weekly	8 hr. Comp
74055	Fecal Coliform	N/A	N/A	3 MPN/100ml	Weekly	Grab ⁽³⁾
00400	pH	N/A	N/A	6.5 – 8.5	Daily	Grab ⁽³⁾

⁽¹⁾ Permit modification is required for any future expansion of this facility.

⁽²⁾ Although the disposal area is designed for an ultimate wastewater flow of 540,000 gpd (monthly average), approval of the permitted flow to 540,000 gpd is divided into five separate phases. The development of the commercial properties is expected to be included in phases 2, 3, and 4. The proposed WWTP will be constructed in phases to be consistent with the size of each phase of the development. The capacity of each phase of the WWTP is expected to be approximately 100,000 gallons per day per phase. The spray irrigation infrastructure will be constructed in 100,000 gpd phases as well, to support the discharge from each phase of the WWTP. The final phase will be planned for the remaining 140,000 gpd. Phase IA is the initial phase of Phase I and is authorized to discharge 37,500 gpd of wastewater flow. Subsequent phases of the WWTP will be constructed when the current phase is approaching 80% of its capacity.

- Phase I flow 100,000 gpd (Phase I.A flow 37,500 gpd)
- Phase II flow 100,000 gpd
- Phase III flow 100,000 gpd
- Phase IV flow 100,000 gpd
- Phase V flow 140,000 gpd

Once the wastewater flow reaches an annual average of 100,000 gpd in Phase I, the Permittee shall notify the Department to increase the projected flow to 200,000 gpd in Phase II. Once the wastewater flow reaches an annual average of 200,000 gpd in Phase II, the Permittee shall notify the Department to increase the projected flow to 300,000 gpd in Phase III. Once the wastewater flow reaches an annual average of 300,000 gpd in Phase III, the Permittee shall notify the Department to increase the

projected flow to 400,000 gpd in Phase IV. Once the wastewater flow reaches an annual average of 400,000 gpd in Phase IV, the Permittee shall notify the Department to increase the projected flow to 540,000 gpd in Phase V.

(3) Grab samples shall be obtained from the effluent line just prior to spray irrigation.

3. Groundwater samples taken from eleven (11) groundwater monitoring wells per requirements of Section I.D.2.c shall be monitored by the permittee according to the following limitations:
- The discharge of the wastewater authorized in this permit shall not cause groundwater quality to exceed the limitations listed below, as measured in the designated down gradient monitoring wells (MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, and MW-9 shown on Map B). The Table below includes limitations based on the drinking water standards for NO₂ (Nitrite 00615), Total Dissolved Solids (70295), Chloride (00940), and Fecal Coliform (74055).
 - For other parameters not included in (a) above, the discharge of the treated wastewater, which is authorized in this permit, shall not cause an exceedance of the groundwater quality standards adopted by the Department of the Environment in COMAR 26.04.01, and 26.08.02.09.C. For any exceedance, if the average groundwater quality in the background upgradient wells exceeds the groundwater discharge standards, the Department may evaluate whether a violation exists on a case by a case basis.

Parameter Code (STORET)	Parameter Description	Concentration ^{(2) (3)}	Measurement Frequency	Type of Sample
00620	NO ₃	(1)	Once every 3 months	Grab
00615	NO ₂	1 mg/l	Once every 3 months	Grab
00625	TKN	(1)	Once every 3 months	Grab
00600	Total Nitrogen (TKN+NO ₂ +NO ₃)	(1)	Once every 3 months	Grab
00400	pH	(1)	Once every 3 months	Grab
00650	PO ₄ (total)	(1)	Once every 3 months	Grab
70295	Total Dissolved Solids	500 mg/l	Once every 3 months	Grab
00940	Chloride	250 mg/l	Once every 3 months	Grab
74055	Fecal Coliform	Non-Detect	Once every 3 months	Grab

- Monitoring required without limitation.
- For any reported exceedance at the downgradient well, if the average groundwater quality in either background upgradient well (MW-1, MW-2, MW-10, and MW-11) or background downgradient wells (MW-3, MW-4, MW-5, MW-6, MW-7, MW-8, and MW-9) exceeds the groundwater discharge standards, the Department may evaluate whether a violation exists on a case by case basis.
- The groundwater quality limitations are not applicable to the upgradient wells (MW-1, MW-2, MW-10, and MW-11) as shown on Map B.

B. Effluent Monitoring

1. Measurements and Reporting Requirements

a. NetDMR

Monitoring results obtained during each calendar year shall be reported using NetDMR. Results shall be submitted to the Department no later than the 28th day of the month following the end of the reporting year.

NetDMR is a freely available U.S. EPA tool allowing permittees to submit monitoring reports electronically via a secure Internet application. You must apply for access to NetDMR at www.epa.gov/netdmr and register for a NetDMR Webinar.

Before you can submit official DMRs using NetDMR you must attend a training Webinar and successfully set-up and submit test monitoring results electronically. You must complete all requirements to gain access to NetDMR within six (6) months of authorization under this permit, including applying for access within one (1) month of being registered.

Hard copies of monitoring results obtained before the permittee is granted access to NetDMR shall be submitted postmarked no later than the 28th of the month following the end of the reporting year. Signed copies of the results shall be submitted to the Department at the following address:

Attention: Discharge Monitoring Reports
Water and Science Administration
Compliance Program
Maryland Department of the Environment
1800 Washington Boulevard, STE-425
Baltimore, MD 21230-1708

NetDMR is designed to improve data quality, reduce reporting liabilities, save paper, and provide cost savings. It allows participants to discontinue mailing in hard copy forms. For more information call the MDE Water Management Administration, Compliance Program, at [410-537-3510](tel:410-537-3510) and ask to speak to a NetDMR coordinator.

b. NetDMR Waiver Request

The permittee may be eligible for a temporary waiver by MDE from electronic reporting requirements if the permittee has no current internet access and is physically located in a geographic area (i.e., zip code) that is identified as under-served for broadband internet access in the most recent National Broadband Map from the Federal Communications Commission (FCC); or if the permittee can demonstrate that such electronic reporting of the monitoring data and reports would pose an unreasonable burden or expense to the permitted facility. Waiver requests must be submitted in writing to the Department for written approval at least 120 days prior to the date the permittee would be required under this permit to begin using NetDMR. All waiver requests and hardcopy DMRs shall be sent to the following address:

Attention: Discharge Monitoring Reports
Water and Science Administration
Compliance Program
Maryland Department of the Environment
1800 Washington Boulevard, STE-425
Baltimore, MD 21230-1708

c. Monthly Operating Reports

The permittee shall submit monthly operating reports on a form supplied or approved by the Inspection and Compliance Program. Reports shall be submitted to the Inspection and Compliance Program postmarked no later than 28th day of the month following the reporting month.

d. Groundwater Monitoring Report (GMR)

Groundwater monitoring data required by this permit under I.A.3. a. shall be summarized on a discharge monitoring report form supplied by the Compliance Program. The yearly report shall be submitted on or before the 28th day of the month following the end of each calendar year to the address shown on I.B.1a.above. The permittee shall report any violations of the groundwater quality standards in accordance with General Condition II.A.3 included in this permit.

2. Definitions

- a. The monthly average shall be determined by the summation of all the required measurements divided by the number of days during the month when the measurements were made. The only exception is flow rate which shall be divided by the total number of days of each month. The yearly average flow shall be the summation of monthly average flow divided by 12. The fecal coliform shall be determined as a geometric mean of the monthly data.
- b. The weekly average shall be determined by the summation of all the required measurements divided by the number of days during the week when the measurements were made.
- c. The minimum and maximum values called for in this permit shall represent the results of a 24-hour day
- d. A composite sample is a combination of individual samples obtained, at least, on an hourly basis over the specified time period. Either the volume of each individual sample is proportional to discharge flow rates or the sampling interval (for constant volume samples) is proportional to the flow rates over the time period used to produce the composite.
- e. A grab sample is an individual sample collected in less than 15 minutes.

3. Analysis Methods

The analytical methods used shall conform to test procedures for the analysis of pollutants as identified in "Guideline Establishing Test Procedures for the Analysis of Pollutants" (40 CFR 136),

and published in the Federal Register, Volume 41, No. 232-Wednesday, December 1, 1976 or as amended.

4. Monitoring Equipment Maintenance

The Permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation to insure accuracy of measurements.

5. Data Recording Requirements

For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

- a. The exact place, date, and time of sampling;
- b. The dates the analyses were performed;
- c. The person (s) who performed the analyses;
- d. The analytical techniques or methods used; and
- e. The results of all required analyses.

6. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed, calibration and maintenance of instrumentation and original recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years. This period may be extended during the course of litigation, or when so requested by the Department.

C. Land Application Requirements and Limitations

1. The Permittee shall apply treated wastewaters by spray irrigation on the designated primary irrigation area (85 acres) outlined on Map B. The area (22 acres) immediately west of the **lagoon** area is designated as a reserve area. The hydraulic loading rates of the spray irrigation area shall not exceed 2 inches/week (**annual average**).
2. Irrigation of treated wastewater shall not take place during periods of precipitation, high winds, freezing conditions, or saturated soil. At no time shall spray irrigation be conducted on areas with bare unvegetated soils or with groundwater table depth less than 2' from ground surface. Excessive irrigation resulting in surface runoff or ponding is prohibited. The Permittee shall install or provide a storage facility designed to hold treated wastewater during periods when irrigation cannot take place. The storage facility shall be capable of containing wastewater generated during no less than 60 days of normal operation of the wastewater facility. The storage facility shall provide a 3-foot freeboard and shall be sealed or constructed to prevent the direct seepage of stored waters into ground waters beneath the site. The Department will review future operational records and may require additional storage capacity, if necessary. The Permittee shall provide a 30-day reserve storage capacity for this purpose. **The 60-day storage capacity is allowed to be phased based on the estimated flows of each section in accordance with condition I.A.2. At this phase (Phase I section A) the permittee is required to provide 60-day storage based on design flow of 37,500 gpd.**

3. The Permittee shall provide adequate means to prevent spray droplets from entering adjacent properties, either by direct application or wind carry-over. These means shall include a buffer zone that is:
 - a. **a minimum of 100-foot buffer to potable wells and surface water intakes;**
 - b. **a minimum of 25-foot buffer to intermittent streams, perennial streams and residential structures;**
 - c. a minimum of 50-foot buffer to schools and playgrounds;
 - d. a minimum of 25-foot buffer to public roads and residential property lines

4. Daily logs of the response of each disposal area to the application of treated effluent shall be kept by the plant operator. Subjects to be included in the log are:
 - a. Area(s) or section(s) under irrigation.
 - b. Application rates (hourly and weekly).
 - c. Effect of irrigation on vegetation.
 - d. Instances of ponding or runoff.
 - e. Weather conditions.

The log shall be kept at the waste treatment facility and be available for inspection by the Department personnel upon request.

5. The Permittee shall develop a "Manual of Operation and Maintenance". The manual shall clearly state how the entire treatment facility shall be managed to insure satisfactory treatment and operation. The manual shall include:
 - a. Operating and maintenance procedures involving the sewage treatment facility and spray application equipment.
 - b. Testing procedures to determine acceptable maximum application rates and cycles.
 - c. Monitoring and sampling procedures as required in this permit.
 - d. Personnel requirements.
 - e. A Nutrient management plan that will recycle the entire effluent nitrogen and phosphorus loads into the vegetation grown on the spray field. The plan should also include procedures for removing crop residues or grass mowed during regular field maintenance in all areas.

The manual shall be submitted to the Department for approval three (3) months after the issuance date of the Department's Sewerage Construction Permit.

6. Installations of the storage ponds shall be in compliance with all applicable State and County guidelines.

7. The vegetation planted at the spray irrigation fields must have a phosphorus uptake rate of greater than 58 lb/acre/year unless the phosphorus adsorption capacity evaluation process included in Condition I.D.3. demonstrates that soils at the spray irrigation site provide adequate capacity to remove phosphorus in the irrigation water.

8. **Within 3 months of the starting date of the spray irrigation system operation, the Permittee shall submit to the department for approval a nutrient management plan for the spray irrigation**

system. The plan shall include procedures to minimize nitrogen discharge to the groundwater system. The plan shall be prepared in accordance with COMAR 15.20.08.05 with applicable effluent characteristics.

D. Monitoring Requirements of the Land Application System

1. The land treatment system, including the pre-treatment process, shall be monitored by a certified operator. **The wastewater treatment plant and the spray irrigation system shall be operated by a Maryland State Certified Operator in accordance with the provisions of COMAR 26.06.01 and consistent with the approved operation and maintenance manual. In order to ensure that the operator is proficient in the operation of the spray irrigation system, the operator shall take required training courses, when available, at a frequency approved by the Maryland Board of Waterworks and Waste Systems Operator. This training shall be specific to the operation of the wastewater system in addition to any other training requirements of the operator's class**
2. The Permittee is responsible for the installation, operation and maintenance of 11 ground water monitoring wells to be used for obtaining grab or pumped samples of the ground water. The wells are to be established throughout the site as shown on the attached map B.
 - a. The monitoring wells shall be installed according to the following specifications:
 - (1) Installation of the wells shall be by a licensed Maryland Well Driller in accordance with the following:
 - i. Schedule 40 P.V.C. or better quality well casing, 4-inch diameter shall be used.
 - ii. Commercial well screen or neatly slotted well casing, approved by the Department shall be used in conjunction with a gravel pack.
 - iii. The screen, or slotted casing, shall extend from the seasonally high water table downward approximately 15 feet.
 - iv. The wells shall be grouted from near the top of the screen to ground surface.
 - v. The wells shall be equipped with locking watertight removal caps.
 - (2) The well driller selected to install the observation wells shall obtain all necessary State and local well drilling permits.
 - b. So that the background quality of the ground water may be determined, the monitoring wells shall be installed in the irrigation areas at least twelve (12) months prior to the start-up of the spray fields.
 - (1) The Permittee shall take and analyze one sample each month from each of the monitoring wells during the twelve-month period before start-up of the irrigation facility.
 - (2) Water samples may be obtained by either pumping or bailing the monitoring wells. Prior to taking the sample, a volume of water equal to 300% of the wetted volume of the casing and screen shall be removed.
 - (3) The water sample shall be analyzed for the parameters shown on I.A.3.b.

- c. The Permittee shall take and analyze one water sample every three months from each monitoring well after start-up of the irrigation facility. Samples shall be taken as outlined in I.D.2.b. (2), and analyzed for the same parameters listed in I.A.3.b. (3).
3. To evaluate the phosphorus loading at the irrigation site, the permittee is responsible for monitoring the soil-test phosphorus concentrations in the soils of irrigation fields and total phosphorus in the treated wastewater used for spray irrigation. Representative soil samples shall be taken once a year after the growing season for analyzing soil-test phosphorus. The Permittee shall also evaluate the soil phosphorus adsorption capacity at various soil depths in the spray fields. If the evaluation indicates inadequate soil phosphorus adsorption capacity, a plan to further reduce phosphorus loading to soils shall be submitted to the Department for review three month after the date when the inadequate soil phosphorus adsorption capacity is revealed.
4. The Permittee shall **install four (4)** surface water monitoring stations installed at tributaries of Mile Creek to conduct surface water quality monitoring. Sampling frequency and parameters for surface water quality analyses shall be the same as specified in Section I.A.3.b. The locations of three sampling stations are shown on the attached Map B.
5. Discharge of the treated wastewater shall not cause the natural (background) ground water quality, as measured in the monitoring wells, to exceed standards for Type I aquifers as specified in COMAR 26.08.02.09, "Ground Water Quality Standards".
6. Ground water and surface water quality monitoring data shall be submitted to the Department yearly no later than the 28th day of January following the reporting year at the address specified in I.B.1.

E. Background Water Quality of Potable Water Supplies.

Prior to operation of the wastewater treatment and disposal system, the permittee shall submit for review of the Department the results of water quality analyses performed on water samples taken from unconfined wells within a 1/4 mile radius downgradient from the irrigation sites. Samples shall be analyzed for the parameters included in I.A.3.b.

II. GENERAL CONDITIONS

A. Management Requirements

1. Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any pollutant in toxic amounts, as determined by the Department during the effective period of this permit, is prohibited. Any anticipated facility expansion, production increases, or process modifications which will result in new, different, or increased discharge of pollutants shall be reported by the Permittee by submission of a new application at least one year prior to the commencement of the changed discharge or, if such changes will not violate the effluent limitations specified in this permit, by notice to the Department. Following such notice, the permit may be modified by the Department to specify and limit any pollutants not previously limited.

2. Operational Restrictions

The operation of a waste treatment or disposal facility shall at no time create: (1) a direct discharge to surface waters of the State; (2) any standing or ponded water condition on adjacent properties; or (3) a persistent standing or ponded water condition on the Permittee's property, excluding actual storage lagoons.

3. Noncompliance Notification

- a. If, for any reason, the Permittee does not comply with or will be unable to comply with the special and general conditions of this permit, the Permittee shall, within 24 hours, notify the Department by telephone at (410) 537-3510 during work hours and at (866) 633-4686 during evenings, weekends and holidays and provide the Department with the following information in writing within five days of such notification:
 1. a description of the noncompliance, including its impact upon the receiving ground or surface waters;
 2. cause of noncompliance;
 3. anticipated time the condition of noncompliance is expected to continue or if such condition has been corrected, the duration of the period of noncompliance;
 4. steps taken by the Permittee to reduce and eliminate the noncompliance discharge;
 5. steps to be taken by the Permittee to prevent recurrence of the condition of noncompliance; and

6. a description of the accelerated or additional monitoring by the Permittee to determine the nature and impact of the noncompliance.

b. In the case of any discharge subject to any toxic pollutant effluent standard under Section 307 (a) of the Clean Water Act of 1987, the Department shall be notified within 24 hours of the time the Permittee becomes aware of the noncomplying discharge. Notification shall include information as described in paragraph 3.a. above. If such notification is made orally, a written submission must follow within five days of the time the Permittee becomes aware of the noncomplying discharge.

4. Facility Operation and Quality Control

All waste collection, control, treatment, monitoring, and disposal facilities shall be maintained in good working order and operated at all times as efficiently as possible and in a manner which will minimize upsets and discharges of excessive pollutants.

5. Adverse Impact

The Permittee shall take all reasonable steps to minimize any adverse impact to the ground water quality resulting from noncompliance with any limitations specified in this permit, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge.

6. Removed Substances

The Permittee shall comply with all existing State and federal laws and regulations that apply to sewage sludge monitoring requirements and utilization practices, and with any regulations promulgated pursuant to Environment Article, Section 9-230 et seq. The Permittee is responsible for ensuring that its sewage sludge is utilized in accordance with a valid sewage sludge utilization permit issued by the Department.

7. Bypassing

Any bypass of treatment facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited unless:

- a. the bypass is unavoidable to prevent loss of life, personal injury or substantial physical damage to property, damage to the treatment facilities which would cause them to become inoperable, or substantial and permanent loss of natural resources; and
- b. there are no feasible alternatives; and
- c. the Department is notified within 24 hours (if orally notified, then followed by a written submission within five days of the Permittee's becoming aware of the bypass). Where the need for a bypass is known (or should have been known) in advance, this notification shall be submitted to the Department for approval at least ten days before the date of bypass; and
- d. the bypass is allowed under conditions determined by the Department to be necessary to minimize adverse effect; and

- e. there is an existing flow of any such diversion or bypass, then a schedule for the elimination of such shall be included in a schedule of compliance.

B. Responsibility

1. Right of Entry

The Permittee shall allow the Secretary of the Department, or authorized representatives, upon the presentation of credentials:

- a. to enter upon the Permittee's premises where an effluent source is located or in which any records are required to be kept under the terms and conditions of this permit;
- b. to have access to and to copy, at reasonable times, any records required to be kept under the terms and conditions of this permit;
- c. to inspect, at reasonable times, any monitoring equipment or monitoring method required in this permit;
- d. to sample at reasonable times any discharge of pollutants;
- e. to inspect, at reasonable times, any collection, treatment, pollution management or discharge facilities required under this permit; or
- f. to drill and install monitoring wells for the purpose of obtaining samples of the groundwater.

2. Property Rights/Compliance with Other Requirements

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State or local laws or regulations.

3. Availability of Reports

Except for data determined to be confidential under COMAR 26.08.04.01.F, all reports, plans, maps, or other specifications submitted for review shall be available for public inspection at the Department.

4. Transfer of Ownership or Control

This permit is not transferable to any person except after notice to the Department. The Department may require modification or revocation and re-issuance of the permit to change the name of the Permittee and may incorporate other requirements as may be necessary. The written notice to the Department shall include at least the following information:

- a. the legal name, address and telephone number of the new owner or operator;

- b. a statement, signed by the new owner or operator, indicating that the new owner or operator has read, understands and accepts the terms and conditions of the existing permit; and
- c. the date that the new owner or operator took control or expects to take control of the facility. In the event that new ownership or control is expected in the future, the current Permittee and the anticipated new owner or operator both must sign the written notice to the Department.

5. Reapplication for a Permit

At least one year before the expiration date of this permit, unless permission for a later date has been granted by the Department, the Permittee shall submit an application for renewal of the permit or notify the Department of the intent to cease discharging by the expiration date. In the event that a timely and sufficient reapplication has been submitted and the Department is unable, through no fault of the Permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

6. Permit Modification

A permit may be modified by the Department upon the written request of the Permittee and after notice and opportunity for a public hearing in accordance with the reasons set forth in COMAR 26.08.04.10.

7. Permit Modification, Suspension, or Revocation

A permit may be modified, suspended, or revoked by the Department in the event of a violation of the terms or conditions of the permit, or federal or State laws and regulations and in accordance with the procedures set forth in COMAR 26.08.04.10.

8. Permit Expiration

This permit and the authorization to discharge shall expire at midnight on the expiration date of the permit unless the permittee has submitted a timely and complete reapplication pursuant to Section II.B.5.

9. Civil and Criminal Liability

Environment Article, Sections 9-342 and 9-343 provide that any person who violates a permit condition implementing Environment Article, Section 9-322 *et seq.* is subject to a civil penalty in an amount not to exceed \$10,000 per day for such violation; and to criminal penalties of a \$25,000 fine or imprisonment not exceeding one year or both for a first offense, and a \$50,000 fine or imprisonment not exceeding two years or both for subsequent offenses.

10. Waterway Construction and Obstruction

This permit does not authorize the construction or placing of physical structures, facilities, debris, or the undertaking of related activities in any waters of the State including the 100-year flood plain.

11. Severability

If any provision of this permit shall be held invalid for any reason, the remaining provisions shall remain in full force and effect, and such invalid provisions shall be considered severed and deleted from this permit.

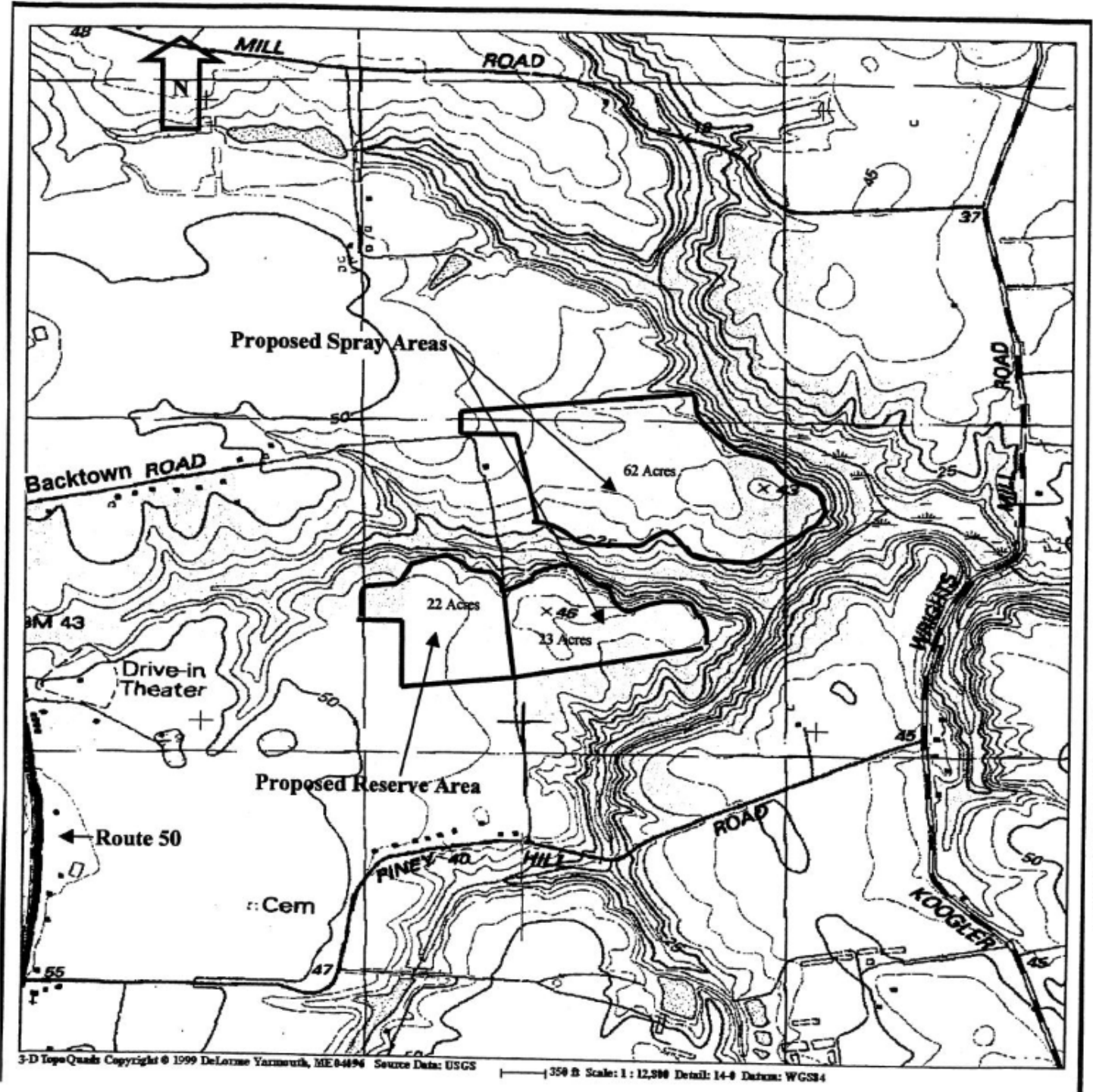
12. Nuisance and Odor Restrictions

The facility shall be operated at all times to prevent offensive odors from escaping the facility boundaries and to prevent the facility from becoming a public nuisance. In the event that prolonged or excessive odors are noted outside of the property line, the Permittee shall take actions necessary to remedy the problem.

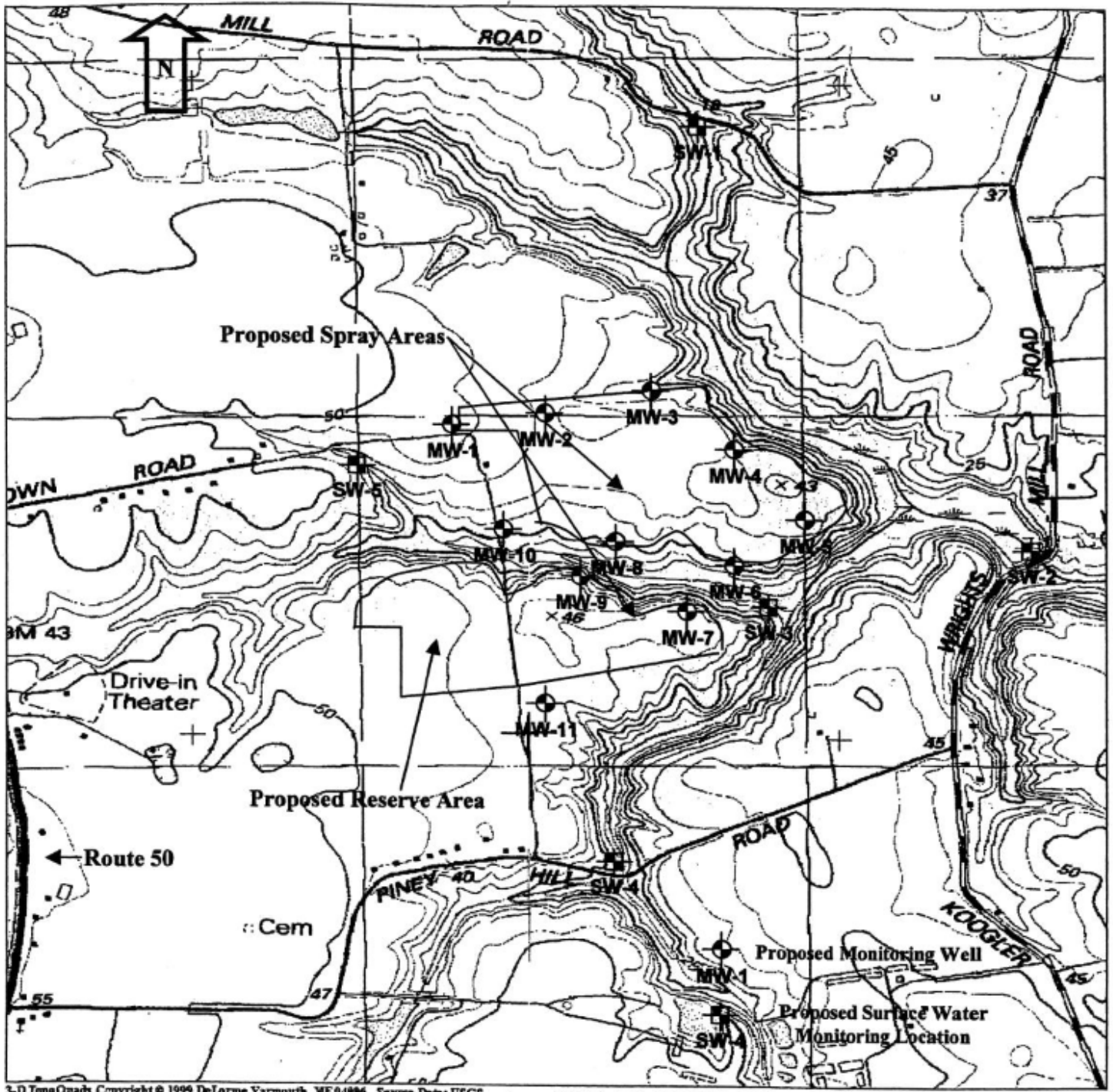
13. Action on Violations

The issuance or reissuance of this permit does not constitute a decision by the State not to proceed in any administrative, civil or criminal action for any violations of State law or regulations occurring prior to the issuance or reissuance of this permit, nor a waiver of the State's right to do so.

D. Lee Currey, Director
Water and Science Administration



Map A. Locations of Spray Irrigation Sites (Trappe East)



Map B. Locations of Monitoring Wells

**Department of the Environment
Groundwater Discharge Permit
Summary Report and Fact Sheet**

Executive Summary

State Application No.: 19-DP-3460

Facility Name and Location: The Trappe East Wastewater Facility located at East End of Backtown Road, Trappe, MD 21673

Description of Facility: Wastewater treatment and disposal via spray irrigation for residential development (2000 units proposed) and commercial retail

Facility Discharges: Treated wastewater from residential development (2000 units) and commercial retail

Pollutants Limited: BOD5 < 10 mg/l, TSS <10 mg/l, total nitrogen <8 mg/l, total phosphorus <3 mg/l and fecal coliform <3 MPN/100 ml.

Changes from Previous Permit: The development of the project is planned to be completed in 5 separate phases of approximately 400 residential units per phase. The development of the commercial properties is expected to be included in phases 2, 3, and 4. The proposed WWTP will be constructed in phases to be consistent with the size of each phase of the development. The capacity of each phase of the WWTP is expected to be approximately 100,000 gallons per day per phase. The spray irrigation infrastructure will be constructed in 100,000 gpd phases as well, to support the discharge from each phase of the WWTP. The final phase will be planned for the remaining 140,000 gpd. Each phase of the development will be completed in sections based on the current market demands. Phase 1 Section 1, or Phase 1A may include up to 150 EDUs with an estimated wastewater demand of 37,500 gpd. The proposed 100,000 gpd phase of the WWTP can operate with as little as 10% of the design flow. Subsequent phases of the WWTP will be constructed when the current phase is approaching 80% of its capacity.

Controversial Provisions: Neighboring residents oppose the spray irrigation proposal (04-DP-3460)

Unusual Conditions: This Permit has two permittees (Town of Trappe and Trappe East LLC).

Major Facility: No. (0.54 mgd)

Summary of Wastewater Facility

The applicant has applied for a permit to discharge treated wastewater to the land and subsequently to ground waters of the State. Significant information involving the application, additional data and determinations made by the State may be summarized as follows:

Groundwater Discharge Permit
Summary Report and Fact Sheet
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The Trappe East wastewater facility will support a proposed residential development of 2000 dwelling units and commercial retail. Wastewater from this community will be treated at an advanced wastewater treatment plant which produces a tertiary effluent quality of BOD < 10 mg/l, TSS <10 mg/l, total nitrogen <8 mg/l, total phosphorus <3 mg/l and fecal coliform <3 MPN/100 ml. Treated effluent will be disposed of via spray irrigation. The spray irrigation site includes: (1) 85 acres primary irrigation area to be sprayed at 2"/wk. (2) 22 acres to be reserved for future use. Groundwater quality will be monitored quarterly via 11 groundwater monitoring wells and surface water quality will be monitored via 5 sampling stations (see permit Map B for locations).

Project Type: Spray Irrigation

State Application No.: 19-DP-3460

Facility Name: The Trappe East Wastewater Facility

Address: East End of Backtown Road, Trappe
Talbot County, Maryland 21673

County: Talbot

Contact (Name, Title): Robert D. Rauch, P.E.
Cheryl Lewis, President, Town of Trappe

Phone: (410) 476-3170 (Lewis)
(410) 770-3666 (Rauch)

SIC Code: 4952, POTW

Applicant is engaged in: POTW and developer

Legal Name of Applicant: (1) Town of Trappe and (2) Trappe East LLC

Address: (1) P.O. Box 162, Trappe, MD 21673
(2) C/o Ryan Showalter, Esq, Miles &
Stockbridge, P.C. 101 Bay Street, Easton, MD 21601

Basin Code: 02130404 Receiving Water Name (class)
groundwater type I aquifer

Latitude: 38°40'23" N Longitude: 076°02'76" W

Wastewater Characteristics

Average Flow: 540,000 gpd

Proposed Discharge Period: all year round except for inclement weather

<u>Parameter</u>	<u>*Raw Concentration</u>	<u>Treated Concen.</u>
BOD ₅	250 mg/l	10 mg/l
TSS	250 mg/l	10 mg/l
Nitrogen(total as N)	60 mg/l	8 mg/l
Phosphorus	8 mg/l	3 mg/l ^a
Fecal Coliform		3 MPN/100ml

^a Phosphorus loading rate to spray field (85 acres): $(0.54 \text{ mgd} \times 3 \text{ mg/l} \times 8.34 \times 365 \text{ days/yr}) / 85 \text{ acres}$
 = 58 lb/acre/year

PRETREATMENT FLOW DIAGRAM

Assimilative Capacity

Limiting Parameter (s) Loading Rate Land Required

Use an irrigation time of 10 months (305 days)

Hydraulic Loading 2"/wk 85 acres provided

Area required: $(540,000 \times 365 \times 7) / (27154 \times 305 \times 2"/wk) = 83.3 \text{ acres}$

Reserve area : 25% x 83.3 acres =21 acres, 22 acres provided

*Final Report of Hydrogeologic Evaluation for Proposed Spray Irrigation System – Trappe East Project, Talbot County, Trappe, Maryland”, John D. Hynes & Associates, Inc. 4/15/2004

GROUNDWATER SYSTEM

Aquifer Name: Columbia Group (surface aquifer, 70' in depth)*

Estimated Aquifer Transmissivity: 13670 ft²/day**

Estimated Aquifer Permeability: 195 ft/day (based on 70' aquifer thickness)

Estimated Total Dissolved Solids Concentration: 61-1260 mg/l**

Other Properties: Thickness of the aquifer is 70'

**Information excerpted from "Aquifer Identification and Injection Well
Inventory, State of Maryland" by Gordon Wolman et al,
Johns Hopkins University, May 1981

Present Use:

No wells are located within 1/4 – mile of the site* (page 6 of the Hydro report)

Projected Impact:

Irrigation of treated wastewater with total N <8 mg/l meet the MCL and should have little impact to groundwater quality. The limits of total N < 8 mg/l and Total P < 3 mg/l along with the nutrient uptake (uptake of N > 167 lb/acre/yr and uptake of P >65 lb/acre/yr) by vegetation will result zero N and P in the percolate.