

Groundwater Discharge Permitting Program

Andrea Munoz-Hernandez, Permits Section Manager

Kristine Rendon, Groundwater Permits Unit Supervisor

Rachel Burns, Groundwater Discharge Program Compliance
Specialist

Overview

Part 1: *Applicable Regulations*

Part 2: *Groundwater Discharge Permits*

Part 3: *Processing an Application*

Part 4: *Compliance and Enforcement of a Permit*

Part 5: *Improperly Managed Discharges*



Michigan Act 451, Public Act of 1994, as amended

- Part 31 Water Resources Protection Law
 - Regulates wastewater discharges to waters of the state
 - Waters of the state includes surface water and groundwater
 - Part 21 Wastewater Discharge Permits Administrative Rules
 - Part 22 Groundwater Quality Administrative Rules

Part 22 Groundwater Quality Rules

- Responsible for protecting waters of the state through setting groundwater standards for wastewater discharged to the ground (surface or subsurface).
- Rule 2204 (Discharge Requirements) reference:
 - Part 4 Water Quality Standards (**surface water protection**)
 - The Safe Drinking Water Act and the Michigan Water Well Construction and Pump Installation Code (**drinking water/public health protection**)
 - Part 201 (**Environmental Remediation**)





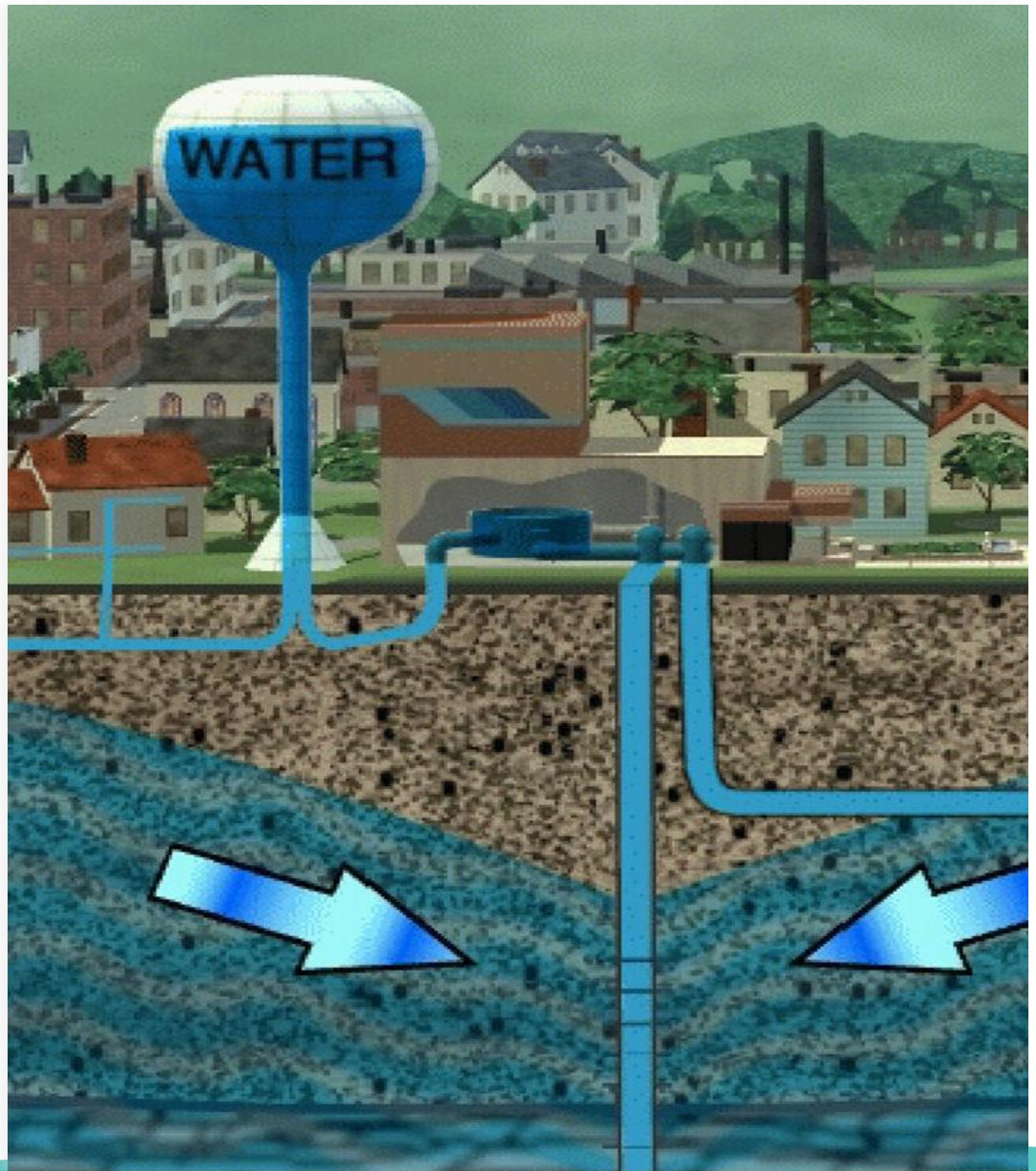
What is a Water of the State?

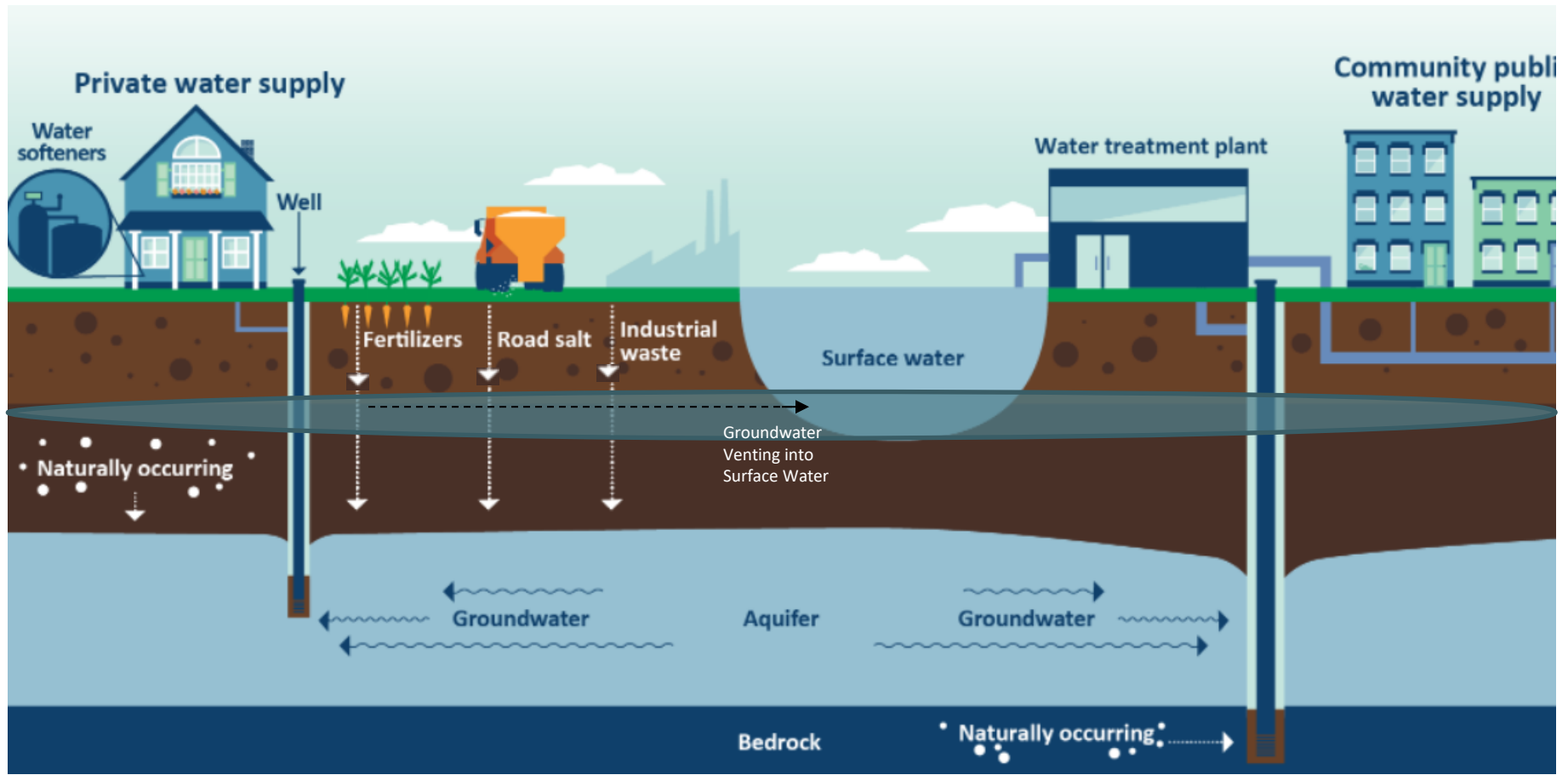
- Part 31 defines waters of the state.
 - Lakes, rivers, and streams
 - All other watercourses and waters, including the Great Lakes, within the jurisdiction of this state

Part 31 Waters of the State Definition:

Groundwaters

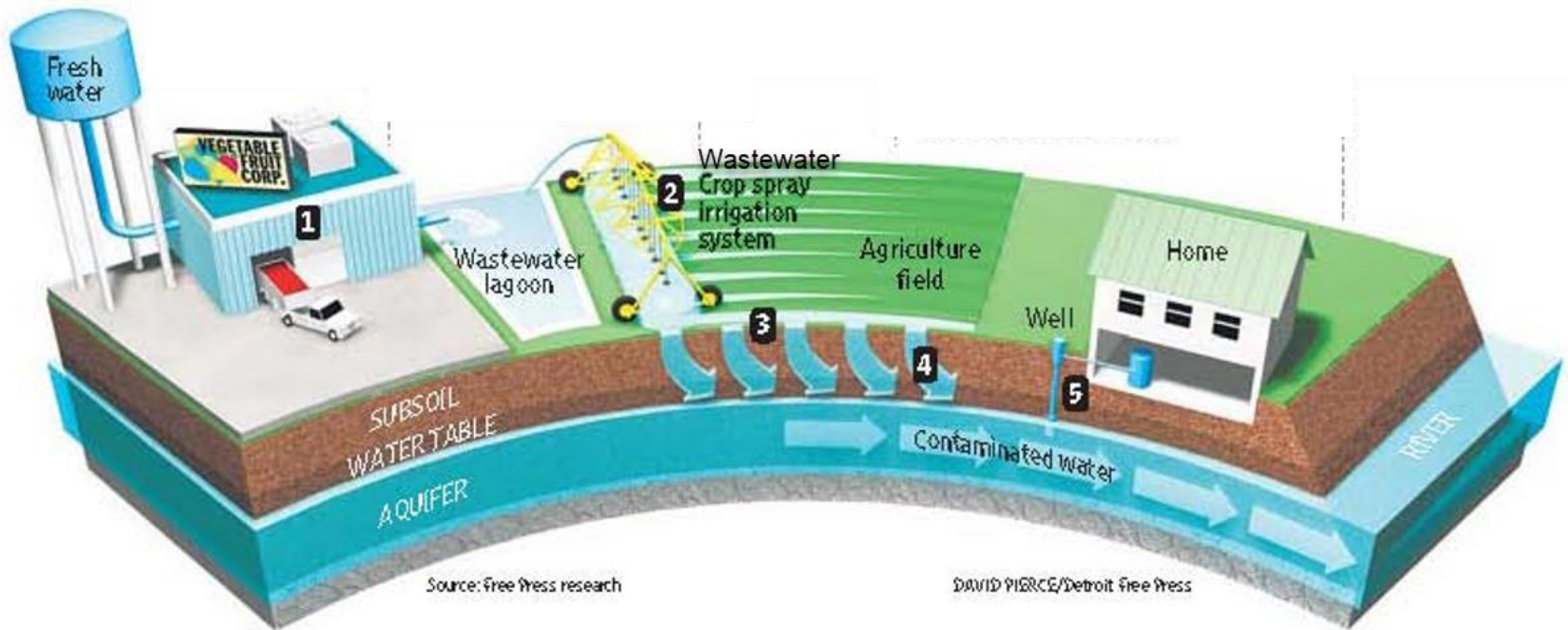
Water below the land surface in a zone of saturation





The Hydrologic Cycle

- Surface and Groundwater are connected
 - Surface activities impact quality of groundwater
- Pollution Prevention is the best way to keep our surface and groundwater clean and safe for all uses



Groundwater Transport

- Surface and Groundwater are connected
- **Surface activities can impact quality of groundwater**
- Pollution prevention is the best way to keep our surface water and groundwater clean and safe for all uses

Why is treating wastewater so important?



Protecting Michigan's Surface Water

Waters of the state

- Recreation and watercraft navigation!
- Warmwater and coldwater fish
- Indigenous aquatic life
- Wildlife dependent on healthy environment





Why is treating wastewater so important?

- **Protecting Michigan's Drinking Water Source**
- Over 1,000,000 private drinking water wells
 - On average 25,000 new domestic wells drilled per year.
 - Almost 2.6 million Michiganders depend on groundwater as their sole source of drinking water.



What is Wastewater?

- **Wastewater**
 - Liquid waste discharged directly or indirectly into waters of the state or on the ground that results from industrial and commercial processes or municipal operations
 - Including liquid or water-carried process waste, cooling and condensing waters, and sanitary sewage
- **Sanitary sewage**
 - Treated or untreated wastes that only contain human metabolic waste or wastes generated as a result of domestic or restaurant activities

Wastewater Characterization



- A wastewater characterization will be required for processing wastewater facilities on the application
- It is a sample of wastewater that is tested for certain parameters that we identify as concerns depending on the wastewater type
- Pesticides, fertilizers, pieces of product, sanitizers, etc. can affect the water quality and may require closer or more frequent monitoring

*What types of permits are issued under the
Part 22 Rules?*

Part 2: Groundwater Discharge Permits

Groundwater Discharge Permits



- Permits many types of wastewater discharges
 - Sanitary sewage greater than 6,000 gallons per day
 - Industrial wastewater
 - Fruit/vegetable processors
 - Slaughterhouses
 - Wineries
 - Breweries
 - Distilleries
 - Creameries
 - Cheese making
 - Non-contact cooling water
 - Portable power washing
 - Laundromats
- EGLE regulates mixed wastewater discharges

Different Permitting Categories

2210	2211	2213	2215	2216	2218
• Specific exemption categories for items not needing a permit.	• Up to 6,000 gpd Sanitary Sewage, permitted alongside LHD • Portable Power Washers • Egg Washing • Up to 50,000gpd Fruit/Veg Wash water • Up to 500 gpd Laundromat • Up to 10,000 gpd Noncontact cooling water • Up to 1,000 gpd Animal Care Facility	• Specific Categories of low flow discharges	• General Permits	• Sanitary Sewage • Specific treatment system requirements • up to 50,000gpd	• Discharge Permits for anything not meeting the requirements of 2210, 2211, 2213, 2215, and 2216



Groundwater Permits

- Routine monitoring of pollutant parameters and/or discharge flows
 - Monitoring requirements more rigorous for complicated wastewater or treatment types
- Electronic submittal of analytical data via MiWaters System
 - All data and information is available and accessible to the public
- EGLE Wastewater Permits require a certified operator
- Routine compliance inspections

How is a Groundwater Discharge Permit Processed?

Part 3: Processing an Application

MiEnviro

Application Process

Permitting & Compliance

What can I do here?

For registered users, MiEnviro Portal supports several types of actions:

- Apply for permits
- Manage your permits (pay fees, apply for renewals)
- View issued permits
- Submit reports (required by your permit or certification)
- Submit compliance notifications
- Submit service requests (such as Wetland Identification or Floodplain services)
- See your email notifications
- Review evaluations / site inspections

To get started, you'll need an account.

Create a MiEnviro Portal Account

Groundwater Permit
Applications → MiEnviro

Groundwater Discharge Permit

Criteria for Processing Wastewater

- Determining the Groundwater Discharge Permitting category is site-specific for each application received.
 - Typically, large food processors are a Rule 2218 permit that has a very complex application process.
 - Others may need a smaller site-specific permit that is tailored to their wastewater generated.
- The unit has 30 days to review an application and 180 days to make a permitting decision and often there is a 30-day public notice time period.

Groundwater Permits Unit: Permit Coordinators

Complete administrative reviews of groundwater permit applications.



Coordinate meetings, technical reviews, and compliance reviews.



Analyze technical data to develop permits with appropriate limits.

Technical Staff

- **Engineers**
 - Review basis of design of wastewater treatment systems to meet groundwater limitations.
- **Soil Scientists**
 - Review effluent data
 - Evaluate suitability of discharge method
- **Geologists**
 - Review groundwater data
 - Evaluate impacts on groundwater quality

Figure 1

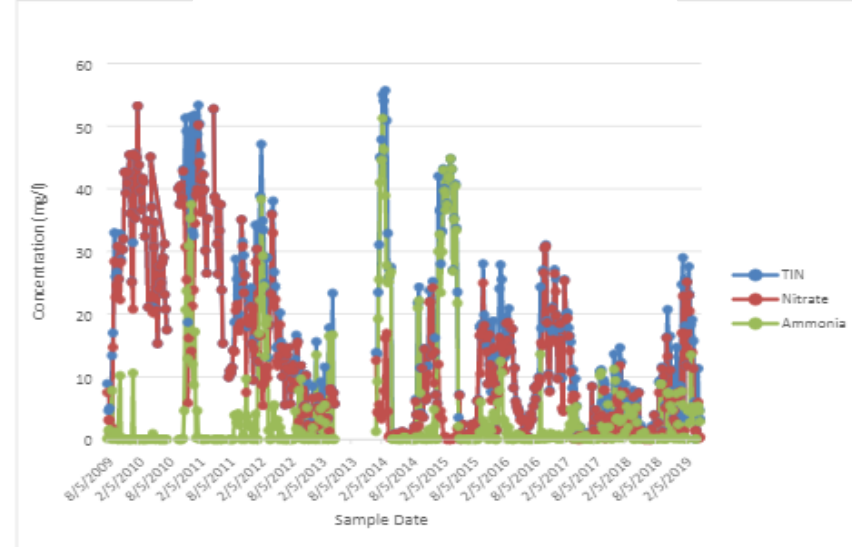
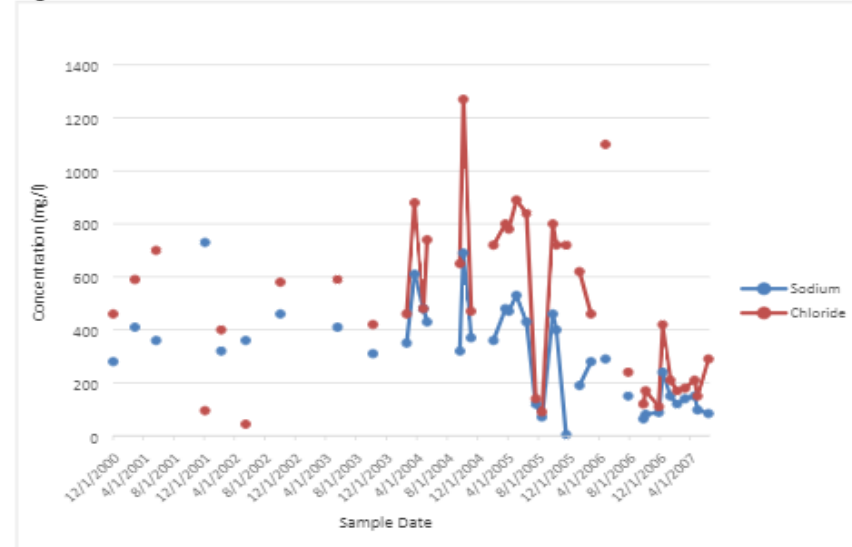


Figure 2



WRD: Technical Staff

Toxicologists	Reviewing additives for groundwater impacts for the protection of human health in drinking water.
Aquatic Biologists	Help in the review of wastewater characterizations for the protection of aquatic organisms for groundwater receiving wastewater that vents to a surface water body.
Part 41 Engineers	Review engineer plans and issue construction permits under Part 41 of NREPA for sewerage systems used by the public.

Design, Plan, Report

- Required Submittals with some applications:
 - **Treatment Basis of Design**
 - Engineer Design- describing existing or proposed treatment
 - Flow diagrams, design hydraulic capacity, sizing of units, operation and maintenance, design calculations, etc.
 - **Discharge Management Plan** to document managing the land as part of the wastewater treatment.
 - The complexity varies dependent on the discharge. Calculates plant uptake of nutrients and management of irrigation water and crop removal.
 - **Hydrogeological Investigation Report** to evaluate the area geology and flow direction of the groundwater.
 - This is done through core sampling and the installation of a minimum of three monitoring wells.
 - Is complex and can be extremely technical.

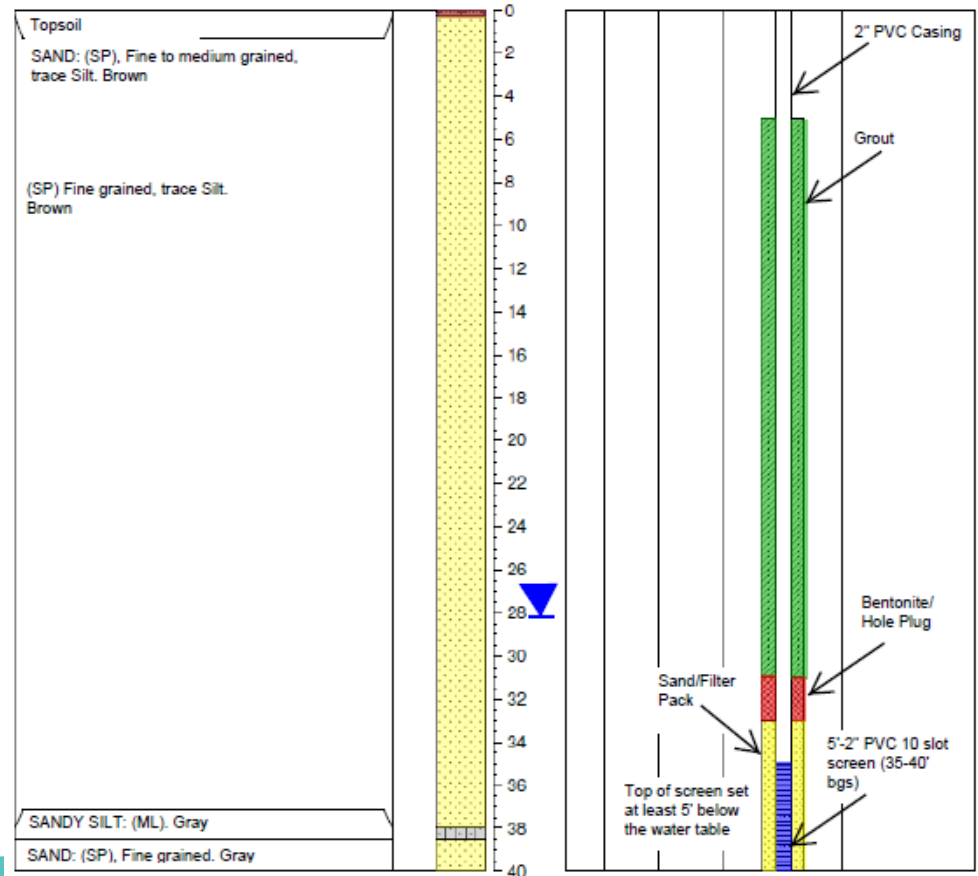


Groundwater Monitoring Wells



Monitoring the Groundwater

Department of Environment, Great Lakes and Energy		BOREHOLE LOG BORING/WELL ID: 1 MW-1 TOTAL DEPTH (ft.): 40	
PROJECT: GW1810000 SITE LOCATION: Anywhere, MI PROJECT NO.: 123 PROJECT MANAGER: Kristine Rendon LOGGED BY: Geologist		START DATE: 1/9/2023 END DATE: 1/9/2023 TOC ELEV.: 962.68' GROUND ELEV.: 963.01' STATIC WATER LVL.: 28' bgs	
DRILLING CO.: ABC Drilling DRILLER: Bill RIG TYPE: CME 850 METHOD OF DRILLING: Hollow Stem Auger SAMPLING METHODS: NA		NOTES:	
		Static Water Level	
		Page 1 of 1	
DESCRIPTION	PID ft	GRAPHIC LOG	DEPTH (ft. bgs)
		Static Water Level	Sample Recovery
		Sample ID	Blow Counts
			WELL CONSTRUCTION DETAIL



Permit Issued

Permits are only effective for a maximum of 5 years.



Every cycle the site is re-evaluated

Digital
Monitoring
Reports

Flow and
Wastewater
Characterization

Violations

Compliance
Inspections

Technical
Review
Soil Capacity and
Monitoring Well
Exceedances

What happens after a groundwater discharge permit is issued?

Part 4: Compliance and Enforcement of a Permit

Types of Wastewater Treatment

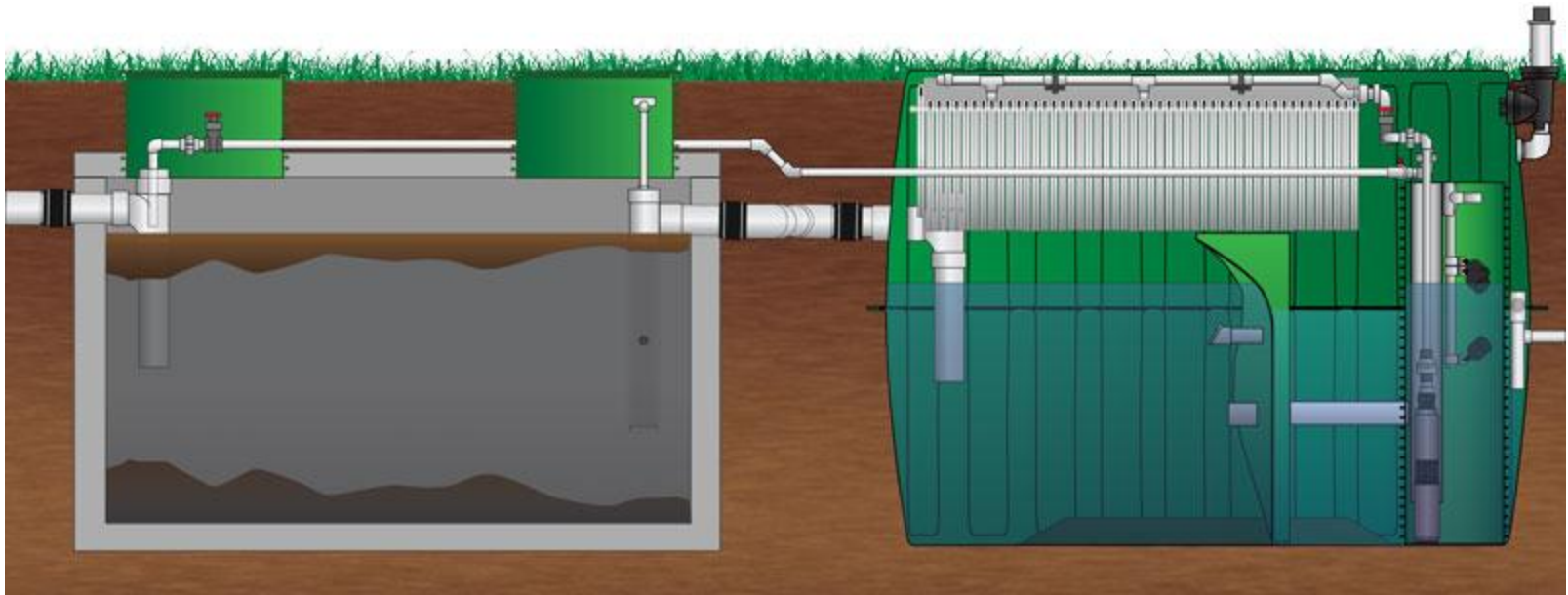


Sequencing Batch Reactor



Activated Sludge Plant (also known as a mechanical plant or package plant)

Types of Wastewater Treatment (continued)



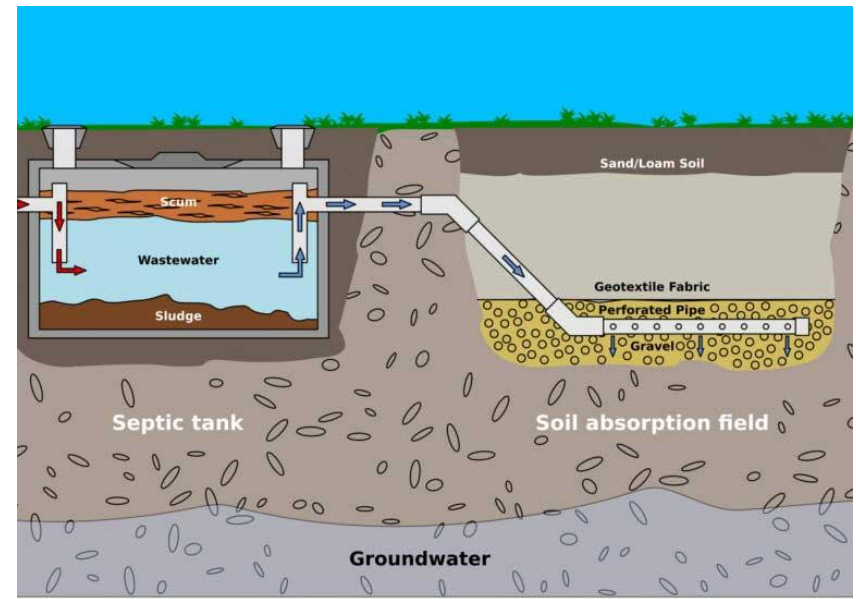
Septic Tank Advanced Treatment

Possible Discharge Methods

- Utilizing the land as additional treatment of the wastewater dependent on soil permeability, wastewater characterization, and nutrients that may be in the wastewater.
- Crop uptake of nutrients calculated into the discharge limits.
- Examples of discharge methods include:
 - Slow rate spray irrigation
 - Overland flow
 - Ridge and Furrow



Possible Discharge Methods (continued)

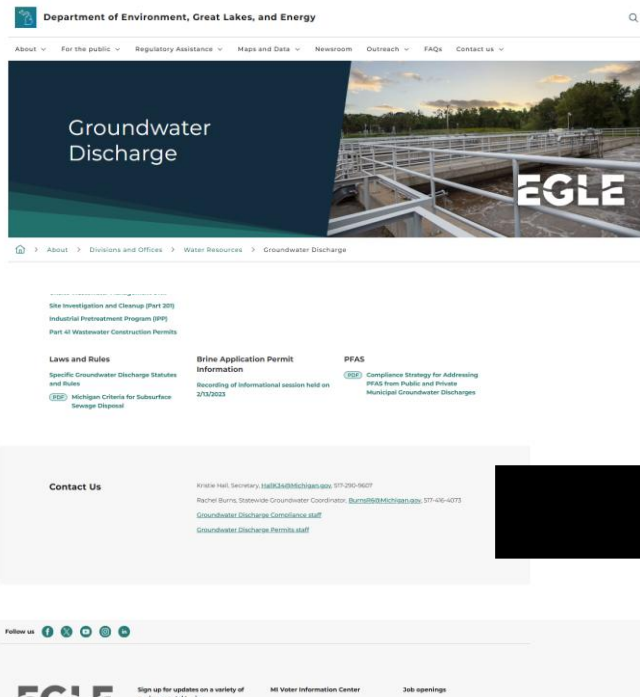


- Rapid infiltration basin (RIB)
- Subsurface Drainfield

*Does not account for any additional treatment, only dispersal.

Groundwater Discharge Compliance Staff

Michigan.gov/GroundwaterDischarge



Groundwater Discharge Compliance Staff

Michigan.gov/GroundwaterDischarge

Statewide Groundwater Coordinator
Rachel Burns, BurnsR6@Michigan.gov, 517-416-4073, Jackson (JDO)

Statewide PFAS in Groundwater Discharges Contact
Daniel Burlingame, BurlingameD2@Michigan.gov, 269-569-1886, Lansing Central

The map of Michigan is color-coded by region, with each county labeled with the name of the assigned staff member. The regions and their staff are: Northern (C. Wunder), Central (C. Wunder), Eastern (C. Wunder), Southern (C. Wunder), Western (C. Wunder), and Southwestern (C. Wunder). The map also shows the locations of the Statewide Groundwater Coordinator (Rachel Burns) and the Statewide PFAS in Groundwater Discharges Contact (Daniel Burlingame).

Brent Benson, BensonB1@Michigan.gov, 517-389-7258, Jackson (JDO)
McKinnigh Cordahl, CordahlM@Michigan.gov, 517-881-0580, Lansing (LDO)
Ryan Easley, EasleyB@Michigan.gov, 231-429-2146, Cadillac (CDO)
Ben Harkanson, HarkansonB1@Michigan.gov, 989-439-5876, Bay City (BCDO)
Anthony Klein, KleinA7@Michigan.gov, 517-243-3734, Lansing (LDO)
Jordan Kriem, KriemJ@Michigan.gov, 269-568-6605, Kalamazoo (KDO)
Shayla Le, LeS@Michigan.gov, 269-491-0423, Kalamazoo (KDO)
Jenna Merlo, MerloJ@Michigan.gov, 585-255-3536, Warren (WDO)
William Muzzi, MuzziW@Michigan.gov, 989-619-4271, Gaylord (GDO)
Connor O'Brien, OBrienC11@Michigan.gov, 616-401-3776, Grand Rapids (GRDO)
Courtney Quist, QuistC@Michigan.gov, 231-429-2493, Cadillac (CDO)
Jeremy Rubin, RubinJ@Michigan.gov, 269-568-3384, Kalamazoo (KDO)
Amanda St. Amour, StAmourA@Michigan.gov, 616-401-9913, Grand Rapids (GRDO)
Emily Weller, WellerE1@Michigan.gov, 616-407-2621, Grand Rapids (GRDO)
Emma Wickert, WickertE@Michigan.gov, 989-370-0550, Gaylord (GDO)
Chelsey Wunder, WunderC@Michigan.gov, 989-255-6872, Marquette (MDO)

EGLE Water Resources Division
MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
Michigan.gov/WRD ↔ 517-284-5567 5/6/2026

Why are Compliance Inspections Necessary?



- The Groundwater Discharge Program is a self-monitoring program
- EGLE Mission (Planned Inspections)
 - To protect Michigan's environment and public health by managing air, water, land, and energy resources.
- Complaints (Unplanned Inspections)

Compliance Inspections

- All Groundwater permitted facilities can expect regular, planned inspections (announced & unannounced)
- Inspection frequencies vary. More complex facilities and/or those not in compliance with their permit may be inspected more often
- Not all inspections will include the same level of review



Compliance Inspections

- Three primary types of inspections:
 - Reconnaissance Inspection
 - Compliance Evaluation Inspection
 - Compliance Sampling Inspection

Permittee Electronic Requirements

- Discharge Monitoring Reports (DMRs)
 - Water Quality/Wastewater characterization parameters (influent, effluent and monitoring wells as applicable)
 - May be due monthly or annually
- Sampling and Analysis Plans (SAP)
- Discharge Management Plans (DMP)
- Operation and Maintenance Manuals (O&M)



Prior to an Inspection

- EGLE staff review the file to evaluate the overall compliance status.
 - Compliance with effluent and/or monitoring well limitations: Did exceedances occur? Were appropriate test methods used?
 - DMRS: Were they submitted? Were they submitted on time? Were they complete?
 - Certified Operator: Does the facility have one? Are they properly certified?



What to Expect During an Inspection

- Opening Conference: with the operator and/or manager (or other site contact) of the facility to discuss the purpose of the inspection and what areas the inspection will cover.



What to Expect During an Inspection

- Verbal interview and review of on-site monitoring records



What to Expect During an Inspection

- Visual site inspection (includes all steps from when water enters the system to where it exits). EGLE staff may also review other areas such as sampling technique, lab, and operations and maintenance.

What to Expect During an Inspection

- Closing Conference. This conference will summarize:
 - Areas of noncompliance that were identified during the inspection or during review prior to the inspection.
 - Areas that need improvement.
 - What additional information EGLE staff may need.
 - What information EGLE staff will be providing to the facility
 - What next steps from EGLE staff are likely to be (a follow-up inspection letter, violation letter, another inspection, etc.)



CAUTION

Common Violations

- Operating and discharging without a permit (e.g. permit has expired or no application has been submitted).
- Facility does not have a properly certified operator.
- Inadequate operation and maintenance and/or poor treatment or discharge.
- The facility is not collecting or retaining all the required monitoring data.



Common Violations

- The facility is not monitoring at the specified frequency.
- The facility failed to report their noncompliance as required.
- Transcription problems with reported data.
- Facility failed to submit something that was required, or it was not sent timely.

Compliance Actions

- Violations found during inspections or during review of electronically submitted reports are addressed through Schedules of Compliance (SOCs) in:
 - Compliance Communications
 - Violation Notices

Compliance Actions

If facilities fail to meet the SOC's, or if violations continue to occur, compliance staff will escalate their response. This may include:

Additional Violation Notices

Second Violation Notices



Continued failure to return to compliance may result in referral to the WRD Enforcement Unit.

What Can Happen if the Discharge is not Properly Managed?

Part 5: Improperly Managed Discharges

What can be discharged?



What is added into the wastewater system as part of the process can pass through to the groundwater.



Sanitary sewage only vs. Processing Wastewater



Be aware of what is going into the system

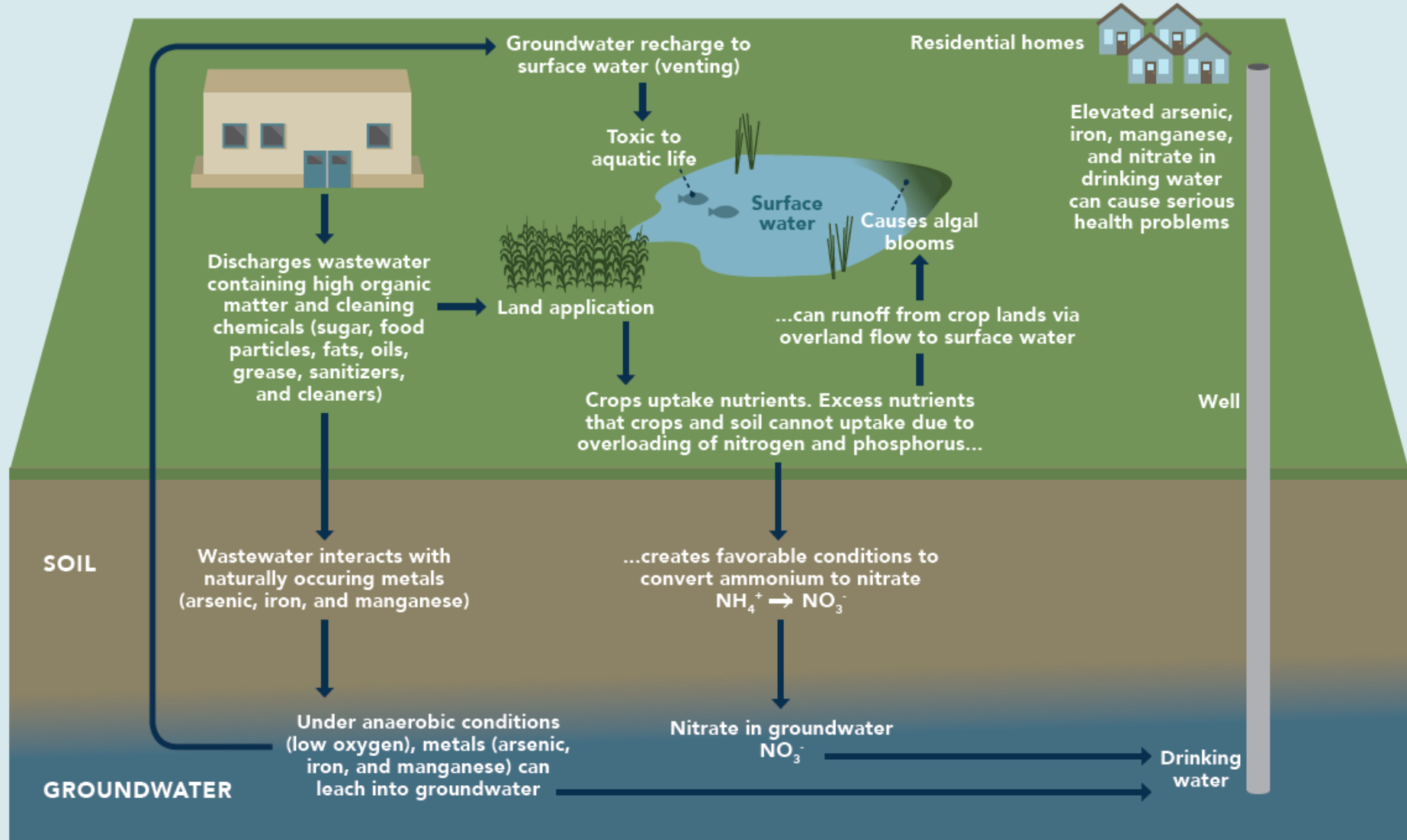
ALWAYS KNOW WHAT IS IN THE WASTEWATER!

What Can Happen if the Discharge is Not Properly Managed?

- Negative effects to the receiving soil
 - If wastewater is not adequately distributed when discharged, metals can mobilize into the groundwater
 - Metal mobilization can lead to arsenic, lead, and other heavy metals leaching into the groundwater and being drawn into a drinking water well
 - If the discharge area becomes saturated for long enough, pollutants can leach into the groundwater.

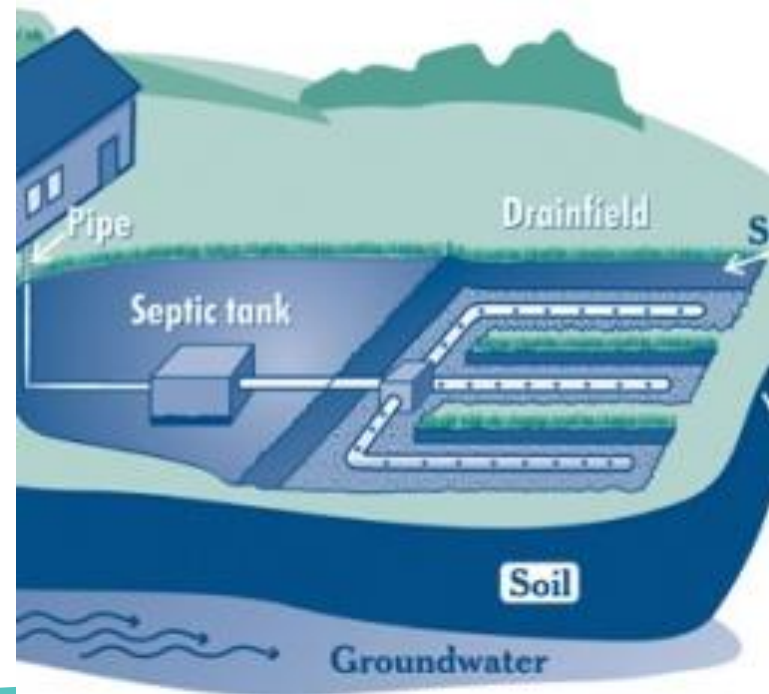


FOOD PROCESSING WASTEWATER IN MICHIGAN



Can Processing Wastewater be Discharged to the Ground or put in an Existing Septic System?

- Processing Wastewater can be discharged to the ground but must be accompanied by an EGLE Groundwater Discharge Permit.
- An existing septic system for sanitary sewage is not appropriate to receive wastewater from processing wastewater, especially if it is designed for sanitary sewage only!



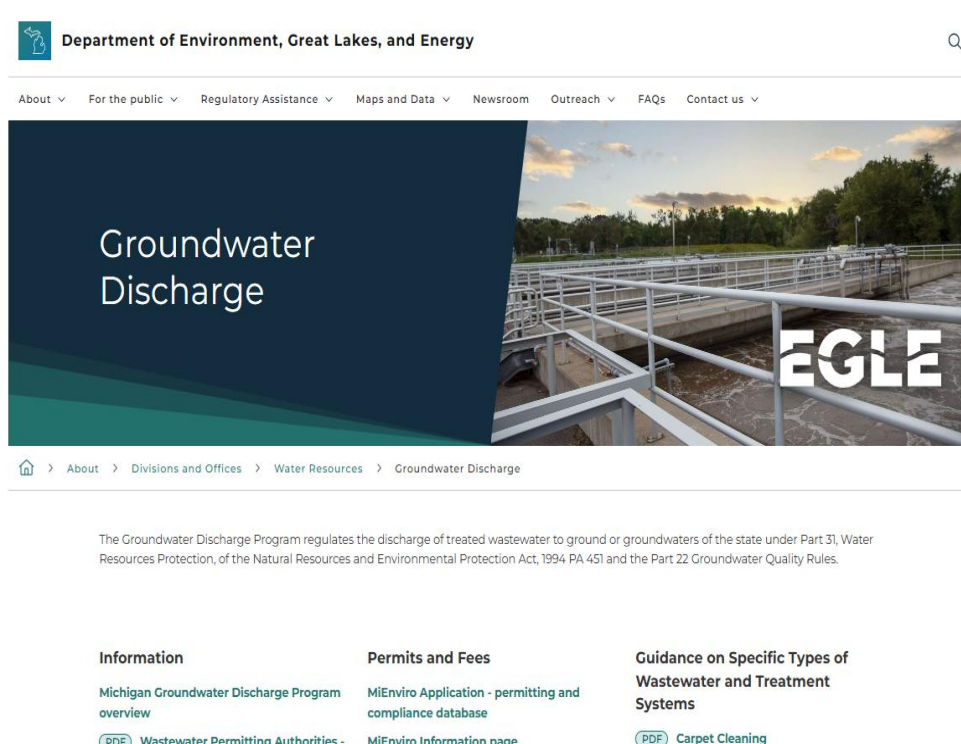
Inadequate Wastewater Treatment

- Problems can occur due to inadequate or inappropriate wastewater treatment can lead to:
 - Contamination of residential drinking water wells
 - Installation of new drinking water wells
 - Installation of costly groundwater monitoring well network
 - Designation as a facility under Part 201
 - Installation of new treatment system
 - Impacts to surface water through venting groundwater



Where can I find additional information?

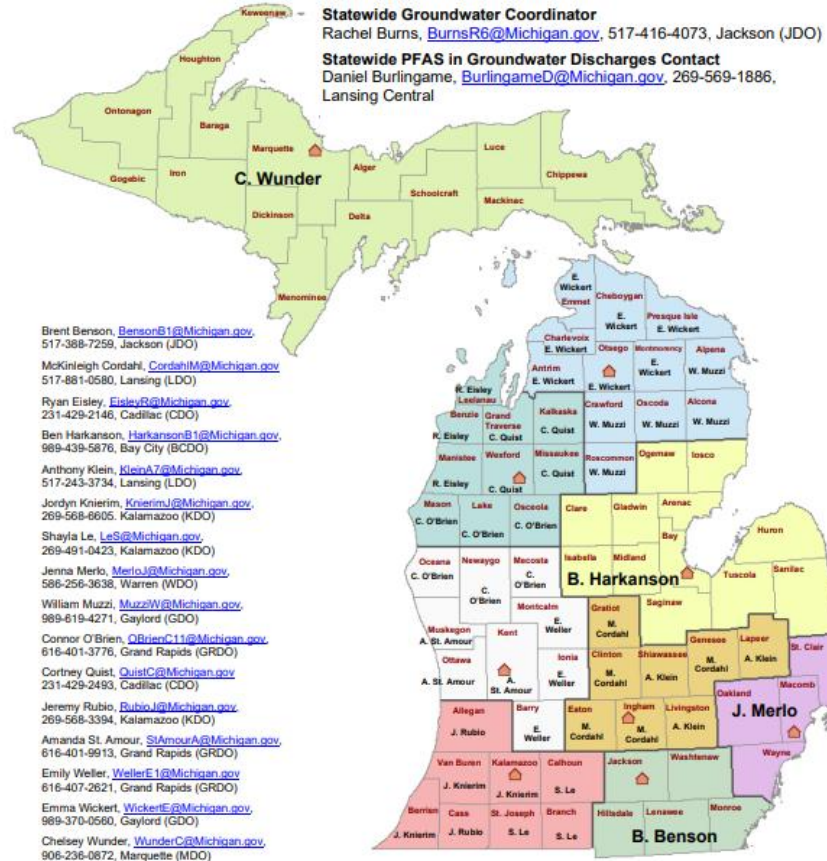
Michigan.gov/GroundwaterDischarge



Contact your District for Assistance

Groundwater Discharge Compliance Staff

Michigan.gov/GroundwaterDischarge



MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Water Resources Division

Michigan.gov/WRD ↔ 517-284-5567

5/16/2026

Summary

- Wastewater Regulations
- Groundwater Discharge Application Reviews and Issued Permits
- Groundwater Discharge Permit Compliance and Inspections





MICHIGAN DEPARTMENT OF
ENVIRONMENT, GREAT LAKES, AND ENERGY

Questions?

Michigan Department of
Environment, Great Lakes, and Energy

Kristine Rendon, Groundwater Permits Unit Supervisor

RENDONK@michigan.gov

Rachel Burns, Groundwater Discharge Program Compliance Specialist

BURNSR6@michigan.gov