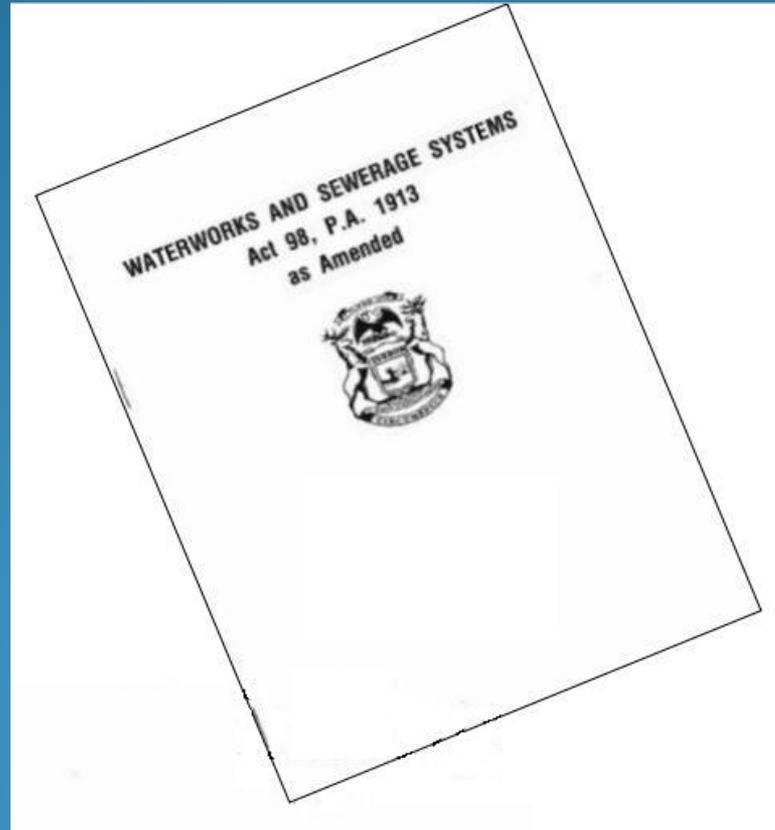


Groundwater Permit and Protection Program



Groundwater Permit and Protection Program

Presented by

Dennis Ryan

Senior Environmental Engineer

Water Resources Division

Michigan Department of Environmental Quality

Groundwater Permit and Protection Program

We have been doing this since 1913

Groundwater Permit and Protection Program

Waterworks and Sewerage Systems

Act 98, P.A. 1913

-

Promulgated August 15, 1913

Groundwater Permit and Protection Program

The object of today's presentation is to present information about the Groundwater Permit program for wastewater, including;

- background

- where and how it applies

- what an inspector looks for during an inspection, and

Groundwater Permit and Protection Program

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background

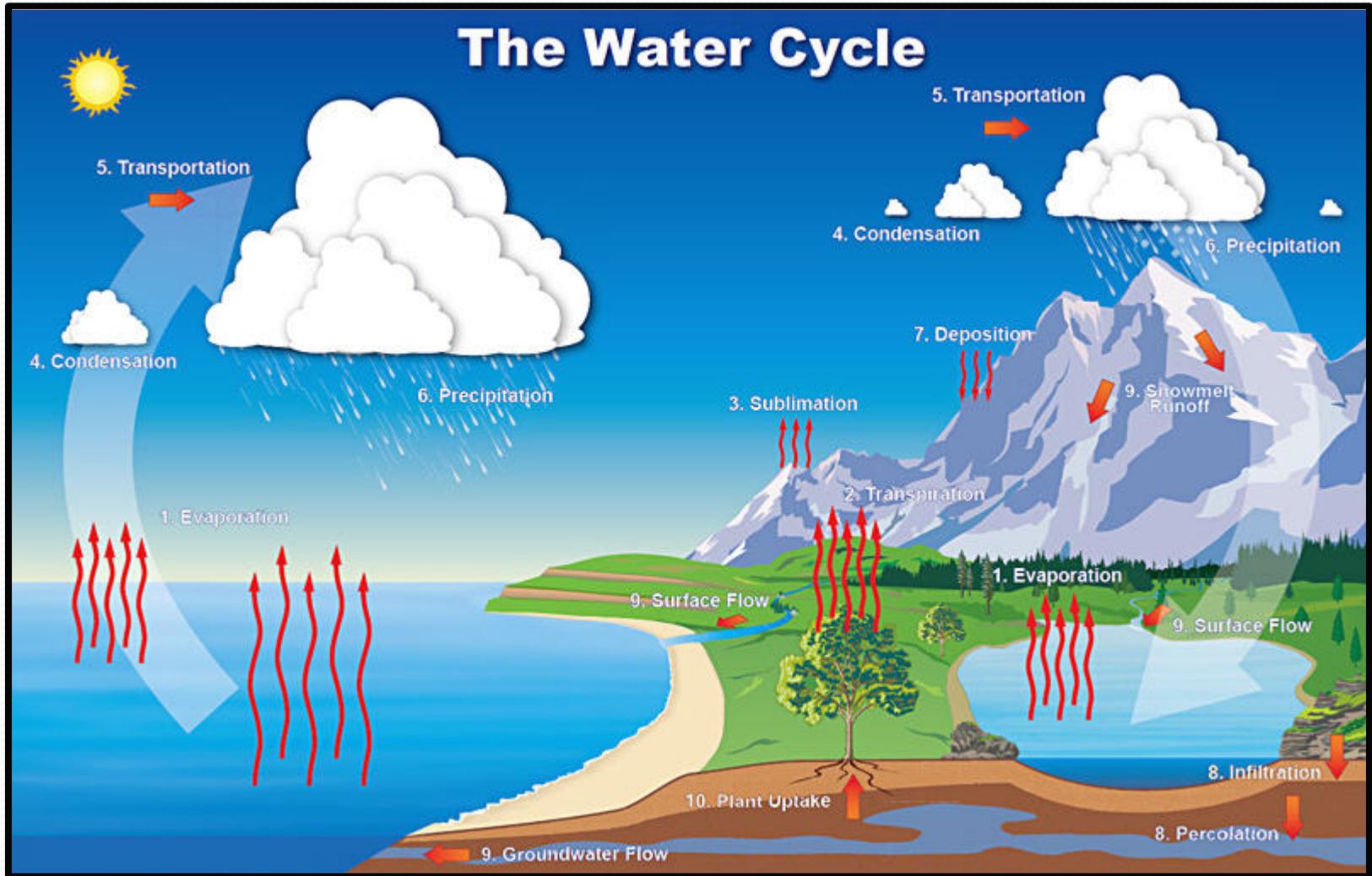
where and how it applies

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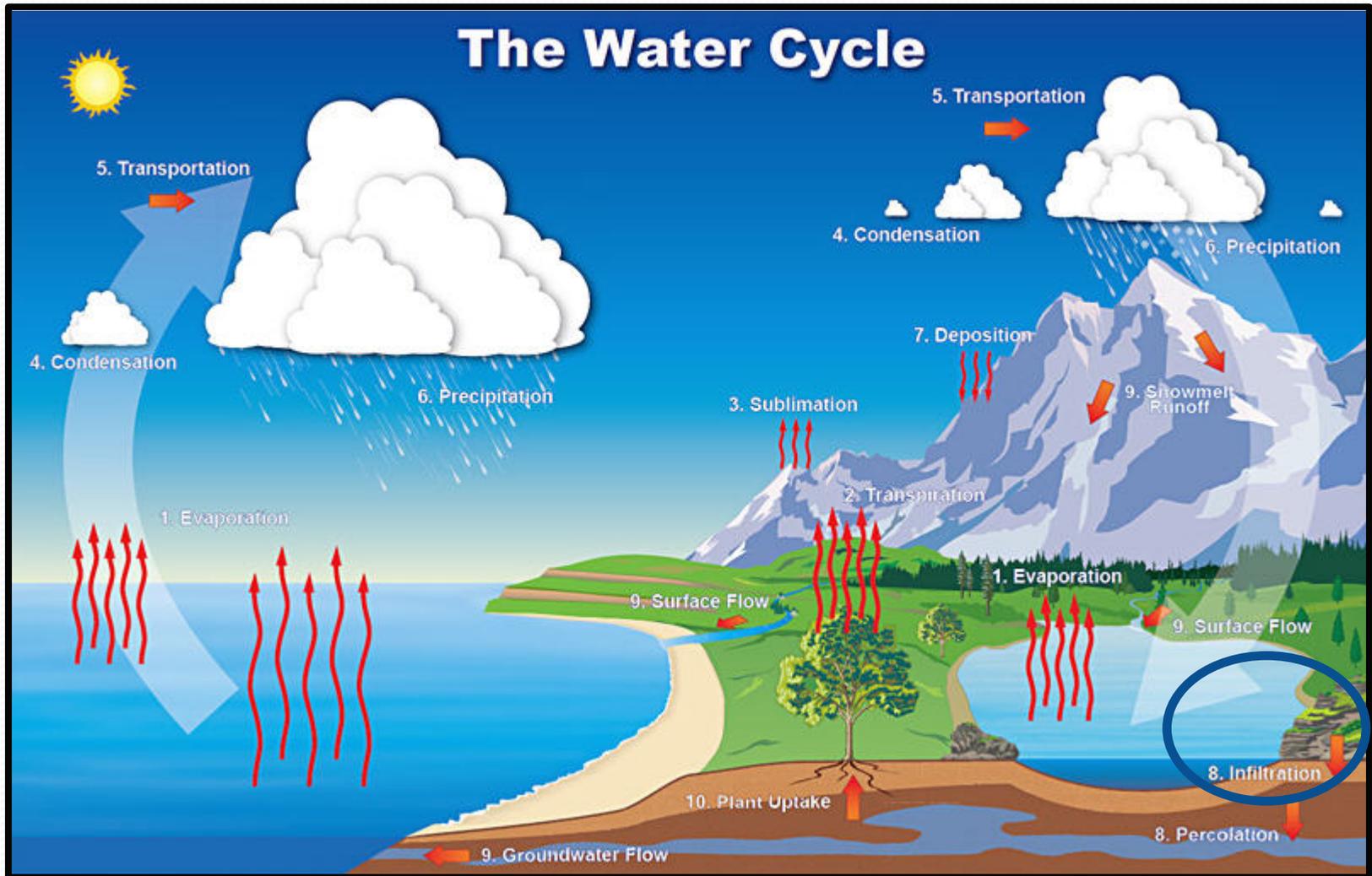
compliance tips



Groundwater

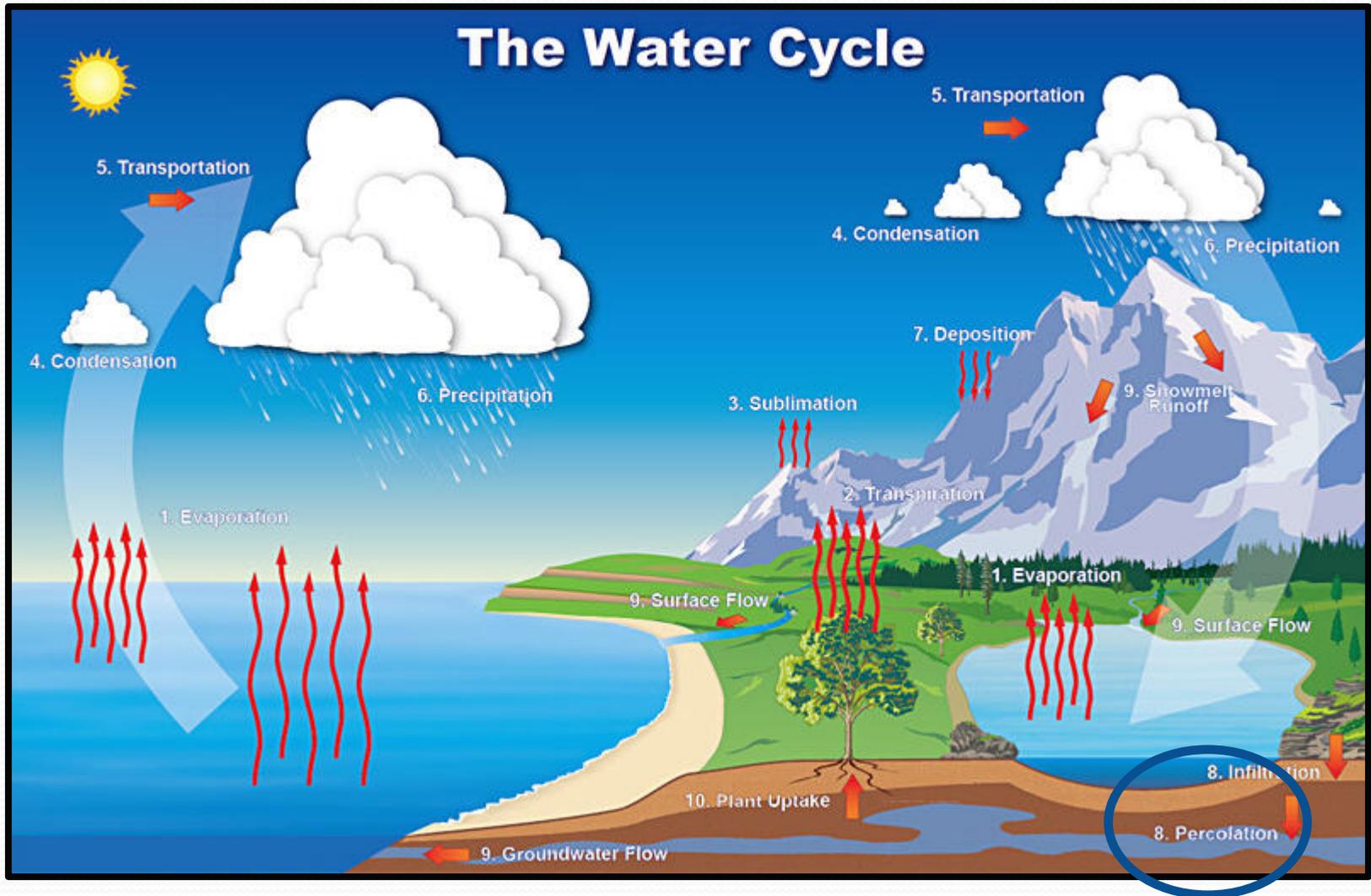


Groundwater



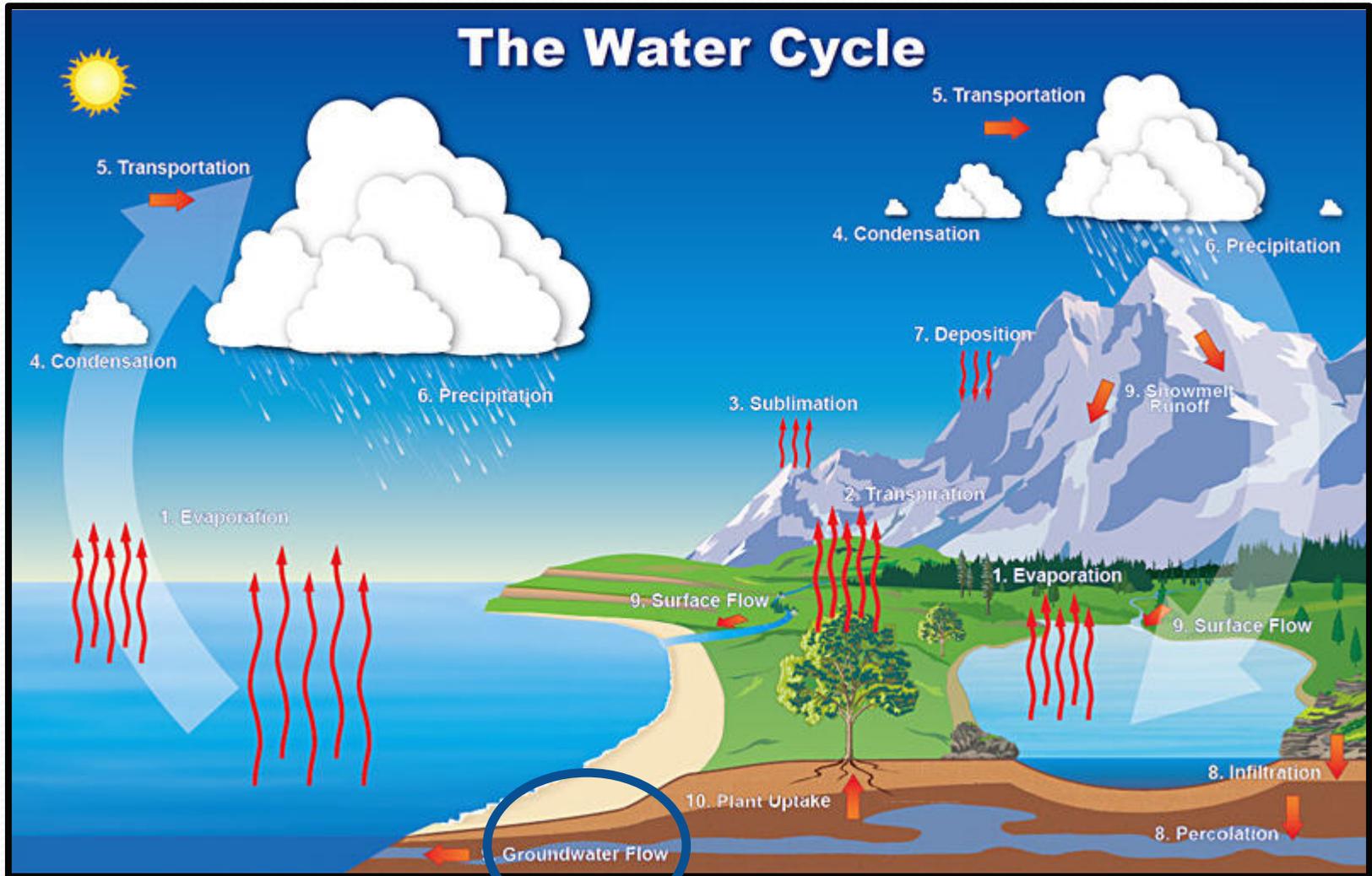
specifically infiltration

Groundwater



percolation

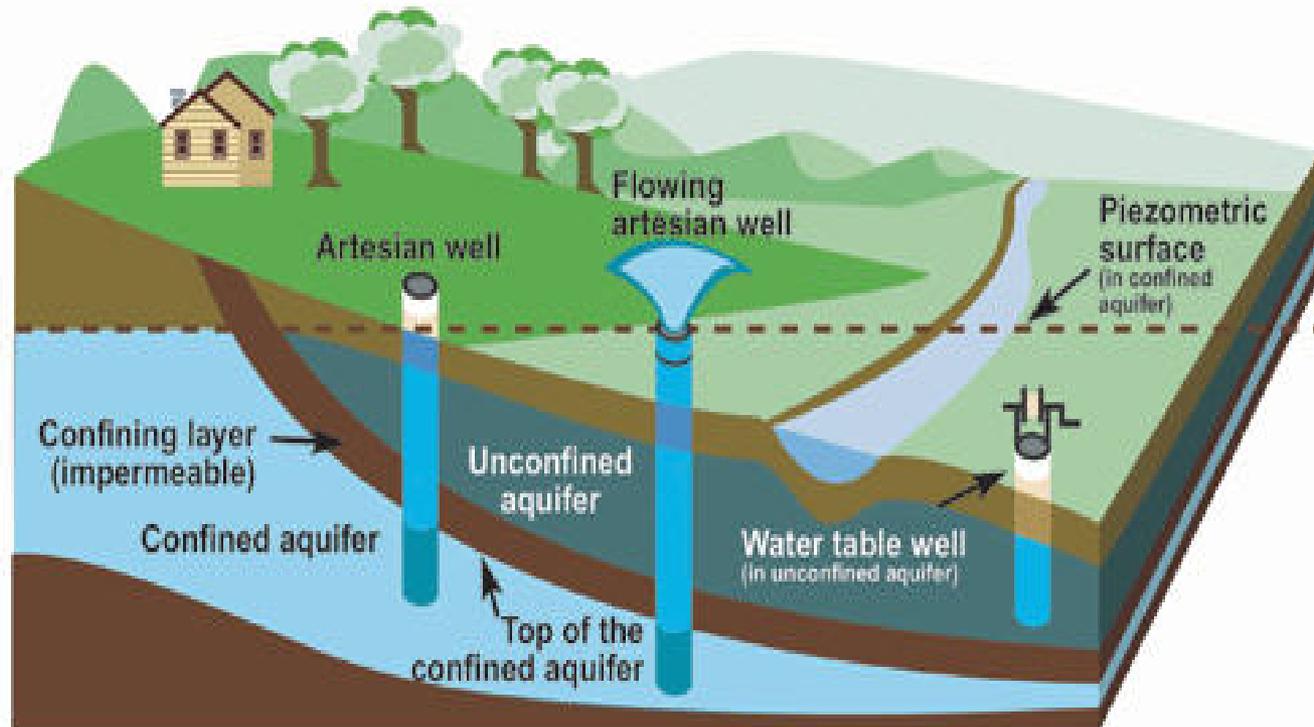
Groundwater



and groundwater flow

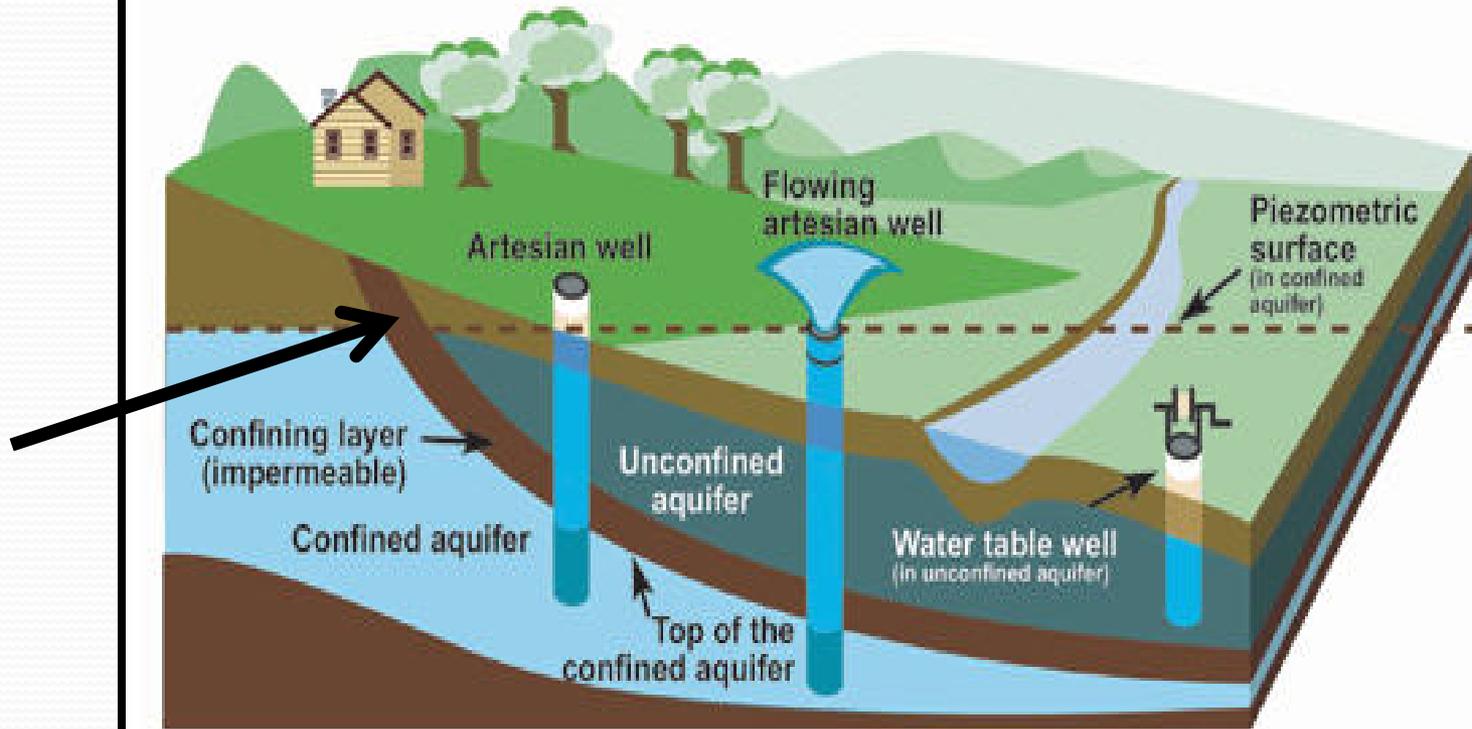
Groundwater

Aquifers and wells



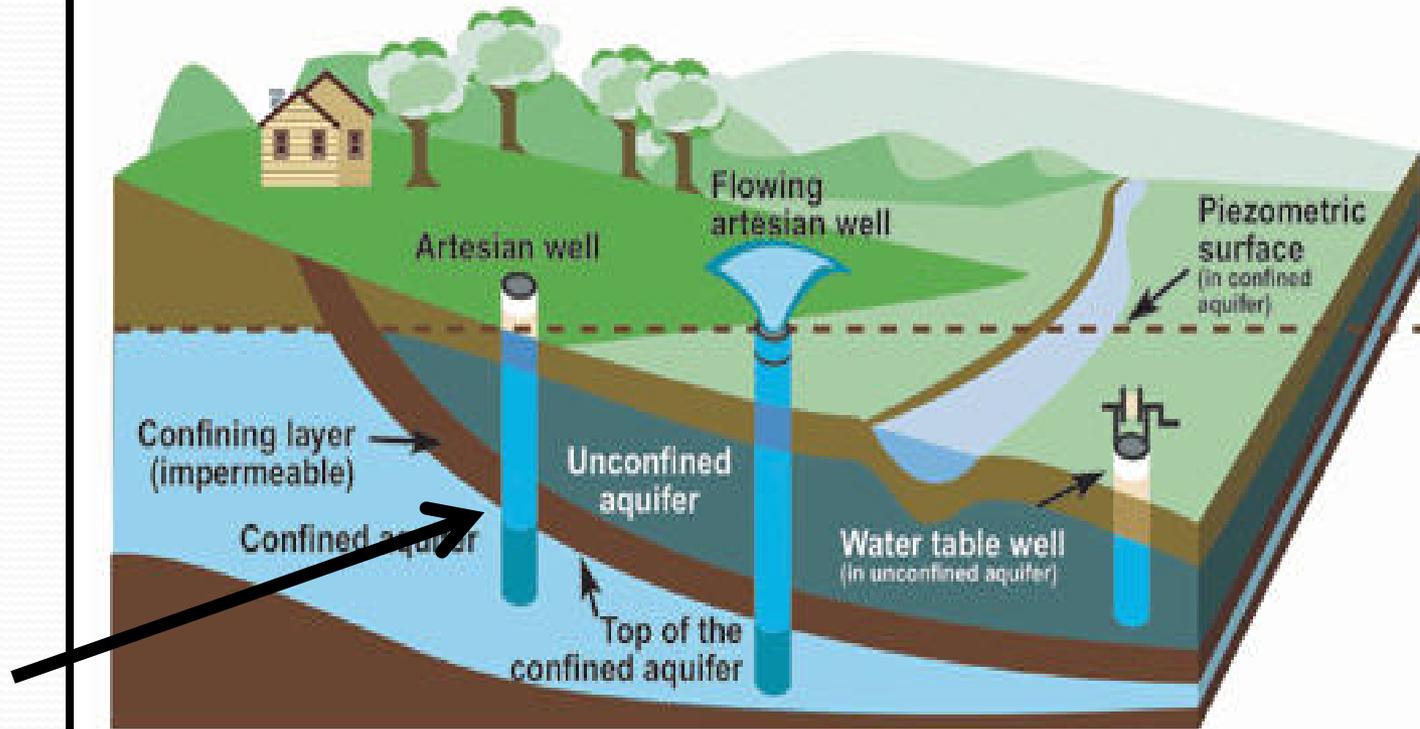
Groundwater

Aquifers and wells

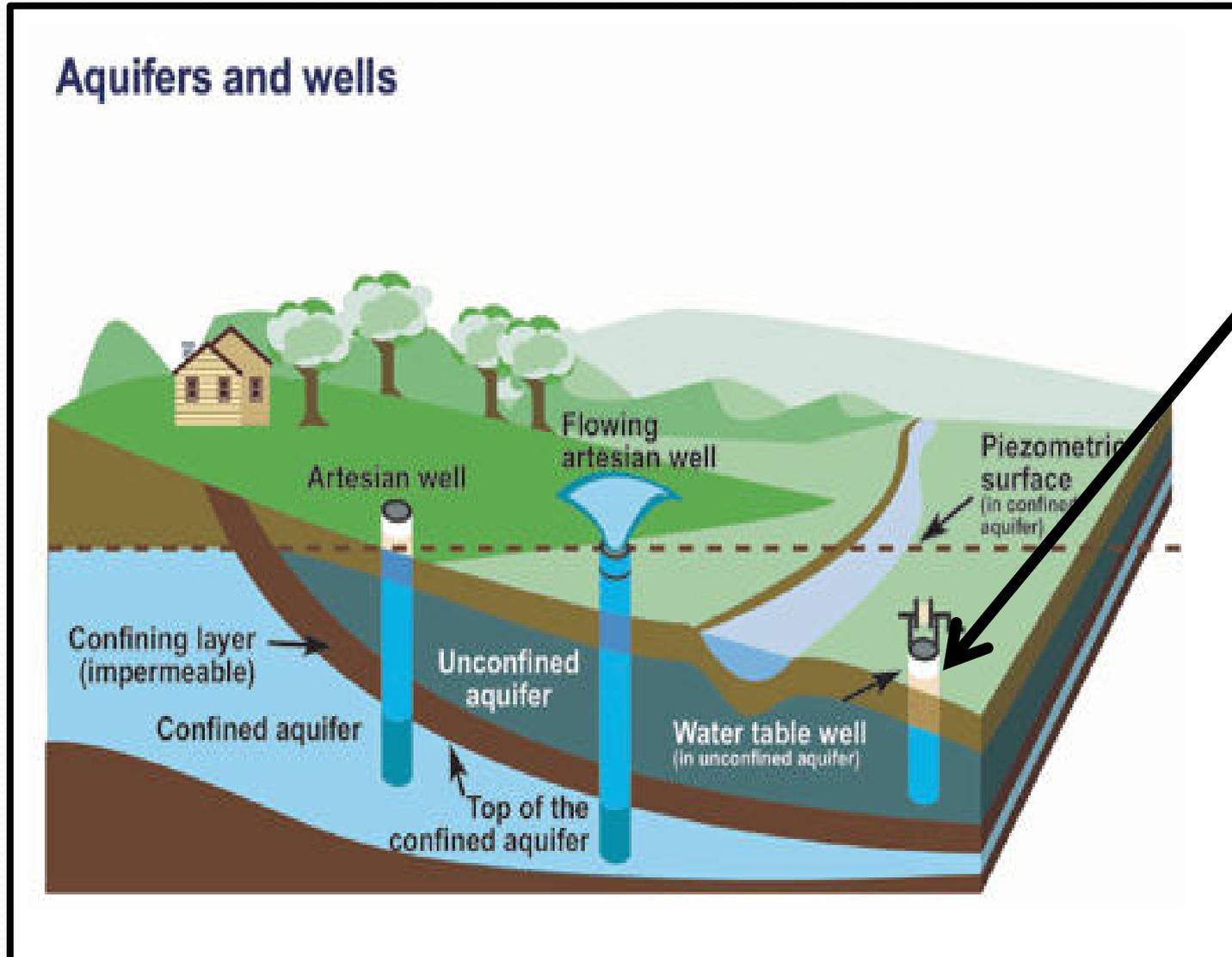


Groundwater

Aquifers and wells

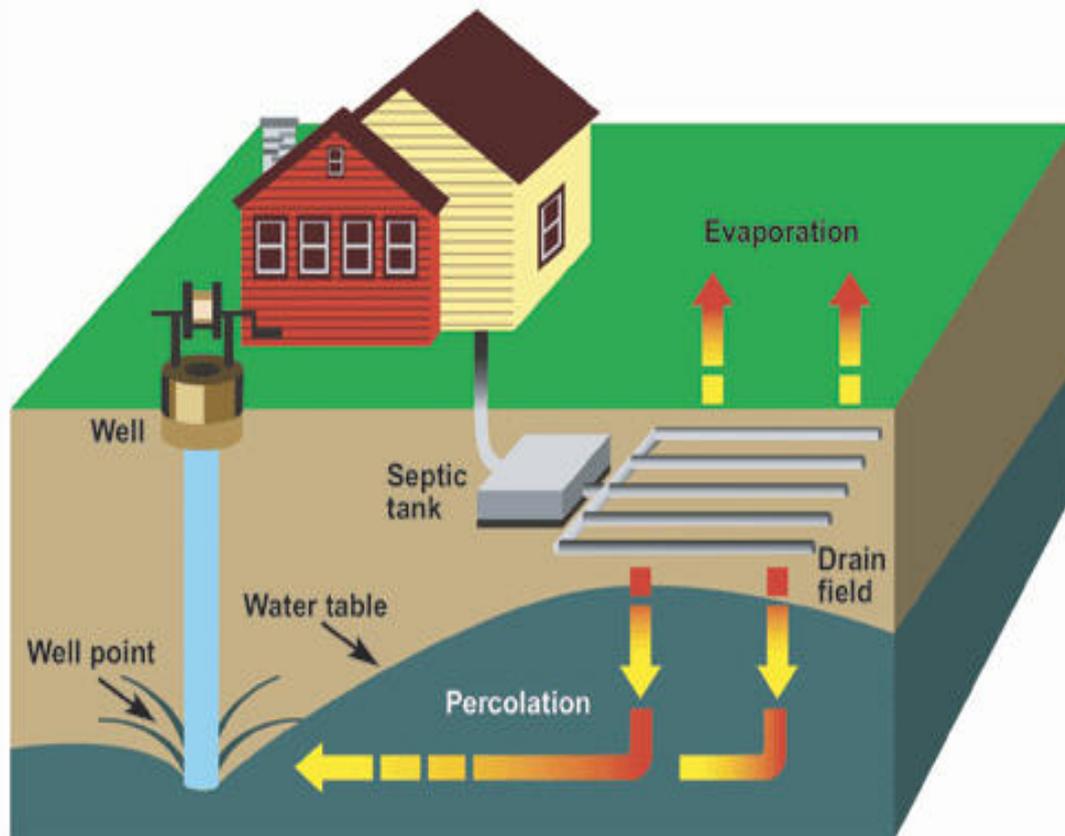


Groundwater



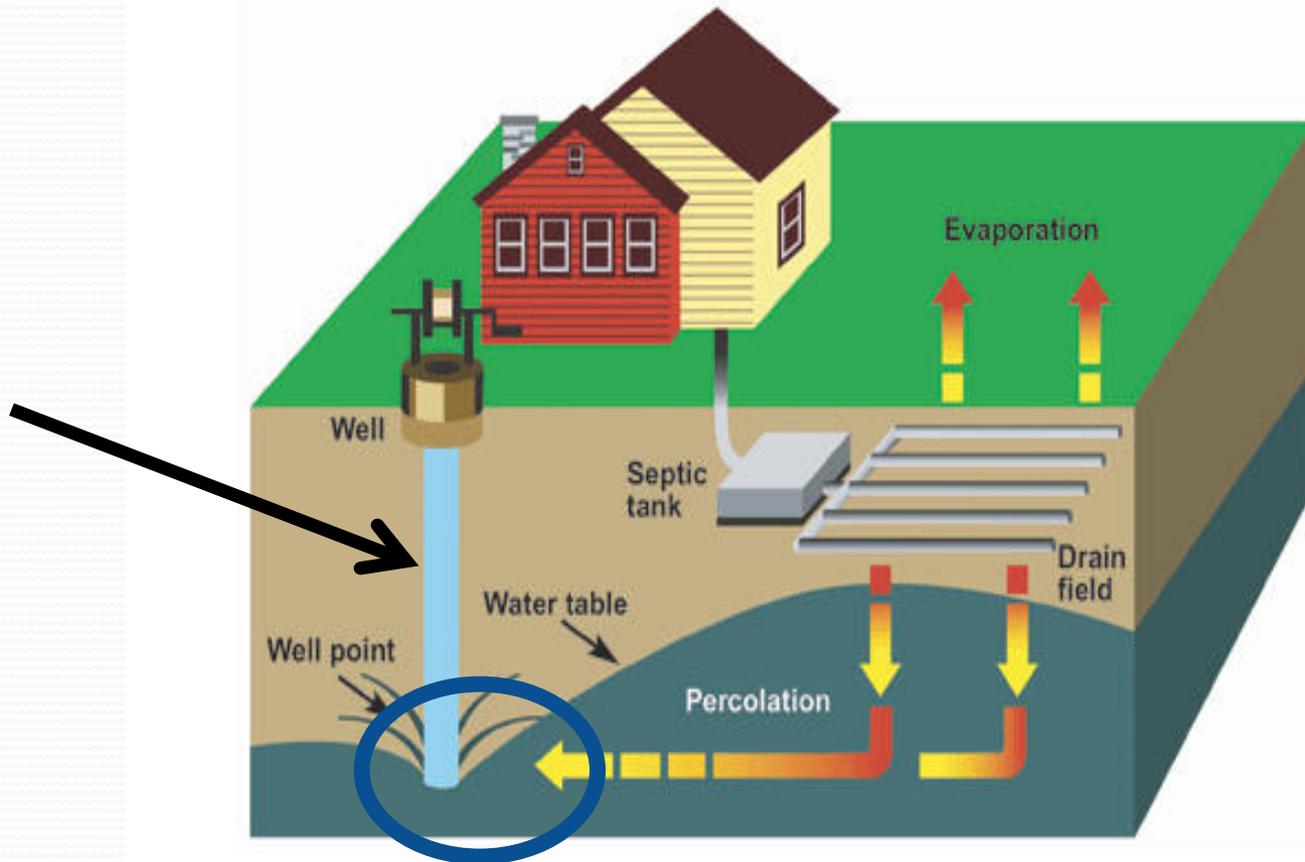
Groundwater Discharge Compliance

Septic effluent percolates to the water table



Groundwater Discharge Compliance

Septic effluent percolates to the water table



Groundwater

Groundwater is the water located beneath the earth's surface in soil pore spaces and in the fractures of rock formations

Groundwater fills the spaces between sand grains (intergranular), in rock crevices (as in igneous rocks), and in solution openings (as in limestone)

a deposit is called an aquifer when it can yield a usable quantity of water

the depth at which soil pore spaces or fractures and voids in rock become completely saturated with water is called the water table

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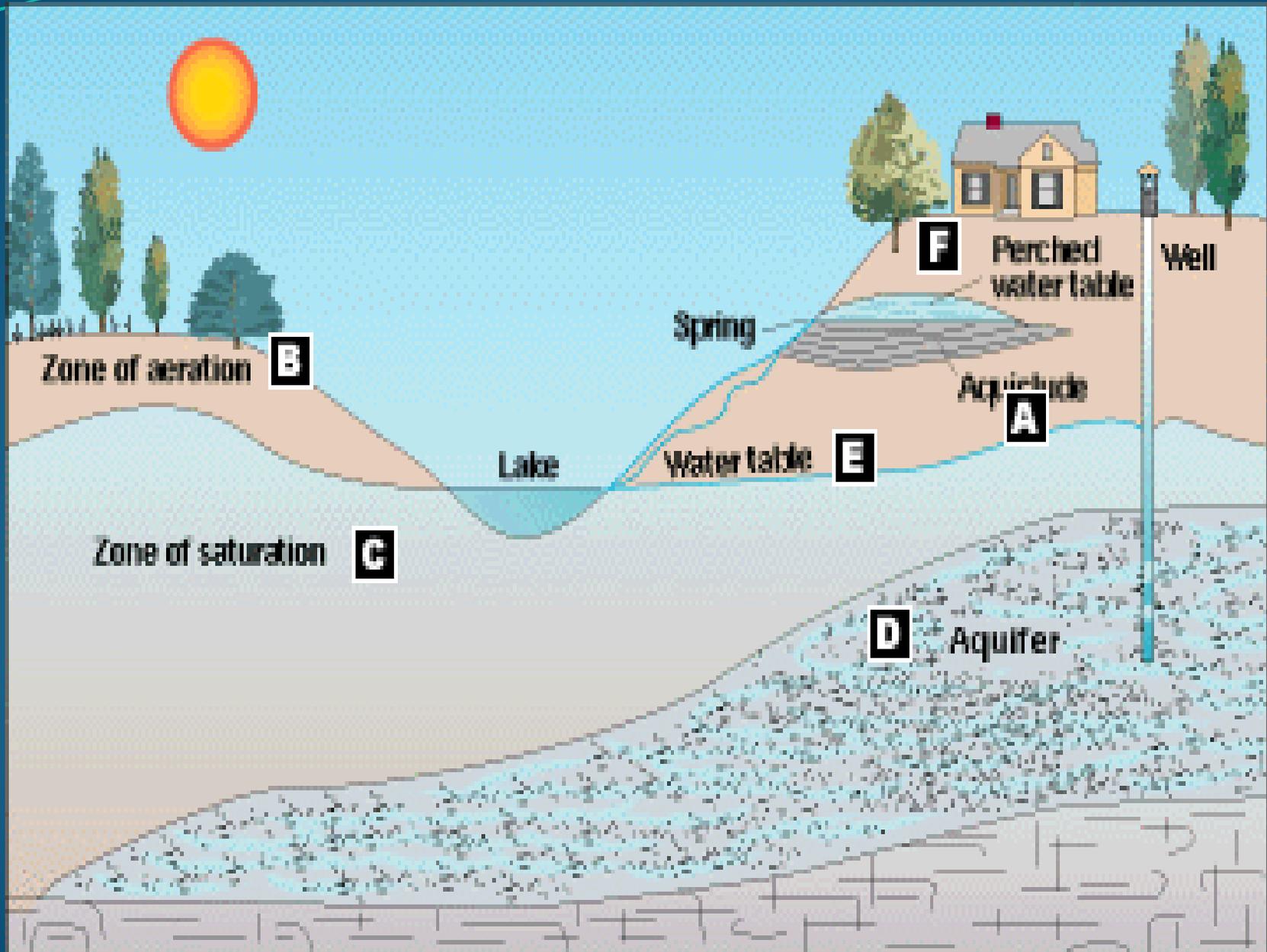
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Groundwater



Groundwater

The water filling these openings is usually within 100 meters of the surface.

Much of the earth's fresh water is found in these spaces.

Groundwater

At greater depths, because of the weight of overlying rock, these openings are much smaller, and therefore hold considerably smaller quantities of water.

Groundwater flows slowly through water-bearing formations (aquifers) at different rates. In some places, where groundwater has dissolved limestone to form caverns and large openings, its rate of flow can be relatively fast but this is exceptional.

Groundwater

The residence time of groundwater, i.e., the length of time water spends in the groundwater portion of the hydrologic cycle, varies enormously.

Water may spend as little as days or weeks underground, or as much as 10,000 years.

Residence times of tens, hundreds, or even thousands of years are not unusual.

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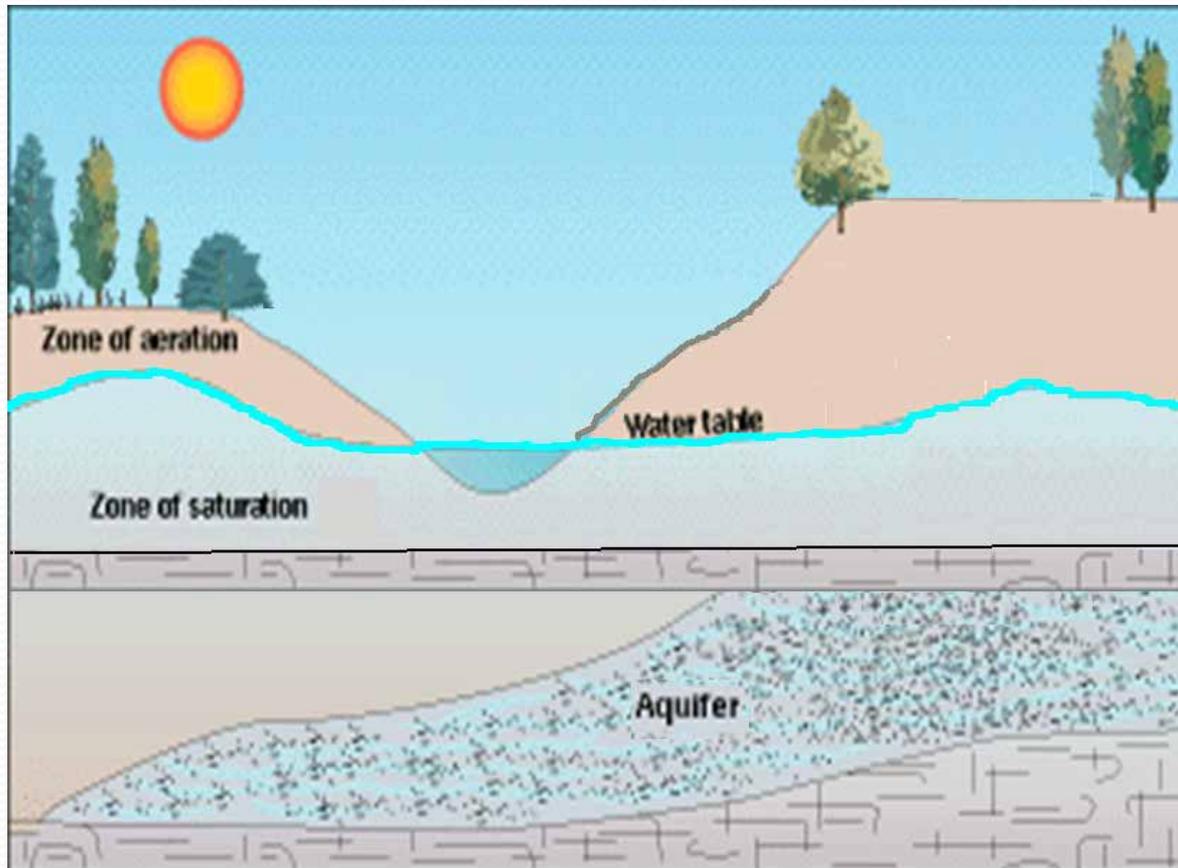
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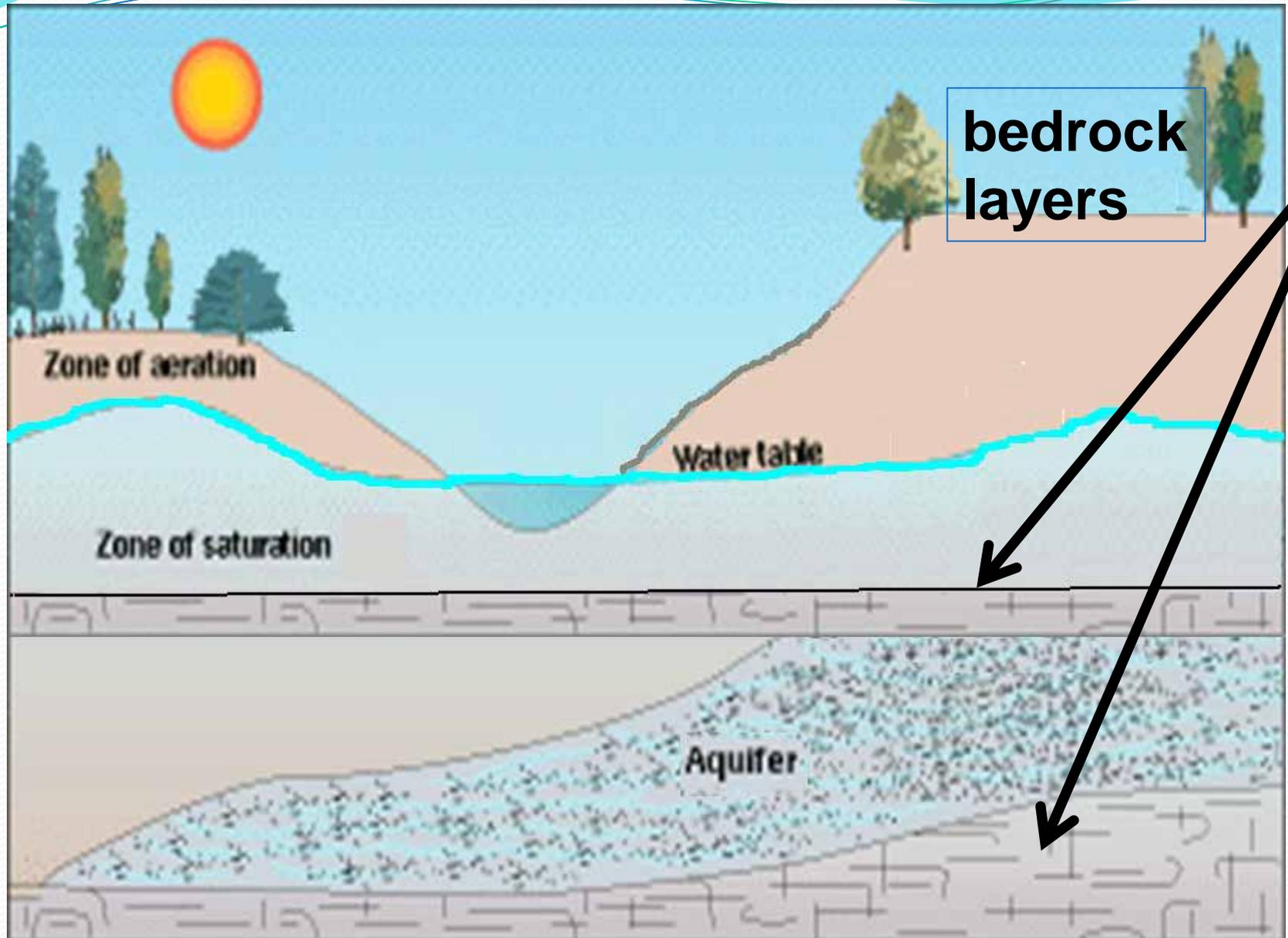
By comparison, the average turnover time of river water, or the time it takes the water in rivers to completely replace itself, is about two weeks.

Groundwater

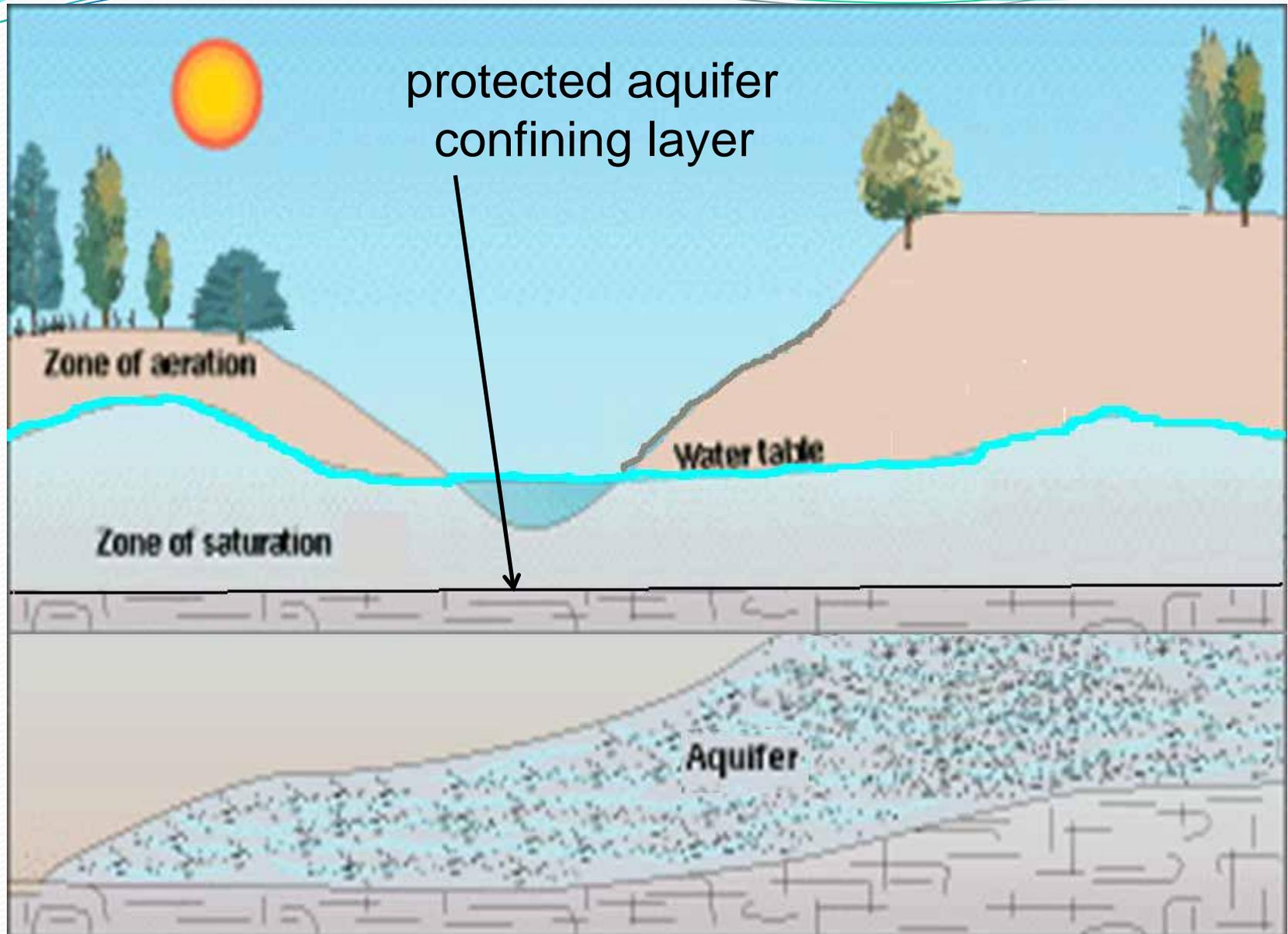
The glacial history of Michigan has left some areas with naturally protected aquifers.



Groundwater



Groundwater

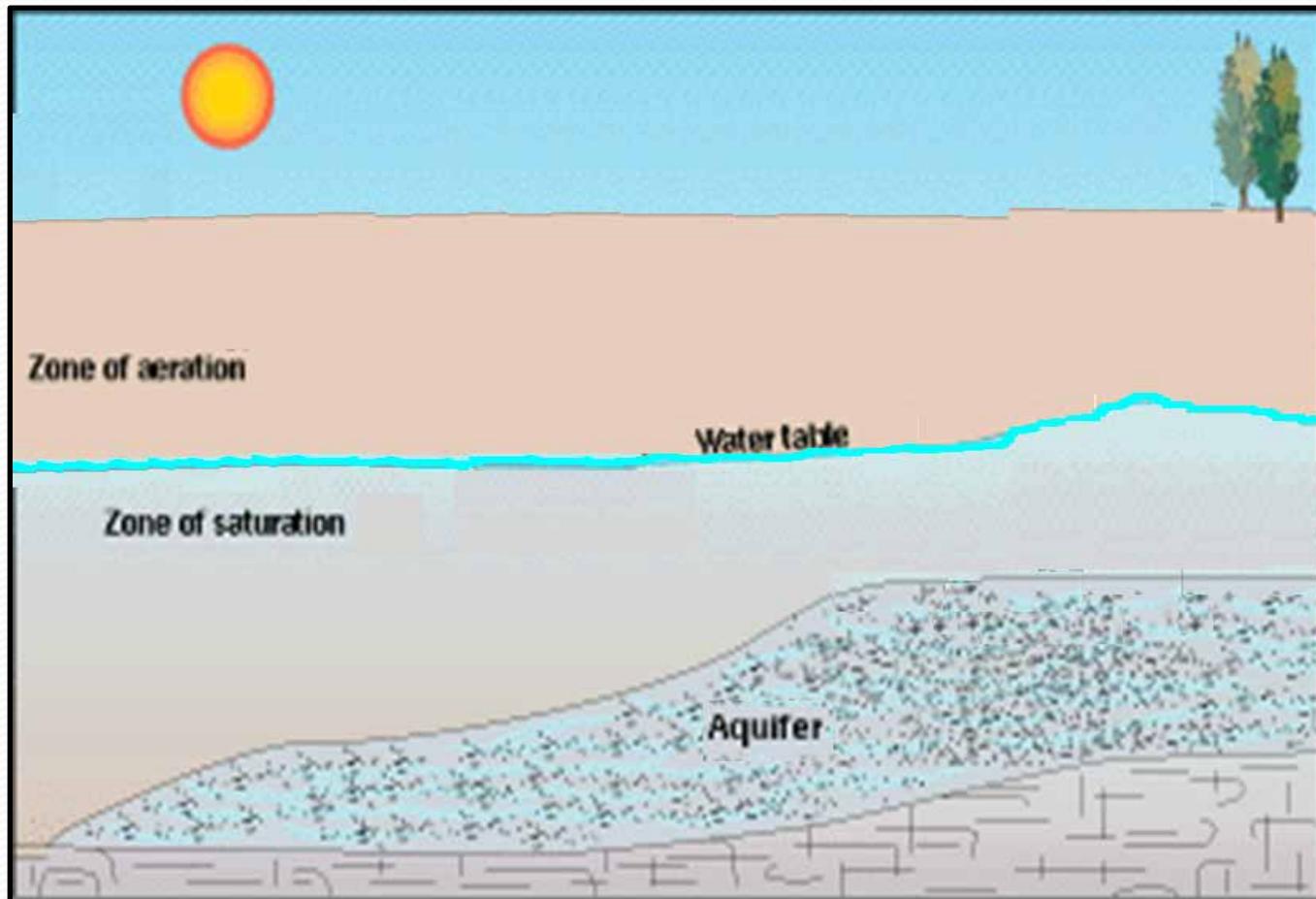


Groundwater

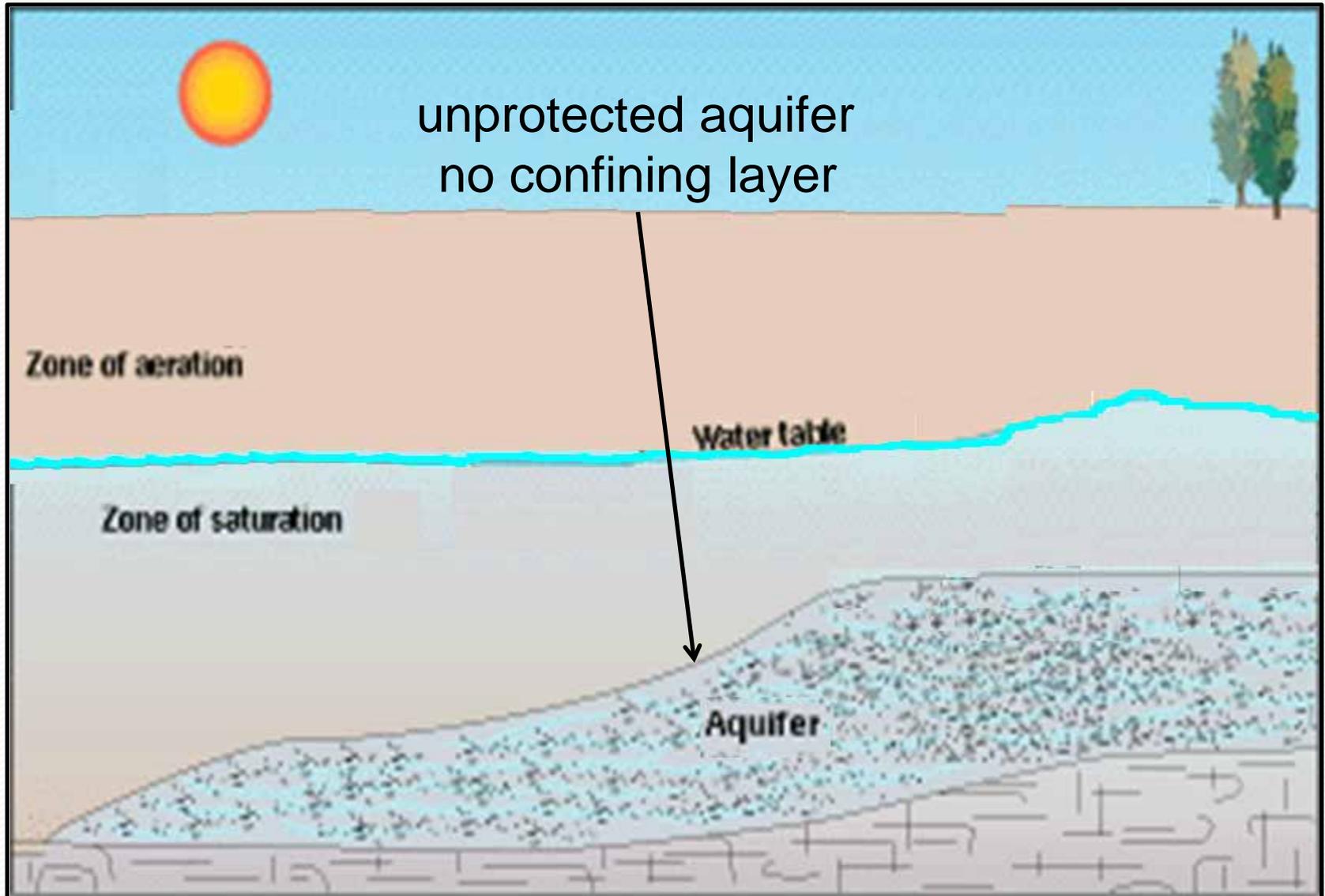
**However, many areas have only glacial outwash
overlying deep sand aquifers**

Groundwater

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Groundwater



Groundwater

In Michigan there are:

over 1,000,000 private drinking water wells

an average of 25,000 domestic drinking water wells drilled per year

Groundwater

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an average of 25,000 domestic drinking water wells drilled per year

twice as many groundwater supplies as surface water supplies for public drinking water use

almost 2.6 million Michiganders depend on groundwater as their sole source of drinking water.

Groundwater Discharge

The State has a formal program, which, if certain conditions are met, allows the discharge of treated wastewater to the ground, and hence to the groundwater.

Groundwater Discharge Permit

the permit

The Part 22 Groundwater Discharge Permit arose from the following

Groundwater Discharge Permit

Legal authority- History

The early regulation enacted in by the Michigan legislature declared that the Department shall protect and conserve the water resources of the state.

Federal protections were put in place much later than Michigan's water protection act. While the Federal Clean Water Act provides protection for surface water across the country there is no Federal groundwater discharge permit program.

Michigan's regulations were put in place to give Michigan the authority to enforce the Federal surface water permit program (NPDES), and they protect surface water and groundwater as one and the same as they are "Waters of the State".

Groundwater Discharge Permit

Legal authority- History

These regulations are now Part 31 of the **Natural Resources and Environmental Protection Act PA 1994** as amended (**NREPA**).

Part 31 established the method to issue permits as well as monitoring, inspection and enforcement authority for those who violate the law.

Both Administrative and criminal legal processes may be employed to protect waters of the state. Fines and penalties are included.

Part 41 Compliance

Legal authority

Another group of regulations establishes standards for sewage collection, treatment and facility maintenance.

Originally called Act 98, it was incorporated into the NREPA as Part 41.

Part 41 applies to all public collection systems, and wastewater plants whether they discharge to surface water or groundwater.

A public wastewater treatment plant is defined as a wastewater plant serving the public and requires a Part 41 Permit

Part 41 Compliance

serving the public?

Part 41 Compliance

serving the public?

What else does that mean?

Part 41 Compliance

serving the public?

One ownership entity may be developing a property as site condominiums.

The site developer may have an NPDES discharge permit or a groundwater discharge permit for the site which the DEQ will inspect, and both the collection system and the WWTP will require a Part 41 Construction Permit.

The individual site condos are owned.

Part 41 Compliance

Legal authority

Part 41 of NREPA includes reference to

Construction Permits

Engineering Standards

Maintenance requirements

Facility Classification

Operator Training and Certification

Groundwater Discharge Permit

Municipal Facilities that discharge to groundwater are eligible to apply for both State and Federal construction grants and loans.

State Revolving Fund Loan Program (SRF)

USDA grants and loans

SAW grants and loans

Groundwater Discharge Compliance

NREPA Part 22 Rules

the Part 22 Rules were revised in 1999

set specific discharge standards

identify specific exemptions

set specific permit types- “permit grades of regulation”

no Federal oversight

fees fund the groundwater permit program

Groundwater Discharge Compliance

NREPA Part 22 Rules

All groundwater discharges must meet certain general requirements that prohibit nuisance conditions and set isolation standards between polluting sources and drinking water wells.

The rules set out a series of authorizations that have increasing regulation based on the characteristics of the discharge.

Groundwater Discharge Compliance

The Permit

The Permit is a renewable operating Permit, with a 5 year span

Groundwater Discharge Compliance

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The Permit is a renewable operating Permit, with a 5 year span

Re-application is required 18 months in advance of Permit expiration

Groundwater Discharge Compliance

The objective of the groundwater permit program is to preserve and maintain our groundwater aquifer resource for use as drinking water.

there is a permit program

Groundwater Discharge Compliance

The objective of the groundwater permit program is to preserve and maintain our groundwater aquifer resource for drinking water.

there is a permit program

it includes health and resource based standards

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a permit can be denied

Groundwater Discharge Compliance

Groundwater protection standards focus on nitrates or salts due to the direct health implications of consuming high nitrates and salts

Groundwater Discharge Compliance

Groundwater protection standards focus on nitrates or salts due to the direct health implications of consuming high nitrates and salts

Surface water protections focus more on ammonia, BOD and temperature because of the potential impacts to aquatic organisms, and phosphorous, because of its impact on aquatic plant growth, and disinfection

Groundwater Discharge Compliance

The Groundwater Discharge Permit is a more difficult Permit to obtain and a more difficult permit to renew.

Groundwater Discharge Compliance

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Groundwater Discharge Compliance

The treatment standard for a discharge will vary depending on location and whether surface waters might be affected.

Groundwater Discharge Compliance

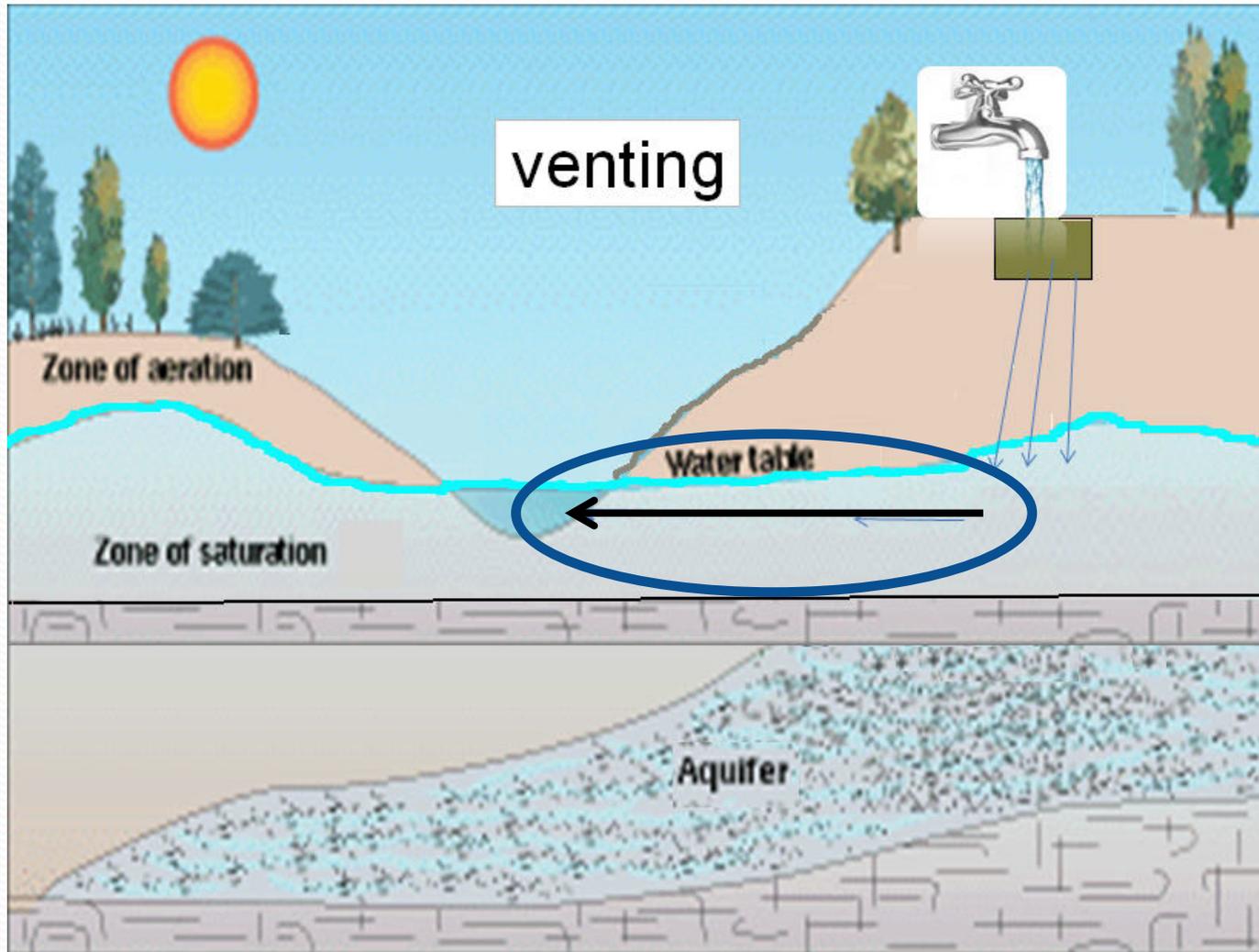
The treatment standard for a discharge will vary depending on location and whether **surface waters might be affected**.

Groundwater Discharge Compliance

The treatment standard for a discharge will vary depending on location and whether surface waters might be affected.

Groundwater can vent to surface water

Groundwater Discharge Compliance



Groundwater Discharge Compliance

The technical review requires that the that the entire discharge footprint be located a minimum of 1000 feet from any surface drainage feature that is determined to be a potential receptor of groundwater venting to surface water,

or the proposed discharge would be considered to impart loading to the receiving stream in much the same way as a direct discharge from an outfall pipe.

Groundwater Discharge Compliance

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Groundwater Discharge Compliance

The most difficult effluent parameters to meet are found in Groundwater Discharge Permits where venting to surface water must be included.

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Groundwater Discharge Compliance

Under what circumstances would a groundwater discharge permit for wastewater discharge be required?

Groundwater Discharge Compliance

Under what circumstances would a groundwater permit for wastewater effluent to be discharged to the environment might be required?

It could be that a developer is looking to build a residential housing development

Groundwater Discharge Compliance

Under what circumstances would a groundwater permit for wastewater effluent to be discharged to the environment might be required?

It could be that a developer is looking to build a residential housing development

and will be required to provide water, water treatment, sewers and sewage treatment

Groundwater Discharge Compliance

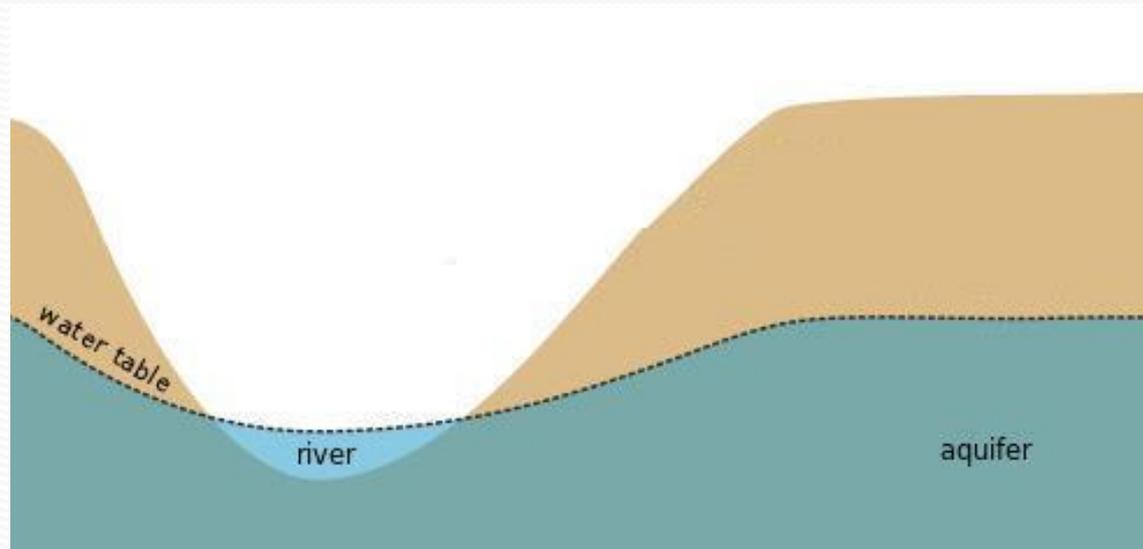
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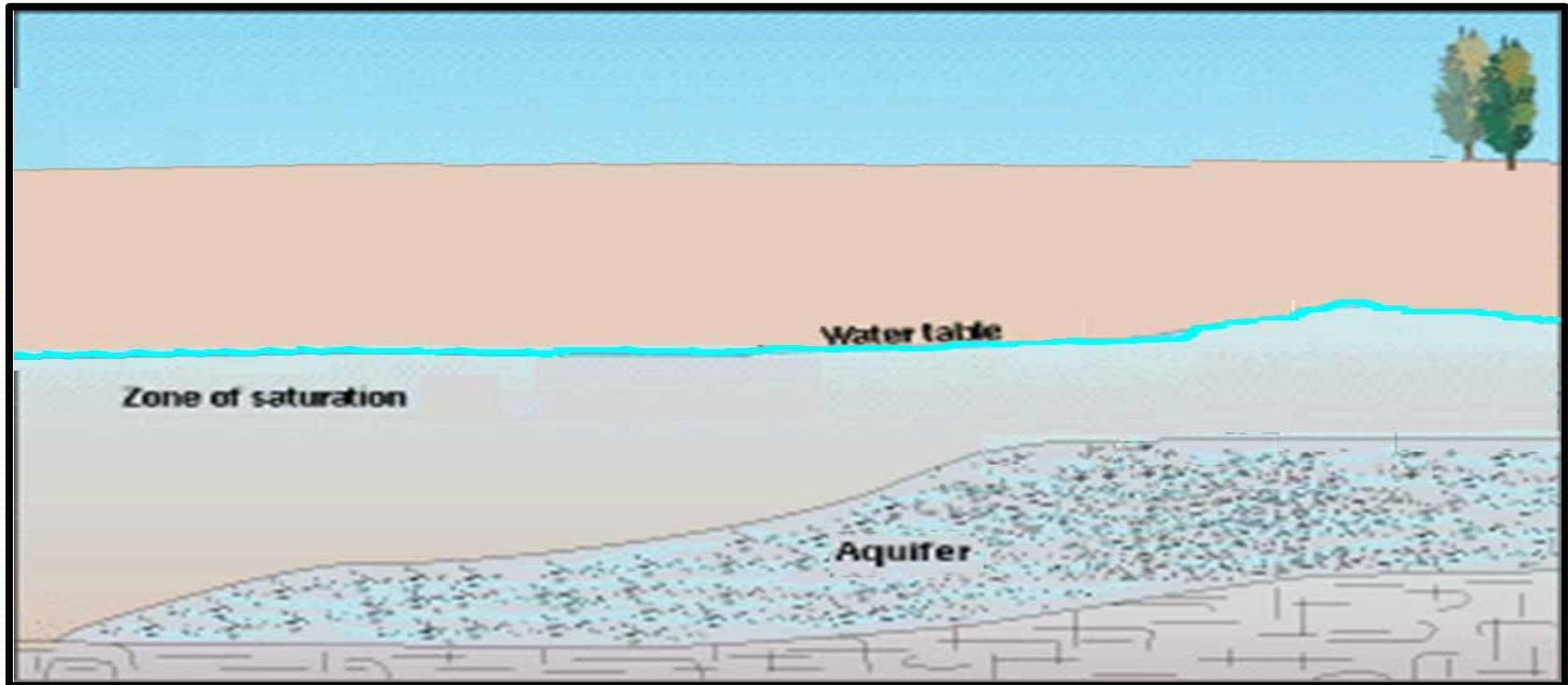
but an NPDES Permit could not be obtained because

Groundwater Discharge Compliance



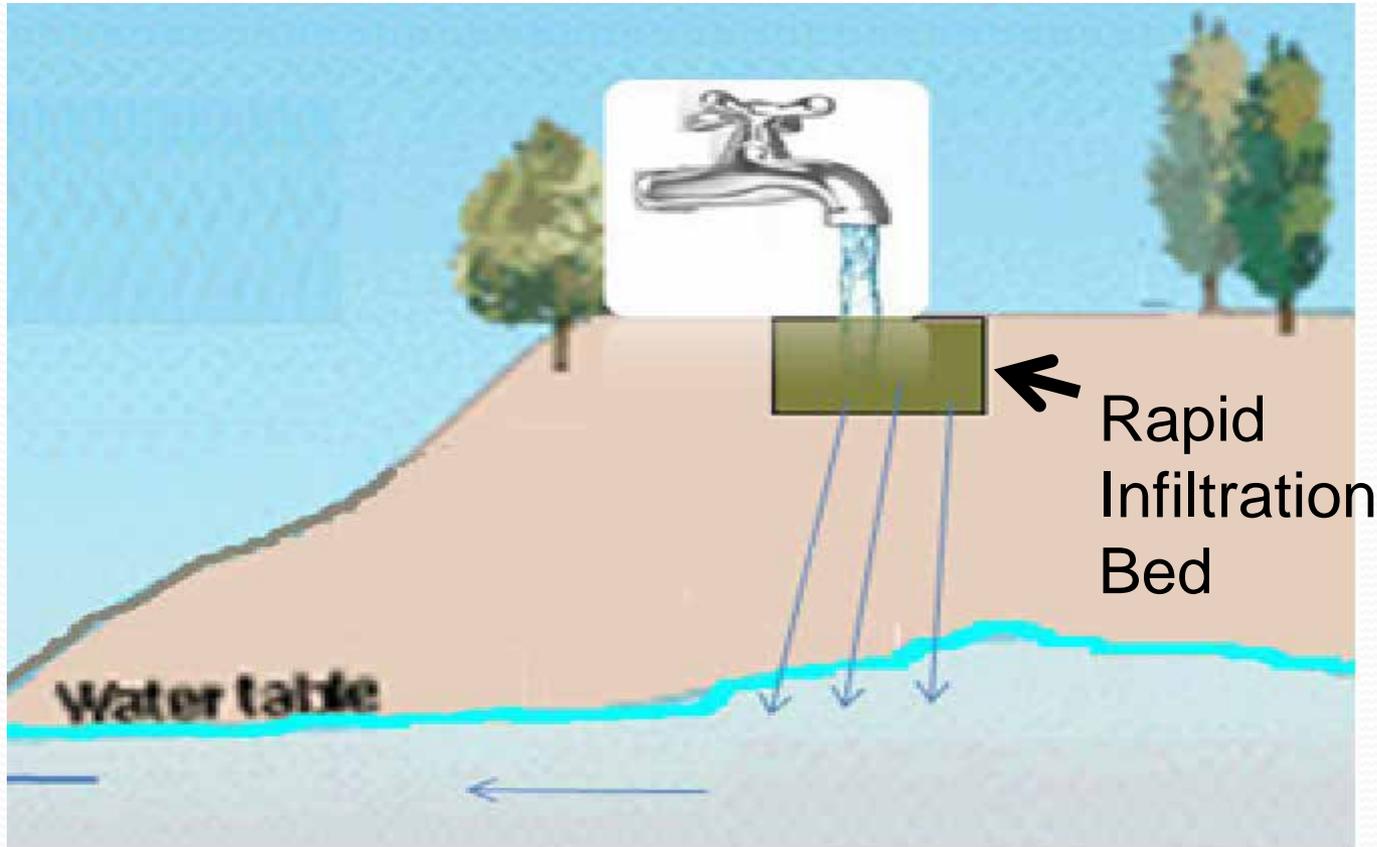
the first thing required for an NPDES Permit is the availability of a suitable surface watercourse

Groundwater Discharge Compliance



and none is available

Groundwater Discharge Compliance



A 2218 groundwater discharge permit might be appropriate

Groundwater Discharge Compliance

NREPA Part 22 Rules

The rules also set out the permit application process

Groundwater Discharge Compliance

General Conditions
All permits

Specific exemptions

Design & Operation

Monitoring & Compliance

Standards

Closure

Groundwater Discharge Compliance

AUTHORIZATIONS

2210(y)

2211

2213

2215

2216

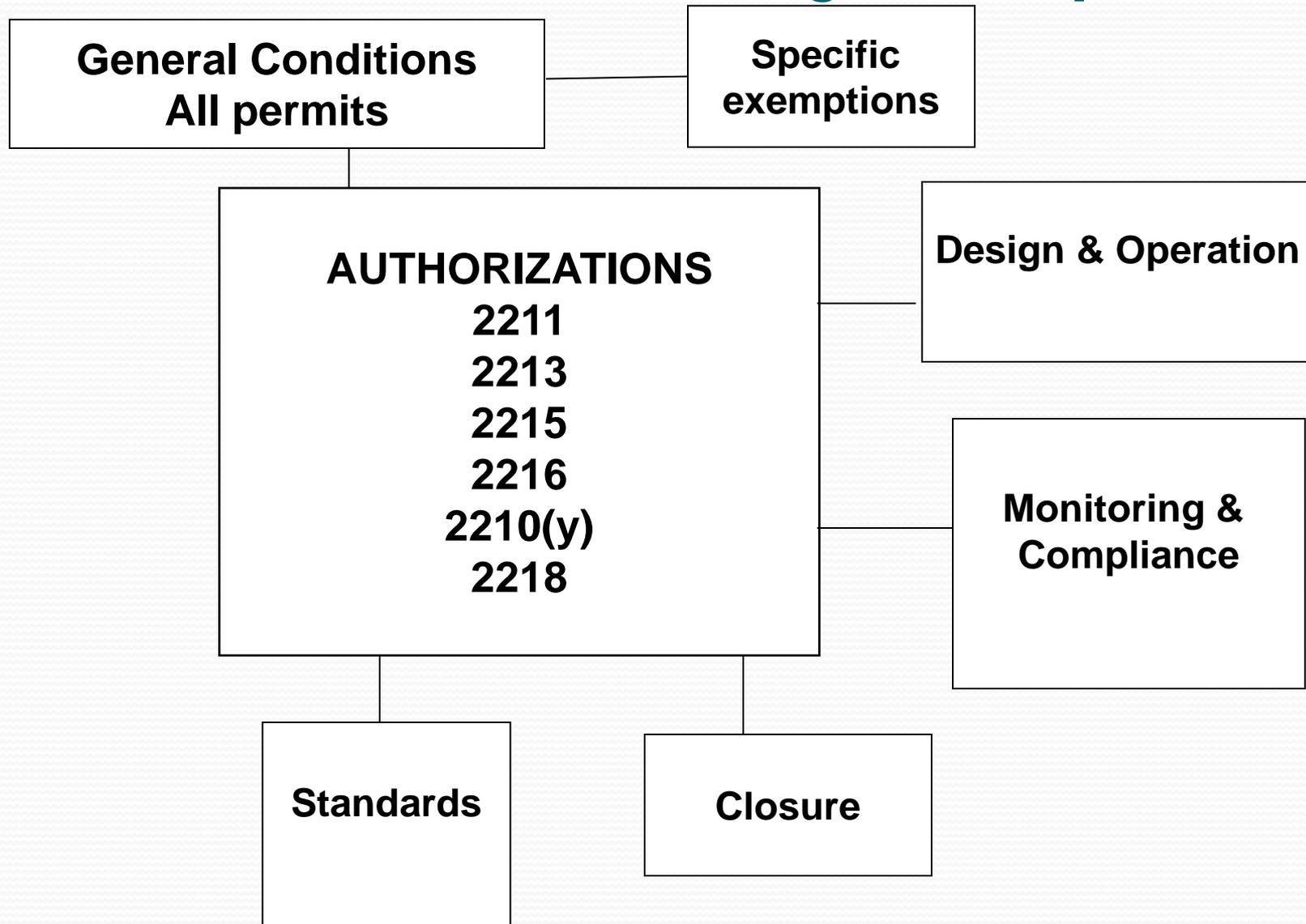
2218

LOW IMPACT



HIGH IMPACT

Groundwater Discharge Compliance



Groundwater Discharge Compliance

NREPA Part 22 Rules

EXEMPTIONS 2210

Rule 2210 outlines things that **do not need a groundwater permit** such as a **discharge covered by other statutes** (home septic systems, storm water, animal feed lots) or discharge of things that **likely will not cause harm** (such as non-contact cooling water), or **sanitary sewage** < 6,000 gpd with LHD approval

Groundwater Discharge Compliance

NREPA Part 22 Rules

EXEMPTIONS 2210

Authorization 2210(y)

Insignificant Discharge

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS 2211

Rule 2211 is a simple notification authorization for **low hazard discharges** such as small laundromats, portable power washers, and **sanitary sewage >6,000gpd and < 10,000gpd** requiring LHD approval and annual reporting to DEQ (Rule 2212).

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS 2215

Rule 2215 are **general permits** which can be applied for

vehicle wash not open to the public <2,000gpd

slaughterhouse <2,000gpd

gravel, sand, limestone, or dolomite mining

application of oil field brine

vehicle wash open to the public <3,000gpd

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS

2216

Rule 2216 is for discharges with some specific treatment designs

<20,000gpd to **constructed wetland**

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS

2216

Rule 2216 is for discharges with some specific treatment designs

<20,000gpd to constructed wetland

<20,000gpd **laundromat, no dry cleaning**

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS

2216

Rule 2216 is for discharges with some specific treatment designs

<20,000gpd to constructed wetland

<20,000gpd laundromat, no dry cleaning

<50,000gpd **sanitary sewage**

Groundwater Discharge Compliance

NREPA Part 22 Rules

AUTHORIZATIONS

2218

high potential impact

> 50,000gpd sanitary sewage

Groundwater Discharge Compliance

NREPA Part 22 Rules

Discharges to groundwater require some form of treatment to meet the groundwater discharge standards

Groundwater Discharge Compliance

NREPA Part 22, Part 41 Rules

Discharges to groundwater require some form of treatment to meet the groundwater discharge standards.

Public facilities, and privately owned facilities serving the public, must meet strict engineering standards as outlined by Part 41 of NREPA which also requires a construction permit.

Groundwater Discharge Compliance

NREPA Part 22, Part 41 Rules

Most discharges to groundwater require some form of treatment to meet the groundwater discharge standards.

Public facilities, and privately owned facilities serving the public, must meet strict engineering standards as outlined by Part 41 of NREPA which also requires a construction permit.

Other than above, private plants are not regulated by Part 41 (construction permits) but still need a discharge permit and must meet State discharge standards.

Groundwater Discharge Compliance

Treatment options

application to land, and land treatment (plant nutrients)

septic tanks

neutralization

Groundwater Discharge Compliance

Treatment options

lagoons



Groundwater Discharge Compliance

An NPDES Permit mandates an (NH₃) ammonia limit

Groundwater Discharge Compliance

A Groundwater Discharge Permit mandates a (TIN)
Total Inorganic Nitrogen limit ($\text{NH}_3 + \text{NO}_2 + \text{NO}_3$) of 5.0 mg/l

the chemistry is more complex

Groundwater Discharge Compliance

A Groundwater Discharge Permit mandates a (TIN)
Total Inorganic Nitrogen limit ($\text{NH}_3 + \text{NO}_2 + \text{NO}_3$) of 5.0 mg/l

Nitrification
of Ammonia to Nitrite to Nitrate

1



Groundwater Discharge Compliance

A Groundwater Discharge Permit mandates a (TIN) Total Inorganic Nitrogen limit ($\text{NH}_3 + \text{NO}_2 + \text{NO}_3$) of 5.0 mg/l

Nitrification
of Ammonia to Nitrite to Nitrate

1



De-Nitrification
of Nitrate to Nitrite to Nitrogen (gas)

2

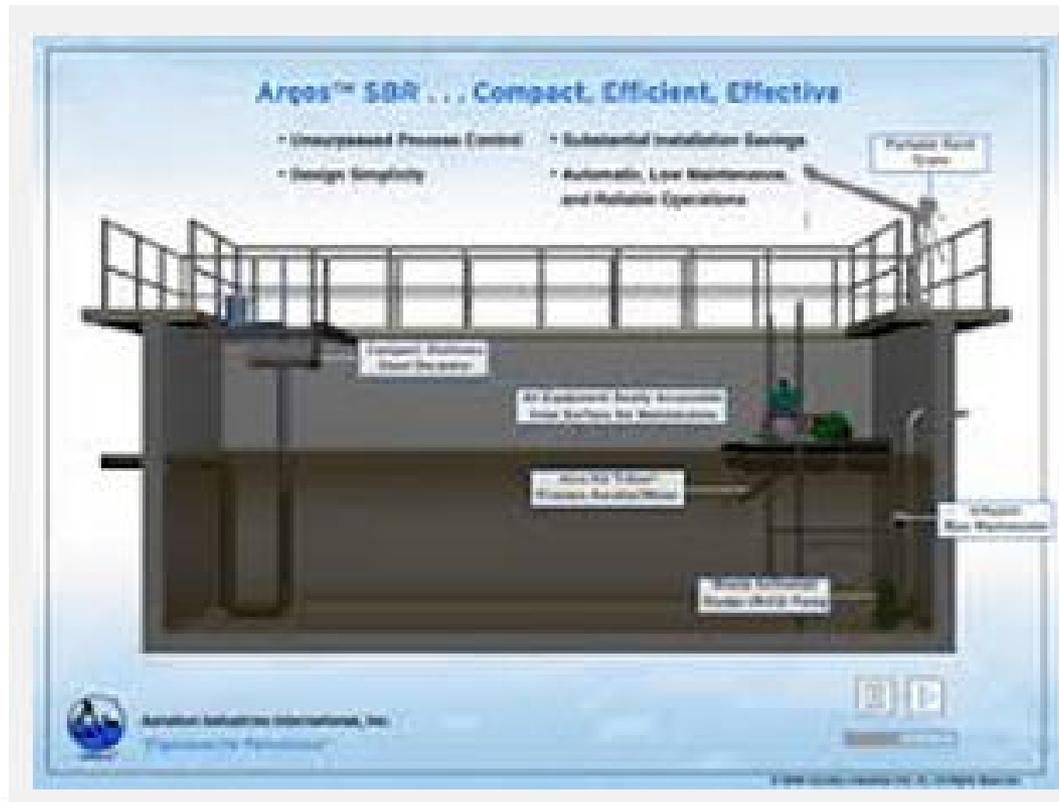


Groundwater Discharge Compliance

activated sludge **sequential batch reactor** processes

Single
tank

(fill &
draw)

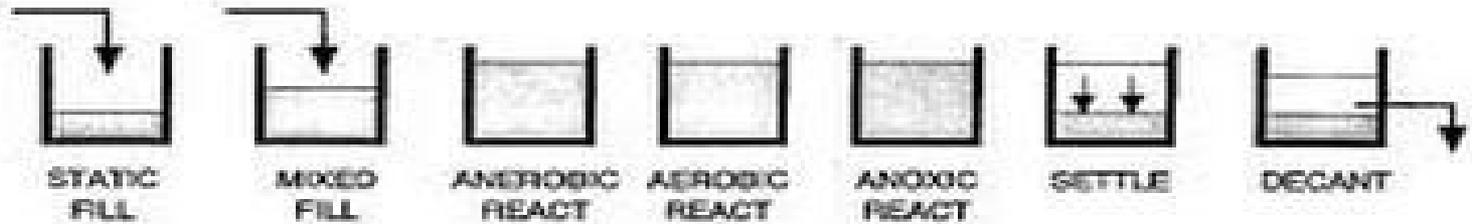


Groundwater Discharge Compliance

Treatment options

activated sludge **sequential batch reactor** processes

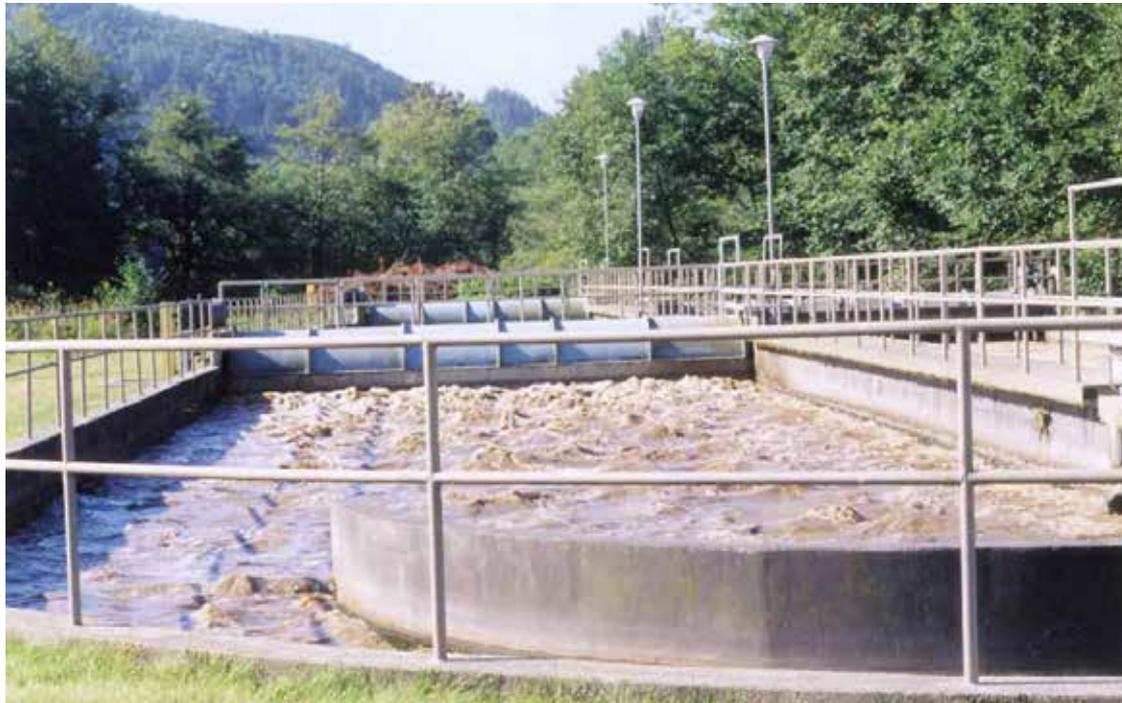
Single
tank
(cycles)



Groundwater Discharge Compliance

Treatment options

activated sludge processes



Groundwater Discharge Compliance

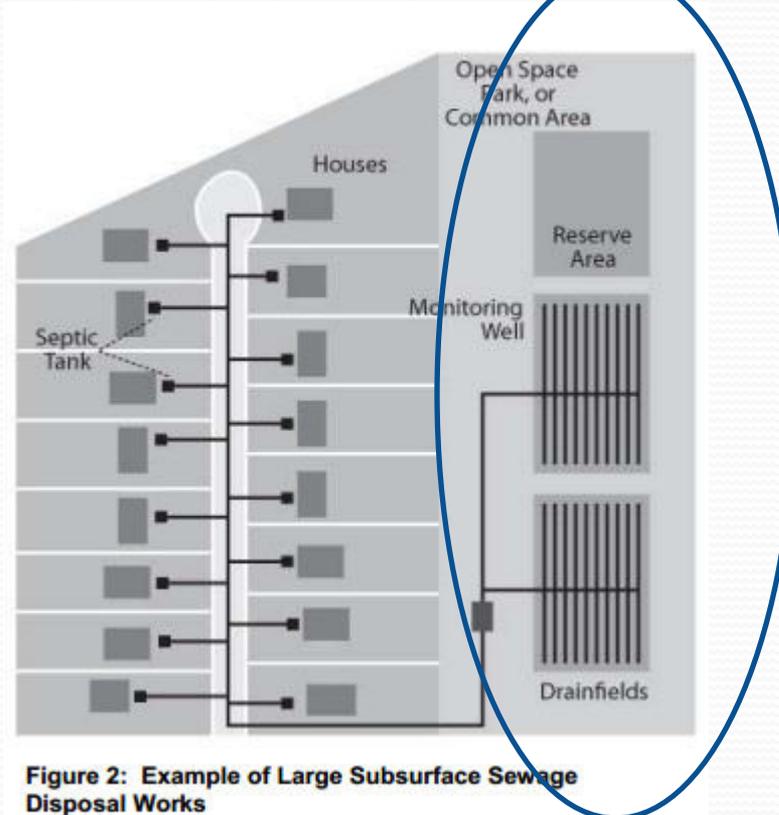
Discharge options

drainfield / subsurface

Groundwater Discharge Compliance

Discharge options

drainfield / subsurface



Groundwater Discharge Compliance

Discharge options

spray irrigation



Groundwater Discharge Compliance

Discharge options

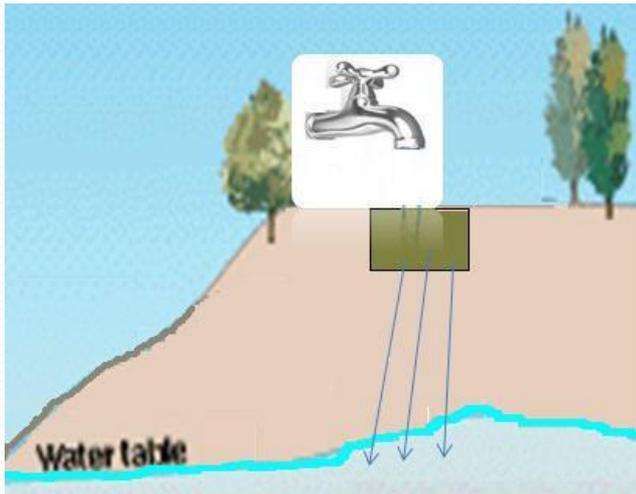
rapid infiltration beds



Groundwater Discharge Compliance

Discharge options

rapid infiltration beds

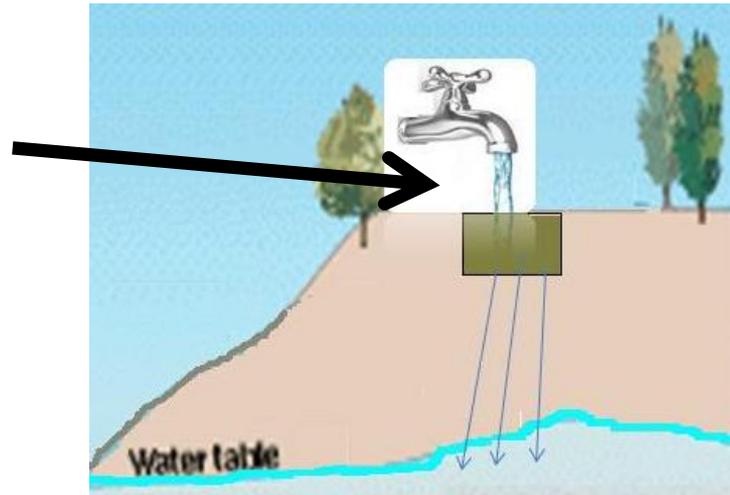
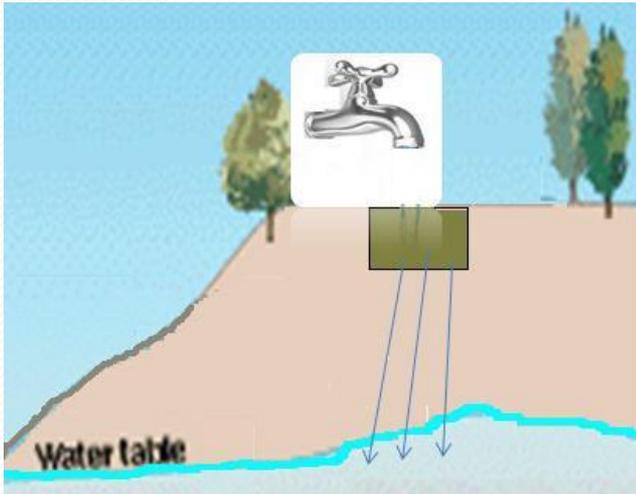


Groundwater Discharge Compliance

Discharge options

rapid infiltration beds

dosing required



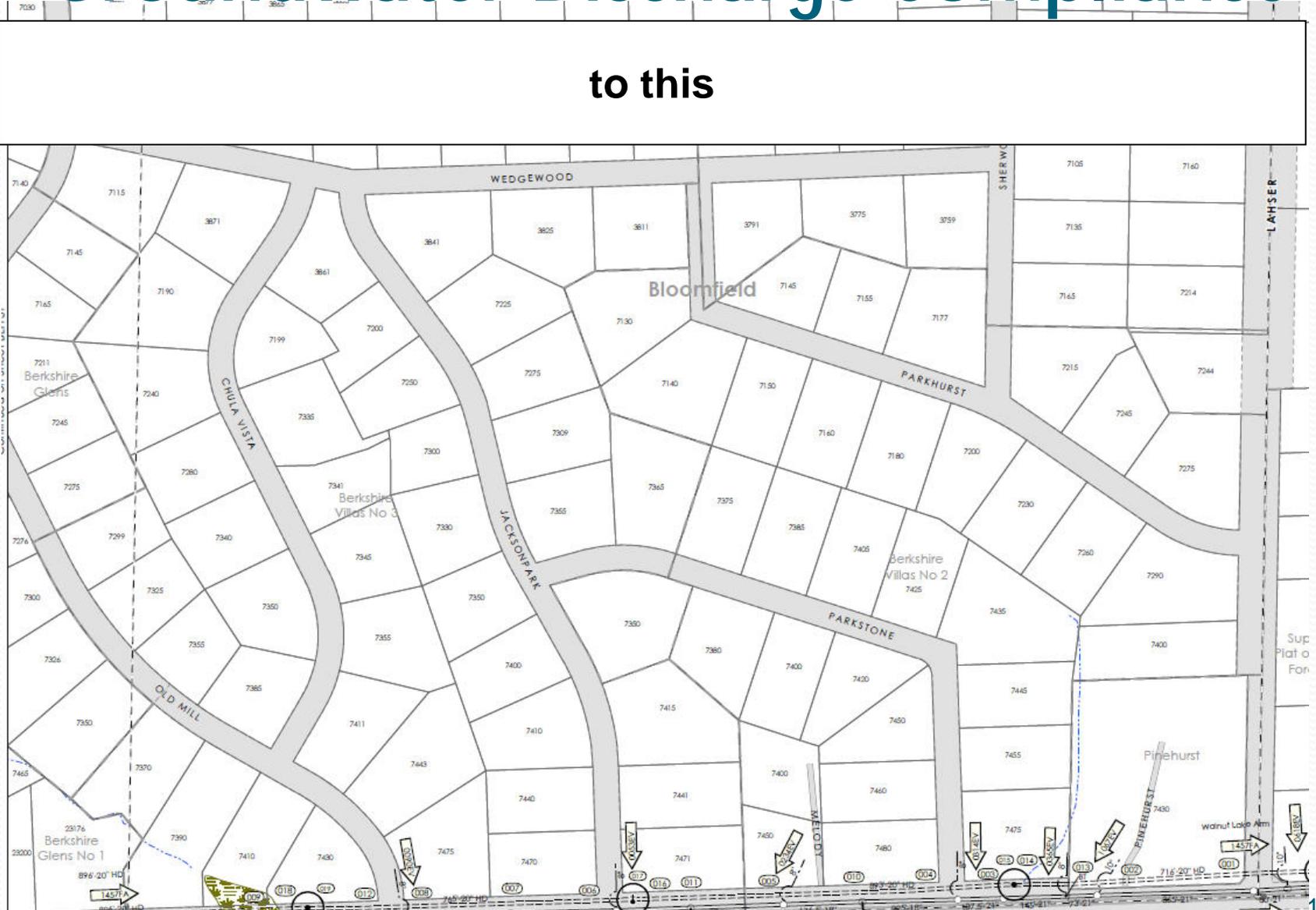
Groundwater Discharge Compliance

So how do you get from this

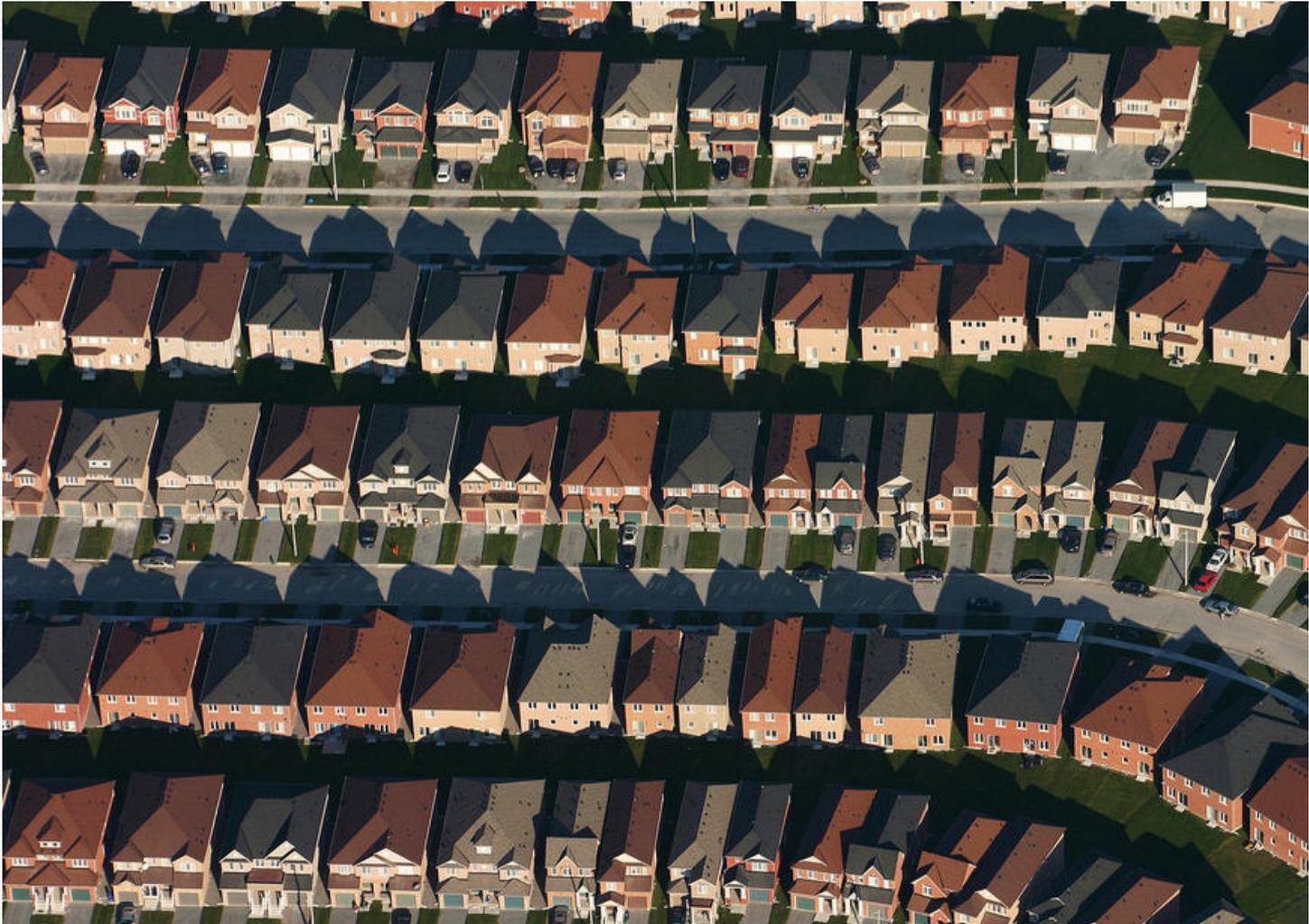


Groundwater Discharge Compliance

to this

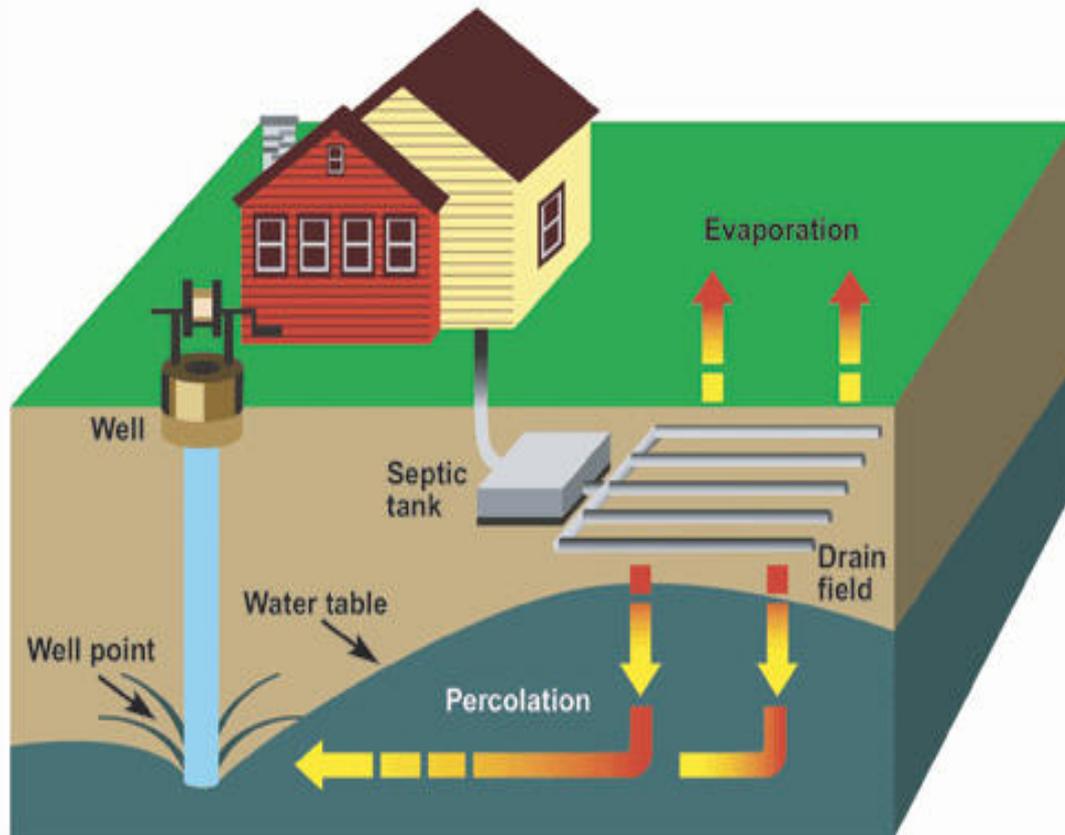


Groundwater Discharge Compliance



Groundwater Discharge Compliance

Septic effluent percolates to the water table



Requires big acreage

Groundwater Discharge Compliance

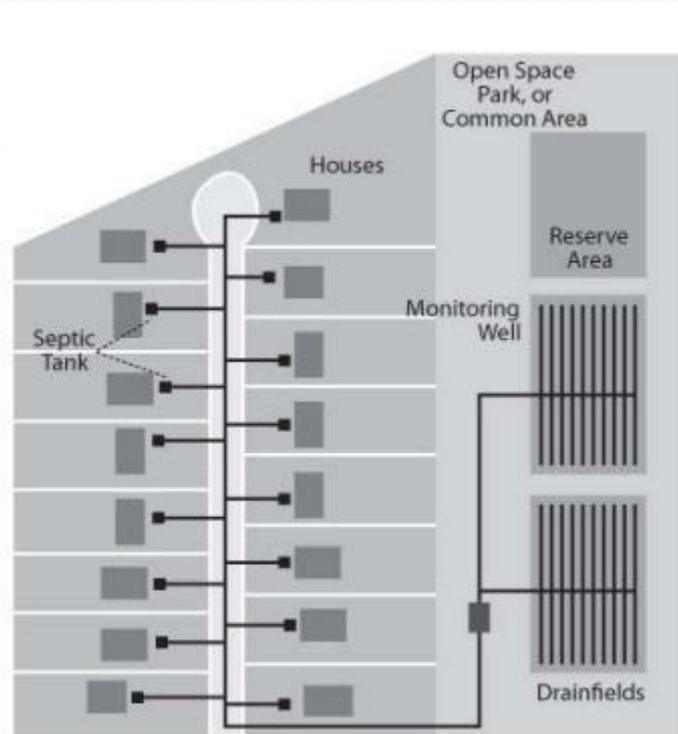


Figure 2: Example of Large Subsurface Sewage Disposal Works

Groundwater Discharge Compliance

NREPA Part 22 Rules

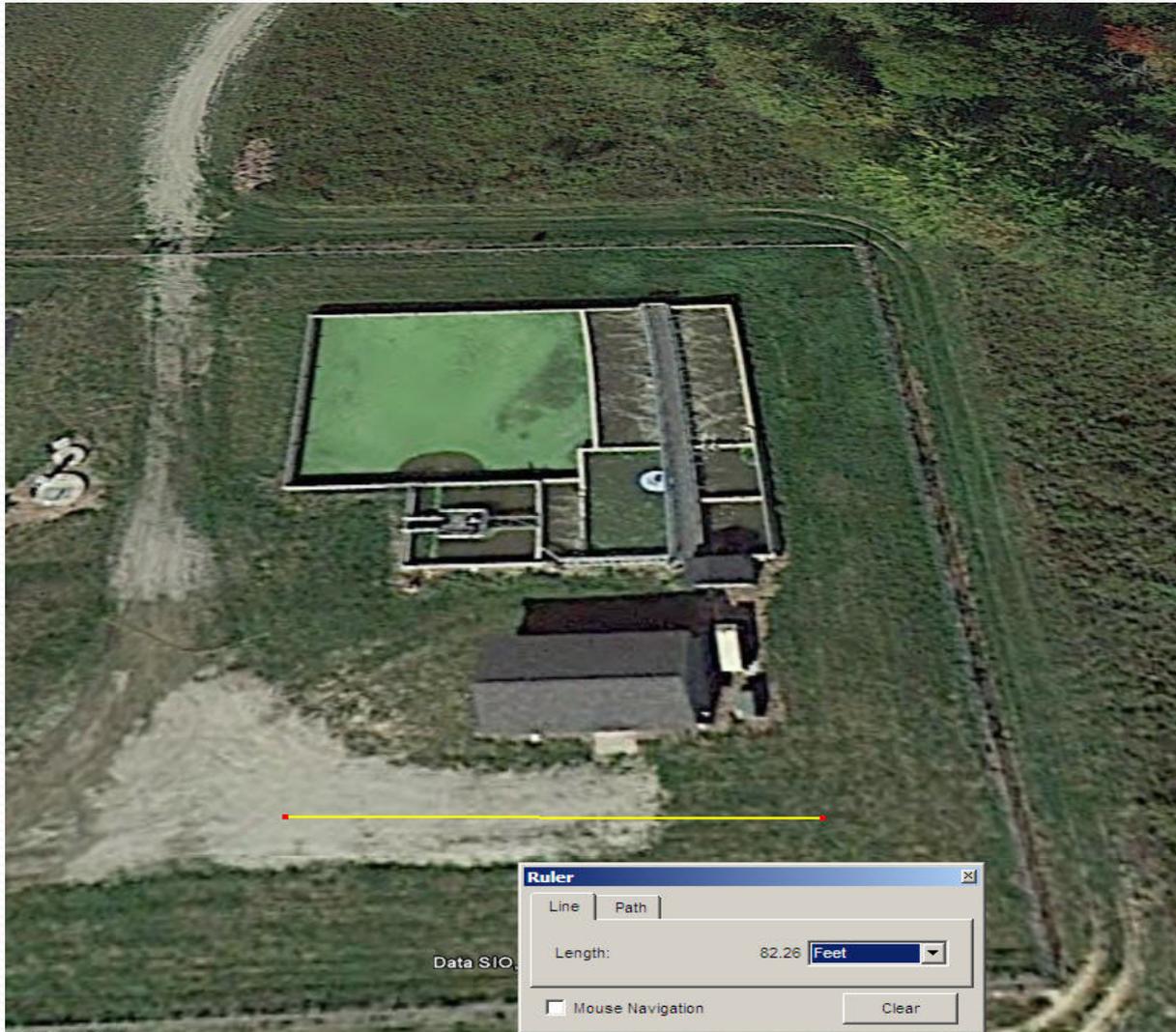
2218

sanitary discharge permit for
>50,000gpd of sanitary sewage

Groundwater Discharge Compliance



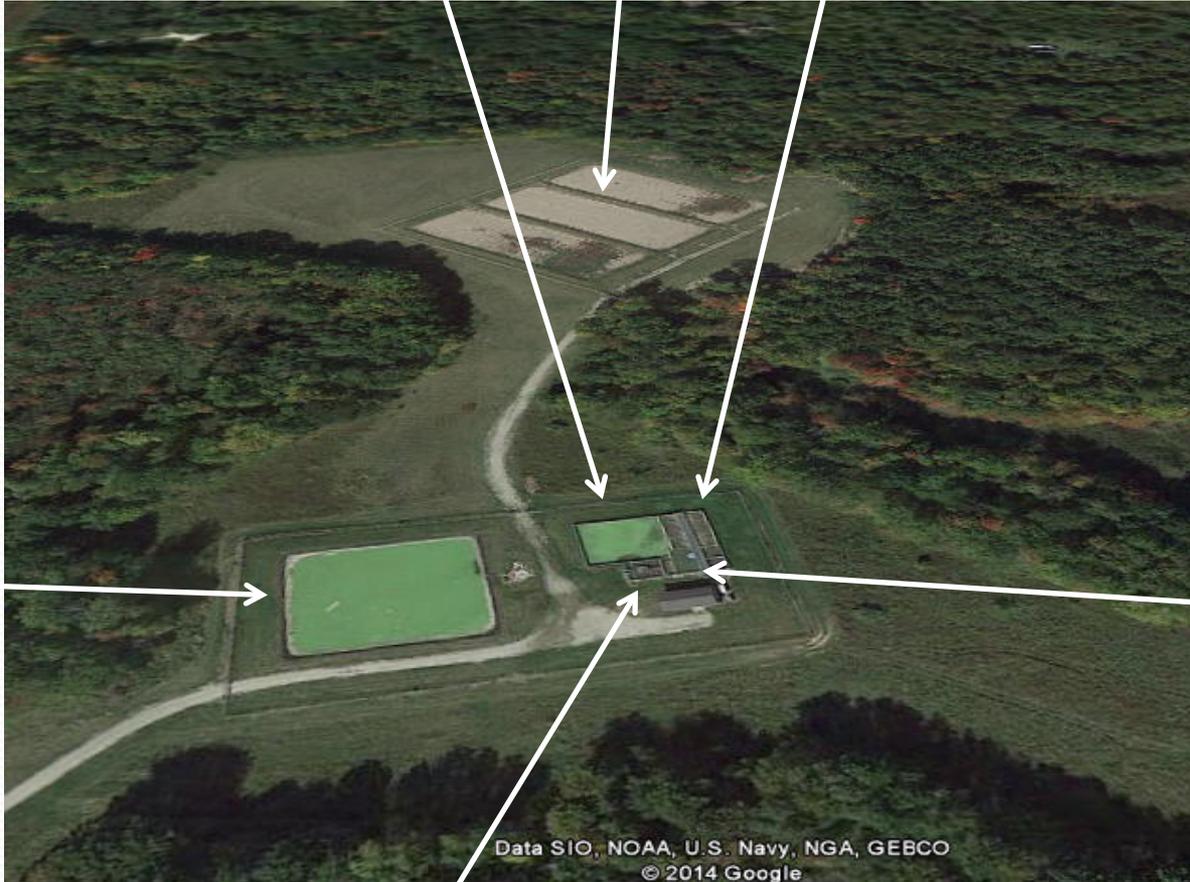
Groundwater Discharge Compliance



sludge
storage

RIBs

aeration



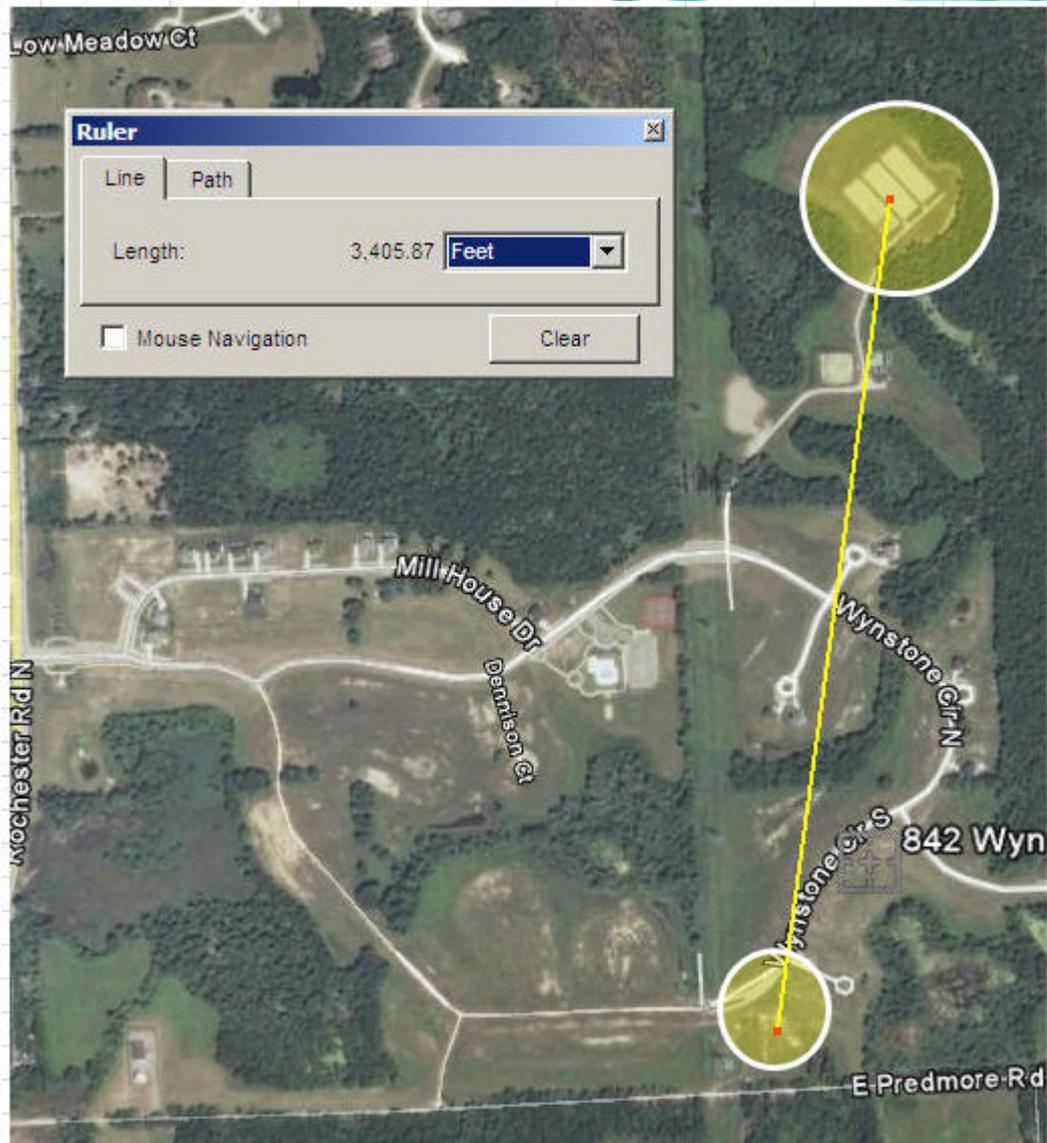
building

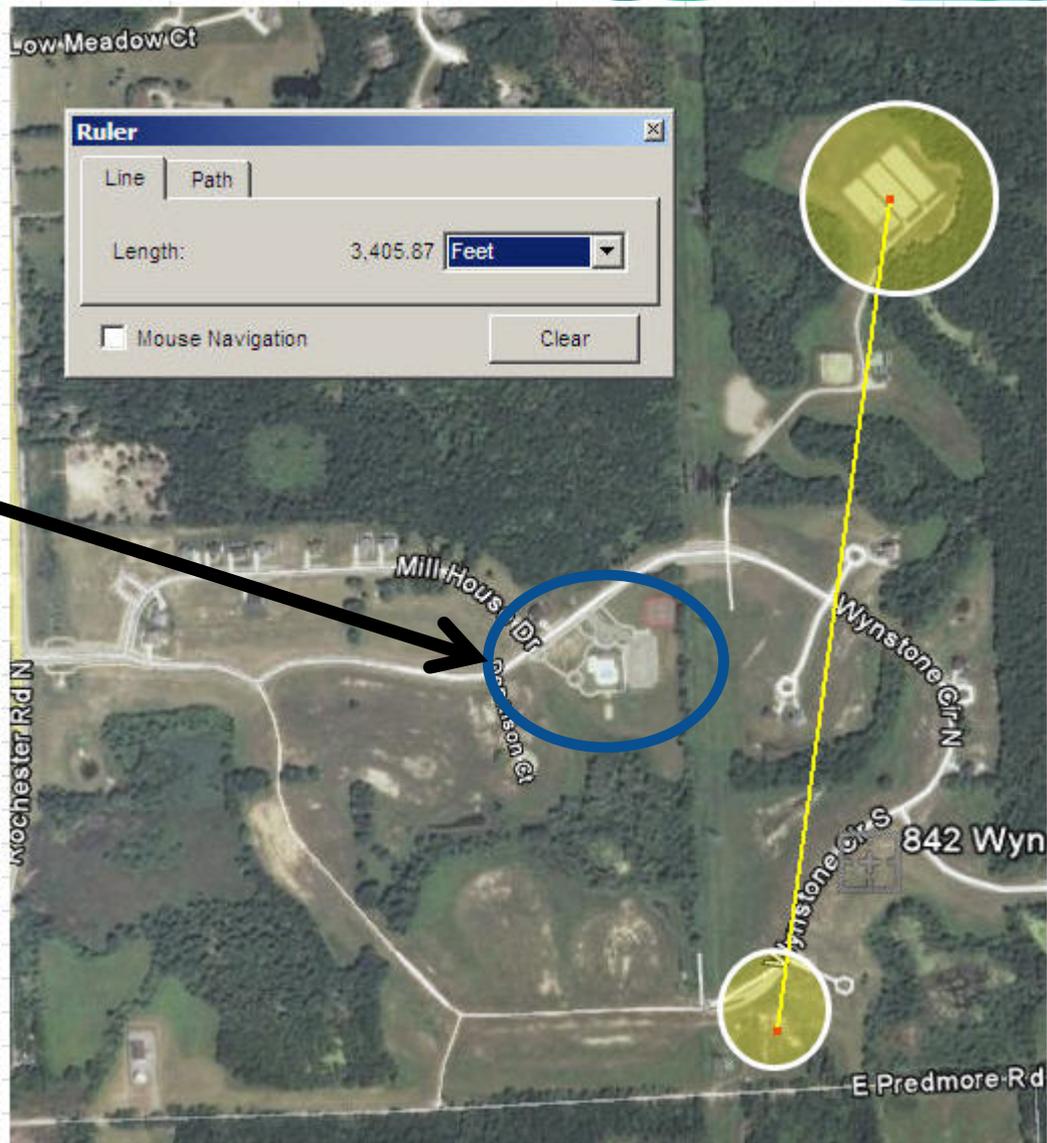
upset
pond

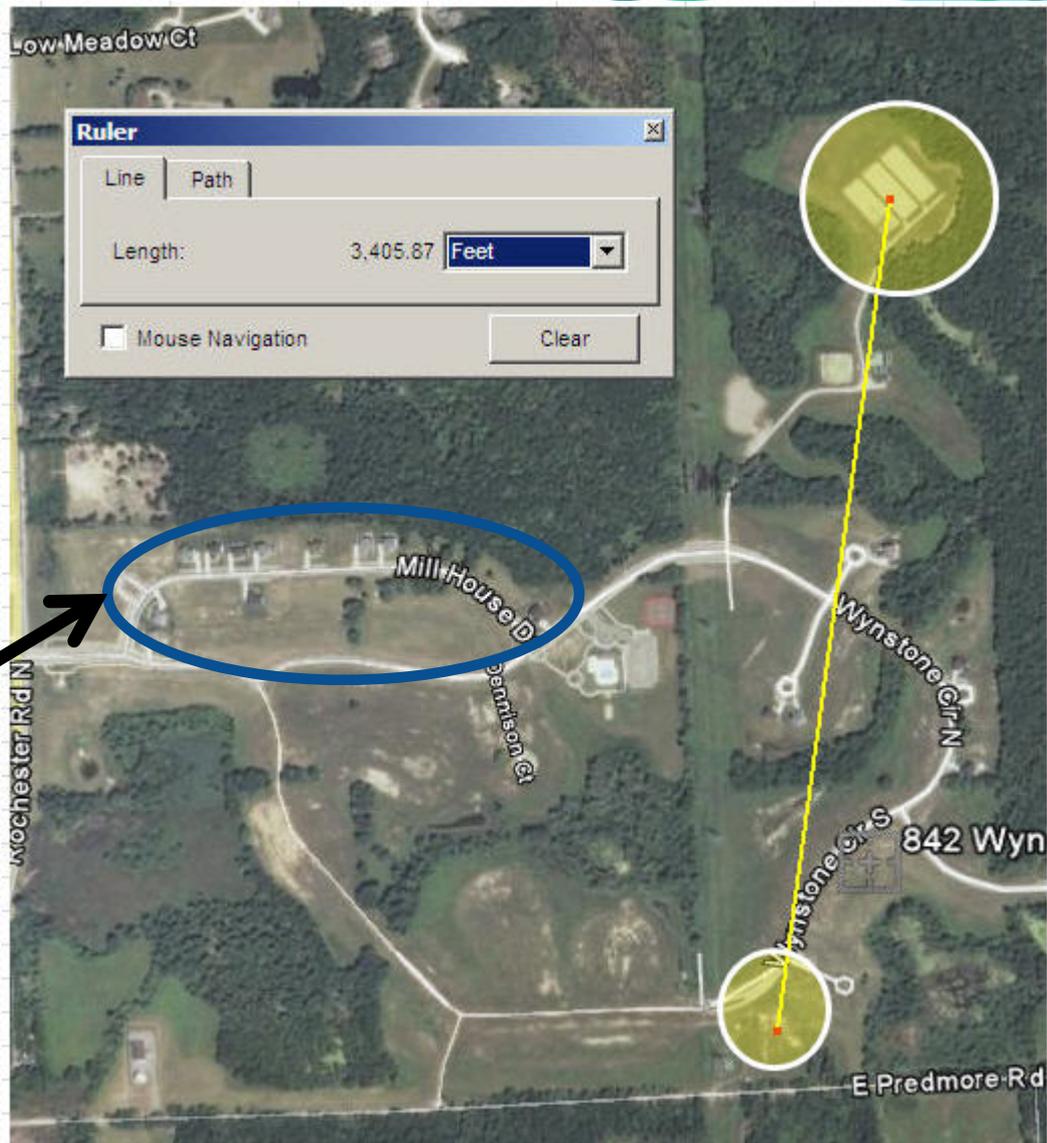
clarifiers

Groundwater Discharge Compliance









Groundwater Discharge Compliance

Extensive documentation is required for a 2218 Permit

Guidance on the documentation and requirements are included on the DEQ website as part of the application for a Groundwater Discharge Permit

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www.mi.gov/groundwaterdischarge

Groundwater Discharge Compliance

Extensive documentation is required for a 2218 Permit

a hydrogeologic study

an irrigation management plan

characterization of the wastewater

toxicity information

operation and maintenance manual

design information

Groundwater Discharge Compliance

Extensive documentation is required for a 2218 Permit

a hydrogeologic study

an irrigation management plan

characterization of the wastewater

toxicity information

operation and maintenance manual

design information



If you happen to be a “private” wastewater system serving the public, additional financial information and financial assurances are required.

Groundwater Discharge Compliance

After acquiring the Permit, and installing the required Infrastructure, you need to

ensure proper operation

sample and monitor

report as required

comply as required

Groundwater Discharge Compliance

monitoring requirements will be detailed in the permit

effluent sampling prior to discharge is important

groundwater monitoring wells are very important and sampling and data reporting is a common permit requirement

the data is required to evaluate how well the wastewater is treated by the facility and how groundwater may be being affected by the discharge, and

whether changes and improvements are required when the Permit is renewed every 5 years

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Groundwater Discharge Compliance

DEQ roles in the process

Groundwater Discharge Compliance

District roles

Permit compliance

- inspections
- review permit monitoring data
- document permit compliance

Compliance assistance

Enforcement

Lansing roles

Permit coordination

- hydrogeological review
- soil review
- toxicology review

Permit issuance

Escalated Enforcement

Groundwater Discharge Compliance

District people

Cadillac

Janice Heuer, Dave Walters

Grand Rapids

Leslie Sorensen, Keith Zahn, Derrick Simmons

Jackson

Michael Kennedy

Kalamazoo

Steve Norton

Lansing

Chris Babcock, Brent Bodnar

Saginaw Bay

Matt Siler

SE Michigan

Matt Goddard, Dennis Ryan

UP

Randy Conroy

Groundwater Discharge Compliance

Lansing HQ people

Permit coordinators Jeanette Bailey, Justin Pung

Geologists Angela Strong, Doug Thompson, Jeff Warner

Soil Scientists Bob Deatruck, Geoff List, Jeanette Makries,

Toxicologist Amy Babcock

Chief of Permits Unit Rick Ruz

Groundwater Discharge Compliance

the inspection

Groundwater Discharge Compliance

the inspection



Groundwater Discharge Compliance

the inspection

why do we inspect?

Groundwater Discharge Compliance

the inspection

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we inspect to ensure that the permittee is doing the things they promised to do during the acquisition process through which the permit was allowed



Groundwater Discharge Compliance

the inspection

why do we inspect?

we inspect to ensure that the permittee is doing the things they promised to do during the acquisition process through which the permit was allowed

the permittee has a duty to comply with the terms and conditions of the Permit

Groundwater Discharge Compliance

There are basically 3 types of inspections, in order of increasing complexity:

- 1) a Reconnaissance Inspection (RI)

Groundwater Discharge Compliance

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- 1) a Reconnaissance Inspection (RI)
- 2) a Compliance Evaluation Inspection (CEI), a more in-depth inspection, and

Groundwater Discharge Compliance

There are basically 3 types of inspections, in order of increasing complexity:

- 1) a Reconnaissance Inspection (RI)
- 2) a Compliance Evaluation Inspection (CEI), a more in-depth inspection, and
- 3) a Compliance Evaluation Inspection with sampling by the DEQ which is known as a Compliance Sampling Inspection (CSI)

Groundwater Discharge Compliance

A description of what can be expected during an inspection is contained in a DEQ brochure, a copy of which will be made available to you during the inspection

Groundwater Discharge Compliance

Michigan Department of Environmental Quality



**ENVIRONMENTAL
INSPECTIONS:**

 CESQG, LOW GENERATOR, SMALL QUANTITY GENERATOR, GENERATOR, GENERATOR-TANK SYSTEM, and USED OIL ACTIVITIES." data-bbox="402 405 585 728"/>

**RIGHTS
AND
RESPONSIBILITIES**

Rick Snyder, Governor
Dan Wyant, Director
www.michigan.gov/deq

Groundwater Discharge Compliance

After acquiring the Permit, and installing the required Infrastructure, you are required to

ensure proper operation

sample and monitor

report as required

comply as required

Groundwater Discharge Compliance

An inspection can be broken down into different elements

- 1) the inspector prepares for the inspection
 - **In depth, by reviewing previous inspections, the file, checking for violations, reviewing the Permit, checking permit dates, trends, complaints, compliance history, and previous interactions with the owner.**

Groundwater Discharge Compliance

An inspection can be broken down into different elements

2) the arrival

- by design it is our intention is to arrive for an inspection **unannounced**, however, sometimes this works out better than others, so on occasion 24 hours notice of inspection can be expected.
- the inspector will indicate to you under **what Act** and what regulation the inspection is being carried out (for purposes of this presentation it is Part 22, NREPA, Act 451).
- DEQ staff have the **right of access** for necessary inspections

Groundwater Discharge Compliance

An inspection can be broken down into different elements

3) the opening meeting

- the inspector must understand the activities conducted at your facility, so you may be asked to **describe the operation**, such as loadings, hydraulic issues, raw materials used, for documentation such as logs, manifests, records, data, QA/QC on analytical, samples, O&M Manuals, discharge management plans, sampling plans or MSDS sheets.

Groundwater Discharge Compliance



keep your documents organized so
information is readily available



Groundwater Discharge Compliance

An inspection can be broken down into different elements

4) the walk through



Groundwater Discharge Compliance

An inspection can be broken down into different elements

4) the walk through

- the inspector is interested in **seeing processes** in action, and you will be **asked questions** about operational practices, analytical methods, data recording, man-power and the condition of physical structures.
- notes and samples may be taken and a camera used to document various items.
- The inspector will be looking at the grounds for **physical conditions** relating to evidence of spills, maintenance issues, odors, by passes, and general housekeeping.

Groundwater Discharge Compliance



general housekeeping ?

Groundwater Discharge Compliance



?



Groundwater Discharge Compliance



?



Groundwater Discharge Compliance

following discharge management plan

surface runoff



Groundwater Discharge Compliance

following discharge management plan

surface runoff

dikes - no deep rooted plants, erosion, slumping, animal burrowing, breakthrough



Groundwater Discharge Compliance

following discharge management plan

surface runoff

dikes - no deep rooted plants, erosion, slumping, animal burrowing, breakthrough

even distribution of wastewater during application, alternately loaded and rested

solids on the soil surface



Groundwater Discharge Compliance

following discharge management plan

surface runoff

dikes - no deep rooted plants, erosion, slumping, animal burrowing, breakthrough

even distribution of wastewater during application, alternately loaded and rested

solids on the soil surface

ponding or saturated soil

all areas within a system accessible for maintenance equipment

Groundwater Discharge Compliance

if vegetation is present in the discharge area, does it interfere with system performance

are discharge areas inspected daily during use and are inspections recorded in a log on site

any detectable odors

have there been odor complaints or other complaints regarding nuisances are nuisance conditions noted in an inspection log

is effluent applied at least 100 feet from property lines, unless a lesser distance has been authorized.

all treatment units in service

problems with chemical feed system, secondary containment

Groundwater Discharge Compliance

does the facility conduct sampling in accordance with the requirements in the Sampling and Analysis Plan

all unit processes working properly

do the number of wastewater treatment personnel appear to be adequate

adequate funding, asset management plan

how are alarms/upsets monitored and responded to, and during off hours

Groundwater Discharge Compliance

does the facility conduct sampling in accordance with the requirements in the Sampling and Analysis Plan

all unit processes working properly

do the number of wastewater treatment personnel appear to be adequate

adequate funding, asset management plan

how are alarms/upsets monitored and responded to, and during off hours

evidence of bypasses, chemical spills, surcharges and/or overflows

Groundwater Discharge Compliance

does the facility conduct sampling in accordance with the requirements in the Sampling and Analysis Plan

all unit processes working properly

do the number of wastewater treatment personnel appear to be adequate

adequate funding, asset management plan

how are alarms/upsets monitored and responded to, and during off hours

evidence of bypasses, chemical spills, surcharges and/or overflows

accumulation of solids, grease, foam or floating materials

Groundwater Discharge Compliance



Groundwater Discharge Compliance



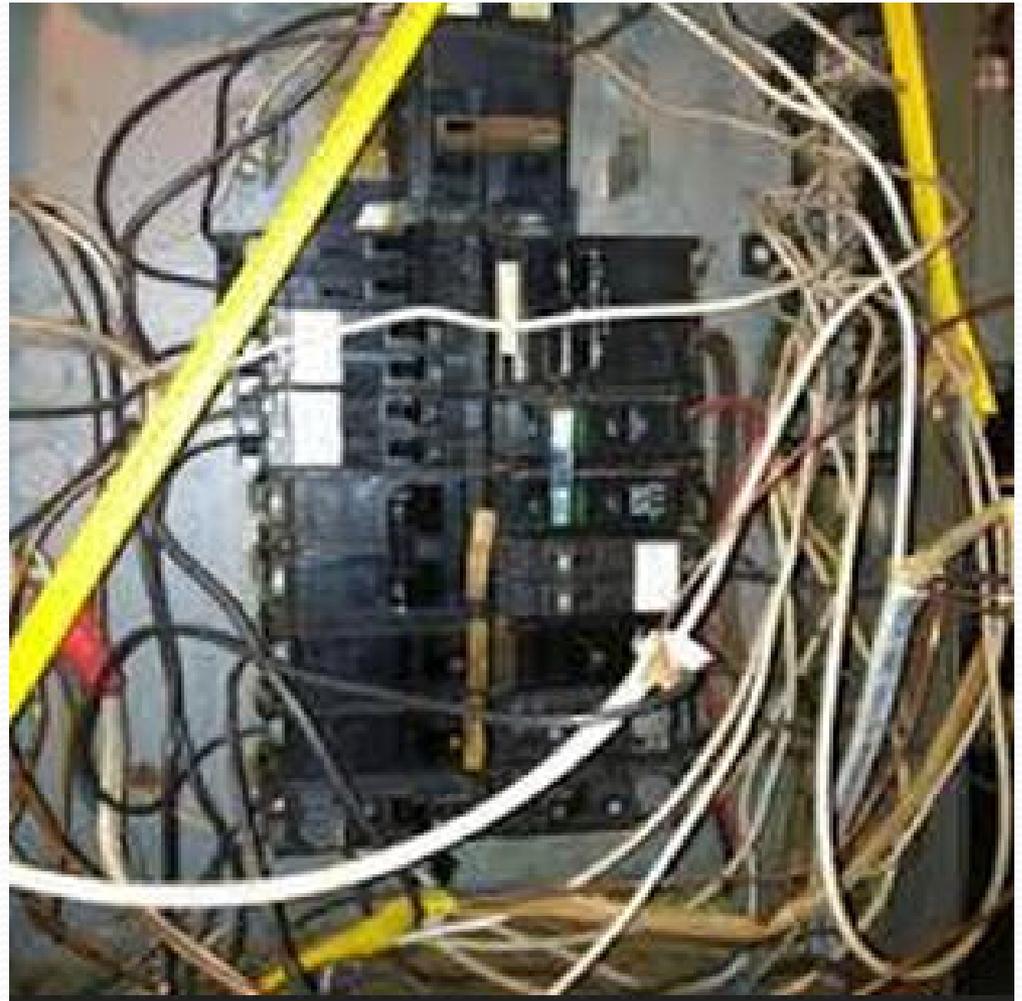
Groundwater Discharge Compliance



general housekeeping

fencing

any jury rigged systems, why



Groundwater Discharge Compliance

general housekeeping

fencing

any jury rigged systems, why

integrity of liner protected

no runoff to, ponding on, or flooding of adjacent property

part 201 issues

sludge storage, sludge disposal

Groundwater Discharge Compliance

monitoring wells, located, locked, protected, operating properly



Groundwater Discharge Compliance

monitoring wells, located, locked, protected, operating properly



Groundwater Discharge Compliance

monitoring wells, located, locked, protected, operating properly



groundwater monitoring wells take a lot of abuse, from mowers, or ATVs and if not locked collect numerous things, like rubber duckies, lego, pop cans.

Message **LOCK** – and occasionally verify the depth



Groundwater Discharge Compliance

the Laboratory



Groundwater Discharge Compliance

the Laboratory

Wastewater labs are very complex operations, requiring a high degree of skill, attention to detail, and adherence to standards

A lot of effort goes into our inspections of wastewater labs.

We encounter numerous issues in these labs, and require rigorous attention to Quality Assurance and Quality Control procedures (QA/QC)

Groundwater Discharge Compliance

An inspection can be broken down into different elements

5) the closing meeting

- the inspector will go over the inspection results with you, details findings, upgrades and improvements required, any violations observed, and discuss the options and a timetable for follow up action if appropriate
- you will be made aware of subsequent follow up actions, if any, which the inspector will be undertaking as a result of the inspection
- You have an opportunity to go to our website and provide feedback on the inspection

michigan.gov/deq (about the DEQ)(DEQ Inspections)

Groundwater Discharge Compliance

An inspection can be broken down into different elements

6) follow up actions

- the inspector has a number of options available, for follow up after the inspection, ranging from a straight forward letter, to a requirement to upgrade the facilities, to complex legal action, as follows

Groundwater Discharge Compliance

Scale of “escalating enforcement”

**LOW LEVEL OR
LITTLE ACTION
REQUIRED**



**SIGNIFICANT
ACTION
REQUIRED**

Groundwater Discharge Compliance

Scale of “escalating enforcement”

1) Letter acknowledging Inspection and results (**attaboy?**)

2) Compliance Communication (some issues, please correct)

3) Violation Notice (VN) (bigger issues, correct, deadline) (CA)(SOC)

4) Notice of Significant Violation (SVN) (inadequate response to 3)

5) Egregious Violation (straight to legal action)

6) District Administrative Consent Order (DACO) (S)(CA)(SOC)

7) Administrative Consent Order (ACO) (S)(CA)(SOC)

8) Court Action, and charges

Fine required (S) Corrective Action required (CA) Schedule of Compliance report

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- 6) District Administrative Consent Order (DACO) (\$) (**CA**)(**SOC**)
- 7) Administrative Consent Order (ACO) (\$) (**CA**)(**SOC**)
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SIGNIFICANT
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Groundwater Discharge Compliance

Compliance Tips



Groundwater Discharge Compliance

Compliance Tips

know your Permit



Groundwater Discharge Compliance

Compliance Tips



know your Permit



Groundwater Discharge Compliance

Compliance Tips

know your Permit
If there is something you don't understand, ask!



Groundwater Discharge Compliance

Compliance Tips

advise us about your plant being out of compliance or having issues as soon as you become aware of them



Groundwater Discharge Compliance

Compliance Tips

WWTPs operate labs, some very large and sophisticated. some not so much. QA/QC is very important. We find numerous issues with labs and with QA/QC. Particularly in smaller labs. If you need help contact us.

We have resources that we can bring to bear and you are advised to contact us as soon as you suspect problems.



Groundwater Discharge Compliance

Compliance Tips

complete and submit all paperwork on time



Groundwater Discharge Compliance

Compliance Tips

- be pro-active in managing your assets**
- implement an asset management plan**



Groundwater Discharge Compliance

Compliance Tips

note: new information will cause our criteria to change



Groundwater Discharge Compliance

Compliance Tips

**the requirement is to treat wastewater
to drinking water standards**

Groundwater Discharge Compliance

Compliance Tips

remember

**our jobs involve protecting the waters
of the State so please work with our
District Office and Lansing to resolve issues**



Groundwater Permit and Protection Program

Water Resources Division- 2014