

# Ground Water Classification And Response Requirements

OAC 3745-300-10

Certified Professional  
8-Hour Training

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# Ground Water Rule

- Classification
- Urban setting designation
- Response requirements



# Ground Water Classification

- Each zone that exceeds UPUS must be classified
- Only those zones that exceed UPUS are classified
- Ground water classification determines the applicable response requirements for that zone



# Ground Water Classification

- Each zone that meets UPUS is not classified but must be protected
  - Protection of next lower zone generally means deeper zones are also protected
- Different zones may have different classifications depending on their characteristics



# Ground Water Classification

- Critical Resource Ground Water
- Class A Ground Water
- Class B Ground Water



# Critical Resource Ground Water

Is in a “drinking water source protection area for a public water system using ground water”

- This is a defined term in the rules
- Only applied to the zone used by the public water system



# Critical Resource Ground Water

- Part of an unconsolidated zone that is capable of yielding 100 gpm over 24 hrs
- Is in a consolidated Sole Source Aquifer



# Class A Ground Water

- Zone is used for potable purposes within ½ mile of the property boundary
  - Well search, e.g. ODNR and County Health Dept. records and field survey
- Zone yields greater than 0.1 gpm and has TDS less than 3,000 mg/L
  - Testing for TDS is optional, i.e. can assume TDS is less than 3,000 mg/L





# Class A Ground Water

- Does not meet any of the criteria for critical resource ground water
  - Can assume Class A, if critical resource ground water can be ruled out
  - ODNR Ground Water Resource Maps can help distinguish between Class A and Critical Resource ground water



# Class B Ground Water

- Does not meet any of the criteria for Critical Resource or Class A ground water
  - Cannot assume Class B, yield testing of the zone or TDS analysis must be done
  - ODNR Ground Water Resource Maps can help determine if it is worthwhile investigating Class B



# Class B Ground Water

Two criteria turn an otherwise Class A ground water into Class B

- Class B by comparison to a lower zone
- Class B by depth from ground surface



# Class B by Comparison

- Zone contains less than 3,000 mg/L TDS
- Ground water zone being classified must yield less than 3 gpm

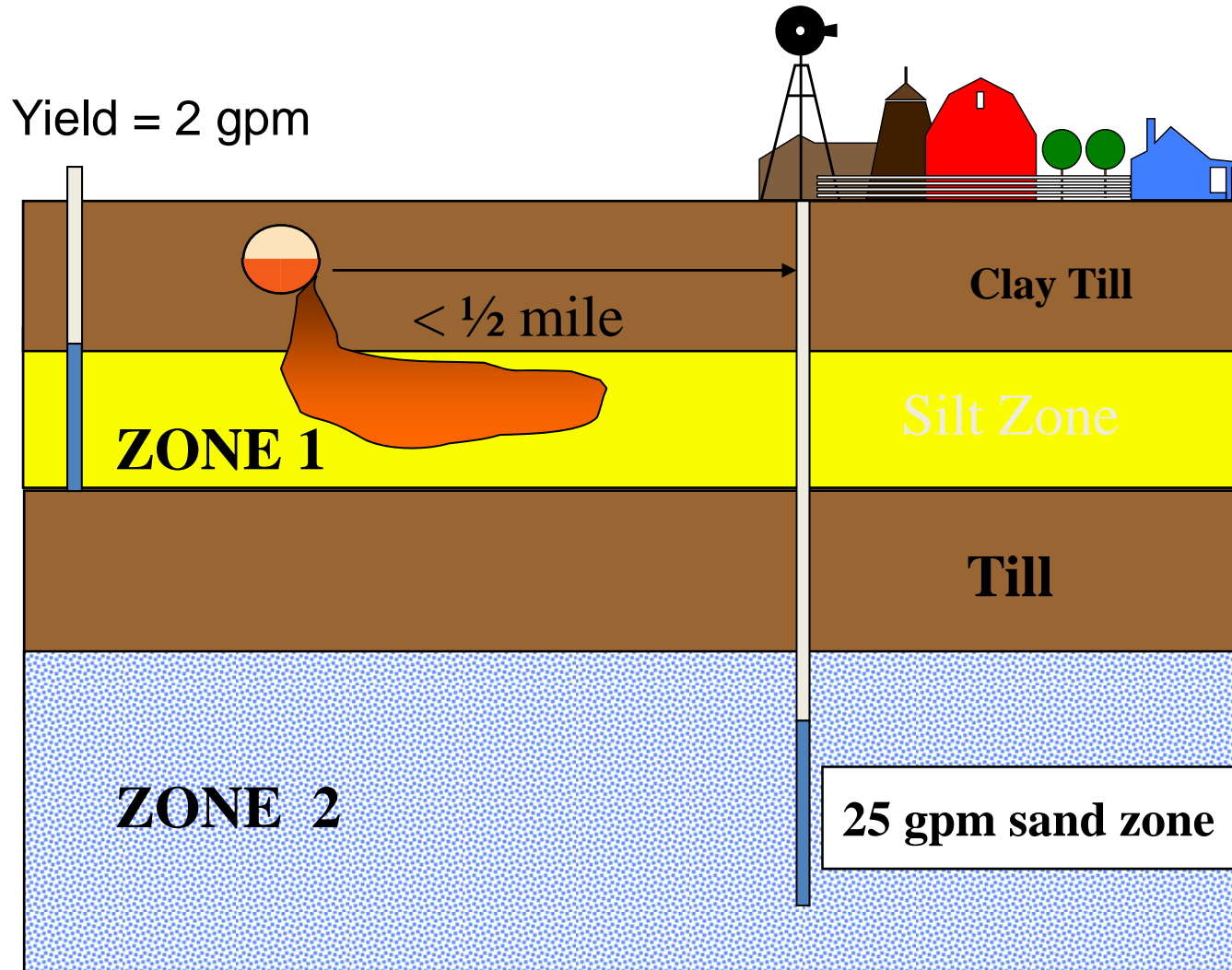


# Class B by Comparison

- Ground water zone used for comparison must be:
  - Beneath the property
  - Have a yield at least twice that of the zone being classified, but yield at least 3 gpm
  - Be a likely source of potable water within 1 mile

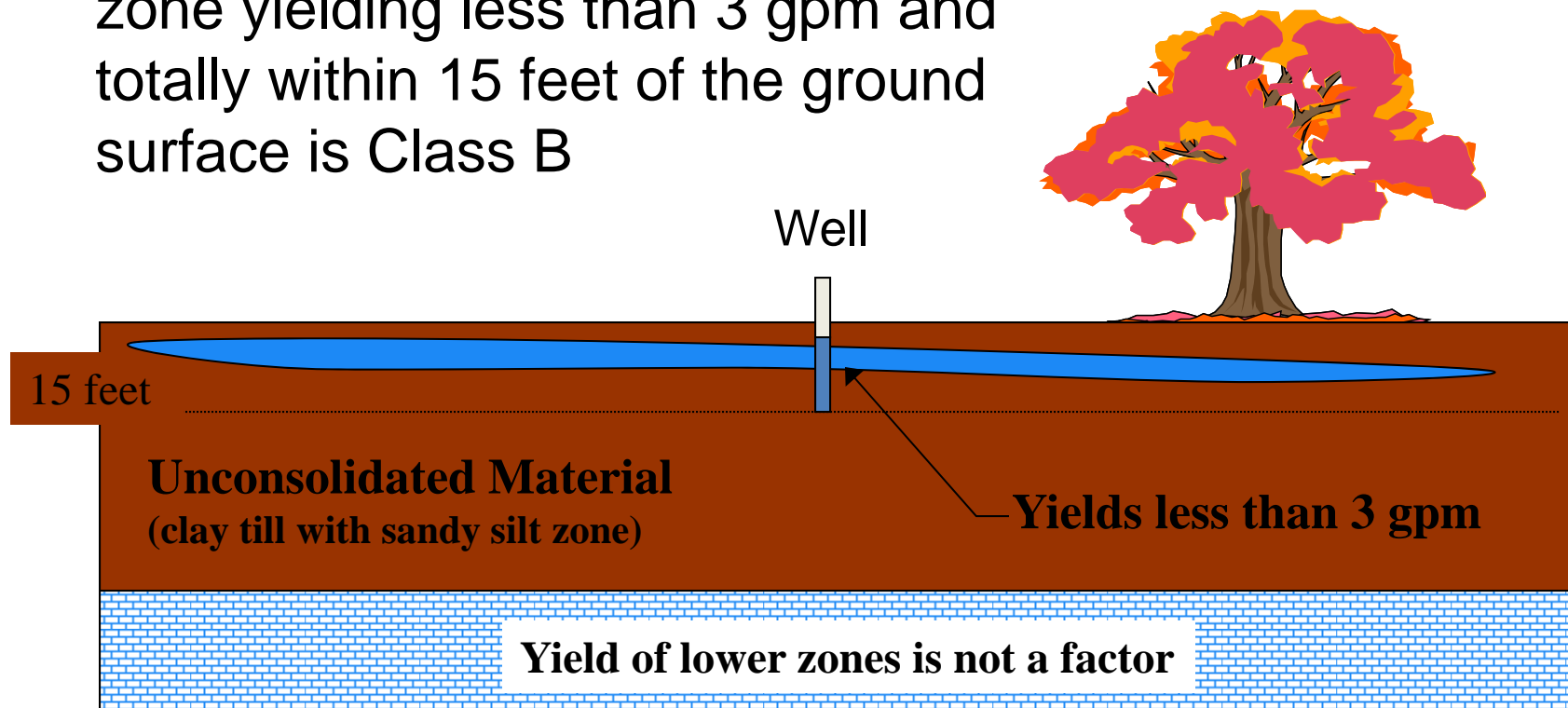


# Class B by Comparison



# Class B by Depth from Ground Surface

- Ground water in an unconsolidated zone yielding less than 3 gpm and totally within 15 feet of the ground surface is Class B



# Summary of Ground Water Classification

- ODNR resources
  - Potable water wells logs
  - Oil and gas well logs
  - Ground water resource maps
- Zones are Critical Resource ground water if:
  - Zone is used by a public water system, and
  - Property is in a “drinking water source protection area for a public water system using ground water”





# Summary of Ground Water Classification

- Can assume Class A, if Critical Resource is ruled out
- Yield testing is required to determine Class B by yield
- Analysis of TDS is only required if TDS is used to make a Class B determination



# Urban Setting Designation

- Evaluates the use of ground water as a potable resource
- Eliminates the off-property potable use pathway near a VAP Property
- Changes the POC for ground water response requirements



# How a USD Changes the Point of Compliance

- Class B: No change
- Class A: Do not need to meet UPUS at the property boundary
- Critical Resource: POC for UPUS is moved to ½ mile from the property or the USD boundary, whichever is greater



# USD Threshold Criteria

- USD can only be located within a community that is surrounded by:
  - City, or
  - Township(s) with populations of twenty thousand or more residents in unincorporated areas, or
  - The unincorporated portion of a township that has an average population density of 650 people per square mile in the unincorporated area, or



# USD Threshold Criteria (cont.)

- A former township that is entirely composed of municipal corporations, or
- An area that is completely surrounded by areas that are otherwise eligible as described above.



# USD Threshold Criteria (cont.)

- Municipal water system has a connection rate of at least 90% of parcels
- Water system capable of meeting future water needs
- Located outside of a ground water source water protection area



# USD Threshold Criteria (cont.)

- No potable wells within ½ miles of USD boundary
- If USD area overlies vital ground water zones, must demonstrate no new potable wells will be installed within ½ miles of USD boundary



# Making a USD Request

- CP must make the request
- Granting not automatic based on threshold criteria
- Additional Criteria For Approval/Denial
  - Local and regional water needs
  - The potential impact of the USD on local jurisdictions
  - Potential future use of ground water in the region





# USD Request Review

- Ohio EPA consults with legislative authorities
- Ohio EPA publishes public notice of USD request in local newspaper
- Public information session may be held
- USD applicant is responsible for all Ohio EPA costs for evaluating USD request



# Use of USD to Support an NFA Letter

- CP must demonstrate in the NFA Letter that certain USD criteria are still valid when the NFA Letter is issued
- CP may rely upon Director's determination, if it is recent



# Use of USD to Support NFA Letter

- Ohio EPA reviews area wide USDs once every five years
- USD may be eliminated or its may be boundaries reduced
- Any action will be public noticed and all CPs will be notified
- Changes to a USD only affect new NFA Letters, i.e. a CNS already issued is still valid



# Ground Water Response Requirements

- Classification of Ground Water Zone
- Location of Sources or Source Areas
- Urban Setting Designation (USD)



# Response Requirements

- All classifications of ground water must prevent human exposure to contaminated ground water on the property, either by
  - Implementing institutional or engineering controls, or
  - Restoring the ground water to meet UPUS
- **REMINDER – Response requirements for non-potable pathways and other media (e.g., vapor intrusion) are addressed in Rule 7**



# Off-property contamination

- Prevent human exposure to contaminated to contaminated ground water on the property
- Prevent leaching of COCs resulting in UPUS being exceeded at the point of compliance.
  - Only applies to Critical Resource or Class A



# Class A and Critical Resource Without USD

- The Point of Compliance for UPUS is the property boundary (with a few exceptions)
- Must ensure ground water above UPUS does not migrate beyond the property boundary



# Class A and Critical Resource Points of Compliance (without USD)

## Situation



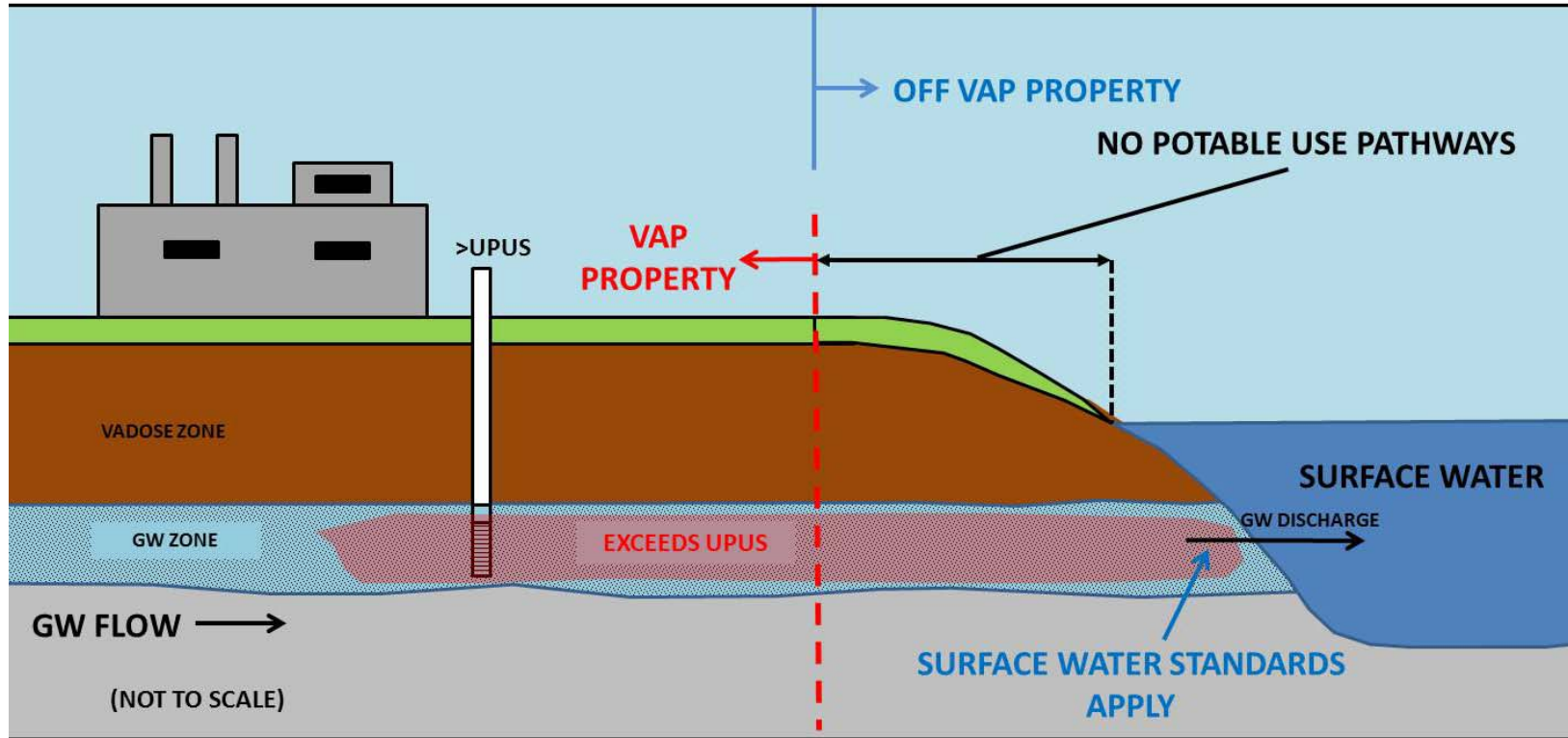
## Potable Use POC

- Property adjacent to transportation corridor
  - GW discharging to surface water in close proximity (not necessarily adjacent) and GW not likely to be used for potable purposes
- Down-gradient edge of transportation corridor
  - Surface water boundary, and surface water standards apply





# SURFACE WATER COMPLIANCE BOUNDARY



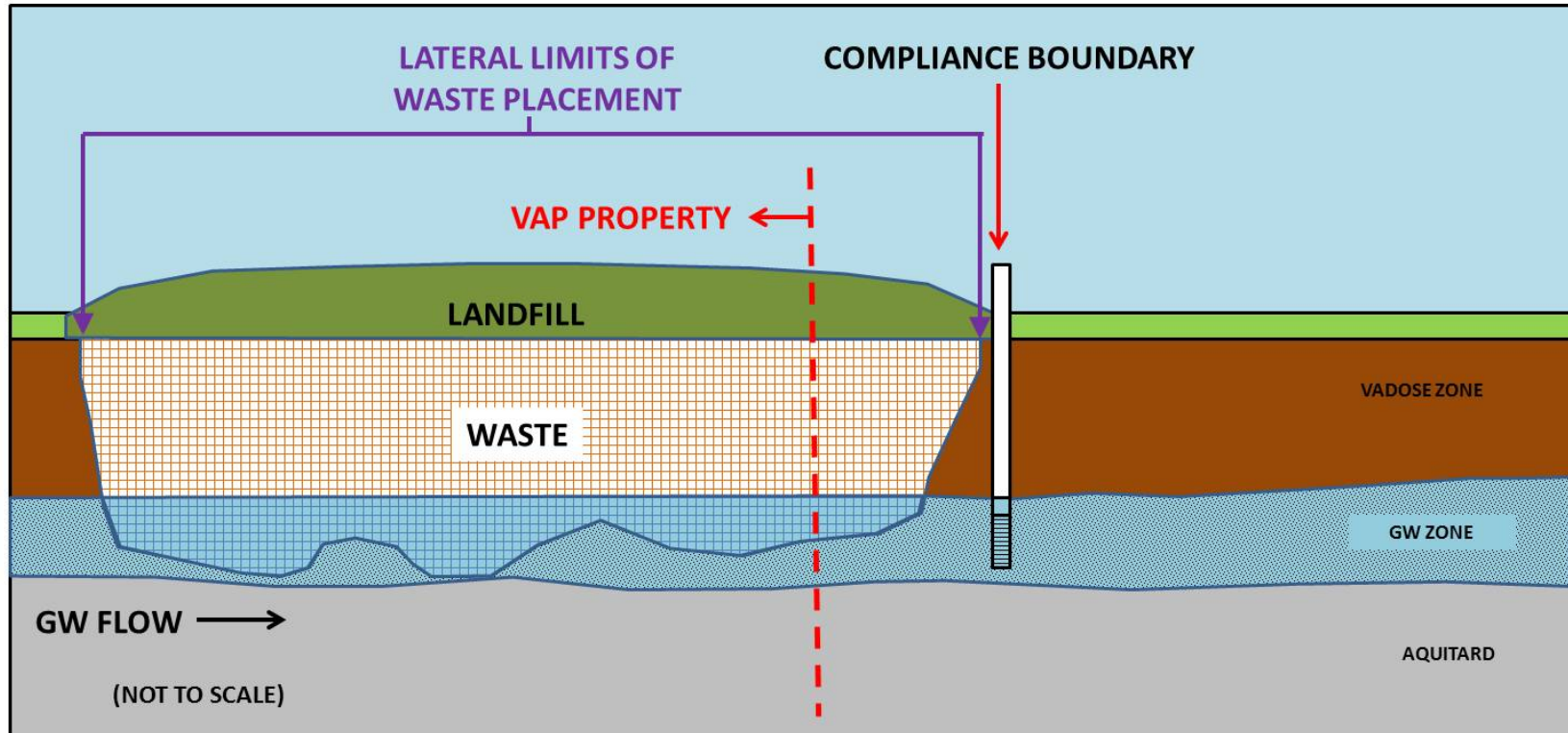
# Class A and Critical Resource Points of Compliance (without USD)

Situation → Potable Use POC

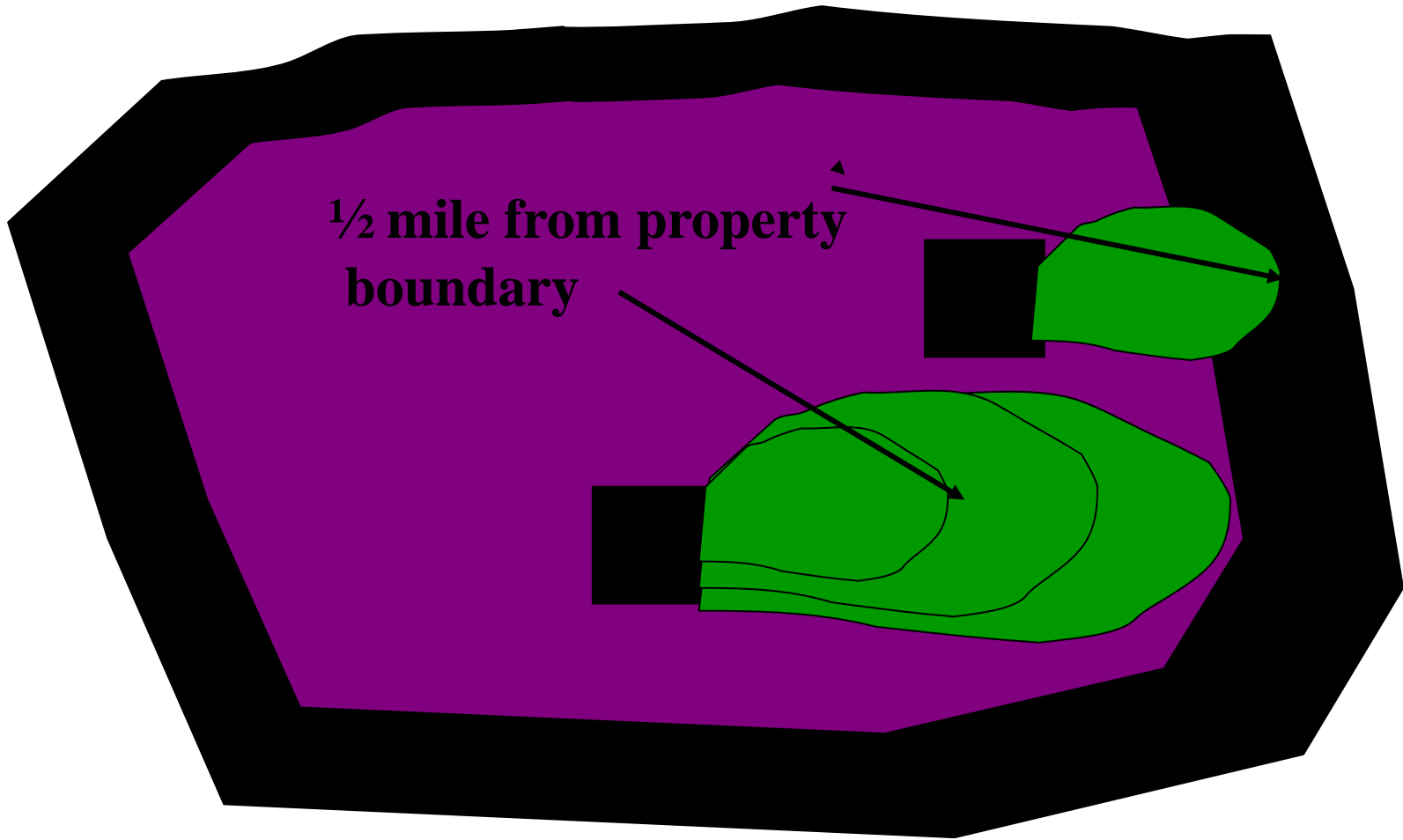
- Adjacent, down-gradient property has an Environmental Covenant
- Property boundary bisects a landfill
- Down-gradient edge of adjacent property
- Down-gradient edge of the lateral extent of the waste in the landfill



# LANDFILL COMPLIANCE BOUNDARY



# Alternate POC for Critical Resource with USD



# Class A Without a USD and All Critical Resource

Prevent potable use exposures at existing  
off property wells by:

- Providing and alternative supply of water,
- Providing water treatment, OR
- Remediate ground water to meet UPUS



# Critical Resource

If Critical Resource ground water above UPUS has migrated off-site,

- Must notify down gradient property owners
- Prevent off-property exposures to future potable users of ground water, a.k.a. “the re-opener” in O&M plan



# Class B Ground Water and Class A With a USD

- Prevent people from drinking ground water on the property
- Ensure non-drinking exposures to humans on and off property meet applicable standards or remediate
- Protect important ecological resources both on and off property



# Last Thoughts...

- Classification is critical because it leads to correct response requirements
- Potable use of ground water is not the only pathway that needs to be considered
- Must also evaluate non-potable ground water pathways both on and off property

