Groundwater Protection Council

Class 1 UIC Wells to Manage PFAS in Wastewaters
Agenda

- TM Deer Park Services (Texas Molecular)
- PFAS Wastewater Applications for Class 1 Injection Wells
- Benefits of Class 1 UIC Wells to Manage PFAS in Wastewater
- Additional Benefits of Class 1 Hazardous Wells with a No Migration Petition
- Limitations of Class 1 Injection Wells
- Questions
Texas Molecular

- Hazardous and non-hazardous wastewater management facility
- In operation for 40 years
- Provides utility-like service to a variety of industries
- State of Texas and USEPA permits including a Federal EPA No Migration Petition for 3 Injection Wells
- TCEQ Compliance Rating of 0, “High” Performance
- Active member of Deer Park CAC and Deer Park LEPC
- Managed and injected over 50,000,000 gallons of waters contaminated with PFAS in the past 2 years
PFAS Wastewater Applications for Class 1 Injection Wells

• **Wastewater**
  » Chemical Production
  » Industries that use PFAS
  » Supplement Reverse Osmosis (high concentration reject).

• **Groundwater**

• **Leachate**

• **Firefighting Water**
  » Generally an event not conducive to on-site treatment

• **Supplement other Technologies**
  » e.g. Reverse Osmosis (high concentration reject).
Benefits of Class 1 UIC Wells to Manage PFAS in Wastewater

• **Discharges**
  » No discharges to water or groundwater
  » No/low air emissions

• **Capacity**
  » Capacity for moderate demand

• **Cost**
  » CAPEX
  » Operation Cost

• **Constituents**
  » Organics and Inorganics
  » Discharge sensitive metals
  » Hazardous waste codes (No Migration Wells)
Additional Benefits of Class 1 Hazardous Injection Wells

• Overall Risk Concern
  » Trend to Manage Non-Hazardous PFAS as Hazardous.

• EPA No Migration Petition
  » More rigorous approval process and evaluation of geology
  » Broad range of hazardous waste codes

• Compliance with Proposed Regulations
  » Toxic Release Inventory (TRI)
  » Hazardous Substance (CERCLA)
  » Any potential for future determination of PFAS as a Hazardous Waste

• RCRA Hazardous Waste Permit
  » Additional layer of risk reduction; Manage as a hazardous waste from acceptance to injection to disposal of residuals
  » Tank standards and containment regulations
  » Acceptance of PFAS waters of 0 to 14 pH and those with RCRA Hazardous Waste Codes, including listed codes

• Residue Management
Limitations of Class 1 Wells

• **Capacity**
  » Current capacity is limited
  » Additional capacity is likely to be required if underground injection benefits can be realized

• **Permitting Additional Capacity**
  » Time
  » Cost
  » Siting criteria

• **Logistics**
  » Distance to off-site injection wells

• **Liquid Properties**
  » Solids
  » Phased organics
  » Emulsions
  » Waste Codes