

# **Groundwater Protection Council**

Class 1 UIC Wells to Manage PFAS in Wastewaters

**February 17, 2020**

# 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

**Frank Marine, President**

**281-930-2500**

[fmarine@texasmolecular.com](mailto:fmarine@texasmolecular.com)