



Colorado Stalled Sites: Challenges and Solutions

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Overview

- Colorado's "Stalled Sites"
- Colorado's Petroleum Storage Tank Fund (PSTF)
- Initial closures – Tier I & Tier II
- Regulation update for risk-based closures – Tier III & Tier IV
- Tier III & Tier IV Trends following update implementation
- Current challenges while implementing risk-based closures



Colorado's “Stalled Sites”

Most states define “stalled” as a site that has **not been active or touched** for an extended time.

Colorado does not have a large list of stalled sites.

- Petroleum Storage Tank Fund (PSTF)



Colorado Petroleum Storage Tank Fund

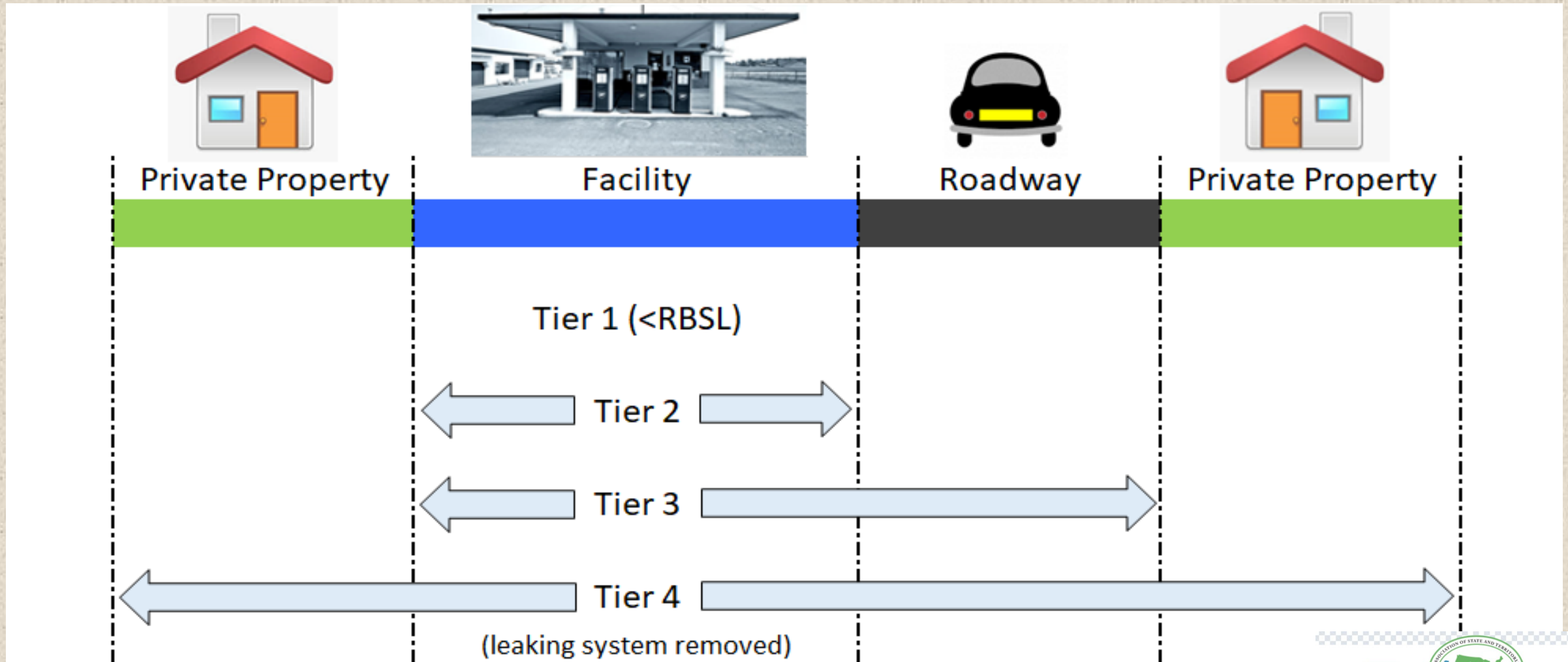
Fund Balance	Surcharge per Tanker Truckload
Above \$12 million	None
\$6 - \$12 million	\$50
\$3 - \$6 million	\$75
Below \$3 million	\$100
Current Environmental Response Surcharge: \$100 per tank (effective 08/01/2024)	
Previous Environmental Response Surcharge: \$50 per tanker (effective 05/01/2023)	

Closure Criteria prior to 2015

- **Tier I** – Chemicals of concern (COCs) meet Tier I risk based screening levels (RBSLs) with no offsite impacts, no modeling.
- **Tier II** – COCs are at concentrations that are protective of human health and the environment (Tier II site specific target levels [SSTLs]); No offsite impacts.



Risk-Based Closures

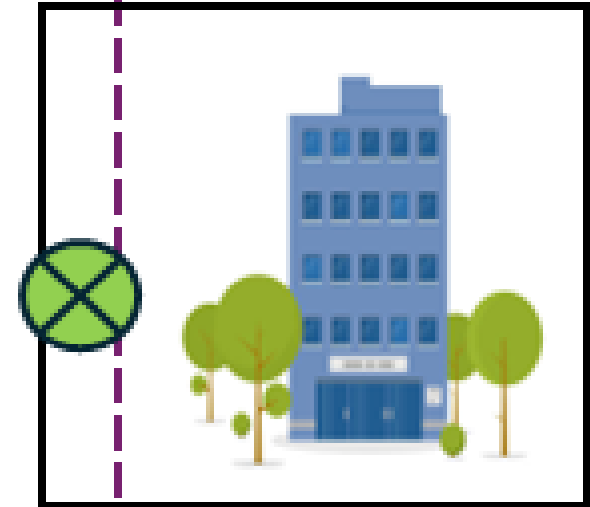


Maximum Extent Practicable (MEP)

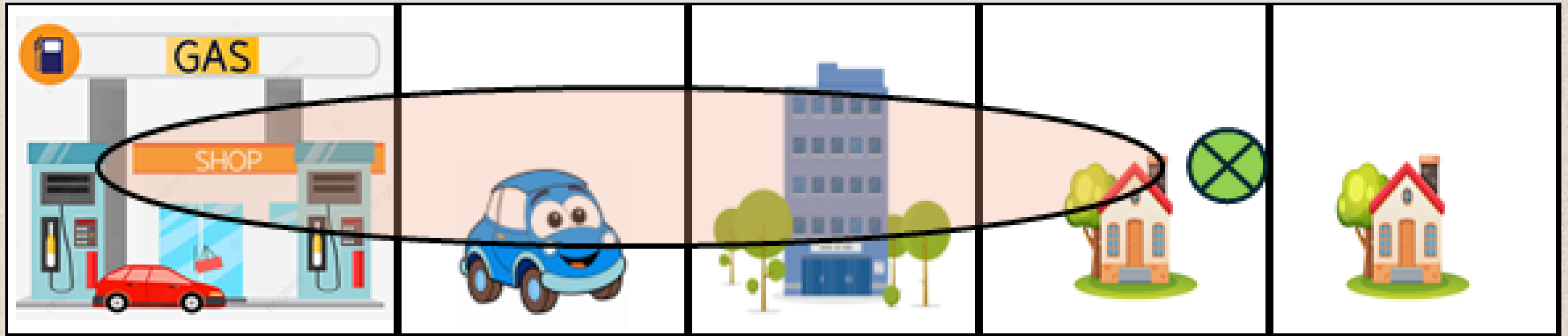
- Proper implementation of feasible remediation technologies
- Risk reduction
- Access
- Cost
- Potential use of offsite properties
- Magnitude and extent of offsite contamination



Tier III NFA



Tier IV NFA



Tier III NFA Closure Summary

Event 123 Tier III Closure Summary

Former Service Station

123 Main St, Denver, Colorado

Please contact the Colorado Division of Oil & Public Safety (OPS) at (303) 318-8547 if soil excavation, dewatering, or subsurface earthwork is proposed in or adjacent to the petroleum-impacted area depicted below. Our knowledge of petroleum contamination is based on the site conditions at the time of closure. Conditions may change over time. Please contact OPS if newer information is obtained about the site conditions. Please keep in mind soils may be stained and have odor, but not be hazardous or require special handling or disposal. Contact OPS for guidance.

Environmental Conditions at Time of Closure

Closure date: August 29, 2024

Depth to Water: 8 to 10 feet below ground surface (ft bgs)

Groundwater Flow Direction: East-northeast

Depth to Utilities: approximately 3 to 5 ft bgs

Impacted Offsite Property Address: ROW Main Street

Petroleum Contaminants of Concern: Benzene

Groundwater Offsite (depicted by blue area) —Benzene up to 0.267 milligrams per liter (mg/L).



Tier IV NFA Closure Summary

Event 123 Tier IV Closure Summary My Gas Station 123 Main Road, Colorado 80123

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Environmental Conditions at Time of Closure

Closure date: June 26, 2024

Impacted Offsite Property Address: 123 1st Avenue

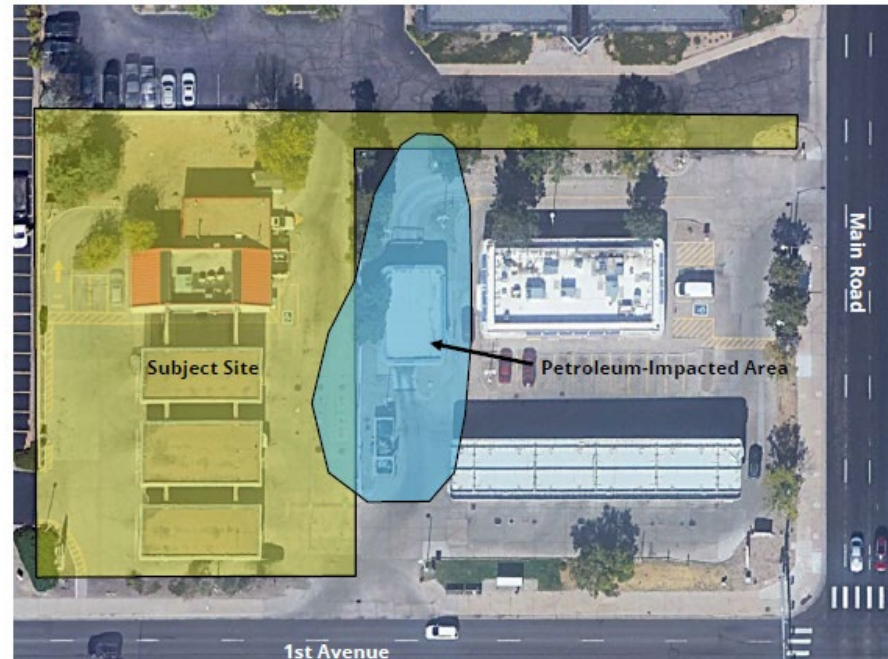
Petroleum Contaminants of Concern: Benzene in groundwater

Depth to Petroleum Contamination: Approximately between 7 to 10 feet below ground surface

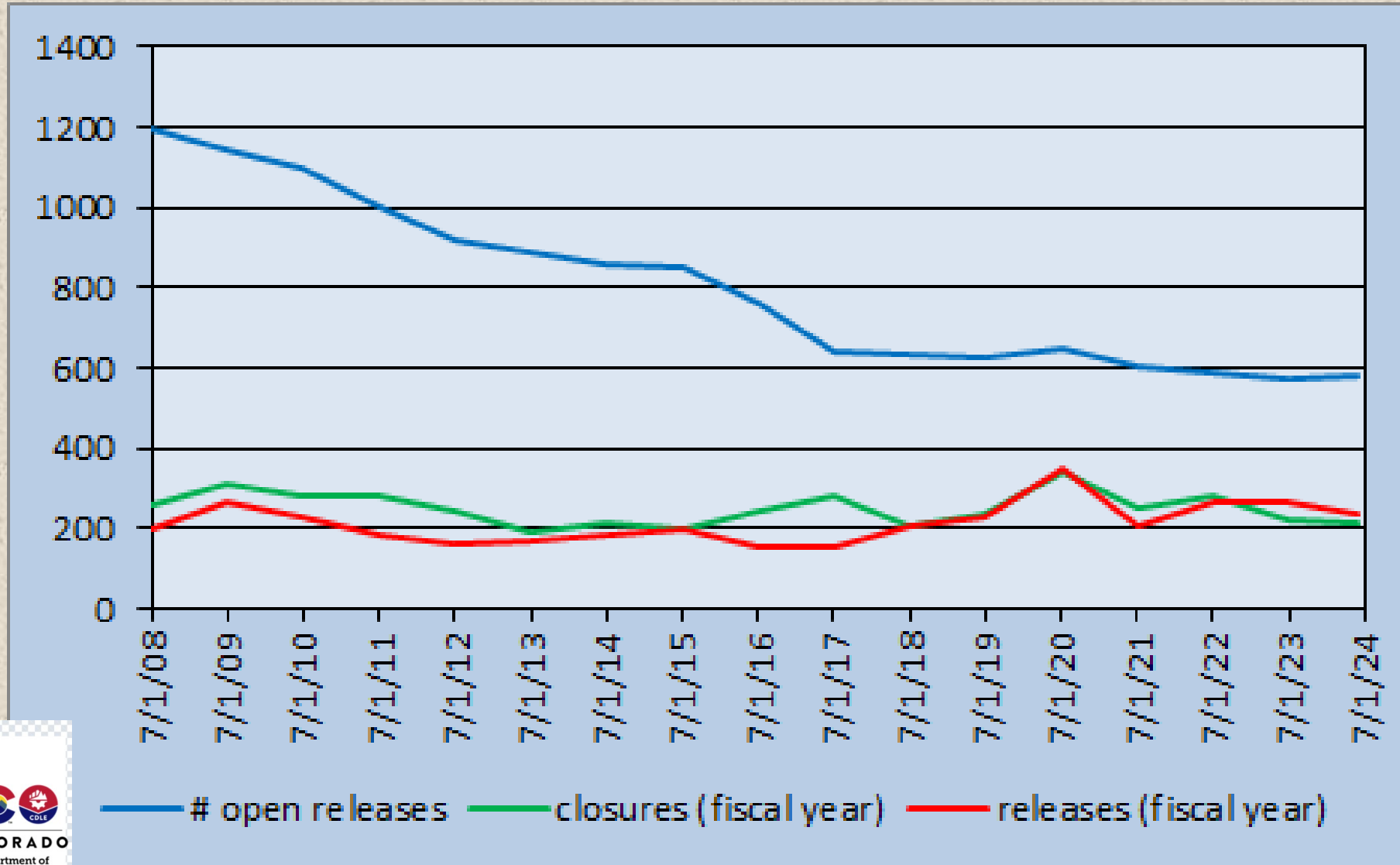
Depth to Utilities: Approximately between 3 to 10 feet below ground surface

Groundwater Flow Direction: North-northeast

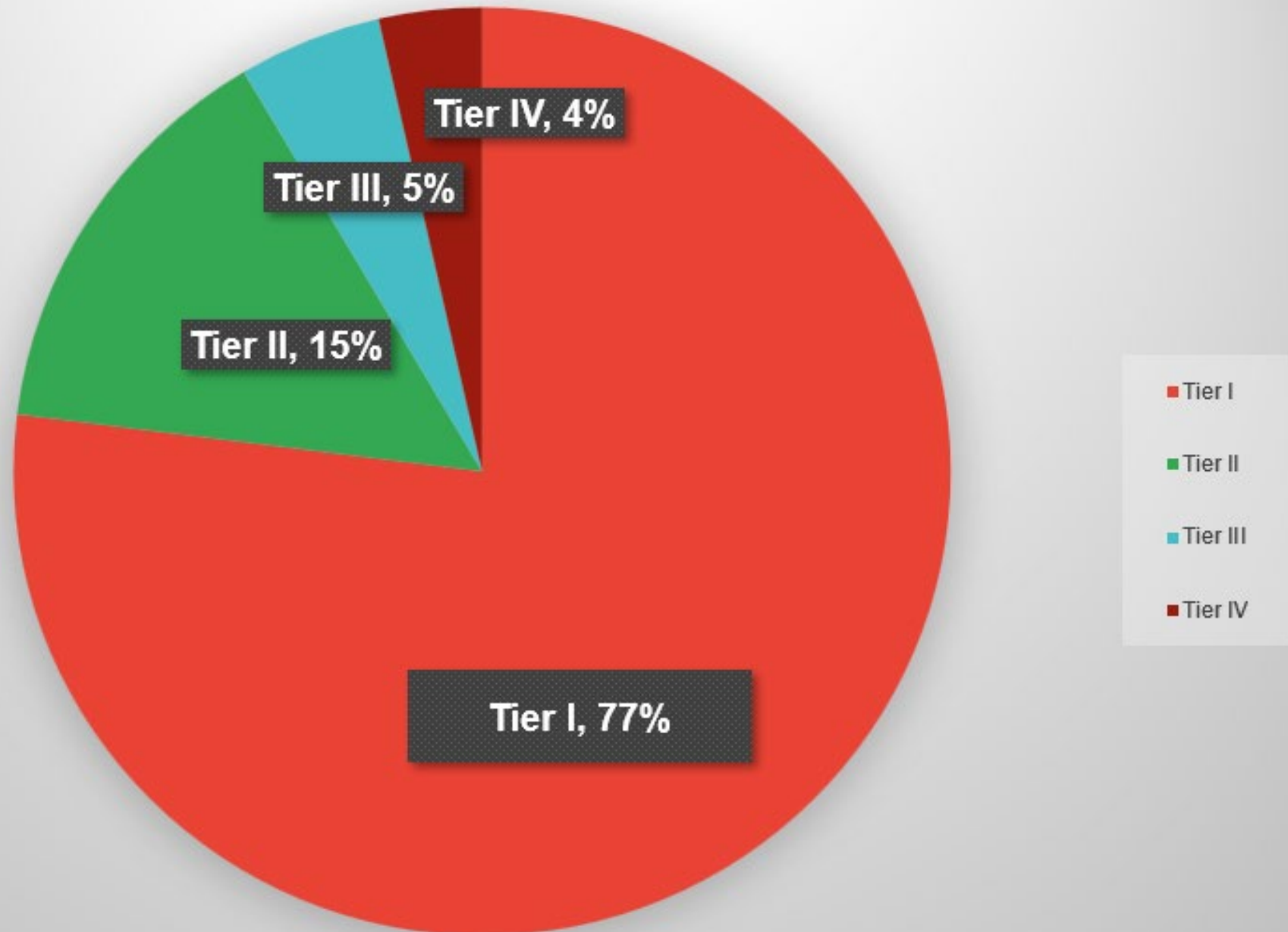
Groundwater Offsite (depicted by blue area) - Benzene up to 0.031 milligrams per liter (mg/l)



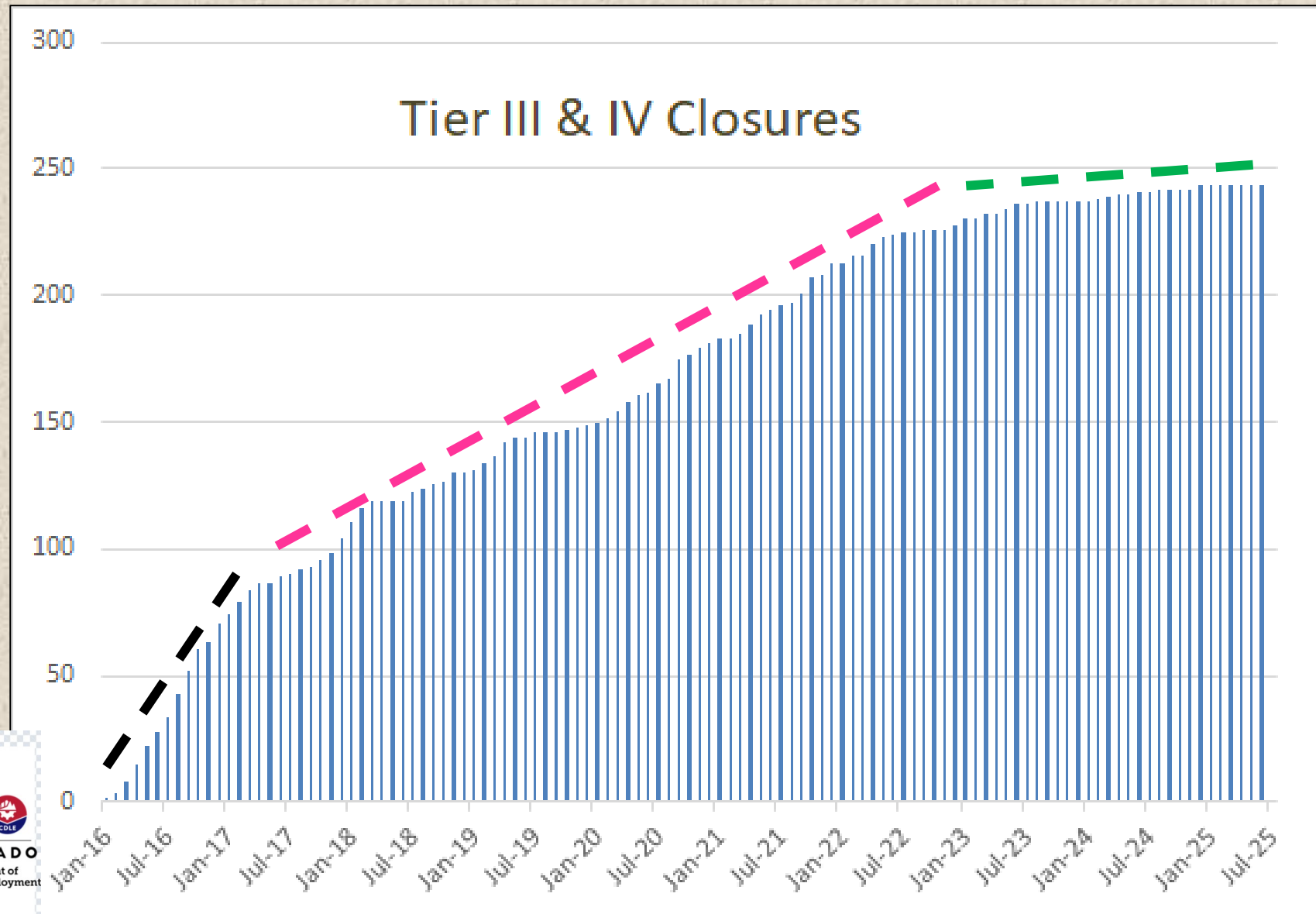
Release Trends



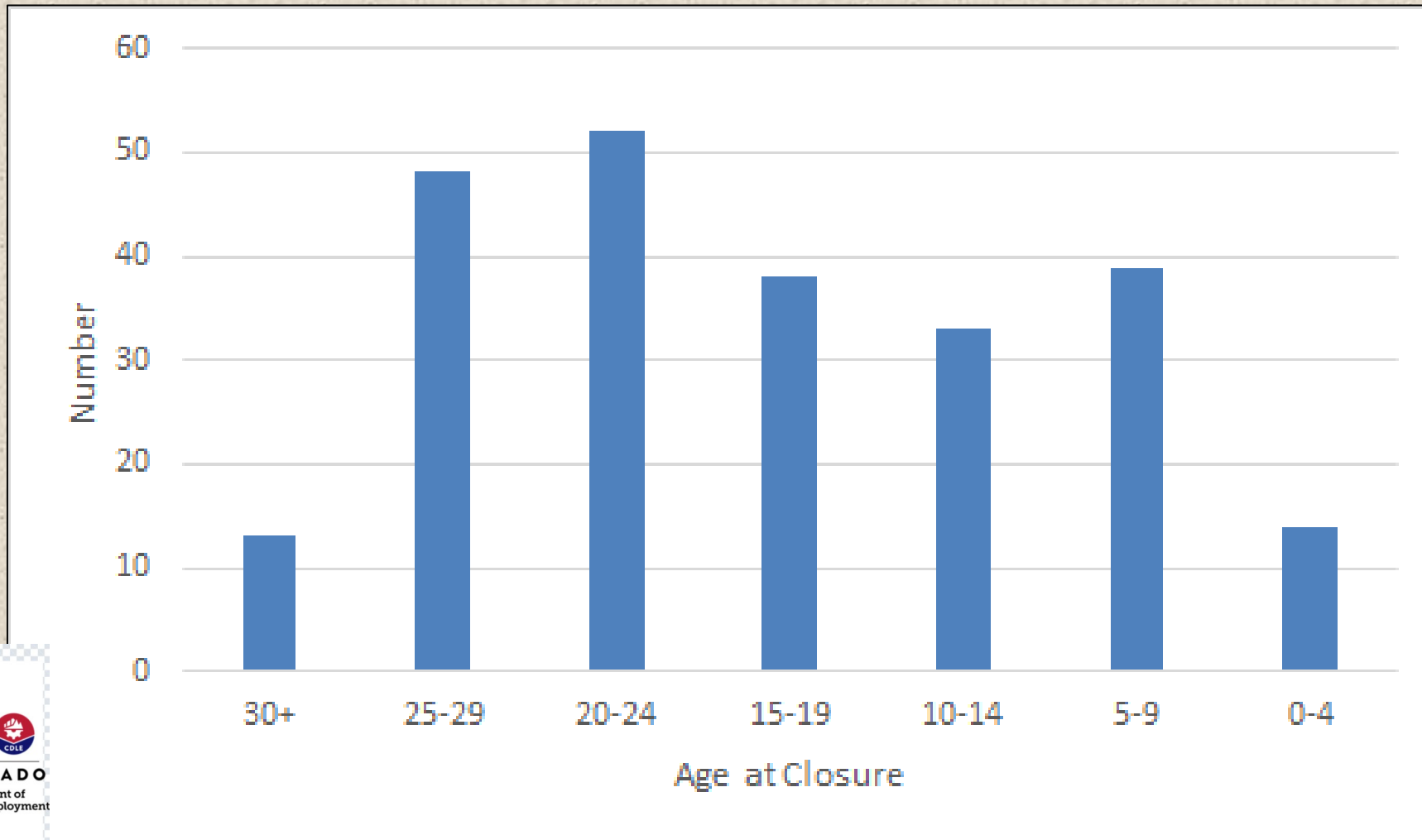
Closure Tier Distribution through 2025



Tier III and Tier IV Closures



Tier III and Tier IV Closure Age



Risk Based NFA Closures Average and Maximum Reimbursement



Current Challenges to Closing Sites

1. **Contaminant concentrations** – residual or mobile LNAPL
2. **Inadequate site characterization** – inadequate wells or depths; HRSC not available then
3. **Complex geology** – fractured bedrock, clay
4. **Access** – underground infrastructure, buildings, roads; access denial
5. **Inadequate attempts at corrective action** – no innovation or optimization
6. **Finance** – \$2M limit for reimbursement. Sites are using \$ much faster.





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