



Request For Response Actions Board Presentation 3M Perfluorochemical Disposal Sites

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Presentation Overview

- ▶ Request for Response Action (RFRA) purpose and outcomes
- ▶ Review of the 5 determinations for the 3M disposal sites – Chemolite/Cottage Grove, Oakdale, Woodbury
- ▶ Commissioner's Recommendation
- ▶ MPCA Citizens' Board Resolutions

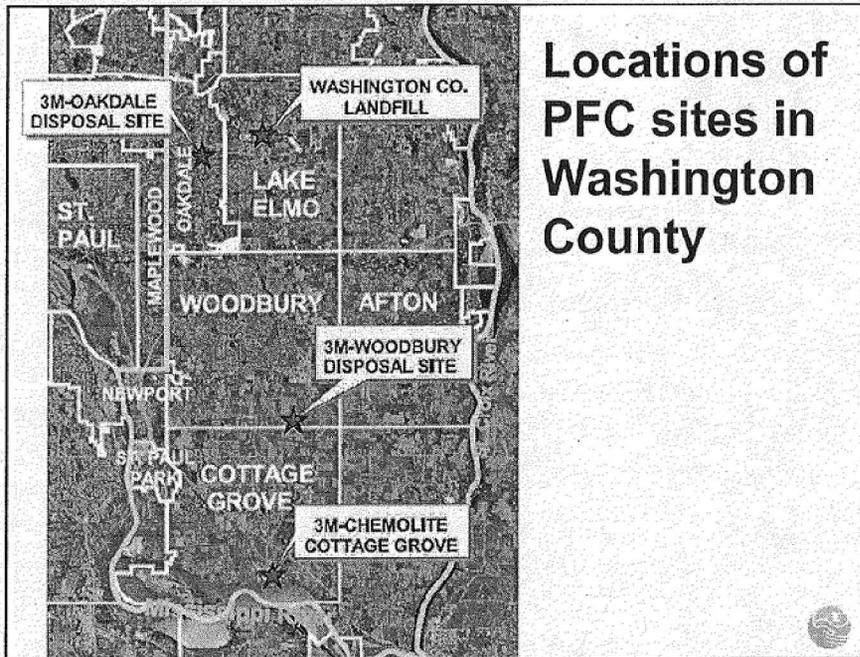
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**Exhibit
2147**

State of Minnesota v. 3M Co.,
Court File No. 27-CV-10-28862

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Request For Response Action (RFRA) Process

► Why do a RFRA now?

- Heightened public concern about health effects
 - RFRA is best legal framework to assure effective long-term remediation
 - Provides roadmap for addressing other PFC chemicals
- A small globe icon is in the bottom right corner of the text box.

Request For Response Action (RFRA) Process

- ▶ 3 RFRA's -3M Chemolite, 3M Oakdale and 3M Woodbury
- ▶ 5 Determinations made for each site, staff recommendation

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Minnesota Environmental Response and Liability Act (MERLA) 5 Determinations

1. There is a Release
2. There is a Facility
3. The Release or Threatened Release is from the Facility
4. The Release Involves Hazardous Substances
5. 3M is a Responsible Person as Defined by MERLA

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Determination #1: There is a release

- ▶ “any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment which occurred at a point in time or which continues to occur.”

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Determination #1: There is a release

- ▶ Investigations conducted by 3M at each of the three sites document that a release of PFOA and PFOS has occurred.
- ▶ In addition, a release of VOCs has been documented at the 3M Woodbury Site

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Determination #2: There is a facility

- ▶ Any site or area where a hazardous substance, or a pollutant or contaminant, has been deposited, stored, disposed of, or placed, or otherwise come to be located.

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Determination #2: There is a facility

- ▶ Investigations conducted by 3M have found PFOA and PFOS at the following disposal areas owned or used by 3M:
 - 3M Chemolite Disposal Site – Cottage Grove
 - 3M Oakdale Disposal Site
 - 3M Woodbury Disposal Site

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**Determination #3:
The Release or Threatened
Release is from the Facility**

- ▶ Under Section 115B.17 Sub (1) in order to issue a RFRA, the MPCA must determine that a release or threatened release has occurred from a facility.

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**Determination #3:
The Release or Threatened Release
is from the Facility**

- ▶ Investigations conducted by 3M have found PFOA and PFOS released to soil, surface water, ground water and sediment at or near the following facilities:
 - 3M Chemolite Disposal Site – Cottage Grove
 - 3M Oakdale Disposal Site
 - 3M Woodbury Disposal Site

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Determination #4: The Release Involves Hazardous Substances

- ▶ Hazardous substances include “hazardous waste” which is refuse, sludge, or other waste material...that because of chemical characteristics may...pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed.

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Determination #4: The Release Involves Hazardous Substances

- ▶ Minnesota Department of Health (MDH) has issued Health Based Values (HBVs) for PFOA and PFOS. Groundwater at each site exceeds HBVs
- ▶ MDH has issued fish consumption advisories for PFOS
- ▶ The state of New Jersey, U.S. EPA, United Kingdom and Germany have all issued health based standards for PFOA and/or PFOS

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ PFOS and PFOA are toxic
 - Toxic to rats, mice, and non-human primates
 - Scant evidence of human toxicity
- ▶ Calculate levels of concern in water or fish
 - Dose-response information combined with exposure information
- ▶ Potential hazards exist when levels in water or fish exceed the level of concern

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ PFOS
 - Monkey study—decreased “good” cholesterol and thyroid hormones
 - Dose-adjusted reference dose of 0.075 ug/Kg-d
 - Total uncertainty factor of 100
- ▶ PFOA
 - Monkey study—increased liver weight; Rat studies--changes in development, blood, and immune system
 - Dose adjusted reference dose of 0.140 ug/Kg-d
 - Total uncertainty factor of 300

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ Health Based Values (HBVs) for Water
 - Inputs: Reference dose, long-term water intake (in L/kg-d), and a standard relative source contribution factor
 - HBV of 0.3 ppb for PFOS in water is protective
 - HBV of 0.5 ppb for PFOA in water is protective
- ▶ PFOS Health Based Calculation for Fish
 - Inputs: Reference dose and meal ratio of 227 g fish/70 kg human body weight
 - 1 meal per week = greater than 38 ppb fish
 - 1 meal per month = greater than 160 ppb fish

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ The MDH issued drinking water advisories for PFOA and PFOS in Lake Elmo and Oakdale
 - Issued when water concentrations exceed HBVs
 - The MDH recommended "do not cook with or drink the water"
 - Filter systems have been installed on public water supply wells to reduce PFOA and PFOS in water
- ▶ The MDH issued fish consumption advisories
 - Issued when fish tissue exceeds "unlimited" guideline
 - Advice on eating species in pools of the Mississippi River is now more restrictive due to PFOS

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ German Drinking Water Commission (July 2006)
 - "Strictly health-based guide value"
 - 0.3 ppb (for combined PFOA and PFOS)
 - "Health-based precautionary value"
 - 0.1 ppb (for combined PFOA and PFOS)

- ▶ United Kingdom Committee on Toxicity of Chemicals in Food (November 2006)
 - Corresponding drinking water values
 - 9 ppb PFOA
 - 0.9 ppb PFOS

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Determination #4: The Release Involves Hazardous Substances (con't)

- ▶ U.S. EPA (November 2006)
 - Site-specific drinking water action level
 - 0.5 ppb PFOA

- ▶ New Jersey Department of Environmental Protection (February 2007)
 - Preliminary health-based guidance
 - 0.04 ppb PFOA

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Determination #4: The Release Involves Hazardous Substances-(con't)

| | PFOA | PFOS |
|----------------|----------------------|---------------------|
| 3M Oakdale | 73,767 23,700 ppb | 13,367 8,343 ppb |
| 3M Chemolite | 1,863 ppb | 324 ppb |
| 3M Woodbury | 3.12 3.22 ppb | 2.29 ppb |
| Drinking Water | 3.20 ppb | 3.50 ppb |
| HBVs | 0.5 ppb | 0.3 ppb |

Oakdale

| | PFOA | PFOS |
|---|------|------|
| 5 | .8 | 1.0 |
| 7 | .3 | .24 |
| 8 | .9 | .7 |
| 9 | .8 | .6 |

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Determination #4: The Release Involves Hazardous Substances (con't)

► Summary

- Hazardous Substance based upon statutory definition of Hazardous Waste
- MPCA and MDH believe PFOA/PFOS pose a present or potential hazard to human health

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**Determination #5: 3M is a
Responsible Person as Defined
by MERLA**

- ▶ Owned or operated the facility when the hazardous substance was placed in the facility
- ▶ Or owned or possessed the hazardous substance and arranged, contract, agreement, or otherwise for the disposal of the hazardous substance

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**Determination #5: 3M is a
Responsible Person as Defined
by MERLA**

- ▶ 3M owned the sites and/or arranged for disposal of wastes containing PFOA and PFOS at the following:
 - 3M Chemolite Disposal Site – Cottage Grove
 - 3M Oakdale Disposal Site
 - 3M Woodbury Disposal Site

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Conclusion

- ▶ 5 Determinations for issuance of RFRAs for each site have been met
- ▶ MPCA reasons for issuance of the RFRAs
- ▶ MPCA Commissioner recommends that the MPCA Citizens' Board adopt the suggested staff resolution for each of the three named RFRAs

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See next slide for Legal Framework for the Board Decision

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