



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

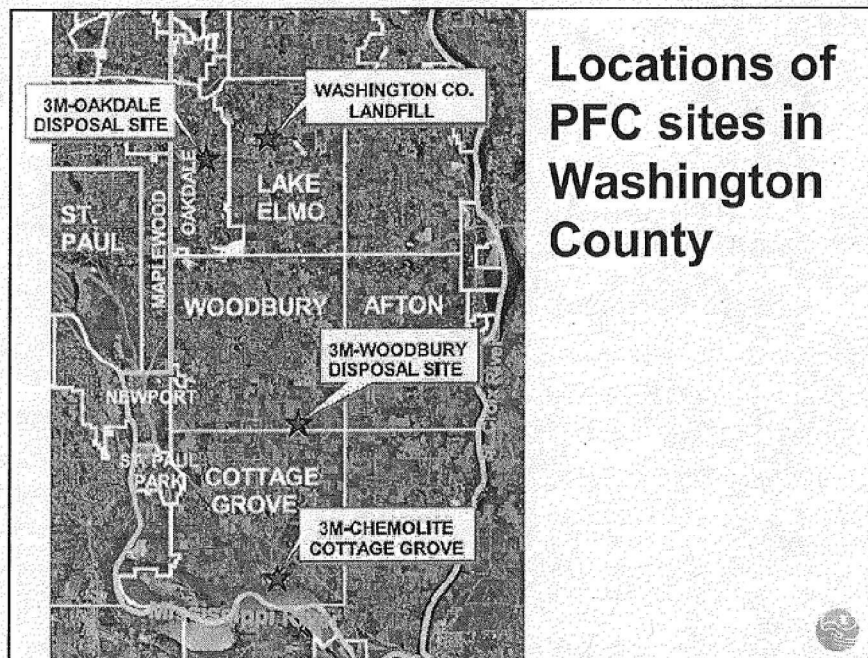
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**Exhibit
2147**

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

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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	L. Elm? 3.20 ppb	L. Elm? 3.50 ppb
HBVs	0.5 ppb	0.3 ppb

Mar 05 W26
Mar 06 W33

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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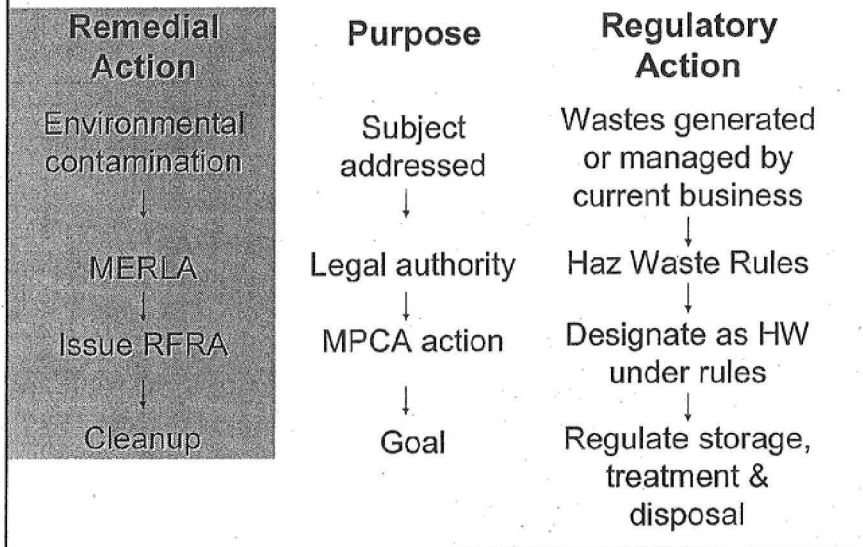


See next slide for Legal Framework for the
Board Decision

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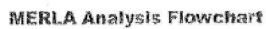
Legal Framework for Board Decision



MERLA Allows Board to Use Statutory Def. of Haz. Waste to Remediate Releases Not Covered by Rules

M.S. §116.06,
subd. 11

YES



To determine whether the release from a facility is a "hazardous substance" under CERCLA:

