



Dec 5, 2022

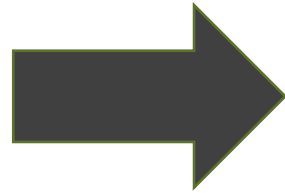
## *Consent Order Toxicity Studies – Status Update*

*Frannie Nilsen, PhD  
DEQ Environmental Toxicologist*



# *PFAS in North Carolina*

Consent Order  
Paragraph 14  
Study PFAS



PFMOAA

PMPA

PFO2HxA

PEPA

Nafion BP2

## *Chemours Consent Order: Toxicity Study Details*

“The following studies, which shall be conducted following applicable USEPA, OECD protocols as defined in the USEPA TSCA, OPPT or other appropriate programs as determined by DEQ.”

### **Rodent Toxicity Studies:**

- 28-day oral immunotoxicity study in rats
- 28-day oral immunotoxicity study in mice
- 90-day repeated dose oral toxicity study in rats
- 90-day repeated dose oral toxicity study in mice

***Rodent Studies: mouse and rat;  
classic tox and immunotox***

### **Ecological Toxicity Studies:**

- Algal acute (72-hour growth) toxicity study
- Daphnid acute toxicity study
- Daphnid chronic (reproduction) toxicity study
- Fish acute toxicity study
- Sediment 10-day freshwater invertebrates toxicity test

***Aquatic Tox Studies: algae,  
zooplankton, fish, and sediment worms***



*Current Status of Consent Order: Toxicity Study Review & Approval Process*

**Toxicity Study Protocol Review Timeline**

	<b>1<sup>st</sup> Draft</b>		<b>2<sup>nd</sup> Draft</b>		<b>3<sup>rd</sup> / Final<sup>?</sup> Draft</b>		<b>4<sup>th</sup> / Final<sup>?</sup> Draft</b>	
<b>Aquatic</b>	Dec 2020	Feb, Mar, May 2021	July, Aug 2021	Sept, Oct 2021	Feb 2022	Algae & Fish Approved April 2022	July 2022	Plankton & Sediment Aug 2022- DEQ comments sent
<b>Rodent</b>	Dec 2020	Apr, Sept 2021	Nov 2021	Dec 2021, Mar 2022				
	Initial protocols Rec'd	Meetings/ Comments	Revised protocol Rec'd	Meetings/ Comments	Revised protocol Rec'd	Meetings/ Comments	Revised protocol Rec'd	Meetings/ Comments

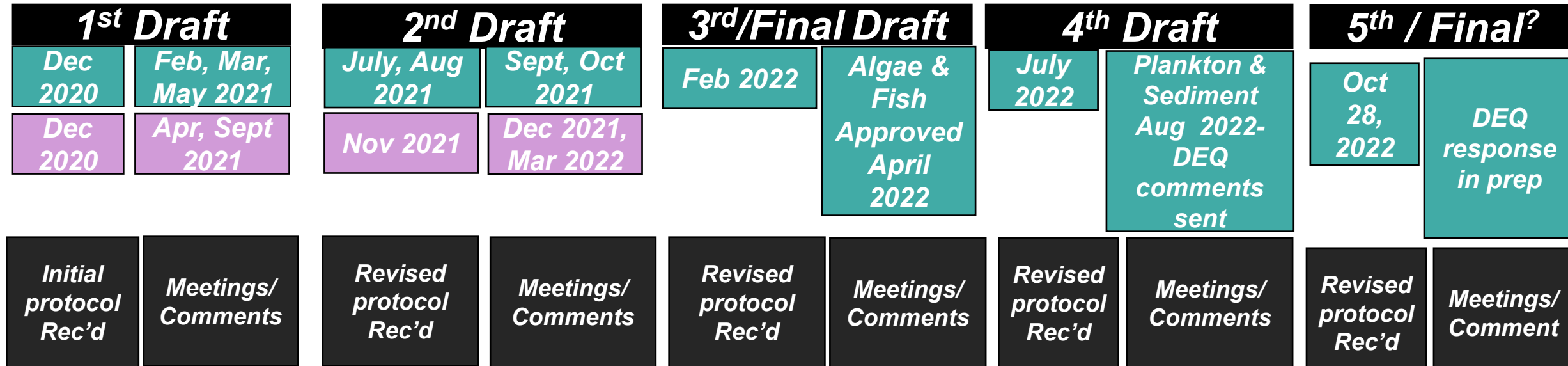


# Current Status of Consent Order: Toxicity Study Review & Approval Process

## Toxicity Study Protocol Review Timeline

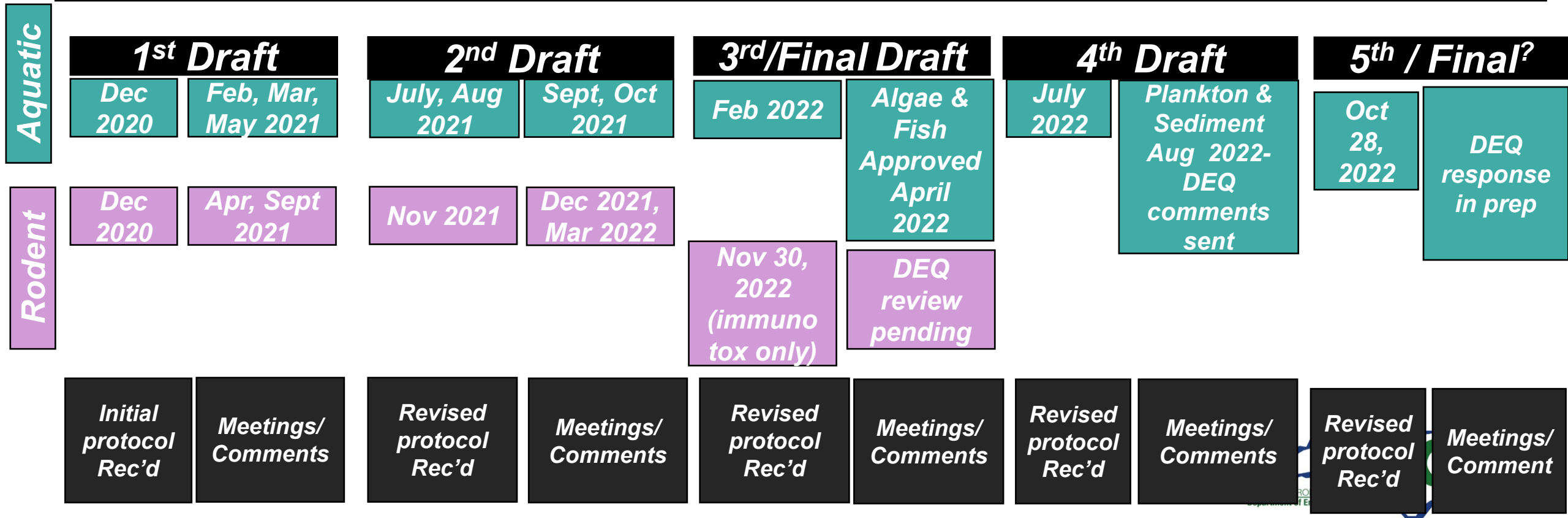
Aquatic

Rodent



# Current Status of Consent Order: Toxicity Study Review & Approval Process

## Toxicity Study Protocol Review Timeline



# Chemours Consent Order: Aquatic Toxicity Study Status



# Chemours Consent Order: Aquatic Toxicity Study Status

## Ecotoxicity Studies

Algae

**Approved- awaiting timeline from contract lab**

Daphnid (acute)

**Revision reviewed; DEQ response in prep**

Daphnid (chronic)

**Revision reviewed; DEQ response in prep**

Fish

**Approved- awaiting timeline from contract lab**

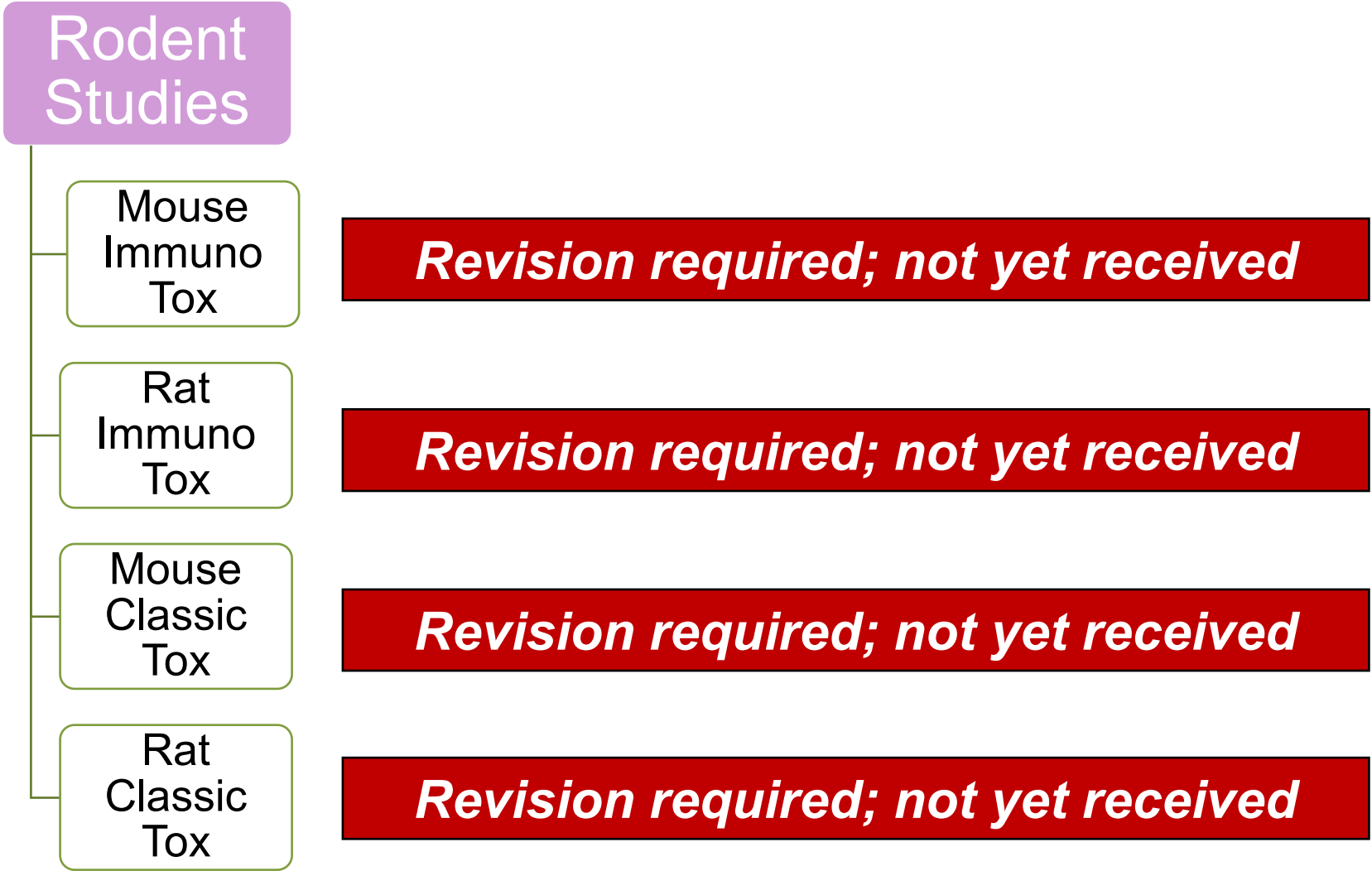
Sediment

**Revision reviewed; DEQ response in prep**

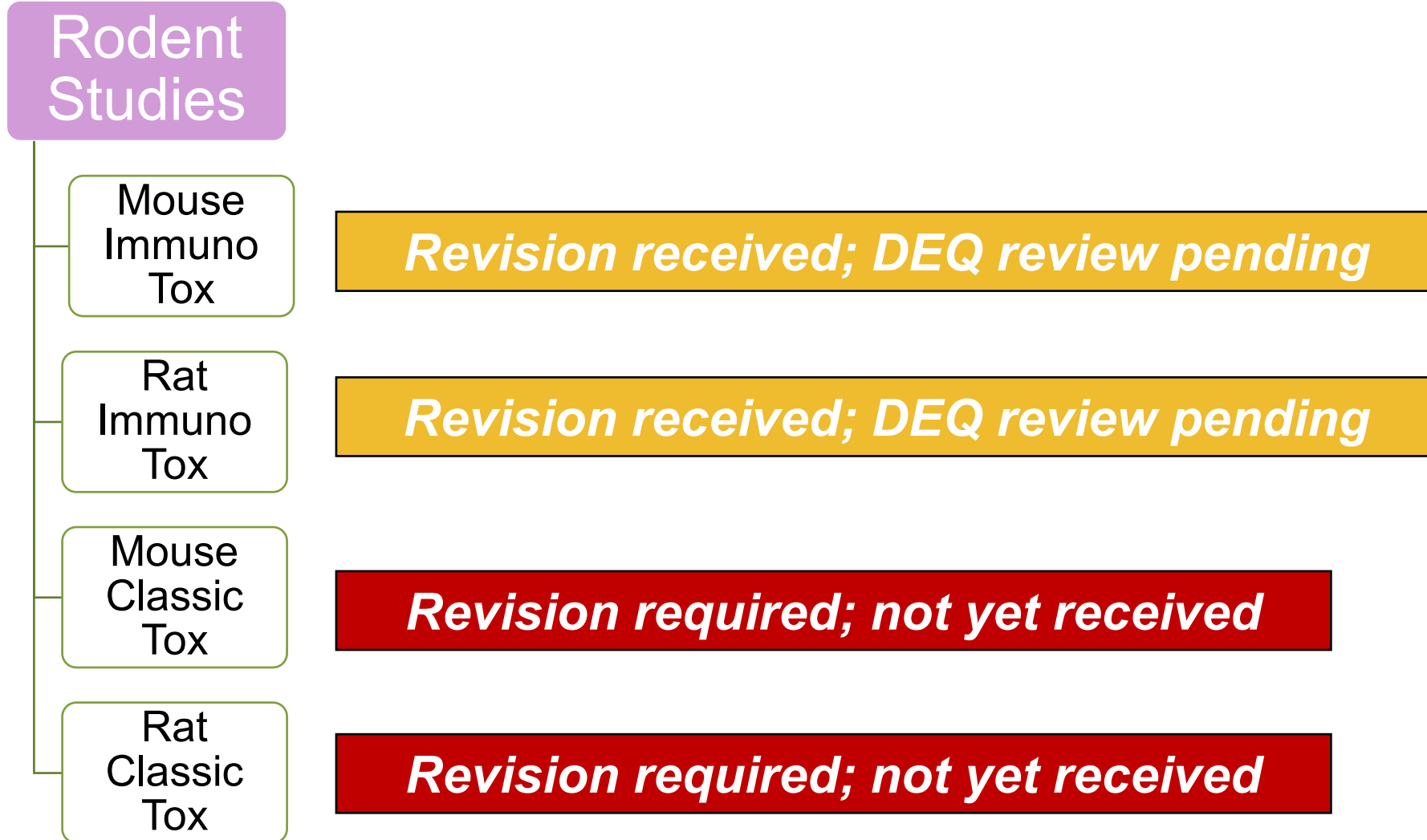




# Chemours Consent Order: Rodent Aquatic Toxicity Study Status



# Chemours Consent Order: Rodent Aquatic Toxicity Study Status



## *Chemours Consent Order: Proposed Timeline Moving Forward*

### Through Dec 2022:

1. Provide response to Chemours regarding remaining 3 aquatic toxicity protocols
  - Approve remaining 3 aquatic toxicity protocols?
2. Review 2 revised rodent immunotoxicology protocols

### Early 2023:

1. Rodent Immunotoxicology –
  - Meet with Chemours and third-party lab
  - Submit comments/questions to Chemours
2. Receive timelines and work plans for approved toxicity experiments to begin
3. Receive and review revised 90-day rodent protocols
  - Meet with Chemours and third-party lab
  - Submit comments/questions to Chemours
4. Approve rodent protocols?



*Thank you*



Frannie Nilsen, PhD

*Environmental Toxicologist, Office of the Secretary*

North Carolina Department of Environmental Quality

(919) 707-8217 | (919) 368-0205

[Frannie.Nilsen@ncdenr.gov](mailto:Frannie.Nilsen@ncdenr.gov)

*Department of Environmental Quality*

