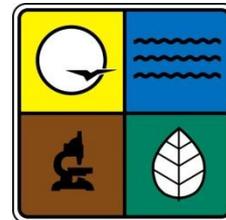
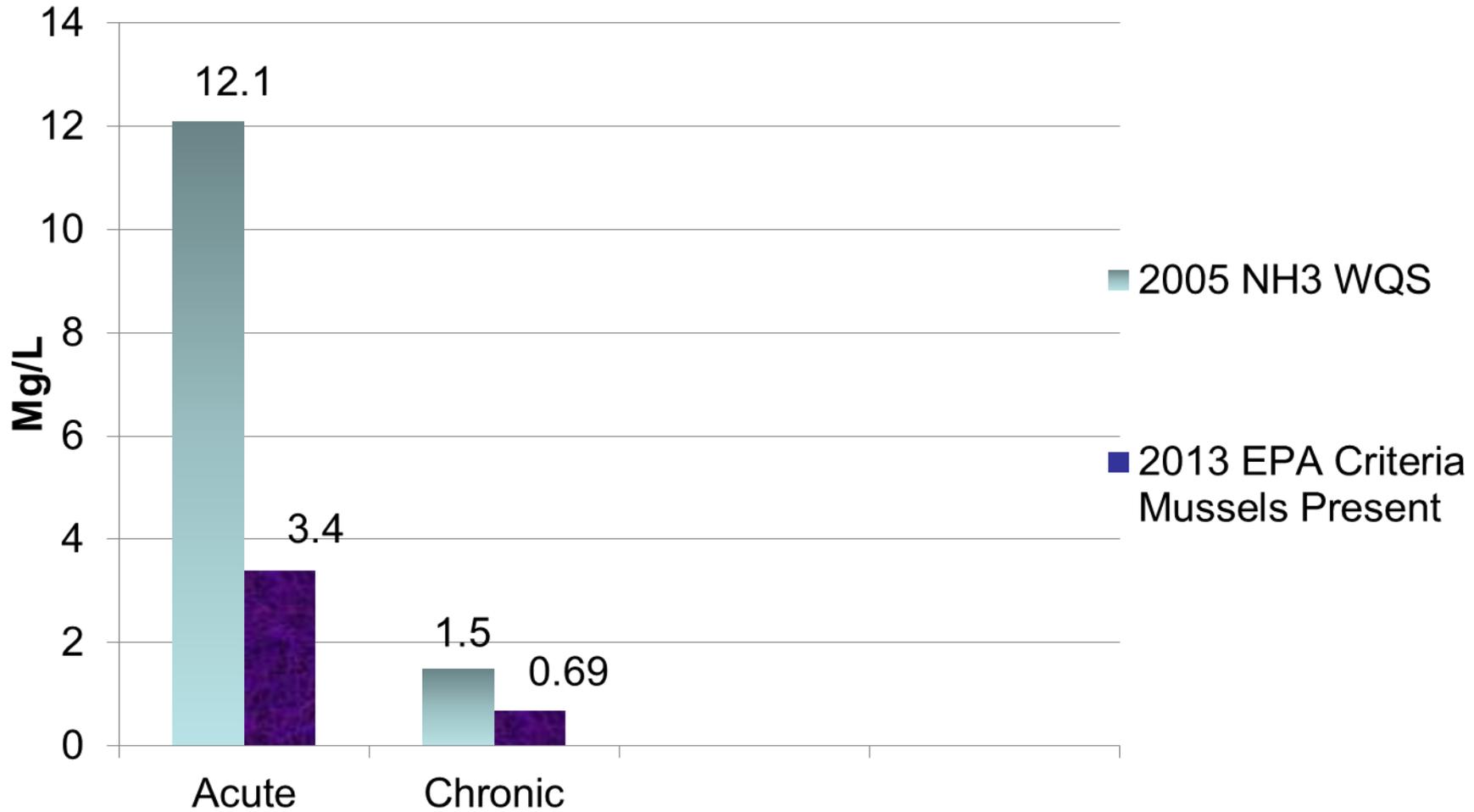


# Permit Limitations Based on EPA's 2013 Ammonia Criteria

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**MISSOURI**  
DEPARTMENT OF  
NATURAL RESOURCES



## Default Assumptions

- Coefficient of Variation of 0.6
- pH of 7.8
- Temperature of 26° C for Summer
- Temperature of 6° C for Winter

Small Stream with no dilution available Salmonid  
 Absent/Cool and Warm Water Fishery (Early Life Stages  
 Present) Current WQS for NH3

U stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	2.9	7.5
NH3	Ammonia as Nitrogen (Summer)	1.4	3.6
C stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	2.9	7.5
NH3	Ammonia as Nitrogen (Summer)	1.4	3.6
P stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	3.2	8.3
NH3	Ammonia as Nitrogen (Summer)	1.5	4.0

Small Stream with no dilution available Mussels Present/Salmonid Absent/Cool and Warm Water Fishery (Early Life Stages Present) 2013 EPA Criteria

U stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	2.1	5.6
NH3	Ammonia as Nitrogen (Summer)	0.6	1.7
C stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	2.1	5.6
NH3	Ammonia as Nitrogen (Summer)	0.6	1.7
P stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	2.4	6.2
NH3	Ammonia as Nitrogen (Summer)	0.7	1.9

## Stream with dilution available

Design flow of 1.5 MGD Salmonid Absent/Cool and Warm Water Fishery (Early Life Stages Present) Current NH3 WQS

	Flow CFS	Mixing Zone	ZID
1Q10	230.4	57.6	5.76
7Q10	234.5	58.625	5.8625
30Q10	243	60.75	6.075

P stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	16.1	42.1
NH3	Ammonia as Nitrogen (Summer)	16.1	42.1

Stream with dilution available

Design flow of 1.5 MGD Mussels Present/Salmonid  
 Absent/Cool and Warm Water Fishery (Early Life Stages  
 Present) 2013 EPA Criteria

	Flow CFS	Mixing Zone	ZID
1Q10	230.4	57.6	5.76
7Q10	234.5	58.625	5.8625
30Q10	243	60.75	6.075

P stream			
Symbol	Parameter	AML	MDL
NH3	Ammonia as Nitrogen (Winter)	10.8	28.1
NH3	Ammonia as Nitrogen (Summer)	4.5	11.8

Questions???