Reasonable Potential Analyzer

Facility Name

NPDES Permit Number TX0002887 Outfall Number 002

Proposed Critical Dilution* 9

***Critical Dilution in draft permit, do not use % sign.**

Enter data in yellow shaded cells only. Fifty percent should be entered as 50, not 50%.

Test Data

	VERTEBRATE				INVERTEBRATE			
Date (mm/yyyy)	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU
Mar-11	40		2.50		23		4.35	
Jun-11	40		2.50		30		3.33	
Sep-11	40		2.50		30		3.33	
Dec-11	40		2.50		40		2.50	
Mar-12	40		2.50		40		2.50	
Jun-12	40		2.50		40		2.50	
Sep-12	40		2.50		30		3.33	
Dec-12	40		2.50		30		3.33	
Mar-13	41		2.44		41		2.44	
Jun-13	41		2.44		31		3.23	
Jun-13	31		3.23		23		4.35	
Sep-13	31		3.23		23		4.35	
Dec-13	41		2.44		41		2.44	
Mar-14	41		2.44		41		2.44	
Jun-14	41		2.44		41		2.44	
Sep-14	41		2.44		41		2.44	
Dec-14	41		2.44		31		3.23	
Dec-14	41		2.44		41		2.44	
Jan-15	41		2.44		41		2.44	
Apr-15	41		2.44		41		2.44	
Jul-15	41		2.44		31		3.23	
Oct-15	41		2.44		41		2.44	
Mar-16	10.9	10.9	9.17	9.17	10.9	10.9	9.17	9.17
Jun-16	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Sep-16	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Dec-16	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Mar-17	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Jun-17	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Sep-17	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Dec-17	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Mar-18	14.5	14.5	6.90	6.90	14.5	14.5	6.90	6.90
Jun-18								
	10.9	10.9	9.17	9.17	10.9	10.9	9.17	9.17
Count			31	9			31	9
Mean			3.873	7.150			4.189	7.150
Std. Dev.			2.174	0.759			2.045	0.759
CV			0.6	0.6			0.5	0.6
RPMF			1.4	1.8			1.3	1.8

	11.111	Reasonable Potential Acceptance Criteria
Vertebrate Lethal	1.156	No Reasonable Potential exists. Permit requires WET monitoring, but no WET
Vertebrate Sublethal	1.486	No Reasonable Potential exists. Permit requires WET monitoring, but no WET
Invertebrate Lethal	1.073	No Reasonable Potential exists. Permit requires WET monitoring, but no WET
Invertebrate Sublethal	1.486238532	No Reasonable Potential exists. Permit requires WET monitoring, but no WET

* Although the statistical analysis indicates there is no reasonable potential for toxicity, the chronic limit should be carried over until at least 5 years from the effective date of the limit.

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	VERTEBRATE				INVERTEBRATE			
Date (mm/yyyy)	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU

Reasonable Potential Analyzer

Determining "Reasonable Potential" for Excursions Above Ambient Criteria Using Effluent Data Only

EPA recommends finding that a permittee has "reasonable potential" to exceed a receiving water quality standard if it cannot be demonstrated with a high confidence level that the upper bound of the lognormal distribution of effluent concentrations is below the receiving water criteria at specified low-flow conditions.

Step 1 Determine the number of total observations ("n") for a particular set of effluent data (concentration or toxic units [TUs]), and determine the highest value from that data set.

Step 2 Determine the coefficient of variation for the data set. For a data set where n<10, the coefficient of variation (CV) is estimated to equal 0.6, or the CV is calculated from data obtained from a discharger. For a data set where n>0, the CV is calculate as standard deviation/mean. For less than 10 items of data, the uncertainty in the CV is too large to calculate a standard deviation or mean with sufficient confidence.

Step 3 Determine the appropriate ratio from the table below.

Step 4 Multiply the highest value from a data set by the value from the table below. Use this value with the appropriate dilution to project a maximum receiving water concentration (RWC).

Step 5 Compare the projected maximum RWC to the applicable standard (criteria maximum concentration, criteria continuous concentration [CCC], or reference ambient concentration). EPA recommends that permitting authorities find reasonable potential when the projected RWC is greater than an ambient criterion.

Reasonable Potential Analyzer

Determining "Reasonable Potential" for Excursions Above Ambient Criteria Using Effluent Data Only

EPA recommends finding that a permittee has “reasonable potential” to exceed a receiving water quality standard if it cannot be demonstrated with a high confidence level that the upper bound of

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