



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Southwest Region Office

PO Box 47775, Olympia, WA 98504-7775 • 360-407-6300

February 7, 2024

Chris Lam
Safe Coast Seafoods
PO Box 800
Ilwaco, WA 98624-0800

Re: Safe Coast Seafoods New Effluent Calculation Method

Dear Chris Lam:

It has come to The Department of Ecology's (Ecology) attention that there are several inconsistencies on how to calculate production based effluent limits for seafood processors in the Southwest Region. Ecology understands that your facility has been doing the calculations based on your interpretation of the permit. However, because the permit is vague when it comes to calculating the limits, these interpretations have led to each seafood processor using different methods/numbers to calculate their limits.

To eliminate these discrepancies, Ecology has worked to provide guidelines for calculating the limits. These guidelines will allow for continuity in calculating production based effluent limits for seafood processors permitted in the Southwest Region.

Starting now, please implement the following guidelines for calculating production based effluent limits at your facility:

- Use the production for each discrete **sample day** when filling out "production" for calculating average monthly and maximum daily effluent limits (See Figure 1 and 2).
- Select the **highest** calculated waste load value and use that day's calculated effluent limit to deduce compliance for daily maximum (See Figure 3).
- Average the calculated waste loads and compare that average to the average monthly limit (See Figure 4).
- If there is not production for one production on a sampling day, do not include the zero production in your averaging calculations (See Figure 5).

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February 7, 2024
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The worksheet that Ecology provided is an example to show what values to select for calculations. You may adapt the calculations to fit your current effluent limit worksheet. Ecology appreciates your flexibility in adapting these new guidelines. Please reach out if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Kamren Moen". The signature is fluid and cursive, with the first name "Kamren" and last name "Moen" clearly distinguishable.

Kamren Moen
Industrial Facility Manager
Lower Columbia Basin
Southwest Region Office
Water Quality Program

WASTEWATER TREATMENT PLANT MONITORING REPORT

Permit No. [REDACTED] Month April Year 2021
 Facility Name [REDACTED] County [REDACTED]
 Receiving Water [REDACTED] Plant Type Crab & Shrimp Processing

FINAL WASTEWATER EFFLUENT (Outfall 001)

	CONT	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	2/MONTH	1/MONTH	1/MONTH
Frequency	METERED	GRAB	GRAB	GRAB	CALC	COMP	CALC	COMP	CALC	GRAB	REC	REC	GRAB	GRAB	GRAB	
Date	Flow MGD	pH Standard Units	Fecal Coliform #/100 mL	Temperature °C	BOD lbs/day	BOD mg/L	Total Suspended Solids lbs/day	Total Suspended Solids mg/L	Oil & Grease lbs/day	Oil & Grease mg/L	Production (Crab) lbs/day	Production (Shrimp) lbs/day	DO mg/L	Ammonia mg/L	Chlorine mg/L	
1	0.158										28,355	4,000				
2	0.096										31,393	6,120				
3	0.119										300	7,131				
4	0.028										0	0				
5	0.110										18,510	10,072				
6	0.077										12,347	10,996				
7	0.078	7.7	70	11.3	44.1	67.4	32.7	50.0	<3.27	<5.00	17,838	14,160	11.0	4.9		
8	0.074										6,339	9,376				
9	0.093										5,545	9,215				
10	0.355										0	41,009				
11	0.013										0	8,132				
12	0.320										6,157	42,684				
13	0.189										6,594	29,309				
14	0.076										10,675	11,760				
15	0.060										11,019	10,178				
16	0.032										4,541	0				
17	0.009										0	0				
18	0.482										0	59,049				
19	0.776										3,721	101,321				
20	0.669										6,279	73,976				
21	0.332										5,881	45,274				
22	0.245	8.4	10	12.5	271.5	133.0	330.7	162.0	6.53	3.20	6,578	38,513	10.9			
23	0.537										4,397	74,739				
24	0.052										0	0				
25	0.861										33,941	101,723				
26	0.987										5,967	148,982				
27	0.472										5,890	52,243				
28	0.329										5,608	42,816				
29	0.831										6,348	122,426				
30	0.733										4,828	89,968			0.05	
MIN/AVM Permit Limit	AVM	MIN	GEOMEAN		AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	
	0.306	7.7	26.45751		135.0	100.2	142.9	106.0	<4.90	<5.53	8,301.7	38,839.1	10.9	4.9	0.05	
MXD Permit Limits	AVM	MIN	GEOMEAN		AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	AVM	
	1.296	6.0	200	N/A	1682.9	Report	403.5	Report	151.34	Report	Report	Report	Report	Report	Report	
MXD Permit Limits	MXD	MAX	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	
	0.987	8.4	70	12.5	271.5	133.0	330.7	162.0	6.53	<5.00	33,941	148,982	11.0	4.9	0.05	
MXD Permit Limits	MXD	MAX	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	MXD	
	1.296	9.0	400	16.0	6035.3	Report	1474.7	Report	540.83	Report	Report	Report	Report	Report	Report	

Please Circle ALL Permit Violations Mail to P.O. Box 47775, Olympia WA 98504-7775
 AVM=Average Monthly MAX=Maximum MIN=Minimum MXD=Maximum Daily

Figure 1. Select production on *sample days* to calculate both Daily Max and Average Monthly Limits. This facility sampled on 4/7 and 4/22 so both sample days must be calculated in the worksheet.

DAILY MAXIMUM										
For the Monitoring Period										
		Year	Month	Day		Year	Month	Day		
	From				to					
Total Categorical BOD5, Permit Effluent Limit Calculation										
	Sample Date	EPA Categorical Multiplier		Sample Day Production				Limit		
	4/7/2021	Crab	10	X	17838	Production	=	178.4	lbs BOD5	
						1000				
	4/22/2021	Crab	10	X	6578	Production	=	65.8	lbs BOD5	
						1000				
	4/7/2021	Shrimp	155	X	14160	Production	=	2194.8	lbs BOD5	
						1000				
	4/22/2021	Shrimp	155	X	38513	Production	=	5969.5	lbs BOD5	
						1000				
Repeat for other seafood categories				X		Production	=	0.0	lbs BOD5	
						1000				
						SUM crab/shrimp production on highest wasteload day				
						TOTAL ENFORCEABLE EFFLUENT LIMIT = 6035.3 lbs BOD5				
						(Enter into "Permit Requirement" box for Total Categorical Mass BOD5)				
Total Reportable BOD5, Sample measurements, Avg.										
	Sample Date	Flow (MGD)		Sample Measurement	Conversion Factor			Wasteload Value	Limit Met? (Y/N)	
	4/7/2021	0.078	X	44.1	X	8.34	=	28.7	lbs BOD5	
	4/22/2021	0.245	X	271.5	X	8.34	=	554.8	lbs BOD5	
			X		X	8.34	=	0.0	lbs BOD5	
			X		X	8.34	=	0.0	lbs BOD5	
				(Enter into "Sample Measurement" box for BOD5 sample)		(Enter into "Sample Measurement" box for Total Categorical Mass BOD5)				

Figure 2. Using Daily Max as the example: Input all sample days into the worksheet. Calculate Limits and Wasteloads for all sample days. In this case, there are 2 sample days.

DAILY MAXIMUM										
For the Monitoring Period										
		From	Year	Month	Day	to	Year	Month	Day	
Total Categorical BOD5, Permit Effluent Limit Calculation										
	Sample Date		EPA Categorical Multiplier		Sample Day Production				Limit	
	4/7/2021	Crab	10	X	17838	Production	=	178.4	lbs BOD5	
						1000				
	4/22/2021	Crab	10	X	6578	Production	=	65.8	lbs BOD5	
						1000				
	4/7/2021	Shrimp	155	X	14160	Production	=	2194.8	lbs BOD5	
						1000				
	4/22/2021	Shrimp	155	X	38513	Production	=	5969.5	lbs BOD5	
						1000				
Repeat for other seafood categories				X		Production	=	0.0	lbs BOD5	
						1000				
						SUM crab/shrimp production on highest wasteload day				
						TOTAL ENFORCEABLE EFFLUENT LIMIT = 6035.3 lbs BOD5				
						(Enter into "Permit Requirement" box for Total Categorical Mass BOD5)				
Total Reportable BOD5, Sample measurements, Avg.										
	Sample Date		Flow (MGD)		Sample Measurement	Conversion Factor		Wasteload Value		Limit Met? (Y/N)
	4/7/2021		0.078	X	44.1	X	8.34	= 28.7	lbs BOD5	
	4/22/2021		0.245	X	271.5	X	8.34	= 554.8	lbs BOD5	
				X		X	8.34	= 0.0	lbs BOD5	
				X		X	8.34	= 0.0	lbs BOD5	
						(Enter into "Sample Measurement" box for BOD5 sample)		(Enter into "Sample Measurement" box for Total Categorical Mass BOD5)		

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Figure 3. For Max Daily Limit Calculations only: Select the sample day with the highest wasteload to calculate the max daily effluent limit. April 22 has the highest wasteload at 554.76 lbs BOD₅. Sum the crab and shrimp production for April 22 to get the max daily effluent limit for the month of April. Effluent limit: 65.78 + 5969 = **6035**.

MONTHLY AVERAGE									
For the Monitoring Period									
From		Year	Month	Day	to		Year	Month	Day
Total Categorical BOD5, Permit Effluent Limit Calculation									
Date		EPA Categorical Multiplier		Sample Day Production				Limit	
4/7/2021	Crab	4.1	X	17838	Production	=		73.1	lbs BOD5
					1000				
4/22/2021	Crab	4.1	X	6578	Production	=		27.0	lbs BOD5
					1000				
4/7/2021	Shrimp	62	X	14160	Production	=		877.9	lbs BOD5
					1000				
4/22/2021	Shrimp	62	X	38513	Production	=		2387.8	lbs BOD5
					1000				
Repeat for other seafood			X		Production	=		0	lbs BOD5
					1000				
SUM CRAB/SHRIMP SAMPLE DAY 1					=(SUM(J94,J99))				
SUM CRAB/SHRIMP SAMPLE DAY 2					= 2414.8				
SUM CRAB/SHRIMP SAMPLE DAY (n)					=				
Average the SUM of crab/shrimp sample day 1,2,n...									
TOTAL ENFORCEABLE EFFLUENT LIMIT					= 1682.9 lbs BOD5				
(Enter into "Permit Requirement" box for Total Categorical Mass BOD5)									
Total Reportable BOD5, Sample measurements, Avg.									
Date		Flow (MGD)		Sample Measurement	Conversion Factor			Wasteload Value	Limit Met? (Y/N)
4/7/2021		0.078	X	44.1	X	8.34	=	28.7	lbs BOD5
4/22/2021		0.245	X	271.5	X	8.34	=	554.8	lbs BOD5
			X		X	8.34	=	0.0	lbs BOD5
			X		X	8.34	=	0.0	lbs BOD5
MONTHLY AVERAGE					145.9 lbs BOD5				
(Enter into "Sample Measurement" box for BOD5 sample)					(Enter into "Sample Measurement" box for Total Categorical Mass BOD5)				

SUM crab and shrimp on each sample day

AVERAGE the waste loads for sample days

Figure 4. Calculating average monthly limits

MONTHLY AVERAGE									
For the Monitoring Period									
	From	Year	Month	Day	to	Year	Month	Day	
Total Categorical BOD5, Permit Effluent Limit Calculation									
Date		EPA Categorical Multiplier		Sample Day Production				Limit	
4/7/2021	Crab	4.1	X	17838	Production	=	73.1	lbs BOD5	
					1000				
4/22/2021	Crab	4.1	X	0	Production	=	0.0	lbs BOD5	
					1000				
4/7/2021	Shrimp	62	X	14160	Production	=	877.9	lbs BOD5	
					1000				
4/22/2021	Shrimp	62	X	0	Production	=	0.0	lbs BOD5	
					1000				
Repeat for other seafood			X		Production	=	0	lbs BOD5	
					1000				
					SUM CRAB/SHRIMP SAMPLE DAY 1	=	951.1		
					SUM CRAB/SHRIMP SAMPLE DAY 2	=	0.0		
					SUM CRAB/SHRIMP SAMPLE DAY (n)	=			
					Average the SUM of crab/shrimp sample day 1,2,n...				
					TOTAL ENFORCEABLE EFFLUENT LIMIT = AVERAGE(J107)				
					(Enter into "Permit Requirement" box for Total Categorical Mass BOD5)				

Figure 5. Do not include the zero when averaging if there is a sample day that did not have production. Total Enforceable Effluent limit is 951.1 lbs BOD₅