

JUNEAU-DOUGLAS WASTEWATER TREATMENT FACILITY

Juneau, Alaska

December 2015

DAY	DATE	Influent										Effluent									
		TEMP °F	RAIN FALL INCHES	J-D TTL EFFL MGD	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D mg/L	B.O.D. LBS	TEMP °C	pH	D.O. mg/L	S.S. mg/L	S.S. LBS	B.O.D. mg/L	B.O.D. LBS	Enteroc. Fecal	Channel Fecal	FECAL Coliform /100 ml
SUN	29	43	1.33	2.024																	
MON	30	41	0.84	1.764	9.4	7.5	8.5					12.2	6.7	6.4							
TUE	1	41	0.70	1.481	11.2	7.7	5.3	62.0	765.8	91.0	1124.0	6.1	6.7	7.8	1.0	12.4	3.2	39.5		1.0	
WED	2	40	0.54	1.104	11.1	7.8	5.2	100.0	920.7	120.0	1104.9	10.1	6.8	7.4	5.2	47.9	4.3	39.6			
THU	3	35	0.62	0.800	11.0	7.7	5.3					10.3	6.8	7.4							
FRI	4	29	0.03	0.756	10.3	7.7	3.5					11.1	6.9	4.8							
SAT	5	33	0.00	0.868																	
SUN	6	38	0.01	0.891																	
MON	7	36	M	0.891	9.9	7.7	3.6					10.4	6.8	5.2							
TUE	8	39	0.55	1.147	10.8	7.4	4.7	37.0	353.9	94.0	899.2	11.9	7.2	4.3	1.0	9.6	4.0	38.3		7.0	
WED	9	39	M	0.965	10.9	7.5	3.7					11.8	7.2	4.5	5.2	41.9	4.5	36.2			
THU	10	34	M	0.737	9.0	7.4	4.1					10.0	7.2	6.0							
FRI	11	28	0.25	0.769	8.6	7.7	1.2					9.2	7.5	4.9							
SAT	12	31	M	0.675																	
SUN	13	25	T	0.645																	
MON	14	33	0.06	0.771	8.9	7.4	2.4					9.5	7.3	4.9							
TUE	15	36	0.08	0.762	8.8	7.4	3.3	132.0	838.9	150.0	953.3	9.8	7.3	5.7	9.2	58.5	5.4	34.3		2.0	
WED	16	35	0.02	0.681	8.6	7.4	3.2	180	1022.3	150	851.9	10.0	7.3	4.3	1.0	5.7	2.30	13.1			
THU	17	38	0.00	0.656	11.5	7.9	1.8					10.4	7.3	4.3							
FRI	18	35	T	0.596	10.2	8.0	1.1					10.8	7.3	4.1							
SAT	19	36	0.00	0.593																	
SUN	20	35	0.04	0.664																	
MON	21	36	0.21	0.638	9.4	7.5	3.4					10.1	7.3	4.1							
TUE	22	34	0.09	0.663	9.1	7.4	2.9	104.0	575.1	130.0	718.8	10.0	7.3	4.4	1.0	5.5	3.8	21.0		2.0	
WED	23	32	T	0.620	9.0	7.4	3.4	424.0	2192.4	300.0	1551.2	10.0	7.3	4.6	4.4	22.8	5.4	27.9			
THU	24	22	0.00	0.601	8.6	7.6	3.6					9.8	7.3	5.3							
FRI	25	20	0.00	0.552	8.8	7.5	3.0					9.3	7.3	5.1							
SAT	26	29	0.08	0.581																	
SUN	27	31	0.23	0.593																	
MON	28	31	0.00	0.612	8.5	7.5	2.7					9.3	7.3	4.7							
TUE	29	35	0.28	0.709	8.2	7.5	2.5	261.0	1543.3	210.0	1241.7	9.8	7.3	4.3	4.0	23.7	2.9	17.1		8.0	
WED	30	34	0.13	0.573	8.1	7.5	3.4	212.0	1013.1	200.0	955.8	9.2	7.2	4.4	1.0	4.8	2.9	13.9			
THU	31	39	0.02	0.811	8.2	7.5	3.2					10.5	7.2	4.6							
FRI	1	39	0.26	0.792	9.5	7.7	5.4					8.7	7.3	5.0							
SAT	2	38	0.16	1.544																	
TOTAL			6.53	23.41																	
MAXIMUM		42.6	1.33	2.02	11.5	8.0	8.5	424.0	2192.4	300.0	1551.2	12.2	7.5	7.8	9.2	58.5	5.4	39.6		8.0	
MINIMUM		20.3	0.00	0.55	8.1	7.4	1.1	37.0	353.9	91.0	718.8	6.1	6.7	4.1	1.0	4.8	2.3	13.1		1.0	
AVERAGE		34.3	0.23	0.84	9.5	7.6	3.6	168.0	1025.1	160.6	1044.5	10.0		5.1	3.3	23.3	3.9	28.1		3.0	
Number Of Analyses		35	28	35	25	25	25	9	8	9	8	25	25	25	10	10	10	10	0	0	5

BOD % REMOVAL	TSS % Removal	Turbidity
97.6	98.0	

Ammonia	mg/L	Copper	ug/L
12/2/2015	2.3	12/2/2015	7.4

Weekly	TSS				BOD				Weekly
TSS	BOD								Coliform
Aver	mg/l	lbs	mg/l	lbs	Geo. Mean				
WEEK1	3.1	30.1	3.8	39.6	1.0				
WEEK2	3.1	25.7	4.3	37.2	7.0				
WEEK3	5.1	32.1	3.9	23.7	2.0				
WEEK4	2.7	14.1	4.6	24.5	2.0				
WEEK5	2.5	14.2	2.9	15.5	8.0				
MAX	5.1	32.1	4.6	39.6	8.0				

# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Samantha Stoughtenger  
 MAILING ADDRESS: 2009 Radcliffe Road  
 Juneau, AK 99801

FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

PERMIT NUMBER: AK0023213


MONITORING PERIOD: 12/1/2015

TO 12/31/2015

OUTFALL / MONITORING POINT: 001

NO DISCHARGE:  

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Temperature (C)  1 - Final Effluent 00010	Sample meas.	*****	*****		*****	*****	12.2		0		
	Permit reqmt.	*****	*****		*****	*****	Report daily maximum	DEG.C		5X Weekly	Grab
Dissolved Oxygen  1 - Final Effluent 00300	Sample meas.	*****	*****		4.1	*****	7.8		0		
	Permit reqmt.	*****	*****		2.0 daily minimum	*****	17 daily maximum	mg/l		5X Weekly	Grab
Biochemical Oxygen Demand (BOD5)  1 - Final Effluent 00310	Sample meas.	28.1	39.6		*****	3.9	5.4		0		
	Permit reqmt.	690 monthly average	1,380 daily maximum	lbs/day	*****	30 monthly average	60 daily maximum	mg/l		Monthly	24-Hr Composite
Biochemical Oxygen Demand (BOD5)  G - Influent 00310	Sample meas.	1044.5	*****		*****	3.9	*****		0		
	Permit reqmt.	report monthly average	*****	lbs/day	*****	report monthly average	*****	mg/l		Monthly	24-Hr Composite
Biochemical Oxygen Demand (BOD5)  W - See Comments 00310	Sample meas.	*****	39.6		*****	4.6	*****		0		
	Permit reqmt.	*****	1,035 weekly average	lbs/day	*****	45 weekly average	*****	mg/l		Monthly	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <div style="text-align: center; font-family: cursive; font-size: 1.2em;">Jim Westcott</div>	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE  <div style="font-size: 1.2em;">907.586.0393</div>	DATE  <div style="font-size: 1.2em;">12/1/15</div>
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  <div style="text-align: center; font-family: cursive; font-size: 1.5em;">  </div>	AREA   NUMBER	Y   M   D



# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Samantha Stoughtenger  
 MAILING ADDRESS: 2009 Radcliffe Road  
 Juneau, AK 99801

FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

PERMIT NUMBER: AK0023213  
 OUTFALL / MONITORING POINT: 001

MONITORING PERIOD: 12/1/2015 TO 12/31/2015  
 NO DISCHARGE:  

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
pH  1 - Final Effluent 00400	Sample meas.	*****	*****		6.7	*****	7.5		0		
	Permit reqmt.	*****	*****		6.5 minimum	*****	8.5 maximum	S.U.		5X Weekly	Grab
Total Suspended Solids  1 - Final Effluent 00530	Sample meas.	23.3	58.5		*****	3.3	9.2		0		
	Permit reqmt.	690 monthly average	1,380 daily maximum	lbs/day	*****	30 monthly average	60 daily maximum	mg/l		Monthly	24-Hr Composite
Total Suspended Solids  G - Influent 00530	Sample meas.	1025.1	*****		*****	168.0	*****		0		
	Permit reqmt.	report monthly average	*****	lbs/day	*****	report monthly average	*****	mg/l		Monthly	24-Hr Composite
Total Suspended Solids  W - See Comments 00530	Sample meas.	*****	32.1		*****	5.1	*****		0		
	Permit reqmt.	*****	1,035 weekly average	lbs/day	*****	45 weekly average	*****	mg/l		Monthly	24-Hr Composite
Ammonia Nitrogen (as N)  1 - Final Effluent 00610	Sample meas.	*****	*****		*****	2.3	2.3		0		
	Permit reqmt.	*****	*****		*****	14 monthly average	30 daily maximum	mg/l		Monthly	24-Hr Composite

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <div style="text-align: center; font-family: cursive; font-size: 1.2em;">Jim Westcott</div>	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE  <div style="text-align: center; font-family: cursive; font-size: 1.2em;">907.586.0393</div>	DATE  <div style="text-align: center; font-family: cursive; font-size: 1.2em;">10/1/15</div>
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA   NUMBER	Y   M   D

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CONTACT NAME: Samantha Stoughtenger  
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FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

PERMIT NUMBER: AK0023213  
 OUTFALL / MONITORING POINT: 001

MONITORING PERIOD: 12/1/2015

TO 12/31/2015

NO DISCHARGE:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Ammonia Nitrogen (as N)  W - See Comments 00610	Sample meas.	*****	*****		*****	2.3	*****		0		
	Permit reqmt.	*****	*****		*****	21 weekly average	*****	mg/l		Monthly	24-Hr Composite
Copper Total Recoverable  1 - Final Effluent 01119	Sample meas.	*****	*****		*****	*****	7.4		0		
	Permit reqmt.	*****	*****		*****	*****	Report daily maximum	ug/l		Quarterly	24-Hr Composite
Flow  1 - Final Effluent 50050	Sample meas.	0.844	2.024		*****	*****	*****		0		
	Permit reqmt.	2.76 monthly average	6.0 daily maximum	MGD	*****	*****	*****			Continuous	Recorded
Enterococci  1 - Final Effluent 61211	Sample meas.	*****	*****		*****	*****			NA		
	Permit reqmt.	*****	*****		*****	*****	Report daily maximum	cts/100 ml		See Permit Requirements	Grab
Fecal Coliform  1 - Final Effluent 74055	Sample meas.	*****	*****		*****	3.0	8.0		0		
	Permit reqmt.	*****	*****		*****	200 monthly geometric mean	800 daily maximum	cts/100 ml		Weekly	Grab

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <div style="font-family: cursive; font-size: 1.2em; text-align: center;">Jim Westcott</div>	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE  907.586.0593	DATE  12/1/15
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  	AREA   NUMBER	Y   M   D



# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Samantha Stoughtenger  
 MAILING ADDRESS: 2009 Radcliffe Road  
 Juneau, AK 99801

FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

PERMIT NUMBER: AK0023213  
 OUTFALL / MONITORING POINT: 001

MONITORING PERIOD: 12/1/2015

TO 12/31/2015

NO DISCHARGE:  

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Fecal Coliform  W - See Comments 74055	Sample meas.	*****	*****		*****	8.0	*****		0		
	Permit reqmt.	*****	*****		*****	400 weekly average	*****	cts/100 ml		Weekly	Grab
BOD5 Minimum % Removal  K - Percent Removal 81010	Sample meas.	*****	*****		97.6	*****	*****		0		
	Permit reqmt.	*****	*****		85 minimum percent removal	*****	*****	%		Monthly	Calculation
Total Suspended Solids Minimum % Removal  K - Percent Removal 81011	Sample meas.	*****	*****		98.0	*****	*****		0		
	Permit reqmt.	*****	*****		85 minimum percent removal	*****	*****	%		Monthly	Calculation

COMMENTS:  
 W = weekly average;

Mail this report when completed to ADEC, Division of Water, 555 Cordova Street, Anchorage, AK 99501-2617  
 Attach an explanation of any violations. Reference all attachments below.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <div style="text-align: center; font-family: cursive; font-size: 1.2em;">Jim Westcott</div>	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE  <div style="font-family: cursive; font-size: 1.2em;">907-586-0595</div>	DATE  <div style="font-family: cursive; font-size: 1.2em;">11/1/15</div>
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT  <div style="font-family: cursive; font-size: 1.5em;">A. Westcott</div>	AREA   NUMBER	Y   M   D

# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Mark Mow  
 MAILING ADDRESS: 155 S. Seward Street  
 Juneau, AK 99801  
 PERMIT NUMBER: AK0023213


FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

MONITORING PERIOD: 12/1/2015 TO 12/31/2015  
 MONITORING POINT: 004 (N-15.1) (R) Douglas NO DISCHARGE: **X**

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Biochemical Oxygen Demand (BOD5) 1 - Final Effluent 00310 R	Sample meas.				*****						
	Permit reqmt.	Report monthly average	Report daily maximum	lbs/day	*****	Report monthly average	Report daily maximum	mg/l		When Discharging	Grab
Total Suspended Solids 1 - Final Effluent 00530 R	Sample meas.				*****						
	Permit reqmt.	Report monthly average	Report daily maximum	lbs/day	*****	Report monthly average	Report daily maximum	mg/l		When Discharging	Grab
Coliform, fecal MF, M-FC broth, 44.5 C 1 - Final Effluent 31616 R	Sample meas.	*****	*****		*****						
	Permit reqmt.	*****	*****		*****	Report monthly geometric mean	Report daily maximum	cts/100 ml		When Discharging	Grab
Flow 1 - Final Effluent 50050 R	Sample meas.				*****	*****	*****				
	Permit reqmt.	Report monthly average	Report daily maximum	MGD	*****	*****	*****			When Discharging	Recorded
Duration of Discharge 1 - Final Effluent 81381 R	Sample meas.	*****			*****	*****	*****				
	Permit reqmt.	*****	report daily maximum	min/day	*****	*****	*****			When Discharging	Instantaneous Reading
COMMENTS:											

Mail this report when completed to ADEC, Division of Water, 555 Cordova Street, Anchorage, AK 99501-2617

Attach an explanation of any violations. Reference all attachments below.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE	DATE	
MARK F. MOW / SR. OPERATOR TYPED OR PRINTED		 SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	(907) 790-2525 / 1/4/16	Y   M   D
			AREA   NUMBER	



# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Mark Mow  
 MAILING ADDRESS: 155 S. Seward Street  
 Juneau, AK 99801  
 PERMIT NUMBER: AK0023213

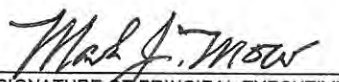
FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

MONITORING PERIOD: 12/1/2015 TO 12/31/2015  
 MONITORING POINT: 002 (N-11) (P) Sta AE NO DISCHARGE: X

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Biochemical Oxygen Demand (BOD5) 1 - Final Effluent 00310 P	Sample meas.			lbs/day	*****			mg/l		When Discharging	Grab
	Permit reqmt.	report monthly average	report daily maximum		*****	report monthly average	report daily maximum				
Total Suspended Solids 1 - Final Effluent 00530 P	Sample meas.			lbs/day	*****			mg/l		When Discharging	Grab
	Permit reqmt.	report monthly average	report daily maximum		*****	report monthly average	report maximum monthly average				
Coliform, fecal MF, M-FC broth, 44.5 C 1 - Final Effluent 31616 P	Sample meas.	*****	*****		*****			cts/100 ml		When Discharging	Grab
	Permit reqmt.	*****	*****		*****	report monthly geometric mean	report daily maximum				
Flow 1 - Final Effluent 50050 P	Sample meas.	*****		MGD	*****	*****	*****			When Discharging	Recorded
	Permit reqmt.	*****	report daily maximum		*****	*****	*****				
Duration of Discharge 1 - Final Effluent 81381 P	Sample meas.	*****		min/day	*****	*****	*****			When Discharging	Recorded
	Permit reqmt.	*****	Report daily maximum		*****	*****	*****				

COMMENTS:

Mail this report when completed to ADEC, Division of Water, 555 Cordova Street, Anchorage, AK 99501-2617  
 Attach an explanation of any violations. Reference all attachments below.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  <i>MARK J. MOW/SR. OPERATOR</i>  TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE <i>(907) 790-2525</i>  AREA   NUMBER	DATE <i>1/4/16</i>  Y   M   D
	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 		

# Alaska Department of Environmental Conservation Monthly Discharge Monitoring Report (DMR)

CONTACT NAME: Mark Mow  
 MAILING ADDRESS: 155 S. Seward Street  
 Juneau, AK 99801  
 PERMIT NUMBER: AK0023213

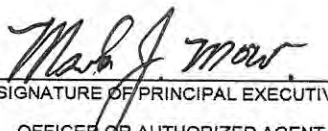
FACILITY: JUNEAU DOUGLAS WW TREATMENT FACILITY  
 LOCATION: 1540 Thane Rd  
 Juneau, AK 99801

MONITORING PERIOD: 12/1/2015 TO 12/31/2015  
 MONITORING POINT: 003 (N11.2) (Q) Sta C NO DISCHARGE: **X**

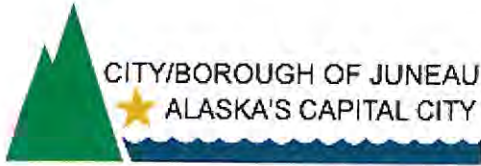
Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
		Average	Maximum		Minimum	Average	Maximum				
Biochemical Oxygen Demand (BOD5)  1 - Final Effluent 00310 Q	Sample meas.				*****						
	Permit reqmt.	Report monthly average	Report daily maximum	lbs/day	*****	Report monthly average	Report daily maximum	mg/l		When Discharging	Grab
Total Suspended Solids  1 - Final Effluent 00530 Q	Sample meas.				*****						
	Permit reqmt.	Report monthly average	Report daily maximum	lbs/day	*****	Report monthly average	Report daily maximum	mg/l		When Discharging	Grab
Coliform, fecal MF, M-FC broth, 44.5 C  1 - Final Effluent 31616 Q	Sample meas.	*****	*****		*****						
	Permit reqmt.	*****	*****		*****	Report monthly geometric mean	Report daily maximum	cts/100 ml		When Discharging	Grab
Flow  1 - Final Effluent 50050 Q	Sample meas.	*****			*****	*****	*****				
	Permit reqmt.	*****	Report daily maximum	MGD	*****	*****	*****			When Discharging	Recorded
Duration of Discharge  1 - Final Effluent 81381 Q	Sample meas.	*****			*****	*****	*****				
	Permit reqmt.	*****	report daily maximum	min/day	*****	*****	*****			When Discharging	Recorded

COMMENTS:

Mail this report when completed to ADEC, Division of Water, 555 Cordova Street, Anchorage, AK 99501-2617  
 Attach an explanation of any violations. Reference all attachments below.

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER  MARK J. MOW / SR. OPERATOR  TYPED OR PRINTED	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	TELEPHONE (907) 790-2525  AREA   NUMBER	DATE 1/24/16  Y   M   D
	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT 		





January 13, 2016

Alaska Department of Environmental Conservation  
610 University Avenue  
Fairbanks, Alaska 99709

Re: Toxicity Test Report Results

To whom it may concern,

I am writing in regards to the enclosed toxicity test results analyzed 8/27/15 as required in our permit under section 1.3.2.1. The test is separate from the second series of tests taken in December due to species availability of the blue mussel and the required larval development test that was not performed at that time. The results of this test are not available at the time of the required submission with the December DMR as required in our permit. The contract lab has not yet reported the final report and will be submitted as soon as it becomes available.

The permit for this facility # AK0023213 was issued on 6/1/2015 and expires 5/31/2020.

Enclosed you will find all pertinent QA/QC and the COC from the receiving laboratory.

Should any further information be required I can be contacted at the 586.5329.

Regards,

Jim Westcott  
Senior Wastewater Treatment Operator

Juneau Douglas Wastewater Treatment Facility  
1540 Thane Rd.  
Juneau, AK 99801



**BIO-AQUATIC TESTING, INC.**  
 2501 MAYES RD., STE. 100  
 CARROLLTON, TX 75006  
 PH: 972-242-7750 FAX: 972-242-7749

# CHAIN OF CUSTODY

Bio Only  
 No Sample Left

Lab Id : **60421**

Please Fill Out C-O-C by Completing Sections A, B, & C.

P.O. No:

Client: Juneau, City and Borough of

Facility: Douglas WWTF

Permit No: AK0023213 Outfall: 001

Client Contact: Karen Sewell /

Client Phone: 907-586-0393

**A.1** Check Sample # For Chronic and 48 Hour Acute Tests :  First,  Second, or  Third.

Check the type of test(s) required, if different from the Scheduled Test(s) in "A":

**A.** SCHEDULED TEST(S):

Fertilization	Dendraster excentricus	To Ship the 1st Sample on:

Dilution Series: 1.25 2.5 5 10 20

Include Semi-annual 24hr Acute Test?  No

C. dubia (water flea)	D. pulex (water flea)	D. magna (water flea)	P. promelas (minnow)	M. bahia (shrimp)	M. beryllina (minnow)	Dendraster Excentricus (Sand Dollar)
<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input checked="" type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour

Notes: Annual Fertilization Test (BG)  
 Dendraster excentricus or Strongylocentrotus purpuratus

**B.**

Sample ID or Location: (Outfall No. or Name)	Sample Type: E = Effluent RS = Rec. Stream S = Sediment	Sample Date		Sample Time (military)		Grab or Composite	Sampled By: (Sign and Print Name)	Number Of Containers Shipped
		From	To	From	To			
1 <u>AK0023213</u>	<u>RECEIVING WATERS</u>	<u>E/26/15</u>		<u>0615</u>		<u>Grab</u>	<u>J. WESTCOTT / L. VANSEN</u>	<u>1</u>
2								
3								

**C.**

Relinquished By:	Date	Time	Received By:	Date	Time
1 <u>Jim Westcott</u>	<u>E/26/15</u>	<u>0615</u>	<u>Richard [Signature]</u>	<u>E/26/15</u>	<u>8:15</u>
2					
3					

Bio-Aquatic Sample Login		Effluent Parameters:				Receiving Stream Parameters:			
Date:	Time:	Temp: (C)	pH:	Int. Sal: ppt	Temp: (C)	pH:	Int. Sal: ppt		
Analyst:	IR Gun#:	Cl <sub>2</sub> <sup>-</sup> : mg/l	DO: mg/l	Adj. Sal: ppt	Cl <sub>2</sub> <sup>-</sup> : mg/l	DO: mg/l	Adj. Sal: ppt		
Dilution Water: <input checked="" type="radio"/> Receiving Stream <input type="radio"/> Synthetic Lab		Condition:	Ammonia:	Other:	Condition:	Ammonia:	Other:		
Ammonia: <input checked="" type="radio"/> Yes <input type="radio"/> No	Dechlor. <input type="radio"/> Yes <input checked="" type="radio"/> No								





**Bio-Aquatic Testing, Inc.**



TCEQ TNi Accredited

**City and Borough of Juneau  
Douglas WWTF  
OUTFALL 001**

**Fertilization Biomonitoring Report**

**60421**

*Dendraster excentricus*

**August 27, 2015**

Approved by Chris Robinson

*Bio-Aquatic Testing, Inc. ♦ 2501 Mayes Rd. Ste. 100 ♦ Carrollton, Texas ♦ 75006*

**BIO-AQUATIC TESTING, INC.**

2501 Mayes Road, Suite 100  
Carrollton, Texas 75006  
Tel: (972) 242-7750  
Fax: (972) 242-7749

TOXICITY TEST REPORT - Fertilization

---

Client: Juneau, City and Borough of	Sample: 001
Facility: Douglas WWTF	Laboratory Number: 60421
Permit No. AK0023213	Date: August 27, 2015

*Dendraster excentricus* passed fertilization testing requirements. TUc= 10.0

---

SAMPLE COLLECTION:

A composite effluent sample from the City and Borough of Juneau, Douglas WWTF, was transported to Bio-Aquatic Testing via Federal Express. The sample was received on August 27, 2015. The effluent sample was collected from Outfall 001 by facility personnel.

The effluent sample was analyzed for total residual chlorine using the Hanna Ion Specific Meter #711 and contained <0.10 mg/L. Effluent and laboratory dilution water pH, temperature, salinity, and dissolved oxygen data were collected daily.

TEST PROCEDURES: EPA METHOD: 1008.0

*Dendraster excentricus*

The *Dendraster excentricus* fertilization test was initiated at 14:38 hours on August 27, 2015. Five concentrations of 1.25%, 2.5%, 5%, 10% and 20% were prepared utilizing the receiving stream (Gastineau Channel) as dilution water. The test was set up with 10mL sterile glass test tubes containing 5mL of test solution. Each effluent concentration included four replicate test tubes with the appropriate egg to sperm ratios in each replicate. Test organisms were ordered from an outside source and were delivered on the day of the actual test. All gametes were collected within 4 hours of test initiation. Sperm from 3 males were checked for viability and motility before being pooled for the test. Eggs from 2 females were checked for viability and deformities before being pooled for use in the tests. The test proceeded for 42 minutes. Sperm initiation took place at 14:38 hours, and the eggs were added exactly 20 minutes later at 14:58. Data on fertilization results was collected within 24 hours of test termination. Test termination was accomplished by adding 0.5mL of a 0.02% gluteraldehyde solution. A reference toxicant test of four replicate test tubes per dilution, also containing the appropriate egg to sperm ratio, was conducted concurrently with the effluent test. The gametes were the same for both tests, and the reference toxicant test was initiated following the same test procedures discussed above. Copper chloride was used as the reference toxicant. There was 90.0% fertilization in the control. The test ended at 15:20 hours on August 27, 2015. Fertilization data was statistically (p=0.05) analyzed according to EPA procedures to determine the Lowest Observable Effect Concentration (LOEC) and the No Observable Effect Concentration (NOEC).

Sperm to egg ratio: approximately 1,428:1  
Sperm count: approximately 2,000,000 per 0.1mL added to each tube  
Egg count: approximately 1,400 per 1 mL added to each tube



**BIO-AQUATIC TESTING, INC.**

**Fertilization *Dendraster excentricus* TOXICITY TEST**

Client: Juneau, City and Borough of Douglas WWTF

Lab ID: 60421

Permit Number: NPDES AK0023213

Test Temperature (oC): 12 ± 1

Sample Type: Composite      Outfall Name: 001

Photo Period: Continuous

Receiving Water Name: Gastineau Channel

Begin Date: 8/27/2015

Test Start Time:

Test End Time:

End Date: 08/27/2015

Sperm Addition:

Egg Addition:

Effluent  
Con.  
%

**FERTILIZATION**

		Total Egg Count	# Fertilized	Proportion Fertilized		%CV
TCON	A	100	90	0.90	Avg Count	1.9
	B	100	89	0.89	90	
	C	100	88	0.88	Avg Proportion	
	D	100	92	0.92	0.90	
PCON	A	100	90	0.90	Avg Count	1.9
	B	100	87	0.87	89	
	C	100	89	0.89	Avg Proportion	
	D	100	91	0.91	0.89	
1.25	A	100	93	0.93	Avg Count	3.1
	B	100	87	0.87	90	
	C	100	91	0.91	Avg Proportion	
	D	100	88	0.88	0.90	
2.5	A	100	87	0.87	Avg Count	1.8
	B	100	89	0.89	89	
	C	100	89	0.89	Avg Proportion	
	D	100	91	0.91	0.89	
5	A	100	91	0.91	Avg Count	1.9
	B	100	90	0.90	89	
	C	100	89	0.89	Avg Proportion	
	D	100	87	0.87	0.89	

BIO-AQUATIC TESTING, INC.

FERTILIZATION

Organism: Dendroaster excentricus Fertilization \_\_\_\_\_ Outfall: 001  
 Client: Juneau, City and Borough of Douglas WWTF Lab ID: 60421  
 Start Date/Time: Date: 8-27-15 Time: 1438 Technician: CA Sperm Addition Time: 1438  
 End Date/Time: Date: 8-27-15 Time: 1520 Technician: CA Eggs Addition Time: 1458  
 Culture No. : De 082715 RANDOMIZATION: RS-4 0

TEST INSTRUCTIONS:

CONCENTRATION	REPLICATE	# EGGS COUNTED	# EGGS FERTILIZED
TCON	A	<del>CA</del> 90 100	90
	B	100	89
	C	100	88
	D	100	92
PCON	A	100	90
	B	100	87
	C	100	89
	D	100	91
1.25	A	100	93
	B	100	87
	C	100	91
	D	100	88
2.5	A	100	87
	B	100	89
	C	100	89
	D	100	91
5	A	100	91
	B	100	90
	C	100	89
	D	100	87
10	A	100	86
	B	100	89
	C	100	87
	D	100	87
20	A	100	83
	B	100	80
	C	100	85
	D	100	83
EGG BLANK	A	100	∅
	B	100	∅
EFFLUENT BLANK	A	100	∅
	B	100	∅

Lined through spaces preceded by a number represent the same number. Lined spaces without a preceding number indicate unused or not applicable spaces.



**ORGANISM EVALUATION & SPERM OPTIMIZATION**

Organism: Dendraster excentricus Fertilization

Related Lab IDs: 60671, 60421

**SPAWNING RECORD:** Circle organisms used for pooling gametes

NO.	SEX	TIME SPAWNED**	APPEARANCE OF GAMETES
①	M	1245	creamy yellow, high volume, motile
①	F	1246	high volume, good shape/color, no immature or fert
2	M	1249	off white, low volume, debris
②	F	1251	high volume, good shape/color, no immature or fert
3	F	1253	good volume, no fert, some immature
3	M	1255	off white, low volume, debris
4	F	1256	low clumpy volume, no immature, no fert
④	M	1258	creamy yellow, high volume, motile
5	F	1259	low volume, debris, no fert, some immature
⑤	M	1301	creamy yellow, high volume, motile
6	M	1303	creamy off white, medium volume, motile
6	F	1305	good volume, several misshapen, no fert

\*\*Note: Do NOT collect gametes past the first fifteen minutes of spawning.

**SPERM TRIAL:** Circle Sperm/Egg Ratio Chosen

uL of Sperm Stock Added	Target S:E	Nominal Sperm Conc.	Fertilization after 65 minutes			Actual Sperm Concentration
			# Counted	# Fertilized	% Fertilized	
6 uL	150	$3 \times 10^5$				
10 uL	250	$5 \times 10^5$				
20 uL	500	$1 \times 10^6$				
40 uL	1000	$2 \times 10^6$				
60 uL	1500	$3 \times 10^6$				
80 uL	2000	$4 \times 10^6$				
100 uL	2500	$5 \times 10^6$				

**ADDITIONAL NOTES:**

egg count: diluted 1:10, counted 281 → 2810 eggs/ml  
 diluted 1:2 for test, count → 1,400 eggs/ml  
 sperm count: diluted 1:100 for count (initial)  
 counted 258 in 5 squares →  $1.29 \times 10^9$  pooled count  
 diluted 1:100 for test  
 definitive count:  $2.0 \times 10^6$

60421.OUT

Fertilization  
File: 60421.def Transform: ARC SINE(SQUARE ROOT(Y))

Shapiro - wilk's test for normality

D = 0.017

W = 0.967

Critical W (P = 0.05) (n = 24) = 0.916

Critical W (P = 0.01) (n = 24) = 0.884

Data PASS normality test at P=0.01 level. Continue analysis.

Fertilization  
File: 60421.def Transform: ARC SINE(SQUARE ROOT(Y))

Bartlett's test for homogeneity of variance  
Calculated B1 statistic = 2.37

Table Chi-square value = 15.09 (alpha = 0.01, df = 5)  
Table Chi-square value = 11.07 (alpha = 0.05, df = 5)

Data PASS B1 homogeneity test at 0.01 level. Continue analysis.

Fertilization  
File: 60421.def Transform: ARC SINE(SQUARE ROOT(Y))

ANOVA TABLE

SOURCE	DF	SS	MS	F
Between	5	0.032	0.006	6.977
Within (Error)	18	0.017	0.001	
Total	23	0.048		

Critical F value = 2.77 (0.05,5,18)  
Since F > Critical F REJECT Ho: All equal

Fertilization  
File: 60421.def Transform: ARC SINE(SQUARE ROOT(Y))

DUNNETT'S TEST - TABLE 1 OF 2 Ho: Control < Treatment

GROUP	IDENTIFICATION	TRANSFORMED MEAN	MEAN CALCULATED IN ORIGINAL UNITS	T STAT	SIG
1	TCON	1.246	0.898		
2	1.25	1.247	0.898	-0.061	
3	2.5	1.233	0.890	0.576	



60421

# Bio-Aquatic Testing, Inc.

## SALT WATER TEST SETUP FORM

Client: Juneau, City and Borough of

Permit AK0023213

Facility: Douglas WWTF

Lab Number 60421

Outfall Name: 001

Number of samples 1

Dilution Water: Receiving Stream

Receiving Water Name: Gastineau Channel

Dechlorinate Sample: No

Sx #	Rcvd Date	Rcvd Time	Sampling Dates		Sampling Times	
			Begin Date	End Date	Start	End
1	08/27/15	10:45	08/25/15	08/26/15	08:35	07:15

**Type of Test(s)**

Dendroaster excentricus Fertilization

\_\_\_\_\_

Start Sx # 1 Date: 8/27/2015

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Renew Sx # \_\_\_\_\_ Date: \_\_\_\_\_

Test Start Date: 8/27/2015 Test End Date: 8/27/2015

Controls: TCON

pH Match: \_\_\_\_\_

Hardness Match: moderate

Dendroaster Test Set Up: 4 Reps & Organisms per Rep

Test Set Up: \_\_\_\_\_

Concentrations: 1.25 2.5 5 10 20 % LF % 5

Test Chemistry on these dilutions: 1.25 2.5 5 10 20

- Samples received by:**
- Greyhound
  - UPS Next Day
  - Delta Dash
  - Delta
  - Pony Express
  - Client Delivered
  - Southwest Airlines
  - DHL
  - Federal Express
  - American Airlines
  - Bio Pick Up

Other: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# BIO-AQUATIC TESTING, INC.

pH, Dissolved Oxygen, Salinity

Fertilization

*Dendraster excentricus*

Client: Juneau, City and Borough of

Lab Number: 60421

Facility: Douglas WWTF

Dilution Water(s): Receiving Stream

Outfall: 001

Test Begin Date: August 27, 2015

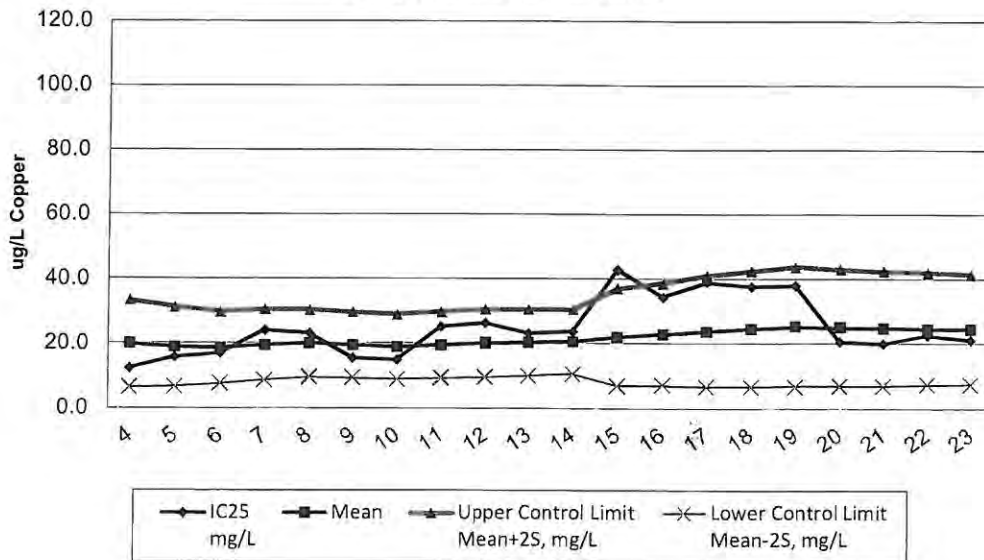
ANALYST	DATE	TIME	SX#	UNIT	%	Concentration							
						TCON	1.25	2.5	5	10	20		
JH	8/27	Start	1	pH		7.9	7.9	7.9	7.9	7.9	7.9		
				DO (mg/L)		7.3	7.4	7.5	7.5	7.6	7.6		
				Salinity (ppt)		33.4	33.4	33.4	33.3	33.0	32.5		



**REFERENCE TOXICANT STATISTICAL RESULTS: IC25 AND CONTROL LIMITS**  
*Strongylocentrotus purpuratus* or *Dendraster excentricus* Gametes EXPOSED TO COPPER CHLORIDE, 40 Min Ex

Test Number	Date	Project Number	Toxicant Lot Number	Statistical Method	IC25 mg/L	Mean	Twice Standard Deviation 2S	Upper Control Limit Mean+2S, mg/L	Lower Control Limit Mean-2S, mg/L	Cumulative CV%
4	6/28/2006	30111	604609	ICPIN	12.3	19.8	13.5	33.3	6.3	34.0
5	11/7/2007	36858	604609	ICPIN	15.6	19.0	12.2	31.2	6.7	32.3
6	7/2/2008	39432	P889164	ICPIN	17.0	18.6	11.1	29.7	7.6	29.7
7	6/30/2009	41643	P889164	ICPIN	24.0	19.4	10.9	30.3	8.5	28.0
8	12/9/2009	42295	P889164	ICPIN	23.1	19.9	10.4	30.3	9.5	26.2
9	6/4/2010	43919	909003	ICPIN	15.4	19.4	10.2	29.5	9.2	26.3
10	12/15/2010	43920	909003	ICPIN	14.8	18.9	10.0	28.9	8.9	26.5
11	6/9/2010	48395	909003	ICPIN	25.1	19.5	10.2	29.7	9.3	26.2
12	9/20/2011	49180	909003	ICPIN	26.2	20.0	10.5	30.5	9.6	26.2
13	10/21/2011	49382	909003	ICPIN	23.0	20.3	10.2	30.4	10.1	25.1
14	11/5/2011	49767	909003	ICPIN	23.6	20.5	9.9	30.4	10.6	24.2
15	12/7/2011	49964	909003	ICPIN	42.9	22.0	15.0	37.0	7.0	34.1
16	6/7/2012	51183	909003	ICPIN	34.4	22.8	15.8	38.5	7.0	34.6
17	12/19/2012	53547	909003	ICPIN	38.9	23.7	17.2	40.9	6.6	36.2
18	6/19/2013	54174	909003	ICPIN	37.7	24.5	17.9	42.4	6.6	36.5
19	12/12/2013	56391	909003	ICPIN	38.0	25.2	18.5	43.7	6.7	36.6
20	5/20/2014	57155	909003	ICPIN	20.6	25.0	18.1	43.1	6.9	36.2
21	12/3/2014	57740	909003	ICPIN	20.1	24.7	17.8	42.5	7.0	35.9
22	6/18/2015	60455	M4360	ICPIN	22.5	24.6	17.4	42.0	7.3	35.2
23	8/27/2015	60671	126504	ICPIN	21.2	24.5	17.0	41.5	7.5	34.8

**Fertilization Control Chart**



# CHAIN-OF-CUSTODY SHEETS

## Appendix D





**BIO-AQUATIC TESTING, INC.**  
 2501 MAYES RD., STE. 100  
 CARROLLTON, TX 75006  
 PH: 972-242-7750 FAX: 972-242-7749

# CHAIN OF CUSTODY

Bio Only  
 No Sample Left

Lab Id :

60421

Please Fill Out C-O-C by Completing Sections A, B, & C.

P.O. No:

**A.1** Check Sample # For Chronic and 48 Hour Acute Tests :  First,  Second, or  Third.

Check the type of test(s) required, if different from the Scheduled Test(s) in "A":

C. dubia (water flea)	D. pulex (water flea)	D. magna (water flea)	P. promelas (minnow)	M. bahia (shrimp)	M. beryllina (minnow)	Dendroster excentricus (Sand Dollar)
<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour	<input checked="" type="checkbox"/> Chronic <input type="checkbox"/> 96 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 24 Hour

Notes: Annual Fertilization Test (BG)  
 Dendroster excentricus or Strongylocentrotus purpuratus

Client: Juneau, City and Borough of

Facility: Douglas WWTF

Permit No: AK0023213 Outfall: 001

Client Contact: Karen Sewell /

Client Phone: 907-586-0393

**A.** SCHEDULED TEST(S):

Fertilization	Dendroster excentricus
---------------	------------------------

To Ship the 1st Sample on:

Dilution Series: 1.25 2.5 5 10 20

Include Semi-annual 24hr Acute Test?  No

Sample ID or Location: (Outfall No. or Name)	Sample Type: E = Effluent RS = Rec. Stream S = Sediment	Sample Date		Sample Time (military)		Grab or Composite	Sampled By: (Sign and Print Name)	Number Of Containers Shipped
		From	To	From	To			
1 AK0023213	RECEIVING WATERS	E/26/15		0615		Grab	J. WESTCOTT / L. VANZYL	1
2								
3								

	Relinquished By:		Date		Time		Received By:		Date		Time	
1	Jim Westcott		E/26/15		0615		Richard [Signature]		E/26/15		8:15	
2												
3							Chris		8-27-15		1045	

**Bio-Aquatic Sample Login**

Date: 8-27-15 Time: 1045  
 Analyst: [Signature] IR Gun#: 002  
 Dilution Water:  Receiving Stream  Synthetic Lab  
 Ammonia:  Yes  No Dechlor.  Yes  No

**Effluent Parameters:**

Temp: (C) pH: 7.7 Int. Sal: ppt  
 Cl<sub>2</sub>: mg/l DO: mg/l Adj. Sal: ppt  
 Condition: Ammonia: Other:

**Receiving Stream Parameters:**

Temp: 5.3 (C) pH: 7.7 Int. Sal: 136 ppt  
 Cl<sub>2</sub>: 20.1 mg/l DO: 9.9 mg/l Adj. Sal: 33 ppt  
 Condition: Ammonia: Other:

Report Date: 10/02/2015 Revision: 0

Z1 01 23

Bio Aquatic Lab ID: 0042

BIOMONITORING REPORT

*Dendraster excentricus* FERTILIZATION TEST

Permittee: Juneau, City and Borough of - Douglas WWTF

Permit No.: AK0023213

Outfall No.: 001

Dates and times Composites were collected: FROM: 8/25/2015 @ 08:35 TO: 8/26/2015 @ 07:15

Test Initiation: Time: 14:38 Date: 8/27/2015  
 Dilution Water Used:  Receiving Water  Synthetic Dilution Water

DATA TABLE FOR FERTILIZATION OF *Dendraster excentricus*

Effluent Concentration	Proportion Fertilized per replicate				Average Proportion Fertilized	Mean	CV %
	A	B	C	D			
TCON	90	89	88	92	89.8	0.90	1.9
PCON	90	87	89	91	89.3	0.89	1.9
1.25 %	93	87	91	88	89.8	0.90	3.1
2.5 %	87	89	89	91	89.0	0.89	1.8
5 %	91	90	89	87	89.3	0.89	1.9
10 %	86	89	87	87	87.3	0.87	1.4
20 %	83	80	85	83	82.8	0.83	2.5
PMSD							3.7 %

Note: CV% = (Stdev/Mean) \*100

1. Enter the percent effluent corresponding to each NOEC/LOEC below:
  - a. NOEL FERTILIZATION = 10 % Effluent
  - b. LOEL FERTILIZATION = 20 % Effluent
  - c. TOXIC UNITS VALUE = 10 NOEC Based

Q\* refers to a value that is not calculable