Admiralty ENVIRONMENTAL 641 W. Willoughby Ave., Suite 301 Juneau, AK 99801 (907) 463-4415

Chris O'Brien
1873 Shell Simmons Dr.
Suite 200
Juneau, AK 99801

December 6, 2022

JNU International Airport Stormwater Sampling

Date of Collection: November 21, 2022
Sampling Location: Juneau, Alaska

Summary

Size samples from the Juneau International Airport were received at Admiralty Environmental, Juneau, AK on November 21, 2022.

The samples were analyzed for biochemical oxygen demand, chemical oxygen demand, and pH. Samples were forward to Microbac Laboratories, Merillville, IN for analysis of ammonia. The parameter of pH was received past holding time. All other laboratory acceptance criteria were met for all samples.

A complete report of the final lab results is enclosed. The official laboratory report follows this letter, and includes the analytical results, case narrative, chain of custody form, and cooler receipt form.

Kind Regards,

Diana Cote
Admiralty Environmental

Admiralty ENVIRONMENTAL
641 W. Willoughby Ave., Suite 301 Juneau, AK 99801 (907) 463 - 4415
www.admiraltyenvironmental.com

Juneau International Airport

Permit AKR06AD42 Compliance

November 21, 2022

Juneau, AK

Analytical Report

Admiralty Environmental EPA ID AK 00976

AE 30921

Sample Location	3 Upper Duck Ck	6 Terminal Area Discharge	9 NE Development Area Outlet	10 Twy G Culvert	16 Pond Discharge to River	11 Jordan Creek Culvert Outlet
Date & Time Sampled	11/21/2022; 13:45	11/21/2022; 14:00	11/21/2022; 14:07	11/21/2022; 14:13	11/21/2022; 14:23	11/21/2022; 14:32
BOD (mg/L)	<4.0	<4.0	<4.0	<4.0	10	<4.0
COD (mg/L)	<15	15	<15	<15	32	17
pH (S.U.)	6.33	7.25	7.20	7.31	7.37	7.03

Quality Control:

Analysis	MB	LCS	LCS Duplicate	RPD	Date/Time Commenced	Holding time met
BOD	<2.0	81.1%	79.3%	2.2	11/23/2022; 08:16	Yes
COD	<4.0	103.2%	104.2%	1.0	12/01/2022; 11:21	Yes
pH	---	---	---	---	11/21/2022; 16:02	No

Case Narrative:

The parameter of pH was received past holding time and analyzed upon laboratory receipt. All other sample analysis QA/QC parameters were met for this event.

Analysis Description:

Analysis	Method	MDL	PQL	Unit
BOD	EPA 405.1	2.0	2.0	mg/L
COD	SM 5220D	4.0	15	mg/L
pH	EPA 150.1	0.10	0.1	pH units

Key:

BOD	Biochemical Oxygen Demand	ND	Not Detected
COD	Chemical Oxygen Demand	PQL	Practical Quantitation Limit
LCS	Laboratory Control Standard	RPD	Relative Percent Difference
MB	Method Blank	NH3	Ammonia as N
MDL	Method Detection Limit	mg/L	Milligrams Per Liter

David Wetzel
CTO, Admiralty Environmental
dwetzel@admiraltyenv.com

Microbac Laboratories, Inc. - Chicagoland

CERTIFICATE OF ANALYSIS

22L0127

Project Description

Juneau International Airport/AE 30921

For:

David Wetzel

Admiralty Environmental, LLC

641 W Willoughby AVE STE 301

Juneau, AK 99801

Carey Gadzala

Project Manager

Monday, December 5, 2022

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc. - Chicagoland. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

Microbac Laboratories, Inc. - Chicagoland

CERTIFICATE OF ANALYSIS

22L0127

Admiralty Environmental, LLC

David Wetzel
641 W Willoughby AVE STE 301
Juneau, AK 99801

Project Name: Juneau International Airport/AE 30921
Project / PO Number: N/A
Received: 12/02/2022
Reported: 12/05/2022

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
3 - Upper Duck Creek - 2	22L0127-01	Aqueous			11/21/22 13:45	12/02/22 10:00
6 - Terminal Area Discharge	22L0127-02	Aqueous			11/21/22 14:00	12/02/22 10:00
9 - NE Development Area Outlet	22L0127-03	Aqueous			11/21/22 14:07	12/02/22 10:00
10 - Twr Culvert	22L0127-04	Aqueous			11/21/22 14:13	12/02/22 10:00
16 - Pond Discharge to River	22L0127-05	Aqueous			11/21/22 14:23	12/02/22 10:00
11 - Jordan Creek Culvert Outlet	22L0127-06	Aqueous			11/21/22 14:32	12/02/22 10:00

Analytical Testing Parameters

Client Sample ID: 3 - Upper Duck Creek - 2
Sample Matrix: Aqueous
Lab Sample ID: 22L0127-01 **Collection Date:** 11/21/2022 13:45

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1042	12/05/22 1405	MTF

Client Sample ID: 6 - Terminal Area Discharge
Sample Matrix: Aqueous
Lab Sample ID: 22L0127-02 **Collection Date:** 11/21/2022 14:00

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1042	12/05/22 1407	MTF

Client Sample ID: 9 - NE Development Area Outlet
Sample Matrix: Aqueous
Lab Sample ID: 22L0127-03 **Collection Date:** 11/21/2022 14:07

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1042	12/05/22 1411	MTF

Client Sample ID: 10 - Twr Culvert
Sample Matrix: Aqueous
Lab Sample ID: 22L0127-04 **Collection Date:** 11/21/2022 14:13

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1042	12/05/22 1412	MTF

Client Sample ID: 16 - Pond Discharge to River
Sample Matrix: Aqueous
Lab Sample ID: 22L0127-05 **Collection Date:** 11/21/2022 14:23

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1126	12/05/22 1423	MTF

Client Sample ID:	11 - Jordan Creek Culvert Outlet		
Sample Matrix:	Aqueous		
Lab Sample ID:	22L0127-06	**Collection Date:**	11/21/2022 14:32

Inorganics Total	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 350.1 Rev 2.0/EPA 350.1, Rv. 2 (1993)								
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L	1		12/05/22 1126	12/05/22 1429	MTF

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 350.1, Rv. 2 (1993)	B209466	B209466-BLK1	
		B209466-BS1	
		B209466-MS1	22L0001-01
		B209466-MSD1	22L0001-01
		B209466-MS2	22L0002-01
		B209466-MSD2	22L0002-01
		22L0127-01	3 - Upper Duck Creek - 2
		22L0127-02	6 - Terminal Area Discharge
		22L0127-03	9 - NE Development Area Outlet
		22L0127-04	10 - Twr Culvert

Method	Batch	Laboratory ID	Client / Source ID
EPA 350.1, Rv. 2 (1993)	B209472	B209472-BLK1	
		B209472-BS1	
		22L0127-05	16 - Pond Discharge to River
		B209472-MS1	22L0127-05
		B209472-MSD1	22L0127-05
		22L0127-06	11 - Jordan Creek Culvert Outlet
		B209472-MS2	22L0127-06
		B209472-MSD2	22L0127-06

Batch Quality Control Summary: Microbac Laboratories, Inc. - Chicagoland

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B209466 - NH3PR_W - EPA 350.1, Rv. 2 (1993)										
Blank (B209466-BLK1)			Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L							
LCS (B209466-BS1)			Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.08	0.10	mg/L	2.0		104	90-110			
Matrix Spike (B209466-MS1)	**Source: 22L0001-01**		Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.44	0.10	mg/L	2.0	0.423	101	90-110			
Matrix Spike (B209466-MS2)	**Source: 22L0002-01**		Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.02	0.10	mg/L	2.0	ND	101	90-110			
Matrix Spike Dup (B209466-MSD1)	**Source: 22L0001-01**		Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.42	0.10	mg/L	2.0	0.423	99.9	90-110	0.691	20	
Matrix Spike Dup (B209466-MSD2)	**Source: 22L0002-01**		Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.04	0.10	mg/L	2.0	ND	102	90-110	0.734	20	
Batch B209472 - NH3PR_W - EPA 350.1, Rv. 2 (1993)										
Blank (B209472-BLK1)			Prepared & Analyzed: 12/05/2022							

Inorganics Total	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B209472 - NH3PR_W - EPA 350.1, Rv. 2 (1993)										
Blank (B209472-BLK1)			Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	<0.10	0.10	mg/L							
LCS (B209472-BS1)			Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.09	0.10	mg/L	2.0		105	90-110			
Matrix Spike (B209472-MS1)		**Source: 22L0127-05**	Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	1.96	0.10	mg/L	2.0	ND	98.2	90-110			
Matrix Spike (B209472-MS2)		**Source: 22L0127-06**	Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.08	0.10	mg/L	2.0	0.0726	101	90-110			
Matrix Spike Dup (B209472-MSD1)		**Source: 22L0127-05**	Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.05	0.10	mg/L	2.0	ND	102	90-110	4.12	20	
Matrix Spike Dup (B209472-MSD2)		**Source: 22L0127-06**	Prepared & Analyzed: 12/05/2022							
Nitrogen, Ammonia (As N)	2.01	0.10	mg/L	2.0	0.0726	96.9	90-110	3.54	20	

Definitions

DF:	Dilution Factor representing the amount the sample was diluted during analysis and may not represent preparation factors.
mg/L:	Milligrams per Liter
RL:	Reporting Limit
RPD:	Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 1.8°C

Cooler Inspection Checklist

Ice Present or not required?	Yes	Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes	Chain of Custody (COC) Present?	Yes
COC includes customer information?	Yes	Relinquished and received signature on COC?	Yes
Sample collector identified on COC?	Yes	Sample type identified on COC?	Yes
Correct type of Containers Received	Yes	Correct number of containers listed on COC?	Yes
Containers Intact?	Yes	COC includes requested analyses?	Yes
Enough sample volume for indicated tests received?	Yes	Sample labels match COC (Name, Date & Time?)	Yes
Samples arrived within hold time?	Yes	Correct preservatives on COC or not required?	Yes
Chemical preservations checked or not required?	Yes	Preservation checks meet method requirements?	Yes
VOA vials have zero headspace, or not recd.?	Yes		

Report Comments

Reviewed and Approved By:

Carey Gadzala
Project Manager
carey.gadzala@microbac.com
12/05/2022 18:37

Admiralty ENVIRONMENTAL

Admiralty Environmental
641 W. Willoughby Ave., Suite 301
Juneau, AK 99801
(907) 463-4415

CHAIN OF CUSTODY/TRANSMITTAL RECORD
PAGE 1 OF 1

Admiralty - Juneau, AK
PM: Carey Gadzala

22L0127

AE 30921

CLIENT: Juneau International Airport

Stormwater Sampling
MSGP ADEC Compliance

REPORT TO: Chris O'Brien	PHONE#: 954-999-2357
ADDRESS: 1873 Shell Simmons Drive Suite 200, Juneau AK 99801 Juneau, AK 99801	SAMPLED BY:
EMAIL: christopher.obrien@jnuairport.com, pam.chapin@jnuairport.com	
BILL TO: christopher.obrien@jnuairport.com, pam.chapin@jnuairport.com	

DATE	TIME	SITE DESCRIPTION /IDENTIFIER	MATRIX	# OF BOTTLES	Ammonia	FIELD RESULTS pH	Temp			
11/21/22	1345	(3) Upper Duck Creek -2	H_2O	1	1					-01
11/21/22	1400	(6) Terminal Area discharge	H_2O	1	1					-02
11/21/22	1407	(9) NE. Development area outlet	H_2O	1	1					-03
11/21/22	1413	(10) Twin 6" Culvert	H_2O	1	1					-04
11/21/22	1423	(16) Pond discharge to river	H_2O	1	1					-05
11/21/22	1432	(11) Jordan Creek Culvert outlet	H_2O	1	1					-06

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Chris O'Brien	Signature: Nora Harper	Signature: Nora Harper	Signature:
Printed Name: Chris O'Brien	Printed Name: Nora Harper	Printed Name: Nora Harper	Printed Name:
Date: 11/21/22	Date: 11/21/22	Date: 11/30/22	Date: 12/2/22
Time: 3:19 PM	Time: 1519	Time: 0832	Time: 1015

Section to Be Completed by Receiving Laboratory

Temp °C:	3.13			1.8°C
Thermo ID#:	Lab #7			IR#4
Condition of Custody Seals:	✓			✓
Initialed By:	NH			DOR
Shipped Via:	—			FE

Admiralty Environmental
641 W. Willoughby Ave., Suite 301
Juneau, AK 99801
(907) 463-4415

CHAIN OF CUSTODY/TRANSMITTAL RECORD

CLIENT: **Juneau International Airport**

Stormwater Sampling
MSGP ADEC Compliance

AE 30921

REPORT TO: Chris O'Brien | PHONE#: 954-999-2357

ADDRESS: 1873 Shell Simmons Drive, Suite 200, Juneau AK 99801, Juneau, AK 99801 | SAMPLED BY:

EMAIL: christopher.obrien@jnuairport.com, pam.chapin@jnuairport.com

BILL TO: christopher.obrien@jnuairport.com, pam.chapin@jnuairport.com

DATE	TIME	SITE DESCRIPTION /IDENTIFIER	MATRIX	# OF BOTTLES	pH, BOD	COD	Ammonia										FIELD RESULTS pH	FIELD RESULTS Temp		
11/21/22	1345	(3) Upper Duck creek -2	H_2O	3	1	1	1													
11/21/22	1400	(6) Terminal Area discharge	H_2O	3	1	1	1													
11/21/22	1407	(9) N.E. Development area outlet	H_2O	3	1	1	1													
11/21/22	1413	(10) Twin Culvert	H_2O	3	1	1	1													
11/21/22	1423	(16) Pond discharge to river	H_2O	3	1	1	1													
11/21/22	1432	(11) Jordan Creek Culvert outlet	H_2O	3	1	1	1													

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature: Chris O'Brien	Signature: Nora Harper	Signature:	Signature:
Printed Name: Chris O'Brien	Printed Name: Nora Harper	Printed Name:	Printed Name:
Date: 11/21/22	Date: 11/21/22	Date:	Date:
Time: 3:19 PM	Time: 1519	Time:	Time:

Section to Be Completed by Receiving Laboratory

Temp °C:	3.13			
Thermo ID#:	Lab#7			
Condition of Custody Seals:	✓			
Initialed By:	NH			
Shipped Via:	—			

Admiralty Environmental Cooler Receipt Form

Lab: **Admiralty Environmental, LLC**
Client: **Juneau International Airport** AE# AE 30921

Date Opened: **11/21/2022** Opened by: **N. Harper**

A. External Cooler Conditions

• Local Sampling Event

1. Project ID: **Stormwater**

2. COC Attached? **yes** Properly Completed? **yes** Signed by AE employee? **yes**

Small Temp. Blank **3.13** (temp in Celsius)
Large Temp. Blank: **n/a** (temp in Celsius)

• Air-Transported Sampling Event

1. Project ID: **n/a**

2. COC Attached? **n/a** Properly Completed? **n/a** Signed by AE employee? **n/a**
3. Airbill attached? **n/a** Airbill #: **n/a**
4. Custody Seals? **n/a**
5. Seals intact? **n/a**

Temp. Blank: n/a (temp in Celsius)

COMMENTS:

B. Sample Conditions

Number of Samples Received: **6**
Number of Bottles Received: **18**
Packing type: **cooler**

1. Samples in proper bags? **yes**
2. Bottles intact? **yes**
3. Sufficient sample volume? **yes**
4. Labels agree with COC? **yes**

5. Samples delivered within holding time? **yes**
6. Sample preservation checked? **yes, pH<2**
Problems encountered: **no**

Was the project manager called? **no**

COMMENTS:

Signature: Nan Hyn Date and time: 11/21/22; 1519