



Engineering Department
800 Seminole Road
Atlantic Beach, FL 32233
904-247-5874

MEMORANDUM

To: Shane Corbin

From: Steve Swann, PE
Troy Stephens

Date: July 14, 2021

Re: Ocean Water Quality Sampling in Response to Bridgeport Barge Incident

On June 17, 2021, Public Utilities staff collected water samples from the ocean in four locations along the Duval County shoreline as summarized in the table on the following page. None of the analyses appear to indicate that the water samples were impacted at detectable levels by the Bridgeport Barge spill of Agremax. All four water samples analyzed had fairly consistent results.

All samples were collected in the ocean in approximately 3 FT of water off of the beach, The samples were analyzed for priority pollutant metals using standard EPA approved methods with method detection limits equal to or less than the analyses reported in RPI's Bridgeport report on June 22, 2021. Advanced Environmental Laboratories, Inc., the same laboratory used by RPI, was used to conduct the analyses. AEL is a National Environmental Laboratories Accreditation Conference (NELAC) certified laboratory, is FDEP approved is routinely used by the City for our compliance samples.

The samples were collected in the surf zone and were not filtered and likely contained some sediments entrained by wave action. Therefore, the sample results are an indicator of water quality in the surf zone at the time they were collected and are not necessarily indicative of water quality further offshore.

The method detection limit (MDL) is an estimate of the minimum amount of a substance that an analytical process can reliably detect. The practical quantitation level (PQL) is the lowest level of measurement that can be reliably achieved during routine laboratory operating conditions within acceptable limits of precisions and accuracy. The metals analyzed in most of the samples analyzed were not detected (less than the MDL). However, several samples had metals greater than the MDL but less than the PQL.

The results from all four Nickel samples, two Arsenic samples and one Zinc sample were reported as greater than the MDL but less than the PQL. From a practical standpoint this means the metals that exceeded the MDL but were less than the PQL were present but the exact concentration cannot be reliably reported.

Although the Nickel analyses appear high relative to the water quality standard, the results are consistent across all four sites and can probably be considered the background concentration for Nickel on the day the samples were collected with respect to the analytical method used for the analyses. Analytical results in the region between the MDL and PQL have a high degree of uncertainty and do not necessarily mean that there were water quality violations.

It is important to note that analyzing metals in ocean water can be difficult due to interference from the chlorides in the samples. Because of this interference, the MDLs and PQLs are often quite a bit higher than the actual water quality standard.

Location	Sample ID	Results						
		Antimony (ug/L)	Arsenic (ug/L)	Beryllium (ug/L)	Cadmium (ug/L)	Chromium (ug/L)	Copper (ug/L)	Lead (ug/L)
Jax Beach Pier	1A	U	U	U	U	U	U	U
1 Ocean Hotel	2A	U	U	U	U	U	U	U
Hanna Park	3A	U	7.4	U	U	U	U	U
Huguenot Park	4A	U	6.0	U	U	U	U	U
FL Marine Standard		≤4,300	≤50	≤0.13	≤8.8	≤50	≤3.7	≤8.5
EPA Screening Value		4,300	36	0.13	8.9	103	3.6	8.5
Method Detection Limit		20	5.0	20	5.0	10	20	10
Practical Quantitation Level		80.0	20.0	80.0	20.0	40.0	80.0	40.0

Location	Sample ID	Results					
		Nickel (ug/L)	Selenium (ug/L)	Silver (ug/L)	Thallium (ug/L)	Zinc (ug/L)	Mercury (ug/L)
Jax Beach Pier	1A	54	U	U	U	190	U
1 Ocean Hotel	2A	57	U	U	U	U	U
Hanna Park	3A	70	U	U	U	U	U
Huguenot Park	4A	76	U	U	U	U	U
FL Marine Standard		≤8.3	≤71	≤2.3	≤6.3	≤86	≤0.025
EPA Screening Value		8.3	71	0.1	6.3	82	0.94
Method Detection Limit		25	25	10	5.0	120	0.011
Practical Quantitation Level		100	100	40	20.0	480	0.10

U = Not Detected

RPI's Bridgeport report was not available to us before we shipped our samples to the laboratory for analysis. The priority pollutant metals we analyzed did not include the analyses flagged as exceeding FDEP standards or EPA screening criteria in the RPI report (Barium, Boron, Iron and Manganese). However, the analyses flagged in the RPI report were less than the PQL in all cases except for Boron, which did not exceed the global ocean background level.

If you need any additional information, please let us know.

Attachment – Analytical Results

SCS/s



Advanced Environmental Laboratories, Inc
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Payments: P.O. Box 551580 Jacksonville, FL 32255-1580
Phone: (904)363-9350
Fax: (904)363-9354

July 14, 2021

Troy Stephens
City of Atlantic Beach
902 Assisi Lane
Atlantic Beach, FL 32233

RE: Workorder: J2108213 Priority Pollutants

Dear Troy Stephens:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, June 18, 2021. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report. The analytical results for the samples contained in this report were submitted for analysis as outlined by the Chain of Custody and results pertain only to these samples.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jerry Allen', is positioned above the typed name.

Jerry Allen - Project Manager
JAllen@aellab.com

Enclosures

Report ID: 1064819 - 1112054

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SAMPLE SUMMARY

Workorder: J2108213 Priority Pollutants

Lab ID	Sample ID	Matrix	Date Collected	Date Received
J2108213001	1A	Water	6/17/2021 09:40	6/18/2021 12:20
J2108213002	2A	Water	6/17/2021 10:00	6/18/2021 12:20
J2108213003	3A	Water	6/17/2021 10:40	6/18/2021 12:20
J2108213004	4A	Water	6/17/2021 11:45	6/18/2021 12:20

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ANALYTICAL RESULTS

Workorder: J2108213 Priority Pollutants

Lab ID: **J2108213001**
 Sample ID: **1A**

Date Received: 06/18/21 12:20 Matrix: Water
 Date Collected: 06/17/21 09:40

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.8 Analysis,Waters			Preparation Method: EPA 200.8					
			Analytical Method: EPA 200.8					
Antimony	0.020	U	mg/L	20	0.080	0.020	7/10/2021 23:52	J
Arsenic	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:00	J
Beryllium	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:00	J
Cadmium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:00	J
Chromium	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:00	J
Copper	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:00	J
Lead	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:00	J
Nickel	0.054	I	mg/L	20	0.10	0.025	6/25/2021 17:00	J
Selenium	0.025	U	mg/L	20	0.10	0.025	7/9/2021 13:28	J
Silver	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:00	J
Thallium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:00	J
Zinc	0.19	I	mg/L	20	0.48	0.12	6/25/2021 17:00	J

Analysis Desc: EPA 245.1
 Analysis,Water

Preparation Method: EPA 245.1
 Analytical Method: EPA 245.1

Mercury	0.000011	U	mg/L	1	0.00010	0.000011	6/23/2021 15:41	J
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Lab ID: **J2108213002**
 Sample ID: **2A**

Date Received: 06/18/21 12:20 Matrix: Water
 Date Collected: 06/17/21 10:00

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.8 Analysis,Waters			Preparation Method: EPA 200.8					
			Analytical Method: EPA 200.8					
Antimony	0.020	U	mg/L	20	0.080	0.020	7/10/2021 23:58	J
Arsenic	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:04	J
Beryllium	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:04	J
Cadmium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:04	J
Chromium	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:04	J
Copper	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:04	J

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ANALYTICAL RESULTS

Workorder: J2108213 Priority Pollutants

Lab ID: **J2108213002**
 Sample ID: **2A**

Date Received: 06/18/21 12:20 Matrix: Water
 Date Collected: 06/17/21 10:00

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
Lead	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:04	J
Nickel	0.057	I	mg/L	20	0.10	0.025	6/25/2021 17:04	J
Selenium	0.025	U	mg/L	20	0.10	0.025	7/9/2021 13:34	J
Silver	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:04	J
Thallium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:04	J
Zinc	0.12	U	mg/L	20	0.48	0.12	6/25/2021 17:04	J

Analysis Desc: EPA 245.1 Preparation Method: EPA 245.1
 Analysis,Water Analytical Method: EPA 245.1

Mercury	0.000011	U	mg/L	1	0.00010	0.000011	6/23/2021 15:54	J
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Lab ID: **J2108213003**
 Sample ID: **3A**

Date Received: 06/18/21 12:20 Matrix: Water
 Date Collected: 06/17/21 10:40

Sample Description:

Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.8 Analysis,Waters Preparation Method: EPA 200.8 Analytical Method: EPA 200.8								
Antimony	0.020	U	mg/L	20	0.080	0.020	7/11/2021 00:04	J
Arsenic	0.0074	I	mg/L	20	0.020	0.0050	7/3/2021 23:46	J
Beryllium	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:09	J
Cadmium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:09	J
Chromium	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:09	J
Copper	0.020	U	mg/L	20	0.080	0.020	6/25/2021 17:09	J
Lead	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:09	J
Nickel	0.070	I	mg/L	20	0.10	0.025	6/25/2021 17:09	J
Selenium	0.025	U	mg/L	20	0.10	0.025	7/9/2021 13:40	J
Silver	0.010	U	mg/L	20	0.040	0.010	6/25/2021 17:09	J
Thallium	0.0050	U	mg/L	20	0.020	0.0050	6/25/2021 17:09	J
Zinc	0.12	U	mg/L	20	0.48	0.12	6/25/2021 17:09	J

Analysis Desc: EPA 245.1 Preparation Method: EPA 245.1
 Analysis,Water Analytical Method: EPA 245.1

Mercury	0.000011	U	mg/L	1	0.00010	0.000011	6/23/2021 15:59	J
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ANALYTICAL RESULTS

Workorder: J2108213 Priority Pollutants

Lab ID: **J2108213004** Date Received: 06/18/21 12:20 Matrix: Water
 Sample ID: **4A** Date Collected: 06/17/21 11:45

Sample Description: Location:

Parameters	Results	Qual	Units	DF	Adjusted PQL	Adjusted MDL	Analyzed	Lab
METALS								
Analysis Desc: E200.8 Analysis,Waters			Preparation Method: EPA 200.8					
			Analytical Method: EPA 200.8					
Antimony	0.020	U	mg/L	20	0.080	0.020	7/10/2021 16:59	J
Arsenic	0.0060	I	mg/L	20	0.020	0.0050	7/4/2021 00:26	J
Beryllium	0.020	U	mg/L	20	0.080	0.020	7/4/2021 00:26	J
Cadmium	0.0050	U	mg/L	20	0.020	0.0050	7/4/2021 00:26	J
Chromium	0.010	U	mg/L	20	0.040	0.010	7/4/2021 00:26	J
Copper	0.020	U	mg/L	20	0.080	0.020	7/4/2021 00:26	J
Lead	0.010	U	mg/L	20	0.040	0.010	7/4/2021 00:26	J
Nickel	0.076	I	mg/L	20	0.10	0.025	7/4/2021 00:26	J
Selenium	0.025	U	mg/L	20	0.10	0.025	7/9/2021 14:03	J
Silver	0.010	U	mg/L	20	0.040	0.010	7/4/2021 00:26	J
Thallium	0.0050	U	mg/L	20	0.020	0.0050	7/4/2021 00:26	J
Zinc	0.12	U	mg/L	20	0.48	0.12	7/4/2021 00:26	J
Analysis Desc: EPA 245.1 Analysis,Water			Preparation Method: EPA 245.1					
			Analytical Method: EPA 245.1					
Mercury	0.000011	U	mg/L	1	0.00010	0.000011	6/23/2021 16:03	J

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ANALYTICAL RESULTS QUALIFIERS

Workorder: J2108213 Priority Pollutants

PARAMETER QUALIFIERS

- U The compound was analyzed for but not detected.
- I The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

LAB QUALIFIERS

- J DOH Certification #E82574(AEL-JAX)(FL NELAC Certification)

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QUALITY CONTROL DATA

Workorder: J2108213 Priority Pollutants

QC Batch: DGMj/1712 Analysis Method: EPA 200.8
 QC Batch Method: EPA 200.8 Prepared: 06/22/2021 10:30
 Associated Lab Samples: J2108213001, J2108213002, J2108213003

METHOD BLANK: 3929945

Parameter	Units	Blank Result	Reporting Limit Qualifiers
METALS			
Beryllium	mg/L	0.0010	0.0010 U
Chromium	mg/L	0.00050	0.00050 U
Nickel	mg/L	0.0012	0.0012 U
Copper	mg/L	0.0010	0.0010 U
Zinc	mg/L	0.0060	0.0060 U
Arsenic	mg/L	0.00025	0.00025 U
Selenium	mg/L	0.0012	0.0012 U
Silver	mg/L	0.00050	0.00050 U
Cadmium	mg/L	0.00025	0.00025 U
Antimony	mg/L	0.0010	0.0010 U
Thallium	mg/L	0.00025	0.00025 U
Lead	mg/L	0.00050	0.00050 U

QC Batch: DGMj/1729 Analysis Method: EPA 245.1
 QC Batch Method: EPA 245.1 Prepared: 06/23/2021 11:06
 Associated Lab Samples: J2108213001, J2108213002, J2108213003, J2108213004

METHOD BLANK: 3932085

Parameter	Units	Blank Result	Reporting Limit Qualifiers
METALS			
Mercury	mg/L	0.000011	0.000011 U

QC Batch: DGMj/1757 Analysis Method: EPA 200.8
 QC Batch Method: EPA 200.8 Prepared: 06/28/2021 11:00
 Associated Lab Samples: J2108213004

METHOD BLANK: 3937248

Parameter	Units	Blank Result	Reporting Limit Qualifiers
METALS			
Beryllium	mg/L	0.0010	0.0010 U
Chromium	mg/L	0.00050	0.00050 U

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QUALITY CONTROL DATA

Workorder: J2108213 Priority Pollutants

METHOD BLANK: 3937248

Parameter	Units	Blank Result	Reporting Limit Qualifiers
Nickel	mg/L	0.0012	0.0012 U
Copper	mg/L	0.0010	0.0010 U
Zinc	mg/L	0.0060	0.0060 U
Arsenic	mg/L	0.00025	0.00025 U
Selenium	mg/L	0.0012	0.0012 U
Silver	mg/L	0.00050	0.00050 U
Cadmium	mg/L	0.00025	0.00025 U
Antimony	mg/L	0.0010	0.0010 U
Thallium	mg/L	0.00025	0.00025 U
Lead	mg/L	0.00050	0.00050 U

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: J2108213 Priority Pollutants

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
J2108213001	1A	EPA 200.8	DGMj/1712	EPA 200.8	ICMj/1277
J2108213002	2A	EPA 200.8	DGMj/1712	EPA 200.8	ICMj/1277
J2108213003	3A	EPA 200.8	DGMj/1712	EPA 200.8	ICMj/1277
J2108213001	1A	EPA 245.1	DGMj/1729	EPA 245.1	CVAj/1171
J2108213002	2A	EPA 245.1	DGMj/1729	EPA 245.1	CVAj/1171
J2108213003	3A	EPA 245.1	DGMj/1729	EPA 245.1	CVAj/1171
J2108213004	4A	EPA 245.1	DGMj/1729	EPA 245.1	CVAj/1171
J2108213004	4A	EPA 200.8	DGMj/1757	EPA 200.8	ICMj/1301

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 528 S. North Lake Blvd., Ste. 1016 • Allamore Springs, FL 32701 • 407.937.1594 • Fax 407.937.1597 • EG5076

* J 2 1 0 8 2 1 3 *



LABORATORY I.D. NUMBER

City of Atlantic Beach

CLIENT NAME: **City of Atlantic Beach**
 ADDRESS: 902 Assisi Ln., Atlantic Beach, FL 32233
 PHONE: (904) 588-4503
 FAX: (904) - 247 - 5895
 CONTACT: Troy Stephens
 SAMPLED BY: Eric Andersen
 TURN AROUND TIME: RUSH

PROJECT NAME: **Priority Pollutants**
 PROJECT LOCATION: **Coastal Shoreline**
 REMARKS/SPECIAL INSTRUCTIONS:

ANALYSIS REQUIRED
Cadmium, Lead, Arsenic, Mercury
Priority Pollutant metal

STANDARD RUSH

SAMPLE ID	SAMPLE DESCRIPTION	Grab Comp	SAMPLING		MATRIX	NO. COUNT	PRESERVATION	HNO3
			DATE	TIME				
1A	Jacksonville Pier	G	6.17.21	9:40am	SW	1		X
2A	Ocean 1 (Abern St.)	G	6.17.21	10:00am	SW	1		X
3A	Hanna Park	G	6.17.21	10:40am	SW	1		X
4A	Huguenot Park	G	6.17.21	11:45am	SW	1		X

Matrix Code: WW = wastewater SW = surface water GW = ground water DW = drinking water O = oil A = air SO = soil SL = sludge
 Received on Ice Yes No Temp taken from sample Temp from temp blank Where required, pH checked
 Device used for measuring Temp by unique identifier (Circle IR temp gun used) IR G: LT-1 LT-2 T: 10A A: 3A
 Preservation Code: I = (Ice H=(HCl) S = (H2SO4) N = (HNO3) T = (Sodium Thiosulfate)
 Temperature when received (in degrees celcius)

Relinquished by: Eric Andersen Date: 6/18/21 Time: 12:20
 Received by: Abbas Date: 6/18/21 Time: 12:20

FOR DRINKING WATER USE:
 (When PWS information not otherwise supplied) PWS ID: _____
 Contact Person: _____ Phone: _____
 Supplier of Water: _____
 Site Address: _____