

August 19, 2019

Arcelor Mittal USA, Inc.
250 W US Highway 12
Burns Harbor, IN 46304-9745

Work Order No.: 19H1112

Re: Spill Samples

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 15 sample(s) on 8/18/2019 12:07:00PM for the analyses presented in the following report as Work Order 19H1112.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Ron Misiunas, Division Manager, at ron.misiunas@microbac.com.

Sincerely,
Microbac Laboratories, Inc.



Carey Gadzala
Project Manager



WORK ORDER SAMPLE SUMMARY

Date: *Monday, August 19, 2019*

Client: Arcelor Mittal USA, Inc.
Project: Spill Samples
Lab Order: 19H1112

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19H1112-01	#13		08/18/2019 12:07	8/18/2019 12:07:00PM
19H1112-02	#11		08/18/2019 07:08	8/18/2019 12:07:00PM
19H1112-03	#10		08/18/2019 07:13	8/18/2019 12:07:00PM
19H1112-04	#9		08/18/2019 07:17	8/18/2019 12:07:00PM
19H1112-05	#8		08/18/2019 07:22	8/18/2019 12:07:00PM
19H1112-06	#7		08/18/2019 07:32	8/18/2019 12:07:00PM
19H1112-07	#6		08/18/2019 08:04	8/18/2019 12:07:00PM
19H1112-08	#5		08/18/2019 08:45	8/18/2019 12:07:00PM
19H1112-09	#4		08/18/2019 08:49	8/18/2019 12:07:00PM
19H1112-10	#3		08/18/2019 08:54	8/18/2019 12:07:00PM
19H1112-11	#2		08/18/2019 08:59	8/18/2019 12:07:00PM
19H1112-12	#1		08/18/2019 09:04	8/18/2019 12:07:00PM
19H1112-13	Outfall 001		08/18/2019 09:09	8/18/2019 12:07:00PM
19H1112-14	#12		08/18/2019 09:43	8/18/2019 12:07:00PM
19H1112-15	000		08/18/2019 10:28	8/18/2019 12:07:00PM

Field Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order:	19H1112
Client Project:	Spill Samples		
Client Sample ID:	#13	Work Order/ID:	19H1112-01
Sample Description:		Sampled:	08/18/2019 12:07
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.68	pH Units
Temp	75.9	F

Client Sample ID:	#11	Work Order/ID:	19H1112-02
Sample Description:		Sampled:	08/18/2019 07:08
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.68	pH Units
Temp	77.7	F

Client Sample ID:	#10	Work Order/ID:	19H1112-03
Sample Description:		Sampled:	08/18/2019 07:13
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.67	pH Units
Temp	77.5	F

Client Sample ID:	#9	Work Order/ID:	19H1112-04
Sample Description:		Sampled:	08/18/2019 07:17
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.69	pH Units
Temp	77.7	F

Client Sample ID:	#8	Work Order/ID:	19H1112-05
Sample Description:		Sampled:	08/18/2019 07:22
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.69	pH Units
Temp	77.8	F

Client Sample ID:	#7	Work Order/ID:	19H1112-06
Sample Description:		Sampled:	08/18/2019 07:32
Matrix:	Aqueous	Received:	08/18/2019 12:07

Analyses	Result	Units
pH	7.74	pH Units
Temp	77.9	F

Field Results

Date: *Monday, August 19, 2019*

Client Sample ID: #6	Work Order/ID: 19H1112-07
Sample Description:	Sampled: 08/18/2019 08:04
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.77	pH Units
Temp	77.6	F

Client Sample ID: #5	Work Order/ID: 19H1112-08
Sample Description:	Sampled: 08/18/2019 08:45
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.78	pH Units
Temp	76.7	F

Client Sample ID: #4	Work Order/ID: 19H1112-09
Sample Description:	Sampled: 08/18/2019 08:49
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.89	pH Units
Temp	76.8	F

Client Sample ID: #3	Work Order/ID: 19H1112-10
Sample Description:	Sampled: 08/18/2019 08:54
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.89	pH Units
Temp	77.2	F

Client Sample ID: #2	Work Order/ID: 19H1112-11
Sample Description:	Sampled: 08/18/2019 08:59
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.86	pH Units
Temp	77.7	F

Client Sample ID: #1	Work Order/ID: 19H1112-12
Sample Description:	Sampled: 08/18/2019 09:04
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.79	pH Units
Temp	78.7	F

Client Sample ID: Outfall 001	Work Order/ID: 19H1112-13
Sample Description:	Sampled: 08/18/2019 09:09
Matrix: Aqueous	Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.76	pH Units

[Microbac Laboratories, Inc.](http://www.microbac.com)

Field Results

Date: *Monday, August 19, 2019*

Temp	82.6	F
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Client Sample ID: #12
 Sample Description:
 Matrix: Aqueous

Work Order/ID: 19H1112-14
 Sampled: 08/18/2019 09:43
 Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.77	pH Units
Temp	77.1	F

Client Sample ID: 000
 Sample Description:
 Matrix: Aqueous

Work Order/ID: 19H1112-15
 Sampled: 08/18/2019 10:28
 Received: 08/18/2019 12:07

Analyses	Result	Units
pH	7.89	pH Units
Temp	68.4	F

CASE NARRATIVE**Date:** *Monday, August 19, 2019*

Client: Arcelor Mittal USA, Inc.
Project: Spill Samples
Lab Order: 19H1112

H - sample received beyond the maximum allowable hold time for dissolved oxygen analysis.

<u>Laboratory ID</u>	<u>Sample Name</u>
19H1112-01	#13
19H1112-02	#11
19H1112-03	#10
19H1112-04	#9
19H1112-05	#8
19H1112-06	#7
19H1112-07	#6
19H1112-08	#5
19H1112-09	#4
19H1112-10	#3
19H1112-11	#2
19H1112-12	#1
19H1112-13	Outfall 001
19H1112-14	#12
19H1112-15	000

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-01
Client Project:	Spill Samples	Sampled:	08/18/2019 12:07
Client Sample ID:	#13	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: EF			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/18/2019 13:42			
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/18/2019 15:50
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:24
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	7.3	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.20	0.10		mg/L	1	08/19/2019 10:54

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-02
Client Project:	Spill Samples	Sampled:	08/18/2019 7:08
Client Sample ID:	#11	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: EF			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/18/2019 13:42			
Cyanide, Total	dij	A	0.0058	0.0050		mg/L	1	08/18/2019 15:52
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:29
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	6.1	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.28	0.10		mg/L	1	08/19/2019 10:56

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-03
Client Project:	Spill Samples	Sampled:	08/18/2019 7:13
Client Sample ID:	#10	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: EF			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/18/2019 13:42			
Cyanide, Total	dij	A	0.0052	0.0052		mg/L	1	08/18/2019 15:54
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:31
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	6.4	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.24	0.10		mg/L	1	08/19/2019 10:59

Analytical Results

Date: *Monday, August 19, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Spill Samples
Client Sample ID: #9
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H1112-04
Sampled: 08/18/2019 7:17
Received: 08/18/2019 12:07

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999			Analyst: EF		
Total Cyanide			Prep Method: NA			Prep Date/Time: 08/18/2019 13:42		
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/18/2019 15:55
			Method: SW-846 9014			Analyst: ABG		
Free Cyanide			Prep Method: SW-846 9014			Prep Date/Time: 08/18/2019 19:59		
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:32
			Method: SM 4500-O C-2001			Analyst: EF		
Dissolved Oxygen			Prep Method: SM 4500-O C-2001			Prep Date/Time: 08/18/2019 15:21		
Oxygen, Dissolved	di	A	6.2	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0			Analyst: ABG		
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0			Prep Date/Time: 08/18/2019 13:52		
Nitrogen, Ammonia (As N)	di	A	0.22	0.10		mg/L	1	08/19/2019 11:01

Analytical Results

Date: *Monday, August 19, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Spill Samples
Client Sample ID: #8
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H1112-05
Sampled: 08/18/2019 7:22
Received: 08/18/2019 12:07

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999			Analyst: ABG		
Total Cyanide			Prep Method: NA			Prep Date/Time: 08/18/2019 13:42		
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 10:59
			Method: SW-846 9014			Analyst: ABG		
Free Cyanide			Prep Method: SW-846 9014			Prep Date/Time: 08/18/2019 19:59		
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:34
			Method: SM 4500-O C-2001			Analyst: EF		
Dissolved Oxygen			Prep Method: SM 4500-O C-2001			Prep Date/Time: 08/18/2019 15:21		
Oxygen, Dissolved	di	A	6.0	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0			Analyst: ABG		
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0			Prep Date/Time: 08/18/2019 13:52		
Nitrogen, Ammonia (As N)	di	A	0.26	0.10		mg/L	1	08/19/2019 11:03

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-06
Client Project:	Spill Samples	Sampled:	08/18/2019 7:32
Client Sample ID:	#7	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SM 4500-CN C/E-1999						
		Prep Method: NA						
					Analyst: ABG			
Total Cyanide					Prep Date/Time: 08/18/2019 13:42			
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:04
		Method: SW-846 9014						
		Prep Method: SW-846 9014						
					Analyst: ABG			
Free Cyanide					Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:36
		Method: SM 4500-O C-2001						
		Prep Method: SM 4500-O C-2001						
					Analyst: EF			
Dissolved Oxygen					Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	6.8	0.20	H	mg/L	1	08/18/2019 15:21
		Method: EPA 350.1 Rev 2.0						
		Prep Method: EPA 350.1 Rev 2.0						
					Analyst: ABG			
Nitrogen, Ammonia as N					Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.19	0.10		mg/L	1	08/19/2019 11:06

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-07
Client Project:	Spill Samples	Sampled:	08/18/2019 8:04
Client Sample ID:	#6	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: ABG			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/18/2019 13:42			
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:06
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:38
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	6.4	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.26	0.10		mg/L	1	08/19/2019 11:08

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-08
Client Project:	Spill Samples	Sampled:	08/18/2019 8:45
Client Sample ID:	#5	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Method: SM 4500-CN C/E-1999 Analyst: ABG								
Prep Method: NA Prep Date/Time: 08/18/2019 13:42								
Total Cyanide								
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:08
Method: SW-846 9014 Analyst: ABG								
Prep Method: SW-846 9014 Prep Date/Time: 08/18/2019 19:59								
Free Cyanide								
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:39
Method: SM 4500-O C-2001 Analyst: EF								
Prep Method: SM 4500-O C-2001 Prep Date/Time: 08/18/2019 15:21								
Dissolved Oxygen								
Oxygen, Dissolved	di	A	6.5	0.20	H	mg/L	1	08/18/2019 15:21
Method: EPA 350.1 Rev 2.0 Analyst: ABG								
Prep Method: EPA 350.1 Rev 2.0 Prep Date/Time: 08/18/2019 13:52								
Nitrogen, Ammonia as N								
Nitrogen, Ammonia (As N)	di	A	0.23	0.10		mg/L	1	08/19/2019 11:11

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-09
Client Project:	Spill Samples	Sampled:	08/18/2019 8:49
Client Sample ID:	#4	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Method: SM 4500-CN C/E-1999 Analyst: ABG								
Prep Method: NA Prep Date/Time: 08/18/2019 13:42								
Total Cyanide								
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:10
Method: SW-846 9014 Analyst: ABG								
Prep Method: SW-846 9014 Prep Date/Time: 08/18/2019 19:59								
Free Cyanide								
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:44
Method: SM 4500-O C-2001 Analyst: EF								
Prep Method: SM 4500-O C-2001 Prep Date/Time: 08/18/2019 15:21								
Dissolved Oxygen								
Oxygen, Dissolved	di	A	6.6	0.20	H	mg/L	1	08/18/2019 15:21
Method: EPA 350.1 Rev 2.0 Analyst: ABG								
Prep Method: EPA 350.1 Rev 2.0 Prep Date/Time: 08/18/2019 13:52								
Nitrogen, Ammonia as N								
Nitrogen, Ammonia (As N)	di	A	0.28	0.10		mg/L	1	08/19/2019 11:13

Analytical Results

Date: *Monday, August 19, 2019*

Client: Arcelor Mittal USA, Inc.
Client Project: Spill Samples
Client Sample ID: #3
Sample Description:
Matrix: Aqueous

Work Order/ID: 19H1112-10
Sampled: 08/18/2019 8:54
Received: 08/18/2019 12:07

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999			Analyst: ABG		
Total Cyanide			Prep Method: NA			Prep Date/Time: 08/18/2019 13:42		
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:11
			Method: SW-846 9014			Analyst: ABG		
Free Cyanide			Prep Method: SW-846 9014			Prep Date/Time: 08/18/2019 19:59		
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:46
			Method: SM 4500-O C-2001			Analyst: EF		
Dissolved Oxygen			Prep Method: SM 4500-O C-2001			Prep Date/Time: 08/18/2019 15:21		
Oxygen, Dissolved	di	A	6.7	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0			Analyst: ABG		
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0			Prep Date/Time: 08/18/2019 13:52		
Nitrogen, Ammonia (As N)	di	A	0.25	0.10		mg/L	1	08/19/2019 11:15

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-11
Client Project:	Spill Samples	Sampled:	08/18/2019 8:59
Client Sample ID:	#2	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Method: SM 4500-CN C/E-1999 Analyst: ABG								
Prep Method: NA Prep Date/Time: 08/18/2019 13:42								
Total Cyanide								
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:13
Method: SW-846 9014 Analyst: ABG								
Prep Method: SW-846 9014 Prep Date/Time: 08/18/2019 19:59								
Free Cyanide								
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:48
Method: SM 4500-O C-2001 Analyst: EF								
Prep Method: SM 4500-O C-2001 Prep Date/Time: 08/18/2019 15:21								
Dissolved Oxygen								
Oxygen, Dissolved	di	A	6.8	0.20	H	mg/L	1	08/18/2019 15:21
Method: EPA 350.1 Rev 2.0 Analyst: ABG								
Prep Method: EPA 350.1 Rev 2.0 Prep Date/Time: 08/18/2019 13:52								
Nitrogen, Ammonia as N								
Nitrogen, Ammonia (As N)	di	A	0.28	0.10		mg/L	1	08/19/2019 11:22

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-12
Client Project:	Spill Samples	Sampled:	08/18/2019 9:04
Client Sample ID:	#1	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Method: SM 4500-CN C/E-1999 Analyst: ABG								
Prep Method: NA Prep Date/Time: 08/19/2019 05:50								
Total Cyanide								
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 10:53
Method: SW-846 9014 Analyst: ABG								
Prep Method: SW-846 9014 Prep Date/Time: 08/18/2019 19:59								
Free Cyanide								
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:53
Method: SM 4500-O C-2001 Analyst: EF								
Prep Method: SM 4500-O C-2001 Prep Date/Time: 08/18/2019 15:21								
Dissolved Oxygen								
Oxygen, Dissolved	di	A	6.5	0.20	H	mg/L	1	08/18/2019 15:21
Method: EPA 350.1 Rev 2.0 Analyst: ABG								
Prep Method: EPA 350.1 Rev 2.0 Prep Date/Time: 08/18/2019 13:52								
Nitrogen, Ammonia as N								
Nitrogen, Ammonia (As N)	di	A	0.34	0.10		mg/L	1	08/19/2019 11:25

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-13
Client Project:	Spill Samples	Sampled:	08/18/2019 9:09
Client Sample ID:	Outfall 001	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
Total Cyanide		Method: SM 4500-CN C/E-1999		Analyst: ABG		Prep Date/Time: 08/19/2019 05:50		
		Prep Method: NA						
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:30
Free Cyanide		Method: SW-846 9014		Analyst: ABG		Prep Date/Time: 08/18/2019 19:59		
		Prep Method: SW-846 9014						
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:54
Dissolved Oxygen		Method: SM 4500-O C-2001		Analyst: EF		Prep Date/Time: 08/18/2019 15:21		
		Prep Method: SM 4500-O C-2001						
Oxygen, Dissolved	di	A	6.3	0.20	H	mg/L	1	08/18/2019 15:21
Nitrogen, Ammonia as N		Method: EPA 350.1 Rev 2.0		Analyst: ABG		Prep Date/Time: 08/18/2019 13:52		
		Prep Method: EPA 350.1 Rev 2.0						
Nitrogen, Ammonia (As N)	di	A	0.46	0.10		mg/L	1	08/19/2019 11:27

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-14
Client Project:	Spill Samples	Sampled:	08/18/2019 9:43
Client Sample ID:	#12	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: ABG			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/19/2019 05:50			
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:31
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:56
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	6.2	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.33	0.10		mg/L	1	08/19/2019 11:30

Analytical Results

Date: *Monday, August 19, 2019*

Client:	Arcelor Mittal USA, Inc.	Work Order/ID:	19H1112-15
Client Project:	Spill Samples	Sampled:	08/18/2019 10:28
Client Sample ID:	000	Received:	08/18/2019 12:07
Sample Description:			
Matrix:	Aqueous		

Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-CN C/E-1999		Analyst: ABG			
Total Cyanide			Prep Method: NA		Prep Date/Time: 08/19/2019 05:50			
Cyanide, Total	dij	A	ND	0.0050		mg/L	1	08/19/2019 11:33
			Method: SW-846 9014		Analyst: ABG			
Free Cyanide			Prep Method: SW-846 9014		Prep Date/Time: 08/18/2019 19:59			
Free Cyanide		A	ND	0.0062		mg/L	1	08/19/2019 10:58
			Method: SM 4500-O C-2001		Analyst: EF			
Dissolved Oxygen			Prep Method: SM 4500-O C-2001		Prep Date/Time: 08/18/2019 15:21			
Oxygen, Dissolved	di	A	7.1	0.20	H	mg/L	1	08/18/2019 15:21
			Method: EPA 350.1 Rev 2.0		Analyst: ABG			
Nitrogen, Ammonia as N			Prep Method: EPA 350.1 Rev 2.0		Prep Date/Time: 08/18/2019 13:52			
Nitrogen, Ammonia (As N)	di	A	0.14	0.10		mg/L	1	08/19/2019 11:32

ANALYTE TYPES: (AT)

A, B = Target Analyte

I = Internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)



QC SAMPLE IDENTIFICATIONS

BLK = Method Blank

DUP = Method Duplicate

BS = Method Blank Spike

MS = Matrix Spike

ICB = Initial Calibration Blank

CCB = Continuing Calibration Blank

CRL = Client Required Reporting Limit

PDS = Post Digestion Spike

QCS = Quality Control Standard

ICSA = Interference Check Standard "A"

ICSAB = Interference Check Standard "AB"

BSD = Method Blank Spike Duplicate

MSD = Matrix Spike Duplicate

ICV = Initial Calibration Verification

CCV = Continuing Calibration Verification

OPR = Ongoing Precision and Recovery Standard

SD = Serial Dilution

CERTIFICATIONS (Certs)

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

d Illinois EPA drinking water, wastewater and solid waste analysis (#200064)

i Kansas Dept Health & Env. NELAP (#E-10397)

j Kentucky Wastewater Laboratory Certification Program (#108202)

FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)**H:** Sample was analyzed past holding time.**RL:** Reporting Limit**RPD:** Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler



Comments

No dates or times on sample containers

Cooler Inspection Checklist

Ice Present or not required?	No
Shipping containers sealed or not required?	Yes
Custody seals intact or not required?	Yes
Chain of Custody (COC) Present?	Yes
COC includes customer information?	No
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?)	No
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

Microbac Laboratories, Inc.

250 West 84th Drive | Merrillville, IN 46410 | 800.536.8379 p | 219.769.8378 p | 219.769.1664 f | www.microbac.com

RUSH!



TO BE COMPLETED BY MICROBAC
Temperature Upon Receipt (°C) **22.70.3**
Therm ID
Holding Time **= 22.4**
Samples Received on Ice? Yes No N/A
Custody Seals Intact? Yes No N/A

Turnaround Time
 Routine (5 to 7 business days)
 RUSH* (notify lab)
(needed by)
Report Type
 Results Only Level 1 Level 2 Level 3 Level 4 EDD

Invoice Address
Client Name:
Address:
City, State, Zip:
Contact:
Telephone No.:

Lab Report Address
Client Name:
Address:
City, State, Zip:
Contact:
Telephone No.:

Send Report via: Mail Fax e-mail (address)
Send Invoice via: Mail Fax e-mail (address)
Compliance Monitoring? Yes No
 Agency/Program

Project: **Receiving Water Monitoring** Location: PO No.:
Sampler Signature: *[Signature]* Sampler Phone No.: **219-644-7585**
Sampled by (PRINT): **Potalek Gorman**

19H1112 Carey Gadzala
ArcelorMittal - Burns Harbor, IN
Spill Samples
08/18/2019

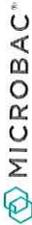
* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methano, (7) Sodium Bisulfate, (8) Hexane, (U) Unpreserved

Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	DO	NH4	CS	Free Cu	Temp	pH	Temp	Additional Notes
# 13	8/18/19	6:58A	4	AO	G	U, 2, 4	X	X	X	X	X	X	75.9	7.68
12		7:03A					X	X	X	X	X	X	77.7	7.58
11		7:08A					X	X	X	X	X	X	77.7	7.68
10		7:13A					X	X	X	X	X	X	77.5	7.67
9		7:17					X	X	X	X	X	X	77.7	7.67
8		7:22					X	X	X	X	X	X	77.8	7.69
7		7:32					X	X	X	X	X	X	77.9	7.74
6		8:40					X	X	X	X	X	X	77.6	7.77
5		8:45					X	X	X	X	X	X	76.7	7.78
4		8:49					X	X	X	X	X	X	76.8	7.89

Possible Hazard Identification
 Hazardous Non-Hazardous Radioactive
Sample Disposition Dispose as appropriate Return Archive

Reinquired By (signature) *[Signature]* Date/Time **8-18-19 12:07p**
Received By (signature) *[Signature]* Date/Time
Received By (signature) *[Signature]* Date/Time **8-18-19/1207**
Received By (signature) *[Signature]* Date/Time

CHAIN OF CUSTODY RECORD



Number **152343**
Instructions on back

TO BE COMPLETED BY MICROBAC
Temperature Upon Receipt (°C)
Therm ID
Holding Time
Samples Received on Ice? Yes No N/A
Custody Seals Intact? Yes No N/A

Turnaround Time
 Routine (5 to 7 business days)
 RUSH* (notify lab)
(needed by)
Report Type
 Results Only Level 1 Level 2 Level 3 Level 4 EDD

Invoice Address
Client Name:
Address:
City, State, Zip:
Contact:
Telephone No.:

Lab Report Address
Client Name:
Address:
City, State, Zip:
Contact:
Telephone No.:

Send Report via: Mail Fax e-mail (address)
Send Invoice via: Mail Fax e-mail (address)
Compliance Monitoring? Yes No
 Agency/Program

Project: Receiving Water Monitoring Location: PO No.:
Sampled by (PRINT): Patrick Spenser Sampler Signature: [Signature] Sampler Phone No.: 219-644-7585

* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify)
** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Manganese, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved

Lab ID	Client Sample ID	Date Collected	Time Collected	No. of Containers	Matrix	Grab / Comp	Preservative Types **	NH4	CS	Free CS	Temp	PH	Additional Notes
	3	8-18-19	8:54	4	AG	G	U24	X	X	X	77.2	7.89	Temp
	7		8:59					X	X	X	77.7	7.86	
			9:04					X	X	X	78.7	7.79	
	OUTFALL 001		9:09					X	X	X	82.6	7.76	
	12		9:43					X	X	X	77.1	7.77	
	000		10:28					X	X	X	68.4	7.89	

Requested Analysis
Possible Hazard Identification Hazardous Non-Hazardous Radioactive
Sample Disposition Dispose as appropriate Return Archive
Comments: When collected
Temp
pH
Relinquished By (signature): [Signature] Date/Time: 8-18-19 12:07
Relinquished By (signature): [Signature] Date/Time:
Relinquished By (signature): [Signature] Date/Time:
Received By (signature): [Signature] Date/Time:
Received By (signature): [Signature] Date/Time: 8-18-19 17:07