Work Order No.: 19H1106



August 18, 2019

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

Re: Spill Samples

Dear Teri Kirk:

Microbac Laboratories, Inc. - Chicagoland Division received 30 sample(s) on 8/17/2019 11:20:00AM for the analyses presented in the following report as Work Order 19H1106.

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.

Carry Hadzala

Carey Gadzala Project Manager



Date:

Revised 8/18/2019

Sunday, August 18, 2019

WORK ORDER SAMPLE SUMMARY

Client: Arcelor Mittal USA, Inc.

Project: Spill Samples **Lab Order:** 19H1106

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
19H1106-01	#13		08/16/2019 16:36	8/17/2019 11:20:00AM
19H1106-02	#12		08/16/2019 16:44	8/17/2019 11:20:00AM
19H1106-03	#11		08/16/2019 16:52	8/17/2019 11:20:00AM
19H1106-04	#10		08/16/2019 16:58	8/17/2019 11:20:00AM
19H1106-05	#9		08/16/2019 17:04	8/17/2019 11:20:00AM
19H1106-06	#8		08/16/2019 17:08	8/17/2019 11:20:00AM
19H1106-07	#7		08/16/2019 17:13	8/17/2019 11:20:00AM
19H1106-08	#6		08/16/2019 17:20	8/17/2019 11:20:00AM
19H1106-09	#5		08/16/2019 17:28	8/17/2019 11:20:00AM
19H1106-10	#4		08/16/2019 17:33	8/17/2019 11:20:00AM
19H1106-11	#3		08/16/2019 17:38	8/17/2019 11:20:00AM
19H1106-12	#2		08/16/2019 17:43	8/17/2019 11:20:00AM
19H1106-13	#1		08/16/2019 17:53	8/17/2019 11:20:00AM
19H1106-14	Outfall 001		08/16/2019 17:59	8/17/2019 11:20:00AM
19H1106-15	#000		08/16/2019 19:08	8/17/2019 11:20:00AM



Field Results		Date: Sund	lay, August 18, 2019
Client: Client Project:	Arcelor Mittal USA, Inc. Spill Samples	Work Order:	19H1106
Client Sample ID:	#13	Work Order/ID:	19H1106-01
Sample Description:		Sampled:	08/16/2019 16:36
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pН		7.71	pH Units
Temp		76.2	F
Client Sample ID:	#12	Work Order/ID:	19H1106-02
Sample Description:	π 1 2	Sampled:	08/16/2019 16:44
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses	1	Result	Units
pH		7.40	pH Units
Temp		79.2	F
Client Sample ID:	#11	Work Order/ID:	19H1106-03
Sample Description:		Sampled:	08/16/2019 16:52
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pH		7.32	pH Units
Temp		78.7	F
Client Sample ID:	#10	Work Order/ID:	19H1106-04
Sample Description:		Sampled:	08/16/2019 16:58
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pН		7.35	pH Units
Temp		78.4	F
Client Sample ID:	#9	Work Order/ID:	19H1106-05
Sample Description:		Sampled:	08/16/2019 17:04
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pН		7.29	pH Units
Temp		78.1	F
Client Sample ID:	#8	Work Order/ID:	19H1106-06
Sample Description:	π Ο	Sampled:	08/16/2019 17:08
Matrix:	Aqueous	Sampled: Received:	08/17/2019 11:20
Analyses	·	Result	Units
pH		7.37	pH Units
Temp		78.1	F



Revised 8/18/2019

Field Results		Date: Sur	day, August 18, 2019
Client Sample ID:	#7	Work Order/ID	19H1106-07
Sample Description:		Sampled:	08/16/2019 17:13
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pH		7.52	pH Units
Temp		79	F
		'	
Client Sample ID:	#6	Work Order/ID	19H1106-08
Sample Description:		Sampled:	08/16/2019 17:20
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses	·	Result	Units
pH		7.59	pH Units
Temp		79.2	F
- 1			
Client Sample ID:	#5	Work Order/ID	19H1106-09
Sample Description:		Sampled:	08/16/2019 17:28
Matrix:	Aqueous	Received:	08/17/2019 11:20
	4	Result	Units
Analyses pH		7.59	pH Units
Temp		80.4	F
		1 22	
Client Sample ID:	#4	Work Order/ID	19H1106-10
Sample Description:		Sampled:	08/16/2019 17:33
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pН		7.64	pH Units
Temp		80.8	F
Client Sample ID:	#3	Work Order/ID	
Sample Description:	_	Sampled:	08/16/2019 17:38
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pH		7.63	pH Units
Temp		81.2	F
Client Sample ID:	#2	Work Order/ID	
Sample Description:	•	Sampled:	08/16/2019 17:43
Matrix:	Aqueous	Received:	08/17/2019 11:20
Analyses		Result	Units
pH		7.66	pH Units
Temp		81.2	F
Client Sample ID:	#1	Work Order/ID	19H1106-13
Sample Description:	<i>u</i> :	Sampled:	08/16/2019 17:53
Sample Description. Matrix:	Aqueous	Received:	08/17/2019 11:20
	7,440043		
Analyses		Result 7.62	Units pH Units
pH			



	Date: Sund	ay, August 18, 2019
	82.5	F
Outfall 001	Work Order/ID:	19H1106-14 08/16/2019 17:59
Aqueous	Received:	08/17/2019 11:20
	Result	Units
	7.63	pH Units
	84.5	F
#000	Work Order/ID:	19H1106-15
	Sampled:	08/16/2019 19:08
Aqueous	Received:	08/17/2019 11:20
	Result	Units
	7.64	pH Units
	70.9	F
	Aqueous #000	Outfall 001 Work Order/ID: Sampled: Received: Result 7.63 84.5 #000 Work Order/ID: Sampled: Aqueous Received: Received: Received: Result 7.64



CASE NARRATIVE Date: Sunday, August 18, 2019

Client: Arcelor Mittal USA, Inc.

Project: Spill Samples **Lab Order:** 19H1106

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

<u>Laboratory ID</u>	Sample Name
19H1106-01	#13
19H1106-02	#12
19H1106-03	#11
19H1106-04	#10
19H1106-05	#9
19H1106-06	#8
19H1106-07	#7
19H1106-08	#6
19H1106-09	#5
19H1106-10	#4
19H1106-11	#3
19H1106-12	#2
19H1106-13	#1
19H1106-14	Outfall 001
19H1106-15	#000

This report has been revised 8/18/19 in order to correct the Free Cyanide results to adjust for the Matrix Interference that caused the high bias on original results reported 8/17/19.



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#13 Work Order/ID: 19H1106-01 **Client Sample ID:**

Sampled: 08/16/2019 16:36 **Sample Description:**

Matrix: Aqueous						Receiv	ea:	06/17/2019 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500	-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	А	0.0079	0.0050		mg/L	1	08/17/2019 15:20
			Method: SW-846	9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	Time:08/17/2019 13:28
Free Cyanide		Α	NI	0.0062		mg/L	1	08/18/2019 14:39
			Method: SM 4500	-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	8.5	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 350	1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 350	.1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.12	0.10		mg/L	1	08/17/2019 15:54



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#12 Work Order/ID: 19H1106-02 **Client Sample ID:**

08/16/2019 16:44 **Sample Description:** Sampled:

Received: Matrix: Aqueous 08/17/2019 11:20

Matrix: Aqueous						Receiv	rea:	08/17/2019 11:20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4	500-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	Α	0.042	0.0050		mg/L	1	08/17/2019 15:25
			Method: SW-8	346 9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW- 8	346 9014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide		Α	0.040	0.0062		mg/L	1	08/18/2019 14:41
			Method: SM 4	500-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4	500-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	А	6.8	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA	350.1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA	350.1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.45	0.10		mg/L	1	08/17/2019 15:56



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#11 Work Order/ID: 19H1106-03 **Client Sample ID:**

08/16/2019 16:52 **Sample Description:** Sampled:

Received: Matrix: Aqueous 08/17/2019 11:20

Matrix: Aqueous						Received:		08/17/2019 11:20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4	500-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	А	0.044	0.0050		mg/L	1	08/17/2019 15:30
			Method: SW-8	346 9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-8	346 9014			Prep Date/	Time:08/17/2019 13:28
Free Cyanide		А	0.046	0.0062		mg/L	1	08/18/2019 13:23
			Method: SM 4	500-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4	500-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	6.6	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA ;	350.1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA	350.1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.58	0.10		mg/L	1	08/17/2019 16:04



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#10 Work Order/ID: 19H1106-04 **Client Sample ID:**

Sampled: 08/16/2019 16:58 **Sample Description:**

Matrix.						INCCCIV	cu.	00/11/2010 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500	-CN C/E-1999			Ana	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	īme: 08/17/2019 12:30
Cyanide, Total	dij	Α	0.050	0.0050		mg/L	1	08/17/2019 15:32
			Method: SW-846 9	9014			Ana	alyst: EF
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	ime:08/17/2019 13:28
Free Cyanide		Α	0.050	0.0062		mg/L	1	08/18/2019 14:43
			Method: SM 4500	-O C-2001			Ana	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/	ime:08/17/2019 12:16
Oxygen, Dissolved	di	А	6.5	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 350.	1 Rev 2.0			Ana	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 350	.1 Rev 2.0			Prep Date/	ime:08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.59	0.10		mg/L	1	08/17/2019 16:06



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

Work Order/ID: 19H1106-05 **Client Sample ID:** Sampled: 08/16/2019 17:04 **Sample Description:**

watrix: Aqueous						Receiv	ea:	06/17/2019 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 45	00-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/17/2019 12:30
Cyanide, Total	dij	А	0.038	0.0050		mg/L	1	08/17/2019 15:33
			Method: SW-84	6 9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-84	6 9014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide		А	0.040	0.0062		mg/L	1	08/18/2019 14:45
			Method: SM 45	00-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 45	00-O C-2001			Prep Date/	Time:08/17/2019 12:16
Oxygen, Dissolved	di	А	6.4	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 3	50.1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 3	50.1 Rev 2.0			Prep Date/	Time:08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.65	0.10		mg/L	1	08/17/2019 16:08



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#8 Work Order/ID: 19H1106-06 **Client Sample ID: Sample Description:** Sampled: 08/16/2019 17:08

Matrix.						IVECEIA	cu.	00/11/2015 11.20	
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed	
			Method: SM 4500	CN C/E-1999			An	alyst: ABG	
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30	
Cyanide, Total	dij	Α	0.035	0.0050		mg/L	1	08/17/2019 15:35	
			Method: SW-846 9	014			Ana	alyst: EF	
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	Time: 08/17/2019 13:28	
Free Cyanide		Α	0.032	0.0062		mg/L	1	08/18/2019 14:46	
			Method: SM 4500	O C-2001			Ana	alyst: DAT	
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/Time: 08/17/2019 12:16		
Oxygen, Dissolved	di	Α	6.4	0.20	Н	mg/L	1	08/17/2019 12:16	
			Method: EPA 350.	1 Rev 2.0			Ana	alyst: ABG	
Nitrogen, Ammonia as N		F	Prep Method: EPA 350	1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39	
Nitrogen, Ammonia (As N)	di	Α	0.61	0.10		mg/L	1	08/17/2019 16:11	



Client: Arcelor Mittal USA, Inc.

Client Project: Spill Samples

 Client Sample ID:
 #7
 Work Order/ID:
 19H1106-07

 Sample Description:
 Sampled:
 08/16/2019
 17:13

Matrix.						IXCCCIV	cu.	00/11/2010 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500	-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time:08/17/2019 12:30
Cyanide, Total	dij	Α	0.026	0.0050		mg/L	1	08/17/2019 15:37
			Method: SW-846 9	9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	Time:08/17/2019 13:28
Free Cyanide		Α	0.024	0.0062		mg/L	1	08/18/2019 14:48
			Method: SM 4500	-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	7.0	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 350.	1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 350	.1 Rev 2.0			Prep Date/	Time:08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.47	0.10		mg/L	1	08/17/2019 16:13



Client: Arcelor Mittal USA, Inc.

Client Project: Spill Samples

 Client Sample ID:
 #6
 Work Order/ID:
 19H1106-08

 Sample Description:
 Sampled:
 08/16/2019
 17:20

Matrix.						INCCCIV	cu.	00/11/2015 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500-	CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	А	0.023	0.0050		mg/L	1	08/17/2019 15:39
			Method: SW-846 9	014			Ana	alyst: EF
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide		Α	0.022	0.0062		mg/L	1	08/18/2019 14:50
			Method: SM 4500-	O C-2001			Ana	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	7.2	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 350.	1 Rev 2.0			Ana	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 350 .	1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.43	0.10		mg/L	1	08/17/2019 16:16



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#5 Work Order/ID: 19H1106-09 **Client Sample ID: Sample Description:** Sampled: 08/16/2019 17:28

Matrix. / iqueous						INCCCIV	cu.	00/11/2010 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 4500	-CN C/E-1999			Ana	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	īme:08/17/2019 12:30
Cyanide, Total	dij	Α	0.018	0.0050		mg/L	1	08/17/2019 15:40
			Method: SW-846 9	9014			Ana	alyst: EF
Free Cyanide		F	Prep Method: SW-846	9014			Prep Date/	ime: 08/17/2019 13:28
Free Cyanide		Α	0.016	0.0062		mg/L	1	08/18/2019 14:51
			Method: SM 4500	-O C-2001			Ana	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 4500	-O C-2001			Prep Date/	ime: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	7.2	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 350.	1 Rev 2.0			Ana	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 350	.1 Rev 2.0			Prep Date/	ime: 08/17/2019 12:39
Nitrogen, Ammonia (As N)	di	Α	0.41	0.10		mg/L	1	08/17/2019 16:18



Client: Arcelor Mittal USA, Inc.

Client Project: Spill Samples

 Client Sample ID:
 #4
 Work Order/ID:
 19H1106-10

 Sample Description:
 Sampled:
 08/16/2019
 17:33

 Matrix:
 Aqueous
 Received:
 08/17/2019
 11:20

Analyses Certs AT Result RL Qual **Units** DF Analyzed Method: SM 4500-CN C/E-1999 Analyst: ABG Prep Method: NA Prep Date/Time: 08/17/2019 12:30 **Total Cyanide** A 0.018 dij 0.0050 mg/L 08/17/2019 15:42 Cyanide, Total Method: SW-846 9014 Analyst: EF Prep Method: SW-846 9014 Prep Date/Time: 08/17/2019 13:28 Free Cyanide A 0.016 0.0062 08/18/2019 14:53 Free Cyanide mg/L Method: SM 4500-O C-2001 Analyst: DAT **Dissolved Oxygen** Prep Method: SM 4500-O C-2001 Prep Date/Time: 08/17/2019 12:16 Oxygen, Dissolved di A 7.4 0.20 08/17/2019 12:16 Н mg/L Method: EPA 350.1 Rev 2.0 Analyst: ABG Prep Method: EPA 350.1 Rev 2.0 Prep Date/Time: 08/17/2019 12:39 Nitrogen, Ammonia as N A 0.52 08/17/2019 16:20 Nitrogen, Ammonia (As N) di 0.10 mg/L



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#3 Work Order/ID: 19H1106-11 **Client Sample ID:** 08/16/2019 17:38 **Sample Description:** Sampled:

Received: Matrix: Aqueous 08/17/2019 11:20

					Receiv	ea:	06/17/2019 11.20
Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
		Method: SM 45	500-CN C/E-1999			An	alyst: ABG
	F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
dij	Α	0.018	0.0050		mg/L	1	08/17/2019 15:44
		Method: SW-84	46 9014			An	alyst: EF
	F	Prep Method: SW-8	46 9014			Prep Date/	Time: 08/17/2019 13:28
	Α	0.017	0.0062		mg/L	1	08/18/2019 14:55
		Method: SM 45	500-O C-2001			An	alyst: DAT
	F	Prep Method: SM 45	500-O C-2001			Prep Date/	Time: 08/17/2019 12:16
di	Α	7.1	0.20	Н	mg/L	1	08/17/2019 12:16
		Method: EPA 3	50.1 Rev 2.0			An	alyst: ABG
	F	Prep Method: EPA 3	350.1 Rev 2.0			Prep Date/	Time: 08/17/2019 12:39
di	Α	0.47	0.10		mg/L	1	08/17/2019 16:23
	dij	dij A F di A	Method: SM 45 Prep Method: NA dij A 0.018 Method: SW-84 Prep Method: SW-8 A 0.017 Method: SM 45 Prep Method: SM 45 Prep Method: SM 45 Prep Method: SM 45 Prep Method: EPA 3 Prep Method: EPA 3	Method: SM 4500-CN C/E-1999 Prep Method: NA dij A 0.018 0.0050 Method: SW-846 9014 Prep Method: SW-846 9014 A 0.017 0.0062 Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 di A 7.1 0.20 Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Method: SM 4500-CN C/E-1999 Prep Method: NA dij A 0.018 0.0050 Method: SW-846 9014 Prep Method: SW-846 9014 A 0.017 0.0062 Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 di A 7.1 0.20 H Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Certs AT Result RL Qual Units Method: SM 4500-CN C/E-1999 Prep Method: NA 0.0050 mg/L Method: SW-846 9014 Prep Method: SW-846 9014 Method: SW-846 9014 A 0.017 0.0062 mg/L Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Method: SM 4500-CN C/E-1999 And Prep Method: NA Prep Date/ dij A 0.018 0.0050 mg/L 1 Method: SW-846 9014 And Prep Method: SW-846 9014 Prep Date/ A 0.017 0.0062 mg/L 1 Method: SM 4500-O C-2001 And Prep Method: SM 4500-O C-2001 Prep Date/ di A 7.1 0.20 H mg/L 1 Method: EPA 350.1 Rev 2.0 And Prep Date/



Client: Arcelor Mittal USA, Inc.

Client Project: Spill Samples

 Client Sample ID:
 #2
 Work Order/ID:
 19H1106-12

 Sample Description:
 Sampled:
 08/16/2019
 17:43

Matrix: Aqueous						Receiv	ea:	06/17/2019 11.20
Analyses	Certs	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 45	00-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	А	0.016	0.0050		mg/L	1	08/17/2019 16:49
			Method: SW-84	16 9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-84	46 9014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide		А	0.016	0.0062		mg/L	1	08/18/2019 15:00
			Method: SM 45	00-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 45	500-O C-2001			Prep Date/	Time:08/17/2019 12:16
Oxygen, Dissolved	di	Α	7.0	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 3	50.1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 3	50.1 Rev 2.0			Prep Date/	Time: 08/17/2019 14:31
Nitrogen, Ammonia (As N)	di	Α	0.41	0.10		mg/L	1	08/17/2019 16:25



Arcelor Mittal USA, Inc. Client:

Client Project: Spill Samples

#1 Work Order/ID: 19H1106-13 **Client Sample ID: Sample Description:** Sampled: 08/16/2019 17:53

Certs	AT	Result					
		Result	RL	Qual	Units	DF	Analyzed
		Method: SM 4500)-CN C/E-1999			An	alyst: ABG
		Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
dij	А	0.016	0.0050		mg/L	1	08/17/2019 16:50
		Method: SW-846	9014			Ana	alyst: EF
		Prep Method: SW-846	9014			Prep Date/	Time: 08/17/2019 13:28
	А	0.016	0.0062		mg/L	1	08/18/2019 15:01
		Method: SM 4500	0-O C-2001			Ana	alyst: DAT
		Prep Method: SM 450	0-O C-2001			Prep Date/	Time: 08/17/2019 12:16
di	А	6.9	0.20	Н	mg/L	1	08/17/2019 12:16
		Method: EPA 350).1 Rev 2.0			Ana	alyst: ABG
		Prep Method: EPA 350	0.1 Rev 2.0			Prep Date/	Time: 08/17/2019 14:31
di	Α	0.43	0.10		mg/L	1	08/17/2019 16:32
	di	dij A	Prep Method: NA dij A 0.016 Method: SW-846 Prep Method: SW-846 A 0.016 Method: SM 4500 Prep Method: SM 4500 di A 6.9 Method: EPA 350 Prep Method: EPA 350	dij A 0.016 0.0050 Method: SW-846 9014 Prep Method: SW-846 9014 A 0.016 0.0062 Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 0.20 Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Prep Method: NA dij A 0.016 0.0050 Method: SW-846 9014 Prep Method: SW-846 9014 A 0.016 0.0062 Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 di A 6.9 0.20 H Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Prep Method: NA dij A 0.016 0.0050 mg/L Method: SW-846 9014 Prep Method: SW-846 9014 A 0.016 0.0062 mg/L Method: SM 4500-O C-2001 Prep Method: SM 4500-O C-2001 di A 6.9 0.20 H mg/L Method: EPA 350.1 Rev 2.0 Prep Method: EPA 350.1 Rev 2.0	Prep Method: NA Prep Date/T dij A 0.016 0.0050 mg/L 1 Method: SW-846 9014 Prep Date/T A 0.016 0.0062 mg/L 1 Method: SM 4500-O C-2001 Ana Prep Date/T di A 6.9 0.20 H mg/L 1 Method: EPA 350.1 Rev 2.0 Ana Prep Date/T Prep Method: EPA 350.1 Rev 2.0 Prep Date/T



Arcelor Mittal USA, Inc. Client:

Client Project: Spill Samples

Outfall 001 Work Order/ID: 19H1106-14 **Client Sample ID:**

Sample Description:

08/16/2019 17:59 Sampled: Aqueous Received: Matrix: 08/17/2019 11:20

Analyses	Certs	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SM 450	00-CN C/E-1999			An	alyst: ABG
Total Cyanide		F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total	dij	Α	0.019	0.0050		mg/L	1	08/17/2019 16:52
			Method: SW-84	6 9014			An	alyst: EF
Free Cyanide		F	Prep Method: SW-84	6 9014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide		Α	0.018	0.0062		mg/L	1	08/18/2019 15:03
			Method: SM 450	00-O C-2001			An	alyst: DAT
Dissolved Oxygen		F	Prep Method: SM 45	00-O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved	di	Α	6.6	0.20	Н	mg/L	1	08/17/2019 12:16
			Method: EPA 35	50.1 Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as N		F	Prep Method: EPA 3	50.1 Rev 2.0			Prep Date/	Time: 08/17/2019 14:31
Nitrogen, Ammonia (As N)	di	Α	0.56	0.10		mg/L	1	08/17/2019 16:35



Arcelor Mittal USA, Inc. Client:

Spill Samples **Client Project:**

#000 Work Order/ID: 19H1106-15 **Client Sample ID:**

08/16/2019 19:08 **Sample Description:** Sampled:

Received: 08/17/2019 11:20 Matrix: Aduenus

Matrix:	Aqueous						Receiv	ea:	08/17/2019 11:20
Analyses		Certs	AT	Result	RL	Qual	Units	DF	Analyzed
				Method: SM 4500-0	CN C/E-1999			An	alyst: ABG
Total Cyanide			F	Prep Method: NA				Prep Date/	Time: 08/17/2019 12:30
Cyanide, Total		dij	Α	ND	0.0050		mg/L	1	08/17/2019 16:54
				Method: SW-846 90)14			An	alyst: EF
Free Cyanide			F	Prep Method: SW-846 90	014			Prep Date/	Time: 08/17/2019 13:28
Free Cyanide			Α	ND	0.0062		mg/L	1	08/18/2019 15:05
				Method: SM 4500-C	C-2001			An	alyst: DAT
Dissolved Oxygen			F	Prep Method: SM 4500-0	O C-2001			Prep Date/	Time: 08/17/2019 12:16
Oxygen, Dissolved		di	Α	8.0	0.20	Н	mg/L	1	08/17/2019 12:16
				Method: EPA 350.1	Rev 2.0			An	alyst: ABG
Nitrogen, Ammonia as	N		F	Prep Method: EPA 350.1	Rev 2.0			Prep Date/	Time: 08/17/2019 14:31
Nitrogen, Ammonia (A	s N)	di	Α	ND	0.10		mg/L	1	08/17/2019 16:37

ANALYTE TYPES: (AT)

A,B = Target Analyte

I = Internal Standard

M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)



Revised 8/18/2019

QC SAMPLE IDENTIFICATIONS

BLK = Method Blank
DUP = Method Duplicate
BS = Method Blank Spike
MS = Matrix Spike
ICB = Initial Calibration Blank
CCB = Continuing Calibration Blank

INS - Matrix Spike

INS - Matrix Spike

INS - Matrix Spike

ICV =

ICS = Initial Calibration Blank

ICV =

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

Revised

Cooler ID: Default Cooler



8/18/2019

_	g III OKO BAC	8/18/2019
Cooler Inspection Checklist		0/10/2010
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?	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?)	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	

中干中 19H1106 Carey Gadzala ArcelorMittal - Burns Harbor, IN Receiving Water Monitoring Page 24 of 26 08/17/2019 Additional Notes 9 CHAIN OF CUSTODY RECOF Custody Seals Intact? Tes No Samples Received on Ice? XYes 8/16/19 TO BE COMPLETED BY MICROBAC Number 152346
Instructions on back ☐ Level 1 ☐ Level 2 ☐ Level 3 ☐ Level 4 ☐ EDD 0 Temperature Upon Receipt (°C) Therm ID Date/Time °N □ ☐ Dispose as appropriate ☐ Return ☐ Archive ** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCl, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved □ Yes Holding Time Compliance Monitoring? ☐ Agency/Program * Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GW), Surface Water (SW), Waste Water (WW), Other (specify) Received By (signature) Received By (signature) Received By (signature) = e-mail (address) JESTED ANALYSIS ☐ Routine (5 to 7 business days) ☐ RUSH* (notify lab) Hd dun FROG M Sampler Phone No.: **Turnaround Time** ☐ Results Only ☐ Mail ☐ Fax 10/18/1120 (needed by) Report Type Sample Disposition HMN Send Invoice via: PO No.: Tang of Date/Time Date/Time Preservative い、み、と Grab / Comp 5 d Relinquished By (signature) ADA Relinquished By (signature) Matrix ☐ Hazardous ☐ Non-Hazardous ☐ Radioactive Relinquished By (sigh Sampler Signature: Vo. of Containers Invoice Address City, State, Zip: Telephone No.: 4.36PM Client Name: Time Address: Contact: Location: 2 Project: Roceiving Water Monitorina 10118 Date e-mail (address) というと Client Sample ID ☐ Mail ☐ Fax When collected Sampled by (PRINT): PORTY ((H Possible Hazard Identification MICROBAC* Lab Report Address remp Send Report via: City, State, Zip: Telephone No.: Client Name:

Lab ID

Address:

Contact:

rev.12/26/2017

Comments

∅ MICROBAC*

CHAIN OF CUSTODY RECORD Number 152367 Instructions on back	TO BE COMPLETED BY MICROBAC	Temperature Upon Receipt (°C) Therm ID	Holding Time	Samples Received on Ice? (XYes □ No □ N/A	Custody Seals Intact? ☐ Yes ☐ No ZÃN/A	☐ Level 3 ☐ Level 4 ☐ EDD		ing? ☐ Yes ☐ No	18-785 W	(U) Unpreserved		3011HB1 0	Tenst	19 JoF 75	78.70 7.32	78,4°F 7.35-0		181°F 7.37-0	79.0°F 7.53-0	79,2°F 7.59-0	0-05,7 7°1.08	7-79 1-80.08	81,2°F 7.631	□ Return □ Archive	Date/Time	1	Date/Time Date/Time (1/20)	
		☐ Routine (5 to 7 business days) ☑ RUSH* (notify lab)		(needed by)	Report Type	☐ Results Only ☐ Level 1 ☐ Level 2	via:	PO No.: Compliance Monitoring?	Sampler Phone No.: 219-69	Surface Water (SW), Waste Water (WW), Other (specify) (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved	REQUESTED ANALYSIS	5	7H7	* × × × × ×	×××××	××××××××××××××××××××××××××××××××××××××	XXXXX	× × × × × ×	× × × ×	× × × ×	× × × × ×	X		Sample Disposition 🔲 Dispose as appropriate 📙	18 Received	Received By (signature)	Received By (signature)	
	Invoice Address	Client Name:	Address:	City, State, Zip:	Contact:	Telephone No.:	Send Invoice via:	11,	Sampler Signature:	, Groundwater (GW), cetate, (6) Methanol	>		o. of Conta atrix rab / Comp	10 G 6 24	x 1 1 1 1 Md CS:			5:08PM		S: 20PM		5:33 PM	5:38pm+ 4 4 4		Relinquished By Asignature) Date/Time	Relinquished By (signature) Date/Time	Relinquished By Grignature Date/Time	
١٠,	lnv	Clie	PA	e. Off	Ö	Tel	☐ Mail ☐ Fax ☐ e-mail (address)	Receiving Water Manitaingcation:	Garman	* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW) ** Preservative Types: (1) HNO3, (2) H2SO4, (3) HCI, (4) NaOH, (5) Zinc A			Date	112 Sample 10 Collected	J	7	0	ည	-	0	b	7	>	tification Hazardous Non-Hazardous Radioactive	collected 4.2 Rel)	
∅ MICROBAC*	Lab Report Address	Client Name:	Address:	City, State, Zip:	Contact:	Telephone No.:	Send Report via:	Project: Recei	Sampled by (PRINT): Patrick	** Presen			<u> </u>	- Can ID			3	•	-	,	# . • .	#	#	Possible Hazard Identification	7	st st	S	7,00/00/00

∅ MICROBAC*

CHAIN OF CUSTODY RECORD Number 152368

(MICROBAC			Number 152368 Instructions on pack
Lab Report Address	Invoice Address	Turnaround Time	TO BE COMPLETED BY MICROBAC
Client Name:	Client Name:	☐ Routine (5 to 7 business days) 【RUSH* (notify lab)	Temperature Upon Receipt (°C) Therm ID
Address:	Address:		Holding Time
City, State, Zip:	City, State, Zip:	(needed by)	Samples Received on Ice? XYes \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Contact:	Contact:	Report Type	Custody Seals Intact? ☐ Yes ☐ No KN/A
Telephone No.:	Telephone No.:	☐ Results Only ☐ Level 1 ☐ Level 2	il 2 ☐ Level 3 ☐ Level 4 ☐ EDD
Send Report via:		Send Invoice via:	
Project: Receiving Mater Mohiporing Location:	Location:	PO No.: Compliance Monitoring?	nitoring?
Sampled by (PRINT): Patrick (normain	Sampler Signature:	Sampler Phone No.: 219-69	644-788S
* 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) HCI, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane, (U) Unpreserved	"Drinking Water (DW), Groundwater (GW) (4) NaOH, (5) Zinc Acetate, (6) Methanc	* Matrix Types: Soil/Solid (S), Sludge, Oil, Wipe, Drinking Water (DW), Groundwater (GM), Surface Water (SW), Waste Water (WW), Other (specify) ervative Types: (1) HNO3, (2) H2SO4, (3) HCI, (4) NaOH, (5) Zinc Acetate, (6) Methanol, (7) Sodium Bisulfate, (8) Sodium Thiosulfate, (9) Hexane	ify) (ane, (U) Unpreserved
		REQUESTED ANALYSIS	
Date Cample ID Chlored	Jo. of Containers	Preservative DO 17-6-MP 17-6-M	Ho 1941/06
8 C#	S:43PM/4 / 1/4 / C U	1,2,4 X X X X X X	81.29 7.00-12
一世	5:53PM	XXXXXXX	182,59F 7,62-13
ONTEAN GOI	>	X	84.50 7.63-14
	M M80:t	× × × × × × × ×	70.74 7.67-15
	,		
Possible Hazard Identification Hazardous Non-Hazardous	lazardous Radioactive	Sample Disposition Dispose as appropriate	Return Archive
te	Sed By	100	Date/Time
Temp	Relinquished By (signature)	Date/Time Received By (signature)	Date/Time
Hod	Relinquished By (signature)	Date/Time Received By (signature 8/17/19 112c Fame	e) Pate/Time 1120
rev.12/26/2017			Page Page 24of 26