



29-Aug-2019

Robert Macial
ArcelorMittal USA LLC
Gary Plate Processing
One North Buchanan Street
Gary, IN 46402

Re: **Arcelor Mittal - Burns Harbor E.R.**

Work Order: **19081888**

Dear Robert,

ALS Environmental received 25 samples on 27-Aug-2019 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 42.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

A handwritten signature in black ink that reads "Amanda Grzybowski".

Electronically approved by: Amanda Grzybowski

Amanda Grzybowski
Project Manager

Report of Laboratory Analysis

Certificate No: VL: E871119

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

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RIGHT SOLUTIONS RIGHT PARTNER

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Work Order: 19081888

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
19081888-01	15	Aqueous		8/27/2019 08:46	8/27/2019 15:28	<input type="checkbox"/>
19081888-02	14	Aqueous		8/27/2019 08:56	8/27/2019 15:28	<input type="checkbox"/>
19081888-03	7	Aqueous		8/27/2019 09:04	8/27/2019 15:28	<input type="checkbox"/>
19081888-04	6	Aqueous		8/27/2019 09:04	8/27/2019 15:28	<input type="checkbox"/>
19081888-05	5	Aqueous		8/27/2019 09:21	8/27/2019 15:28	<input type="checkbox"/>
19081888-06	4	Aqueous		8/27/2019 09:30	8/27/2019 15:28	<input type="checkbox"/>
19081888-07	3	Aqueous		8/27/2019 09:39	8/27/2019 15:28	<input type="checkbox"/>
19081888-08	2	Aqueous		8/27/2019 09:48	8/27/2019 15:28	<input type="checkbox"/>
19081888-09	1	Aqueous		8/27/2019 09:56	8/27/2019 15:28	<input type="checkbox"/>
19081888-10	OF001	Aqueous		8/27/2019 10:09	8/27/2019 15:28	<input type="checkbox"/>
19081888-11	8	Aqueous		8/27/2019 11:16	8/27/2019 15:28	<input type="checkbox"/>
19081888-12	9	Aqueous		8/27/2019 11:21	8/27/2019 15:28	<input type="checkbox"/>
19081888-13	10	Aqueous		8/27/2019 11:30	8/27/2019 15:28	<input type="checkbox"/>
19081888-14	11	Aqueous		8/27/2019 11:36	8/27/2019 15:28	<input type="checkbox"/>
19081888-15	12	Aqueous		8/27/2019 11:41	8/27/2019 15:28	<input type="checkbox"/>
19081888-16	13	Aqueous		8/27/2019 11:47	8/27/2019 15:28	<input type="checkbox"/>
19081888-17	SL-1	Aqueous		8/27/2019 11:51	8/27/2019 15:28	<input type="checkbox"/>
19081888-18	SL-2	Aqueous		8/27/2019 11:56	8/27/2019 15:28	<input type="checkbox"/>
19081888-19	SL-3	Aqueous		8/27/2019 12:05	8/27/2019 15:28	<input type="checkbox"/>
19081888-20	SL-4	Aqueous		8/27/2019 12:14	8/27/2019 15:28	<input type="checkbox"/>
19081888-21	SL-5	Aqueous		8/27/2019 12:20	8/27/2019 15:28	<input type="checkbox"/>
19081888-22	SL-6	Aqueous		8/27/2019 12:30	8/27/2019 15:28	<input type="checkbox"/>
19081888-23	SL-7	Aqueous		8/27/2019 12:37	8/27/2019 15:28	<input type="checkbox"/>
19081888-24	SL-8	Aqueous		8/27/2019 12:47	8/27/2019 15:28	<input type="checkbox"/>
19081888-25	000	Aqueous		8/27/2019 14:45	8/27/2019 15:28	<input type="checkbox"/>

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Work Order: 19081888

Case Narrative

Samples in this Work Order were received and analyzed at the ALS Valparaiso facility at 2400 Cumberland Drive, Valparaiso, Indiana; under Florida NELAP certification ID# E871119.

Any Batch MS/MSD results that are flagged, but not addressed in this Case Narrative, are not related to this project's sample(s); therefore the data does not require qualification.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 15
Collection Date: 8/27/2019 08:46 AM

Work Order: 19081888
Lab ID: 19081888-01
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.40		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.63		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	22.5		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 14:44
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:09
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0837		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:04

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 14
Collection Date: 8/27/2019 08:56 AM

Work Order: 19081888
Lab ID: 19081888-02
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	8.10		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.75		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	22.6		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 14:48
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:11
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0726		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:08

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 7
Collection Date: 8/27/2019 09:04 AM

Work Order: 19081888
Lab ID: 19081888-03
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.30		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.52		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	22.1		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 14:49
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:12
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.120		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:09

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 6
Collection Date: 8/27/2019 09:04 AM

Work Order: 19081888
Lab ID: 19081888-04
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.80		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.66		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.7		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00268	J	0.00200	0.00500	mg/L	1	8/28/2019 14:50
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:15
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.167		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:10

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 5
Collection Date: 8/27/2019 09:21 AM

Work Order: 19081888
Lab ID: 19081888-05
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.00		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.68		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.4		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00290	J	0.00200	0.00500	mg/L	1	8/28/2019 14:53
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:16
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.173		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 4
Collection Date: 8/27/2019 09:30 AM

Work Order: 19081888
Lab ID: 19081888-06
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.50		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.69		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.5		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00314	J	0.00200	0.00500	mg/L	1	8/28/2019 14:55
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:17
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.190		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:15

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 3
Collection Date: 8/27/2019 09:39 AM

Work Order: 19081888
Lab ID: 19081888-07
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.60		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.70		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.6		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00243	J	0.00200	0.00500	mg/L	1	8/28/2019 14:58
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:21
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.187		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:16

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 2
Collection Date: 8/27/2019 09:48 AM

Work Order: 19081888
Lab ID: 19081888-08
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.50		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.71		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.6		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00276	J	0.00200	0.00500	mg/L	1	8/28/2019 14:59
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:22
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.181		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:18

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
 Project: Arcelor Mittal - Burns Harbor E.R.
 Sample ID: 1
 Collection Date: 8/27/2019 09:56 AM

Work Order: 19081888
 Lab ID: 19081888-09
 Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.50		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	7.65		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	21.9		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	0.00390	J	0.00200	0.00500	mg/L	1	8/28/2019 15:00
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	0.0022	J	0.0020	0.0050	mg/L	1	8/29/2019 09:23
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.226		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:19
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: OF001
Collection Date: 8/27/2019 10:09 AM

Work Order: 19081888
Lab ID: 19081888-10
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.10		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.64		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	22.4		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00300	J	0.00200	0.00500	mg/L	1	8/28/2019 15:01
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:26
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.300		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:22

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 8
Collection Date: 8/27/2019 11:16 AM

Work Order: 19081888
Lab ID: 19081888-11
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.10		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.64		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	25.2		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:02
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:28
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.113		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:24

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 9
Collection Date: 8/27/2019 11:21 AM

Work Order: 19081888
Lab ID: 19081888-12
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	5.80		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.63		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	24.1		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	0.00206	J	0.00200	0.00500	mg/L	1	8/28/2019 15:04
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:29
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.124		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 10
Collection Date: 8/27/2019 11:30 AM

Work Order: 19081888
Lab ID: 19081888-13
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.10		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.76		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	24.2		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:05
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:30
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.121		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:26

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 11
Collection Date: 8/27/2019 11:36 AM

Work Order: 19081888
Lab ID: 19081888-14
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	5.70		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	7.70		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	24.2		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	0.00223	J	0.00200	0.00500	mg/L	1	8/28/2019 15:06
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:31
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.130		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:30
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 12
Collection Date: 8/27/2019 11:41 AM

Work Order: 19081888
Lab ID: 19081888-15
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	5.60		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	7.74		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	24.0		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	0.00392	J	0.00200	0.00500	mg/L	1	8/28/2019 15:07
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide		U	0.0020	0.0050	mg/L	1	8/29/2019 09:34
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.124		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:31
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 13
Collection Date: 8/27/2019 11:47 AM

Work Order: 19081888
Lab ID: 19081888-16
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.90		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	7.87		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	21.3		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:08
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:35
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0467		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:32

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-1
Collection Date: 8/27/2019 11:51 AM

Work Order: 19081888
Lab ID: 19081888-17
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.50		0		mg/L	1	8/27/2019
PH (FIELD)							
pH (field)	8.04		0		s.u.	1	8/27/2019
TEMPERATURE (FIELD)							
Temperature (field)	19.4		0		°C	1	8/27/2019
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:12
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:37
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0303	J	0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-2
Collection Date: 8/27/2019 11:56 AM

Work Order: 19081888
Lab ID: 19081888-18
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.60		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.05		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.8		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:13
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:38
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0126	J	0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:34
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-3
Collection Date: 8/27/2019 12:05 PM

Work Order: 19081888
Lab ID: 19081888-19
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.60		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.06		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.7		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:14
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:39
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:36
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-4
Collection Date: 8/27/2019 12:14 PM

Work Order: 19081888
Lab ID: 19081888-20
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.30		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.06		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.1		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:15
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/27/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:40
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:37
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-5
Collection Date: 8/27/2019 12:20 PM

Work Order: 19081888
Lab ID: 19081888-21
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.20		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.04		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.5		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:18
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/28/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:43
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:41
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-6
Collection Date: 8/27/2019 12:30 PM

Work Order: 19081888
Lab ID: 19081888-22
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.70		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.01		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.2		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:22
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/28/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:44
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:44
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-7
Collection Date: 8/27/2019 12:37 PM

Work Order: 19081888
Lab ID: 19081888-23
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	7.80		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	7.99		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.5		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:25
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/28/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:48
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:48
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: SL-8
Collection Date: 8/27/2019 12:47 PM

Work Order: 19081888
Lab ID: 19081888-24
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.90		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	8.05		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	19.6		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:26
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/28/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:49
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	U		0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:49
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 29-Aug-19

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
Sample ID: 000
Collection Date: 8/27/2019 02:45 PM

Work Order: 19081888
Lab ID: 19081888-25
Matrix: AQUEOUS

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
DISSOLVED OXYGEN (FIELD)							
Dissolved Oxygen (field)	6.80		0		mg/L	1	8/27/2019
				Method: A4500-O G-11			Analyst: ALS
PH (FIELD)							
pH (field)	7.71		0		s.u.	1	8/27/2019
				Method: A4500-H B-11			Analyst: ALS
TEMPERATURE (FIELD)							
Temperature (field)	22.1		0		°C	1	8/27/2019
				Method: A2550 B-10			Analyst: ALS
CYANIDE, TOTAL							
Cyanide, Total	U		0.00200	0.00500	mg/L	1	8/28/2019 15:27
				Method: A4500-CN E-11		Prep: A4500-CN C-11 / 8/28/19	Analyst: CD
WEAK ACID DISSOCIABLE CYANIDE							
Weak Acid Dissociable Cyanide	U		0.0020	0.0050	mg/L	1	8/29/2019 09:50
				Method: A4500-CN I-11		Prep: A4500-CN I / 8/28/19	Analyst: CD
AMMONIA AS NITROGEN							
Ammonia as Nitrogen	0.0298	J	0.00980	0.0320	mg NH3-N/L	1	8/28/2019 09:50
				Method: E350.1 R2.0			Analyst: CD

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: ArcelorMittal USA LLC
Project: Arcelor Mittal - Burns Harbor E.R.
WorkOrder: 19081888

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
°C	Degrees Celcius
mg NH3-N/L	Milligrams Ammonia-Nitrogen per Liter
mg/L	Milligrams per Liter
s.u.	Standard Units

Client: ArcelorMittal USA LLC
Work Order: 19081888
Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: **141619** Instrument ID **VAL-LACHAT** Method: **A4500-CN E-11**

MBLK	Sample ID: MBLK-141619-141619				Units: mg/L		Analysis Date: 8/28/2019 02:40 PM			
Client ID:	Run ID: VAL-LACHAT_190828B			SeqNo: 5879670		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total U 0.0050

LCS	Sample ID: LCS-141619-141619				Units: mg/L		Analysis Date: 8/28/2019 02:41 PM			
Client ID:	Run ID: VAL-LACHAT_190828B			SeqNo: 5879671		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.097 0.0050 0.1 0 97 90-110 0

MS	Sample ID: 19081888-01B MS				Units: mg/L		Analysis Date: 8/28/2019 02:46 PM			
Client ID: 15	Run ID: VAL-LACHAT_190828B			SeqNo: 5879675		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.102 0.0050 0.1 0.001725 100 70-130 0

MS	Sample ID: 19081888-04B MS				Units: mg/L		Analysis Date: 8/28/2019 02:51 PM			
Client ID: 6	Run ID: VAL-LACHAT_190828B			SeqNo: 5879680		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.107 0.0050 0.1 0.00268 104 70-130 0

MSD	Sample ID: 19081888-01B MSD				Units: mg/L		Analysis Date: 8/28/2019 02:47 PM			
Client ID: 15	Run ID: VAL-LACHAT_190828B			SeqNo: 5879676		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.096 0.0050 0.1 0.001725 94.3 70-130 0.102 6.06 30

MSD	Sample ID: 19081888-04B MSD				Units: mg/L		Analysis Date: 8/28/2019 02:52 PM			
Client ID: 6	Run ID: VAL-LACHAT_190828B			SeqNo: 5879681		Prep Date: 8/27/2019		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.112 0.0050 0.1 0.00268 109 70-130 0.107 4.57 30

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
Work Order: 19081888
Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: **141619** Instrument ID **VAL-LACHAT** Method: **A4500-CN E-11**

The following samples were analyzed in this batch:

19081888-01B	19081888-02B	19081888-03B
19081888-04B	19081888-05B	19081888-06B
19081888-07B	19081888-08B	19081888-09B
19081888-10B	19081888-11B	19081888-12B
19081888-13B	19081888-14B	19081888-15B
19081888-16B	19081888-17B	19081888-18B
19081888-19B	19081888-20B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
 Work Order: 19081888
 Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: 141620 Instrument ID VAL-LACHAT Method: A4500-CN E-11

MBLK	Sample ID: MBLK-141620-141620		Units: mg/L		Analysis Date: 8/28/2019 03:16 PM					
Client ID:	Run ID: VAL-LACHAT_190828B		SeqNo: 5879702		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total U 0.0050

LCS	Sample ID: LCS-141620-141620		Units: mg/L		Analysis Date: 8/28/2019 03:17 PM					
Client ID:	Run ID: VAL-LACHAT_190828B		SeqNo: 5879703		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.101 0.0050 0.1 0 101 90-110 0

MS	Sample ID: 19081888-21B MS		Units: mg/L		Analysis Date: 8/28/2019 03:19 PM					
Client ID: SL-5	Run ID: VAL-LACHAT_190828B		SeqNo: 5879705		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.1045 0.0050 0.1 0.00082 104 70-130 0

MSD	Sample ID: 19081888-21B MSD		Units: mg/L		Analysis Date: 8/28/2019 03:21 PM					
Client ID: SL-5	Run ID: VAL-LACHAT_190828B		SeqNo: 5879706		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Cyanide, Total 0.101 0.0050 0.1 0.00082 100 70-130 0.1045 3.41 30

The following samples were analyzed in this batch:

19081888-21B	19081888-22B	19081888-23B
19081888-24B	19081888-25B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
 Work Order: 19081888
 Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: 141652 Instrument ID VAL-LACHAT Method: A4500-CN I-11

MBLK		Sample ID: MBLK-141652-141652				Units: mg/L		Analysis Date: 8/29/2019 09:07 AM		
Client ID:		Run ID: VAL-LACHAT_190829A				SeqNo: 5882199		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide U 0.0050

LCS		Sample ID: LCS-141652-141652				Units: mg/L		Analysis Date: 8/29/2019 09:08 AM		
Client ID:		Run ID: VAL-LACHAT_190829A				SeqNo: 5882200		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.105 0.0050 0.1 0 105 80-120 0

MS		Sample ID: 19081888-03C MS				Units: mg/L		Analysis Date: 8/29/2019 09:13 AM		
Client ID: 7		Run ID: VAL-LACHAT_190829A				SeqNo: 5882204		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.099 0.0050 0.1 0.00155 97.4 70-130 0

MS		Sample ID: 19081888-09C MS				Units: mg/L		Analysis Date: 8/29/2019 09:24 AM		
Client ID: 1		Run ID: VAL-LACHAT_190829A				SeqNo: 5882214		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.104 0.0050 0.1 0.002225 102 70-130 0

MSD		Sample ID: 19081888-03C MSD				Units: mg/L		Analysis Date: 8/29/2019 09:14 AM		
Client ID: 7		Run ID: VAL-LACHAT_190829A				SeqNo: 5882205		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.099 0.0050 0.1 0.00155 97.4 70-130 0.099 0 30

MSD		Sample ID: 19081888-09C MSD				Units: mg/L		Analysis Date: 8/29/2019 09:25 AM		
Client ID: 1		Run ID: VAL-LACHAT_190829A				SeqNo: 5882215		Prep Date: 8/28/2019		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.1005 0.0050 0.1 0.002225 98.3 70-130 0.104 3.42 30

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
Work Order: 19081888
Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: **141652** Instrument ID **VAL-LACHAT** Method: **A4500-CN I-11**

The following samples were analyzed in this batch:

19081888-01C	19081888-02C	19081888-03C
19081888-04C	19081888-05C	19081888-06C
19081888-07C	19081888-08C	19081888-09C
19081888-10C	19081888-11C	19081888-12C
19081888-13C	19081888-14C	19081888-15C
19081888-16C	19081888-17C	19081888-18C
19081888-19C	19081888-20C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
 Work Order: 19081888
 Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: 141653 Instrument ID VAL-LACHAT Method: A4500-CN I-11

MBLK	Sample ID: MBLK-141653-141653		Units: mg/L		Analysis Date: 8/29/2019 09:41 AM					
Client ID:	Run ID: VAL-LACHAT_190829A		SeqNo: 5882229		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide U 0.0050

LCS	Sample ID: LCS-141653-141653		Units: mg/L		Analysis Date: 8/29/2019 09:42 AM					
Client ID:	Run ID: VAL-LACHAT_190829A		SeqNo: 5882230		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.105 0.0050 0.1 0 105 80-120 0

MS	Sample ID: 19081888-25C MS		Units: mg/L		Analysis Date: 8/29/2019 09:51 AM					
Client ID: 000	Run ID: VAL-LACHAT_190829A		SeqNo: 5882238		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.1025 0.0050 0.1 -0.0003485 103 70-130 0

MSD	Sample ID: 19081888-25C MSD		Units: mg/L		Analysis Date: 8/29/2019 09:52 AM					
Client ID: 000	Run ID: VAL-LACHAT_190829A		SeqNo: 5882239		Prep Date: 8/28/2019 DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Weak Acid Dissociable Cyanide 0.099 0.0050 0.1 -0.0003485 99.3 70-130 0.1025 3.47 30

The following samples were analyzed in this batch:

19081888-21C	19081888-22C	19081888-23C
19081888-24C	19081888-25C	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
 Work Order: 19081888
 Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: **R269348** Instrument ID **VAL-LACHAT** Method: **E350.1 R2.0**

MBLK	Sample ID: MBLK-R269348		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:02 AM					
Client ID:	Run ID: VAL-LACHAT_190828A		SeqNo: 5878360		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen U 0.032

MBLK	Sample ID: MBLK-R269348		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:38 AM					
Client ID:	Run ID: VAL-LACHAT_190828A		SeqNo: 5878390		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen U 0.032

LCS	Sample ID: LCS-R269348		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:03 AM					
Client ID:	Run ID: VAL-LACHAT_190828A		SeqNo: 5878361		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen 0.416 0.032 0.4 0 104 90-110 0

LCS	Sample ID: LCS-R269348		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:39 AM					
Client ID:	Run ID: VAL-LACHAT_190828A		SeqNo: 5878391		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen 0.429 0.032 0.4 0 107 90-110 0

MS	Sample ID: 19081888-01A MS		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:06 AM					
Client ID: 15	Run ID: VAL-LACHAT_190828A		SeqNo: 5878363		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen 0.28 0.032 0.2 0.0837 98.2 90-110 0

MS	Sample ID: 19081888-09A MS		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:20 AM					
Client ID: 1	Run ID: VAL-LACHAT_190828A		SeqNo: 5878375		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen 0.434 0.032 0.2 0.226 104 90-110 0

MS	Sample ID: 19081888-22A MS		Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:45 AM					
Client ID: SL-6	Run ID: VAL-LACHAT_190828A		SeqNo: 5878396		Prep Date: DF: 1					
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Ammonia as Nitrogen 0.195 0.032 0.2 -0.0179 106 90-110 0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: ArcelorMittal USA LLC
 Work Order: 19081888
 Project: Arcelor Mittal - Burns Harbor E.R.

QC BATCH REPORT

Batch ID: **R269348** Instrument ID **VAL-LACHAT** Method: **E350.1 R2.0**

MSD		Sample ID: 19081888-01A MSD				Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:07 AM		
Client ID: 15		Run ID: VAL-LACHAT_190828A				SeqNo: 5878364		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	0.278	0.032	0.2	0.0837	97.2	90-110	0.28	0.717	20	

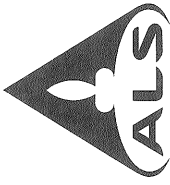
MSD		Sample ID: 19081888-09A MSD				Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:21 AM		
Client ID: 1		Run ID: VAL-LACHAT_190828A				SeqNo: 5878376		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	0.436	0.032	0.2	0.226	105	90-110	0.434	0.46	20	

MSD		Sample ID: 19081888-22A MSD				Units: mg NH3-N/L		Analysis Date: 8/28/2019 09:46 AM		
Client ID: SL-6		Run ID: VAL-LACHAT_190828A				SeqNo: 5878397		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Ammonia as Nitrogen	0.195	0.032	0.2	-0.0179	106	90-110	0.195	0	20	

The following samples were analyzed in this batch:

19081888-01A	19081888-02A	19081888-03A
19081888-04A	19081888-05A	19081888-06A
19081888-07A	19081888-08A	19081888-09A
19081888-10A	19081888-11A	19081888-12A
19081888-13A	19081888-14A	19081888-15A
19081888-16A	19081888-17A	19081888-18A
19081888-19A	19081888-20A	19081888-21A
19081888-22A	19081888-23A	19081888-24A
19081888-25A		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



Chain of Custody Form

Cincinnati, OH
+1 513 733 5336
Everett, WA
+1 425 356 2600

Fort Collins, CO
+1 970 490 1511
Holland, MI
+1 616 399 6070

Houston, TX
+1 281 530 5656
Middletown, PA
+1 717 944 5541

Spring City, PA
+1 610 948 4903
Salt Lake City, UT
+1 801 266 7700

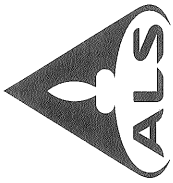
South Charleston, WV
+1 304 356 3168
York, PA
+1 717 505 5280

Page 1 of 3

COC ID: **41861**

Customer Information				Project Information				ALS Project Manager:				ALS Work Order #:					
Purchase Order	Project Name	Receiving Water Monitoring		Parameter/Method Request for Analysis													
Work Order	Project Number	AMBH		NHH													
Company Name	Bill To Company	AMBH		CN (total)													
Send Report To	Invoice Attn	AMBH		FREE CN													
Address	Address			PH (field tested)													
City/State/Zip	City/State/Zip			TEMP °C (field tested)													
Phone	Phone			D.O. (field tested)													
Fax	Fax																
e-Mail Address	e-Mail Address																
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	15	8/27/19	846	AQ	4,3,V	3	X	X	X				22.5	7.4			
2	14		856										22.6	8.1			
3	7		904										22.1	7.3			
4	6		911										21.7	6.8			
5	5		921										21.4	7.0			
6	4		930										21.5	6.5			
7	3		939										21.6	6.6			
8	2		948										21.6	6.5			
9	1		956										21.9	6.5			
10	OF 001		1609										22.9	7.1			
Sampler(s) Please Print & Sign				Shipment Method				Turnaround Time in Business Days (BD)				Results Due Date:					
M. Michael Hall								<input type="checkbox"/> 10 BD <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD									
Relinquished by:				Received by:				Notes:				QC Package: (Check One Box Below)					
Date: 8-27-19				Time: 1500								<input type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist <input type="checkbox"/> Level III Std QC/Raw Date <input type="checkbox"/> TRRP Level IV <input type="checkbox"/> Level IV SW846/GLP <input type="checkbox"/> Other _____					
Relinquished by:				Received by (Laboratory):				Cooler ID				Cooler Temp					
Date: 8-27-19				Time: 1528								3.62					
Logged by (Laboratory):				Checked by (Laboratory):													
Date:				Time:													
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																	

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Chain of Custody Form

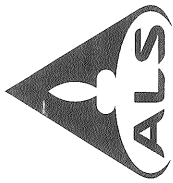
Cincinnati, OH +1 513 733 5336
 Fort Collins, CO +1 970 490 1511
 Everett, WA +1 425 356 2600
 Houston, TX +1 281 530 5656
 Middletown, PA +1 717 944 5541
 Salt Lake City, UT +1 801 266 7700
 Spring City, PA +1 610 948 4903
 South Charleston, WV +1 304 356 3168
 York, PA +1 717 505 5280

Page 2 of 3

COC ID: 41859

Customer Information				Project Information				ALS Project Manager:				ALS Work Order #:					
Purchase Order	Project Name	Project Information		Parameter/Method Request for Analysis													
Work Order	Project Number	Receiving water monitoring		NH4													
Company Name	Bill To Company	AMBH		CN (total)													
Send Report To	Invoice Attn			FREE CN													
Address	Address			PH (field tested)													
City/State/Zip	City/State/Zip			Temp C (field tested)													
Phone	Phone			D.O. (field tested)													
Fax	Fax			PH TEMP													
e-Mail Address	e-Mail Address			D.O.													
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	8	8/27/19	1116	AQ	43, V	3	X	X	X		7.64		25.2		6.1		
2	9		1121								7.63		24.1		5.8		
3	10		1130								7.76		24.2		6.1		
4	11		1136								7.70		24.2		5.7		
5	12		1141								7.74		24.0		5.6		
6	13		1147								7.87		21.3		6.9		
7	SL-1		1151								8.04		19.4		6.5		
8	SL-2		1156								8.05		19.8		6.6		
9	SL-3		12:05								8.06		19.7		7.6		
10	SL-4		1214								8.06		19.1		7.3		
Sampler(s) Please Print & Sign				Shipment Method				Turnaround Time in Business Days (BD)				Results Due Date:					
Michael Hall								<input type="checkbox"/> 10 BD <input type="checkbox"/> 5 BD <input type="checkbox"/> 3 BD <input type="checkbox"/> 2 BD <input type="checkbox"/> 1 BD									
Relinquished by: <i>[Signature]</i>				Received by: <i>[Signature]</i>				Notes:				QC Package: (Check One Box Below)					
Date: 8-27-19 Time: 1500				Received by (Laboratory):				Cooler ID				Cooler Temp					
Date: 8-27-19 Time: 1520				Checked by (Laboratory):				Cooler ID				Cooler Temp					
Date:				Checked by (Laboratory):				Cooler ID				Cooler Temp					
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035																	

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.



Chain of Custody Form

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+1 513 733 5336

York, PA
+1 717 505 5280

Salt Lake City, UT
+1 801 266 7700

Middletown, PA
+1 717 944 5541

Holland, MI
+1 616 399 6070

Everett, WA
+1 425 356 2600

Page 3 of 3

COC ID: 41873

Customer Information				Project Information				ALS Work Order #:									
Purchase Order	Project Name	ALS Project Manager:	Parameter/Method Request for Analysis														
Work Order	Project Number		Receiving Water Monitoring														
Company Name	Bill To Company		AM BH														
Send Report To	Invoice Attn		Ca (total)														
Address	Address		FREE Ca														
City/State/Zip	City/State/Zip		PH (field tested)														
Phone	Phone		Temp °C (field tested)														
Fax	Fax		D.O. (field tested)														
e-Mail Address	e-Mail Address																
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	B	C	D	E	F	G	H	I	J	Hold
1	SL-5	8/27/19	12:20	AQ	4,3,U	3	X	X			8.04		19.5			7.2	
2	SL-6		12:30								8.01		19.2			7.7	
3	SL-7		12:37								7.99		19.5			7.8	
4	SL-8		12:47								8.65		19.6			6.9	
5	000		2:45								7.71		22.1			6.8	
6																	
7																	
8																	
9																	
10																	

Sampler(s) Please Print & Sign: Michael Hall Shipment Method: _____ Turnaround Time in Business Days (BD): 10 BD 5 BD 3 BD 2 BD 1 BD Results Due Date: _____

Relinquished by: [Signature] Date: 8-27-19 Time: 1500 Received by: [Signature]

Relinquished by: [Signature] Date: 8-27-19 Time: 1528 Received by (Laboratory): [Signature]

Logged by (Laboratory): [Signature] Date: _____ Time: _____ Checked by (Laboratory): [Signature]

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄ 7-Other 8-4°C 9-5035

QC Package: (Check One Box Below)
 Level II Std QC
 Level III Std QC/Raw Date
 Level IV SW846/CLP
 TRRP Checklist
 TRRP Level IV
 Other _____

Notes: _____

Cooler ID: _____ Cooler Temp: 3.6°C

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Sample Receipt Checklist

Client Name: **ARCELORMITTAL-BURNSHARBO**

Date/Time Received: **27-Aug-19 00:00**

Work Order: **19081888**

Received by: **PW**

Checklist completed by Amanda Przybowski 27-Aug-19
eSignature Date

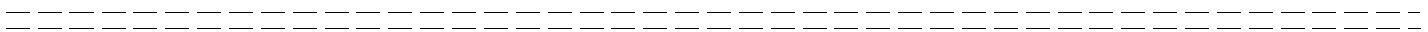
Reviewed by: Amanda Przybowski 27-Aug-19
eSignature Date

Matrices: **Aqueous**

Carrier name: **ALSHN**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<input type="text" value="3.6"/>		
Cooler(s)/Kit(s):	<input type="text"/>		
Date/Time sample(s) sent to storage:	<input type="text" value="8/27/19"/>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<input type="text"/>		

Login Notes:



Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: