



Beneficial Use Determination: Analytical Testing Report



DNR Certified Lab: <u>Eurofins TestAmerica, Cedar Falls</u> Lab Report Date: <u>2/27/2022</u> By-Product Generator: <u>Keokuk Steel Castings</u> City: <u>Keokuk</u> , State: <u>IA</u> , Zip: <u>52632</u> By-Product Name: <u>Foundry Sand</u>	Send completed report form(s) and associated laboratory analytics to: Iowa Department of Natural Resources Land Quality Bureau Solid Waste Section 502 East 9 th Street Des Moines, IA 50319-0034 For questions concerning this report form, please contact the DNR at (515) 725-8351.
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ANALYTICAL RESULTS

Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846).

Required		Synthetic Precipitation Leaching Procedure (EPA Test Method 1312)			Total Metals	
*	Contaminant	MCL	10 X MCL	Test Result	Regulatory Limit	Test Result
<input type="checkbox"/>	Antimony	0.006 mg/L	0.06 mg/L	0.00774 mg/L	31 mg/kg	<0.331 mg/kg
<input type="checkbox"/>	Arsenic	0.010 mg/L	0.10 mg/L	<0.0038 mg/L	17 mg/kg	0.313 mg/kg
<input type="checkbox"/>	Barium	2.0 mg/L	20.0 mg/L	<0.020 mg/L	15,000 mg/kg	7.48 mg/kg
<input type="checkbox"/>	Beryllium	0.004 mg/L	0.04 mg/L	<0.0014 mg/L	110 mg/kg	<0.138 mg/kg
<input type="checkbox"/>	Boron				16,000 mg/kg	<11.5 mg/kg
<input type="checkbox"/>	Cadmium	0.005 mg/L	0.05 mg/L	0.000675 mg/L	70 mg/kg	<0.115 mg/kg
<input type="checkbox"/>	Chromium	0.1 mg/L	1.0 mg/L	<0.0072 mg/L	** (Total)	21.6 mg/kg
					(Hexavalent - VI) 210 mg/kg	mg/kg
					(Trivalent - III) 97,000 mg/kg	mg/kg
<input type="checkbox"/>	Cobalt				23 mg/kg	1.60 mg/kg
<input type="checkbox"/>	Copper	1.3 mg/L	13.0 mg/L	<0.0160 mg/L	15,000 mg/kg	7.62 mg/kg
<input type="checkbox"/>	Fluoride	4.0 mg/L	40.0 mg/L	0.215 mg/L	4,700 mg/kg	<4.15 mg/kg
<input type="checkbox"/>	Lead	0.015 mg/L	0.15 mg/L	0.00333 mg/L	400 mg/kg	1.45 mg/kg
<input type="checkbox"/>	Lithium				160 mg/kg	<0.523 mg/kg
<input type="checkbox"/>	Manganese				10,000 mg/kg	290 mg/kg
<input type="checkbox"/>	Mercury	0.002 mg/L	0.02 mg/L	<0.00150 mg/L	23 mg/kg	<0.00649 mg/kg
<input type="checkbox"/>	Molybdenum				390 mg/kg	3.91 mg/kg
<input type="checkbox"/>	Nickel				1,500 mg/kg	18.4 mg/kg
<input type="checkbox"/>	Selenium	0.05 mg/L	0.5 mg/L	<0.00830 mg/L	390 mg/kg	<0.477 mg/kg
<input type="checkbox"/>	Silver				370 mg/kg	<0.115 mg/kg
<input type="checkbox"/>	Thallium	0.002 mg/L	0.02 mg/L	<0.00240 mg/L	0.78 mg/kg	<0.154 mg/kg
<input type="checkbox"/>	Vanadium				350 mg/kg	17.7 mg/kg
<input type="checkbox"/>	Zinc				23,000 mg/kg	12.2 mg/kg

(*) Required contaminant

(**) If Total Chromium ≥ 210 mg/kg, further analysis shall be conducted to determine hexavalent and trivalent results.

Toxicity Characteristic Leaching Procedure (EPA Test Method 1311) – Regulatory Limits

Metals				Volatile Organic Compounds			
*	Contaminant	Regulatory Limit	Test Result	*	Contaminant	Regulatory Limit	Test Result
<input type="checkbox"/>	Arsenic	5.0 mg/L	<0.100 mg/L	<input type="checkbox"/>	Benzene	0.5 mg/L	mg/L
<input type="checkbox"/>	Barium	100.0 mg/L	0.138 mg/L	<input type="checkbox"/>	Carbon tetrachloride	0.5 mg/L	mg/L
<input type="checkbox"/>	Cadmium	1.0 mg/L	<0.0078 mg/L	<input type="checkbox"/>	Chlorobenzene	100.0 mg/L	mg/L
<input type="checkbox"/>	Chromium	5.0 mg/L	<0.0087 mg/L	<input type="checkbox"/>	Chloroform	6.0 mg/L	mg/L
<input type="checkbox"/>	Lead	5.0 mg/L	<0.0500 mg/L	<input type="checkbox"/>	1,2-Dichloroethane	0.5 mg/L	mg/L
<input type="checkbox"/>	Mercury	0.2 mg/L	<0.0015 mg/L	<input type="checkbox"/>	1,1-Dichloroethylene	0.7 mg/L	mg/L
<input type="checkbox"/>	Selenium	1.0 mg/L	<0.0670 mg/L	<input type="checkbox"/>	Methyl ethyl ketone	200.0 mg/L	mg/L
<input type="checkbox"/>	Silver	5.0 mg/L	<0.0094 mg/L	<input type="checkbox"/>	Tetrachloroethylene	0.7 mg/L	mg/L
				<input type="checkbox"/>	Trichloroethylene	0.5 mg/L	mg/L
				<input type="checkbox"/>	Vinyl chloride	0.2 mg/L	mg/L
Pesticides				Semi-Volatile Organic Compounds			
*	Contaminant	Regulatory Limit	Test Result	*	Contaminant	Regulatory Limit	Test Result
<input type="checkbox"/>	Chlordane	0.03 mg/L	mg/L	<input type="checkbox"/>	o-Cresol	200.0 mg/L	mg/L
<input type="checkbox"/>	Endrin	0.02 mg/L	mg/L	<input type="checkbox"/>	m-Cresol	200.0 mg/L	mg/L
<input type="checkbox"/>	Heptachlor (& its epoxide)	0.008 mg/L	mg/L	<input type="checkbox"/>	p-Cresol	200.0 mg/L	mg/L
<input type="checkbox"/>	Lindane	0.4 mg/L	mg/L	<input type="checkbox"/>	Cresol	200.0 mg/L	mg/L
<input type="checkbox"/>	Methoxychlor	10.0 mg/L	mg/L	<input type="checkbox"/>	1,4-Dichlorobenzene	7.5 mg/L	mg/L
<input type="checkbox"/>	Toxaphene	0.5 mg/L	mg/L	<input type="checkbox"/>	2,4-Dinitrotoluene	0.13 mg/L	mg/L
				<input type="checkbox"/>	Hexachlorobenzene	0.13 mg/L	mg/L
				<input type="checkbox"/>	Hexachlorobutadiene	0.5 mg/L	mg/L
				<input type="checkbox"/>	Hexachloroethane	3.0 mg/L	mg/L
Herbicides				<input type="checkbox"/>	Nitrobenzene	2.0 mg/L	mg/L
*	Contaminant	Regulatory Limit	Test Result	<input type="checkbox"/>	Pentachlorophenol	100.0 mg/L	mg/L
<input type="checkbox"/>	2,4-D	10.0 mg/L	mg/L	<input type="checkbox"/>	Pyridine	5.0 mg/L	mg/L
<input type="checkbox"/>	2,4,5-TP (Silvex)	1.0 mg/L	mg/L	<input type="checkbox"/>	2,4,5-Trichlorophenol	400.0 mg/L	mg/L
				<input type="checkbox"/>	2,4,6-Trichlorophenol	2.0 mg/L	mg/L

(*) Required contaminant

By-Product pH	
<input type="checkbox"/>	

BY-PRODUCT GENERATOR CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Signature: Mark Giovannetti

Date: 2/27/28

Printed Name: Mark Giovannetti

Title: Vice President of Sales

ANALYTICAL REPORT

PREPARED FOR

Attn: Shawn Ferdig
Keokuk Steel Castings
3972 Main Street
Keokuk, Iowa 52632

Generated 2/27/2023 11:57:18 AM

JOB DESCRIPTION

Beneficial Sand

JOB NUMBER

310-249658-1

Eurofins Cedar Falls

Job Notes

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Authorization



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Case Narrative

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Job ID: 310-249658-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-249658-1

Comments

No additional comments.

Receipt

The sample was received on 2/13/2023 8:30 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 9.8° C.

HPLC/IC

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-249658-1	North/West	Solid	02/08/23 13:00	02/13/23 08:30

1

2

3

4

5

6

7

8

9

10

11

Client Sample Results

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Client Sample ID: North/West

Lab Sample ID: 310-249658-1

Date Collected: 02/08/23 13:00

Matrix: Solid

Date Received: 02/13/23 08:30

Method: SW846 9056A - Anions, Ion Chromatography - SPLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	0.215		0.200	0.0750	mg/L			02/16/23 23:51	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.100		0.200	0.100	mg/L		02/15/23 10:10	02/15/23 16:44	1
Barium	0.138	J	0.500	0.110	mg/L		02/15/23 10:10	02/15/23 16:44	1
Cadmium	<0.00780		0.0200	0.00780	mg/L		02/15/23 10:10	02/15/23 16:44	1
Chromium	<0.00870		0.0200	0.00870	mg/L		02/15/23 10:10	02/15/23 16:44	1
Lead	<0.0500		0.100	0.0500	mg/L		02/15/23 10:10	02/15/23 16:44	1
Selenium	<0.0670		0.100	0.0670	mg/L		02/15/23 10:10	02/15/23 16:44	1
Silver	<0.00940		0.0200	0.00940	mg/L		02/15/23 10:10	02/15/23 16:44	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00774	J	0.0100	0.00550	mg/L		02/17/23 09:20	02/17/23 18:01	1
Arsenic	<0.00380		0.0100	0.00380	mg/L		02/17/23 09:20	02/17/23 18:01	1
Barium	<0.0200		0.100	0.0200	mg/L		02/17/23 09:20	02/17/23 18:01	1
Beryllium	<0.00140		0.00500	0.00140	mg/L		02/17/23 09:20	02/17/23 18:01	1
Cadmium	0.000675	J	0.00250	0.000280	mg/L		02/17/23 09:20	02/17/23 18:01	1
Chromium	<0.00720		0.0250	0.00720	mg/L		02/17/23 09:20	02/17/23 18:01	1
Copper	<0.0160		0.0500	0.0160	mg/L		02/17/23 09:20	02/17/23 18:01	1
Lead	0.00333	J	0.00500	0.00160	mg/L		02/17/23 09:20	02/17/23 18:01	1
Selenium	<0.00830		0.0250	0.00830	mg/L		02/17/23 09:20	02/17/23 18:01	1
Thallium	<0.00240		0.00500	0.00240	mg/L		02/17/23 09:20	02/17/23 18:01	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00150		0.00200	0.00150	mg/L		02/16/23 15:32	02/17/23 11:53	1

Method: SW846 7470A - Mercury (CVAA) - SPLP West

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00150		0.00200	0.00150	mg/L		02/16/23 15:35	02/17/23 12:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	0.2		0.1	0.1	%			02/14/23 06:32	1
Percent Solids (EPA Moisture)	99.8		0.1	0.1	%			02/14/23 06:32	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9045D)	8.9	HF	0.1	0.1	SU			02/21/23 23:01	1

Client Sample ID: North/West

Lab Sample ID: 310-249658-1

Date Collected: 02/08/23 13:00

Matrix: Solid

Date Received: 02/13/23 08:30

Percent Solids: 99.8

Method: SW846 9056A - Anions, Ion Chromatography - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoride	<4.15		9.43	4.15	mg/Kg	☆		02/22/23 13:56	10

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Client Sample Results

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Client Sample ID: North/West

Lab Sample ID: 310-249658-1

Date Collected: 02/08/23 13:00

Matrix: Solid

Date Received: 02/13/23 08:30

Percent Solids: 99.8

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.331		0.769	0.331	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Arsenic	0.313	J	0.769	0.277	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Barium	7.48		0.769	0.323	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Beryllium	<0.138		0.384	0.138	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Boron	<11.5		38.4	11.5	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Cadmium	<0.115		0.384	0.115	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Chromium	21.6		1.15	0.369	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Cobalt	1.60		0.192	0.100	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Copper	7.62		1.15	0.584	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Lead	1.45	J	1.92	0.600	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Lithium	<0.523		1.92	0.523	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Manganese	290		1.92	1.00	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Molybdenum	3.91		0.769	0.254	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Nickel	18.4		1.15	0.446	mg/Kg	✱	02/22/23 12:05	02/24/23 14:18	5
Selenium	<0.477		1.15	0.477	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Silver	<0.115		0.192	0.115	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Thallium	<0.154		0.192	0.154	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Vanadium	17.7		1.15	0.285	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5
Zinc	12.2		3.84	1.92	mg/Kg	✱	02/22/23 12:05	02/23/23 18:15	5

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00649		0.0158	0.00649	mg/Kg	✱	02/17/23 12:01	02/20/23 13:12	1

Lab Chronicle

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Client Sample ID: North/West

Lab Sample ID: 310-249658-1

Date Collected: 02/08/23 13:00

Matrix: Solid

Date Received: 02/13/23 08:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
SPLP	Leach	1312			379167	FK4Z	EET CF	02/14/23 14:00 - 02/15/23 06:15 ¹
SPLP	Analysis	9056A		1	379609	DHM5	EET CF	02/16/23 23:51
TCLP	Leach	1311			379170	FK4Z	EET CF	02/14/23 14:00 - 02/15/23 06:15 ¹
TCLP	Prep	3010A			379235	KCK5	EET CF	02/15/23 10:10
TCLP	Analysis	6010D		1	379364	ZRI4	EET CF	02/15/23 16:44
SPLP West	Leach	1312			379166	FK4Z	EET CF	02/14/23 14:00 - 02/15/23 06:15 ¹
SPLP West	Prep	3010A			379238	KCK5	EET CF	02/17/23 09:20
SPLP West	Analysis	6020B		1	379530	A6US	EET CF	02/17/23 18:01
SPLP West	Leach	1312			379166	FK4Z	EET CF	02/14/23 14:00 - 02/15/23 06:15 ¹
SPLP West	Prep	7470A			379388	XXW3	EET CF	02/16/23 15:35
SPLP West	Analysis	7470A		1	379467	DHM5	EET CF	02/17/23 12:28
TCLP	Leach	1311			379170	FK4Z	EET CF	02/14/23 14:00 - 02/15/23 06:15 ¹
TCLP	Prep	7470A			379381	XXW3	EET CF	02/16/23 15:32
TCLP	Analysis	7470A		1	379467	DHM5	EET CF	02/17/23 11:53
Soluble	Leach	DI Leach			379712	ZJX4	EET CF	02/21/23 20:05
Soluble	Analysis	9045D		1	379713	ZJX4	EET CF	02/21/23 23:01
Total/NA	Analysis	Moisture		1	379101	DGU1	EET CF	02/14/23 06:32

Client Sample ID: North/West

Lab Sample ID: 310-249658-1

Date Collected: 02/08/23 13:00

Matrix: Solid

Date Received: 02/13/23 08:30

Percent Solids: 99.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Soluble	Leach	DI Leach			379738	QTZ5	EET CF	02/22/23 09:32
Soluble	Analysis	9056A		10	379867	DHM5	EET CF	02/22/23 13:56
Total/NA	Prep	3050B			379599	DHM5	EET CF	02/22/23 12:05
Total/NA	Analysis	6020B		5	379965	A6US	EET CF	02/24/23 14:18
Total/NA	Prep	3050B			379599	DHM5	EET CF	02/22/23 12:05
Total/NA	Analysis	6020B		5	379940	ZRI4	EET CF	02/23/23 18:15
Total/NA	Prep	7471B			379453	XXW3	EET CF	02/17/23 12:01
Total/NA	Analysis	7471B		1	379600	DHM5	EET CF	02/20/23 13:12

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins Cedar Falls

Definitions/Glossary

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes. Test performed by laboratory at client's request.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Accreditation/Certification Summary

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3050B	Solid	Lithium
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Method Summary

Client: Keokuk Steel Castings
Project/Site: Beneficial Sand

Job ID: 310-249658-1

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6010D	Metals (ICP)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
7471B	Mercury (CVAA)	SW846	EET CF
9045D	pH	SW846	EET CF
Moisture	Percent Moisture	EPA	EET CF
1311	TCLP Extraction	SW846	EET CF
1312	SPLP Extraction	SW846	EET CF
3010A	Preparation, Total Metals	SW846	EET CF
3050B	Preparation, Metals	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
7471B	Preparation, Mercury	SW846	EET CF
DI Leach	Deionized Water Leaching Procedure	ASTM	EET CF

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401



Environment Testing
America



310-249658 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Kedok steel casting</u>			
City/State:	CITY <u>Kedok</u>	STATE <u>LA</u>	Project: <u>77804</u>
Receipt Information			
Date/Time Received:	DATE <u>2/3/23</u>	TIME <u>0830</u>	Received By: <u>TD</u>
Delivery Type: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: <input type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input checked="" type="checkbox"/> NONE			
Thermometer ID: <u>U</u>		Correction Factor (°C): <u>0.0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>9.8</u>		Corrected Temp (°C): <u>9.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 <u>32oz jar</u>	CONTAINER 2	
Uncorrected Temp (°C):	<u>11.8</u>		
Corrected Temp (°C):	<u>11.8</u>		
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			
<u>TCLP</u>			

[illegible]

Login Sample Receipt Checklist

Client: Keokuk Steel Castings

Job Number: 310-249658-1

Login Number: 249658

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Muehling, Angela C

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	False	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	