



# Beneficial Use Determination: Solid By-Product Management Plan Analytical Testing Report

Beneficial Use ID#: 04 -BUD- 02 - 22  
 DNR Certified Lab: Keystone/Microbac Laboratories  
 Lab Report Date: Recd: 07/23/2025 Reported: 08/11/2025  
 By-Product Generator: Jef-Scot Metal Industries  
 City: Centerville State: IA Zip: 52544  
 By-Product Name: spent foundry sand

Send completed report form(s), laboratory analytics, and supplemental Solid By-Product Management Plan (SBMP) documentation to:  
 Iowa Department of Natural Resources  
 Land Quality Bureau  
 Solid Waste Section  
 502 E 9<sup>th</sup> St  
 Des Moines, IA 50319-0034  
 For questions concerning this report form please contact the DNR at (515) 201-8272.

## ANALYTICAL TESTING 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	<.0010 mg/L	31 mg/kg	< 5.0	mg/kg
<input type="checkbox"/>	Arsenic	0.010 mg/L	0.10 mg/L	<.0020 mg/L	17 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Barium	2.0 mg/L	20.0 mg/L	.0023 mg/L	15,000 mg/kg	< 1.00	mg/kg
<input type="checkbox"/>	Beryllium	0.004 mg/L	0.04 mg/L	<.0005 mg/L	110 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Boron				16,000 mg/kg	< 10.0	mg/kg
<input type="checkbox"/>	Cadmium	0.005 mg/L	0.05 mg/L	<.0002 mg/L	70 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Chromium	0.1 mg/L	1.0 mg/L	.0019 mg/L	** (Total)	3.0	mg/kg
(Hexavalent - VI)					210 mg/kg	< 5.0	mg/kg
(Trivalent - III)					97,000 mg/kg	< 3.00	mg/kg
<input type="checkbox"/>	Cobalt				23 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Copper	1.3 mg/L	13.0 mg/L	<.005 mg/L	15,000 mg/kg	< 3.0	mg/kg
<input type="checkbox"/>	Fluoride	4.0 mg/L	40.0 mg/L	<.1 mg/L	4,700 mg/kg	< 10.0	mg/kg
<input type="checkbox"/>	Lead	0.015 mg/L	0.15 mg/L	<.0010 mg/L	400 mg/kg	5.65	mg/kg
<input type="checkbox"/>	Lithium				160 mg/kg	< 5	mg/kg
<input type="checkbox"/>	Manganese				10,000 mg/kg	4.8	mg/kg
<input type="checkbox"/>	Mercury	0.002 mg/L	0.02 mg/L	<.0005 mg/L	23 mg/kg	<.05	mg/kg
<input type="checkbox"/>	Molybdenum				390 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Nickel				1,500 mg/kg	< 5.0	mg/kg
<input type="checkbox"/>	Selenium	0.05 mg/L	0.5 mg/L	<.0020 mg/L	390 mg/kg	< 3.0	mg/kg
<input type="checkbox"/>	Silver				370 mg/kg	< 1.0	mg/kg
<input type="checkbox"/>	Thallium	0.002 mg/L	0.02 mg/L	<.0005 mg/L	0.78 mg/kg	< 0.5	mg/kg
<input type="checkbox"/>	Vanadium				350 mg/kg	< 5.00	mg/kg
<input type="checkbox"/>	Zinc				23,000 mg/kg	11.9	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	<.03 mg/L	<input type="checkbox"/>	Benzene	0.5 mg/L	mg/L
<input type="checkbox"/>	Barium	100.0 mg/L	.058 mg/L	<input type="checkbox"/>	Carbon tetrachloride	0.5 mg/L	mg/L
<input type="checkbox"/>	Cadmium	1.0 mg/L	<.005 mg/L	<input type="checkbox"/>	Chlorobenzene	100.0 mg/L	mg/L
<input type="checkbox"/>	Chromium	5.0 mg/L	<.010 mg/L	<input type="checkbox"/>	Chloroform	6.0 mg/L	mg/L
<input type="checkbox"/>	Lead	5.0 mg/L	.339 mg/L	<input type="checkbox"/>	1,2-Dichloroethane	0.5 mg/L	mg/L
<input type="checkbox"/>	Mercury	0.2 mg/L	<.0005 mg/L	<input type="checkbox"/>	1,1-Dichloroethylene	0.7 mg/L	mg/L
<input type="checkbox"/>	Selenium	1.0 mg/L	<.05 mg/L	<input type="checkbox"/>	Methyl ethyl ketone	200.0 mg/L	mg/L
<input type="checkbox"/>	Silver	5.0 mg/L	<.010 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 (and 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
				<input type="checkbox"/>	Nitrobenzene	2.0 mg/L	mg/L
Herbicides				<input type="checkbox"/>	Pentachlorophenol	100.0 mg/L	mg/L
*	Contaminant	Regulatory Limit	Test Result	<input type="checkbox"/>	Pyridine	5.0 mg/L	mg/L
<input type="checkbox"/>	2,4-D	10.0 mg/L	mg/L	<input type="checkbox"/>	2,4,5-Trichlorophenol	400.0 mg/L	mg/L
<input type="checkbox"/>	2,4,5-TP (Silvex)	1.0 mg/L	mg/L	<input type="checkbox"/>	2,4,6-Trichlorophenol	2.0 mg/L	mg/L

\*Required contaminant

**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: Amy Stephens Date: 8/12/25  
 Printed Name: Amy Stephens Title: Office HR Manager



Microbac Laboratories, Inc., Centerville

CERTIFICATE OF ANALYSIS

4IG0343

Jeff Scott Metals

Project Name: Waste Sampling

Amy Stephens  
201 East Madison  
Centerville, IA 52544

Project / PO Number: N/A  
Received: 07/23/2025  
Reported: 08/11/2025

Analytical Testing Parameters

Client Sample ID: 541 N 13th Centerville  
Sample Matrix: Bulk-Solid  
Lab Sample ID: 4IG0343-01

Collected By: Stephens, Amy  
Collection Date: 07/23/2025 15:10

Analyses Performed by: Microbac Laboratories, Inc., Newton

Determination of Total Metals	Result	RL	Units	Note	Prepared	Analyzed	Analyst
<b>Calculation</b>							
Chromium, trivalent	<3.00	3.00	mg/kg		07/28/25 1549	07/31/25 0337	JAR
<b>EPA 6010B</b>							
Antimony, total	<5.0	5.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Barium, total	<1.00	1.00	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Beryllium, total	<1.0	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Boron, total	<10.0	10.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Cadmium, total	<1.0	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Chromium, total	3.0	3.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Cobalt, total	<1.0	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Copper, total	<3.0	3.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Lead, total	5.65	5.00	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Lithium, total	<5	5	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Manganese, total	4.8	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Molybdenum, total	<1.0	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Nickel, total	<5.0	5.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Selenium, total	<3.0	3.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Silver, total	<1.0	1.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Thallium, total	<5.0	5.0	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Vanadium, total	<5.00	5.00	mg/kg		07/28/25 1549	07/31/25 0337	JAR
Zinc, total	11.9	3.0	mg/kg	M2	07/28/25 1549	07/31/25 0337	JAR
<b>EPA 6020A</b>							
Antimony, total	<1.00	1.00	mg/kg		07/28/25 1549	07/30/25 2255	RVV
Arsenic, total	<1.00	1.00	mg/kg		07/28/25 1549	07/30/25 2255	RVV
Beryllium, total	<1.0	1.0	mg/kg		07/28/25 1549	07/30/25 2255	RVV
Cobalt, total	<1.00	1.00	mg/kg		07/28/25 1549	07/30/25 2255	RVV
Thallium, total	<0.5	0.5	mg/kg		07/28/25 1549	07/30/25 2255	RVV
<b>EPA 7196A</b>							
Chromium, hexavalent	<5.0	5.0	mg/kg		07/24/25 0817	07/29/25 1606	KKJ
<b>EPA 7471B</b>							
Mercury, total	<0.05	0.05	mg/kg		07/31/25 0729	07/31/25 1205	JAR
<b>EPA 9056A</b>							
Fluoride	<10.0	10.0	mg/kg			08/06/25 1432	MID
Determination of TCLP Metals	Result	RL	Units	Note	Prepared	Analyzed	Analyst



Microbac Laboratories, Inc., Centerville

CERTIFICATE OF ANALYSIS

4IG0343

<b>Client Sample ID:</b>	541 N 13th Centerville	<b>Collected By:</b>	Stephens, Amy
<b>Sample Matrix:</b>	Bulk-Solid	<b>Collection Date:</b>	07/23/2025 15:10
<b>Lab Sample ID:</b>	4IG0343-01		

Determination of TCLP Metals	Result	RL	Units	Note	Prepared	Analyzed	Analyst
<b>EPA 6010B</b>							
Arsenic (TCLP)	<0.030	0.030	mg/L		08/04/25 1526	08/06/25 0419	JAR
Barium (TCLP)	<b>0.058</b>	0.010	mg/L		08/04/25 1526	08/06/25 0419	JAR
Cadmium (TCLP)	<0.005	0.005	mg/L		08/04/25 1526	08/06/25 0419	JAR
Chromium (TCLP)	<0.010	0.010	mg/L		08/04/25 1526	08/06/25 0419	JAR
Lead (TCLP)	<b>0.339</b>	0.020	mg/L		08/04/25 1526	08/06/25 0419	JAR
Selenium (TCLP)	<0.050	0.050	mg/L		08/04/25 1526	08/06/25 0419	JAR
Silver (TCLP)	<0.010	0.010	mg/L		08/04/25 1526	08/06/25 0419	JAR

<b>EPA 7470A</b>							
Mercury (TCLP)	<0.00050	0.00050	mg/L		08/05/25 1503	08/06/25 1508	JAR

TCLP Extraction	Result	RL	Units	Note	Prepared	Analyzed	Analyst
<b>EPA 1311</b>							
TCLP pH, Initial	<b>4.9</b>		pH		07/28/25 0816	08/05/25 1001	JAR
TCLP pH, Final	<b>5.0</b>		pH		07/28/25 0816	08/05/25 1001	JAR

Determination of SPLP Metals	Result	RL	Units	Note	Prepared	Analyzed	Analyst
<b>EPA 6020A</b>							
Antimony (SPLP)	<0.0010	0.0010	mg/L		07/30/25 1509	07/31/25 2043	RVV
Arsenic (SPLP)	<0.0020	0.0020	mg/L		07/30/25 1509	07/31/25 2043	RVV
Barium (SPLP)	<b>0.0023</b>	0.0010	mg/L		07/30/25 1509	07/31/25 2043	RVV
Beryllium (SPLP)	<0.0005	0.0005	mg/L		07/30/25 1509	07/31/25 2043	RVV
Cadmium (SPLP)	<0.0002	0.0002	mg/L		07/30/25 1509	07/31/25 2043	RVV
Chromium (SPLP)	<b>0.0019</b>	0.0010	mg/L		07/30/25 1509	07/31/25 2043	RVV
Copper (SPLP)	<0.0050	0.0050	mg/L		07/30/25 1509	07/31/25 2043	RVV
Lead (SPLP)	<0.0010	0.0010	mg/L		07/30/25 1509	07/31/25 2043	RVV
Selenium (SPLP)	<0.0020	0.0020	mg/L		07/30/25 1509	07/31/25 2043	RVV
Thallium (SPLP)	<0.0005	0.0005	mg/L		07/30/25 1509	07/31/25 2043	RVV

<b>EPA 7470A</b>							
Mercury (SPLP)	<0.00050	0.00050	mg/L		07/31/25 1512	08/01/25 1555	JAR

<b>EPA 9056A</b>							
Fluoride (SPLP)	<0.1	0.1	mg/L		08/06/25 0000	08/06/25 1303	MID

SPLP Extraction	Result	RL	Units	Note	Prepared	Analyzed	Analyst
<b>EPA 1312</b>							
SPLP pH, Initial	<b>5.0</b>		pH		07/29/25 1153	07/31/25 1040	JAR
SPLP pH, Final	<b>9.4</b>		pH		07/29/25 1153	07/31/25 1040	JAR

Definitions

- M2:** Matrix spike recovery is below acceptance limits.
- MDL:** Minimum Detection Limit
- RL:** Reporting Limit



Microbac Laboratories, Inc., Centerville

CERTIFICATE OF ANALYSIS

4IG0343

**Report Comments**

*The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.*

**Reviewed and Approved By:**

Darcie Bouchard  
Laboratory Supervisor  
darcie.bouchard@microbac.com  
08/11/25 07:48





# INVOICE

Questions? 641-437-7023  
Ask for: Darcie Bouchard

Invoice Number: CV2500633  
Invoice Date: 08/11/2025  
Due Date: 09/10/2025  
PO Number:  
Client ID: 13520

Bill to: Jeff Scott Metals  
Amy Stephens  
201 East Madison  
Centerville, IA 52544

Work Order(s): 4IG0343

Analysis/Description	Matrix	Qty	Unit Cost	Surcharge	Extended Cost
Alkaline Digestion for Hexavalent Chromium	Bulk-Solid	1	\$19.75		\$19.75
Beneficial Use Metals	Bulk-Solid	1	\$325.50		\$325.50
be-t-6010	Bulk-Solid	1	\$16.50		\$16.50
Chromium Profile	Bulk-Solid	1	\$54.50		\$54.50
co-t-6010	Bulk-Solid	1	\$16.50		\$16.50
Parr Bomb Digestion	Bulk-Solid	1	\$15.00		\$15.00
sb-t-6010	Bulk-Solid	1	\$16.50		\$16.50
SPLP Metals by ICP-MS	Bulk-Solid	1	\$182.50		\$182.50
splp-non-zhe-glass	Bulk-Solid	1	\$81.75		\$81.75
SPLP Extraction	Bulk-Solid	1	\$81.75		\$81.75
SPLP Metals	Bulk-Solid	1	\$162.75		\$162.75
tl-t-6010	Bulk-Solid	1	\$16.50		\$16.50
Total Metals ICP Digestion	Bulk-Solid	1	\$4.50		\$4.50

Additional Items	Qty	Unit Cost	Extended Cost
Environmental Sustainability Fee per Sample A credit card fee may be added for any credit card payment.	1.00	\$1.00	\$1.00

Total Current Charges \$995.00

**Total invoice amount USD \$995.00**  
by September 10, 2025



INVOICE

Questions? 641-437-7023  
Ask for: Darcie Bouchard

Invoice Number: CV2500633  
Invoice Date: 08/11/2025  
Due Date: 09/10/2025  
PO Number:  
Client ID: 13520

Bill to: Jeff Scott Metals  
Amy Stephens  
201 East Madison  
Centerville, IA 52544

Work Order(s): 4IG0343

Microbac Laboratories Inc. | Centerville  
205 East Van Buren Street | Centerville, IA 52544 | 641-437-7023 p | www.microbac.com



Jeff Scott Metals  
Amy Stephens  
201 East Madison  
Centerville, IA 52544

Invoice Number: CV2500633  
Invoice Date: 08/11/2025  
Client ID: 13520

Total charges due **\$995.00**  
by September 10, 2025

Make checks payable to:  
Please return this remit slip with payment

Microbac Laboratories, Inc.  
c/o Dollar Bank  
PO Box 3510  
Pittsburgh, PA 15230-3510

0073 000000013520 CV2500633 0000099500