



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4**

**Laboratory Services & Applied Science Division
980 College Station Road
Athens, Georgia 30605-2720**

November 18, 2021

MEMORANDUM

SUBJECT: Sampling Investigation Final Report
TAV Holdings, Inc. – Atlanta, Georgia
LSASD Project # 22-0021

FROM: Paula A. Whiting, Environmental Engineer
Field Services Branch, Hazardous Waste Section

THRU: Liza I. Montalvo, Chief
Field Services Branch, Hazardous Waste Section

TO: Araceli B. Chavez, Chief
RCRA Enforcement Section
Chemical Safety and Land Enforcement Branch
Enforcement and Compliance Assurance Division

Attached is the Sampling Investigation Report for the sampling that was conducted at the TAV Holdings, Inc. site in Atlanta, Georgia on October 20, 2021. If you have any questions concerning the sampling investigation, please call me at (706) 818-5926.

Attachment

Mission: To provide sound Science to our customers through superior environmental evaluation

Vision: To be a solutions-oriented organization, and seen as a leader in sound science through innovation, responsive customer service, and cutting-edge expertise

Project ID: 22-0021

Sampling Investigation Final Report

TAV Holdings, Inc.

**3311 Empire Boulevard SW
Atlanta, GA 30354-2605**

Project Date: October 20, 2021

Report Date: November 18, 2021



Project Leader: Paula A Whiting

Hazardous Waste Section

Field Services Branch

Laboratory Services & Applied Science Division

US Environmental Protection Agency – Region 4

980 College Station Road

Athens, Georgia 30605-2720

The ANSI National Accreditation Board attests that U.S. EPA Region 4 Laboratory Services and Applied Science Division fulfills the requirements of ISO/IEC 17025:2017 ANAB Forensic Testing & Calibration AR 3125:2019 in the field of Forensic Testing. The activities contained in this report fall within the scope of accreditation, Certificate Number: FT-0330. Expires 31 July 2022.

LSASD
LABORATORY SERVICES & APPLIED SCIENCE DIVISION

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Sampling Investigation Report TAV Holdings, Inc.

1.0 Introduction

The United States Environmental Protection Agency (US EPA) Region 4 Laboratory Services and Applied Science Division (LSASD) personnel conducted sampling at the TAV Holdings, Inc. in Atlanta, Georgia on October 20, 2021. Brooke York, Environmental Engineer, and David Champagne, Environmental Engineer, Region 4 Enforcement and Compliance Assurance Division (ECAD) requested the sampling and laboratory analyses of the piles of auto shredder residues and stormwater runoff at the site.

Representatives of the LSASD conducted the requested waste, surface water and sediment sampling investigation. The following personnel were present for all or a portion of the investigation:

NAME	ORGANIZATION	DUTIES
Paula Whiting	LSASD	Project Leader, Safety Officer
Art Masters	LSASD	Sampler
Mike Neill	LSASD	Scribe, Sampler
Brooke York	ECAD	Project Manager, Inspector
David Champagne	ECAD	Inspector
Faney Foster	Georgia Env. Prot. Div.	Inspector

This sampling event was conducted in accordance with the Sampling and Analysis Plan (SAP) for the TAV Holdings, Inc. facility dated October 14, 2021. Any deviations from the SAP are documented in the field logbook as needed and discussed in the appropriate sections of this report. In addition, the SAP is designed to be used in conjunction with the Applied Science Branch (ASB) Quality Assurance Project Plan December 2019.

2.0 Summary

During the TAV Holdings, Inc. sampling investigation, LSASD personnel collected a total of fifteen samples. Nine samples were waste samples collected from various locations at the facility, and six samples were sediment and surface water samples collected from the unnamed perennial tributary on the northern property boundary. LSASD's Laboratory Services Branch chemists analyzed the samples for total metals and TCLP metals.

Laboratory analyses showed that five of the nine samples collected from the waste materials located in the Jig Pad, the Hollow Tree warehouse, and the Outfall 003 sediment basin exhibited the toxicity characteristic (TC) for lead (D008). Lead toxicity characteristic leaching procedure (TCLP) results ranged from 9.1 mg/l to 24 mg/l for the five samples which exceeded the lead TC regulatory level of 5.0 mg/l (Table 5). In addition, both sediment samples collected downstream of the facility's outfalls exhibited the TC for lead. Lead TCLP results for SD01 was 8.2 mg/l while SD02 was 12 mg/l.

Laboratory analyses of the sediment samples detected high levels of metals with four analytes exceeding their Residential Screening Level (RSL) for Residential Soil, May 2021 THQ=1. The RSLs for antimony (31 mg/kg), arsenic (0.68 mg/kg), copper (3100 mg/kg) and lead (400 mg/kg)

were exceeded. Sample SD01 contained highest concentrations of the four analytes with antimony at 59 mg/kg, arsenic at 7.2 mg/kg, copper at 10,000 mg/kg and lead at 5400 mg/kg (Table 3).

3.0 Site Background

TAV Holdings, Inc. (TAV) is located at 3311 Empire Blvd SW in Atlanta, Georgia. TAV operates a facility that includes offices and warehouse storage at the former Keebler Complex (which includes three buildings), the Fabrication Shop and the laydown yard and stockpile. The TAV facility receives automobile shredder residue (ASR), fluff generated from the shredding of automobiles, various stages of ASR in the recovery process, and previously land filled ASR from multiple offsite sources. This material received would normally be disposed of in solid waste landfills.

TAV operates a recycling facility that uses various separation technologies for different industries, as well as a processing and trading company of non-ferrous metals. The US EPA and Georgia Environmental Protection Division (GAEPD) inspectors were informed that the incoming material is received at no cost to TAV. All the material received for processing at TAV are solid waste. This solid waste received is stored outside upon delivery. The solid waste is separated based on particle size and undergoes several screening and particle size reduction processes to recover metals, primarily copper. As the solid waste is processed, material not high enough in recovered metals, to be sold for recovery or smelting, is stored onsite, and recirculated through the process indefinitely. No disposal records of any of the wastes generated from the processing of the ASR have been provided.

TAV currently holds a National Pollutant Discharge Elimination System (NPDES) industrial stormwater permit from GAEPD. The US EPA was originally contacted concerning NPDES violations that were occurring.

On October 6, 2021, US EPA Region 4 ECAD personnel conducted a Resource Conservation and Recovery Act (RCRA) Compliance Evaluation Inspection at the TAV facility and found several potential waste management issues. There are large piles of ASR stored both inside and outside the facility, as well as process water runoff accumulating on the Jig Pad.

TAV recovers metals from the ASR. However, there are numerous piles of the processed ASR material stored both inside and outside at the facility. In addition, the facility operates a wastewater treatment system and the process water was observed both on the floor inside the facility and on the ground outside of the plant.

Studies, completed by the US EPA, report that auto shredder residues may contain lead, cadmium, chromium, and mercury. A school is located on an adjacent property. ECAD has requested LSASD to collect samples to determine if the ASR and processed materials with metal contaminants are being properly managed and/or if contaminants are potentially leaving the site.

4.0 Field Investigation and Methodology

On October 20, 2021, the US EPA and GAEPD conducted a case development investigation evaluation (CDIE) at TAV Holdings, Inc.. LSASD conducted an authoritative sampling investigation with approximately nine waste samples, three surface water samples and three sediment samples collected. Sample locations were based on observations at the time of the investigation. The US EPA

inspectors and LSASD field investigators surveyed the facility initially to determine where to collect samples.

During the October 20, 2021 CDIE, the US EPA and GAEPD investigators observed processing equipment located next to the Jig Pad that was screening and sorting auto shredder residues. On the Jig Pad was a fractionation tank used to collect process water runoff which was ponding on the Jig Pad.

The investigators then entered the Hollow Tree warehouse and observed the wastewater treatment system. A pile identified by the facility as filter cake waste was observed next to the clarifier screw auger. Runoff from the auger process was ponding around the unit and ran off the loading dock onto the ground below.

In the center of the warehouse were large piles of auto shredder residue that had been processed multiple times and were being stored to potentially process again. The facility did not specifically state how long the piles had been stored on site or when the last time the different piles had been processed. In addition, the liquid draining from process units were combining with clarifier screw auger process water runoff and draining off the loading dock and onto the ground below.

The investigators left the warehouse and walked into the rear of the building to survey Outfall 003, the stormwater sediment basin and the very large auto shredder residue pile located on site. The investigators observed that the outfall had rip rap and piping leading down the side of a very steep hill. The stormwater sediment basin was completely full of processed ASR, sediment and water, and the investigators observed liquid and material that had overflowed the top of the basin and deposited onto the rip rap. The discharge hose leading to the unnamed perennial tributary was intact and did not appear damaged.

The very large auto shredder residue pile sat mostly in a concrete barrier and rose to approximately fifty feet in height. This pile was outside and was not covered or protected from the elements.

ECAD requested that LSASD sample the Jig Pad process water runoff, fractionation tank, warehouse stored piles, process water runoff draining off the loading dock, Outfall 003 sediment collection area, the processed ASR pile in the laydown yard and the unnamed perennial tributary near Outfalls 002 and 003 and collect a background/control sample from upstream.

LSASD personnel sampled liquid and/or solids from the Jig Pad, Jig Pad fractionation tank, clarifier screw auger waste pile, the ASR piles between beams E9 and F9 in the Hollow Tree warehouse, process water runoff from the loading dock, stormwater/sediment overflowing Outfall 003 sediment basin, the large onsite ASR pile, the large ASR pile in laydown yard across the street from the main facility (WA01, WA02, WA03, WA04, WA05, WA06, WA07, WA08 and WA09), and surface water and sediment samples downstream of Outfalls 002 and 003 discharge to the unnamed perennial tributary and a background (upstream) sample from a residential neighborhood west of I-75 (SD01, SW01, SD02, SW02, SD03, and SW03).

Field activities were conducted in accordance with LSASD's Field Branch's Management and Quality System Procedures and the following LSASD field sampling operating procedures:

LSASDPROC-302-R4, Waste Sampling
LSASDPROC-201-R4, Surface Water Sampling
LSASDPROC-200-R4, Sediment Sampling.

All field measurement and sampling procedures were performed and/or overseen by LSASD Field Services Branch personnel proficient in the pertinent procedures. Any person that was not proficient in any measurement or sampling procedure was teamed with someone who was proficient.

Chain of custody documents were prepared by Mr. Neill using the US EPA's Scribe program. Samples were submitted to the LSASD laboratory for analyses. Split samples were collected by LSASD and were provided to Mr. Andy Camozzi, TAV Holdings, Inc. on October 20, 2021, at 6:00 PM.

Sample data collected during the investigation are presented in **Table 1**. Photographs are in **Appendix A**.

5.0 Results and Discussion

Environmental samples (SW01, SW02, SW03, SD01, SD02 and SD03) and waste samples (WA01, WA02, WA03, WA04, WA05, WA06, WA07, WA08, and WA09,) were analyzed for total metals using USEPA method 6010C, USEPA method 200.8, USEPA method 7473 and USEPA method 245.1. When total metal scan results showed that one of the TC constituents in a sample could possibly exceed its TC regulatory levels, the TCLP was performed for that sample. The TCLP was performed on eight waste and two sediment samples. The TCLP was performed on environmental and waste samples using US EPA method 1311 and the TCLP extracts were analyzed for TC metals.

Table 2 summarizes the Total Metals – Waste Data Summary, and **Table 3** contains the Total Metals – Sediment Data Summary, and **Table 4** summarizes the Total Metals – Surface Water Data Summary, and **Table 5** summarizes the TCLP metal analyses for the sediment and waste samples. LSASD's complete analytical reports are included as **Appendix D**.

Laboratory analyses showed that five of the nine samples collected from the waste materials, and two of the three sediment samples exhibited the toxicity characteristic for lead (D008). TCLP results for lead exceeded the TC regulatory level of 5.0 mg/l for seven samples. The lead TCLP results were: 8.2 mg/l for sample SD01; 12 mg/l for sample SD02; 21 mg/l for sample WA01; 12 mg/l for sample WA03; 10 mg/l for sample WA04; 24 mg/l for sample WA05; and 9.1 mg/l for sample WA07 (**Table 5**).

As expected, metal scans of the waste samples showed high concentrations of copper and other metals including lead and zinc. Analyses showed that the waste samples that were solids or multi-phased contained copper ranging from 730 mg/kg to 8700 mg/kg, contained lead ranging from 300 mg/kg to 5600 mg/kg, and contained zinc from 770 mg/kg to 6200 mg/kg (Table 2).

Metals analyses of the sediment samples also detected high levels of metals with four analytes exceeding their Residential Screening Level (RSL) for Residential Soil, May 2021 THQ=1. The Residential Soil RSLs for antimony (31 mg/kg), arsenic (0.68 mg/kg), copper (3,100 mg/kg) and lead (400 mg/kg) were exceeded. Sample SD01 contained antimony at 59 mg/kg, arsenic at 7.2 mg/kg, copper at 10,000 mg/kg and lead at 5,400 mg/kg while sample SD02 contained antimony at

an estimated 48 mg/kg, arsenic at an estimated 6.3 mg/kg, copper at 4500 mg/kg and lead at 2,000 mg/kg (Table 3).

Analyses of the surface water samples detected five constituents in one or more the samples. The detected analytes included antimony, barium, copper lead and zinc (Table 4).

Quality Control Sample Results

Blanks (Field and Equipment)

No field or equipment blanks were collected during this investigation. A temperature blank accompanied the environmental samples and arrived at the laboratory at 3.4° C.

Split Samples

Split samples were collected at each sample station except for sample station S03 and were provided to the facility for shipment to and analysis at their contract laboratory. The copy of the signed Receipt for Samples is in **Appendix C**.

Laboratory Quality Control Samples

For the total metal analyses, samples SD02, SW02, and WA04 were designated as the LSASD's laboratory matrix spike/matrix spike duplicate (MS/MSD), and for the TCLP analyses, samples SD02 and WA04 were used as quality control samples. Samples SD03, SW03, WA01 and WA09 were used as duplicate samples for the mercury testing quality control. Results of quality control analyses are contained in the LSASD's Laboratory Analytical Data Reports in **Appendix D** and are acceptable for the purposes of this investigation. Full definitions for the data qualifiers are provided in their respective reports. The reported results are accurate within the limits of the methods.

6.0 Conclusions

The analytical data from this sampling investigation indicates the TAV Holdings' activities and operations are impacting the unnamed perennial tributary on the facility's northern boundary. Laboratory analyses showed high concentrations of metals in the processed materials and five of the nine waste samples were shown to exhibit the toxicity characteristic for lead (D008) with TCLP results ranging from 9.1 mg/l to 24 mg/l. Through the facility's processing, storage, moving and reprocessing of the ASR materials with high concentrations of lead and other metals, the processed material is entering into the unnamed perennial tributary. Both sediment samples (SD01 and SD02) collected downstream of the facility's outfalls contained elevated contaminants compared to the control sample (SD03).

The downstream sediment samples contained 10,000 and 4,500 mg/kg of copper while the control sample contained 10 mg/kg. Also, the downstream sediment samples contained 5,400 and 2,000 mg/kg of lead while the control sample contained 11 mg/kg, and the downstream sediment samples contained 11,000 and 5,600 mg/kg of zinc while the control sample contained 54 mg/kg. Both downstream sediment samples were also found to exhibit the toxicity characteristic for lead with TCLP results of 8.2 mg/l for SD01 and 12 mg/l for SD02.

Finally, the downstream surface water samples also document the contamination of the stream. Downstream samples SW01 and SW02 contained copper concentrations of 33 ug/l and 53 ug/l, lead concentrations of 7.7 ug/l and 21 ug/l, and zinc concentrations of 63 ug/l and 69 ug/l while the

upstream control sample (SW03) contained no detectable levels of these contaminants. The method reporting limits for sample SW03 were 10 ug/l for copper, 1 ug/l for lead and 10 ug/l for zinc.

7.0 References

US EPA LSASD. "Quality System and Technical Procedures for SESD Field Branches."
<https://www.epa.gov/quality/quality-system-and-technical-procedures-lsasd-field-branches>,
Most recent versions as of study date.

US EPA LSASD. "Sampling and Analysis Plan for TAV Holdings, Inc." October 14, 2021.

US EPA LSASD. "Laboratory Services Branch Laboratory Operations and Quality Assurance Manual." April 24, 2020.

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Crawford W Long Middle School

SW01

SD01

SW02

SD02

WA01

WA02

WA07

WA08

WA06

Text

WA03

WA05

WA09

SW03

SD03

I-75

Empire Blvd SW

TAV Holdings Inc.

Figure 1
TAV Holdings Inc.
Sample Locations
Atlanta, Georgia

USEPA LSASD
October 2021



LSASD ID: 22-0021

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Table 1
Sample Data

Sample I.D.	Sample Media	Sample Description	Location	Sample Type	Sample Container	Analyses	Latitude	Longitude
WA01	Waste	Brown multi-phase liquid with brown solids with gravel and metal debris	Jig Pad, stormwater runoff ponding near frac tank	Solid	1 Liter	Metals/ TCLP	33.66494	-84.39373
WA02	Waste	Clear liquid	Jig Pad frac tank	Liquid	1 Liter	Metals/ TCLP	33.66485	-84.39379
WA03	Waste	Black grainy solid with white debris	Clarifier screw auger conveyor	Solid	8 ounces	Metals/ TCLP	33.66403	-84.39389
WA04	Waste	Gray black fine gritty solid	Inside the Hollow Tree Warehouse, between Beams F9 and E9	Solid	8 ounces	Metals/ TCLP	NR	NR
WA05	Waste	Sludgy black mud solid with water	Clarifier Screw Auger Loading Dock, runoff from auger overflowing loading dock to ground	Solid	8 ounces	Metals/ TCLP	33.66399	-84.39388
WA06	Waste	Dark brown liquid	Outfall 003 overflow onto rip rap	Liquid	1 Liter	Metals/ TCLP	33.66470	-84.39495
WA07	Waste	Dark black-brown solid		Solid	8 ounces	Metals/ TCLP	33.66470	-84.39495
WA08	Waste	Dark brown dry dusty solid	Outfall 003 sludge basin near large auto fluff shredder pile	Solid	8 ounces	Metals/ TCLP	33.66449	-84.39491
WA09	Waste	Dark brown dry dusty solid	Processed Auto fluff shredder pile laydown yard	Solid	8 ounces	Metals/ TCLP	33.66409	-84.39069
S01	Surface Water	Clear water with yellow tint	Outfall 002 discharge to stream	Liquid	1 Liter	Metals/ TCLP	33.66584	-84.39420
S01	Sediment	Dark brown gray silty solid with water		Solid	8 ounces	Metals/ TCLP	33.66584	-84.39420
S02	Surface Water	Clear water with yellow tint	Outfall 003 discharge to stream	Liquid	1 Liter	Metals/ TCLP	33.66515	-84.39500
S02	Sediment	Dark brown gray silty solid with water		Solid	8 ounces	Metals/ TCLP	33.66515	-84.39500
S03	Surface Water	Clear liquid	Background/control, upstream of facility, Private Residence, 3326 Forrest Hills Drive, Hapeville, GA	Liquid	1 Liter	Metals/ TCLP	33.66425	-84.39721
S03	Sediment	Sandy, gritty solid		Solid	8 ounces	Metals/ TCLP	33.66425	-84.39721

NR – No reading was obtained

Table 2

Lab Results Data Summary: Total Metals - Waste
Study: 22-0021 - TAV Holdings, Inc.
Sample Date: 10/20/2021

	Station ID	WA01	WA02	WA03	WA04	WA05	WA06	WA07	WA08	WA09
	Sample ID	WA01	WA02	WA03	WA04	WA05	WA06	WA07	WA08	WA09
	Matrix	Waste	Waste	Waste	Waste	Waste	Waste	Waste	Waste	Waste
	Sample Date	10/20/2021 11:55 AM	10/20/2021 12:15 PM	10/20/2021 12:30 PM	10/20/2021 12:45 PM	10/20/2021 1:00 PM	10/20/2021 1:15 PM	10/20/2021 1:20 PM	10/20/2021 1:35 PM	10/20/2021 2:35 PM
Analyte	Units									
Antimony	mg/kg	12	0.31	23	19 J,O	21	< 0.061 U	15	28	20
Arsenic	mg/kg	1.0	< 0.072 U	2.7	2.4 J,O	3.0	< 0.061 U	2.4	3.8	2.5
Barium	mg/kg	240	< 0.18 U	550	500	810	0.25	870	820	700
Cadmium	mg/kg	1.8	< 0.036 U	4.6	38 J,O	7.5	< 0.031 U	10	12	14
Chromium	mg/kg	24	< 0.18 U	290	420	130	< 0.15 U	120	120	120
Copper	mg/kg	730	< 0.36 U	8400 J,O	8000 J,O	4600 J,O	1.5	4200 J,O	6700 J,O	8700 J,O
Lead	mg/kg	300	0.073	1600 J,O	5600	1600	0.38	1700 J,O	2600	1400
Nickel	mg/kg	22	< 0.36 U	250	320	120	< 0.31 U	110	140	420
Silver	mg/kg	< 3.2 U	< 0.18 U	< 8.9 U	< 10 U,J,QM- 1,QM-3	12	< 0.15 U	15	11	8.7
Vanadium	mg/kg	< 3.2 U	< 0.18 U	13	22 J,O	15	< 0.15 U	14	13	12
Zinc	mg/kg	770	< 0.36 U	2900	4500	4000	< 0.31 U	4600	6200	3800
Mercury	mg/kg	0.11	< 0.048U	0.28	0.19	0.56	< 0.050U	0.66	1.5	0.76 J,O

Table 3

Lab Results Data Summary: Total Metals - Sediment Study: 22-0021 - TAV Holdings, Inc. Sample Date Range: 10/20/2021					
	Station ID		S01	S02	S03
	Sample ID		SD01	SD02	SD03
	Matrix		Sediment	Sediment	Sediment
	Sample Date		10/20/2021 16:40	10/20/2021 17:10	10/20/2021 18:30
Analyte	Units	RSL Residential Soil May 2021 THQ=1:			
Antimony	mg/kg dry	31 mg/kg	59	48 J,O	< 0.20 U
Arsenic	mg/kg dry	0.68 mg/kg	7.2	6.3 J,O	0.67 J,O
Barium	mg/kg dry	15000 mg/kg	2900	1900	24
Cadmium	mg/kg dry	71 mg/kg	24	12 J,O	< 0.099 U
Chromium	mg/kg dry		200	180	9.6
Copper	mg/kg dry	3100 mg/kg	10000	4500	10
Lead	mg/kg dry	400 mg/kg	5400	2000	11
Nickel	mg/kg dry	1500 mg/kg	230	160	< 5.0 U
Vanadium	mg/kg dry	390 mg/kg	< 25 U,J,QR-1	< 15 U,J,QR-1	28
Zinc	mg/kg dry	23000 mg/kg	11000 O	5600	54
Mercury	mg/kg dry	11 mg/kg	2.4	0.96	< 0.047 U

Table 4

Lab Results Data Summary: - Total Metals - Surface Water Study: 22-0021 - TAV Holdings, Inc. Sample Date Range: 10/20/2021				
	Station ID	S01	S02	S03
	Sample ID	SW01	SW02	SW03
	Matrix	Surface Water	Surface Water	Surface Water
	Sample Date	10/20/2021 16:35	10/20/2021 17:00	10/20/2021 18:25
Analyte	Units			
Antimony	ug/L	< 1.0 U	1.1	< 1.0 U
Barium	ug/L	63	58	41
Copper	ug/L	33	53	< 10 U
Lead	ug/L	7.7	21	< 1.0 U
Zinc	ug/L	63	69	< 10 U

DEFINITIONS OF REGION 4 ANALYTICAL DATA QUALIFIERS

- U The analyte was not detected at or above the reporting limit.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- QC-2 Analyte concentration high in continuing calibration verification standard
- QC-4 Result greater than the highest point on the calibration curve
- QI- Internal standard was outside of method control limits.
- QM-1 Matrix Spike Recovery less than method control limits
- QM-2 Matrix Spike Recovery greater than method control limits
- QM-3 Matrix Spike Precision outside method control limits
- QR-1 MRL verification recovery less than lower control limits.
- O Other qualifiers have been assigned providing additional information. These explanatory qualifiers are included in the printable pdf report and in other columns in the export files.

Table 5

Lab Results Data Summary - RCRA TCLP Metals
Study: 22-0021 - TAV Holdings Inc.
Sample Date: 10/20/2021

	Station ID		S01	S02	S03	WA01	WA03	WA04	WA05	WA07	WA08	WA09
	Sample ID		SD01	SD02	SD03	WA01	WA03	WA04	WA05	WA07	WA08	WA09
	Matrix		Sediment	Sediment	Sediment	Waste	Waste	Waste	Waste	Waste	Waste	Waste
	Sample Date		10/20/21 4:40 PM	10/20/21 5:10 PM	10/20/21 6:30 PM	10/20/21 11:55 AM	10/20/21 12:30 PM	10/20/21 12:45 PM	10/20/21 1:00 PM	10/20/21 1:20 PM	10/20/21 1:35 PM	10/20/21 2:35 PM
Analyte	Units	RCRA (TCLP) mg/L										
Barium	mg/L	100	12	5.4	0.21	8.3	2.6	2.5	14	2.3	2.5	2.0
Cadmium	mg/L	1	0.30	0.23 J,O	< 0.050 U	0.32	0.14 J,O	0.71	0.28	0.26	0.16 J,O	0.16 J,O
Lead	mg/L	5	8.2 ^	12 ^	< 0.10 U	21 ^	12 ^	10 ^	24 ^	9.1 ^	2.3	3.6
Nickel	mg/L		0.31	0.47	< 0.20 U	0.51	< 0.20 U	0.23	0.88	0.24	< 0.20 U	< 0.20 U
Zinc	mg/L		51	69	0.31 J,O	79	47	100	79	76	19	28

DEFINITIONS OF REGION 4 ANALYTICAL DATA QUALIFIERS

- U The analyte was not detected at or above the reporting limit.
- J The identification of the analyte is acceptable; the reported value is an estimate.
- O Other qualifiers have been assigned providing additional information. These explanatory qualifiers are included in the printable pdf report and in other columns in the export files.

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Appendix A – Photographs

Photos taken by Paula Whiting, Art Masters and David Champagne

Camera Type: Olympus Tough

Serial Number: SC7374



Photo taken by P. Whiting 10/20/2021

Sample Location WA01 – Jig Pad runoff collection area



Photo taken by P. Whiting 10/20/2021

Sample Location WA02 – Jig Pad frac tank

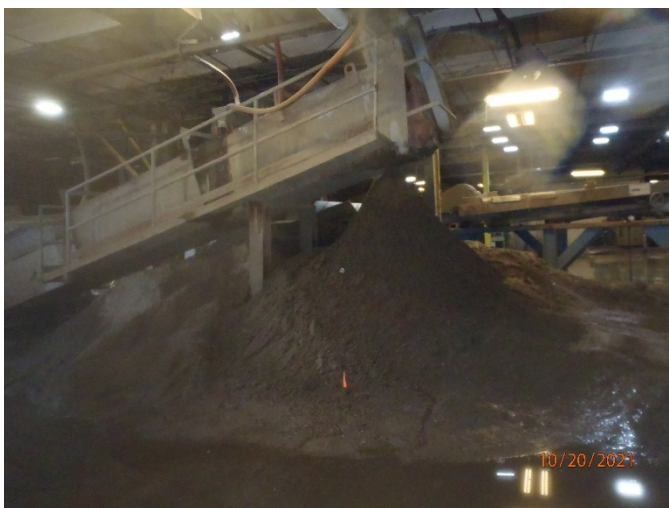


Photo taken by P. Whiting 10/20/2021

Sample Location WA03 - Clarifier Screw Auger sludge pile



Photo taken by P. Whiting 10/20/2021

Sample Location WA03 - Clarifier Screw
Auger sludge pile



Photo taken by P. Whiting 10/20/2021

Sample Location WA04 – Hollow Tree
warehouse processed auto shredder residue
sample in glass pan



Photo taken by P. Whiting 10/20/2021

Sample Location WA04 – Hollow Tree
warehouse between Beams E9 and F9



Photo taken by P. Whiting 10/20/2021

Sample Location WA05 –Process water
runoff to loading dock



Photo taken by P. Whiting 10/20/2021

Sample Location WA05 – Process water runoff to loading dock



Photo taken by P. Whiting 10/20/2021

Sample Location WA05 – Process water runoff to loading dock



Photo taken by P. Whiting 10/20/2021

Sample Locations WA06 and WA07 – Outfall
003 Sediment Basin Overflow



Photo taken by P. Whiting 10/20/2021

Sample Locations WA06 and WA07 – Outfall
003 Sediment Basin Overflow



Photo taken by P. Whiting 10/20/2021

Sample Locations WA06 and WA07 – Outfall
003 Sediment Basin Overflow



Photo taken by P. Whiting 10/20/2021

Sample Locations WA06 and WA07 – Outfall
003 Sediment Basin Overflow



Photo taken by P. Whiting 10/20/2021

Outfall 003 Full sludge basin



Photo taken by P. Whiting 10/20/2021

Sample Location WA08 – Large processed
auto shredder residue pile



Photo taken by P. Whiting 10/20/2021

Sample Location WA08 – Large processed auto shredder residue pile



Photo taken by P. Whiting 10/20/2021

Sample Location WA09 - External Laydown Yard across the street from the facility



Photo taken by P. Whiting 10/20/2021

Sample Location S01 – Outfall 002 to unnamed tributary



Photo taken by D. Champagne 10/20/2021

Sample Location S02 – Outfall 003 to unnamed tributary



Photo taken by D. Champagne 10/20/2021

Sample Location S02 – Outfall 003 to unnamed tributary



Photo taken by A. Masters 10/20/2021

Sample Location S02 – Auto shredder debris deposition in unnamed tributary



Photo taken by P. Whiting

10/20/2021

Sample location S03 – Control Sample, Water flowing downstream in a north eastern direction



Photo taken by P. Whiting

10/20/2021

Sample location S03 – Control Sample, View looking upstream

Appendix B – Field Logbook

United States Environmental Protection Agency
Region 4

Laboratory Services and Applied Science Division
980 College Station Road
Athens, Georgia 30605-2720



TAV Holdings Inc.
Atlanta, Georgia

LSASD PROJECT ID NO: 22-0021

Mike Neill, Project Leader

FIELD SCREENING and SAMPLING LOGBOOK

Book 1 of 1.

Dates: 10 / 20 / 2021.

List of personnel in logbook:

Name	Initials	Organization/Duties
<u>Mike Neill</u>	<u>MM</u>	<u>LSASD / Project Leader</u>
<u>Paula Whiting</u>	<u>PAW</u>	<u>LSASD / Safety Officer</u>
<u>Art Masters</u>	<u>AM</u>	<u>LSASD / Support</u>

The following LSASD field measurement and sampling procedures will be followed during this field study, as applicable:

SESDPROC-1002-R0	Logbooks
LSASDPROC 110-R5	Global Positioning System
LSASDPROC-202-R4	Management of Investigation Derived Waste
LSASDPROC-205-R4	Field Equipment Cleaning and Decontamination
LSASDPROC-209-R4	Packing, Marking, Labeling and Shipping of Environmental and Waste Samples
LSASDPROC-302-R4	Waste Sampling
LSASDPROC-200-R4	Sediment Sampling
LSASDPROC-201-R4	Surface Water Sampling

Table of Contents:

General Notes	3
Sampling Investigation.....	7
Final Notes	41

General Notes

Date: 10/20/21

• GPS measurements made with Garmin 64S, ID number: S49794

By: Mike Neill

Andy Camozzi

Enter facility @ 925A

- David champagne
 - Brooke York
 - Mike Neill
 - AA Masters
 - Paula Whiting
 - Faney Foster
- EPA
GABPO

Property across the street from main facility is unpermitted laydown yard.

Sample Locations

- Outfall sedone w/ liner and rocks - debris added to process water and clarifier
- will be sending material to LF

→ Split samples to be done.

- Need process flow diagram.

Tank, Lake, Building piles, Outside storage, Outfall 3 overflow, sludge storage
Clarifier waste

6 Env samples ~~over outfall~~ 1L pres metal
↳ stream 1L unpres TCLP

2 waste - over outfall

2 waste - waste pile

1 waste - Buildg pile

1 waste 1 filter cakes

1 waste frac tank (lake)

Crawford W. Long Middle School - north of facility property line
and Outfall 003.
Property line follows unnamed perennial stream

If applicable, samples preserved with ice:

Ice checked or purchased	By	Date	Time
✓	M. Neill	10/20/21	7AM

General Notes

Date: 10/20/21

ASR residue in creek/unnamed perennial stream
Auto Shredder Residue - see picture by ART.
between ^{OF} 003 and S02
downstream of S02 and outfall of 003

PAW

10/20/21

General Notes

Date: _____

10/20/21

pmw

General Notes

Date: _____

10/20/21
Paw

Sampling Investigation

Date: 10/20/21 Station ID: WA01 Sample ID: WA-01

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes, photos

Sampler

Sampler, GPS, Scribe

Description of sample location:

33.66494 N 084.39373 W 19ft
Jig Pad - Lake near port tank

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling [☐]
LSASDPROC-200-R4 Sediment Sampling [☐]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Scoop, glass pan, SS spoon, grab

Description of Media/Sample:

multiphase liquid-brown, brown solids
w/ parts gravel, parts metal

Other pertinent information (weather conditions, photos, etc.):

Sunny, light breeze, warm 72°F
photo 2 - Jig Pad Lake/pond - surface runoff
split sample

Sample Collected: Yes or No Sample Time 1155

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / <u>1-L</u>	<u>1</u>	<u>None</u>	<u>grab</u>

Split sample? Y or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA02 Sample ID: WA02

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes , photos

Sampler

Sampler , GPS, Scribe

Description of sample location:

Jig Pad frac tank

33.66485 N 084.39379 W ± 9ft

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling [☐]
LSASDPROC-200-R4 Sediment Sampling [☐]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

perisaltic pump, teflon tubing, 88 conduit steel grab

Description of Media/Sample:

clear liquid

Other pertinent information (weather conditions, photos, etc.):

Sunny, warm, light breeze
photo 3 - Jig Pad frac tank
Paw 10/20/21

Sample Collected: Yes or No Sample Time 1215

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / <u>1-L</u>	<u>1</u>	<u>NONE</u>	<u>grab</u>

Split sample? Y or N

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Sampling Investigation

Date: 10/20/24 Station ID: WA03 Sample ID: WA03

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes , photos
Sampler _____
Sampler , GPS, Scribe

Description of sample location:

33.66403 N 084.39389 W ± 11
Clarifier screw auger conveyor

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling [☐]
LSASDPROC-200-R4 Sediment Sampling [☐]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

grab, glass pan, SS spoon

Description of Media/Sample:

black, grainy material, sludge from clarifier, white
chunks/debris, solid

Other pertinent information (weather conditions, photos, etc.):

Indoors - inside process building, beside clarifier
photo 3, photo 4 foot of pile of clarifier sludge

Sample Collected: (Yes) or No Sample Time 1230

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>8 oz</u> / 1-L	<u>1</u>	<u>None</u>	<u>grab</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA04 Sample ID: WA04

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes, photos

Sampler

Sampler, GPS, Scuba

Description of sample location: between N W

Hollow tree Warehouse - E9 and E9 beams
mtl pile processed multiple times

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate): raw 10/20/21
glass pan, SS spoon, 2 8-oz glass jars, grab composite

Description of Media/Sample: gray/black solid material - 15 aliquots taken and
blended together, fine, gritty

Other pertinent information (weather conditions, photos, etc.):

Indoors, runoff from piles, tall piles of material
floor wet and gritty
photo 5, photo 6 - pile and mat in pan

Sample Collected: (Yes) or No Sample Time 1245

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>(8 oz / 1-L)</u>		<u>None</u>	<u>composite</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA05 Sample ID: WA05

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties
Notes photo
Sampler
Sampler Scrub, GPS

Description of sample location: 33.66399 N 084.39388 W ± 9
Clarifier loading dock, surface runoff from sludge
auger overflowing LD to ground and down towards outfall
WWTP

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):
PAW 10/20/21
Conduit, SS Scoop, glass pan, SS spoon, grab, mixed

Description of Media/Sample:
black mud, sludgy

Other pertinent information (weather conditions, photos, etc.):
Loading dock, sunny, warm
photo 7, 8, 9, 10 - LD, flow from press auger, flow thru
trmt + sp, sample area

Sample Collected: (Yes) or No Sample Time 1300

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>8 oz / 1-L</u>	<u>1</u>	<u>None</u>	<u>grab</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA06 Sample ID: WA06

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes Photo

Sampler

Sampler GPS, Scribe

Description of sample location:

Outlet 11003 overflow 33.66470 N 084.39495 W ± 9
riff raff

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [4]
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Paula 10/20/21 Scoop, SS

Description of Media/Sample:

dark brown liquid

Other pertinent information (weather conditions, photos, etc.):

Sunny, warm, hill side out fall covered in riff raff
overflow puddles sampled
photos 11-17

Sample Collected: (Yes) or No Sample Time 1315

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / <u>(1-L)</u>	<u>1</u>	<u>None</u>	<u>grab</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA07 Sample ID: WA07

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes Photos

Sampler

Sampler GPS, Scrube

Description of sample location:

33.66470 N 084.39495 W ± 9

Outfall 003 overflow into riffraff

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling [☐]
LSASDPROC-200-R4 Sediment Sampling [☐]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Scoop, SS Spoon

Description of Media/Sample:

Solid material collected from outfall overflow in riffraff
dark brown/black

Other pertinent information (weather conditions, photos, etc.):

Sunny, warm, light breeze
sample taken from riffraff below sediment
photo 18-17

Sample Collected: (Yes) or No Sample Time 1320

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>8 oz / 1-L</u>	<u>1</u>	<u>None</u>	<u>grab</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA08 Sample ID: WA08

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes: photos

Sampler

Sampler: G.P.S., Scribe

Description of sample location:

33.66449 N 084.39491 W #9

Outfall 003 sludge basin near large pile
Auto fluff shredder pile

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling [☒]
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Spoon, glass pan, collected 15 aliquots

Description of Media/Sample:

dark brown solid, dry, dusty

Other pertinent information (weather conditions, photos, etc.):

Sunny, hot, light breeze
large Auto fluff pile shredder residue
and mining landfills photos 18-20

Sample Collected: ☒ Yes or No Sample Time 1335

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>8 oz / 1-L</u>	<u>1</u>	<u>None</u>	<u>Composite</u>

Split sample? ☒ Y or N

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Sampling Investigation

Date: 10/20/21 Station ID: WA09 Sample ID: WA09

Sample Team: [X] Paula Whiting

(Check, as appropriate) [X] Art Masters

[X] Mike Neill

Duties

Notes, Photos

Sampler

Sampler, GPS, Scribe

Description of sample location:

33.66409 N 084.39069 W ±9

Laydown yard auto fluff pile - processed

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling

LSASDPROC-201-R4 Surface Water Sampling

LSASDPROC-200-R4 Sediment Sampling

Other:

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Spoon, glass pan, composite collection mixed together, 10 aliquots collected

Description of Media/Sample:

dark brown dry solid, dusty,

Other pertinent information (weather conditions, photos, etc.):

Sunny, hot, light breeze,
laydown yard w/over 100ft auto fluff pile, discarded
equipment, runoff @ the base, photos 21-

Sample Collected: Yes or No Sample Time 1435

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L	1	None	Composite

Split sample? Y or N

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paw 10/20/21

Sampling Investigation

Date: 10/20/21 Station ID: \$ S01 Sample ID: SW01 / SDO1

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes, photos

Sampler

Sampler, GPS, Scuba

Description of sample location:

33.66584 N 084.39420 W #14

Outfall 002 to Stream

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []
LSASDPROC-201-R4 Surface Water Sampling [✓]
LSASDPROC-200-R4 Sediment Sampling [✓]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Scoop, SS spoon, glass pan, collected directly from
midstream flow, sediment collected from deposition

Description of Media/Sample:

clear w/ yellow tint liquid
dark gray brown sediment, fine, silty w/ H₂O
10/20/21 paw

Other pertinent information (weather conditions, photos, etc.):

sunny, hot, under canopy, cooler temp

photos 22-23

Sample Collected: (Yes) or No Sample Time SW01 1635
SDO2 1640

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	<u>8oz 1 (1-L)</u>	<u>2</u>	<u>1 - preserv</u>	<u>grab</u>
<u>metals / TCLP</u>	<u>8oz</u>	<u>1</u>	<u>none</u>	<u>grab</u>

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/24 Station ID: S02 Sample ID: SW02
SD02

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes: Photos

Sampler

Sampler, GPS, Scribe

Description of sample location:

Outfall 003 to Stream

33.66515 N 084.39500 W $\pm$ 11

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []
LSASDPROC-201-R4 Surface Water Sampling [☒]
LSASDPROC-200-R4 Sediment Sampling [☒]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

glass pan, SS scoop, SS spoon, collected directly from
mid stream, sediment collected from deposition

Description of Media/Sample:

clear water w/ yellow tint liquid
dark brown gray silty sediment w/ water

Other pertinent information (weather conditions, photos, etc.):

sunny, hot, under canopy, cooler temp

photos 24-29

Sample Collected: (Yes) or No Sample Time 1700-SW02
1710-SD02

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	-8-oz / (1-L)	2	1-pres	grab
metals/TCLP	8oz	1	none	grab

Split sample? (Y) or N

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Sampling Investigation

Date: 10/20/21 Station ID: S03 Sample ID: SW03/SDD3

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes, Photos

Sampler

Sampler, GPS, Scribe

Description of sample location:

33.66425 N 084.39721 W ± 9

3326 Forrest Hills Drive, Hapeville
Mr. Bud Smith Residence - walked in unnamed
Perennial stream/tributary

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []
LSASDPROC-201-R4 Surface Water Sampling [☒]
LSASDPROC-200-R4 Sediment Sampling [☒]
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

SS Scoop, SS Spoon, glass pan

Description of Media/Sample:

Clear SW liquid
sandy, gritty sediment from stream deposition

Other pertinent information (weather conditions, photos, etc.): Control 10/20/21 PMW

Background Sample
Evening, sundown, cool temp, clear

photos 30-31 Upstream from facility

Sample Collected: Yes or No Sample Time 1825 SW03
1830 - SDD03 PMW 10/20/21

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / <u>(1-L)</u>	<u>2</u>	<u>1 - pres</u>	<u>grab</u>
<u>Metals / TCLP</u>	<u>8oz</u>	<u>2</u>	<u>none</u>	<u>grab</u>

Split sample? Y or N

Sample
Control is upgradient of site / source
of contaminant.

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Sampling Investigation

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes _____

Sampler _____

Sampler _____

Description of sample location: _____

N

W

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Description of Media/Sample: *RAW* *10/20/21*

Other pertinent information (weather conditions, photos, etc.):

Sample Collected: Yes or No Sample Time _____

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L			

Split sample? Y or N

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Sampling Investigation

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: [X] Paula Whiting

(Check, as appropriate) [X] Art Masters

[X] Mike Neill

Duties

Notes

Sampler

Sampler

Description of sample location:

N

W

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []

LSASDPROC-201-R4 Surface Water Sampling []

LSASDPROC-200-R4 Sediment Sampling []

Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Description of Media/Sample:

Other pertinent information (weather conditions, photos, etc.):

Sample Collected: Yes or No Sample Time _____

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L			

Split sample? Y or N

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Sampling Investigation

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: [X] Paula Whiting
(Check, as appropriate) [X] Art Masters
[X] Mike Neill

Duties

Notes

Sampler

Sampler

Description of sample location:

N

W

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []
LSASDPROC-201-R4 Surface Water Sampling []
LSASDPROC-200-R4 Sediment Sampling []
Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Description of Media/Sample:

PAW 10/20/21

Other pertinent information (weather conditions, photos, etc.):

Sample Collected: Yes or No Sample Time _____

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L			

Split sample? Y or N

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Sampling Investigation

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: [X] Paula Whiting

(Check, as appropriate) [X] Art Masters

[X] Mike Neill

Duties

Notes

Sampler

Sampler

Description of sample location: _____

N

W

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []

LSASDPROC-201-R4 Surface Water Sampling []

LSASDPROC-200-R4 Sediment Sampling []

Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate):

Description of Media/Sample:

PTW 10/20/21

Other pertinent information (weather conditions, photos, etc.):

Sample Collected: Yes or No Sample Time _____

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L			

Split sample? Y or N

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Sampling Investigation

Date: _____ Station ID: _____ Sample ID: _____

Sample Team: [X] Paula Whiting

(Check, as appropriate) [X] Art Masters

[X] Mike Neill

Duties

Notes

Sampler

Sampler

Description of sample location: _____

N

W

LSASD Operating Procedures: LSASDPROC-302-R4 Waste Sampling []

LSASDPROC-201-R4 Surface Water Sampling []

LSASDPROC-200-R4 Sediment Sampling []

Other: _____

Specific Sampling Procedure/Method Used (including equipment ID, as appropriate): _____

Description of Media/Sample: *ptaw 10/20/21*

Other pertinent information (weather conditions, photos, etc.): _____

Sample Collected: Yes or No Sample Time _____

Laboratory Analyses and containers:

Analyses	Container	# of Containers	Preservation	Notes
Metals / TCLP	8 oz / 1-L			

Split sample? Y or N

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Final Notes

Date: _____

PAW

10/20/21

Date: 10/20/21

- Photo 1 - Laydown yard 10/20/21 Pttw
- 2 - Jig Pad frac tank & ~~surf~~ runoff
 - 3 - Jig Pad runoff ponding
 - 4 - Jig Pad frac tank
 - 5 - Clarifier screw auger sludge pile - waste
 - 6 - Clarifier screw auger sludge pile - sample location
 - 7 - Hollowtree warehouse Beams E9 - F9 sample
 - 8 - Hollowtree warehouse Beams E9, F9 ASR pile
 - 9 - Loading dock - Clarifier, runoff and sediment
 - 10 - 13 - " " " " " "
 - 14 - Outfall 003 overflow runoff onto nft raft
 - 15 - Outfall 003 overflow to nft raft
 - 16 - Outfall 003 liquid runoff from sediment basin
 - 17 - Outfall 003 liquid and sediment overflow
 - 18 - Outfall 003 Sediment basin (buildup to top)
- Shovel length deep.
 - 19 - Autocluff shredder residue pile
 - 20 - External Laydown yard (across the street) (2)
 - 21 - SO1 Sample location on unnamed perennial stream
 - 22 - SO2 Sample location near Outfall 003.
 - 23 - SO2 Sample location debris from facility
accumulation
 - 24 - Upstream view from Outfall 003
 - 25 - Background/control location SO3 sample.
 - 26 - " " " " " " downstream view
upstream view

Appendix C – Receipt for Samples

E 214303

USEPA Region 4 COC (REGION COPY)

DateShipped:

CarrierName:

AirbillNo:

CHAIN OF CUSTODY RECORD

TAV Holdings Inc./GA

22-0021

Cooler #:

No: 10/19/21-0001

Lab: Region 4 Lab

Lab Contact: Mike Beall

Lab Phone: 706-355-8856

-01

-03

-05

-02

-04

-06

-07

-08

Sample Identifier	CLP Sample No.	Media/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SD01		Sediment/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	S01	10/20/2021 16:40	Field Sample
SD02		Sediment/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	S02	10/20/2021 17:10	Field Sample
SD03		Sediment/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	S03	10/20/2021 18:30	Field Sample
SW01		Surface Water/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21), TMTL + Hg(21)	A, B (HNO3 pH<2) (2) ✓	S01	10/20/2021 16:35	Field Sample
SW02		Surface Water/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21), TMTL + Hg(21)	A, B (HNO3 pH<2) (2) ✓	S02	10/20/2021 16:35	Field Sample
SW03		Surface Water/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21), TMTL + Hg(21)	A, B (HNO3 pH<2) (2) ✓	S03	10/20/2021 16:35	Field Sample
WA01		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA01	10/20/2021 11:55	Field Sample
WA02		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA02	10/20/2021 12:15	Field Sample

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: TMTL + Hg=(TMTL) Total Metals (Superfund, RCRA) + Hg

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Mike Hein EPA	10-20-21/20:50	Mike Beall EPA R4 LSASD	10-21-21 0745	

E214303

USEPA Region 4 COC (REGION COPY)

CHAIN OF CUSTODY RECORD

No: 10/19/21-0001

DateShipped:

TAV Holdings Inc./GA

Lab: Region 4 Lab

CarrierName:

22-0021

Lab Contact: Mike Beall

AirbillNo:

Cooler #:

Lab Phone: 706-355-8856

Sample Identifier	CLP Sample No.	Media/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
-09 WA03		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA03	10/20/2021 12:30	Field Sample
-10 WA04		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA04	10/20/2021 12:45	Field Sample
-11 WA05		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA05	10/20/2021 13:00	Field Sample
-12 WA06		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA06	10/20/2021 13:15	Field Sample
-13 WA07		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA07	10/20/2021 13:20	Field Sample
-14 WA08		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA08	10/20/2021 13:35	Field Sample
-15 WA09		Waste/ Masters, Art		(TCLPM-TMTL+Hg) TCLP + TMTL + Hg (TAT 21 Days)(21)	A (1) ✓	WA09	10/20/2021 14:35	Field Sample

Special Instructions:

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: TMTL + Hg=(TMTL) Total Metals (Superfund, RCRA) + Hg

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Mike Beall EPA	10-20-21	Mike Beall EPA R4 LSASD		

Appendix D – Laboratory Analytical Data Reports



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

November 3, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 22-0021, TAV Holdings Inc.

FROM: Stephanie McCarthy
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Mike Neill

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:

Method Used:

Accreditations:

Physical Properties (PHYSP)

Physical Properties

EPA 200.2 (Soil)

ISO



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

SAMPLES INCLUDED IN THIS REPORT

Project: 22-0021, TAV Holdings Inc.

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
SD01	E214303-01	Sediment	10/20/21 16:40	10/21/21 7:45
SD02	E214303-03	Sediment	10/20/21 17:10	10/21/21 7:45
SD03	E214303-05	Sediment	10/20/21 18:30	10/21/21 7:45



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

DATA QUALIFIER DEFINITIONS

ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.

Refer to the certificate and scope of accreditation FT-0330 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

NR Not accredited for this test.

DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.

Refer to the certificate and scope of accreditation AT-2628 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Physical Properties

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD01

Lab ID: E214303-01

Station ID: S01

Matrix: Sediment

Date Collected: 10/20/21 16:40

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
E1642941	% Solids	38		%	0.0	10/21/21 15:11	10/25/21 11:58	EPA 200.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Physical Properties

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD02

Lab ID: E214303-03

Station ID: S02

Matrix: Sediment

Date Collected: 10/20/21 17:10

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
E1642941	% Solids	56		%	0.0	10/21/21 15:11	10/25/21 11:58	EPA 200.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Physical Properties

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD03

Lab ID: E214303-05

Station ID: S03

Matrix: Sediment

Date Collected: 10/20/21 18:30

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
E1642941	% Solids	79		%	0.0	10/21/21 15:11	10/25/21 11:58	EPA 200.2



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Physical Properties (PHYSP) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch 2110062 - M % Solids

Duplicate (2110062-DUP1)

Source: E214303-05

Prepared: 10/21/21 Analyzed: 10/25/21

EPA 200.2

% Solids	76.607	0.0	%		79.040			3.13	10	
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Notes and Definitions for QC Samples



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

November 12, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 22-0021, TAV Holdings Inc.

FROM: Stephanie McCarthy
LSB Inorganic Chemistry Section Chief

THRU: John Deatruck, Chief
Laboratory Services Branch

TO: Mike Neill

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
TCLP Metals (TCLPM)		
TCLP Metals	EPA 200.8 (Waste)	ISO
TCLP Metals	EPA 245.1 (Water)	ISO
TCLP Metals	EPA 6010 (Waste)	ISO
Total Metals (TMTL)		
Total Mercury	EPA 245.1 (Water)	ISO/DW
Total Mercury	EPA 7473 (Soil)	ISO
Total Mercury	EPA 7473 (Waste)	ISO



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Report Narrative for Work Order: E214303 Analysis: TMTL

For the TCLP digestion, a matrix blank was prepared using both extraction fluid 1 and extraction fluid 2. Both blanks were evaluated for contamination as part of the QA process.

Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

SAMPLES INCLUDED IN THIS REPORT

Project: 22-0021, TAV Holdings Inc.

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
SD01	E214303-01	Sediment	10/20/21 16:40	10/21/21 7:45
SW01	E214303-02	Surface Water	10/20/21 16:35	10/21/21 7:45
SD02	E214303-03	Sediment	10/20/21 17:10	10/21/21 7:45
SW02	E214303-04	Surface Water	10/20/21 16:35	10/21/21 7:45
SD03	E214303-05	Sediment	10/20/21 18:30	10/21/21 7:45
SW03	E214303-06	Surface Water	10/20/21 16:35	10/21/21 7:45
WA01	E214303-07	Waste	10/20/21 11:55	10/21/21 7:45
WA02	E214303-08	Waste	10/20/21 12:15	10/21/21 7:45
WA03	E214303-09	Waste	10/20/21 12:30	10/21/21 7:45
WA04	E214303-10	Waste	10/20/21 12:45	10/21/21 7:45
WA05	E214303-11	Waste	10/20/21 13:00	10/21/21 7:45
WA06	E214303-12	Waste	10/20/21 13:15	10/21/21 7:45
WA07	E214303-13	Waste	10/20/21 13:20	10/21/21 7:45
WA08	E214303-14	Waste	10/20/21 13:35	10/21/21 7:45
WA09	E214303-15	Waste	10/20/21 14:35	10/21/21 7:45



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
J	The identification of the analyte is acceptable; the reported value is an estimate.
QM-1	Matrix Spike Recovery less than method control limits
QR-1	MRL verification recovery less than lower control limits.
QR-2	MRL verification recovery greater than upper control limits.

ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
MDL	Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
MRL	Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
TIC	Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories. Refer to the certificate and scope of accreditation FT-0330 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
NR	Not accredited for this test.
DW	Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005. Refer to the certificate and scope of accreditation AT-2628 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
ISO/DW	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD01

Lab ID: E214303-01

Station ID: S01

Matrix: Sediment

Date Collected: 10/20/21 16:40

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	2.4		mg/kg dry	0.050	11/02/21 16:21	11/03/21 18:21	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD01

Lab ID: E214303-01

Station ID: S01

Matrix: Sediment

Date Collected: 10/20/21 16:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7440-39-3	Barium	12		mg/L	0.10	11/08/21 10:06	11/09/21 13:43	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 13:43	EPA 6010
7440-43-9	Cadmium	0.30		mg/L	0.050	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:43	EPA 6010
7439-92-1	Lead	8.2		mg/L	0.10	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 20:40	EPA 245.1
7440-02-0	Nickel	0.31		mg/L	0.20	11/08/21 10:06	11/09/21 13:43	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:43	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:35	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:43	EPA 6010
7440-66-6	Zinc	51		mg/L	0.20	11/08/21 10:06	11/09/21 13:43	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW01

Lab ID: E214303-02

Station ID: S01

Matrix: Surface Water

Date Collected: 10/20/21 16:35

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.10	U	ug/L	0.10	10/25/21 17:28	10/26/21 19:39	EPA 245.1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD02

Lab ID: E214303-03

Station ID: S02

Matrix: Sediment

Date Collected: 10/20/21 17:10

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.96		mg/kg dry	0.049	11/02/21 16:21	11/03/21 18:29	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD02

Lab ID: E214303-03

Station ID: S02

Matrix: Sediment

Date Collected: 10/20/21 17:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7440-39-3	Barium	5.4		mg/L	0.10	11/08/21 10:06	11/09/21 13:47	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 13:47	EPA 6010
7440-43-9	Cadmium	0.23	J, QR-2	mg/L	0.050	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:47	EPA 6010
7439-92-1	Lead	12		mg/L	0.10	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 20:44	EPA 245.1
7440-02-0	Nickel	0.47		mg/L	0.20	11/08/21 10:06	11/09/21 13:47	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:47	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:41	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:47	EPA 6010
7440-66-6	Zinc	69		mg/L	0.20	11/08/21 10:06	11/09/21 13:47	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW02

Lab ID: E214303-04

Station ID: S02

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-97-6	Mercury	0.10	U	ug/L	0.10	10/25/21 17:28	10/26/21 19:43	EPA 245.1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD03

Lab ID: E214303-05

Station ID: S03

Matrix: Sediment

Date Collected: 10/20/21 18:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-97-6	Mercury	0.047	U	mg/kg dry	0.047	11/02/21 16:21	11/03/21 18:37	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD03

Lab ID: E214303-05

Station ID: S03

Matrix: Sediment

Date Collected: 10/20/21 18:30

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-39-3	Barium	0.21		mg/L	0.10	11/08/21 10:06	11/09/21 13:50	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 13:50	EPA 6010
7440-43-9	Cadmium	0.050	U	mg/L	0.050	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:50	EPA 6010
7439-92-1	Lead	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-02-0	Nickel	0.20	U	mg/L	0.20	11/08/21 10:06	11/09/21 13:50	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:50	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:46	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:50	EPA 6010
7440-66-6	Zinc	0.31	J, QR-1	mg/L	0.20	11/08/21 10:06	11/09/21 13:50	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW03

Lab ID: E214303-06

Station ID: S03

Matrix: Surface Water

Date Collected: 10/20/21 16:35

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.10	U	ug/L	0.10	10/25/21 17:28	10/26/21 19:47	EPA 245.1



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA01

Lab ID: E214303-07

Station ID: WA01

Matrix: Waste

Date Collected: 10/20/21 11:55

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.11		mg/kg	0.036	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA01

Lab ID: E214303-07

Station ID: WA01

Matrix: Waste

Date Collected: 10/20/21 11:55

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7440-39-3	Barium	8.3		mg/L	0.10	11/08/21 10:06	11/09/21 13:54	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 13:54	EPA 6010
7440-43-9	Cadmium	0.32		mg/L	0.050	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:54	EPA 6010
7439-92-1	Lead	21		mg/L	0.10	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:00	EPA 245.1
7440-02-0	Nickel	0.51		mg/L	0.20	11/08/21 10:06	11/09/21 13:54	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:54	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:52	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:54	EPA 6010
7440-66-6	Zinc	79		mg/L	0.20	11/08/21 10:06	11/09/21 13:54	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA02

Lab ID: E214303-08

Station ID: WA02

Matrix: Waste

Date Collected: 10/20/21 12:15

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.048	U	mg/kg	0.048	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA03

Lab ID: E214303-09

Station ID: WA03

Matrix: Waste

Date Collected: 10/20/21 12:30

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.28		mg/kg	0.043	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA03

Lab ID: E214303-09

Station ID: WA03

Matrix: Waste

Date Collected: 10/20/21 12:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7440-39-3	Barium	2.6		mg/L	0.10	11/08/21 10:06	11/09/21 13:57	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 13:57	EPA 6010
7440-43-9	Cadmium	0.14	J, QR-2	mg/L	0.050	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:57	EPA 6010
7439-92-1	Lead	12		mg/L	0.10	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:04	EPA 245.1
7440-02-0	Nickel	0.20	U	mg/L	0.20	11/08/21 10:06	11/09/21 13:57	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:57	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 13:57	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 13:57	EPA 6010
7440-66-6	Zinc	47		mg/L	0.20	11/08/21 10:06	11/09/21 13:57	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA04

Lab ID: E214303-10

Station ID: WA04

Matrix: Waste

Date Collected: 10/20/21 12:45

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.19		mg/kg	0.047	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA04

Lab ID: E214303-10

Station ID: WA04

Matrix: Waste

Date Collected: 10/20/21 12:45

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7440-39-3	Barium	2.5		mg/L	0.10	11/08/21 10:06	11/09/21 14:19	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 14:19	EPA 6010
7440-43-9	Cadmium	0.71		mg/L	0.050	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:19	EPA 6010
7439-92-1	Lead	10		mg/L	0.10	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:08	EPA 245.1
7440-02-0	Nickel	0.23		mg/L	0.20	11/08/21 10:06	11/09/21 14:19	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:19	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:14	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:19	EPA 6010
7440-66-6	Zinc	100		mg/L	0.20	11/08/21 10:06	11/09/21 14:19	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA05

Lab ID: E214303-11

Station ID: WA05

Matrix: Waste

Date Collected: 10/20/21 13:00

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.56		mg/kg	0.050	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA05

Lab ID: E214303-11

Station ID: WA05

Matrix: Waste

Date Collected: 10/20/21 13:00

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7440-39-3	Barium	14		mg/L	0.10	11/08/21 10:06	11/09/21 14:29	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 14:29	EPA 6010
7440-43-9	Cadmium	0.28		mg/L	0.050	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:29	EPA 6010
7439-92-1	Lead	24		mg/L	0.10	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:24	EPA 245.1
7440-02-0	Nickel	0.88		mg/L	0.20	11/08/21 10:06	11/09/21 14:29	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:29	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:30	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:29	EPA 6010
7440-66-6	Zinc	79		mg/L	0.20	11/08/21 10:06	11/09/21 14:29	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA06

Lab ID: E214303-12

Station ID: WA06

Matrix: Waste

Date Collected: 10/20/21 13:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7439-97-6	Mercury	0.050	U	mg/kg	0.050	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA07

Lab ID: E214303-13

Station ID: WA07

Matrix: Waste

Date Collected: 10/20/21 13:20

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.66		mg/kg	0.040	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA07

Lab ID: E214303-13

Station ID: WA07

Matrix: Waste

Date Collected: 10/20/21 13:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7440-39-3	Barium	2.3		mg/L	0.10	11/08/21 10:06	11/09/21 14:36	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 14:36	EPA 6010
7440-43-9	Cadmium	0.26		mg/L	0.050	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:36	EPA 6010
7439-92-1	Lead	9.1		mg/L	0.10	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:28	EPA 245.1
7440-02-0	Nickel	0.24		mg/L	0.20	11/08/21 10:06	11/09/21 14:36	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:36	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:36	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:36	EPA 6010
7440-66-6	Zinc	76		mg/L	0.20	11/08/21 10:06	11/09/21 14:36	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA08

Lab ID: E214303-14

Station ID: WA08

Matrix: Waste

Date Collected: 10/20/21 13:35

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	1.5		mg/kg	0.041	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA08

Lab ID: E214303-14

Station ID: WA08

Matrix: Waste

Date Collected: 10/20/21 13:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7440-39-3	Barium	2.5		mg/L	0.10	11/08/21 10:06	11/09/21 14:40	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 14:40	EPA 6010
7440-43-9	Cadmium	0.16	J, QR-2	mg/L	0.050	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:40	EPA 6010
7439-92-1	Lead	2.3		mg/L	0.10	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:32	EPA 245.1
7440-02-0	Nickel	0.20	U	mg/L	0.20	11/08/21 10:06	11/09/21 14:40	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:40	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:41	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:40	EPA 6010
7440-66-6	Zinc	19		mg/L	0.20	11/08/21 10:06	11/09/21 14:40	EPA 6010



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA09

Lab ID: E214303-15

Station ID: WA09

Matrix: Waste

Date Collected: 10/20/21 14:35

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7439-97-6	Mercury	0.76	J, QM-1	mg/kg	0.048	10/27/21 10:47	11/01/21 14:24	EPA 7473



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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 D.A.R.T. Id: 22-0021
 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA09

Lab ID: E214303-15

Station ID: WA09

Matrix: Waste

Date Collected: 10/20/21 14:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7440-38-2	Arsenic	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7440-39-3	Barium	2.0		mg/L	0.10	11/08/21 10:06	11/09/21 14:43	EPA 6010
7440-41-7	Beryllium	0.060	U	mg/L	0.060	11/08/21 10:06	11/09/21 14:43	EPA 6010
7440-43-9	Cadmium	0.16	J, QR-2	mg/L	0.050	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7440-47-3	Chromium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:43	EPA 6010
7439-92-1	Lead	3.6		mg/L	0.10	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7439-97-6	Mercury	5.E-5	U	mg/L	5.E-5	11/05/21 14:01	11/05/21 21:36	EPA 245.1
7440-02-0	Nickel	0.20	U	mg/L	0.20	11/08/21 10:06	11/09/21 14:43	EPA 6010
7782-49-2	Selenium	0.20	U	mg/L	0.20	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7440-22-4	Silver	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:43	EPA 6010
7440-28-0	Thallium	0.10	U	mg/L	0.10	11/08/21 10:11	11/09/21 14:47	EPA 200.8
7440-62-2	Vanadium	0.10	U	mg/L	0.10	11/08/21 10:06	11/09/21 14:43	EPA 6010
7440-66-6	Zinc	28		mg/L	0.20	11/08/21 10:06	11/09/21 14:43	EPA 6010



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110073 - M 245.1 Hg Wtr

Blank (2110073-BLK1)

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	U	0.10	ug/L							U
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LCS (2110073-BS1)

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	2.0930	0.10	ug/L	2.0000		105	85-115			
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Duplicate (2110073-DUP1)

Source: E214303-06

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	U	0.10	ug/L		U				20	U
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Matrix Spike (2110073-MS1)

Source: E214303-06

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	1.8970	0.10	ug/L	2.0000	U	94.8	70-130			
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Matrix Spike Dup (2110073-MSD1)

Source: E214303-06

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	1.9150	0.10	ug/L	2.0000	U	95.8	70-130	0.944	20	
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MRL Verification (2110073-PS1)

Prepared: 10/25/21 Analyzed: 10/26/21

EPA 245.1

Mercury	0.11000		ug/L	0.10000		110	70-130			MRL-2
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Batch 2110080 - M 7473 Hg-Direct

Blank (2110080-BLK1)

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	U	0.050	mg/kg							U
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LCS (2110080-BS1)

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	1.0708	0.050	mg/kg	1.0000		107	80-120			
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LCS Dup (2110080-BSD1)

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	1.0512	0.050	mg/kg	1.0000		105	80-120	1.84	20	
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 D.A.R.T. Id: 22-0021
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Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110080 - M 7473 Hg-Direct

Matrix Spike (2110080-MS1) Source: E214303-07 Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	1.0225	0.041	mg/kg	0.82305	0.11367	110	80-120			
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Matrix Spike (2110080-MS2)

Source: E214303-15

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	1.6593	0.046	mg/kg	0.91912	0.76353	97.5	80-120			
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Matrix Spike Dup (2110080-MSD1)

Source: E214303-07

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	0.93849	0.040	mg/kg	0.80515	0.11367	102	80-120	8.57	20	
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Matrix Spike Dup (2110080-MSD2)

Source: E214303-15

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	1.4697	0.046	mg/kg	0.91075	0.76353	77.5	80-120	12.1	20	QM-1
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MRL Verification (2110080-PS1)

Prepared: 10/27/21 Analyzed: 11/01/21

EPA 7473

Mercury	4.2070		ng Hg	5.0000		84.1	70-130			MRL-6
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Batch 2111008 - M 7473 Hg-Direct

Blank (2111008-BLK1)

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	U	0.050	mg/kg dry							U
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LCS (2111008-BS1)

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	8166.9	200	mg/kg dry	7420.0		110	80-120			
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LCS Dup (2111008-BSD1)

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	7927.5	240	mg/kg dry	7420.0		107	80-120	2.97	20	
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Duplicate (2111008-DUP1)

Source: E214303-05

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	0.0065290	0.049	mg/kg dry	0.0075726				14.8	20	U
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 D.A.R.T. Id: 22-0021
 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2111008 - M 7473 Hg-Direct

Matrix Spike (2111008-MS1)

Source: E214303-05

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	0.91896	0.047	mg/kg dry	0.93985	0.0075726	97.0	80-120			
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Matrix Spike Dup (2111008-MSD1)

Source: E214303-05

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	0.82705	0.049	mg/kg dry	0.97847	0.0075726	83.8	80-120	10.5	20	
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MRL Verification (2111008-PS1)

Prepared: 11/02/21 Analyzed: 11/03/21

EPA 7473

Mercury	7.3610		ng Hg	5.0000		147	70-130			MRL-3, QR-2
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TCLP Metals (TCLPM) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2111017 - M 245.1 TCLP extract										
Blank (2111017-BLK1)				Prepared & Analyzed: 11/05/21						
EPA 245.1										
Mercury	U	0.000050	mg/L							U
LCS (2111017-BS1)				Prepared & Analyzed: 11/05/21						
EPA 245.1										
Mercury	0.0020590	0.000050	mg/L	0.0020000		103	85-115			
Duplicate (2111017-DUP1)				Source: E214303-03		Prepared & Analyzed: 11/05/21				
EPA 245.1										
Mercury	0.000022000	0.000050	mg/L		0.000022000			0.00	20	U
Duplicate (2111017-DUP2)				Source: E214303-10		Prepared & Analyzed: 11/05/21				
EPA 245.1										
Mercury	0.000018000	0.000050	mg/L		0.000017000			5.71	20	U
Leach Fluid Blank (2111017-LBK1)				Prepared & Analyzed: 11/05/21						
EPA 245.1										
Mercury	0.000011000	0.000050	mg/L							U
Leach Fluid Blank (2111017-LBK2)				Prepared & Analyzed: 11/05/21						
EPA 245.1										
Mercury	0.000011000	0.000050	mg/L							U
Matrix Spike (2111017-MS1)				Source: E214303-03		Prepared & Analyzed: 11/05/21				
EPA 245.1										
Mercury	0.0018740	0.000050	mg/L	0.0020000	0.000022000	92.6	75-125			
Matrix Spike (2111017-MS2)				Source: E214303-10		Prepared & Analyzed: 11/05/21				
EPA 245.1										
Mercury	0.0020890	0.000050	mg/L	0.0020000	0.000017000	104	75-125			
Matrix Spike Dup (2111017-MSD1)				Source: E214303-03		Prepared & Analyzed: 11/05/21				
EPA 245.1										
Mercury	0.0019690	0.000050	mg/L	0.0020000	0.000022000	97.4	75-125	4.94	200	
Matrix Spike Dup (2111017-MSD2)				Source: E214303-10		Prepared & Analyzed: 11/05/21				



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TCLP Metals (TCLPM) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2111017 - M 245.1 TCLP extract

Matrix Spike Dup (2111017-MSD2)

Source: E214303-10

Prepared & Analyzed: 11/05/21

EPA 245.1

Mercury	0.0020690	0.000050	mg/L	0.0020000	0.000017000	103	75-125	0.962	200	
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MRL Verification (2111017-PS1)

Prepared & Analyzed: 11/05/21

EPA 245.1

Mercury	0.10500		ug/L	0.10000		105	65-135			MRL-9
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Batch 2111024 - M 200.2 TCLP

Blank (2111024-BLK1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	U	0.025	mg/L							U
Beryllium	U	0.015	"							U
Chromium	U	0.025	"							U
Nickel	U	0.050	"							U
Silver	U	0.025	"							U
Vanadium	U	0.025	"							U
Zinc	U	0.050	"							U

Blank (2111024-BLK2)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	U	0.020	mg/L							U
Beryllium	U	0.012	"							U
Chromium	U	0.020	"							U
Nickel	U	0.040	"							U
Silver	U	0.020	"							U
Vanadium	U	0.020	"							U
Zinc	U	0.040	"							U

LCS (2111024-BS1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	4.45	0.025	mg/L	5.0000		89.0	85-115			
Beryllium	0.870	0.015	"	1.0000		87.0	85-115			
Chromium	4.33	0.025	"	5.0000		86.6	85-115			
Nickel	0.856	0.050	"	1.0000		85.6	85-115			
Silver	0.0875	0.025	"	0.10000		87.5	85-115			
Vanadium	0.876	0.025	"	1.0000		87.6	85-115			
Zinc	0.885	0.050	"	1.0000		88.5	85-115			



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TCLP Metals (TCLPM) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2111024 - M 200.2 TCLP

Matrix Spike (2111024-MS1)

Source: E214303-10

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	20.7	0.10	mg/L	20.000	2.52	90.9	75-125
Beryllium	3.63	0.060	"	4.0000	U	90.7	75-125
Chromium	17.7	0.10	"	20.000	U	88.4	75-125
Nickel	3.68	0.20	"	4.0000	0.230	86.3	75-125
Silver	0.357	0.10	"	0.40000	U	89.3	75-125
Vanadium	3.62	0.10	"	4.0000	0.0424	89.4	75-125
Zinc	107	0.20	"	4.0000	103	109	75-125

Matrix Spike Dup (2111024-MSD1)

Source: E214303-10

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	20.5	0.10	mg/L	20.000	2.52	90.1	75-125	0.803	25
Beryllium	3.60	0.060	"	4.0000	U	90.0	75-125	0.760	25
Chromium	17.6	0.10	"	20.000	U	88.1	75-125	0.415	25
Nickel	3.68	0.20	"	4.0000	0.230	86.2	75-125	0.0728	25
Silver	0.360	0.10	"	0.40000	U	89.9	75-125	0.729	25
Vanadium	3.60	0.10	"	4.0000	0.0424	89.0	75-125	0.450	25
Zinc	107	0.20	"	4.0000	103	109	75-125	0.000186	25

MRL Verification (2111024-PS1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 6010

Barium	0.00571	0.0050	mg/L	0.0050000		114	70-130		MRL-9
Beryllium	0.00264	0.0030	"	0.0030000		88.0	70-130		MRL-9, U
Chromium	0.00485	0.0050	"	0.0050000		97.1	70-130		MRL-9, U
Nickel	0.0100	0.010	"	0.010000		100	70-130		MRL-9
Silver	0.00443	0.0050	"	0.0050000		88.7	70-130		MRL-9, U
Vanadium	0.00575	0.0050	"	0.0050000		115	70-130		MRL-9
Zinc	0.00525	0.010	"	0.010000		52.5	70-130		MRL-9, QR-1, U

Batch 2111025 - M 200.2 TCLP

Blank (2111025-BLK1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	U	0.0010	mg/L						U
Arsenic	U	0.0010	"						U
Cadmium	U	0.00050	"						U
Lead	U	0.0010	"						U



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

TCLP Metals (TCLPM) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2111025 - M 200.2 TCLP

Blank (2111025-BLK1)

Prepared: 11/08/21 Analyzed: 11/09/21

Selenium	U	0.0020	mg/L							U
Thallium	U	0.0010	"							U

Blank (2111025-BLK2)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	U	0.0040	mg/L							U
Arsenic	U	0.0040	"							U
Cadmium	U	0.0020	"							U
Lead	U	0.0040	"							U
Selenium	U	0.0080	"							U
Thallium	U	0.0040	"							U

LCS (2111025-BS1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	0.997	0.025	mg/L	1.0000		99.7	85-115			
Arsenic	4.81	0.025	"	5.0000		96.2	85-115			
Cadmium	0.956	0.012	"	1.0000		95.6	85-115			
Lead	4.86	0.025	"	5.0000		97.2	85-115			
Selenium	0.974	0.050	"	1.0000		97.4	85-115			
Thallium	0.196	0.025	"	0.20000		97.8	85-115			

Matrix Spike (2111025-MS1)

Source: E214303-10

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	4.07	0.10	mg/L	4.0000	0.0385	101	70-130			
Arsenic	20.2	0.10	"	20.000	U	101	70-130			
Cadmium	4.64	0.050	"	4.0000	0.714	98.1	70-130			
Lead	29.7	0.10	"	20.000	10.4	96.9	70-130			
Selenium	4.07	0.20	"	4.0000	U	102	70-130			
Thallium	0.792	0.10	"	0.80000	U	99.0	70-130			

Matrix Spike Dup (2111025-MSD1)

Source: E214303-10

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	4.07	0.10	mg/L	4.0000	0.0385	101	70-130	0.154	20	
Arsenic	19.6	0.10	"	20.000	U	98.1	70-130	3.03	20	
Cadmium	4.70	0.050	"	4.0000	0.714	99.5	70-130	1.23	20	
Lead	29.5	0.10	"	20.000	10.4	95.9	70-130	0.680	20	
Selenium	3.90	0.20	"	4.0000	U	97.6	70-130	4.10	20	
Thallium	0.784	0.10	"	0.80000	U	98.0	70-130	0.990	20	



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TCLP Metals (TCLPM) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2111025 - M 200.2 TCLP

Matrix Spike Dup (2111025-MSD1)

Source: E214303-10

Prepared: 11/08/21 Analyzed: 11/09/21

MRL Verification (2111025-PS1)

Prepared: 11/08/21 Analyzed: 11/09/21

EPA 200.8

Antimony	0.000402	0.0010	mg/L	0.00050000	80.3	65-135	MRL-9, U
Arsenic	0.000942	0.0010	"	0.0010000	94.2	65-135	MRL-9, U
Cadmium	0.000743	0.00050	"	0.00050000	149	65-135	MRL-9, QR-2
Lead	0.00159	0.0010	"	0.0010000	159	65-135	MRL-9, QR-2
Selenium	0.00221	0.0020	"	0.0020000	111	65-135	MRL-9
Thallium	0.000470	0.0010	"	0.00050000	94.0	65-135	MRL-9, U



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Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
MRL-2	MRL verification for Non-Potable Water matrix
MRL-3	MRL verification for Soil matrix
MRL-6	MRL verification for Waste matrix
MRL-9	MRL verification for TCLP matrix
QM-1	Matrix Spike Recovery less than method control limits
QR-1	MRL verification recovery less than lower control limits.
QR-2	MRL verification recovery greater than upper control limits.



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

November 4, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 22-0021, TAV Holdings Inc.

FROM: Stephanie McCarthy
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Mike Neill

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Total Metals (TMTL)		
Total Metals	EPA 200.8 (Soil)	ISO
Total Metals	EPA 200.8 (Waste)	ISO
Total Metals	EPA 200.8 (Water)	ISO/DW



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Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.



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SAMPLES INCLUDED IN THIS REPORT

Project: 22-0021, TAV Holdings Inc.

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
SD01	E214303-01	Sediment	10/20/21 16:40	10/21/21 7:45
SW01	E214303-02	Surface Water	10/20/21 16:35	10/21/21 7:45
SD02	E214303-03	Sediment	10/20/21 17:10	10/21/21 7:45
SW02	E214303-04	Surface Water	10/20/21 16:35	10/21/21 7:45
SD03	E214303-05	Sediment	10/20/21 18:30	10/21/21 7:45
SW03	E214303-06	Surface Water	10/20/21 16:35	10/21/21 7:45
WA01	E214303-07	Waste	10/20/21 11:55	10/21/21 7:45
WA02	E214303-08	Waste	10/20/21 12:15	10/21/21 7:45
WA03	E214303-09	Waste	10/20/21 12:30	10/21/21 7:45
WA04	E214303-10	Waste	10/20/21 12:45	10/21/21 7:45
WA05	E214303-11	Waste	10/20/21 13:00	10/21/21 7:45
WA06	E214303-12	Waste	10/20/21 13:15	10/21/21 7:45
WA07	E214303-13	Waste	10/20/21 13:20	10/21/21 7:45
WA08	E214303-14	Waste	10/20/21 13:35	10/21/21 7:45
WA09	E214303-15	Waste	10/20/21 14:35	10/21/21 7:45



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DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
J	The identification of the analyte is acceptable; the reported value is an estimate.
QC-2	Analyte concentration high in continuing calibration verification standard
QC-4	Result greater than the highest point on the calibration curve
QI-1	Internal standard was outside of method control limits.
QM-1	Matrix Spike Recovery less than method control limits
QM-2	Matrix Spike Recovery greater than method control limits
QM-3	Matrix Spike Precision outside method control limits



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ACRONYMS AND ABBREVIATIONS

CAS	Chemical Abstracts Service Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.
MDL	Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.
MRL	Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.
TIC	Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories. Refer to the certificate and scope of accreditation FT-0330 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
NR	Not accredited for this test.
DW	Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005. Refer to the certificate and scope of accreditation AT-2628 at: http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd
ISO/DW	Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD01

Lab ID: E214303-01

Station ID: S01

Matrix: Sediment

Date Collected: 10/20/21 16:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	59		mg/kg dry	0.99	10/25/21 15:45	10/28/21 16:13	EPA 200.8
7440-38-2	Arsenic	7.2		mg/kg dry	0.99	10/25/21 15:45	10/28/21 16:13	EPA 200.8
7440-43-9	Cadmium	24		mg/kg dry	0.099	10/25/21 15:45	10/28/21 16:07	EPA 200.8
7439-92-1	Lead	5400		mg/kg dry	25	10/25/21 15:45	10/28/21 16:18	EPA 200.8
7782-49-2	Selenium	0.40	U	mg/kg dry	0.40	10/25/21 15:45	10/28/21 16:07	EPA 200.8
7440-28-0	Thallium	0.20	U, J, QI-1	mg/kg dry	0.20	10/25/21 15:45	10/28/21 16:07	EPA 200.8



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW01

Lab ID: E214303-02

Station ID: S01

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 14:44	EPA 200.8
7440-38-2	Arsenic	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 14:44	EPA 200.8
7440-43-9	Cadmium	0.50	U	ug/L	0.50	10/22/21 11:21	10/28/21 14:44	EPA 200.8
7439-92-1	Lead	7.7		ug/L	1.0	10/22/21 11:21	10/28/21 14:44	EPA 200.8
7782-49-2	Selenium	2.0	U	ug/L	2.0	10/22/21 11:21	10/28/21 14:44	EPA 200.8
7440-28-0	Thallium	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 14:44	EPA 200.8



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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD02

Lab ID: E214303-03

Station ID: S02

Matrix: Sediment

Date Collected: 10/20/21 17:10

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	48	J, QM-1	mg/kg dry	0.98	10/25/21 15:45	10/28/21 16:43	EPA 200.8
7440-38-2	Arsenic	6.3	J, QC-2	mg/kg dry	0.20	10/25/21 15:45	10/28/21 16:35	EPA 200.8
7440-43-9	Cadmium	12	J, QM-2	mg/kg dry	0.098	10/25/21 15:45	10/28/21 16:35	EPA 200.8
7439-92-1	Lead	2000		mg/kg dry	9.8	10/25/21 15:45	10/28/21 16:48	EPA 200.8
7782-49-2	Selenium	0.39	U, J, QM-1	mg/kg dry	0.39	10/25/21 15:45	10/28/21 16:35	EPA 200.8
7440-28-0	Thallium	0.20	U	mg/kg dry	0.20	10/25/21 15:45	10/28/21 16:35	EPA 200.8



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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW02

Lab ID: E214303-04

Station ID: S02

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	1.1		ug/L	1.0	10/22/21 11:21	10/28/21 14:50	EPA 200.8
7440-38-2	Arsenic	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 14:50	EPA 200.8
7440-43-9	Cadmium	0.50	U	ug/L	0.50	10/22/21 11:21	10/28/21 14:50	EPA 200.8
7439-92-1	Lead	21		ug/L	1.0	10/22/21 11:21	10/28/21 14:50	EPA 200.8
7782-49-2	Selenium	2.0	U	ug/L	2.0	10/22/21 11:21	10/28/21 14:50	EPA 200.8
7440-28-0	Thallium	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 14:50	EPA 200.8



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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD03

Lab ID: E214303-05

Station ID: S03

Matrix: Sediment

Date Collected: 10/20/21 18:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.20	U	mg/kg dry	0.20	10/25/21 15:45	10/28/21 17:27	EPA 200.8
7440-38-2	Arsenic	0.67	J, QC-2	mg/kg dry	0.20	10/25/21 15:45	10/28/21 17:27	EPA 200.8
7440-43-9	Cadmium	0.099	U	mg/kg dry	0.099	10/25/21 15:45	10/28/21 17:27	EPA 200.8
7439-92-1	Lead	11		mg/kg dry	0.20	10/25/21 15:45	10/28/21 17:27	EPA 200.8
7782-49-2	Selenium	0.40	U	mg/kg dry	0.40	10/25/21 15:45	10/28/21 17:27	EPA 200.8
7440-28-0	Thallium	0.20	U	mg/kg dry	0.20	10/25/21 15:45	10/28/21 17:27	EPA 200.8



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW03

Lab ID: E214303-06

Station ID: S03

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 15:24	EPA 200.8
7440-38-2	Arsenic	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 15:24	EPA 200.8
7440-43-9	Cadmium	0.50	U	ug/L	0.50	10/22/21 11:21	10/28/21 15:24	EPA 200.8
7439-92-1	Lead	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 15:24	EPA 200.8
7782-49-2	Selenium	2.0	U	ug/L	2.0	10/22/21 11:21	10/28/21 15:24	EPA 200.8
7440-28-0	Thallium	1.0	U	ug/L	1.0	10/22/21 11:21	10/28/21 15:24	EPA 200.8



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA01

Lab ID: E214303-07

Station ID: WA01

Matrix: Waste

Date Collected: 10/20/21 11:55

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	12		mg/kg	0.065	10/22/21 11:28	10/29/21 11:49	EPA 200.8
7440-38-2	Arsenic	1.0		mg/kg	0.065	10/22/21 11:28	10/29/21 11:49	EPA 200.8
7440-43-9	Cadmium	1.8		mg/kg	0.032	10/22/21 11:28	10/29/21 11:49	EPA 200.8
7439-92-1	Lead	300		mg/kg	1.6	10/22/21 11:28	10/29/21 12:00	EPA 200.8
7782-49-2	Selenium	0.13	U	mg/kg	0.13	10/22/21 11:28	10/29/21 11:49	EPA 200.8
7440-28-0	Thallium	0.065	U	mg/kg	0.065	10/22/21 11:28	10/29/21 11:49	EPA 200.8



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA02

Lab ID: E214303-08

Station ID: WA02

Matrix: Waste

Date Collected: 10/20/21 12:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.31		mg/kg	0.072	10/22/21 11:28	10/29/21 12:06	EPA 200.8
7440-38-2	Arsenic	0.072	U	mg/kg	0.072	10/22/21 11:28	10/29/21 12:06	EPA 200.8
7440-43-9	Cadmium	0.036	U	mg/kg	0.036	10/22/21 11:28	10/29/21 12:06	EPA 200.8
7439-92-1	Lead	0.073		mg/kg	0.072	10/22/21 11:28	10/29/21 12:06	EPA 200.8
7782-49-2	Selenium	0.14	U	mg/kg	0.14	10/22/21 11:28	10/29/21 12:06	EPA 200.8
7440-28-0	Thallium	0.072	U	mg/kg	0.072	10/22/21 11:28	10/29/21 12:06	EPA 200.8



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA03

Lab ID: E214303-09

Station ID: WA03

Matrix: Waste

Date Collected: 10/20/21 12:30

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	23		mg/kg	0.36	10/22/21 11:28	10/29/21 12:28	EPA 200.8
7440-38-2	Arsenic	2.7		mg/kg	0.36	10/22/21 11:28	10/29/21 12:28	EPA 200.8
7440-43-9	Cadmium	4.6		mg/kg	0.18	10/22/21 11:28	10/29/21 12:28	EPA 200.8
7439-92-1	Lead	1600	J, QC-4	mg/kg	3.6	10/22/21 11:28	10/29/21 12:33	EPA 200.8
7782-49-2	Selenium	0.71	U	mg/kg	0.71	10/22/21 11:28	10/29/21 12:28	EPA 200.8
7440-28-0	Thallium	0.36	U	mg/kg	0.36	10/22/21 11:28	10/29/21 12:28	EPA 200.8



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Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA04

Lab ID: E214303-10

Station ID: WA04

Matrix: Waste

Date Collected: 10/20/21 12:45

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	19	J, QM-1, QM-3	mg/kg	2.0	10/22/21 11:28	10/29/21 12:44	EPA 200.8
7440-38-2	Arsenic	2.4	J, QM-3	mg/kg	2.0	10/22/21 11:28	10/29/21 12:44	EPA 200.8
7440-43-9	Cadmium	38	J, QM-3	mg/kg	1.0	10/22/21 11:28	10/29/21 12:44	EPA 200.8
7439-92-1	Lead	5600		mg/kg	20	10/22/21 11:28	10/29/21 12:50	EPA 200.8
7782-49-2	Selenium	4.0	U, J, QM-1, QM-3	mg/kg	4.0	10/22/21 11:28	10/29/21 12:44	EPA 200.8
7440-28-0	Thallium	2.0	U, J, QM-3	mg/kg	2.0	10/22/21 11:28	10/29/21 12:44	EPA 200.8



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA05

Lab ID: E214303-11

Station ID: WA05

Matrix: Waste

Date Collected: 10/20/21 13:00

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	21		mg/kg	0.40	10/22/21 11:28	10/29/21 13:44	EPA 200.8
7440-38-2	Arsenic	3.0		mg/kg	0.40	10/22/21 11:28	10/29/21 13:44	EPA 200.8
7440-43-9	Cadmium	7.5		mg/kg	0.040	10/22/21 11:28	10/29/21 13:39	EPA 200.8
7439-92-1	Lead	1600		mg/kg	4.0	10/22/21 11:28	10/29/21 13:50	EPA 200.8
7782-49-2	Selenium	0.16	U	mg/kg	0.16	10/22/21 11:28	10/29/21 13:39	EPA 200.8
7440-28-0	Thallium	0.40	U	mg/kg	0.40	10/22/21 11:28	10/29/21 13:44	EPA 200.8



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA06

Lab ID: E214303-12

Station ID: WA06

Matrix: Waste

Date Collected: 10/20/21 13:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	0.061	U	mg/kg	0.061	10/22/21 11:28	10/29/21 13:55	EPA 200.8
7440-38-2	Arsenic	0.061	U	mg/kg	0.061	10/22/21 11:28	10/29/21 13:55	EPA 200.8
7440-43-9	Cadmium	0.031	U	mg/kg	0.031	10/22/21 11:28	10/29/21 13:55	EPA 200.8
7439-92-1	Lead	0.38		mg/kg	0.061	10/22/21 11:28	10/29/21 13:55	EPA 200.8
7782-49-2	Selenium	0.12	U	mg/kg	0.12	10/22/21 11:28	10/29/21 13:55	EPA 200.8
7440-28-0	Thallium	0.061	U	mg/kg	0.061	10/22/21 11:28	10/29/21 13:55	EPA 200.8



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA07

Lab ID: E214303-13

Station ID: WA07

Matrix: Waste

Date Collected: 10/20/21 13:20

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	15		mg/kg	0.080	10/22/21 11:28	10/29/21 14:01	EPA 200.8
7440-38-2	Arsenic	2.4		mg/kg	0.080	10/22/21 11:28	10/29/21 14:01	EPA 200.8
7440-43-9	Cadmium	10		mg/kg	0.040	10/22/21 11:28	10/29/21 14:01	EPA 200.8
7439-92-1	Lead	1700	J, QC-4	mg/kg	4.0	10/22/21 11:28	10/29/21 14:12	EPA 200.8
7782-49-2	Selenium	0.16	U	mg/kg	0.16	10/22/21 11:28	10/29/21 14:01	EPA 200.8
7440-28-0	Thallium	0.40	U	mg/kg	0.40	10/22/21 11:28	10/29/21 14:06	EPA 200.8



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA08

Lab ID: E214303-14

Station ID: WA08

Matrix: Waste

Date Collected: 10/20/21 13:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-36-0	Antimony	28		mg/kg	2.1	10/22/21 11:28	10/29/21 14:34	EPA 200.8
7440-38-2	Arsenic	3.8		mg/kg	2.1	10/22/21 11:28	10/29/21 14:34	EPA 200.8
7440-43-9	Cadmium	12		mg/kg	0.042	10/22/21 11:28	10/29/21 14:28	EPA 200.8
7439-92-1	Lead	2600		mg/kg	11	10/22/21 11:28	10/29/21 14:39	EPA 200.8
7782-49-2	Selenium	0.17	U	mg/kg	0.17	10/22/21 11:28	10/29/21 14:28	EPA 200.8
7440-28-0	Thallium	2.1	U	mg/kg	2.1	10/22/21 11:28	10/29/21 14:34	EPA 200.8



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA09

Lab ID: E214303-15

Station ID: WA09

Matrix: Waste

Date Collected: 10/20/21 14:35

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-36-0	Antimony	20		mg/kg	0.38	10/22/21 11:28	10/29/21 14:50	EPA 200.8
7440-38-2	Arsenic	2.5		mg/kg	0.38	10/22/21 11:28	10/29/21 14:50	EPA 200.8
7440-43-9	Cadmium	14		mg/kg	0.038	10/22/21 11:28	10/29/21 14:45	EPA 200.8
7439-92-1	Lead	1400		mg/kg	3.8	10/22/21 11:28	10/29/21 14:56	EPA 200.8
7782-49-2	Selenium	0.15	U	mg/kg	0.15	10/22/21 11:28	10/29/21 14:45	EPA 200.8
7440-28-0	Thallium	0.38	U	mg/kg	0.38	10/22/21 11:28	10/29/21 14:50	EPA 200.8



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110064 - M 200.2 Metals Soil

Blank (2110064-BLK1)

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	U	0.10	mg/kg dry							U
Arsenic	U	0.10	"							U
Cadmium	U	0.050	"							U
Lead	U	0.10	"							U
Selenium	U	0.20	"							U
Thallium	U	0.10	"							U

Blank (2110064-BLK2)

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	U	0.10	mg/kg dry							U
Arsenic	U	0.10	"							U
Cadmium	U	0.050	"							U
Lead	U	0.10	"							B-3, U
Selenium	U	0.20	"							U
Thallium	U	0.10	"							U

LCS (2110064-BS1)

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	103.56	0.20	mg/kg dry	100.00		104	85-115			QC-4
Arsenic	54.129	0.20	"	50.000		108	85-115			
Cadmium	21.618	0.10	"	20.000		108	85-115			
Lead	103.83	0.20	"	100.00		104	85-115			
Selenium	107.92	0.40	"	100.00		108	85-115			
Thallium	21.113	0.20	"	20.000		106	85-115			

LCS (2110064-BS2)

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	101.52	1.0	mg/kg dry	100.00		102	85-115			
Arsenic	55.286	1.0	"	50.000		111	85-115			
Cadmium	20.660	0.50	"	20.000		103	85-115			
Lead	104.13	1.0	"	100.00		104	85-115			
Selenium	108.23	2.0	"	100.00		108	85-115			
Thallium	21.337	1.0	"	20.000		107	85-115			



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110064 - M 200.2 Metals Soil

Matrix Spike (2110064-MS1)

Source: E214303-03

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	105.02	0.20	mg/kg dry	99.167	46.409	59.1	70-130			QC-4, QM-1
Arsenic	51.795	0.20	"	49.584	6.2623	91.8	70-130			
Cadmium	33.493	0.099	"	19.833	11.691	110	70-130			
Selenium	62.591	0.40	"	99.167	U	63.1	70-130			QM-1
Thallium	19.169	0.20	"	19.833	0.099087	96.2	70-130			

Matrix Spike (2110064-MS2)

Source: E214303-03RE1

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	107.91	0.99	mg/kg dry	99.167	48.102	60.3	70-130			QM-1
Arsenic	51.207	0.99	"	49.584	6.4625	90.2	70-130			
Cadmium	34.816	0.50	"	19.833	12.679	112	70-130			
Selenium	68.431	2.0	"	99.167	U	69.0	70-130			QM-1
Thallium	16.987	0.99	"	19.833	0.095107	85.2	70-130			

Matrix Spike (2110064-MS3)

Source: E214303-03RE2

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	108.53	9.9	mg/kg dry	99.167	48.407	60.6	70-130			QM-1
Arsenic	55.190	9.9	"	49.584	6.5230	98.2	70-130			
Cadmium	38.797	5.0	"	19.833	13.127	129	70-130			QM-2
Lead	2389.6	9.9	"	99.167	2024.4	368	70-130			XM-1
Selenium	77.244	20	"	99.167	U	77.9	70-130			
Thallium	17.896	9.9	"	19.833	U	90.2	70-130			

Matrix Spike Dup (2110064-MSD1)

Source: E214303-03

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	104.03	0.20	mg/kg dry	99.265	46.409	58.0	70-130	0.948	20	QC-4, QM-1
Arsenic	51.197	0.20	"	49.633	6.2623	90.5	70-130	1.16	20	
Cadmium	34.457	0.099	"	19.853	11.691	115	70-130	2.84	20	
Selenium	63.092	0.40	"	99.265	U	63.6	70-130	0.796	20	QM-1
Thallium	18.861	0.20	"	19.853	0.099087	94.5	70-130	1.62	20	



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Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110064 - M 200.2 Metals Soil

Matrix Spike Dup (2110064-MSD2)

Source: E214303-03RE1

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	109.45	0.99	mg/kg dry	99.265	48.102	61.8	70-130	1.42	20	QM-1
Arsenic	52.165	0.99	"	49.633	6.4625	92.1	70-130	1.85	20	
Cadmium	38.658	0.50	"	19.853	12.679	131	70-130	10.5	20	QM-2
Selenium	73.927	2.0	"	99.265	U	74.5	70-130	7.72	20	
Thallium	17.741	0.99	"	19.853	0.095107	88.9	70-130	4.34	20	

Matrix Spike Dup (2110064-MSD3)

Source: E214303-03RE2

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	113.78	9.9	mg/kg dry	99.265	48.407	65.9	70-130	4.72	20	QM-1
Arsenic	53.803	9.9	"	49.633	6.5230	95.3	70-130	2.54	20	
Cadmium	40.474	5.0	"	19.853	13.127	138	70-130	4.23	20	QM-2
Lead	2378.7	9.9	"	99.265	2024.4	357	70-130	0.455	20	XM-1
Selenium	75.529	20	"	99.265	U	76.1	70-130	2.25	20	
Thallium	17.902	9.9	"	19.853	U	90.2	70-130	0.0335	20	

MRL Verification (2110064-PS1)

Prepared: 10/25/21 Analyzed: 10/28/21

EPA 200.8

Antimony	0.057923	0.10	mg/kg dry	0.050000		116	65-135			U, MRL-3
Arsenic	0.11085	0.10	"	0.10000		111	65-135			MRL-3
Cadmium	0.049089	0.050	"	0.050000		98.2	65-135			U, MRL-3
Lead	0.10879	0.10	"	0.10000		109	65-135			MRL-3
Selenium	0.14367	0.20	"	0.20000		71.8	65-135			U, MRL-3
Thallium	0.055546	0.10	"	0.050000		111	65-135			U, MRL-3

Batch 2110068 - M 200.2 Metals Water

Blank (2110068-BLK1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	U	1.0	ug/L							U
Arsenic	U	1.0	"							U
Cadmium	U	0.50	"							U
Lead	U	1.0	"							U
Selenium	U	2.0	"							U
Thallium	U	1.0	"							U



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 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110068 - M 200.2 Metals Water

LCS (2110068-BS1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	213.11	1.0	ug/L	200.00		107	85-115			QC-4
Arsenic	217.96	1.0	"	200.00		109	85-115			
Cadmium	51.882	0.50	"	50.000		104	85-115			
Lead	196.10	1.0	"	200.00		98.0	85-115			
Selenium	203.90	2.0	"	200.00		102	85-115			
Thallium	198.54	1.0	"	200.00		99.3	85-115			

LCS (2110068-BS2)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	200.89	5.0	ug/L	200.00		100	85-115			
Arsenic	204.76	5.0	"	200.00		102	85-115			
Cadmium	49.995	2.5	"	50.000		100	85-115			
Lead	198.54	5.0	"	200.00		99.3	85-115			
Selenium	209.34	10	"	200.00		105	85-115			
Thallium	200.51	5.0	"	200.00		100	85-115			

Matrix Spike (2110068-MS1)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	209.76	1.0	ug/L	200.00	1.1149	104	70-130			
Arsenic	214.61	1.0	"	200.00	U	107	70-130			
Cadmium	51.053	0.50	"	50.000	U	102	70-130			
Lead	220.97	1.0	"	200.00	21.347	99.8	70-130			
Selenium	199.97	2.0	"	200.00	U	100	70-130			
Thallium	203.78	1.0	"	200.00	U	102	70-130			QC-4

Matrix Spike (2110068-MS2)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	205.38	5.0	ug/L	200.00	U	103	70-130			
Arsenic	212.60	5.0	"	200.00	U	106	70-130			
Cadmium	50.823	2.5	"	50.000	U	102	70-130			
Lead	226.85	5.0	"	200.00	21.347	103	70-130			
Selenium	206.68	10	"	200.00	U	103	70-130			
Thallium	207.14	5.0	"	200.00	U	104	70-130			



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Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110068 - M 200.2 Metals Water

Matrix Spike Dup (2110068-MSD1)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	212.15	1.0	ug/L	200.00	1.1149	106	70-130	1.13	20	
Arsenic	215.47	1.0	"	200.00	U	108	70-130	0.401	20	
Cadmium	51.418	0.50	"	50.000	U	103	70-130	0.713	20	
Lead	218.42	1.0	"	200.00	21.347	98.5	70-130	1.16	20	
Selenium	212.64	2.0	"	200.00	U	106	70-130	6.14	20	
Thallium	201.44	1.0	"	200.00	U	101	70-130	1.16	20	QC-4

Matrix Spike Dup (2110068-MSD2)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	213.89	5.0	ug/L	200.00	U	107	70-130	4.06	20	
Arsenic	218.36	5.0	"	200.00	U	109	70-130	2.67	20	
Cadmium	53.077	2.5	"	50.000	U	106	70-130	4.34	20	
Lead	227.71	5.0	"	200.00	21.347	103	70-130	0.378	20	
Selenium	208.20	10	"	200.00	U	104	70-130	0.734	20	
Thallium	214.51	5.0	"	200.00	U	107	70-130	3.49	20	

MRL Verification (2110068-PS1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 200.8

Antimony	0.46420	1.0	ug/L	0.50000		92.8	65-135			U, MRL-2
Arsenic	1.2016	1.0	"	1.0000		120	65-135			MRL-2
Cadmium	0.61750	0.50	"	0.50000		124	65-135			MRL-2
Lead	1.0161	1.0	"	1.0000		102	65-135			MRL-2
Selenium	1.9848	2.0	"	2.0000		99.2	65-135			U, MRL-2
Thallium	0.51088	1.0	"	0.50000		102	65-135			U, MRL-2

Batch 2110070 - M 200.2 Metals Waste

Blank (2110070-BLK1)

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	U	0.050	mg/kg							U
Arsenic	U	0.050	"							U
Cadmium	U	0.025	"							U
Lead	U	0.050	"							U
Selenium	U	0.10	"							U
Thallium	U	0.050	"							U



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 D.A.R.T. Id: 22-0021
 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control
US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110070 - M 200.2 Metals Waste

LCS (2110070-BS1)

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	49.961	0.10	mg/kg	50.000		99.9	85-115			QC-4
Arsenic	26.139	0.10	"	25.000		105	85-115			
Cadmium	10.076	0.050	"	10.000		101	85-115			
Lead	49.673	0.10	"	50.000		99.3	85-115			QC-4
Selenium	53.496	0.20	"	50.000		107	85-115			
Thallium	10.168	0.10	"	10.000		102	85-115			

LCS (2110070-BS2)

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	51.142	0.50	mg/kg	50.000		102	85-115			
Arsenic	25.378	0.50	"	25.000		102	85-115			
Cadmium	10.449	0.25	"	10.000		104	85-115			
Lead	50.380	0.50	"	50.000		101	85-115			
Selenium	50.896	1.0	"	50.000		102	85-115			
Thallium	10.234	0.50	"	10.000		102	85-115			

Matrix Spike (2110070-MS1)

Source: E214303-10

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	34.274	0.076	mg/kg	37.879	17.802	43.5	70-130			QC-4, QI-1, QM-1
Arsenic	16.465	0.076	"	18.939	2.7913	72.2	70-130			QI-1
Cadmium	32.911	0.038	"	7.5758	33.560	-8.57	70-130			QC-4, QI-1, XM-1
Selenium	10.133	0.15	"	37.879	U	26.8	70-130			QI-1, QM-1
Thallium	9.2072	0.076	"	7.5758	0.12191	120	70-130			QI-1

Matrix Spike (2110070-MS2)

Source: E214303-10RE1

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	36.435	1.9	mg/kg	37.879	18.939	46.2	70-130			QM-1
Arsenic	16.244	1.9	"	18.939	2.4389	72.9	70-130			
Cadmium	39.804	0.95	"	7.5758	38.238	20.7	70-130			XM-1
Selenium	12.955	3.8	"	37.879	U	34.2	70-130			QM-1
Thallium	7.1658	1.9	"	7.5758	U	94.6	70-130			



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Region 4 Laboratory Services and Applied Science Division
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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110070 - M 200.2 Metals Waste

Matrix Spike (2110070-MS3)

Source: E214303-10RE2

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Lead	2856.1	19	mg/kg	37.879	5587.8	-7210	70-130			XM-1
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Matrix Spike Dup (2110070-MSD1)

Source: E214303-10

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	26.884	0.064	mg/kg	31.867	17.802	28.5	70-130	24.2	20	QC-4, QI-1, QM-1, QM-3
Arsenic	12.176	0.064	"	15.934	2.7913	58.9	70-130	30.0	20	QM-3, QI-1, QM-1
Cadmium	19.215	0.032	"	6.3735	33.560	-225	70-130	52.6	20	QI-1, QM-3, XM-1
Selenium	6.4254	0.13	"	31.867	U	20.2	70-130	44.8	20	QI-1, QM-1, QM-3
Thallium	7.9472	0.064	"	6.3735	0.12191	123	70-130	14.7	20	QI-1

Matrix Spike Dup (2110070-MSD2)

Source: E214303-10RE1

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	29.739	1.6	mg/kg	31.867	18.939	33.9	70-130	20.2	20	QM-1, QM-3
Arsenic	12.575	1.6	"	15.934	2.4389	63.6	70-130	25.5	20	QM-1, QM-3
Cadmium	23.009	0.80	"	6.3735	38.238	-239	70-130	53.5	20	QM-3, XM-1
Selenium	7.6609	3.2	"	31.867	U	24.0	70-130	51.4	20	QM-1, QM-3
Thallium	5.7193	1.6	"	6.3735	U	89.7	70-130	22.5	20	QM-3

Matrix Spike Dup (2110070-MSD3)

Source: E214303-10RE2

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Lead	2582.9	16	mg/kg	31.867	5587.8	-9430	70-130	10.0	20	XM-1
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MRL Verification (2110070-PS1)

Prepared: 10/22/21 Analyzed: 10/29/21

EPA 200.8

Antimony	0.024559	0.050	mg/kg	0.025000		98.2	65-135			U, MRL-6
Arsenic	0.061839	0.050	"	0.050000		124	65-135			MRL-6
Cadmium	0.029794	0.025	"	0.025000		119	65-135			MRL-6



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D.A.R.T. Id: 22-0021
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Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110070 - M 200.2 Metals Waste

MRL Verification (2110070-PS1)

Prepared: 10/22/21 Analyzed: 10/29/21

Lead	0.087773	0.050	mg/kg	0.050000		176	65-135			MRL-6, QR-2
Selenium	0.095623	0.10	"	0.10000		95.6	65-135			U, MRL-6
Thallium	0.026079	0.050	"	0.025000		104	65-135			U, MRL-6



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Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
B-3	Level in blank does not impact data quality
MRL-2	MRL verification for Non-Potable Water matrix
MRL-3	MRL verification for Soil matrix
MRL-6	MRL verification for Waste matrix
QC-4	Result greater than the highest point on the calibration curve
QI-1	Internal standard was outside of method control limits.
QM-1	Matrix Spike Recovery less than method control limits
QM-2	Matrix Spike Recovery greater than method control limits
QM-3	Matrix Spike Precision outside method control limits
QR-2	MRL verification recovery greater than upper control limits.
XM-1	Sample background/spike ratio higher than method evaluation criteria



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

November 4, 2021

MEMORANDUM

SUBJECT: FINAL Analytical Report
Project: 22-0021, TAV Holdings Inc.

FROM: Stephanie McCarthy
LSB Inorganic Chemistry Section Chief

THRU: John Deatrck, Chief
Laboratory Services Branch

TO: Mike Neill

Attached are the final results for the analytical groups listed below. This report shall not be reproduced except in full without approval of the Region 4 laboratory. These analyses were performed in accordance with the Laboratory Services Branch's Laboratory Operations and Quality Assurance Manual (LSB LOQAM) found at www.epa.gov/region4/sesd/asbsop. Any unique project data quality objectives specified in writing by the data requestor have also been incorporated into the data unless otherwise noted in the Report Narrative. Chemistry data have been verified based on the LSB LOQAM specifications and have been qualified by this laboratory if the applicable quality control criteria were not met. Verification is defined in Chapter 5 of the LSB LOQAM. For a listing of specific data qualifiers and explanations, please refer to the Data Qualifier Definitions included in this report. The reported results are accurate within the limits of the method(s) and are representative only of the samples as received by the laboratory.

Analyses Included in this report:	Method Used:	Accreditations:
Total Metals (TMTL)		
Total Metals	EPA 6010 (Soil)	ISO
Total Metals	EPA 6010 (Waste)	ISO
Total Metals	EPA 6010 (Water)	ISO



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Report Narrative for Project: 22-0021q Analysis: TMTL

This data is being re-reported to include results for copper, which were not originally requested but were analyzed.
This report replaces the report titled "E214303 TMTL FINAL 11 03 21 1310".

Sample Disposal Policy

Due to limited space for long term sample storage, LSB's policy is to dispose of samples on a periodic schedule. Air samples collected in summa canisters will be disposed of 30 days following the issuance of this report. All other sample media including original samples, sample extracts and or digestates will be disposed of, in accordance with applicable regulations, 60 days from the date of this report.

This sample disposal policy does not apply to criminal samples which are held until the laboratory is notified by the criminal investigators that case development and litigation are complete.

These samples may be held in the laboratory's custody for a longer period of time. If samples require storage beyond the 60-day period, please contact the Sample Control Coordinator by e-mail at R4SampleCustody@epa.gov.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

SAMPLES INCLUDED IN THIS REPORT

Project: 22-0021, TAV Holdings Inc.

Sample ID	Laboratory ID	Matrix	Date Collected	Date Received
SD01	E214303-01	Sediment	10/20/21 16:40	10/21/21 7:45
SW01	E214303-02	Surface Water	10/20/21 16:35	10/21/21 7:45
SD02	E214303-03	Sediment	10/20/21 17:10	10/21/21 7:45
SW02	E214303-04	Surface Water	10/20/21 16:35	10/21/21 7:45
SD03	E214303-05	Sediment	10/20/21 18:30	10/21/21 7:45
SW03	E214303-06	Surface Water	10/20/21 16:35	10/21/21 7:45
WA01	E214303-07	Waste	10/20/21 11:55	10/21/21 7:45
WA02	E214303-08	Waste	10/20/21 12:15	10/21/21 7:45
WA03	E214303-09	Waste	10/20/21 12:30	10/21/21 7:45
WA04	E214303-10	Waste	10/20/21 12:45	10/21/21 7:45
WA05	E214303-11	Waste	10/20/21 13:00	10/21/21 7:45
WA06	E214303-12	Waste	10/20/21 13:15	10/21/21 7:45
WA07	E214303-13	Waste	10/20/21 13:20	10/21/21 7:45
WA08	E214303-14	Waste	10/20/21 13:35	10/21/21 7:45
WA09	E214303-15	Waste	10/20/21 14:35	10/21/21 7:45



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

DATA QUALIFIER DEFINITIONS

U	The analyte was not detected at or above the reporting limit.
J	The identification of the analyte is acceptable; the reported value is an estimate.
QC-4	Result greater than the highest point on the calibration curve
QM-1	Matrix Spike Recovery less than method control limits
QM-3	Matrix Spike Precision outside method control limits
QR-1	MRL verification recovery less than lower control limits.



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ACRONYMS AND ABBREVIATIONS

CAS Chemical Abstracts Service

Note: Analytes with no known CAS identifiers have been assigned codes beginning with "E", the EPA ID as assigned by the EPA Substance Registry System (www.epa.gov/srs), or beginning with "R4-", a unique identifier assigned by the EPA Region 4 laboratory.

MDL Method Detection Limit - The minimum concentration of a substance (an analyte) that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero.

MRL Minimum Reporting Limit - Analyte concentration that corresponds to the lowest demonstrated level of acceptable quantitation. The MRL is sample-specific and accounts for preparation weights and volumes, dilutions, and moisture content of soil/sediments.

TIC Tentatively Identified Compound - An analyte identified based on a match with the instrument software's mass spectral library. A calibration standard has not been analyzed to confirm the compound's identification or the estimated concentration reported.

ACCREDITATIONS:

ISO Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Laboratories.

Refer to the certificate and scope of accreditation FT-0330 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

NR Not accredited for this test.

DW Accredited for conformance with ISO/IEC 17025:2017 and testing elements in the Fifth Edition of the Manual for the Certification of Laboratories Analyzing Drinking Water, EPA 815-R-05-004, 2005.

Refer to the certificate and scope of accreditation AT-2628 at:
<http://www.epa.gov/aboutepa/about-region-4s-science-and-ecosystem-support-division-sesd>

ISO/DW Accredited to ISO/IEC 17025:2017 and accreditation requirements for Forensic Science Testing Labs, and conformance with ISO/IEC 17025:2017 and testing elements in the Manual for the Certification of Laboratories Analyzing Drinking Water.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD01

Lab ID: E214303-01

Station ID: S01

Matrix: Sediment

Date Collected: 10/20/21 16:40

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	2900		mg/kg dry	25	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-41-7	Beryllium	15	U	mg/kg dry	15	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-47-3	Chromium	200		mg/kg dry	25	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-50-8	Copper	10000		mg/kg dry	50	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-02-0	Nickel	230		mg/kg dry	50	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-22-4	Silver	25	U	mg/kg dry	25	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-62-2	Vanadium	25	U, J, QR-1	mg/kg dry	25	10/25/21 15:37	10/27/21 13:25	EPA 6010
7440-66-6	Zinc	11000	QC-4	mg/kg dry	50	10/25/21 15:37	10/27/21 13:25	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW01

Lab ID: E214303-02

Station ID: S01

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	63		ug/L	5.0	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-41-7	Beryllium	3.0	U	ug/L	3.0	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-47-3	Chromium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-50-8	Copper	33		ug/L	10	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-02-0	Nickel	10	U	ug/L	10	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-22-4	Silver	5.0	U	ug/L	5.0	10/22/21 11:15	10/27/21 12:42	EPA 6010
7440-62-2	Vanadium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:34	EPA 6010
7440-66-6	Zinc	63		ug/L	10	10/22/21 11:15	10/26/21 13:34	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD02

Lab ID: E214303-03

Station ID: S02

Matrix: Sediment

Date Collected: 10/20/21 17:10

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	1900		mg/kg dry	15	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-41-7	Beryllium	8.8	U	mg/kg dry	8.8	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-47-3	Chromium	180		mg/kg dry	15	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-50-8	Copper	4500		mg/kg dry	29	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-02-0	Nickel	160		mg/kg dry	29	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-22-4	Silver	15	U	mg/kg dry	15	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-62-2	Vanadium	15	U, J, QR-1	mg/kg dry	15	10/25/21 15:37	10/27/21 13:29	EPA 6010
7440-66-6	Zinc	5600		mg/kg dry	29	10/25/21 15:37	10/27/21 13:29	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW02

Lab ID: E214303-04

Station ID: S02

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	58		ug/L	5.0	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-41-7	Beryllium	3.0	U	ug/L	3.0	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-47-3	Chromium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-50-8	Copper	53		ug/L	10	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-02-0	Nickel	10	U	ug/L	10	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-22-4	Silver	5.0	U	ug/L	5.0	10/22/21 11:15	10/27/21 12:46	EPA 6010
7440-62-2	Vanadium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:37	EPA 6010
7440-66-6	Zinc	69		ug/L	10	10/22/21 11:15	10/26/21 13:37	EPA 6010



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D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SD03

Lab ID: E214303-05

Station ID: S03

Matrix: Sediment

Date Collected: 10/20/21 18:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	24		mg/kg dry	2.5	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-41-7	Beryllium	1.5	U	mg/kg dry	1.5	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-47-3	Chromium	9.6		mg/kg dry	2.5	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-50-8	Copper	10		mg/kg dry	5.0	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-02-0	Nickel	5.0	U	mg/kg dry	5.0	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-22-4	Silver	2.5	U	mg/kg dry	2.5	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-62-2	Vanadium	28		mg/kg dry	2.5	10/25/21 15:37	10/27/21 13:43	EPA 6010
7440-66-6	Zinc	54		mg/kg dry	5.0	10/25/21 15:37	10/27/21 13:43	EPA 6010



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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: SW03

Lab ID: E214303-06

Station ID: S03

Matrix: Surface Water

Date Collected: 10/20/21 16:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	41		ug/L	5.0	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-41-7	Beryllium	3.0	U	ug/L	3.0	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-47-3	Chromium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-50-8	Copper	10	U	ug/L	10	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-02-0	Nickel	10	U	ug/L	10	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-22-4	Silver	5.0	U	ug/L	5.0	10/22/21 11:15	10/27/21 12:57	EPA 6010
7440-62-2	Vanadium	5.0	U	ug/L	5.0	10/22/21 11:15	10/26/21 13:48	EPA 6010
7440-66-6	Zinc	10	U	ug/L	10	10/22/21 11:15	10/26/21 13:48	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA01

Lab ID: E214303-07

Station ID: WA01

Matrix: Waste

Date Collected: 10/20/21 11:55

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	240		mg/kg	3.2	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-41-7	Beryllium	1.9	U	mg/kg	1.9	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-47-3	Chromium	24		mg/kg	3.2	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-50-8	Copper	730		mg/kg	6.5	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-02-0	Nickel	22		mg/kg	6.5	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-22-4	Silver	3.2	U	mg/kg	3.2	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-62-2	Vanadium	3.2	U	mg/kg	3.2	10/22/21 11:24	10/28/21 11:22	EPA 6010
7440-66-6	Zinc	770		mg/kg	6.5	10/22/21 11:24	10/28/21 11:22	EPA 6010



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Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA02

Lab ID: E214303-08

Station ID: WA02

Matrix: Waste

Date Collected: 10/20/21 12:15

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	0.18	U	mg/kg	0.18	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-41-7	Beryllium	0.11	U	mg/kg	0.11	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-47-3	Chromium	0.18	U	mg/kg	0.18	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-50-8	Copper	0.36	U	mg/kg	0.36	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-02-0	Nickel	0.36	U	mg/kg	0.36	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-22-4	Silver	0.18	U	mg/kg	0.18	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-62-2	Vanadium	0.18	U	mg/kg	0.18	10/22/21 11:24	10/28/21 11:26	EPA 6010
7440-66-6	Zinc	0.36	U	mg/kg	0.36	10/22/21 11:24	10/28/21 11:26	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA03

Lab ID: E214303-09

Station ID: WA03

Matrix: Waste

Date Collected: 10/20/21 12:30

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	550		mg/kg	8.9	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-41-7	Beryllium	5.3	U	mg/kg	5.3	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-47-3	Chromium	290		mg/kg	8.9	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-50-8	Copper	8400	J, QC-4	mg/kg	18	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-02-0	Nickel	250		mg/kg	18	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-22-4	Silver	8.9	U	mg/kg	8.9	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-62-2	Vanadium	13		mg/kg	8.9	10/22/21 11:24	10/28/21 11:29	EPA 6010
7440-66-6	Zinc	2900		mg/kg	18	10/22/21 11:24	10/28/21 11:29	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA04

Lab ID: E214303-10

Station ID: WA04

Matrix: Waste

Date Collected: 10/20/21 12:45

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	500		mg/kg	10	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-41-7	Beryllium	6.1	U	mg/kg	6.1	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-47-3	Chromium	420		mg/kg	10	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-50-8	Copper	8000	J, QC-4	mg/kg	20	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-02-0	Nickel	320		mg/kg	20	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-22-4	Silver	10	U, J, QM-1, QM-3	mg/kg	10	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-62-2	Vanadium	22	J, QM-1	mg/kg	10	10/22/21 11:24	10/28/21 11:33	EPA 6010
7440-66-6	Zinc	4500		mg/kg	20	10/22/21 11:24	10/28/21 11:33	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA05

Lab ID: E214303-11

Station ID: WA05

Matrix: Waste

Date Collected: 10/20/21 13:00

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	810		mg/kg	6.0	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-41-7	Beryllium	3.6	U	mg/kg	3.6	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-47-3	Chromium	130		mg/kg	6.0	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-50-8	Copper	4600	J, QC-4	mg/kg	12	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-02-0	Nickel	120		mg/kg	12	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-22-4	Silver	12		mg/kg	6.0	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-62-2	Vanadium	15		mg/kg	6.0	10/22/21 11:24	10/28/21 11:43	EPA 6010
7440-66-6	Zinc	4000		mg/kg	12	10/22/21 11:24	10/28/21 11:43	EPA 6010



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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA06

Lab ID: E214303-12

Station ID: WA06

Matrix: Waste

Date Collected: 10/20/21 13:15

<i>CAS Number</i>	<i>Analyte</i>	<i>Results</i>	<i>Qualifiers</i>	<i>Units</i>	<i>MRL</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Method</i>
7440-39-3	Barium	0.25		mg/kg	0.15	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-41-7	Beryllium	0.092	U	mg/kg	0.092	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-47-3	Chromium	0.15	U	mg/kg	0.15	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-50-8	Copper	1.5		mg/kg	0.31	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-02-0	Nickel	0.31	U	mg/kg	0.31	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-22-4	Silver	0.15	U	mg/kg	0.15	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-62-2	Vanadium	0.15	U	mg/kg	0.15	10/22/21 11:24	10/28/21 11:47	EPA 6010
7440-66-6	Zinc	0.31	U	mg/kg	0.31	10/22/21 11:24	10/28/21 11:47	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA07

Lab ID: E214303-13

Station ID: WA07

Matrix: Waste

Date Collected: 10/20/21 13:20

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	870		mg/kg	6.0	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-41-7	Beryllium	3.6	U	mg/kg	3.6	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-47-3	Chromium	120		mg/kg	6.0	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-50-8	Copper	4200	J, QC-4	mg/kg	12	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-02-0	Nickel	110		mg/kg	12	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-22-4	Silver	15		mg/kg	6.0	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-62-2	Vanadium	14		mg/kg	6.0	10/22/21 11:24	10/28/21 11:50	EPA 6010
7440-66-6	Zinc	4600		mg/kg	12	10/22/21 11:24	10/28/21 11:50	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA08

Lab ID: E214303-14

Station ID: WA08

Matrix: Waste

Date Collected: 10/20/21 13:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	820		mg/kg	11	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-41-7	Beryllium	6.3	U	mg/kg	6.3	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-47-3	Chromium	120		mg/kg	11	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-50-8	Copper	6700	J, QC-4	mg/kg	21	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-02-0	Nickel	140		mg/kg	21	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-22-4	Silver	11		mg/kg	11	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-62-2	Vanadium	13		mg/kg	11	10/22/21 11:24	10/28/21 11:54	EPA 6010
7440-66-6	Zinc	6200		mg/kg	21	10/22/21 11:24	10/28/21 11:54	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Region 4 Laboratory Services and Applied Science Division

980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals

Project: 22-0021, TAV Holdings Inc.

Sample ID: WA09

Lab ID: E214303-15

Station ID: WA09

Matrix: Waste

Date Collected: 10/20/21 14:35

CAS Number	Analyte	Results	Qualifiers	Units	MRL	Prepared	Analyzed	Method
7440-39-3	Barium	700		mg/kg	5.7	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-41-7	Beryllium	3.4	U	mg/kg	3.4	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-47-3	Chromium	120		mg/kg	5.7	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-50-8	Copper	8700	J, QC-4	mg/kg	11	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-02-0	Nickel	420		mg/kg	11	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-22-4	Silver	8.7		mg/kg	5.7	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-62-2	Vanadium	12		mg/kg	5.7	10/22/21 11:24	10/28/21 11:57	EPA 6010
7440-66-6	Zinc	3800		mg/kg	11	10/22/21 11:24	10/28/21 11:57	EPA 6010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 22-0021
 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110063 - M 200.2 Metals Soil

Blank (2110063-BLK1)

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	U	0.50	mg/kg dry							U
Beryllium	U	0.30	"							U
Chromium	U	0.50	"							U
Copper	U	1.0	"							U
Nickel	U	1.0	"							U
Silver	U	0.50	"							U
Vanadium	U	0.50	"							U
Zinc	U	1.0	"							U

Blank (2110063-BLK2)

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	U	0.50	mg/kg dry							U
Beryllium	U	0.30	"							U
Chromium	U	0.50	"							U
Copper	U	1.0	"							U
Nickel	U	1.0	"							U
Silver	U	0.50	"							U
Vanadium	U	0.50	"							U
Zinc	U	1.0	"							U

LCS (2110063-BS1)

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	50.003	0.50	mg/kg dry	50.000	100	85-115
Beryllium	20.795	0.30	"	20.000	104	85-115
Chromium	49.212	0.50	"	50.000	98.4	85-115
Copper	27.858	1.0	"	30.000	92.9	85-115
Nickel	78.684	1.0	"	80.000	98.4	85-115
Silver	9.6700	0.50	"	10.000	96.7	85-115
Vanadium	38.982	0.50	"	40.000	97.5	85-115
Zinc	104.82	1.0	"	100.00	105	85-115



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 4 Laboratory Services and Applied Science Division
980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110063 - M 200.2 Metals Soil

Matrix Spike (2110063-MS1)

Source: E214303-03

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	2249.2	15	mg/kg dry	49.584	1922.7	658	75-125			XM-1
Beryllium	18.542	8.9	"	19.833	0.64752	90.2	75-125			
Chromium	224.17	15	"	49.584	184.02	81.0	75-125			
Copper	4867.4	30	"	29.750	4470.6	1330	75-125			XM-1
Nickel	230.45	30	"	79.334	159.16	89.9	75-125			
Silver	24.293	15	"	9.9167	14.089	103	75-125			
Vanadium	44.124	15	"	39.667	7.6059	92.1	75-125			
Zinc	6152.6	30	"	99.167	5587.8	569	75-125			XM-1

Matrix Spike Dup (2110063-MSD1)

Source: E214303-03

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	2319.6	15	mg/kg dry	49.633	1922.7	800	75-125	3.08	20	XM-1
Beryllium	19.304	8.9	"	19.853	0.64752	94.0	75-125	4.03	20	
Chromium	240.98	15	"	49.633	184.02	115	75-125	7.23	20	
Copper	5106.3	30	"	29.780	4470.6	2130	75-125	4.79	20	XM-1
Nickel	242.58	30	"	79.412	159.16	105	75-125	5.13	20	
Silver	23.547	15	"	9.9265	14.089	95.3	75-125	3.12	20	
Vanadium	45.470	15	"	39.706	7.6059	95.4	75-125	3.01	20	
Zinc	6570.8	30	"	99.265	5587.8	990	75-125	6.57	20	XM-1

MRL Verification (2110063-PS1)

Prepared: 10/25/21 Analyzed: 10/27/21

EPA 6010

Barium	0.50256	0.50	mg/kg dry	0.50000		101	70-130			MRL-3
Beryllium	0.32663	0.30	"	0.30000		109	70-130			MRL-3
Chromium	0.51085	0.50	"	0.50000		102	70-130			MRL-3
Copper	0.98964	1.0	"	1.0000		99.0	70-130			MRL-3, U
Nickel	1.0202	1.0	"	1.0000		102	70-130			MRL-3
Silver	0.46239	0.50	"	0.50000		92.5	70-130			MRL-3, U
Vanadium	U	0.50	"	0.50000			70-130			MRL-3, QR-1, U
Zinc	1.1238	1.0	"	1.0000		112	70-130			MRL-3



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980 College Station Road, Athens, Georgia 30605-2700
D.A.R.T. Id: 22-0021
Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110067 - M 200.2 Metals Water

Blank (2110067-BLK1)

Prepared: 10/22/21 Analyzed: 10/26/21

EPA 6010

Barium	U	5.0	ug/L							U
Beryllium	U	3.0	"							U
Chromium	U	5.0	"							U
Copper	U	10	"							U
Nickel	U	10	"							U
Vanadium	U	5.0	"							U
Zinc	U	10	"							U

Blank (2110067-BLK2)

Prepared: 10/22/21 Analyzed: 10/27/21

EPA 6010

Silver	U	5.0	ug/L							U
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LCS (2110067-BS1)

Prepared: 10/22/21 Analyzed: 10/26/21

EPA 6010

Barium	192.72	5.0	ug/L	200.00		96.4	85-115
Beryllium	48.134	3.0	"	50.000		96.3	85-115
Chromium	185.09	5.0	"	200.00		92.5	85-115
Copper	93.099	10	"	100.00		93.1	85-115
Nickel	182.45	10	"	200.00		91.2	85-115
Vanadium	92.168	5.0	"	100.00		92.2	85-115
Zinc	190.21	10	"	200.00		95.1	85-115

LCS (2110067-BS2)

Prepared: 10/22/21 Analyzed: 10/27/21

EPA 6010

Silver	95.984	5.0	ug/L	100.00		96.0	85-115
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Matrix Spike (2110067-MS1)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/26/21

EPA 6010

Barium	248.49	5.0	ug/L	200.00	57.761	95.4	75-125
Beryllium	48.898	3.0	"	50.000	U	97.8	75-125
Chromium	188.64	5.0	"	200.00	2.3408	93.1	75-125
Copper	146.26	10	"	100.00	53.244	93.0	75-125
Nickel	186.85	10	"	200.00	1.6906	92.6	75-125
Vanadium	96.125	5.0	"	100.00	2.0933	94.0	75-125
Zinc	256.87	10	"	200.00	68.949	94.0	75-125



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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980 College Station Road, Athens, Georgia 30605-2700

D.A.R.T. Id: 22-0021

Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110067 - M 200.2 Metals Water

Matrix Spike (2110067-MS2)

Source: E214303-04RE1

Prepared: 10/22/21 Analyzed: 10/27/21

EPA 6010

Silver	96.277	5.0	ug/L	100.00	U	96.3	75-125			
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Matrix Spike Dup (2110067-MSD1)

Source: E214303-04

Prepared: 10/22/21 Analyzed: 10/26/21

EPA 6010

Barium	249.90	5.0	ug/L	200.00	57.761	96.1	75-125	0.566	20	
Beryllium	48.445	3.0	"	50.000	U	96.9	75-125	0.929	20	
Chromium	186.81	5.0	"	200.00	2.3408	92.2	75-125	0.972	20	
Copper	146.10	10	"	100.00	53.244	92.9	75-125	0.109	20	
Nickel	183.08	10	"	200.00	1.6906	90.7	75-125	2.04	20	
Vanadium	95.773	5.0	"	100.00	2.0933	93.7	75-125	0.367	20	
Zinc	254.58	10	"	200.00	68.949	92.8	75-125	0.892	20	

Matrix Spike Dup (2110067-MSD2)

Source: E214303-04RE1

Prepared: 10/22/21 Analyzed: 10/27/21

EPA 6010

Silver	95.343	5.0	ug/L	100.00	U	95.3	75-125	0.974	20	
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MRL Verification (2110067-PS1)

Prepared: 10/22/21 Analyzed: 10/26/21

EPA 6010

Barium	4.4509	5.0	ug/L	5.0000		89.0	70-130			MRL-2, U
Beryllium	2.5017	3.0	"	3.0000		83.4	70-130			MRL-2, U
Chromium	4.2518	5.0	"	5.0000		85.0	70-130			MRL-2, U
Copper	8.5132	10	"	10.000		85.1	70-130			MRL-2, U
Nickel	8.6607	10	"	10.000		86.6	70-130			MRL-2, U
Vanadium	4.6680	5.0	"	5.0000		93.4	70-130			MRL-2, U
Zinc	8.8162	10	"	10.000		88.2	70-130			MRL-2, U

MRL Verification (2110067-PS2)

Prepared: 10/22/21 Analyzed: 10/27/21

EPA 6010

Silver	4.0201	5.0	ug/L	5.0000		80.4	70-130			MRL-2, U
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Batch 2110069 - M 200.2 Metals Waste



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 Region 4 Laboratory Services and Applied Science Division
 980 College Station Road, Athens, Georgia 30605-2700
 D.A.R.T. Id: 22-0021
 Project: 22-0021, TAV Holdings Inc. - Reported by Stephanie McCarthy

Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110069 - M 200.2 Metals Waste

Blank (2110069-BLK1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 6010

Barium	U	0.25	mg/kg							U
Beryllium	U	0.15	"							U
Chromium	U	0.25	"							U
Copper	U	0.50	"							U
Nickel	U	0.50	"							U
Silver	U	0.25	"							U
Vanadium	U	0.25	"							U
Zinc	U	0.50	"							U

LCS (2110069-BS1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 6010

Barium	24.558	0.25	mg/kg	25.000		98.2	85-115
Beryllium	9.9610	0.15	"	10.000		99.6	85-115
Chromium	23.928	0.25	"	25.000		95.7	85-115
Copper	14.540	0.50	"	15.000		96.9	85-115
Nickel	38.220	0.50	"	40.000		95.5	85-115
Silver	4.7704	0.25	"	5.0000		95.4	85-115
Vanadium	19.284	0.25	"	20.000		96.4	85-115
Zinc	48.962	0.50	"	50.000		97.9	85-115

Matrix Spike (2110069-MS1)

Source: E214303-10

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 6010

Barium	580.43	9.5	mg/kg	18.939	500.21	424	75-125	XM-1
Beryllium	6.5574	5.7	"	7.5758	U	86.6	75-125	
Chromium	374.89	9.5	"	18.939	421.86	-248	75-125	XM-1
Copper	9282.9	19	"	11.364	7967.2	11600	75-125	XM-1
Nickel	281.82	19	"	30.303	316.86	-116	75-125	XM-1
Silver	9.8698	9.5	"	3.7879	6.6639	84.6	75-125	QM-3
Vanadium	29.885	9.5	"	15.152	22.195	50.8	75-125	QM-1
Zinc	4314.8	19	"	37.879	4475.2	-424	75-125	XM-1



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Total Metals (TMTL) - Quality Control

US-EPA, Region 4, LSASD

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110069 - M 200.2 Metals Waste

Matrix Spike Dup (2110069-MSD1)

Source: E214303-10

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 6010

Barium	544.67	8.0	mg/kg	15.934	500.21	279	75-125	6.36	20	XM-1
Beryllium	5.6332	4.8	"	6.3735	U	88.4	75-125	15.2	20	
Chromium	316.54	8.0	"	15.934	421.86	-661	75-125	16.9	20	XM-1
Copper	10780	16	"	9.5602	7967.2	29400	75-125	14.9	20	XM-1
Nickel	320.10	16	"	25.494	316.86	12.7	75-125	12.7	20	XM-1
Silver	8.0041	8.0	"	3.1867	6.6639	42.1	75-125	20.9	20	QM-1, QM-3
Vanadium	26.936	8.0	"	12.747	22.195	37.2	75-125	10.4	20	QM-1
Zinc	4447.3	16	"	31.867	4475.2	-87.7	75-125	3.02	20	XM-1

MRL Verification (2110069-PS1)

Prepared: 10/22/21 Analyzed: 10/28/21

EPA 6010

Barium	0.24705	0.25	mg/kg	0.25000		98.8	70-130			MRL-6, U
Beryllium	0.14760	0.15	"	0.15000		98.4	70-130			MRL-6, U
Chromium	0.25535	0.25	"	0.25000		102	70-130			MRL-6
Copper	0.52200	0.50	"	0.50000		104	70-130			MRL-6
Nickel	0.50536	0.50	"	0.50000		101	70-130			MRL-6
Silver	0.23722	0.25	"	0.25000		94.9	70-130			MRL-6, U
Vanadium	0.24850	0.25	"	0.25000		99.4	70-130			MRL-6, U
Zinc	0.55654	0.50	"	0.50000		111	70-130			MRL-6



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Notes and Definitions for QC Samples

U	The analyte was not detected at or above the reporting limit.
MRL-2	MRL verification for Non-Potable Water matrix
MRL-3	MRL verification for Soil matrix
MRL-6	MRL verification for Waste matrix
QM-1	Matrix Spike Recovery less than method control limits
QM-3	Matrix Spike Precision outside method control limits
QR-1	MRL verification recovery less than lower control limits.
XM-1	Sample background/spike ratio higher than method evaluation criteria

END OF REPORT