



Tuesday, October 29, 2019

eAnalytics Laboratory  
eAnalytics Laboratory  
4130 Clydesdale Parkway  
Loveland, CO 80538

Re: ALS Workorder: 1910381  
Project Name: Platteville Drill Cuttings  
Project Number:

Dear Laboratory:

Five soil samples were received from eAnalytics Laboratory, on 10/15/2019. The samples were scheduled for the following analyses:

Inorganics

Metals

The results for these analyses are contained in the enclosed reports.

The data contained in the following report have been reviewed and approved by the personnel listed below. In addition, ALS certifies that the analyses reported herein are true, complete and correct within the limits of the methods employed.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental  
Katie M. OBrien  
Project Manager

ALS Environmental – Fort Collins is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

ALS Environmental – Fort Collins	
Accreditation Body	License or Certification Number
AIHA	214884
Alaska (AK)	UST-086
Alaska (AK)	CO01099
Arizona (AZ)	AZ0742
California (CA)	06251CA
Colorado (CO)	CO01099
Florida (FL)	E87914
Idaho (ID)	CO01099
Kansas (KS)	E-10381
Kentucky (KY)	90137
PJ-LA (DoD ELAP/ISO 170250)	95377
Louisiana (LA)	05057
Maryland (MD)	285
Missouri (MO)	175
Nebraska(NE)	NE-OS-24-13
Nevada (NV)	CO000782008A
New York (NY)	12036
North Dakota (ND)	R-057
Oklahoma (OK)	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241
Utah (UT)	CO01099
Washington (WA)	C1280



# 1910381

**Metals:**

The samples were analyzed following SW-846, 3<sup>rd</sup> Edition procedures. Analysis by ICPMS followed method 6020B and the current revision of SOP 827. Mercury analysis by CVAA followed method 747FA and the current revision of SOP 812.

All acceptance criteria were met.

**Inorganics:**

The samples were analyzed following SW-846 procedures for the current revision of the following SOP and method:

<u>Analyte</u>	<u>Method</u>	<u>SOP #</u>
Hexavalent chromium	7196A	1122

All acceptance criteria were met.

# ALS -- Fort Collins

## Sample Number(s) Cross-Reference Table

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**OrderNum:** 1910381

**Client Name:** eAnalytics Laboratory

**Client Project Name:** Platteville Drill Cuttings

**Client Project Number:**

**Client PO Number:**

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Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
NW1 Composite 6"-12" (1690-1)	1910381-1		SOIL	08-Oct-19	
NE2 Composite 6"-12" (1690-2)	1910381-2		SOIL	08-Oct-19	
SE3 Composite 6"-12" (1690-3)	1910381-3		SOIL	08-Oct-19	
SW4 Composite 6"-12" (1690-4)	1910381-4		SOIL	08-Oct-19	
Background (1690-5)	1910381-5		SOIL	08-Oct-19	



# Chain-of-Custody

Form 202r8

\*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

**For metals or anions, please detail analytes below.**

Comments:		QC PACKAGE (check below)		DATE		TIME		
Please send all reports and invoices to the following:  cde@eanalyticlab.com  trhea@eanalyticlab.com  mra@eanalyticlab.com		LEVEL II (Standard QC)		10/15/2019	4:30PM			
		LEVEL III (Std QC + forms)						
		LEVEL IV (Std QC + forms + raw data)						
Preservative Key:		1-HCl	2-HNO3	4-NaOH	5-NaHSO4	7-Other	8-4 degrees C	9-50/35



**ALS Environmental - Fort Collins**  
**CONDITION OF SAMPLE UPON RECEIPT FORM**

Client: Analytics

Workorder No: 120381

Project Manager: KMD

Initials: TEM Date: 10/16/19

1. Are airbills / shipping documents present and/or removable?	<u>DROP OFF</u>	<u>YES</u>	NO
2. Are custody seals on <b>shipping</b> containers intact?	<u>NONE</u>	YES	NO *
3. Are custody seals on <b>sample</b> containers intact?	<u>NONE</u>	YES	NO *
4. Is there a COC (chain-of-custody) present?		<u>YES</u>	NO *
5. Is the COC in agreement with samples received? (IDs, dates, times, # of samples, # of containers, matrix, requested analyses, etc.)		<u>YES</u>	NO *
6. Are short-hold samples present?		YES	<u>NO</u>
7. Are all samples within holding times for the requested analyses?		<u>YES</u>	NO *
8. Were all sample containers received intact? (not broken or leaking)		<u>YES</u>	NO *
9. Is there sufficient sample for the requested analyses?		<u>YES</u>	NO *
10. Are all samples in the proper containers for the requested analyses?		<u>YES</u>	NO *
11. Are all aqueous samples preserved correctly, if required? (excluding volatiles)	<u>N/A</u>	YES	NO *
12. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, radon) free of bubbles > 6 mm (1/4 inch) diameter? (i.e. size of green pea)	<u>N/A</u>	YES	NO
13. Were the samples shipped on ice?		<u>YES</u>	NO
14. Were cooler temperatures measured at 0.1-6.0°C?	IR gun used*: #1 <u>#3</u> #4	RAD ONLY	YES <u>NO</u>
Cooler #: <u>1</u>			
Temperature (°C): <u>16.3</u>			
No. of custody seals on cooler: <u>0</u>			
External µR/hr reading: <u>-</u>			
Background µR/hr reading: <u>12</u>			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES / NO / <u>NA</u> (If no, see Form 008.)			

\* Please provide details here for NO responses to gray boxes above - for 2 thru 5 & 7 thru 12, notify PM & continue w/ login.

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All client bottle ID's vs ALS lab ID's double-checked by: TEM

If applicable, was the client contacted? YES / NO / NA Contact: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Project Manager Signature / Date: [Signature] 10/16/19

## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** NW1 Composite 6"-12" (1690-1)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-1  
**Matrix:** SOIL  
**Percent Moisture:** 3.9

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>HEXAVALENT CHROMIUM</b> CHROMIUM VI	ND		<b>SW7196</b> 0.1	MG/KG	1	0.031	Prep Date: <b>10/22/2019</b> PrepBy: <b>KJS</b> 10/22/2019
<b>ICPMS METALS</b> ARSENIC	1900		<b>SW6020</b> 210	UG/KG	10	37	Prep Date: <b>10/18/2019</b> PrepBy: <b>JML</b> 10/22/2019 23:54
<b>MERCURY</b> MERCURY	0.0048	J	<b>SW7471</b> 0.035	MG/KG	1	0.000062	Prep Date: <b>10/24/2019</b> PrepBy: <b>AFS</b> 10/24/2019 13:53

## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** NE2 Composite 6"-12" (1690-2)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-2  
**Matrix:** SOIL  
**Percent Moisture:** 5.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>HEXAVALENT CHROMIUM</b> CHROMIUM VI	ND		<b>SW7196</b> 0.11	MG/KG	Prep Date: <b>10/22/2019</b> 1	PrepBy: <b>KJS</b> 0.032	10/22/2019
<b>ICPMS METALS</b> ARSENIC	2400		<b>SW6020</b> 200	UG/KG	Prep Date: <b>10/18/2019</b> 10	PrepBy: <b>JML</b> 36	10/22/2019 23:57
<b>MERCURY</b> MERCURY	0.007	J	<b>SW7471</b> 0.035	MG/KG	Prep Date: <b>10/24/2019</b> 1	PrepBy: <b>AFS</b> 0.000063	10/24/2019 13:59



## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** SE3 Composite 6"-12" (1690-3)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-3  
**Matrix:** SOIL  
**Percent Moisture:** 2.4

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>HEXAVALENT CHROMIUM</b> CHROMIUM VI	ND		<b>SW7196</b> 0.1	MG/KG	1	0.03	Prep Date: <b>10/22/2019</b> PrepBy: <b>KJS</b> 10/22/2019
<b>ICPMS METALS</b> ARSENIC	2000		<b>SW6020</b> 200	UG/KG	10	36	Prep Date: <b>10/18/2019</b> PrepBy: <b>JML</b> 10/23/2019 00:00
<b>MERCURY</b> MERCURY	0.00055	J	<b>SW7471</b> 0.034	MG/KG	1	0.000061	Prep Date: <b>10/24/2019</b> PrepBy: <b>AFS</b> 10/24/2019 14:01

## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** SW4 Composite 6"-12" (1690-4)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-4  
**Matrix:** SOIL  
**Percent Moisture:** 2.1

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>HEXAVALENT CHROMIUM</b> CHROMIUM VI	ND		<b>SW7196</b> 0.1	MG/KG	1	0.03	Prep Date: <b>10/22/2019</b> PrepBy: <b>KJS</b> 10/22/2019
<b>ICPMS METALS</b> <b>ARSENIC</b>	1600		<b>SW6020</b> 200	UG/KG	10	36	Prep Date: <b>10/18/2019</b> PrepBy: <b>JML</b> 10/23/2019 00:14
<b>MERCURY</b> MERCURY	ND		<b>SW7471</b> 0.034	MG/KG	1	0.000061	Prep Date: <b>10/24/2019</b> PrepBy: <b>AFS</b> 10/24/2019 14:04

## ALS -- Fort Collins

## SAMPLE SUMMARY REPORT

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** Background (1690-5)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-5  
**Matrix:** SOIL  
**Percent Moisture:** 5.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
<b>HEXAVALENT CHROMIUM</b> CHROMIUM VI	ND		<b>SW7196</b> 0.11	MG/KG	Prep Date: <b>10/22/2019</b> 1	PrepBy: <b>KJS</b> 0.032	10/22/2019
<b>ICPMS METALS</b> ARSENIC	2300		<b>SW6020</b> 210	UG/KG	Prep Date: <b>10/18/2019</b> 10	PrepBy: <b>JML</b> 37	10/23/2019 00:17
<b>MERCURY</b> MERCURY	ND		<b>SW7471</b> 0.035	MG/KG	Prep Date: <b>10/24/2019</b> 1	PrepBy: <b>AFS</b> 0.000063	10/24/2019 14:06

**Client:** eAnalytics Laboratory  
**Project:** Platteville Drill Cuttings  
**Sample ID:** Background (1690-5)  
**Legal Location:**  
**Collection Date:** 10/8/2019

**Date:** 29-Oct-19  
**Work Order:** 1910381  
**Lab ID:** 1910381-5  
**Matrix:** SOIL  
**Percent Moisture:** 5.3

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	MDL	Date Analyzed
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### Explanation of Qualifiers

#### Radiochemistry:

- "Report Limit" is the MDC  
 U or ND - Result is less than the sample specific MDC.  
 Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.  
 Y2 - Chemical Yield outside default limits.  
 W - DER is greater than Warning Limit of 1.42  
 \* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.  
 # - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.  
 G - Sample density differs by more than 15% of LCS density.  
 D - DER is greater than Control Limit  
 M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.  
 L - LCS Recovery below lower control limit.  
 H - LCS Recovery above upper control limit.  
 P - LCS, Matrix Spike Recovery within control limits.  
 N - Matrix Spike Recovery outside control limits  
 NC - Not Calculated for duplicate results less than 5 times MDC  
 B - Analyte concentration greater than MDC.  
 B3 - Analyte concentration greater than MDC but less than Requested MDC.

#### Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).  
 U or ND - Indicates that the compound was analyzed for but not detected.  
 E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.  
 M - Duplicate injection precision was not met.  
 N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.  
 Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.  
 \* - Duplicate analysis (relative percent difference) not within control limits.  
 S - SAR value is estimated as one or more analytes used in the calculation were not detected above the detection limit.

#### Organics:

U or ND - Indicates that the compound was analyzed for but not detected.  
 B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.  
 E - Analyte concentration exceeds the upper level of the calibration range.  
 J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).  
 A - A tentatively identified compound is a suspected aldol-condensation product.  
 X - The analyte was diluted below an accurate quantitation level.  
 \* - The spike recovery is equal to or outside the control criteria used.  
 + - The relative percent difference (RPD) equals or exceeds the control criteria.  
 G - A pattern resembling gasoline was detected in this sample.  
 D - A pattern resembling diesel was detected in this sample.  
 M - A pattern resembling motor oil was detected in this sample.  
 C - A pattern resembling crude oil was detected in this sample.  
 4 - A pattern resembling JP-4 was detected in this sample.  
 5 - A pattern resembling JP-5 was detected in this sample.  
 H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.  
 L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.  
 Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:  
 - gasoline  
 - JP-8  
 - diesel  
 - mineral spirits  
 - motor oil  
 - Stoddard solvent  
 - bunker C

## ALS -- Fort Collins

Date: 10/29/2019 5:01

Client: eAnalytics Laboratory

## QC BATCH REPORT

Work Order: 1910381

Project: Platteville Drill Cuttings

Batch ID: HG191024-1-1

Instrument ID CETAC7500

Method: SW7471

<b>LCS</b>	Sample ID: <b>HG191024-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/24/2019 13:51</b>					
Client ID:	Run ID: <b>HG191024-2A2</b>				Prep Date: <b>10/24/2019</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual	
MERCURY	0.161	0.0333	0.167		96	80-120				20		

<b>MB</b>	Sample ID: <b>HG191024-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/24/2019 13:44</b>					
Client ID:	Run ID: <b>HG191024-2A2</b>				Prep Date: <b>10/24/2019</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit	MDL								Qual	
MERCURY	-0.0031	0.033	0.00006								J	

<b>MS</b>	Sample ID: <b>1910381-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/24/2019 13:55</b>					
Client ID: <b>NW1 Composite 6"-12" (1690-1)</b>	Run ID: <b>HG191024-2A2</b>				Prep Date: <b>10/24/2019</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual	
MERCURY	0.328	0.0346	0.346	0.0048	94	80-120				20		

<b>MSD</b>	Sample ID: <b>1910381-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/24/2019 13:57</b>					
Client ID: <b>NW1 Composite 6"-12" (1690-1)</b>	Run ID: <b>HG191024-2A2</b>				Prep Date: <b>10/24/2019</b>		DF: <b>1</b>					
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual	
MERCURY	0.328	0.0346	0.346	0.0048	93	80-120		0.328	0	20		

The following samples were analyzed in this batch:

1910381-1	1910381-2	1910381-3
1910381-4	1910381-5	

**Client:** eAnalytics Laboratory  
**Work Order:** 1910381  
**Project:** Platteville Drill Cuttings

## QC BATCH REPORT

Batch ID: **IP191018-3-2** Instrument ID **ICPMS2** Method: **SW6020**

<b>LCS</b>		Sample ID: <b>IM191018-3</b>			Units: <b>UG/KG</b>			Analysis Date: <b>10/22/2019 22:48</b>			
Client ID:		Run ID: <b>IM191022-10A17</b>			Prep Date: <b>10/18/2019</b>			DF: <b>10</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
ARSENIC	8830	200	10000		88	80-120				20	

<b>MB</b>		Sample ID: <b>IP191018-3</b>			Units: <b>UG/KG</b>			Analysis Date: <b>10/22/2019 22:45</b>			
Client ID:		Run ID: <b>IM191022-10A17</b>			Prep Date: <b>10/18/2019</b>			DF: <b>10</b>			
Analyte	Result	ReportLimit	MDL								Qual
ARSENIC	ND	200	36								

The following samples were analyzed in this batch:

1910381-1	1910381-2	1910381-3
1910381-4	1910381-5	

**Client:** eAnalytics Laboratory  
**Work Order:** 1910381  
**Project:** Platteville Drill Cuttings

## QC BATCH REPORT

Batch ID: **CR191022-1-1** Instrument ID **Spec** Method: **SW7196**

<b>LCS</b>		Sample ID: <b>CR191022-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/22/2019</b>			
Client ID:		Run ID: <b>CR191022-1a4</b>			Prep Date: <b>10/22/2019</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHROMIUM VI	2.94	0.1	3		98	80-120				20	

<b>MB</b>		Sample ID: <b>CR191022-1</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/22/2019</b>			
Client ID:		Run ID: <b>CR191022-1a4</b>			Prep Date: <b>10/22/2019</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	MDL								Qual
CHROMIUM VI	ND	0.1	0.03								

<b>MS</b>		Sample ID: <b>1910381-4</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/22/2019</b>			
Client ID: <b>SW4 Composite 6"-12" (1690-4)</b>		Run ID: <b>CR191022-1a4</b>			Prep Date: <b>10/22/2019</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHROMIUM VI	0.83	0.102	1.02	0.1	81	75-125				20	

<b>MSD</b>		Sample ID: <b>1910381-4</b>			Units: <b>MG/KG</b>			Analysis Date: <b>10/22/2019</b>			
Client ID: <b>SW4 Composite 6"-12" (1690-4)</b>		Run ID: <b>CR191022-1a4</b>			Prep Date: <b>10/22/2019</b>			DF: <b>1</b>			
Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	Decision Level	RPD Ref	RPD	RPD Limit	Qual
CHROMIUM VI	0.768	0.102	1.02	0.1	76	75-125		0.83	8	20	

The following samples were analyzed in this batch:

1910381-1	1910381-2	1910381-3
1910381-4	1910381-5	