



December 20, 2022

KP Kauffman Co. Inc.

Levi Kirk

1700 Lincoln St #4550

Denver CO 80203

Project Name - Koch Tank Battery

Project Number - [none]

Attached are your analytical results for Koch Tank Battery received by Origins Laboratory, Inc. December 09, 2022. This project is associated with Origins project number Y212238-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



1725 Elk Place, Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

KP Kauffman Co. Inc.

1700 Lincoln St #4550

Denver CO 80203

Levi Kirk

Project Number: [none]

Project: Koch Tank Battery

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-5@4'	Y212238-01	Soil	December 9, 2022 12:15	12/09/2022 13:20
SW-6@3'	Y212238-02	Soil	December 9, 2022 12:10	12/09/2022 13:20

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

www.originslaboratory.com

40238

ORIGINS
LABORATORY, INC

page 1 of 1

Client: K. P. Kauffman
Address: 1675 Broadway Denver, CO 80202
Telephone Number: 303.825.4822
Email Address: PrimaryContractor@marcomllc.net

Project Manager: Levi Kirk
Project Name: KOCH TANK BATTERY
Project Number:
Samples Collected By: B. W.

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	As Summa Container #			Other
SW-5 C41	12-9-22	1215	2	X					X				1
SW-6 C31	12-9-22	1210	2	X					X				2
													3
													4
													5
													6
													7
													8
													9
													10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
[Signature]	12-9-22	1320	[Signature]	12/09/22	1320	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	

Date Results Needed

in

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.

1700 Lincoln St #4550

Denver CO 80203

Levi Kirk

Project Number: [none]

Project: Koch Tank Battery

Origins Laboratory

F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: 4212238

Client: KP Kauffman

Client Project ID: Koch TB

Checklist Completed by: ISH/DE

Shipped Via: HD
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 12/09/22

Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____

Cooler Number/Temperature: 1 / 10 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: T004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		Same day
Is there ice present (document if blue ice is used)		<input checked="" type="checkbox"/>		
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by: DE (Project Manager)

Date/Time Reviewed: 12-12-22

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-5@4'

12/9/2022 12:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y212238-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.607	0.0986	mg/L	1	B2L1207	12/12/2022	12/15/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2L1217	12/12/2022	12/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	83.6 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2L1329	12/13/2022	12/14/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	119 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Jen Pellegrini, Project Manager

KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-5@4'

12/9/2022 12:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y212238-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.4 %	70-130	B2L13 29	12/13/2022	12/14/2022
Surrogate: 4-Bromofluorobenzene	93.1 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	2.00	0.499	meq/L	10	[CALC]	12/12/2022	12/13/2022
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.894	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L653945	12/15/2022	12/16/2022
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	0.000648	0.000468	0.00067	"	"	"	"	" J
Benzo(b)fluoranthene	0.000631	0.000585	0.00067	"	"	"	"	" J
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	0.000684	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	0.000762	0.000394	0.00067	"	"	"	"	"
Fluorene	ND	0.000286	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



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1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-5@4'

12/9/2022 12:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y212238-01 (Soil)

PAH by 8270D SIM

Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	mg/Kg	1	L653945	12/15/2022	12/16/2022
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	0.00094	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	48 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	55.9 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	45.3 %	29-110	"	"	"

pH in Soil by 9045D

pH	8.16	pH Units	1	B2L1215	12/12/2022	12/13/2022
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SAR by 20B Saturated Paste

SAR	0.753	SAR	1	B2L1211	12/12/2022	12/13/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.409	0.00500	mmhos/cm	1	B2L1215	12/12/2022	12/13/2022
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Table 915 metals by EPA 6020B

Arsenic	2.77	0.0985	mg/kg	10	B2L1205	12/12/2022	12/13/2022
Barium	98.1	9.85	"	"	"	"	"

Origins Laboratory, Inc.



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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-5@4'

12/9/2022 12:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y212238-01 (Soil)

Table 915 metals by EPA 6020B

Cadmium	0.166	0.0985	mg/kg	10	B2L1205	12/12/2022	12/13/2022	
Copper	ND	9.85	"	"	"	"	"	U
Lead	ND	9.85	"	"	"	"	"	U
Nickel	ND	9.85	"	"	"	"	"	U
Selenium	0.133	0.0985	"	"	"	"	"	
Silver	ND	0.0985	"	"	"	"	"	U
Zinc	ND	98.5	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	1.22	2.5	mg/Kg	5	L654039	12/09/2022	12/15/2022
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Origins Laboratory, Inc.



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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-6@3'

12/9/2022 12:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y212238-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.176	0.0991	mg/L	1	B2L1207	12/12/2022	12/15/2022	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B2L1217	12/12/2022	12/13/2022	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	80.9 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B2L1329	12/13/2022	12/14/2022	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	125 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-6@3'

12/9/2022 12:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y212238-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	105 %	70-130	B2L13 29	12/13/2022	12/14/2022
Surrogate: 4-Bromofluorobenzene	96.4 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	1.99	0.499	meq/L	10	[CALC]	12/12/2022	12/13/2022
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.728	0.435	"	"	"	"	"

PAH by 8270D SIM

1-Methylnaphthalene	ND	0.00109	0.00201	mg/Kg	1	L653945	12/15/2022	12/16/2022
2-Methylnaphthalene	ND	0.00194	0.00201	"	"	"	"	"
Acenaphthene	ND	0.000304	0.00067	"	"	"	"	"
Anthracene	ND	0.000334	0.00067	"	"	"	"	"
Benzo(a)anthracene	ND	0.000493	0.00067	"	"	"	"	"
Benzo(a)pyrene	ND	0.000468	0.00067	"	"	"	"	"
Benzo(b)fluoranthene	ND	0.000585	0.00067	"	"	"	"	"
Benzo(k)fluoranthene	ND	0.000437	0.00067	"	"	"	"	"
Chrysene	ND	0.000624	0.00067	"	"	"	"	"
Dibenz(a,h)anthracene	ND	0.000614	0.00067	"	"	"	"	"
Fluoranthene	ND	0.000394	0.00067	"	"	"	"	"

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-6@3'

12/9/2022 12:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.
Y212238-02 (Soil)

PAH by 8270D SIM

Fluorene	ND	0.000286	0.00067	mg/Kg	1	L653945	12/15/2022	12/16/2022
Indeno(1,2,3-cd)pyrene	ND	0.000627	0.00067	"	"	"	"	"
Naphthalene	ND	0.00145	0.00201	"	"	"	"	"
Pyrene	ND	0.000643	0.00067	"	"	"	"	"

Surrogate: 2-Fluorobiphenyl	52.7 %	33-115	"	"	"
Surrogate: 4-Terphenyl-d14	63.3 %	33-122	"	"	"
Surrogate: Nitrobenzene-d5	50 %	29-110	"	"	"

pH in Soil by 9045D

pH	8.22	pH Units	1	B2L1215	12/12/2022	12/13/2022
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SAR by 20B Saturated Paste

SAR	0.643	SAR	1	B2L1211	12/12/2022	12/13/2022
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.359	0.00500	mmhos/cm	1	B2L1215	12/12/2022	12/13/2022
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Table 915 metals by EPA 6020B

Arsenic	3.71	0.0924	mg/kg	10	B2L1205	12/12/2022	12/13/2022
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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

SW-6@3'

12/9/2022 12:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y212238-02 (Soil)

Table 915 metals by EPA 6020B

Barium	115	9.24	mg/kg	10	B2L1205	12/12/2022	12/13/2022	
Cadmium	0.226	0.0924	"	"	"	"	"	
Copper	10.6	9.24	"	"	"	"	"	
Lead	ND	9.24	"	"	"	"	"	U
Nickel	10.2	9.24	"	"	"	"	"	
Selenium	0.267	0.0924	"	"	"	"	"	
Silver	ND	0.0924	"	"	"	"	"	U
Zinc	ND	92.4	"	"	"	"	"	U

Total Metals by 7196A

Chromium, Hexavalent	ND	1.22	2.5	mg/Kg	5	L654039	12/09/2022	12/15/2022
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Origins Laboratory, Inc.



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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Extractable Petroleum Hydrocarbons by 8015D - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2L1217 - EPA 3550B										
Blank (B2L1217-BLK1)					Prepared: 12/12/2022 Analyzed: 12/13/2022					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	21		"	24.9		86.1	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1217 - EPA 3550B

LCS (B2L1217-BS1)

Prepared: 12/12/2022 Analyzed: 12/13/2022

Diesel (C10-C28)	952	50.0	mg/kg	1000		95.2	70-130			
Residual Range Organics (C28-C40)	866	200	"	1000		86.6	70-130			
Surrogate: o-Terphenyl	47		"	49.8		95.1	50-150			

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1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1217 - EPA 3550B

Matrix Spike (B2L1217-MS1)		Source: Y212225-01			Prepared: 12/12/2022 Analyzed: 12/13/2022					
Diesel (C10-C28)	985	50.0	mg/kg	1000	ND	98.5	70-130			
Residual Range Organics (C28-C40)	913	200	"	1000	ND	91.3	70-130			
Surrogate: o-Terphenyl	41		"	49.8		82.9	50-150			

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
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Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1217 - EPA 3550B

Matrix Spike Dup (B2L1217-MSD1)		Source: Y212225-01			Prepared: 12/12/2022 Analyzed: 12/13/2022					
Diesel (C10-C28)	956	50.0	mg/kg	1000	ND	95.6	70-130	2.94	35	
Residual Range Organics (C28-C40)	895	200	"	1000	ND	89.5	70-130	1.95	35	
Surrogate: o-Terphenyl	48		"	49.8		95.9	50-150			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2L1329 - EPA 5030 (soil)										
Blank (B2L1329-BLK1)					Prepared: 12/13/2022 Analyzed: 12/14/2022					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125	116		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	102		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	100		70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1329 - EPA 5030 (soil)

LCS (B2L1329-BS1)

Prepared: 12/13/2022 Analyzed: 12/14/2022

1,2,4-Trimethylbenzene	0.0846	0.00200	mg/kg	0.100		84.6	70-130			
1,3,5-Trimethylbenzene	0.0855	0.00200	"	0.100		85.5	70-130			
Benzene	0.0964	0.00200	"	0.100		96.4	70-130			
Ethylbenzene	0.0854	0.00200	"	0.100		85.4	70-130			
Naphthalene	0.0899	0.00380	"	0.100		89.9	70-130			
Toluene	0.0917	0.00200	"	0.100		91.7	70-130			
o-Xylene	0.0858	0.00200	"	0.100		85.8	70-130			
m,p-Xylene	0.168	0.00400	"	0.200		83.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		112	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		110	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.0	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1329 - EPA 5030 (soil)

Matrix Spike (B2L1329-MS1)		Source: Y212210-01			Prepared: 12/13/2022 Analyzed: 12/14/2022					
1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100	ND	107	70-130			
1,3,5-Trimethylbenzene	0.108	0.00200	"	0.100	ND	108	70-130			
Benzene	0.123	0.00200	"	0.100	ND	123	70-130			
Ethylbenzene	0.111	0.00200	"	0.100	ND	111	70-130			
Naphthalene	0.120	0.00380	"	0.100	ND	120	70-130			
Toluene	0.115	0.00200	"	0.100	ND	115	70-130			
o-Xylene	0.112	0.00200	"	0.100	ND	112	70-130			
m,p-Xylene	0.219	0.00400	"	0.200	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.1	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2L1329 - EPA 5030 (soil)										
Matrix Spike Dup (B2L1329-MSD1)		Source: Y212210-01			Prepared: 12/13/2022 Analyzed: 12/14/2022					
1,2,4-Trimethylbenzene	0.0803	0.00200	mg/kg	0.100	ND	80.3	70-130	28.7	20	QR-02
1,3,5-Trimethylbenzene	0.0794	0.00200	"	0.100	ND	79.4	70-130	30.8	20	QR-02
Benzene	0.0947	0.00200	"	0.100	ND	94.7	70-130	25.7	20	QR-02
Ethylbenzene	0.0838	0.00200	"	0.100	ND	83.8	70-130	28.2	20	QR-02
Naphthalene	0.0920	0.00380	"	0.100	ND	92.0	70-130	26.5	20	QR-02
Toluene	0.0854	0.00200	"	0.100	ND	85.4	70-130	29.6	20	QR-02
o-Xylene	0.0843	0.00200	"	0.100	ND	84.3	70-130	28.1	20	QR-02
m,p-Xylene	0.165	0.00400	"	0.200	ND	82.6	70-130	28.2	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		113	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.6	70-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1205 - EPA 3050B

Blank (B2L1205-BLK1)

Prepared: 12/12/2022 Analyzed: 12/13/2022

Arsenic	ND	0.000100	mg/kg							U
Barium	ND	0.0100	"							U
Cadmium	ND	0.000100	"							U
Copper	ND	0.0100	"							U
Lead	ND	0.0100	"							U
Nickel	ND	0.0100	"							U
Selenium	ND	0.000100	"							U
Silver	ND	0.000100	"							U
Zinc	ND	0.100	"							U

LCS (B2L1205-BS1)

Prepared: 12/12/2022 Analyzed: 12/13/2022

Arsenic	0.0502	0.000100	mg/kg	0.0500		100	80-120
Barium	5.08	0.0100	"	5.00		102	80-120
Cadmium	0.0525	0.000100	"	0.0500		105	80-120
Copper	0.546	0.0100	"	0.500		109	80-120
Lead	0.0527	0.0100	"	0.0500		105	80-120
Nickel	0.0548	0.0100	"	0.0500		110	80-120
Selenium	0.0480	0.000100	"	0.0500		96.1	80-120
Silver	0.0455	0.000100	"	0.0500		91.0	80-120
Zinc	0.516	0.100	"	0.500		103	80-120

Matrix Spike (B2L1205-MS1)

Source: Y212149-04

Prepared: 12/12/2022 Analyzed: 12/13/2022

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1205 - EPA 3050B

Matrix Spike (B2L1205-MS1)		Source: Y212149-04			Prepared: 12/12/2022 Analyzed: 12/13/2022					
Arsenic	10.0	0.0893	mg/kg	4.47	4.96	114	75-125			
Barium	571	8.93	"	447	166	90.8	75-125			
Cadmium	5.32	0.0893	"	4.47	0.200	115	75-125			
Copper	66.7	8.93	"	44.7	12.7	121	75-125			
Lead	26.1	8.93	"	4.47	10.6	349	75-125			QM-07
Nickel	17.7	8.93	"	4.47	13.3	98.8	75-125			
Selenium	4.63	0.0893	"	4.47	0.152	100	75-125			
Silver	4.43	0.0893	"	4.47	0.0529	98.1	75-125			
Zinc	107	89.3	"	44.7	46.1	137	75-125			QM-07
Matrix Spike Dup (B2L1205-MSD1)		Source: Y212149-04			Prepared: 12/12/2022 Analyzed: 12/13/2022					
Arsenic	10.4	0.0942	mg/kg	4.71	4.96	115	75-125	3.26	20	
Barium	689	9.42	"	471	166	111	75-125	18.7	20	
Cadmium	5.50	0.0942	"	4.71	0.200	113	75-125	3.25	20	
Copper	65.4	9.42	"	47.1	12.7	112	75-125	1.87	20	
Lead	17.8	9.42	"	4.71	10.6	153	75-125	38.2	20	QM-07, QR-DUP
Nickel	20.7	9.42	"	4.71	13.3	157	75-125	15.5	20	QM-07
Selenium	5.00	0.0942	"	4.71	0.152	103	75-125	7.79	20	
Silver	4.47	0.0942	"	4.71	0.0529	93.9	75-125	0.914	20	
Zinc	103	94.2	"	47.1	46.1	122	75-125	3.81	20	

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B2L1207 - DTPA Sorbitol Preparation

Blank (B2L1207-BLK1)

Prepared: 12/12/2022 Analyzed: 12/13/2022

Boron	ND	0.100	mg/L							U
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Duplicate (B2L1207-DUP1)

Source: Y212215-01

Prepared: 12/12/2022 Analyzed: 12/13/2022

Boron	0.813	0.0990	mg/L		0.251			106	50	QR-DUP
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Batch B2L1211 - Saturated Paste Metals

Blank (B2L1211-BLK1)

Prepared: 12/12/2022 Analyzed: 12/13/2022

Calcium PPM	ND	10.0	mg/L							U
SAR	0.00		SAR							U
Magnesium PPM	ND	10.0	mg/L							U
Sodium PPM	ND	10.0	"							U

Duplicate (B2L1211-DUP1)

Source: Y212169-01

Prepared: 12/12/2022 Analyzed: 12/13/2022

Calcium PPM	23.9	10.0	mg/L		21.4			11.0	50	
SAR	0.00		SAR		3.40			200	200	U
Magnesium PPM	4.78	10.0	mg/L		4.04			16.6	50	U
Sodium PPM	60.8	10.0	"		65.4			7.37	50	

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B2L1215 - Saturated Paste pH/EC										
Blank (B2L1215-BLK1)					Prepared: 12/12/2022 Analyzed: 12/13/2022					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							U
pH	0.00		pH Units							U
Duplicate (B2L1215-DUP1)					Source: Y212169-01 Prepared: 12/12/2022 Analyzed: 12/13/2022					
Specific Conductance (EC)	0.579	0.00500	mmhos/cm		0.559			3.57	25	
pH	8.29		pH Units		8.34			0.601	25	

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

PAH by 8270D SIM - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L653945 - 3550B

MSD (L 82037-MSD-L653945)		Source: 82037			Prepared: 12/15/2022 Analyzed: 12/16/2022					
Chrysene	0.119	0.00335	mg/Kg	0.167	<0.00312	71.2	30-130	15.3	30	
1-Methylnaphthalene	0.102	0.0101	"	0.167	<0.00549	61	30-130	17.3	30	
Dibenz(a,h)anthracene	0.0689	0.00335	"	0.167	<0.00307	41.2	30-130	20.6	30	
Pyrene	0.108	0.00335	"	0.167	<0.00322	64.6	30-130	15.2	30	
Naphthalene	0.101	0.0101	"	0.167	<0.00730	60.4	30-130	15.3	30	
Fluorene	0.0964	0.00335	"	0.167	<0.00143	57.7	30-130	12.9	30	
Acenaphthene	0.102	0.00335	"	0.167	<0.00152	61	30-130	17	30	
Anthracene	0.105	0.00335	"	0.167	<0.00167	62.8	30-130	16	30	
Fluoranthene	0.109	0.00335	"	0.167	<0.00197	65.2	30-130	15.9	30	
2-Methylnaphthalene	0.107	0.0101	"	0.167	<0.00972	64	30-130	14.8	30	
Benzo(a)anthracene	0.113	0.00335	"	0.167	<0.00247	67.6	30-130	17.6	30	
Benzo(a)pyrene	0.112	0.00335	"	0.167	<0.00234	67	30-130	12.6	30	
Benzo(b)fluoranthene	0.0688	0.00335	"	0.167	<0.00293	41.1	30-130	13.3	30	
Benzo(k)fluoranthene	0.086	0.00335	"	0.167	<0.00219	51.4	30-130	19.5	30	
Indeno(1,2,3-cd)pyrene	0.0658	0.00335	"	0.167	<0.00314	39.4	30-130	23.8	30	
Surrogate: 4-Terphenyl-d14	60		"	0.333	186	60	33-122			
Surrogate: Nitrobenzene-d5	48.9		"	0.333	157	48.9	29-110			
Surrogate: 2-Fluorobiphenyl	49.8		"	0.333	158	49.8	33-115			

MS (L 82037-MS-L653945)		Source: 82037			Prepared: 12/15/2022 Analyzed: 12/16/2022					
Pyrene	0.0927	0.00335	mg/Kg	0.167	<0.00322	55.5	30-130			
1-Methylnaphthalene	0.0857	0.0101	"	0.167	<0.00549	51.3	30-130			
2-Methylnaphthalene	0.0922	0.0101	"	0.167	<0.00972	55.2	30-130			
Acenaphthene	0.086	0.00335	"	0.167	<0.00152	51.4	30-130			
Anthracene	0.0894	0.00335	"	0.167	<0.00167	53.5	30-130			
Naphthalene	0.0866	0.0101	"	0.167	<0.00730	51.8	30-130			
Benzo(a)anthracene	0.0947	0.00335	"	0.167	<0.00247	56.7	30-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

PAH by 8270D SIM - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L653945 - 3550B

MS (L 82037-MS-L653945)		Source: 82037			Prepared: 12/15/2022 Analyzed: 12/16/2022					
Benzo(a)pyrene	0.0987	0.00335	mg/Kg	0.167	<0.00234	59.1	30-130			
Benzo(b)fluoranthene	0.0602	0.00335	"	0.167	<0.00293	36	30-130			
Benzo(k)fluoranthene	0.0707	0.00335	"	0.167	<0.00219	42.3	30-130			
Chrysene	0.102	0.00335	"	0.167	<0.00312	61	30-130			
Dibenz(a,h)anthracene	0.056	0.00335	"	0.167	<0.00307	33.5	30-130			
Fluoranthene	0.0929	0.00335	"	0.167	<0.00197	55.6	30-130			
Fluorene	0.0847	0.00335	"	0.167	<0.00143	50.7	30-130			
Indeno(1,2,3-cd)pyrene	0.0518	0.00335	"	0.167	<0.00314	31	30-130			
Surrogate: 4-Terphenyl-d14	51.3		"	0.333	186	51.3	33-122			
Surrogate: 2-Fluorobiphenyl	39.9		"	0.333	158	39.9	33-115			
Surrogate: Nitrobenzene-d5	38.7		"	0.333	157	38.7	29-110			

LCS (LCS-L653945)		Prepared: 12/15/2022 Analyzed: 12/16/2022								
Naphthalene	0.112	0.00201	mg/Kg	0.167		67	30-130			
Benzo(a)anthracene	0.124	0.00067	"	0.167		74.2	30-130			
Fluorene	0.116	0.00067	"	0.167		69.4	30-130			
Pyrene	0.127	0.00067	"	0.167		76	30-130			
Dibenz(a,h)anthracene	0.112	0.00067	"	0.167		67	30-130			
Chrysene	0.126	0.00067	"	0.167		75.4	30-130			
Benzo(k)fluoranthene	0.101	0.00067	"	0.167		60.4	30-130			
Benzo(a)pyrene	0.132	0.00067	"	0.167		79	30-130			
Indeno(1,2,3-cd)pyrene	0.109	0.00067	"	0.167		65.2	30-130			
Anthracene	0.121	0.00067	"	0.167		72.4	30-130			
Acenaphthene	0.114	0.00067	"	0.167		68.2	30-130			
2-Methylnaphthalene	0.126	0.00201	"	0.167		75.4	30-130			
1-Methylnaphthalene	0.109	0.00201	"	0.167		65.2	30-130			
Benzo(b)fluoranthene	0.0983	0.00067	"	0.167		58.8	30-130			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

PAH by 8270D SIM - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L653945 - 3550B

LCS (LCS-L653945)

Prepared: 12/15/2022 Analyzed: 12/16/2022

Fluoranthene	0.128	0.00067	mg/Kg	0.167		76.6	30-130			
Surrogate: Nitrobenzene-d5	57		"	0.333		57	29-110			
Surrogate: 4-Terphenyl-d14	72.3		"	0.333		72.3	33-122			
Surrogate: 2-Fluorobiphenyl	62.4		"	0.333		62.4	33-115			

LRB (LRB-L653945)

Prepared: 12/15/2022 Analyzed: 12/16/2022

Benzo(k)fluoranthene	ND	0.00067	mg/Kg				-			
Pyrene	ND	0.00067	"				-			
Naphthalene	ND	0.00201	"				-			
Indeno(1,2,3-cd)pyrene	ND	0.00067	"				-			
Fluorene	ND	0.00067	"				-			
Fluoranthene	ND	0.00067	"				-			
Chrysene	ND	0.00067	"				-			
1-Methylnaphthalene	ND	0.00201	"				-			
Benzo(b)fluoranthene	ND	0.00067	"				-			
Benzo(a)pyrene	ND	0.00067	"				-			
Benzo(a)anthracene	ND	0.00067	"				-			
Anthracene	ND	0.00067	"				-			
Acenaphthene	ND	0.00067	"				-			
2-Methylnaphthalene	ND	0.00201	"				-			
Dibenz(a,h)anthracene	ND	0.00067	"				-			
Surrogate: 4-Terphenyl-d14	71.1		"	0.333		71.1	33-122			
Surrogate: Nitrobenzene-d5	53.4		"	0.333		53.4	29-110			
Surrogate: 2-Fluorobiphenyl	57.6		"	0.333		57.6	33-115			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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KP Kauffman Co. Inc.
1700 Lincoln St #4550
Denver CO 80203

Levi Kirk
Project Number: [none]
Project: Koch Tank Battery

Total Metals by 7196A - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L654039 -										
DUP (L 82043-DUP)		Source: Y212238-01			Prepared: Analyzed: 12/15/2022					
Chromium, Hexavalent	ND	2.5	mg/Kg		<2.50	-		0	20	
MS (L 82043-MS)		Source: Y212238-01			Prepared: Analyzed: 12/15/2022					
Chromium, Hexavalent	32.8	2.51	mg/Kg	40.1	<1.22	82	75-125			
MSD (L 82043-MSD)		Source: Y212238-01			Prepared: Analyzed: 12/15/2022					
Chromium, Hexavalent	504	50	mg/Kg	586	<24.4	86	75-125			
LCS (LCS)					Prepared: Analyzed: 12/15/2022					
Chromium, Hexavalent	6.69	0.5	mg/Kg	8		84	75-125			
LRB (LRB)					Prepared: Analyzed: 12/15/2022					
Chromium, Hexavalent	ND	0.5	mg/Kg							

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Levi Kirk
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Project: Koch Tank Battery

Notes and Definitions

U Sample is Non-Detect.

QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

J Estimated Value. Analyte below reported quantitation limit.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



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