

**TABLE 1**  
**SOIL SAMPLE ANALYTICAL AND FIELD RESULTS**  
**BUDDY 17-7HZ PAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

Analyte	Groundwater Protection Values (GPV)	B01@0.5'	BG01@0.5'	B02@2'	B03@5'	E01@2'
		3/9/2021	3/9/2021	9/10/2021	9/22/2021	9/22/2021
Photoionization Detector Reading						
PID (ppm)	NA	3.3	NA	2.2	1.1	0.0
Total Petroleum Hydrocarbons by USEPA Method 8015D						
TPH-GRO* (mg/kg)	500	<0.200	NA	NA	NA	NA
TPH-DRO* (mg/kg)	500	<25.0	NA	NA	NA	NA
TPH-RRO* (mg/kg)	500	<100	NA	NA	NA	NA
Soil Suitability for Reclamation						
EC (mmhos/cm)	4	18.3	0.401	0.508	NA	NA
Sodium Adsorption Ratio (SAR)	6	41.98	54.22	NA	NA	NA
pH, Lab (pH units)	6-8.3	7.08	8.27	NA	NA	NA
Boron (mg/L)	2	10.1	0.6	0.359	NA	NA
Soil Suitability for Reclamation (GPV for Soil)						
Benzene (mg/kg)	0.0026	0.00204	NA	NA	NA	NA
Toluene (mg/kg)	0.69	<0.00200	NA	NA	NA	NA
Ethylbenzene (mg/kg)	0.78	<0.00200	NA	NA	NA	NA
Xylenes, Total (mg/kg)	9.9	<0.00600	NA	NA	NA	NA
1,2,4-Trimethylbenzene (mg/kg)	0.0081	<0.00200	NA	NA	NA	NA
1,3,5-Trimethylbenzene (mg/kg)	0.0087	<0.00200	NA	NA	NA	NA
Acenaphthene (mg/kg)	0.55	<0.00391	NA	NA	NA	NA
Anthracene (mg/kg)	5.8	<0.00391	NA	NA	NA	NA
Benzo (a) anthracene (mg/kg)	0.011	<0.00391	NA	NA	NA	NA
Benzo (b) fluoranthene (mg/kg)	0.3	<0.00391	NA	NA	NA	NA
Benzo (k) fluoranthene (mg/kg)	2.9	<0.00391	NA	NA	NA	NA
Benzo (a) pyrene (mg/kg)	0.24	<0.00391	NA	NA	NA	NA
Chrysene (mg/kg)	9	<0.00391	NA	NA	NA	NA
Fluoranthene (mg/kg)	8.9	<0.00391	NA	NA	NA	NA
Fluorene (mg/kg)	0.54	<0.00391	NA	NA	NA	NA
Indeno (1,2,3-cd) pyrene (mg/kg)	0.98	<0.00391	NA	NA	NA	NA
1-Methylnaphthalene (mg/kg)	0.006	<0.00391	NA	NA	NA	NA
2-Methylnaphthalene (mg/kg)	0.019	<0.00391	NA	NA	NA	NA
Naphthalene (mg/kg)	0.0038	<0.00391	NA	NA	NA	NA
Pyrene (mg/kg)	1.3	<0.00391	NA	NA	NA	NA
Metals in Soils (GPV for Soil)						
Arsenic (mg/Kg)	0.29	5.15	5.54	3.6	NA	NA
Barium (mg/Kg)	82	218	123	174	86.8	152
Cadmium (mg/Kg)	0.38	0.172	0.116	NA	NA	NA
Chromium, Hexavalent (mg/Kg)	0.00067	NA	NA	NA	NA	NA
Copper (mg/Kg)	46	11.8	9.89	NA	NA	NA
Lead (mg/Kg)	14	12.1	9.44	NA	NA	NA
Nickel (mg/Kg)	26	12.7	13.5	NA	NA	NA
Selenium (mg/Kg)	0.26	1.68	1.31	0.371	NA	NA
Silver (mg/Kg)	0.8	<0.572	<0.563	NA	NA	NA
Zinc (mg/Kg)	370	41.5	34.9	NA	NA	NA

**TABLE 1 (Continued)**  
**SOIL SAMPLE ANALYTICAL AND FIELD RESULTS**  
**BUDDY 17-7HZ PAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

Analyte	Groundwater Protection Values (GPV)	N01@2'	Native-BG02@5'	Native-BG03@5'	Native-BG04@5'	Native-BG05@5'
		9/22/2021	9/22/2021	9/22/2021	9/22/2021	9/22/2021
Photoionization Detector Reading						
PID (ppm)	NA	0.0	NA	NA	NA	NA
Total Petroleum Hydrocarbons by USEPA Method 8015D						
TPH-GRO* (mg/kg)	500	NA	NA	NA	NA	NA
TPH-DRO* (mg/kg)	500	NA	NA	NA	NA	NA
TPH-RRO* (mg/kg)	500	NA	NA	NA	NA	NA
Soil Suitability for Reclamation						
EC (mmhos/cm)	4	NA	0.742	2.16	2.35	1.46
Sodium Adsorption Ratio (SAR)	6	NA	0.397	0.983	1.06	0.894
pH, Lab (pH units)	6-8.3	NA	8.11	7.78	7.69	7.89
Boron (mg/L)	2	NA	0.954	0.719	0.897	1.24
Soil Suitability for Reclamation (GPV for Soil)						
Benzene (mg/kg)	0.0026	NA	NA	NA	NA	NA
Toluene (mg/kg)	0.69	NA	NA	NA	NA	NA
Ethylbenzene (mg/kg)	0.78	NA	NA	NA	NA	NA
Xylenes, Total (mg/kg)	9.9	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene (mg/kg)	0.0081	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene (mg/kg)	0.0087	NA	NA	NA	NA	NA
Acenaphthene (mg/kg)	0.55	NA	NA	NA	NA	NA
Anthracene (mg/kg)	5.8	NA	NA	NA	NA	NA
Benzo (a) anthracene (mg/kg)	0.011	NA	NA	NA	NA	NA
Benzo (b) fluoranthene (mg/kg)	0.3	NA	NA	NA	NA	NA
Benzo (k) fluoranthene (mg/kg)	2.9	NA	NA	NA	NA	NA
Benzo (a) pyrene (mg/kg)	0.24	NA	NA	NA	NA	NA
Chrysene (mg/kg)	9	NA	NA	NA	NA	NA
Fluoranthene (mg/kg)	8.9	NA	NA	NA	NA	NA
Fluorene (mg/kg)	0.54	NA	NA	NA	NA	NA
Indeno (1,2,3-cd) pyrene (mg/kg)	0.98	NA	NA	NA	NA	NA
1-Methylnaphthalene (mg/kg)	0.006	NA	NA	NA	NA	NA
2-Methylnaphthalene (mg/kg)	0.019	NA	NA	NA	NA	NA
Naphthalene (mg/kg)	0.0038	NA	NA	NA	NA	NA
Pyrene (mg/kg)	1.3	NA	NA	NA	NA	NA
Metals in Soils (GPV for Soil)						
Arsenic (mg/Kg)	0.29	NA	4.78	2.92	3.21	4.55
Barium (mg/Kg)	82	155	131	77.6	75.8	161
Cadmium (mg/Kg)	0.38	NA	0.219	0.186	0.142	0.211
Chromium, Hexavalent (mg/Kg)	0.00067	NA	<0.5	<0.512	<0.512	<2.5
Copper (mg/Kg)	46	NA	11	5.89	6.1	13.5
Lead (mg/Kg)	14	NA	9.53	7.31	7.58	12.7
Nickel (mg/Kg)	26	NA	15.1	9.36	9.84	16.1
Selenium (mg/Kg)	0.26	NA	0.368	0.306	0.328	0.491
Silver (mg/Kg)	0.8	NA	0.0432	0.0243	0.0232	0.0689
Zinc (mg/Kg)	370	NA	42.9	31.7	33.2	55.7

**TABLE 1 (Continued)**  
**SOIL SAMPLE ANALYTICAL AND FIELD RESULTS**  
**BUDDY 17-7HZ PAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

Analyte	Groundwater Protection Values (GPV)	S01@2'	W01@2'
		9/22/2021	9/22/2021
Photoionization Detector Reading			
PID (ppm)	NA	0.0	0.0
Total Petroleum Hydrocarbons by USEPA Method 8015D			
TPH-GRO* (mg/kg)	500	NA	NA
TPH-DRO* (mg/kg)	500	NA	NA
TPH-RRO* (mg/kg)	500	NA	NA
Soil Suitability for Reclamation			
EC (mmhos/cm)	4	NA	NA
Sodium Adsorption Ratio (SAR)	6	NA	NA
pH, Lab (pH units)	6-8.3	NA	NA
Boron (mg/L)	2	NA	NA
Soil Suitability for Reclamation (GPV for Soil)			
Benzene (mg/kg)	0.0026	NA	NA
Toluene (mg/kg)	0.69	NA	NA
Ethylbenzene (mg/kg)	0.78	NA	NA
Xylenes, Total (mg/kg)	9.9	NA	NA
1,2,4-Trimethylbenzene (mg/kg)	0.0081	NA	NA
1,3,5-Trimethylbenzene (mg/kg)	0.0087	NA	NA
Acenaphthene (mg/kg)	0.55	NA	NA
Anthracene (mg/kg)	5.8	NA	NA
Benzo (a) anthracene (mg/kg)	0.011	NA	NA
Benzo (b) fluoranthene (mg/kg)	0.3	NA	NA
Benzo (k) fluoranthene (mg/kg)	2.9	NA	NA
Benzo (a) pyrene (mg/kg)	0.24	NA	NA
Chrysene (mg/kg)	9	NA	NA
Fluoranthene (mg/kg)	8.9	NA	NA
Fluorene (mg/kg)	0.54	NA	NA
Indeno (1,2,3-cd) pyrene (mg/kg)	0.98	NA	NA
1-Methylnaphthalene (mg/kg)	0.006	NA	NA
2-Methylnaphthalene (mg/kg)	0.019	NA	NA
Naphthalene (mg/kg)	0.0038	NA	NA
Pyrene (mg/kg)	1.3	NA	NA
Metals in Soils (GPV for Soil)			
Arsenic (mg/Kg)	0.29	NA	NA
Barium (mg/Kg)	82	143	181
Cadmium (mg/Kg)	0.38	NA	NA
Chromium, Hexavalent (mg/Kg)	0.00067	NA	NA
Copper (mg/Kg)	46	NA	NA
Lead (mg/Kg)	14	NA	NA
Nickel (mg/Kg)	26	NA	NA
Selenium (mg/Kg)	0.26	NA	NA
Silver (mg/Kg)	0.8	NA	NA
Zinc (mg/Kg)	370	NA	NA

**TABLE 1 (Continued)**  
**SOIL SAMPLE ANALYTICAL AND FIELD RESULTS**  
**BUDDY 17-7HZ PAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

**Notes:**

GPV - groundwater protection values  
mg/kg - milligrams per kilogram  
PID - Photoionization Detector  
ppm - parts per million  
TPH - total petroleum hydrocarbons  
GRO - gasoline range organics  
DRO - diesel range organics  
RRO - residual range organics

EC - electrical conductivity  
SAR - sodium adsorption ratio  
mmhos/cm - millimhos per centimeter  
<0.00200 - less than laboratory reporting limit  
NA - Not Applicable / Not Analyzed  
Bold indicates exceeds allowable level  
\*Allowable level for TPH is 500 mg/kg for combined GRO,  
DRO, and RRO

**TABLE 2**  
**PHOTOIONIZATION DETECTOR FIELD RESULTS**  
**BUDDY 17-7HZ PAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL & GAS ONSHORE, LP**

Screening Location	Location	Date	PID Reading (ppm)
B01@0.5'	Excavation Sample	3/9/2021	3.3
B02@2'	Excavation Sample	9/10/2021	2.2
B03@5'	Excavation Sample	9/22/2021	1.1
N01@2'	Excavation Sample	9/22/2021	0.0
E01@2'	Excavation Sample	9/22/2021	0.0
S01@2'	Excavation Sample	9/22/2021	0.0
W01@2'	Excavation Sample	9/22/2021	0.0
BG01@0.5'	Background	3/9/2021	NA
Native-BG02@5'	Background	9/22/2021	NA
Native-BG03@5'	Background	9/22/2021	NA
Native-BG04@5'	Background	9/22/2021	NA
Native-BG05@5'	Background	9/22/2021	NA

Notes:

PID - Photoionization Detector

ppm - parts per million

NA - Not Analyzed



March 16, 2021

WSP USA

Brian Sulzberger

4600 W. 60th Ave.

Arvada

CO

80003

Project Name - KMG - Buddy 17-7 HZ Pad

Project Number - [none]

Attached are your analytical results for KMG - Buddy 17-7 HZ Pad received by Origins Laboratory, Inc. March 09, 2021. This project is associated with Origins project number Y103176-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@.5'	Y103176-01	Soil	March 9, 2021 10:02	03/09/2021 16:26
BG01@.5'	Y103176-02	Soil	March 9, 2021 10:08	03/09/2021 16:26

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

Y1031740

page 1 of 1

Client: WSP USA  
Address: 4600 W 60th Ave  
Arvada, CO 80003  
Telephone Number: (703) 880-0943  
Email Address: Kell McGee

Project Manager: Brian Sulzberger  
Project Name: Buddy 17-7 HZ Pad  
Project Number: 149  
Samples Collected By: 149

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa	Other	Full 915	915 Method	Boto	
B010.5	3/9/21	1002	5												1
B6010.5	3/9/21	1008	3												2
															3
															4
															5
															6
															7
															8
															9
															10

Relinquished By: Kyle Mathis Date: 3/9/21 Time: 16:26

Relinquished By: JMULL Date: 3-9-21 Time: 16:26

Turnaround Time: ☒ Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard

Date Results Needed

Temp Received- 7.3

Origins Laboratory, Inc.

*Jordan A. Merrill*

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WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

Origins Laboratory

Sample Receipt Checklist

Origins Work Order: Y103174

Client: WSP USA

Client Project ID: KMG-Buddy

Checklist Completed by: JA dm

Date/time completed: 3/9/12

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid        Water        Other:       

Cooler Number/Temperature: 17.3 °C        °C        °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<u>X</u>		
Is there ice present (document if blue ice is used)	<u>X</u>			<u>Same day</u>
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<u>X</u>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<u>X</u>	
Were all samples received intact <sup>(1)</sup> ?	<u>X</u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>X</u>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?			<u>X</u>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>X</u>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>X</u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>X</u>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCl, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with Na <sub>2</sub> CO <sub>3</sub> +NaOH, ZnAc+NaOH)			<u>X</u>	
Additional Comments (if any):				

<sup>(1)</sup> 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: dm (Project Manager)

Date/Time Reviewed: 3-9-21

Origins Laboratory, Inc.

*Jordan A. Merrill*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

B01@.5'

3/9/2021 10:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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AAL, Inc.

Y103176-01 (Soil)

## Boron (Sorbitol)

Boron	10.1		mg/L	1	[none]	03/11/2021	03/15/2021	
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## DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B1C0906	03/09/2021	03/09/2021	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	68.4 %	50-150			"	"	"	
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## GBTEX+TMBs

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B1C0905	03/09/2021	03/09/2021	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	0.00204	0.00200	"	"	"	"	"	
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
m,p-Xylene	ND	0.00400	"	"	"	"	"	Ua
o-Xylene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Origins Laboratory, Inc.

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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

B01@.5'

3/9/2021 10:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y103176-01 (Soil)**

**GBTEX+TMBs**

Surrogate: 1,2-Dichloroethane-d4	109 %	70-130	B1C0905	03/09/2021	03/09/2021
Surrogate: Toluene-d8	92.1 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	90.7 %	70-130	"	"	"

**Metals (Saturated Paste Prep)**

Calcium	53.43	me/L	1	[none]	03/11/2021	03/15/2021
Magnesium	23.90	"	"	"	"	"
Sodium	261.06	"	"	"	"	"

**PAH by 8270D SIM**

1-Methylnaphthalene	ND	0.00129	0.00391	mg/kg dry	1	2101819	03/12/2021	03/12/2021	U
2-Methylnaphthalene	ND	0.00129	0.00391	"	"	"	"	"	U
Acenaphthene	ND	0.00129	0.00391	"	"	"	"	"	U
Anthracene	ND	0.00129	0.00391	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00129	0.00391	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00129	0.00391	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00129	0.00391	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00129	0.00391	"	"	"	"	"	U
Chrysene	ND	0.00129	0.00391	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00129	0.00391	"	"	"	"	"	U

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

B01@.5'

3/9/2021 10:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC**  
Y103176-01 (Soil)

**PAH by 8270D SIM**

Fluoranthene	ND	0.00129	0.00391	mg/kg dry	1	2101819	03/12/2021	03/12/2021	U
Fluorene	ND	0.00129	0.00391	"	"	"	"	"	U
Indeno(1,2,3-cd)pyrene	ND	0.00129	0.00391	"	"	"	"	"	U
Naphthalene	ND	0.00129	0.00391	"	"	"	"	"	U
Pyrene	ND	0.00129	0.00391	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 62 % 25-121 " " "

**pH in Soil by EPA 9045D**

pH	7.08			pH Units	1	B1C1008	03/10/2021	03/10/2021	
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**SAR by 20B Saturated Paste**

SAR	41.98				1	[none]	03/11/2021	03/15/2021	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	18.3		0.00500	mmhos/cm	1	B1C1009	03/10/2021	03/10/2021	
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**Total Metals by 6010C**

Silver	ND	0.114	0.572	mg/kg dry	1	2101913	03/11/2021	03/11/2021	U
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Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

B01@.5'

3/9/2021 10:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## GEL Laboratories, LLC

Y103176-01 (Soil)

### Total Metals by 6020A

Arsenic	5.15	0.373	1.10	mg/kg dry	2	2101911	03/11/2021	03/15/2021	
Barium	218	0.110	0.882	"	"	"	"	"	
Cadmium	0.172	0.0221	0.221	"	"	"	"	"	J
Copper	11.8	0.0728	0.441	"	"	"	"	"	
Lead	12.1	0.110	0.441	"	"	"	"	"	
Nickel	12.7	0.110	0.441	"	"	"	"	"	
Selenium	1.68	0.397	1.10	"	"	"	"	"	
Zinc	41.5	0.882	4.41	"	"	"	"	"	

### Total Metals by 7196A

Hexavalent Chromium	ND	0.184	0.459	mg/kg dry	1	2101801	03/12/2021	03/15/2021	U
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Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

BG01@.5'

3/9/2021 10:08:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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AAL, Inc.

Y103176-02 (Soil)

## Boron (Sorbitol)

Boron	0.6		mg/L	1	[none]	03/11/2021	03/15/2021
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## Metals (Saturated Paste Prep)

Calcium	48.59		me/L	1	[none]	"	03/15/2021
Magnesium	19.70		"	"	"	"	"
Sodium	316.80		"	"	"	"	"

## pH in Soil by EPA 9045D

pH	8.27		pH Units	1	B1C1008	03/10/2021	03/10/2021
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## SAR by 20B Saturated Paste

SAR	54.22			1	[none]	03/11/2021	03/15/2021
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## Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.401	0.00500	mmhos/cm	1	B1C1009	03/10/2021	03/10/2021
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## Total Metals by 6010C

Silver	ND	0.113	0.563	mg/kg dry	1	2101913	03/11/2021	03/11/2021	U
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Origins Laboratory, Inc.



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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

BG01@.5'

3/9/2021 10:08:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC**  
**Y103176-02 (Soil)**

**Total Metals by 6020A**

Arsenic	5.54	0.370	1.09	mg/kg dry	2	2101911	"	03/15/2021	
Barium	123	0.109	0.876	"	"	"	"	"	
Cadmium	0.116	0.0219	0.219	"	"	"	"	"	J
Copper	9.89	0.0723	0.438	"	"	"	"	"	
Lead	9.44	0.109	0.438	"	"	"	"	"	
Nickel	13.5	0.109	0.438	"	"	"	"	"	
Selenium	1.31	0.394	1.09	"	"	"	"	"	
Zinc	34.9	0.876	4.38	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.172	0.429	mg/kg dry	1	2101801	03/12/2021	03/15/2021	U
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Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**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 B1C0905 - EPA 5030 (soil)**

**Blank (B1C0905-BLK1)**

Prepared: 03/09/2021 Analyzed: 03/09/2021

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
Naphthalene	ND	0.0100	"							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
m,p-Xylene	ND	0.00400	"							Ua
o-Xylene	ND	0.00200	"							Ua
Toluene	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	107		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	92.8		70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125	90.8		70-130			

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Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0905 - EPA 5030 (soil)

#### LCS (B1C0905-BS1)

Prepared: 03/09/2021 Analyzed: 03/09/2021

1,2,4-Trimethylbenzene	0.0521	0.00200	mg/kg	0.0500		104	70-130			
Naphthalene	0.0409	0.0100	"	0.0500		81.7	70-130			
1,3,5-Trimethylbenzene	0.0529	0.00200	"	0.0500		106	70-130			
Benzene	0.0495	0.00200	"	0.0500		99.0	70-130			
Ethylbenzene	0.0470	0.00200	"	0.0500		94.1	70-130			
m,p-Xylene	0.0970	0.00400	"	0.100		97.0	70-130			
o-Xylene	0.0486	0.00200	"	0.0500		97.2	70-130			
Toluene	0.0484	0.00200	"	0.0500		96.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		89.1	70-130			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0905 - EPA 5030 (soil)

Matrix Spike (B1C0905-MS1)		Source: Y103142-01			Prepared: 03/09/2021 Analyzed: 03/09/2021					
1,2,4-Trimethylbenzene	0.0537	0.00200	mg/kg	0.0500	ND	107	70-130			
Naphthalene	0.0413	0.0100	"	0.0500	0.00142	79.8	70-130			
1,3,5-Trimethylbenzene	0.0537	0.00200	"	0.0500	ND	107	70-130			
Benzene	0.0537	0.00200	"	0.0500	ND	107	70-130			
Ethylbenzene	0.0499	0.00200	"	0.0500	ND	99.7	70-130			
m,p-Xylene	0.105	0.00400	"	0.100	ND	105	70-130			
o-Xylene	0.0544	0.00200	"	0.0500	ND	109	70-130			
Toluene	0.0514	0.00200	"	0.0500	ND	103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		90.3	70-130			

Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**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 B1C0905 - EPA 5030 (soil)**

Matrix Spike Dup (B1C0905-MSD1)		Source: Y103142-01			Prepared: 03/09/2021 Analyzed: 03/09/2021					
1,2,4-Trimethylbenzene	0.0557	0.00200	mg/kg	0.0500	ND	111	70-130	3.73	20	
Naphthalene	0.0454	0.0100	"	0.0500	0.00142	87.9	70-130	9.41	20	
1,3,5-Trimethylbenzene	0.0560	0.00200	"	0.0500	ND	112	70-130	4.19	20	
Benzene	0.0536	0.00200	"	0.0500	ND	107	70-130	0.261	20	
Ethylbenzene	0.0506	0.00200	"	0.0500	ND	101	70-130	1.47	20	
m,p-Xylene	0.106	0.00400	"	0.100	ND	106	70-130	1.21	20	
o-Xylene	0.0552	0.00200	"	0.0500	ND	110	70-130	1.50	20	
Toluene	0.0519	0.00200	"	0.0500	ND	104	70-130	0.929	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		92.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		89.3	70-130			

Origins Laboratory, Inc.



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Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0906 - EPA 3550B

Blank (B1C0906-BLK1)

Prepared: 03/09/2021 Analyzed: 03/09/2021

Diesel (C10-C28)	ND	50.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	200	"							Ua
Surrogate: o-Terphenyl	32		"	50.0		63.7	50-150			

Origins Laboratory, Inc.



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4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0906 - EPA 3550B

### LCS (B1C0906-BS1)

Prepared: 03/09/2021 Analyzed: 03/09/2021

Diesel (C10-C28)	1110	50.0	mg/kg	1000		111	70-130			
Residual Range Organics (C28-C40)	1140	200	"	1000		114	70-130			
Surrogate: o-Terphenyl	45		"	50.0		90.6	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0906 - EPA 3550B

Matrix Spike (B1C0906-MS1)		Source: Y103159-01			Prepared: 03/09/2021 Analyzed: 03/09/2021					
Diesel (C10-C28)	1040	50.0	mg/kg	1000	ND	104	70-130			
Residual Range Organics (C28-C40)	1090	200	"	1000	58.3	103	70-130			
Surrogate: o-Terphenyl	41		"	50.0		81.5	50-150			

Origins Laboratory, Inc.



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4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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 B1C0906 - EPA 3550B

Matrix Spike Dup (B1C0906-MSD1)		Source: Y103159-01			Prepared: 03/09/2021 Analyzed: 03/09/2021					
Diesel (C10-C28)	1150	50.0	mg/kg	1000	ND	115	70-130	10.5	35	
Residual Range Organics (C28-C40)	1200	200	"	1000	58.3	114	70-130	9.71	35	
Surrogate: o-Terphenyl	46		"	50.0		91.9	50-150			

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## 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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## Saturated Paste - 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 B1C1008 - NO PREP

#### Duplicate (B1C1008-DUP1)

Source: Y103134-04

Prepared: 03/10/2021 Analyzed: 03/10/2021

pH	6.99	pH Units	7.86	11.7	25
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#### Batch B1C1009 - NO PREP

#### Blank (B1C1009-BLK1)

Prepared: 03/10/2021 Analyzed: 03/10/2021

Specific Conductance (EC)	0.00290	0.00500	mmhos/cm
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#### Duplicate (B1C1009-DUP1)

Source: Y103134-04

Prepared: 03/10/2021 Analyzed: 03/10/2021

Specific Conductance (EC)	0.253	0.00500	mmhos/cm	0.251	0.755	25
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Origins Laboratory, Inc.



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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

**PAH by 8270D SIM - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2101819 - SW846 3541**

**BLANK (1204771370-BLK)**

Prepared: 03/12/2021 Analyzed: 03/12/2021

Chrysene	ND	0.00328	mg/kg				-			U
Naphthalene	ND	0.00328	"				-			U
Indeno(1,2,3-cd)pyrene	ND	0.00328	"				-			U
Fluorene	ND	0.00328	"				-			U
Pyrene	ND	0.00328	"				-			U
Fluoranthene	ND	0.00328	"				-			U
Dibenzo(a,h)anthracene	ND	0.00328	"				-			U
Benzo(b)fluoranthene	ND	0.00328	"				-			U
Benzo(a)pyrene	ND	0.00328	"				-			U
Benzo(a)anthracene	ND	0.00328	"				-			U
Acenaphthene	ND	0.00328	"				-			U
2-Methylnaphthalene	ND	0.00328	"				-			U
1-Methylnaphthalene	ND	0.00328	"				-			U
Benzo(k)fluoranthene	ND	0.00328	"				-			U
Anthracene	ND	0.00328	"				-			U

Surrogate: 5-alpha-Androstane

0.146

"

0.164

89

25-121

**LCS (1204771371-BKS)**

Prepared: 03/12/2021 Analyzed: 03/12/2021

2-Methylnaphthalene	0.247	0.00324	mg/kg	0.324		76	50-109
Fluoranthene	0.249	0.00324	"	0.324		77	43-116
Chrysene	0.269	0.00324	"	0.324		83	53-108
Dibenzo(a,h)anthracene	0.280	0.00324	"	0.324		86	40-137
Benzo(b)fluoranthene	0.252	0.00324	"	0.324		78	42-119
Benzo(a)pyrene	0.269	0.00324	"	0.324		83	42-123
Benzo(a)anthracene	0.231	0.00324	"	0.324		71	51-118
Anthracene	0.252	0.00324	"	0.324		78	49-113
1-Methylnaphthalene	0.243	0.00324	"	0.324		75	50-109

Origins Laboratory, Inc.

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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## PAH by 8270D SIM - Quality Control

### GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2101819 - SW846 3541

#### LCS (1204771371-BKS)

Prepared: 03/12/2021 Analyzed: 03/12/2021

Fluorene	0.254	0.00324	mg/kg	0.324		78	42-113			
Acenaphthene	0.241	0.00324	"	0.324		74	48-107			
Naphthalene	0.244	0.00324	"	0.324		75	52-106			
Benzo(k)fluoranthene	0.245	0.00324	"	0.324		76	39-119			
Pyrene	0.263	0.00324	"	0.324		81	42-114			
Indeno(1,2,3-cd)pyrene	0.282	0.00324	"	0.324		87	40-132			
Surrogate: 5-alpha-Androstane	0.149		"	0.162		92	25-121			

#### LCSD (1204771372-BKSD)

Prepared: 03/12/2021 Analyzed: 03/12/2021

Chrysene	0.288	0.00327	mg/kg	0.327		88	53-108	7	30	
Pyrene	0.269	0.00327	"	0.327		82	42-114	2	30	
Naphthalene	0.246	0.00327	"	0.327		75	52-106	1	30	
Indeno(1,2,3-cd)pyrene	0.282	0.00327	"	0.327		86	40-132	0	30	
Fluorene	0.268	0.00327	"	0.327		82	42-113	5	30	
Dibenzo(a,h)anthracene	0.273	0.00327	"	0.327		83	40-137	3	30	
Benzo(k)fluoranthene	0.270	0.00327	"	0.327		82	39-119	10	30	
1-Methylnaphthalene	0.247	0.00327	"	0.327		76	50-109	2	30	
Fluoranthene	0.270	0.00327	"	0.327		83	43-116	8	30	
2-Methylnaphthalene	0.251	0.00327	"	0.327		77	50-109	1	30	
Benzo(b)fluoranthene	0.273	0.00327	"	0.327		83	42-119	8	30	
Acenaphthene	0.255	0.00327	"	0.327		78	48-107	6	30	
Anthracene	0.270	0.00327	"	0.327		83	49-113	7	30	
Benzo(a)anthracene	0.246	0.00327	"	0.327		75	51-118	7	30	
Benzo(a)pyrene	0.288	0.00327	"	0.327		88	42-123	7	30	
Surrogate: 5-alpha-Androstane	0.155		"	0.164		94	25-121			

#### MS (1204771373 S)

Source: 537409001

Prepared: 03/12/2021 Analyzed: 03/12/2021

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

**PAH by 8270D SIM - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2101819 - SW846 3541**

**MS (1204771373 S)**

**Source: 537409001**

Prepared: 03/12/2021 Analyzed: 03/12/2021

Chrysene	3.40	0.382	mg/kg dry	0.382	2.52	229	31-119			
Naphthalene	0.763	0.382	"	0.382	0.489	72	29-122			
Indeno(1,2,3-cd)pyrene	1.87	0.382	"	0.382	1.35	135	14-132			
Fluorene	1.26	0.382	"	0.382	0.828	113	26-123			
Fluoranthene	5.61	0.382	"	0.382	3.91	444	21-122			
Dibenzo(a,h)anthracene	0.840	0.382	"	0.382	0.565	72	16-139			
Pyrene	5.42	0.382	"	0.382	4.06	355	19-139			
Acenaphthene	0.763	0.382	"	0.382	0.527	62	29-118			
Benzo(b)fluoranthene	3.40	0.382	"	0.382	2.45	249	22-130			
Benzo(a)pyrene	3.36	0.382	"	0.382	2.48	229	24-129			
Benzo(a)anthracene	3.40	0.382	"	0.382	2.37	269	31-124			
Benzo(k)fluoranthene	1.60	0.382	"	0.382	1.05	144	26-130			
1-Methylnaphthalene	0.649	0.382	"	0.382	0.376	71	30-129			
Anthracene	1.98	0.382	"	0.382	1.32	175	29-127			
2-Methylnaphthalene	0.725	0.382	"	0.382	0.452	72	23-124			

Surrogate: 5-alpha-Androstane

0.191

"

0.191

0.226

100

25-121

**MSD (1204771374 SD)**

**Source: 537409001**

Prepared: 03/12/2021 Analyzed: 03/12/2021

Benzo(a)pyrene	1.68	0.382	mg/kg dry	0.382	2.48	0	24-129	67	30	
Pyrene	2.56	0.382	"	0.382	4.06	0	19-139	72	30	
Benzo(k)fluoranthene	0.879	0.382	"	0.382	1.05	0	26-130	58	30	
Chrysene	1.64	0.382	"	0.382	2.52	0	31-119	70	30	
Dibenzo(a,h)anthracene	0.497	0.382	"	0.382	0.565	0	16-139	51	30	
Fluoranthene	2.52	0.382	"	0.382	3.91	0	21-122	76	30	
Fluorene	0.650	0.382	"	0.382	0.828	0	26-123	64	30	
Indeno(1,2,3-cd)pyrene	0.956	0.382	"	0.382	1.35	0	14-132	65	30	
Naphthalene	0.535	0.382	"	0.382	0.489	12	29-122	35	30	

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

**PAH by 8270D SIM - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2101819 - SW846 3541

MSD (1204771374 SD)		Source: 537409001			Prepared: 03/12/2021 Analyzed: 03/12/2021					
Benzo(a)anthracene	1.61	0.382	mg/kg dry	0.382	2.37	0	31-124	72	30	
Benzo(b)fluoranthene	1.72	0.382	"	0.382	2.45	0	22-130	66	30	
Acenaphthene	0.535	0.382	"	0.382	0.527	2	29-118	35	30	
2-Methylnaphthalene	0.459	0.382	"	0.382	0.452	2	23-124	45	30	
1-Methylnaphthalene	0.420	0.382	"	0.382	0.376	12	30-129	43	30	
Anthracene	0.994	0.382	"	0.382	1.32	0	29-127	67	30	
Surrogate: 5-alpha-Androstane	0.115		"	0.191	0.226	60	25-121			

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6010C - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2101913 - SW846 3050B</b>										
<b>BLANK (1204771578-BLK)</b>					Prepared: 03/11/2021 Analyzed: 03/11/2021					
Silver	0.106	0.463	mg/kg				-			J
<b>LCS (1204771579-BKS)</b>					Prepared: 03/11/2021 Analyzed: 03/11/2021					
Silver	9.83	0.484	mg/kg	9.69		101	80-120			
<b>DUP (1204771580 D)</b>					Prepared: 03/11/2021 Analyzed: 03/11/2021					
<b>MS (1204771581 S)</b>					Prepared: 03/11/2021 Analyzed: 03/11/2021					
Silver	0.472	0.565	mg/kg dry		0.326		0-20	36.5	20	J
<b>Source: 537409001</b>					Prepared: 03/11/2021 Analyzed: 03/11/2021					
Silver	11.0	0.553	mg/kg dry	11.1	0.326	96.5	75-125			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6020A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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### Batch 2101911 - SW846 3050B

#### BLANK (1204771569-BLK)

Prepared: 03/11/2021 Analyzed: 03/15/2021

Zinc	ND	3.68	mg/kg				-			U
Selenium	ND	0.919	"				-			U
Nickel	ND	0.368	"				-			U
Lead	ND	0.368	"				-			U
Copper	ND	0.368	"				-			U
Cadmium	ND	0.184	"				-			U
Arsenic	ND	0.919	"				-			U
Barium	ND	0.735	"				-			U

#### LCS (1204771570-BKS)

Prepared: 03/11/2021 Analyzed: 03/15/2021

Copper	5.16	0.391	mg/kg	4.88		106	80-120
Lead	5.11	0.391	"	4.88		105	80-120
Nickel	5.17	0.391	"	4.88		106	80-120
Zinc	4.57	3.91	"	4.88		93.6	80-120
Barium	5.21	0.781	"	4.88		107	80-120
Arsenic	4.30	0.977	"	4.88		88	80-120
Selenium	3.95	0.977	"	4.88		80.9	80-120
Cadmium	4.55	0.195	"	4.88		93.2	80-120

#### DUP (1204771571 D)

Source: Y103176-01

Prepared: 03/11/2021 Analyzed: 03/15/2021

Cadmium	0.165	0.230	mg/kg dry	0.172		0-20	4.13	20	J
Selenium	1.64	1.15	"	1.68		0-20	2.38	20	
Nickel	12.3	0.460	"	12.7		0-20	3.12	20	
Copper	11.6	0.460	"	11.8		0-20	2.06	20	
Zinc	39.7	4.60	"	41.5		0-20	4.59	20	
Barium	187	0.921	"	218		0-20	15.3	20	
Arsenic	4.43	1.15	"	5.15		0-20	15.1	20	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6020A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2101911 - SW846 3050B</b>										
<b>DUP (1204771571 D)</b>		<b>Source: Y103176-01</b>			Prepared: 03/11/2021 Analyzed: 03/15/2021					
Lead	10.1	0.460	mg/kg dry		12.1		0-20	18.4	20	
<b>MS (1204771572 S)</b>		<b>Source: Y103176-01</b>			Prepared: 03/11/2021 Analyzed: 03/15/2021					
Lead	16.1	0.450	mg/kg dry	5.63	12.1	70.1	75-125			
Selenium	5.95	1.13	"	5.63	1.68	75.9	75-125			
Nickel	18.2	0.450	"	5.63	12.7	97.9	75-125			
Zinc	45.2	4.50	"	5.63	41.5	0	75-125			
Copper	17.0	0.450	"	5.63	11.8	92.5	75-125			
Cadmium	5.10	0.225	"	5.63	0.172	87.5	75-125			
Arsenic	9.41	1.13	"	5.63	5.15	75.7	75-125			
Barium	186	0.900	"	5.63	218	0	75-125			
<b>PS (1204773230 S)</b>		<b>Source: Y103176-01</b>			Prepared: 03/11/2021 Analyzed: 03/15/2021					
Lead	0.193	0.00483	mg/kg dry	0.0250		101	80-120			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 7196A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2101801 - SW846 3060A</b>										
<b>BLANK (1204771355-BLK)</b>					Prepared: 03/12/2021 Analyzed: 03/15/2021					
Hexavalent Chromium	ND	0.386	mg/kg				-			U
<b>LCS (1204771356-BKS)</b>					Prepared: 03/12/2021 Analyzed: 03/15/2021					
Hexavalent Chromium	3.80	0.372	mg/kg	3.72		102	80-120			
<b>ILCS (1204771357-ILCS)</b>					Prepared: 03/12/2021 Analyzed: 03/15/2021					
Hexavalent Chromium	7.35	0.376	mg/kg	7.52		97.7	80-120			
<b>DUP (1204771358 D)</b>					Prepared: 03/12/2021 Analyzed: 03/15/2021					
<b>Source: Y103176-01</b>										
Hexavalent Chromium	ND	0.459	mg/kg dry		<0.184		0-50	NR	50	U
<b>MS (1204771359 S)</b>					Prepared: 03/12/2021 Analyzed: 03/15/2021					
<b>Source: Y103176-01</b>										
Hexavalent Chromium	4.38	0.443	mg/kg dry	4.43	<0.177	98.2	75-125			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

### Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting 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.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



September 20, 2021

WSP USA

Brian Sulzberger

4600 W. 60th Ave.

Arvada

CO 80003

Project Name - KMG - Buddy 17-7 HZ Pad

Project Number - [none]

Attached are your analytical results for KMG - Buddy 17-7 HZ Pad received by Origins Laboratory, Inc. September 10, 2021. This project is associated with Origins project number Y109204-01.

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

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@2'	Y109204-01	Soil	September 10, 2021 9:50	09/10/2021 14:21

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

www.originslaboratory.com

1109204

**ORIGINS**  
LABORATORY, INC

Client: WSP USA  
Address: 4600 W 60<sup>th</sup> Ave  
Arvada, CO 80003  
Telephone Number: (303) 881-1143  
Email Address: KMG

Project Manager: Brian Sulzberger  
Project Name: Buddy 17-7 HZ  
Project Number: 31403177.14  
Samples Collected By: Kyle Mathis

page | of |

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis				Sample Instructions			
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #	Other	Boron	EC	Asenic		Boron	Selenium	
B2002	9/10/12	0950	2	X						X					X	X	X	Blood Water Analysis 1
																		2
																		3
																		4
																		5
																		6
																		7
																		8
																		9
																		10
Relinquished By: <u>Kyle Mathis</u>	Date: <u>9/10/12</u>	Time: <u>1421</u>		Received By: <u>[Signature]</u>	Date: <u>9/10/12</u>	Time: <u>1421</u>												Turnaround Time: <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr
Relinquished By:	Date:	Time:		Received By:	Date:	Time:												Standard

Date Results Needed

Temp Received: 5.9

Origins Laboratory, Inc.

*Jordan A. Merrill*

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y109204

Client: WSP

Client Project ID: Buddy 17-7 HZ

Checklist Completed by: JG

Date/time completed: 9/10/21

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

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid    Water    Other:    (Describe)

Cooler Number/Temperature: 1157 °C    °C    °C    °C

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup> 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 (Project Manager)

Date/Time Reviewed 9/10/21

Origins Laboratory, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

B02@2'

9/10/2021 9:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
Y109204-01 (Soil)

**Boron (DTPA Sorbitol)**

Boron	0.359	0.199	mg/L	1	B111303	KAP	09/13/2021	09/13/2021
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.508	0.00500	mmhos/cm	1	B111707	JSM	09/17/2021	09/17/2021
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**Total Metals by 6020B**

Arsenic	3.6	0.25	mg/Kg	5	L573652		09/13/2021	09/14/2021
Barium	174	0.25	"	"	"		"	"
Selenium	0.371	0.25	"	"	"		"	"

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## Saturated Paste - Quality Control

### Origins Laboratory, Inc.

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

#### Batch B111707 - NO PREP

##### Blank (B111707-BLK1)

Prepared: 09/17/2021 Analyzed: 09/17/2021

Specific Conductance (EC) 0.00320 0.00500 mmhos/cm

##### Duplicate (B111707-DUP1)

Source: Y109325-01

Prepared: 09/17/2021 Analyzed: 09/17/2021

Specific Conductance (EC) 0.893 0.00500 mmhos/cm 0.922 3.16 25

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6020B - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch L573652 - 3050B</b>										
<b>MSD (L 86423-MSD-L573652)</b>			<b>Source: 86423</b>		Prepared: 09/13/2021 Analyzed: 09/14/2021					
Selenium	3.66	0.103	mg/Kg	4.84	0.496	65	75-125	6.4	80	*
Barium	66.3	0.042	"	4.84	62.4	80	75-125	2.4	80	
Arsenic	4.87	0.0855	"	2.42	2.94	80	75-125	4.4	80	
<b>MS (L 86423-MS-L573652)</b>			<b>Source: 86423</b>		Prepared: 09/13/2021 Analyzed: 09/14/2021					
Selenium	3.43	0.103	mg/Kg	4.68	0.496	63	75-125			*
Barium	64.7	0.042	"	4.68	62.4	49	75-125			*
Arsenic	5.09	0.0855	"	2.34	2.94	92	75-125			
<b>LCS (LCS-L573652)</b>			Prepared: 09/13/2021 Analyzed: 09/14/2021							
Selenium	5.26	0.103	mg/Kg	5		105	80-120			
Barium	4.95	0.042	"	5		99	80-120			
Arsenic	2.5	0.0855	"	2.5		100	80-120			
<b>LRB (LRB-L573652)</b>			Prepared: 09/13/2021 Analyzed: 09/15/2021							
Selenium	ND	0.25	mg/Kg				-			
Barium	ND	0.25	"				-			
Arsenic	ND	0.25	"				-			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

### Notes and Definitions

\* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



September 30, 2021

WSP USA

Brian Sulzberger

4600 W. 60th Ave.

Arvada

CO

80003

**Project Name - KMG - Buddy 17-7 HZ Pad**

**Project Number - [none]**

Attached are your analytical results for KMG - Buddy 17-7 HZ Pad received by Origins Laboratory, Inc. September 22, 2021. This project is associated with Origins project number Y109468-01.

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

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@2'	Y109468-01	Soil	September 22, 2021 15:03	09/22/2021 16:55
E01@2'	Y109468-02	Soil	September 22, 2021 15:10	09/22/2021 16:55
S01@2'	Y109468-03	Soil	September 22, 2021 15:16	09/22/2021 16:55
W01@2'	Y109468-04	Soil	September 22, 2021 15:20	09/22/2021 16:55
B03@5'	Y109468-05	Soil	September 22, 2021 15:23	09/22/2021 16:55
Native-BG02@5'	Y109468-06	Soil	September 22, 2021 15:32	09/22/2021 16:55
Native-BG03@5'	Y109468-07	Soil	September 22, 2021 15:40	09/22/2021 16:55
Native-BG04@5'	Y109468-08	Soil	September 22, 2021 15:45	09/22/2021 16:55
Native-BG05@5'	Y109468-09	Soil	September 22, 2021 15:50	09/22/2021 16:55

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**ORIGINS**  
LABORATORY, INC

www.originslaboratory.com

410946x

page 1 of 1

Client: WSP USA  
Address: 4600 W. 60th Ave. Arvada 80003  
Telephone Number: [blank]  
Email Address: [blank]

Project Manager: Brian Sulzberger  
Project Name: Buddy 17-7 HZ Pad  
Project Number: 31403177-14  
Samples Collected By: DH

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	At Summa #	Other	Other	
N0102'	9-22-21	1503	2	X				X					GW pickup
E0102'		1510											
S0102'		1516											
W0102'		1520											
B0305'		1523	X										
NATIVE - B0305'		1532											
NATIVE - B0305'		1540											
NATIVE - B0405'		1545											
NATIVE - B0405'		1550											
Relinquished By: [Signature]	Date: 9-22-21	Time: 1655											
Relinquished By: [Signature]	Date: 9-22-21	Time: 1655											

Date Results Needed

8.2

Origins Laboratory, Inc.

[Signature]

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada

CO

80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: 7109468

Client: WSP

Client Project ID: Buddy 17-7

Checklist Completed by: JG

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

Date/time completed: 9/22/12

Airbill #: N/A

Matrix(s) Received: (Check all that apply): X Soil/Solid    Water    Other:   

Cooler Number/Temperature: 1/52°C    °C    °C    °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		<u>  </u>		<u>same day</u>
Is there ice present (document if blue ice is used)	<u>  </u>			
Are custody seals present on cooler? (If so, document in comments if they are signed and dated, broken or intact)		<u>  </u>		
Are custody seals present on each sample container? (If so, document in comments if they are signed and dated, broken or intact)		<u>  </u>		
Were all samples received intact <sup>(1)</sup> ?	<u>  </u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>  </u>			
Are short holding time analytes or samples with HTS due within 48 hours present <sup>(1)</sup> ?		<u>  </u>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<u>  </u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>  </u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>  </u>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<u>  </u>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<u>  </u>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)			<u>  </u>	
Additional Comments (if any):				

<sup>(1)</sup>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 (Project Manager) [Signature]

Date/Time Reviewed 9/22/12

Origins Laboratory, Inc.

[Signature]

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

N01@2'

9/22/2021 3:03:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.

Y109468-01 (Soil)

## Total Metals by 6020B

Barium	155	0.042	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

E01@2'

9/22/2021 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.

Y109468-02 (Soil)

## Total Metals by 6020B

Barium	152	0.042	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

S01@2'

9/22/2021 3:16:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.

Y109468-03 (Soil)

## Total Metals by 6020B

Barium	143	0.042	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

W01@2'

9/22/2021 3:20:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.

Y109468-04 (Soil)

## Total Metals by 6020B

Barium	181	0.042	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
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Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

B03@5'

9/22/2021 3:23:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Waypoint Analytical, LLC.

Y109468-05 (Soil)

## Total Metals by 6020B

Barium	86.8	0.042	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
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Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## Native-BG02@5'

9/22/2021 3:32:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc.

Y109468-06 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.954	0.199	mg/L	1	B1I2226	09/22/2021	09/23/2021
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### Metals by Saturated Paste

Calcium	1.40	0.499	meq/L	10	[CALC]	09/22/2021	09/23/2021
Magnesium	4.13	0.823	"	"	"	"	"
Sodium	2.09	0.435	"	"	"	"	"

### pH in Soil by 9045D

pH	8.11	pH Units	1	B1I2232	09/22/2021	09/24/2021
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### SAR by 20B Saturated Paste

SAR	0.397	SAR	1	B1I2225	09/22/2021	09/23/2021
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.742	0.00500	mmhos/cm	1	B1I2233	09/22/2021	09/24/2021
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### Total Metals by 6020B

Arsenic	4.78	0.0855	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
Barium	131	0.042	0.25	"	"	"	"	"
Cadmium	0.219	0.0259	0.25	"	"	"	"	"
Copper	11	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

**Native-BG02@5'**  
**9/22/2021 3:32:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Waypoint Analytical, LLC.**  
**Y109468-06 (Soil)**

**Total Metals by 6020B**

Lead	9.53	0.031	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021	
Nickel	15.1	0.0633	0.25	"	"	"	"	"	
Selenium	0.368	0.103	0.25	"	"	"	"	"	
Silver	0.0432	0.0067	0.25	"	"	"	"	"	J
Zinc	42.9	0.534	2.5	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L575959	09/22/2021	09/27/2021	
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Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## Native-BG03@5'

9/22/2021 3:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc.

Y109468-07 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.719	0.200	mg/L	1	B112226	09/22/2021	09/23/2021
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### Metals by Saturated Paste

Calcium	12.0	0.499	meq/L	10	[CALC]	09/22/2021	09/23/2021
Magnesium	11.1	0.823	"	"	"	"	"
Sodium	3.34	0.435	"	"	"	"	"

### pH in Soil by 9045D

pH	7.78	pH Units	1	B112232	09/22/2021	09/24/2021
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### SAR by 20B Saturated Paste

SAR	0.983	SAR	1	B112225	09/22/2021	09/23/2021
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.16	0.00500	mmhos/cm	1	B112233	09/22/2021	09/24/2021
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### Total Metals by 6020B

Arsenic	2.92	0.0855	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
Barium	77.6	0.042	0.25	"	"	"	"	"
Cadmium	0.186	0.0259	0.25	"	"	"	"	"
Copper	5.89	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

**Native-BG03@5'**  
**9/22/2021 3:40:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Waypoint Analytical, LLC.**  
**Y109468-07 (Soil)**

**Total Metals by 6020B**

Lead	7.31	0.031	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021	
Nickel	9.36	0.0633	0.25	"	"	"	"	"	
Selenium	0.306	0.103	0.25	"	"	"	"	"	
Silver	0.0243	0.0067	0.25	"	"	"	"	"	J
Zinc	31.7	0.534	2.5	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	0.249	0.512	mg/Kg	1	L575959	09/22/2021	09/27/2021	
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Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## Native-BG04@5'

9/22/2021 3:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc.

Y109468-08 (Soil)

### Boron (DTPA Sorbitol)

Boron	0.897	0.199	mg/L	1	B1I2226	09/22/2021	09/23/2021
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### Metals by Saturated Paste

Calcium	13.0	0.499	meq/L	10	[CALC]	09/22/2021	09/23/2021
Magnesium	12.4	0.823	"	"	"	"	"
Sodium	3.78	0.435	"	"	"	"	"

### pH in Soil by 9045D

pH	7.69	pH Units	1	B1I2232	09/22/2021	09/24/2021
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### SAR by 20B Saturated Paste

SAR	1.06	SAR	1	B1I2225	09/22/2021	09/23/2021
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.35	0.00500	mmhos/cm	1	B1I2233	09/22/2021	09/24/2021
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### Total Metals by 6020B

Arsenic	3.21	0.0855	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
Barium	75.8	0.042	0.25	"	"	"	"	"
Cadmium	0.142	0.0259	0.25	"	"	"	"	"
Copper	6.1	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**Native-BG04@5'**

**9/22/2021 3:45:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Waypoint Analytical, LLC.**

**Y109468-08 (Soil)**

**Total Metals by 6020B**

Lead	7.58	0.031	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021	
Nickel	9.84	0.0633	0.25	"	"	"	"	"	
Selenium	0.328	0.103	0.25	"	"	"	"	"	
Silver	0.0232	0.0067	0.25	"	"	"	"	"	J
Zinc	33.2	0.534	2.5	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	0.249	0.512	mg/Kg	1	L575959	09/22/2021	09/27/2021	
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Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

## Native-BG05@5'

9/22/2021 3:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc.

Y109468-09 (Soil)

### Boron (DTPA Sorbitol)

Boron	1.24	0.200	mg/L	1	B112226	09/22/2021	09/23/2021
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### Metals by Saturated Paste

Calcium	6.79	0.499	meq/L	10	[CALC]	09/22/2021	09/23/2021
Magnesium	6.82	0.823	"	"	"	"	"
Sodium	2.33	0.435	"	"	"	"	"

### pH in Soil by 9045D

pH	7.89		pH Units	1	B112232	09/22/2021	09/24/2021
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### SAR by 20B Saturated Paste

SAR	0.894		SAR	1	B112225	09/22/2021	09/23/2021
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### Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.46	0.00500	mmhos/cm	1	B112233	09/22/2021	09/24/2021
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### Total Metals by 6020B

Arsenic	4.55	0.0855	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021
Barium	161	0.042	0.25	"	"	"	"	"
Cadmium	0.211	0.0259	0.25	"	"	"	"	"
Copper	13.5	0.0806	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

**Native-BG05@5'**

**9/22/2021 3:50:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Waypoint Analytical, LLC.**

**Y109468-09 (Soil)**

**Total Metals by 6020B**

Lead	12.7	0.031	0.25	mg/Kg	5	L575874	09/24/2021	09/28/2021	
Nickel	16.1	0.0633	0.25	"	"	"	"	"	
Selenium	0.491	0.103	0.25	"	"	"	"	"	
Silver	0.0689	0.0067	0.25	"	"	"	"	"	J
Zinc	55.7	0.534	2.5	"	"	"	"	"	

**Total Metals by 7196A**

Chromium, Hexavalent	ND	1.22	2.5	mg/Kg	5	L575959	09/22/2021	09/27/2021	
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Origins Laboratory, Inc.



*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B1I2232 - NO PREP</b>										
<b>Duplicate (B1I2232-DUP1)</b>		<b>Source: Y109466-01</b>			Prepared: 09/22/2021 Analyzed: 09/24/2021					
pH	7.54		pH Units		7.53			0.133	25	
<b>Batch B1I2233 - NO PREP</b>										
<b>Blank (B1I2233-BLK1)</b>		Prepared: 09/22/2021 Analyzed: 09/24/2021								
Specific Conductance (EC)	0.00430	0.00500	mmhos/cm							
<b>Duplicate (B1I2233-DUP1)</b>		<b>Source: Y109466-01</b>			Prepared: 09/22/2021 Analyzed: 09/24/2021					
Specific Conductance (EC)	0.900	0.00500	mmhos/cm		0.881			2.12	25	

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WSP USA  
4600 W. 60th Ave.  
Arvada CO 80003

Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6020B - 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 L575874 - 3050B

MSD (L 91917-MSD-L575874)			Source: 91917			Prepared: 09/24/2021 Analyzed: 09/28/2021				
Selenium	4.75	0.103	mg/Kg	4.95	0.249	96	75-125	4.3	80	
Arsenic	3.29	0.0855	"	2.48	1.26	82	75-125	2.1	80	
Silver	0.51	0.0067	"	0.495	0.0283	103	75-125	0.9	80	
Nickel	5.5	0.0633	"	2.48	3.65	75	75-125	14.8	80	
Lead	7.47	0.031	"	2.48	6.45	41	75-125	3	80	*
Copper	6.12	0.0806	"	2.48	4.82	53	75-125	3	80	*
Cadmium	0.568	0.0259	"	0.495	0.101	115	75-125	5.6	80	
Barium	59.5	0.042	"	4.95	78.8	NR	75-125	31.4	80	*
Zinc	44.1	0.534	"	24.8	18.8	102	75-125	8.2	80	

MS (L 91917-MS-L575874)			Source: 91917			Prepared: 09/24/2021 Analyzed: 09/28/2021				
Zinc	40.6	0.534	mg/Kg	24.2	18.8	90	75-125			
Arsenic	3.22	0.0855	"	2.42	1.26	81	75-125			
Barium	81.7	0.042	"	4.83	78.8	60	75-125			*
Cadmium	0.537	0.0259	"	0.483	0.101	111	75-125			
Copper	6.31	0.0806	"	2.42	4.82	62	75-125			*
Lead	7.7	0.031	"	2.42	6.45	52	75-125			*
Nickel	6.38	0.0633	"	2.42	3.65	113	75-125			
Selenium	4.55	0.103	"	4.83	0.249	94	75-125			
Silver	0.505	0.0067	"	0.483	0.0283	105	75-125			

LCS (LCS-L575874)			Prepared: 09/24/2021 Analyzed: 09/28/2021							
Cadmium	0.473	0.0259	mg/Kg	0.5		95	80-120			
Copper	2.61	0.0806	"	2.5		104	80-120			
Lead	2.46	0.031	"	2.5		98	80-120			
Nickel	2.64	0.0633	"	2.5		106	80-120			
Selenium	5.52	0.103	"	5		110	80-120			

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Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## Total Metals by 6020B - 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 L575874 - 3050B

#### LCS (LCS-L575874)

Prepared: 09/24/2021 Analyzed: 09/28/2021

Silver	0.5	0.0067	mg/Kg	0.5		100	80-120			
Zinc	25.6	0.534	"	25		102	80-120			
Barium	5.09	0.042	"	5		102	80-120			
Arsenic	2.7	0.0855	"	2.5		108	80-120			

#### LRB (LRB-L575874)

Prepared: 09/24/2021 Analyzed: 09/28/2021

Barium	ND	0.25	mg/Kg				-			
Zinc	ND	2.5	"				-			
Silver	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
Nickel	ND	0.25	"				-			
Lead	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			
Arsenic	ND	0.25	"				-			
Copper	ND	0.25	"				-			

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Brian Sulzberger  
Project Number: [none]  
Project: KMG - Buddy 17-7 HZ Pad

## 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
<b>Batch L575959 -</b>										
<b>DUP (L 91907-DUP)</b>	<b>Source: Y109468-06</b>				Prepared: Analyzed: 09/27/2021					
Chromium, Hexavalent	ND	0.253	mg/Kg		91907	-		0	20	
<b>MS (L 91907-MS)</b>	<b>Source: Y109468-06</b>				Prepared: Analyzed: 09/27/2021					
Chromium, Hexavalent	5.11	0.244	mg/Kg	7.75	91907	66	75-125			*
<b>LCS (LCS)</b>					Prepared: Analyzed: 09/27/2021					
Chromium, Hexavalent	6.69	0.244	mg/Kg	8		84	75-125			
<b>LRB (LRB)</b>					Prepared: Analyzed: 09/27/2021					
Chromium, Hexavalent	ND	0.5	mg/Kg							

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WSP USA

4600 W. 60th Ave.

Arvada CO 80003

Brian Sulzberger

Project Number: [none]

Project: KMG - Buddy 17-7 HZ Pad

### Notes and Definitions

J Estimated Value. Analyte below reported quantitation limit.

\* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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