

TABLE 1
BERIG 17-35 & UP42-35 1
GROUNDWATER SAMPLE RESULTS SUMMARY TABLE
WELD COUNTY, COLORADO
KERR-McGEE OIL AND GAS ONSHORE LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- trimethylbenzene (µg/L)	1,3,5- trimethylbenzene (µg/L)	Total Dissolved Solids (ug/L)	Chloride Ion (ug/L)	Sulfate Ion (ug/L)	Depth to Water/ (Product Thickness) (ft bgs)	Relative GW Elev. (ft)
ECMC Allowable Levels		5	560	700	1400	140	67	67	1,500,000	250,000	445,000		
GW01	7/29/2021	1,480	3,070	238	4,560	20.1	358	308	901,000	185,000	193,000	2.00	NA
GW02	7/29/2021	<1.00	<1.00	11.1	<1.00	<4.00	<1.00	<1.00	660,000	114,000	161,000	2.00	NA
GW03	7/29/2021	177	<4.00	49.5	305	<16.0	97.0	68.1	826,000	219,000	125,000	2.00	NA
GW04	7/29/2021	3.32	<1.00	11.1	<1.00	4.04	<1.00	<1.00	678,000	138,000	92,300	2.00	NA
GW-BG01	7/29/2021	NA	NA	NA	NA	NA	NA	NA	1,200,000	192,000	356,000	2.00	NA
MW01	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,040,000	169,000	250,000	1.92	98.38
MW02	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	706,000	140,000	168,000	2.71	99.13
MW03	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,150,000	187,000	316,000	2.43	98.77
MW04	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,410,000	270,000	363,000	2.19	97.45
MW05	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,400,000	265,000	335,000	1.99	96.37
MW06	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,210,000	203,000	243,000	1.82	97.61
MW07	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,290,000	302,000	233,000	2.10	97.59
MW08	6/26/2023	<1.00	<1.00	<1.00	<1.00	<2.00	<2.00	<2.00	1,450,000	164,000	349,000	2.42	98.41

Notes: ECMC - Colorado Energy and Carbon Management Commission µg/L - micrograms per liter
ft bgs - feet below ground surface < - less than laboratory reporting limit
NA - not analyzed/not available Excavation groundwater depth is approximate
NM - not measured
Corrected Relative GW Elev. is used when LNAPL is present.
Inorganic parameters TDS and Sulfate based on site-specific background sample (GW-BG01 - 7/29/2021) concentration x 1.25.
BOLD = Analytical result is in exceedance of ECMC Table 915-1 groundwater standards.

TABLE 2
SURFACE WATER ANALYTICAL RESULTS
BERIG 17-35 & UP42-35 1 O SA FACILITY
WELD COUNTY, COLORADO
KERR-MCGEE OIL & GAS ONSHORE, LP

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- trimethylbenzene (µg/L)	1,3,5- trimethylbenzene (µg/L)
ECMC Allowable Levels		5	560	700	1400	140	67	67
Ditch-01	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
Ditch-02	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
Ditch-03	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
Ditch-04	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
Ditch-05	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
Ditch-06	8/12/2021	<1.00	<1.00	<1.00	<1.00	<4.00	<1.00	<1.00
SW-01	8/12/2021	<1.00	2.57	<1.00	<1.00	<4.00	<1.00	<1.00

Notes: ECMC - Colorado Energy and Carbon Management Commission

ft bgs - feet below ground surface

NA - not analyzed/not available

Excavation groundwater depth is approximate

BOLD = Analytical result is in exceedance of ECMC Table 915-1 groundwater standards.

µg/L - micrograms per liter

< - less than laboratory reporting limit



July 07, 2023

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Berig 17-35 & UP 42-35 1
OSA Facility**

Project Number - 09A1662045

Attached are your analytical results for KMG - Berig 17-35 & UP 42-35 1 OSA Facility received by Origins Laboratory, Inc. June 26, 2023. This project is associated with Origins project number Y306711-01.

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

Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA
Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	Y306711-01	Water	June 26, 2023 14:52	06/26/2023 18:20
MW02	Y306711-02	Water	June 26, 2023 15:13	06/26/2023 18:20
MW03	Y306711-03	Water	June 26, 2023 13:50	06/26/2023 18:20
MW04	Y306711-04	Water	June 26, 2023 14:04	06/26/2023 18:20
MW05	Y306711-05	Water	June 26, 2023 14:18	06/26/2023 18:20
MW06	Y306711-06	Water	June 26, 2023 14:34	06/26/2023 18:20
MW07	Y306711-07	Water	June 26, 2023 15:43	06/26/2023 18:20
MW08	Y306711-08	Water	June 26, 2023 15:27	06/26/2023 18:20

Origins Laboratory, Inc.



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11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

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4306711

Client: Ensolum

Project Manager: Jeremy Espinoza

Project Name: Berig 17-35 & UP 42-35 1 OSA Facility

Project Number: 09A1662045

Samples Collected By: JH

Telephone Number: KMG Team

Email Address: KMG Team

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #			Other
MW01	6-26-23	1452	4	X				X					1
MW02		1513	1										2
MW03		1350	1										3
MW04		1404	1										4
MW05		1418	1										5
MW06		1434	1										6
MW07		1543	1										7
MW08		1527	1										8
													9
													10
Relinquished By: J. H. 455	Date: 6-26-23	Time: 1820		Received By: [Signature]	Date: 6/26/23	Time: 1820		Received By: [Signature]	Date: 6/26/23	Time: 1820		Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard	
Relinquished By:	Date:	Time:		Received By:	Date:	Time:		Received By:	Date:	Time:			

Temp Received: 5.8 Date Results Needed

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

Origins Laboratory, Inc.

J. Bynon

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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4306711

Client: ENSOLUM

Client Project ID: Berig 17-35 & UP 42-35 1

Checklist Completed by: EHS

Shipped Via: HO OSA

Date/time completed: 6/27/23

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: N/A

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

Cooler Number/Temperature: 1 15.5 °C 1 °C 1 °C (Describe) °C

Thermometer ID: 7004

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 8°C ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	<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 (Project Manager) [Signature]

Date/Time Reviewed 6/28/23

Origins Laboratory, Inc.

[Signature]

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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW01

6/26/2023 2:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y306711-01 (Water)

Anions by IC 300.0

Chloride	169	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/28/2023	
Sulfate	250	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	92.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	115 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	87.5 %	70-130			"	"	"	

Total Dissolved Solids by 2540C

Total Dissolved Solids	1040	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW02

6/26/2023 3:13:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y306711-02 (Water)

Anions by IC 300.0

Chloride	140	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/28/2023	
Sulfate	168	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

94.7 % 70-130

"

"

"

Surrogate: Toluene-d8

114 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

89.2 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	706	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW03

6/26/2023 1:50:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y306711-03 (Water)

Anions by IC 300.0

Chloride	187	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/28/2023	
Sulfate	316	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

90.8 % 70-130

"

"

"

Surrogate: Toluene-d8

118 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

90.9 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1150	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW04

6/26/2023 2:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y306711-04 (Water)

Anions by IC 300.0

Chloride	270	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/28/2023	
Sulfate	363	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

90.9 % 70-130

"

"

"

Surrogate: Toluene-d8

112 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

92.8 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1410	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW05

6/26/2023 2:18:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y306711-05 (Water)

Anions by IC 300.0

Chloride	265	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/28/2023	
Sulfate	335	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

94.7 % 70-130

"

"

"

Surrogate: Toluene-d8

114 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

83.5 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1400	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW06

6/26/2023 2:34:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.

Y306711-06 (Water)

Anions by IC 300.0

Chloride	203	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/29/2023	
Sulfate	243	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

93.1 % 70-130

"

"

"

Surrogate: Toluene-d8

115 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

92.4 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1210	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW07

6/26/2023 3:43:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y306711-07 (Water)

Anions by IC 300.0

Chloride	302	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/29/2023	
Sulfate	233	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

95.2 % 70-130

"

"

"

Surrogate: Toluene-d8

114 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

89.3 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1290	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Origins Laboratory, Inc.



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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

MW08

6/26/2023 3:27:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y306711-08 (Water)

Anions by IC 300.0

Chloride	164	31.2	mg/L	125	B3F2809	ACC	06/28/2023	06/29/2023	
Sulfate	349	31.2	"	"	"	ACC	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B3F2833	JSM	06/28/2023	06/29/2023	U
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	JSM	"	"	U
Benzene	ND	1.00	"	"	"	JSM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	JSM	"	"	U
Naphthalene	ND	2.00	"	"	"	JSM	"	"	U
Toluene	ND	1.00	"	"	"	JSM	"	"	U
Xylenes, total	ND	1.00	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4

95.4 % 70-130

"

"

"

Surrogate: Toluene-d8

116 % 70-130

"

"

"

Surrogate: 4-Bromofluorobenzene

86.7 % 70-130

"

"

"

Total Dissolved Solids by 2540C

Total Dissolved Solids	1450	5.00	mg/L	1	B3F2831	EMILI	06/28/2023	06/29/2023	
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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA
Facility

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 B3F2833 - EPA 5030B (Water)

Blank (B3F2833-BLK1)

Prepared: 06/28/2023 Analyzed: 06/28/2023

1,2,4-Trimethylbenzene	ND	2.00	ug/L							U
1,3,5-Trimethylbenzene	ND	2.00	"							U
Benzene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Naphthalene	ND	2.00	"							U
Toluene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.7	70-130			
Surrogate: Toluene-d8	70		"	62.5		112	70-130			
Surrogate: 4-Bromofluorobenzene	55		"	62.5		88.6	70-130			

Origins Laboratory, Inc.



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Jeremy Espinoza

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Facility

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 B3F2833 - EPA 5030B (Water)

LCS (B3F2833-BS1)

Prepared: 06/28/2023 Analyzed: 06/28/2023

1,2,4-Trimethylbenzene	51.9	2.00	ug/L	50.0		104	70-130			
1,3,5-Trimethylbenzene	50.0	2.00	"	50.0		99.9	70-130			
Benzene	49.0	1.00	"	50.0		98.0	70-130			
Ethylbenzene	62.6	1.00	"	50.0		125	70-130			
m,p-Xylene	115	2.00	"	100		115	70-130			
Naphthalene	51.9	2.00	"	50.0		104	70-130			
o-Xylene	53.4	1.00	"	50.0		107	70-130			
Toluene	55.2	1.00	"	50.0		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		93.8	70-130			
Surrogate: Toluene-d8	67		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA
Facility

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 B3F2833 - EPA 5030B (Water)

Matrix Spike (B3F2833-MS1)		Source: Y306708-01			Prepared: 06/28/2023 Analyzed: 06/28/2023					
1,2,4-Trimethylbenzene	41.4	2.00	ug/L	50.0	ND	82.7	70-130			
1,3,5-Trimethylbenzene	40.8	2.00	"	50.0	ND	81.7	70-130			
Benzene	24.3	1.00	"	50.0	ND	48.6	70-130			QM-07
Ethylbenzene	48.2	1.00	"	50.0	ND	96.5	70-130			
m,p-Xylene	94.3	2.00	"	100	ND	94.3	70-130			
Naphthalene	34.9	2.00	"	50.0	ND	69.7	70-130			QM-07
o-Xylene	45.7	1.00	"	50.0	ND	91.4	70-130			
Toluene	34.7	1.00	"	50.0	ND	69.4	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.6	70-130			
Surrogate: Toluene-d8	71		"	62.5		114	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		111	70-130			

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Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

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 B3F2833 - EPA 5030B (Water)

Matrix Spike Dup (B3F2833-MSD1)		Source: Y306708-01			Prepared: 06/28/2023 Analyzed: 06/28/2023					
1,2,4-Trimethylbenzene	52.4	2.00	ug/L	50.0	ND	105	70-130	23.5	20	QR-02
1,3,5-Trimethylbenzene	51.5	2.00	"	50.0	ND	103	70-130	23.0	20	QR-02
Benzene	39.6	1.00	"	50.0	ND	79.1	70-130	47.8	20	QR-03
Ethylbenzene	57.8	1.00	"	50.0	ND	116	70-130	17.9	20	
m,p-Xylene	113	2.00	"	100	ND	113	70-130	17.9	20	
Naphthalene	52.5	2.00	"	50.0	ND	105	70-130	40.5	20	QR-03
o-Xylene	58.3	1.00	"	50.0	ND	117	70-130	24.1	20	QR-02
Toluene	50.2	1.00	"	50.0	ND	100	70-130	36.6	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.3	70-130			
Surrogate: Toluene-d8	66		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.6	70-130			

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Ensolum
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Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1662045
Project: KMG - Berig 17-35 & UP 42-35 1 OSA Facility

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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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 B3F2809 - Filter .45um non acidified

Blank (B3F2809-BLK1)

Prepared: 06/28/2023 Analyzed: 06/28/2023

Chloride	ND	0.250	mg/L							U
Sulfate	ND	0.250	"							U

LCS (B3F2809-BS1)

Prepared: 06/28/2023 Analyzed: 06/28/2023

Chloride	4.21	0.250	mg/L	4.00		105	90-110			
Sulfate	4.14	0.250	"	4.00		104	90-110			

Matrix Spike (B3F2809-MS1)

Source: Y306711-02

Prepared: 06/28/2023 Analyzed: 06/28/2023

Chloride	675		mg/L	500	140	107	90-110			
Sulfate	685		"	500	168	103	90-110			

Matrix Spike Dup (B3F2809-MSD1)

Source: Y306711-02

Prepared: 06/28/2023 Analyzed: 06/28/2023

Chloride	684		mg/L	500	140	109	90-110	1.26	5	
Sulfate	694		"	500	168	105	90-110	1.31	5	

Batch B3F2831 - NO PREP

Blank (B3F2831-BLK1)

Prepared: 06/28/2023 Analyzed: 06/29/2023

Total Dissolved Solids	ND	5.00	mg/L							
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LCS (B3F2831-BS1)

Prepared: 06/28/2023 Analyzed: 06/29/2023

Total Dissolved Solids	993	5.00	mg/L	1000		99.3	90-110			
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Duplicate (B3F2831-DUP1)

Source: Y306661-01

Prepared: 06/28/2023 Analyzed: 06/29/2023

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Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1662045

Project: KMG - Berig 17-35 & UP 42-35 1 OSA
Facility

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 B3F2831 - NO PREP

Total Dissolved Solids	1210	5.00	mg/L		1180			2.34	10	
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Facility

Notes and Definitions

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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