

February 25, 2021

Olsson Associates

Trent Watne

1525 Raleigh St, Suite 400

Denver CO 80204

Project Name - Schneider 179hnx Flowline

Project Number - [none]

Attached are your analytical results for Schneider 179hnx Flowline received by Origins Laboratory, Inc. February 17, 2021. This project is associated with Origins project number Y102317-01.

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



Olsson Associates
1525 Raleigh St, Suite 400
Denver CO 80204

Trent Watne
Project Number: [none]
Project: Schneider 179hnx Flowline

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Schneider-16	Y102317-01	Soil	February 17, 2021 11:00	02/17/2021 16:33

Origins Laboratory, Inc.



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Olsson Associates
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 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Schneider 179hnx Flowline

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y102317

Client: Olsson
 Client Project ID: Schneider 179hnx Flowline

Checklist Completed by: jm

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

Date/Time completed: 2-18-21

Airbill #: 172A

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

Cooler Number/Temperature: 1, 2, 4c / _____ °C / _____ °C (Describe) _____ °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 ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			<u>same day</u>
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			<input checked="" type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) jm

Date/Time Reviewed 2-19-21

Origins Laboratory, Inc.



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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Schneider 179hnx Flowline

Schneider-16
2/17/2021 11:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y102317-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	87.4	50.0	mg/kg	1	B1B1812	KDK	02/18/2021	02/18/2021	
Residual Range Organics (C28-C40)	ND	200	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl	71.3 %	50-150			"	"	"	"	
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GBTEX+TMBs

1,2,4-Trimethylbenzene	0.0104	0.00200	mg/kg	1	B1B1811	TEM	"	02/19/2021	
1,3,5-Trimethylbenzene	0.100	0.00200	"	"	"	TEM	"	"	
Benzene	ND	0.00200	"	"	"	TEM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	TEM	"	"	U
Toluene	ND	0.00200	"	"	"	TEM	"	"	U
Gasoline Range Hydrocarbons	10.1	0.200	"	"	"	TEM	"	"	
Xylenes, total	0.0629	0.00200	"	"	"	TEM	"	"	

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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Olsson Associates
 1525 Raleigh St, Suite 400
 Denver CO 80204

Trent Watne
 Project Number: [none]
 Project: Schneider 179hnx Flowline

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 B1B1811 - EPA 5030 (soil)

Blank (B1B1811-BLK1)

Prepared: 02/18/2021 Analyzed: 02/18/2021

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
Naphthalene	ND	0.0100	"							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
m,p-Xylene	ND	0.00400	"							U
o-Xylene	ND	0.00200	"							U
Toluene	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125	110		70-130			
Surrogate: Toluene-d8	0.11		"	0.125	91.8		70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125	91.3		70-130			

Origins Laboratory, Inc.



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Trent Watne
 Project Number: [none]
 Project: Schneider 179hnx Flowline

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 B1B1811 - EPA 5030 (soil)

LCS (B1B1811-BS1)

Prepared: 02/18/2021 Analyzed: 02/18/2021

1,2,4-Trimethylbenzene	0.0424	0.00200	mg/kg	0.0500		84.8	70-130			
Naphthalene	0.0427	0.0100	"	0.0500		85.5	70-130			
1,3,5-Trimethylbenzene	0.0416	0.00200	"	0.0500		83.2	70-130			
Benzene	0.0518	0.00200	"	0.0500		104	70-130			
Ethylbenzene	0.0411	0.00200	"	0.0500		82.3	70-130			
m,p-Xylene	0.0857	0.00400	"	0.100		85.7	70-130			
o-Xylene	0.0408	0.00200	"	0.0500		81.6	70-130			
Toluene	0.0462	0.00200	"	0.0500		92.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		113	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.11		"	0.125		91.5	70-130			

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 Project: Schneider 179hnx Flowline

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 B1B1811 - EPA 5030 (soil)

Matrix Spike (B1B1811-MS1)	Source: Y102325-01			Prepared: 02/18/2021 Analyzed: 02/18/2021						
1,2,4-Trimethylbenzene	0.0356	0.00200	mg/kg	0.0500	ND	71.2	70-130			
Naphthalene	0.0352	0.0100	"	0.0500	ND	70.4	70-130			
1,3,5-Trimethylbenzene	0.0353	0.00200	"	0.0500	ND	70.7	70-130			
Benzene	0.0462	0.00200	"	0.0500	ND	92.3	70-130			
Ethylbenzene	0.0354	0.00200	"	0.0500	ND	70.8	70-130			
m,p-Xylene	0.0726	0.00400	"	0.100	ND	72.6	70-130			
o-Xylene	0.0348	0.00200	"	0.0500	ND	69.6	70-130			QM-07
Toluene	0.0393	0.00200	"	0.0500	ND	78.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		116	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		90.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.3	70-130			

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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 B1B1811 - EPA 5030 (soil)

Matrix Spike Dup (B1B1811-MSD1)	Source: Y102325-01			Prepared: 02/18/2021 Analyzed: 02/18/2021						
1,2,4-Trimethylbenzene	0.0361	0.00200	mg/kg	0.0500	ND	72.2	70-130	1.51	20	
Naphthalene	0.0391	0.0100	"	0.0500	ND	78.2	70-130	10.5	20	
1,3,5-Trimethylbenzene	0.0361	0.00200	"	0.0500	ND	72.1	70-130	2.02	20	
Benzene	0.0480	0.00200	"	0.0500	ND	95.9	70-130	3.82	20	
Ethylbenzene	0.0360	0.00200	"	0.0500	ND	72.1	70-130	1.74	20	
m,p-Xylene	0.0743	0.00400	"	0.100	ND	74.3	70-130	2.34	20	
o-Xylene	0.0356	0.00200	"	0.0500	ND	71.2	70-130	2.33	20	
Toluene	0.0403	0.00200	"	0.0500	ND	80.5	70-130	2.52	20	
Surrogate: 1,2-Dichloroethane-d4	0.15		"	0.125		117	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		89.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		92.7	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B1B1812 - EPA 3550B										
Blank (B1B1812-BLK1)										
					Prepared: 02/18/2021 Analyzed: 02/18/2021					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	30		"	50.0		60.1	50-150			

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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 B1B1812 - EPA 3550B

LCS (B1B1812-BS1)

Prepared: 02/18/2021 Analyzed: 02/18/2021

Diesel (C10-C28)	1060	50.0	mg/kg	1000		106	70-130			
Residual Range Organics (C28-C40)	1080	200	"	1000		108	70-130			
Surrogate: o-Terphenyl	46		"	50.0		91.4	50-150			

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Trent Watne
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 Project: Schneider 179hnx Flowline

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 B1B1812 - EPA 3550B

Matrix Spike (B1B1812-MS1)	Source: Y102325-01			Prepared: 02/18/2021 Analyzed: 02/18/2021						
Diesel (C10-C28)	896	50.0	mg/kg	1000	ND	89.6	70-130			
Residual Range Organics (C28-C40)	924	200	"	1000	ND	92.4	70-130			
Surrogate: o-Terphenyl	34		"	50.0		68.6	50-150			

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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 B1B1812 - EPA 3550B

Matrix Spike Dup (B1B1812-MSD1)	Source: Y102325-01			Prepared: 02/18/2021 Analyzed: 02/18/2021						
Diesel (C10-C28)	899	50.0	mg/kg	1000	ND	89.9	70-130	0.289	35	
Residual Range Organics (C28-C40)	924	200	"	1000	ND	92.4	70-130	0.0119	35	
Surrogate: o-Terphenyl	36		"	50.0		72.4	50-150			

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Project: Schneider 179hnx Flowline

Notes and Definitions

U Sample is Non-Detect.

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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