Columbia LABORATORIES
A Tentamus Company

12423 NE Whitaker Way
Portland, OR 97230
503-254-1794

Report Number:	23-008002/D005.R000
Report Date:	07/14/2023
ORELAP#:	OR100028
Purchase Order:	
Received:	07/07/23 12:29

Customer:	Brothers Apothecary
Product identity:	D8- Goodnight Oil
Project Number:	COL-BR-13
Client/Metrc ID:	.
Laboratory ID:	23-008002-0008

Summary

Potency:

Analyte	Result	Limits	Units	Status
CBD	0.815		%	
CBG	0.825		%	
CBN	0.757		%	
Δ8-THC	1.56		%	

Analyte per 30ml	Result	Limits	Units	Status
CBD per 30ml	245		mg/30ml	
CBG per 30ml	248		mg/30ml	
CBN per 30ml	227		mg/30ml	
Δ8-THC per 30ml	468		mg/30ml	

CBD-Total per Serving Size	245 mg/30ml
THC-Total per Serving Size	<LOQ

(Reported in milligrams per serving)

Residual Solvents:

All analytes passing and less than LOQ.

Metals:

Less than LOQ for all analytes.

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Purchase Order:
Received: 07/07/23 12:29

Customer: Brothers Apothecary
3423 SE18th Ave
Portland OR, 97202
United States of America (USA)

Product identity: D8- Goodnight Oil
Project Number: COL-BR-13
Client/Metrc ID: .
Sample Date:
Laboratory ID: 23-008002-0008
Evidence of Cooling: No
Temp: 22.8
Relinquished by: client
Serving Size #1: 30 g
Density: 1.000 g/ml

Sample Results

Potency **Method:** J AOAC 2015 V98-6 (mod)[b] **Units** % **Batch:** 2308987 **Analyze:** 7/12/23 1:50:00 AM

Analyte	Result	Limits	Units	LOQ	Notes
CBD	0.815		%	0.00323	
CBD-A	< LOQ		%	0.00323	
CBD-Total	0.815		%	0.00607	
CBG	0.825		%	0.00323	
CBG-A	< LOQ		%	0.00323	
CBG-Total	0.825		%	0.00604	
CBN	0.757		%	0.00323	
Δ10-THC-9R	< LOQ		%	0.00323	
Δ10-THC-9S	< LOQ		%	0.00323	
Δ10-THC-Total	< LOQ		%	0.00647	
Δ8-THC	1.56		%	0.0323	
Δ9-THC	< LOQ		%	0.00323	
THC-A	< LOQ		%	0.00323	
THC-Total	< LOQ		%	0.00607	
Total Cannabinoids	**3.96**		%		

Potency per 30ml **Method:** J AOAC 2015 V98-6 (mod)[b] **Units** mg/se **Batch:** 2308987 **Analyze:** 7/12/23 1:50:00 AM

Analyte	Result	Limits	Units	LOQ	Notes
CBD per 30ml	245		mg/30ml	0.970	
CBD-A per 30ml	< LOQ		mg/30ml	0.970	
CBD-Total per 30ml	245		mg/30ml	1.82	
CBG per 30ml	248		mg/30ml	0.970	
CBG-A per 30ml	< LOQ		mg/30ml	0.970	
CBG-Total per 30ml	248		mg/30ml	1.81	
CBN per 30ml	227		mg/30ml	0.970	
Δ10-THC-9R per 30ml	< LOQ		mg/30ml	0.970	
Δ10-THC-9S per 30ml	< LOQ		mg/30ml	0.970	
Δ10-THC-Total per 30ml	< LOQ		mg/30ml	1.94	

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Potency per 30ml **Method:** J AOAC 2015 V98-6 (mod)[þ] **Units** mg/se **Batch:** 2308987 **Analyze:** 7/12/23 1:50:00 AM

Analyte	Result	Limits	Units	LOQ	Notes
Δ8-THC per 30ml	468		mg/30ml	9.70	
Δ9-THC per 30ml	< LOQ		mg/30ml	0.970	
THC-A per 30ml	< LOQ		mg/30ml	0.970	
THC-Total per 30ml	< LOQ		mg/30ml	1.82	

Solvents **Method:** Residual Solvents by GC/MS[þ] **Units** µg/g **Batch** 2308992 **Analyze** 07/12/23 02:12 PM

Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
1-Butanol	< LOQ		500			1-Pentanol	< LOQ		500		
1,1-Dichloroethane	< LOQ		1.00			1,2-Dichloroethane	< LOQ		1.00		
1,2-Dimethoxyethane	< LOQ		50.0			1,4-Dioxane	< LOQ		100		
2-Butanol	< LOQ		200			2-Ethoxyethanol	< LOQ		30.0		
2-methyl-1-propanol	< LOQ		500			2-Methylbutane (Isopentane)	< LOQ		200		
2-Methylpentane	< LOQ		30.0			2-Propanol (IPA)	< LOQ		200		
2,2-Dimethylbutane	< LOQ		30.0			2,2-Dimethylpropane (neo-pentane)	< LOQ		200		
2,3-Dimethylbutane	< LOQ		30.0			3-Methyl-(1)-Butanol	< LOQ		500		
3-Methylpentane	< LOQ		30.0			Acetic Acid	< LOQ		250		
Acetone	< LOQ		200			Acetonitrile	< LOQ		100		
Anisole	< LOQ		500			Benzene	< LOQ		1.00		
Butanes (sum)	< LOQ		400			Butyl acetate	< LOQ		500		
Chloroform	< LOQ		1.00			Cyclohexane	< LOQ		200		
DMSO	< LOQ		500			Ethanol	< LOQ		200		
Ethyl acetate	< LOQ		200			Ethyl benzene	< LOQ		200		
Ethyl ether	< LOQ		200			Ethyl Formate	< LOQ		500		
Ethylene glycol	< LOQ		200			Ethylene oxide	< LOQ		1.00		
Formic Acid	< LOQ		250			Hexanes (sum)	< LOQ		150		
Isobutyl acetate	< LOQ		500			Isopropyl acetate	< LOQ		200		
Isopropylbenzene (Cumene)	< LOQ		30.0			m,p-Xylene	< LOQ		200		
Methanol	< LOQ		200			Methyl-t-butyl ether	< LOQ		500		
Methylacetate	< LOQ		500			Methylene chloride	< LOQ		1.00		
Methylethylketone	< LOQ		500			Methylisobutylketone	< LOQ		500		
Methylpropane (Isobutane)	< LOQ		200			n-Butane	< LOQ		200		
n-Heptane	< LOQ		200			n-Hexane	< LOQ		30.0		
n-Pentane	< LOQ		200			n-Propanol	< LOQ		500		
N,N-dimethylacetamide	< LOQ		200			N,N-dimethylformamide	< LOQ		200		
o-Xylene	< LOQ		200			Pentanes (sum)	< LOQ		600		
Propane	< LOQ		200			Propyl Acetate	< LOQ		500		
Pyridine	< LOQ		50.0			Sulfolane	< LOQ		50.0		
Tetrahydrofuran	< LOQ		100			Toluene	< LOQ		100		
Total Residual Solvents	< LOQ		5,000			Total Xylenes	< LOQ		400		
Total Xylenes and Ethyl benzene	< LOQ		600			Trichloroethylene	< LOQ		1.00		
Triethylamine	< LOQ		500								

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Metals

Analyte	Result	Limits	Units	LOQ	Batch	Analyzed	Method	Status	Notes
Arsenic¥	< LOQ		mg/kg	0.0933	2309029	07/12/23	AOAC 2013.06 (mod.)þ		
Cadmium¥	< LOQ		mg/kg	0.0933	2309029	07/12/23	AOAC 2013.06 (mod.)þ		
Lead¥	< LOQ		mg/kg	0.0933	2309029	07/12/23	AOAC 2013.06 (mod.)þ		
Mercury¥	< LOQ		mg/kg	0.0467	2309029	07/12/23	AOAC 2013.06 (mod.)þ		

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Abbreviations

Limits: Action Levels per OAR-333-007-0400, OAR-333-007-0210, OAR-333-007-0220, CCR title 16-division 42. BCC-section 5723

Limit(s) of Quantitation (LOQ): The minimum levels, concentrations, or quantities of a target variable (e.g., target analyte) that can be reported with a specified degree of confidence.

þ = ISO/IEC 17025:2017 accredited method.
¥ = TNI accredited analyte.

Units of Measure

g = g
g/ml = Gram per milliliter
µg/g = Microgram per gram
mg/kg = Milligram per kilogram = parts per million (ppm)
mg/30ml = Milligram per 30ml
% = Percentage of sample
% wt = µg/g divided by 10,000

Approved Signatory

Derrick Tanner
General Manager

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Revision: 4 Document ID: 7148
Legacy ID: Worksheet Validated 04/20/2021

Laboratory Quality Control Results

J AOAC 2015 V98-6 **Batch ID: 2308987**

Laboratory Control Sample

Analyte	LCS	Result	Spike	Units	% Rec	Limits	Evaluation	Notes
CBDVA	2	0.0302	0.0316	%	95.7	80.0 - 120	Acceptable	
CBDV	2	0.0306	0.0315	%	97.2	80.0 - 120	Acceptable	
CBE	2	0.0333	0.0348	%	95.7	80.0 - 120	Acceptable	
CBDA	1	0.0323	0.0325	%	99.5	90.0 - 110	Acceptable	
CBGA	1	0.0322	0.0326	%	98.8	80.0 - 120	Acceptable	
CBG	1	0.0329	0.0332	%	99.0	80.0 - 120	Acceptable	
CBD	1	0.0337	0.0337	%	100.0	90.0 - 110	Acceptable	
THCV	2	0.0242	0.0236	%	103	80.0 - 120	Acceptable	
d8THCV	2	0.0283	0.0279	%	102	80.0 - 120	Acceptable	
THCVA	2	0.0308	0.0308	%	100.0	80.0 - 120	Acceptable	
CBN	1	0.0332	0.0340	%	97.8	80.0 - 120	Acceptable	
exo-THC	2	0.0279	0.0283	%	98.4	80.0 - 120	Acceptable	
d9THC	1	0.0330	0.0329	%	100	90.0 - 110	Acceptable	
d8THC	1	0.0315	0.0320	%	98.6	90.0 - 110	Acceptable	
9S-d10THC	1	0.0342	0.0343	%	99.7	80.0 - 120	Acceptable	
CBL	2	0.0323	0.0311	%	104	80.0 - 120	Acceptable	
9R-d10THC	1	0.0308	0.0313	%	98.6	80.0 - 120	Acceptable	
CBC	2	0.0296	0.0293	%	101	80.0 - 120	Acceptable	
THCA	1	0.0318	0.0322	%	98.6	90.0 - 110	Acceptable	
CBCA	2	0.0329	0.0320	%	103	80.0 - 120	Acceptable	
CBLA	2	0.0309	0.0302	%	102	80.0 - 120	Acceptable	
d9THCP	2	0.0328	0.0326	%	101	80.0 - 120	Acceptable	
CBT	2	0.0333	0.0326	%	102	80.0 - 120	Acceptable	

Method Blank

Analyte	Result	LOQ	Units	Limits	Evaluation	Notes
CBDVA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBDV	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBE	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBDA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBGA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBG	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBD	<LOQ	0.00317	%	< 0.00317	Acceptable	
THCV	<LOQ	0.00317	%	< 0.00317	Acceptable	
d8THCV	<LOQ	0.00317	%	< 0.00317	Acceptable	
THCVA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBN	<LOQ	0.00317	%	< 0.00317	Acceptable	
exo-THC	<LOQ	0.00317	%	< 0.00317	Acceptable	
d9THC	<LOQ	0.00317	%	< 0.00317	Acceptable	
d8THC	<LOQ	0.00317	%	< 0.00317	Acceptable	
9S-d10THC	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBL	<LOQ	0.00317	%	< 0.00317	Acceptable	
9R-d10THC	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBC	<LOQ	0.00317	%	< 0.00317	Acceptable	
THCA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBCA	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBLA	<LOQ	0.00317	%	< 0.00317	Acceptable	
d9THCP	<LOQ	0.00317	%	< 0.00317	Acceptable	
CBT	<LOQ	0.00317	%	< 0.00317	Acceptable	

Abbreviations

ND - None Detected at or above MRL
RPD - Relative Percent Difference
LOQ - Limit of Quantitation

Units of Measure:

% - Percent

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Revision: 4 Document ID: 7148
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Laboratory Quality Control Results

J AOAC 2015 V98-6 **Batch ID: 2308987**

Sample Duplicate Sample ID: **23-003447-0006**

Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Evaluation	Notes
CBDVA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBDV	0.00456	0.00460	0.00321	%	0.884	< 20	Acceptable	
CBE	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBDA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBGA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBG	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBD	1.44	1.44	0.00321	%	0.148	< 20	Acceptable	
THCV	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
d8THCV	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
THCVA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBN	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
exo-THC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
d9THC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
d8THC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
9S-d10THC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBL	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
9R-d10THC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBC	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
THCA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBCA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBLA	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
d9THCP	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	
CBT	<LOQ	<LOQ	0.00321	%	NA	< 20	Acceptable	

Abbreviations

ND - None Detected at or above MRL
RPD - Relative Percent Difference
LOQ - Limit of Quantitation

Units of Measure:

% - Percent

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Revision: 2 Document ID: 7087
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Laboratory Quality Control Results

Residual Solvents **Batch ID:** 2308992

Method Blank					Laboratory Control Sample							
Analyte	**Result**		**LOQ**	**Notes**	**Result**	**Spike**	**Units**	**% Rec**	**Limits**			**Notes**
Propane	ND	<	200		632	584	µg/g	108.2	60	-	120	
Isobutane	ND	<	200		833	767	µg/g	108.6	60	-	120	
Butane	ND	<	200		831	782	µg/g	106.3	60	-	120	
2,2-Dimethylpropane	ND	<	200		1020	939	µg/g	108.6	60	-	120	
Methanol	ND	<	200		1850	1640	µg/g	112.8	60	-	120	
Ethylene Oxide	ND	<	30		73.5	57.1	µg/g	128.7	60	-	120	Q1
2-Methylbutane	ND	<	200		1670	1600	µg/g	104.4	60	-	120	
Pentane	ND	<	200		1700	1620	µg/g	104.9	60	-	120	
Ethanol	ND	<	200		1920	1610	µg/g	119.3	70	-	130	
Ethyl Ether	ND	<	200		1730	1610	µg/g	107.5	60	-	120	
2,2-Dimethylbutane	ND	<	30		177	168	µg/g	105.4	60	-	120	
Acetone	ND	<	200		1750	1620	µg/g	108.0	60	-	120	
2-Propanol	ND	<	200		1970	1600	µg/g	123.1	60	-	120	Q1
Ethyl Formate	ND	<	500		1610	1600	µg/g	100.6	70	-	130	
Acetonitrile	ND	<	100		516	484	µg/g	106.6	60	-	120	
Methyl Acetate	ND	<	500		1630	1610	µg/g	101.2	70	-	130	
2,3-Dimethylbutane	ND	<	30		177	162	µg/g	109.3	60	-	120	
Dichloromethane	ND	<	60		523	483	µg/g	108.3	60	-	120	
2-Methylpentane	ND	<	30		181	174	µg/g	104.0	60	-	120	
MTBE	ND	<	500		1610	1610	µg/g	100.0	70	-	130	
3-Methylpentane	ND	<	30		188	168	µg/g	111.9	60	-	120	
Hexane	ND	<	30		171	168	µg/g	101.8	60	-	120	
1-Propanol	ND	<	500		1790	1600	µg/g	111.9	70	-	130	
Methylethylketone	ND	<	500		1640	1620	µg/g	101.2	70	-	130	
Ethyl acetate	ND	<	200		1770	1600	µg/g	110.6	60	-	120	
2-Butanol	ND	<	200		2010	1600	µg/g	125.6	60	-	120	Q1
Tetrahydrofuran	ND	<	100		540	514	µg/g	105.1	60	-	120	
Cyclohexane	ND	<	200		1670	1600	µg/g	104.4	60	-	120	
2-methyl-1-propanol	ND	<	500		1880	1610	µg/g	116.8	70	-	130	
Benzene	ND	<	1		4.41	5.12	µg/g	86.1	60	-	120	
Isopropyl Acetate	ND	<	200		1790	1620	µg/g	110.5	60	-	120	
Heptane	ND	<	200		1700	1610	µg/g	105.6	60	-	120	
1-Butanol	ND	<	500		1870	1600	µg/g	116.9	70	-	130	
Propyl Acetate	ND	<	500		1640	1600	µg/g	102.5	70	-	130	
1,4-Dioxane	ND	<	100		509	493	µg/g	103.2	60	-	120	
2-Ethoxyethanol	ND	<	30		216	163	µg/g	132.5	60	-	120	Q1
Methylisobutylketone	ND	<	500		1680	1600	µg/g	105.0	70	-	130	
3-Methyl-1-butanol	ND	<	500		1830	1610	µg/g	113.7	70	-	130	
Ethylene Glycol	ND	<	200		473	483	µg/g	97.9	60	-	120	
Toluene	ND	<	100		508	493	µg/g	103.0	60	-	120	
Isobutyl Acetate	ND	<	500		1640	1600	µg/g	102.5	70	-	130	
1-Pentanol	ND	<	500		1970	1600	µg/g	123.1	70	-	130	
Butyl Acetate	ND	<	500		1640	1600	µg/g	102.5	70	-	130	
Ethylbenzene	ND	<	200		994	969	µg/g	102.6	60	-	120	
m,p-Xylene	ND	<	200		931	968	µg/g	96.2	60	-	120	
o-Xylene	ND	<	200		989	976	µg/g	101.3	60	-	120	
Cumene	ND	<	30		169	162	µg/g	104.3	60	-	120	
Anisole	ND	<	500		1550	1610	µg/g	96.3	70	-	130	
DMSO	ND	<	500		1450	1610	µg/g	90.1	70	-	130	
1,2-dimethoxyethane	ND	<	50		160	164	µg/g	97.6	70	-	130	
Triethylamine	ND	<	500		1470	1600	µg/g	91.9	70	-	130	
N,N-dimethylformamide	ND	<	150		513	484	µg/g	106.0	70	-	130	
N,N-dimethylacetamide	ND	<	150		478	489	µg/g	97.8	70	-	130	
Pyridine	ND	<	50		149	172	µg/g	86.6	70	-	130	
Sulfolane	ND	<	50		127	163	µg/g	77.9	70	-	130	
1,2-Dichloroethane	ND	<	1		1.07	1	µg/g	107.0	70	-	130	
Chloroform	ND	<	1		1.12	1	µg/g	112.0	70	-	130	
Trichloroethylene	ND	<	1		1.07	1	µg/g	107.0	70	-	130	
1,1-Dichloroethane	ND	<	1		1.03	1	µg/g	103.0	70	-	130	

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Revision: 2 Document ID: 7087
Legacy ID: CFL-E33Effective:

QC - Sample Duplicate **Sample ID: 23-007460-0001**

Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Accept/Fail	Notes
Propane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Isobutane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Butane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2,2-Dimethylpropane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Methanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethylene Oxide	ND	ND	30	µg/g	0.0	< 20	Acceptable	
2-Methylbutane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Pentane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethyl Ether	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2,2-Dimethylbutane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Acetone	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-Propanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Ethyl Formate	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Acetonitrile	ND	ND	100	µg/g	0.0	< 20	Acceptable	
Methyl Acetate	ND	ND	500	µg/g	0.0	< 20	Acceptable	
2,3-Dimethylbutane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Dichloromethane	ND	ND	60	µg/g	0.0	< 20	Acceptable	
2-Methylpentane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
MTBE	ND	ND	500	µg/g	0.0	< 20	Acceptable	
3-Methylpentane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Hexane	ND	ND	30	µg/g	0.0	< 20	Acceptable	
1-Propanol	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Methylethylketone	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Ethyl acetate	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-Butanol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Tetrahydrofuran	ND	ND	100	µg/g	0.0	< 20	Acceptable	
Cyclohexane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
2-methyl-1-propanol	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Benzene	ND	ND	1	µg/g	0.0	< 20	Acceptable	
Isopropyl Acetate	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Heptane	ND	ND	200	µg/g	0.0	< 20	Acceptable	
1-Butanol	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Propyl Acetate	ND	ND	500	µg/g	0.0	< 20	Acceptable	
1,4-Dioxane	ND	ND	100	µg/g	0.0	< 20	Acceptable	
2-Ethoxyethanol	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Methylisobutylketone	ND	ND	500	µg/g	0.0	< 20	Acceptable	
3-Methyl-1-butanol	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Ethylene Glycol	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Toluene	ND	ND	100	µg/g	0.0	< 20	Acceptable	
Isobutyl Acetate	ND	ND	500	µg/g	0.0	< 20	Acceptable	
1-Pentanol	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Butyl Acetate	ND	ND	500	µg/g	0.0	< 20	Acceptable	
Ethylbenzene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
m,p-Xylene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
o-Xylene	ND	ND	200	µg/g	0.0	< 20	Acceptable	
Cumene	ND	ND	30	µg/g	0.0	< 20	Acceptable	
Anisole	ND	ND	500	µg/g	0.0	< 20	Acceptable	
DMSO	ND	ND	500	µg/g	0.0	< 20	Acceptable	
1,2-dimethoxyethane	ND	ND	50	µg/g	0.0	< 20	Acceptable	
Triethylamine	ND	ND	500	µg/g	0.0	< 20	Acceptable	
N,N-dimethylformamide	ND	ND	150	µg/g	0.0	< 20	Acceptable	
N,N-dimethylacetamide	ND	ND	150	µg/g	0.0	< 20	Acceptable	
Pyridine	ND	ND	50	µg/g	0.0	< 20	Acceptable	
Sulfolane	ND	ND	50	µg/g	0.0	< 20	Acceptable	
1,2-Dichloroethane	ND	ND	1	µg/g	0.0	< 20	Acceptable	
Chloroform	ND	ND	1	µg/g	0.0	< 20	Acceptable	
Trichloroethylene	ND	ND	1	µg/g	0.0	< 20	Acceptable	
1,1-Dichloroethane	ND	ND	1	µg/g	0.0	< 20	Acceptable	

Abbreviations

ND - None Detected at or above MRL
RPD - Relative Percent Difference
LOQ - Limit of Quantitation
Q1 - Quality control result biased high. Only non-detect samples reported.

Units of Measure:

µg/g- Microgram per gram or ppm

Columbia LABORATORIES
A Tentamus Company

12423 NE Whitaker Way
Portland, OR 97230
503-254-1794

Report Number: 23-008002/D005.R000
Report Date: 07/14/2023
ORELAP#: OR100028
Purchase Order:
Received: 07/07/23 12:29

Revision: 1 Document ID: TBA

Laboratory Quality Control Results

Organic Acids							Batch ID:	2308999			
Method Blank					Laboratory Control Sample						
Analyte	Result		LOQ	Notes	Result	Spike	Units	%Rec	Limits		Notes
Acetic Acid	<LOQ	<	250		462	522	µg/g	88.4	70	- 130	
Formic Acid	<LOQ	<	250		538	557	µg/g	96.6	70	- 130	

QC- Sample Duplicate — Sample ID: LCS

Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Accept/Fail	Notes
Acetic Acid	<LOQ	<LOQ	250	µg/g	0.0	< 20	Acceptable	
Formic Acid	<LOQ	<LOQ	250	µg/g	0.0	< 20	Acceptable	

Abbreviations

ND- None Detected at or above MRL
RPD- Relative Percent Difference
LOQ- Limit of Quantitation

Units of Measure:

µg/g- Microgram per gram or ppm

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Testing in accordance with: OAR 333-007-0410 OAR 333-007-0430

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Explanation of QC Flag Comments:

Code	Explanation
Q	Matrix interferences affecting spike or surrogate recoveries.
Q1	Quality control result biased high. Only non-detect samples reported.
Q2	Quality control outside QC limits. Data considered estimate.
Q3	Sample concentration greater than four times the amount spiked.
Q4	Non-homogenous sample matrix, affecting RPD result and/or % recoveries.
Q5	Spike results above calibration curve.
Q6	Quality control outside QC limits. Data acceptable based on remaining QC.
R	Relative percent difference (RPD) outside control limit.
R1	RPD non-calculable, as sample or duplicate results are less than five times the LOQ.
R2	Sample replicates RPD non-calculable, as only one replicate is within the analytical range.
LOQ1	Quantitation level raised due to low sample volume and/or dilution.
LOQ2	Quantitaion level raised due to matrix interference.
B	Analyte detected in method blank, but not in associated samples.
B1	The sample concentration is greater than 5 times the blank concentration.
B2	The sample concentration is less than 5 times the blank concentration.