Columbia LABORATORIES
A Tentamus Company

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

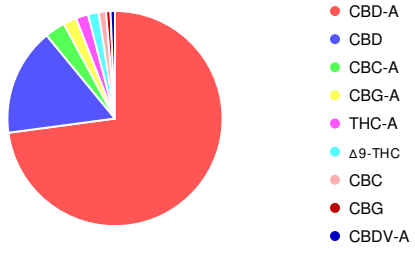
Report Number: 23-012171/D002.R000
Report Date: 10/19/2023
ORELAP#: OR100028
Purchase Order:
Received: 10/12/23 10:34

Customer: The Hemp Collect
Product identity: Raw CBD Flower- Blue Orchid
Client/Metrc ID: 7014SGEF-092623
Laboratory ID: 23-012171-0001

Summary

Potency:

Analyte	Result (%)
CBD-A	10.7
CBD	2.37
CBC-A	0.448
CBG-A	0.292
THC-A	0.271
Δ9-THC	0.233
CBC	0.163
CBG	0.0975
CBDV-A	0.0973



CBD-Total	11.8%
THC-Total	0.471%

(Reported in percent of total sample)

Residual Solvents:

All analytes passing and less than LOQ.

Pesticides:

All analytes passing and less than LOQ.

Metals:

Less than LOQ for all analytes.

Microbiology:

Less than LOQ for all analytes.

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Customer: The Hemp Collect
825 NW 16th Ave
Portland Oregon 97209
United States of America (USA)

Product identity: Raw CBD Flower- Blue Orchid
Client/Metrc ID: 7014SGEF-092623
Sample Date:
Laboratory ID: 23-012171-0001
Evidence of Cooling: No
Temp: 18.1
Relinquished by: client

THE HEMP COLLECT

Sample Results

Potency **Method:** J AOAC 2015 V98-6 (mod)[b] **Units** % **Batch:** 2311877 **Analyze:** 10/13/23 5:56:00 PM

Analyte	As Received	Dry weight	LOQ	Notes
CBC	0.163		0.0299	
CBC-A	0.448		0.0299	
CBC-Total	0.556		0.0560	
CBD	2.37		0.0299	
CBD-A	10.7		0.299	
CBD-Total	11.8		0.292	
CBDV	< LOQ		0.0299	
CBDV-A	0.0973		0.0299	
CBDV-Total	0.0843		0.0557	
CBE	< LOQ		0.0299	
CBG	0.0975		0.0299	
CBG-A	0.292		0.0299	
CBG-Total	0.354		0.0557	
CBL	< LOQ		0.0299	
CBL-A	< LOQ		0.0299	
CBL-Total	< LOQ		0.0560	
CBN	< LOQ		0.0299	
CBT	< LOQ		0.0299	
Δ10-THC-9R	< LOQ		0.0299	
Δ10-THC-9S	< LOQ		0.0299	
Δ10-THC-Total	< LOQ		0.0597	
Δ8-THC	< LOQ		0.0299	
Δ8-THCV	< LOQ		0.0299	
Δ9-THC	0.233		0.0299	
delta-9-THCP	< LOQ		0.0299	
THC-A	0.271		0.0299	
THC-Total	0.471		0.0560	
THCV	< LOQ		0.0299	
THCV-A	< LOQ		0.0299	
THCV-Total	< LOQ		0.0557	
Total Cannabinoids	14.7			

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Microbiology

Analyte	Result	Limits	Units	LOQ	Batch	Analyzed	Method	Status	Notes
Salmonella spp. by PCR¥	Negative		/g		2311808	10/14/23	AOAC 2020.02Þ		
EHEC including STEC¥	Negative		/g		2311809	10/14/23	AOAC RI 121806Þ		

Solvents

Method: Residual Solvents by GC/MSÞ **Units** µg/g **Batch** 2311951 **Analyze** 10/18/23 11:54 AM

Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
1,4-Dioxane	< LOQ	380	100	pass		2-Butanol	< LOQ	5000	200	pass	
2-Ethoxyethanol	< LOQ	160	30.0	pass		2-Methylbutane (Isopentane)	< LOQ		200		
2-Methylpentane	< LOQ		30.0			2-Propanol (IPA)	< LOQ	5000	200	pass	
2,2-Dimethylbutane	< LOQ		30.0			2,2-Dimethylpropane (neo-pentane)	< LOQ		200		
2,3-Dimethylbutane	< LOQ		30.0			3-Methylpentane	< LOQ		30.0		
Acetone	< LOQ	5000	200	pass		Acetonitrile	< LOQ	410	100	pass	
Benzene	< LOQ	2.00	1.00	pass		Butanes (sum)	< LOQ	5000	400	pass	
Cyclohexane	< LOQ	3880	200	pass		Ethyl acetate	< LOQ	5000	200	pass	
Ethyl benzene	< LOQ		200			Ethyl ether	< LOQ	5000	200	pass	
Ethylene glycol	< LOQ	620	200	pass		Ethylene oxide	< LOQ	50.0	20.0	pass	
Hexanes (sum)	< LOQ	290	150	pass		Isopropyl acetate	< LOQ	5000	200	pass	
Isopropylbenzene (Cumene)	< LOQ	70.0	30.0	pass		m,p-Xylene	< LOQ		200		
Methanol	< LOQ	3000	200	pass		Methylene chloride	< LOQ	600	60.0	pass	
Methylpropane (Isobutane)	< LOQ		200			n-Butane	< LOQ		200		
n-Heptane	< LOQ	5000	200	pass		n-Hexane	< LOQ		30.0		
n-Pentane	< LOQ		200			o-Xylene	< LOQ		200		
Pentanes (sum)	< LOQ	5000	600	pass		Propane	< LOQ	5000	200	pass	
Tetrahydrofuran	< LOQ	720	100	pass		Toluene	< LOQ	890	100	pass	
Total Xylenes	< LOQ		400			Total Xylenes and Ethyl benzene	< LOQ	2170	600	pass	

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Pesticides

Method: AOAC 2007.01 & EN 15662 (mod)þ **Units** mg/kg **Batch** 2311878 **Analyze** 10/16/23 02:17 PM

Analyte	Result	Limits	LOQ	Status	Notes	Analyte	Result	Limits	LOQ	Status	Notes
Abamectin¥	< LOQ	0.50	0.250	pass		Acephate¥	< LOQ	0.40	0.200	pass	
Acequinocyl¥	< LOQ	2.0	1.00	pass		Acetamiprid¥	< LOQ	0.20	0.100	pass	
Aldicarb¥	< LOQ	0.40	0.200	pass		Azoxystrobin¥	< LOQ	0.20	0.100	pass	
Bifenazate¥	< LOQ	0.20	0.100	pass		Bifenthrin¥	< LOQ	0.20	0.100	pass	
Boscalid¥	< LOQ	0.40	0.200	pass		Carbaryl¥	< LOQ	0.20	0.100	pass	
Carbofuran¥	< LOQ	0.20	0.100	pass		Chlorantraniliprole¥	< LOQ	0.20	0.100	pass	
Chlorfenapyr¥	< LOQ	1.0	0.500	pass		Chlorpyrifos¥	< LOQ	0.20	0.100	pass	
Clofentezine¥	< LOQ	0.20	0.100	pass		Cyfluthrin¥	< LOQ	1.0	0.500	pass	
Cypermethrin¥	< LOQ	1.0	0.500	pass		Daminozide¥	< LOQ	1.0	0.500	pass	
Diazinon¥	< LOQ	0.20	0.100	pass		Dichlorvos¥	< LOQ	1.0	0.500	pass	
Dimethoate¥	< LOQ	0.20	0.100	pass		Ethoprophos¥	< LOQ	0.20	0.100	pass	
Etofenprox¥	< LOQ	0.40	0.200	pass		Etoxazole¥	< LOQ	0.20	0.100	pass	
Fenoxycarb¥	< LOQ	0.20	0.100	pass		Fenpyroximate¥	< LOQ	0.40	0.200	pass	
Fipronil¥	< LOQ	0.40	0.200	pass		Flonicamid¥	< LOQ	1.0	0.400	pass	
Fludioxonil¥	< LOQ	0.40	0.200	pass		Hexythiazox¥	< LOQ	1.0	0.400	pass	
Imazalil¥	< LOQ	0.20	0.100	pass		Imidacloprid¥	< LOQ	0.40	0.200	pass	
Kresoxim-methyl¥	< LOQ	0.40	0.200	pass		Malathion¥	< LOQ	0.20	0.100	pass	
Metalaxyl¥	< LOQ	0.20	0.100	pass		Methiocarb¥	< LOQ	0.20	0.100	pass	
Methomyl¥	< LOQ	0.40	0.200	pass		MGK-264¥	< LOQ	0.20	0.100	pass	
Myclobutanil¥	< LOQ	0.20	0.100	pass		Naled¥	< LOQ	0.50	0.250	pass	
Oxamyl¥	< LOQ	1.0	0.500	pass		Paclobutrazole¥	< LOQ	0.40	0.200	pass	
Parathion-Methyl¥	< LOQ	0.20	0.100	pass		Permethrin¥	< LOQ	0.20	0.100	pass	
Phosmet¥	< LOQ	0.20	0.100	pass		Piperonyl butoxide¥	< LOQ	2.0	1.00	pass	
Prallethrin¥	< LOQ	0.20	0.100	pass		Propiconazole¥	< LOQ	0.40	0.200	pass	
Propoxur¥	< LOQ	0.20	0.100	pass		Pyrethrin I (total)¥	< LOQ	1.0	0.500	pass	
Pyridaben¥	< LOQ	0.20	0.100	pass		Spinosad¥	< LOQ	0.20	0.100	pass	
Spiromesifen¥	< LOQ	0.20	0.100	pass		Spirotetramat¥	< LOQ	0.20	0.100	pass	
Spiroxamine¥	< LOQ	0.40	0.200	pass		Tebuconazole¥	< LOQ	0.40	0.200	pass	
Thiacloprid¥	< LOQ	0.20	0.100	pass		Thiamethoxam¥	< LOQ	0.20	0.100	pass	
Trifloxystrobin¥	< LOQ	0.20	0.100	pass							

Metals

Analyte	Result	Limits	Units	LOQ	Batch	Analyzed	Method	Status	Notes
Arsenic¥	< LOQ	0.200	mg/kg	0.0197	2311977	10/18/23	AOAC 2013.06 (mod.)þ	pass	
Cadmium¥	< LOQ	0.200	mg/kg	0.0197	2311977	10/18/23	AOAC 2013.06 (mod.)þ	pass	
Lead¥	< LOQ	0.500	mg/kg	0.0197	2311977	10/18/23	AOAC 2013.06 (mod.)þ	pass	
Mercury¥	< LOQ	0.100	mg/kg	0.00986	2311977	10/18/23	AOAC 2013.06 (mod.)þ	pass	

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Mycotoxins

Analyte	Result	Limits	Units	LOQ	Batch	Analyzed	Method	Status	Notes
Aflatoxin B2¥	< LOQ		µg/kg	5.00	2311938	10/18/23	AOAC 2007.01 & EN 15662 (mod)þ		
Aflatoxin B1¥	< LOQ		µg/kg	5.00	2311938	10/18/23	AOAC 2007.01 & EN 15662 (mod)þ		
Aflatoxin G1¥	< LOQ		µg/kg	5.00	2311938	10/18/23	AOAC 2007.01 & EN 15662 (mod)þ		
Aflatoxin G2¥	< LOQ		µg/kg	5.00	2311938	10/18/23	AOAC 2007.01 & EN 15662 (mod)þ		
Ochratoxin A¥	< LOQ	20.0	µg/kg	5.00	2311938	10/18/23	AOAC 2007.01 & EN 15662 (mod)þ	pass	
Total Aflatoxins¥	0.000	20.0	µg/kg	20.0		10/19/23	AOAC 2007.01 & EN 15662 (mod)þ	pass	

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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.

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

Units of Measure

µg/g = Microgram per gram
µg/kg = Micrograms per kilogram = parts per billion (ppb)
mg/kg = Milligram per kilogram = parts per million (ppm)
/g = Per gram
% = 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: 2311877**

Laboratory Control Sample

Analyte	LCS	Result	Spike	Units	% Rec	Limits	Evaluation	Notes
CBDVA	2	0.0290	0.0303	%	95.8	80.0 - 120	Acceptable	
CBDV	2	0.0279	0.0294	%	94.8	80.0 - 120	Acceptable	
CBE	2	0.0307	0.0322	%	95.3	80.0 - 120	Acceptable	
CBDA	1	0.0286	0.0293	%	97.5	90.0 - 110	Acceptable	
CBGA	1	0.0286	0.0299	%	95.5	80.0 - 120	Acceptable	
CBG	1	0.0323	0.0334	%	96.8	80.0 - 120	Acceptable	
CBD	1	0.0290	0.0285	%	102	90.0 - 110	Acceptable	
THCV	2	0.0264	0.0277	%	95.4	80.0 - 120	Acceptable	
d8THCV	2	0.0265	0.0278	%	95.5	80.0 - 120	Acceptable	
THCVA	2	0.0280	0.0297	%	94.2	80.0 - 120	Acceptable	
CBN	1	0.0287	0.0299	%	95.9	80.0 - 120	Acceptable	
exo-THC	2	0.0292	0.0297	%	98.4	80.0 - 120	Acceptable	
d9THC	1	0.0327	0.0332	%	98.5	90.0 - 110	Acceptable	
d8THC	1	0.0294	0.0309	%	95.2	90.0 - 110	Acceptable	
9S-d10THC	1	0.0294	0.0306	%	96.0	80.0 - 120	Acceptable	
CBL	2	0.0293	0.0307	%	95.7	80.0 - 120	Acceptable	
9R-d10THC	1	0.0293	0.0306	%	96.0	80.0 - 120	Acceptable	
CBC	2	0.0290	0.0308	%	94.2	80.0 - 120	Acceptable	
THCA	1	0.0293	0.0306	%	95.7	90.0 - 110	Acceptable	
CBCA	2	0.0287	0.0303	%	94.8	80.0 - 120	Acceptable	
CBLA	2	0.0301	0.0317	%	94.9	80.0 - 120	Acceptable	
d9THCP	2	0.0293	0.0303	%	96.9	80.0 - 120	Acceptable	
CBT	2	0.0278	0.0293	%	94.8	80.0 - 120	Acceptable	

Method Blank

Analyte	Result	LOQ	Units	Limits	Evaluation	Notes
CBDVA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBDV	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBE	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBDA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBGA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBG	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBD	<LOQ	0.0291	%	< 0.0291	Acceptable	
THCV	<LOQ	0.0291	%	< 0.0291	Acceptable	
d8THCV	<LOQ	0.0291	%	< 0.0291	Acceptable	
THCVA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBN	<LOQ	0.0291	%	< 0.0291	Acceptable	
exo-THC	<LOQ	0.0291	%	< 0.0291	Acceptable	
d9THC	<LOQ	0.0291	%	< 0.0291	Acceptable	
d8THC	<LOQ	0.0291	%	< 0.0291	Acceptable	
9S-d10THC	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBL	<LOQ	0.0291	%	< 0.0291	Acceptable	
9R-d10THC	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBC	<LOQ	0.0291	%	< 0.0291	Acceptable	
THCA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBCA	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBLA	<LOQ	0.0291	%	< 0.0291	Acceptable	
d9THCP	<LOQ	0.0291	%	< 0.0291	Acceptable	
CBT	<LOQ	0.0291	%	< 0.0291	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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Laboratory Quality Control Results

J AOAC 2015 V98-6 **Batch ID: 2311877**

Sample Duplicate Sample ID: **23-012171-0001**

Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Evaluation	Notes
CBDVA	0.0979	0.0973	0.0293	%	0.595	< 20	Acceptable	
CBDV	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBE	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBDA	10.8	10.7	0.0293	%	0.974	< 20	Acceptable	
CBGA	0.296	0.292	0.0293	%	1.27	< 20	Acceptable	
CBG	0.0983	0.0975	0.0293	%	0.727	< 20	Acceptable	
CBD	2.39	2.37	0.0293	%	0.953	< 20	Acceptable	
THCV	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
d8THCV	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
THCVA	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBN	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
exo-THC	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
d9THC	0.236	0.233	0.0293	%	1.22	< 20	Acceptable	
d8THC	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
9S-d10THC	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBL	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
9R-d10THC	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBC	0.164	0.163	0.0293	%	0.869	< 20	Acceptable	
THCA	0.274	0.271	0.0293	%	1.10	< 20	Acceptable	
CBCA	0.451	0.448	0.0293	%	0.539	< 20	Acceptable	
CBLA	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
d9THCP	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	
CBT	<LOQ	<LOQ	0.0293	%	NA	< 20	Acceptable	

Abbreviations

ND - None Detected at or above MRL
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Units of Measure:

% - Percent

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Laboratory Pesticide Quality Control Results

AOAC 2007.1 & EN 15662 **Units:** mg/Kg **Batch ID:** 2311878

Method Blank				Laboratory Control Sample					
Analyte	**Blank Result**	**Blank Limits**	**Notes**	**LCS Result**	**LCS Spike**	**LCS % Rec**	**Limits**		**Notes**
Abamectin	0.000	< 0.250		0.822	1.000	82.2	50.0	150	
Acephate	0.180	< 0.200		0.742	0.800	92.7	60.0	120	
Acequinocyl	0.000	< 1.000		3.933	4.000	98.3	40.0	160	
Acetamiprid	0.000	< 0.100		0.353	0.400	88.4	60.0	120	
Aldicarb	0.000	< 0.200		0.745	0.800	93.1	60.0	120	
Azoxystrobin	0.004	< 0.100		0.295	0.400	73.7	60.0	120	
Bifenazate	0.000	< 0.100		0.273	0.400	68.2	60.0	120	
Bifenthrin	0.000	< 0.100		0.349	0.400	87.2	50.0	150	
Boscalid	0.000	< 0.200		0.532	0.800	66.5	60.0	120	
Carbaryl	0.000	< 0.100		0.332	0.400	83.0	60.0	120	
Carbofuran	0.003	< 0.100		0.350	0.400	87.6	60.0	120	
Chlorantraniliprole	0.000	< 0.100		0.287	0.400	71.8	60.0	120	
Chlorfenapyr	0.000	< 0.500		1.506	2.000	75.3	60.0	120	
Chlorpyrifos	0.000	< 0.100		0.288	0.400	72.0	60.0	120	
Clofentezine	0.000	< 0.100		0.255	0.400	63.8	60.0	120	
Cyfluthrin	0.000	< 0.500		1.614	2.000	80.7	50.0	150	
Cypermethrin	0.000	< 0.500		1.649	2.000	82.4	50.0	150	
Daminozide	0.001	< 0.500		0.687	2.000	***34.4***	60.0	120	**Q7**
Diazinon	0.000	< 0.100		0.278	0.400	69.6	60.0	120	
Dichlorvos	0.000	< 0.500		1.942	2.000	97.1	60.0	120	
Dimethoate	0.000	< 0.100		0.381	0.400	95.2	60.0	120	
Ethoprophos	0.006	< 0.100		0.305	0.400	76.2	60.0	120	
Etofenprox	0.000	< 0.200		0.691	0.800	86.3	50.0	150	
Etoxazole	0.001	< 0.100		0.288	0.400	72.1	60.0	120	
Fenoxycarb	0.003	< 0.100		0.289	0.400	72.3	60.0	120	
Fenpyroximate	0.000	< 0.200		0.636	0.800	79.5	60.0	120	
Fipronil	0.000	< 0.200		0.581	0.800	72.6	60.0	120	
Flonicamid	0.000	< 0.250		0.855	1.000	85.5	60.0	120	
Fludioxonil	0.000	< 0.200		0.587	0.800	73.3	50.0	150	
Hexythiazox	0.000	< 0.250		0.772	1.000	77.2	60.0	120	
Imazalil	0.011	< 0.100		0.277	0.400	69.1	60.0	120	
Imidacloprid	0.000	< 0.200		0.692	0.800	86.5	60.0	120	
Kresoxim-methyl	0.000	< 0.200		0.600	0.800	75.0	60.0	120	
Malathion	0.000	< 0.100		0.301	0.400	75.3	60.0	120	
Metalaxyl	0.003	< 0.100		0.348	0.400	87.1	60.0	120	
Methiocarb	0.006	< 0.100		0.300	0.400	75.0	60.0	120	
Methomyl	0.006	< 0.200		0.672	0.800	84.1	60.0	120	
MGK-264	0.000	< 0.100		0.290	0.400	72.6	50.0	150	
Myclobutanil	0.000	< 0.100		0.309	0.400	77.2	60.0	120	
Naled	0.000	< 0.250		0.626	1.000	62.6	50.0	150	
Oxamyl	0.000	< 0.500		1.818	2.000	90.9	60.0	120	
Paclobutrazole	0.001	< 0.200		0.608	0.800	76.0	60.0	120	
Parathion-Methyl	0.000	< 0.100		0.307	0.400	76.8	50.0	150	
Permethrin	0.000	< 0.100		0.333	0.400	83.3	50.0	150	
Phosmet	0.007	< 0.100		0.296	0.400	74.1	50.0	150	
Piperonyl butoxide	0.000	< 0.500		1.482	2.000	74.1	60.0	120	
Prallethrin	0.000	< 0.100		0.276	0.400	69.0	60.0	120	
Propiconazole	0.000	< 0.200		0.590	0.800	73.7	60.0	120	
Propoxur	0.000	< 0.100		0.362	0.400	90.5	60.0	120	
Pyrethrin (Summe)	0.001	< 0.100		0.377	0.488	77.2	60.0	120	
Pyridaben	0.000	< 0.100		0.320	0.400	79.9	50.0	150	
Spinosad	0.000	< 0.100		0.308	0.388	79.5	50.0	150	
Spiromesifen	0.000	< 0.100		0.318	0.400	79.5	60.0	120	
Spirotetramat	0.000	< 0.100		0.299	0.400	74.7	60.0	120	
Spiroxamine	0.007	< 0.200		0.564	0.800	70.6	60.0	120	
Tebuconazole	0.000	< 0.200		0.593	0.800	74.2	60.0	120	
Thiacloprid	0.000	< 0.100		0.330	0.400	82.6	60.0	120	
Thiamethoxam	0.000	< 0.100		0.330	0.400	82.6	60.0	120	
Trifloxystrobin	0.000	< 0.100		0.290	0.400	72.4	60.0	120	

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Laboratory Pesticide Quality Control Results

AOAC 2007.1 & EN 15662 — **Units:** mg/Kg — **Batch ID:** 2311878

Matrix Spike/Matrix Spike Duplicate Recoveries — **Sample ID:** 23-012171-0001

Analyte	Result	MS Res	MSD Res	Spike	RPD%	Limit	MS % Rec	MSD % Rec	Limits	Notes
Abamectin	0.000	0.819	0.815	1.000	0.4%	< 30	81.9%	81.5%	50 - 150	
Acephate	0.177	0.700	0.716	0.800	2.9%	< 30	65.4%	67.3%	50 - 150	
Acequinocyl	0.000	3.149	2.984	4.000	5.4%	< 30	78.7%	74.6%	50 - 150	
Acetamiprid	0.000	0.359	0.368	0.400	2.4%	< 30	89.8%	92.0%	50 - 150	
Aldicarb	0.000	0.754	0.733	0.800	2.9%	< 30	94.3%	91.6%	50 - 150	
Azoxystrobin	0.004	0.346	0.330	0.400	4.6%	< 30	85.4%	81.6%	50 - 150	
Bifenazate	0.000	0.339	0.353	0.400	4.0%	< 30	84.8%	88.2%	50 - 150	
Bifenthrin	0.000	0.277	0.276	0.400	0.2%	< 30	69.2%	69.1%	50 - 150	
Boscalid	0.000	0.627	0.757	0.800	18.8%	< 30	78.4%	94.7%	50 - 150	
Carbaryl	0.000	0.353	0.351	0.400	0.8%	< 30	88.4%	87.6%	50 - 150	
Carbofuran	0.004	0.331	0.341	0.400	2.9%	< 30	81.9%	84.3%	50 - 150	
Chlorantraniliprole	0.000	0.385	0.391	0.400	1.5%	< 30	96.3%	97.7%	50 - 150	
Chlorfenapyr	0.000	1.539	1.784	2.000	14.8%	< 30	76.9%	89.2%	50 - 150	
Chlorpyrifos	0.000	0.299	0.278	0.400	7.4%	< 30	74.8%	69.4%	50 - 150	
Clofentezine	0.000	0.271	0.282	0.400	4.2%	< 30	67.7%	70.6%	50 - 150	
Cyfluthrin	0.000	1.258	1.252	2.000	0.5%	< 30	62.9%	62.6%	30 - 150	
Cypermethrin	0.000	1.237	1.221	2.000	1.3%	< 30	61.9%	61.0%	50 - 150	
Daminozide	0.000	0.786	0.876	2.000	10.9%	< 30	39.3%	43.8%	30 - 150	
Diazinon	0.000	0.311	0.331	0.400	6.3%	< 30	77.7%	82.8%	50 - 150	
Dichlorvos	0.000	1.667	1.710	2.000	2.5%	< 30	83.4%	85.5%	50 - 150	
Dimethoate	0.000	0.364	0.371	0.400	1.8%	< 30	91.0%	92.7%	50 - 150	
Ethoprophos	0.005	0.326	0.336	0.400	3.1%	< 30	80.2%	82.8%	50 - 150	
Etofenprox	0.000	0.571	0.563	0.800	1.3%	< 30	71.3%	70.4%	50 - 150	
Etoxazole	0.002	0.285	0.322	0.400	12.3%	< 30	70.8%	80.1%	50 - 150	
Fenoxycarb	0.000	0.385	0.404	0.400	4.7%	< 30	96.3%	101.0%	50 - 150	
Fenpyroximate	0.000	0.523	0.546	0.800	4.3%	< 30	65.3%	68.2%	50 - 150	
Fipronil	0.000	0.617	0.617	0.800	0.1%	< 30	77.1%	77.2%	50 - 150	
Flonicamid	0.000	0.895	0.880	1.000	1.6%	< 30	89.5%	88.0%	50 - 150	
Fludioxonil	0.000	0.778	0.859	0.800	9.9%	< 30	97.3%	107.3%	50 - 150	
Hexythiazox	0.000	0.116	0.111	1.000	3.9%	< 30	11.6%	11.1%	50 - 150	Q
Imazalil	0.014	0.351	0.347	0.400	1.1%	< 30	84.2%	83.2%	50 - 150	
Imidacloprid	0.000	0.619	0.649	0.800	4.7%	< 30	77.4%	81.1%	50 - 150	
Kresoxim-methyl	0.000	0.663	0.675	0.800	1.9%	< 30	82.8%	84.4%	50 - 150	
Malathion	0.000	0.323	0.355	0.400	9.5%	< 30	80.6%	88.7%	50 - 150	
Metalaxyl	0.002	0.336	0.331	0.400	1.5%	< 30	83.4%	82.2%	50 - 150	
Methiocarb	0.006	0.335	0.334	0.400	0.2%	< 30	82.2%	82.0%	50 - 150	
Methomyl	0.006	0.781	0.778	0.800	0.4%	< 30	96.9%	96.5%	50 - 150	
MGK-264	0.000	0.313	0.322	0.400	2.7%	< 30	78.4%	80.5%	50 - 150	
Myclobutanil	0.000	0.342	0.345	0.400	0.7%	< 30	85.6%	86.2%	50 - 150	
Naled	0.000	0.854	0.867	1.000	1.5%	< 30	85.4%	86.7%	50 - 150	
Oxamyl	0.000	1.714	1.873	2.000	8.9%	< 30	85.7%	93.7%	50 - 150	
Paclobutrazole	0.000	0.605	0.598	0.800	1.2%	< 30	75.6%	74.7%	50 - 150	
Parathion-Methyl	0.000	0.300	0.327	0.400	8.6%	< 30	74.9%	81.7%	30 - 150	
Permethrin	0.000	0.294	0.291	0.400	1.1%	< 30	73.6%	72.8%	50 - 150	
Phosmet	0.000	0.303	0.317	0.400	4.3%	< 30	75.8%	79.1%	50 - 150	
Piperonyl butoxide	0.000	1.586	1.680	2.000	5.7%	< 30	79.3%	84.0%	50 - 150	
Prallethrin	0.000	0.132	0.133	0.400	1.2%	< 30	32.9%	33.3%	50 - 150	Q
Propiconazole	0.000	0.477	0.493	0.800	3.3%	< 30	59.6%	61.6%	50 - 150	
Propoxur	0.000	0.331	0.334	0.400	0.9%	< 30	82.7%	83.5%	50 - 150	
Pyrethrin (Summe)	0.002	0.382	0.382	0.488	0.1%	< 30	77.8%	77.7%	50 - 150	
Pyridaben	0.000	0.202	0.193	0.400	4.6%	< 30	50.6%	48.3%	50 - 150	Q
Spinosad	0.000	0.334	0.347	0.388	3.6%	< 30	86.1%	89.3%	50 - 150	
Spiromesifen	0.000	0.171	0.169	0.400	1.5%	< 30	42.8%	42.1%	50 - 150	Q
Spirotetramat	0.001	0.439	0.457	0.400	3.9%	< 30	109.6%	113.9%	50 - 150	
Spiroxamine	0.000	0.686	0.679	0.800	1.0%	< 30	85.7%	84.8%	50 - 150	
Tebuconazole	0.000	0.551	0.563	0.800	2.2%	< 30	68.8%	70.3%	50 - 150	
Thiacloprid	0.000	0.348	0.351	0.400	0.7%	< 30	87.1%	87.7%	50 - 150	
Thiamethoxam	0.000	0.367	0.365	0.400	0.5%	< 30	91.7%	91.3%	50 - 150	
Trifloxystrobin	0.000	0.295	0.305	0.400	3.4%	< 30	73.6%	76.2%	50 - 150	

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Laboratory Quality Control Results

Residual Solvents **Batch ID:** 2311951

Method Blank					Laboratory Control Sample							
Analyte	**Result**		**LOQ**	**Notes**	**Result**	**Spike**	**Units**	**% Rec**	**Limits**			**Notes**
Propane	ND	<	200		539	584	µg/g	92.3	60	-	120	
Isobutane	ND	<	200		792	767	µg/g	103.3	60	-	120	
Butane	ND	<	200		778	782	µg/g	99.5	60	-	120	
2,2-Dimethylpropane	ND	<	200		1000	939	µg/g	106.5	60	-	120	
Methanol	ND	<	200		1870	1670	µg/g	112.0	60	-	120	
Ethylene Oxide	ND	<	30		64.3	57.1	µg/g	112.6	60	-	120	
2-Methylbutane	ND	<	200		1740	1680	µg/g	103.6	60	-	120	
Pentane	ND	<	200		1710	1670	µg/g	102.4	60	-	120	
Ethanol	ND	<	200		1840	1660	µg/g	110.8	70	-	130	
Ethyl Ether	ND	<	200		1750	1670	µg/g	104.8	60	-	120	
2,2-Dimethylbutane	ND	<	30		195	189	µg/g	103.2	60	-	120	
Acetone	ND	<	200		1820	1670	µg/g	109.0	60	-	120	
2-Propanol	ND	<	200		1760	1630	µg/g	108.0	60	-	120	
Ethyl Formate	ND	<	500		1480	1600	µg/g	92.5	70	-	130	
Acetonitrile	ND	<	100		506	492	µg/g	102.8	60	-	120	
Methyl Acetate	ND	<	500		1730	1600	µg/g	108.1	70	-	130	
2,3-Dimethylbutane	ND	<	30		199	180	µg/g	110.6	60	-	120	
Dichloromethane	ND	<	60		505	488	µg/g	103.5	60	-	120	
2-Methylpentane	ND	<	30		174	182	µg/g	95.6	60	-	120	
MTBE	ND	<	500		1720	1610	µg/g	106.8	70	-	130	
3-Methylpentane	ND	<	30		189	177	µg/g	106.8	60	-	120	
Hexane	ND	<	30		185	177	µg/g	104.5	60	-	120	
1-Propanol	ND	<	500		1760	1600	µg/g	110.0	70	-	130	
Methylethylketone	ND	<	500		1720	1610	µg/g	106.8	70	-	130	
Ethyl acetate	ND	<	200		1750	1630	µg/g	107.4	60	-	120	
2-Butanol	ND	<	200		1750	1630	µg/g	107.4	60	-	120	
Tetrahydrofuran	ND	<	100		514	488	µg/g	105.3	60	-	120	
Cyclohexane	ND	<	200		1650	1610	µg/g	102.5	60	-	120	
2-methyl-1-propanol	ND	<	500		1590	1610	µg/g	98.8	70	-	130	
Benzene	ND	<	1		5.2	4.79	µg/g	108.6	60	-	120	
Isopropyl Acetate	ND	<	200		1780	1650	µg/g	107.9	60	-	120	
Heptane	ND	<	200		1680	1630	µg/g	103.1	60	-	120	
1-Butanol	ND	<	500		1630	1600	µg/g	101.9	70	-	130	
Propyl Acetate	ND	<	500		1690	1600	µg/g	105.6	70	-	130	
1,4-Dioxane	ND	<	100		536	523	µg/g	102.5	60	-	120	
2-Ethoxyethanol	ND	<	30		213	179	µg/g	119.0	60	-	120	
Methylisobutylketone	ND	<	500		1640	1600	µg/g	102.5	70	-	130	
3-Methyl-1-butanol	ND	<	500		1910	1600	µg/g	119.4	70	-	130	
Ethylene Glycol	ND	<	200		337	506	µg/g	66.6	60	-	120	
Toluene	ND	<	100		499	496	µg/g	100.6	60	-	120	
Isobutyl Acetate	ND	<	500		1680	1610	µg/g	104.3	70	-	130	
1-Pentanol	ND	<	500		1680	1600	µg/g	105.0	70	-	130	
Butyl Acetate	ND	<	500		1650	1610	µg/g	102.5	70	-	130	
Ethylbenzene	ND	<	200		923	978	µg/g	94.4	60	-	120	
m,p-Xylene	ND	<	200		925	994	µg/g	93.1	60	-	120	
o-Xylene	ND	<	200		920	982	µg/g	93.7	60	-	120	
Cumene	ND	<	30		164	171	µg/g	95.9	60	-	120	
Anisole	ND	<	500		1460	1600	µg/g	91.3	70	-	130	
DMSO	ND	<	500		1720	1620	µg/g	106.2	70	-	130	
1,2-dimethoxyethane	ND	<	50		194	186	µg/g	104.3	70	-	130	
Triethylamine	ND	<	500		1420	1600	µg/g	88.8	70	-	130	
N,N-dimethylformamide	ND	<	150		522	480	µg/g	108.8	70	-	130	
N,N-dimethylacetamide	ND	<	150		420	483	µg/g	87.0	70	-	130	
Pyridine	ND	<	50		179	168	µg/g	106.5	70	-	130	
Sulfolane	ND	<	50		121	161	µg/g	75.2	70	-	130	
1,2-Dichloroethane	ND	<	1		0.832	1	µg/g	83.2	70	-	130	
Chloroform	ND	<	1		0.871	1	µg/g	87.1	70	-	130	
Trichloroethylene	ND	<	1		0.867	1	µg/g	86.7	70	-	130	
1,1-Dichloroethane	ND	<	1		0.991	1	µg/g	99.1	70	-	130	

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QC - Sample Duplicate **Sample ID: 23-012301-0002**

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

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:	23-012171/D002.R000
Report Date:	10/19/2023
ORELAP#:	OR100028
Purchase Order:	
Received:	10/12/23 10:34

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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.