



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



Report Number: 20-011256/D02.R00
Report Date: 10/21/2020
ORELAP#: OR100028
Purchase Order:
Received: 10/15/20 09:59

Customer: Owls
Product identity: Nothern Lights Batch #G20021
Client/Metric ID: .
Laboratory ID: 20-011256-0001 **Sample Date:** 10/12/20 13:00

Summary

Potency:

Analyte	Result (%)		
Δ8-THC [†]	87.8		CBD-Total <LOQ
			THC-Total <LOQ
			(Reported in percent of total sample)

Terpenes:

Analyte	Percent by weight	Percent of Total	Analyte	Percent by weight	Percent of Total
β-Caryophyllene [†]	2.61	45.00%	Humulene [†]	1.41	24.31%
β-Myrcene [†]	0.541	9.33%	α-pinene [†]	0.374	6.45%
(-)-caryophyllene oxide [†]	0.341	5.88%	(R)-(+)-Limonene [†]	0.201	3.47%
(-)-β-Pinene [†]	0.191	3.29%	(+)-fenchol [†]	0.0754	1.30%
Eucalyptol [†]	0.0307	0.53%	(+)-Borneol [†]	0.0263	0.45%
Total Terpenes[†]	5.80	100.00%			

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Customer: Owls

Product identity: Nothern Lights Batch #G20021
Client/Metric ID: .
Sample Date: 10/12/20 13:00
Laboratory ID: 20-011256-0001
Relinquished by: UPS
Temp: 19.3 °C

Sample Results

Potency **Method J AOAC 2015 V98-6 (mod) Batch: 2008708 Analyze: 10/20/20 11:02:00 P**

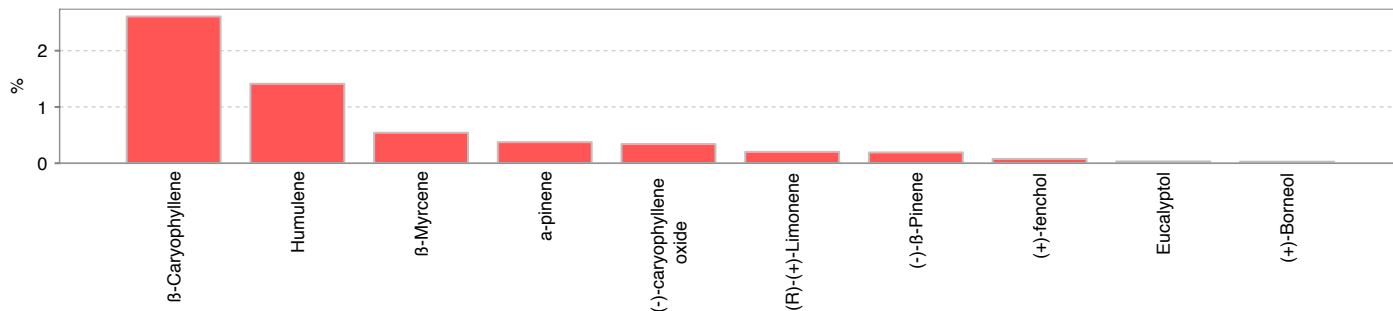
Analyte	As Received	Dry weight	LOQ	Notes
CBC	<LOQ		0.0895	
CBC-A†	<LOQ		0.0895	
CBC-Total†	<LOQ		0.168	
CBD	<LOQ		0.0895	
CBD-A	<LOQ		0.0895	
CBD-Total	<LOQ		0.168	
CBDV†	<LOQ		0.0895	
CBDV-A†	<LOQ		0.0895	
CBDV-Total†	<LOQ		0.167	
CBG†	<LOQ		0.0895	
CBG-A†	<LOQ		0.0895	
CBG-Total	<LOQ		0.167	
CBL†	<LOQ		0.0895	
CBN	<LOQ		0.0895	
Δ8-THC†	87.8		0.0895	
Δ9-THC	<LOQ		0.0895	
THC-A	<LOQ		0.0895	
THC-Total	<LOQ		0.168	
THCV†	<LOQ		0.0895	
THCV-A†	<LOQ		0.0895	
THCV-Total†	<LOQ		0.167	
Total Cannabinoids†	87.8			



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Terpenes				Method J AOAC 2015 V98-6	Units %	Batch 2008586	Analyze 10/16/20 11:08 AM		
Analyte	Result	LOQ	% of Total	Notes	Analyte	Result	LOQ	% of Total	Notes
β-Caryophyllene [†]	2.61	0.020	45.00%		Humulene [†]	1.41	0.020	24.31%	
β-Myrcene [†]	0.541	0.020	9.33%		α-pinene [†]	0.374	0.020	6.45%	
(-)-caryophyllene oxide [†]	0.341	0.020	5.88%		(R)-(+)-Limonene [†]	0.201	0.020	3.47%	
(-)-β-Pinene [†]	0.191	0.020	3.29%		(+)-fenchol [†]	0.0754	0.020	1.30%	
Eucalyptol [†]	0.0307	0.020	0.53%		(+)-Borneol [†]	0.0263	0.020	0.45%	
(-)-α-Terpineol [†]	< LOQ	0.020	0.00%		(-)-Guaiol [†]	< LOQ	0.020	0.00%	
(-)-Isopulegol [†]	< LOQ	0.020	0.00%		(+)-Cedrol [†]	< LOQ	0.020	0.00%	
(+)-Pulegone [†]	< LOQ	0.020	0.00%		(±)-Camphor [†]	< LOQ	0.020	0.00%	
(±)-cis-Nerolidol [†]	< LOQ	0.020	0.00%		(±)-fenchone [†]	< LOQ	0.020	0.00%	
(±)-trans-Nerolidol [†]	< LOQ	0.020	0.00%		α-Bisabolol [†]	< LOQ	0.020	0.00%	
α-cedrene [†]	< LOQ	0.020	0.00%		α-phellandrene [†]	< LOQ	0.020	0.00%	
α-Terpinene [†]	< LOQ	0.020	0.00%		Camphene [†]	< LOQ	0.020	0.00%	
cis-β-Ocimene [†]	< LOQ	0.006	0.00%		d-3-Carene [†]	< LOQ	0.020	0.00%	
farnesene [†]	< LOQ	0.020	0.00%		γ-Terpinene [†]	< LOQ	0.020	0.00%	
Geraniol [†]	< LOQ	0.020	0.00%		Geranyl acetate [†]	< LOQ	0.020	0.00%	
Isoborneol [†]	< LOQ	0.020	0.00%		Linalool [†]	< LOQ	0.020	0.00%	
Menthol [†]	< LOQ	0.020	0.00%		nerol [†]	< LOQ	0.020	0.00%	
p-Cymene [†]	< LOQ	0.020	0.00%		Sabinene [†]	< LOQ	0.020	0.00%	
Sabinene hydrate [†]	< LOQ	0.020	0.00%		Terpinolene [†]	< LOQ	0.020	0.00%	
trans-β-Ocimene [†]	< LOQ	0.013	0.00%		valencene [†]	< LOQ	0.020	0.00%	
Total Terpenes	5.80								





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These test results are representative of the individual sample selected and submitted by the client.

Abbreviations

Limits: Action Levels per OAR-333-007-0400, OAR-333-007-0210, OAR-333-007-0220

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.

† = Analyte not NELAP accredited.

Units of Measure

% = Percentage of sample

% wt = $\mu\text{g/g}$ divided by 10,000

Approved Signatory

Derrick Tanner
General Manager



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Terpenes Quality Control Results

Method Reference: EPA 5035				Batch ID: 2008586					
Method Blank				Laboratory Control Sample					
Analyte	Result	Blank	Notes	Result	LCS	Units	LCS% Rec	Limits	Notes
a-pinene	<LOQ	< 200		412	500	µg/g	82	70 - 130	
Camphene	<LOQ	< 200		353	500	µg/g	71	70 - 130	
Sabinene	<LOQ	< 200		398	500	µg/g	80	70 - 130	
b-Pinene	<LOQ	< 200		414	500	µg/g	83	70 - 130	
b-Myrcene	<LOQ	< 200		383	500	µg/g	77	70 - 130	
a-phellandrene	<LOQ	< 200		430	500	µg/g	86	70 - 130	
d-3-Carene	<LOQ	< 200		485	500	µg/g	97.0	70 - 130	
a-Terpinene	<LOQ	< 200		379	500	µg/g	76	70 - 130	
p-Cymene	<LOQ	< 200		409	500	µg/g	82	70 - 130	
D-Limonene	<LOQ	< 200		391	500	µg/g	78	70 - 130	
Eucalyptol	<LOQ	< 200		507	500	µg/g	101	70 - 130	
b-cis-OCimene	<LOQ	< 66.7		143	167	µg/g	85.8	70 - 130	
b-trans-OCimene	<LOQ	< 133		296	333	µg/g	70.8	70 - 130	
g-Terpinene	<LOQ	< 200		417	500	µg/g	83	70 - 130	
Sabinene_Hydrate	<LOQ	< 200		429	500	µg/g	86	70 - 130	
Terpinolene	<LOQ	< 200		379	500	µg/g	76	70 - 130	
D-Fenchone	<LOQ	< 200		458	500	µg/g	92	70 - 130	
Linalool	<LOQ	< 200		421	500	µg/g	84	70 - 130	
Fenchol	<LOQ	< 200		438	500	µg/g	88	70 - 130	
Camphor	<LOQ	< 200		483	500	µg/g	97	70 - 130	
Isopulego	<LOQ	< 200		381	500	µg/g	76	70 - 130	
Isoborneol	<LOQ	< 200		497	500	µg/g	99	70 - 130	
Borneol	<LOQ	< 200		439	500	µg/g	88	70 - 130	
DL-Menthol	<LOQ	< 200		471	500	µg/g	94	70 - 130	
Terpineol	<LOQ	< 200		400	500	µg/g	80	70 - 130	
Nerol	<LOQ	< 200		372	500	µg/g	74	70 - 130	
Pulegone	<LOQ	< 200		432	500	µg/g	86	70 - 130	
Geraniol	<LOQ	< 200		357	500	µg/g	71	70 - 130	
Geranyl_Acetate	<LOQ	< 200		465	500	µg/g	93	70 - 130	
a-Cedrene	<LOQ	< 200		472	500	µg/g	94	70 - 130	
b-Caryophyllene	<LOQ	< 200		532	500	µg/g	106	70 - 130	
a-Humulene	<LOQ	< 200		478	500	µg/g	96	70 - 130	
Valenene	<LOQ	< 200		486	500	µg/g	97	70 - 130	
cis-Nerolidol	<LOQ	< 200		543	500	µg/g	109	70 - 130	
a-Farnesene	<LOQ	< 200		477	500	µg/g	95	70 - 130	
trans-Nerolidol	<LOQ	< 200		441	500	µg/g	88	70 - 130	
Caryophyllene_Oxide	<LOQ	< 200		523	500	µg/g	105	70 - 130	
Guaiol	<LOQ	< 200		487	500	µg/g	97	70 - 130	
Cedrol	<LOQ	< 200		522	500	µg/g	104	70 - 130	
a-Esabolol	<LOQ	< 200		498	500	µg/g	100	70 - 130	



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Terpenes Quality Control Results

Method Reference: EPA 5035		Batch ID: 2008586						
Sample/ Sample Duplicate		Sample ID: 20-010964-0004						
Analyte	Result	Org. Result	LOQ	Units	RPD, %	LIMIT, %	Notes	
a-pinene	<LOQ	<LOQ	200	µg/g	0.0	< 20		
Camphene	<LOQ	<LOQ	200	µg/g	0.0	<20		
Sabinene	<LOQ	<LOQ	200	µg/g	0.0	<20		
b-Pinene	<LOQ	<LOQ	200	µg/g	0.0	<20		
b-Myrcene	149C	1260	200	µg/g	16.7	<20		
a-phellandrene	<LOQ	<LOQ	200	µg/g	0.0	<20		
d-3-Carene	<LOQ	<LOQ	200	µg/g	0.0	<20		
a-Terpinene	<LOQ	<LOQ	200	µg/g	0.0	<20		
p-Cymene	<LOQ	<LOQ	200	µg/g	0.0	<20		
D-Limonene	203C	1700	200	µg/g	17.7	<20		
Eucalyptol	<LOQ	<LOQ	200	µg/g	0.0	<20		
b-cis-Occimene	<LOQ	<LOQ	66.7	µg/g	0.0	<20		
b-trans-Occimene	<LOQ	<LOQ	133	µg/g	0.0	<20		
g-Terpinene	<LOQ	<LOQ	200	µg/g	0.0	<20		
Sabinene_Hydrate	<LOQ	<LOQ	200	µg/g	0.0	<20		
Terpinolene	<LOQ	<LOQ	200	µg/g	0.0	<20		
D-Fenchone	<LOQ	<LOQ	200	µg/g	0.0	<20		
Linalool	<LOQ	<LOQ	200	µg/g	0.0	<20		
Fenchol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Camphor	<LOQ	<LOQ	200	µg/g	0.0	<20		
Isopulego	<LOQ	<LOQ	200	µg/g	0.0	<20		
Isoborneol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Borneol	<LOQ	<LOQ	200	µg/g	0.0	<20		
DL-Menthol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Terpineol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Nerol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Pulegone	<LOQ	<LOQ	200	µg/g	0.0	<20		
Geraniol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Geranyl_Acetate	<LOQ	<LOQ	200	µg/g	0.0	<20		
a-Cedrene	<LOQ	<LOQ	200	µg/g	0.0	<20		
b-Caryophyllene	387C	3630	200	µg/g	6.40	<20		
a-Humulene	580	543	200	µg/g	6.59	<20		
Valenene	<LOQ	<LOQ	200	µg/g	0.0	<20		
cis-Nerolidol	<LOQ	<LOQ	200	µg/g	0.0	<20		
a-Farnesene	<LOQ	<LOQ	200	µg/g	0.0	<20		
trans-Nerolidol	<LOQ	<LOQ	200	µg/g	0.0	<20		
Caryophyllene_Oxide	355	342	200	µg/g	3.73	<20		
Quaiol	299	280	200	µg/g	6.56	<20		
Cedrol	<LOQ	<LOQ	200	µg/g	0.0	<20		
a-Bisabolol	947	916	200	µg/g	3.33	<20		

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Revision #: 0.00 Control : CFL-D06
Revision Date: 05/31/2019 Effective Date: 05/31/2019

Laboratory Quality Control Results

J AOAC 2015 V98-6 **Batch ID: 2008708**

Laboratory Control Sample

Analyte	Result	Spike	Units	% Rec	Limits	Evaluation	Notes
CBDV-A	0.208	0.2	%	104	85.0 - 115	Acceptable	
CBDV	0.218	0.2	%	109	85.0 - 115	Acceptable	
CBD-A	0.198	0.2	%	99.2	85.0 - 115	Acceptable	
CBG-A	0.206	0.2	%	103	85.0 - 115	Acceptable	
CBG	0.208	0.2	%	104	85.0 - 115	Acceptable	
CBD	0.202	0.2	%	101	85.0 - 115	Acceptable	
THCV	0.205	0.2	%	102	85.0 - 115	Acceptable	
THCVA	0.193	0.2	%	96.6	85.0 - 115	Acceptable	
CBN	0.202	0.2	%	101	85.0 - 115	Acceptable	
THC	0.197	0.2	%	98.6	85.0 - 115	Acceptable	
D8THC	0.204	0.2	%	102	85.0 - 115	Acceptable	
CBL	0.201	0.2	%	101	85.0 - 115	Acceptable	
CBC	0.206	0.2	%	103	85.0 - 115	Acceptable	
THCA	0.191	0.2	%	95.5	85.0 - 115	Acceptable	
CBCA	0.208	0.2	%	104	85.0 - 115	Acceptable	

Method Blank

Analyte	Result	LOQ	Units	Limits	Evaluation	Notes
CBDV-A	<LOQ	0.1	%	< 0.1	Acceptable	
CBDV	<LOQ	0.1	%	< 0.1	Acceptable	
CBD-A	<LOQ	0.1	%	< 0.1	Acceptable	
CBG-A	<LOQ	0.1	%	< 0.1	Acceptable	
CBG	<LOQ	0.1	%	< 0.1	Acceptable	
CBD	<LOQ	0.1	%	< 0.1	Acceptable	
THCV	<LOQ	0.1	%	< 0.1	Acceptable	
THCVA	<LOQ	0.1	%	< 0.1	Acceptable	
CBN	<LOQ	0.1	%	< 0.1	Acceptable	
THC	<LOQ	0.1	%	< 0.1	Acceptable	
D8THC	<LOQ	0.1	%	< 0.1	Acceptable	
CBL	<LOQ	0.1	%	< 0.1	Acceptable	
CBC	<LOQ	0.1	%	< 0.1	Acceptable	
THCA	<LOQ	0.1	%	< 0.1	Acceptable	
CBCA	<LOQ	0.1	%	< 0.1	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 #: 0.00 Control : CFL-D06
Revision Date: 05/31/2019 Effective Date: 05/31/2019

Laboratory Quality Control Results

J AOAC 2015 V98-6		Batch ID: 2008708							
Sample Duplicate		Sample ID: 20-010993-0001-01							
Analyte	Result	Org. Result	LOQ	Units	RPD	Limits	Evaluation	Notes	
CBDV-A	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBDV	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBD-A	0.140	0.142	0.1	%	1.01	< 20	Acceptable		
CBG-A	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBG	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBD	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
THCV	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
THCVA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBN	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
THC	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
D8THC	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBL	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBC	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
THCA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		
CBCA	<LOQ	<LOQ	0.1	%	NA	< 20	Acceptable		

Abbreviations

- ND - None Detected at or above MRL
- RPD - Relative Percent Difference
- LOQ - Limit of Quantitation
- NA - Calculation Not Applicable given non-numerical results

Units of Measure:

% - Percent



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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	Quantitation 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.