

HIGH NORTH ID:
00258072
Date: 2022-11-01
Certificate: 1667346699



High North Inc.
241 Hanlan Rd, Unit 7
Woodbridge, ON, L4L 3R7
1-416-864-6119
LIC-P4PNJMAC20-2022

Client:	Atlas Growers Ltd	Strain:	BSE (661-2022)
	56322 Range Road 25,	Lot:	E220026
	Gunn, AB, T0E1A0	Matrix:	Oil
Name:	Garrett Wagner	Sub-matrix:	Concentrate
	780-430-9514	Sampled:	2022-10-26
	garrettw@atlasgrowers.com	Received:	2022-10-27

Certificate of Analysis

Cannabinoid Analysis	LOD (%)	LOQ (%)	wt%	mg/g
Total THC [(THCA x 0.877) + D9-THC]			70.525	705.251
Total CBD [(CBDA x 0.877) + CBD]			1.519	15.188
D9-THC	0.0086	0.03	64.959	649.593
THCA-A	0.004	0.03	6.346	63.464
CBG	0.0028	0.03	2.187	21.871
CBGA	0.007	0.03	1.926	19.256
CBD	0.0081	0.03	1.519	15.188
CBN	0.0069	0.03	0.752	7.516
THCV	0.0068	0.03	BLQ	BLQ
CBC	0.0092	0.03	ND	ND
D8-THC	0.0074	0.03	ND	ND
CBDA	0.008	0.03	ND	ND
CBDV	0.0073	0.03	ND	ND
Total of all quantified cannabinoids:			77.689	776.888

Terpene Analysis	LOD (%)	LOQ (%)	wt%
Farnesene*	0.0021	0.025	1.529
Trans-Caryophyllene	0.0016	0.025	1.112
(R)-(+)-Limonene	0.0023	0.025	0.668
Linalool	0.0014	0.025	0.613
Alpha-Humulene	0.0017	0.025	0.337
Beta-Myrcene	0.0012	0.025	0.239
Terpineol*	0.0013	0.025	0.228
(R)-Endo-(+)-Fenchyl	0.0013	0.025	0.201
alpha-Bisabolol	0.0022	0.025	0.169
Alpha-Pinene	0.0013	0.025	0.09
Beta-Pinene	0.0016	0.025	BLQ

Abbreviations: wt% = percentage of weight, CFU = colony forming units, ppm = Parts per million, ppb = Parts per billion, ND = None Detected, BLQ = Below Limit of Quantification, LOQ = Limit of Quantification, LOD = Limit of Detection, RL = Reporting Limit, * = Mixture of Isomers

Authorized by:


Ebai Achare
QA Specialist

Terpene Analysis	LOD (%)	LOQ (%)	wt%
Citronellol	0.0014	0.025	BLQ
Fenchone*	0.0014	0.025	BLQ
Phytol*	0.0028	0.050	ND
(+)-Cedrol	0.0023	0.025	ND
Caryophyllene oxide	0.0023	0.025	ND
Guaiol	0.0016	0.025	ND
trans-Nerolidol	0.0025	0.025	ND
cis-Nerolidol	0.0028	0.025	ND
Valencene	0.0015	0.025	ND
Eugenol	0.0019	0.025	ND
Alpha-Cedrene	0.0016	0.025	ND
Geranyl acetate	0.0015	0.025	ND
Pulegone	0.0011	0.025	ND
Geraniol	0.0020	0.025	ND
Nerol	0.0023	0.025	ND
Camphor + Borneol*	0.0013	0.050	ND
Isoborneol	0.0013	0.025	ND
Hexahydrothymol	0.0020	0.025	ND
Isopulegol	0.0011	0.025	ND
Terpinolene	0.0018	0.025	ND
Sabinene Hydrate	0.0011	0.025	ND
Gamma-Terpinene	0.0014	0.025	ND
Ocimene*	0.0030	0.025	ND
Eucalyptol	0.0028	0.025	ND
p-Cymene	0.0010	0.025	ND
Alpha-Terpinene	0.0021	0.025	ND
Alpha-Phellandrene	0.0018	0.025	ND
(1S)-3-Carene	0.0020	0.025	ND
Sabinene	0.0017	0.025	ND
Camphene	0.0019	0.025	ND
Total of all quantified terpenes:			5.186

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Mycotoxin Analysis	LOD (ppb)	LOQ (ppb)	RL (ppb)	Result (ppb)	
Aflatoxin-B1	0.9	2	2	ND	PASS
Aflatoxin-B2	0.8	2		ND	PASS
Aflatoxin-G1	0.9	2		ND	PASS
Aflatoxin-G2	0.8	2		ND	PASS
Sum of Aflatoxins:			4	0	PASS
Ochratoxin-A	9.4	20	20	ND	PASS

Microbial Analysis	LOD (CFU/g)	RL (CFU/g)	Result (CFU/g)	Status
Total Aerobic Count	12	200	ND	PASS
Bile-Tolerant Gram-Negative			Absent in 1g	PASS
Total Yeast and Mold Count	1.8	20	ND	PASS
S.aureus/P.aeruginosa			Absent in 1g	PASS

Heavy Metals Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Arsenic	0.05	0.2	0.2	ND	PASS
Cadmium	0.01	0.05	0.3	ND	PASS
Lead	0.02	0.5	0.5	ND	PASS
Mercury	0.01	0.05	0.1	ND	PASS

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Residual Solvents Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
1-Butanol	22.7	1000	5,000	ND	PASS
1-Pentanol	28.9	1000	5,000	ND	PASS
1-Propanol	44.6	1000	5,000	ND	PASS
2-Butanol	20.1	1000	5,000	ND	PASS
2-Methyl-1-propanol	11.6	1000	5,000	ND	PASS
2-Propanol	13.3	1000	5,000	ND	PASS
3-Methyl-1-butanol	16.8	1000	5,000	ND	PASS
Acetone	19.4	1000	5,000	ND	PASS
Anisole	104	1000	5,000	ND	PASS
Butyl acetate	67.3	1000	5,000	ND	PASS
Dimethyl sulfoxide	55.8	1000	5,000	ND	PASS
Ethanol	34.5	1000	5,000	ND	PASS
Ethyl acetate	17.3	1000	5,000	ND	PASS
Ethyl ether	27	1000	5,000	ND	PASS
Ethyl formate	92.5	1000	5,000	ND	PASS
Heptane	19.2	1000	5,000	ND	PASS
Isobutyl acetate	28.4	1000	5,000	ND	PASS
Isopropyl acetate	13.5	1000	5,000	ND	PASS
Methyl acetate	26.9	1000	5,000	ND	PASS
Methylethyl ketone	13.1	1000	5,000	ND	PASS
Pentane	35.7	1000	5,000	ND	PASS
Propyl acetate	13.5	1000	5,000	ND	PASS
Tert-Butylmethyl ether	134.2	1000	5,000	ND	PASS
Triethylamine	22.4	1000	5,000	ND	PASS

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Pesticides Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Abamectin	0.0244	0.25	0.25	ND	PASS
Acephate	0.003	0.05	0.05	ND	PASS
Acequinocyl	0.1489	0.50		ND	PASS
Acetamiprid	0.0019	0.05	0.05	ND	PASS
Aldicarb	0.0458	0.5	0.5	ND	PASS
Allethrin	0.0306	0.1	0.1	ND	PASS
Azadirachtin	0.0638	0.5	0.5	ND	PASS
Azoxystrobin	0.0014	0.01	0.01	ND	PASS
Benzovindiflupyr	0.003	0.01	0.01	ND	PASS
Bifenazate	0.0024	0.01	0.01	ND	PASS
Bifenthrin	0.0259	0.10		ND	PASS
Boscalid	0.0022	0.01	0.01	ND	PASS
Buprofezin	0.0160	0.10		ND	PASS
Carbaryl	0.0046	0.025	0.025	ND	PASS
Carbofuran	0.0022	0.01	0.01	ND	PASS
Chlorantraniliprole	0.0146	0.10		ND	PASS
Chlorfenapyr	0.2688	1.5	1.5	ND	PASS
Chlorpyrifos	0.0143	0.5	0.5	ND	PASS
Clofentezine	0.0012	0.01	0.01	ND	PASS
Clothianidin	0.005	0.025	0.025	ND	PASS
Coumaphos	0.003	0.01	0.01	ND	PASS
Cyantraniliprole	0.0043	0.01	0.01	ND	PASS
Cyfluthrin	0.1434	0.50		ND	PASS
Cypermethrin	0.0451	0.30		ND	PASS
Cyprodinil	0.0023	0.01	0.01	ND	PASS
Daminozide	0.0351	0.30		ND	PASS
Deltamethrin	0.0305	0.10		ND	PASS
Diazinon	0.0163	0.10		ND	PASS
Dichlorvos	0.0127	0.05	0.05	ND	PASS
Dimethoate	0.0022	0.01	0.01	ND	PASS
Dimethomorph	0.0272	0.10		ND	PASS
Dinotefuran	0.0037	0.05	0.05	ND	PASS
Dodemorph	0.0247	0.10		ND	PASS
Endosulfan-alpha	0.1472	2.5	2.5	ND	PASS
Endosulfan-beta	0.2012	2.5	2.5	ND	PASS
Endosulfan sulfate	0.0181	2.5	2.5	ND	PASS
Ethoprophos	0.0029	0.01	0.01	ND	PASS
Etofenprox	0.0217	0.10		ND	PASS
Etoxazole	0.0161	0.10		ND	PASS
Etridiazol	0.0195	0.15	0.15	ND	PASS
Fenoxycarb	0.0032	0.01	0.01	ND	PASS
Fenpyroximate	0.0135	0.10		ND	PASS
Fensulfothion	0.0026	0.01	0.01	ND	PASS

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Pesticides Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Fenthion	0.0031	0.01	0.01	ND	PASS
Fenvalerate	0.1895	0.50		ND	PASS
Fipronil	0.0031	0.01	0.01	ND	PASS
Flonicamid	0.0047	0.025	0.025	ND	PASS
Fludioxonil	0.003	0.01	0.01	ND	PASS
Fluopyram	0.003	0.01	0.01	ND	PASS
Hexythiazox	0.0178	0.10		ND	PASS
Imazalil	0.0024	0.01	0.01	ND	PASS
Imidacloprid	0.0029	0.01	0.01	ND	PASS
Iprodione	0.0521	0.5	0.5	ND	PASS
Kinoprene	0.0895	1.25	1.25	ND	PASS
Kresoxim-methyl	0.0028	0.15	0.15	ND	PASS
Malathion	0.0023	0.01	0.01	ND	PASS
Metalaxyl	0.0022	0.01	0.01	ND	PASS
Methiocarb	0.003	0.01	0.01	ND	PASS
Methomyl	0.0041	0.025	0.025	ND	PASS
Methoprene	0.1350	0.50		ND	PASS
Mevinphos	0.0046	0.025	0.025	ND	PASS
MGK-264	0.2124	0.50		ND	PASS
Myclobutanil	0.005	0.01	0.01	ND	PASS
Naled	0.0245	0.10		ND	PASS
Novaluron	0.0031	0.025	0.025	ND	PASS
Oxamyl	0.0088	1.5	1.5	ND	PASS
Paclobutrazol	0.0033	0.01	0.01	ND	PASS
Parathion-methyl	0.2699	0.5		ND	PASS
Permethrin	0.0441	0.3		ND	PASS
Phenothrin	0.0583	0.30		ND	PASS
Phosmet	0.0157	0.30		ND	PASS
Piperonyl butoxide	0.0162	1.25	1.25	ND	PASS
Pirimicarb	0.002	0.01	0.01	ND	PASS
Prallethrin	0.0631	0.60		ND	PASS
Propiconazole	0.0178	0.10		ND	PASS
Propoxur	0.0025	0.01	0.01	ND	PASS
Pyraclostrobin	0.0029	0.01	0.01	ND	PASS
Pyrethrins	0.0221	0.10		ND	PASS
Pyridaben	0.0022	0.02	0.02	ND	PASS
Quintozene	0.1097	0.10		ND	PASS
Resmethrin	0.0098	0.05	0.05	ND	PASS
Spinetoram	0.0037	0.01	0.01	ND	PASS
Spinosad	0.0033	0.01	0.01	ND	PASS
Spirodiclofen	0.0801	0.3		ND	PASS
Spiromesifen	0.0200	0.10		ND	PASS
Spirotetramat	0.0032	0.01	0.01	ND	PASS

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Pesticides Analysis	LOD (ppm)	LOQ (ppm)	RL (ppm)	Result (ppm)	Status
Spiroxamine	0.0306	0.10		ND	PASS
Tebuconazole	0.0017	0.01	0.01	ND	PASS
Tebufenozide	0.0022	0.01	0.01	ND	PASS
Teflubenzuron	0.0037	0.025	0.025	ND	PASS
Tetrachlorvinphos	0.002	0.01	0.01	ND	PASS
Tetramethrin	0.0198	0.02		ND	PASS
Thiacloprid	0.0017	0.01	0.01	ND	PASS
Thiamethoxam	0.0019	0.01	0.01	ND	PASS
Thiophanate-methyl	0.0132	0.01		ND	PASS
Trifloxystrobin	0.0019	0.01	0.01	ND	PASS

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Details of Testing

Cannabinoid Analysis

Analysis of 11 Cannabinoids by HPLC & UHPLC

Method LAB-MTD-020: Flower (LOQ 0.06%), Oil (LOQ 0.03%), Concentrates (LOQ 0.6%)

Method LAB-MTD-021: Isolates (LOQ 0.06%)

Method LAB-MTD-023: Tablets & Granules (LOQ 0.025%)

Method LAB-MTD-030: Topicals (LOQ 0.005%)

Method LAB-MTD-039: Determination of 5 Cannabinoids in Cannabis Edibles; Liquid Edibles (LOQ 0.0002%) and Solid Edibles (LOQ 0.005%)

Terpene Analysis

Profile of 42 terpenes by GC/MS

Method LAB-MTD-035: Cannabis Flower, Oil

Pesticide Analysis

Determination of 96 Pesticide Residues by LC/MS/MS and GC/MS/MS

Method LAB-MTD-010: Cannabis Flower, Oil

Method LAB-MTD-040: Determination of EP Pesticide Residue in Cannabis Oil by GCMSMS

Method LAB-MTD-041: Determination of EP Pesticide Residues in Cannabis Flower and Related Products by GCMSMS

Mycotoxin Analysis

Determination of Aflatoxins B1, B2, G1, G2 and Ochratoxin-A by LC/MS/MS

Method LAB-MTD-010: Cannabis Flower, Oil

Method LAB-MTD-029: Tablets

Method LAB-MTD-037: Topicals

Heavy Metal Analysis

Determination of Heavy Metal contamination (Arsenic, Cadmium, Lead & Mercury) by ICP/MS

Method LAB-MTD-027: Cannabis Flower, Oil, Topicals, Tablets

Residual Solvents Analysis

Determination of 24 Residual Solvents by GC/MS

Method LAB-MTD-036: Cannabis Oil

Method LAB-MTD-028: Tablets

Determination of Butane and Propane Residual Solvents in Cannabis Oil

Method LAB-MTD-034 (GC/MS): Cannabis Oil

Information is accurate unless otherwise stated. The results of this report are reflective only to material and product analyzed as received. This report shall not be reproduced, without written approval from High North Laboratories. Test Results are confidential unless explicitly waived otherwise.

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Details of Testing

Microbial Analysis, Powdery Mildew & Gender Determination

Molecular detection and quantitation by PCR & qPCR

Cannabis Flower, Oil, Cannabis-Infused Products

Method MIC-MTD-001 (TAMC, TYMC, BTGN, E.coli, Salmonella, Staph/Pseudomonas)

Method MIC-MTD-005: (Powdery Mildew & Gender Determination)

Method MIC-MTD-006: Determination of Viruses in Cannabis via qPCR and ELISA

Moisture Analysis

Water Activity & Moisture Content (Loss on Drying)

Method LAB-MTD-017 (Loss on Drying; Dry flower only)

Method LAB-MTD-031 (Water activity, a_w)

Foreign Matter Analysis

Visual/Magnified Inspection for Foreign Matter

Method LAB-MTD-022

Total Ash Analysis

Method LAB-MTD-043: Total Ash by Muffle Furnace in Cannabis Products

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