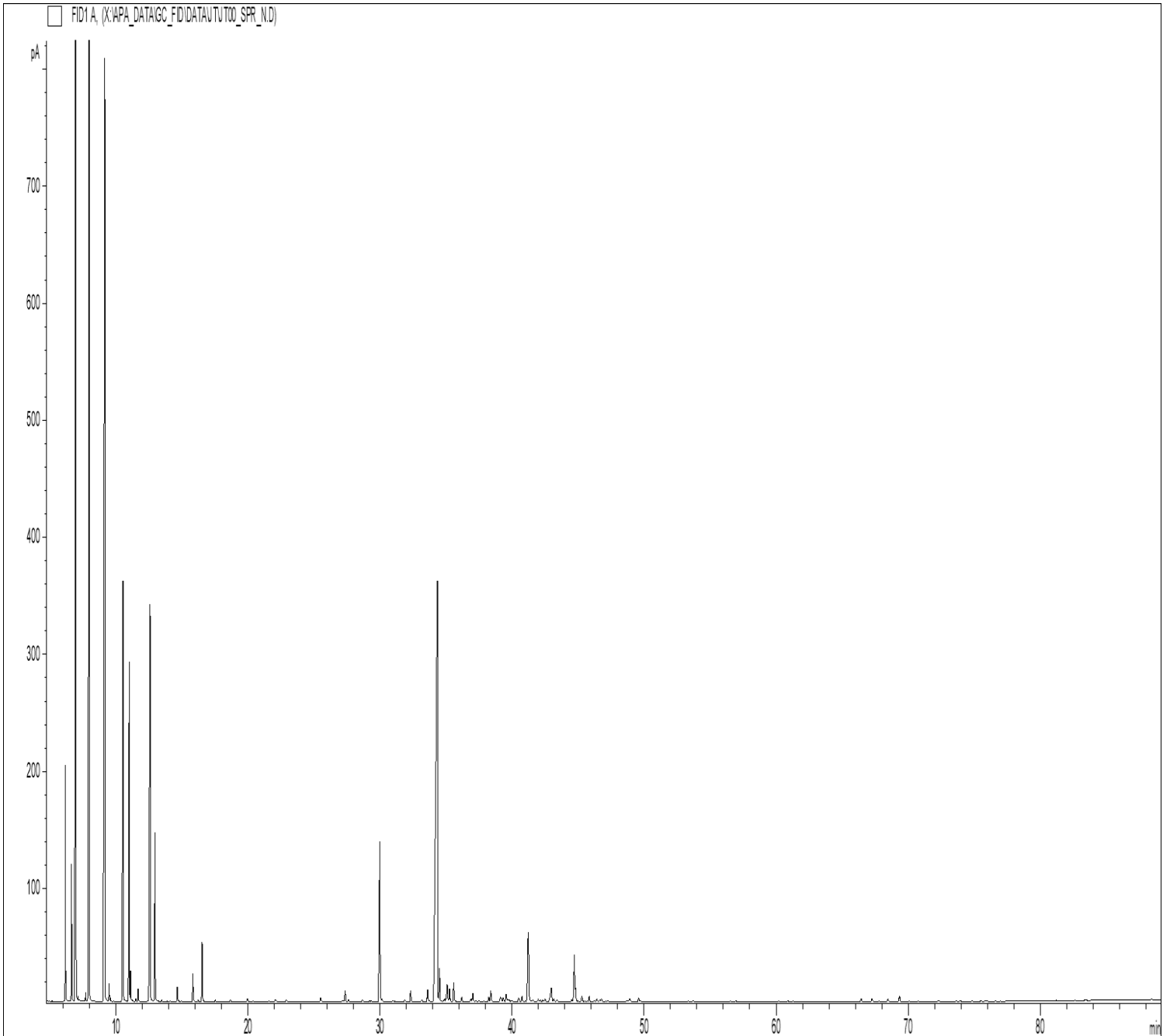


GCMS ANALYSIS

PRODUCT NAME: SPRUCE ESSENTIAL OIL - HEMLOCK - 11135

DATE: June 6, 2023



Due to volume turnover, this report is not lot specific, It is representative of the quality of this oil produced by the manufacturer of this product, Specific lots may vary slightly as is the case in natural products,

GCMS ANALYSIS (cont'd.)

PRODUCT NAME: SPRUCE ESSENTIAL OIL – HEMLOCK – 11135

Peak	RT (min)	Compound name	%
1	6,17	SANTENE	1,91
2	6,64	TRICYCLENE	1,35
3	6,98	alpha-PINENE	20,35
4		alpha-THUYENE	
5	7,13	AROMATIC COMPOUND Mw=122	0,02
6	7,70	alpha-FENCHENE	0,09
7	7,97	CAMPHENE	12,76
8	9,16	beta-PINENE	15,84
9	9,49	SABINENE	0,18
10	9,57	PINADIENE	0,04
11	10,54	delta3-CARENE	5,74
12	11,01	beta-MYRCENE	4,16
13	11,11	alpha-PHELLANDRENE	0,33
14	11,51	o-CYMENE	0,03
15	11,68	alpha-TERPINENE	0,16
16	12,59	LIMONENE	6,28
17	12,96	1,8-CINEOLE	2,13
18		beta-PHELLANDRENE	
19	13,19	1,3,8-p-MENTHATRIENE	0,02
20	13,47	COMPOUND Mw=152	0,02
21	14,12	cis-beta-OCIMENE	0,01
22	14,66	gamma-TERPINENE	0,21
23	15,18	trans-beta-OCIMENE	0,01
24	15,82	p-CYMENE	0,39
25	16,22	ISOTERPINOLENE	0,02
26	16,53	TERPINOLENE	0,80
27	17,53	3-HEXEN-1-OL ACETATE	0,03
28	18,68	PINOL	0,03
29	19,97	CAMPHOLENAL ISOMER	0,05
30	20,38	ALIPHATIC ESTER	0,02

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: SPRUCE ESSENTIAL OIL – HEMLOCK – 11135

Peak	RT (min)	Compound name	%
31	21,60	alpha-PINENE OXIDE	0,01
32	22,08	3-HEXEN-1-OL	0,06
33	22,89	FENCHONE	0,04
34	24,33	COMPOUND Mw=150	0,01
35	24,93	DIMETHYLSTYRENE ISOMER	0,01
36	25,50	alpha,p-DIMETHYLSTYRENE	0,09
37	27,11	alpha-CUBEBENE	0,01
38	27,22	4,8-TERPINOLENE EPOXIDE	0,02
39	27,36	FENCHYL ACETATE	0,19
40	27,62	alpha-LONGIPINENE	0,04
41	28,17	CITRONELLAL	0,02
42	28,67	alpha-CAMPHOLENAL	0,05
43	29,23	alpha-COPAENE	0,02
44	29,35	LONGICYCLENE	0,02
45	29,99	CAMPHOR	2,87
46	30,14	PINOCAMPHONE	0,05
47	30,98	COMPOUND Mw=152	0,02
48	31,14	SESQUITERPENE	0,01
49	31,88	ISOPINOCAMPHONE	0,04
50	32,32	LINALOOL	0,18
51	33,17	ISOPULEGOL	0,06
52	33,60	LONGIFOLENE	0,27
53	33,95	SESQUITERPENE	0,01
54	34,34	BORNYL ACETATE	15,09
55	34,50	ISOBORNYL ACETATE	0,50
56	34,79	SESQUITERPENE	0,02
57	34,88	METHYL THYMOL ETHER	0,05
58	35,08	CAMPHENE HYDRATE	0,39
59	35,27	beta-CARYOPHYLLENE	0,25
60	35,57	TERPINENE-4-OL	0,34

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GCMS ANALYSIS (cont'd,)

PRODUCT NAME: SPRUCE ESSENTIAL OIL – HEMLOCK – 11135

Peak	RT (min)	Compound name	%
61	36,18	AROMATIC COMPOUND Mw=194	0,08
62	36,87	MYRTENAL	0,06
63	37,03	MYRTENIC ESTER	0,17
64	37,24	ALIPHATIC ESTER	0,03
65	37,48	CADINA-3,5-DIENE	0,02
66	37,83	SESQUITERPENE	0,03
67	38,22	cis-PINOCARVYL ACETATE	0,08
68	38,38	trans-PINOCARVEOL	0,22
69	39,12	ZONARENE	0,14
70	39,33	CITRONELLYL ACETATE	0,09
71	39,55	alpha-HUMULENE	0,15
72	39,70	E-beta-FARNESENE	0,05
73	39,79	cis-4,5-MUROLADIENE	0,02
74	39,97	gamma-SELINENE	0,04
75	40,48	TERPENIC ESTER	0,09
76	40,75	gamma-MUROLENE	0,10
77	40,99	SESQUITERPENE	0,02
78	41,23	BORNEOL	1,76
79		alpha-TERPINEOL	
80	41,57	VERBENONE	0,05
81	41,98	GERMACRENE D	0,06
82	42,12	MUROLADIENE ISOMER	0,03
83	42,31	SESQUITERPENE	0,03
84	42,49	beta-SELINENE	0,06
85	42,90	PIPERITONE	0,09
86	42,97	alpha-SELINENE	0,32
87		alpha-MUROLENE	
88	43,17	beta-BISABOLENE	0,06
89	43,40	cis-CARVYL ACETATE	0,05
90	43,89	beta-CURCUMENE	0,02

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GCMS ANALYSIS (cont'd.)

PRODUCT NAME: SPRUCE ESSENTIAL OIL – HEMLOCK – 11135

Peak	RT (min)	Compound name	%
91	44,50	E,E-alpha-FARNESENE	0,04
92	44,71	delta-CADINENE	0,88
93	44,80	gamma-CADINENE	0,21
94	44,98	METHYL SALICYLATE	0,02
95	45,28	CITRONELLOL	0,12
96	45,51	SESQUITERPENE	0,02
97	45,66	alpha-CURCUMENE	0,02
98	45,84	trans-alpha-BISABOLENE	0,09
99	46,22	CADINA-1,4-DIENE	0,03
100	46,41	MYRTENOL	0,05
101	46,65	CAMPHOLENOL	0,03
102	46,77	alpha-AMORPHENE	0,06
103	47,10	TERPENIC COMPOUND	0,01
104	47,26	TERPENIC COMPOUND	0,03
105	48,73	cis-CALAMENENE	0,05
106	48,91	trans-CALAMENENE	0,09
107	49,30	m-CYMENE-8-OL	0,01
108	49,57	p-CYMENE-8-OL	0,07
109	49,72	GERANIOL	0,03
110	53,33	AROMATIC COMPOUND	0,01
111	53,70	alpha-CALACORENE	0,02
112	56,55	ALIPHATIC COMPOUND	0,02
113	56,96	CARYOPHYLLENE OXIDE	0,02
114	58,42	METHYLEUGENOL	0,01
115	60,88	Epi-CUBENOL	0,02
116	61,27	CUBENOL	0,01
117	62,15	SESQUITERPENOL	0,01
118	66,44	T-CADINOL	0,06
119	67,25	alpha-MUUROLOL	0,06
120	67,79	delta-CADINOL	0,02

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GCMS ANALYSIS (cont'd,)

PRODUCT NAME: SPRUCE ESSENTIAL OIL – HEMLOCK – 11135

Peak	RT (min)	Compound name	%
121	68,48	DITERPENE	0,05
122	69,34	alpha-CADINOL	0,10
123	70,75	DITERPENE	0,02
124	72,29	TERPENIC COMPOUND	0,02
125	74,83	MANOYL OXIDE	0,01
126	79,06	AROMATIC COMPOUND	0,01
127	88,44	AROMATIC COMPOUND	0,02
		TOTAL	100,00

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