

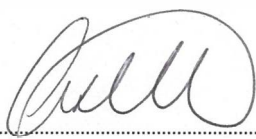
### CERTIFICATE OF ANALYSIS

<b>SAMPLE NAME</b>		Marjoram oil	
<b>FORM</b>		Oil	
<b>CUSTOMER NAME</b>		Buckley & Phillips Aromatics	
<b>CERTIFICATION DATE</b>		06 May 2019	
<b>CUSTOMER REFERENCE</b>		29916/36	
<b>ARL JOB #</b>	A190904	<b>LAB REF. #</b>	ARL1902301
<b>ANALYSIS</b>	GCFID - Area%		

TEST	RESULTS	TEST METHOD
	Area %	
sabinene	7.33	ARL-TM101-3*
myrcene	1.96	
$\alpha$ -terpinene	7.20	
limonene	2.12	
$\beta$ -phellandrene	1.72	
p-cymene	2.36	
$\gamma$ -terpinene	12.40	
trans sabinene hydrate	4.69	
terpinolene	2.92	
linalool	1.02	
cis sabinene hydrate	17.18	
cis p-menth-2-en-1-ol	1.49	
trans p-menth-2-en-1-ol	0.91	
terpinen-4-ol	22.67	
$\alpha$ -terpineol	3.08	
linalyl acetate	2.14	
$\beta$ -caryophyllene	2.32	
bicyclogermacrene	0.86	

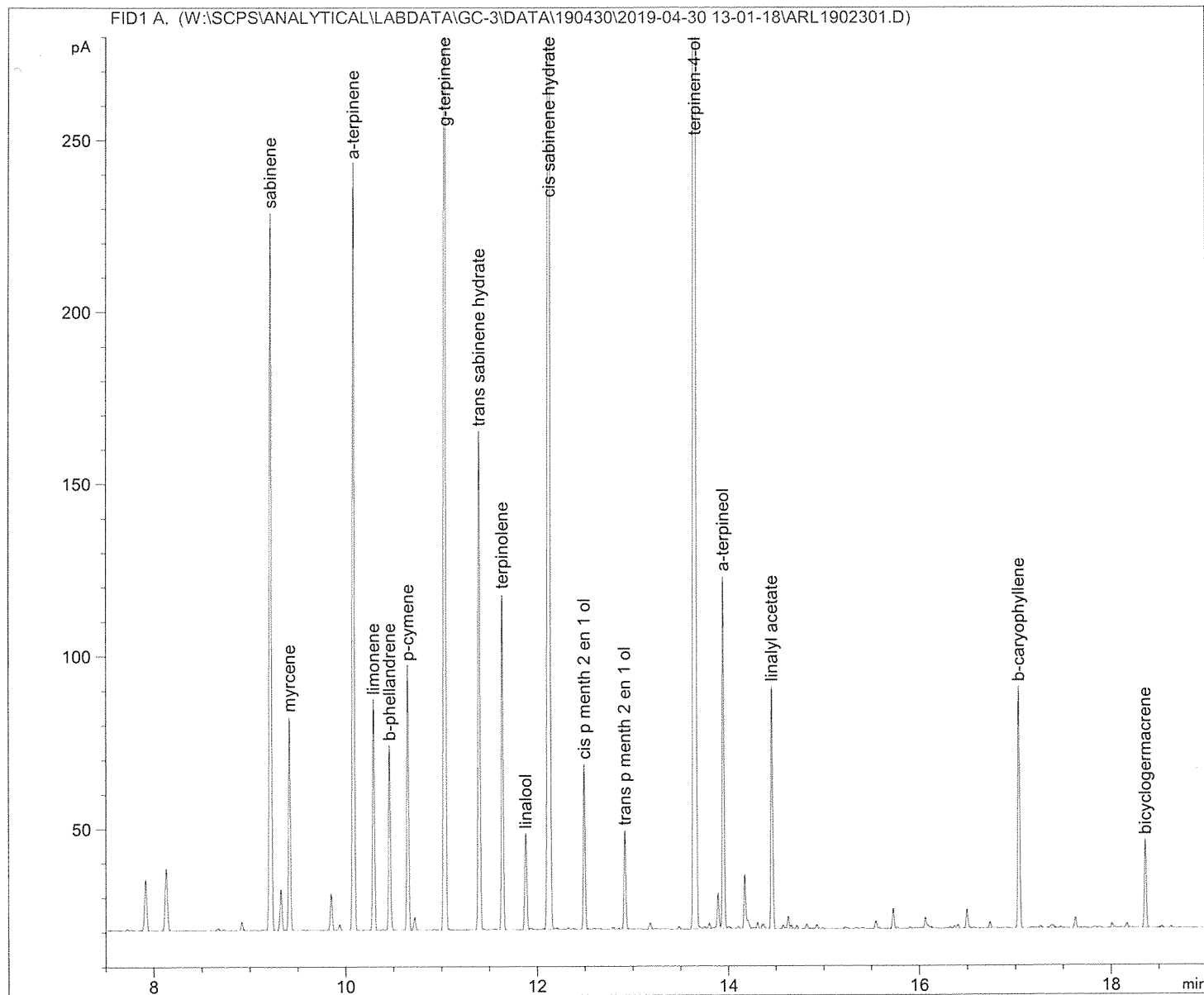
\* Assay by GC (FID detection –area percent report)

  
 Dr Jeanette Balindong  
 ANALYTICAL OFFICER

  
 Mr Ashley Dowell  
 MANAGER - ARL

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=====
Acq. Operator   : Ana & Jeanette           Seq. Line :    8
Acq. Instrument : GC-3                     Location  : Vial 8
Injection Date  : 30/04/2019 6:02:16 PM    Inj       :    1
                                           Inj Volume: 1.000 µl
Acq. Method    : C:\DATA\GC-3\DATA\190430\2019-04-30 13-01-18\MARJORAM.M
Last changed   : 23/04/2019 10:25:44 AM by Ana & Regan
Analysis Method: W:\SCPS\ANALYTICAL\LABDATA\GC-3\METHODS\MARJORAM.M
Last changed   : 2/05/2019 2:33:47 PM
                (modified after loading)
Method Info    : Method to analyse essential oils
=====
  
```



=====  
 Area Percent Report  
 =====

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Sorted By      : Signal
Calib. Data Modified : 6/23/2016 2:16:14 PM
Multiplier:    : 1.0000
Dilution:      : 1.0000
Use Multiplier & Dilution Factor with ISTDs
  
```

*Handwritten:* 2/5/19

Signal 1: FID1 A,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	9.218	VB	0.0234	310.85355	7.3316	sabinene
2	9.416	VB	0.0212	83.12130	1.9604	myrcene
3	10.085	BB	0.0215	305.15866	7.1972	a-terpinene
4	10.290	BB	0.0211	89.70528	2.1157	limonene
5	10.460	BB	0.0219	73.06669	1.7233	b-phellandrene
6	10.650	BV	0.0208	100.23845	2.3641	p-cymene
7	11.040	VB	0.0215	525.88287	12.4031	g-terpinene
8	11.399	BV	0.0215	198.87817	4.6906	trans sabinene hydrate
9	11.641	BB	0.0198	123.68255	2.9171	terpinolene
10	11.884	BV	0.0245	43.32288	1.0218	linalool
11	12.135	VV	0.0259	728.55072	17.1831	cis sabinene hydrate
12	12.495	BV	0.0208	63.01868	1.4863	cis p menth 2 en 1 ol
13	12.918	BV	0.0205	38.40635	0.9058	trans p menth 2 en 1 ol
14	13.663	BV	0.0248	961.19232	22.6700	terpinen-4-ol
15	13.952	VV	0.0199	130.57294	3.0796	a-terpineol
16	14.460	BB	0.0205	90.76688	2.1408	linalyl acetate
17	17.040	BB	0.0223	98.24113	2.3170	b-caryophyllene
18	18.361	BB	0.0226	36.50101	0.8609	bicyclogermacrene

Totals : 4001.16043 94.3684

\*\*\* End of Report \*\*\*

*YLB*  
*2/5/19*