

### CERTIFICATE OF ANALYSIS

<b>SAMPLE NAME</b>		Eucalyptus radiata Essential Oil	
<b>FORM</b>		Oil	
<b>CUSTOMER NAME</b>		Projects Etc Pty (Japan)	
<b>CERTIFICATION DATE</b>		12 September 2018	
<b>CUSTOMER REFERENCE</b>		RD0818	
<b>ARL JOB #</b>	A182099	<b>LAB REF. #</b>	ARL186615
<b>ANALYSIS</b>	GCFID - Area%	<b>METHOD</b>	ARL-TM101-3

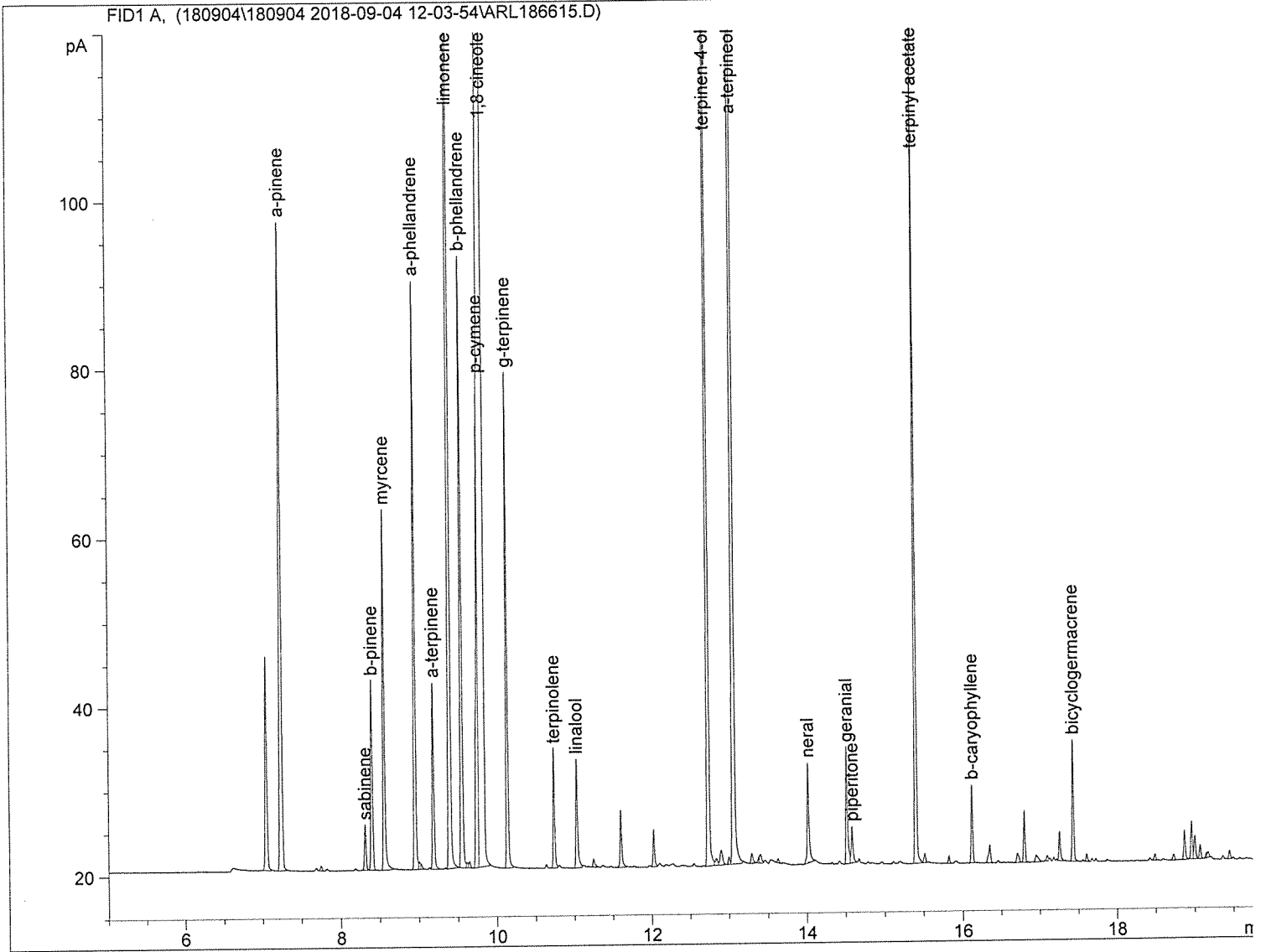
TEST	RESULTS	TEST METHOD
	Area %	
α-pinene	2.77	ARL-TM101-3*
sabinene	0.17	
β-pinene	0.71	
myrcene	1.28	
α-phellandrene	2.02	
α-terpinene	0.67	
limonene	6.02	
β-phellandrene	2.22	
p-cymene	1.88	
1,8-cineole	59.62	
γ-terpinene	1.58	
terpinolene	0.41	
linalool	0.42	
terpinen-4-ol	4.81	
α-terpineol	8.27	
neral	0.41	
geranial	0.44	
peperitone	0.15	
terpinyl acetate	2.71	
β-caryophyllene	0.27	
bicyclogermacrene	0.41	

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

  
 Jeanette Balindong  
 ANALYTICAL OFFICER

  
 Ashley Dowell  
 MANAGER - ARL

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Acq. Operator : JB Seq. Line : 4  
Acq. Instrument : GC-3 Location : Vial 5  
Injection Date : 9/4/2018 2:35:40 PM Inj : 1  
Inj Volume : 1 µl  
Acq. Method : D:\GC-3\_DATA\DATA\180904\180904 2018-09-04 12-03-54\EUC RADIATA.M  
Last changed : 12/6/2016 9:37:56 AM by DS  
Analysis Method : D:\GC-3\_DATA\METHODS\EUC RADIATA.M  
Last changed : 9/12/2018 2:27:09 PM by JB & SM  
(modified after loading)  
Method Info : Method to analyse essential oils



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Area Percent Report  
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Sorted By : Signal  
Calib. Data Modified : Wednesday, September 12, 2018 2:26:59 PM  
Multiplier : 1.0000  
Dilution : 1.0000  
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A,

Peak #	RetTime [min]	Type	Width [min]	Area [pA*s]	Area %	Name
1	7.237	BV	0.0254	129.36951	2.77013	a-pinene
2	8.310	VV	0.0225	7.84675	0.16802	sabinene
3	8.395	BV	0.0235	33.29905	0.71302	b-pinene
4	8.551	VV	0.0208	59.75762	1.27956	myrcene
5	8.944	BV	0.0208	94.47289	2.02291	a-phellandrene
6	9.180	VV	0.0214	31.10760	0.66609	a-terpinene
7	9.392	BB	0.0211	281.16193	6.02040	limonene
8	9.547	BV	0.0219	103.87012	2.22412	b-phellandrene
9	9.765	BV	0.0211	88.01897	1.88471	p-cymene
10	9.826	VV	0.0261	2784.55054	59.62435	1,8 cineole
11	10.131	BV	0.0194	73.66177	1.57729	g-terpinene
12	10.731	BV	0.0198	18.95990	0.40598	terpinolene
13	11.025	BV	0.0222	19.59368	0.41955	linalool
14	12.729	BV	0.0203	224.46999	4.80648	terpinen-4-ol
15	13.060	VV	0.0199	386.03409	8.26598	a-terpineol
16	14.011	BV	0.0236	19.26353	0.41248	neral
17	14.508	BV	0.0221	20.33656	0.43546	geranial
18	14.577	VV	0.0214	6.85249	0.14673	piperitone
19	15.398	VV	0.0195	126.58264	2.71046	terpinyl acetate
20	16.118	VV	0.0204	12.70046	0.27195	b-caryophyllene
21	17.430	BV	0.0195	19.19366	0.41099	bicyclogermacrene

Totals : 4541.10373 97.2366

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