

CERTIFICATE OF ANALYSIS

SAMPLE NAME		Juniperberry oil	
FORM		Oil	
CUSTOMER NAME		Buckley & Phillips Aromatics	
CERTIFICATION DATE		06 May 2019	
CUSTOMER REFERENCE		30450/19	
ARL JOB #	A190904	LAB REF. #	ARL1902305
ANALYSIS	GCFID - Area%		

TEST	RESULTS	TEST METHOD
	Area %	
α -pinene	58.33	ARL-TM101-3*
camphene	0.60	
β -pinene	18.48	
myrcene	1.15	
limonene	9.97	
terpinolene	0.41	
terpinen-4-ol	0.55	
α -terpineol	2.04	
longifolene	1.11	
caryophyllene	1.41	
β -cedrene	0.50	
cedrol	0.84	

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



 Dr Jeanette Balindong
ANALYTICAL OFFICER



 Mr Ashley Dowell
MANAGER - ARL

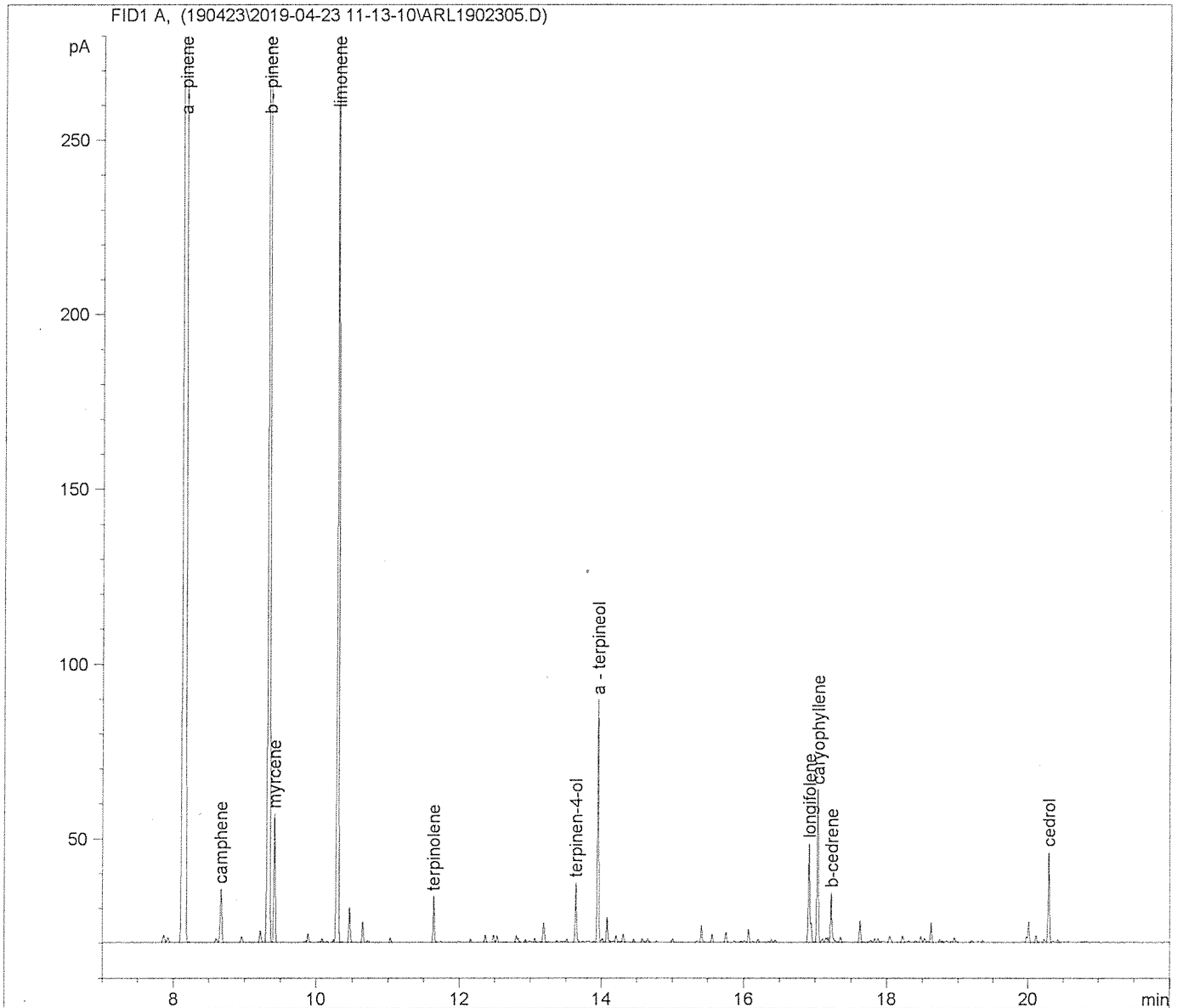
Sample Name: Juniperberry oil 30450/19

```

=====
Acq. Operator   : Ana & Regan                Seq. Line :   14
Acq. Instrument : GC-3                      Location  : Vial 9
Injection Date  : 4/23/2019 7:47:33 PM      Inj       :    1
                                          Inj Volume: 1 µl

Acq. Method     : C:\DATA\GC-3\DATA\190423\2019-04-23 11-13-10\JUNIPER BERRY.M
Last changed    : 4/23/2019 10:46:27 AM by Ana & Regan
Analysis Method : C:\DATA\GC-3\METHODS\INGREDIENT WAREHOUSE (JUNIPER BERRY).M
Last changed    : 5/6/2019 11:59:47 AM by BEN LIU
Method Info     : Method to analyse essential oils

```



843
6/5/19

Sample Name: Juniperberry oil 30450/19

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

Sorted By : Signal
Calib. Data Modified : Monday, May 06, 2019 11:55:52 AM
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	8.157	BB	0.0304	2549.36743	58.33437	a - pinene
2	8.666	VB	0.0268	26.18840	0.59924	camphene
3	9.332	VV	0.0258	807.60449	18.47953	b - pinene
4	9.413	VB	0.0213	50.09736	1.14632	myrcene
5	10.294	VB	0.0218	435.71506	9.96999	limonene
6	11.637	BV	0.0209	17.75011	0.40616	terpinolene
7	13.637	BV	0.0218	24.21573	0.55410	terpinen-4-ol
8	13.948	VV	0.0199	89.21723	2.04146	a - terpineol
9	16.914	VV	0.0254	48.70509	1.11447	longifolene
10	17.037	VV	0.0224	61.67859	1.41132	caryophyllene
11	17.224	VV	0.0228	21.90432	0.50121	b-cedrene
12	20.299	VV	0.0218	36.52883	0.83585	cedrol

Totals : 4168.97264 95.3940

=====
*** End of Report ***

ylb
6/5/19