AGAT® Laboratories

HYDROCARBON LIQUID ANALYSIS

N.E.B. COPY

Container Identification	Laboratory Number
PB#14	CG63754N

Operator Name
PARAMOUNT RESOURCES LTD.

Unique Well Identifier	Well Name	Elevation			
Not Available	PARA et al FORT LIARD N-01	KB m	492.10	GRD m	487.00

Field or Area	Pool or Zone	Sampler's Company
FORT LIARD	MATTSON	ALPINE

Test Type	Test No.	Test Recovery	Name of Sampler
DST	#5	60 deg 10' LATITUDE 123 deg 15' LONGITUDE	

Test Interval or Perfs		Sampling Point
1738.00-1759.00		2
mKB		

	Separator	Reservoir	Source	Sampled	Received
Pressure (kPa)					
Temperature (°C)					

Date Sampled	Date Received	Date Reported	Analyst
Jan 10, 2001	Jan 12, 2001	Jan 16, 2001	KK

Other Information

COMP.	MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
N2	0.0000	0.0000	0.0000
CO2	0.0000	0.0000	0.0000
H2S	0.0000	0.0000	0.0000
C1	0.0001	TRACE	TRACE
C2	0.0014	0.0003	0.0007
C3	0.0010	0.0003	0.0005
IC4	0.0007	0.0003	0.0005
NC4	0.0017	0.0008	0.0010
IC5	0.0033	0.0019	0.0023
NC5	0.0047	0.0026	0.0032
C6	0.0202	0.0134	0.0157
C7+	0.9669	0.9804	0.9761
TOTAL	**1.0000**	**1.0000**	**1.0000**

Observed Properties of C7+ Residue (15/15° C)

Density	*Relative Density*	*API @ 15°*
782.9 kg/m³	0.7836	49.1

Relative Molecular Mass: 130.4

Calculated Properties of Total Sample (15/15° C)

Density	*Relative Density*	*API @ 15°*
779.4 kg/m³	0.7801	49.9

Relative Molecular Mass: 128.6

Calculations for C6 and C7 are based on Boiling Point Grouping. If Carbon Number Grouping had been done, the mole fractions would be (C6: 0.0475) (C7+:0.9396)

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PROPERTIES OF C6+ FRACTION

File No.	Company	Well No.
CG63754N	PARAMOUNT RESOURCES LTD.	Not Available

BOILING POINT RANGE (C)	COMPONENT		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
36.1 - 68.9	HEXANES	C6	0.0193	0.0129	0.0152
68.9 - 98.3	HEPTANES	C7	0.0496	0.0400	0.0438
98.3 - 125.6	OCTANES	C8	0.1372	0.1261	0.1345
125.6 - 150.6	NONANES	C9	0.1370	0.1413	0.1476
150.6 - 173.9	DECANES	C10	0.1372	0.1570	0.1613
173.9 - 196.1	UNDECANES	C11	0.0805	0.1011	0.1028
196.1 - 215.0	DODECANES	C12	0.0373	0.0511	0.0513
215.0 - 235.0	TRIDECANES	C13	0.0295	0.0437	0.0435
235.0 - 252.2	TETRADECANES	C14	0.0175	0.0279	0.0275
252.2 - 270.6	PENTADECANES	C15	0.0109	0.0187	0.0182
270.6 - 287.8	HEXADECANES	C16	0.0045	0.0082	0.0080
287.8 - 302.8	HEPTADECANES	C17	0.0015	0.0029	0.0028
302.8 - 317.2	OCTADECANES	C18	0.0003	0.0007	0.0007
317.2 - 330.0	NONADECANES	C19	0.0001	0.0002	0.0002
330.0 - 344.4	EICOSANES	C20	0.0000	0.0001	0.0001
344.4 - 357.2	HENEICOSANES	C21	0.0000	0.0000	0.0000
357.2 - 369.4	DOCOSANES	C22	0.0000	0.0000	0.0000
369.4 - 380.0	TRICOSANES	C23	0.0000	0.0000	0.0000
380.0 - 391.1	TETRACOSANES	C24	0.0000	0.0000	0.0000
391.1 - 401.7	PENTACOSANES	C25	0.0000	0.0000	0.0000
401.7 - 412.2	HEXACOSANES	C26	0.0000	0.0000	0.0000
412.2 - 422.2	HEPTACOSANES	C27	0.0000	0.0000	0.0000
422.2 - 431.7	OCTACOSANES	C28	0.0000	0.0000	0.0000
431.7 - 441.1	NONACOSANES	C29	0.0000	0.0000	0.0000
441.1 - PLUS	TRIACONTANES PLUS	C30+	0.0000	0.0000	0.0000

BOILING POINT RANGE (C)	AROMATICS		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
80.0	BENZENE	C6	0.0043	0.0027	0.0023
110.6	TOLUENE	C7	0.0748	0.0554	0.0482
136.2	ETHYLBENZENE	C8	0.0137	0.0117	0.0102
138.4 - 144.4	XYLENES	C8	0.1196	0.1021	0.0883
168.9	1,2,4 TRIMETHYLBENZENE	C9	0.0231	0.0223	0.0193

BOILING POINT RANGE (C)	NAPHTHENES		MOLE FRACTION	MASS FRACTION	VOLUME FRACTION
48.9	CYCLOPENTANE	CC5	0.0009	0.0005	0.0005
72.2	METHYLCYCLOPENTANE	MCC5	0.0051	0.0035	0.0034
81.1	CYCLOHEXANE	CC6	0.0179	0.0121	0.0117
101.1	METHYLCYCLOHEXANE	MCC6	0.0651	0.0514	0.0504

The above hexanes plus values are based upon a measured mass fraction and a calculated mole fraction, and assume a total hydrocarbon recovery from the chromatographic system.