AGAT® Laboratories

EXTENDED GAS ANALYSIS

No flag set.

Container Identification
5005320

Operator Name	Laboratory Number
EOG RESOURCES CANADA INC.	12ES570878B

Unique Well Identifier	Well Name
16-21-001-25W1	WASKADA 16-21 PLANT

Field or Area	Pool or Zone	Sampler's Company
WASKADA	NOT APPLICABLE	AGAT/ESTEVAN

Well License	Elevation	Test Type	Test No.	Name of Sampler
	KB m GRD m			

Test Interval or Perfs mKB		Sampling Point
		BATTERY GAS

	Separator	Reservoir	Source	Sampled	Received
Pressure (kPa)			50	50	50
Temperature			5	5	21

Date Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Feb 01, 2012	Feb 03, 2012	Feb 06, 2012	Feb 06, 2012	Calgary - Gerry Ecker - Reporter

Other Information

FIELD H2S BY TUT = 0.38%, COMMINGLED GAS FROM 15-21 BATTERY

** Results relate only to the items tested*

COMPONENT	Mole Fraction		LIQUID VOLUMES mL / m³
	As Received	Air & Acid Gas Free	
Hydrogen	0.00045	0.00045	
Helium	0.00016	0.00016	
Nitrogen	0.07180	0.07242	
Carbon Dioxide	0.00469	0.00000	
Hydrogen Sulfide	0.00380	0.00000	
Methane	0.34260	0.34554	
Ethane	0.21101	0.21281	749.6
Propane	0.22039	0.22228	809.6
Isobutane	0.02958	0.02984	129.2
n-Butane	0.07299	0.07362	307.2
Isopentane	0.01336	0.01347	65.3
n-Pentane	0.01521	0.01534	73.5
Hexanes	0.00785	0.00792	42.1
Heptanes+	0.00612	0.00617	37.8
TOTAL	**1.00000**	**1.00000**	**2214.2**

Gross Heating Value MJ/m³ 15 °C and 101.325 kPa

Moisture Free (MJ/m³)	Moisture and Acid Gas Free (MJ/m³)
67.53	68.02

Calculated Relative Density Moisture Free

1.147

Calculated Density C7+ Fraction (kg/m³) Moisture Free

702.4

Calculated pseudo critical properties

As Sampled		Acid Gas Free	
Ppc (kPa abs)	pTC (K)	Ppc (kPa abs)	pTC (K)
4376.55	286.82	4344.63	286.41

Calculated molecular weight (g/mol)

Total Sample	C7+ Fraction
33.23	102.62

Calculated C5+ Vapour Pressure (kPa abs)

99.05

Field H2S (ppm)

Tutweiler
3800.00

Laboratory H2S (ppm)

0.00

This analysis and calculations are based on GPA 2286, GPA 2145, AGA#5, and TP-17

AGAT® Laboratories

PROPERTIES OF C6+ FRACTION

File No.	Company	UWI / LSD
12ES570878B	EOG RESOURCES CANADA INC.	16-21-001-25W1

BOILING POINT RANGE (°C)	SUMMARY	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m³)
36.2+	Hexanes+ (C6+)	0.01396	13965	0.01408	79.8779
98.6+	Octanes+ (C8+)	0.00156	1557	0.00157	9.9155
125.8+	Nonanes+ (C9+)	0.00019	186	0.00019	1.2571
150.9+	Decanes+ (C10+)	0.00000	0	0.00000	0.0000
174.3+	Undecanes+ (C11+)	0.00000	0	0.00000	0.0000
196.00+	Dodecanes+ (C12+)	0.00000	0	0.00000	0.0000
216.4+	Tridecanes+ (C13+)	0.00000	0	0.00000	0.0000
235.6 - 270.7	Tetradecanes+ (C14+)	0.00000	0	0.00000	0.0000

BOILING POINT RANGE (°C)	GROUPINGS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m³)
68.9 - 98.6	Heptanes (C7)	0.00456	4560	0.00460	27.8614
98.6 - 125.8	Octanes (C8)	0.00137	1371	0.00138	8.6584
125.8 - 150.9	Nonanes (C9)	0.00019	186	0.00019	1.2571
150.9 - 174.3	Decanes (C10)	0.00000	0	0.00000	0.0000
174.3 - 196.00	Undecanes (C11)	0.00000	0	0.00000	0.0000
196.00 - 216.4	Dodecanes (C12)	0.00000	0	0.00000	0.0000
216.4 - 235.6	Tridecanes (C13)	0.00000	0	0.00000	0.0000
235.6 - 253.6	Tetradecanes (C14)	0.00000	0	0.00000	0.0000
253.6 - 270.69	Pentadecanes (C15)	0.00000	0	0.00000	0.0000

BOILING POINT RANGE (°C)	RELEVENT COMPONENTS	AIR FREE AS RECEIVED MOLE FRACTION	AIR FREE AS RECEIVED (ppm)	AIR & ACID GAS FREE MOLE FRACTION	AIR FREE AS RECEIVED LIQUID VOLUMES (mL / m³)
49.28	Cyclopentane	0.00150	1496	0.00151	7.2853
68.73	n-Hexane	0.00278	2780	0.00280	15.2598
71.83	Methylcyclopentane	0.00001	< 10	0.00001	0.0274
80.06	Benzene	0.00001	12	0.00001	0.0453
80.78	Cyclohexane	0.00015	154	0.00016	0.8063
99.24	2,2,4-Trimethylpentane	0.00000	0	0.00000	0.0000
100.94	Methylcyclohexane	0.00004	42	0.00004	0.2233
110.61	Toluene	0.00026	262	0.00026	1.1722
136.16	Ethylbenzene	0.00000	< 10	0.00000	0.0246
138.33; 139.09	m&p-Xylene	0.00004	37	0.00004	0.1915
144.42	o-Xylene	0.00000	< 10	0.00000	0.0142
169.34	1,2,4-Trimethylbenzene	0.00000	0	0.00000	0.0000