



EXTENDED HYDROCARBON LIQUID STUDY
CERTIFICATE OF ANALYSIS

Company:	Synergy Resources	Sample Name:	Wolfson #26-2 Unpressurized Liquid
Sample Date:	5/25/2016	Sample Number:	16052709-01
Sample Facility:	Wolfson #26-2	Date Tested:	6/1/2016
Sample Equipment:	Bradenhead	Test Method:	GPA 2186M
Sample Location:	Not Indicated	Date Reported:	6/2/2016
Sample Pressure:	Ambient		
Sample Temperature:	61°F		
Sampling Method:	GPA-2174		
Type Sample:	Spot		

Components	Mole %	Weight %	Liq. Vol. %
Carbon Dioxide	0.000	0.000	0.000
Nitrogen	0.023	0.004	0.004
Methane	0.007	0.001	0.002
Ethane	0.510	0.104	0.215
Propane	2.761	0.826	1.198
iso-Butane	3.405	1.343	1.755
n-Butane	8.025	3.170	3.990
iso-Pentane	3.960	1.939	2.281
n-Pentane	2.249	1.101	1.284
2-Methylpentane	2.776	1.624	1.825
3-Methylpentane	1.107	0.647	0.728
Heptanes	8.002	5.443	5.905
Octanes	6.803	5.275	5.553
Nonanes	4.408	3.777	3.546
Decanes+	48.433	69.924	66.912
Benzene	0.061	0.032	0.027
Toluene	0.946	0.592	0.499
Ethylbenzene	0.092	0.066	0.056
m-Xylene	1.213	0.875	0.740
p-Xylene	0.196	0.141	0.119
o-Xylene	0.304	0.219	0.182
n-Hexane	4.000	2.340	2.591
2,2,4-Trimethylpentane	0.719	0.557	0.588
Totals	100.000	100.000	100.000

**TOTAL C31+ EXTENDED REPORT
CERTIFICATE OF ANALYSIS**

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p-Xylene	0.196	0.141	0.119
o-Xylene	0.304	0.219	0.182
Nonanes	4.408	3.777	3.546
Decanes	3.356	3.195	2.874
Undecanes (C11)	3.771	3.641	3.668
Dodecanes (C12)	5.480	5.918	5.881
Tridecanes (C13)	5.829	6.606	6.477
Tetradecanes (C14)	5.498	7.403	7.201
Pentadecanes (C15)	5.811	8.381	8.075
Hexadecanes (C16)	1.911	2.938	2.809
Heptadecanes (C17)	3.151	5.142	4.892
Octadecanes (C18)	3.060	5.285	5.002
Nonadecanes (C19)	2.783	5.073	4.801
Eicosanes (C20)	2.481	4.757	4.451
Heneicoanes (C21)	1.649	3.320	3.096
Docosanes (C22)	1.186	2.501	2.322
Tricosanes (C23)	0.912	2.009	1.899
Tetracosanes (C24)	0.629	1.445	1.333
Pentacosanes (C25)	0.408	0.978	0.902
Hexacosanes (C26)	0.329	0.818	0.751
Heptacosanes (C27)	0.041	0.105	0.099
Octacosanes (C28)	0.088	0.236	0.222
Nonacosanes (C29)	0.019	0.053	0.048
Triacosanes (C30)	0.022	0.063	0.057
Hentriacontanes Plus (C31+)	0.019	0.057	0.052
Totals	100.000	100.000	100.000

SAMPLE CHARACTERISTICS

RELATIVE SPECIFIC GRAVITY, calculated	0.73536
API GRAVITY AT 60/60 F, calculated	60.9
TRUE VAPOR PRESSURE AT 100 F, PSIA, calculated	19.513
AVERAGE MOLECULAR WEIGHT	147.331
AVERAGE BOILING POINT, F, calculated	327.655
RELATIVE SPECIFIC GRAVITY OF DECANES+ (C10+) FRACTION, calculated	0.76530
AVERAGE MOLECULAR WEIGHT OF DECANES+ (C10+) FRACTION, calculated	198.385
BTU / GALLON OF LIQUID AT 14.73 PSIA, calculated	79,103.88
LBS / GALLON OF LIQUID, calculated	6.131
CUBIC FEET OF GAS / GALLON OF LIQUID, as Ideal Gas, calculated	11.364

NOTATION: ALL CALCULATIONS PERFORMED USING PHYSICAL CONSTANTS FROM GPA 2145-09, THE TABLES OF PHYSICAL CONSTANTS FOR HYDROCARBONS AND OTHER COMPOUNDS OF INTEREST TO THE NATURAL GAS INDUSTRY.