



PRIMARY DB KEY: NAME/DESCRIP: **JOHN CRAIG 1-2**  
 LEASE #: **GAS AT SEPARATOR**

PROJECT NO. : **201712120** ANALYSIS NO. : **19**  
 COMPANY NAME : **NIGHTHAWK PRODUCTION COMPANY** ANALYSIS DATE: **DECEMBER 27, 2017 07:29**  
 OFFICE / BRANCH: **HIGHLANDS RANCH, CO** SAMPLE DATE : **DECEMBER 20, 2017 16:50**  
 CUSTOMER REF: TO:  
 PRODUCER : EFFECTIVE DATE:

**\*\*\*FIELD DATA\*\*\***

SAMPLE CYCLE: SAMPLE TYPE: **SPOT**  
 SAMPLE PRES.: **20** psig PROBE : **NO**  
 FLOW PRES.: psig CYLINDER NO.: **0105**  
 LAB PRES: psig SAMPLED BY : **JOHN MOSER**  
 SAMPLE TEMP.: **72.7** °f SAMPLING COMPANY: **EMPACT**  
 AMBIENT TEMP.: °f H2S BY STAIN TUBE: **3.0** ppm  
 H2O BY STAIN TUBE #/mmcf CO2 BY STAIN TUBE: Mol %  
 FIELD COMMENTS:  
 LAB COMMENTS:

COMPONENTS	NORM. MOLE%	GPM @ 14.73	GPM @ 14.65
HELIUM	0.39	-	-
HYDROGEN	0.00	-	-
OXYGEN/ARGON	0.09	-	-
NITROGEN	20.31	-	-
CO2	1.32	-	-
METHANE	34.69	-	-
ETHANE	15.55	4.1813	4.1586
PROPANE	17.81	4.9332	4.9065
ISOBUTANE	2.15	0.7076	0.7038
N-BUTANE	5.04	1.5977	1.5890
ISOPENTANE	0.89	0.3276	0.3258
N-PENTANE	0.87	0.3175	0.3158
HEXANES+	0.89	0.3881	0.3860
<b>TOTAL</b>	<b>100.00</b>	<b>12.4530</b>	<b>12.3855</b>

BTU @ 60 DEG F

	<b>14.73</b>	<b>14.65</b>
GROSS DRY REAL =	1435.7 /scf	1427.9 /scf
GROSS SATURATED REAL =	1410.7 /scf	1402.9 /scf
RELATIVE DENSITY (AIR=1 @14,696 PSIA 60F)	1.0595	
GRAVITY (LB/SCF)	0.08087	
COMPRESSIBILITY FACTOR :	0.99434	

NOTE: REFERENCE GPA 2261(ASTM D1945 & ASME-PTC, 2145, & 2172 CURRENT PUBLICATIONS

Reference: Per GPA 2172-14 sec 9 **The C6+ is derived from the following ratios of C6, C7 & C8+ respectively: 60% 30% 10%**

*The data presented herein has been acquired by means of current analytical techniques and represents the judicious conclusion EMPACT Analytical Systems, Inc. Results of the analysis can be affected by the sampling conditions, therefore, are only warranted through proper lab protocol. EMPACT assumes no responsibility for interpretation or any consequences from application of the reported information and is the sole liability of the user. The reproduction in any media of this reported information may not be made, in portion or as a whole, without the written permission of EMPACT Analytical Systems, Inc.*