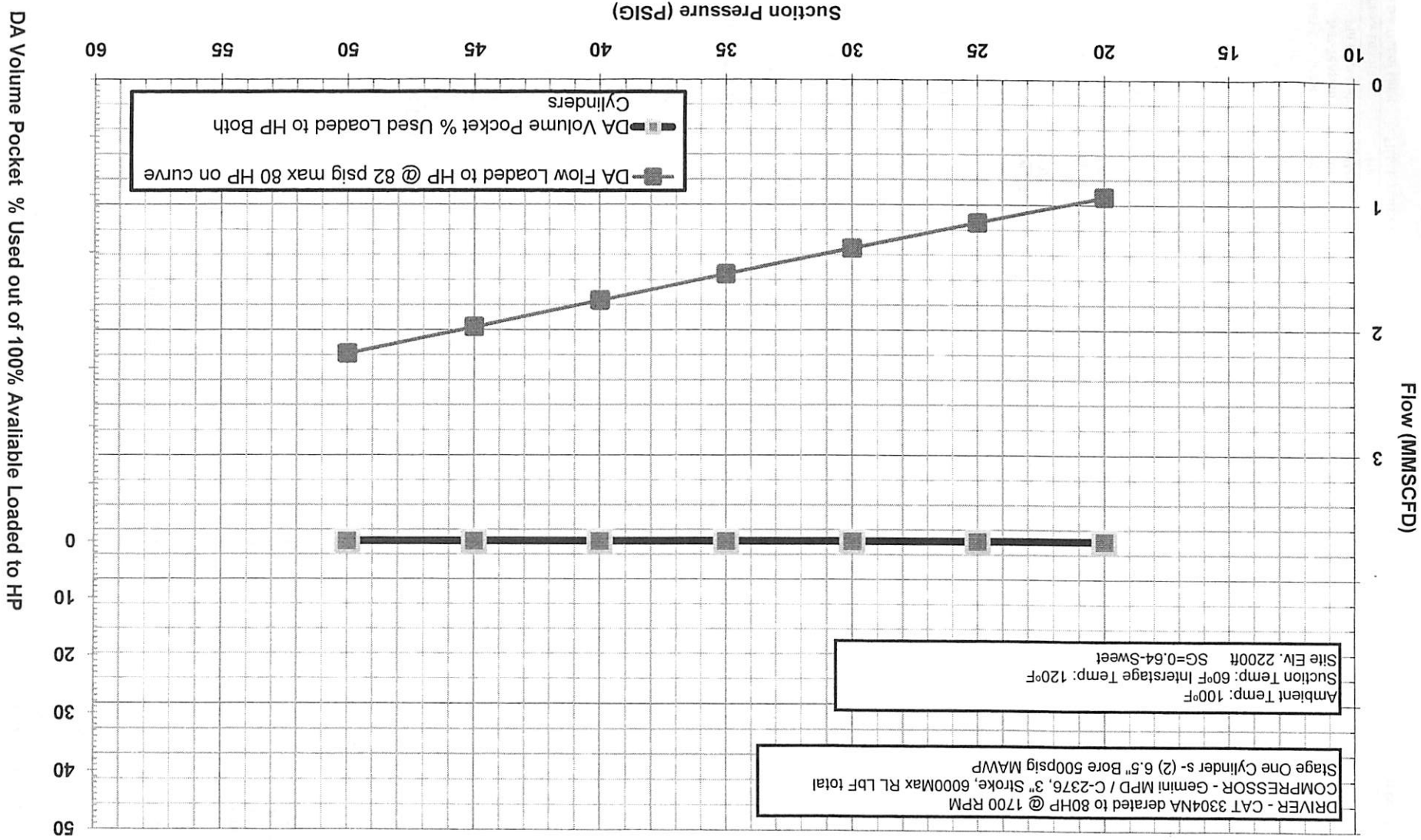


**Genovus Energy
Wayne Dalum 11-25-27-20W4M
Unit K302**





GE Oil & Gas - HSR Compressor Performance Report

Project Name:
 End User:
 Customer: Cenovus Energy
 Engineer:
 Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
 Line #:
 Case #: 1
 Version: 01.06.01
 Date: 6/27/2010, 4:43:56 PM

Site Data:	Application Data:	Compressor Data:	Driver Data:
Elevation: 2500.0 ft Atm Pressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 75.3 HP (84%) Est. Flow: 1.140 MMscfd Load/Flow: 66.1 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies

ERRORS:
 Project Notes:
 Case Notes: CASE #1
 Order Status:

Stage/Service Data:	Stage-1
Flow Rate: MMscfd	1.14
Load: HP	65.6
Specific Gravity: -	0.6402
K Value (Cp/Cv): -	1.2634
Zs: -	0.9931
Zd: -	0.9914
Suction Press.: psiG	25.00
Ps@Flange: psiG	23.85
Pd@Flange: psiG	84.86
Discharge Press.: psiG	82.00
Compress. Ratio: -	2.6376
Suction Temp.: °F	52.0
Discharge Temp.: °F	166.7
Cooler Temp.: °F	n/a

Cylinder Data:	Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model: -	M-Series	M-Series				
Operating Mode: -	D/A Cyl	D/A Cyl				
Head End	Serv#/Stg#	1 / 1	1 / 1			
Bore: in		6.5	6.5			
MAWP: psiG		500	500			
RDP: psiG		455	455			
Tall Rod Dia: in		0	0			
Est. Td: °F		196.4	196.4			
VVCP Open: %/Turns		0 / 0	0 / 0			
Base Clr: %		15.83	15.83			
Added Clr: %		0.00	0.00			
Total Clr: %		15.83	15.83			
Vol. Eff. Suct.: %		79.18	79.18			
Vol. Eff. Disch.: %		36.68	36.68			
Flow: MMscfd		0.29	0.29			
Crank End	Serv#/Stg#	1 / 1	1 / 1			
Bore: in		6.5	6.5			
MAWP: psiG		500	500			
RDP: psiG		455	455			
Est. Td: °F		196.4	196.4			
Base Clr: %		14.78	14.78			
Added Clr: %		0.00	0.00			
Total Clr: %		14.78	14.78			
Vol. Eff. Suct.: %		80.37	80.37			
Vol. Eff. Disch.: %		37.24	37.24			
Flow: MMscfd		0.28	0.28			
Rod Loads						
Gas-Compress.: lbf		2,506	2,506			
Gas-Tension: lbf		2,340	2,340			
Net-Compress.: lbf		2,548	2,548			
Net-Tension: lbf		2,661	2,661			
Pin Reversal: Deg/Mag%		169/96	169/96			
Throw Loading	HP	32.8	32.8			



GE Oil & Gas - HSR Compressor Performance Report

Project Name:
 End User:
 Customer: Cenovus Energy
 Engineer:
 Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
 Line #:
 Case #: 2
 Version: 01.06.01
 Date: 6/27/2010, 4:44:00 PM

Site Data:	Application Data:	Compressor Data:	Driver Data:
Elevation: 2500.0 ft AtmPressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 78.0 HP (87%) Est. Flow: 1.347 MMscfd Load/Flow: 57.9 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies
ERRORS: Project Notes: Case Notes: CASE #2 Order Status:			

Stage/Service Data:

Stage-1

Flow Rate:	MMscfd	1.35
Load:	HP	68.2
Specific Gravity:	-	0.6402
K Value (Cp/Cv):	-	1.2661
Zs:	-	0.9922
Zd:	-	0.9905
Suction Press.:	psiG	30.00
Ps@Flange:	psiG	28.70
Pd@Flange:	psiG	84.86
Discharge Press.:	psiG	82.00
Compress. Ratio:	-	2.3338
Suction Temp.:	°F	52.0
Discharge Temp.:	°F	151.8
Cooler Temp.:	°F	n/a

Cylinder Data:

Throw-1

Throw-2

Throw-3

Throw-4

Throw-5

Throw-6

Model:	-	M-Series	M-Series
Operating Mode:	-	D/A Cyl	D/A Cyl
Head End	Serv#/Stg#	1 / 1	1 / 1
Bore:	in	6.5	6.5
MAWP:	psiG	500	500
RDP:	psiG	455	455
Tail Rod Dia:	in	0	0
Est. Td:	°F	182.1	182.1
VVCP Open:	%/Turns	0 / 0	0 / 0
Base Clr:	%	15.83	15.83
Added Clr:	%	0.00	0.00
Total Clr:	%	15.83	15.83
Vol. Eff. Suct.:	%	82.74	82.74
Vol. Eff. Disch.:	%	42.29	42.29
Flow:	MMscfd	0.34	0.34
Crank End	Serv#/Stg#	1 / 1	1 / 1
Bore:	in	6.5	6.5
MAWP:	psiG	500	500
RDP:	psiG	455	455
Est. Td:	°F	182.1	182.1
Base Clr:	%	14.78	14.78
Added Clr:	%	0.00	0.00
Total Clr:	%	14.78	14.78
Vol. Eff. Suct.:	%	83.73	83.73
Vol. Eff. Disch.:	%	42.80	42.80
Flow:	MMscfd	0.33	0.33
Rod Loads			
Gas-Compress.:	lbf	2,398	2,398
Gas-Tension:	lbf	2,239	2,239
Net-Compress.:	lbf	2,692	2,692
Net-Tension:	lbf	2,831	2,831
Pin Reversal:	Deg/Mag%	167/95	167/95
Throw Loading	HP	34.1	34.1

BOLD = Out of Limit

FILE: P:/Customers/Cenovus Energy/Greg Benzon Curves/Wayne Dalum 11-25/Compressor Performance/CENOVU~1.HSR



GE Oil & Gas - HSR Compressor Performance Report

Project Name:
 End User:
 Customer: Cenovus Energy
 Engineer:
 Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
 Line #:
 Case #: 3
 Version: 01.06.01
 Date: 6/27/2010, 4:44:04 PM

Site Data:	Application Data:	Compressor Data:	Driver Data:
Elevation: 2500.0 ft Atm Pressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 79.2 HP (88%) Est. Flow: 1.555 MMscfd Load/Flow: 51.0 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies
ERRORS: Project Notes: Case Notes: CASE #3 Order Status:			

Stage/Service Data:	Stage-1
Flow Rate: MMscfd	1.55
Load: HP	69.4
Specific Gravity: -	0.6402
K Value (Cp/Cv): -	1.2685
Zs: -	0.9913
Zd: -	0.9897
Suction Press.: psiG	35.00
Ps@Flange: psiG	33.55
Pd@Flange: psiG	84.86
Discharge Press.: psiG	82.00
Compress. Ratio: -	2.0928
Suction Temp.: °F	52.0
Discharge Temp.: °F	138.6
Cooler Temp.: °F	n/a

Cylinder Data:	Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model: -	M-Series	M-Series				
Operating Mode: -	D/A Cyl	D/A Cyl				
Head End	Serv#/Stg#	1 / 1	1 / 1			
Bore: in		6.5	6.5			
MAWP: psiG		500	500			
RDP: psiG		455	455			
Tail Rod Dia: in		0	0			
Est. Td: °F		169.2	169.2			
VVCP Open: %/Turns		0 / 0	0 / 0			
Base Clr: %		15.83	15.83			
Added Clr: %		0.00	0.00			
Total Clr: %		15.83	15.83			
Vol. Eff. Suct.: %		85.64	85.64			
Vol. Eff. Disch.: %		47.77	47.77			
Flow: MMscfd		0.39	0.39			
Crank End	Serv#/Stg#	1 / 1	1 / 1			
Bore: in		6.5	6.5			
MAWP: psiG		500	500			
RDP: psiG		455	455			
Est. Td: °F		169.2	169.2			
Base Clr: %		14.78	14.78			
Added Clr: %		0.00	0.00			
Total Clr: %		14.78	14.78			
Vol. Eff. Suct.: %		86.46	86.46			
Vol. Eff. Disch.: %		48.23	48.23			
Flow: MMscfd		0.38	0.38			
Rod Loads						
Gas-Compress.: lbf		2,285	2,285			
Gas-Tension: lbf		2,128	2,128			
Net-Compress.: lbf		2,790	2,790			
Net-Tension: lbf		3,000	3,000			
Pin Reversal: Deg/Mag%		166/93	166/93			
Throw Loading	HP	34.7	34.7			



GE Oil & Gas - HSR Compressor Performance Report

Project Name:
 End User:
 Customer: Cenovus Energy
 Engineer:
 Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
 Line #:
 Case #: 4
 Version: 01.06.01
 Date: 6/27/2010, 4:44:08 PM

Site Data:	Application Data:	Compressor Data:	Driver Data:
Elevation: 2500.0 ft Atm Pressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 79.3 HP (88%) Est. Flow: 1.765 MMscfd Load/Flow: 44.9 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies
ERRORS: Project Notes: Case Notes: CASE #4 Order Status:			

Stage/Service Data:	Stage-1
Flow Rate: MMscfd	1.76
Load: HP	69.5
Specific Gravity:	0.6402
K Value (Cp/Cv):	1.2706
Zs:	0.9904
Zd:	0.9888
Suction Press.: psiG	40.00
Ps@Flange: psiG	38.40
Pd@Flange: psiG	84.86
Discharge Press.: psiG	82.00
Compress. Ratio:	1.8969
Suction Temp.: °F	52.0
Discharge Temp.: °F	126.7
Cooler Temp.: °F	n/a

Cylinder Data:	Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model:	M-Series	M-Series				
Operating Mode:	D/A Cyl	D/A Cyl				
Head End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Tall Rod Dia:	in	0	0			
Est. Td:	°F	157.5	157.5			
VVCP Open:	%/Turns	0 / 0	0 / 0			
Base Clr:	%	15.83	15.83			
Added Clr:	%	0.00	0.00			
Total Clr:	%	15.83	15.83			
Vol. Eff. Suct.:	%	88.06	88.06			
Vol. Eff. Disch.:	%	53.12	53.12			
Flow:	MMscfd	0.45	0.45			
Crank End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Est. Td:	°F	157.5	157.5			
Base Clr:	%	14.78	14.78			
Added Clr:	%	0.00	0.00			
Total Clr:	%	14.78	14.78			
Vol. Eff. Suct.:	%	88.75	88.75			
Vol. Eff. Disch.:	%	53.54	53.54			
Flow:	MMscfd	0.44	0.44			
Rod Loads						
Gas-Compress.:	lbf	2,159	2,159			
Gas-Tension:	lbf	2,015	2,015			
Net-Compress.:	lbf	2,861	2,861			
Net-Tension:	lbf	3,168	3,168			
Pin Reversal:	Deg/Mag%	165/90	165/90			
Throw Loading	HP	34.8	34.8			



GE Oil & Gas - HSR Compressor Performance Report

Project Name:
End User:
Customer: Cenovus Energy
Engineer:
Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
Line #:
Case #: 5
Version: 01.06.01
Date: 6/27/2010, 4:44:12 PM

Site Data:	Application Data:	Compressor Data:	Driver Data:
Elevation: 2500.0 ft AtmPressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 78.3 HP (87%) Est. Flow: 1.976 MMscfd Load/Flow: 39.7 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies
ERRORS: Project Notes: Case Notes: CASE #5 Order Status:			

Stage/Service Data:	Stage-1
Flow Rate:	MMscfd 1.98
Load:	HP 68.6
Specific Gravity:	- 0.6402
K Value (Cp/Cv):	- 1.2725
Zs:	- 0.9895
Zd:	- 0.9880
Suction Press.:	psiG 45.00
Ps@Flange:	psiG 43.25
Pd@Flange:	psiG 84.86
Discharge Press.:	psiG 82.00
Compress. Ratio:	- 1.7345
Suction Temp.:	°F 52.0
Discharge Temp.:	°F 116.0
Cooler Temp.:	°F n/a

Cylinder Data:	Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model:	-	M-Series	M-Series			
Operating Mode:	-	D/A Cyl	D/A Cyl			
Head End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Tail Rod Dia:	in	0	0			
Est. Td:	°F	146.8	146.8			
VVCP Open:	%/Turns	0 / 0	0 / 0			
Base Clr:	%	15.83	15.83			
Added Clr:	%	0.00	0.00			
Total Clr:	%	15.83	15.83			
Vol. Eff. Suct.:	%	90.11	90.11			
Vol. Eff. Disch.:	%	58.37	58.37			
Flow:	MMscfd	0.50	0.50			
Crank End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Est. Td:	°F	146.8	146.8			
Base Clr:	%	14.78	14.78			
Added Clr:	%	0.00	0.00			
Total Clr:	%	14.78	14.78			
Vol. Eff. Suct.:	%	90.68	90.68			
Vol. Eff. Disch.:	%	58.74	58.74			
Flow:	MMscfd	0.49	0.49			
Rod Loads						
Gas-Compress.:	lbf	2,030	2,030			
Gas-Tension:	lbf	1,890	1,890			
Net-Compress.:	lbf	2,911	2,911			
Net-Tension:	lbf	3,333	3,333			
Pin Reversal:	Deg/Mag%	163/87	163/87			
Throw Loading	HP	34.3	34.3			

BOLD = Out of Limit

FILE: P:/Customers/Cenovus Energy/Greg Benzon Curves/Wayne Dalum 11-25/Compressor Performance/CENOVU~1.HSR



GE Oil & Gas - HSR Compressor Performance Report

Project Name:
End User:
Customer: Cenovus Energy
Engineer:
Site Location: Wayne Dalum 11-25-27-20W4

Quote #:
Line #:
Case #: 6
Version: 01.06.01
Date: 6/27/2010, 4:44:16 PM

Site Data: Elevation: 2500.0 ft Atm Pressure: 13.4110 psiA Ambient Temp: 100.0 °F Flow Rates are relative to base conditions of: Pressure: 14.6960 psiA Temperature: 60.0 °F	Application Data: Auxiliary Load: 6.0 HP Run Speed: 1700 Est. Load: 76.5 HP (85%) Est. Flow: 2.188 MMscfd Load/Flow: 34.9 HP/MMscfd Non-lubed: Lubed Type: Gas Gathering	Compressor Data: Frame: MPD Rated Power: 120.0 HP Stroke: 3.000 in Rated Speed: 1800 Rod Diameter: 1.125 in Max Rod Load Comp: 6000 lbf Max Rod Load Tens: 6000 lbf	Driver Data: Type: Engine Manufacturer: Caterpillar Model: G3304-NA Rated Power: 95.0 HP Rated Speed: 1800 Avail. Power: 89.7 HP Amb. Derate: Varies
ERRORS: Project Notes: Case Notes: CASE #6 Order Status:			

Stage/Service Data:	Stage-1
Flow Rate:	MMscfd 2.19
Load:	HP 66.7
Specific Gravity:	- 0.6402
K Value (Cp/Cv):	- 1.2743
Zs:	- 0.9885
Zd:	- 0.9872
Suction Press.:	psiG 50.00
Ps@Flange:	psiG 48.10
Pd@Flange:	psiG 84.86
Discharge Press.:	psiG 82.00
Compress. Ratio:	- 1.5977
Suction Temp.:	°F 52.0
Discharge Temp.:	°F 106.3
Cooler Temp.:	°F n/a

Cylinder Data:	Throw-1	Throw-2	Throw-3	Throw-4	Throw-5	Throw-6
Model:	-	M-Series	M-Series			
Operating Mode:	-	D/A Cyl	D/A Cyl			
Head End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Tail Rod Dia:	in	0	0			
Est. Td:	°F	137.0	137.0			
VVCP Open:	%/Turns	0 / 0	0 / 0			
Base Clr:	%	15.83	15.83			
Added Clr:	%	0.00	0.00			
Total Clr:	%	15.83	15.83			
Vol. Eff. Suct.:	%	91.87	91.87			
Vol. Eff. Disch.:	%	63.52	63.52			
Flow:	MMscfd	0.55	0.55			
Crank End	Serv#/Stg#	1 / 1	1 / 1			
Bore:	in	6.5	6.5			
MAWP:	psiG	500	500			
RDP:	psiG	455	455			
Est. Td:	°F	137.0	137.0			
Base Clr:	%	14.78	14.78			
Added Clr:	%	0.00	0.00			
Total Clr:	%	14.78	14.78			
Vol. Eff. Suct.:	%	92.33	92.33			
Vol. Eff. Disch.:	%	63.84	63.84			
Flow:	MMscfd	0.54	0.54			
Rod Loads						
Gas-Compress.:	lbf	1,900	1,900			
Gas-Tension:	lbf	1,757	1,757			
Net-Compress.:	lbf	2,945	2,945			
Net-Tension:	lbf	3,478	3,478			
Pin Reversal:	Deg/Mag%	162/85	162/85			
Throw Loading	HP	33.3	33.3			

GE Oil & Gas - HSR Compressor Unit Diagram Report

Page 7 of 7

Project Name:
End User:
Customer: Cenovus Energy
Engineer:
Site Location: Wayne Dalum 11-25-27-20W4
Quote #:
Line #:
Version: 01.06.01
Date: 6/27/2010, 4:44:19 PM

