

## Air-Cooled Heat Exchanger Specification Sheet

1	Company: Noble Energy										
2	Location: Keenesburg, CO										
3	Service of Unit: Cooling Water										
4	Item No.: 180772										
5	Date: 7/17/18										
6	Size & Type	36	/	6	ft	Type	Forced	Number of Bays	1		
7	Surf/Unit-Finned Tube			18,026	ft <sup>2</sup>	Bare area/bundle	483	ft <sup>2</sup>	Ratio (Total/	18.67	
8	Heat exchanged			5,325,755	BTU/h	MTD, Eff		38.96	°F		
9	Transfer rate	7.58			Bare, Service	141.55	Clean	168.11	BTU/(h-ft <sup>2</sup> -F)		
10	<b>PERFORMANCE DATA - TUBE SIDE</b>										
11	Fluid Circulated	Water				In/Out					
12	Total Fluid Entering	lb/h		144,763		Density, Liq	lb/ft <sup>3</sup>	60.804	/	61.514	
13		BPD		10,000		Density, Vap	lb/ft <sup>3</sup>		/		
14	Temperature	°F		170	/	135	Specific Heat, Liq	BTU/(lb-F)	0.9999	/	0.9974
15	Liquid	lb/h		144,763	/	144,763	Specific Heat, Vap	BTU/(lb-F)		/	
16	Vapor	lb/h		0	/	0	Therm. Cond, Liq	BTU/(ft-h-F)	0.386	/	0.376
17	Noncondensable	lb/h		0	/	0	Therm. Cond, Vap	BTU/(ft-h-F)		/	
18	Steam	lb/h		/			Freeze Point	°F			
19	Water	lb/h		/			Bubble / Dew point	°F		/	
20	Molecular wt, Vap			/			Latent heat	BTU/lb			
21	Molecular wt, NC						Inlet pressure (abs)	psi		64.7	
22	Viscosity, Liq	cp		0	/	0	Pres Drop, Allow/Calc	psi	5	/	0.67
23	Viscosity, Vap	cp		/			Fouling resistance	ft <sup>2</sup> -h-F/BTU		0.001	
24	<b>PERFORMANCE DATA - AIR SIDE</b>										
25	Air Quantity, Total	750,000	lb/h			Altitude	5,000	ft			
26	Air Quantity/Fan	106,408	ft <sup>3</sup> /min			Temperature In	95	°F			
27	Static Pressure	1.61	inH2O			Temperature Out	124	°F			
28	Face Velocity	21.99	ft/s	Bundle velocity	4,650	lb/h/ft <sup>2</sup>	Design Ambient	95	°F		
29	<b>DESIGN-MATERIALS-CONSTRUCTION</b>										
30	Design/Vac./Test Pres	645	/	/		psi	Design temperature	350	°F		
31	<b>TUBE BUNDLE</b>			<b>Header</b>			<b>Tube</b>				
32	Size	36	ft	Type	Box	Material	Carbon Steel				
33	Number/bay	2		Material	Carbon Steel	Specifications					
34	Tube Rows	4		Passes	2	OD	1.25	Min Thk.	0.065	in	
35	Arrangement			Plug Mat.		No./Bun	46	Lng	34	ft	
36	Bundles	2	par	Gasket Mat.		Pitch	2.5	/	2.1651	30	deg
37	Bays	1	par	Corr. Allow.		in	<b>Fin</b>				
38	Bundle frame			Inlet Nozzle	1	6	in	Type	L-finned		
39	<b>MISCELLANEOUS</b>			Outlet nozzle	1	6	in	Material	Aluminum 1060		
40	Struct. Mount.			Special Nozzles		OD	2.4375	Tks	0.016	in	
41	Surf.Prepare			Rating	300	ANSI	No.	10	#/in	DesTemp	°F
42	Louvers			TI	PI	Code	ASME Code Sec VIII Div 1				
43	Vibration Switches			Chem Cleaning		Stamp	Yes	Specs			
44	<b>MECHANICAL EQUIPMENT</b>										
45	Fan,Mfr., Model			Driver, Type		Speed Reducer, Type					
46	No./Bay	2	RPM	Mfr.		Mfr.&Model					
47	Dia.	11	ft	Blade(s)		No./Bay					
48	Pitch		Angle	RPM		Rating					
49	Blade(s)		Hub	Enclosure		Ratio					
50	hp/Fan	30	hp	MinAmb		V/Phase/Hz	Support				
51	Control Action on Air Failure-	Louvers									
52	Degree Control of Outlet Process Temperature										
53	Recirculation							Steam Coil	No		
54	Plot Area	ft <sup>2</sup>	Drawing No.	Wt.Bundle	6,347	Wt. Unit	12,694	lb			
55	Notes:										
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