

### Air-Cooled Heat Exchanger Specification Sheet

1	Client: Ovintiv										
2	Location:										
3	Service of Unit: Cooling Wet Natural Gas										
4	Item No.: 220830A										
5	Date: 9/8/2023										
6	Size & Type	14	/	11	ft	Type	Induced	Number of Bays	1		
7	Surf/Unit-Finned Tube	13,570 ft <sup>2</sup>			Bare area/bundle	307	ft <sup>2</sup>	Ratio (Total	22.09		
8	Heat exchanged	282326 BTU/h			MTD, Eff	39.52 °F					
9	Transfer rate	0.53	Bare, Service	11.63		Clean	11.93 BTU/(h-ft <sup>2</sup> -F)				
10	<b>PERFORMANCE DATA - TUBE SIDE</b>										
11	Fluid Circulated	Wet Natural Gas				In/Out					
12	Total Fluid Entering	lb/h	9,463			Density, Liq	lb/ft <sup>3</sup>	0	/	0	
13						Density, Vap	lb/ft <sup>3</sup>	0.097	/	0.108	
14	Temperature	°F	180	/	120	Specific Heat, Liq	BTU/(lb-F)	0	/	0	
15	Liquid	lb/h	0	/	0	Specific Heat, Vap	BTU/(lb-F)	0.4517	/	0.4153	
16	Vapor	lb/h	9463	/	9463	Therm. Cond, Liq	BTU/(ft-h-F)	0	/	0	
17	Noncondensable	lb/h	0	/	0	Therm. Cond, Vap	BTU/(ft-h-F)	0.015	/	0.012	
18	Steam	lb/h	/			Freeze Point	°F	0			
19	Water	lb/h	/			Bubble / Dew point	°F	0	/	0	
20	Molecular wt, Vap	41.99 / 41.99			Latent heat	BTU/lb					
21	Molecular wt, NC					Inlet pressure (abs)	psi	15.7			
22	Viscosity, Liq	cp	0.0000	/	0.0000	Pres Drop, Allow/Calc	psi	0.5	/	0.09	
23	Viscosity, Vap	cp	0.0105	/	0.0093	Fouling resistance	ft <sup>2</sup> -h-F/BTU	0.001			
24	<b>PERFORMANCE DATA - AIR SIDE</b>										
25	Air Quantity, Total	220,500	lb/h	Altitude			2,500	ft			
26	Air Quantity/Fan	57,499	ft <sup>3</sup> /min	Temperature In			95	°F			
27	Static Pressure	0.99	inH2O	Temperature Out			100	°F			
28	Face Velocity	8.47	ft/s	Bundle velocity	1,967	lb/h/ft <sup>2</sup>	Design Ambient	95	°F		
29	<b>DESIGN-MATERIALS-CONSTRUCTION</b>										
30	Design/Vac./Test Pres	150	/	0	/	0	psi	Design temperature	250	°F	
31	<b>TUBE BUNDLE</b>		<b>Header</b>			<b>Tube</b>					
32	Size	14 ft		Type	Box	Material					SS 304
33	Number/bay	2		Material	Carbon Steel	Specifications					
34	Tube Rows	4		Passes	1	OD	1	Min Thk.	0.065	in	
35	Arrangement				Plug Mat.	No./Bun	102	Lng	12	ft	
36	Bundles	2 par		Gasket Mat.		Pitch	2.25 / 1.949	30	deg		
37	Bays	1 par		Corr. Allow.	0	in	Fin				
38	Bundle frame				Inlet Nozzle	1	8 in	Type	L-finned		
39	<b>MISCELLANEOUS</b>			Outlet nozzle	1	8 in	Material	Aluminum 1060			
40	Struct. Mount.				Special Nozzles	OD	2.25	Tks	0.0625	in	
41	Surf.Preap				Rating	150	ANSI	No. 10	#/in	DesTemp	0 °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	V-belt		Speed Reducer, Type			
46	No./Bay	1	RPM	0	Mfr.	Mfr.&Model					
47	Dia.	8	ft	Blade(s)	No./Bay	No./Bay					
48	Pitch				RPM	Rating					
49	Blade(s)	0	Hub	0	Enclosure			Ratio			
50	hp/Fan	15	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	0	ft <sup>2</sup>	Drawing No.	Wt.Bundle	6,178	Wt. Unit	12,357	lb		
55	Notes:										
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### Air-Cooled Heat Exchanger Specification Sheet

1	Client: Ovintiv										
2	Location:										
3	Service of Unit: Cooling Wet Natural Gas										
4	Item No.: 220830B										
5	Date: 9/8/2023										
6	Size & Type	14	/	9	ft	Type	Induced	Number of Bays	1		
7	Surf/Unit-Finned Tube			10,909	ft <sup>2</sup>	Bare area/bundle	247	ft <sup>2</sup>	Ratio (Total	22.09	
8	Heat exchanged			66269	BTU/h		MTD, Eff	32.39	°F		
9	Transfer rate	0.19			Bare, Service	4.14	Clean	4.18	BTU/(h-ft <sup>2</sup> -F)		
10	<b>PERFORMANCE DATA - TUBE SIDE</b>										
11	Fluid Circulated	Wet Natural Gas					In/Out				
12	Total Fluid Entering	lb/h		1,991		Density, Liq	lb/ft <sup>3</sup>	0	/	0	
13						Density, Vap	lb/ft <sup>3</sup>	0.097	/	0.11	
14	Temperature	°F	180	/	120	Specific Heat, Liq	BTU/(lb-F)	0	/	0	
15	Liquid	lb/h	0	/	0	Specific Heat, Vap	BTU/(lb-F)	0.4517	/	0.4112	
16	Vapor	lb/h	1991	/	1991	Therm. Cond, Liq	BTU/(ft-h-F)	0	/	0	
17	Noncondensable	lb/h	0	/	0	Therm. Cond, Vap	BTU/(ft-h-F)	0.015	/	0.012	
18	Steam	lb/h	/	/	/	Freeze Point	°F	0			
19	Water	lb/h	/	/	/	Bubble / Dew point	°F	0	/	0	
20	Molecular wt, Vap		41.99	/	41.99	Latent heat	BTU/lb	0			
21	Molecular wt, NC					Inlet pressure (abs)	psi	15.7			
22	Viscosity, Liq	cp	0.0000	/	0.0000	Pres Drop, Allow/Calc	psi	0.5	/	0.09	
23	Viscosity, Vap	cp	0.0105	/	0.0092	Fouling resistance	ft <sup>2</sup> -h-F/BTU	0.001			
24	<b>PERFORMANCE DATA - AIR SIDE</b>										
25	Air Quantity, Total	179,500	lb/h			Altitude	2,500	ft			
26	Air Quantity/Fan	46,497	ft <sup>3</sup> /min			Temperature In	95	°F			
27	Static Pressure	0.99	inH2O			Temperature Out	97	°F			
28	Face Velocity	8.53	ft/s	Bundle velocity	1,982	lb/h/ft <sup>2</sup>	Design Ambient	95	°F		
29	<b>DESIGN-MATERIALS-CONSTRUCTION</b>										
30	Design/Vac./Test Pres	150	/	0	/	0	psi	Design temperature	250	°F	
31	<b>TUBE BUNDLE</b>			<b>Header</b>			<b>Tube</b>				
32	Size	14	ft	Type	Box	Material	SS 304				
33	Number/bay	2		Material	Carbon Steel	Specifications					
34	Tube Rows	4		Passes	1	OD	1	Min Thk.	0.065	in	
35	Arrangement			Plug Mat.		No./Bun	82	Lng	12	ft	
36	Bundles	2	par	Gasket Mat.		Pitch	2.25	/	1.949	30 deg	
37	Bays	1	par	Corr. Allow.	0	in	<b>Fin</b>				
38	Bundle frame			Inlet Nozzle	1	3	in	Type	L-finned		
39	<b>MISCELLANEOUS</b>			Outlet nozzle	1	3	in	Material	Aluminum 1060		
40	Struct. Mount.			Special Nozzles		OD	2.25	Tks	0.0625	in	
41	Surf.Prepare			Rating	150	ANSI	No.	10	#/in	DesTemp	0 °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	V-belt	Speed Reducer, Type					
46	No./Bay	1	RPM	0	Mfr.	Mfr.&Model					
47	Dia.	8	ft	Blade(s)		No./Bay					
48	Pitch		Angle		RPM	Rating					
49	Blade(s)	0	Hub	0	Enclosure	Ratio					
50	hp/Fan	15	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	0	ft <sup>2</sup>	Drawing No.		Wt.Bundle	4,812	Wt. Unit	9,624	lb	
55	Notes:										
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