Assessments Efficiency Report

Report Summary

Pumps

4 pumps with a

$64,123.20

MAXIMUM ANNUAL COST SAVINGS

00.00 MWh

MAXIMUM ANNUAL ENERGY SAVINGS

$156,278.40	**3,906.96 MWh**
ANNUAL COST	ANNUAL ENERGY

July 24th, 2017

U.S. DEPARTMENT OF ENERGY

Energy Efficiency & Renewable Energy

Test Folder /

Example PSAT

Last Modified

ASSESSMENT RESULT DATA

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Percent Savings (%)	— —	20 %	0 %	0 %	8 %
Pump efficiency (%)	80.26	56.71	80.26	80.26	86.75
Motor rated power (hp)	200.00	200.00	200.00	200.00	100.00
Motor shaft power (hp)	101.19	101.19	101.19	101.19	93.61
Pump shaft power (hp)	101.19	101.19	101.19	101.19	93.61
Motor efficiency (%)	94.36	94.36	94.36	94.36	95.03
Motor power factor (%)	76.46	76.46	76.46	76.46	85.98
Motor current (amps)	125.86	125.86	125.86	125.86	102.81
Motor power (hp)	80.00	80.00	80.00	80.00	73.49
Annual Energy (MWh)	**700.80**	**700.80**	**700.80**	**700.80**	**643.78**
Annual Energy Savings (MWh)	**— —**	**00.00**	**00.00**	**00.00**	**57.02**
Annual Cost	**35,040.00**	**$28,032.00**	**$35,040.00**	**$35,040.00**	**$32,188.86**
Annual Savings	**— —**	**$7,008.00**	**$00.00**	**$00.00**	**$2,851.14**

*Optimized

ASSESSMENT INPUT DATA

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Pump & Fluid					
Pump Type	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API
Pump RPM	1,780.00	1,780.00	1,780.00	1,780.00	1,780.00
Drive	Direct Drive	Direct Drive	Direct Drive	Direct Drive	Direct Drive
Kinematic Viscosity (cST)	01.00	01.00	01.00	01.00	01.00
Specific Gravity	01.00	01.00	01.00	01.00	01.00
Stages	02.00	02.00	02.00	02.00	02.00
Fixed specifc speed?	No	No	No	No	No
Motor					
Line Frequency	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Horse Power	200 hp	200.00 hp	200.00 hp	200.00 hp	200.00 hp
Motor (RPM)	1,780.00	1,780.00	1,780.00	1,780.00	1,780.00
Efficiency Class	Specified	Specified	Specified	Specified	Specified
Voltage	460.00	460.00	460.00	460.00	460.00
Full-Load Amps	225.00	225.00	225.00	225.00	225.00
Size Margin	00.00	00.00	00.00	00.00	00.00
Field Data					
Operating Fraction	01.00	01.00	01.00	01.00	01.00
Cost (kW/hr)	**00.05**	**00.04**	00.05	00.05	00.05
Flow Rate (gpm)	**1,840.00**	**1,300.00**	1,840.00	1,840.00	1,840.00
Head (ft)	174.85	174.85	174.85	174.85	174.85
Load Estimated Method	Power	Power	Power	Power	Power

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Motor Power (kW)	80.00	80.00	80.00	80.00	80.00
Voltage	480.00	480.00	480.00	480.00	480.00

Test Folder /

New Assessment

Last Modified

ASSESSMENT RESULT DATA

	Baseline	Modification 3	Modification 2	Opportunities Modification
Percent Savings (%)	— —	-365 %	-21 %	33 %
Pump efficiency (%)	47.02	75.71	82.17	47.02
Motor rated power (hp)	200.00	50,000.00	11,000.00	200.00
Motor shaft power (hp)	183.51	493.75	105.02	183.51
Pump shaft power (hp)	183.51	493.75	105.02	183.51
Motor efficiency (%)	95.73	45.88	44.36	95.73
Motor power factor (%)	86.34	06.89	06.79	86.34
Motor current (amps)	207.87	14,528.30	3,195.65	207.87
Motor power (hp)	143.00	798.08	172.86	143.00
Annual Energy (MWh)	**1,252.68**	**6,991.20**	**1,514.22**	**1,252.68**
Annual Energy Savings (MWh)	— —	**-5,738.52**	**-261.54**	**00.00**
Annual Cost	**75,160.80**	**$349,559.83**	**$90,853.10**	**$50,107.20**
Annual Savings	— —	**-$274,399.03**	**-$15,692.30**	**$25,053.60**
		*Optimized	*Optimized	

ASSESSMENT INPUT DATA

	Baseline	Modification 3	Modification 2	Opportunities Modification
Pump & Fluid				
Pump Type	**End Suction ANSI/API**	End Suction ANSI/API	End Suction ANSI/API	**Large End Suction**
Pump RPM	1,780.00	1,780.00	1,780.00	1,780.00
Drive	Direct Drive	Direct Drive	Direct Drive	Direct Drive
Kinematic Viscosity (cST)	01.00	01.00	01.00	01.00
Specific Gravity	01.00	01.00	01.00	01.00
Stages	01.00	01.00	01.00	01.00
Fixed specifc speed?	Yes	Yes	Yes	Yes
Motor				
Line Frequency	60 Hz	60 Hz	60 Hz	60 Hz
Horse Power	200 hp	200.00 hp	200.00 hp	200.00 hp
Motor (RPM)	1,780.00	1,780.00	1,780.00	1,780.00
Efficiency Class	Energy Efficient	Energy Efficient	Energy Efficient	Energy Efficient
Voltage	460.00	460.00	460.00	460.00
Full-Load Amps	225.80	225.80	225.80	225.80
Size Margin	100.00	100.00	100.00	100.00
Field Data				
Operating Fraction	01.00	01.00	01.00	01.00
Cost (kW/hr)	**00.06**	**00.05**	00.06	**00.04**
Flow Rate (gpm)	1,234.00	1,234.00	1,234.00	1,234.00
Head (ft)	**277.00**	**1,200.00**	277.00	277.00
Load Estimated Method	Power	Power	Power	Power
Motor Power (kW)	143.00	143.00	143.00	143.00
Voltage	460.00	460.00	460.00	460.00

Example PSAT

Last Modified Jul 24, 2017, 9:27:42 AM

ASSESSMENT RESULT DATA

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Percent Savings (%)	— —	20 %	0 %	0 %	8 %
Pump efficiency (%)	80.26	56.71	80.26	80.26	86.75
Motor rated power (hp)	200.00	200.00	200.00	200.00	100.00
Motor shaft power (hp)	101.19	101.19	101.19	101.19	93.61
Pump shaft power (hp)	101.19	101.19	101.19	101.19	93.61
Motor efficiency (%)	94.36	94.36	94.36	94.36	95.03
Motor power factor (%)	76.46	76.46	76.46	76.46	85.98
Motor current (amps)	125.86	125.86	125.86	125.86	102.81
Motor power (hp)	80.00	80.00	80.00	80.00	73.49
Annual Energy (MWh)	**700.80**	**700.80**	**700.80**	**700.80**	**643.78**
Annual Energy Savings (MWh)	— —	**00.00**	**00.00**	**00.00**	**57.02**
Annual Cost	**35,040.00**	**$28,032.00**	**$35,040.00**	**$35,040.00**	**$32,188.86**
Annual Savings	— —	**$7,008.00**	**$00.00**	**$00.00**	**$2,851.14**

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ASSESSMENT INPUT DATA

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Pump & Fluid					
Pump Type	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API	End Suction ANSI/API
Pump RPM	1,780.00	1,780.00	1,780.00	1,780.00	1,780.00
Drive	Direct Drive	Direct Drive	Direct Drive	Direct Drive	Direct Drive
Kinematic Viscosity (cST)	01.00	01.00	01.00	01.00	01.00
Specific Gravity	01.00	01.00	01.00	01.00	01.00
Stages	02.00	02.00	02.00	02.00	02.00
Fixed specifc speed?	No	No	No	No	No
Motor					
Line Frequency	60 Hz	60 Hz	60 Hz	60 Hz	60 Hz
Horse Power	200 hp	200.00 hp	200.00 hp	200.00 hp	200.00 hp
Motor (RPM)	1,780.00	1,780.00	1,780.00	1,780.00	1,780.00
Efficiency Class	Specified	Specified	Specified	Specified	Specified
Voltage	460.00	460.00	460.00	460.00	460.00
Full-Load Amps	225.00	225.00	225.00	225.00	225.00
Size Margin	00.00	00.00	00.00	00.00	00.00
Field Data					
Operating Fraction	01.00	01.00	01.00	01.00	01.00
Cost (kW/hr)	**00.05**	**00.04**	00.05	00.05	00.05
Flow Rate (gpm)	**1,840.00**	**1,300.00**	1,840.00	1,840.00	1,840.00
Head (ft)	174.85	174.85	174.85	174.85	174.85
Load Estimated Method	Power	Power	Power	Power	Power

	Baseline	Modification 4	Modification 3	Modification 2	Opportunities Modification
Motor Power (kW)	80.00	80.00	80.00	80.00	80.00
Voltage	480.00	480.00	480.00	480.00	480.00

New Assessment

Last Modified Jul 24, 2017, 9:28:51 AM

ASSESSMENT RESULT DATA

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Kinematic Viscosity (cST)	01.00	01.00	01.00	01.00
Specific Gravity	01.00	01.00	01.00	01.00
Stages	01.00	01.00	01.00	01.00
Fixed specifc speed?	Yes	Yes	Yes	Yes
Motor				
Line Frequency	60 Hz	60 Hz	60 Hz	60 Hz
Horse Power	200 hp	200.00 hp	200.00 hp	200.00 hp
Motor (RPM)	1,780.00	1,780.00	1,780.00	1,780.00
Efficiency Class	Energy Efficient	Energy Efficient	Energy Efficient	Energy Efficient
Voltage	460.00	460.00	460.00	460.00
Full-Load Amps	225.80	225.80	225.80	225.80
Size Margin	100.00	100.00	100.00	100.00
Field Data				
Operating Fraction	01.00	01.00	01.00	01.00
Cost (kW/hr)	**00.06**	**00.05**	00.06	**00.04**
Flow Rate (gpm)	1,234.00	1,234.00	1,234.00	1,234.00
Head (ft)	**277.00**	**1,200.00**	277.00	277.00
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Voltage	460.00	460.00	460.00	460.00