



SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>

An EDISON INTERNATIONAL<sup>®</sup> Company

**Confidential/Proprietary Information**

November 9, 2012

PETER TUCULET  
PALM RANCH IRRIGATION DISTRICT  
4871 W. COLUMBIA WAY  
QUARTZ HILL, CA 93536

**HYDRAULIC TEST RESULTS**, Plant: WELL #8  
Location: NW C/O 50TH W & AVE K      HP: 150  
Cust #: 0-003-0391      Serv. Acct. #: 002-8246-42  
Meter: V349N-12011      Pump Ref. #: 21134

In accordance with your request, an energy efficiency test was performed on your turbine well pump on November 5, 2012. If you have any questions regarding the results which follow, please contact RICK KOCH at (805)654-7312.

**Equipment**

Pump:	WINTR	No:	R08029
Motor:	GE	No:	EEJ514163

**Results**

Discharge Pressure, PSI	40.6
Standing Water Level, Feet	272.5
Drawdown, Feet	106.9
Discharge Head, Feet	93.8
Pumping Water Level, Feet	379.4
Total Head, Feet	473.2
Capacity, GPM	397
GPM per Foot Drawdown	3.7
Acre Feet Pumped in 24 Hours	1.755
kW Input to Motor	57.4
HP Input to Motor	77.0
Motor Load (%)	47.7
Measured Speed of Pump, RPM	1,789
Customer Meter, GPM	458
<b>kWh per Acre Foot</b>	<b>785</b>
<b>Overall Plant Efficiency (%)</b>	<b>61.6</b>

RUSS JOHNSON  
Manager  
Hydraulic Services

November 9, 2012

PETER TUCULET  
PALM RANCH IRRIGATION DISTRICT  
4871 W. COLUMBIA WAY  
QUARTZ HILL, CA 93536

**PUMPING COST ANALYSIS,** Plant: WELL #8  
Location: NW C/O 50TH W & AVE K HP: 150  
Cust #: 0-003-0391 Serv. Acct. #: 002-8246-42  
Meter: V349N-12011 Pump Ref.#: 21134

The following energy efficiency analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on November 5, 2012, billing history for the past 12 months, and your current rate of TOU-PA-SOP-2.

Assuming that water requirements will be the same as for the past year, and all operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test, it is estimated that:

1. Overall plant efficiency can be improved from 61.6% to 70.0%.
2. This can save you up to 26,369 kWh and \$2,311.81 annually.
3. These kWh savings translate to a 11-ton decrease in CO<sub>2</sub> emissions.

	<u>Existing</u>	<u>Plant Efficiency Improved</u>	<u>Savings</u>
Total kWh	220,560	194,191	26,369
kW Input	57.4	50.5	6.9
kWh per Acre Foot	785	691	94
Acre Feet per Year	280.9		
Average Cost per kWh	\$0.09		
Average Cost per Acre Foot	\$68.84	\$60.61	\$8.23
Overall Plant Efficiency (%)	61.6	70.0	
<b>Total Annual Cost</b>	<b>\$19,336.50</b>	<b>\$17,024.69</b>	<b>\$2,311.81</b>

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact RICK KOCH at (805)654-7312.

RUSS JOHNSON  
Manager  
Hydraulic Services



SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>

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**Confidential/Proprietary Information**

October 29, 2010

PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
4871 W. COLUMBIA WAY  
QUARTZ HILL, CA 93536

**HYDRAULIC TEST RESULTS**, Plant: WELL #8  
Location: NW C/O 50TH W & AVE K      HP: 150  
Cust #: 0-003-0391      Serv. Acct. #: 002-8246-42  
Meter: 349M-1177      Pump Ref. #: 21134

In accordance with your request, an energy efficiency test was performed on your turbine well pump on October 25, 2010. If you have any questions regarding the results which follow, please contact RICK KOCH at (805)654-7312.

<b>Equipment</b>		
Pump:	WINTR	No: R08029
Motor:	GE	No: EEJ514163

**Results**

Discharge Pressure, PSI	<b>198.1</b>
Standing Water Level, Feet	<b>224.2</b>
Drawdown, Feet	<b>117.6</b>
Discharge Head, Feet	<b>457.6</b>
Pumping Water Level, Feet	<b>341.8</b>
Total Head, Feet	<b>799.4</b>
Capacity, GPM	<b>414</b>
GPM per Foot Drawdown	<b>3.5</b>
Acre Feet Pumped in 24 Hours	<b>1.830</b>
kW Input to Motor	<b>99.1</b>
HP Input to Motor	<b>132.9</b>
Motor Load (%)	<b>82.4</b>
Measured Speed of Pump, RPM	<b>1,783</b>
Customer Meter, GPM	<b>467</b>
<b>kWh per Acre Foot</b>	<b>1,300</b>
<b>Overall Plant Efficiency (%)</b>	<b>62.9</b>

RUSS JOHNSON  
Manager  
Hydraulic Services



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October 29, 2010

PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
4871 W. COLUMBIA WAY  
QUARTZ HILL, CA 93536

**PUMPING COST ANALYSIS,** Plant: WELL #8  
Location: NW C/O 50TH W & AVE K HP: 150  
Cust #: 0-003-0391 Serv. Acct. #: 002-8246-42  
Meter: 349M-1177 Pump Ref. #: 21134

The following energy efficiency analysis is presented as an aid to your cost accounting. This is an estimate based on the conditions present during the Edison pump test performed on October 25, 2010, billing history for the past 12 months, and your current rate of TOU-PA-B.

Assuming that water requirements will be the same as for the past year, and all operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test, it is estimated that:

1. Overall plant efficiency can be improved from 62.9% to 70.0%.
2. This can save you up to 27,941 kWh and \$3,332.79 annually.
3. These kWh savings translate to a 12-ton decrease in CO<sub>2</sub> emissions.

	<b>Plant Efficiency</b>		<u>Savings</u>
	<u>Existing</u>	<u>Improved</u>	
Total kWh	275,004	247,063	27,941
kW Input	99.1	89.0	10.1
kWh per Acre Foot	1,300	1,168	132
Acre Feet per Year	211.5		
Average Cost per kWh	\$0.12		
Average Cost per Acre Foot	\$155.06	\$139.31	\$15.75
Overall Plant Efficiency (%)	62.9	70.0	
<b>Total Annual Cost</b>	<b>\$32,802.48</b>	<b>\$29,469.68</b>	<b>\$3,332.79</b>

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued. If you have any questions regarding this report, please contact RICK KOCH at (805)654-7312.

RUSS JOHNSON  
Manager  
Hydraulic Services



**Save Energy,  
Save Money...  
Your test results show that you can!**

October 29, 2010

PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
4871 W. COLUMBIA WAY  
QUARTZ HILL, CA 93536

**PUMPING COST ANALYSIS**, Plant: WELL #8  
Location: NW C/O 50TH W & AVE K HP: 150  
Cust #: 0-003-0391 Serv. Acct. #: 002-8246-42  
Meter: 349M-1177 Pump Ref. #: 21134

Dear SCE Customer:

Helping California businesses save energy and money is a major goal at SCE. As you know, our Technical Specialist performed a free energy efficiency test on one or more pumps at your facility on October 25, 2010. We thank you for the opportunity to provide this service, and appreciate your interest in the performance of your pumps.

The results of the testing, shown in the table below, indicate that the pump listed above has the potential for improved Overall Plant Efficiency (OPE), lower energy costs, and a cash incentive.

	Projected Incentive, Energy, and Cost Savings			
	Existing	Improved	Savings	Cash Incentive
Total kWh	275,004	247,063	27,941	\$2,514.68
kW Input	99.1	89.0	10.1	
kW on-peak activity factor *			6.5	\$654.47
Acre Feet per Year	211.5			
kWh per Acre Foot	1,300	1,168	132	
Average Cost per Acre Foot	\$155.06	\$139.31	\$15.75	
Overall Plant Efficiency (%)	62.9	70.0		
<b>Annual Total</b>	<b>\$32,802.48</b>	<b>\$29,469.68</b>	<b>\$3,332.79</b>	<b>\$3,169.15</b>

(\*The kW on-peak activity factor represents how the kW impacts the SCE system during on-peak periods as determined by SCE's agricultural and water pumping customers' average load profiles. By improving efficiency, your expected kW savings is 10.1 kW, and the savings used for incentive calculations is 65% of 10.1, or 6.5 kW.)

Case studies have shown that repairing, retrofitting, or replacing inefficient pumps can save energy and money, and may even help you avoid serious operational problems. For your business, this could mean the following:

- **Improved Plant Efficiency:** Your OPE can be improved from 62.9% to 70.0%.
- **Lower Energy Costs:** Based on the test data, your past energy usage, and your current rate of TOU-PA-B, we estimate that you may save up to 27,941 kWh annually (which translates to a 12-ton decrease in CO<sub>2</sub> emissions). This may result in energy cost savings of \$3,332.79.
- **Cash Incentive:** Through the retrofit and installation of more energy-efficient equipment, you have the potential to receive an incentive of \$0.09 per kWh and \$100 per on-peak activity factored kW reduced, courtesy of SCE's Customized Efficiency Program. Based on your estimated kWh and kW, you would be eligible for a Potential Cash Incentive of \$3,169.15, capped at 50% of your project cost. (See contract for details.)

You may also be eligible for a **Premium Efficiency Motor Incentive.** For more information about your test results, options, and incentive opportunities, contact **CAROLINE LEE** at (760)951-3210.

We encourage you to review your results and take advantage of SCE's energy efficiency expertise and incentives. Visit [www.sce.com/rebatesandsavings](http://www.sce.com/rebatesandsavings), or give us a call and let us know how we can be of further service to you.

Sincerely,

Southern California Edison



CONFIDENTIAL/PROPRIETARY INFORMATION

December 2, 2005

ATTN: PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
42116 50TH ST WEST, SUITE D  
QUARTZ HILL, CA 93586

SUBJECT: HYDRAULIC TEST RESULTS [REDACTED]  
NW C/O 50TH W & AVE K  
CUST #: 0-003-0391 - SERV ACCT #: 002-8246-42  
DATE OF TEST: [REDACTED]

In accordance with your request, a test was made on your turbine well pump on the date listed above. If you have any questions regarding the results which follow, please contact RICK KOCH at (805)654-7312.

EQUIPMENT

PUMP: WINTR NO: R08029  
MOTOR: GE NO: EEJ514163 150 HP  
METER: 349M-1177  
HYDRAULIC TEST REFERENCE NUMBER: 21134

TEST RESULTS	TEST 1	TEST 2	TEST 3
Discharge Pressure, PSI	140.5	171.0	194.0
Standing Water Level, Ft.	190.4	190.4	190.4
Drawdown, Ft.	171.2	162.0	152.2
Discharge Head, Ft.	324.6	395.0	448.1
Pumping Water Level, Ft.	361.6	352.4	342.6
Total Head, Ft.	686.2	747.4	790.7
Capacity, GPM	559.0	483.0	435.0
GPM per Ft. Drawdown	3.3	3.0	2.9
Acre Ft. Pumped in 24 Hrs.	2.471	2.135	1.923
kW Input to Motor	105.0	101.6	98.6
HP Input to Motor	140.8	136.2	132.2
Motor Load (%)	85.9	83.1	80.7
Measured Speed of Pump, RPM	1,781		
kWh per Acre Ft.	1,020	1,142	1,231
Overall Plant Efficiency (%)	[REDACTED]	66.9	65.7
Customer Meter, GPM	663.0	576.0	509.0

Test 1 is the normal operation of this pump at the time of the above test(s). The other results were obtained by throttling the discharge.

A handwritten signature in black ink, appearing to read "Dan L. Johnson".  
DAN L. JOHNSON  
Manager  
Hydraulic Services



CONFIDENTIAL/PROPRIETARY INFORMATION

December 2, 2005

ATTN: PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
42116 50TH ST WEST, SUITE D  
QUARTZ HILL, CA 93586

SUBJECT: PUMPING COST ANALYSIS  
HP: 150 - PLANT: WELL #8  
CUST #: 0-003-0391 - SERV ACCT #: 002-8246-42  
HYDRAULIC TEST REFERENCE NUMBER: 21134

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the Edison Pump Test performed November 29, 2005 and billing history for the past 12 months.

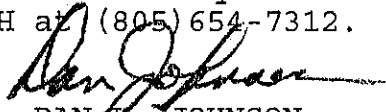
EXISTING PLANT EFFICIENCY  
TOU-PA-SOP1  
Current Rate

Total kWh	301,080
kW Input	105.0
kWh per Acre Ft.	1,020
Acre Ft. per Year	295.1
Avg. Cost per kWh	\$0.07
Avg. Cost per Acre Ft.	\$69.68
Overall Plant Eff. (%)	68.8
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TOTAL ANNUAL COST	\$20,566.77

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued.

If you have any additional questions regarding this report, please contact RICK KOCH at (805) 654-7312.

  
DAN L. JOHNSON  
Manager  
Hydraulic Services



CONFIDENTIAL/PROPRIETARY INFORMATION

November 19, 2004

ATTN: PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
42116 50TH ST WEST, SUITE D  
QUARTZ HILL, CA 93586

SUBJECT: HYDRAULIC TEST RESULTS - WELL #8  
NW C/O 50TH W & AVE K  
CUST #: 0-003-0391 - SERV ACCT #: 002-8246-42  
DATE OF TEST: November 15, 2004

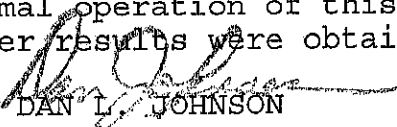
In accordance with your request, a test was made on your turbine well pump on the date listed above. If you have any questions regarding the results which follow, please contact RICK KOCH at (805)654-7312.

EQUIPMENT

PUMP: WINTR NO: R08029  
MOTOR: GE NO: EEJ514163 150 HP  
METER: PO726K-1619  
HYDRAULIC TEST REFERENCE NUMBER: 21134

TEST RESULTS	TEST 1	TEST 2	TEST 3
Discharge Pressure, PSI	160.0	182.5	203.5
Standing Water Level, Ft.	199.1	199.1	199.1
Drawdown, Ft.	156.7	150.7	137.9
Discharge Head, Ft.	369.6	421.6	470.1
Pumping Water Level, Ft.	355.8	349.8	337.0
Total Head, Ft.	725.4	771.4	807.1
Capacity, GPM	504.0	450.0	386.0
GPM per Ft. Drawdown	3.2	3.0	2.8
Acre Ft. Pumped in 24 Hrs.	2.228	1.989	1.706
kW Input to Motor	104.4	100.8	95.4
HP Input to Motor	140.0	135.2	127.9
Motor Load (%)	85.4	82.5	78.0
Measured Speed of Pump, RPM	1,782		
kWh per Acre Ft.	1,125	1,217	1,342
Overall Plant Efficiency (%)	65.9	64.8	61.5
Customer Meter, GPM	565.0		

Test 1 is the normal operation of this pump at the time of the above test(s). The other results were obtained by throttling the discharge.

  
DAN L. JOHNSON  
Manager  
Hydraulic Services





SOUTHERN CALIFORNIA  
**EDISON**<sup>®</sup>

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CONFIDENTIAL/PROPRIETARY INFORMATION

November 19, 2004

ATTN: PHIL SHOTT  
 PALM RANCH IRRIGATION DISTRICT  
 42116 50TH ST WEST, SUITE D  
 QUARTZ HILL, CA 93586

SUBJECT: PUMPING COST ANALYSIS  
 HP: 150 - PLANT: WELL #8  
 CUST #: 0-003-0391 - SERV ACCT #: 002-8246-42  
 HYDRAULIC TEST REFERENCE NUMBER: 21134

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the Edison Pump Test performed November 15, 2004 and billing history for the past 12 months.

EXISTING PLANT EFFICIENCY  
 TOU-PA-SOP  
 Current Rate

Total kWh	248,436
kW Input	104.4
kWh per Acre Ft.	1,125
Acre Ft. per Year	220.8
Avg. Cost per kWh	\$0.08
Avg. Cost per Acre Ft.	\$86.07
Overall Plant Eff. (%)	65.9
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TOTAL ANNUAL COST	\$19,007.84

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued.

If you have any additional questions regarding this report, please contact RICK KOCH at (805) 654-7312.

DAN L. JOHNSON  
 Manager  
 Hydraulic Services



CONFIDENTIAL/PROPRIETARY INFORMATION

November 19, 2004

ATTN: PHIL SHOTT  
 PALM RANCH IRRIGATION DISTRICT  
 42116 50TH ST WEST, SUITE D  
 QUARTZ HILL, CA 93586

SUBJECT: PUMPING COST ANALYSIS - HP: 150 - PLANT: WELL #8  
 CUST #: 0-003-0391 - SERV ACCT #: 002-8246-42  
 HYDRAULIC TEST REFERENCE NUMBER: 21134

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the Edison Pump Test performed November 15, 2004 and billing history for the past 12 months.

It is recommended and assumed that:

1. Overall plant efficiency can be improved from 65.9% to 70.0%. These improvements can save you up to 14,391 kWh annually.
2. Water requirements will be the same as for the past year.
3. All operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test.

	EXISTING PLANT EFFICIENCY		IMPROVED PLANT EFFICIENCY	
	TOU-PA-SOP	TOU-PA-SOP	TOU-PA-SOP	Savings
	Current Rate	Current Rate		
Total kWh	248,436	234,045	14,391	
kW Input	104.4	98.4	6.0	
kWh per Acre Ft.	1,125	1060	65	
Acre Ft. per Year	220.8	220.8		
Avg. Cost per kWh	\$0.08			
Avg. Cost per Acre Ft.	\$86.07	\$81.09	\$4.99	
Overall Plant Eff. (%)	65.9	70.0		
TOTAL ANNUAL COST	\$19,007.84	\$17,906.81	\$1,101.02	

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued.

If you have any additional questions regarding this report, please contact RICK KOCH at (805) 652-7312.

*[Signature]*  
 DAN L. JOHNSON  
 Manager  
 Hydraulic Services



## CONFIDENTIAL/PROPRIETARY INFORMATION

March 16, 2003

ATTN: PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
P. O. BOX 3396  
QUARTZ HILL, CA 93586-0396SUBJECT: HYDRAULIC TEST RESULTS - WELL #8  
NW C/O 50TH W & AVE K  
CUST #: 0-003-0391 SERV ACCT #: 002-8246-42  
DATE OF TEST: March 13, 2003

In accordance with your request, a test was made on your turbine well pump on the date listed above. If you have any questions regarding the results which follow, please contact GARY PARDUE at (661)726-5662.

## EQUIPMENT

PUMP: WINTR NO: R08029  
MOTOR: GE NO: EEJ514163 150 HP  
METER: PO726K-1619  
HYDRAULIC TEST REFERENCE NUMBER: 21134

TEST RESULTS	TEST 1	TEST 2
Discharge Pressure, PSI	136.5	152.5
Standing Water Level, Ft.	270.4	270.4
Drawdown, Ft.	144.5	138.5
Discharge Head, Ft.	315.3	352.3
Pumping Water Level, Ft.	414.9	408.9
Total Head, Ft.	730.2	761.2
Capacity, GPM	477.0	444.0
GPM per Ft. Drawdown	3.3	3.2
Acre Ft. Pumped in 24 Hrs.	2.108	1.962
kW Input to Motor	104.6	102.3
HP Input to Motor	140.3	137.2
Motor Load (%)	85.6	83.7
Measured Speed of Pump, RPM	1,779	
kWh per Acre Ft.	1,191	1,251
Overall Plant Efficiency (%)	62.7	62.2
Customer Meter, GPM	540.0	

The above test results indicate various operating conditions of this pump. Test 1 is running with a K-8 booster; test 2 simulates running with a K-8 booster and Well #7.

  
DAN L. JOHNSON  
Manager  
Hydraulic Services



CONFIDENTIAL/PROPRIETARY INFORMATION

March 16, 2003

ATTN: PHIL SHOTT  
PALM RANCH IRRIGATION DISTRICT  
P. O. BOX 3396  
QUARTZ HILL, CA 93586-0396

SUBJECT: PUMPING COST ANALYSIS  
HP: 150 - PLANT: WELL #8  
CUST #: 0-003-0391 SERV ACCT #: 002-8246-42  
HYDRAULIC TEST REFERENCE NUMBER: 21134

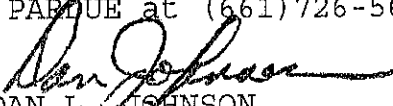
The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the Edison Pump Test performed March 13, 2003 and billing history for the past 12 months.

	EXISTING PLANT EFFICIENCY TOU-PA-SOP Current Rate
Total kWh	6,636
kW Input	104.6
kWh per Acre Ft.	1,191
Acre Ft. per Year	5.6
Avg. Cost per kWh	\$0.59
Avg. Cost per Acre Ft.	\$707.06
Overall Plant Eff. (%)	62.7
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TOTAL ANNUAL COST	\$3,939.89

The hydraulic test results indicate that this pump is operating in an efficient manner.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pump efficiency will be continued.

If you have any questions, please contact GARY PARQUE at (661)726-5662.

  
DAN L. JOHNSON  
Manager  
Hydraulic Services



CONFIDENTIAL/PROPRIETARY INFORMATION

March 16, 2003

ATTN: PHIL SHOTT
PALM RANCH IRRIGATION DISTRICT
P. O. BOX 3396
QUARTZ HILL, CA 93586-0396

SUBJECT: PUMPING COST ANALYSIS
HP: 150 - PLANT: WELL #8
CUST #: 0-003-0391 SERV ACCT #: 002-8246-42
HYDRAULIC TEST REFERENCE NUMBER: 21134

The following Pumping Cost Analysis is presented as an aid to your cost accounting. This analysis is an estimate prepared from operating criteria supplied from the Edison Pump Test performed March 13, 2003 and billing history for the past 12 months.

It is recommended and assumed that:

- 1. Overall plant efficiency can be improved to 70.0%.
2. Water requirements will be the same as for the past year.
3. All operating conditions (annual hours of operation, head above, and water pumping level) will remain the same as they were at the time of the pump test.

Table with 4 columns: Metric, Existing Plant Efficiency (TOU-PA-SOP Current Rate), Improved Plant Efficiency (TOU-PA-SOP Current Rate), and Savings. Rows include Total kWh, kW Input, kWh per Acre Ft., Acre Ft. per Year, Avg. Cost per kWh, Avg. Cost per Acre Ft., Overall Plant Eff. (%), and TOTAL ANNUAL COST.

It is sincerely hoped that this information will prove helpful to you, and that your concerns over maintaining optimum pumping efficiency will be continued.

If you have any questions, please contact GARY PARQUE at (661)726-5662.

Handwritten signature of Dan L. Johnson
DAN L. JOHNSON
Manager
Hydraulic Services