1990 ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM

by

Jean A. Bowman and Cecille A. Widolff
Office of Ground-Water Resources Evaluation and Management

F. William Simmons
Department of Agronomy, University of Illinois

Prepared for the
Illinois Department of Energy and Natural Resources

Champaign, Illinois
December 1990
1990 ILLINOIS IRRIGATION ENERGY CONSERVATION
GRANT PROGRAM

Illinois State Water Survey Contract Report 501

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Prepared for the
Illinois Department of Energy and Natural Resources
Contract No. SWRR2

Illinois State Water Survey
2204 Griffith Drive
Champaign, IL 61820-7495

December 1990
INTRODUCTION AND OVERVIEW

As agricultural irrigation spreads in Illinois, the importance of energy and water conservation will grow. For supplemental irrigation to be efficient, it must be: (1) scheduled accurately to reflect the crop's water needs, natural rainfall patterns, and soil moisture characteristics; and (2) applied with irrigation systems which are sufficiently designed and maintained to maximize the relationship between water applied and energy used. In Illinois, there may be opportunities for improved efficiency in both areas. The first, improved scheduling and reduced irrigation, is being addressed in ongoing irrigation field studies. The second, improved irrigation efficiency, is the focus of the Illinois Department of Energy and Natural Resource's (ENR) pilot 1990 Illinois Irrigation Energy Conservation Grant Program (energy grant program); that program is discussed here.

The purpose of this project was to evaluate the energy efficiency of irrigation systems used in heavily irrigated portions of Illinois, including parts of Mason, Tazewell, Lee, Whiteside, and Henry Counties. Further, the goal was to make grant money available to qualified irrigation farmers meeting specific program criteria. The grant money was used by the farmers to make eligible improvements in existing irrigation systems and in the operation of those systems in order to save energy and improve energy efficiency. This project was conducted in conjunction with an irrigation field study in those counties; the purpose of the field study is to gain a better understanding of typical irrigation water use patterns in Illinois by measuring irrigation flow rates, hours of irrigation system operation, and amounts of irrigation water used at regular intervals throughout the growing season. The impact of irrigation water use on regional water resources is also being evaluated in the irrigation field study.

This report contains the results of the energy conservation and grant program. The results of the ongoing irrigation field studies are contained in a companion report, "Irrigation Practices in Illinois," Illinois State Water Survey Circular (in press).
METHODS

Because of funding limitations, the energy grant program was limited to those farmers already participating in the irrigation field studies being conducted by Water Survey personnel. The participating irrigation farmers were notified by mail that grant money may be available for certain eligible improvements to irrigation systems which resulted in energy savings. Following that, a packet was sent to each farmer containing an application form, instructions, eligibility criteria, and a letter describing the program. Completed applications were sent to the Water Survey, where they were reviewed. As part of the application review process, Water Survey personnel made numerous site visits to the irrigation farms to discuss the proposed improvements. These site visits included conduct of six well performance tests to verify and document well deterioration problems. In many cases, revisions to the application forms were made based on discussion and recommendation by Water Survey personnel.

Once applications were complete, they were forwarded to program managers at ENR for further review. Program managers from ENR met with the principal investigators on six occasions to discuss and review the applications as they were received. After the applications were approved and the actual improvements to the irrigation systems made, Water Survey personnel made site visits to inspect the improvements and to interview the farmers about energy savings. Contract managers from ENR accompanied Water Survey personnel on a number of these site visits.

At the end of the irrigation season, each participating farmer was contacted and interviewed regarding energy costs and savings following the improvements.

RESULTS

A total of 33 irrigation farmers in five counties took part in the energy grant program in 1990; program eligibility criteria are summarized in Appendix A. The improvements made to the irrigation
systems totaled $240,284.32, of which $89,981.80 was contributed in the form of 40 percent cost-sharing grants through ENR. Estimates of annual energy savings made by participating farmers totaled $50,267.63. Actual energy savings information was available through extensive interviews and review of energy bills from 26 of the 33 participating farmers. Seven of the participating farmers did not have energy savings to report because: (1) they did not operate their irrigation system in 1990 because of unusually heavy rainfall; (2) they did not operate their irrigation system long enough (because of heavy rains) to obtain adequate energy consumption costs; or (3) they did not have their improvements completed until well into the 1990 irrigation season, and therefore do not have accurate estimates of actual energy savings. The 26 farmers who did have energy savings to report estimated a $38,892.68 cumulative energy savings in 1990; their actual 1990 energy savings totaled $46,154.27. Some irrigation farmers saved more energy dollars than they expected and some saved less; the differences between estimated and actual energy savings stemmed mainly from variations in hours of system operation.

The improvements made to irrigation systems through this energy grant program are as follows: (1) 23 participating farmers converted systems from high to low pressure; (2) four participating farmers brought three-phase electricity to their system to change from diesel fuel to off-peak electric use; (3) four participating farmers had irrigation wells rehabilitated or relocated to improve pumping efficiency, based on recommendations from State Water Survey personnel; and (4) one participating farmer had a lower pressure submersible pump installed.

The conversions from high to low pressure involved replacing existing spray nozzles with low-impact nozzles, and reducing the horsepower of the irrigation system engine. In some cases, new diesel motors were required to accommodate the more efficient low pressure nozzles. Most of the low-pressure conversions also required the installation of a small booster pump to operate an extension at the end of the system (end-gun) to keep the pressure high enough to water the corners
of the fields. The total cost for these improvements was $144,642.46, with an ENR cost-share contribution of $56,578.80.

The conversions from diesel fuel to three-phase electricity allowed the use of highly cost-effective off-peak electricity during the night hours, which also minimizes evaporative losses making the irrigation conditions more optimal. These improvements required installation of an electric motor, replacing spray nozzles, removal of the diesel engine, and installation of the electric line and meter. Total cost for these improvements was $48,846.48, with an ENR cost-share contribution of $16,000.00.

The well rehabilitations/replacements allowed the participating farmers to decrease operating time and improve pumping efficiency by decreasing pumping lift and well loss. The wells that were replaced or rehabilitated had significantly lost capacity, increased recovery time, and lost efficiency; in most instances the farmers were operating their wells 24 hours a day in order to keep up with the irrigation demand. The well rehabilitations ranged from simple chemical rehabilitation to relocation of the well, including installation of pipeline to the irrigation intake point. The total cost for these improvements was $34,322.38 with an ENR cost-share contribution of $12,414.00.

Finally, the installation of the low pressure submersible pump allowed the farmer to operate at lower pressure with a highly efficient underground pump. This improvement involved removing the old pump and installing the new submersible one. This improvement cost $6,625.00, with an ENR cost-share contribution of $2,650.00.

Copies of letters explaining the conversions to three-phase electricity and the well rehabilitations/replacements are included in this report in Appendix B. Copies of the original grant applications and supporting documentation are included in Appendix C; these applications detail the improvements made by each participating farmer, and their estimated energy savings. Copies of the signed contracts are included in Appendix D. These contracts were signed by participating farmers.
when Water Survey personnel visited the grant sites to inspect the improvements.

Table 1 summarizes the grants applied for and received under the ENR energy grant program, including the estimated and actual energy savings. The annual payback is based on actual energy savings.

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<th>Name</th>
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<th>Estimated Energy Savings</th>
<th>Actual Energy Savings</th>
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<td>50,267.63</td>
<td>48,276.45</td>
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CONCLUSIONS

The importance of optimizing irrigation operations has been demonstrated by the energy savings realized with this project. It is worth noting that the 33 irrigation farmers participating in the energy grant program derived substantial direct benefits from the ENR contribution of cost-share grants. However, broader benefits may be felt throughout the general irrigation community in Illinois through the demonstration of viable energy-saving techniques (conversion from high to low pressure, well rehabilitation, etc.) by the participating farmers. Irrigation farmers who have been contemplating such improvements, but who may have lacked specific information on potential energy savings, may now proceed with more energy efficient and cost effective irrigation operations.
APPENDIX A

1990 Illinois Irrigation Energy Conservation Grant Program
Application Instructions and Program Eligibility Criteria
November 24, 1989

Dear Participating Irrigation Farmers:

The Illinois Department of Energy and Natural Resources (ENR) has funding available for an Energy Conservation and Irrigation Grant Program. This funding can provide 40% matching grants up to $4,000 to purchase and install energy conservation measures on irrigation systems.

Two target areas have been identified for the program. These areas are defined as the two hydrologic regions known as the Havana Lowlands and the Green River Lowlands. The areas include: 1) Mason and Tazewell counties and 2) Bureau, Lee and Whiteside counties. The pilot program will be United to those operators participating in the phase one of the "Irrigation Water Use in Illinois: Strategies for Soil Water Management and Ground Water Conservation Study" conducted by the State Water Survey and the University of Illinois Cooperative Extension Service.

The enclosed program opportunity notice describes the program and requirements for the submission of an application. Interested and qualified parties whose proposed projects meet the criteria specified in this notice are invited to respond.

If you are interested in applying for a grant, please read the enclosed program description and submit a completed application by May 15, 1990.

The Energy Conservation and Irrigation Grant Program is a cooperative effort of the Illinois Department of Energy and Natural Resources, the State Water Survey and the University of Illinois Cooperative Extension Service.

Sincerely yours,

Henry C. Kurth, Manager
Consumer Assistance Section

Webster Bay, Manager
Agricultural Program

HCK:pc
applt
PROGRAM OPPORTUNITY NOTICE
FOR THE
ENERGY CONSERVATION, IRRIGATION GRANT PROGRAM
FOR ILLINOIS FARMERS

PROGRAM GUIDELINES

Illinois' irrigated agriculture depends heavily on water and energy inputs. To minimize costs and maximize profits in the short term and to maintain Illinois' irrigation in the long term, it is imperative that the energy and water resources be managed efficiently. The Energy Conservation Irrigation Grant Program will provide Illinois farmers with an opportunity to save energy, save water and reduce their operating costs. The Program is designed as a pilot subsidy project to encourage operator investment, and demonstrate the cost effectiveness of energy conservation investment in more efficient irrigation systems or equipment. The pilot program will be limited to those operators participating in the phase one of the study entitled "Irrigation Water Use In Illinois; Strategies For Soil And Water Management And Ground Water Conservation" conducted by the State Water Survey and the University of Ill. Cooperative Extension Service.

General Description

The Illinois Department of Energy and Natural Resources, as the lead agency, in cooperation with the University of Illinois Cooperative Extension Service, and the State Water Survey will conduct a grant program to partially fund energy conservation improvements in agricultural irrigation systems. The program objective is to provide technical and financial assistance to Illinois farmers to identify, evaluate and implement water management systems and make pump and system improvements that have significant direct and indirect energy conservation potential. Two target areas have been identified for the program. These areas are defined as the two hydrologic regions known as the Havana Lowlands and the Green River Lowlands. The areas include: 1) Mason and Tazewell Counties and 2) Bureau, Lee, and Whiteside Counties. These two target areas were selected because of substantial research work conducted under phase 1 of the program conducted by the Cooperative Extension and the Water Survey. These areas also have a majority of the irrigation systems in the State, and appear to have an abundance of older systems most likely to benefit from an energy efficient retrofit.
Grant Program

The Illinois Department of Energy and Natural Resources has allocated $150,000 for the Energy Conservation, Irrigation Grant Program for the purchase of equipment and services needed to improve the efficiency of irrigation systems. This includes: 1) The repairing or replacement of selected irrigation pumps which audits indicate have significant potential for energy efficiency improvements; and 2) modifying or retrofitting existing irrigation systems, i.e. operating irrigation systems at lower pressures, etc.

Project Eligibility

To Be Eligible, Projects must meet the following requirements:

1. Be located in the two target areas: 1) Mason and Tazewell Counties; and 2) Bureau, Lee and Whiteside Counties, and be systems that have been analyzed in phase 1 of the Irrigation Study.

2. Utilize existing, reliable technologies designed to reduce energy use through efficiency improvements, reduced hours of operations or by utilizing renewable resources.

3. Demonstrate energy savings to produce a simple payback period of 10 years or less for the total cost of the project based on estimated annual energy savings.

4. To enhance the potential for project success, applicants are encouraged to work with agricultural advisors/specialists from colleges and universities, and/or farm equipment manufacturers and suppliers.

5. New irrigation systems will not be considered for funding. Project eligibility for replacement systems replacing systems older than for five years or more will be determined on a case-by-case basis. Retrofits to existing irrigation systems that meet program criteria are eligible.

6. Program grants shall be 40% matching grants with a minimum grant of $1000 and a maximum grant of $4000.

7. All projects must be completed within 90 days following approval of project by the Illinois Department of Energy and Natural Resources. Failure to do this will result in revocation of the grant and require submission of a new application to the Department.

8. Applicant must be the direct user/beneficiary of conservation measures funded by this program.
Grant Application Process:

1. Potential applicant receives a Program packet.

2. Applicant completes an evaluation of his irrigation system, which includes recommendations for energy conservation retrofits.

3. Applicant submits a completed application form along with at least one estimate of project costs to the Illinois Water Survey for preliminary review. The Water Survey makes a preliminary approval and forwards the application to the Department of Energy and Natural Resources for final review.

4. The Department may request additional information prior to taking action on a specific application. The Department may conduct site visits to further evaluate the project and reserves the right to require changes and/or additional Information prior to grant approval.

5. If the application is approved a grant agreement between the applicant and ENR will be signed. This agreement will specify work schedules for the completion of the retrofits and provide for dispersal of the grant funds.

ENR reserves the right to make changes in these policies as may be necessary.
IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
APPLICATION INSTRUCTIONS

SECTION

A. Name: Please fill in the applicants legal name. If the application is in the name of a corporation, please list the legal name of the corporation and a name of a principal person of the corporation.
   Address: List the mailing address of the person or entity named above. Please include county, zip code and the telephone number of the person responsible for the application.

B. Applicant’s social security number: List the social security number of the person responsible for the grant application. If the application is on behalf of a corporation, list the FEIN number for the corporation.

C. List the electric utility supplying power to the site to be improved with the proceeds of this grant. List the account number for the location.

D. List the gas, propane or diesel fuel supplier for the site.

E. Please describe the energy conservation improvements planned. Be as detailed as possible and attach additional sheets of paper if necessary. All brand names and model numbers of equipment to be purchased should be listed. Attach at least one estimate or contractor bid for the improvement cost.

F. Total $ amount of the improvements: This figure should include only costs associated with the energy conservation measures installed.

G. Amount of grant requested: Please list the amount of grant funds you are seeking from ENR under this application. In no case should this amount be greater than 40% than the amount of line F. or more than $4000.

H. Table for energy savings: This table should list the various components of line E. and list the estimated energy costs associated with those installations. ENR recommends that the applicant utilize utilities, equipment suppliers and the Illinois Water Survey to develop these estimates.

I. Applicant’s Certification: Please read the certification carefully and sign your name acknowledging your acceptance of these terms.

J. Mail the completed form and accompanying documents to:

   Ms. Jean A. Bowman
   Illinois Water Survey
   Ground-Water Section
   2204 Griffith Drive
   Champaign, Illinois 61820-7496
   Phone: (217) 333-3728
APPENDIX B

Documentation of Individual Applications for Conversion to Three-Phase Electricity and for Well Rehabilitation and Replacement
May 24, 1990

Webster Bay  
IL Department of Energy and  
Natural Resources  
325 W. Adams St, Room 300  
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Alan Landis for participation in the irrigation energy grant program.

Mr. Landis has applied to bring 3-phase electricity to his farm, allowing him to operate his irrigation rig with low-cost electricity rather than diesel fuel.

Because of the availability of favorable off-peak electric rates in Mr. Landis' area, the use of electric power is substantially cheaper than diesel. Off-peak hours are at night, so irrigation operation occurs during optimal conditions with minimal evaporative losses. This results is decreased operation time.

We recommend that Mr. Landis' application be approved; it encourages energy efficient, cost-effective irrigation practices and takes advantage of favorable electric rates available to farmers in the region.

Sincerely,

F. William Simmons  
Jean A Bowman
May 24, 1990

Webster Bay
IL Department of Energy and
Natural Resources
325 W. Adams St., Room 300
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Marlin LeFevre for participation in the irrigation energy grant program.

Mr. LeFevre has applied to bring 3-phase electricity to his farm, allowing him to operate his irrigation rig with low-cost electricity rather than diesel fuel.

Because of the availability of favorable off-peak electric rates in Mr. LeFevre's area, the use of electric power is substantially cheaper than diesel. Off-peak hours are at night, so irrigation operation occurs during optimal conditions with minimal evaporative losses. This results is decreased operation time.

We recommend that Mr. LeFevre's application be approved; it encourages energy efficient, cost-effective irrigation practices and takes advantage of favorable electric rates available to farmers in the region.

Sincerely,

F. William Simmons

Jean A. Bowman
May 24, 1990

Webster Bay  
IL Department of Energy and Natural Resources  
325 W. Adams St., Room 300  
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Terry Poci for participation in the irrigation energy grant program.

Mr. Poci has applied to bring 3-phase electricity to his farm, allowing him to operate his irrigation rig with low-cost electricity rather than diesel fuel.

Because of the availability of favorable off-peak electric rates in Mr. Poci’s area, the use of electric power is substantially cheaper than diesel. Off-peak hours are at night, so irrigation operation occurs during optimal conditions with minimal evaporative losses. This results in decreased operation time.

We recommend that Mr. Poci’s application be approved; it encourages energy efficient, cost-effective irrigation practices and takes advantage of favorable electric rates available to farmers in the region.

Sincerely,

F. William Simmons  
Jean A. Bowman
May 24, 1990

Webster Bay
IL Department of Energy and
Natural Resources
325 W. Adams St., Room 300
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Robert Cassens for participation in the irrigation energy grant program.

Mr. Cassens has applied to convert an irrigation rig from high to low pressure, and to replace an existing, deteriorated irrigation well. I believe that you are well aware of the energy benefits of converting to lower pressure, and that your questions concern the well.

Mr. Cassens' 25-year-old well had significantly lost capacity, increased recovery time, and lost efficiency. Over the three years of our irrigation study, Mr. Cassens has been forced to operate his well 24-hours a day, seven days a week throughout the irrigation season.

Because of the advanced age of the well, a replacement well has been recommended. The replacement well will increase the watering capacity by 350 gallons per minute, thereby decreasing the necessary operating time significantly.

We recommend that Mr. Cassens' application be approved as his improved operation will be approximately twice as energy efficient as before.

Sincerely,

F. William Simmons              Jean A. Bowman
May 24, 1990

Webster Bay
IL Department of Energy and Natural Resources
325 W. Adams St., Room 300
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Alvin Landis for participation in the irrigation energy grant program.

Mr. Landis has applied to replace an existing, deteriorated irrigation well. His original well had lost capacity, increased its recovery time, and had been operating with declining pumping water levels. Over the last three years of our irrigation field study, we observed the well's lost efficiency. Mr. Landis had to increase his operating time to keep up with water demand. Because of the advanced age of the well, chemical rehabilitation would not have been likely to remedy the problems in the long run; a replacement well was the most cost effective remedy. These problems and options were documented by a pumping and well performance test conducted by the Water Survey in October, 1989.

We recommend that Mr. Landis' application be approved as his new well will require fewer total hours of operation, and allow for more efficient application of water and reduced pumping lift. This will result in overall energy savings and efficiency.

Sincerely,

F. William Simmons          Jean A. Bowman
May 24, 1990

Webster Bay
IL Department of Energy and
Natural Resources
325 W. Adams St., Room 300
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Doug Schmidt for participation in the irrigation energy grant program.

Mr. Schmidt has applied to replace an existing, deteriorated irrigation well. Mr. Schmidt's original well was approximately 57 feet deep with the pump set at 55 feet. A water-free bedrock formation started at 57 feet, the bottom of the well. With only two feet of available drawdown in the well, the pump was constantly dewatered during operation. The well had significantly decreased in capacity. Over the last three years of our irrigation field study, we have observed Mr. Schmidt's well; he has had to operate the well around the clock, regardless of energy consumption, in order to supply adequate water to his crop. These problems were documented in a pumping and well performance test conducted by the Water Survey in October, 1989.

Because of the presence of the shallow bedrock formation that does not yield an adequate water supply, deepening or rehabilitating the existing well was not cost effective. The replacement well was considered to be the only reasonable alternative.

We recommend that Mr. Schmidt's application be approved as his new well will require fewer total hours of operation, and allow for more efficient application of water without pump dewatering and reduced pumping lift. These measures will allow for overall energy savings and efficiency.

Sincerely,

F. William Simmons  
Jean A. Bowman
May 24, 1990

Webster Bay  
IL Department of Energy and  
Natural Resources  
325 W. Adams St., Room 300  
Springfield, IL  62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Edward Mead for participation in the irrigation energy grant program.

Mr. Mead has applied to rehabilitate an existing irrigation well. The well, drilled in 1976, was 653 feet deep, finished in a sandstone formation, with a pump setting of approximately 150 feet. In the last three years of our irrigation field study, we have observed Mr. Mead's well increasing recovery time, decreasing capacity, and losing efficiency. These problems were confirmed by a test pump. A local well driller recommended deepening the well to increase the capacity and raise the pumping water levels; we confirm this recommendation. The improvements will allow Mr. Mead to operate his well fewer hours and decrease his overall pumping lift.

We recommend that Mr. Mead's application be approved as it is within the program guidelines and goals.

Sincerely,

F. William Simmons  
Jean A. Bowman
Webster Bay  
IL Department of Energy and  
Natural Resources  
325 W. Adams St., Room 300  
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses your questions regarding the application by Robert Garlisch for participation in the irrigation energy grant program.

Mr. Garlisch has applied to convert his existing irrigation rig from high to low pressure. At the time he filed his application, he estimated going from 90 pounds pressure at 2200 revolutions per minute and 1000 gallons per minute water delivery, to 40 pounds pressure at 1800 revolutions per minute and 1300 gallons per minute water delivery for an annual savings of about $600 with a 6.5 year payback period. However, as Mr. Garlisch has notified you, a test pump of the well has shown that he was only pumping 850 gallons of water per minute to begin with, and that his improvements would yield him 950 gallons per minute instead of 1300. He was concerned that the change in estimated savings would disqualify him from participating in the program.

We have visited with Mr. Garlisch and have re-evaluated his energy application. By going from 850 to 950 gallons per minute delivery, he will save between 50 and 100 hours of operation per year. With fuel prices at approximately $1.05 per gallon and fuel consumption at 5 gallons per hour, that will enable a savings of between $260 and $525 a year. However, in going from the present 90 pounds pressure at 2200 rpm to 40 pounds pressure and 1800 rpm, he will also save in fuel consumption per hour. The savings is estimated at approximately one gallon per hour. That will mean a savings of approximately 840 gallons of fuel a year at a savings of $882.

With these changes, we estimate that Mr. Garlisch will be saving between $1,142 and $1,407 per year. His installation cost is estimated at $3,968, making his simple payback period in years between 2.8 and 3.5. This is well under the 10 year maximum payback period. (Please note that Mr. Garlisch's original application accounts for the energy savings in fuel consumption but not for savings in total hours of operation. That explains why his improvements yielding fewer gallons of water per hour than expected still have higher annual savings than he estimated on his original application.)

We recommend that Mr. Garlisch's application be approved so that he may go ahead with his improvements. He will be saving both in total hours of operation and in fuel consumption per hour.

Sincerely,

F. William Simmons

Jean A. Bowman

F. William Simmons

Jean A. Bowman
APPENDIX C

Copies of Original Grant Applications and Supporting Documentation
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES  
Illinois Irrigation Energy Conservation Grant Program  
Preliminary Program Application  
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: Breadlove Farms  
B. Applicant’s S.S.#: 346-46-5781  
C. Electric Utility: Menard Electric Co-op  
D. Gas Utility:  
Account #: 01-016-017-04  
E. County: Tazewell  
F. Telephone #: (309) 968-6951  
G. Total # amount of improvements: $5182  
H. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $2073  
I. Estimated start up date: Mar of 1990  
J. Estimated completion date: April of 1990

Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting from high pressure to low pressure system</td>
<td>$4600</td>
<td>$2073</td>
<td>0.84/kWh @1000 hrs/yr</td>
<td>$840</td>
<td>2.56 yrs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>=$960 Electric</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1800/yr</td>
<td>2.5 yrs</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

John Breadlove  
Applicant’s Signature: 3/21/90

IL428-0233  
Disclosure of this information is VOLUNTARY. However, failure to complete may result in the form not being processed. This form has been approved by the State Forms Management Center.
DATE 1/4/89

JOHN BREEDLOVE

LOW PRESSURE CONVERSION ON 4 TOWER VALLEY (660 FT.)

NELSON SPRAY III SPRINKLERS AND CHART 175
NELSON 15 PSI REGULATORS 567
SR100 END GUN 575
130 GPM BOOSTER PUMP, PANEL, AND WIRING 1000
REMOVE AND INSTALL LAND ROLLAR PUMP MAKE PUMP 500 GPM AT 40 PSI 940
NEW 30 HP ELEC MOTOR, CHANGE HEATERS IN EXISTING PANEL 1400
FREIGHT 150
WELDING NEW OUT LETS IN PIPE. INSTALLING SPRINKLERS AND END GUN 375

TOTAL $5,182.00

CUSTOMER TO KEEP OLD ELEC MOTOR,

CUSTOMER SIGNATURE
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

A. Name: STEVEN D BROWNLEE
   Address: 230 WEST MAIN STREET
   AHDOY, ILLINOIS
   Zip Code: 61310
   County: LEE

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

I will be converting my East Irrigation Well and Pivots' power source from a cummins 220 120 hp. (b gal/hr) diesel to a 75 hp. U.S. Holoshift Motor using Off-Peak Electrical Power supplied by Commonwealth Edison, with the option to power the well and pivot with diesel power during On-Peak periods by means of an Amarillo C100A Combination Gearhead, thus allowing continuance 24 hours per day operations during extremely dry periods without incurring the $ 800.00 demand charge and higher price per kWh rates imposed during those On-Peak hours. The diesel power is more efficient than the On-Peak rates and charges, but the Off-Peak rates are 4.5 times cheaper than the current diesel power. The savings outlined below are well documented due to the fact that Dale (my father) and I converted our West Irrigation Well and Pivots' power source to Off-Peak Electrical power before the 1989 season and have experienced the savings as well as learning the higher management skills needed for optimum efficient Off-Peak Operations.

F. Total $ amount of improvements
   $ 10,395.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $ 4,000.00

H. Estimated start up data March 15, 1990
   Estimated completion data May 15, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Instillation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off_Peak Electric Conversion</td>
<td>$10395.00</td>
<td>Hours of annual use are as follows: 1987 700 hrs, 1988 800 hrs, 1989 650 hrs</td>
<td>750 hrs of use</td>
<td>$863.50</td>
<td>$3166.50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>450 gal .90/gal</td>
<td>$863.50</td>
<td>$3166.50</td>
<td>3.28</td>
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<tr>
<td></td>
<td></td>
<td>$750.00</td>
<td>3600 gal .90/gal</td>
<td>$2490.00</td>
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<tr>
<td></td>
<td></td>
<td>$650.00</td>
<td>3000 gal .90/gal</td>
<td>$2040.00</td>
<td>5.09</td>
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<tr>
<td>TOTAL</td>
<td></td>
<td>681 hours $822.00</td>
<td>4086 gal .90/gal</td>
<td>$2855.00</td>
<td>3.64</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ERN outlining the grant procedures and schedules.

[Signature]
DATE: 2-27-90

Destruction of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been approved by the State Farm Management Center.

IL 428-0233
TOTAL AMOUNT OF THE IMPROVEMENTS

Commonwealth Edison contract to supply 480 volts $ 3113.11
(815)288-2211

Amarillo C100A Combination Gearhead $ 2332.00

K & D Motor & Electric : 75 hp. U.S. Holoshift Motor(used)$ 1800.00
(308)995-6063 Size 4 Used pump panel $ 800.00

Erbes Electric : Installation of 480 volt meter & panel $ 750.00
(815) 849-5260

Midwest Irrigation Co. : Combination Chemagation &
(402)723-5374 Control Valve $ 400.00

Mid-American Pump : Stainless Steel Headshaft(Goulds) $ 400.00
(402) 463-5658

Wilco Rental : Trencher rental & labor to install wire $ 200.00
(815) 625-4323

Freight : Fuel & Motel charges incurred during trip out
to Nebraska to haul Gearhead, Motor, Panel,
Chemagation valve, and Headshaft back to Amboy.
Individual freight charges could total $700.00 $ 200.00

Eller & Willey Block Co. : Prefabricated Concrete
(815)284-7761 Transformer Pad $ 400.00

TOTAL IMPROVEMENTS ... $10395.11
Date: 02/02/1990

MR. STEVE BROWNLEE
SLEEPY HOLLOW RD.
AMBOY TWP. IL 61310

Dear MR. STEVE BROWNLEE

Enclosed are the documents related to the supply of electricity at SLEEPY HOLLOW RD., AMBOY TWP., ILLINOIS. Please sign all copies of the enclosed documents. Return the signed documents and payment of $3,113.11 to my attention.

The cost of providing electric service is void after six months.

Upon receipt of your payment and signed copies, Commonwealth Edison will begin to schedule any necessary service work. An authorized copy of each document will be returned to you for your files.

If you have any questions concerning this or other Commonwealth Edison matter, please call me at (815) 288-2211 ext. 249.

Sincerely,

MARK HECKMAN
Sales Department
Commonwealth Edison

Enclosures
SERVICE ENTRANCE LOCATION SKETCH

FOR A CONNECTED LOAD OF________ H.P. LIGHT, AND _________ H.P. AND _________ SPECIAL
AND ESTIMATED TOTAL MAXIMUM DEMAND OF ________ KW.

FOR CLASS OF BUSINESS ____________ SERVICE VOLTAGE ________ KV ________

This information for the electrical contractor and/or architect

The electrical contractor shall ensure the approval of the appropriate Building Authority and meet criteria of the
Commonwealth Edison Company's Book of Information and Requirements for the supply of Electric Service.
This location is contingent upon there being no objection to crossing adjacent property with service wires if access
Location given is for load shown above, and any change in load may require change in location.
Customer's underground conduit should not be installed in advance of Commonwealth Edison Company's conduit.
Approval of this extension will constitute customer's approval of service location as shown below.

C.E. CO. TO: (As Checked)

☐ 1 Install, Own, and Maintain Transformers.
☐ 2 Install, Own, and Maintain Primary Wire or Cable.
☐ 3 Trench 30" Deep and Rough Backfill.
☐ 4 Install, Own and Maintain ________ Set(s)
of Secondary Service Cable, C.E. Co. to
Feed into Bldg. Customer to Pull.
☐ 5 Furnish Lugs and Connect Secondary at
Transformer. Customer to Furnish Lugs and Con
nect at Switch.
☐ 6 Install, Own and Maintain Transformer Pad.

CUSTOMER TO: (As Checked)

☐ 7 Provide Grade Within 4" of Finished Grade Before
C.E. Co. Starts Work.
☐ 8 Install, Own and Maintain Transformer Foundation
Per C.E. Co. Spec. C5285 and C5289
Front of Foundation to Face ________.
☐ 9 Install, Own and Maintain Secondary Cable to C.E
Co. Transformer.
☐ 10 Install, Own and Maintain Vehicular Barriers Per
C.E. Co. Specification C5296.
☐ 11 Install Service Attch. at Bldg. of Sufficient Height
as to Maintain Min. Service Drop Height of 18'-0".
☐ 12 Extend Service Entrance Conduit(s) a Minimum of
2' into Undisturbed Earth Outside Bldg. Wall.

Sketch Submitted To Customer on______ By______ For
Marketing

SHORT CIRCUIT CURRENT
The short circuit current which can be delivered from
Commonwealth Edison Company's system, calculated at the
first point(s) of connection between Edison-owned facil
ities and those of
(customer's name)

such point(s) being located at

in

kVA

Impedance symmetrical rms (three phase, at

voltage.
The electrical characteristics of circuits used in acc
sequence from the aforementioned point(s) and those of
your existing equipment, will affect the short circuit
duty imposed on your electrical facilities.

We suggest that this information be conveyed to the De
signer of your electrical system to enable him to specify
adequate and economical installation.

LOCATION PLAN FOR
ELECTRICAL FACILITIES
APPROVED BY:

CUSTOMER

DATE

COMMONWEALTH EDISON COMPANY
DIVISION EMERGENCY DEPARTMENT

BY B. BURGESS

DATE

TELEPHONE 288-8271 EXTENSION 271

APPROVED
NOTE: CUSTOMER TO PROVIDE TRENCH FROM C.E. TERMINAL POLE TO TRANSFORMER PAD.

NOTE: LOC. 290-344AL 25/4YA CAN BE REMOVED. CONTINUED, CUTF X PUMP WILL BE CARRIED FROM NEW YOY LOC.
Dale Brownlee
1202 Sleepy Hollow Rd.
Debary, FL 32713

Installation of 200 AMP, 480 volt, 3-phase, 4-wire, B-phase grounded system for irrigation system. Wire will be 4/0 URD, installed in a 4" tile, (tile supplied by owner) metered at pivot of irrigation.

Contractor will install meter socket, but no other additional boxes. Meter socket will be mounted on galvanized lumber and connected to disconnect supplied by owner.

All labor to be performed on a non-union basis by Erbes Electric. All materials and workmanship to be in accordance with the National Electric Code, and National Building Code.

Total Contract Price ................................... $1,450.00

Reduced due to I will be trenching the wire and doing best of labor.

50% 12/5/87

WE PROPOSE to furnish labor and material — complete in accordance with above specifications, and subject to conditions found on both sides of this agreement, for the sum of:

$1,450.00

Payment to be made as follows: 50% Down, Net 30 days upon monthly billing.

Respectfully submitted,

Douglas Erbes

Date of Acceptance: 7/1/87

By: ____________________________

Note: This proposal may be withdrawn by us if not accepted within 30 days.
INVOICE 5098

FROM: Mid-America Pump & Supply
Industrial Park East, Bldg. S.H. 4B
P.O. Box 1287
HASTINGS, NEBRASKA 68902-1287
(402) 463-6658
FAX (402) 463-0523

TO: Dale Brownlee
1202 Sleepy Hollow Road
Amboy, Illinois, 61310

SHIP TO:

Invoice Date: 5-16-89

SOLD TO: Same

<table>
<thead>
<tr>
<th>YOUR ORDER NO.</th>
<th>DATES ENTERED</th>
<th>UPS-SHIPPED VIA</th>
<th>F.A.S. POINT</th>
<th>TERMS</th>
<th>JOB NAME</th>
</tr>
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<tbody>
<tr>
<td>Vbl/Dale</td>
<td>4-11-89</td>
<td>PPD &amp; ADD Hastings</td>
<td>C.O.D.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>1 3/16&quot; x 514&quot; S.S. Headshaft 12 thd.</td>
<td></td>
<td>141.82</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Goulds Headshaft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>1</td>
<td>Nut</td>
<td></td>
<td>19.00</td>
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<tr>
<td>1</td>
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<td>UPS-BLUE &amp; C.O.D. Charges</td>
<td></td>
<td>160.82</td>
<td></td>
</tr>
</tbody>
</table>

TOTAL CHARGES: 196.00

Due to headshaft for
COOA will be approximately three
as long (120")

PAID 5-12-89
WITH CK #5565

PLEASE PAY FROM THIS INVOICE.
NO STATEMENT WILL BE MAILED.

The title to the merchandise and personal property covered by this invoice shall remain vested in Mid-America Pump & Supply, Inc. until the purchase price is paid in full.

A FINANCE CHARGE COMPUTED AT A PERIODIC RATE PER MONTH, WHICH IS AN ANNUAL PERCENTAGE RATE OR HIGHEST LAWFUL RATE, WILL BE APPLIED TO ACCOUNTS AFTER DEDUCTING CURRENT CREDITS.

P.O.F.          P.O.F.
P.O.F.          P.O.F.

ORIGINAL
FOUNDER FOR OPEN DELTA COMPARTMENTAL TR
DESIGN FOR ELECTRIC SERVICE STATIONS
167KVA MAX CAPACITY - EACH TRANSFORMER
(LOW PROFILE TRANSFORMER ONLY)

<table>
<thead>
<tr>
<th>I.D.</th>
<th>MATERIAL DESCRIPTION</th>
<th>C.E. C.O.</th>
<th>LBS</th>
<th>FT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>DRAIN GROUND</td>
<td>CS550....FO</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>CORD, 1/0 BY SD 10 STRG, CU.</td>
<td>G</td>
<td>355082</td>
<td>30</td>
</tr>
</tbody>
</table>

NOTES:
SUPPLEMENTARY MATERIAL

1. WHEN NON-JACKETED BARE CABLES ARE IN USE, INSTALL WITH 1/2 LEAD CLAD COPPER CONDUCTORS (2 306089).

The concrete mix is to be composed of cement, sand, gravel, air entrainment, fly ash and the desired amount of water to produce a compressive strength of 3000 psi at 28 days on test. The sand and gravel must be clean and hard. The air entrainment is to be between 3% and 6% by volume. The mix to have 5 BAGS OF PORTLAND CEMENT TYPE-I OF A REPUTABLE BRAND, PER CU. YD. OF CONCRETE. IF AVAILABLE, FLY ASH IS TO BE MIXED IN AT A RATE OF 20 LBS. PER BAG OF Cement, also a slump of 3 inch to 5 inch is required.

12. TOP OF FOUNDATION TO BE SMOOTH AND LEVEL.

13. GRADE AWAY FROM FOUNDATION.

14. PRIMARY AND SECONDARY CONDUIT MUST COME THROUGH FOUNDATION IN DESIGNATED AREAS. DEVIATIONS FROM THE DESIGN AS SHOWN MUST HAVE C.E. CONSTRUCTION.

15. WEIGHT OF ULTIMATE TRANSFORMER TO BE FURNISHED BY ENGINEER (LBS).

16. ALTERNATE METHODS OF MAKING GROUND CONNECTIONS ARE: CAMELLE, SILOS, BOLTED, SOLDERED OR COMPRESSION.

17. FINAL GRADE TO BE WELL GRADED AT ALL TIMES.

18. BOX OUT BETWEEN CONDUIT OPENINGS WITH 1 INCH UNTREATED LUMBER TO PROVIDE A 4 INCH X 1 INCH CLEAR OPENING. LUMBER MAY REMAIN IN PLACE AFTER CONCRETE IS POLISHED.

19. WHEN NUMBER OF SECONDARY CONDUITS EXCEED THAT SHOWN IN TABLE A, REFER TO CS290.
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: Robert Cassens
   Address: R.R. 1, Prophetstown, Ill.
   Zip Code: 61277
   County: Henry
   Telephone #: (815) 537-5679

B. Applicant’s S.S.#: 361-07-1577

C. Electric Utility: Farmers Mutual Electric
   Account #: 3-17-11

D. Gas Utility: 
   Account #: 

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   New 75’ well *
   Renozzling and new 40 Hp motor
   See attached estimates.

   * Test well shows 75’ sufficient.

F. Total $ amount of improvements $10,050.

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $4,000.

H. Estimated start up date May 7
   Estimated completion date June 7

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well, motor,</td>
<td>$10,050</td>
<td>35856</td>
<td>.0494</td>
<td>$1,773</td>
<td>5.6</td>
</tr>
<tr>
<td>renozzling</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See attached savings sheet.

| TOTAL                         |                             |               |             | $1,773               | 5.6                     |

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

[Signature]
Applicant’s Signature

[Date] April 23, 1990

IL.428-0233
THE FOLLOWING EQUIPMENT IS NEEDED TO IMPROVE THE IRRIGATION EFFICIENCY FOR THE CENTER PIVOT SYSTEM FOR ROBERT CASSENS.

1 NEW IRRIGATION WELL, 14" STEEL CASING W/12" STAINLESS STEEL SCREEN AT THE BOTTOM, APPROX. 75' TOTAL DEPTH------------------- $8,750.00

1 RENOZZLING OF THE CENTER PIVOT, USING EXISTING SPRINKLERS-- $300.00
CUSTOMER PROVIDES LABOR INSTALLING NOZZLES

1 NEW 40 HP VHS MOTOR W/TRADE IN OF OLD 60 HP------------------- $1,000.00
CUSTOMER TO PROVIDE LABOR TO MOVE PUMP AND SWITCH MOTORS.

CASSENS

TOTAL------------------------------------- $10,050.00

THANK YOU VERY MUCH.
BEIERSMANN AGRI-SYSTEMS INC.
Grosch Irrigation Co., Inc.
Well Drilling and Complete Installations

MASON CITY, ILL. 62864
Phone 217-452-5479

**STATEMENT OF ESTIMATE**
- ESTIMATES BASED ON CURRENT PRICES

**DATE**
April 16, 1990

Robert Cassens
RR 1

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 ft. Well</td>
<td></td>
</tr>
<tr>
<td>80 ft. 14&quot; Plain steel casing</td>
<td>$3,800.00</td>
</tr>
<tr>
<td>20 ft. 12&quot; Stainless steel screen</td>
<td>$3,675.00</td>
</tr>
<tr>
<td>Gravel</td>
<td>$750.00</td>
</tr>
<tr>
<td>Permit</td>
<td>$75.00</td>
</tr>
<tr>
<td>Test pumping</td>
<td>$200.00</td>
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<tr>
<td>Drilling fluids</td>
<td>$350.00</td>
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<tr>
<td>Installation</td>
<td>$500.00</td>
</tr>
<tr>
<td>Steel pump base</td>
<td>$150.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$9,500.00</strong></td>
</tr>
</tbody>
</table>

A charge of $40.00 per ft. will be added if the well is over 100 ft. $10.00 ft. will be deducted if the well is under 100 ft.

75' $4,750
ESTIMATED COST SAVINGS PER YEAR, W/10" OF WATER APPLIED ON 135 ACRES

PRESENT WELL AND MOTOR:

500 GPM High PSI w/35' pumping level, very inefficient,* 60 HP motor,
Requires approx. 1200 hours, consuming approx. 49.8 kwh. @ $.0577/kwh.
Total energy cost per year---------------- $3448.00

NEW ENERGY CONSERVATION PLAN:

850 GPM Low PSI w/70' pumping level, 40 HP motor, Requires approx. 720 hours,
consuming approx. 33.2 kwh. @ $.0701/kwh. **
Total energy cost per year---------------- $1675.00

Annual Kw savings------------------------------------- 35856 kw.
Annual cost savings----------------------------------- $1773.

* Due to poor well, pumping air, resulting in low GPM requiring more hours of operation.
New well also 500' closer to pivot, resulting in more efficient use of energy pumping shorter distance.

** Kw charge differs due to rate structure.
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Robert Coleman
   Address: 1383 Ballman Rd. Harmony, Ill.
   Zip Code: 61040
   County: Ile
   Telephone #: (815) 251-4791

B. Applicant’s S.S.#: 318-40-3380
C. Electric Utility: ____________________________
   Account #: ____________________________
D. Gas Utility: Brown O; L Co.
   Account #: ____________________________

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractor’s bids.)

   Reduce operating pressure of 1977 Center Pivot from 120 lbs. to 60 lbs., a reduction of 70% operating pressure.
   Replace old high pressure PC100 End gun with SR100 MED. pressure End gun. Will require closer spacing of nozzles to accommodate MED pressure.

F. Total $ amount of Improvements $1,649.61
G. Amount of grant requested (not to exceed 40% of line F or $4,000) $659.85
H. Estimated start up date 6/90 Estimated completion date 7/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remotes</td>
<td>1,650</td>
<td>2,000 gal</td>
<td>8.94</td>
<td>1,680°</td>
<td>1</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Robert Coleman
Applicant’s Signature

4/28/90
Date

IL428-0233

(Disposal of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been approved by the Illinois Farm Management Center.)
ORDER, FORM AND SALES CONTRACT

AUTHORIZED DEALER: Mead Machine Shop
Address: 731 Walter Rd
City: Omaha
State: NE Zip: 68104
Phone: (402) 462-4731

Sold to: Robert Coleman
Address: 1323 Rollman Rd
City: Omaha
State: NE Zip: 68104

Shipping Date: 4/18/99
Shipping Directions: 1323 Rollman Rd

G.P.M.: 1000 PSI (Top of Prod) 60" End Gun
Yes Sprinkler Rack 3A Press. Req. No
No. of Towers: 10 Auto-Endgun Yes Eng. or Elec. Eng End Pipe LgLth. 16 Gear Dr. Type: Belt

Serial No.: Position Stop Yes Towable No Tires Std Spare 1/4" Oil Line No

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>MODEL PART #</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>M589279</td>
<td>Nozzles - Med. Pressure</td>
<td>400</td>
<td>60.21</td>
</tr>
<tr>
<td>1</td>
<td>SN 70458</td>
<td>100 End Gun - Med. Pressure</td>
<td>46.50</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SN 90199</td>
<td>Taper bore 100 End Gun</td>
<td>15.15</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>PC 2014</td>
<td>Water on Castings</td>
<td>48.24</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>BP 2166</td>
<td>Sheave - Bump</td>
<td>45.45</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>BB 5774</td>
<td>Busing SDS x 1&quot;</td>
<td>13.30</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>BX 8871</td>
<td>Bump SD x 1&quot;</td>
<td>13.30</td>
<td></td>
</tr>
</tbody>
</table>

Objective: Reduce Operating Pressure from 130" to 60"
Expected Horsepower Savings - 51 hp
Optimum Fuel Savings - 5.8 gal
Expected Fuel Savings - 950 gal
Expected Fuel Savings per year - $10,000.00

Sub-Total: $1,907.20
Installation: $40.00
Total: $1,947.20
Sales Tax (if applicable): $32.14
Loss Down Payment: $428.91
Balance Due on Delivery: $1,418.19

Neither T-L Irrigation Co. nor the Seller shall be liable for any delays or defaults in making delivery where occasioned by any cause beyond its control, including but not limited to: action of any governmental authority; strikes, shortage of labor, or materials; production facilities or transportation; labor difficulties; fire, flood, accidents or acts of God.

SELLER: Mead Machine Shop
METHOD OF PAYMENT: Cash D Lease O

By: C. D. Mead
Title:

This Agreement is Subject to the Acceptance by T-L Irrigation Co., of Hastings, Nebraska.
Part I – To be completed by applicant.

A. Name: Davie Didier

Address: 154 Meyers Rd

Amboy, IL

Zip Code: 61310

County: Lee

Telephone: 815-837-3859

B. Applicant’s S.S. #: 324-50-7608

C. Electric Utility: ComEd

D. Gas Utility: North Cal Co

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractor bids.)

The attached proposal greatly much explain all material estimates and labor charges.

F. Total $ amount of improvements $3,882.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $1,540.00

H. Estimated start up date May 1, 1990

Estimated completion date May 10, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Pres. to Low Pres</td>
<td>38,822</td>
<td></td>
<td>The attached analysis sheet will explain fuel savings and a payback period of appeal two to three years. Fuel costs will be cut by appeal 1/3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. [We hereby certify that]:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Davie Didier

Applicant’s Signature

Date 1/26/90

IL428-0233
# PROPOSAL & SALES AGREEMENT

**Owner**

Dave Dedic
674 Meyers Rd.
Forney, TX 75126

**Tenant**


<table>
<thead>
<tr>
<th>No.</th>
<th>Item Description</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Re: Hi everyone to low pressure (another reason)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>To convert Raincoast (water plant) from low pressure compact (equipment) to high pressure R20 series (water solution)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Complete upgrades pkg designed by [Vendor]</td>
<td>1230.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>[Vendor] H20 40 and gun</td>
<td>520.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 HP (tractor) caution pkg including contract of sale, pressure (contract), all plumbing, hardware, etc.</td>
<td>1203.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>All (other) to complete using customer loader (tractor)</td>
<td>880.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(price) quoted per (sheet on) 800 gem and 24 PSI at tip of gun.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(Note: first pumping existing sump if required) upgrades are negotiable with 9% to total.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 3852.00

---

**This agreement does or does not include the following***

<table>
<thead>
<tr>
<th>Item</th>
<th>Does</th>
<th>Not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery to site</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Footing and concrete work</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Foundation bolts and steel</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Complete erection</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Preparation to grade level</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>Crane</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>

*Terms:*

- Cash with order
- Cash upon delivery of materials
- Cash upon completion 3852.00

*NOTE:

The dealer hereby agrees to furnish the above described materials and services. All work to be completed in a workmanlike manner (according to standard trade practices).

Balance due within 10 days after substantial completion or use, whichever occurs first. Price of minor items not immediately available during erection will be deducted, leaving balance payable. Billing of shortages will follow their installation. Balance shall accrue interest at 1 1/2% per month after due date.

**ACCEPTED:**


**DATE:**
IRRIGATION SYSTEM COMBINATION FIFE COST COMPARISON
ESPECIALLY PREPARED FOR

by
ANALYST

01/18/90 13:58:53

System length 1278 GPM 800 Elevation change 0
Endgun 100 Irr water in./day 0.33
Acres to be watered 127 Fuel Diesel Inches/yr 15.0
Fuel cost $ 0.85/Gal Hrs. op./season 1081
Brake hp/hr 14.60

CASE I

System make-up
No. Length Diam
1 1260.0 6.62
Overhang 18.0 feet
Pivot pressure needed 28.9
System Brake HP 19.3----Not incl. generator
Added Brake HP 0.0

CASE II

System make-up
No. Length Diam
1 1260.0 6.62
Overhang 18.0 feet
Pivot pressure needed 83.9
System Brake HP 56.0
Added Brake HP 0.0

System brake HP + added BHP is used to calculate fuel cost.

FUEL COST DIFFERENCE

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FUEL COST</th>
<th>PER YEAR</th>
<th>CUM</th>
<th>YEAR</th>
<th>FUEL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1214</td>
<td>2309</td>
<td>2309</td>
<td>1</td>
<td>3523</td>
</tr>
<tr>
<td>2</td>
<td>1251</td>
<td>2378</td>
<td>4636</td>
<td>2</td>
<td>3629</td>
</tr>
<tr>
<td>3</td>
<td>1288</td>
<td>2449</td>
<td>7136</td>
<td>3</td>
<td>3738</td>
</tr>
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<td>4</td>
<td>1327</td>
<td>2523</td>
<td>9653</td>
<td>4</td>
<td>3850</td>
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<tr>
<td>5</td>
<td>1367</td>
<td>2598</td>
<td>12257</td>
<td>5</td>
<td>3965</td>
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<td>6</td>
<td>1408</td>
<td>2676</td>
<td>14933</td>
<td>6</td>
<td>4084</td>
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<tr>
<td>7</td>
<td>1450</td>
<td>2757</td>
<td>17690</td>
<td>7</td>
<td>4207</td>
</tr>
<tr>
<td>8</td>
<td>1494</td>
<td>2839</td>
<td>20529</td>
<td>8</td>
<td>4333</td>
</tr>
<tr>
<td>9</td>
<td>1538</td>
<td>2924</td>
<td>23453</td>
<td>9</td>
<td>4463</td>
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<tr>
<td>10</td>
<td>1585</td>
<td>3012</td>
<td>26466</td>
<td>10</td>
<td>4597</td>
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<tr>
<td>11</td>
<td>1632</td>
<td>3103</td>
<td>29568</td>
<td>11</td>
<td>4735</td>
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<tr>
<td>12</td>
<td>1681</td>
<td>3196</td>
<td>32764</td>
<td>12</td>
<td>4877</td>
</tr>
<tr>
<td>13</td>
<td>1732</td>
<td>3292</td>
<td>36055</td>
<td>13</td>
<td>5023</td>
</tr>
<tr>
<td>14</td>
<td>1784</td>
<td>3390</td>
<td>39445</td>
<td>14</td>
<td>5174</td>
</tr>
<tr>
<td>15</td>
<td>1837</td>
<td>3492</td>
<td>42937</td>
<td>15</td>
<td>5329</td>
</tr>
</tbody>
</table>

TOTAL $ 22588
SYSTEM PRICE $ 30000

TOTAL $ 65526
SYSTEM PRICE $ 30000

Fuel costs do not include BHP required for gen. or pump lift.
The following values are computed from the first year fuel cost for each system.

Per acre fuel costs

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$9.53</td>
<td>$27.66</td>
</tr>
</tbody>
</table>

Fuel cost to apply 1 inch of water over 127.4 acres:

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$80.97</td>
<td>$234.87</td>
</tr>
</tbody>
</table>

Fuel cost to apply 1 acre inch:

<table>
<thead>
<tr>
<th>Case 1</th>
<th>Case 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0.64</td>
<td>$1.84</td>
</tr>
</tbody>
</table>
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: EGAN BROS.
   Address: 29269 Yates Road
   Deere Grove, ILL
   Zip Code: 61243
   County: Whiteside
   Telephone #: 618-436-3615

B. Applicant's S.S.#: (336-60-5163)

C. Electric Utility: System powered by Diesel engine.
   Account #: [Blank]

D. Gas Utility: MLNius Oil Co.
   Account #: Egan Bros. (Harrell Farm)

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model if's of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Change Reinde F 65 SN 277 C 4186 from high to low pressure (90 psi to 50 psi) Material estimate is enclosed which includes the sprinkler package and all necessary equipment to convert to lower pressure.

F. Total & amount of improvements: $36,660.00
G. Amount of grant requested (not to exceed 40% of line F or $4,000) $14,264.00

H. Estimated start up date: June 15, 1990
   Estimated completion date: June 15, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
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<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/Kwh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3564 Kwh</td>
<td>7.50</td>
<td>525.00</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that five will be required to negotiate and sign a written contractual agreement with EWR outlining the general procedures and schedules.

Egan Bros. by Douglas R. Egan
Applicant's Signature

Date: May 15, 1990

IL-428-0233
LISTED BELOW IS THE MATERIALS USED TO CONVERT THE 10-TOWER CENTER PIVOT SYSTEM FOR DOUG EGAN TO LOW PRESSURE AND RAISE THE GALLONAGE TO IMPROVE THE EFFICIENCY OF THE SYSTEM.

1 NELSON ROTATOR SPRINKLER PACKAGE FOR AN 10-TOWER CENTER PIVOT SYSTEM, W/NEW END GUN NOZZLE $1,850.00
1 200 GPM END GUN BOOSTER PUMP W/MISC PIPE FITTINGS
1 BOOSTER PUMP CONTROL BOX W/WIRE, & LABOR
1 NELSON SR100NV END GUN $3,010.00
1 12 KW LIMA GENERATOR & PULLEY, NEEDED FOR 5-HP BOOSTER PUMP $2,300.00

TOTAL LIST ON ABOVE EQUIPMENT—$7,160.00
SELLING PRICE ON ABOVE EQUIP. $5,600.00

1 LABOR INSTALLING BOOSTER PUMP, END GUN, CONTROLS $200.00
1 OUTLETS & OUTLET INSTALLATION ON THE CENTER PIVOT SYSTEM TO ACCOMMODATE THE NEW SPRINKLER PACKAGE, & INSTALL SPRINKLERS $650.00
( THESE ARE DRILLED & RIVETED, NO WELDING AT ALL.)
1 LABOR & MATERIALS FOR WIRING IN NEW LOW PRESSURE SWITCH $125.00
EGAN

TOTAL AMOUNT DUE: $6,575.00

terms: NET 30-DAYS

THANK YOU VERY MUCH,

BEIERMANN AGRI-SYSTEMS INC.
DOUG EGAN
FARMING
RR#1
DEER GROVE, IL
61249
1-439-3243

May 15, 1999

CHANGE REINKE C65 SN#277 C1186 FROM HIGH TO LOW PRESSURE. SPECS. NOW 1000GPH @ 90PSI TO 1000GPH @ 50PSI. MACHINE IS A 12′ SPAN, 2-14′ SPAN. W/ 20′ OVERHANG. INSTALL NEW SR100KW NELSON END GUN, END GUN SWITCH, AND 6145 SPRINKLER PACKAGE.

A. 6145 SPRINKLER PKG. W/COUPLERS (NELSON PLASTIC) $1300.
B. INSTALLATION OF SPRINKLER PACKAGE $300.
C. RETROFIT 2-HP BOOSTER PUMP W/ END GUN SWITCH $1510.
D. SR100KW END GUN INSTALLED $1016.
E. SET OF PULLEY’S FOR PROPER GENERATOR SPEED $110.

TOTAL $4850
LESS TRADE IN OF 7.5KW GENERATOR $800

PROJECTED TOTAL $4050.
May 31, 1990

Webster Bay
IL Department of Energy and Natural Resources
325 W. Adams St., Room 300
Springfield, IL 62704

Dear Mr. Bay:

This letter addresses some changes to the application by Doug Egan for participation in the irrigation energy grant program.

As you may recall, I notified you by phone that a generator was inadvertently left off the estimate Mr. Egan sent in, and that the total cost of improvements and total grant amount requested were, therefore, incorrect. The irrigation dealer, Alton Irrigation in Rock Falls, has sent a corrected estimate. Please replace the original estimate from Alton Irrigation with the enclosed, updated estimate. The new total is $5848, which is $2282 more than listed on the initial application and estimate. The cost of the generator is $2282. The new amount of grant money requested will be $2339, rather than $1426.

Since you already have the original application, I will let you make the necessary changes in order to expedite the processing of this application.

Everything now looks in order for Mr. Egan's application, but if you have any further questions or comments, please call us.

Sincerely,

F. William Simmons

Jean A Bowman
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Tim Fawer
   Address: RR 1 Box 43A
   Kildeer, IL
   Zip Code: 60047
   County: Mason
   Telephone #: 708-528-2307

B. Applicant's S.S.N.: 329-54-1609

C. Electric Utility: Mound Electric Cooperative
   Account #: 09-034-027-01

D. Gas Utility:
   Account #:

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model 
   #'s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)
   Convert from high pressure impact sprinklers to low pressure Nelson Rotator wands, also adding 2 HP 
   Booster Pump and different endgun, Change Pump and rewind 60 HP electric motor to a 40 HP 
   and a Champion check valve

F. Total $ amount of improvements: $6,300.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $2,520.00

H. Estimated start up date: April 1, 1990
   Estimated completion date: April 10, 1990

I. Table of Annual Energy Savings Estimates

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<th>Fossil Fuel</th>
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<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low pressure conversion</td>
<td>2672</td>
<td>-6.29</td>
<td>-4.50</td>
<td>302.50</td>
<td>12</td>
</tr>
<tr>
<td>rewind pump &amp; change pump &amp; add check valve</td>
<td>2628</td>
<td>-0-</td>
<td>329/HP</td>
<td>579.00</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>6300</td>
<td>842.05</td>
<td>7.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Tim Fawer
Applicant's Signature
March 31, 1990
Date
February 9, 1990

Tim Fanter
R.R.
Kilbourne, IL 62655

Law Pressure Conversion/Model 4271- 827' system @ 750 g.p.m. (includes):

- Nelson Rotator nozzles w/04 pads
- Nelson pressure regulators
- 2 HP booster pump
- Nelson 39160- end gun
- Labor

$3,347.00
$500.00

$3,847.00

Pull pump, restore 8-1CDM bowl to 5-10 CM. Reset pump, add check valve, rewind 60 HP motor to 40 HP, replace pump motor bearings, down size fuses & heaters in pump panel.

$2,740.00

Less discount

(287.00)

Total

$8,300.00

APPROVED BY: John A. Bossy

DATE: Feb 23, 1990

BY: John A. Bossy
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Arthur E. Finch

B. Applicant’s S.S.#: 326-70-7979

Address: 881 2nd St
Champaign, IL 61827


D. Gas Utility:

County: Mason

Telephone #: (309) 546-2553

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

10 HP Crown Submersible Pump Model # 74400

Nelson Spray III

Chek Valve

8100 Nelson End Gun

F. Total $ amount of improvements

G. Amount of grant requested (not to exceed 40% of line F or $4,000)

H. Estimated start up date 3-19-90

Estimated completion date 4-20-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 HP Pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nelson Sprays</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Booster Pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Check Valve</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End Gun</td>
<td>6,625.00</td>
<td>8400</td>
<td>.08</td>
<td>$680.40</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6,625.00</td>
<td>10 HP</td>
<td>5.28 per HP</td>
<td>$280.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td>$960.40</td>
<td></td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Arthur E. Finch

Applicant's Signature

1-4-90

Date

IL428-0233
SALES CONTRACT

Central Illinois Irrigation Co.
R.R.# 1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: Arthur Finch
Address: R.R.#2, Chandleville, IL 62627
Telephone No.: (309) 546-2353

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10 HP Submersible Pump</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>1</td>
<td>Set Nelson Sprinklers (Low Pressure)</td>
<td>650.00</td>
</tr>
<tr>
<td>1</td>
<td>2 HP Booster Pump</td>
<td>1,375.00</td>
</tr>
<tr>
<td>1</td>
<td>End Gun (necessary to maintain correct system pressure)</td>
<td>600.00</td>
</tr>
</tbody>
</table>

TOTAL $6,025.00

TERMS OF PAYMENT

% Down Payment: $6,250.00
% Delivery Payment:
% Completion Payment:

SOLD BY: ____________________________  CUSTOMER: ____________________________

Date: 1-10-90
I wish to convert a 20 H.P. high pressure system to low pressure for economic reasons.

I have two 10 H.P. irrigation systems running off ace No. 15-032-002-01 also with Menard Electric Cooperative. The cost of operation for both systems is less than the high pressure system that I wish to convert to low pressure.

The high pressure system used 16,320 KWH in 1989 while the two 10 H.P. systems used 15,840 KWH. The two 10 H.P. systems irrigated twice the acres as the 20 H.P. high pressure system. The three fields were in corn receiving the same amount of water.

You may call Menard Electric Cooperative to affirm the cost of electricity used and you welcome to visit the systems at convenience.

Menard Electric Cooperative Phone No. 217-632-7746

Menard Electric rates for irrigation $2.00 per H.P. plus $8 KWH
1 High Pressure total cost $ 3,237.00 every 4th for 1989
2 Low Pressure systems total cost $ 3,034.45 every 4th for 1989
High Pressure every 4th per Acre $33.09 for 1989
Low Pressure every 4th per Acre $16.30 for 1989

Arthur E. Finch
P.O. Box 14
Chancellorsville, Ill. 62627
Part I - To be completed by applicant.

A. Name: KEITH FRIEDRICH

B. Applicant's S.S.#: 361-40-0200

Address: R.R. # 2

HAVANA, IL 62646

C. Electric Utility: ___________________________

Account #: ___________________________

D. Gas Utility: E.B. (MAISON CO.)

Account #: ___________________________

County: mason

Telephone #: (309) 543-2980

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #'s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

INCREASE GPM. OF A 1300' LOCKWOOD PIVOT BY 30% THUS 30% LESS

RUN TIME PER SAME AMOUNT OF WATER. BY INCREASING GPM. PRESSURE

WILL DROP FROM 81# TO 45# AT TOP OF PIVOT.

ADDITION OF A BOOSTER PUMP WILL BE NECESSARY.

F. Total $ amount of improvements $ 3220.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 1288.00

H. Estimated start up date JUNE 15

Estimated completion date JUNE 20

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>increase gpm 30%</td>
<td>3220.00</td>
<td></td>
<td></td>
<td>1350 gal .82</td>
<td></td>
</tr>
<tr>
<td>drop press 55%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>3220.00</td>
<td>1350 gal .82</td>
<td>1107.00</td>
<td>2.9</td>
<td></td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application is no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

KEITH FRIEDRICH

Applicant’s Signature

May 29, 1997

Date

IL428-0233
## CONTRACT PURCHASE AGREEMENT

**CUSTOMER:** KEITH FREIDRICH  
**R. R. #2**  
**HAVANA, ILL. 62644**

<table>
<thead>
<tr>
<th>1500 LOCKWOOD</th>
<th>@1400 GPH</th>
<th>@ TOP OF PIVOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>MELSON SPRAY 3</td>
<td>100% REGULATED</td>
<td>3/4 PIPE NIPPLES FOR REGULATOR</td>
</tr>
<tr>
<td>BOOSTER PUMP KIT</td>
<td>LABOR</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL**  
$3220.00

---

**Keith Friedrich**  
**CUSTOMER SIGNATURE**  
**5-26-90**  
**DATE**

---

**P & A authorized acceptance**  
**5-26-90**  
**DATE**
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side (or instructions)

Part I – To be completed by applicant:

A. Name: Russell Friedrich
   Address: 252
   Zip Code: 644
   County: Mason
   Telephone #: (309) 635-3770

B. Applicant’s S.S.#: 345-30-5557
   Electric Utility:
   Account #:

C. Gas Utility: T.S.
   Account #:

E. Describe the Energy Conservation Improvements planned. Please include all brand names and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Lower Rosemary Noon and Add More Rain

   Increase Rain by 30%. Cut Run Times by 30%.

   By increasing allowed pump pressure will lower flows
   80 to 45 at top of spring until our work from work

   Presently using RPE 9250 gpm and 60#. Should
   cut to 6725 gallon. Same pump in use for 2 years

F. Total # amount of improvements: $3200

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $1488

H. Estimated start up date: June 20
   Estimated completion date: June 30

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Low Pressure Nozzles</td>
<td></td>
<td>390.590</td>
<td>72</td>
<td>137.8</td>
<td></td>
</tr>
<tr>
<td>High-Gail</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>390.590</td>
<td></td>
<td>1199.2</td>
<td></td>
</tr>
</tbody>
</table>

J. We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Russell Friedrich
Applicant’s Signature: May 25-1990

IL428-0233
CUSTOMER: RUSSELL FREIDRICH
K. K. #2
HAVANA, ILL. 62644

1300 RAINCAT @1400 GPM 45# @ TOP OF PIVOT

NELSON 3 DN IMPAC PLASTIC
100% REGULATED
3/4 PIP NIPPLES FOR REGULATOR
BOOSTER PUMP KIT
LABOR TO REENOZZLER

TOTAL $3720.00

Russell Friedrick
CUSTOMER SIGNATURE
5-35-90
DATE

P & A authorized acceptance
5-35-70
DATE
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.

A. Name: Randall R. Formoff

B. Applicant's S.S.N.: 325-50-6980

C. Electric Utility: ________________________________
   Account #: ________________________________

D. Gas Utility: Mason County Service Company
   Account #: 135847-2

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Convert a 1300 ft. Valley irrigation system from 95 p.s.i. with high impact spray guns, Nelson 200 end gun, high pressure pump, and a Duetz 6 cyl. turbo powered diesel engine, to a 20 p.s.i. system with Valley 20 p.s.i. sprays/regulators, a Nelson 100 end gun with a 5 h.p. booster pump, changing the high pressure pump to a 3-1/2HP 1/2C pump, and a Duetz model R51912 5 cyl. diesel engine.

   ________________________________

F. Total $ amount of improvements $ 9,400.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 3,760.00

H. Estimated start up date: Mar 15, 90
   Estimated completion date: Apr 15, 90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measure</th>
<th>Estimated Installation Cost</th>
<th>Electric (D/kWh)</th>
<th>Fossil Fuel (D)</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Converting the system from 95psi (high pressure) to a 20 psi (low pressure) and trading the 6 cyl. motor for a 5 cyl fuel efficient motor</td>
<td>$9,400.00</td>
<td>1320 gal diesel fuel annually</td>
<td>$1.10/</td>
<td>$1,452.00 annually</td>
<td>6.5 yrs.</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$9,400</td>
<td>1320 gal. $1.10/</td>
<td>$1,452.00</td>
<td>6.5 yrs.</td>
<td></td>
</tr>
</tbody>
</table>

J. We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

[Signature]
Applicant's Signature

January 25, 1990
Date

IL428-0233

Disclosure of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been approved by the Illinois Farm Management Center.
SALES CONTRACT

Central Illinois Irrigation Co.
R.R. #1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: Randy Fornoff
Address: R.R. #1, Box 1-Havana, IL 62644
Telephone No.: 543-3516

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5 HP Booster Pump</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Set Rainbird sprays w/Reg.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>SR100 Nelson End Gun</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Labor, Fit., Wiring</td>
<td>$4,000.00</td>
</tr>
<tr>
<td>1</td>
<td>Pull Pump and Take Off Bowls, and Reset</td>
<td>600.00</td>
</tr>
<tr>
<td></td>
<td>Sub-Total</td>
<td>$4,600.00</td>
</tr>
<tr>
<td>1</td>
<td>Trade in Rig Gun</td>
<td>- 200.00</td>
</tr>
</tbody>
</table>

TOTAL $4,400.00

TERMS OF PAYMENT

% Down Payment

% Delivery Payment

% Completion Payment

Sold By: Steve Bitner
Customer:

Date: __________________
PROPOSAL

STELTER-HOFREITER, INC.
Havana, Illinois 62644

<table>
<thead>
<tr>
<th>QTY.</th>
<th>DESCRIPTION - MODEL - SIZE</th>
<th>CASH PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dec 12 E-1917 Eng. with hitch</td>
<td>$799.00</td>
</tr>
<tr>
<td></td>
<td>beer.</td>
<td>40 hp. Con. puller half/hardy trailer</td>
</tr>
<tr>
<td></td>
<td>402</td>
<td>Sp 8x5 gauge lift</td>
</tr>
<tr>
<td></td>
<td>65 HP 17</td>
<td></td>
</tr>
</tbody>
</table>

We warrant:

Freight and Handling Charges:

<table>
<thead>
<tr>
<th>ITEM AND DESCRIPTION</th>
<th>ALLOWANCE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 12 E-1917 Eng.</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>beer.</td>
<td>40 hp. Con. puller half/hardy trailer</td>
<td></td>
</tr>
<tr>
<td>402</td>
<td>Sp 8x5 gauge lift</td>
<td></td>
</tr>
<tr>
<td>TOTAL ALLOWANCE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$500.00

Cash balance:

Signed this 10th Day of Nov 1987
February 8, 1990  
RR 1 Box 1  
Havana, IL 62644  

Ms. Jean A. Bowman  
Illinois Water Survey  
2204 Griffith Drive  
Champaign, IL 61820  

Dear Ms. Bowman:  

Enclosed please find an itemized list of the contract with Central Illinois Irrigation. Included at the bottom is the information that we used to determine the 30% fuel savings. (In actuality it amounts to a 44% savings.) If this is not adequate, please let me know.  

Thank you for your attention to this matter.  

Sincerely,  

[Signature]  

Randall R. Fornoff  

enclosure
Central Illinois Irrigation
R.R. #1, Box 122
Havana, IL 62644
(309) 543-2776
February 6, 1990

Randy Fonoff
R.R. #1, Box 1
Havana, IL 62644

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 5 HP Booster Pump</td>
<td>$1,700.00</td>
</tr>
<tr>
<td>1 Set Rainbird Sprays with Reg.</td>
<td>$1,250.00</td>
</tr>
<tr>
<td>1 Nelson SR100 End Gun</td>
<td>$600.00</td>
</tr>
<tr>
<td>Labor, Freight, Wining</td>
<td>$500.00</td>
</tr>
<tr>
<td>1 Pull Pump and Take off Bowls</td>
<td>$550.00</td>
</tr>
<tr>
<td>Trade-in Big Gun</td>
<td>$4,600.00</td>
</tr>
<tr>
<td></td>
<td>-$200.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,400.00</strong></td>
</tr>
</tbody>
</table>

1000 GPM 85 PSI High Pressure 78HP
1000 GPM 40 PSI Low Pressure 45HP

6L913 Deutz at 78 HP will use 3.6 Gal. per Hour
5L912 Deutz at 45 HP will use 2 Gal. per Hour

*Note*- These HP are for pumping water only.

825 Hours a Year x 1.6 = 1320 Gallon
$1.10 Gallon = $1,452.00 a Year Saved.
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Robert L. Garlisch

B. Applicant's S.S.N.: 329-42-1274

Address: RRT Box 60

C. Electric Utility: __________________________

Forest City, Illinois

Account #: __________________________

Zip Code: 61532

D. Gas Utility: FS DISJH FUSE

County: Dekalb

Account #: Mason County Service Co

Telephone #: (309) 968-7659

POB 158, Easton, Illinois (Supplier)

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

NELSON LOW ANGLE SPRINKLERS WITH DIFFUSER NOZZLES

MINIMUM PRESSURE 25 AIR

NELSON PRESSURE REGULATORS

28 AIR

3 HP Booster Pump (Burkley), Lindsay Booster

Control Panel and Pressure Switch, Long, Freight,

AND FLOW METER TEST.

F. Total $ amount of Improvements

$ 3,968.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000)

$ 1,587.20

H. Estimated start up date February 10

Estimated completion date April 1

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback In Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change System to Low Pressure Pump 3000gal per min. More by this method</td>
<td>$3,968</td>
<td></td>
<td>5756.000# per year of fuel</td>
<td>603.75</td>
<td>6.57</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Robert L. Garlisch

Applicant's Signature

January 20, 1990

Date
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson Low Angle Sprinklers with Defusers</td>
<td>$1808.00</td>
</tr>
<tr>
<td>Nelson Pressure Regulators 25 lb.</td>
<td>$530.00</td>
</tr>
<tr>
<td>3 HP Booster Pump (Berkley)</td>
<td>$647.00</td>
</tr>
<tr>
<td>Lindsay Panel &amp; Pressure Switch</td>
<td>$257.00</td>
</tr>
<tr>
<td>Labor (Test Pump with Flow Meter, Change Sprinklers, &amp; Add Holes as needed)</td>
<td>$1370.00</td>
</tr>
<tr>
<td><strong>Sub-Total</strong></td>
<td><strong>$4662.00</strong></td>
</tr>
<tr>
<td><strong>Less: Cash Discount</strong></td>
<td><strong>$694.00</strong></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3963.00</strong></td>
</tr>
</tbody>
</table>
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.

A. Name: Hahn Farms Inc - Don Hahn  
B. Applicant's S.S.#: 37-134,070
C. Electric Utility: MENDAR ELECTRIC COOP.
D. Gas Utility:  
E. Zip Code: 62444  
E. County: MASON  
Telephone #: (309) 543-4660

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

I WANT TO LOWER THE PRESSURE AT THE PUMP FROM 78 PSI TO 40 PSI. AT THE SAME TIME I WILL INCREASE GPM FROM 750 GPM TO 850 GPM. THIS SHOULD CUT MY RACI TIME BY 1370. ALSO THE LOW PRESSURE RATING NOZZLES SHOULD REDUCE EVAPORATION.

F. Total & amount of improvements $3,875.37

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $1550.15

H. Estimated start up date: upon approval  
Estimated completion date: June 30, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Pressure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Run Time</td>
<td>$3875.37</td>
<td>8522</td>
<td>553.93</td>
<td>7553.93</td>
<td>7 years</td>
</tr>
<tr>
<td>Less Evaporation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less Electricity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$3875.37</td>
<td>8522</td>
<td>553.93</td>
<td>7553.93</td>
<td>7 years</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Applicant's Signature: Don Hahn  
Date: 5/26/90

Distribution of this information is VOLUNTARY. However, failure to complete may result in this form not being processed. This form has been approved by the State Farms Management Center.
BOOSTER PUMP KIT
LABOR TO MOUNT BOOSTER PUMP
NELSON ROATERS INCLUDING END GUN
LABOR TO RENOZZLE
PULL PUMP & REMOVE BOWL

SYSTEM QUOTE

HAHN FARMS INC. * P & A IRRIGATION, INC.
R. R. #1 * RT 97 SOUTH
HAVANA, ILL 62644 * HAVANA, ILL. 62644

LOW PRESSURE VALLEY QUICK TOW 850 GPM 46#

SYSTEM TOTAL $ 3875.37
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part 1 — To be completed by applicant.

A. Name: Vernon Heye
   Address: RR #1
   Bath, IL
   Zip Code: 62617
   County: Mason
   Telephone #: (309) 546-2366

B. Applicant's S.S.#: 336-22-3442

C. Electric Utility: Menard Electric
   Account #: 150090401

D. Gas Utility: ___________________________
   Account #: ___________________________

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   I plan to install Nelson Spray III Nozzles on my Raincat
   Serial # 2449. Installation of these and modification
   of the Arpura pump serial # 38072457 Model 122LM. Modification
   consisting of removal of 1 stage. This together will decrease the
   pivot pressure from 50# to 30# and decrease the the Horsepower
   requirement by 15.5 HP.
   Formula: 15.5HP x 748.5KWH x 0.09 x 1000 hr = APPR $1043.46 per year

   Total $ amount of improvements $ 1698.00

   Amount of grant requested (not to exceed 40% of line F or $4,000) $ 679.20

F. Estimated start up date 5-1-90
   Estimated completion date 5-10-90

H. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWH)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower HP requirement</td>
<td>1698.00</td>
<td>11,594 .09</td>
<td></td>
<td>$1043.46</td>
<td>1.6 Yr.</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Vernon Heye

Applicant's Signature 4-13-90

Date

IL428-0233

Disclosure of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been adopted by the State Public Management Center.
CUSTOMER: DUANE HAHN & VERN HETE
R.R. #1
BATH, ILLINOIS 62617

DATE: APRIL 17, 1990

LOW PRESSURE CONVERSION PACKAGE
ONE (1) SET NELSON SPRAY III $660.00

PULL PUMP AND REMOVE BOWL
RESET PUMP $30.00

LABOR TO RENOZZLE $200.00

TOTAL PRICE $1,690.00

*PUMP WORK IS AN ESTIMATE. ANY REPAIR TO PUMP WOULD BE
AND ADDITIONAL CONTRACT.

Accepted by: [Signature]
Date: 4-17-90
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.

A. Name: Ralph Kreiling
B. Applicant's S.S. #: 320-24-1256
C. Electric Utility: REA
D. Gas Utility: NA
E. Address: RR # 3 Box 78
   Forest City 27, 61532
F. Zip Code: 61532
G. Telephone #: (309) 597-2143

E. Describe the Energy Conservation Improvements planned. Please include all brand names and model #s of any equipment purchased. (Attach copies of materials estimates and/or contractors bids.)

   Nelson Spray III Sprinklers & Chart $305.00
   Nelson 15 PSI Regulator $1180.00
   SR 100 End Gun $575.00
   1200 AMPS Panel, Wire, Panel & Wiring Upcharge $1200.00
   Check Out System with Flow Meter, Freight and Labor $1000.00

   Total: $4260.00

F. Total $ amount of improvements: $4260.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $1704.00

H. Estimated start up date: Feb 1990
   Estimated completion date: Apr 1 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change to Low Pressure</td>
<td>4260.00</td>
<td>172</td>
<td>4.05</td>
<td>1040.40</td>
<td>4.09 yr.</td>
</tr>
<tr>
<td>to Increase Gallons from 900 GPM to 1200 GPM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>4260.00</td>
<td>172</td>
<td>4.05</td>
<td>1040.40</td>
<td>4.09 yr.</td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Ralph Kreiling
Applicant's Signature

Date: 1-23-90
T. N. & W. IRRIGATION INC.
R. R. #2
MANITO, IL. 61546

DATE 1/4/89

RALPH KREILING

LOW PRESSURE CONVERSION ON 7 TOWER LINDSAY (1280 FT. 900-70)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>NELSON SPRAY III SPRINKLERS AND CHART</td>
<td>305</td>
</tr>
<tr>
<td>NELSON 15 PSI REGULATORS</td>
<td>1180</td>
</tr>
<tr>
<td>SR100 END GUN</td>
<td>575</td>
</tr>
<tr>
<td>130 GPM BOOSTER PUMP, PANEL, AND WIRING OVERHANG</td>
<td>1200</td>
</tr>
<tr>
<td>CHECK OUT SYSTEM WITH FLOW METER</td>
<td></td>
</tr>
<tr>
<td>FREIGHT AND LABOR</td>
<td>1000</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>$4,260.00</strong></td>
</tr>
</tbody>
</table>

TERMS 10% DOWN, 75% DELIVERY, 15% WHEN DONE

CUSTOMER SIGNATURE ____________________________
DATE 1/22/90

RALPH KREILING

TO IRRIGATE 132 ACRES PUMPING 900 GPM WOULD TAKE 66 HRS TO APPLY ONE INCH OF WATER

TO IRRIGATE 132 ACRES PUMPING 1200 GPM WOULD TAKE 45 HRS TO APPLY ONE INCH OF WATER

RALPH WATERED 665 HRS IN 1989 SEASON AT 900 GPM IF HE WOULD HAVE CHANGED TO LOW PRESSURE AND PUMPED 1200 GPM WOULD HAVE SAVED 172 HRS OF OPERATION FOR SAME AMOUNT OF WATER APPLICATION

RALPH’S TOTAL ELECTRIC COST FOR 665 HRS WAS $4,025.00 IN THE 1989 SEASON WHICH IS $6.05 PER HR OF OPERATION

RALPH PUMPING 1200 GPM WOULD HAVE SAVED 172 HRS OR $6.05 X 172 = $1040.60 TOTAL FOR ONE YEAR
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: **Alan Landis**
B. Applicant’s S.S.#: **341-40-4313**

Address: **7112 Hickory Hills Rd, Rock Falls, IL 61071**
C. Electric Utility: **Commonwealth Edison**
D. Gas Utility: __________________________

Account #: **234-23-2**
Account #: __________________________

Telephone #: **(815) 438-3871**

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

To bring 3 phase electricity to the farm allowing irrigation systems to operate with low cost electricity vs. diesel fuel. Irrigation water usage would be enhanced due to night operation with the low off-peak electrical cost. Water use is estimated to be 10-25% more efficient due less evaporation at night.

F. Total $ amount of improvements **$ 17,604.62**

G. Amount of grant requested (not to exceed 40% of line F or $4,000) **$ 6,000.00**

H. Estimated start up date **June 1, 1990**
Estimated completion date **August 27, 1990**

I. Table of Annual Energy Savings Estimates

| Conservation Measures | Estimated Installation Cost | Electric (kWh) | Fossil Fuel | Total Dollar Savings | Simple Payback
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Off-peak/</td>
<td>$17,601.00</td>
<td>2,465</td>
<td>.02417</td>
<td>502.2</td>
<td>.43/ft</td>
</tr>
<tr>
<td>20% under savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>17,601.00</strong></td>
<td></td>
<td></td>
<td>$3,050</td>
<td></td>
</tr>
</tbody>
</table>

J. **I/we hereby certify that:**

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENF outlining the grant procedures and schedules.

**Alan Landis**

Applicant’s Signature **April 20, 1990**

IL428-0233

*Disclosure of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been adapted by the State Family Management Council.*
ELECTRIC SERVICE CONTRACT

RATE 6T PER CUSTOMER REQUEST

The Company, dated 03/21/1990, between COMMONWEALTH EDISON COMPANY, herein called the "Company," and ALAN LANDIS, herein called the "Customer," witnesseth that, the parties hereto do agree as follows:

The Company will supply all electricity required by the Customer for power, lighting, and miscellaneous purposes on the premises occupied by the Customer at 236-242, HUME-LTHO-NEPHS TWP, ILLINOIS, up to but not exceeding:

FOR GENERAL SERVICE - TIME OF DAY CUSTOMERS, A 10-MINUTE ON-Peak DEMAND OF 119 KILOWATTS
AND A 20-MINUTE OFF-Peak DEMAND OF 119 KILOWATTS.

The Customer will make written application for any service in excess of the number of kilowatts specified above. Electricity will be supplied as follows:

Loc. 01, max. 10-minute peak demand 58 , metering voltage approx. 440 volts, 3 phase, 3 wire
Loc. 02, max. 10-minute peak demand 61 , metering voltage approx. 440 volts, 3 phase, 3 wire

The Customer will receive and pay for electric service under Rate 6T ILL. C.C. No. 4 as on file with the Illinois Commerce Commission. The customer will initially be billed in accordance with provision for:

GENERAL SERVICE - TIME OF DAY. (REQUIRED IF MAX. DEMAND EXPECTED TO EXCEED 500 KW STATED IN RATE.
OPTIONAL IF MAX. DEMAND IS LESS THAN 500 KW.)

In addition, Rider(s) No. 06,20,23 and Terms and Conditions attached to the Customer's copy hereof are part of this Contract. Any changes in the rate(s) and other applicable portions of the Company's Rate Schedule shall be applicable to service rendered hereunder.

Service shall commence on or about 05/07/1990.

This Electric Service Contract, dated 03/21/1990 with Rider(s) No. 06,20,23 supercedes and cancels all Electric Service Contracts and Electric Service Station Agreements prior to 03/21/1990, subject to the applicable provisions with substitution of rate.

The Company and the Customer agree that the Company will furnish at the Customer's expense the labor and materials necessary to do the work for the Customer on or adjacent to the Customer's premises described below.

<table>
<thead>
<tr>
<th>TAXABLE CHARGES</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rider 2 Charge</td>
<td>$332.00</td>
<td>Base Tax</td>
</tr>
<tr>
<td>Service Connection</td>
<td>$7571.20</td>
<td>State Tax</td>
</tr>
<tr>
<td>Terminal Facilities</td>
<td>$1137.00</td>
<td>Municipal Tax</td>
</tr>
<tr>
<td>Electric Service</td>
<td>$1196.00</td>
<td></td>
</tr>
<tr>
<td>Community Bank</td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$0.00</td>
<td>NON-TAXABLE CHARGES</td>
</tr>
<tr>
<td></td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td>Credit</td>
<td>$0.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$0.50</td>
<td></td>
</tr>
<tr>
<td>Total Customer Charge</td>
<td>$17601.48</td>
<td></td>
</tr>
</tbody>
</table>

The Customer agrees to pay to the Company the sum of $17,601.48 at the time this agreement is accepted. Work will be done during the Company's regular working hours, unless otherwise specified. This Agreement shall be void if not accepted by the Customer within ninety days from date submitted. Transformers and metering equipment installed in conjunction with this work shall, in all cases, remain the property of the Company.
Alan Sandia

Calculations - electric vs. diesel

diesel
4.5 gal/hr. x 1,200 hrs. x $0.974/gal = 5,022

electric
85 kw/hr. x 1,200 hrs. x $0.02417 = 2,465
savings with electric = 2,557

Calculation - increased water use

efficiency at night of 20%

20% x $2,465 = saving $493
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: ALVIN LANDIS
Address: 1109 Hoover Road
          Rock Falls, IL 61071
Zip Code: 61071
County: Whiteside
Telephone #: (815) 625-2414

B. Applicant’s S.S.#: 334-05-9219

C. Electric Utility: Commonwealth Edison
   Account #: Not established yet.

D. Gas Utility: 
   Account #: 

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Convert irrigation system to low-pressure operation.
   Change from diesel to electric pumping unit to utilize low-cost electricity. Utilization of modern submersible pumps increasing pumping efficiency by 8%.

F. Total # amount of improvements
   $10,460

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $4,000

H. Estimated start up date: June 1, 1990
   Estimated completion date: May 30, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/KWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Convert system to low pressure</td>
<td>$93,141.29</td>
<td>$1932</td>
<td>$0.2417</td>
<td>4,800</td>
<td>2,864</td>
</tr>
<tr>
<td>Change to electric pumping unit &amp; install new increased pump efficiency 8%</td>
<td>$54,330</td>
<td>1,880</td>
<td>$0.2417</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$147,471.29</td>
<td></td>
<td></td>
<td>155</td>
<td></td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Signature: ALVIN LANDIS
Date: May 3, 1990

IL428-0233
# Proposal & Sales Agreement

## Terms:
- Cash with order
- Cash upon delivery of materials
- Cash upon completion

## Included:
- Delivery to site
- Footing and concrete work
- Foundation bolts and steel
- Complete erection
- Preparation to grade level
- Wiring
- Crane

## Note:
- Cash upon completion

The dealer hereby agrees to furnish the above described materials and services. All work to be completed in a workmanlike manner according to standard trade practices. Balance due within 10 days after substantial completion or earlier, whichever occurs first. Price of minor items not immediately available during erection will be prorated according to schedule. Delays in delivery due to manufacturer or unforeseen conditions will be subject to additional interest at the rate of 1.75% per month after due date.
April 19, 1990

Dear Mr. Landis;
Enclosed are the quotes for the pumps you have requested for your consideration.

1. 
   80HP 30 HP 2-Stage Goulds Pump
   700 GPM @135' TDH
   
   30' 6' Drop Pipe @ $8.56 /Ft.
   40' 6-3 Sub. Cable @ $2.50/Ft.
   1 Top Plate
   
   $1,433.34

   Freight & Install 600.00

   $2,493.14

2. 
   100HP 50 HP 1-Stage Goulds Pump
   100 GPM @155' TDH
   
   50' 6' Drop Pipe @ $8.56/Ft.
   60' 4-3 Sub. Cable @ $6.00/Ft.
   1 Top Plate
   
   $3,940.00

   Freight & Install 600.00

   $4,833.00

If there are any questions please feel free to contact me at our office.

Thank you,

ROBERT W. ALBRECHT

Water Systems Contractors Since 1880
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.
A. Name: MAPLE E. LEFEVRE
B. Applicant's S.S.N.: 368-20-9846
C. Electric Utility: COMMONWEALTH EDISON
   Account #: 248-22-4
D. Gas Utility: __________________________
   Account #: __________________________
E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)
   THE FOLLOWING EQUIPMENT IS NEEDED TO CONVERT THE CURRENT CENTER PIVOT SYSTEM FROM 800 G.P.M @ 75 PSI TO 1000 G.P.M @ 45 PSI, WHILE ALSO CHANGING THE POWER SUPPLY FROM A TRACTOR PTO DRIVE TO ELECTRIC, WHICH CAN BE OPERATED ON OFF PEAK RATES AS LOW AS $0.0417 PER KW/HR.
   MATERIAL ESTIMATE & CONTRACTOR BID ATTACHED
   __________________________
   __________________________
   __________________________
F. Total $ amount of improvements $ 10,390.00
G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 4,000.00
H. Estimated start up date MARCH 1990
   Estimated completion date JUNE 1990
I. Table of Annual Energy Savings Estimates - SEE ATTACHED ESTIMATE COST SAVINGS

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback In Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td>TOTAL</td>
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I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

[Signature]
Date: March 23, 1990

K.428-0233
THE FOLLOWING EQUIPMENT IS NEEDED TO CONVERT THE CURRENT CENTER PIVOT SYSTEM FROM 800 GPM @ 75 PSI TO 1000 GPM @ 44 PSI, WHILE ALSO CHANGING THE POWER SUPPLY FROM A TRACTOR PTO DRIVE TO ELECTRIC, WHICH CAN BE OPERATED ON OFF PEAK RATES AS LOW AS $.02417 PER/KWHR.

1 LOW PRESSURE SPRINKLER PACKAGE, W/BOOSTER PUMP & SR100 GUN, W/LABOR RENOZZLING & INSTALLING BOOSTER PUMP & END GUN-------- $2,200.00
1 8" PLUMBING PACKAGE W/CHECK VALVE -------------------------------- $400.00
1 USED 60 HP VHS MOTOR W/STARTER PANEL, W/HOA, ------------------$1,950.00
1 200 AMP 3-PHASE, 480 VOLT UNDERGROUND SERVICE ------------------$1,300.00
1 TRANSFORMER PAD & TRENCHING OF PRIMARY UNDERGROUND WIRE -------$650.00
1 MISC. WIRING HOOK-UPS TIES PIVOT & PUMP TOGETHER ----------------$125.00
1 LABOR TO PULL PUMP, REWORK BOWLS, RESET THE PUMP, WO/PARTS- $650.00
1 COMMONWEALTH EDISON FEE FOR THEIR UNDERGROUND WIRE TO WELL- $3,115.00

**ESTIMATED COST SAVINGS PER YEAR, W/10" OF WATER APPLIED, ON 135 ACRES**

800 GPM @ 75 PSI W/50' PUMPING LEVEL, @ 75% EFF. REQUIRES APPROX. 60 BRAKE HP. REQUIRES APPROX. 764 HOURS, CONSUMING APPROX. 3.33 GPH, @ $.80 PER GALLON, TOTAL ENERGY COST PER/YEAR W/DIESEL-APPROX. $2,035.30 PER/YEAR

1000 GPM @ 44 PSI W/50' PUMPING LEVEL, @ 75% EFF. REQUIRES APPROX. 51 BRAKE HP. REQUIRES APPROX. 611 HOURS, USING APPROX. 41 KWHR. @ $.02417 PER/KWHR, TOTAL ENERGY COST PER YEAR W/ELECTRIC-APPROX. $605.50 PER/YEAR

ANNUAL COST SAVINGS BY CONVERTING TO LOW PSI & ELECTRIC IS APPROX.- $1,429.80

THANK YOU VERY MUCH,
BEIERMANN AGRI-SYSTEMS INC.
GARY & MARIE BEIERMANN
MELVIN BEIERMANN
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES

Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Edward Mead
   Address: 1214 Ambory Rd
   Ambory, Ill.
   Zip Code: 61710
   County: Lee
   Telephone #: (315) 857-8198

B. Applicant's S.S.#:

C. Electric Utility: 
   Account #:

   Account #:

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Rehabilitate Existing Well -
   Increase GPM from 305 to 600
   (Reduce pumping time by 46%)

F. Total $ amount of improvements
   $ 19,400

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $ 4,000

H. Estimated start up date 6/90
   Estimated completion date 6/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
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<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rehabilitate Well</td>
<td>18,700</td>
<td>2,000</td>
<td>$94</td>
<td>$1,680</td>
<td>7.38</td>
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<tr>
<td>TOTAL</td>
<td>19,400</td>
<td>2,000</td>
<td>$94</td>
<td>$1,680</td>
<td>7.38</td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Edward Mead
Applicant’s Signature
4/28/90

IL428-0233

Display of this information is VOLUNTARY. However, failure to comply may result in the form not being processed. This form has been approved by the State Farm Management Center.
Mr. Ed Mead  
1214 Amboy Grove  
Amboy, IL 61310

Dear Mr. Mead;

Following please find the proposal for rehabilitating your irrigation well that pumps 325 GPM with a pumping water level of 240 feet. Our objective is to get the well to pump 600 GPM with a pumping water level of 100 feet. The proposal is as follows:

1. Ream the well out to 11" diameter and a total depth of 845 feet.................. $6,600.00  
   Testing Well and Pump Installation................... 800.00

2. Additional drilling to deepen well to approximately a total depth of 1195 feet................. 5,000.00

   TOTAL PROPOSAL.................. $12,400.00

If you have any questions, please feel free to contact us.

Sincerely,

[Signature]

S. Dean Albrecht  
ALBRECHT WELL DRILLING, INC.

SCA:gal
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Thomas E. Mead
   Address: 731 Walton Rd
   Ilion,
   Zip Code: 13351
   County: Lee
   Telephone #: 315-857-8843

B. Applicant’s S.S.#: 318-49-7489

C. Electric Utility: __________________________
   Account #: __________________________

D. Gas Utility: Lee & S, Inc, Amboy, Ill
   Account #: 174754-3

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Used Goulds Vert Turbine Pump, Model 10 RTKS 6-Stage, Minimum 150’-6” Water tube column discharge head, Old pump has column distortion, shaft worn at bushings, excessive pump wear
   Approx. cost $3,000
   New Perkins 6.354 T Diesel Power Unit $9,800
   Re-nosse existing 1976 Unit to Nelson hour pressure
   P-30 Rotator Nozzles w/ DH Plates on Drops $1,991

F. Total $ amount of improvements
   $11,991

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $4,000

H. Estimated start up date 6/90 
   Estimated completion date 6/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback In Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Turbine Pump</td>
<td>5,000</td>
<td>1,440</td>
<td>$4</td>
<td>1909</td>
<td>4.13</td>
</tr>
<tr>
<td>Pumps</td>
<td>5,500</td>
<td>730</td>
<td>$4</td>
<td>604</td>
<td>9.09</td>
</tr>
<tr>
<td>Nozzles</td>
<td>1,991</td>
<td>400</td>
<td>$4</td>
<td>336</td>
<td>4.44</td>
</tr>
<tr>
<td>TOTAL</td>
<td>11,991</td>
<td>2,560</td>
<td>$4</td>
<td>2,150</td>
<td>2.2</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Signature: __________________________
Date: 4/28/90

IL428-0233

Disclosure of this information is VOLUNTARY. However, failure to supply may result in the form not being processed. This form has been approved by the State Forms Management Center.
ALBRECHT WELL DRILLING, INC.

PROPOSAL SUBMITTED TO

Thomas F. Muehl
731 Walten Rd.
Kimbark, Ill. (61316)

STREET

PHONE

DATE

4/1/76

We hereby submit specifications and estimates for:

- 10 K.W.O. 6 STAGE Bose A.S.V.
- 150' of 4" Lube Column
- Discharge Head

Total Cost: $5000.00

We Propose hereby to furnish material and labor — complete in accordance with above specifications, for the sum of:

$5000.00

Payment to be made as follows:

Authorized Signature:

Note: This proposal may be withdrawn by us if not accepted within ______ days.

Acceptance of Proposal — The above prices, specifications and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above.

Date of Acceptance:

Authorized Signature:

FROM THE: September 1976 - NEW ENGLAND BUSINESS SERVICES, INC. BOSTON, MASS 02110
**T-L Irrigation Systems**

**Sales & Service**

Mead Machine Shop
Anmoy, Illinois 61310

815-857-2198 Or 815-857-2843

**Proposal**

**T-L IRRIGATION CO.**
P.O. Box 1047
Hastings, NE 68902-1047
(402) 462-4129

Date 4/17/91

**Shipping Directions:**

<table>
<thead>
<tr>
<th>G.P.M.</th>
<th>PSI (Top of Pivot)</th>
<th>End Gun</th>
<th>Sprinkler Pkg. #</th>
<th>Press. Reg.</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of Towers</td>
<td>Auto-EndGun</td>
<td>Eng. or Elec.</td>
<td>End Pipe Lgth.</td>
<td>Gear Dr. Type</td>
</tr>
<tr>
<td>Serial No.</td>
<td>Position Stop</td>
<td>Towable</td>
<td>Tires</td>
<td>Springs 11/4&quot; Oil Line</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>MODEL/PART #</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6354T</td>
<td>New Perkins 6354T Diesel</td>
</tr>
</tbody>
</table>

- Power Unit Inc: Murphy Package  
  - Trailer Package
  - Drive Shaft & Shield  $5,500

- As I Required at Point 40'  90.4
  - Pump Lift - 100'  331.0
  - Pump Lift Loss  10.0

  **Total Head** 333.4

- Pump FH - 82.5

- Continuous hrs req - 667
  - Fuel Consumption 3.4 gal
  - Operating Cost 3.4 gal

<table>
<thead>
<tr>
<th>Sub-Total</th>
<th>5,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installation</td>
<td>=</td>
</tr>
<tr>
<td>Freight</td>
<td>=</td>
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<tr>
<td>Total</td>
<td>5,500</td>
</tr>
<tr>
<td>Sales Tax (if Applicable)</td>
<td>$0</td>
</tr>
<tr>
<td>Less Down Payment</td>
<td>=</td>
</tr>
<tr>
<td>Balance Due on Delivery</td>
<td>5,500</td>
</tr>
</tbody>
</table>

**SELLER** Mead Machine Shop

**METHOD OF PAYMENT:** Cash [ ] Lease [X]

By [Signature]

**This Agreement is Subject to the Acceptance by T-L Irrigation Co., of Hastings, Nebraska.**

**CUSTOMER**
**T-L Irrigation Systems**  
**Sales & Service**  

**Mead Machine Shop**  
Amboy, Illinois 61310  

815-857-2198 Or 815-857-2843  

**Sold to:** Thomas Measler  
Amboy, IL 61310  

Shipping Date:  

<table>
<thead>
<tr>
<th>G.P.M.</th>
<th>PSI (Top of Phot)</th>
<th>End Gun</th>
<th>No. of Towers</th>
<th>Aveo-Endgun</th>
<th>Eng. or Elec.</th>
<th>Egg</th>
<th>End Pipe Lgh.</th>
<th>Gear Dr. Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>150</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>Eng. or Elec.</td>
<td>Egg</td>
<td>10'</td>
<td>Gear Dr. Type</td>
<td>5542</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quantity</th>
<th>Model/Part #</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.25</td>
<td>MD9154</td>
<td>Drop Pipes w/ 2' Ground Clearance</td>
<td>5542</td>
</tr>
<tr>
<td>1.25</td>
<td>MD7153</td>
<td>31' Droppipes</td>
<td>35-25</td>
</tr>
</tbody>
</table>

Sub-Total: 1,341.92  
Installation: 100.00  
Freight: 50.00  
Total: 1,491.92  
Sales Tax (if applicable) N/A  
Less Down Payment:  
Balance Due on Delivery: 1,491.92  

**METHOD OF PAYMENT:**  
Cash ☑  
Lease ☐  

**By:** John E. Measler  

---  

Neither T-L Irrigation Co., nor the Seller shall be liable for any delays or defects in making delivery where occasioned by any cause beyond its control, including but not limited to action of any governmental authority; strikes, shortage of labor or materials, production facilities or transportation; labor difficulties; fire, flood, accidents or acts of God.  

**SELLER:**  
Mead Machine Shop  

This Agreement is Subject to the Acceptance by T-L Irrigation Co., of Hastings, Nebraska.  

**CUSTOMER**
IIpinois Department of Energy and Natural Resources
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I -- To be completed by applicant.

A. Name: Marvin Miller  B. Applicant's S.S. #: 357-58-4295

Address: R.R. 1 Box 39  C. Electric Utility: 
Danh, I1 62617

Zip Code:  D. Gas Utility: Prater Oil Company

County:  

Telephone #:  309 546-2621

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

Presently we have an 8 tower and a 10 tower high pressure systems. We plan to install the Wallcoo Spray III nozzle package; install and gun booster pads; cut back the engine RPM’s; repull the generators to run at the same RPM’s as before. Operating pressures will be reduced from 94 PSI to 45 and 77 PSI to 45. Fuel consumption will be cut from 4 GPA to 2.5 and 3.94 GPA to 2.5.

F. Total & amount of improvements $3780.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $1512.00

H. Estimated start up date 4-1-90  Estimated completion date 9-30-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric Energy</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Pressure to Low Pressure conversion</td>
<td>3780.00</td>
<td>2940</td>
<td>.84</td>
<td>2411.00</td>
<td>1.6</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3780.00</td>
<td>2940</td>
<td>.84</td>
<td>2411.00</td>
<td>1.6</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Applicant's Signature 5-8-90

Date
# CONTRACT PURCHASE

**CUSTOMER:** MILLER & MIDDLEKAMP  
**AT REY’S HOUSE**  
**RAINCAT 10 TOWER**

**DATE:** APRIL 17, 1980

<table>
<thead>
<tr>
<th>PRESENT SYSTEM</th>
<th>PROPOSED SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP</td>
<td>SAME</td>
</tr>
<tr>
<td>GEAR HEAD</td>
<td>12 RM 4 STAGE</td>
</tr>
<tr>
<td>MOTOR</td>
<td>SF 913</td>
</tr>
<tr>
<td>MOTOR’S RPM</td>
<td>2200</td>
</tr>
<tr>
<td>FUEL USAGE</td>
<td>4 G.P.H.</td>
</tr>
<tr>
<td>PRESSURE @ GROUND</td>
<td>94 - LBS</td>
</tr>
<tr>
<td>G.P.M.</td>
<td>1000</td>
</tr>
<tr>
<td>PUMP EFFICIENCY</td>
<td>83.5 %</td>
</tr>
<tr>
<td>H.P. USED</td>
<td>107</td>
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<tr>
<td></td>
<td>2.5 G.P.H.</td>
</tr>
<tr>
<td></td>
<td>46 - LBS</td>
</tr>
<tr>
<td></td>
<td>SAME</td>
</tr>
<tr>
<td></td>
<td>83 %</td>
</tr>
<tr>
<td></td>
<td>69</td>
</tr>
</tbody>
</table>

**COST OF LOW PRESSURE CONVERSION:**

- NELSON SPRAY III
- BOOSTER PUMP KIT
- NEW PULLEY
- LABOR TO RE Nozzle & ADD BOOSTER PUMP

**TOTAL AMOUNT**

$1830.00

---

**sign**

**accepted by**

**sign**

**date**

5-8-89
CONTRACT PURCHASE

CUSTOMER: MILLER & MIDDLEKAMP
SOUTHWEST OF HOUSE
RAINCAT 8 TOWER

DATE: APRIL 17, 1990

<table>
<thead>
<tr>
<th>PRESENT SYSTEM</th>
<th>PROPOSED SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>PUMP 12 RL 4 STAGE</td>
<td>SAME</td>
</tr>
<tr>
<td>GEAR HEAD 5 - 4</td>
<td>SAME</td>
</tr>
<tr>
<td>MOTOR BF 913</td>
<td>SAME</td>
</tr>
<tr>
<td>MOTOR'S RPM 2200</td>
<td>1990</td>
</tr>
<tr>
<td>FUEL USAGE 3.94 G.P.H.</td>
<td>2.5 G.P.H.</td>
</tr>
<tr>
<td>PRESSURE @ GROUND 77 - LBS</td>
<td>45 - LBS</td>
</tr>
<tr>
<td>G.P.M. 1000</td>
<td>SAME</td>
</tr>
<tr>
<td>PUMP EFFICIENCY 85 %</td>
<td>83 %</td>
</tr>
<tr>
<td>H.P. USED 90</td>
<td>69</td>
</tr>
</tbody>
</table>

COST OF LOW PRESSURE CONVERSION:
- NELSON SPRAY III
- BOOSTER PUMP KIT
- NEW PULLEY
- LABOR TO RENozZLE & ADD BOOSTER PUMP

TOTAL AMOUNT $1820.00

[Signatures]

dated 5-8-90
accepted by

ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.

A. Name: Darrell Pfaff
   Address: R.R. 1
   Forest City, I11.
   Zip Code: 61532
   County: Mason
   Telephone #: 009 597-2286

B. Applicant's S.S.#: 333-40-2289

   Account #: 11-5-8-6 6-32-3-1

D. Gas Utility:
   Account #: 

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

SEE ATTACHED P&A BID

F. Total # amount of improvements $ 9096.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 3600.00

H. Estimated start up date 2/3/90
   Estimated completion date 4/30/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>A 50HP to 40HP</td>
<td>5198.00</td>
<td>5232</td>
<td>.0425</td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>$622.44</td>
</tr>
<tr>
<td>B 50HP to 40HP</td>
<td>4798.00</td>
<td>7660</td>
<td>.0425</td>
<td>XXXXXXXXXXXXXXXXXXX</td>
<td>$735.55</td>
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<tr>
<td>TOTAL</td>
<td>$ 9096.00</td>
<td>12892</td>
<td></td>
<td></td>
<td>$1367.99</td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

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I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

[Signature]

Applicant's Signature 2-3-90

Date

IL428-0233

Disclosure of this information is VOLUNTARY. However, failure to comply may result in the form not being processed. This form has been approved by the State Farm Administration Center.
**P & A Irrigation, Inc.**

**CUSTOMER NAME** | Darrell Pfeiffer
---|---
**ADDRESS** | R.R. 1 Forest City, Ill 61532
**TELEPHONE NUMBER** | (309) 597-2386

<table>
<thead>
<tr>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) 1</td>
<td>Reinke Nozzle Package</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td>$1988.00</td>
</tr>
<tr>
<td></td>
<td>Chart for Sprinkler Spacing</td>
<td>$160.00</td>
</tr>
<tr>
<td></td>
<td>*Booster Pump Kit</td>
<td>$1400.00</td>
</tr>
<tr>
<td></td>
<td>Labor Installing Sprinklers</td>
<td>$550.00</td>
</tr>
<tr>
<td></td>
<td>Pump Work</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Machining Pump Bowls</td>
<td>$500.00</td>
</tr>
<tr>
<td></td>
<td>Labor Pulling Pump</td>
<td>$600.00</td>
</tr>
<tr>
<td>(B) 1</td>
<td>Reinke Nozzle Package</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td>$1738.00</td>
</tr>
<tr>
<td></td>
<td>Chart for Sprinkler Spacing</td>
<td>$160.00</td>
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<tr>
<td></td>
<td>*Booster Pump Kit</td>
<td>$1400.00</td>
</tr>
<tr>
<td></td>
<td>Labor Installing Sprinklers</td>
<td>$500.00</td>
</tr>
<tr>
<td></td>
<td>Pump Work</td>
<td>$</td>
</tr>
<tr>
<td></td>
<td>Machining Pump Bowls</td>
<td>$400.00</td>
</tr>
<tr>
<td></td>
<td>Labor Pulling Pump</td>
<td>$600.00</td>
</tr>
</tbody>
</table>

**TOTAL** | $9996.00 |

**TERMS OF PAYMENT**

% DOWN PAYMENT | $ |
% UPON DELIVERY | $ |
% UPON COMPLETION | $ |

(SOLD BY) | Jim Smith |
(ACCEPTED BY) | |
(DATE) | / / |
(ACCEPTED BY) | |
(DATE) | / / |
### Explanation of Energy Saving

**A.** 36160 KW used ave. last 3 yrs.
- .0425 cost per kw unit
- 1536.80 kw cost per year in past
- 50 HP requirement in past
- 940 interruptable rate used
- 92000 HP cost per yr.

**B.** 38300 kw used ave last 3 yrs
- .0425 cost per kw unit
- 1627.75 cost kw per yr past
- 50 HP requirement in past
- $40 interruptible rate used
- $2000 cost HP per yr past

---

<table>
<thead>
<tr>
<th>Description</th>
<th>Future</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>36160 KW used ave. last 3 yrs</td>
<td>30928 KW used per yr in future</td>
<td>30928 KW used per yr in future</td>
</tr>
<tr>
<td>.0425 cost per kw unit</td>
<td>.0425 cost per kw unit</td>
<td>.0425 cost per kw unit</td>
</tr>
<tr>
<td>1536.80 kw cost per year in past</td>
<td>1314.44 kw cost per yr in future</td>
<td>1314.44 kw cost per yr in future</td>
</tr>
<tr>
<td>50 HP requirement in past</td>
<td>40 HP requirement in future</td>
<td>40 HP requirement in future</td>
</tr>
<tr>
<td>940 interruptable rate used</td>
<td>$40 interruptible rate used</td>
<td>$40 interruptible rate used</td>
</tr>
<tr>
<td>92000 HP cost per yr.</td>
<td>$1600 HP cost per yr.</td>
<td>$1600 HP cost per yr.</td>
</tr>
<tr>
<td>1536.80 kw cost in past</td>
<td>1314.44 kw cost per yr.</td>
<td>1314.44 kw cost per yr.</td>
</tr>
<tr>
<td>3536.80 total energy cost past(yr)</td>
<td>2914.44 total energy cost future(yr)</td>
<td>2914.44 total energy cost future(yr)</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Description</th>
<th>Future</th>
<th>Past</th>
</tr>
</thead>
<tbody>
<tr>
<td>38300 kw used ave last 3 yrs</td>
<td>30640 kw used per yr future</td>
<td>30640 kw used per yr future</td>
</tr>
<tr>
<td>.0425 cost per kw unit</td>
<td>.0425 cost per kw unit</td>
<td>.0425 cost per kw unit</td>
</tr>
<tr>
<td>1627.75 cost kw per yr past</td>
<td>1302.20 cost kw per yr future</td>
<td>1302.20 cost kw per yr future</td>
</tr>
<tr>
<td>50 HP requirement in past</td>
<td>40 HP requirement in future</td>
<td>40 HP requirement in future</td>
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<tr>
<td>$40 interruptible rate used</td>
<td>$40 interruptible rate used</td>
<td>$40 interruptible rate used</td>
</tr>
<tr>
<td>$2000 cost HP per yr past</td>
<td>$1600 cost HP per yr future</td>
<td>$1600 cost HP per yr future</td>
</tr>
<tr>
<td>1627.75 cost kw per yr past</td>
<td>1302.20 cost kw per yr future</td>
<td>1302.20 cost kw per yr future</td>
</tr>
<tr>
<td>3627.75 total energy cost past(yr)</td>
<td>2902.20 total energy cost future(yr)</td>
<td>2902.20 total energy cost future(yr)</td>
</tr>
</tbody>
</table>
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Dean Kropp
   Address: RR 1 Box 10
   Bath, Illinois 62617
   Zip Code: 62617
   County: Mason
   Telephone #: (309) 5462222

B. Applicant’s S.S.#: 333-40-2288

   Account #: 19-29-009 & 19-29-008

D. Gas Utility: ____________________________
   Account #: ____________________________

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

SEE P&A ATTACHED LIST

F. Total $ amount of improvements: $9,996.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $4,000.00

H. Estimated start up date: February 20, 1990
   Estimated completion date: March 20, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/KWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>a. 50Hp to 40 Hp</td>
<td>$4728.00</td>
<td>8512</td>
<td>0.0425</td>
<td>XXXXXXXXXXXXXXXX</td>
<td>$761.76</td>
</tr>
<tr>
<td>b. 60 Hp to 40 HP</td>
<td>$5268.00</td>
<td>22144</td>
<td>0.0425</td>
<td>XXXXXXXXXXXXXXXX</td>
<td>$1741.12</td>
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<td>TOTAL</td>
<td>$9996.00</td>
<td>30656</td>
<td></td>
<td>XXXXXXXXXXXXXXXX</td>
<td>$2502.88</td>
</tr>
</tbody>
</table>

J. We hereby certify that:
The information submitted above and on any attachments is correct to best of my knowledge.

I understand that; this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Dean Kropp
Applicant’s Signature

2-3-90
Date

IL428-0233

Disclaimer of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been approved by the State Farm Management Center.
## Contract Purchase

**Customer Name:** Dean Pfeiffer  
**Address:** RR 1 Box 10 Bath, Illinois, 62617  
**Telephone Number:** (309) 546-2222

<table>
<thead>
<tr>
<th>QTY</th>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 1</td>
<td>Reinke nozzles package 50 to 35 PSI</td>
<td>$1,568.00</td>
</tr>
<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chart for Sprinkler Spacings</td>
<td>$160.00</td>
</tr>
<tr>
<td></td>
<td>*Booster Pump</td>
<td>$1,400.00</td>
</tr>
<tr>
<td></td>
<td>*Labor installing sprinklers</td>
<td>$500.00</td>
</tr>
<tr>
<td>1</td>
<td>Pump work 50 to 40 HP</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Machining Pump Bowls</td>
<td>$500.00</td>
</tr>
<tr>
<td></td>
<td>Labor on Pulling Pump</td>
<td>$600.00</td>
</tr>
<tr>
<td>B 1</td>
<td>Reinke nozzles package 50 to 35 PSI</td>
<td>$1,808.00</td>
</tr>
<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chart for Sprinkler Spacings</td>
<td>$160.00</td>
</tr>
<tr>
<td></td>
<td>*Booster Pump</td>
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<tr>
<td></td>
<td>*Labor installing sprinklers</td>
<td>$550.00</td>
</tr>
<tr>
<td>1</td>
<td>Pump Work 60 to 40 HP</td>
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</tr>
<tr>
<td></td>
<td>Machining Pump Bowls</td>
<td>$750.00</td>
</tr>
<tr>
<td></td>
<td>Labor on Pulling Pump</td>
<td>$600.00</td>
</tr>
</tbody>
</table>

**Total:** $9,996.00

**Terms of Payment:**
- **% Down Payment:** $  
- **% Upon Delivery:** $  
- **% Upon Completion:** $

(Signed By)  
(Accepted By)  
(Date)
DEAN PFEIFFER
Explanation Of Energy Saving

A. 

<table>
<thead>
<tr>
<th></th>
<th>past</th>
<th>future</th>
</tr>
</thead>
<tbody>
<tr>
<td>kw used ave. last 3 yrs</td>
<td>.42,560</td>
<td>34,048</td>
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<tr>
<td>cost per kw unit</td>
<td>.0425</td>
<td>.0425</td>
</tr>
<tr>
<td>kw cost per year</td>
<td>1808.80</td>
<td>1447.04</td>
</tr>
<tr>
<td>Hp requirement in past</td>
<td>50</td>
<td>40</td>
</tr>
<tr>
<td>interruptable rate used</td>
<td>$40</td>
<td>$40</td>
</tr>
<tr>
<td>Hp cost per yr.</td>
<td>2000</td>
<td>$1600</td>
</tr>
<tr>
<td>kw cost per yr.</td>
<td>1808.80</td>
<td>1447.04</td>
</tr>
<tr>
<td>total energy cost past</td>
<td>3808.80</td>
<td>3047.04</td>
</tr>
</tbody>
</table>

B. 

<table>
<thead>
<tr>
<th></th>
<th>past</th>
<th>future</th>
</tr>
</thead>
<tbody>
<tr>
<td>kw used ave. last 3 yrs</td>
<td>55,360</td>
<td>33,216</td>
</tr>
<tr>
<td>cost per kw unit</td>
<td>.0425</td>
<td>.0425</td>
</tr>
<tr>
<td>kw cost per yr past</td>
<td>2352.80</td>
<td>1411.68</td>
</tr>
<tr>
<td>Hp requirement in past</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>interruptable rate used</td>
<td>$40</td>
<td>$40</td>
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<tr>
<td>Hp cost per yr past</td>
<td>2400</td>
<td>$1600</td>
</tr>
<tr>
<td>kw cost per yrs past</td>
<td>2352.80</td>
<td>1411.68</td>
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<tr>
<td>total energy cost past</td>
<td>4752.80</td>
<td>3011.68</td>
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</table>
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Leo Pfeiffer
B. Applicant’s S.S.#: 336-32-4158

   Account #: 15-9206-056-15-31-005-15

D. Gas Utility: ____________________________
   Account #: ____________________________

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

SEE ATTACHED P&A BID

F. Total # amount of improvements $ 9998.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 4000.00

H. Estimated start up date 2/25/90
    Estimated completion date 3/19/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>A 50HP to 40HP</td>
<td>$4325.00</td>
<td>7712</td>
<td>0.0425</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B 150HP to 133HP</td>
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<td>0.0425</td>
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<tr>
<td>TOTAL</td>
<td>$9998.00</td>
<td>37112</td>
<td></td>
<td>$2657.26</td>
<td></td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/We will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Applicant’s Signature: ____________________________
Date: 2-3-90

(Failure to sign attests to the Department's right to refuse to process the application unless signed.)
P & A Irrigation, Inc.

CUSTOMER NAME: Len Pfeiffer
ADDRESS: R.R. 1 Forest City, Ill 61532
TELEPHONE NUMBER: (309) 597-2115

C O N T R A C T  P U R C H A S E

<table>
<thead>
<tr>
<th>QTY</th>
<th>DESCRIPTION</th>
<th>PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reinke Renozille Package</td>
<td>$1,565.00</td>
</tr>
<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td>$1,600.00</td>
</tr>
<tr>
<td></td>
<td>Chart for Sprinkler Spacings</td>
<td>$1,400.00</td>
</tr>
<tr>
<td></td>
<td>Labor installing Sprinklers</td>
<td>$500.00</td>
</tr>
<tr>
<td>1</td>
<td>Pump work</td>
<td>$600.00</td>
</tr>
<tr>
<td></td>
<td>Machining Pump Bowls</td>
<td>$500.00</td>
</tr>
<tr>
<td></td>
<td>Labor pulling pump</td>
<td>$4325.00</td>
</tr>
<tr>
<td>1</td>
<td>Reinke Renozille Package</td>
<td>$2,838.00</td>
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<tr>
<td></td>
<td>Nelson Rotor Sprinklers</td>
<td>$425.00</td>
</tr>
<tr>
<td></td>
<td>Pressure Regulators</td>
<td>$160.00</td>
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<tr>
<td></td>
<td>Chart for Sprinkler Spacings</td>
<td>$700.00</td>
</tr>
<tr>
<td></td>
<td>Labor installing Sprinklers</td>
<td>$5,673.00</td>
</tr>
</tbody>
</table>

TOTAL: $9,998.00

TERMS OF PAYMENT:
% DOWN PAYMENT: $4325.00
% UPON DELIVERY: $5,673.00
% UPON COMPLETION: $5,673.00

(SOLD BY) ___________________________ (ACCEPTED BY) ___________________________
(DATE) ___________________________ (DATE) ___________________________
LEO PFEIFFER
Explanation of Energy Saving

A. 38560 KW used ave. last 3 yrs. 30848 KW used per yr in future
   .0425 cost per kw unit .0425 cost per kw unit
   1638.80 kw cost per year in past 1311.04 kw cost per yr in future
   50 HP requirement in past 40 HP requirement in future
   $40 interruptible rate used $40 interruptible rate used
   $2000 HP cost per yr. $1600 HP cost per yr.
   1638.80 kw cost in past 1311.04 kw cost per yr.
   3638.80 total energy cost past(yr) 2911.04 total energy cost future(yr)

B. 196000 kw used ave last 3 yrs 166600 kw used per yr future
   .0425 cost per kw unit .0425 cost per kw unit
   8330.00 cost kw per yr past 7080.50 cost kw per yr future
   150 HP requirement in past 133 HP requirement in future
   $40 interruptible rate used $40 interruptible rate used
   $6000 cost HP per yr past $5320 cost HP per yr future
   8330.00 cost kw per yr past 7080.50 cost kw per yr future
   14330.00 total energy cost past(yr) 12400.50 total enerty cost future(yr)
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: TERRY POSI
   Address: 3342 BUELL RD
   Rock Falls, IL
   Zip Code: 61071
   County: Whiteside
   Telephone: 815-624-7936

B. Applicant’s S.S.#: 354-49-5249

C. Electric Utility: COMMONWEALTH EDISON
   Account #: Will not change one till winter install.

D. Gas Utility: ____________________________
   Account #: ____________________________

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

(See attached)

F. Total $ amount of improvements: $10,633.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $4,000.00

H. Estimated start up date: 4-20-90
   Estimated completion date: 6-1-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (KWH)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback In Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conserve gas to pressure</td>
<td>$1,012.71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric power</td>
<td>$270.00</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>$10,633</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Terry Posi
Applicant’s Signature: ________
Date: 4-20-90

IL428-0233

Disclaimer of this information is VOLUNTARY. However, failure to complete may result in this form not being processed. This form has been approved by the State Farm Management Center.
I

In reply to the energy saving estimate, since I have been on high pressure, the cost of water per inch was right at 4.25 per acre. I was using an L.P. engine which was becoming too expensive to operate. The L.P. engine was using around 1700 lbs of L.P. gas every 6 days. With this amount of fuel it costs approximately 1200-1500.00 per month. After the conversion to low pressure, the estimated cost would be approximately 1.25 per acre. Simple payback period would be 4-5 yrs. For more information just let me know...

Thank you
Terry Pov"
# PROPOSAL & SALES AGREEMENT

**Owner**: Terry Poe  
**Tenant**:  

**Address**:  

---

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Unit Price</th>
<th>Total Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>11.5 HP 50 HP Vertical Hollowshaft Motor</td>
<td>$830.00</td>
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</tr>
<tr>
<td>1</td>
<td>50 HP pump panel</td>
<td>$684.00</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>(RR100 220 volt)</td>
<td>$450.00</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5 HP auto lift booster pump + control box</td>
<td>$1,421.00</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Melting Rotary grizzler pad</td>
<td>$842.00</td>
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</tr>
<tr>
<td>1</td>
<td>Transformer + electric panel pad</td>
<td>$300.00</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Milk warming condenser for electric look-up</td>
<td>$1,200.00</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Pump removal from engine to low pressure station</td>
<td>$7,927.00</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$8,257.00</strong></td>
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</tr>
</tbody>
</table>

---

**COMMONWEALTH EDISON**  
BILL was 2706.xx  
THAT IS FOR LINE ENTRANCE  
AND WIRE ANY QUESTION  
I WOULD BE HAPPy TO ANSWER THEM.  
Terry Poe

---

This agreement does or does not include the following:  

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery to site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Footing and concrete work</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foundation bolts and steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete erection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preparation to grade level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exchange pumps</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Terms:**  
Cash with order  
Cash upon delivery of material

**Delivery Terms:**  
Cash upon completion

---

The dealer hereby agrees to furnish the above described materials and services. All work to be completed in a workmanlike manner (according to standard trade practices).  
Balance due within 10 days after substantial completion or use, whichever occurs first. Price of minor items not immediately available during erection will be deducted, leaving balance payable. Billing of shortages will follow their installation. Balance shall accrue interest at 1 1/2% per month after due date.

**Accepted:** Terry Poe  
**Date:** 6/18/90
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I - To be completed by applicant.

A. Name: J. D. Proctor
B. Applicant's S.S.N.: 352-38-6467
Address: R. I. Box 49
Manito, Ill.
C. Electric Utility: Central Ill. Light Co.
Account #: 600-91
Zip Code: 61546
D. Gas Utility: 
Account #: 
County: Tazewell
Telephone #: (309) 968-6780

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

Acid will be poured into well to clean well screen. After screen is cleaned, water will flow into the well more readily and therefore we can pump more gallons per minute. This will reduce our electrical cost of the electric motor. This will make the irrigation system more efficient.

(ESTIMATE ATTACHED)

F. Total % amount of improvements $1,024.38

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $4,000

H. Estimated start up date Feb 15, 1990
    Estimated completion date Feb 15, 1990

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clean Well Screen</td>
<td>$1034.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>200</td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$1034.38</td>
<td></td>
<td></td>
<td>200</td>
<td>5</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Applicant's Signature: ________________________________
Date: January 17, 1990

IL428-0233
Grosch Irrigation Co., Inc.
Well Drilling and Complete Installations

MASON CITY, IL  62864
Phone  217-482-5479
No  1001

Statement - Estimate
- Estimates based on current prices -

DATE  January 9, 1990
J.D. Proehl
RR 1, Box 49, Maito, IL 61546

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid</td>
<td>$550.00</td>
</tr>
<tr>
<td>Labor</td>
<td>$450.00</td>
</tr>
<tr>
<td>Sales tax</td>
<td>$34.38</td>
</tr>
<tr>
<td>Total</td>
<td>$1034.38</td>
</tr>
</tbody>
</table>

Service charge is 1 1/2% per month
Annual rate is 18% per year
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES

Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: Ringhouse Inc.  
B. Applicant's S.S.#: 37-1020977

Address: 
EASTON, ILL 62633  

County: MASON

C. Electric Utility: 
Account #: 

D. Gas Utility: 
Account #: 

Telephone #: (309) 562 - 7278

E. Describe the Energy Conservation Improvements planned. Please include all brand names and model #'s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

To convert Reih's center pivot system to low pressure: 
Trade a Dutry 913 150 HP engine for a 50 % HP engine. By converting to low pressure and going to a small engine we will drop fuel use from 4.2 gal per hr. to 2.5 gal per hr.

F. Total $ amount of improvements $ 7616

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 3046

H. Estimated start up date 3-15-90  
Estimated completion date 4-15-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/kWh</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Low Pressure System</td>
<td></td>
<td>7616</td>
<td></td>
<td>1190gal</td>
<td>.95</td>
</tr>
</tbody>
</table>

TOTAL

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Ringhouse Inc.  
REMONI RINGHOUSE

Applicant's Signature  
Date 1-29-1990

IL428-0233

Disclosure of this information is VOLUNTARY. However, failure to complete may result in the form not being processed. This form has been approved by the State Farm Management Center.
## CONTRACT TO PURCHASE

<table>
<thead>
<tr>
<th>Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>JD 4239D 59HP @ 1800 RPM WITH SAFETY GAUGE, HOOD</td>
<td>$5055.00</td>
</tr>
<tr>
<td>Clutch</td>
<td>688.00</td>
</tr>
<tr>
<td>Oil Sight Gauge</td>
<td>112.00</td>
</tr>
<tr>
<td>Front Pulley (necessary to gear ratio of package)</td>
<td>160.00</td>
</tr>
<tr>
<td>Safety Hook-Up Wire to Pivot with proper plugs</td>
<td>40.00</td>
</tr>
<tr>
<td>Pulley to Generator necessary for gear reducing</td>
<td>45.00</td>
</tr>
<tr>
<td>Engine Trailer with proper generator mount</td>
<td>400.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>6500.00</td>
</tr>
<tr>
<td>Less Trade In of 913 Deutz</td>
<td>-1000.00</td>
</tr>
<tr>
<td><strong>Engine Subtotal</strong></td>
<td>5500.00</td>
</tr>
<tr>
<td>1 Set of Nelson Spray III’s</td>
<td>235.00</td>
</tr>
<tr>
<td>Booster Pump</td>
<td>1031.00</td>
</tr>
<tr>
<td>Labor to Install</td>
<td>350.00</td>
</tr>
<tr>
<td>Pull Pump &amp; Remove Bowls</td>
<td>500.00</td>
</tr>
<tr>
<td><strong>System Changes</strong></td>
<td>2116.00</td>
</tr>
<tr>
<td><strong>Total Conversion</strong></td>
<td>7616.00</td>
</tr>
</tbody>
</table>

*See Notes Attached*
QUOTE

RINGHOUSE BROTHERS INC.  *  P & A IRRIGATION, INC.
EASTON, IL. 62633  *  RT 97 SOUTH
*  HAVANA, IL. 62644

JD 4239D 59HP @ 1800 RPM WITH SAFETY GAUGE, CLUTCH, HOOD, OIL SIGHT GAUGE, FRONT PULLEY, ENGINE TRAILER, HOOK-UP TO PIVOT, GENERATOR MOUNTED, NEW PULLEY FOR GENERATOR (IF NECESSARY) $6500.00
LESS TRADE-IN OF 913 DEUTZ -1000.00

TOTAL CONTRACT.  $5500.00
CONVERTING REINKE SYSTEM TO LOW PRESSURE

1 SET NELSON SPRAY 3
NEW PRESSURE GUAGE
BOOSTER PUMP KIT WITH
LOW WATER SAFETY SWITCH @ PIVOT
LABOR TO INSTALL
PULL PUMP & REMOVE BOWL

TOTAL CONTRACT $ 2116.00
Miss Bouman,

Please find enclosed the information we discussed. The trailer is more necessary than I thought. If you don't purchase a trailer, then they have to make a skid stand and mounting bracket for the generator out of I beams which would be as expensive or more so than a trailer made for this. Also the pulleys have to be changed in order to gear the generator for the correct R.P.M.

Sincerely yours,

Kenneth F. Ringhouse
TRAILER OPTION HAS BEEN ADDED TO PACKAGE AS IT IS MORE COST EFFECTIVE TO PURCHASE THAN TO BUILD A FRAME TO HOLD ENGINE AND GENERATOR ON SIGHT. LABOR COSTS AND MATERIALS FOR PERMANENT MOUNT ON SIGHT WOULD IN OUR ESTIMATION EXCEED THE COST OF THE TRAILER WITH THE GENERATOR MOUNTED INCLUDED.

Pulleys are needed to run generator the correct RPM.
Performance Curve

\[
\begin{align*}
&200 \text{ LB FT} \quad (282 \text{ N\cdotm}) \\
&100 \text{ rpm} \\
&50 \text{ HP} \quad (37 \text{ kW}) \\
&1800 \text{ RPM} \\
&\text{Rated BHP} \\
&\text{Fuel Consumption} \\
&\text{Engine Speed--RPM} \\
&1000 \quad 1500 \quad 1400 \quad 1300 \quad 1200 \quad 1100 \quad 1000 \quad 900 \quad 800 \quad 700 \quad 600 \quad 500 \quad 400 \quad 300 \quad 200 \quad 100 \\
&\text{Fuel Baste--HR} \\
&.36 \frac{\text{gal}}{\text{hp-hr}} \times .54 \text{ HP} = 19.4 \text{ gal-hr} = 2.5 \text{ gal/hr}
\end{align*}
\]

Charts used to figure fuel consumption at 1800 RPM.
BF6L913

\[
9.3 \text{ HP} \times 363 \text{ lb} = 3376 \text{ lb} \cdot \text{hp} \cdot \text{gal} = 4.22 \text{ gal/ hr}.
\]

Torque and fuel consumption curves relate to maximum rated output.
F6L913

---

**DEUTZ CORPORATION**
7585 Ponce de Leon Circle
Atlanta, Georgia 30340
(404) 449-6140
Telex: 6827025
Telecopier: (404) 447-6387

**KHD CANADA, INC.**
180 Rue De Normandie
Boucherville, RQ. J4B 5S7
Canada
(514) 641-2680
Telex: 268544

---

**DIN 6271 RATING OUTPUT DATA**

<table>
<thead>
<tr>
<th>Engine Speed</th>
<th>RPM</th>
<th>1500</th>
<th>1800</th>
<th>2000</th>
<th>2150</th>
<th>2300</th>
<th>2500</th>
<th>2650</th>
<th>2800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Duty Intermittent Output DIN 6271</td>
<td>HP</td>
<td>105</td>
<td>125</td>
<td>137</td>
<td>144</td>
<td>152</td>
<td>160</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td></td>
<td>KW</td>
<td>77</td>
<td>92</td>
<td>101</td>
<td>106</td>
<td>112</td>
<td>118</td>
<td>118</td>
<td>118</td>
</tr>
<tr>
<td>Heavy Duty Intermittent Output &gt; DIN 6271</td>
<td>HP</td>
<td>100</td>
<td>119</td>
<td>130</td>
<td>136</td>
<td>142</td>
<td>148</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>KW</td>
<td>74</td>
<td>88</td>
<td>96</td>
<td>100</td>
<td>104</td>
<td>109</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Continuous Duty Output to DIN 6271</td>
<td>HP</td>
<td>95</td>
<td>112</td>
<td>122</td>
<td>130</td>
<td>135</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td></td>
<td>KW</td>
<td>70</td>
<td>82</td>
<td>90</td>
<td>96</td>
<td>99</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

DIN 6271 REFERENCE CONDITIONS

- 80.6°F (27°C) Temperature
- 400' (120m) Altitude
- 60% Humidity

---

Printed in USA
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.
A. Name: J O FARM INC.  
   Address: R.R. #1  
   City: BATH  
   State: IL  
   Zip Code: 62617  
   County: MASON  
   Telephone: (309) 543-3207
B. Applicant’s S.S.N.: 37-1151585
C. Electric Utility: CENTRAL ILLINOIS PUBLIC SD
   Account #: 7247890
D. Gas Utility: CENTURY GAS
   Account #: 160400

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

I plan to convert 2 - 4 rower systems and 1 - 16 rower system to low-pressure garden mowers, and center pumps. I will increase the gallonage on the small system from 300 GPM to 415 GPM and the large one from 875 to 1200 GPM. In both cases the total horsepower requirements per hour would remain nearly the same as before conversion.

F. Total $ amount of improvements
   $ 9068.

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $ 3627.20

H. Estimated start up date: 4/1/90  
   Estimated completion date: 5/1/90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric Energy (KWH)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Units Saved</td>
<td>Cost/KWH</td>
<td>Units Saved</td>
<td>Cost/Unit</td>
</tr>
<tr>
<td>Low pressure garden</td>
<td>3900</td>
<td>534</td>
<td>.85</td>
<td>454</td>
<td>8.6</td>
</tr>
<tr>
<td>system</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low pressure small</td>
<td>2584</td>
<td>534</td>
<td>.85</td>
<td>357</td>
<td>7.2</td>
</tr>
<tr>
<td>center pump</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>9068</td>
<td>6366</td>
<td>1124</td>
<td>1164</td>
<td>7.7</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with DNR outlining the grant procedures and schedules.

J C Farm Inc.

Applicant's Signature: 3-14-90

Date: IL428-0233

Disclaimer of this Information is VOLUNTARY, therefore, if any part of this form not being processed, this form has been accepted by the State Farm Management Center.
SALES CONTRACT
Central Illinois Irrigation Co.
R.R. #1, Box 122
Havana, IL 62645
1307/543-2776

Customer Name: Daryl Fornoff
Address: R.R. #1, Havana, IL 62645
Telephone No.

<table>
<thead>
<tr>
<th>Key</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set Rainbird Sprays</td>
<td>$184.00</td>
</tr>
<tr>
<td>1</td>
<td>2 HP Booster Pump</td>
<td>$1,300.00</td>
</tr>
<tr>
<td>1</td>
<td>SR100 End Gun</td>
<td>$600.00</td>
</tr>
<tr>
<td></td>
<td>Labor</td>
<td>$500.00</td>
</tr>
</tbody>
</table>

TOTAL $2,584.00

% Down Payment
% Delivery Payment
% Completion Payment

SOLD BY

CUSTOMER

Date: ____________________
SALES CONTRACT

Central Illinois Irrigation Co.
R.R. 1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: Daryl Foranoff
Address: R.R. 1, RATH 11, 62617
Telephone No.

<table>
<thead>
<tr>
<th>Qty</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set Rainbird Sprayer w/Reg.</td>
<td>$1,000.00</td>
</tr>
<tr>
<td>1</td>
<td>5 HP Booster Pump</td>
<td>1,200.00</td>
</tr>
<tr>
<td>1</td>
<td>SR100 End Gun</td>
<td>600.00</td>
</tr>
<tr>
<td></td>
<td>Labor, Fat. and Wiring</td>
<td>600.00</td>
</tr>
</tbody>
</table>

TOTAL $3,900.00

TERMS OF PAYMENT

% Down Payment
% Delivery Payment
% Completion Payment

SOLD BY ___________________________  CUSTOMER ___________________________

Date: ____________________________
160 acre system  
SALES CONTRACT
Central Illinois Irrigation Co.
R.R. #1, Box #22
Rahna, IL 62644
1307/543-2776

Customer Name: Daryl Forshoff
Address: R.R. #1, Rahna IL 62644
Telephone No.: 

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Item Description</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 Set Rainbird Sprayer</td>
<td>$184.00</td>
</tr>
<tr>
<td>1</td>
<td>2 HP Rotor Pump</td>
<td>$1,300.00</td>
</tr>
<tr>
<td>1</td>
<td>SBI/00 Cad Gun</td>
<td>$600.00</td>
</tr>
</tbody>
</table>

Labor: $500.00

TOTAL: $2,584.00

TERMS OF PAYMENT

% Down Payment:
% Delivery Payment:
% Completion Payment:

SOLD BY: 
CUSTOMER: 
Date: 

ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: DOUG SCHMITT
   Address: 30788 PLAUTZ ROAD
   ROCK FALLS, IL
   Zip Code: 61071
   County: WHITESIDE
   Telephone #: (815) 626-4449

B. Applicant’s S.S.#: 333-60-6024

C. Electric Utility: COMMONWEALTH EDISON
   Account #: EP96-HE-31213

D. Gas Utility: ____________________________
   Account #: ____________________________

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #'s of any equipment purchased. (Attach copies of material estimates and/or contractor's bids.)

   Illinois Water Survey conducted a test on my irrigation well in the fall of 1989. This test was requested due to the fact this well was surging both air and water. It then was determined that a relocated installed well would have a significant direct conservation energy savings. The energy savings come from the costs of well efficiency. This is demonstrated by not breaking demand charge, less pump operating hours, etc. to meet required GPM for both crop and irrigation management. (costs associated are attached)

F. Total $ amount of improvements: $10,838

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $4,000

H. Estimated start up date: 4/29/90 Estimated completion date: 5-29-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric kWh</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovative installation well in a better formation</td>
<td>10,838</td>
<td>+ 55.8</td>
<td>0.05581</td>
<td>253.37</td>
<td>773.94</td>
</tr>
<tr>
<td>TOTAL</td>
<td>10,838</td>
<td>0.05581</td>
<td>253.37</td>
<td>773.94</td>
<td></td>
</tr>
</tbody>
</table>

J. We hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Applicant’s Signature: ____________________________ Date: 4-4-90

IL428-0233
**Contract**

---

**DOUGLAS SCHMITT**

BEIERMANN AGRI-SYSTEMS INC.

30790 FLAT TOP ROAD

26409-178th Ave. N

ROCK FALLS, IL. 61071

CORDOVA, ILLINOIS 61242

(815)-626-4449

---

**THE FOLLOWING IS A BILL FOR TEST WELLS DONE ON DOUG SCHMITT’S FARM TO LOCATE A MORE EFFICIENT AND PRODUCTIVE WELL, SINCE THE OLD WELL & LOCATION JUST DIDN’T PROVIDE ENOUGH WATER, AND PUMPED AIR SINCE THE DRAWDOWN WAS SO GREAT.**

<table>
<thead>
<tr>
<th>Well Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>57' TEST WELL</td>
<td>$228.00</td>
</tr>
<tr>
<td>48' TEST WELL</td>
<td>$192.00</td>
</tr>
<tr>
<td>62' TEST WELL</td>
<td>$248.00</td>
</tr>
<tr>
<td>57' TEST WELL</td>
<td>$228.00</td>
</tr>
<tr>
<td>59' TEST WELL</td>
<td>$236.00</td>
</tr>
<tr>
<td>72' TEST WELL</td>
<td>$288.00</td>
</tr>
<tr>
<td>59' TEST WELL</td>
<td>$236.00</td>
</tr>
<tr>
<td>72' TEST WELL</td>
<td>$288.00</td>
</tr>
<tr>
<td>72' TEST WELL-GOOD FORMATION</td>
<td>$144.00</td>
</tr>
</tbody>
</table>

---

**TOTAL**

$2,088.00

---

**THE RESULTS OF THE ABOVE TEST WELLS INDICATE THAT THE WELL BE RELOCATED TO A BETTER FORMATION IN ORDER TO GET A WELL THAT WILL PRODUCE A HIGHER VOLUME OF WATER W/O/AIR WHICH WOULD MAKE IT A MORE EFFICIENT OPERATION.**

**THE COST OF A NEW WELL WOULD BE:**

<table>
<thead>
<tr>
<th>Well Type</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>75' IRRIGATION WELL, 55' OF 14&quot; STEEL CASING W/20' OF 12&quot; STAINLESS STEEL SCREEN AT THE BOTTOM OF THE WELL. (100' WELL COST $9500, MINUS $30 PER/FT UNDER 100' OR PLUS $40 PER/FT OVER 100').</td>
<td>$8,750.00</td>
</tr>
</tbody>
</table>

---

**TOTAL**

$10,838.00

---

THANK YOU VERY MUCH,

BEIERMANN AGRI-SYSTEMS INC.

GARY & MARIE BEIERMANN

MELVIN BEIERMANN
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I — To be completed by applicant.

A. Name: Loren A. Thomas
   Address: R.R. #2 Box 123
   Havana, Ill.
   Zip Code: 62641
   County: Mason
   Telephone #: (309) 535-3720

B. Applicant’s S.S.#: 350-24-5169

C. Electric Utility: __________________________
   Account #: __________________________

D. Gas Utility: Mason Co. Service
   Account #: 224-2451

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model "s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

Renozzel Rainke System (10 yrs old) to Low Pressure Sprays
Increase Pump 800 GPM to 1000 GPM 80 PSI to 40 PSI will increase
   efficiency by 5%, Run time will decrease 20% Horsepower
   used will drop by 10 HP

F. Total $ amount of improvements
   $ 2530.00

G. Amount of grant requested (not to exceed 40% of line F or $4,000)
   $ 1012.00

H. Estimated start up date: Feb - 1
   Estimated completion date: March - 1

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pressure Box 250.00</td>
<td></td>
<td></td>
<td></td>
<td>$965.80</td>
<td>7 yrs</td>
</tr>
</tbody>
</table>

J. I/we hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Loren A. Thomas

Applicant’s Signature

Jan. 25, 1990

Date
RENOZZEL REINKE SYSTEM 1079 C 6343
FROM 800GPM TO 1000 GPM
80 PSI 50 PSI
1 SET NELSON SPRAY III
NEW REINKE BOOSTER PUMP INCLUDING LOW WATER SAFETY
AND WIRING $ 1470.00

RENOZZEL LABOR, & PULLEY
INSTALL BOOSTER PUMP 380.00

ALL REGULATORS 640.00
NEW PULLEY & BELTS 40.00

TOTAL CONTRACT $ 2530.00

DATE 1/23/90

CUSTOMER

ACCEPTED BY: P & A IRRIGATION, INC.

Pump will increase 5% in efficiency, Run time will decrease 20% Horsepower use will drop 10HP
SALES CONTRACT

Central Illinois Irrigation Co.
R.R. #1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: Loren Thomas
Address: R R 2 Havana
Telephone No.: 535-3720

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set Rainbird Sprays w/Reg.</td>
<td>1022</td>
</tr>
<tr>
<td>1</td>
<td>2HP Booster Pump</td>
<td>1250</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Labor to Install Package</td>
<td>528</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>w/o Regulators, Product # 540</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

TOTAL 2800

TERMS OF PAYMENT

% Down Payment: 
% Delivery Payment: 
% Completion Payment: 

SOLD BY: 
CUSTOMER: 

Date:
Part I - To be completed by applicant.

A. Name:  Steve Vandike  
B. Applicant's S.S.N.:  344-40-7816

Address:  R.R. 1  
Genesee, Ill.  
Zip Code:  61254

County:  Henry  
Telephone #:  (309) 944-2229

C. Electric Utility:  Farmers Mutual Electric  
Account #:  3-16-11

D. Gas Utility:  
Account #:  

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

Converting present center pivot system to low pressure.

See attached estimate.

F. Total $ amount of improvements: $ 6430.

G. Amount of grant requested (not to exceed 40% of line F or $4,000): $ 2572.

H. Estimated start up date: May 15  
Estimated completion date: June 1

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback In Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>convert to low pressure</td>
<td>$6430.</td>
<td>18326</td>
<td>.0568</td>
<td>$1041.</td>
<td>6.1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>See attached sheet.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>$6430.</td>
<td>18326</td>
<td>.0568</td>
<td>$1041.</td>
<td>6.1</td>
</tr>
</tbody>
</table>

J. I hereby certify that:

The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

Signature:  Steve Vandike  
Date:  April 26, 1990

IL42-0233

Disclosure of this information is VOLUNTARY. However, failure to comply may result in this form not being processed. This form has been approved by the Illinois Farm Management Center.
04/15/90

THANK YOU VERY MUCH,
BEIERMANN AGRI-SYSTEMS INC.

GARY & MARIE BEIERMANN

*************************************************************

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW PRESSURE SPRINKLER PACKAGE INSTALLED ON 7-TOWER CENTER PIVOT SYSTEM. W/NEW END GUN NOZZLE</td>
<td>$1,170.00</td>
</tr>
<tr>
<td>WELDING ON MORE OUTLETS ON THE PIPE OF THE CENTER PIVOT TO ACCOMMODATE THE NEW SPRINKLER PACKAGE</td>
<td>$200.00</td>
</tr>
<tr>
<td>130 GPM END GUN BOOSTER PUMP W/MISC PIPE FITTINGS</td>
<td>$750.00</td>
</tr>
<tr>
<td>BOOSTER PUMP CONTROL BOX W/WIRE, &amp; LABOR</td>
<td>$575.00</td>
</tr>
<tr>
<td>40 HP VHS 3-PH. IRRIGATION PUMP MOTOR, 460 VOLT, INSTALLED</td>
<td>$2,680.00</td>
</tr>
<tr>
<td>LABOR PULLING OUT PUMP, REMOVING STAGE(S), RESETTING PUMP</td>
<td>$800.00</td>
</tr>
<tr>
<td>MISC. LABOR WIRING IN NEW MOTOR, FREIGHT, HANDLING &amp; ETC.</td>
<td>$250.00</td>
</tr>
</tbody>
</table>

*************************************************************

VANDIKE TOTAL: $8,430.00

THANK YOU VERY MUCH,
BEIERMANN AGRI-SYSTEMS INC.
GARY & MARIE BEIERMANN
ESTIMATED COST SAVINGS PER YEAR, W/8" OF WATER APPLIED ON 135 ACRES

PRESENT SYSTEM:
650 GPM High PSI w/60' pumping level, 60 HP motor, Requires approx. 752 hours, consuming approx. 49.8 kwh. @ $.0672/kwh.
    Total energy cost per year --------------$2517.00

CONVERTING TO LOW PRESSURE:
850 GPM Low PSI w/60' pumping level, 40 HP motor, Requires approx. 576 hours, consuming approx. 33.2 kwh. @ $.0772/kwh. *
    Total energy cost per year -----------$1476.00

Annual Kw savings --------------------18326 kwh.
Annual cost savings ------------------$1041.

* Kw charge differs due to rate structure.
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES
Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: John A. Whitaker
   Address: R.R.3 Box 61
   Forest City, IA
   Zip Code: 64637
   County: Mason
   Telephone: (309) 968-6495

B. Applicant’s S.S. #: 354-38-4681

C. Electric Utility:
   Account #:

D. Gas Utility: Mason County Service Co.
   Account #: 134249-1

E. Describe the Energy Conservation Improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

   Plan is to Renewal to Irrigation System with Nelson Low Pressure Irrigation Sprinklers and Replace Valves From the Pump To Reduce the Pressure And Replace The Existing Engine And Generator With A More Efficient John Dewey Engine. The New Sprinklers Should Be 15% More Efficient In Water Distribution Than The Old High Pressure Sprinklers. Therefore Reducing The Total Runway Hours Per Year. Presently, the System Requires $3.20/Day Fuel Per Hour with Average Annual Use of 235.67 Hrs. This Should Be Reduced By 1.7 Gal Per Hour or 3.6 Gallon Per Hour.

   $ 9379.80

F. Total $ amount of improvements

G. Amount of grant requested (not to exceed 40% of line F or $4,000)

   $ 3751.62

H. Estimated start up date 3-12-90

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric (kWh)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conversion to Low Pressure System</td>
<td>9379.80</td>
<td>1402.5 GY/yr</td>
<td>100%</td>
<td>1402.5 GY/yr</td>
<td>6.68 yrs</td>
</tr>
</tbody>
</table>

   TOTAL

J. I/We hereby certify that:

   The information submitted above and on any attachments is correct to best of my knowledge.

I understand that: this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/We will be required to negotiate and sign a written contractual agreement with ENR outlining the grant procedures and schedules.

John A. Whitaker
Applicant’s Signature
Date 2-26-90
SALES CONTRACT
Central Illinois Insigation Co.
R.R. # 1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: John Whitaker
Address: R.R. # 3, Box 61, Forest City, Illinois 62532
Telephone No.: ____________________________

<table>
<thead>
<tr>
<th>Qty.</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>63500 John Deere engine, muffler, clutch</td>
<td>8000.00</td>
</tr>
<tr>
<td></td>
<td>oil sight gauge, pulleys, and muffler</td>
<td>8000.00</td>
</tr>
<tr>
<td>1</td>
<td>12kw Lima Generator</td>
<td>1700.00</td>
</tr>
<tr>
<td></td>
<td>Trade-in 471 Detroit engine</td>
<td>-2600.00</td>
</tr>
<tr>
<td></td>
<td>10 kw Lima Generator</td>
<td>-500.00</td>
</tr>
</tbody>
</table>

TOTAL: $6600.00

**TERMS OF PAYMENT**

% Down Payment: ____________

% Delivery Payment: ____________

% Completion Payment: ____________

SOLD BY: ______________________
CUSTOMER: ______________________

Date: ______________________
RENOZZEL 10 TOWER ZIMMATIC

3 DN PLASTIC IMPACT LOW PRESSURE $ 844.00
BOOSTER PUMP KIT 1375.00

TOTAL $2219.00

* * * * * * * * * * SPECIAL PRICE * * * * $1664.00

REGULATORS AND ALL SPRINKLERS 455.00
PULL AND REMOVE BOWLS FROM PUMP 660.00

TOTAL $2779.00

***NOTE****
ANY PUMP REPAIR WOULD BE EXTRA

TERMS: 10% DOWN
90% COMPLETED
ILLINOIS DEPARTMENT OF ENERGY AND NATURAL RESOURCES

Illinois Irrigation Energy Conservation Grant Program
Preliminary Program Application
(See reverse side for instructions)

Part I – To be completed by applicant.

A. Name: Todd A. Whitaker
   Address: N241 Box 24 Forrest City, IL

B. Applicant’s S.S.N.: 547-40-3572

C. Electric Utility:
   Account #: ____________________________

D. Gas Utility: Mason Co. Service Company
   Account #: ____________________________

E. Describe the Energy Conservation improvements planned. Please include all brand name and model #’s of any equipment purchased. (Attach copies of material estimates and/or contractors bids.)

F. Total $ amount of improvements $ 7,900

G. Amount of grant requested (not to exceed 40% of line F or $4,000) $ 2,800

H. Estimated start up date: ________ Estimated completion date: ________

I. Table of Annual Energy Savings Estimates

<table>
<thead>
<tr>
<th>Conservation Measures</th>
<th>Estimated Installation Cost</th>
<th>Electric ($/Wk)</th>
<th>Fossil Fuel</th>
<th>Total Dollar Savings</th>
<th>Simple Payback in Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>low pressure sprinklers</td>
<td>1,300</td>
<td>10%</td>
<td>10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2h.p. booster pump</td>
<td>1,200</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4299T JD less trade</td>
<td>4,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>diesel fuel oil</td>
<td>1080</td>
<td>39.06</td>
<td>1.10</td>
<td>1188</td>
<td>50</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,000</td>
<td></td>
<td></td>
<td>1.239</td>
<td>5.6</td>
</tr>
</tbody>
</table>

J. I/We hereby certify that:

The information submitted above and on any attachments is correct to the best of my knowledge.

I understand that this application in no way obligates the Department of Energy and Natural Resources to any financial commitment and, if approved, that I/we will be required to negotiate and sign a written contractual agreement with EWR outlining the grant procedures and schedules.

signature

Applicant’s Signature: ____________________________
Date: ________

IL428-0233
I plan on converting my twelve year old Zimmatic high pressure center pivot irrigation system to low pressure.

I will accomplish this by replacing the old high pressure sprinklers with low pressure, low profile Rainbird sprinklers. In addition a two horse power Berkeley booster pump will have to be added to the end gun to supply it with enough pressure to perform properly.

Steve Bitner from Central Illinois Irrigation Company, and myself have decided that we can slow the engine speed two to three hundred r.p.m. s to reach the desired decrease in pressure that is recommended.

With the new decrease in pressure the six cylinder model # 913 turbo charged Deutz dieself engine that is currently used is too big. Also the engine speed for the high pressure was two thousand r.p.m. 's. The engine speed would have to be reduced to seventeen to eighteen hundred r.p.m. 's. Deutz does not recommend running this engine below nineteen hundred r.p.m. 's. What looks like the best solution to this problem is a smaller and more efficient four cylinder John Deere 4239T turbo charged engine that is rated at seventy-five horse power at eighteen hundred r.p.m. 's.

The average yearly use of this irrigation system is six hundred hours. By replacing the old wore high pressure sprinklers with new low pressure, low profile sprinklers I should save at least ten percent running time. Using the ten percent figure that would decrease my average yearly hours by sixty.

By replacing the six cylinder Deutz with the smaller four cylinder John Deere and in addition to the lower horse power requirement of lower pressure I should recognize a savings of one and one half to two gallons of fuel per hour. And .063 Quarts of oil per hour. For my energy saving estimates below I will use the one and one half gallons of fuel savings.

If you have any further questions contact Todd at (309) 968-7709.
SALES CONTRACT
Central Illinois Irrigation Co.
R.R. & 1, Box 122
Havana, IL 62644
(309) 543-2776

Customer Name: Todd and Ed Whithaker
Address: R.R. & 3, Box 62, Forest City, IL 61532

<table>
<thead>
<tr>
<th>Qty</th>
<th>Item</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Set Low Pressure Sprinklers</td>
<td>1,300.00</td>
</tr>
<tr>
<td>1</td>
<td>2 HP Booster Pump</td>
<td>1,200.00</td>
</tr>
<tr>
<td>1</td>
<td>42397 John Deere w/ trailer</td>
<td>7,500.00</td>
</tr>
<tr>
<td>1</td>
<td>TRADE 913 Deutz w/ trailer</td>
<td>-3,000.00</td>
</tr>
</tbody>
</table>

TOTAL $7,000.00

TERMS OF PAYMENT

% Down Payment: __________
% Delivery Payment: __________
% Completion Payment: __________

SOLD BY: ____________________  CUSTOMER: ____________________
Date: ____________________
APPENDIX D

Copies of Signed Contracts with ENR
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,073.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, John Breedlove, certify that I received a grant of $2,073.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

[Signature]

[Date]
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Steven P. Brownlee, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Robert Cassens, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

__________________________  7-30-90
Robert Cassens              Signature    Date
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program require that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $660.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Robert Coleman, certify that I received a grant of $660.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature: Robert Coleman
Date: 8/25/90
NAME: Dave Didier

ADDRESS: 674 Meyers Rd.
          Amboy, IL

ZIP CODE: 61310

COUNTY: Lee

TELEPHONE NO: 815/857-3889

FEIN or S.S. NO: 324-50-7608

GRANT CONTRACT NO. SWR112

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,540.80 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Dave Didier, certify that I received a grant of $1,540.80 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature

Date: 7/15/15
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,339.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Doug Egan, certify that I received a grant of $2,339.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,520.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Tim Fanter, certify that I received a grant of $2,520.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature

Date
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,650.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Arthur E. Finch, certify that I received a grant of $2,650.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
NAME: Darvl Fornoff

ADDRESS: R.R. #1
           Bath, IL

ZIP CODE: 62617

COUNTY: Mason

TELEPHONE NO: 309/543-3207

FEIN or S.S. NO: 37-1151585

GRANT CONTRACT NO. SWRR 118

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $3,627.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Darvl Fornoff, certify that I received a grant of $3,627.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature Date
NAME: Randall R. Fornoff
ADDRESS: R.R. #1. Box 1
         Havana, IL
ZIP CODE: 62644
COUNTY: Mason
TELEPHONE NO: 309/543-3516
FEIN or S.S. NO: 325-50-6980
GRANT CONTRACT NO. SWRR117

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $3,760.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Randall R. Fornoff, certify that I received a grant of $3,760.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature: Randall R. Fornoff
Date: 6-11-90
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program require that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,288.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Keith Friedrich, certify that I received a grant of $1,288.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
NAME: Russell J. Friedrich
ADDRESS: R.R. 2
Havana, IL
ZIP CODE: 62644
COUNTY: Mason
TELEPHONE NO: (307) 535-2870
FEIN or S.S. NO: 345-30-5539
GRANT CONTRACT NO. SWRR 147

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,488 for the purchase of services and/or installation of equipment to modify your agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: Robert L. Garlisch

ADDRESS: R.R. 3. Box 60

               Forest City, IL

ZIP CODE: 61532

COUNTY: Mason

TELEPHONE NO: 309/968-7659

FEIN or S.S. NO: 329-42-1274

GRANT CONTRACT NO. SWRR 119

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,587.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Robert L. Garlisch, certify that I received a grant of $1,587.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

__________________________
Signature

__________________________
Date
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: Don Hahn
Hahn Farms, Inc.

ADDRESS: R.R. 1. Box 386
Havana, IL

ZIP CODE: 62644

COUNTY: Mason

TELEPHONE NO: 309/543-4660

FEIN or S.S. NO: 37-1186070

GRANT CONTRACT NO. SWRR 145

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,550.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Don Hahn, certify that I received a grant of $1,550.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Don Hahn
Signature

8/8/00
Date
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: Vernon Heve

ADDRESS: R.R. #1
Bath, IL

ZIP CODE: 62617

COUNTY: Mason

TELEPHONE NO: 309/546-2266

FEIN or S.S. NO: 336-32-2442

GRANT CONTRACT NO. SWRR 136

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $679.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Vernon Heve, certify that I received a grant of $679.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,704.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Ralph Kreiling, certify that I received a grant of $1,704.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature: Ralph Kreiling
Date: 6-11-90
NAME: Alan Landis

ADDRESS: 7112 Hickory Hills Rd.
          Rock Fall3. IL

ZIP CODE: 61071

COUNTY: Whiteside

TELEPHONE NO: 815/438-3871

FEIN or S.S. NO: 341-40-4313

GRANT CONTRACT NO. SWRR 135

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Alan Landis, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

______________________________  ______________________________
Signature                      Date
NAME: Alvin Landis
ADDRESS: 11109 Hoover Road
          Rock Falls, IL
ZIP CODE: 61071
COUNTY: Whiteside
TELEPHONE NO: 815-625-2414
FEIN or S.S. NO: 334-05-9219
GRANT CONTRACT NO. SWRR 138

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Alvin Landis, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature

Date
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: Marlin E. LeFevre

ADDRESS: 29580 Plautz Road
           Rock Falls, IL

ZIP CODE: 61071

COUNTY: Whiteside

TELEPHONE NO: 815/625-2723

FEIN or S.S. NO: 358-20-9846

GRANT CONTRACT NO. SWRR 134

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Marlin E. LeFevre, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

_________________________                     ________________
Signature                                      Date
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Edward Mead, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

[Signature]

[Date]
NAME: Thomas E. Mead

ADDRESS: 731 Walton Rd.

Amboy, IL

ZIP CODE: 61310

COUNTY: Lee

TELEPHONE NO: 815/857-2343

FEIN or S.S. NO: 318-44-7489

GRANT CONTRACT NO. SWRR 139

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Thomas E. Mead, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature

Date 6/25/90
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $1,512.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Marvin Miller, certify that I received a grant of $1,512.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
Darrell Pfeiffer

R.R.1

Forest City, IL

61532

Mason

309/597-2386

333-40-2289

SWRR114

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $3,998.40 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Darrell Pfeiffer, certify that I received a grant of $3,998.40 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature: ____________________________ Date: 6-14-90
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program require that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $3,998.40 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Dean Pfeiffer, certify that I received a grant of $3,998.40 for the purchase of services and installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

[Signature]  [Date]
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you receive a grant of $3,999.20 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Leo Pfeiffer, certify that I received a grant of $3,999.20 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature: ___________________________ Date: 6/14/90

Leo Pfeiffer
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Terry Poci, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
NAME: J.D. Proehl

ADDRESS: R.R. 1, Box 49
Manito, IL

ZIP CODE: 61546

COUNTY: Tazewell

TELEPHONE NO: 309/968-6780

FEIN or S.S. NO: 352-38-6467

GRANT CONTRACT NO. SWRR108

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program require that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $414.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, J.D. Proehl, certify that I received a grant of $414.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Signature

Date: June 25, 1990
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program require that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,486.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Kenneth Ringhouse, certify that I received a grant of $2,486.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: Doug Schmitt
ADDRES: 30788 Plautz Road
        Rock Falls, IL
ZIP CODE: 61071
COUNTY: Whiteside

TELEPHONE NO: 815/626-4449
FEIN or S.S. NO: 333-60-6024
GRANT CONTRACT NO. SWRR 142

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $4,000.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Doug Schmitt, certify that I received a grant of $4,000.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

[Signature]
[Date]
NAME:                      Loren A. Thomas

ADDRESS:                  R.R.2. Box 123
                          Havana, IL

ZIP CODE:                 62644

COUNTY:                   Mason

TELEPHONE NO:             309/535-3720

FEIN or S.S. NO:          350-24-5169

GRANT CONTRACT NO.        SWRR110

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $ 984.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I,            Loren A. Thomas         , certify that I received a grant of $ 984.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project, has been completed.

Signature:       Loren A. Thomas    Date: 6-11-90
NAME: Steve Vandike

ADDRESS: R.R. 1

Geneseo, IL

ZIP CODE: 61254

COUNTY: Henry

TELEPHONE NO: 344-40-7816

GRANT CONTRACT NO. SWRR 131

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,572.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Steve Vandike, certify that I received a grant of $2,572.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

Date 7/13/96

Signature
ILLINOIS IRRIGATION ENERGY CONSERVATION GRANT PROGRAM
SERVICE AND/OR INSTALLATION CERTIFICATION

NAME: John A. Whitaker
ADDRESS: R.R.3, Box 61
Forest City, IL
ZIP CODE: 61532
COUNTY: Mason
TELEPHONE NO: 309/968-6405
FEIN or S.S. NO: 354-28-4681
GRANT CONTRACT NO. SWRR122

Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $3,752.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, John A. Whitaker, certify that I received a grant of $3,752.00 for the purchase of services and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.

[Signature] 6-70-90
Recently you were approved for an energy conservation grant under the Illinois Irrigation Energy Conservation Grant Program. The federal rules concerning this program requires that you certify that the money you received was spent for the purchase and installation of the energy conservation measures indicated by your application.

Our records show that you received a grant of $2,800.00 to install equipment and/or purchase services as specified in your grant program application to the Illinois Irrigation Energy Conservation Grant Program.

I, Todd A. Whitaker, certify that I received a grant of $2,800.00 for the purchase of services (and/or installation of equipment to modify my agricultural irrigation system, and that no more than 40% of the project cost was financed by the proceeds of this grant. The services and/or installation of equipment for this project has been completed.