2 copies

MINI AUDIT

FOR THE

CITY OF BLOOMINGTON

rieke
carroll
muller
associates inc

architects
engineers
land surveyors
planners

MARCH, 1981

RCM JOB NO. 801704

Relates to 1983 Laws, ch 197, sec 5

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
10313 10th Avenue Circle		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Vensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:

Have you received a mini-audit grant before? [ ] Yes [X] No

Have you previously applied for mini-audit funding? [X] Yes [ ] No

Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:

Have you received a mini-audit grant before? [ ] Yes [ ] No

Have you previously applied for mini-audit funding? [ ] Yes [ ] No

Do you wish to apply for mini-audit funding? [ ] Yes [ ] No

The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, Minn. 55343
Address

612/935-6901
Phone

March 18, 1981
Date

March 18, 1981
Building Organizational Authority (Print or Type)

William W Jensen
Signature

March 18, 1871
Date

MINI-AUDIT STATEMENTS

I

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS DATA

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range	Annual Electrical Consumption	Range of Energy Savings	% Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings
lower bound	0 %	x 5052 kwh	= 0 kwh,	0 %	x $ 182.45	= $ 0
	to		to	to		to
upper bound	5 %	x 5052 kwh	= 252.6 kwh,	5 %	x $ 182.45	= $ 9.12

3

Building does not use any fuel

Range of Fuel Savings

	% Range	Annual Fuel Consumption	Range of Fuel Savings	% Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings
lower bound	_____ %	x _____ Btu	= _____ Btu,	_____ %	x $_____	= $_____
	to		to	to		to
upper bound	_____ %	x _____ Btu	= _____ Btu,	_____ %	x $_____	= $_____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad connections on a regular basis.			
3	1	2	Check alignment of motors to driven equipment and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	1	3	Instantaneous power factor reading was 95 note capacitors are installed.			
7	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
8	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
9	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
10	5	1	Review the records books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME: Lift Station - Sanitary Sewage		NAME OF ORGANIZATION: City of Bloomington	DATE: March 19, 1981
BUILDING ADDRESS: 5113 West 80th. Street		ADDRESS: 2215 West Old Shakopee Road	
CITY: Bloomington	ZIP CODE: 55431	CITY: Bloomington	ZIP CODE: 55431
PERSON COMPLETING FORM: Randy Smith	TELEPHONE: 935-6901	CONTACT PERSON: Arthur Jensen	TELEPHONE: 881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☑ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

ENERGY REPORT CHECK-OFF C

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

MINI-AUDIT STATEMENTS M

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, INc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612-935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc. Inc.
Scott Hutchins	Certified Technical Engr.	Rieke Carroll Muller Assoc. Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal Hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? _____ %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	_____ %	x	12974 kwh	=	0 kwh,	0 %	x	$ 441.95	=	$ 0
to					to	to				to
upper bound	_____ %	x	12974 kwh	=	648 kwh,	5 %	x	$ 441.95	=	$ 22.10

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to drive equipment, align and tighten as nec.			
5	1	2	Replace worn or defective motors with motors that are sized as close.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitators at motor terminals to correct the power factor at 90%.			
7	1	3	An instantaneous power factor reading was. 92.			
8	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
9	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
10	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
11	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION		DATE
Lift Station - Sanitary Sewage		City of Bloomington		3/18/81
BUILDING ADDRESS		**ADDRESS**		
2509 West 98th Street		2215 West Old Shakopee Road		
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**	
Bloomington	55431	Bloomington	55431	
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**	
Randy Smith	935-6901	Arthur Jensen	881-5811	

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
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3a. SCHOOLS
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   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
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   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc
Firm Name (if none, enter none)

P.O. Box 130
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	CET	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal Hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____ °

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? none

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	17202 kwh	=	0 kwh,	0 %	x	$ 608.35	=	$ 0
to					to	to				to
upper bound	5 %	x	17202 kwh	=	860 kwh,	5 %	x	$ 608.35	=	$ 30.42

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficeincy motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	1	3	An instantaneous power factor reading was .8.			
8	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
9	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
10	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
11	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
1701 West 106th. Street		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130, Hopkins, MN 55343
Address

612-935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Certified Electrical Tech.	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, lift station building

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Tar and Gravel

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☒ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Face Brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	75829 kwh	=	0 kwh,	to	0 %	x	$2229.28	=	$ 0
upper bound	5 %	x	75829 kwh	=	3791.5 kwh,	to	5 %	x	$2229.28	=	$ 111.46

3 Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	1	3	An instantaneous power factor reading was .87.			
8	2	2	Weatherstrip all exteriod doors.			
9	2	2	Replace an existing door with one of a higher R-value.			
10	2	8	Caulk around pipes, louvers, and other openings in the walls. Insulate walls with rigid insulation on inside surfaces.			
10	3	1	65°F maximum occupied, 60°F maximum unoccupied during the heating season.			
12	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage & shaft erosion.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
13	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
14	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
15	5	1	Review the record books on a regular basis.			
16	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
17	7	4	Check heater elements for cleanliness. Replace as necessary.			
18	7	4	Check controls for proper operation. Adjust as necessary.			
19	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
8350 West 106th Street		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- ☒ Public (PUB)
- ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
- ☐ County (CNTY)
- ☒ City (CITY)
- ☐ Township (TOWN)
- ☐ State (STAT)
- ☐ Public School (PUSC)
- ☐ Private School (PRSC)
- ☐ Non-Profit Association (NPAP)
- ☐ Indian Tribe (INDN)

3a. SCHOOLS
- ☐ Elementary (SCHL-ELM)
- ☐ Secondary (SCHL-SECD)
- ☐ Coll. or Univ. (SCHL-POST)
- ☐ Vocational (SCHL-VOCL)
- ☐ Education Agency (SCHL-ADMN)
- ☐ Administration (SCHL-ADMN)
- ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
- ☐ Nursing Home (PBCR-NURS)
- ☐ Long Term Care (PBCR-TERM)
- ☐ Rehab. Facility (PBCR-RHAB)
- ☐ Public Health Ctr. (PBCR-HCTR)
- ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- ☐ Office (LOCG-OFFC)
- ☐ Storage (LOCG-STRG)
- ☒ Service (LOCG-SERV)
- ☐ Library (LOCG-LBRY)
- ☐ Police (LOCG-PLCE)
- ☐ Fire (LOCG-FIRE)
- ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
- ☐ General (HOSP-GENL)
- ☐ Tuberculosis (HOSP TUBR)
- ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date 3-18-81

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Certified Electronic Technician	Rieke Carroll Muller Assoc, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete plank

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Tar and gravel

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☒ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

20% SAVINGS DATA

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	38080 kwh	=	0 kwh,	0 %	x	$ 1179.22	=	$ 0
to					to	to				to
upper bound	5 %	x	38080 kwh	=	1904 kwh,	5 %	x	$ 1179.22	=	$ 58.96

3

Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	2	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Eliminate excessive vibration.			
4	1	2	Lubricate motors to reduce wear and excessive torque.			
5	1	2	Replace worn bearings.			
6	1	2	Keep motors clean to make cooling easier.			
7	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
8	1	3	Instantaneous power factor reading was .85.			
9	1	4	Shade outdoor transformer banks from solar radiation.			
10	2	2	Weatherstrip all exterior doors.			
11	2	2	Replace an existing door with one of a higher R-valve.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
12	2	8	Caulk all cracks that allow air and moisture into the building.			
13	2	8	Insulate walls and ceiling with rigid insulation on inside surfaces.			
14	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
15	3	1	65°F maximum occupied, 60°F maximum unoccupied during the heating season.			
16	3	3	Make sure that all fans, frequently inoperative in unit heaters, fan coil units, and unit ventilators are running normally to increase the heat transfer rate from heating coils.			
17	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
18	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
19	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
20	5	1	Review the record books on a regular basis.			
21	7	4	Inspect electrical eontacts and work-parts of relays and maintain in good working order.			
22	7	4	Check heater elements for cleanliness. Replace as necessary.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
23	7	4	Check controls for proper operation. Adjust as necessary.			
24	7	4	Periodically tighten all electrical-mechanical connections to prevent			
			arcing and burning due to metal flow or loosening of terminal bolts or			
			lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
226 East 107th Street Circle		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. **OWNERSHIP TYPE**
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. **ULTIMATE OWNER**
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. **SCHOOLS**
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. **PUBLIC CARE**
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. **LOCAL GOVERNMENT**
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. **HOSPITALS**
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:

Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:

Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station, submersible pumps

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
None

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
None

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☐ No None
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) None

Is the roof of the building flat or pitched?
☐ flat ☐ pitched None

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☐ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings Indicate the unit of measure Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS DATA

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	1070 kwh	=	0 kwh,	0 %	x	$74.15	=	$ 0
to					to	to				to
upper bound	5 %	x	1070 kwh	=	53.5 kwh,	5 %	x	$74.15	=	$ 3.71

3

Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
4	1	3	Instantaneous power factor reading was .99. Note: Capacitors are installed.			
5	1	4	Shade outdoor control panel from solar radiation.			
6	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
7	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION		DATE
Lift Station - Sanitary Sewage		City of Bloomington		2/18/81
BUILDING ADDRESS		**ADDRESS**		
9130 East Bush Lake Road		2215 West Old Shakopee Road		
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**	
Bloomington	55431	Bloomington	55431	
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**	
Randy Smith	935-6901	Arthur Jensen	881-5811	

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:

Have you received a mini-audit grant before? ☐ Yes ☒ No

Have you previously applied for mini-audit funding? ☒ Yes ☐ No

Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:

Have you received a mini-audit grant before? ☐ Yes ☐ No

Have you previously applied for mini-audit funding? ☐ Yes ☐ No

Do you wish to apply for mini-audit funding? ☐ Yes ☐ No

The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00444-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not save at least 20% of the building's energy consumption as specified in section I. (did, did not)

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not be the subject of a maxi-audit. (should, should not)

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc., Inc.

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal cover

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

20% SAVINGS DATA

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☒ 5% ☒ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	537 kwh	=	0 kwh,	0 %	x	$ 89.28	=	$ 0
to					to	to				to
upper bound	5 %	x	537 kwh	=	26.9 kwh,	5 %	x	$ 89.28	=	$ 4.46

3

Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

F NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	1	3	Instantaneous power factor reading was .80.			
7	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
8	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
9	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of effieiency of the building. These records will indicate the impact of energy conservation measures.			
10	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION		DATE
Lift Station - Sanitary Sewage		City of Bloomington		3-18-81
BUILDING ADDRESS		**ADDRESS**		
8400 Chalet Road		2215 West Old Shakopee Road		
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**	
Bloomington	55431	Bloomington	55431	
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**	
Randy Smith	935-6901	Arthur Jensen	881-5811	

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this Should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not)
undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130, Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc. Inc.
Scott Hutchins	Certified Electrical Tech.	Rieke Carroll Muller Assoc, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Wood Beams

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Shingles

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☑ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☑ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☑ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☐ flat ☑ pitched

If pitched, what is the compass orientation of the ridgeline? East-West

If pitched, what is the angle that the roof makes with horizontal? 70 °

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Shingles

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☑ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	60525 kwh	=	0 kwh,	0 %	x	$ 1784.53	=	$ 0
to					to	to				to
upper bound	5 %	x	60525 kwh	=	3026 kwh,	5 %	x	$ 1784.53	=	$ 89.23

3 Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	1	3	An instantaneous power factor reading was .80.			
8	2	2	Weatherstrip all exterior doors.			
9	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
10	3	1	65°F maximum occupied, 60°F maximum unoccupied during the heating season.			
11	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
12	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
13	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
14	5	1	Review the record books on a regular basis.			
15	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
16	7	4	Check heater elements for cleanliness. Replace as necessary.			
17	7	4	Check controls for proper operation. Adjust as necessary.			
18	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
11200 France Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Johnson
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc., Inc.

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal cover

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	3246 kwh	=	0 kwh,	0 %	x	$ 114.83	=	$ 0
	to				to	to				to
upper bound	5 %	x	3246 kwh	=	162.3 kwh,	5 %	x	$ 114.83	=	$ 5.74

3 Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____
	to				to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine maintenance schedule.			

Note: Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motors terminals to correct the power factor to 90%.			
6	1	3	Instantaneous power factor reading was .70.			
7	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
8	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
9	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
10	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
11011 Glen Wilding Lane		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- ☒ Public (PUB)
- ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
- ☐ County (CNTY)
- ☒ City (CITY)
- ☐ Township (TOWN)
- ☐ State (STAT)
- ☐ Public School (PUSC)
- ☐ Private School (PRSC)
- ☐ Non-Profit Association (NPAP)
- ☐ Indian Tribe (INDN)

3a. SCHOOLS
- ☐ Elementary (SCHL-ELM)
- ☐ Secondary (SCHL-SECD)
- ☐ Coll. or Univ. (SCHL-POST)
- ☐ Vocational (SCHL-VOCL)
- ☐ Education Agency (SCHL-ADMN)
- ☐ Administration (SCHL-ADMN)
- ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
- ☐ Nursing Home (PBCR-NURS)
- ☐ Long Term Care (PBCR-TERM)
- ☐ Rehab. Facility (PBCR-RHAB)
- ☐ Public Health Ctr. (PBCR-HCTR)
- ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- ☐ Office (LOCG-OFFC)
- ☐ Storage (LOCG-STRG)
- ☒ Service (LOCG-SERV)
- ☐ Library (LOCG-LBRY)
- ☐ Police (LOCG-PLCE)
- ☐ Fire (LOCG-FIRE)
- ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
- ☐ General (HOSP-GENL)
- ☐ Tuberculosis (HOSP-TUBR)
- ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
- Have you received a mini-audit grant before? ☐ Yes ☒ No
- Have you previously applied for mini-audit funding? ☒ Yes ☐ No
- Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
- Have you received a mini-audit grant before? ☐ Yes ☐ No
- Have you previously applied for mini-audit funding? ☐ Yes ☐ No
- Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
- The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc. Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station.

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal hatch

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☒ other (specify) Round

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	2622 kwh	=	0 kwh,		0 %	x	$ 95.27	=	$ 0
	to				to		to				to
upper bound	5 %	x	2622 kwh	=	13.11 kwh,		5 %	x	$ 95.27	=	$ 4.76

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$_____	=	$_____
	to				to		to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor 90%.			
6	1	2	Note motors are overloaded thus causing poor instantaneous power factor readings of pump 1 .74 - pump 2 .64.			
7	3	3	Inspect air compressor intake filter pads and clean or replace as necessary.			
8	3	3	Check the compressor's oil level.			
9	5	1	Keep records of the operating schedule monthly energy consumption and purchase on any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impcat of energy conservation measures.			
10	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME	NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage	City of Bloomington	2/18/81

BUILDING ADDRESS	ADDRESS
11101 Hampshire Avenue South	2215 West Old Shakopee Road

CITY	ZIP CODE	CITY	ZIP CODE
Bloomington	55431	Bloomington	55431

PERSON COMPLETING FORM	TELEPHONE	CONTACT PERSON	TELEPHONE
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:

Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:

Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

☐ Elementary School Energy Report (Form No. ED-00444-02)
☐ Secondary School Energy Report (Form No. ED-00445-02)
XX Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

L NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Eliminate excessive vibration.			
4	1	2	Lubricate motors to reduce wear and excessive torque.			
5	1	2	Replace worn bearings.			
6	1	2	Keep motors clean to make cooling easier.			
7	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
8	1	3	Instantaneous power factor reading was .76.			
9	1	4	Shade outdoor transformer banks from solar radiation.			
10	2	2	Weatherstrip all exterior doors.			
11	2	2	Replace an existing door with one of a higher R-valve.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
12	2	8	Caulk all cracks that allow air and moisture into the building.			
13	2	8	Insulate walls and ceiling with rigid insulation on inside surfaces.			
14	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
15	3	1	65°F maximum occupied, 60°F maximum unoccupied during the heating season.			
16	3	3	Make sure that all fans, frequently inoperative in unit heaters, fan coil units, and unit ventilators are running normally to increase the heat transfer rate from heating coils.			
17	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
18	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
19	5	1	Keep records of the operating shcedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
20	5	1	Review the record books on a regular basis.			
21	7	4	Inspect electrical contacts and workparts of relays and maintain in good working order.			
22	7	4	Check heater elements for cleanliness. Replace as necessary.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
23	7	4	Check controls for proper operation. Adjust as necessary.			
24	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
212 Mission Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- [X] Public (PUB)
- [ ] Non-Profit Association (NAP)

2 ULTIMATE OWNER
- [ ] County (CNTY)
- [X] City (CITY)
- [ ] Township (TOWN)
- [ ] State (STAT)
- [ ] Public School (PUSC)
- [ ] Private School (PRSC)
- [ ] Non-Profit Association (NPAP)
- [ ] Indian Tribe (INDN)

3a. SCHOOLS
- [ ] Elementary (SCHL-ELM)
- [ ] Secondary (SCHL-SECD)
- [ ] Coll. or Univ. (SCHL-POST)
- [ ] Vocational (SCHL-VOCL)
- [ ] Education Agency (SCHL-ADMN)
- [ ] Administration (SCHL-ADMN)
- [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
- [ ] Nursing Home (PBCR-NURS)
- [ ] Long Term Care (PBCR-TERM)
- [ ] Rehab. Facility (PBCR-RHAB)
- [ ] Public Health Ctr. (PBCR-HCTR)
- [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- [ ] Office (LOCG-OFFC)
- [ ] Storage (LOCG-STRG)
- [X] Service (LOCG-SERV)
- [ ] Library (LOCG-LBRY)
- [ ] Police (LOCG-PLCE)
- [ ] Fire (LOCG-FIRE)
- [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
- [ ] General (HOSP-GENL)
- [ ] Tuberculosis (HOSP-TUBR)
- [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:

Have you received a mini-audit grant before? [ ] Yes [X] No

Have you previously applied for mini-audit funding? [X] Yes [ ] No

Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date 3-18-81

Name Arthur Jensen

Signature Arthur W. Jensen

If eligible for Federal funding only:

Have you received a mini-audit grant before? [ ] Yes [ ] No

Have you previously applied for mini-audit funding? [ ] Yes [ ] No

Do you wish to apply for mini-audit funding? [ ] Yes [ ] No

The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- XX Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

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I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Certified Electrical Technician	Rieke Carroll Muller Assoc. Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal hatch

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☒ other (specify) Round

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☐ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

20% SAVINGS DATA

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	22334 kwh	=	0 kwh,	0 %	x	$ 798.87	=	$ 0
to					to	to				to
upper bound	5 %	x	22334 kwh	=	1116.7 kwh,	5 %	x	$ 798.87	=	$ 39.94

3

Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schedule.			

Note: Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors use capacitors at motor terminals to correct the power factor to 90%.			
6	1	3	Instantaneous power factor reading was .86.			
7	3	3	Check for packing wear which can cause excessive water wastage and shaft erosion.			
8	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
9	5	1	Keep records of the operating schedule, monthly energy consumption and purchase on any new equipment that affects energy comsumption of the building. These records will indicate the impact of energy conservation measures.			
10	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	March 19, 1981
BUILDING ADDRESS		**ADDRESS**	
8915 Newton Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612-935-6901
Phone

March 18, 1981
Date

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc. Inc.
Scott Hutchins	Certified Technical Engineer	Rieke Carroll Muller Assoc. Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal Hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	_____ %	x	2592 kwh	=	0 kwh,	0 %	x	$ 94.13	=	$ 0
to					to	to				to
upper bound	_____ %	x	2592 kwh	=	129 kwh,	5 %	x	$ 94.13	=	$ 4.71

3

Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to drive equipment, align and tighten as nec.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitators at motor terminals to correct the power factor at 90%.			
7	1	3	An instantaneous power factor reading was .63			
8	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
9	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
10	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
11	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	March 17, 1981
BUILDING ADDRESS		**ADDRESS**	
4516 Overlook Drive		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- [X] Public (PUB)
- [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
- [ ] County (CNTY)
- [X] City (CITY)
- [ ] Township (TOWN)
- [ ] State (STAT)
- [ ] Public School (PUSC)
- [ ] Private School (PRSC)
- [ ] Non-Profit Association (NPAP)
- [ ] Indian Tribe (INDN)

3a. SCHOOLS
- [ ] Elementary (SCHL-ELM)
- [ ] Secondary (SCHL-SECD)
- [ ] Coll. or Univ. (SCHL-POST)
- [ ] Vocational (SCHL-VOCL)
- [ ] Education Agency (SCHL-ADMN)
- [ ] Administration (SCHL-ADMN)
- [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
- [ ] Nursing Home (PBCR-NURS)
- [ ] Long Term Care (PBCR-TERM)
- [ ] Rehab. Facility (PBCR-RHAB)
- [ ] Public Health Ctr. (PBCR-HCTR)
- [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- [ ] Office (LOCG-OFFC)
- [X] Storage (LOCG-STRG)
- [X] Service (LOCG-SERV)
- [ ] Library (LOCG-LBRY)
- [ ] Police (LOCG-PLCE)
- [ ] Fire (LOCG-FIRE)
- [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
- [ ] General (HOSP-GENL)
- [ ] Tuberculosis (HOSP-TUBR)
- [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.

I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy J Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	RCM
Scott Hutchins	Elec. Technician	RCM
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, lift station built into hill

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
none

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Contrete plank

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Earth

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☒ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____ °

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	17120 kwh	=	0 kwh,	to	0 %	x	$ 628.40	=	$ 0
upper bound	5 %	x	17120 kwh	=	856 kwh,	to	5 %	x	$ 628.40	=	$ 31.42

3

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	2	1	Insulated ceiling			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	2	2	Weatherstrip all exterior doors.			
7	2	2	Replace an existing door with one of higher R-value.			
8	2	8	Caulk all cracks that allow air and moisture into the building.			
9	3	1	65°F maximum occupied, 60°F maximum unocupied during ghe heating season.			
10	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
11	5	1	Keep records of the operating schedule, monthly energy consumption and purchase			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
			of any new equipment that affects energy consumption of efficiency of			
			the building. These records will indicate the impact of energy conser-			
			vation measures.			
12	5	1	Review the record books on a regular			
			basis.			
13	7	4	Inspect electrical contacts and working parts of relays and maintain in			
			good working order.			
14	7	4	Check heater elements for cleanliness. Replace as necessary.			
15	7	4	Check controls for proper operation. Adjust as necessary.			
16	7	4	Periodically tighten all electrical-mechanical connections to prevent			
			arcing and burning due to metal flow or loosening of terminal bolts or			
			lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	3-19-81
BUILDING ADDRESS		**ADDRESS**	
4801 Nine Mile Creek Parkway		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	05431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

M MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates, Inc.
Scott Hutchins	Certified Technical Engr.	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal Hatch

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☒ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? _____ %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	22763 kwh	=	0 kwh,		0 %	x	$ 812.36	-	$ 0
	to				to		to				to
upper bound	5 %	x	22763 kwh	=	1138 kwh,		5 %	x	$ 812.36	=	$ 40.62

3 Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$_____	=	$_____
	to				to		to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible. Use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitators at motor terminals to correct the power factor at 90%.			
7	1	2	An instantaneous power factor reading was .84.			
8	3	3	Check for packing wear chich can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
9	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
10	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
11	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
5050 West Old Shakopee Road		2215 West Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- ☒ Public (PUB)
- ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
- ☐ County (CNTY)
- ☒ City (CITY)
- ☐ Township (TOWN)
- ☐ State (STAT)
- ☐ Public School (PUSC)
- ☐ Private School (PRSC)
- ☐ Non-Profit Association (NPAP)
- ☐ Indian Tribe (INDN)

3a. SCHOOLS
- ☐ Elementary (SCHL-ELM)
- ☐ Secondary (SCHL-SECD)
- ☐ Coll. or Univ. (SCHL-POST)
- ☐ Vocational (SCHL-VOCL)
- ☐ Education Agency (SCHL-ADMN)
- ☐ Administration (SCHL-ADMN)
- ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
- ☐ Nursing Home (PBCR-NURS)
- ☐ Long Term Care (PBCR-TERM)
- ☐ Rehab. Facility (PBCR-RHAB)
- ☐ Public Health Ctr. (PBCR-HCTR)
- ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- ☐ Office (LOCG-OFFC)
- ☐ Storage (LOCG-STRG)
- ☒ Service (LOCG-SERV)
- ☐ Library (LOCG-LBRY)
- ☐ Police (LOCG-PLCE)
- ☐ Fire (LOCG-FIRE)
- ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
- ☐ General (HOSP-GENL)
- ☐ Tuberculosis (HOSP TUBR)
- ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not)
undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc., Inc.

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal cover

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	5360 kwh	=	0 kwh,	0 %	x	$ 191.08	=	$ 0
to					to	to				to
upper bound	5 %	x	5360 kwh	=	268 kwh,	5 %	x	$ 191.08	=	$ 9.55

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note: Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
7	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
8	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of effieiency of the building. These records will indicate the impact of energy conservation measures.			
9	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
9510 Riverview Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- ☒ Public (PUB)
- ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
- ☐ County (CNTY)
- ☒ City (CITY)
- ☐ Township (TOWN)
- ☐ State (STAT)
- ☐ Public School (PUSC)
- ☐ Private School (PRSC)
- ☐ Non-Profit Association (NPAP)
- ☐ Indian Tribe (INDN)

3a. SCHOOLS
- ☐ Elementary (SCHL-ELM)
- ☐ Secondary (SCHL-SECD)
- ☐ Coll. or Univ. (SCHL-POST)
- ☐ Vocational (SCHL-VOCL)
- ☐ Education Agency (SCHL-ADMN)
- ☐ Administration (SCHL-ADMN)
- ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
- ☐ Nursing Home (PBCR-NURS)
- ☐ Long Term Care (PBCR-TERM)
- ☐ Rehab. Facility (PBCR-RHAB)
- ☐ Public Health Ctr. (PBCR-HCTR)
- ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- ☐ Office (LOCG-OFFC)
- ☐ Storage (LOCG-STRG)
- ☒ Service (LOCG-SERV)
- ☐ Library (LOCG-LBRY)
- ☐ Police (LOCG-PLCE)
- ☐ Fire (LOCG-FIRE)
- ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
- ☐ General (HOSP-GENL)
- ☐ Tuberculosis (HOSP-TUBR)
- ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
- Have you received a mini-audit grant before? ☐ Yes ☒ No
- Have you previously applied for mini-audit funding? ☒ Yes ☐ No
- Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
- Have you received a mini-audit grant before? ☐ Yes ☐ No
- Have you previously applied for mini-audit funding? ☐ Yes ☐ No
- Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
- The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Clifton W Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station, submersible pumps

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
None

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
None

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☐ No None
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) None

Is the roof of the building flat or pitched?
☐ flat ☐ pitched None

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☐ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions. Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	1109 kwh	=	0 kwh,	to	0 %	x	$ 76.74	=	$ 0
upper bound	5 %	x	1109 kwh	=	55.5 kwh,	to	5 %	x	$ 76.74	=	$ 3.84

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$ _____	=	$ _____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest effieiency motors available. Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
4	1	3	Instantaneous power factor reading was .97. Note: Capacitors are installed.			
5	1	4	Shade outdoor control panel from solar radiation.			
6	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
7	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Sanitary Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
11661 Palmer Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W. Jensen
Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc., Inc.

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal cover

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings -- ☐ 0% ☐ 5% ☒ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	4110 kwh	=	0 kwh,	0 %	x	$ 155.02	=	$ 0
to					to	to				to
upper bound	5 %	x	4110 kwh	=	205.5 kwh,	5 %	x	$ 155.02	=	$ 7.75

3 Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motors terminals to correct the power factor to 90%.			
6	1	3	Instantaneous power factor reading was .92.			
7	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
8	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
9	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
10	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station - Storm Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
11220 France Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- ☒ Public (PUB)
- ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
- ☐ County (CNTY)
- ☒ City (CITY)
- ☐ Township (TOWN)
- ☐ State (STAT)
- ☐ Public School (PUSC)
- ☐ Private School (PRSC)
- ☐ Non-Profit Association (NPAP)
- ☐ Indian Tribe (INDN)

3a. SCHOOLS
- ☐ Elementary (SCHL-ELM)
- ☐ Secondary (SCHL-SECD)
- ☐ Coll. or Univ. (SCHL-POST)
- ☐ Vocational (SCHL-VOCL)
- ☐ Education Agency (SCHL-ADMN)
- ☐ Administration (SCHL-ADMN)
- ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
- ☐ Nursing Home (PBCR-NURS)
- ☐ Long Term Care (PBCR-TERM)
- ☐ Rehab. Facility (PBCR-RHAB)
- ☐ Public Health Ctr. (PBCR-HCTR)
- ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- ☐ Office (LOCG-OFFC)
- ☐ Storage (LOCG-STRG)
- ☒ Service (LOCG-SERV)
- ☐ Library (LOCG-LBRY)
- ☐ Police (LOCG-PLCE)
- ☐ Fire (LOCG-FIRE)
- ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
- ☐ General (HOSP-GENL)
- ☐ Tuberculosis (HOSP-TUBR)
- ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding, then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130 Hopkins, MN 55343
Address

612/935-6901
Phone

March, 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Art Parvey		City of Bloomington
Scott Hutchins	Electrical Technician	Rieke Carroll Muller Assoc., Inc.

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground lift station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete with metal cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Metal cover

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

20% SAVINGS DATA

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☒ 5% ☒ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	13836 kwh	=	0 kwh,	to	0 %	x	$ 561.73	=	$ 0
upper bound	5 %	x	13836 kwh	=	691.8 kwh,	to	5 %	x	$ 561.36	=	$ 28.09

3

Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$ _____	=	$ _____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$ _____	=	$ _____

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
6	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
7	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
8	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
9	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Lift Station-Storm Sewage		City of Bloomington	2/18/81
BUILDING ADDRESS		**ADDRESS**	
5130 West Old Shakopee Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1 OWNERSHIP TYPE
- [X] Public (PUB)
- [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
- [ ] County (CNTY)
- [X] City (CITY)
- [ ] Township (TOWN)
- [ ] State (STAT)
- [ ] Public School (PUSC)
- [ ] Private School (PRSC)
- [ ] Non-Profit Association (NPAP)
- [ ] Indian Tribe (INDN)

3a. SCHOOLS
- [ ] Elementary (SCHL-ELM)
- [ ] Secondary (SCHL-SECD)
- [ ] Coll. or Univ. (SCHL-POST)
- [ ] Vocational (SCHL-VOCL)
- [ ] Education Agency (SCHL-ADMN)
- [ ] Administration (SCHL-ADMN)
- [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
- [ ] Nursing Home (PBCR-NURS)
- [ ] Long Term Care (PBCR-TERM)
- [ ] Rehab. Facility (PBCR-RHAB)
- [ ] Public Health Ctr. (PBCR-HCTR)
- [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
- [ ] Office (LOCG-OFFC)
- [ ] Storage (LOCG-STRG)
- [X] Service (LOCG-SERV)
- [ ] Library (LOCG-LBRY)
- [ ] Police (LOCG-PLCE)
- [ ] Fire (LOCG-FIRE)
- [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
- [ ] General (HOSP-GENL)
- [ ] Tuberculosis (HOSP-TUBR)
- [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date March 18, 1981

Name Arthur Jensen

Signature Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date _____

Name _____

Signature _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☐ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources waste wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

I 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	33608 kwh	=	0 kwh,	to	0 %	x	$1076.95	=	$ 0
upper bound	5 %	x	33608 kwh	=	1680 kwh,	to	5 %	x	$1076.95	=	$ 53.85

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$_____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule			

Note: Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular bases.			
3	1	2	Check alignment of motors to driven equipment, align and tighten as necessary			
4	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
5	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%			
6	3	1	65^{O}F maximum occupied, 60^{O}F maximum.			
6	3	3	Check for packing wear which can cause excessive water wastage and shaft erosion.			
7	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
8	5	1	Keep records of the operations schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
9	5	1	Review the record books on a regular basis.			
10	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
11	7	4	Check heater elements for cleanliness. Replace as necessary.			
12	7	4	Check controls for proper operation. Adjust as necessary.			
13	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Metering Station - Water		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
6000 Knox Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130, Hopkins, MN 55434
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates, Inc.
Scott Hutchins	Certified Technical Engineer	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground metering station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete, Manhole Cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Asphalt Road

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☒ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____ °

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☒ Other (specify) Underground

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

20% SAVINGS DATA

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	5737 kwh	=	0 kwh,		0 %	x	$ 277.28	=	$ 0
to					to		to				to
upper bound	5 %	x	5737 kwh	=	286 kwh,		5 %	x	$ 277.28	=	$ 13.86

3

Building does not use any fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	%	x	Btu	=	Btu,		%	x	$	=	$
to					to		to				to
upper bound	%	x	Btu	=	Btu,		%	x	$	=	$

SAVINGS ESTIMATION

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schudule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitators at motor terminals to correct the power factor to 90%.			
7	5	1	Keep records of the operating schedule, energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
8	5	1	Review the record books on a regular basis.			
9	7	4	Inspect electrical contacts and working parts of relays and maintain a good working order.			
10	7	4	Check heater elements for cleanliness. Replace as necessary.			
11	7	4	Check controls for proper operation. Adjust as necessary.			
12	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

L NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
12	7	4	(contd) or loosening of terminal			
			bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Metering Station - Water		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
6001 Oliver Avenue South		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130, Hopkins, MN 55343
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates, Inc.
Scott Hutchins	Certified Engineering Tech.	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground metering station

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
concrete, manhole cover

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Asphalt Road

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☐ Yes ☒ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No None

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☒ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? None

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☒ Other (specify) underground

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	6302	kwh =	0	kwh,	0 %	x	$ 302.95		$ 0
	to				to		to				to
upper bound	5 %	x	6302	kwh =	315	kwh,	5 %	x	$ 302.95	=	$ 15.15

3 Building does not use any fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$ _____	=	$ _____
	to				to		to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine Maintenance Schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitatros at motor terminals to correct the power factor to 90%.			
7	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
8	5	1	Review the record books on a regular basis.			
9	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
10	7	4	Check heater elements for cleanliness. Replace as necessary.			
11	7	4	Check controls for proper operation. Adjust as necessary.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
12	7	4	Periodically tighten all electrical-			
			mechanical connections to prevent			
			arcing and burning due to metal			
			flow or loosening of terminal bolts			
			or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Pump House - Well #1		City of Bloomington	3/18/81
BUILDING ADDRESS		**ADDRESS**	
9302 Poplar Bridge Road		2215 West Old Shakopp Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

T

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Witnessed by:

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612-935-6901
Phone

March 18, 1981
Date

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Audtior	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	CET	Rieke Carroll Muller Assoc, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, well house

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Tar and gravel.

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☒ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1

Check two boxes in each category —

Range of Electrical Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2

Calculate ranges of energy and cost savings — Billing is included with water treatment plant.

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	_____ %	x	_____ kwh	=	_____ kwh,	_____ %	x	$ _____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ kwh	=	_____ kwh,	_____ %	x	$ _____	=	$ _____

3

Building does not use fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

L NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for llose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	2	1	Add insulation to ceiling and hatch.			
8	2	2	Weatherstrip all exterior doors.			
9	2	8	Insulate walls with rigid insulation on inside.			
10	3	1	Check the calibration on all controllers and devices for proper settings and operations.			
11	3	3	Check for packing wear which cna cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
12	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
13	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
14	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation meausres.			
15	5	1	Review the record books on a regular basis.			
16	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
17	7	4	Check heater elements for cleanliness. Replace as necessary.			
18	7	4	Check controls for proper operation. Adjust as necessary.			
19	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Pump House - Well #2		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
9320 Poplar Bridge Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: 3-18-81

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

M

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

3-18-81
Date

Witnessed by:

Asst. Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

3-18-81
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	RCM
Scott Hutchins	CET	RCM
Art Parvey	City of Bloomington	

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, well house

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
none

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
tar and gravel

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☒ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded 50 %
% of south facing wall unshaded 50 %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	1034711 kwh	=	0 kwh,	to	0 %	x	$25321.68	-	$ 0
upper bound	5 %	x	1034711 kwh	=	51735 kwh,	to	5 %	x	$25321.68	=	$ 1266.08

3 Building does not use fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	3	Check alignment of motors to driven equipment, align tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	2	1	Add insulation to ceiling and hatch.			
8	2	2	Weatherstrip all exterior doors.			
9	2	8	Insulate walls with rigid insulation on inside.			
10	3	1	Check the calibration on all controllers and devices for proper settings and operations.			
11	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
12	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
13	3	3	Inspect damper blades and linkages. Clean,oil and adjust.			
14	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
15	5	1	Review the record books on a regular basis.			
16	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
17	7	4	Check heater elements for cleanliness. Replace as necessary.			
18	7	4	Check controls for proper operation. Adjust as necessary.			
19	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Pump House - Well #3		City of Bloomington	3/18/81
BUILDING ADDRESS		**ADDRESS**	
9141 Normandale Boulevard		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

M

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 2.06
Signature

Rieke Carroll Muller Assoc., Inc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612-935-6901
Phone

3-19-81
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Assoc., Inc.
Scott Hutchins	CET	Rieke Carroll Muller Assoc., Inc
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, well house

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Tar and gravel

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☒ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded 50 %
% of south facing wall unshaded 50 %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	551105 kwh	=	0 kwh,	to	0 %	x	$14136.57	=	$ 0
upper bound	5 %	x	551105 kwh	=	27555 kwh,	to	5 %	x	$14136.57	=	$ 706.83

3 Building does not use fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$_____
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	to	_____ %	x	$_____	=	$_____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Eliminate excessive vibration.			
4	1	2	Lubricate motors to reduce wear and excessive torque.			
5	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
6	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
7	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
8	1	3	An instantaneous power factor reading was .87.			
9	2	1	Add insulation to ceiling and hatch.			
10	2	2	Weatherstrip all exterior doors.			
11	2	8	Insulate walls with rigid insulation on inside surfaces.			
12	3	1	Check the calibaration of all controllers and devices for proper settings and			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

F NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
			operations.			
13	3	3	Check for packing wear which can cause excessive leakage. Repack to avoid excessive water wastage and shaft erosion.			
14	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
15	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
16	5	1	Keep records of the operating schedule monthly, energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
17	5	1	Review the record books on a regular basis.			
18	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
19	7	4	Check heater elements for cleanliness. Replace as necessary.			
20	7	4	Check controls for proper operation. Adjust as necessary.			
21	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Pump House - Well #4		City of Bloomington	3/18/81
BUILDING ADDRESS		**ADDRESS**	
9301 Collegeview Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - ☒ Public (PUB)
   - ☐ Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - ☐ County (CNTY)
   - ☒ City (CITY)
   - ☐ Township (TOWN)
   - ☐ State (STAT)
   - ☐ Public School (PUSC)
   - ☐ Private School (PRSC)
   - ☐ Non-Profit Association (NPAP)
   - ☐ Indian Tribe (INDN)

3a. SCHOOLS
   - ☐ Elementary (SCHL-ELM)
   - ☐ Secondary (SCHL-SECD)
   - ☐ Coll. or Univ. (SCHL-POST)
   - ☐ Vocational (SCHL-VOCL)
   - ☐ Education Agency (SCHL-ADMN)
   - ☐ Administration (SCHL-ADMN)
   - ☐ OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - ☐ Nursing Home (PBCR-NURS)
   - ☐ Long Term Care (PBCR-TERM)
   - ☐ Rehab. Facility (PBCR-RHAB)
   - ☐ Public Health Ctr. (PBCR-HCTR)
   - ☐ Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - ☐ Office (LOCG-OFFC)
   - ☐ Storage (LOCG-STRG)
   - ☒ Service (LOCG-SERV)
   - ☐ Library (LOCG-LBRY)
   - ☐ Police (LOCG-PLCE)
   - ☐ Fire (LOCG-FIRE)
   - ☐ OTHER (LOCG-OTHR)

d. HOSPITALS
   - ☐ General (HOSP-GENL)
   - ☐ Tuberculosis (HOSP-TUBR)
   - ☐ OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? ☐ Yes ☒ No
Have you previously applied for mini-audit funding? ☒ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☒ No

Date: March 18, 1981

Name: Arthur Jensen

Signature: Arthur A. Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? ☐ Yes ☐ No
Have you previously applied for mini-audit funding? ☐ Yes ☐ No
Do you wish to apply for mini-audit funding? ☐ Yes ☐ No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. I am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller Associates, Inc.
Firm Name (if none, enter none)

P.O. Box 130
Address

612/935-6901
Phone

March 18, 1981
Date

Witnessed by:

Assistant Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

March 18, 1981
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	Rieke Carroll Muller Associates, Inc.
Scott Hutchins	CET	Rieke Carroll Muller Associates, Inc.
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, well house

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
None

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
Concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Tar and gravel

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☒ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded 10 %
% of south facing wall unshaded 10 %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? Face brick

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☒ Yes ☐ No

If the space heating equipment is inside the building, where is it located?
☒ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No None

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR — Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	187262 kwh	=	0 kwh,		0 %	x	$ 4765.81 *		$ 0
	to				to		to				to
upper bound	5 %	x	187262 kwh	=	9363 kwh,		5 %	x	$ 4765.81 *	=	$ 238.29

3 Building does not use fuel.

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$ _____	=	$ _____
	to				to		to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,		_____ %	x	$ _____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

* Note: This figure is for 4 months.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintenance schedule.			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO.		NEW MINI-AUDIT OPPORTUNITIES	OPTIONAL: ENERGY SAVINGS	OPTIONAL: ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	1	1	Keep all controls free of dust.			
2	1	2	Look for loose connections and bad contacts on a regular basis.			
3	1	2	Lubricate motors to reduce wear and excessive torque.			
4	1	2	Check alignment of motors to driven equipment, align and tighten as necessary.			
5	1	2	Replace worn or defective motors with motors that are sized as close to the load as possible and use the highest efficiency motors available.			
6	1	2	Where it is impractical to replace motors which have low loads and power factors, use capacitors at motor terminals to correct the power factor to 90%.			
7	1	2	Capacitors are overheated and should be checked.			
8	2	1	Add insulation to ceiling and hatch.			
9	2	2	Weatherstrip all exterior doors. Weatherstrip all exterior doors.			
10	2	8	Insulate walls with rigid insulation on inside.			
11	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
12	3	3	Check for packing wear which can cause excessive leakage. Repack to			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
			avoid excessive water wastage and shaft erosion.			
13	3	3	Inspect bearings and drive belts for wear and binding. Adjust, repair or replace as necessary.			
14	3	3	Inspect damper blades and linkages. Clean, oil and adjust.			
15	5	1	Keep records of the operating schedule monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
16	5	1	Review the record books on a regular basis.			
17	7	4	Inspect electrical contacts and working parts of relays and maintain in good working order.			
18	7	4	Check heater elements for cleanliness. Replace as necessary.			
19	7	4	Check controls for proper operation. Adjust as necessary.			
20	7	4	Periodically tighten all electrical-mechanical connections to prevent arcing and burning due to metal flow or loosening of terminal bolts or lugs.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Water Tower - Vault		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
9000 4th Ave. S.		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [X] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: 3-18-81

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D

ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E

MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

3-18-81
Date

Witnessed by:

Asst. Maintenance Supervisor
Building Organizational Authority (Print or Type)

Arthur W Jensen
Signature

3-18-81
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	RCM
Scott Hutchins	CET	RCM
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground vault

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
none

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
earth

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☐ Yes ☐ No none

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? none

What percentage of the south facing wall is glass? _____ %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings	% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	5184 kwh	=	0 kwh,	0 %	x	$255.57	=	$ 0
to					to	to				to
upper bound	5 %	x	5184 kwh	=	259 kwh,	5 %	x	$255.57	=	$ 12.78

3 Building does not use fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings	% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____
to					to	to				to
upper bound	_____ %	x	_____ Btu	=	_____ Btu,	_____ %	x	$_____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schedule			

Note Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS OPTIONAL:	ENERGY COST SAVINGS OPTIONAL:	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust			
2	3	3	Check that the valves open fully, close tightly, and don't leak.			
3	3	3	Lubricate all bearings on valves			
4	5	1	Keep records of the operating schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
5	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Water Reservior - Vault		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
9951 - Rich Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: 3-18-81

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☐ Secondary School Energy Report (Form No. ED-00445-02)
- ☒ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

3-18-81
Date

Witnessed by:

Asst. Maintenance Supervisor
Building Organizational Authority (Print or Type)

Signature

3-18-81
Date

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini-Auditor	RCM
Scott Hutchins	CET	RCM
Art Parvey		City of Bloomington

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, underground vault

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
none

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
concrete

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
Concrete

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☐ Yes ☒ No
South facing Wall: ☐ Yes ☐ No none

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded 0 %
% of south facing wall unshaded _____ % none

What is the overall shape of the building?
☒ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☐ other (specify) _____

Is the roof of the building flat or pitched?
☒ flat ☐ pitched

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? none

What percentage of the south facing wall is glass? _____ %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range		Annual Electrical Consumption		Range of Energy Savings		% Range		Annual Electrical Dollars Spent		Range of Electrical Dollars Savings
lower bound	0 %	x	5622	kwh =	0	kwh,	0 %	x	$257.23	=	$ 0
	to				to		to				to
upper bound	5 %	x	5622	kwh =	281	kwh,	5 %	x	$257.23	=	$12.86

3 Building does not use fuel

Range of Fuel Savings

	% Range		Annual Fuel Consumption		Range of Fuel Savings		% Range		Annual Fuel Dollars Spent		Range of Fuel Dollars Savings
lower bound	_____ %	x	_____ Btu	=	_____	Btu,	_____ %	x	$_____	=	$ _____
	to				to		to				to
upper bound	_____ %	x	_____ Btu	=	_____	Btu,	_____ %	x	$_____	=	$ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions: Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS		OPTIONAL:	OPTIONAL:	
1	5	2	Routine Maintenance Schedule.			

ote Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	3	3	Check that the valves open fully, close tightly, and don't leak.			
3	3	3	Lubricate all bearings on valves.			
4	5	1	Keep records of the operation schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of efficiency of the building. These records will indicate the impact of energy conservation measures.			
5	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.

MINI-AUDIT REPORT

FORM NO. MIN-01

A — CONTACT DATA

BUILDING NAME		NAME OF ORGANIZATION	DATE
Walter Tower - Base		City of Bloomington	3-18-81
BUILDING ADDRESS		**ADDRESS**	
8400 Winslow Road		2215 West Old Shakopee Road	
CITY	**ZIP CODE**	**CITY**	**ZIP CODE**
Bloomington	55431	Bloomington	55431
PERSON COMPLETING FORM	**TELEPHONE**	**CONTACT PERSON**	**TELEPHONE**
Randy Smith	935-6901	Arthur Jensen	881-5811

B — BUILDING ELIGIBILITY CODE

Instructions: For blocks 1 and 2 check the box which best fits the building ownership conditions. For block 3 determine which of the four categories describes the building type and then within the category check off the sub category befitting the building function.

1. OWNERSHIP TYPE
   - [X] Public (PUB)
   - [ ] Non-Profit Association (NAP)

2. ULTIMATE OWNER
   - [ ] County (CNTY)
   - [X] City (CITY)
   - [ ] Township (TOWN)
   - [ ] State (STAT)
   - [ ] Public School (PUSC)
   - [ ] Private School (PRSC)
   - [ ] Non-Profit Association (NPAP)
   - [ ] Indian Tribe (INDN)

3a. SCHOOLS
   - [ ] Elementary (SCHL-ELM)
   - [ ] Secondary (SCHL-SECD)
   - [ ] Coll. or Univ. (SCHL-POST)
   - [ ] Vocational (SCHL-VOCL)
   - [ ] Education Agency (SCHL-ADMN)
   - [ ] Administration (SCHL-ADMN)
   - [ ] OTHER (SCHL-OTHR)

b. PUBLIC CARE
   - [ ] Nursing Home (PBCR-NURS)
   - [ ] Long Term Care (PBCR-TERM)
   - [ ] Rehab. Facility (PBCR-RHAB)
   - [ ] Public Health Ctr. (PBCR-HCTR)
   - [ ] Res. Child Care Ctr. (PBCR-RCCC)

c. LOCAL GOVERNMENT
   - [ ] Office (LOCG-OFFC)
   - [ ] Storage (LOCG-STRG)
   - [X] Service (LOCG-SERV)
   - [ ] Library (LOCG-LBRY)
   - [ ] Police (LOCG-PLCE)
   - [ ] Fire (LOCG-FIRE)
   - [ ] OTHER (LOCG-OTHR)

d. HOSPITALS
   - [ ] General (HOSP-GENL)
   - [ ] Tuberculosis (HOSP-TUBR)
   - [ ] OTHER (HOSP-OTHR)

C — MINI-AUDIT FUNDING REQUEST

Instructions: With reference to page 23 entitled Funding Information, determine if the facilities are eligible for both Federal and State funding or just Federal funding. then answer the questions correctly for the situation. This section must be signed and dated by the head of the organization.

If eligible for both Federal and State Funding:
Have you received a mini-audit grant before? [ ] Yes [X] No
Have you previously applied for mini-audit funding? [X] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [X] No

Date: 3-18-81

Name: Arthur Jensen

Signature: Arthur W Jensen

If eligible for Federal funding only:
Have you received a mini-audit grant before? [ ] Yes [ ] No
Have you previously applied for mini-audit funding? [ ] Yes [ ] No
Do you wish to apply for mini-audit funding? [ ] Yes [ ] No
The 50% match for Federal funds will come from: (Use additional sheets if necessary.)

Date: _____

Name: _____

Signature: _____

D ENERGY REPORT CHECK-OFF

Check the type of energy report which was completed and submitted prior to this mini-audit report.

- ☐ Elementary School Energy Report (Form No. ED-00444-02)
- ☒ Secondary School Energy Report (Form No. ED-00445-02)
- ☐ Existing Building Energy Report (Form No. EN-00041-01)

If an energy report has not been completed previous to this mini-audit report, one must be included with this report. Elementary, secondary, and vocational schools should use form ED-00444-02 or form ED-00445-02, depending on building complexity. All other buildings should use the existing building energy report, form EN-00041-01.

E MINI-AUDIT STATEMENTS

Instructions: This section is to be completed and signed by a registered professional engineer or by a certified mini-auditor who has successfully completed the State of Minnesota's Mini-Audit Procedures Course. This section should be completed after this mini-audit report and an energy report are completed. All blanks must be filled in.

I have reviewed the energy report and/or the energy report results for this building. I found all information contained therein to be correct *OR* I have corrected any misinformation on the energy report which will be resubmitted with this mini-audit report to the Minnesota Energy Agency.

I am not directly responsible for the day to day operations of this building being audited.

I have fully disclosed my financial interests relating to this mini-audit and any energy conservation measures considered by this audit.

I have walked through this building and have found the recommendations listed in section I of this mini-audit report to be the operations and maintenance changes, and low cost energy conservation measures, which would reduce energy consumption in this building.

I have made a rough estimate, in section G, of the range of savings which may result from the implementation of all of the mini-audit opportunities listed in section I. i am not responsible if the actual savings resulting from this mini-audit do not fall within the estimated range.

Based on actual records, the energy conservation operating and maintenance procedures listed in section K did not (did, did not) save at least 20% of the building's energy consumption as specified in section I.

Based upon my observation of the physical characteristics of this building and the building's major energy using systems, I recommend that this should not (should, should not) be the subject of a maxi-audit.
I realize that this is not a final judgement, that the State reserves the right to make the maxi-audit funding determination based on this mini-audit report and other criteria.

Based upon the information in section E and the information referred to in section F, I recommend that this building should not (should, should not) undergo further solar conversion analysis, and/or should not (should, should not) undergo further analysis of the renewable resources — waste, wind, wood. (Circle proper resources)

In my judgement, as a mini-auditor, all of the above statements are true and correct.

Randy Smith
Mini-Auditor's Name (Print or Type)

Randy Smith 206
Signature

Rieke Carroll Muller
Firm Name (if none, enter none)

P.O. Box 130
Address

612 935-6901
Phone

3-18-81
Date

Witnessed by:

Asst. Maintenance Supervisor
Building Organizational Authority (Print or Type)

Cathy M Ruen
Signature

3-18-81
Date

F AUDIT TEAM

NAME	POSITION	ORGANIZATION
Randy Smith	Certified Mini - Auditor	RCM
Scott Hutchins	CET	RCM
Art Parvey		City of Bloomington

G BUILDING INFORMATION

BRIEF DESCRIPTION OF GENERAL BUILDING CONDITION (i.e. type, and function)
Good, water tower base

MAJOR CHANGES PLANNED WITHIN NEXT 15 YEARS (i.e. demolition, rehabilitation, conversion from one building type to another)
none

STRUCTURAL COMPONENTS OF ROOF (i.e. metal beams, wooden rafters, concrete)
metal

ROOFING MATERIAL (i.e. tar and gravel, shingles, tile)
metal

H SOLAR POTENTIAL INFORMATION

INSTRUCTIONS: Correctly answer the following questions for the building being mini-audited.

Is there open land adjacent to the building?
☒ Yes ☐ No

Solar collectors need to be located in an unshaded area. Is the roof of the building and the south facing wall unshaded between the hours of 9 a.m. and 3 p.m.?
Roof: ☒ Yes ☐ No
South facing Wall: ☒ Yes ☐ No

If the roof or wall are partly shaded, what percentage of the surface is unshaded?
% of roof unshaded _____ %
% of south facing wall unshaded _____ %

What is the overall shape of the building?
☐ square ☐ rectangle ☐ H-shaped ☐ E-shaped ☒ other (specify) round

Is the roof of the building flat or pitched?
☐ flat ☐ pitched curved

If pitched, what is the compass orientation of the ridgeline? _____

If pitched, what is the angle that the roof makes with horizontal? _____°

Are there large obstructions on the roof such as chimneys, rooms for mechanical equipment, ventilating units, water towers, etc?
☐ Yes ☒ No

What is the exterior facing material for the south facing wall? metal

What percentage of the south facing wall is glass? 0 %

Is the building's space heating equipment located within or on the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the space heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Roof ☐ Other (specify) _____

Is the building's water heating equipment located within the building? (A no answer indicates the equipment is in a separate building.)
☐ Yes ☐ No none

If the water heating equipment is inside the building, where is it located?
☐ Ground Floor ☐ Basement ☐ Other (specify) _____

Is the water heating system a central system, does it consist of multiple units, or is it a combination of the central and multiple units?
☐ Central ☐ Multiple ☐ Combination

I — 20% SAVINGS DATA

Instructions: Enter the total energy used of each fuel type for the base period and the year when there was a 20% or greater energy savings. Indicate the unit of measure. Enter the appropriate conversion factor from Appendix B to convert energy usage into Btu's. Be sure to enter the fiscal years of which the data applies. Refer to pages 7 and 15 for a complete explanation of this section.

BASE PERIOD YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

20% SAVINGS YEAR Fiscal Year _____

ENERGY TYPE	ENERGY USAGE	CONVERSION FACTOR	BTU USAGE
Electricity			
Fuel 1			
Fuel 2			
TOTAL			

J — SAVINGS ESTIMATION

Instructions: This section is to be completed by the mini-auditor after the walk-thru portion of the mini-audit. First, check the appropriate boxes which state the roughly estimated range of the percent of total electrical and fuel consumption which would be saved resulting from the implementation of all of the new mini-audit opportunities listed in section L. Secondly, calculate the range of energy and cost savings by multiplying the estimated percentages by the annual electrical and fuel consumption data on the energy report.

1 Check two boxes in each category —

Range of Electrical Savings — ☒ 0% ☒ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

Range of Fuel Savings — ☐ 0% ☐ 5% ☐ 10% ☐ 15% ☐ 20% ☐ 25% ☐ other (specify) _____

2 Calculate ranges of energy and cost savings —

Range of Electrical Savings

	% Range	Annual Electrical Consumption		Range of Energy Savings	% Range	Annual Electrical Dollars Spent	Range of Electrical Dollars Savings
lower bound	0 %	x 12793 kwh	=	0 kwh,	0 %	x $ 571.98	= $ 0
to				to	to		to
upper bound	5 %	x 12793 kwh	=	639 kwh,	5 %	x $ 571.98	= $28.60

3 building does not use fuel

Range of Fuel Savings

	% Range	Annual Fuel Consumption		Range of Fuel Savings	% Range	Annual Fuel Dollars Spent	Range of Fuel Dollars Savings
lower bound	_____ %	x _____ Btu	=	_____ Btu,	_____ %	x $_____	= $ _____
to				to	to		to
upper bound	_____ %	x _____ Btu	=	_____ Btu,	_____ %	x $_____	= $ _____

The mini-auditor is not responsible if actual savings resulting from the implementation of the energy conservation opportunities listed in section I do not fall between the roughly estimated ranges which are specified.

K

Instructions. Read through the list of energy conservation opportunities provided. As you read through the items, list below those items which have already been undertaken in your facility. The description of the past energy conservation action should contain the specific building location where the recommendation applies, if applicable. Indicate the date of implementation of each item and its classification number. Energy conserving items which have been undertaken and are not on the list provided should also be included along with their appropriate classification numbers. The classification number should be taken from the classification scheme for energy conservation opportunities listed on pages 25 through 37. *This section of the mini-audit report should be completed by building personnel prior to the walk-through by the mini-auditor.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO.		PAST ENERGY CONSERVATION ACTIONS	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
	MAJOR CLASS	SUB CLASS				
1	5	2	Routine maintence schedule			

ote Reproduce this page as necessary

NEW OPPORTUNITIES

Instructions: Read through the energy conservation recommendation list provided. Then walk through the building with the list. Examine the suggested maintenance and operational changes, and any other low cost energy conservation measures, that pertain to the facility. As you go along, record the item number, the classification number of the recommendation, and the new mini-audit opportunity. The description of the mini-audit opportunity should contain the specific building location where the recommendation applies, if applicable. Any recommendation not found on the list may also be included. For those other recommendations, assign an appropriate classification number from the classification scheme for energy conservation opportunities listed on pages 25 through 37. The date of implementation should only be completed as the recommendation is implemented. *This section of the mini-audit report should be completed by the mini-audit team during the building walk-through.*

OPTIONAL: OPTIONAL:

ITEM NO.	CLASSIFICATION NO. MAJOR CLASS	CLASSIFICATION NO. SUB CLASS	NEW MINI-AUDIT OPPORTUNITIES	ENERGY SAVINGS	ENERGY COST SAVINGS	DATE OF IMPLEMENTATION
1	1	1	Keep all controls free of dust.			
2	1	5	Tighten and clean all electrical connections from the circuit breaker back through the transformers, to the main switch gear. NOTE: Have this done at least once a year by a qualified electrician when the building power is shut off. This is not only a precaution but it can also reduce electrical losses.			
3	1	5	Keep all switch gear free of dust.			
4	3	1	Check the calibration of all controllers and devices for proper settings and operations.			
5	5	1	Keep records of the operation schedule, monthly energy consumption and purchase of any new equipment that affects energy consumption of effeciency of the building. These records will indicate the impact of energy conservation measures.			
6	5	1	Review the record books on a regular basis.			

Note 1: Date of Implementation should only be completed as the recommendation is implemented. The mini-audit report may be submitted to the Minnesota Energy Agency before the "Date of Implementation" has been completed.

Note 2: Reproduce this page as necessary.