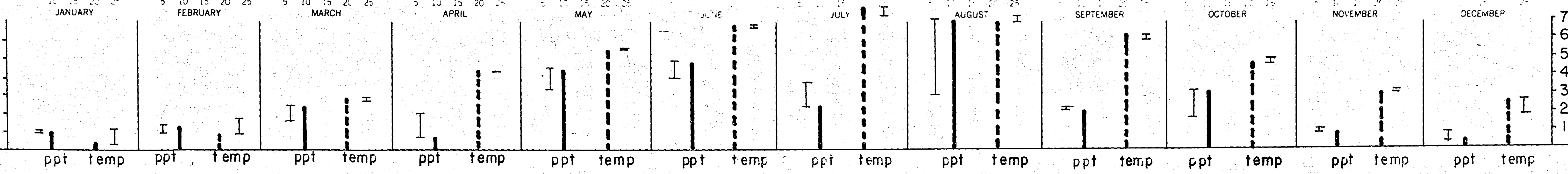
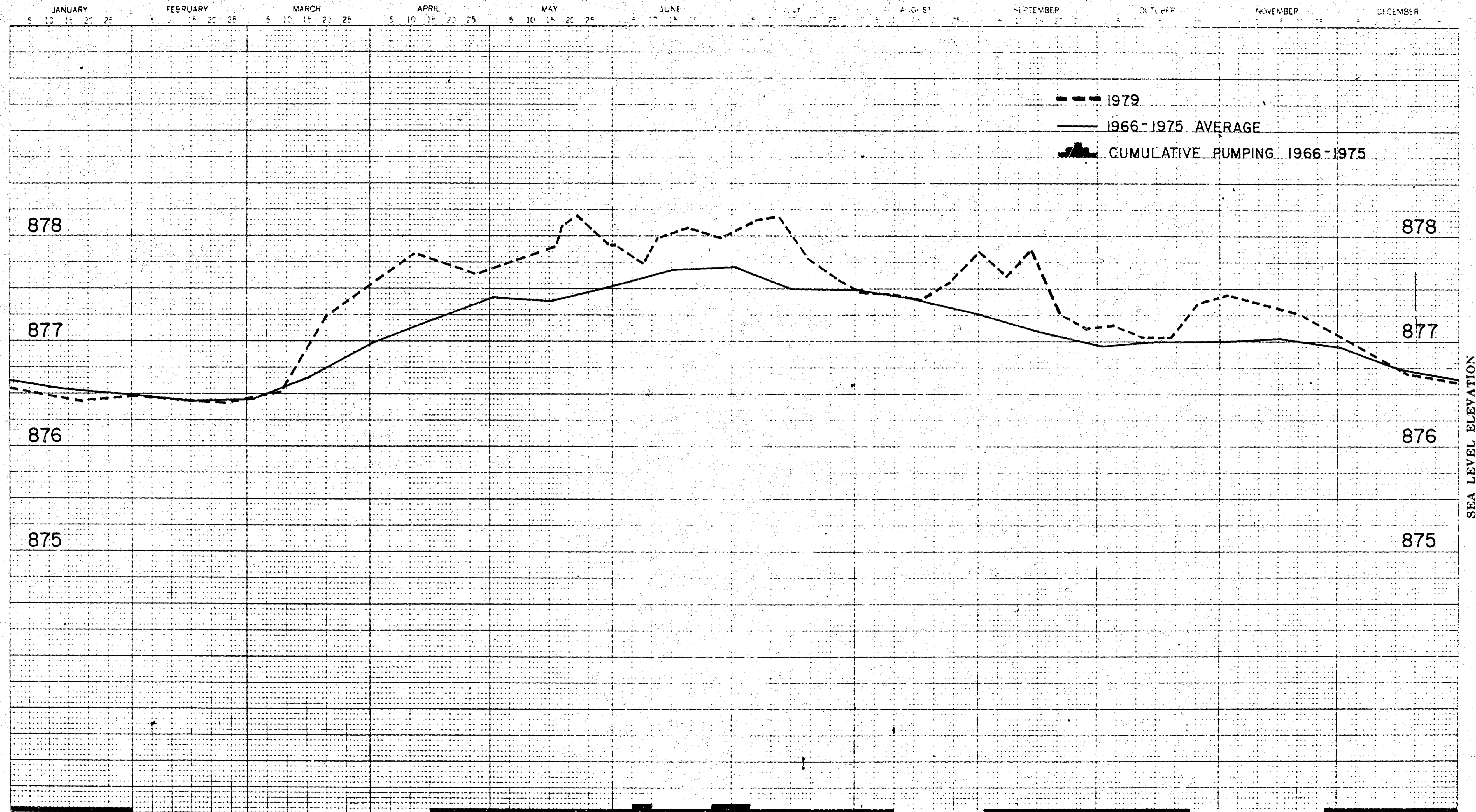


Precipitation This Year 31.07 Area in Acres at Normal Elevation 212 Pump: (1926-75) (1966-75)
 Normal Precipitation 25.94 Gallons Equiv. to One Foot on Lake 69.076 M.G. High 877.45 877.95 876.40 877.30 Lake JOHANNA Year 1979
 Excess-Deficiency +5.13 Pumping Days/One Foot Rise 32.0 Low 870.40 871.95 875.00 875.30 Historical (1924-79) (1966-79)
 Pump No. 19 Capacity 1500 G.P.M. DNR Limit : _____ Avg. 875.75 876.14 875.73 876.60 High 881.27 7/03/78 881.27 7/03/78
 Low 870.35 7/21/26 874.70 3/22/67



KEY
 ppt. (in.)
 temp. (°F)
 avg. ppt.
 avg. temp.

47 2813

KEY
 1 YEAR BY DAYS & DIVISIONS
 PREPARED BY INSPECTOR

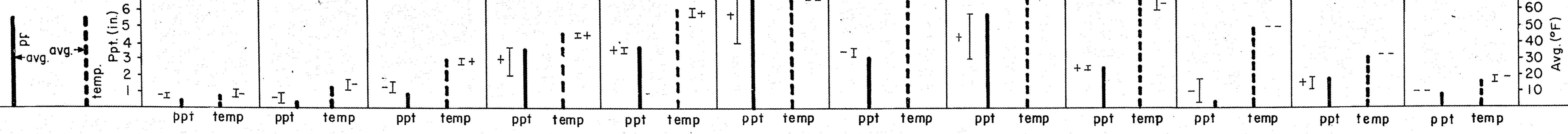
Precipitation This Year 33.88 Area in Acres at Normal Elevation 212 Pump: (1926-75) (1966-75)
 Normal Precipitation 24.78 Gallons Equiv. to One Foot on Lake 69,076 M.G. High 877.45 877.95 876.40 877.30 Lake JOHANNA Year 1978
 Excess-Deficiency +9.10 Pumping Days/One Foot Rise 32.0 Low 870.40 871.95 875.00 875.30 Historical (1924-78) (1966-78)
 Pump No. 19 Capacity 1500 G.P.M. DNR Limit: _____ Avg. 875.75 876.14 875.73 876.60 Low 870.35 7/21/26 874.70 3/22/67

47 2813

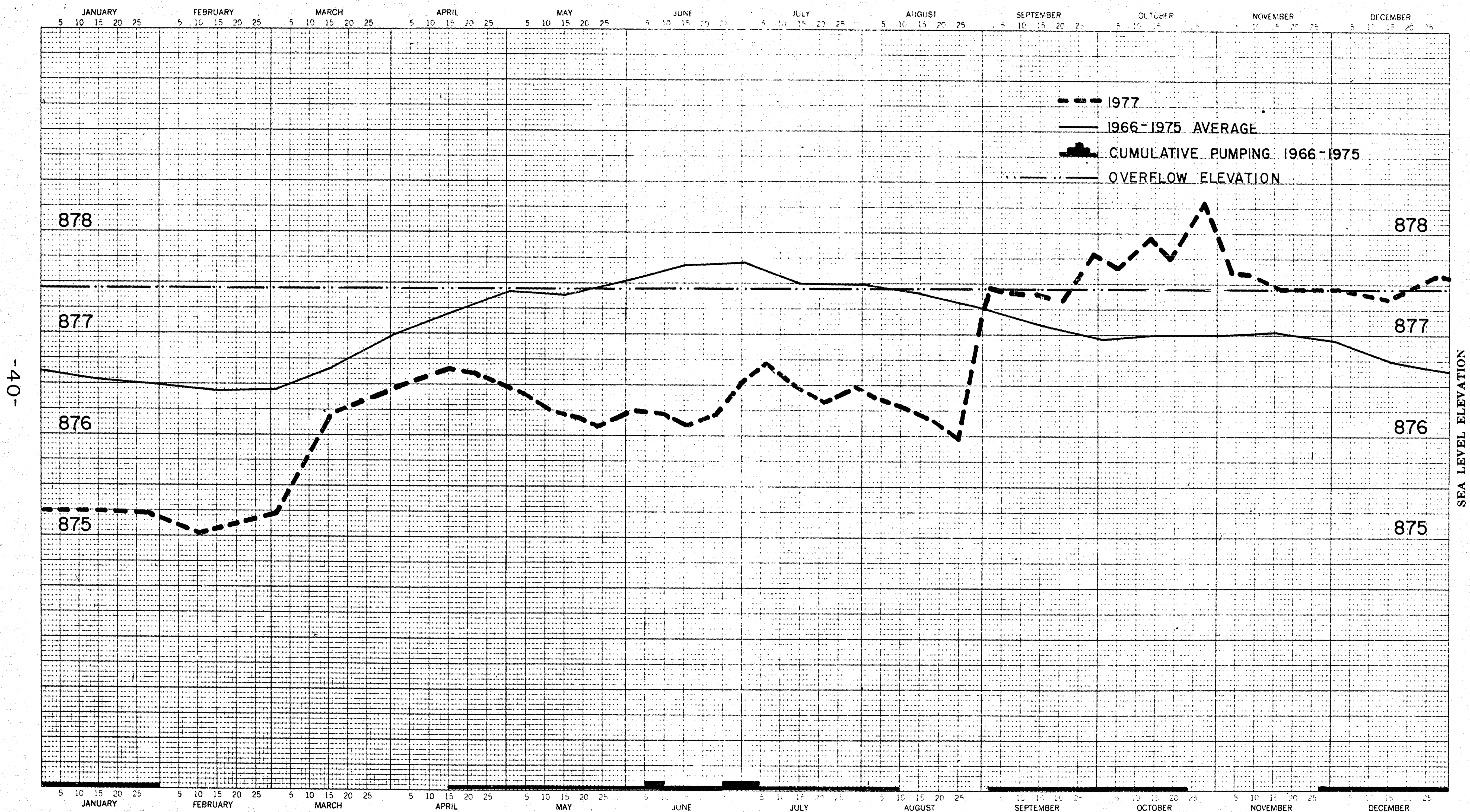
K&E 1 YEAR BY DAYS X 1/4 DIVISIONS
 KEUFFEL & ESSER CO. WASHINGTON, D.C.



KEY

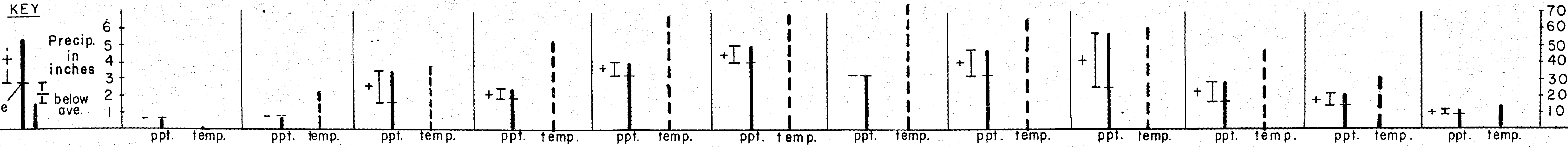


Precipitation This Year 36.03 Area in Acres at Normal Elevation 212 Pump: (1926-75) (1966-75)
 On Off On Off Lake JOHANNA Year 1977
 Normal Precipitation 24.78 Gallons Equiv. to One Foot on Lake 69,076 M.G. High 877.45 877.95 876.40 877.30 Historical (1924-77) (1966-77)
 Excess-Deficiency +11.25 Pumping Days/One Foot Rise 32.0 Low 870.40 871.95 875.00 875.30 High 880.70 6/25/43 879.50 7/02/75
 Pump No. 19 Capacity 1500 G.P.M. DNR Limit : _____ Avg. 875.75 876.14 875.73 876.60 Low 870.35 7/21/26 874.70 3/22/67

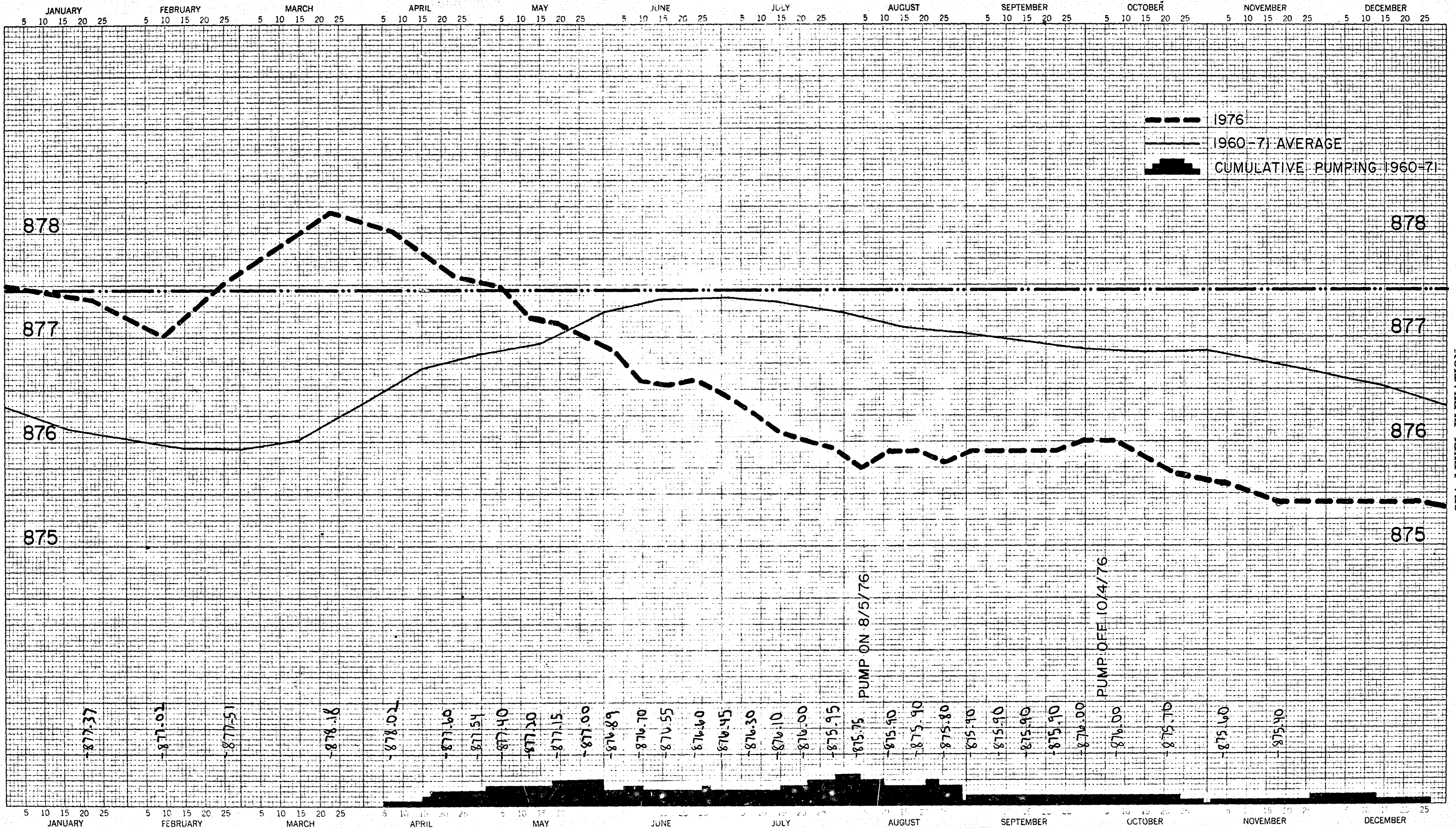


47 2813

1 YEAR BY DAYS X 150 DIVISIONS
 KEUFFEL & ESSER CO. MADE IN U.S.A.



PUMP: ON OFF
 Precipitation This Year: _____ HIGH LOW Area in Acres at Normal Elevation 212 HIGH 876.75 877.30 Lake JOHANNA Year 1976
 Normal Precipitation 880.70 870.35 Gallons Equiv. to One Foot on Lake 69,076 M.G. LOW 874.00 875.30 OFFICE OF
 Cum. Excess-Deficiency (Since 1924) 6/25/43 7/21/26 Ratio: Watershed to Lake Area _____ AVG. 875.89 876.71 RAMSEY COUNTY ENGINEER
 FORM NO. LI-101 PUMP NO. 19 CAPACITY 1500 G.P.M. PUMPING DAYS / ONE FOOT RISE 32.0 Sheet No. _____



Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____ Cum. Pumping Cost _____
 Mil. Gals. Pumped This Year _____ Cum. M. G. Pumped _____
 Equiv. on Lake in Ft. This Year _____ Cum. Equiv. on Lake in Ft. _____
 K. W. H. Consumed This Year _____ Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year _____ Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year _____ Cum. Av. Costs Per M. G. Pumped _____

47 2813

-40-

1 YEAR BY DAYS X 150 DIVISIONS
 KEUFFEL & ESSER CO. MADE IN U.S.A.

SEA LEVEL ELEVATION

Precipitation This Year _____

Area in Acres at Normal Elevation 212

Lake **JOHANNA** Year **1975**

Normal Precipitation _____

Gallons Equiv. to One Foot on Lake 69,100,000

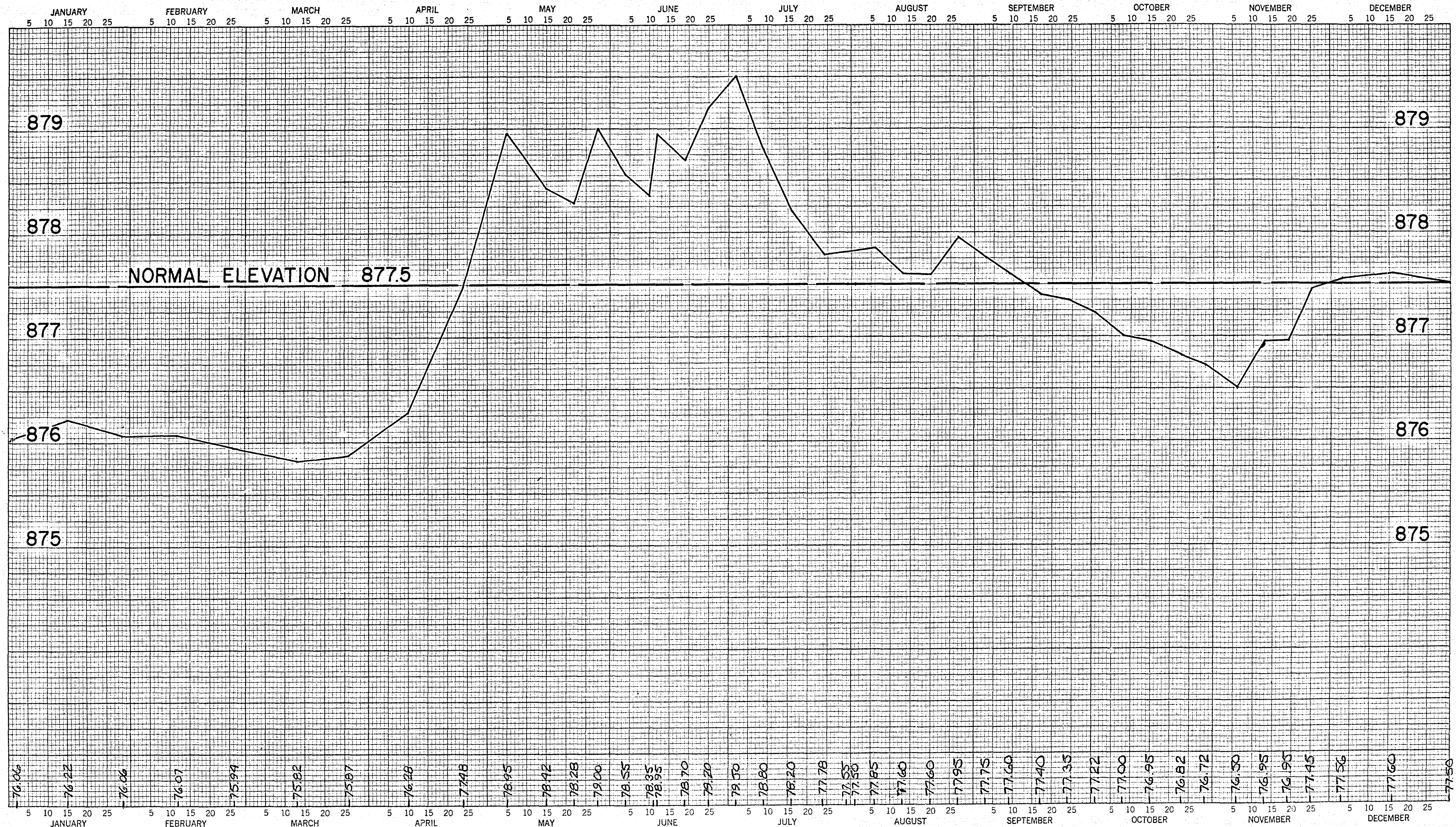
OFFICE OF
RAMSEY COUNTY ENGINEER

Cum. Excess-Deficiency _____
(Since 1924)

Ratio: Watershed to Lake Area 4.64 to 1

Sheet No. _____

FORM NO. LI-101



47 2813

1 YEAR BY DAYS X 150 DIVISIONS
KEUFFEL & ESSER CO. MADE IN U.S.A.

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____

Mil. Gals. Pumped This Year _____

Equiv. on Lake in Ft. This Year _____

K. W. H. Consumed This Year _____

Av. Costs Per K. W. H. This Year _____

Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost _____

Cum. M. G. Pumped _____

Cum. Equiv. on Lake in Ft. _____

Cum. K. W. H. _____

Cum. Av. Cost Per K. W. H. _____

Cum. Av. Costs Per M. G. Pumped _____

Precipitation This Year _____

Area in Acres at Normal Elevation 212

Lake JOHANNA Year 1974

Normal Precipitation _____

Gallons Equiv. to One Foot on Lake 69,100,000

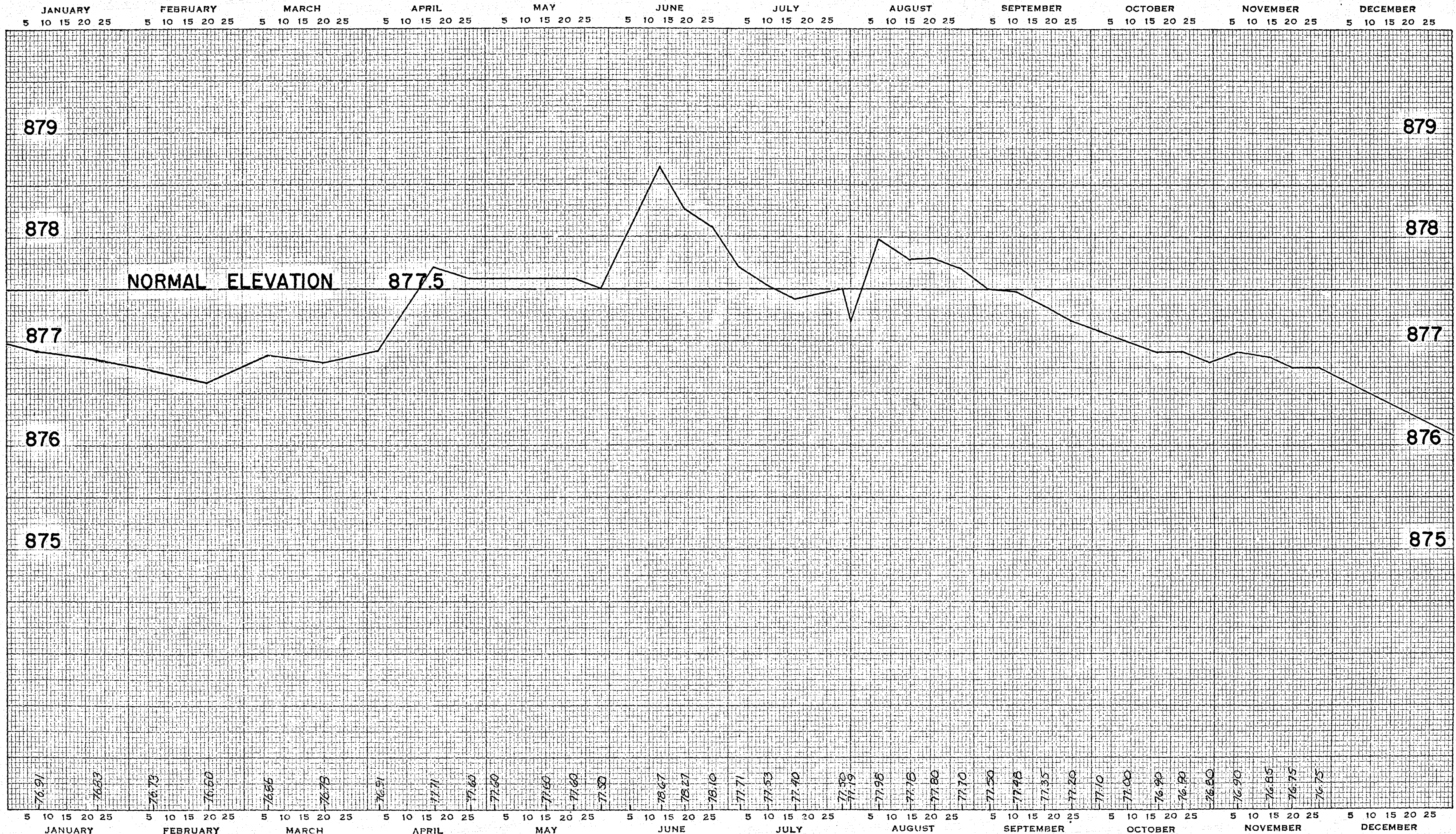
OFFICE OF
RAMSEY COUNTY ENGINEER

Cum. Excess-Deficiency _____
(Since 1924)

Ratio: Watershed to Lake Area 4.64 to 1

Sheet No. _____

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 959-1411
One Year by Days, Calendar Year.
Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost _____
 Cum. M. G. Pumped _____
 Cum. Equiv. on Lake in Ft. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped _____

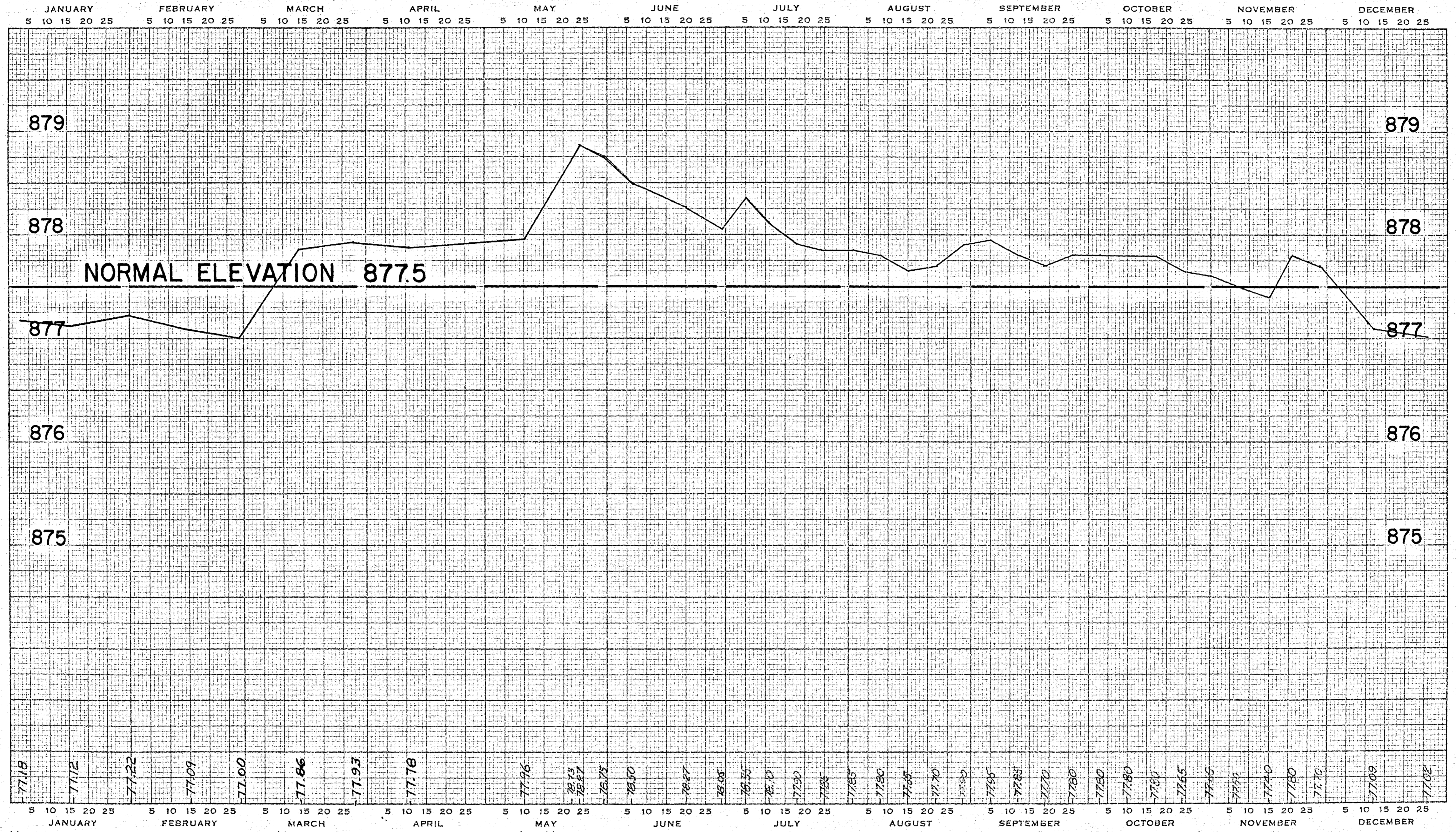
Precipitation This Year _____
 Normal Precipitation _____
 Cum. Excess-Deficiency _____
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1973

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



KEUFFEL & ESSER CO. 359-141L MADE IN U.S.A. CALENDAR YEAR

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost _____
 Cum. M. G. Pumped _____
 Cum. Equiv. on Lake in Ft. _____
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped _____

SEA LEVEL ELEVATION

Precipitation This Year _____

Area in Acres at Normal Elevation 212

Lake JOHANNA Year 1972

Normal Precipitation _____

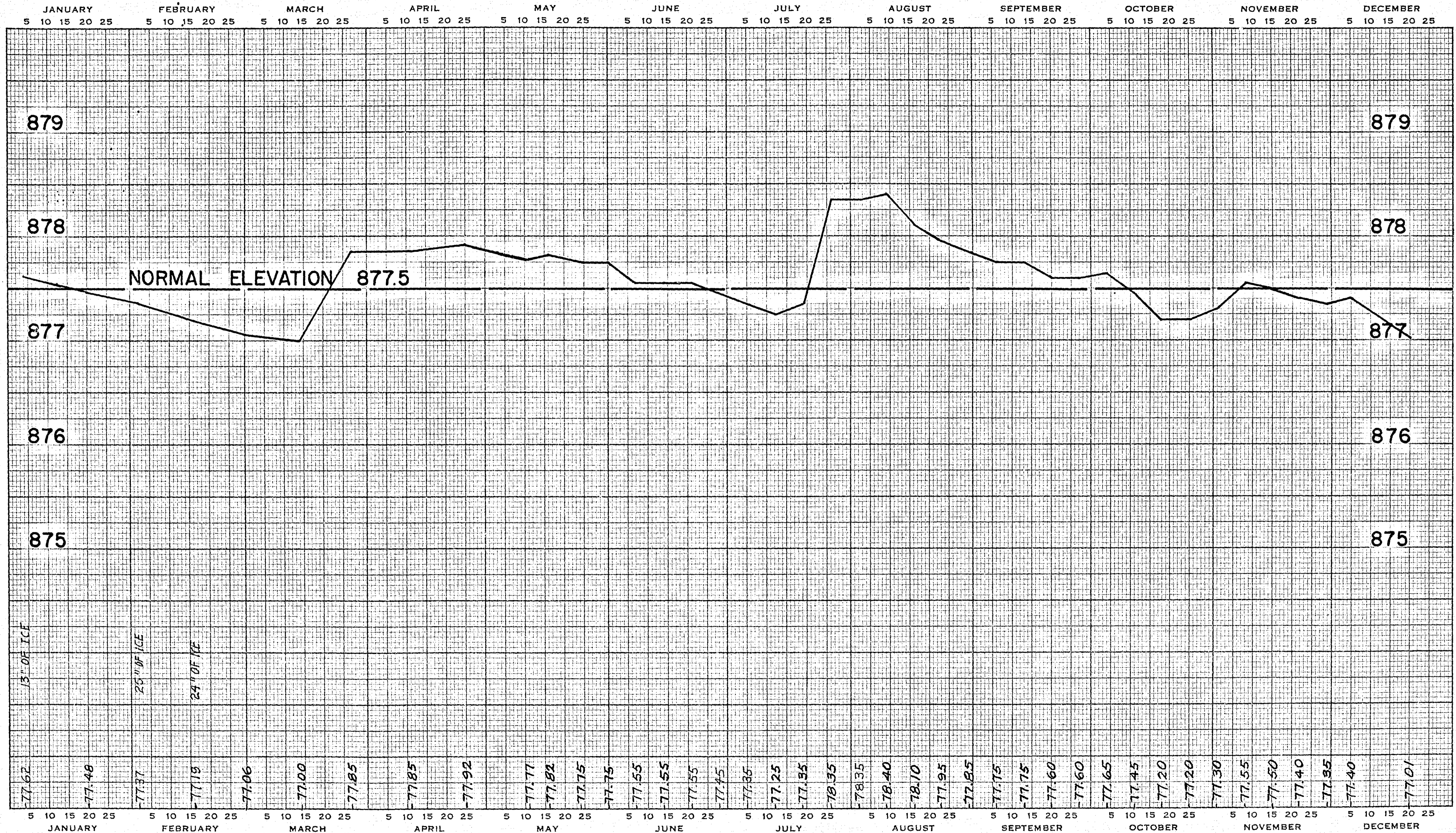
Gallons Equiv. to One Foot on Lake 69,100,000

OFFICE OF
RAMSEY COUNTY ENGINEER

Cum. Excess-Deficiency _____
(Since 1924)

Ratio: Watershed to Lake Area 4.64 TO 1

Sheet No. _____



1 YEAR BY DAYS 47 2813
X 150 DIVISIONS
MADE IN U.S.A.
KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____

Mil. Gals. Pumped This Year _____

Equiv. on Lake in Ft. This Year _____

K. W. H. Consumed This Year _____

Av. Costs Per K. W. H. This Year _____

Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost _____

Cum. M. G. Pumped _____

Cum. Equiv. on Lake in Ft. _____

Cum. K. W. H. _____

Cum. Av. Cost Per K. W. H. _____

Cum. Av. Costs Per M. G. Pumped _____

Precipitation This Year _____

Normal Precipitation _____

Cum. Excess-Deficiency _____
(Since 1924)

Area in Acres at Normal Elevation 212

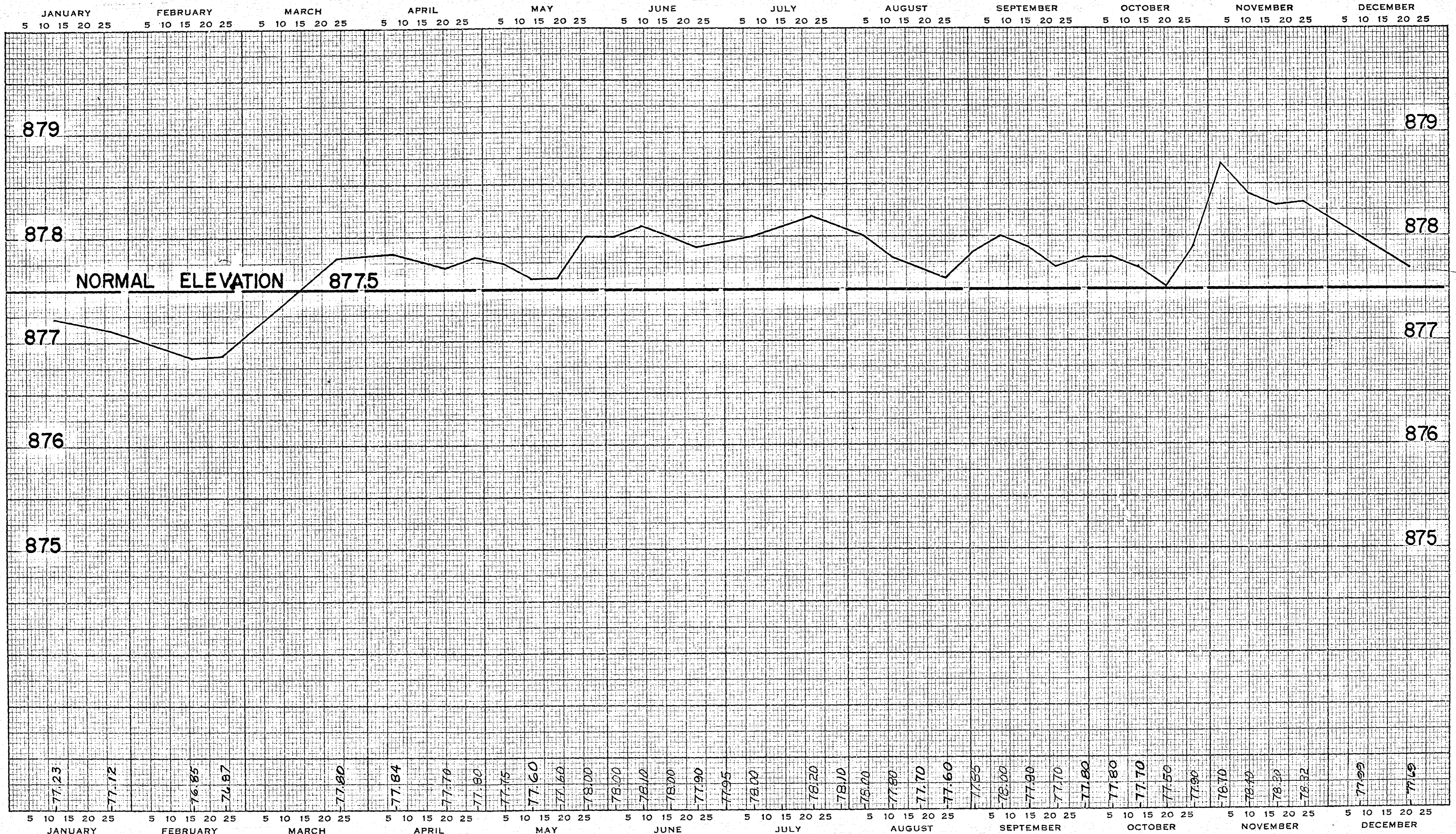
Gallons Equiv. to One Foot on Lake 69,100,000

Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1971

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 45,643.87
 Cum. M. G. Pumped 7,738.74
 Cum. Equiv. on Lake in Ft. 112.14
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 5.90

1 YEAR BY DAYS 47 2813
 X 120 DIVISIONS MADE IN U.S.A.
 KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

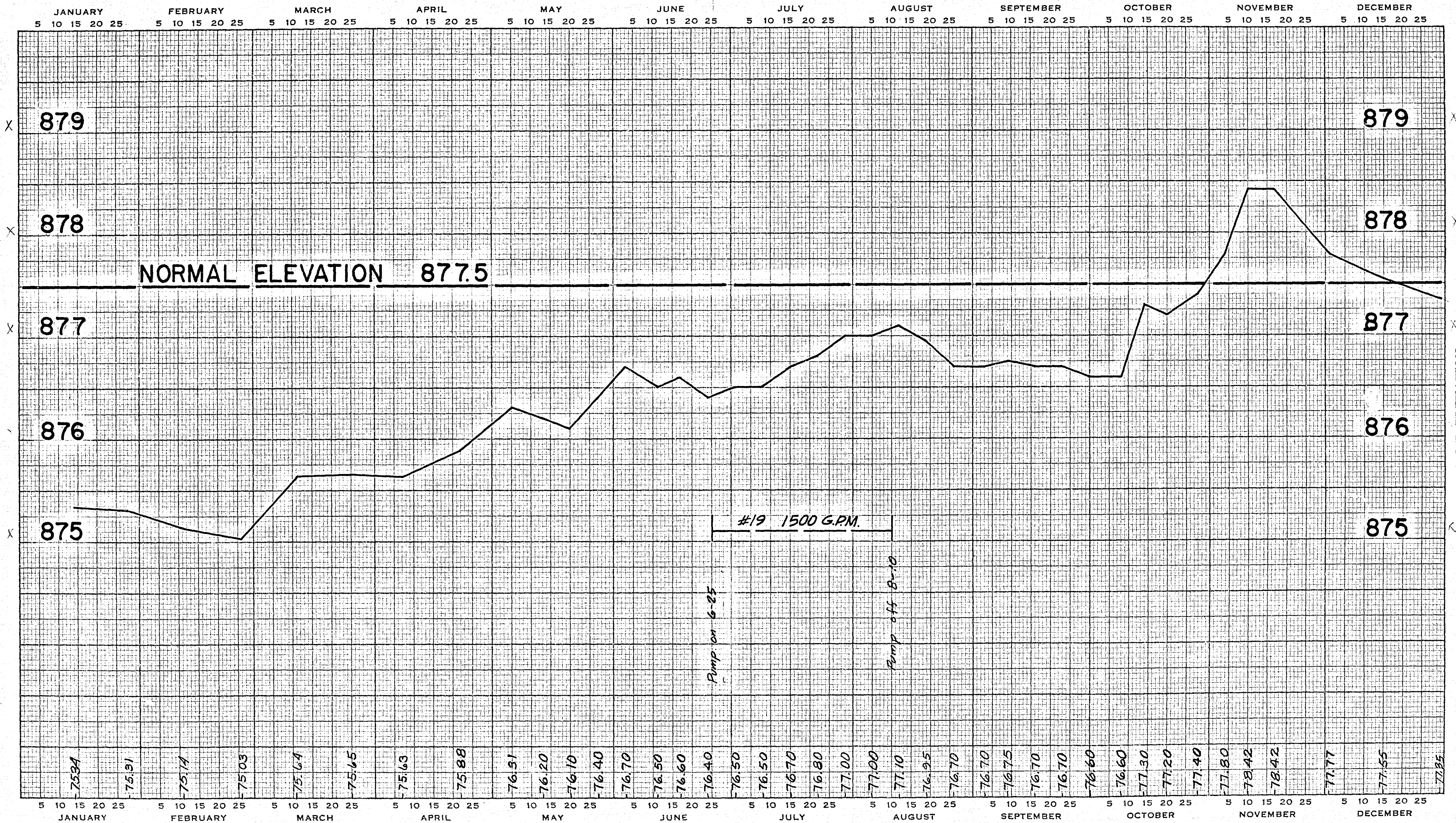
Precipitation This Year 30.53
 Normal Precipitation 24.78
 Cum. Excess-Deficiency -7.88
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake JOHANNA Year 1970

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS
 X 150 DIVISIONS
 KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

PUMP NO. 19

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE		3377	57.34
JULY		17448	284.36
AUG.		5065	86.91
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL		25890	439.61

PUMP NO. _____

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMP NO. _____

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 439.61
 Mil. Gals. Pumped This Year 99.36
 Equiv. on Lake in Ft. This Year 1.44
 K. W. H. Consumed This Year 25890
 Av. Costs Per K. W. H. This Year .0170
 Av. Costs Per M. G. Pumped This Year 4.42

Cum. Pumping Cost 45,643.87
 Cum. M. G. Pumped 7,738.74
 Cum. Equiv. on Lake in Ft. 112.14
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 5.90

Precipitation This Year 19.39

Normal Precipitation 24.78

Cum. Excess-Deficiency -13.63
(Since 1924)

Area in Acres at Normal Elevation 212

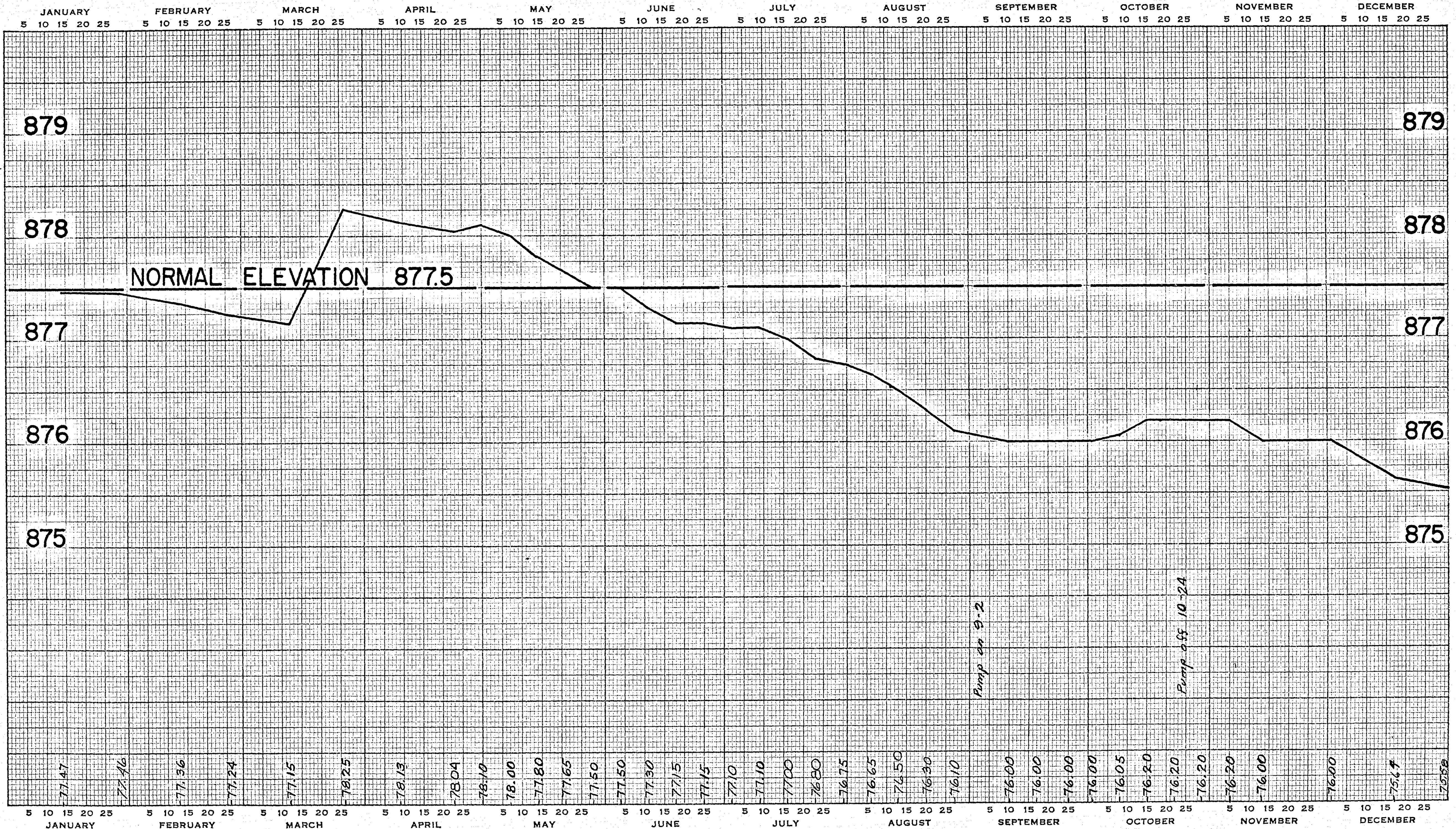
Gallons Equiv. to One Foot on Lake 69,100,000

Ratio: Watershed to Lake Area 4.64 TO 1

Lake JOHANNA Year 1969

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



KE 1 YEAR BY DAYS 47 2813 MADE IN U.S.A. KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.		11.97	200.40
OCT.		10.261	171.77
NOV.			
DEC.			
TOTAL		22,232	372.17

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year	<u>\$372.17</u>	Cum. Pumping Cost	<u>\$45,204.26</u>
Mil. Gals. Pumped This Year	<u>112.32</u>	Cum. M. G. Pumped	<u>7,639.38</u>
Equiv. on Lake in Ft. This Year	<u>1.62</u>	Cum. Equiv. on Lake in Ft.	<u>110.69</u>
K. W. H. Consumed This Year	<u>22,232</u>	Cum. K. W. H.	_____
Av. Costs Per K. W. H. This Year	<u>\$.0167</u>	Cum. Av. Cost Per K. W. H.	_____
Av. Costs Per M. G. Pumped This Year	<u>\$.331</u>	Cum. Av. Costs Per M. G. Pumped	<u>\$.592</u>

PUMP NO. 19

PUMP NO.

PUMP NO.

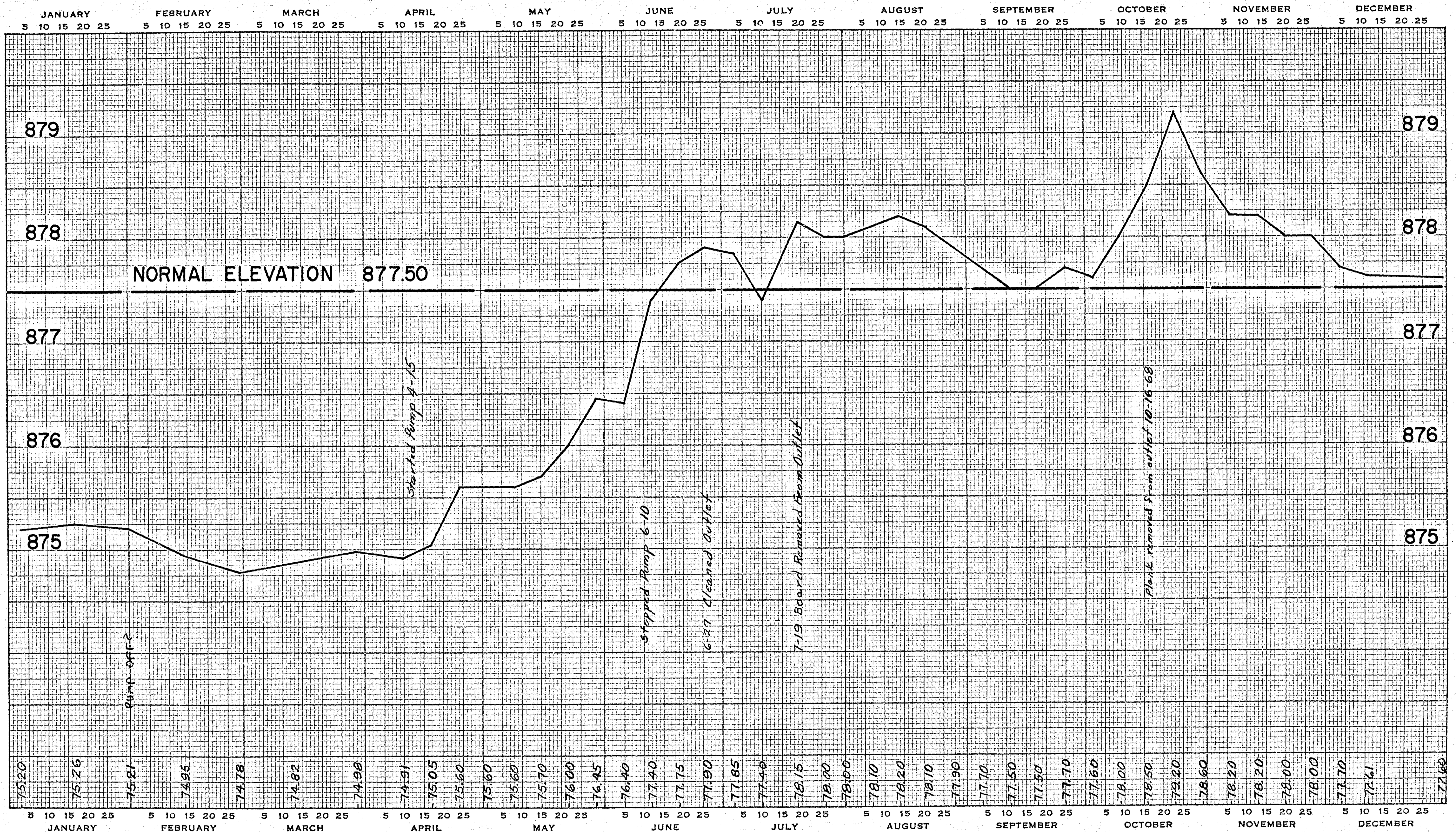
Precipitation This Year 37.93
 Normal Precipitation 24.78
 Cum. Excess-Deficiency -8.24
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake **JOHANNA** Year **1968**

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



47 2813
 MADE IN U. S. A.
 KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

PUMP NO.	Month	K.W. Demand	K.W. Consumed	Total Cost
19	JAN.			
19	FEB.			
19	MAR.			
19	APR.		8552	141.04
19	MAY		16569	273.26
19	JUNE		5879	96.97
19	JULY			
19	AUG.			
19	SEPT.			
19	OCT.			
19	NOV.			
19	DEC.			
19	TOTAL		31000	511.27

PUMP NO.	Month	K.W. Demand	K.W. Consumed	Total Cost
20	JAN.			
20	FEB.			
20	MAR.			
20	APR.			
20	MAY			
20	JUNE			
20	JULY			
20	AUG.			
20	SEPT.			
20	OCT.			
20	NOV.			
20	DEC.			
20	TOTAL			

PUMP NO.	Month	K.W. Demand	K.W. Consumed	Total Cost
21	JAN.			
21	FEB.			
21	MAR.			
21	APR.			
21	MAY			
21	JUNE			
21	JULY			
21	AUG.			
21	SEPT.			
21	OCT.			
21	NOV.			
21	DEC.			
21	TOTAL			

Pumping Costs This Year 511.27
 Mil. Gals. Pumped This Year 125.28
 Equiv. on Lake in Ft. This Year 1.81
 K. W. H. Consumed This Year 31000
 Av. Costs Per K. W. H. This Year .0165
 Av. Costs Per M. G. Pumped This Year 4.08

Cum. Pumping Cost 44832.09
 Cum. M. G. Pumped 7527.06
 Cum. Equiv. on Lake in Ft. 109.07
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 5.96

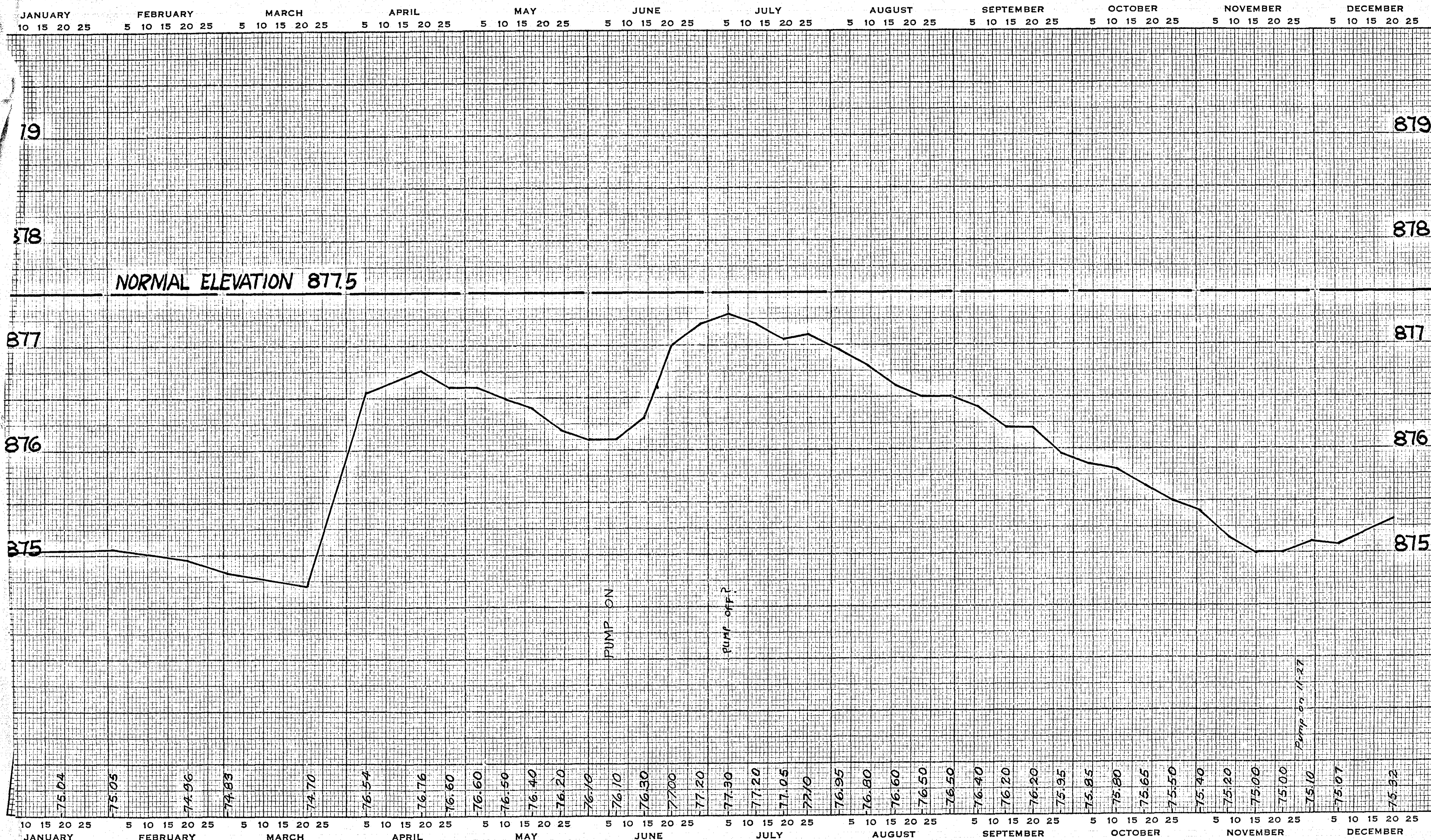
1967 This Year 25.44
 Precipitation 24.78
 Deficiency -21.39
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake **JOHANNA** Year **1967**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS
 X 150 DIVISIONS
 KEUFFEL & ESSER CO.
 47 2813
 MADE IN U.S.A.

PUMP NO. 19

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE		8625.56	142.32
JULY			
AUG.			
SEPT.		821.48	13.53
OCT.			
NOV.		1232.22	20.34
DEC.		11300.79	189.76
TOTAL		22,180	365.97

PUMP NO.

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMP NO.

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$ 365.97
 Mil. Gals. Pumped This Year 116.64
 Equiv. on Lake in Ft. This Year 1.69
 K. W. H. Consumed This Year 22,180
 Av. Costs Per K. W. H. This Year .0165
 Av. Costs Per M. G. Pumped This Year 3.14

Cum. Pumping Cost 44,320.82
 Cum. M. G. Pumped 7,401.78
 Cum. Equiv. on Lake in Ft. 107.26
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 5.99

Precipitation This Year 24.34

Normal Precipitation 24.78

Cum. Excess-Deficiency -22.05
(Since 1924)

Area in Acres at Normal Elevation 212

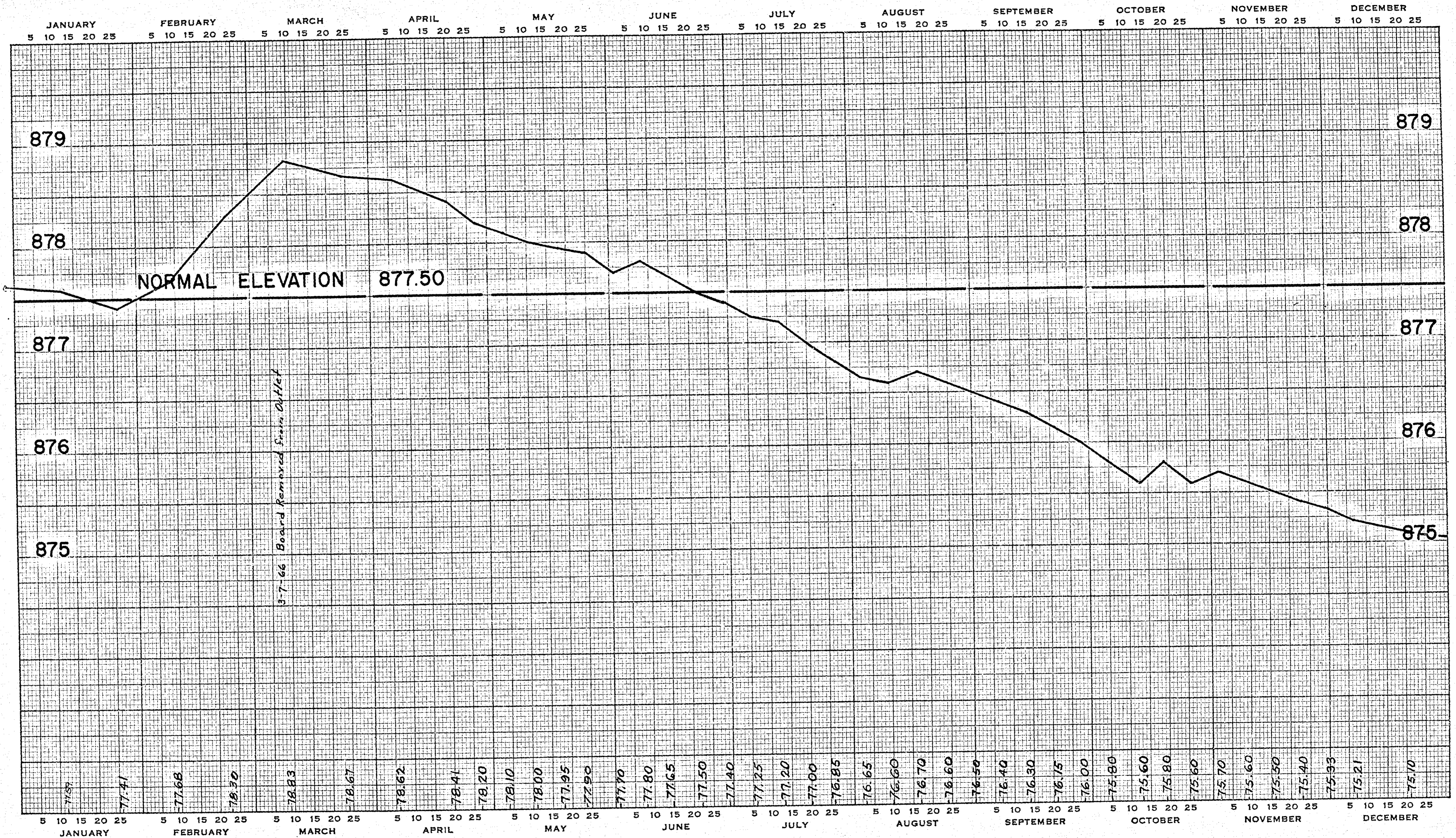
Gallons Equiv. to One Foot on Lake 69,100,000

Ratio: Watershed to Lake Area 4.64 to 1

Lake **JOHANNA** Year **1966**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



KE 1 YEAR BY DAYS 47 2813
 MADE IN U.S.A.
 KEUFFEL & ESSER CO.

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 43954.85
 Cum. M. G. Pumped 7,285.14
 Cum. Equiv. on Lake in Ft. 105.57
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.03

Precipitation This Year 39.94

Normal Precipitation 24.78

Cum. Excess-Deficiency -21.61
(Since 1924)

Area in Acres at Normal Elevation 212

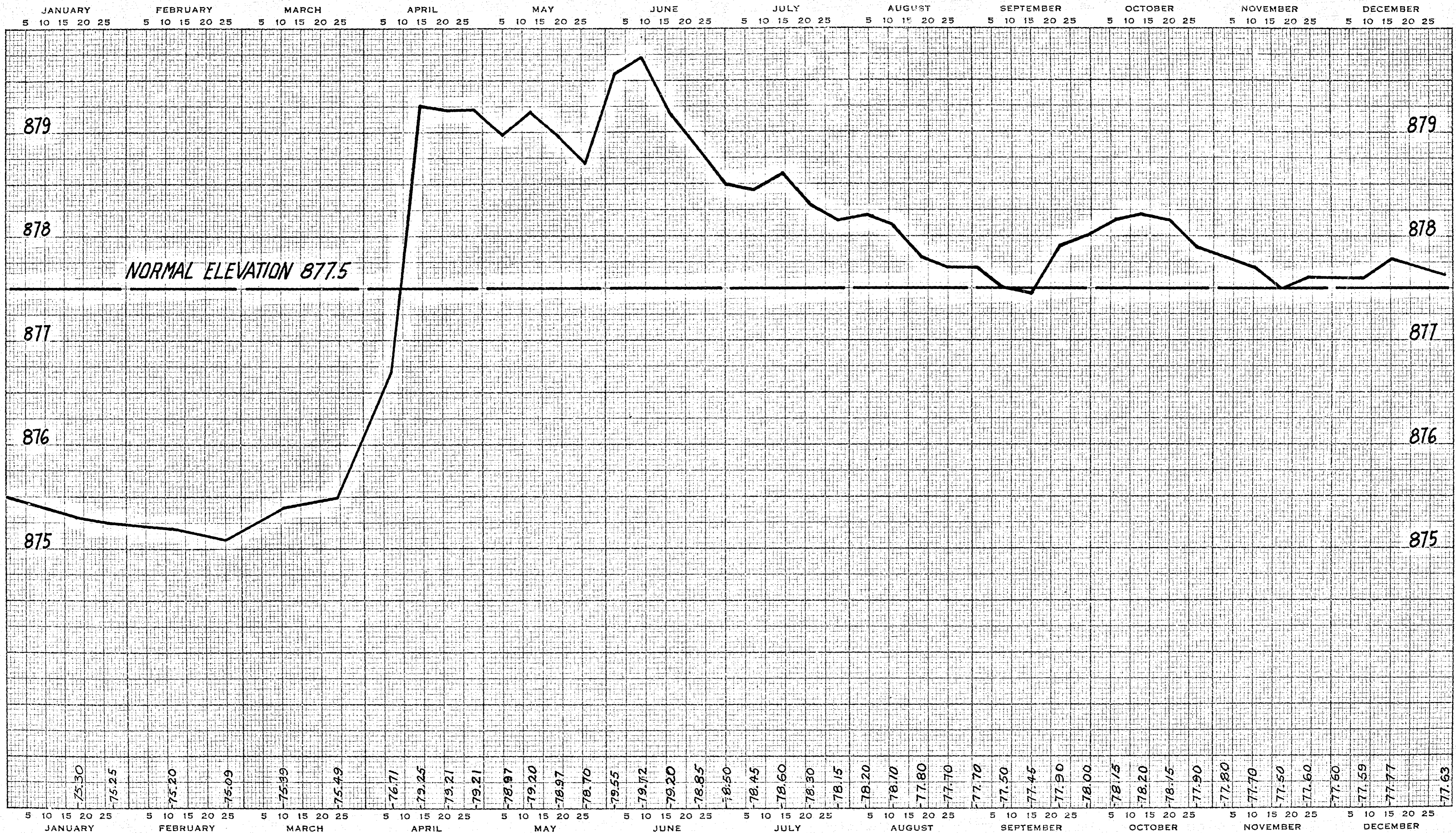
Gallons Equiv. to One Foot on Lake 69,100,000

Ratio: Watershed to Lake Area 4.64 TO 1

Lake JOHANNA Year 1965

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



KE
 1 YEAR BY DAYS X 180 DIVNS.
 KEUFFEL & ESSER CO.
 359-141L
 MADE IN U.S.A.
 CALENDAR YEAR

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 43,954.85
 Cum. M. G. Pumped 7,285.14
 Cum. Equiv. on Lake in Ft. 105.57'
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.03

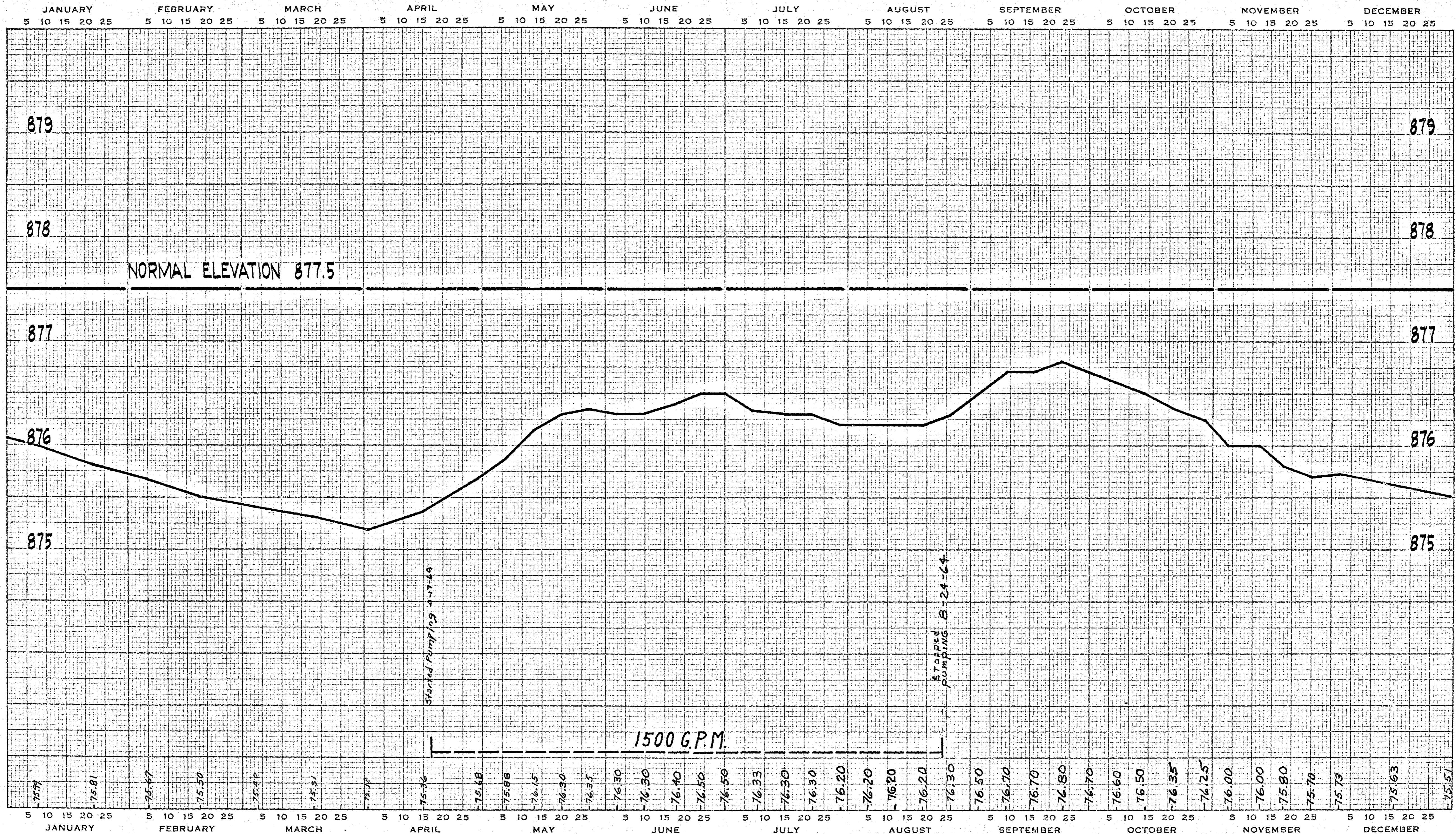
Precipitation This Year 25.97
 Normal Precipitation 24.78
 Cum. Excess-Deficiency -36.77
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake **JOHANNA** Year **1964**

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS X 180 DIVNS.
 KEUFFEL & ESSER CO.
 MADE IN U.S.A.
 CALENDAR YEAR

SEA LEVEL ELEVATION

PUMP NO. _____

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMP NO. _____

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMP NO. 19

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.		7716.58	127.32
MAY		17886.71	281
JUNE		16535.55	272.84
JULY		17086.77	281.83
AUG.		13228.43	218.77
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL		71654.00	1187.79

Pumping Costs This Year	<u>1,182.29</u>	Cum. Pumping Cost	<u>43,954.85</u>
Mil. Gals. Pumped This Year	<u>280.80</u>	Cum. M. G. Pumped	<u>7,285.14</u>
Equiv. on Lake in Ft. This Year	<u>4.06</u>	Cum. Equiv. on Lake in Ft.	<u>105.57</u>
K. W. H. Consumed This Year	<u>71,654.00</u>	Cum. K. W. H.	_____
Av. Costs Per K. W. H. This Year	<u>0.0165</u>	Cum. Av. Cost Per K. W. H.	_____
Av. Costs Per M. G. Pumped This Year	<u>4.21</u>	Cum. Av. Costs Per M. G. Pumped	<u>6.03</u>

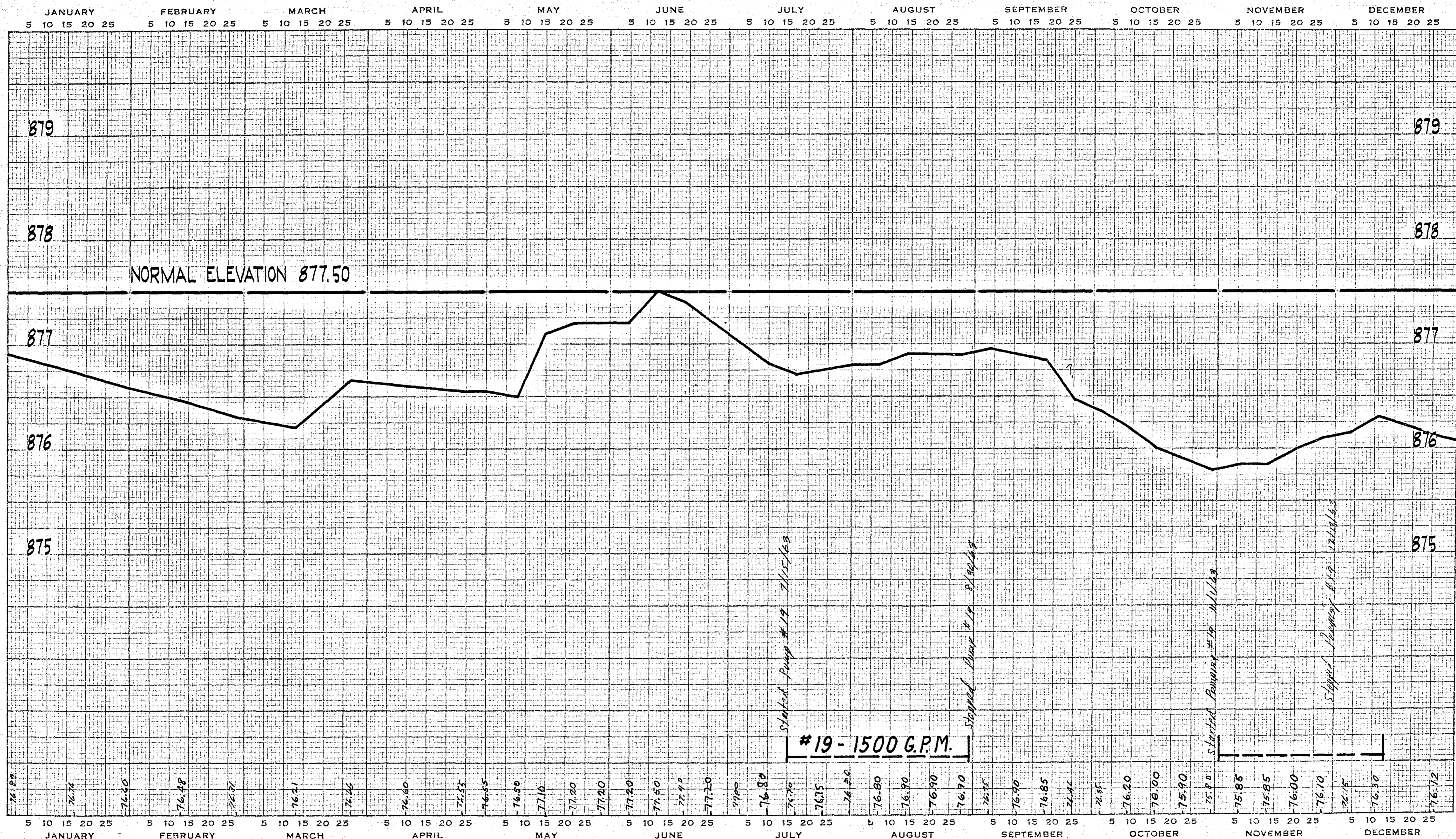
Precipitation This Year 19.57
 Normal Precipitation 24.78
 Cum. Excess-Deficiency -37.96
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake **JOHANNA** Year **1963**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS X 150 DIVS. 359-141L
 KEUFFEL & ESSER CO. MADE IN U.S.A.
 CALENDAR YEAR

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 828.56
 Mil. Gals. Pumped This Year 194.40
 Equiv. on Lake in Ft. This Year 2.81
 K. W. H. Consumed This Year 50216
 Av. Costs Per K. W. H. This Year 0.0165
 Av. Costs Per M. G. Pumped This Year 4.26

Cum. Pumping Cost 42772.56
 Cum. M. G. Pumped 7004.34
 Cum. Equiv. on Lake in Ft. 101.51
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.11

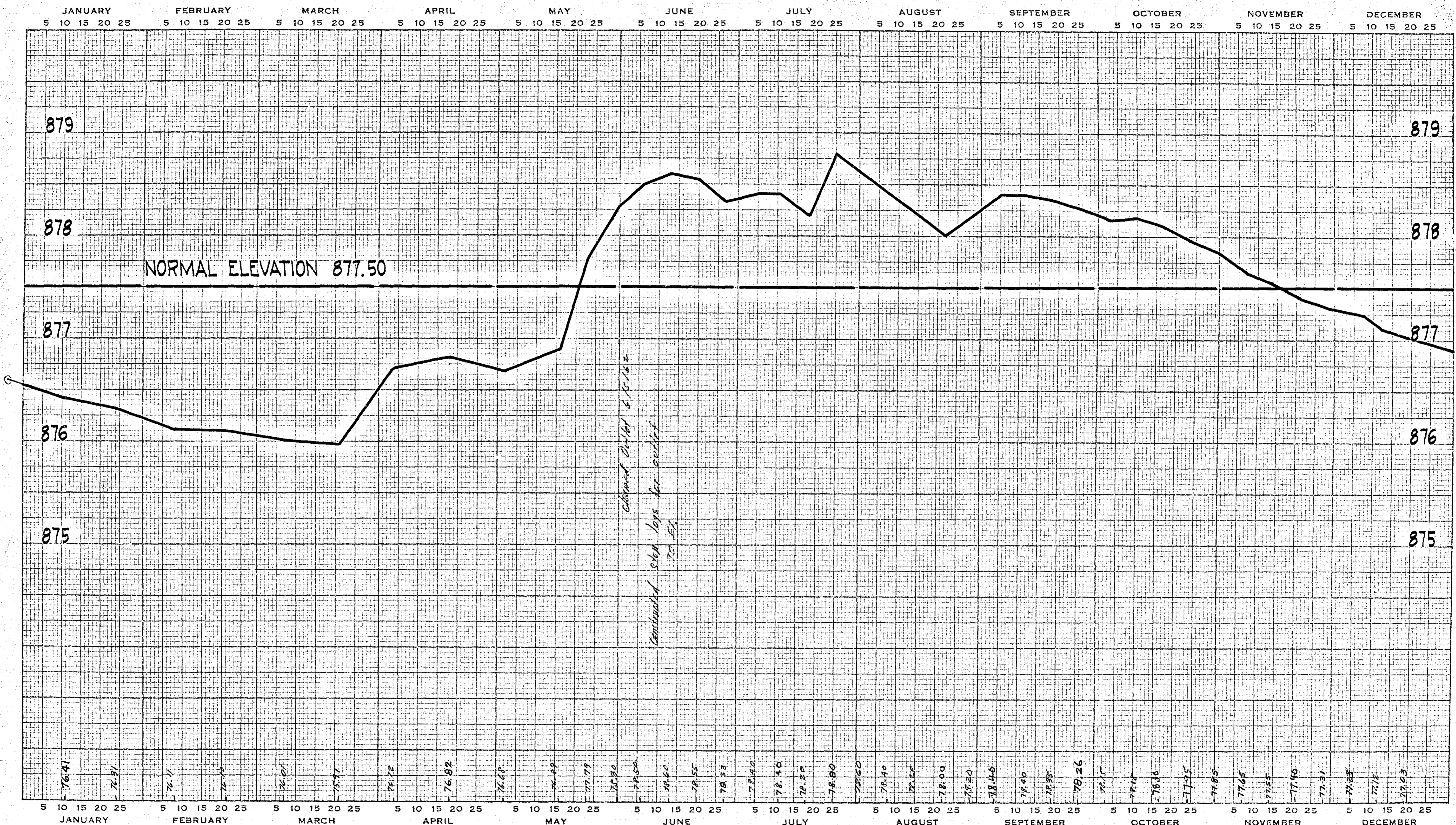
Precipitation This Year 28.83
 Normal Precipitation 24.78
 Cum. Excess-Deficiency -32.75
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake **JOHANNA** Year **1962**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS X 180 DIVNS. 359-141L
 KEUFFEL & ESSER CO. MADE IN U.S.A.
 CALENDAR YEAR

SEA LEVEL ELEVATION

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K.W. Demand	K.W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____
 Cum. Pumping Cost _____
 Cum. M. G. Pumped _____
 Cum. Equiv. on Lake in Ft. _____
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped _____

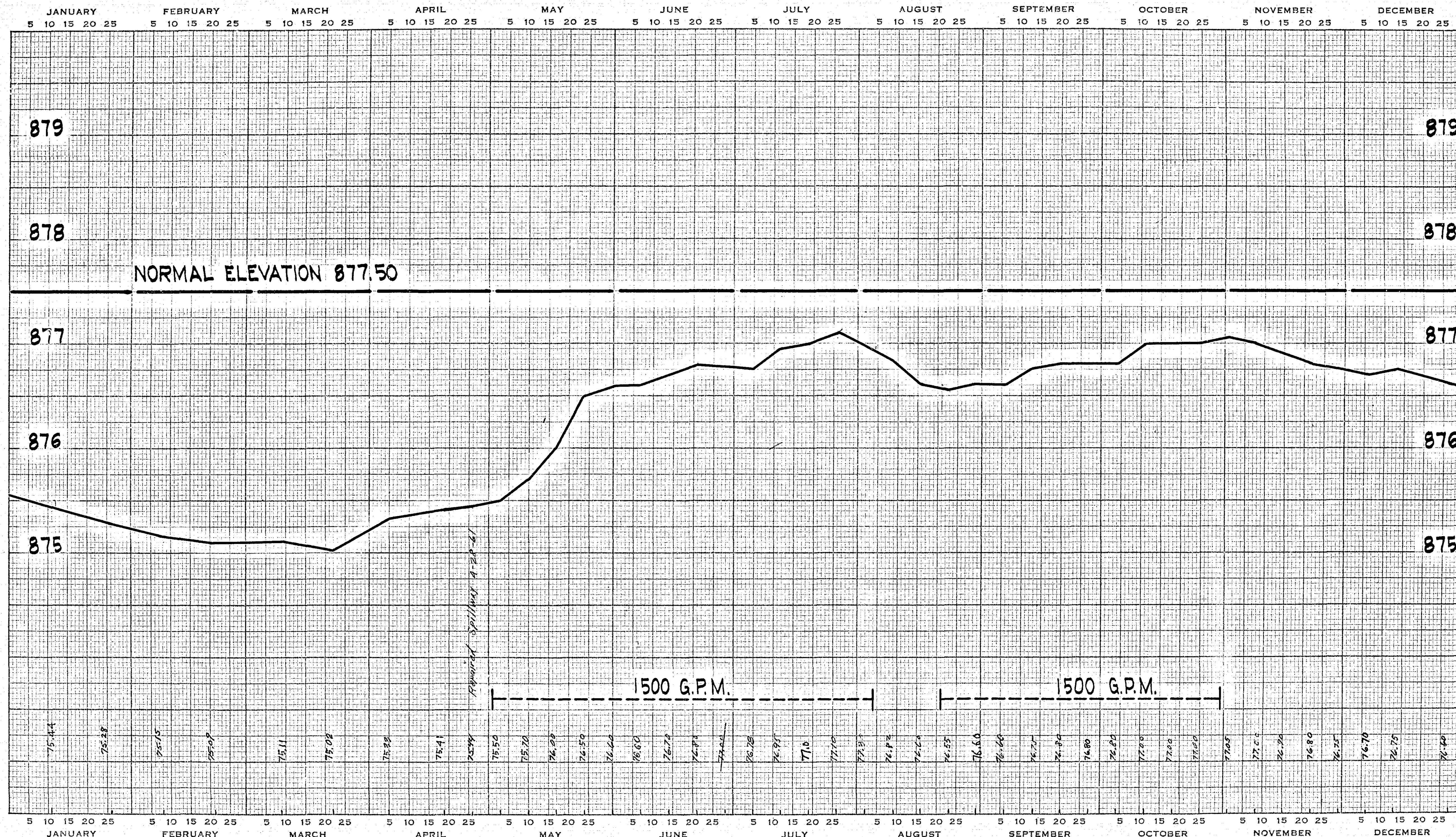
Precipitation This Year 25.74
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -36.80
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake **JOHANNA** Year **1961**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



1 YEAR BY DAYS X 150 DIVS. 359-1411
 KEUFFEL & ESSER CO. MADE IN U.S.A.
 CALENDAR YEAR

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE		160.35	264.59
JULY		155.18	256.05
AUG.		160.35	264.59
SEPT.		77.59	128.02
OCT.		155.18	256.05
NOV.		155.18	256.05
DEC.			
TOTAL		863.85	1425.35

Pumping Costs This Year 1425.35
 Mil. Gals. Pumped This Year 360.72
 Equiv. on Lake in Ft. This Year 5.22
 K. W. H. Consumed This Year 863.85
 Av. Costs Per K. W. H. This Year 0.0165
 Av. Costs Per M. G. Pumped This Year 3.95

Cum. Pumping Cost 41944.00
 Cum. M. G. Pumped 6809.94
 Cum. Equiv. on Lake in Ft. 98.70
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.16

PUMP NO.

PUMP NO.

PUMP NO. 19

SEA LEVEL ELEVATION

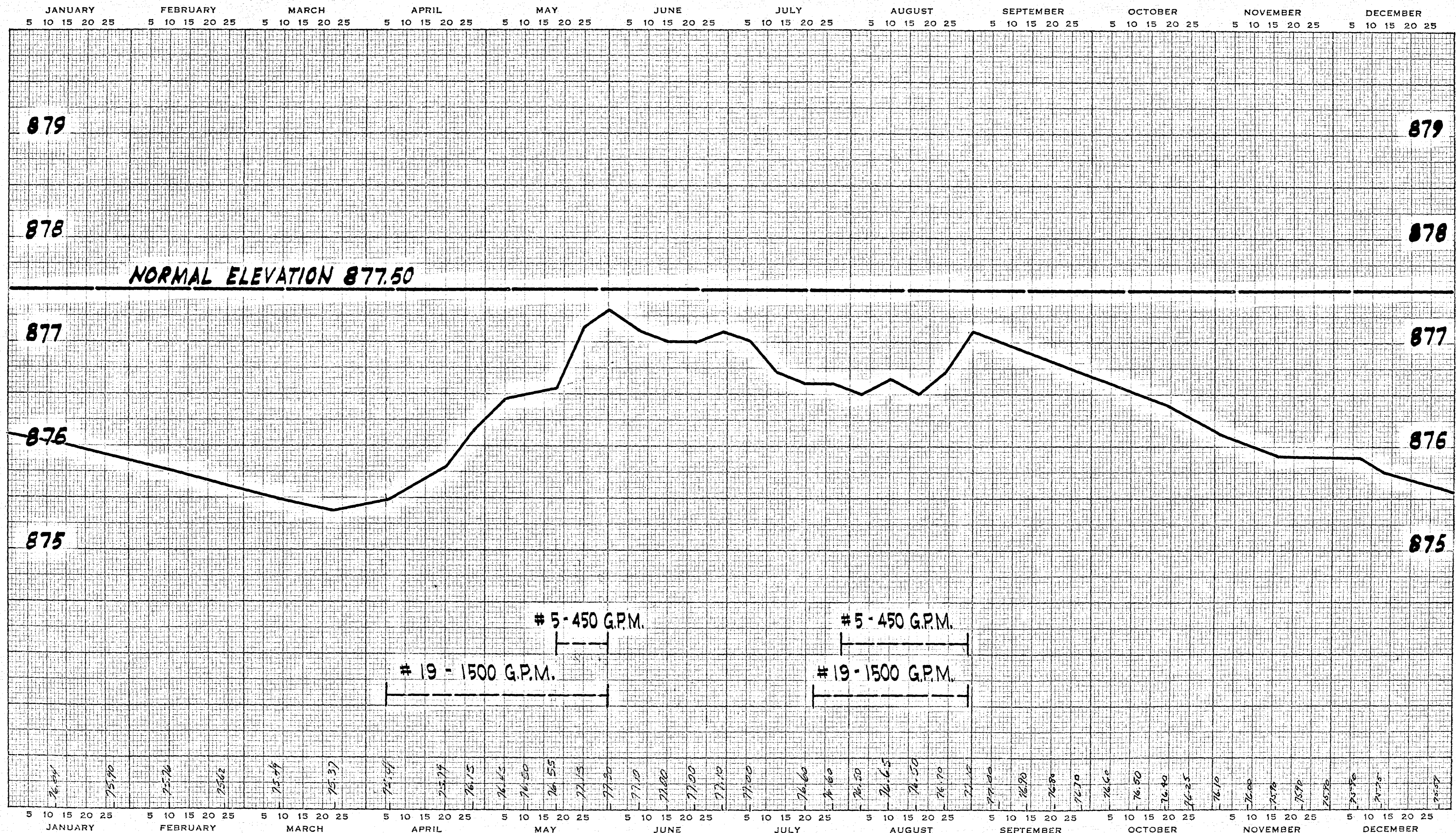
Precipitation This Year 21.46
 Normal Precipitation 24.75
 Cum. Excess-Deficiency -37.83
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake **JOHANNA** Year **1960**

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. _____



Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE		1930	31.85
JULY			
AUG.			
SEPT.	8880		146.52
OCT.			
NOV.			
DEC.			
TOTAL		10810	178.37

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.		8152	134.61
MAY		16709	275.70
JUNE		5249	86.61
JULY		16755	276.46
AUG.			
SEPT.	8078		133.24
OCT.			
NOV.			
DEC.			
TOTAL		54949	906.62

Pumping Costs This Year 1084.99
 Mil. Gals. Pumped This Year 239.98
 Equiv. on Lake in Ft. This Year 3.47
 K. W. H. Consumed This Year 65759
 Av. Costs Per K. W. H. This Year 0.0165
 Av. Costs Per M. G. Pumped This Year 4.52

Cum. Pumping Cost 40518.65
 Cum. M. G. Pumped 6449.22
 Cum. Equiv. on Lake in Ft. 93.48
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.28

KE 1 YEAR BY DAYS X 150 DIVNS. 359-141L MADE IN U.S.A. KEUFFEL & ESSER CO. CALENDAR YEAR

SEA LEVEL ELEVATION

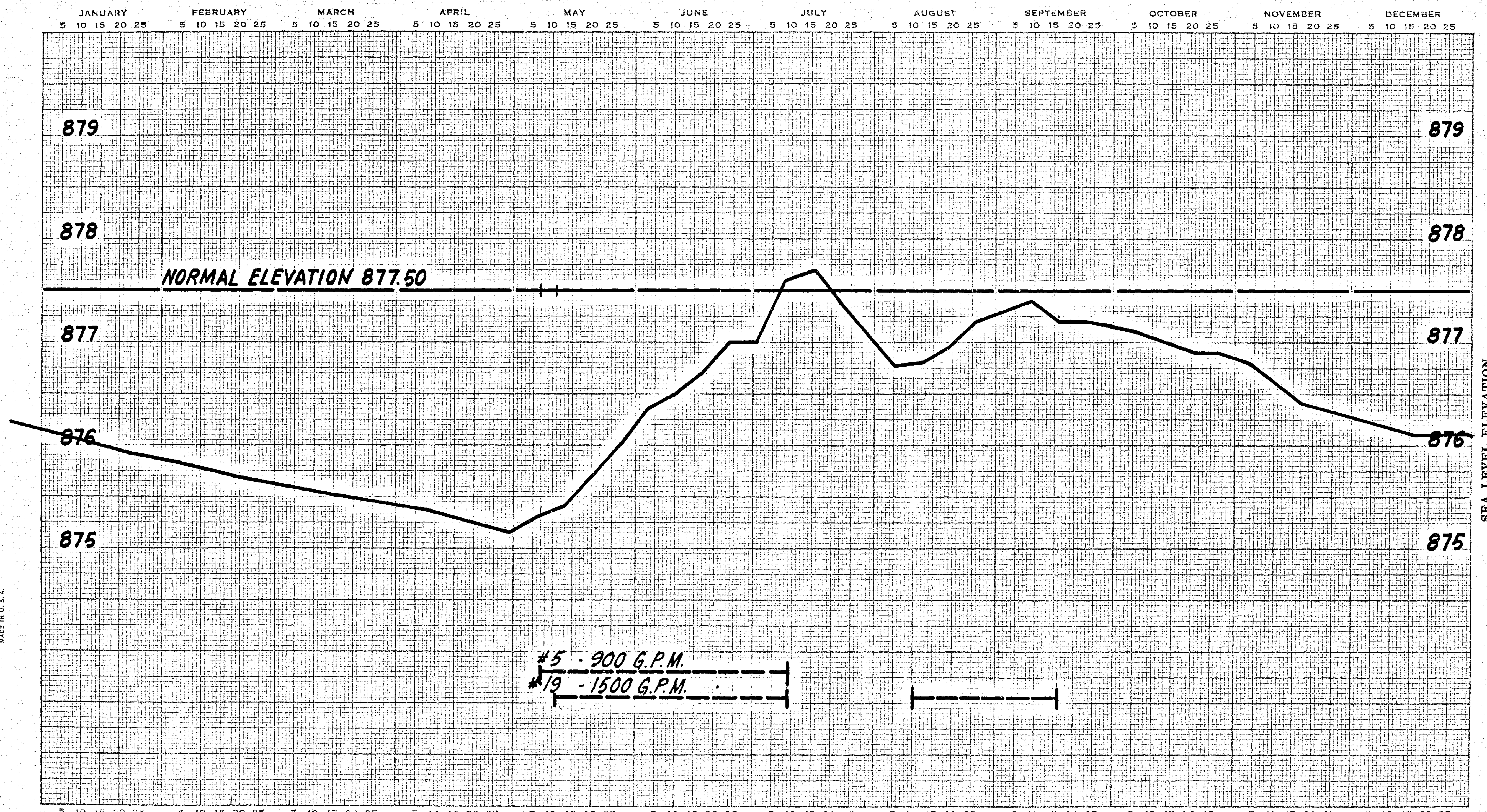
Precipitation This Year 26.88
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -34.54
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake **JOHANNA** Year **1959**

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. **5**



399-141L KEUFFEL & ESSER CO.
 One Year by Days, Calendar Year.
 366 days X 150 (10 per unit) divisions.
 MADE IN U. S. A.

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY		1454.1	
JUNE		1817.1	
JULY		8640	
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL		38352	632.80

PUMPING UNIT NO. 19

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY		11868	195.82
JUNE		17802	293.73
JULY		5340	88.11
AUG.		12460	205.53
SEPT.		3434	56.65
OCT.			
NOV.			
DEC.			
TOTAL		56964	939.90

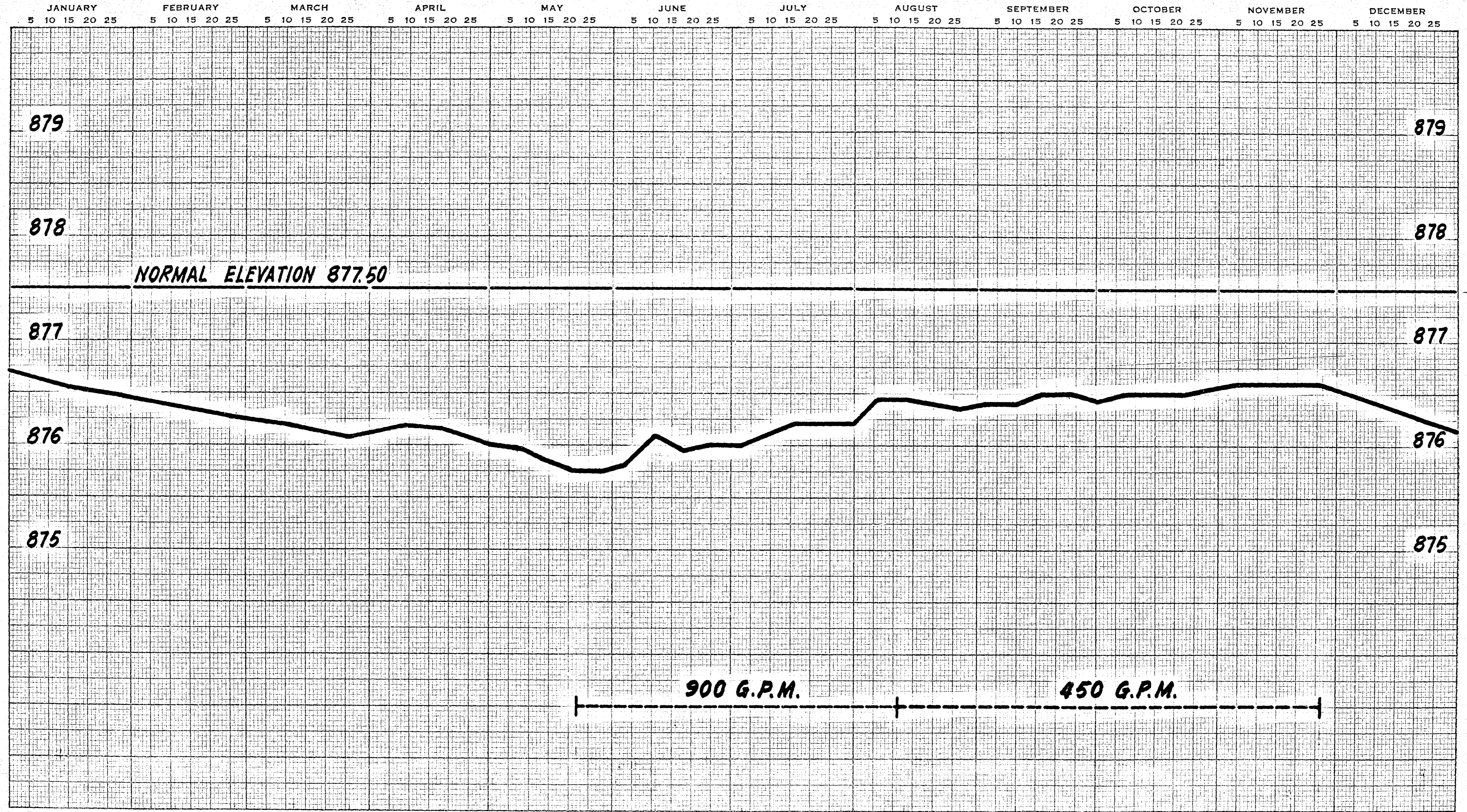
Pumping Costs This Year 1572.70
 Mil. Gals. Pumped This Year 289.01
 Equiv. on Lake in Ft. This Year 4.18
 K. W. H. Consumed This Year 95316
 Av. Costs Per K. W. H. This Year 0.0165
 Av. Costs Per M. G. Pumped This Year 5.44

Cum. Pumping Cost 39433.66
 Cum. M. G. Pumped 6209.24
 Cum. Equiv. on Lake in Ft. 90.01
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.35

Precipitation This Year 16.20
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -36.71
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake **JOHANNA** Year **1958**
 OFFICE OF
RAMSEY COUNTY ENGINEER
 Sheet No. **4**



1 YEAR BY DAYS X 150 DIVS. 359-141L
 KEUFFEL & ESSER CO. MADE IN U.S.A.
 CALENDAR YEAR

SEA LEVEL ELEVATION

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE		4910	79.58
JULY		16367	265.30
AUG.		16913	274.15
SEPT.		7157	115.71
OCT.		8155	132.66
NOV.		7092	114.96
DEC.			
TOTAL		73379	1189.42

Pumping Costs This Year 1189.42 Cum. Pumping Cost 37860.96
 Mil. Gals. Pumped This Year 174.31 Cum. M. G. Pumped 5920.23
 Equiv. on Lake in Ft. This Year 2.52 Cum. Equiv. on Lake in Ft. 85.83
 K. W. H. Consumed This Year 73379 Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year .0162 Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year 6.82 Cum. Av. Costs Per M. G. Pumped 6.40

PUMP NO.

PUMP NO.

PUMP NO. 5

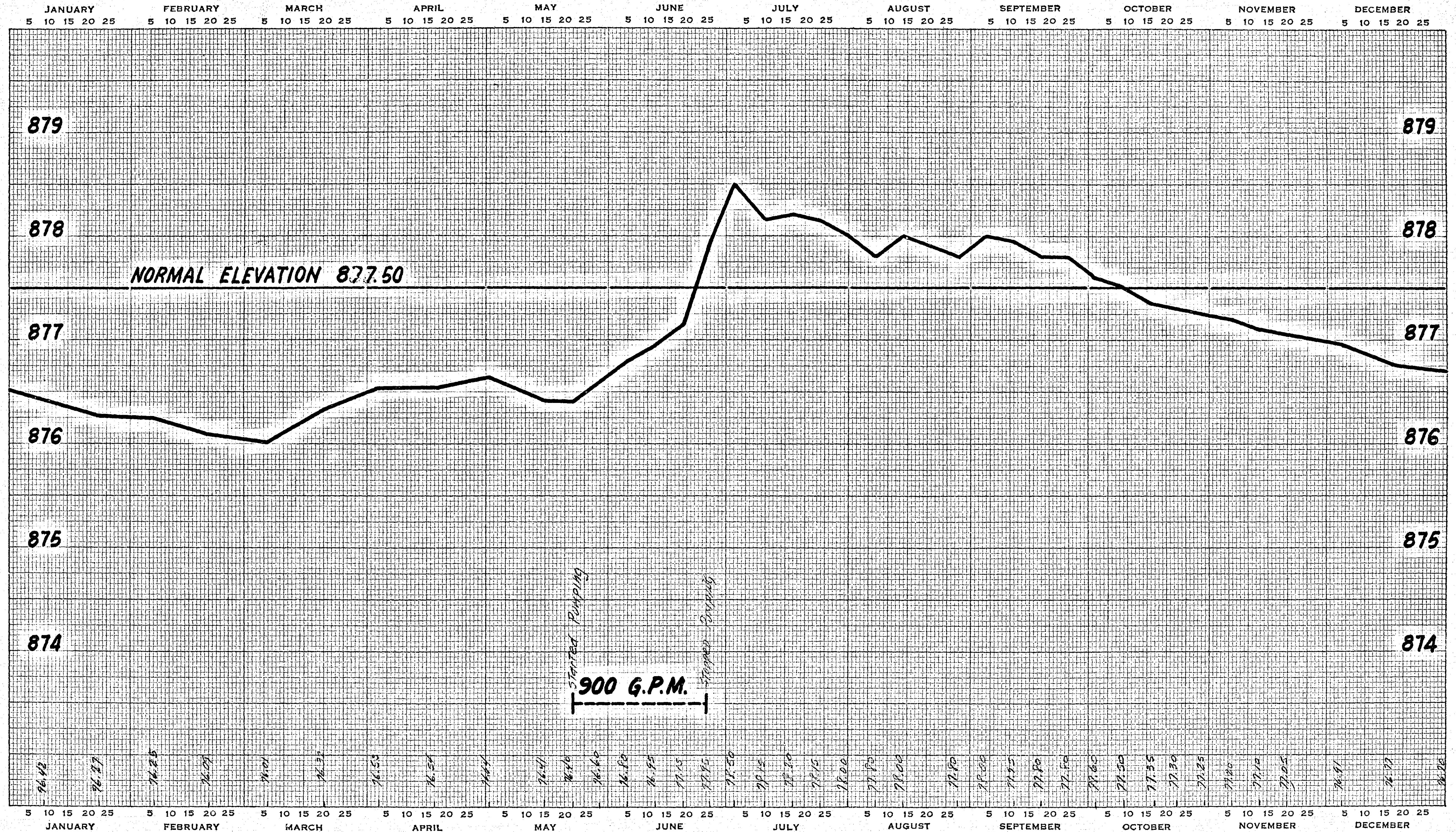
Precipitation This Year 27.85
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -28.20
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1
 DAILY RECORD SHEET

Lake **JOHANNA** Year **1957**

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. **4**



KEUFFEL & ESSER CO., N. Y. NO. 353-141 L
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

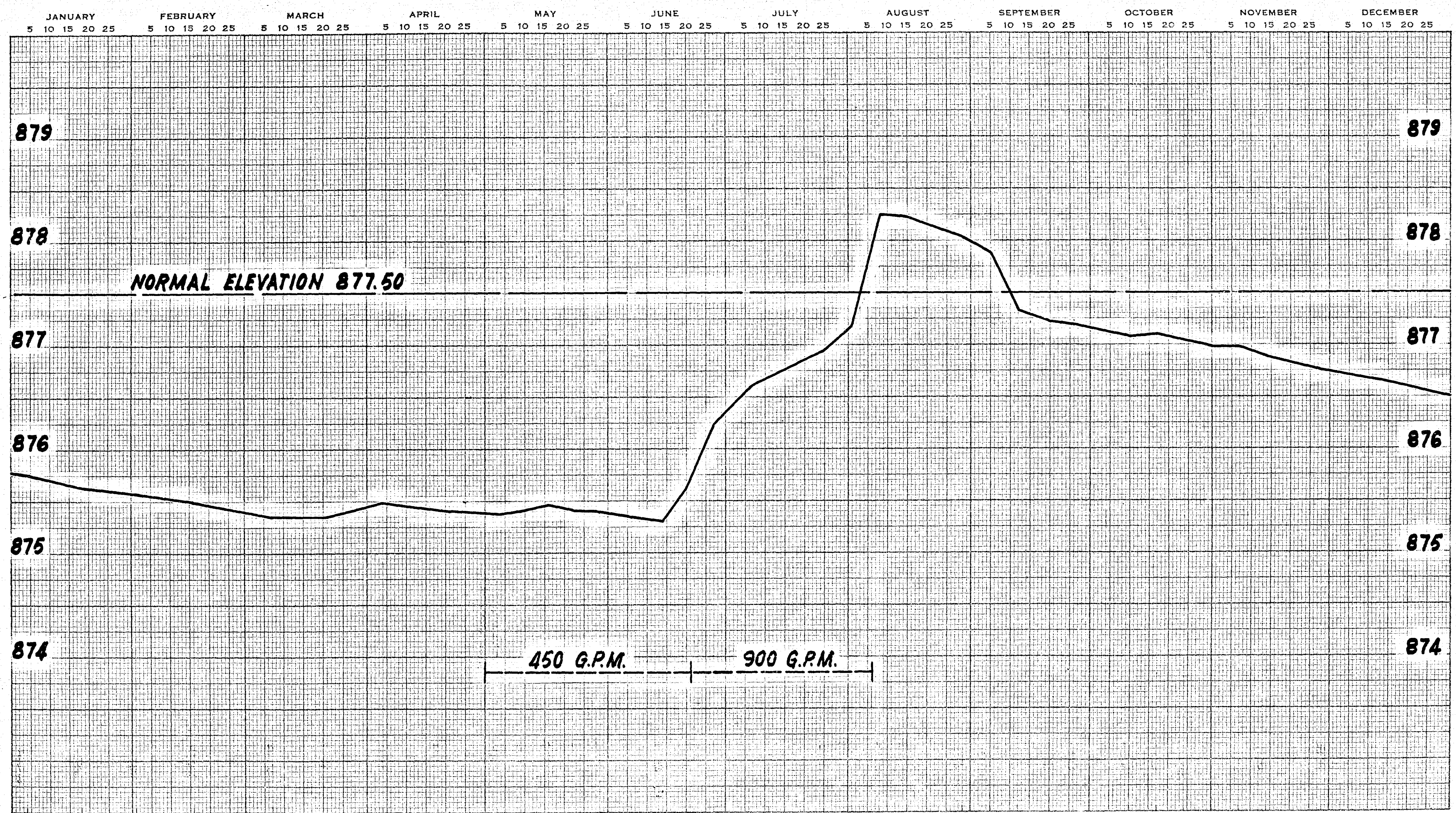
Pumping Costs This Year 0.00
 Mil. Gals. Pumped This Year 0.0
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 36671.54 36671.54
 Cum. M. G. Pumped 5745.92 5745.92
 Cum. Equiv. on Lake in Ft. 83.31 83.31
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.38 6.38

Precipitation This Year 26.75
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -31.34
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake **JOHANNA** Year **1956**
 OFFICE OF
RAMSEY COUNTY SURVEYOR
 Sheet No. **4**



359-1411 KEUFFEL & ESSER CO.
 One Year by Days, Calendar Year.
 365 days X 150 (10 per unit) divisions.
 MADE IN U.S.A.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 2

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. 3

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. 5

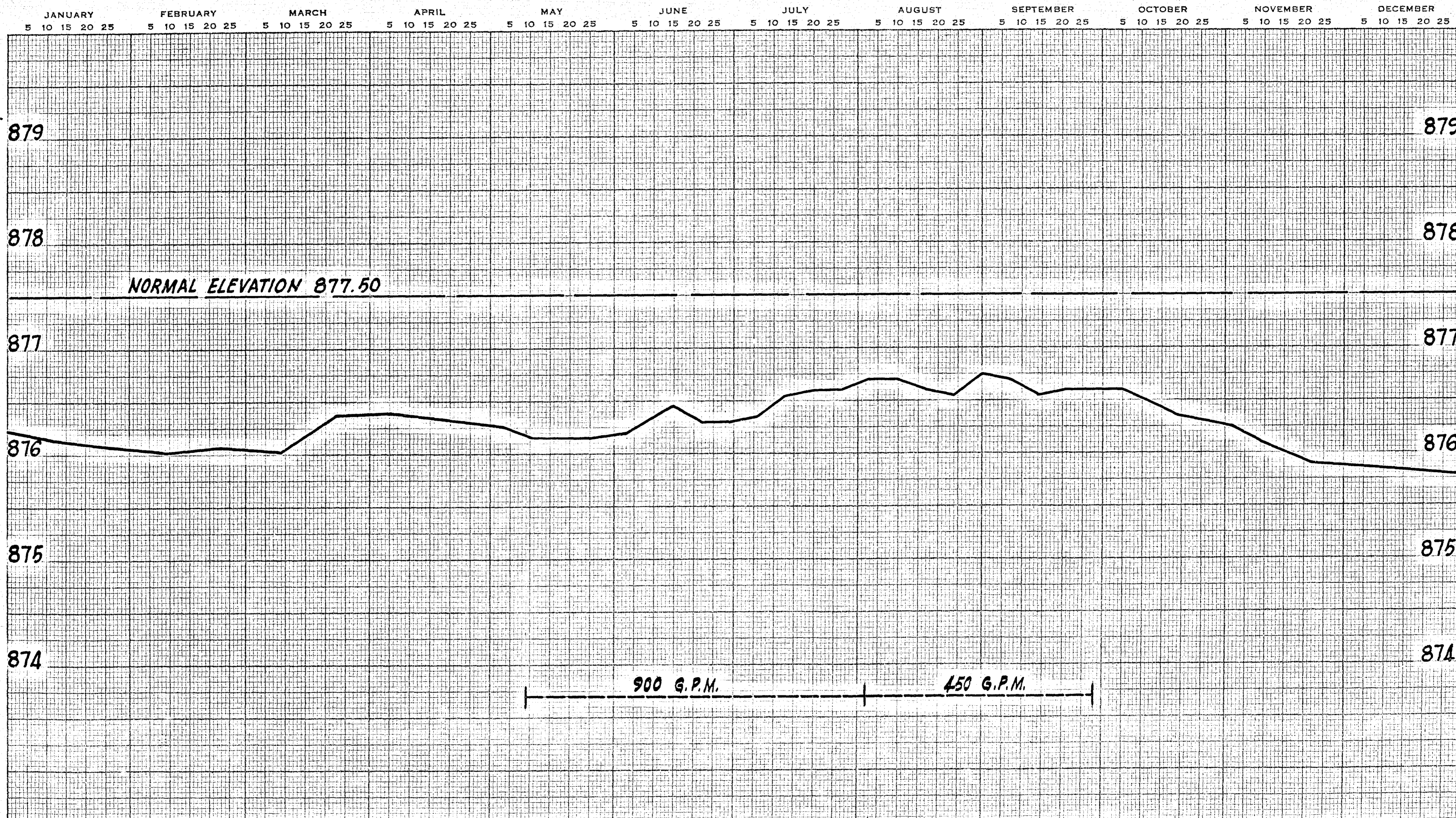
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL		40232	671.87

Pumping Costs This Year 671.81 Cum. Pumping Cost 36671.54
 Mil. Gals. Pumped This Year 93.31 Cum. M. G. Pumped 5745.92
 Equiv. on Lake in Ft. This Year 1.35 Cum. Equiv. on Lake in Ft. 83.31
 K. W. H. Consumed This Year 40232 Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year .0167 Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year 7.20 Cum. Av. Costs Per M. G. Pumped 6.38

Precipitation This Year 21.11
 Normal Precipitation 24.71
 Cum. Excess-Deficiency -33.38
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1955
 OFFICE OF
 RAMSEY COUNTY SURVEYOR
 Sheet No. 4



359-141L KEUFFEL & ESSER CO.
 One Year by Days, Calendar Year,
 306 days X 150 (10 per unit) divisions.
 MADE IN U. S. A.

SEA LEVEL ELEVATION

PUMPING UNIT NO. <u>1</u> FEBRUARY				PUMPING UNIT NO. <u>2</u> MARCH				PUMPING UNIT NO. <u>5</u> MAY				PUMPING UNIT NO. <u>5</u> JULY			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.				JAN.				JAN.				JAN.			
FEB.				FEB.				FEB.				FEB.			
MAR.				MAR.				MAR.				MAR.			
APR.				APR.				APR.				APR.			
MAY				MAY				MAY				MAY			
JUNE				JUNE				JUNE				JUNE			
JULY				JULY				JULY				JULY			
AUG.				AUG.				AUG.				AUG.			
SEPT.				SEPT.				SEPT.				SEPT.			
OCT.				OCT.				OCT.				OCT.			
NOV.				NOV.				NOV.				NOV.			
DEC.				DEC.				DEC.				DEC.			
TOTAL				TOTAL				TOTAL				TOTAL			

Pumping Costs This Year 1068.00
 Mil. Gals. Pumped This Year 147.10
 Equiv. on Lake in Ft. This Year 2.13
 K. W. H. Consumed This Year 63540
 Av. Costs Per K. W. H. This Year .0168
 Av. Costs Per M. G. Pumped This Year 7.15

Cum. Pumping Cost 35999.73
 Cum. M. G. Pumped 5652.61
 Cum. Equiv. on Lake in Ft. 81.96
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.37

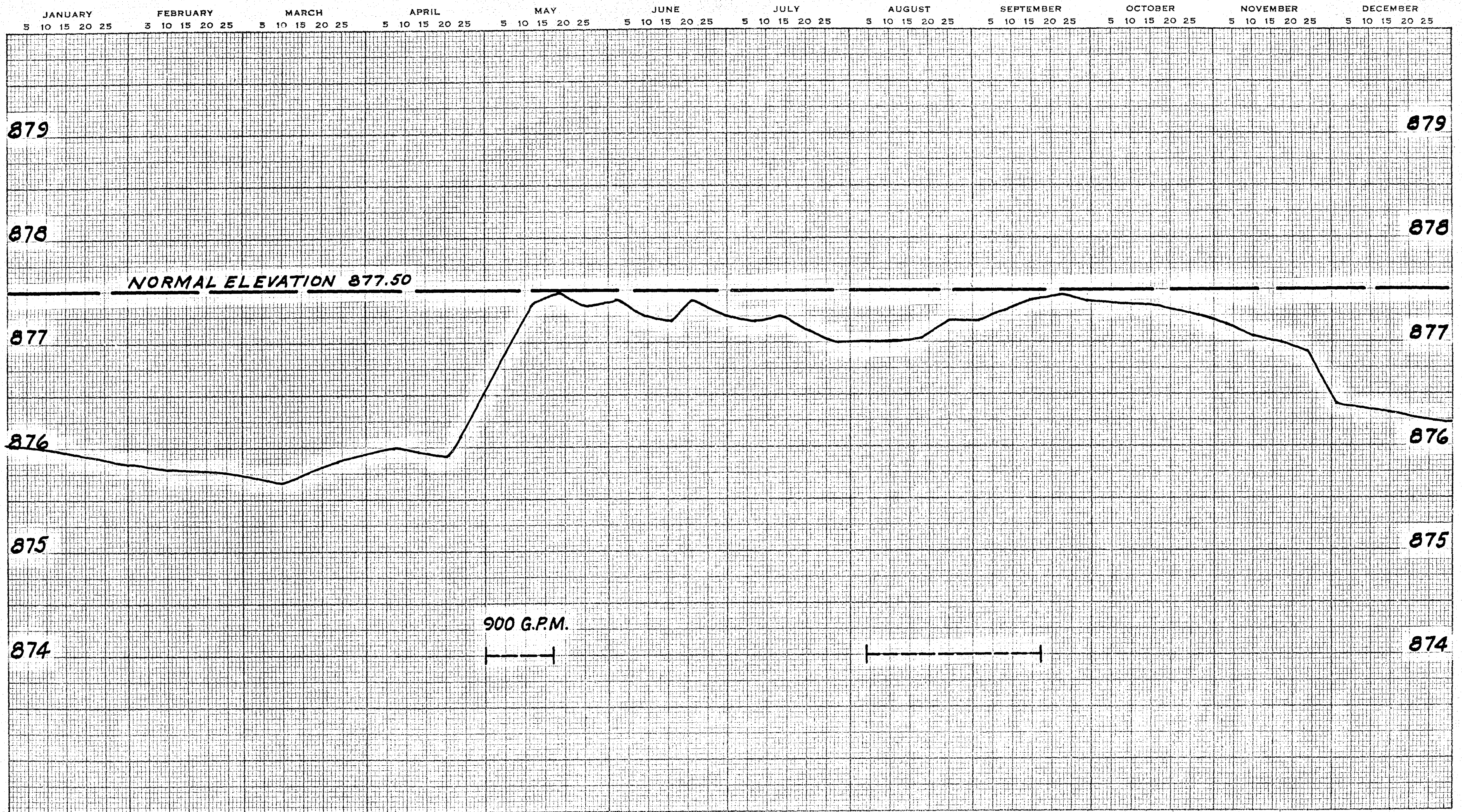
Precipitation This Year 23.68
 Normal Precipitation 24.71
 Cum. Excess-Deficiency 29.78
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1954

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4



389-141L KEUFFEL & ESSER CO.
 One Year by Days, Calendar Year.
 366 days X 150 (10 per unit) divisions.
 MADE IN U. S. A.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year	<u>561.82</u>	Cum. Pumping Cost	<u>34,931.73</u>
Mil. Gals. Pumped This Year	<u>79.06</u>	Cum. M. G. Pumped	<u>5,505.61</u>
Equiv. on Lake in Ft. This Year	<u>1.14</u>	Cum. Equiv. on Lake in Ft.	<u>79.83</u>
K. W. H. Consumed This Year	<u>33101</u>	Cum. K. W. H.	
Av. Costs Per K. W. H. This Year	<u>.0170</u>	Cum. Av. Cost Per K. W. H.	
Av. Costs Per M. G. Pumped This Year	<u>7.11</u>	Cum. Av. Costs Per M. G. Pumped	<u>6.34</u>

Precipitation This Year 27.91

Area in Acres at Normal Elevation 212

Lake JOHANNA Year 1953

Normal Precipitation 24.71

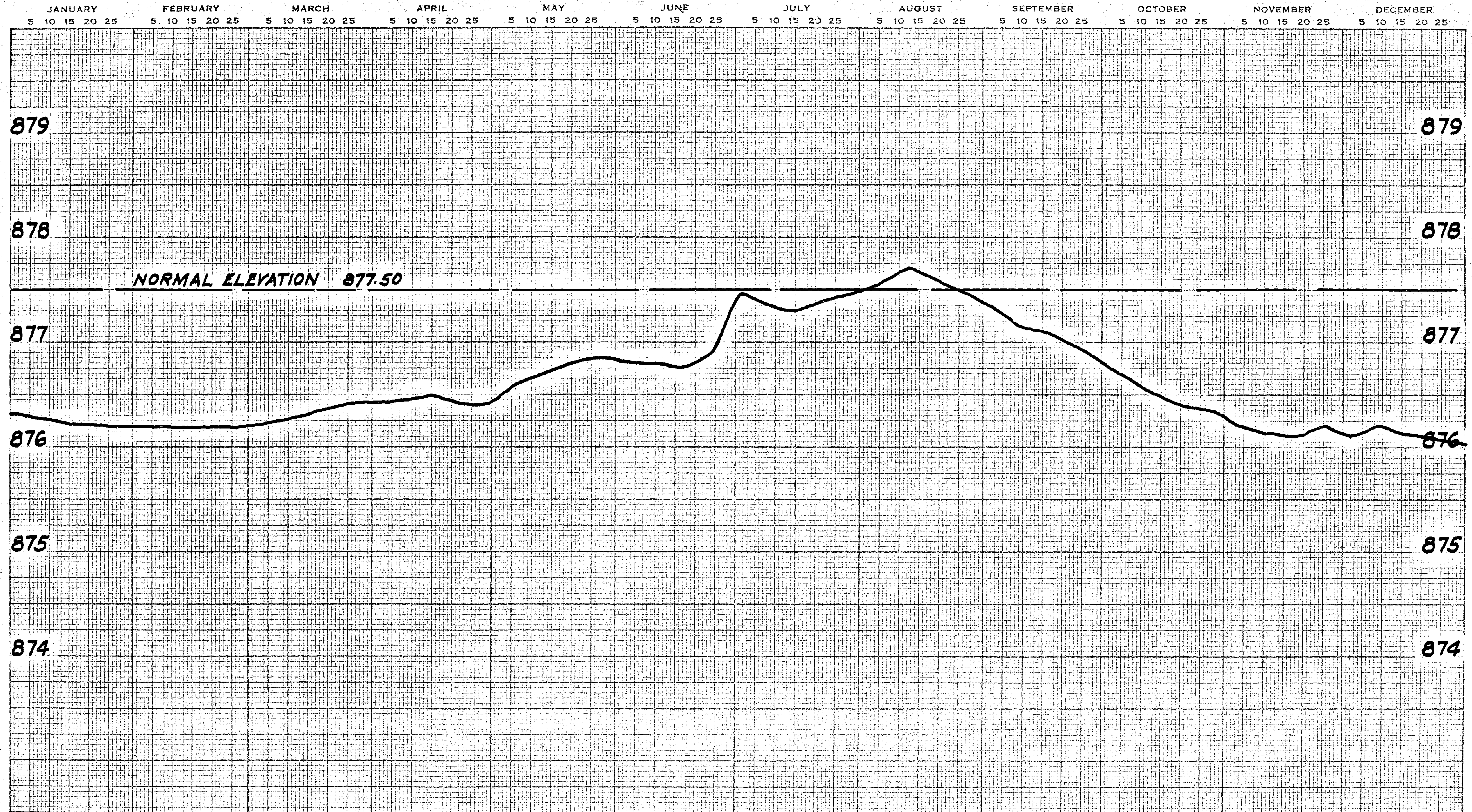
Gallons Equiv. to One Foot on Lake 69,100,000

OFFICE OF
RAMSEY COUNTY SURVEYOR

Cum. Excess-Deficiency -28.75
(Since 1924)

Ratio: Watershed to Lake Area 4.64 To 1

Sheet No. 4



350-141L KEUFFEL & ESSER CO.
One Year by Days, Calendar Year.
366 days X 150 (10 per unit) divisions.
MADE IN U. S. A.

SEA LEVEL ELEVATION

PUMPING UNIT NO. <u>NOVEMBER</u>			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. <u>NOVEMBER</u>			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. <u>JULY</u>			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 0.00
 Mil. Gals. Pumped This Year 0.00
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 34,369.91
 Cum. M. G. Pumped 5,426.55
 Cum. Equiv. on Lake in Ft. 78.69
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.33

Precipitation This Year 23.64
 Normal Precipitation 27.27
 Cum. Excess-Deficiency - 30.99
 (Since 1924)

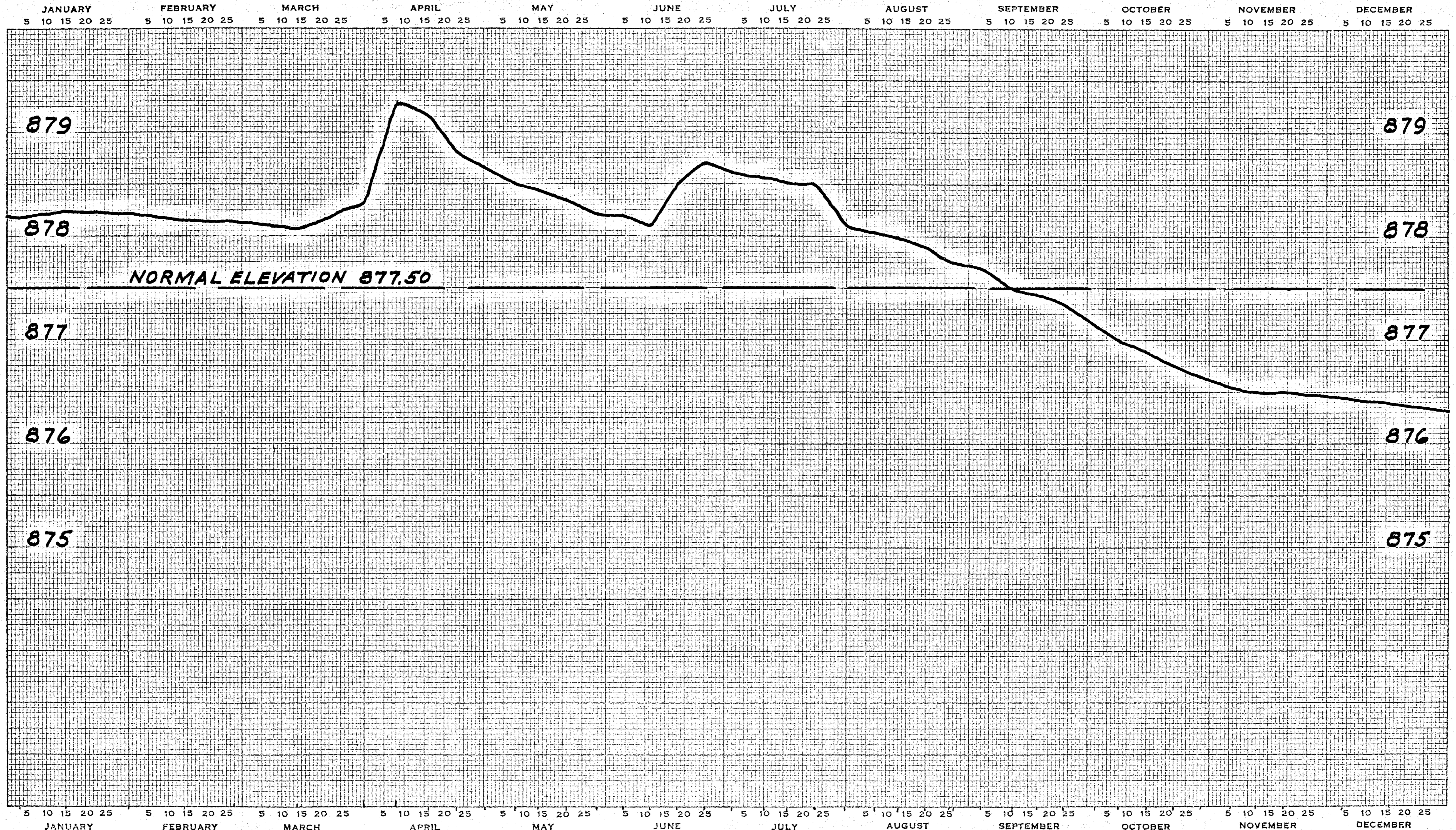
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1952

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411.
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY PUMPING UNIT NO.			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MARCH PUMPING UNIT NO.			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MAY PUMPING UNIT NO.			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year	<u>0.00</u>	Cum. Pumping Cost	<u>34,369.91</u>
Mil. Gals. Pumped This Year	<u>0.00</u>	Cum. M. G. Pumped	<u>5,426.55</u>
Equiv. on Lake in Ft. This Year		Cum. Equiv. on Lake in Ft.	<u>78.69</u>
K. W. H. Consumed This Year		Cum. K. W. H.	
Av. Costs Per K. W. H. This Year		Cum. Av. Cost Per K. W. H.	
Av. Costs Per M. G. Pumped This Year		Cum. Av. Costs Per M. G. Pumped	<u>6.33</u>

Precipitation This Year 37.20
 Normal Precipitation 27.24
 Cum. Excess-Deficiency - 27.36
 (Since 1924)

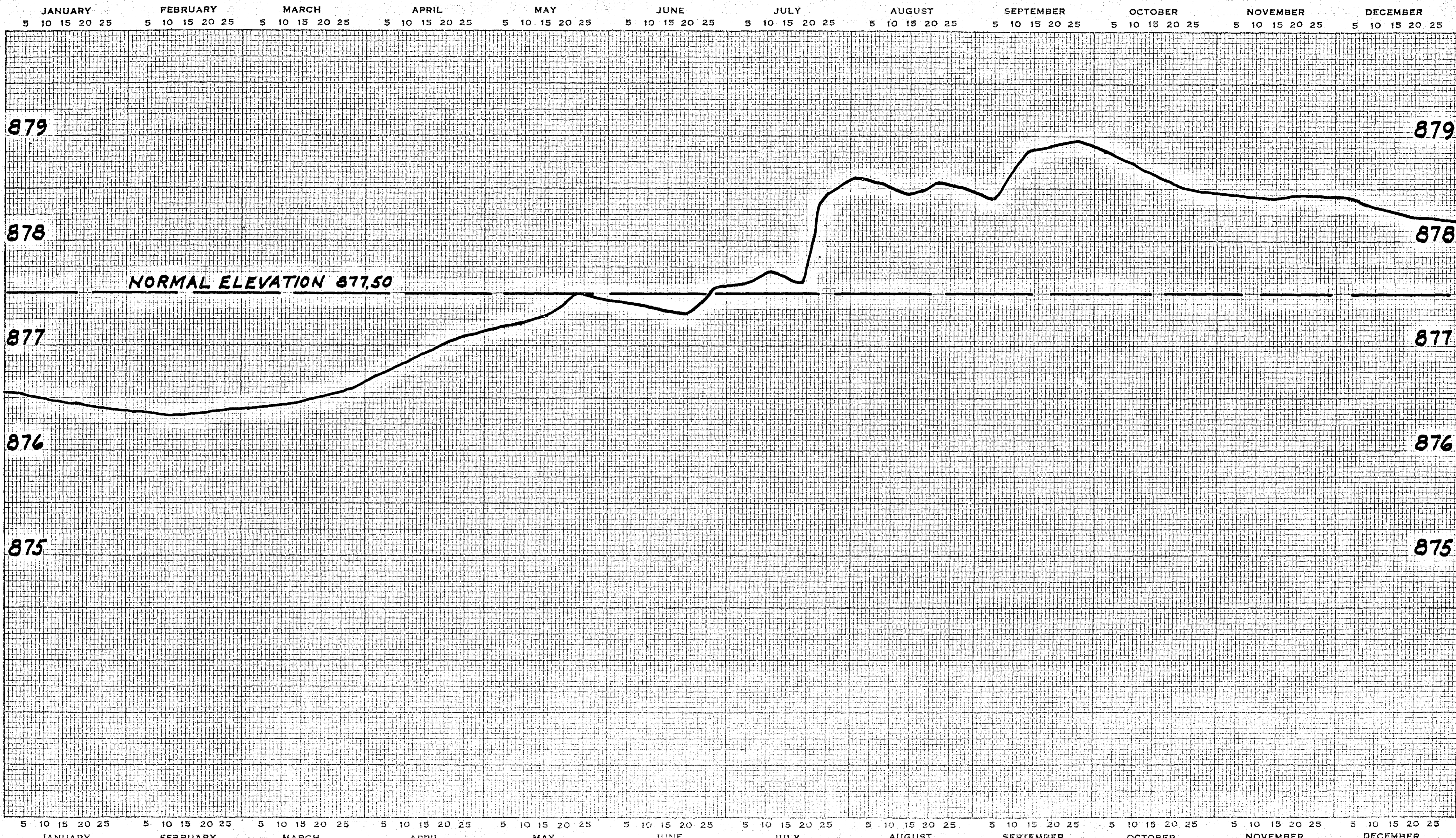
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1951

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 0.00 Cum. Pumping Cost 34,369.91
 Mil. Gals. Pumped This Year 0.00 Cum. M. G. Pumped 5426.55
 Equiv. on Lake in Ft. This Year _____ Cum. Equiv. on Lake in Ft. 78.69
 K. W. H. Consumed This Year _____ Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year _____ Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year _____ Cum. Av. Costs Per M. G. Pumped 6.33

Precipitation This Year 24.46
 Normal Precipitation 27.24
 Cum. Excess-Deficiency -37.32
 (Since 1924)

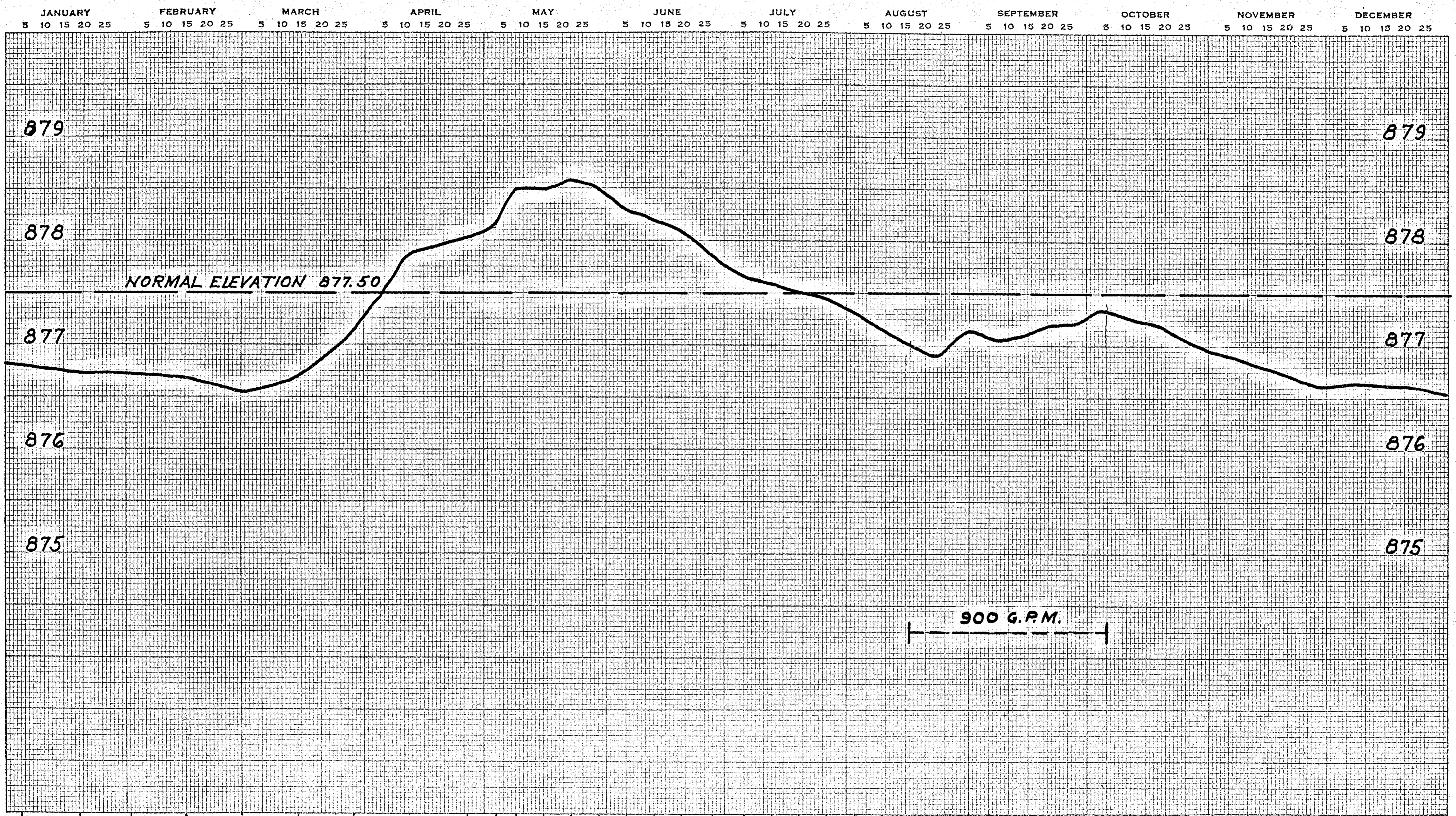
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1950

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 399-141L
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____				PUMPING UNIT NO. _____				PUMPING UNIT NO. <u>5</u>				Pumping Costs This Year		Cum. Pumping Cost	
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Mil. Gals. Pumped This Year	Cum. M. G. Pumped	Equiv. on Lake in Ft. This Year	Cum. Equiv. on Lake in Ft.
JAN.				JAN.				JAN.							
FEB.				FEB.				FEB.							
MAR.				MAR.				MAR.							
APR.				APR.				APR.							
MAY				MAY				MAY							
JUNE				JUNE				JUNE							
JULY				JULY				JULY							
AUG.				AUG.				AUG.	1040		16.98				
SEPT.				SEPT.				SEPT.	18260		297.02				
OCT.				OCT.				OCT.	3140		149.16				
NOV.				NOV.				NOV.							
DEC.				DEC.				DEC.							
TOTAL				TOTAL				TOTAL			28380	463.16			

Pumping Costs This Year 463.16 Cum. Pumping Cost 34369.91
 Mil. Gals. Pumped This Year 64.80 Cum. M. G. Pumped 5426.55
 Equiv. on Lake in Ft. This Year .94 Cum. Equiv. on Lake in Ft. 78.69
 K. W. H. Consumed This Year 28380 Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year .0163 Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year 7.15 Cum. Av. Ccsts Per M. G. Pumped 6.33

Precipitation This Year 24.50
 Normal Precipitation 27.24
 Cum. Excess-Deficiency -34.54
 (Since 1924)

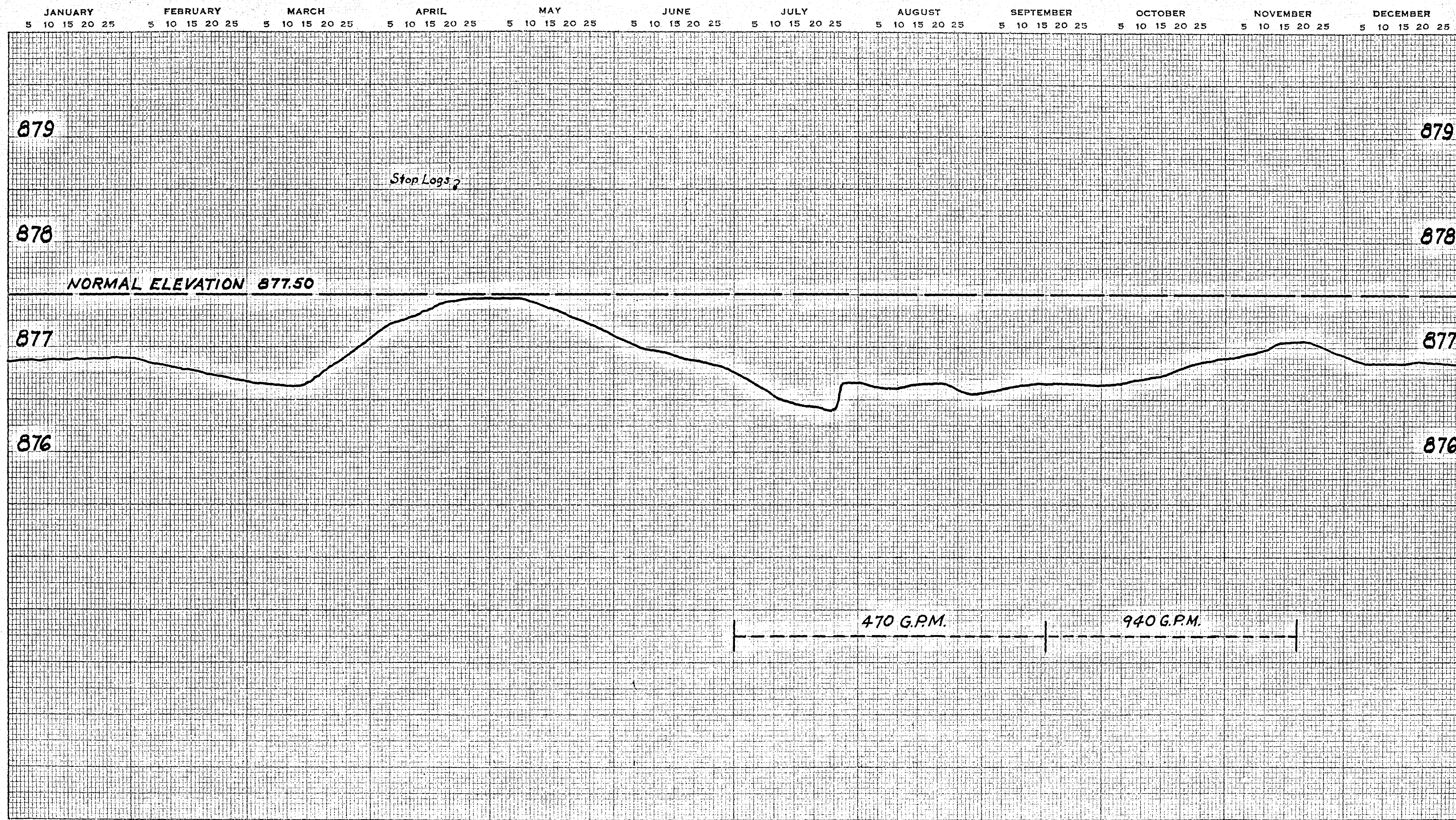
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 To 1

Lake JOHANNA Year 1949

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____				PUMPING UNIT NO. _____				PUMPING UNIT NO. <u>5</u>			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.				JAN.				JAN.			
FEB.				FEB.				FEB.			
MAR.				MAR.				MAR.			
APR.				APR.				APR.			
MAY				MAY				MAY			
JUNE				JUNE				JUNE	73	3735	63.76
JULY				JULY				JULY	13	8490	144.16
AUG.				AUG.				AUG.	29	13905	234.00
SEPT.				SEPT.				SEPT.	22	17460	292.63
OCT.				OCT.				OCT.	21.5	17340	290.62
NOV.				NOV.				NOV.			
DEC.				DEC.				DEC.			
TOTAL				TOTAL				TOTAL	98.5	60950	1025.17

Pumping Costs This Year 1025.17 Cum. Pumping Cost 33,906.75
 Mil. Gals. Pumped This Year 138.07 Cum. M. G. Pumped 5361.75
 Equiv. on Lake in Ft. This Year 2.00 Cum. Equiv. on Lake in Ft. 77.75
 K. W. H. Consumed This Year 60950 Cum. K. W. H. _____
 Av. Costs Per K. W. H. This Year .017 Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year 7.43 Cum. Av. Costs Per M. G. Pumped 6.32

Precipitation This Year 16.95 20.68
 Normal Precipitation 27.70 27.24
 Cum. Excess-Deficiency - 62.69 31.80
 (Since 1924)

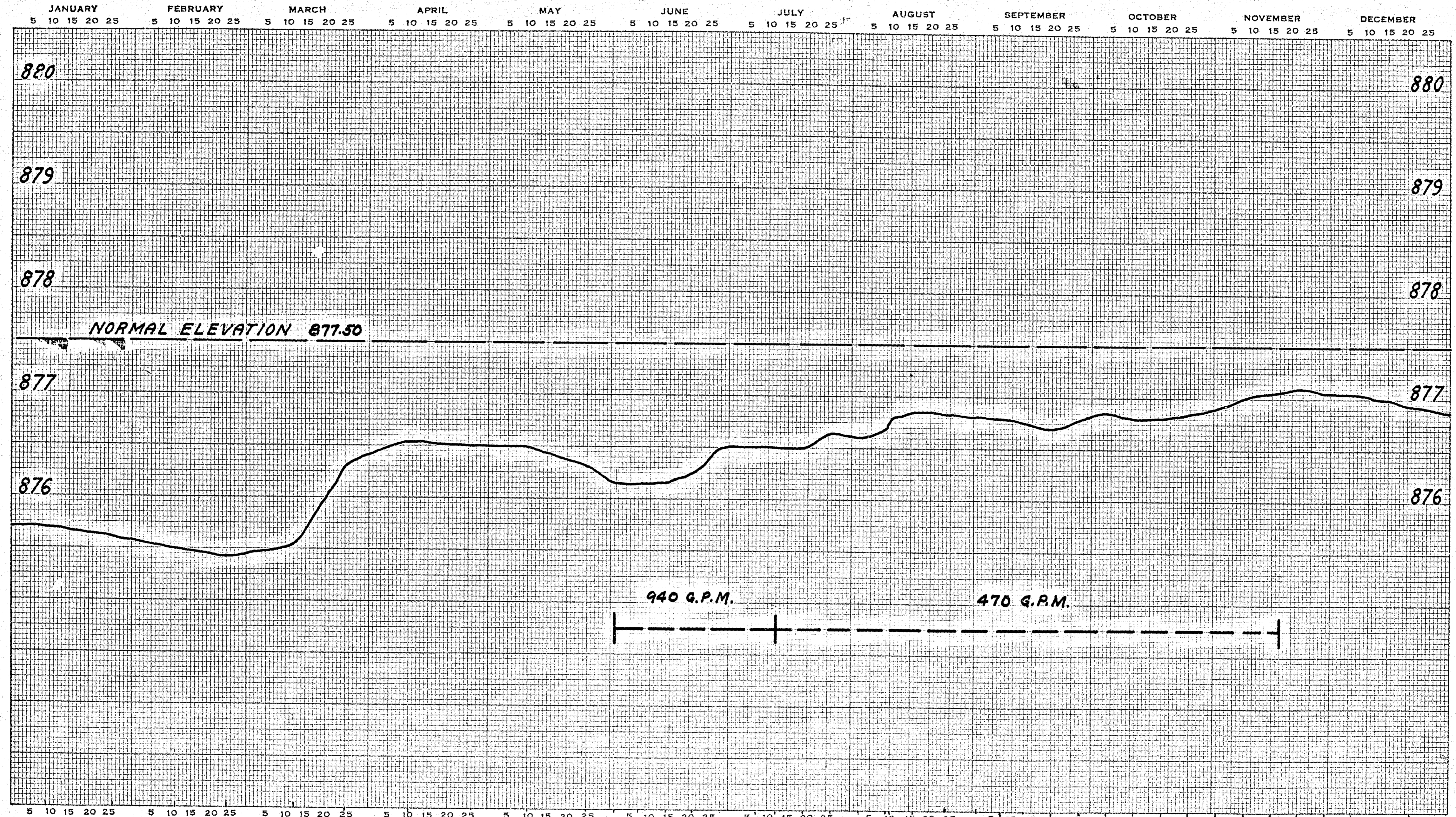
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1948

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 389-141L
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE	27.5	127.0	213.02
JULY	18.7	113.8	193.89
AUG.	15.0	73.9	126.03
SEPT.	13.5	65.9	157.87
OCT.	4.5	21.0	140.35
NOV.	13.5	61.0	136.76
DEC.			
TOTAL	101.70	579.08	970.54

Pumping Costs This Year	<u>970.54</u>	Cum. Pumping Cost	<u>32,881.58</u>
Mil. Gals. Pumped This Year	<u>129.95</u>	Cum. M. G. Pumped	<u>5,223.68</u>
Equiv. on Lake in Ft. This Year	<u>1.88</u>	Cum. Equiv. on Lake in Ft.	<u>75.75</u>
K. W. H. Consumed This Year	<u>579.08</u>	Cum. K. W. H.	_____
Av. Costs Per K. W. H. This Year	<u>.017</u>	Cum. Av. Cost Per K. W. H.	_____
Av. Costs Per M. G. Pumped This Year	<u>7.47</u>	Cum. Av. Costs Per M. G. Pumped	<u>6.29</u>

Precipitation This Year 21.09 22.54
 Normal Precipitation 27.66 27.24
 Cum. Excess-Deficiency 24.91 -25.24
 (Since 1924)

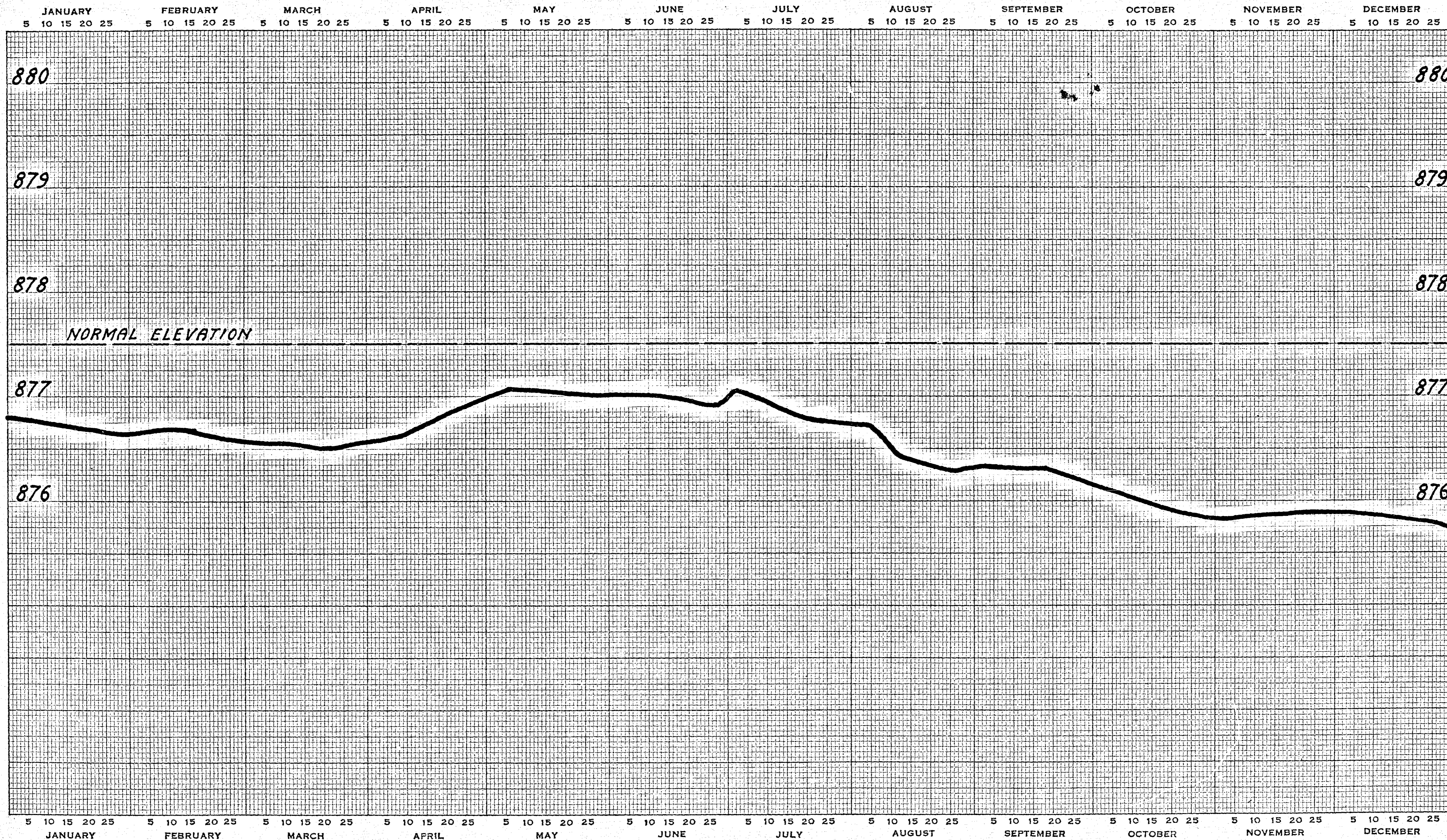
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1947

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 0.00 Cum. Pumping Cost 31911.04
 Mil. Gals. Pumped This Year 0.00 Cum. M. G. Pumped 5093.73
 Equiv. on Lake in Ft. This Year _____ Cum. Equiv. on Lake in Ft. 73.87
 Av. Costs Per K. W. H. This Year _____ Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year _____ Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 28.97 30.66

Normal Precipitation 27.19 27.24

Cum. Excess-Deficiency 18.34 - 20.54
(Since 1924)

Area in Acres at Normal Elevation 212

Gallons Equiv. to One Foot on Lake 69,100,000

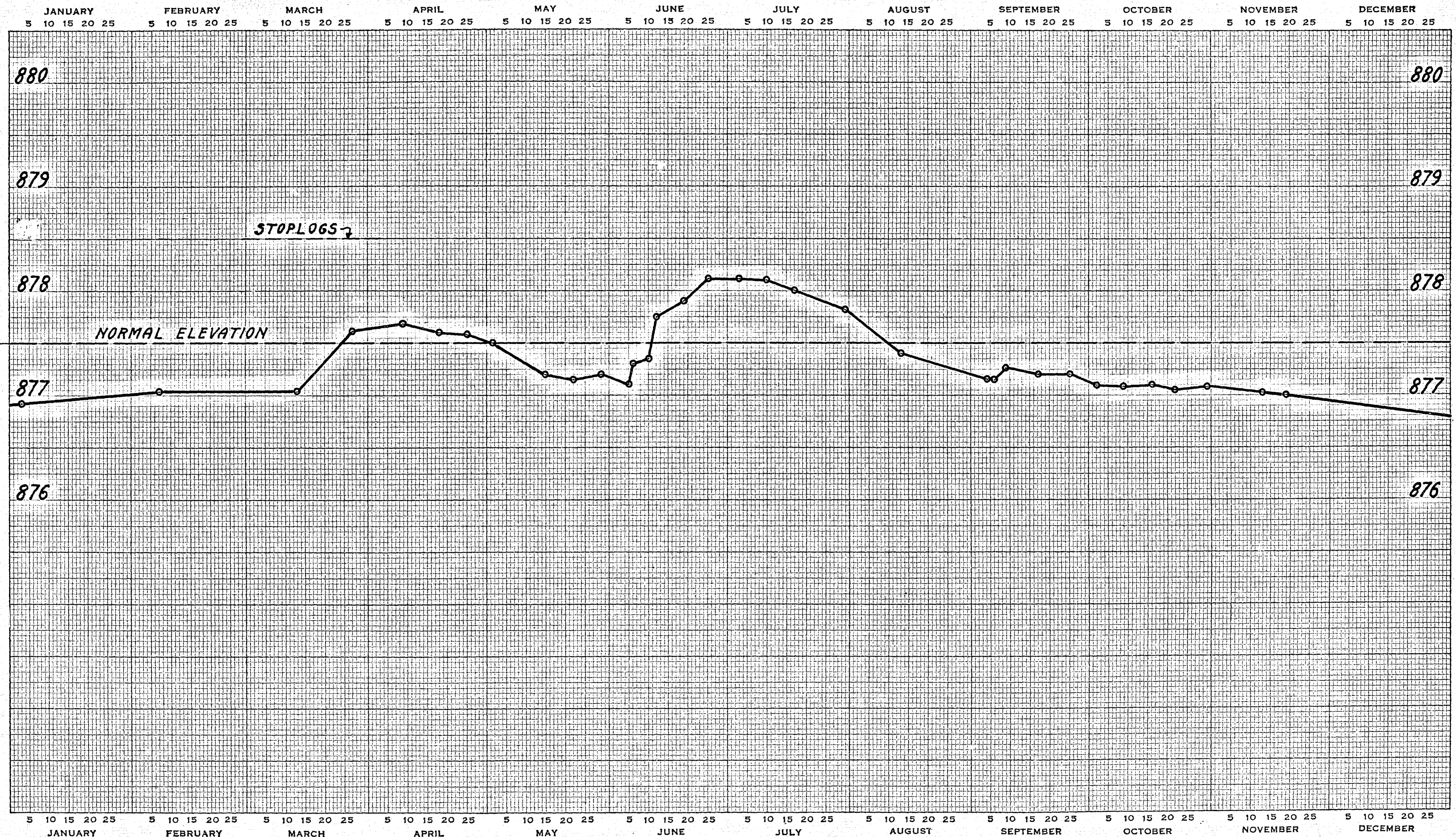
Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1946

OFFICE OF
RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
One Year by Days, Calendar Year.
Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 0.00
 Mil. Gals. Pumped This Year 0.00
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 31911.04
 Cum. M. G. Pumped 5093.73
 Cum. Equiv. on Lake in Ft. 73.87
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 28.96 ~~28.96~~
 Normal Precipitation 27.20 ~~27.24~~
 Cum. Excess-Deficiency -20.12 ~~-23.96~~
 (Since 1924)

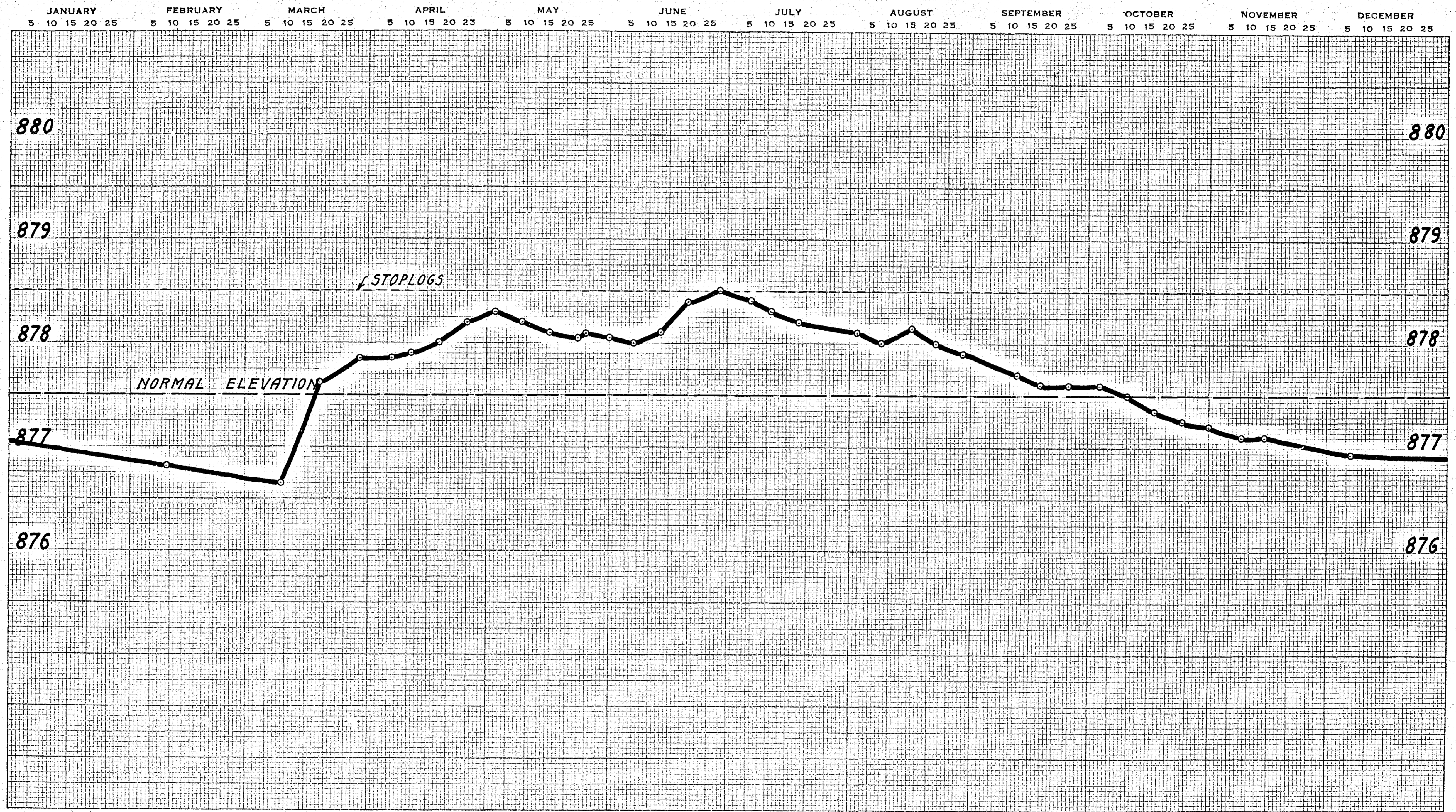
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1945

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY PUMPING UNIT NO. _____				FEBRUARY PUMPING UNIT NO. _____				MARCH PUMPING UNIT NO. _____				APRIL PUMPING UNIT NO. _____				MAY PUMPING UNIT NO. _____				JUNE PUMPING UNIT NO. _____				JULY PUMPING UNIT NO. _____				AUGUST PUMPING UNIT NO. _____				SEPTEMBER PUMPING UNIT NO. _____				OCTOBER PUMPING UNIT NO. _____				NOVEMBER PUMPING UNIT NO. _____				DECEMBER PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.				JAN.				JAN.				JAN.				JAN.				JAN.				JAN.				JAN.				JAN.				JAN.											
FEB.				FEB.				FEB.				FEB.				FEB.				FEB.				FEB.				FEB.				FEB.				FEB.											
MAR.				MAR.				MAR.				MAR.				MAR.				MAR.				MAR.				MAR.				MAR.				MAR.											
APR.				APR.				APR.				APR.				APR.				APR.				APR.				APR.				APR.				APR.											
MAY				MAY				MAY				MAY				MAY				MAY				MAY				MAY				MAY				MAY											
JUNE				JUNE				JUNE				JUNE				JUNE				JUNE				JUNE				JUNE				JUNE				JUNE											
JULY				JULY				JULY				JULY				JULY				JULY				JULY				JULY				JULY				JULY											
AUG.				AUG.				AUG.				AUG.				AUG.				AUG.				AUG.				AUG.				AUG.				AUG.											
SEPT.				SEPT.				SEPT.				SEPT.				SEPT.				SEPT.				SEPT.				SEPT.				SEPT.				SEPT.											
OCT.				OCT.				OCT.				OCT.				OCT.				OCT.				OCT.				OCT.				OCT.				OCT.											
NOV.				NOV.				NOV.				NOV.				NOV.				NOV.				NOV.				NOV.				NOV.				NOV.											
DEC.				DEC.				DEC.				DEC.				DEC.				DEC.				DEC.				DEC.				DEC.				DEC.											
TOTAL				TOTAL				TOTAL				TOTAL				TOTAL				TOTAL				TOTAL				TOTAL				TOTAL				TOTAL											

Pumping Costs This Year 0.0
 Mil. Gals. Pumped This Year 0.0
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 31911.04
 Cum. M. G. Pumped 5093.73
 Cum. Equiv. on Lake in Ft. 73.87
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 28.76
 Normal Precipitation 27.27
 Cum. Excess-Deficiency -25.68
 (Since 1924)

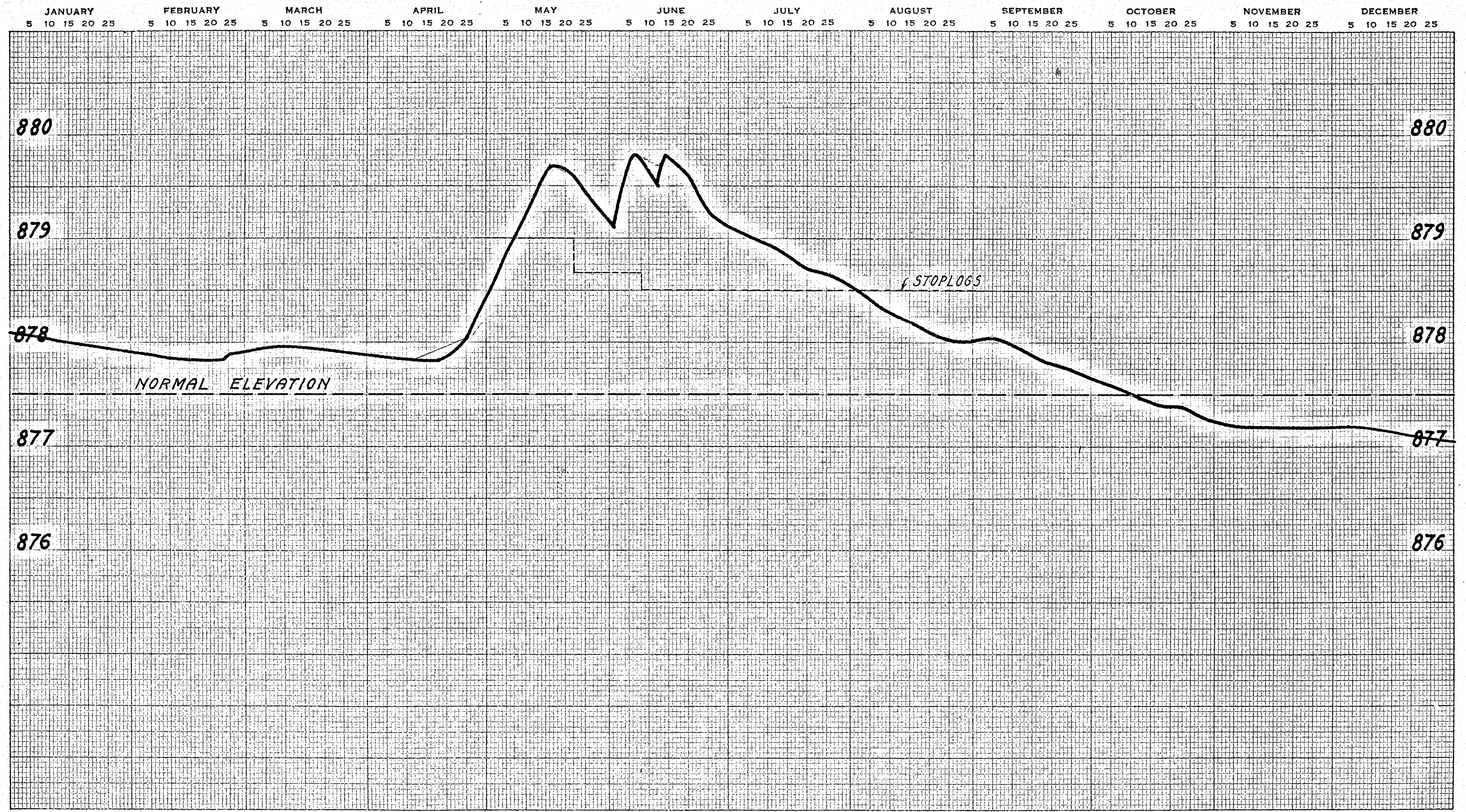
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake **JOHANNA** Year **1944**

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 339-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____				PUMPING UNIT NO. _____				PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.				JAN.				JAN.			
FEB.				FEB.				FEB.			
MAR.				MAR.				MAR.			
APR.				APR.				APR.			
MAY				MAY				MAY			
JUNE				JUNE				JUNE			
JULY				JULY				JULY			
AUG.				AUG.				AUG.			
SEPT.				SEPT.				SEPT.			
OCT.				OCT.				OCT.			
NOV.				NOV.				NOV.			
DEC.				DEC.				DEC.			
TOTAL				TOTAL				TOTAL			

Pumping Costs This Year 0.0
 Mil. Gals. Pumped This Year 0.0
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 31911.04
 Cum. M. G. Pumped 5093.73
 Cum. Equiv. on Lake in Ft. 73.87
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 25.74 25.85
 Normal Precipitation 27.15 27.24
 Cum. Excess-Deficiency -52.15 -27.17
 (Since 1924)

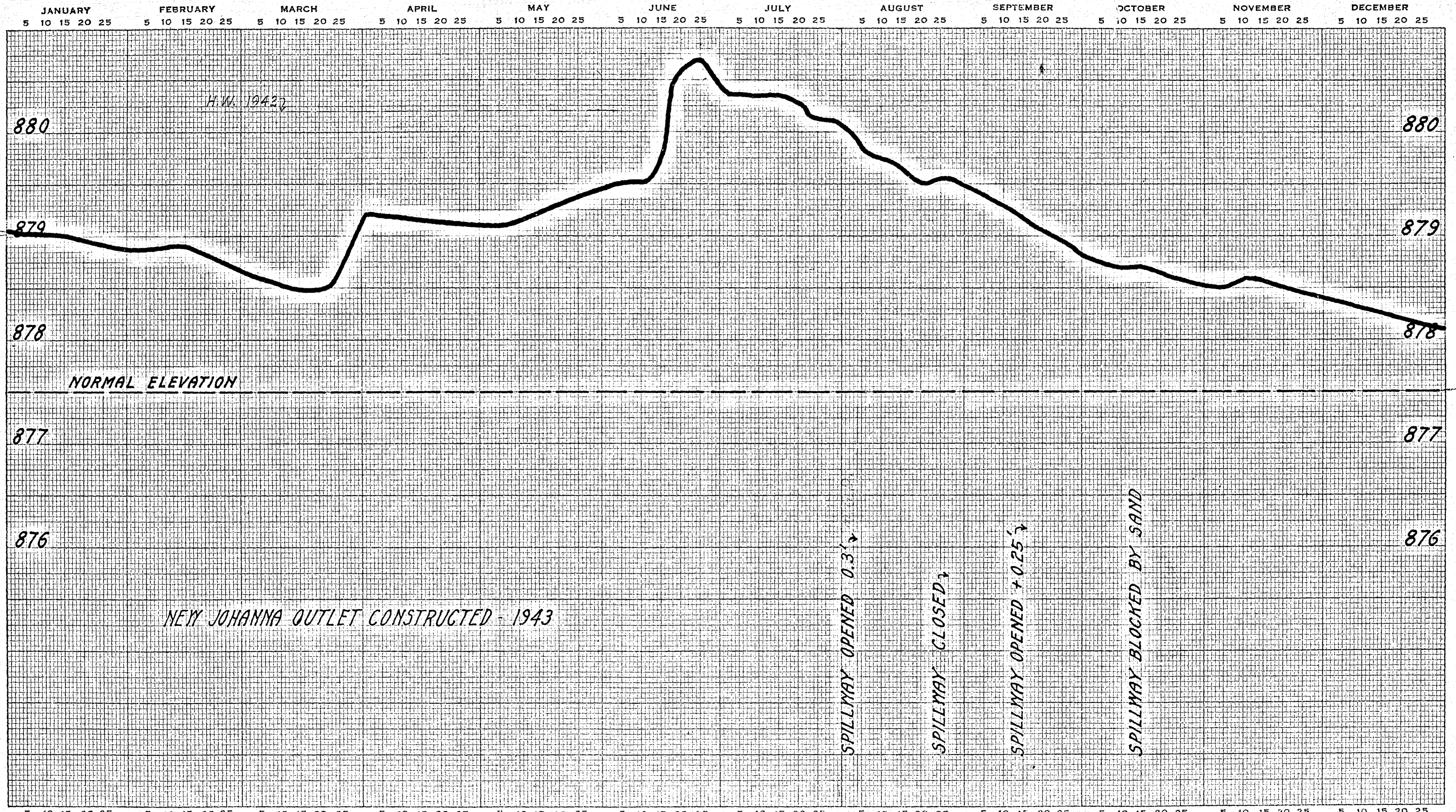
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1943

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 959-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MARCH PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

JUNE PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 0.00
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost 31911.04
 Cum. M. G. Pumped 5093.73
 Cum. Equiv. on Lake in Ft. 73.87
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 38.71 38.71
 Normal Precipitation 27.16 27.24
 Cum. Excess-Deficiency -50.75 -25.78
 (Since 1924)

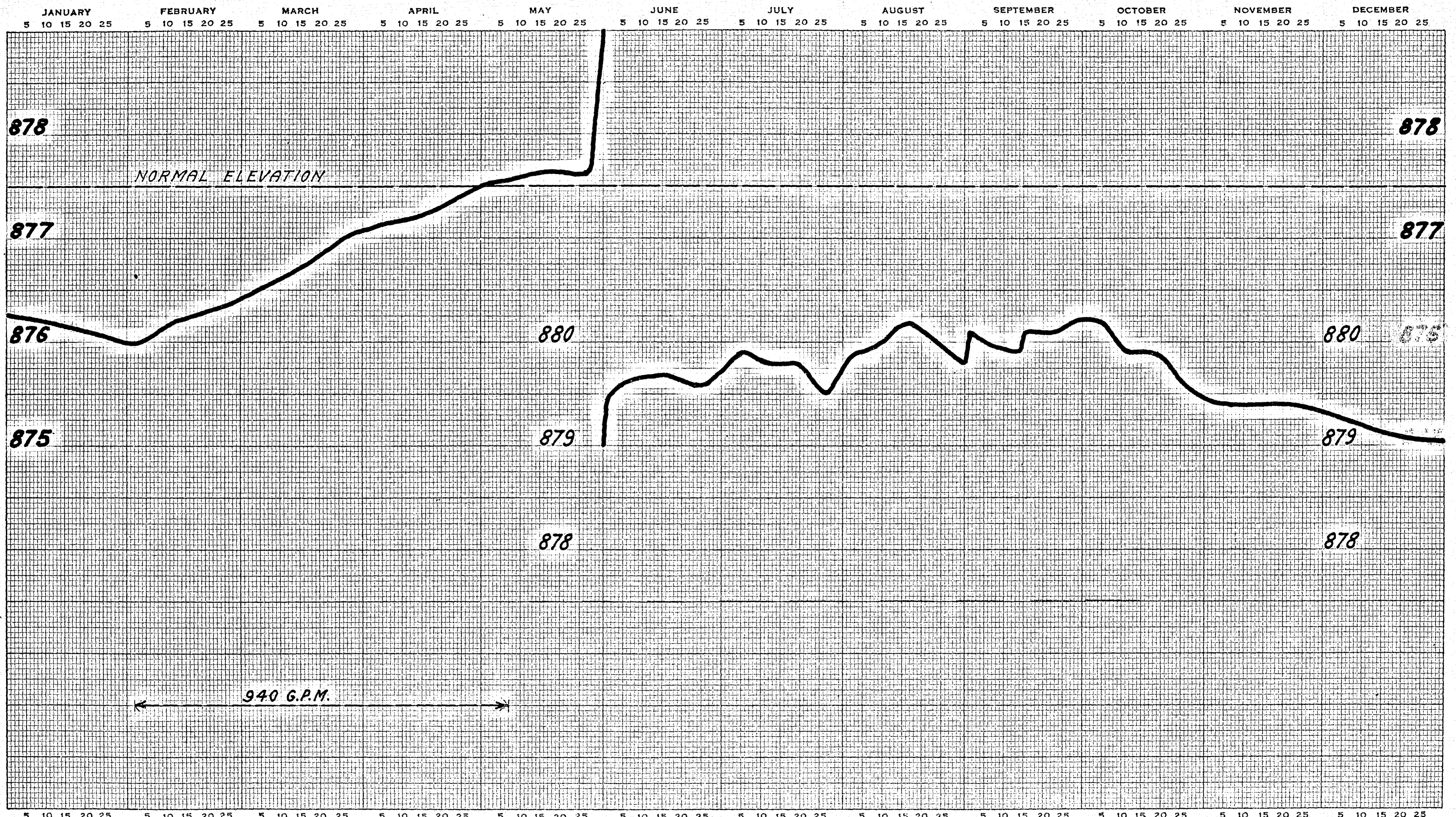
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1942

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MARCH PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MAY PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 814.80
 Mil. Gals. Pumped This Year 128.7
 Equiv. on Lake in Ft. This Year 1.86
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year 6.14

Cum. Pumping Cost 31911.04
 Cum. M. G. Pumped 5093.73
 Cum. Equiv. on Lake in Ft. 73.87
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 27.00 28.98
 Normal Precipitation 27.04 27.24
 Cum. ~~Excess~~-Deficiency -62.30 -37.25
 (Since 1924)

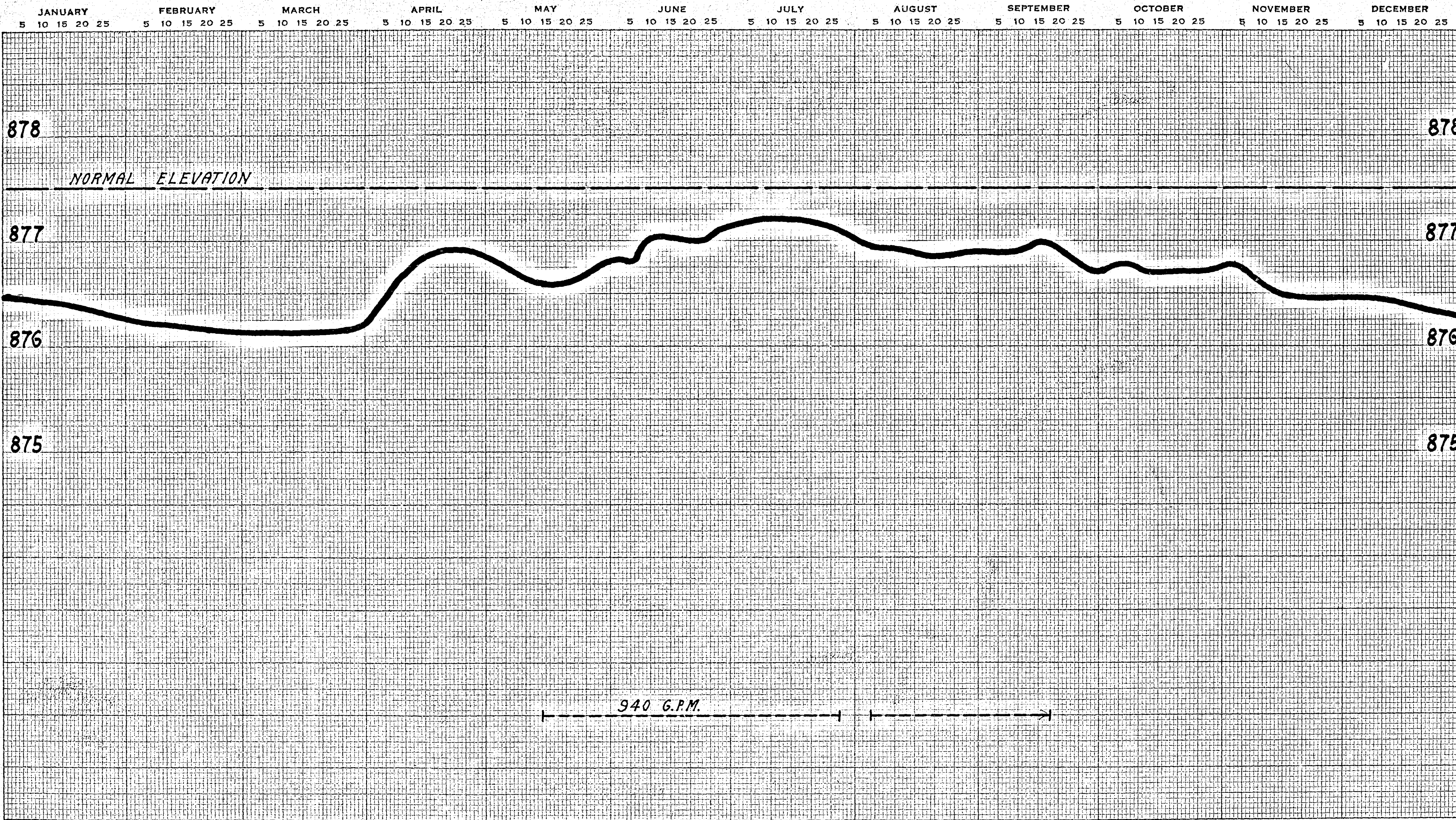
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1941

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			<u>1039.55</u>

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 1039.55
 Mil. Gals. Pumped This Year 161.1
 Equiv. on Lake in Ft. This Year 2.33
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year 6.45

Cum. Pumping Cost 31096.24
 Cum. M. G. Pumped 4965.03
 Cum. Equiv. on Lake in Ft. 72.01
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.26

Precipitation This Year 28.54 27.87
 Normal Precipitation 27.04 27.24
 Cum. Excess-Deficiency -62.26 -38.99
 (Since 1924)

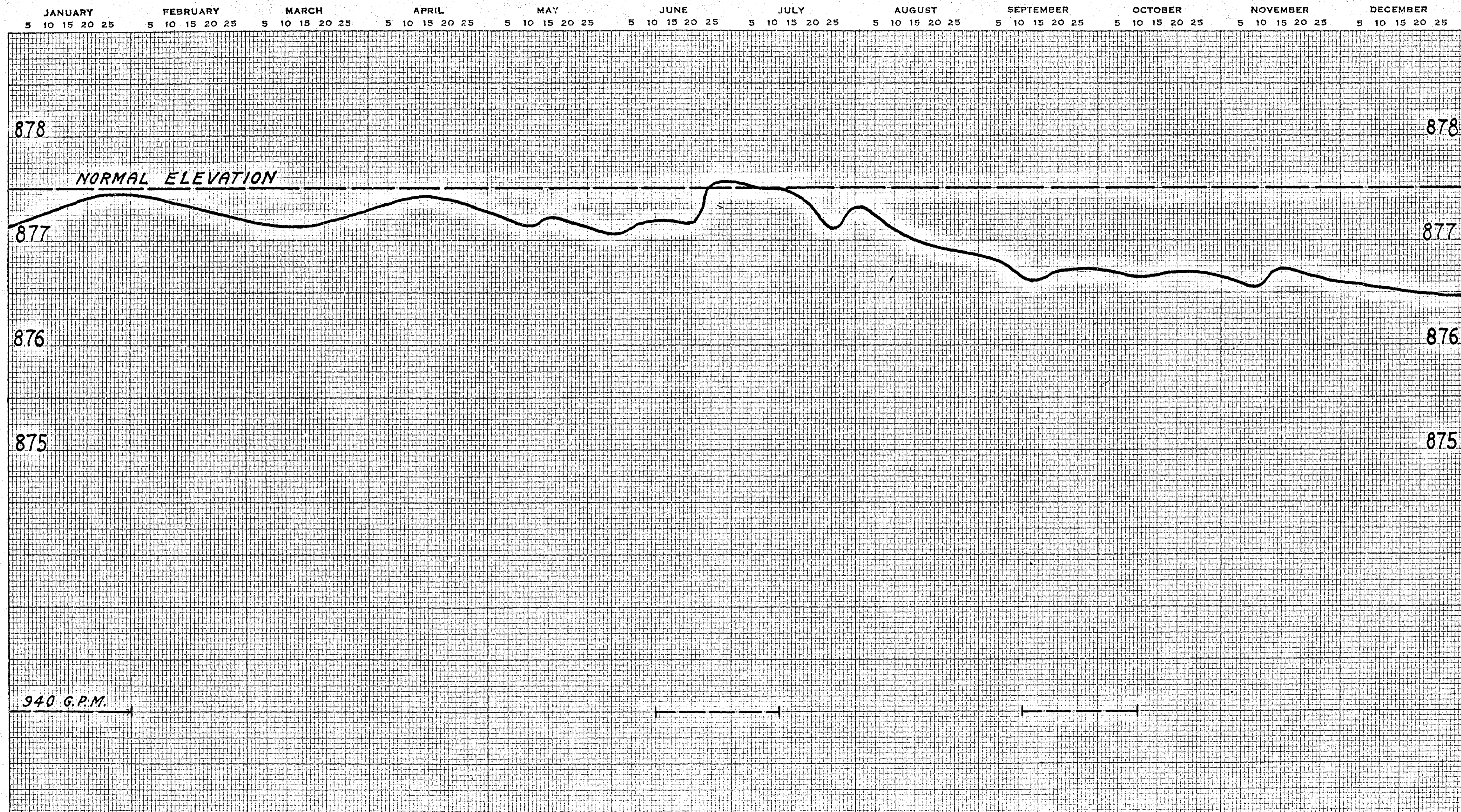
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake JOHANNA Year 1940

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



SEA LEVEL ELEVATION

KEUFFEL & ESSER CO., N. Y. NO. 369-1411.
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER

JANUARY
PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MARCH
PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

JUNE
PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 979.91
 Mil. Gals. Pumped This Year 122.85
 Equiv. on Lake in Ft. This Year 1.75
 K. W. H. Consumed This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year 7.98

Cum. Pumping Cost 30056.69
 Cum. M. G. Pumped 4803.93
 Cum. Equiv. on Lake in Ft. 69.68
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.25

Precipitation This Year 24.51 28.57
 Normal Precipitation 27.01 27.24
 Cum. Excess-Deficiency -63.76 -39.62
 (Since 1924)

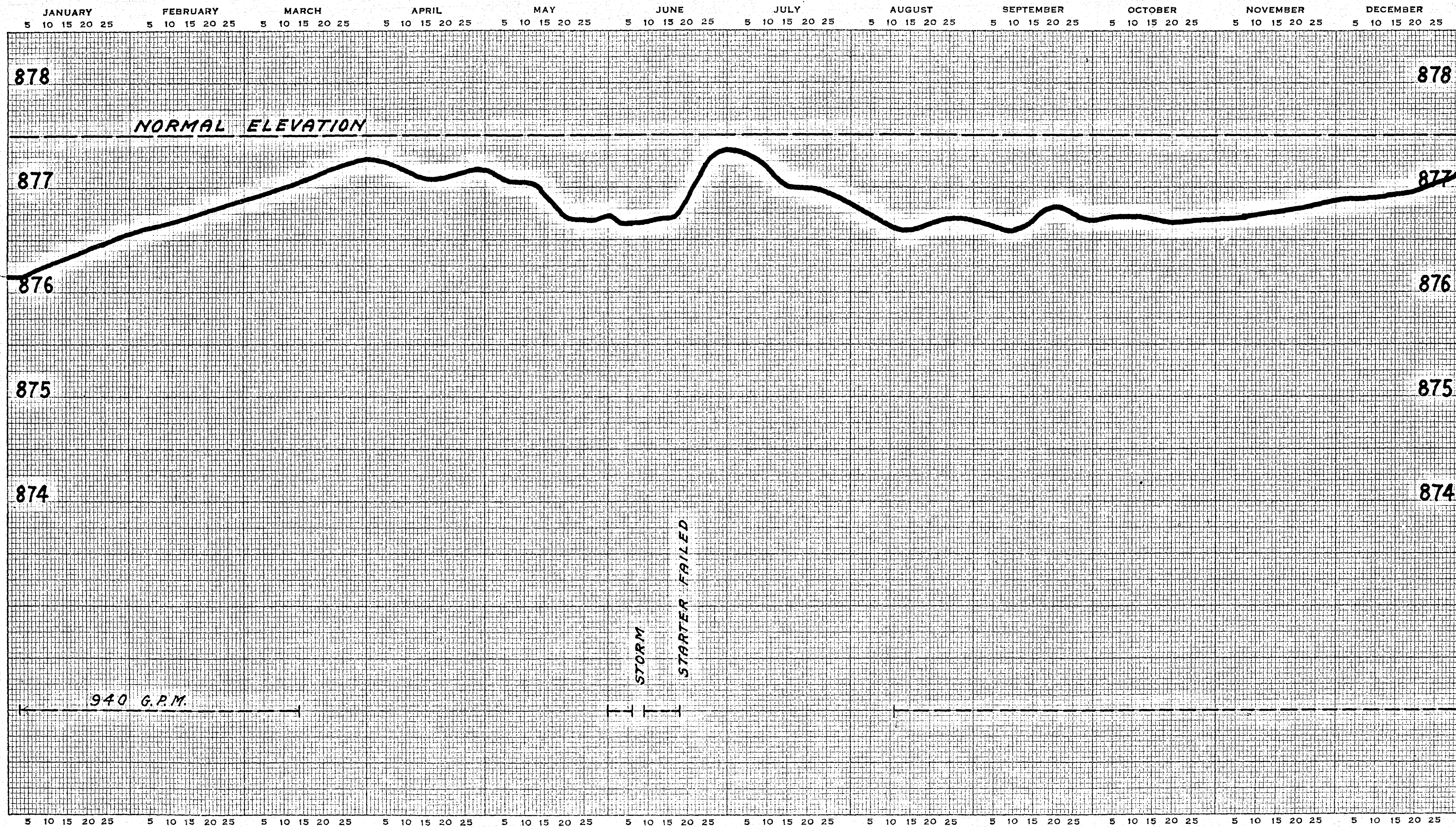
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1

Lake JOHANNA Year 1939

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL		<u>1276.07</u>	<u>1914.10</u>

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 1914.10
 Mil. Gals. Pumped This Year 308.62
 Equiv. on Lake in Ft. This Year 4.466
 K. W. H. Consumed This Year 1276.07
 Av. Costs Per K. W. H. This Year 0.015
 Av. Costs Per M. G. Pumped This Year 6.202

Cum. Pumping Cost 29076.78
 Cum. M. G. Pumped 4681.08
 Cum. Equiv. on Lake in Ft. 67.927
 Cum. K. W. H. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped 6.211

Precipitation This Year 29.75 33.45
 Normal Precipitation 27.05 27.24
 Cum. Excess-Deficiency -61.25 -40.95
 (Since 1924)

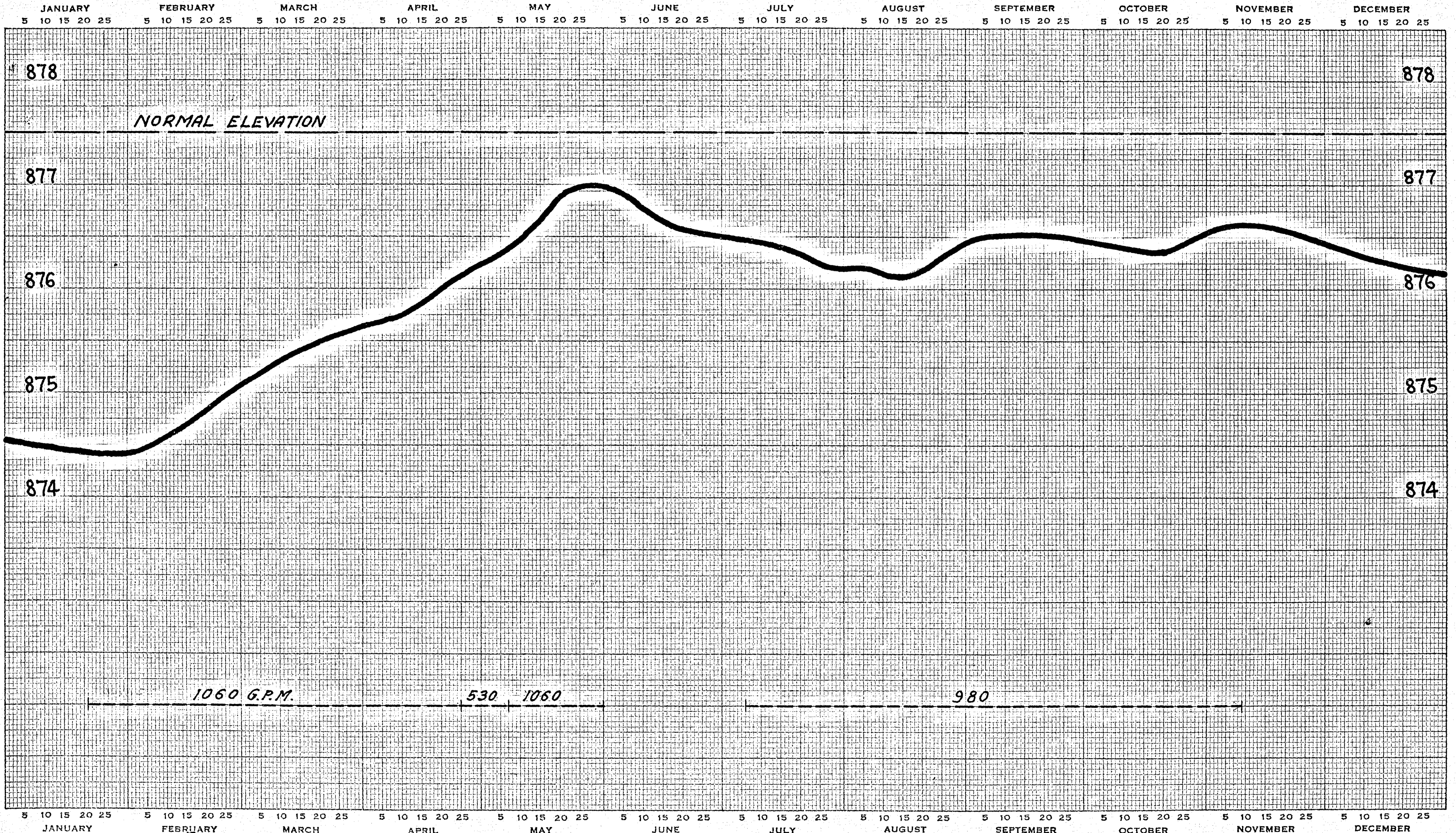
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1938

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



WEUFFEL & ESSER CO., N. Y. NO. 359-141L
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. <u>55</u>				PUMPING UNIT NO. _____				PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.				JAN.				JAN.			
FEB.				FEB.				FEB.			
MAR.				MAR.				MAR.			
APR.				APR.				APR.			
MAY				MAY				MAY			
JUNE				JUNE				JUNE			
JULY				JULY				JULY			
AUG.				AUG.				AUG.			
SEPT.				SEPT.				SEPT.			
OCT.				OCT.				OCT.			
NOV.				NOV.				NOV.			
DEC.				DEC.				DEC.			
TOTAL		<u>145380</u>	<u>2180.70</u>	TOTAL				TOTAL			

Pumping Costs This Year 2180.70 Cum. Pumping Cost 27162.68
 Mil. Gals. Pumped This Year 354.211 Cum. M. G. Pumped 4372.46
 Equiv. on Lake in Ft. This Year 5.126 Cum. Equiv. on Lake in Ft. 63.461
 Av. Costs Per K. W. H. This Year 0.015 Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year 6.156 Cum. Av. Costs Per M. G. Pumped 6.212

31

Precipitation This Year 22.59 21.49
 Normal Precipitation 27.03 27.24
 Cum. Excess-Deficiency -63.95 -47.16
 (Since 1924)

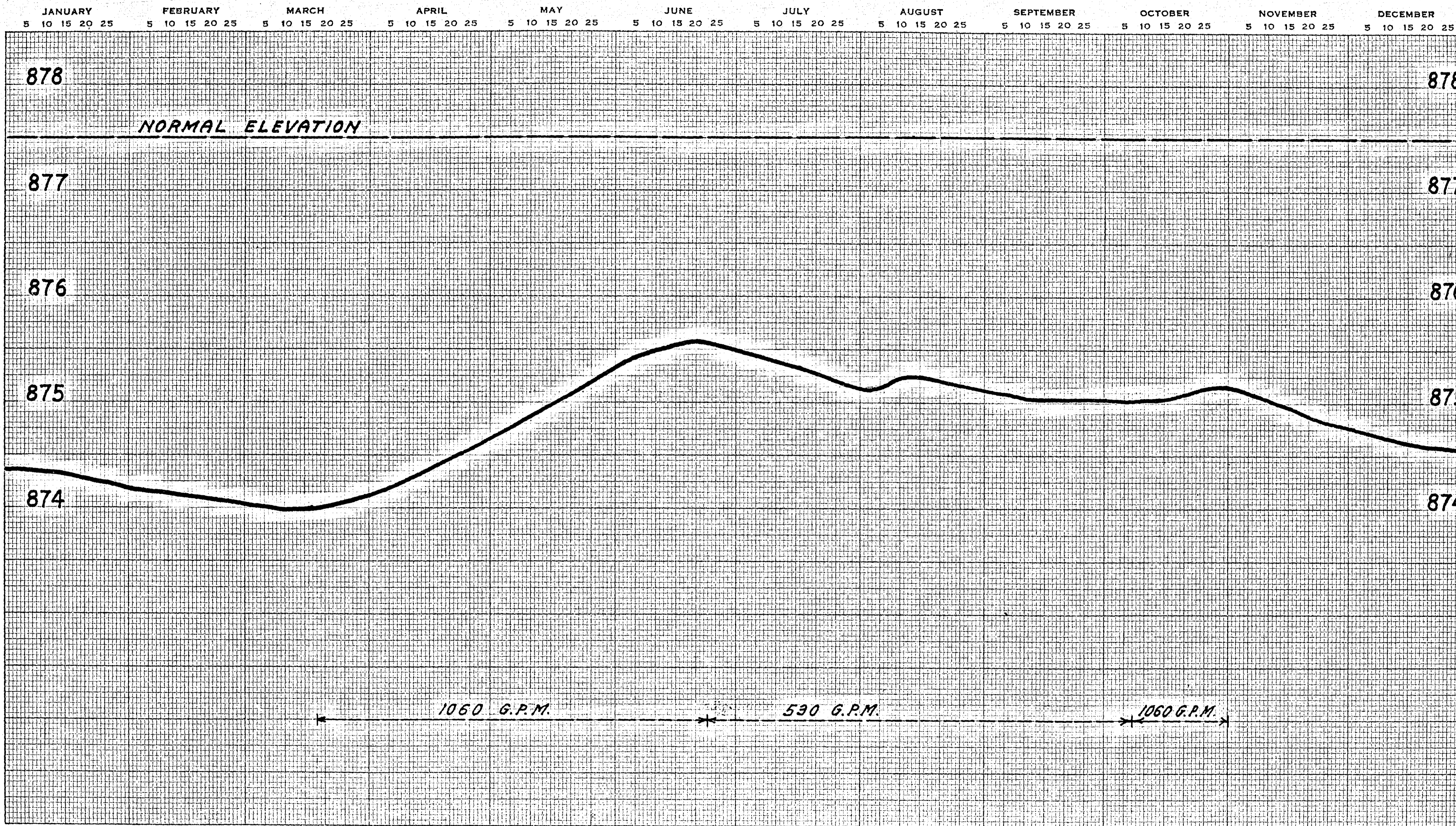
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1937

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY FEBRUARY
 PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.		29.620	309.30
MAY		18.950	284.40
JUNE		17.050	255.75
JULY		8.640	123.60
AUG.		3.325	140.32
SEPT.		2.745	131.77
OCT.		12.918	192.26
NOV.		6.460	96.90
DEC.			
TOTAL		102.688	1540.30

MARCH APRIL
 PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

MAY JUNE JULY
 PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$1540.30
 Mil. Gals. Pumped This Year 265.7
 Equiv. on Lake in Ft. This Year 3.845
 K. W. H. Consumed This Year 102688
 Av. Costs Per K. W. H. This Year 0.0150
 Av. Costs Per M. G. Pumped This Year 5.797

Cum. Pumping Cost \$24981.98
 Cum. M. G. Pumped 4018.25
 Cum. Equiv. on Lake in Ft. 58.335
 Cum. K. W. H. 1349189
 Cum. Av. Cost Per K. W. H. 0.01852
 Cum. Av. Costs Per M. G. Pumped 6.217

Precipitation This Year 18.47 18.47
 Normal Precipitation 27.06 27.27
 Cum. Excess-Deficiency -59.51 -41.41
 (Since 1924)

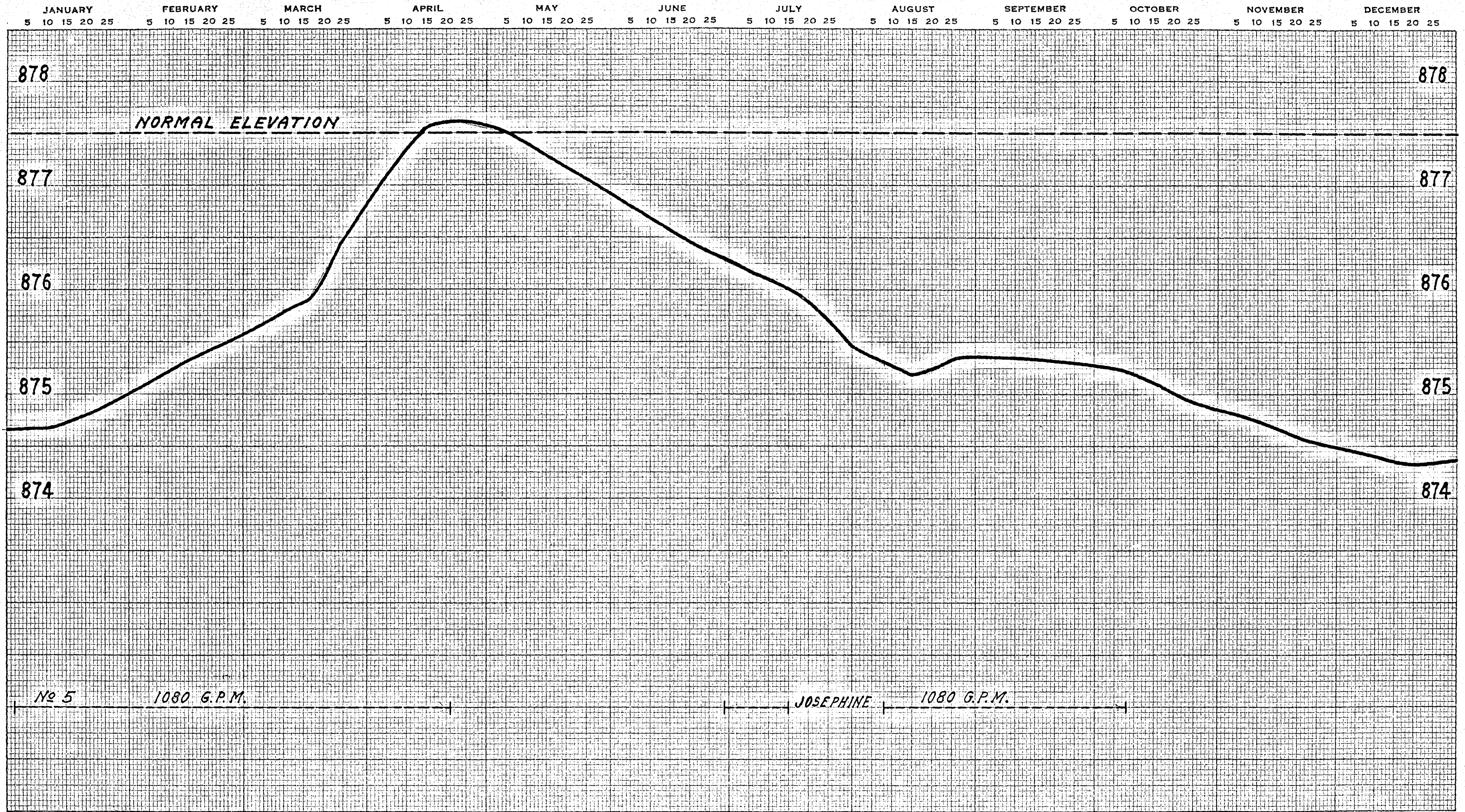
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 to 1

Lake JOHANNA Year 1936

OFFICE OF
 RAMSEY COUNTY SURVEYOR

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

JANUARY PUMPING UNIT NO. <u>5</u>				MARCH PUMPING UNIT NO. _____				JUNE PUMPING UNIT NO. <u>7-15</u>			
Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost	Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	32.0	10220	192.43	JAN.				JAN.			
FEB.	32.0	16850	299.78	FEB.				FEB.			
MAR.	32.0	16290	292.61	MAR.				MAR.			
APR.	32.0	18660	323.01	APR.				APR.			
MAY				MAY				MAY			
JUNE				JUNE				JUNE			
JULY	30.0	7185	122.51	JULY				JULY			
AUG.	26.0	13296	225.19	AUG.				AUG.			
SEPT.	26.5	17250	292.58	SEPT.				SEPT.			
OCT.	27.5	10660	183.34	OCT.				OCT.			
NOV.				NOV.				NOV.			
DEC.				DEC.				DEC.			
TOTAL		110611	1931.46	TOTAL				TOTAL			

Pumping Costs This Year \$1931.46
 Mil. Gals. Pumped This Year 290.785
 Equiv. on Lake in Ft. This Year 4.2081
 K. W. H. Consumed This Year 110.611
 Av. Costs Per K. W. H. This Year \$0.01746
 Av. Costs Per M. G. Pumped This Year \$6.642

Cum. Pumping Cost \$23441.68
 Cum. M. G. Pumped 3752.55
 Cum. Equiv. on Lake in Ft. 54.49
 Cum. K. W. H. 1246.501
 Cum. Av. Cost Per K. W. H. \$0.0188
 Cum. Av. Costs Per M. G. Pumped \$6.247

38

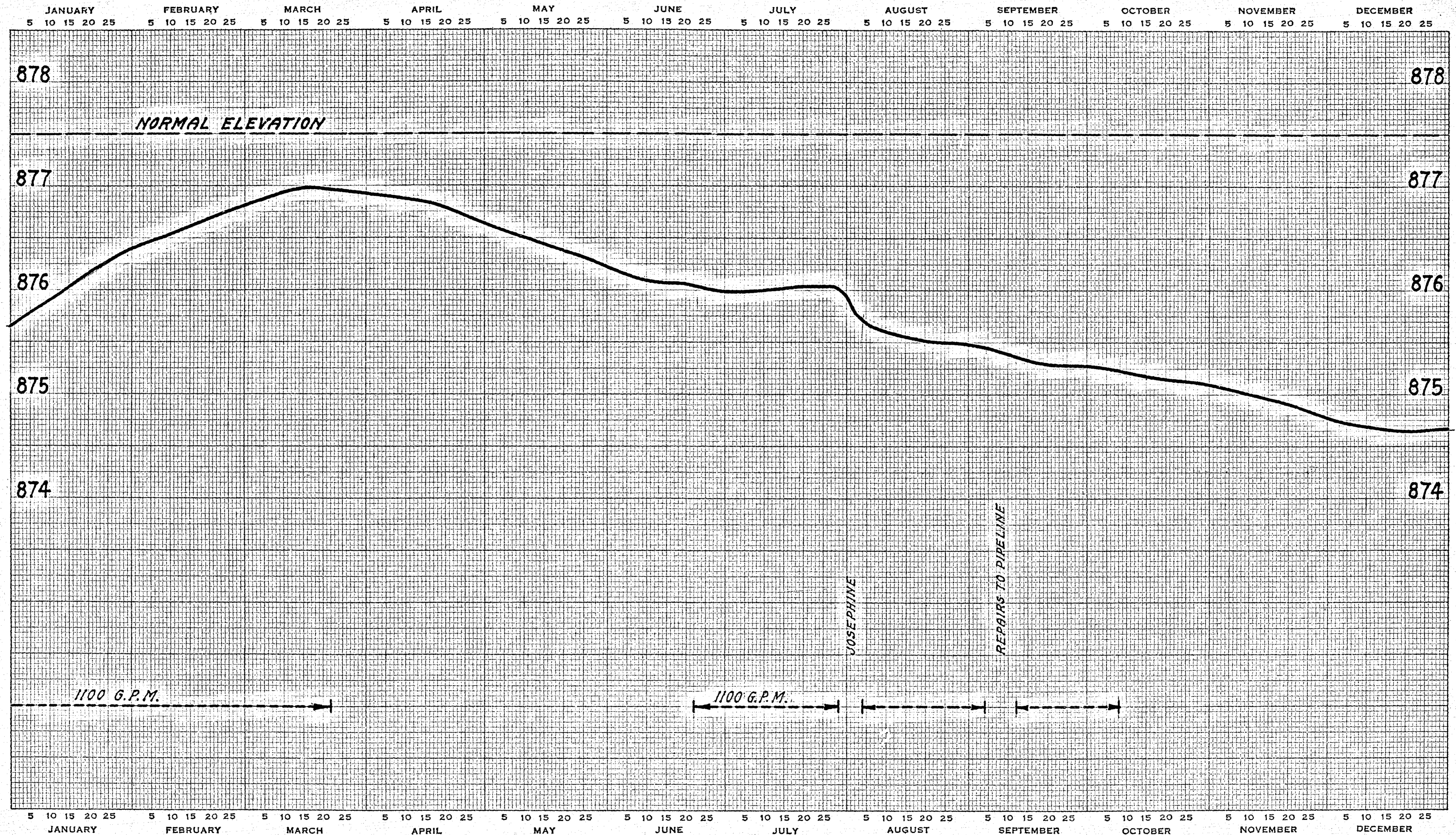
Precipitation This Year 27.50 27.50
 Normal Precipitation 27.15 27.24
 Cum. Excess-Deficiency -50.91 -32.61
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 4.64 TO 1
 DAILY RECORD SHEET

Lake JOHANNA Year 1935

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	27.0	19890	327.56
FEB.	27.0	17440	296.14
MAR.	27.0	11420	218.94
APR.			
MAY			
JUNE	32.0	18300	518.50
JULY	32.0	14120	337.77
AUG.	32.0	11940	296.83
SEPT.	32.0	8210	142.11
OCT.			
NOV.			
DEC.			
TOTAL		101320	1777.24

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$1777.24 Cum. Pumping Cost 21510.22
 Mil. Gals. Pumped This Year 280.37 Cum. M. G. Pumped 3461.77
 Equiv. on Lake in Ft. This Year 4.06 Cum. Equiv. on Lake in Ft. 50.28
 Av. Costs Per K. W. H. This Year .0175 Cum. Av. Cost Per K. W. H. 0.019
 Av. Costs Per M. G. Pumped This Year 6.339 Cum. Av. Costs Per M. G. Pumped 6.21
 Cum. K.W.H. 1135690

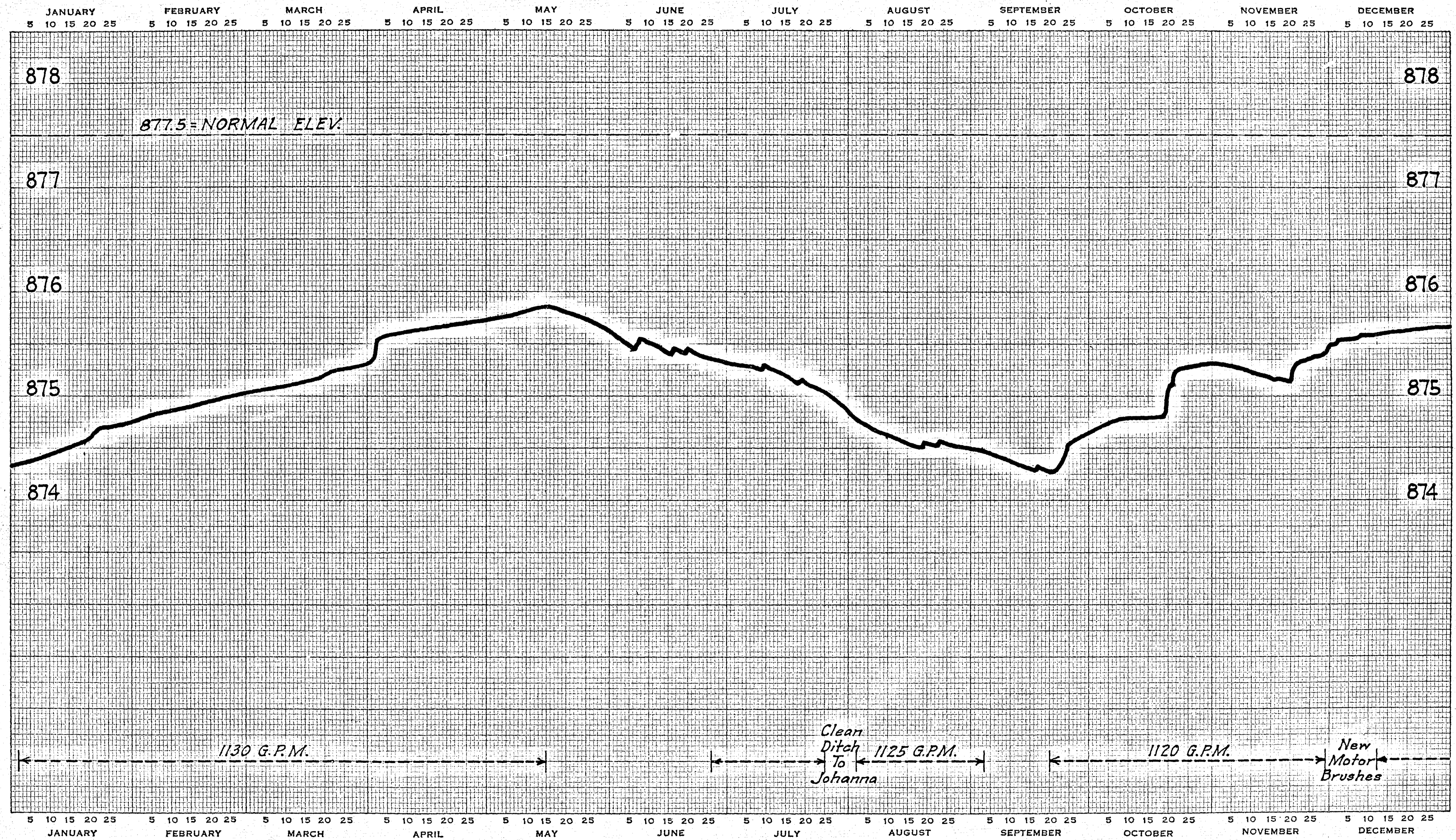
Precipitation This Year 21.97 22.73
 Normal Precipitation 27.05 27.24
 Cum. Excess-Deficiency -51.27 -32.87
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 to .22
 DAILY RECORD SHEET

Lake JOHANNA Year 1934

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



NEUFFEL & ESSER CO., N. Y. NO. 358-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.		13000	224.81
FEB.		17300	305.51
MAR.		14530	272.23
APR.		18740	308.32
MAY	28.0	14742	244.91
JUNE			
JULY	24.0	16650	273.27
AUG.	25.0	14048	231.12
SEPT.	22.5	3260	152.16
OCT.	27.0	18780	313.33
NOV.	25.0	17640	294.21
DEC.	27.0	8850	186.78
TOTAL		163040	2812.83

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 2812.83 Cum. Pumping Cost 19732.98
 Mil. Gals. Pumped This Year 463.5 Cum. M. G. Pumped 3181.4
 Equiv. on Lake in Ft. This Year 6.7 Cum. Equiv. on Lake in Ft. 46.22
 Av. Costs Per K. W. H. This Year 0.0172 Cum. Av. Cost Per K. W. H. 0.019
 Av. Costs Per M. G. Pumped This Year 6.07 Cum. Av. Costs Per M. G. Pumped 6.20
 Cum. K.W.H. 1034570

Precipitation This Year 21.65 23.52
 Normal Precipitation 27.08 27.24
 Cum. Excess-Deficiency -47.46 -28.36
 (Since 1924)

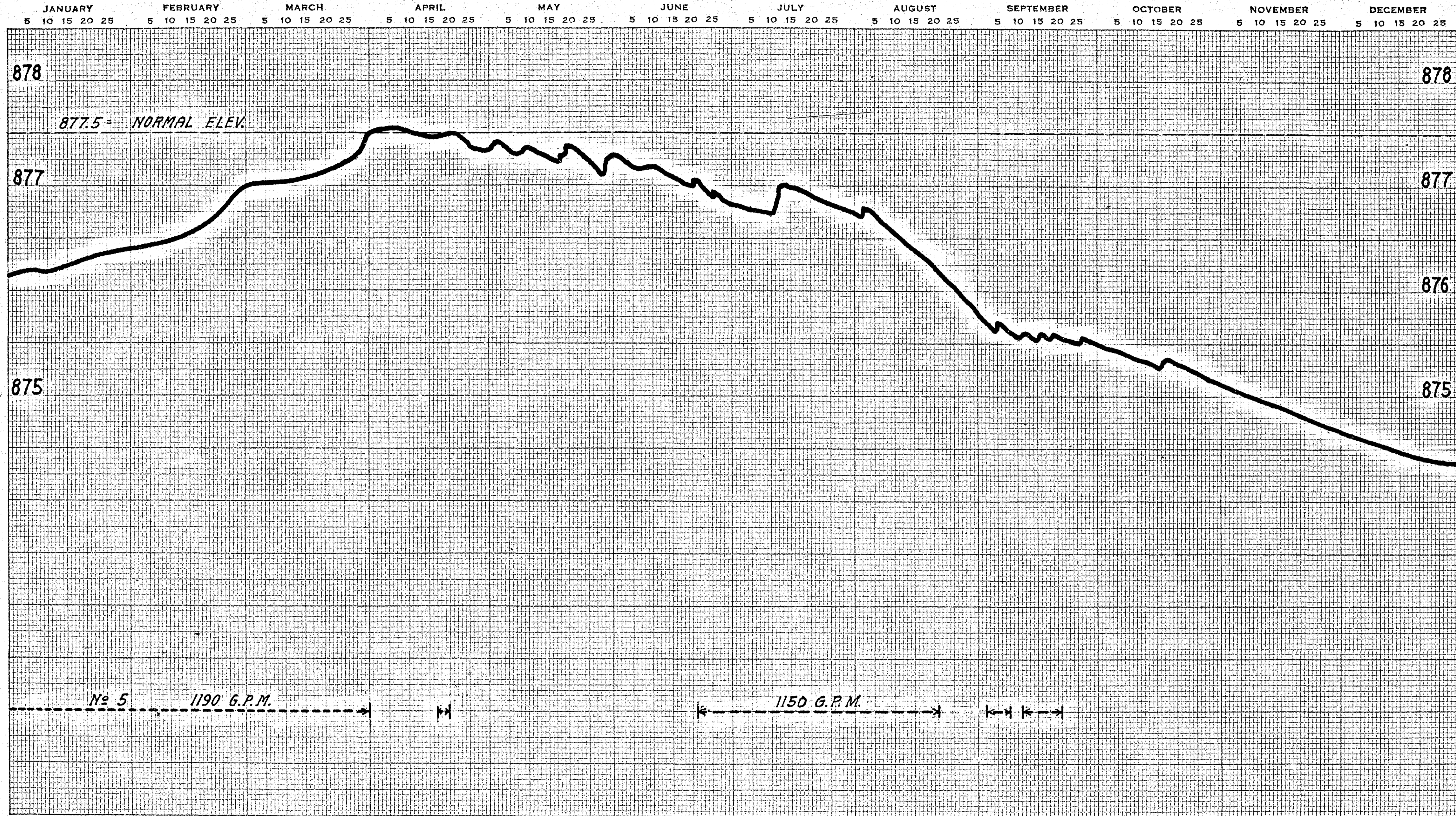
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 TO .22

Lake JOHANNA Year 1933

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____

DAILY RECORD SHEET



NEUFFEL & ESSER CO., N. Y. NO. 359-1411.
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	250	17120	287.55
FEB.	250	18630	313.64
MAR.	250	15610	268.18
APR.	0	0	0
MAY	0	0	0
JUNE	250	17330	293.81
JULY	250	15430	271.18
AUG.	250	11730	218.65
SEPT.	250	580	99.00
OCT.	250	0	0
NOV.	250	0	0
DEC.	250	0	0
TOTAL		96030	1668.01

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

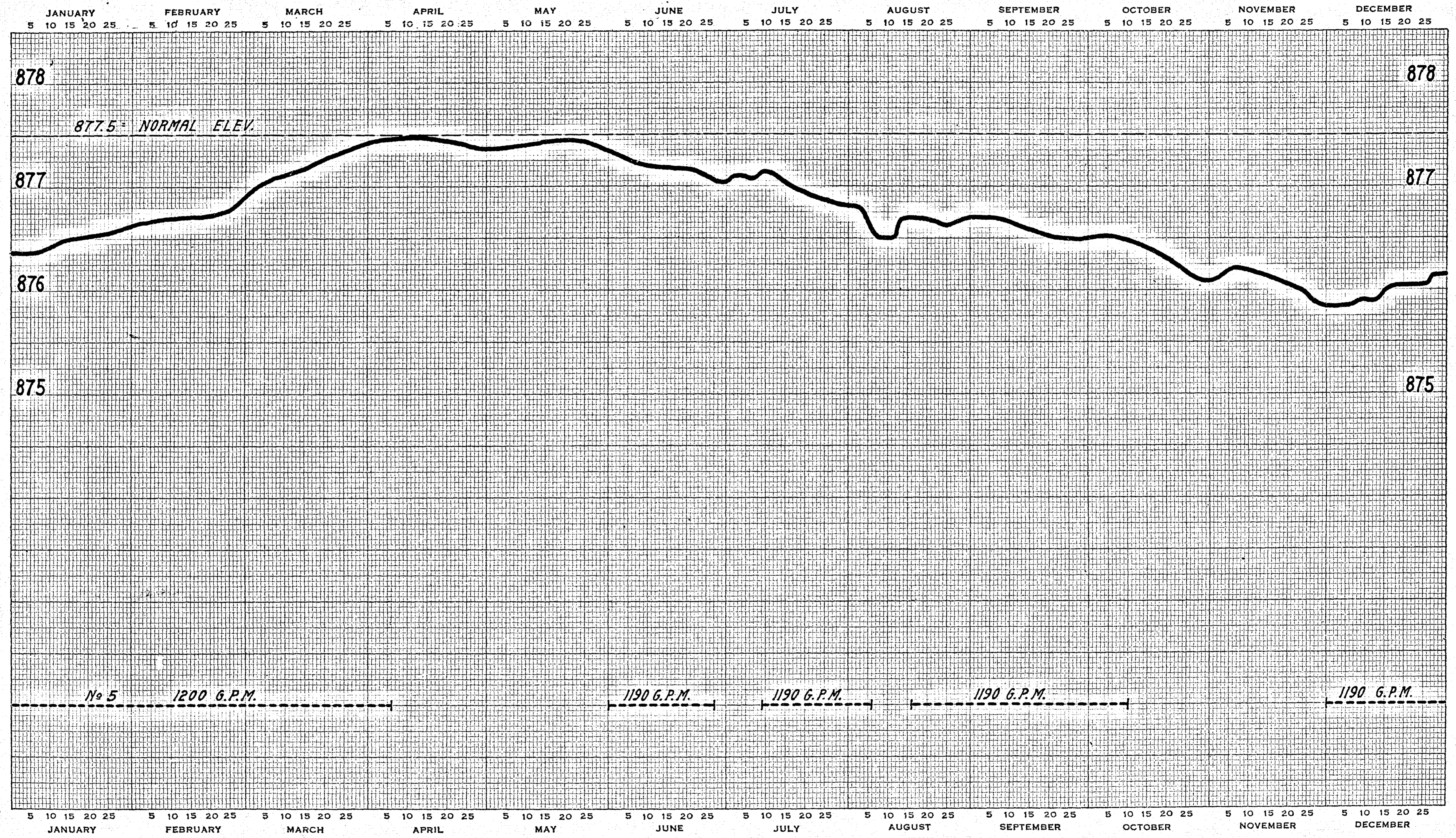
Pumping Costs This Year \$1668.01
 Mil. Gals. Pumped This Year 290.0
 Equiv. on Lake in Ft. This Year 4.2
 Av. Costs Per K. W. H. This Year 0.0174
 Av. Costs Per M. G. Pumped This Year 5.75

Cum. Pumping Cost \$16920.15
 Cum. M. G. Pumped 2717.9
 Cum. Equiv. on Lake in Ft. 39.52
 Cum. Av. Cost Per K. W. H. 0.0194
 Cum. Av. Costs Per M. G. Pumped 5.83
 Cum. K.W.H. 871,530

Precipitation This Year 23.14 23.56
 Normal Precipitation 27.11 27.27
 Cum. Excess-Deficiency -43.03 -24.64
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 to .22
 DAILY RECORD SHEET

Lake JOHANNA Year 1932
 OFFICE OF
RAMSEY COUNTY ENGINEER
 Sheet No. _____



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	30.0	13600	253.62
FEB.	25.2	13220	264.99
MAR.	25.0	13230	301.79
APR.	24.0	8050	173.18
MAY			
JUNE	25.0	9550	145.37
JULY	25.0	17230	298.37
AUG.	25.0	16100	282.16
SEPT.	24.0	19260	318.84
OCT.			
NOV.	24.0	0	30.00
DEC.	23.0	12830	251.26
TOTAL		131640	2316.40

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year 2316.40
 Mil. Gals. Pumped This Year 399.2
 Equip. on Lake in Ft. This Year 5.67
 Av. Costs Per K. W. H. This Year 0.0176
 Av. Costs Per M. G. Pumped This Year 5.84

Cum. Pumping Cost 15252.14
 Cum. M. G. Pumped 2427.9
 Cum. Equip. on Lake in Ft. 35.32
 Cum. Av. Cost Per K. W. H. 0.0197
 Cum. Av. Costs Per M. G. Pumped 6.27

Note: October Bill Charged against Josephine.

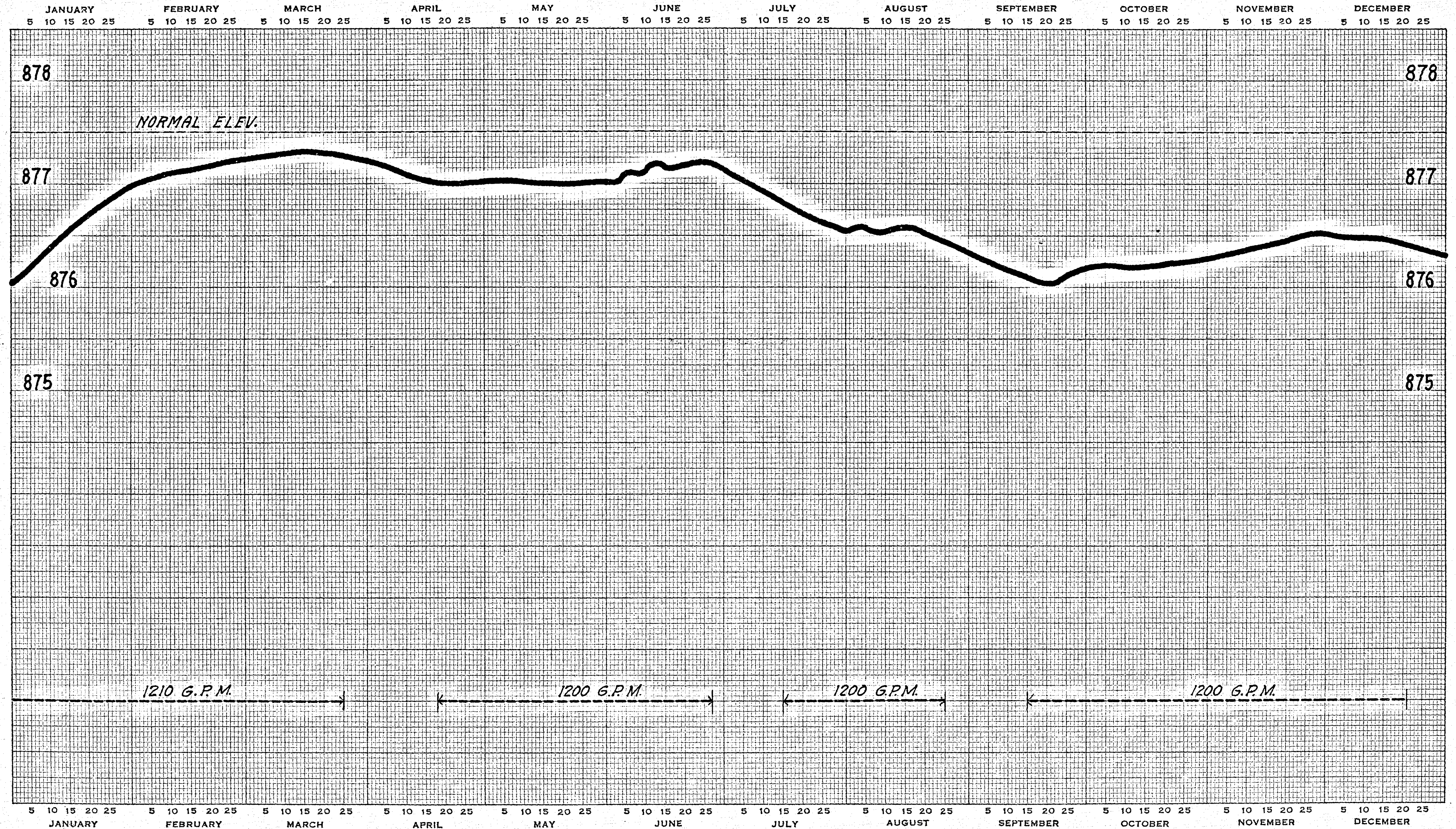
Precipitation This Year 19.90 22.60
 Normal Precipitation 27.15 27.24
 Cum. Excess-Deficiency -39.06 -20.93
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 to .22
 DAILY RECORD SHEET

Lake JOHANNA Year 1931

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



KEUFFEL & ESSER CO., N. Y. NO. 385-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	250	20170	326.67
FEB.	250	15590	267.93
MAR.	250	18370	303.61
APR.	250	19070	312.56
MAY	250	15440	266.00
JUNE	250	13760	221.40
JULY	250	16670	281.78
AUG.	250	17710	295.35
SEPT.	250	16500	279.85
OCT.	250	0	30.00
NOV.	250	0	0
DEC.	250	0	0
TOTAL		159280	2685.35

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$ 2685.35
 Mil. Gals. Pumped This Year 520.0
 Equiv. on Lake in Ft. This Year 7.55
 Av. Costs Per K. W. H. This Year 0.017
 Av. Costs Per M. G. Pumped This Year 5.15

Cum. Pumping Cost \$ 12935.74
 Cum. M. G. Pumped 2028.7
 Cum. Equiv. on Lake in Ft. 29.65
 Cum. Av. Cost Per K. W. H. 0.0201
 Cum. Av. Costs Per M. G. Pumped 6.36

Precipitation This Year 19.09 20.05
 Normal Precipitation 27.20 27.24
 Cum. Excess-Deficiency -31.81 -16.29
 (Since 1924)

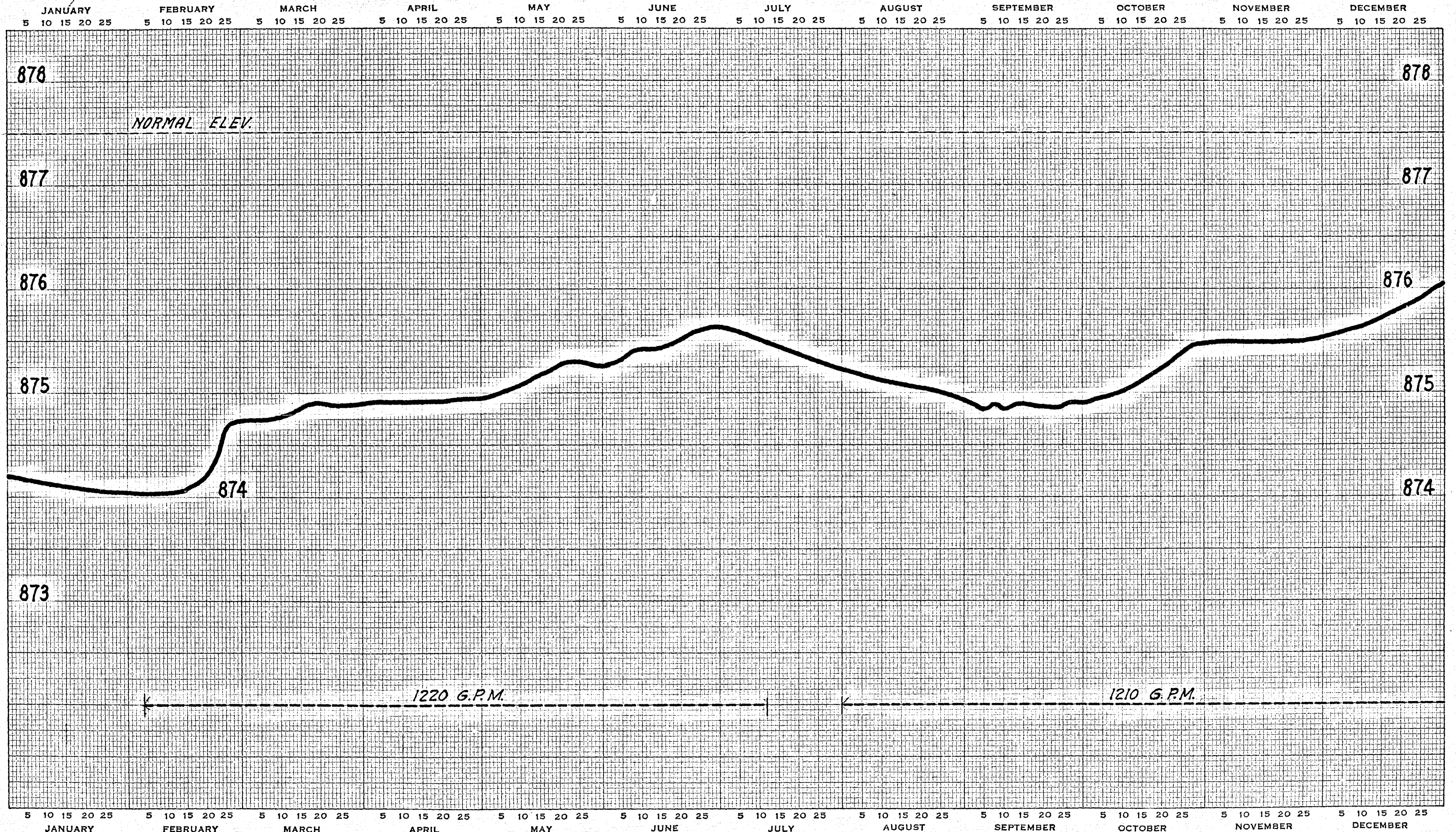
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 TO 22

Lake JOHANNA Year 1930

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	13.8	0	44.08
FEB.	26.5	12775	235.19
MAR.	25.0	16800	263.42
APR.	25.0	18630	306.22
MAY	25.0	11080	211.21
JUNE	25.0	16220	285.80
JULY	12.5	6384	116.00
AUG.	25.0	17270	298.45
SEPT.	25.0	17600	298.58
OCT.	25.0	17230	288.36
NOV.	25.0	17080	287.03
DEC.	23.0	16650	281.52
TOTAL		162789	2931.26

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$2931.26
 Mil. Gals. Pumped This Year 562.0
 Equiv. on Lake in Ft. This Year 8.15
 Av. Costs Per K. W. H. This Year 0.0173
 Av. Costs Per M. G. Pumped This Year 5.21

Cum. Pumping Cost \$10250.39
 Cum. M. G. Pumped 1508.70
 Cum. Equiv. on Lake in Ft. 22.105
 Cum. Av. Cost Per K. W. H. 0.0212
 Cum. Av. Costs Per M. G. Pumped 6.80

Precipitation This Year 23.22 24.39
 Normal Precipitation 27.28 27.24
 Cum. Excess-Deficiency -23.70 -9.10
 (Since 1924)

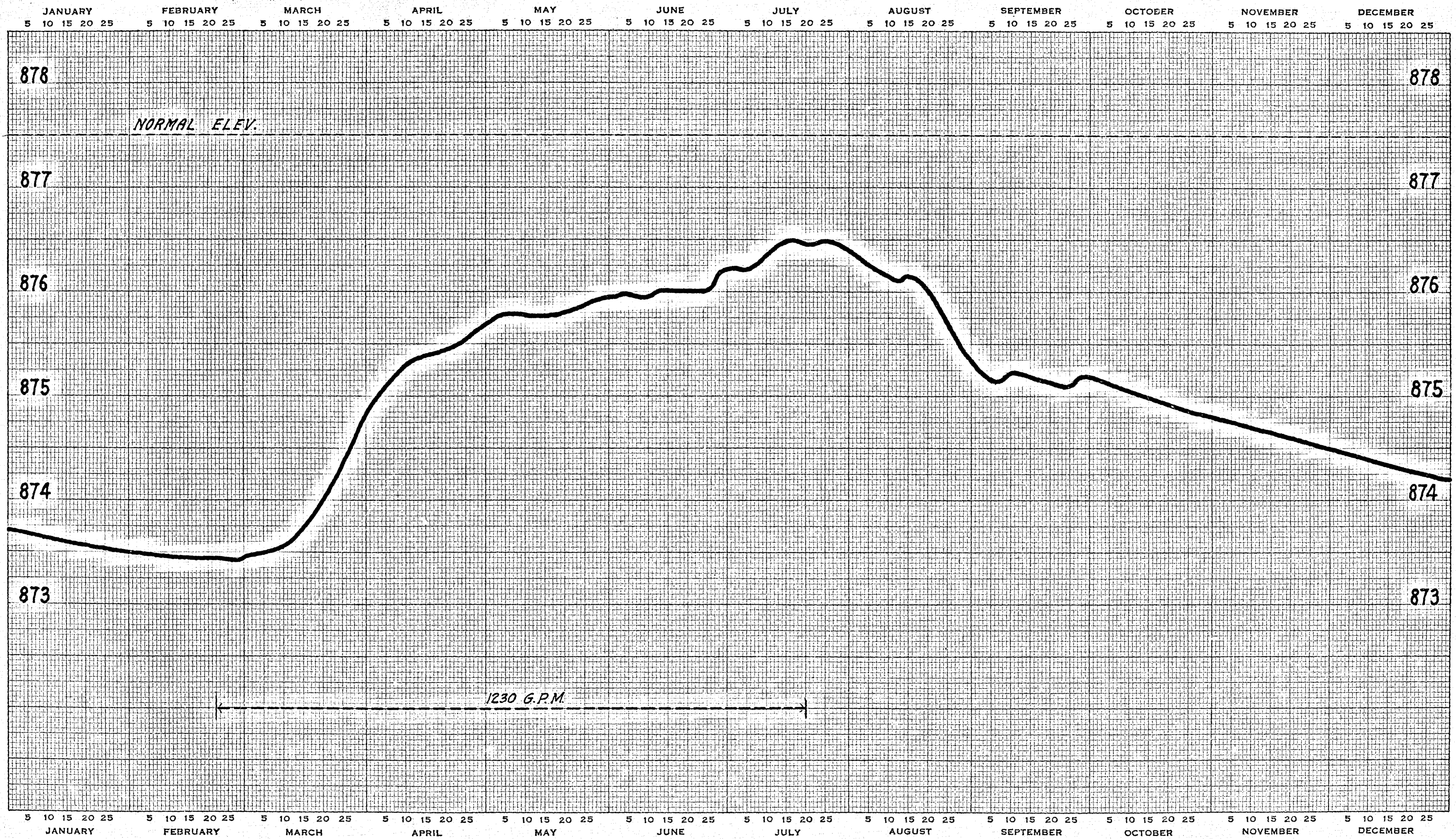
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 170.22

Lake JOHANNA Year 1929

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.	27.5	167.50	356.85
APR.	27.0	184.50	375.61
MAY	25.0	192.75	379.41
JUNE	25.0	176.00	359.81
JULY	25.0	163.00	351.50
AUG.	13.8		44.08
SEPT.			
OCT.			
NOV.	13.8	0	44.08
DEC.	13.8	0	44.08
TOTAL		889.75	1955.72

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$1955.72
 Mil. Gals. Pumped This Year 260.0
 Equiv. on Lake in Ft. This Year 3.821
 Av. Costs Per K. W. H. This Year 0.022
 Av. Costs Per M. G. Pumped This Year 7.52

Cum. Pumping Cost \$7323.60
 Cum. M. G. Pumped 946.70
 Cum. Equiv. on Lake in Ft. 13.965
 Cum. Av. Cost Per K. W. H. 0.0232
 Cum. Av. Costs Per M. G. Pumped 7.75

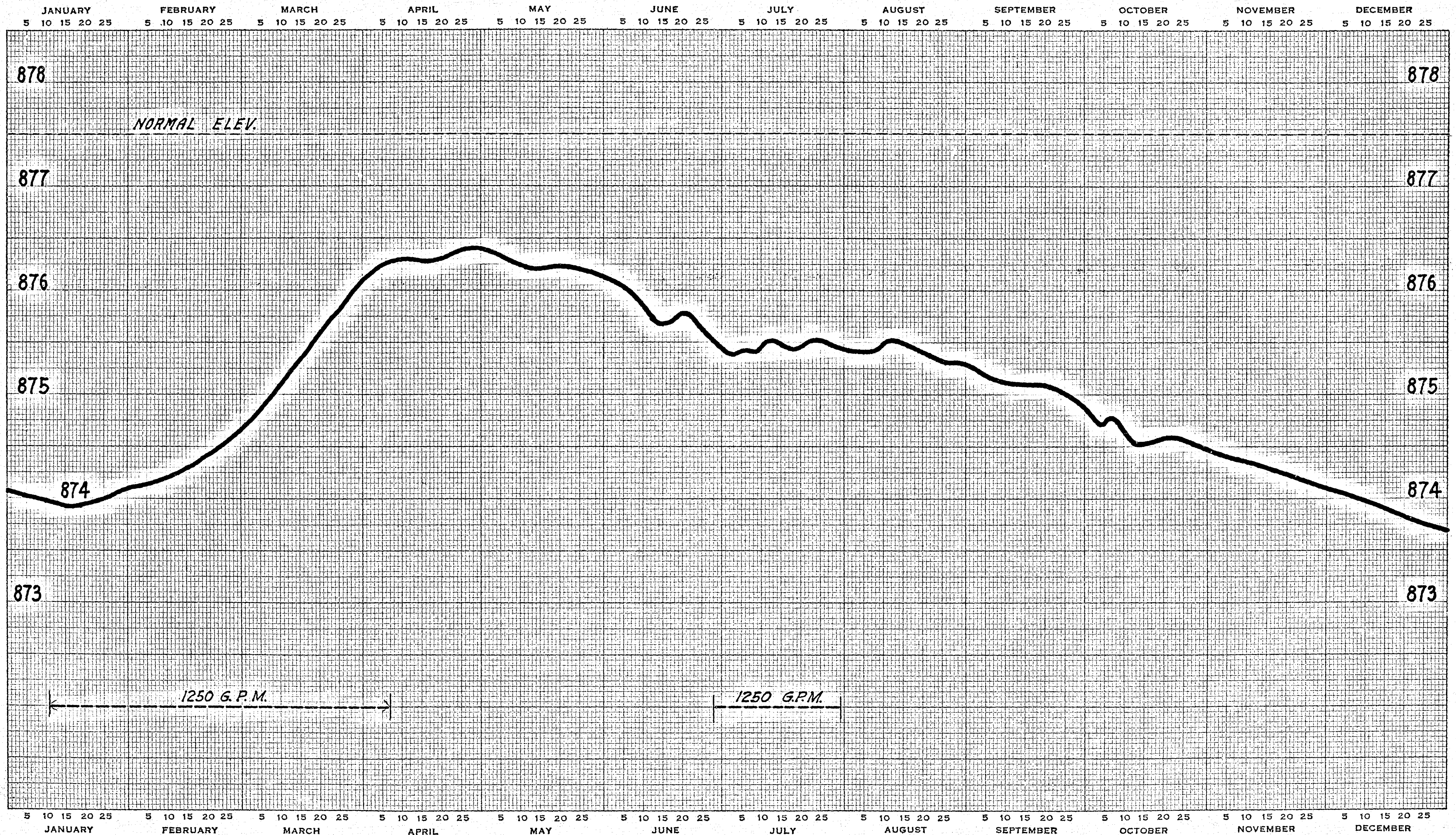
Precipitation This Year 22.48 24.80
 Normal Precipitation 27.31 27.27
 Cum. Excess-Deficiency -19.64 -6.25
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 to .22
 DAILY RECORD SHEET

Lake JOHANNA Year 1928

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



KEUFFEL & ESSER CO., N. Y. NO. 369-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	13.5		23.78
FEB.	28.0	32600	546.49
MAR.	27.0	16375	356.91
APR.	26.5	4400	236.73
MAY	13.5		43.22
JUNE	13.5		43.22
JULY	27.5	16325	351.79
AUG.	27.5	4300	203.17
SEPT.	13.5		43.22
OCT.	13.5		43.22
NOV.	13.5		43.22
DEC.	13.5		43.22
TOTAL		74500	1998.43

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$1998.43
 Mil. Gals. Pumped This Year 223.5
 Equiv. on Lake in Ft. This Year 3.281
 Av. Costs Per K. W. H. This Year 0.0268
 Av. Costs Per M. G. Pumped This Year 8.95

Cum. Pumping Cost \$5367.88
 Cum. M. G. Pumped 686.7
 Cum. Equiv. on Lake in Ft. 10.144
 Cum. Av. Cost Per K. W. H. 0.0238
 Cum. Av. Costs Per M. G. Pumped 7.81

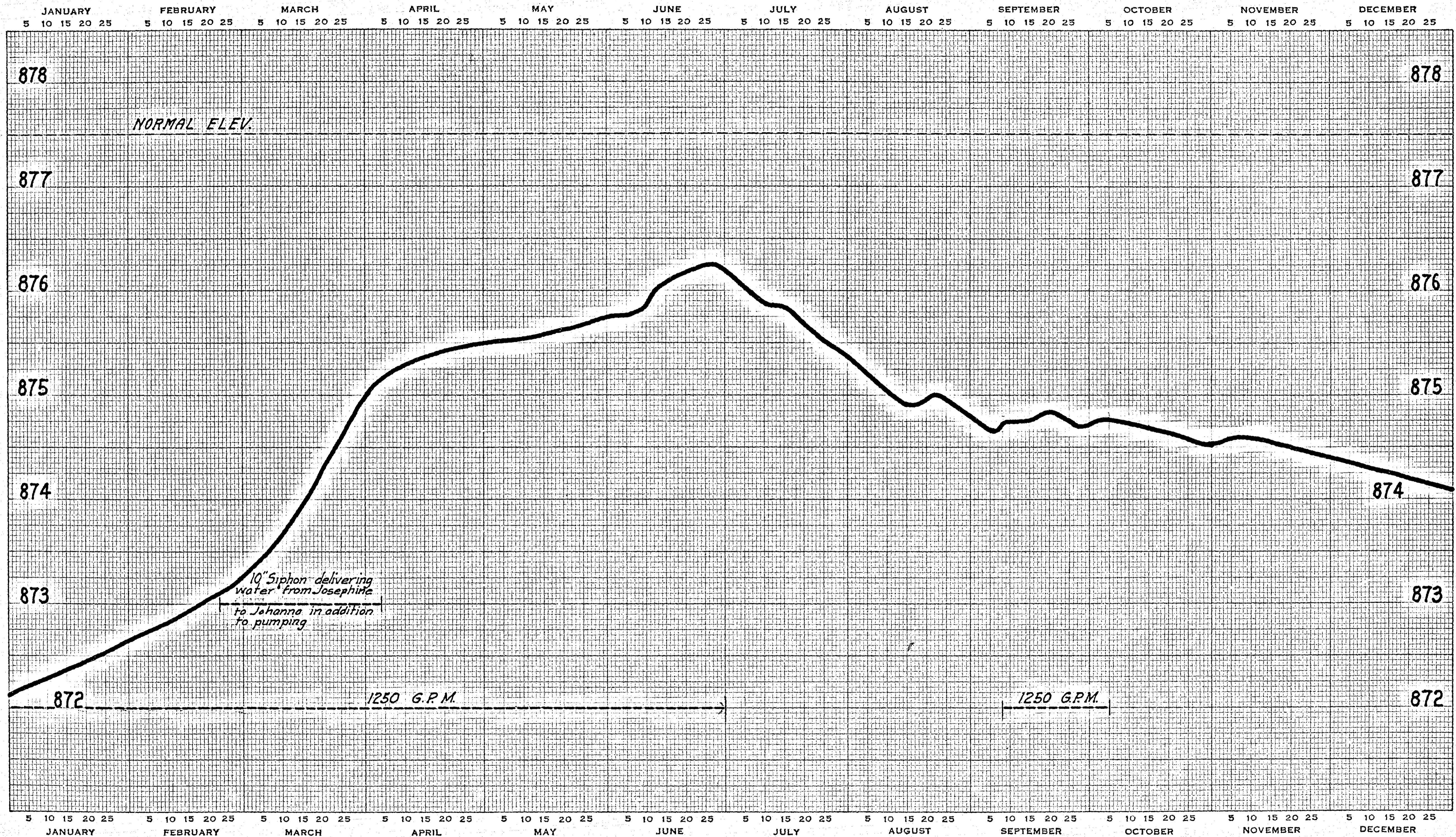
Precipitation This Year 23.04 26.43
 Normal Precipitation 27.34 27.24
 Cum. Excess-Deficiency -14.81 -3.78
 (Since 1924)

Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 1 to .22
 DAILY RECORD SHEET

Lake JOHANNA Year 1927

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days. Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. 5

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.	25.5		
FEB.	25.5	385.50	762.26
MAR.	25.5	193.75	495.39
APR.	27.0	193.50	486.30
MAY	26.5	165.50	386.37
JUNE	25.5	183.75	372.42
JULY			
AUG.			
SEPT.	26.0	107.50	281.32
OCT.	26.0	56.25	218.33
NOV.			
DEC.			
TOTAL		1269.75	2811.07

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year \$ 2811.07
 Mil. Gals. Pumped This Year 367.8
 Equiv. on Lake in Ft. This Year 5.461
 Av. Costs Per K. W. H. This Year 0.0222
 Av. Costs Per M. G. Pumped This Year 7.54

Cum. Pumping Cost \$ 3369.45
 Cum. M. G. Pumped 463.2
 Cum. Equiv. on Lake in Ft. 6.863
 Cum. Av. Cost Per K. W. H. 0.0223
 Cum. Av. Costs Per M. G. Pumped 7.28

Precipitation This Year 19.51 20.87
 Normal Precipitation 27.35 27.24
 Cum. Excess-Deficiency -5.97 -3.07
 (Since 1924)

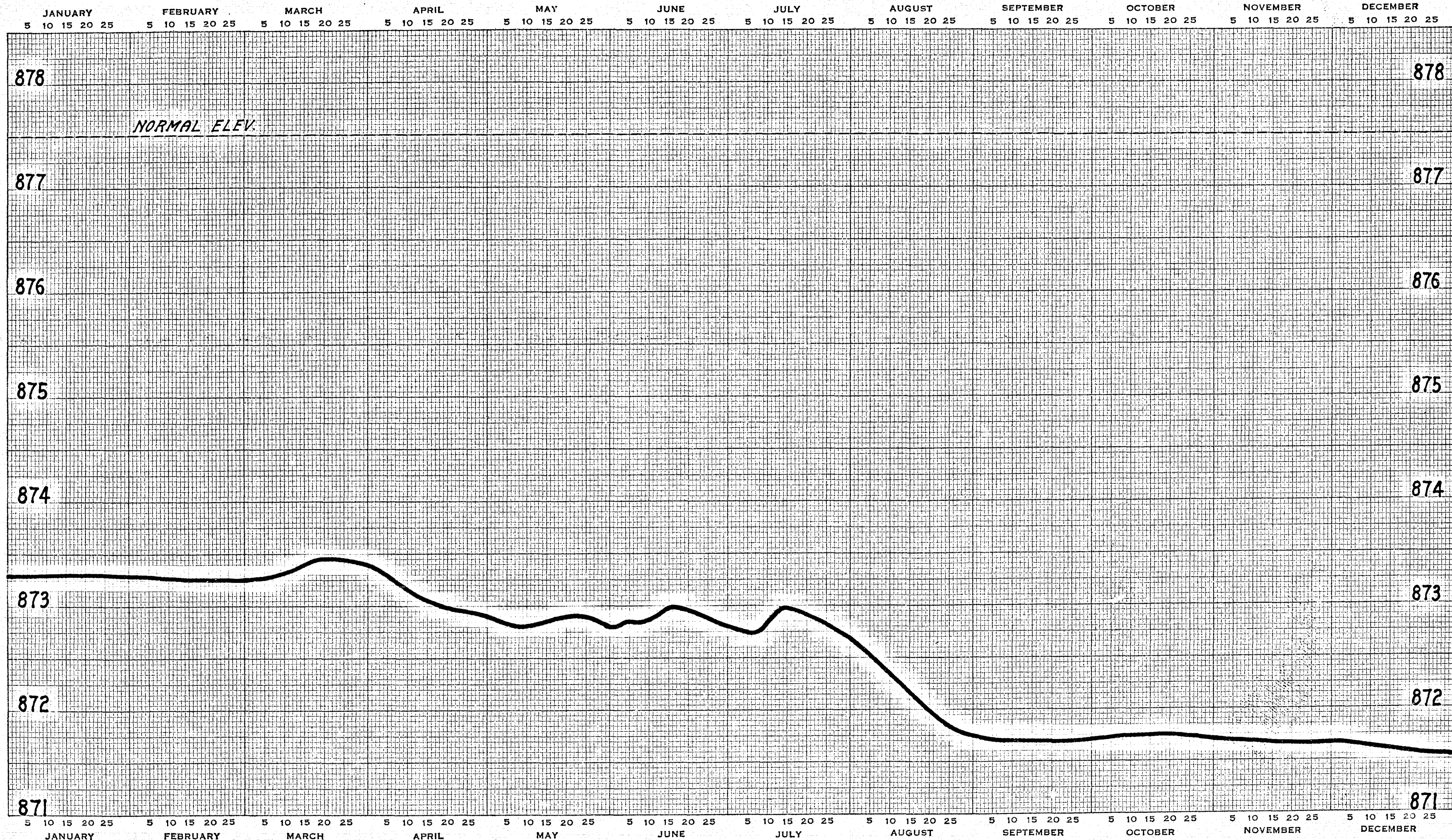
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 170.22

Lake JOHANNA Year 1925

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. _____

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 359-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____			
Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____
 Mil. Gals. Pumped This Year _____
 Equiv. on Lake in Ft. This Year _____
 Av. Costs Per K. W. H. This Year _____
 Av. Costs Per M. G. Pumped This Year _____

Cum. Pumping Cost _____
 Cum. M. G. Pumped _____
 Cum. Equiv. on Lake in Ft. _____
 Cum. Av. Cost Per K. W. H. _____
 Cum. Av. Costs Per M. G. Pumped _____

Precipitation This Year 29.30 30.57
 Normal Precipitation 27.43 27.27
 Cum. Excess-Deficiency +1.87 +3.30
 (Since 1924)

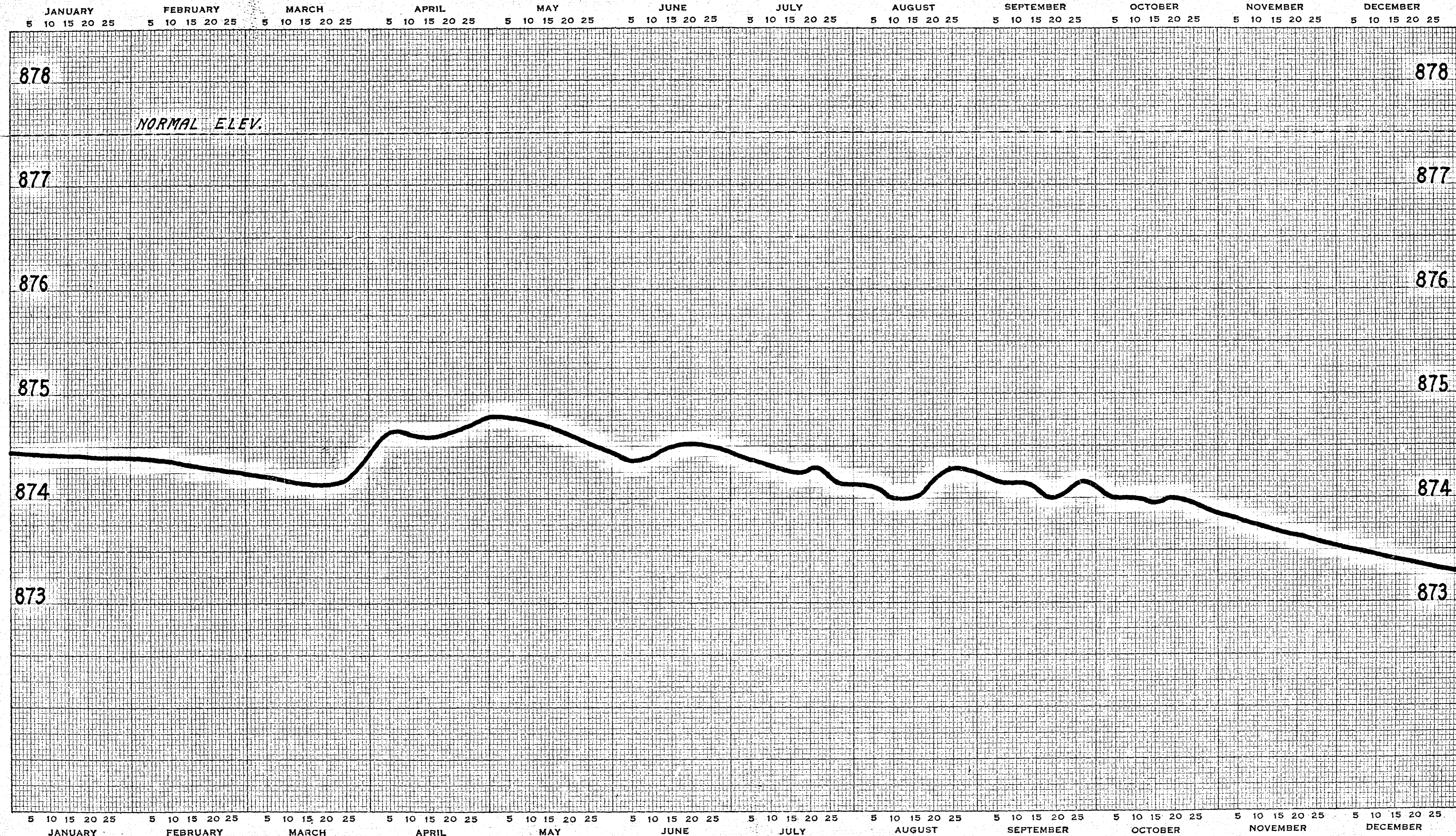
Area in Acres at Normal Elevation 212
 Gallons Equiv. to One Foot on Lake 69,100,000
 Ratio: Watershed to Lake Area 170.22

Lake JOHANNA Year 1924

OFFICE OF
 RAMSEY COUNTY ENGINEER

Sheet No. 4

DAILY RECORD SHEET



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
 One Year by Days, Calendar Year.
 Divided 10 per unit vertically.

SEA LEVEL ELEVATION

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

PUMPING UNIT NO. _____

Month	K. W. Demand	K. W. Consumed	Total Cost
JAN.			
FEB.			
MAR.			
APR.			
MAY			
JUNE			
JULY			
AUG.			
SEPT.			
OCT.			
NOV.			
DEC.			
TOTAL			

Pumping Costs This Year _____ Cum. Pumping Cost _____
 Mil. Gals. Pumped This Year _____ Cum. M. G. Pumped _____
 Equiv. on Lake in Ft. This Year _____ Cum. Equiv. on Lake in Ft. _____
 Av. Costs Per K. W. H. This Year _____ Cum. Av. Cost Per K. W. H. _____
 Av. Costs Per M. G. Pumped This Year _____ Cum. Av. Costs Per M. G. Pumped _____

Precipitation This Year _____

Area in Acres at Normal Elevation _____

Lake Johanna Year _____

Normal Precipitation _____

Gallons Equiv. to One Foot on Lake _____

OFFICE OF
RAMSEY COUNTY ENGINEER

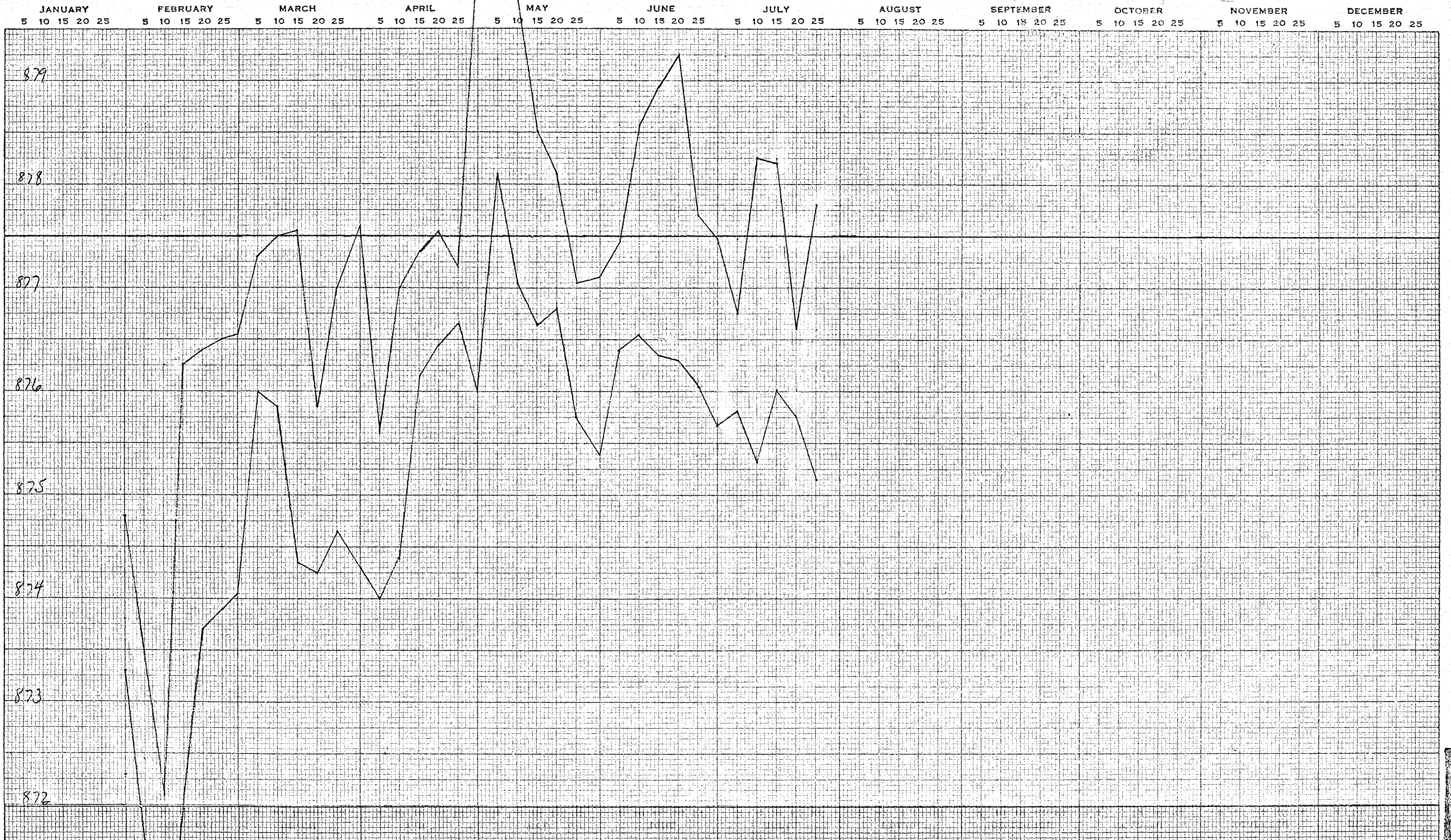
Cum. Excess-Deficiency _____
(Since 1924)

Ratio: Watershed to Lake Area _____

DAILY RECORD SHEET

Sheet No. _____

80.20



KEUFFEL & ESSER CO., N. Y. NO. 389-1411
One Year by Days. Calendar Year.
Divided 10 per unit vertically.



Month	PUMPING UNIT NO. 1				PUMPING UNIT NO. 2				PUMPING UNIT NO. 3			
	R. W. Demand	R. W. Capacity	Time Used	Feet	R. W. Demand	R. W. Capacity	Time Used	Feet	R. W. Demand	R. W. Capacity	Time Used	Feet
1924												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
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49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

Pumping Unit This Year _____

Cum. Pumping Unit _____

Feet This Pumping Unit This Year _____

Feet M. C. Pumping _____

Pumping Unit - 1924 Year _____

Feet _____

SEA LEVEL ELEVATION

ELEVATION

Precipitation This Year _____

Area in Acres at Normal Elevation _____

Lake Johanna Year _____

Normal Precipitation _____

Gallons Equiv. to One Foot on Lake _____

OFFICE OF
RAMSEY COUNTY ENGINEER

Cum. Excess-Deficiency _____
(Since 1924)

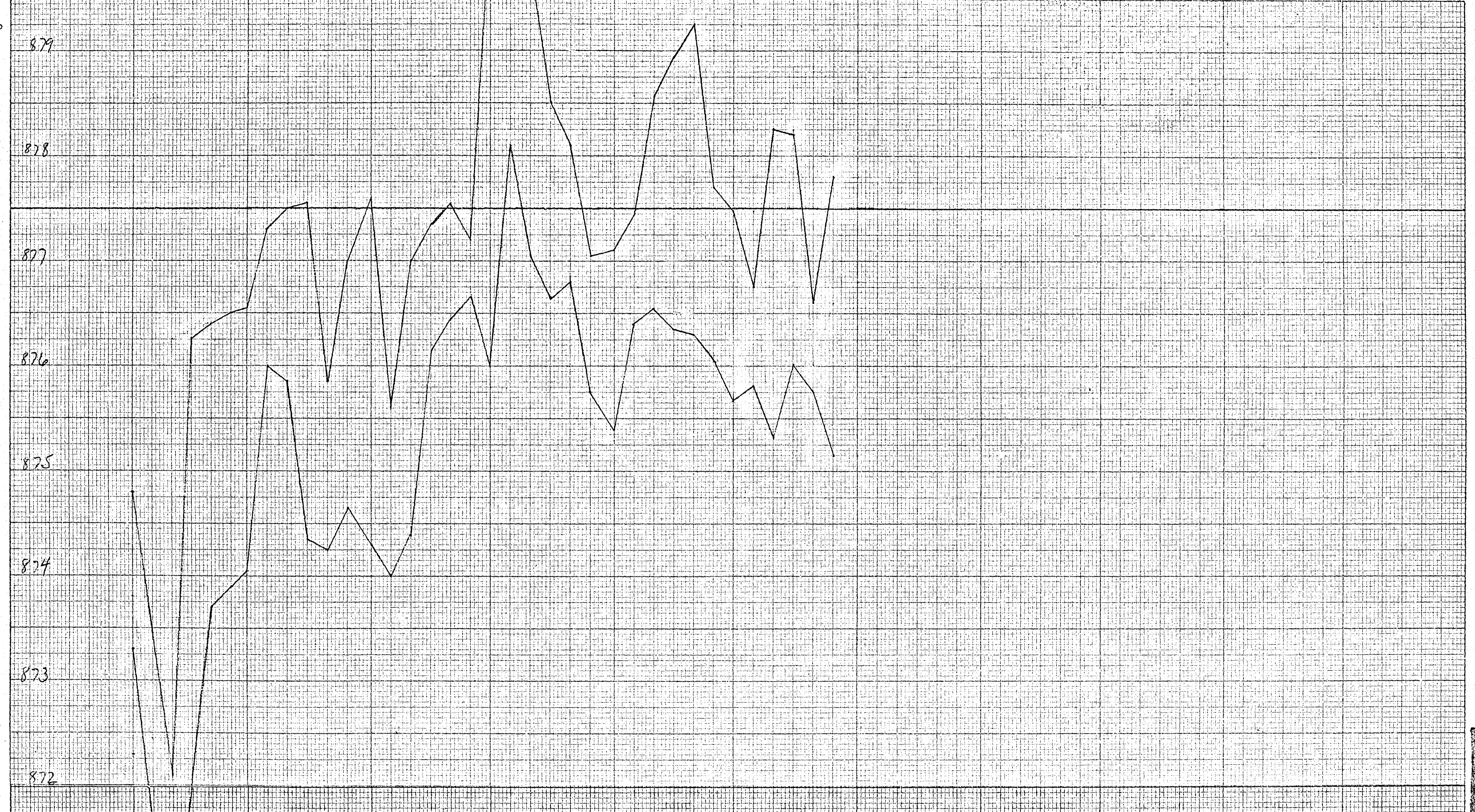
Ratio: Watershed to Lake Area _____

Sheet No. _____

DAILY RECORD SHEET

JANUARY FEBRUARY MARCH APRIL MAY JUNE JULY AUGUST SEPTEMBER OCTOBER NOVEMBER DECEMBER
5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25 5 10 15 20 25

80.20



KEUFFEL & ESSER CO., N. Y. NO. 399-1411
One Year by Days. Calendar Year.
Divided 10 per unit vertically.



ELEVATION	PUMPING UNIT NO. 1			PUMPING UNIT NO. 2			PUMPING UNIT NO. 3		
	Month	R. W. Pumped	C. W. Carried	Month	R. W. Pumped	C. W. Carried	Month	R. W. Pumped	C. W. Carried
871									
870	1924	25							
		26							
		27							
		28							
		29							
		30							
		31							
		32							
		33							
		34							
		35							
		36							
		37							
		38							
		39							
		40							
		41							
		42							
		43							
		44							
		45							
		46							
		47							
		48							
		49							
		50							
		51							
		52							
		53							
		54							
		55							
		56							
		57							
		58							
		59							
		60							

Pumping Unit This Year _____
Total Gallons Pumped This Year _____
Pumping Unit No. 1 This Year _____
Pumping Unit No. 2 This Year _____
Pumping Unit No. 3 This Year _____

Chief, Pumping Unit _____
Chief, M. C. Pumped _____
Chief, M. C. Pumped _____

SEA LEVEL ELEVATION

ELEVATION