THE PRESENT CONDITION AND FUTURE REQUIREMENTS OF THE GAS DISTRIBUTION SYSTEM OF THE CONSUMERS POWER COMPANY LANSING, MICHIGAN

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Sherman

THESIS

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A gas distribution system in any community is subject to constantly changing conditions; for this reason, if an operating company wishes to furnish a high grade of service, it becomes necessary at certain times, to analyze these conditions, and, where they are found to render inadequate service, to correct them.

There are three important factors which contribute to the lessening of the efficiency and service in such a system. The first and largest of these is the growth of the territory being served. When a district or a part of a district increases its size suddenly, the service becomes insufficient during peak loads until such time as this condition can be remedied.

Another condition detrimental to good service and very common in gas distribution systems, is the deposit of napthalene, excess moisture, and tarry and gummy substances in the mains. This deposit is caused by improper manufacturing processes, and, in many cases, bad pressure conditions result.

The third factor contributing to poor service is the deterioration of the system. Pipe becomes rusted through, and bad joints begin to leak, thus bringing about high leakage and poor pressure.

In the following pages, I give in full the data, calculations, and reasoning upon which I have based the conclusions stated in

this report concerning the present condition and the future requirements of the gas distribution system of the Consumers Power Company of Lansing, Michigan.

To check up the present condition of the distribution system and to determine whether or not the feed mains are free from obstruction and are adequate as they now stand for the present business, and for any increase in that business, I have divided the territory supplied with gas into twenty-two districts. This division was made with reference to the existing feed mains.

These districts are as follows:

1. The territory bounded on the north by the city limits; on the east by Pine Street, included; on the south by Brook Street, Daleford Avenue and Hyland Avenue, all included, and the prolongation of Hyland Avenue to the city limits; on the west by the city limits.
2. The territory bounded on the north and east by the Grand River; on the south by Jefferson Street, included; on the west by Pine Street, included from Jefferson Street to Brook Street but not included north of Brook Street.
3. The territory bounded on the north by Jefferson Street, not included; on the east by the Grand River; on the south by Genesee Street, included; on the west by Pine Street, included.

4. The territory bounded on the north by the prolongation of Hyland Avenue to the city limits, and by Hyland Avenue, Daleford Avenue, and Brook Street, none included; on the east by Pine Street, not included; on the south by Genesee Street and South Genesee Street, both included; on the west by the city limits.

5. The territory bounded on the north by Genesee Street, not included, and its prolongation to the Grand River; on the east by the Grand River; on the south by Kalamazoo Street, included; on the west by Townsend Street and Seymour Street, both included.

6. The territory bounded on the north by South Genesee Street and Genesee Street, neither included; on the east by Seymour Street and Townsend Street, neither included; on the south by Kalamazoo Street, included; on the west by the city limits.

7. The territory bounded on the north by Kalamazoo Street, not included; on the east by Capitol Avenue, included, and the Grand River; on the south by the Grand River; on the west by Logan Street, included from the Grand River to Isaac Street and Pine Street, included, from Robert Street to Kalamazoo Street.

8. The territory bounded on the north by the prolong-

ation of Kalamazoo Street and Kalamazoo Street, not included; on the east by Pine Street, not included from Kalamazoo Street to Robert Street, and Logan Street, not included from Isaac Street to the Grand River; on the south by the Grand River; on the west by the city limits.

9. The territory bounded on the north by Kalamazoo Street, not included; on the east and south by the Grand River; on the west by Capitol Avenue not included.

10. The territory bounded on the north by the city limits; on the east by the city limits; on the south by Franklin Avenue, included; on the west by the Grand River.

11. The territory bounded on the north by Franklin Avenue, not included; on the east by Clemons Avenue, not included; on the west by the Grand River.

12. The territory bounded on the north by Saginaw Street, not included; on the east by Pennsylvania Avenue, included; on the south by Kalamazoo Street, included; on the west by the Grand River.

13. The territory bounded on the north by Kalamazoo Street, not included; on the east by Pennsylvania Avenue, included; on the south by the Cedar River;

on the west by the Cedar and Grand Rivers.

14. The territory bounded on the north by Jerome Street, included from Pennsylvania Avenue to Hospital Street, and by Michigan Avenue, included from Hospital to Regent Streets; on the east by Hospital Street, not included from the Industrial School to Michigan Avenue, and Regent Street, included from Michigan Avenue to the Grand Trunk railway tracks; on the south by those tracks; on the west by Pennsylvania Avenue, not included.

15. The territory bounded on the north by the line of the State Industrial School from Hospital Street to Clemons Avenue, and by Sheridan Street from Clemons Avenue to the city limits; on the east by the city limits; on the south by the Pere Marquette railway tracks; on the west by Regent Street, not included from the Pere Marquette railway tracks to Michigan Avenue, by Hospital Street, included from Michigan Avenue to the State Industrial School, and by Clemons Avenue from the southerly line of the School to Sheridan Street.

16. The territory bounded on the north by the Grand River; on the east by Todd Avenue, included; on the

south by the New York Central railway tracks and the city limits. There is also included in the district the consumption along Moores River Drive as far out as the Country Club.

17. The territory bounded on the north by the Grand and Cedar Rivers; on the east by the city limits; on the south by the city limits; on the west by Forest Avenue, included from the city limits to Mount Hope Avenue, and Todd Avenue, not included from Mount Hope Avenue to the Grand River, and by the Grand River.
18. The Greencroft subdivision.
19. East Lansing.
20. Grand Ledge.
21. Mason.
22. Holt.

Having made this division, my next step was to obtain the actual gas sales in each district for a definite period of time. I chose the month of November for this, mainly, because it required the itemizing of twenty thousand customer accounts, and I could do it while securing further data.

TABLE NO.I.--GAS SALES BY DISTRICTS (MONTH OF NOVEMBER,1927).

(See following page).

TABLE NO.I.- GAS SALES BY DISTRICTS (MONTH OF NOVEMBER,1927).

District No.	1.-----	Gas	Sales,	cu. ft.	1044.0
"	2.-----	"	"	"	1833.7
"	3.-----	"	"	"	1067.4
"	4.-----	"	"	"	2280.7
"	5.-----	"	"	"	6708.2
"	6.-----	"	"	"	5596.3
"	7.-----	"	"	"	1820.0
"	8.-----	"	"	"	3822.5
"	9.-----	"	"	"	949.7
"	10.-----	"	"	"	3680.1
"	11.-----	"	"	"	3637.1
"	12.-----	"	"	"	2718.1
"	13.-----	"	"	"	988.4
"	14.-----	"	"	"	3362.4
"	15.-----	"	"	"	3951.0
"	16.-----	"	"	"	2960.8
"	17.-----	"	"	"	7358.8
"	18.-----	"	"	"	436.2
"	19.-----	"	"	"	4339.0
"	20.-----	"	"	"	1144.3
"	21.-----	"	"	"	623.9
"	22.-----	"	"	"	1661.6
		Total	Sales,		61984.2

Due to the fact that a different number of hours are involved in arriving at the maximum hourly demands, it is necessary to divide the sales into domestic and industrial sales. (See Table No.II on the following page).

TABLE NO.II-DOMESTIC AND INDUSTRIAL SALES BY DISTRICTS.

DISTRICTS	DOMESTIC SALES M.CU.FT.	INDUSTRIAL SALES M.CU.FT.
No. 1.	1044.0	
No. 2.	1833.7	
No. 3.	1067.4	
No. 4.	2280.7	
No. 5.	5137.0	1571.2
No. 6.	5297.3	299.0
No. 7.	1418.3	401.7
No. 8.	3822.5	
No. 9.	845.1	104.6
No.10.	3273.1	407.0
No.11.	3110.9	526.2
No.12.	2054.7	663.4
No.13.	988.4	
No.14.	3196.4	166.0
No.15.	3951.0	
No.16.	2960.8	
No.17.	4489.6	2369.2
No.18.	436.2	
No.19.	3828.8	510.2
No.20.	1144.3	
No.21.	623.9	
No.22.	1661.6	
TOTALS	54465.7	7518.5

Having compiled the sales by districts for the above-named period, my next step was to obtain from these sales, the maximum hourly demand for gas in each district, since the size of the mains required to supply these districts depends upon this maximum hourly demand.

From the pressure and holder observations taken during the months of October, November, December, 1927, January, February, March, and April, 1928, I obtained the maximum hourly rate of demand. This maximum rate I found to be 300,000 cubic feet per hour for the five-minute period between 11:25 A.M. and 11:30 A.M. on February 21,1928.

As this maximum hourly sendout includes both domestic and industrial sales, it is necessary to obtain the separate maximum hourly rate of sendout for each. To determine this, I took the maximum hourly rate of sendout for industrial use as being 1/250 th of the total industrial sales during November. (There were 250 working hours in November.)This result is 30,000 cubic feet per hour, which leaves the maximum hourly rate of sendout for domestic use as 270,000 cubic feet. The total domestic sales as shown by the division into districts are 54,465.7M cubic feet, which, divided by 270,000 cubic feet, gives a quotient of 201.5 hours of maximum domestic sendout.

I then used this quotient (201.5) to divide the total domestic sales in each district, in order to obtain the maximum hourly rate of demand for domestic business in that district; while the industrial sales in each district were divided by 250 to obtain the maximum hourly demand for industrial purposes. In the districts where there are both domestic and industrial sales, the two maximum hourly rates have been added together to determine the combined maximum hourly rate.

The figures for the domestic and industrial maximum hourly rates of demand for gas as determined by the analysis described above, are given in the following table.

TABLE NO.III — DOMESTIC AND INDUSTRIAL MAXIMUM HOURLY RATES OF DEMAND BY DISTRICTS.

DISTRICT	MAXIMUM HOURLY DOMESTIC RATE	MAXIMUM HOURLY INDUSTRIAL RATE	TOTAL MAX. HOURLY RATE
NO. 1.	5.18		5.18
NO. 2.	9.10		9.10
NO. 3.	5.20		5.20
NO. 4.	11.32		11.32
NO. 5.	25.50	6.20	31.70
NO. 6.	26.30	1.20	27.50
NO. 7.	7.00	1.61	8.61
NO. 8.	19.00		19.00
NO. 9.	4.18	.42	4.60
NO.10.	16.20	1.63	17.83
NO.11.	15.43	2.12	17.55
NO.12.	10.20	2.65	12.85
NO.13.	4.91		4.91
NO.14.	15.80	.66	16.46
NO.15.	19.60		19.60
NO.16.	14.60		14.60
NO.17.	22.30	11.47	33.77
NO.18.	2.17		2.17
NO.19.	19.00	2.04	21.04
NO.20.	5.68		5.68
NO.21.	3.09		3.09
NO.22.	8.24		8.24
TOTAL	270.00	30.00	300.00

From a consideration and analysis of holder readings taken between October,1927, and May,1928, I have obtained a definite division of the gas leaving the works at the time of the maximum hourly demand, between low pressure, intermediate pressure, and

high pressure feed mains. The following table shows the result of each test.

TABLE NO.IV. - DIVISION OF GAS LEAVING HOLDER.

DATE					
11-28-27	Low Pressure 19.9%	High and Intermediate Pressure 80.1%			
12-15-27	Low Pressure 13.6%	High and Intermediate Pressure 86.4%			
2-13-28	Low Pressure 16.9%	High and Intermediate Pressure 83.1%			
2-14-28	Low Pressure 20.0%	High and Intermediate Pressure 80.0%			
2-15-28	Low and High Pressure 37.6%	Intermediate Pressure 62.4%			
2-16-28	Low and High Pressure 38.7%	Intermediate Pressure 61.3%			
2-17-28	Low and Intermediate Pressure 78.9%	High Pressure 21.1%			
2-20-28	Low and Intermediate Pressure 80.4%	High Pressure 19.6%			
2-21-28	Low Pressure 19.9%	High and Intermediate Pressure 80.1%			
2-27-28	Low and High Pressure 41.0%	Intermediate Pressure 59.0%			
2-28-28	Low and Intermediate Pressure 79.8%	High Pressure 20.2%			
3- 5-28	Low Pressure 19.87%	High and Intermediate Pressure 80.13%			
3-12-28	Intermediate Pressure 61.21%	Low and High Pressure 38.79%			
4- 9-28	Low Pressure 22.6%	High and Intermediate Pressure 77.4%			
4-16-28	Low Pressure 20.75%	High and Intermediate Pressure 79.25%			
4-24-28	Low Pressure 20.63%	High and Intermediate Pressure 79.37%			

TABLE NO.V.- AVERAGE DIVISION OF GAS LEAVING HOLDER.

Low Pressure ----------	19.35%
Intermediate Pressure ------	60.62%
High Pressure ----------	20.03%

Using the above figures to divide my maximum hourly sendout (300,000 cubic feet) into its various outputs, I derived the following: (See next page).

TABLE NO.VI - DIVISION OF MAXIMUM HOURLY SENDOUT LEAVING HOLDER.

Low Pressure ---------- 57.15 M. per hour
Intermediate Pressure ---------- 181.85 M. per hour
High Pressure ---------- 61.00 M. per hour

Low pressures in this report shall be taken as pressures not in excess of ten (10) inches of water. Intermediate Pressures shall be taken as those not in excess of seven (7) pounds gage. High pressure shall be taken as any pressure in excess of seven (7) pounds gage.

TABLE NO.VII.- DIVISION OF GAS BY PRESSURES

GAS CARRIED BY LOW PRESSURE MAINS	MAXIMUM HOURLY RATE CUBIC FEET	TOTAL CUBIC FEET
All of district no. 1	5,180	
All of district no. 2	9,100	
Part of district no. 3	4,000	
Part of district no.10	9,930	
Part of district no.11	5,570	
Part of district no.12	1,290	
Part of district no. 4	10,000	
Part of district no. 5	8,000	
Part of district no. 6	4,080	
		52,150

TABLE NO.VII - DIVISION OF GAS BY PRESSURES (CONTINUED).

GAS CARRIED BY HIGH PRESSURE MAINS	MAXIMUM HOURLY RATE CUBIC FEET	TOTAL CUBIC FEET
All of district no.20	5,680	
All of district no.21	3,090	
All of district no.22	8,240	
All of district no. 15	19,600	
All of district no.19	21,040	
All of district no.18	2,170	
Part of district no.6	670	
Part of district no.7	60	
Part of district no.3	450	
		61,000
GAS CARRIED BY INTER-MEDIATE PRESSURE MAINS		
Part of district no.6	22,750	
Part of district no.7	8,550	
Part of district no.3	750	
Part of district no.10	7,900	
Part of district no.11	11,980	
Part of district no.12	11,560	
Part of district no.4	1,320	
Part of district no.5	23,700	
All of district no.8	19,000	
All of district no.9	4,600	
All of district no.13	4,910	
All of district no.14	16,460	
All of district no.16	14,600	
All of district no.17	33,770	
		181,850

There are losses of pressure in the mains of each system, caused by the carrying of the gas at the rates given above. These losses have been calculated and the results compared with the pressures as observed during the pressure survey. The computations were solved by the use of Professor Pole's formula.

Discharge in cubic feet per hour equals $= c\sqrt{\frac{d^5 \times (P_1 - P_2)}{l \times W.}}$

where "d" equals diameter of pipe in inches;
"p_1" equals initial pressure in inches of water;
"p_2" equals terminal pressure in inches of water;
"l" equals length of pipe in yards
"w" equals specific gravity of gas when air equals one, (used .555)
"c" equals constant varying from 1000 to 1400 (used 1400).

The calculations for the low pressure mains are given below.

All of the gas supplied to the low pressure system has to be carried to Willow Street under the following conditions:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
Workds outlet to Willow Street	57,150	16	1000	.28
Here there will be taken off gas for dist.#1 5180 dist.#4 10000	15,180			
Leaving to be carried to Chestnut Street	41,970	16	200	.03
Here there will be taken off gas for Chestnut Street north of Willow	100			
Leaving to be carried to Walnut St.	41,870	16	350	.053

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
	41,870			
Here there will be taken off gas for Walnut St. north of Willow and for Edmore and Pleasant	120			
	41,750	16	425	.065
Leaving to be carried to Seymour St.	41,750			
Here there will be taken off gas for part of dist.#10	5,000			
Leaving to be carried to Capitol	36,750	16	425	.048
Here there will be taken off gas for the east end of Willow Street	100			
Leaving to be carried to Franklin	36,650	16	400	.045
Totals			2700	.521

According to the pressure survey of April 16,1928, between 11:35 A.M. and 11:40 A.M., the pressure at the plant was 8.0 inches and the pressure at the corner of Grand River and Capitol Avenues was 7.4 inches, or a loss of 0.6 inches with 51,360 cubic feet of gas passing through the main.

Our actual loss in pressure from the works outlet to Willow Street (11:35 A.M.-11:40 A.M.,April 16,1928) was 0.4 inches of water, while the computed drop under maximum conditions was 0.28 inches, and the computed drop under conditions of April 16,1928 (51,360 cubic feet per hour) was 0.25 inches.

The difference between these pressure drops represents a stoppage in the sixteen inch line from the works outlet to Willow Street, and should be deducted from the total observed drop. This brings the observed drop to 0.45 inches, and shows me that the line is clear from Willow Street to Grand River Avenue.

At the corner of Grand River and Capitol Avenues, the gas is split up into two streams, one going south along Capitol Avenue through a ten inch main, and the other going east along Grand River Avenue through a six inch main.

The main running south will carry gas for

Part of district #2
Part of district #3
Part of district #5
Part of district #6

under the following conditions:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried to Kilborn Street	24,860	10	1000	0.52
Here there will be taken of 4000 cu. ft. feeding part of district #2	4,000			
Leaving to be carried to Jefferson	20,860	10	500	0.20

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried to Jefferson St.	20,860	10	500	0.20
Here there will be taken off the balance of dist.#2	4,780			
Leaving to be carried to Madison St.	16,080	10	450	0.11
Here there will be taken off gas for part of dist.#3	2,000			
Leaving to be carried to Saginaw	14,080	10	500	0.09
Here there will be taken off gas for the rest of dist. #3	2,000			
Leaving to be carried to Lapeer St.	12,080	10	350	0.045
TOTALS			2800	0.965

Beyond this point there will be no appreciable drop. The total distance from the works is 5500 feet, and the total calculated loss of pressure, 1.486 inches.

The observed loss, as shown by the pressure readings of April 16 and April 24, is 2.10 inches.

On April 24 we were delivering 57,024 cu.ft. of gas through the low pressure main during our peak load between 11:35 A.M. and 11:40 A.M. Using our computed drop plus the 0.15 inches loss

we have discovered between the plant and Willow Street, we should obtain at this time a pressure of 7.329 inches at Grand River Avenue and Capitol Avenue. The next observed pressure (Kilborn St. and Capitol Ave.) was 6.2 inches or a loss of 1.129 inches. The computed loss at this point was 0.52 inches, or a difference of 0.609 inches. There is no doubt but that we have a stoppage at this point, and from Kilborn Street on, the main is apparently clear.

The main running east on Grand River Avenue will carry gas for

Part of district #10
Part of district #11
Part of district #12

under the following conditions:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried along Grand River Avenue East	11,790	6		
There will be taken off along Grand River Ave.	2,470			
Leaving to be carried to Cedar St.	9,320	6	1701	1.7
Here there will be taken off gas for districts #11 and 12	6,860			
Leaving to be carried to High St.	2,460	6	1800	0.13
TOTALS			3501	1.83

The total distance is 3501 feet and the total calculated pressure drop, 1.83 inches.

The total observed drop was 2.9 inches, while the difference in the calculated and observed drops between Capitol Avenue and Cedar Street was 0.4 inches. This is due to the fact that on May first when these pressures were taken, our maximum hourly sendout was 232,800 cubic feet, or about 77% of the maximum upon which all calculations are based. This makes the sendout in the Grand River main 7,160 cubic feet per hour instead of 9,320 cubic feet per hour, bringing the calculated drop to 1.0 inches. I believe that the remaining difference of 0.3 inches shows that our assumption of gas taken off along Grand River Avenue is wrong, rather than that we have a stoppage. The increased drop to High Street shows that the intermediate governor at Cedar Street is properly set to take care of only such load as cannot be handled by the low pressure.

As a result of this survey of the low pressure main, I have disclosed the fact that there are two stoppages in the system, but, other than these, that the line is clear as far as can be determined, and it is of ample size to handle its present load.

The condition of the intermediate main was next checked in a similar manner, but with the use of Dr.Pole's second formula.

Discharge cubic feet per hour at atmospheric pressure equals $33.3\sqrt{\frac{d^5 + (p_1^2 - p_2^2)}{L \times W}}$

where "d" equals diameter of pipe in inches;
"p_1" equals absolute initial pressure in pounds per square inch;
"p_2" equals absolute terminal pressure in pounds per square inch;
"L" equals length of pipe in miles;
"w" equals specific gravity of the fluid when air = 1.

This main carries a pressure of six pounds gage at the plant during the maximum load, and delivers gas into the low pressure system through district governors.

The conditions are as follows:

	CU.FT. PER HOUR	DISTANCE IN FEET	DISTANCE IN MILES	DIAMETER OF PIPE IN INCHES	PRESSURE IN POUNDS
Leaving plant	181,850	0	0.00	12	5.34
Plant to Willow Street	181,850	800	0.15	12	5.09

Here the gas is split up into two streams; one going South on Pine Street through a ten inch main; and the other going East on Willow Street through a ten inch main.

The main running South on Pine Street will carry gas for the following districts:

District #4 ----------	1320	cu.ft.per hr.
District #3 ----------	750	" "
District #6 ----------	22750	" "
District #5 ----------	23700	" "
District #8 ----------	19000	" "
District #7 ----------	8550	" "
District #9 ----------	4600	" "

District #16 ---------- 14600 cu.ft.per hr.
District #17 ---------- 33770 cu.ft.per hr.

The conditions are as follows:

	CU.FT. PER HOUR	DISTANCE IN FEET	DISTANCE IN MILES	DIAMETER OF PIPE IN INCHES	PRESSURE IN POUNDS
West Willow to Ionia Street Governor	129,040	4200	0.795	10	3.34
Here there is taken off	48,520				
Leaving to be carried to William Street Tee	80,520	4300	0.815	10	2.59
Here there is taken off for Isaac St. Gov.	32,150	300	0.057	10	2.58
Leaving to be carried to tee across river	48,370	2800	0.530	10	2.41
From this point there is carried to the governor at Logan and Britten Streets	10,000	2200	0.417	6	2.33
Leaving to be carried to Davis Street Tee	38,370	1000	0.190	10	2.37
From Davis St. Tee there iscarried to the Sparrow St.Governor	26,900	900	0.170	8	2.31
Leaving to be carried from the Davis St. Tee to the Reo Governor	11,470	1900	0.360	10	2.36

The main running East on Willow Street will carry gas for the following districts:

District #10 ----------	7900	cu.ft.per hr.
District #11 ----------	11980	" "
District #12 ----------	11560	" "
District #13 ----------	4910	" "
District #14 ----------	16460	" "

The conditions are as follows:

	CU.FT. PER HOUR	DISTANCE IN FEET	DISTANCE IN MILES	DIAMETER OF PIPE IN INCHES	PRESSURE IN POUNDS
Willow St.Tee to Cedar St. Governor	52,810	3800	0.72	10	4.83
Here there will be taken off	24,880				
Leaving to be carried to Beech St. Governor	27,930	6600	1.25	10	4.71

The accompanying table shows comparative results between observed and computed pressures in the intermediate system.

Station	OBSERVED PRESSURE	COMPUTED PRESSURE	OBSERVED DROP	COMPUTED DROP
Plant	5.34# gage	5.34# gage		
Ionia St.Gov.	4.07	3.34	1.27	2.00
William St.Tee	3.38	2.58	.69	.76
Logan and Britten Gov.	2.84	2.33	---	----
Davis St.Tee	2.89	2.37	---	----
Reo Governor	3.14	2.36	.24	.22

It will be noted here that the actual observed pressure is higher than the computed pressure. This is because the maximum intermediate sendout on this day was 153,000 cubic feet per hour,

while the computed pressure was for the yearly maximum,or 181,850 cubic feet per hour. The lines are apparently clear and able to handle the present maximum load.

I will next take up for consideration the high pressure system. In making my calculations, I have used the same formula as in figuring the intermediate system.

The high pressure system at the present time consists of a six inch line running south from the plant across the city, and on to Holt and Mason. A six inch branch is taken off at Saginaw Street and runs east to Larch Street where it is reduced to four inches and runs on to East Lansing. Another six inch branch runs west from Shiawassee Street to Grand Ledge.

The 1927 maximum of 61,000 cubic feet per hour is delivered from the plant under the following conditions:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
Plant	61,000	6	----	-----	30.000
Plant to Saginaw	61,000	6	3900	0.738	26.893

Here the gas is split into two streams;one going east on Saginaw Street through a six inch line; the other going south on Chestnut Street through a six inch line.

The line going south on Chestnut Street is as follows:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
Saginaw St.to Shiawassee St.	19,850	6	1200	0.228	26.786
Shiawassee St. to Olds Tee	13,560	6	5280	1.000	26.560
Olds Tee to Rockford Road	13,500	6	7200	1.360	26.260
Rockford Road to Holt	11,350	6	----	7.000	25.136
Holt to Mason	3,090	6	----	5.500	25.070

The main running west on Shiawassee Street will carry 6,350 cubic feet of gas per hour under the following conditions:

Chestnut St. to Durant	6,350	6	4800	0.910	26.340
Durant to Grand Ledge	5,680	6	----	10.500	25.924

The main running east on Saginaw Street will carry 41,090 cu. ft. of gas under the following conditions:

Chestnut St. to Lawrence Baking Company	41,090	6	4100	0.777	26.054
Lawrence Baking Co.to Penn.Ave. and Jerome St.	32,340	4	2900	0.550	19.840
Penn.Ave. and Jerome St.to Horton and Mich.	26,690	4	4000	0.758	11.390
Horton and Mich. Ave.to Harrison Rd.East Lansing	21,040	4	8500	1.610	00.000

It will be noted that, in the case we have taken, the pressure drops to zero before it reaches East Lansing. To account for this I will say that the actual load at any one time on the line is probably not exactly as I have assumed. For instance, at the time of peak load in East Lansing, the Lawrence Baking Company is practically shut down, and probably during the meal hours, the college is not using a great deal of gas. However, there are times when this condition of low pressure actually takes place, and it is necessary to raise the pressure at the plant to forty pounds to handle the load. Ordinarily the lines will handle their present loads.

This completes my analysis and examination of the gas system as it stands today. My next step will be to prophecy and estimate the growth of the system in Lansing and its environs in the next ten years, and to show wherein the present system will have to be enlarged to handle that growth adequately.

In order to determine the probable future demand for gas in various parts of the territory which we serve, I have made an examination of the extent to which each of the twenty-two districts is built up, and of the possibilities of future growth in the districts in which there is room for such growth, as well as in outside territory which we expect to serve.

My investigation has included a personal examination of the territory itself, and also an inspection of an insurance atlas of Lansing and East Lansing, which has been corrected to December, 1927, and which has in it all buildings in existence at that time. This examination shows that districts 2,3,5,9, and 12 are practically completely built up, and that districts 7 and 13 are nearly built up. There is possibility for growth in districts 1,4,6,8, 10,11,14,15,16,17,18,19,20,21, and 22. As a result of this examination and of much thought given to the subject, I have concluded that the greatest percentage of growth will take place in the various ends of the city that lie in districts 1,4,6,8,10,15,16, 18,and 19.

To obtain a foundation upon which to base future predictions, I have gone back to the records of 1920, and have analyzed the sales, dividing the domestic and industrial sales each into the districts heretofore named.

TABLE NO.VIII-DOMESTIC SALES BY DISTRICTS FOR 1920 AND 1927, THEIR DIFFERENCE AND PERCENT OF DIFFERENCE.

DISTRICTS	DOMESTIC SALES M.C.F.- 1920	DOMESTIC SALES M.C.F.- 1927	DOMESTIC DIFF.	% INCREASE OR DECREASE
No. 1	638.2	1044.0	405.8	63.6
No. 2	1675.9	1833.7	157.8	9.4
No. 3	1311.6	1067.4	(244.2)	(18.6)
No. 4	1448.7	2280.7	832.0	57.5
No. 5	4685.4	5137.0	451.6	9.6
No. 6	4052.9	5297.3	1244.4	30.7
No. 7	1506.1	1418.3	(87.7)	(5.8)
No. 8	2781.5	3822.5	1041.0	37.4
No.9	1150.7	845.1	(305.6)	(26.5)
No.10	2079.5	3273.1	1193.6	57.4
No.11	2192.1	3110.9	918.8	41.9
No.12	3080.8	2054.7	(1026.1)	(33.2)
No.13	964.2	988.4	24.2	2.5
No.14	2100.3	3196.4	1096.1	52.2
No.15	1714.1	3951.0	2236.9	131.0
No.16	974.4	2960.8	1986.4	204.0
No.17	3611.6	4489.6	878.0	24.3
No.18	125.0	436.2	311.2	249.0
No.19	1406.5	3828.8	2422.3	173.0
No.20		1144.3	1144.3	
No.21		623.9	623.9	
No.22		1661.6	1661.6	
	37499.5	54465.7		

(Figures in parentheses denote loss).

For Table No.IX, see following page.

TABLE NO.IX - INDUSTRIAL SALES BY DISTRICTS FOR 1920 AND 1927, THEIR DIFFERENCE AND PERCENT OF DIFFERENCE.

DISTRICTS	INDUSTRIAL SALES M.C.F.- 1920	INDUSTRIAL SALES M.C.F.- 1927	INDUSTRIAL DIFFERENCE	% INCREASE OR DECREASE
No. 5	224.0	1571.2	1347.2	600.0
No. 6		299.0	299.0	
No. 7	889.4	401.0	(488.4)	(54.8)
No. 9		104.6	104.6	
No.10		407.0	407.0	
No.11	192.7	526.2	333.5	174.0
No.12		663.4	663.4	
No.14		166.0	166.0	
No.17	7541.6	2869.2	(4672.4)	(62.0)
No.19		510.2	510.2	
	8847.7	7518.5		

(Figures in parentheses denote losses).

TABLE NO.X- POPULATION OF LANSING, EAST LANSING, AND SUBURBS AS SHOWN BY CITY DIRECTORY FOR 1920 AND 1927 INCLUSIVE.

YEAR	POPULATION	DIFFERENCE
1920	71,739	
1921	68,800	(2939)
1922	74,794	5994
1923	82,170	7376
1924	86,000	3830
1925	86,922	922
1926	90,956	4034
1927	93,877	2921
1928	97,877	4000(Est.)
	Total	26138
	Average yearly increase-----	-----3267

(Figures in parentheses denote loss).

TABLE NO.XI-NUMBER OF PHONES AND POPULATION PREDICTED BY TELEPHONE COMPANY. POPULATION RATIO TO TELEPHONES,5 TO 1.

YEAR	TELEPHONES	POPULATION	DIFFERENCE
1929	16,900	84,500	
1930	17,750	88,750	4,250
1931	18,750	93,750	5,000
1932	19,800	99,000	5,250
1933	20,800	104,000	5,000
1934	21,900	109,500	5,500
1935	23,000	115,000	5,500
1936	24,500	122,500	7,500
1937	25,500	127,500	5,000
1938	26,500	132,500	5,000
		Total	48,000
		Average yearly increase----------	5,333

TABLE NO.XII-YEARLY GAS SALES,1923 TO 1928 INCLUSIVE.

YEAR	GAS SALES	DIFFERENCE
1923	654,400,000 C.F.	
1924	677,600,000	23,200,000 C.F.
1925	703,058,000	25,458,000
1926	740,454,600	37,396,600
1927	751,978,000	11,523,400
1928	779,700,000	27,722,000(Est.)
	Total	125,300,000
	Average yearly increase----------	25,060,000

There were 21,009 meters in 1927.

The gas sales in 1927 were 751,978,000 cubic feet.

$$\frac{751,978,000}{21,009} = 35,800$$ Gas used per meter in 1927.

The average yearly increase is 25,060,000 cubic feet.

The gas used per meter is 35,800 cubic feet. (1927)

$$\frac{25,060,000}{35,800} = 700$$ Annual meter increase for 1927.

The population in 1927 according to the directory was 93,877.

$\frac{93,877}{21,009} =$ 4.46 Population per meter.

700 x 4.46 = 3120 Average increase in population over five year period. This checks very closely with city directory figure which is 3267.

The 1928 city directory census figure is somewhat higher than the 1929 telephone census figure. To check the two, I deducted 9000 from the directory figure for population of East Lansing and Lansing suburbs; then added 3500 for an additional year's growth. This makes the directory figure 92,377 in 1929, while the telephone figure is 84,500.

In arriving at an average figure for increase in population for the next ten years, I believe that it will be necessary to average the three average figures arrived at separately; that is, the average increase in population for the past eight years by actual count, plus the average increase in population for the past years arrived at through increase in gas sales, plus the average increase in population for the next ten years predicted by the Telephone Company, divided by three.

Average yearly increase by census	3,267
Average yearly increase by gas sales	3,120
Average yearly increase by telephone prediction	5,333
Total	11,720
Average	3,907

The population for Lansing, East Lansing, and suburbs for the coming ten years will then be as follows:

YEAR	POPULATION
1927	93,877
1928	97,784
1929	101,691
1930	105,598
1931	109,505
1932	113,412
1933	117,319
1934	121,226
1935	125,133
1936	129,040
1937	132,947

By starting with the 1927 directory figure of 93,877, and by using the average figure of 3,907, I have estimated the population for the year 1937 to be 132,947. This estimate is slightly in excess of that predicted by the telephone company which is 127,500, and is a total increase of 39,070.

Assuming that our figure of 4.46 people per gas meter will remain the same, then, by dividing 39,070 by 4.46, we obtain a dividend of 8,800, which represents the increase in meters over the ten year period between 1927 and 1937. This increase multiplied by the gas used per meter (35,800) gives me the increase in sendout during that period.

35,800 C.F. x 8,800 = 315,040,000 cubic feet increase in sales over ten year period.

751,978,000	sales in 1927
315,040,000	sales increase
1,067,018,000	sales in cubic feet in 1937.

The sales for November,1927 (61,984,200 C.F.) were $\frac{1}{12.13}$ of the total sales for 1927.

$\frac{1}{12.13}$ x 1,067,018,000 cu.ft. = 87,800,000 cubic feet sales in November 1937.

The industrial sales for November,1927 were $\frac{1}{8.23}$ of the total sales, and I will assume that they will remain at that figure. Then,

$\frac{87,800,000}{8.23}$ = 10,650,000 cu.ft. of industrial gas sales in November,1937.

87,800,000 cu.ft.— 10,650,000 cu.ft.= 77,150,000 cubic feet of domestic gas sales in November,1937.

The following two tables, No.XIII and No.XIV, show the increases and percentages of increase of industrial and domestic gas sales in November,1937 over November,1927.

TABLE NO.XIII-INCREASE AND PERCENT OF INCREASE OF INDUSTRIAL SALES IN NOVEMBER,1937 OVER NOVEMBER,1927.

DISTRICT	IND.SALES NOV.1927	INCREASE IN SALES,NOV. 1937 OVER '27	PERCENT OF INCREASE NOV.'37	IND. SALES NOV. 1937
No. 5	1571.2	500.0	31.8	2071.2
No. 6	299.0	200.0	66.8	499.0
No. 7	401.7	100.0	24.9	501.7
No. 9	104.6	50.0	47.8	154.6
No.10	407.0	100.0	24.5	507.0
No.11	526.2	18.5	3.5	544.7
No.12	663.4	1500.0	226.0	2163.4
No.14	166.0	0.0	0.0	166.0
No.17	2869.2	463.4	16.2	3333.7
No.19	510.2	200.0	39.2	710.2
TOTALS	7518.5	3132.0		10650.5

TABLE NO.XIV-INCREASE AND PERCENT OF INCREASE OF DOMESTIC SALES IN NOVEMBER 1937 OVER NOVEMBER 1927.

DISTRICT	DOM.SALES NOV.1927 M.C.F.	% INCREASE NOV.'37 OVER NOV.'27	INCREASE NOV.'37 OVER NOV.'27	DOM. SALES NOV.1937 ESTIMATE M.C.F.
No. 1	1044.0	60.0	628.0	1672.0
No. 2	1833.7	10.0	183.4	2017.1
No. 3	1067.4	0.0	0.0	1067.4
No. 4	2280.7	50.0	1140.0	3420.7
No. 5	5137.0	10.0	513.4	5640.4
No. 6	5297.3	30.8	1631.3	6928.6
No. 7	1418.3	0.0	0.0	1418.3
No. 8	3822.5	56.0	2145.0	5967.5
No. 9	845.1	0.0	0.0	845.1
No.10	3273.1	60.0	1965.0	5238.1
No.11	3110.9	40.0	1244.0	4354.9
No.12	2054.7	10.0	205.2	2259.9
No.13	988.4	2.0	19.7	1008.1
No.14	3196.4	40.0	1280.0	4476.4
No.15	3951.0	75.0	2960.0	6911.0
No.16	2960.8	75.0	2220.0	5180.8
No.17	4489.6	25.0	1122.4	5612.0
No.18	436.2	150.0	654.3	1090.5
No.19	3828.8	100.0	3828.8	7657.6
No.20	1144.3	20.0	228.8	1373.1
No.21	623.9	10.0	62.4	686.3
No.22	1661.6	39.2	652.6	2314.2
	54465.7		22684.3	77150.0

TABLE NO.XV-ESTIMATED MAXIMUM HOURLY INDUSTRIAL DEMAND RATE NOVEMBER,1937.

DISTRICT	IND.MAX.HRLY. RATE,NOV.'27 M.C.F.	%INCREASE NOV.'37 OVER NOV.'27	IND.MAX.HRLY. RATE,NOV.1937 M.C.F.
No. 5	6.20	31.80	8.17
No. 6	1.20	66.80	2.02
No. 7	1.61	24.90	2.01
No. 9	.42	47.80	.62
No.10	1.63	24.50	2.03
No.11	2.12	3.50	2.20
No.12	2.65	226.00	8.65
No.14	.66	0.00	.66
No.17	11.47	16.20	13.33
No.19	2.04	39.20	2.85

TABLE NO.XVI-ESTIMATED MAXIMUM HOURLY DOMESTIC RATE, NOVEMBER,1937.

DISTRICT	DOM.MAX.HRLY. RATE,NOV.'27 M.C.F.	EST.% INC. NOV.'37 OVER NOV.1927	DOM.MAX.HRLY. RATE,NOV.1937 M.C.F.
No. 1	5.18	60.0	8.29
No. 2	9.10	10.0	10.00
No. 3	5.20	0.0	5.20
No. 4	11.32	50.0	16.98
No. 5	25.50	10.0	28.05
No. 6	26.30	30.8	34.40
No. 7	7.00	0.0	7.00
No. 8	19.00	56.0	29.65
No. 9	4.18	0.0	4.18
No.10	16.20	60.0	25.92
No.11	15.43	40.0	21.60
No.12	10.20	10.0	11.22
No.13	4.98	2.0	5.89
No.14	15.80	40.0	22.12
No.15	19.60	75.0	34.30
No.16	14.60	75.0	25.55
No.17	22.30	25.0	27.88
No.18	2.17	150.0	5.43
No.19	19.00	100.0	38.00
No.20	5.68	20.0	6.82
No.21	3.09	10.0	3.40
No.22	8.24	39.2	11.47
			383.35

TABLE NO.XVII-TOTAL MAXIMUM HOURLY RATE OF SENDOUT,NOVEMBER,1937.

DISTRICT	TOTAL SALES NOVEMBER,1937 M.C.F.	TOTAL MAXIMUM HR. RATE,NOVEMBER,1937 M.C.F.
No. 1	1672.0	8.29
No. 2	2017.1	10.00
No. 3	1067.4	5.20
No. 4	3420.7	16.98
No. 5	7711.6	36.22
No. 6	7427.6	36.42
No. 7	1920.0	9.01
No. 8	5967.5	29.65
No. 9	999.7	4.80
No.10	5745.1	27.95
No.11	4899.6	23.80
No.12	4423.3	19.87
No.13	1008.1	5.89
No.14	4642.4	22.78
No.15	6911.0	34.30
No.16	5180.8	25.55
No.17	8945.7	41.21
No.18	1090.5	5.43
No.19	8367.8	40.85
No.20	1373.1	6.82
No.21	686.3	3.40
No.22	2314.2	11.47
	87800.0	425.89

Having obtained the probable maximum hourly rate of demand for each district in the territory in 1937, the division of this demand between each of the different transmission systems has been made on the basis of our present division; that is, 20.03 % of the gas is carried by the high pressure system, 19.35% is carried by the low pressure system, and 60.62% is carried by the intermediate pressure system.

In 1927, the low pressure system carried 57,150 cu.ft.per hr.

57,150 plus 19,840 = 76,990 cu.ft.per hr. of gas to be carried in 1937 by the low pressure system.

103,450 plus 76,990 = 180,440 cu.ft.per hr. for combined high and low pressure sendout, in 1937, leaving to be carried by the intermediate system, 245,450 cu.ft.per hr.

The division of gas leaving holder in November,1937, if present system of distribution is maintained, is shown by the following table.

TABLE NO.XVIII-DIVISION OF GAS LEAVING HOLDER BY PRESSURES, NOVEMBER,1937.

GAS CARRIED BY LOW PRESSURE MAINS	CUBIC FEET PER HOUR
All of district no.1	8,290
All of district no.2	10,000
Part of district no.3	4,000
Part of district no.10	14,930
Part of district no.11	7,570
Part of district no.12	1,290
Part of district no.4	12,830
Part of district no.5	10,000
Part of district no.6	8,080
Total	76,990 cu.ft.per hr.

(For intermediate and high pressure mains, see following page.)

TABLE NO.XVIII-DIVISION OF GAS LEAVING HOLDER BY PRESSURES, NOVEMBER,1937(CONTINUED).

GAS CARRIED BY INTERMEDIATE PRESSURE MAINS	CUBIC FEET PER HOUR
Part of district no.6	27,670
Part of district no.7	8,950
Part of district no.3	750
Part of district no.10	13,020
Part of district no.11	16,230
Part of district no.12	18,580
Part of district no.4	~~1,603~~ 4150
Part of district no.5	26,220
All of district no.8	29,650
All of district no.9	4,800
All of district no.13	5,890
All of district no.14	22,780
All of district no.16	25,550
All of district no.17	41,210
Total	~~345,450~~ 245,450

GAS CARRIED BY HIGH PRESSURE MAINS	
Part of district no.3	450
Part of district no.6	670
Part of district no.7	60
All of district no.15	34,300
All of district no.18	5,430
All of district no.19	40,850
All of district no.20	6,794
All of district no.21	3,400
All of district no.22	11,470
Total	103,450

TABLE NO.XIX-AVERAGE DIVISION OF GAS LEAVING HOLDER,NOVEMBER,1937.

High pressure ---------- 24.3%
Low pressure ---------- 18.1%
Intermediate Pressure ---------- 57.6%

Then,

425.89 x 20.03 = 85.2 M.C.F.per hr. high pressure

425.89 x 19.35 = 82.3 M.C.F.per hr. low pressure

425.89 x 60.62 = 258.39 M.C.F.per hr. intermediate pressure.

To check these figures I have totaled the increases in demand in the high pressure districts and find them to be as follows:

District #15	14,700 cu.ft.per hr.
District #19	19,810 cu.ft.per hr.
District #18	3,260 cu.ft.per hr.
District #20	1,114 cu.ft.per hr.
District #21	310 cu.ft.per hr.
District #22	3,230 cu.ft.per hr.
	42,450 cu.ft.per hr.

In 1927 the high pressure system carried 61,000 cu.ft.per hr.

61,000 plus 42,450 = 103,450 cu.ft.per hr. to be distributed by high pressure in 1937 in Lansing, East Lansing, and suburbs. This shows me that my assumption regarding division of demand is wrong.

It is not so simple to segregate the increases in the low pressure system on account of its being interconnected with the intermediate system.

* Increases in the low pressure system are as follows:

District # 1	3,110 cu.ft.per hr.
District # 2	900 cu.ft.per hr.
District # 4	2,830 cu.ft.per hr.
District # 5	2,000 cu.ft.per hr.
District # 6	4,000 cu.ft.per hr.
District #10	5,000 cu.ft.per hr.
District #11	2,000 cu.ft.per hr.
	19,840 cu.ft.per hr.

* Note: The increase in low pressure in the districts was obtained by alloting the total increase, shown on page 36, among them according to their possibilities for expansion.

In addition to this, there will be gas carried by high pressure for the new main now being constructed between Lansing and Howell and the intervening territory;a new main to be constructed in 1929 to Charlotte and its intervening territory;and probably a main will be eventually constructed to St.Johns.

*I will estimate the rates on these lines to be as follows:

District No.23 City limits East Lansing to Howell,inclusive	30.0 M.cu.ft.per hr.
District No.24 City limits Lansing to Charlotte,Eaton Rapids,inc.	15.0 M.cu.ft.per hr.
District No.25 City limits Lansing to St.Johns, inc.	5.0 M.cu.ft.per hr.
	50.0 M.cu.ft.per hr.

103,450 plus 50,000 = 153,450 cu.ft.per hr. of gas to be carried in November,1937 by high pressure mains.

The losses of pressure in the mains of each system, caused by carrying the gas at the above rates, have been calculated to see whether or not the mains have sufficient capacity to handle the estimated 1937 load.

The calculations for the low pressure mains are given below. All of the gas supplied by the low pressure system has to be carried to Willow Street under the following conditions:(See next page)

*Note: Estimates of consumption at St. Johns and Howell are based on an actual count of homes. Charlotte estimate is based on actual operation of Charlotte Plant.

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
Works outlet to Willow Street	76,990	16	1000	0.52
Here there will be taken off gas for Dist.#1 8290 Dist.#4 12830	21,120			
Leaving to be carried to Chestnut Street	55,870	16	200	0.053
Here there will be taken off gas for Chestnut Street north of Willow	100			
Leaving to be carried to Walnut St.	55,770	16	350	0.090
Here there will be taken off gas for Walnut St. north of Willow St. and for Edmore and Pleasant Streets	120			
Leaving to be carried to Seymour St.	55,650	16	425	0.12
Here there will be taken off gas for part of Dist.#10	8,000			
Leaving to be carried to Capitol	47,650	16	425	0.080
Here there will be taken off gas for the east end of Willow Street	100			
Leaving to be carried to Grand River Avenue	47,550	16	400	0.069

At the corner of Grand River and Capitol Avenues, the gas is split up into two streams; one going south along Capitol Avenue through a ten inch main, and the other going east along Grand River Avenue through a six inch main.

The main running south will carry gas for

Part of district no.2
Part of district no.3
Part of district no.5
Part of district no.6

under the following conditions:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried to Kilborn Street	31,760	10	1000	0.93
Here there will be taken off 4900 cu. ft. feeding part of district no.2	4,900			
Leaving to be carried to Jefferson	26,860	10	500	0.33
Here there will be taken off the balance of dist.no.2	4,780			
Leaving to be carried to Madison ST.	22,080	10	450	0.20
Here there will be taken off gas for part of dist.no.3	2,000			
Leaving to be carried to Saginaw	20,080	10	500	0.20
Here there will be taken off gas for the rest of dist. no.3	2,000			
Leaving to be carried to Lapeer St.	18,080	10	350	0.12

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
It will be necessary to carry the gas at least another 1000 ft. in order to feed into dists.#5 and 6	18,080	10	1,000	0.30

The total distance from the plant is 6500 feet, and the total drop is 2.904 inches. If we have an initial pressure of 8.0 inches at the plant, our working pressure as we enter districts #5 and #6 is 5.2 inches, and it is certain that the observed pressure will be less. This is ample working pressure at this point. However, if the load increases beyond my estimate, the ten inch line from Grand River Avenue south on Capitol Avenue will hardly be ample. It is also certain that if the company expects to expand its low pressure system, that it will have to do so in districts #1,#10, #11,and #12, which are the logical districts to be served with low pressure as they lie in the immediate vicinity of the plant.

The main running east on Grand River Avenue will carry gas for

Part of district #10
Part of district #11
Part of district #12

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried along Gd.River E.	15,790	6		
There will be taken off along Gd.River	2,470			
Leaving to be carried to Cedar St.	13,320	6	1701	6.2

This drop of 6.2 inches in pressure is of course too large, and shows that the 1937 load cannot be handled with low pressure through the present main.

Another weak link in the low pressure system is the line going West on Willow Street from the plant driveway which carries gas for districts #1 and #4.

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN FEET	LOSS OF PRESSURE IN INCHES
To be carried West on Willow St.	15,000	6	1500	4.0

This main is also too small, as a 4.0 inch drop puts us below an allowable working pressure, which is generally taken to be between 4.5 and 5.0 inches of pressure.

From the above calculations, I have concluded that this system, as it stands today, will not supply the percentage of gas assigned to it for 1937. As the territory for low pressure distribution is limited to the vicinity of the plant, the company should not attempt to distribute gas in that territory at any other pressure.

The low pressure area in Lansing should include all of districts #1,#2,#3,#4,#10,and #11, and part of districts #5,#6, and #12.

In order to furnish gas to all of districts #10,#11 and part of #12 by the low pressure system in 1937, it will be necessary

to lay a new main across the Grand River and my recommendation is as follows:

Connect into the sixteen inch main at Willow Street and Capitol Avenue; run East on Willow Street to the Grand River and cross the river to James Street; run East on James Street to Turner St., North on Turner St. to North St.; East on North St. to New York Avenue; South on New York Avenue to Grand River Avenue. All of this should be sixteen inch pipe. From this point run West on Grand River Avenue to Pennsylvania Avenue and South on Pennsylvania Avenue to Saginaw Street with a twelve inch pipe.

In order to furnish the gas for districts #1 and #4 by low pressure in 1937, it will be necessary to change the six inch line on West Willow Street, between Lemrock Court and Robertson Avenue, to a ten inch line, and to run a ten inch line from Glenrose Avenue West on Willow Street to Cleo Street; then South on Cleo Street to hook into the eight inch line at Hyland Avenue.

Pressure on the low pressure system in 1937 will then be approximately as follows:

District	#1 --------	8290	cu.ft.per hr.
"	#2 --------	10000	" "
"	#3 --------	4000	" "
"	#4 --------	16980	" "
"	#5 --------	10000	" "
"	#6 --------	8080	" "
"	#10--------	27950	" "
"	#11--------	23800	" "
"	#12--------	1290	" "
Total		110390	cu.ft.per hr.

All of the gas supplied to the low pressure system has to be carried to Willow Street. The conditions will be as follows:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN YARDS	LOSS OF PRESSURE IN INCHES
Works outlet to Willow Street	110,390	16	333	1.00
Here there will be taken off	29,270			
Leaving to be carried to Seymour	81,120	16	385	0.55
Here there will be taken off	10,000			
Leaving to be carried to Capitol Avenue	71,120	16	142	0.175

Here the gas will be split into two streams; one going East on Willow Street through a sixteen inch main; the other going South on Capitol Avenue through a sixteen inch main. The main running South will carry 36,300 cu.ft. of gas per hour under the following conditions:

To be carried to Grand River Ave.	33,080	16	133	0.035
The total drop in pressure from the plant to Gd.River .				1.760"

From this point South, we will obtain practically another inch of drop in pressure, making a total drop from the plant of 2.760 inches. Adding another 0.5 inches for stoppages, we have a final pressure in 1937 of approximately 4.74 inches, which is sufficient.

The line running West on Willow Street will carry 38,040 cu. ft. of gas per hour under the following conditions:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN YARDS	LOSS OF PRESSURE IN INCHES
Willow St. and Capitol Ave. to Turner Street	38,040	16	500	0.19
Turner Street to Larch Street	34,178	16	530	0.17
Larch Street to New York Ave.	30,316	16	670	0.16
New York Ave. to Grand River Ave.	26,454	16	450	0.083
Gd. River Ave.to Saginaw Street	16,454	12	700	0.22
			TOTAL	0.823

The total drop along this line will be approximately 0.823 inches. The total drop from the plant will be 2.583 inches; add to this, 0.5 inches for stoppages and we shall have a final pressure of 4.917 inches. I have assumed that the pressure at the plant will be 8.0 inches.

The line running West on Willow Street from the plant driveway will carry gas for districts #1,#4, and part of #6 (29,270 cu. ft. per hour).

The conditions will be as follows:

	CU.FT. PER HOUR	SIZE OF PIPE IN INCHES	DISTANCE IN YARDS	LOSS OF PRESSURE IN INCHES
Plant driveway to Lansing Ave.	29,270	10	430	1.10
Lansing Ave. to Glenrose Ave.	24,270	10	450	0.73
Glenrose Ave. to Cleo Street	19,270	10	450	0.47
Willow St. to Hyland Ave.	15,000	10	380	0.25
Hyland Ave. to Genesee St.	10,000	8	1000	0.29
			TOTAL	2.84

The total drop from the plant on this line will then be 4.6 inches, leaving a final pressure of 3.4 inches. This is hardly adequate, but it can be boosted up with the Ionia Street governor.

I shall next take up for consideration the intermediate pressure system. As I shall show in the accompanying figures, I have found that the present lines will handle the 1937 load, providing there is an increase in initial pressure. However, it would be much better to connect the extremeties of the two branches of the intermediate system, under which condition our present pressure would handle the load. With this in view, I shall recommend that a ten inch main be laid on Beech Street from Kalamazoo Street to Elm Street; thence West on Elm Street to Cedar Street; thence South on Cedar Street to Baker Street and West on Baker Street to hook into the ten inch line running to the Reo Motor Car Co. A

governor station should be established at Beech and Hazel Streets to help take care of the territory between the Kalamazoo Street and Sparrow Avenue governors. When this governor is installed, it will be necessary to run an eight inch feed main on Hazel Street from Beech Street to Pennsylvania Avenue to take care of the governor output.

I give below the figures showing the computed pressures in 1937 with the present main and pressure conditions.

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	MILES	PRESSURE IN POUNDS GAGE
Leaving plant	245,450	12	00	000	6.0
Plant to Willow Street	245,450	12	800	0.15	5.556

Here the gas will be split into two streams; one going South on Pine Street through a ten inch main; the other going East on Willow Street through a ten inch main.

The main running South on Pine Street will carry gas for the following districts:

District	#4 --------	4150	cu.ft.per hour
"	#3 --------	750	" "
"	#6 --------	27670	" "
"	#5 --------	26220	" "
"	#8 --------	29650	" "
"	#7 --------	8950	" "
"	#9 --------	4800	" "
"	#16--------	25550	" "
"	#17--------	41210	" "

under the following conditions:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
West Willow St. to Ionia St. governor	168,950	10	4200	0.795	2.526
Here there will be taken off gas for Ionia gov. leaving to be carried to William St. Tee	110,160	10	4300	0.815	1.023
Here there will be taken off gas for Isaac St.gov.	43,400	10	300	0.057	1.006
Leaving to be carried to tee across river	66,760	10	2800	0.530	0.640
Here there will be taken off gas for Britten St. governor	17,500	6	2200	0.417	0.370
Leaving to be carried to Davis Street Tee	49,260	10	1000	0.190	0.568
Here there will be taken off gas for Sparrow St. governor	35,930	8	900	0.170	0.457
Davis St.Tee to Reo governor	13,330	10	1900	0.360	0.557

The main running East on Willow Street will carry gas under the following conditions:

Willow St.Tee to Cedar St. governor	76,500	10	3800	0.720	5.030
Cedar St.gov. to Beech St.gov.	39,210	10	6600	1.250	4.780

These figures show that the main running South on Pine Street will not carry the load in 1937 with our present initial pressure, as we should obtain a final pressure at the Reo of 2.5 pounds.

I have computed the final pressures which we will obtain in 1937 at these same stations by raising the initial pressure to both 7.471 pounds and 10.0 pounds. These are shown in the following table:

TABLE NO.XX-COMPUTED FINAL PRESSURES,1937,WITH INITIAL PRESSURES OF 7.471 AND 10.0 POUNDS.

STATIONS	FINAL PRESSURE WHEN INITIAL PRESSURE IS: 10.0 POUNDS	7.471 POUNDS
Leaving plant	10.000	7.471
Willow Street	9.646	7.057
Ionia St.governor	7.190	4.268
William St.Tee	6.028	2.915
Isaac St.governor	6.015	2.900
Tee across river	5.740	2.576
Britten St.governor	5.539	2.337
Davis St.Tee	5.684	2.510
Sparrow Ave.governor	5.602	2.410
Reo governor	5.676	2.500
Cedar St.governor	9.209	6.566
Beech St.governor	9.007	6.340

The effect of connecting the ends of these two branches together will be to split the gas from the plant and to arrive at the end with the same pressure. In order to approximate this condition, I have taken the gas delivered to the Reo and Sparrow Ave.governors, and have sent it East on Willow Street with the following final pressures:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
Leaving plant	245,450	12	----	-----	6.000
Plant to Willow Street	245,450	12	800	0.150	5.556
Ionia St.gov.	127,740	10	4200	0.795	3.885
William St.Tee	68,950	10	4300	0.815	3.355
Isaac St. gov.	43,400	10	300	0.057	3.340
Tee across river	25,550	10	2800	0.530	3.308
Britten St.gov.	17,500	6	2200	0.417	3.087
Davis St. Tee	8,050	10	1000	0.190	3.306
Main going East on Willow Street					
Cedar St.gov.	117,710	10	3800	0.720	4.284
Beech St.gov.	80,420	10	6600	1.250	2.937
Hazel St.gov. (new)	41,210	10	2400	0.455	2.520
Reo gov.	41,210	10	3600	0.682	2.347
Davis St.Tee	27,880	10	1900	0.360	2.306

A balance of these two final pressures should give us a minimum of approximately 2.8 pounds.

The high pressure system in 1937 will be essentially the same as in 1927, with the exception of one change already recommended and passed, and several additions, one of which is under construction at the present time. The change will be the replacing of the six inch line between the plant and Saginaw Street, with a twelve inch line; and the replacing of the six inch line between Saginaw Street and Grand Street with an eight inch line.

The new line under construction at the present time is an eight inch line on East Saginaw Street, running from Grand Street to the Motor Wheel Corporation. Then it continues with a six inch line on Saginaw Street East to Grand River Avenue; east on Grand River Avenue to Harrison Road, East Lansing; North on Harrison Road to South Lawn; south on South Lawn to North Street; east on North Street to Hagedorn Road; south on Hagedorn Road to Grand River Avenue and east on Grand River Avenue to Okemos and Williamston. From Williamston, the line will change to four inch, and will continue on to Howell.

Providing it is decided to add Charlotte to our Lansing distribution system, I will recommend that a six inch line be connected to the present six inch line at Jenison Street and Shiawassee Street; then let it run south on Jenison Street to St. Joseph Street; west on St. Joseph Street to Clare Street; south on Clare Street to Main Street and west on Main Street to Charlotte.

If it is also decided to add St. Johns to our system, I will recommend that a four inch line be connected to the twelve inch line at Chestnut and Willow Streets; that it run east on Willow Street to Grand River Avenue;north on Grand River Avenue to Howard Street; east on Howard Street to Turner Street; north on Turner Street to Town Line Road;and east on Town Line Road to M 13, and north on M 13 to St. Johns. All of this line will be four inch.

I have estimated that we will supply 153,424 cubic feet of gas through this system during the maximum hour.

The conditions will be as follows:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
Plant	153,424	12	----	-----	30.000
Plant to Chestnut and Willow	153,424	12	1300	0.250	29.802

Here the gas is divided into two streams; one going to St. Johns through a four inch line and the other going south on Chestnut Street through a twelve inch line.

To St.Johns	5,000	4	----	19.000	29.786
South on Chestnut to Saginaw	148,424	12	2600	0.492	29.496

Here the gas is split into two streams; one running south on Chestnut through a six inch main and the other running east on Saginaw Street through an eight inch main.

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
South on Chestnut to Shiawassee St.	42,824	6	1200	0.227	29.039

Here the gas is split into two streams; one going south on Chestnut Street through a six inch line and the other west on Shiawassee to Jenison Street.

West on Shiawassee to Jenison Street	22,460	6	3400	0.645	28.676

Here the gas is again split into two streams; one running south on Jenison Street through a six inch main and the other west on Shiawassee Street through a six inch main.

West on Shiawassee to Durant	7,464	6	1400	0.265	28.666
Durant to Grand Ledge	6,794	6	----	10.500	28.117

This insures us ample pressure in Grand Ledge with our present initial pressure at the plant.

The line running south on Jenison Street will carry gas for Charlotte and Eaton Rapids under the following conditions:

South on Jenison to Charlotte	15,000	6	----	18.000	23.700

This insures us plenty of pressure in Charlotte and Eaton Rapids with our present initial pressure at the plant.

The line running south on Chestnut Street from Shiawassee Street will carry gas to Holt and Mason under the following conditions:

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
South on Chestnut to Olds Tee	20,360	6	5280	1.000	28.576
Olds Tee to Rockford Road	20,300	6	7200	1.360	27.938
Rockford Road to Holt	14,870	6	----	7.000	26.094
Holt to Mason	3,400	6	----	5.500	26.015

This pressure will insure us plenty of gas in Mason and Holt with our present initial pressure at the plant.

The line running east on Saginaw Street will carry gas for district #15, East Lansing, Okemos, Williamston, Webberville, Fowlerville, and Howell under the following conditions:

East on Saginaw Street to Grand	105,600	8	1900	0.360	28.440
Grand Street to Motor Wheel	102,500	8	2000	0.380	27.162
Motor Wheel to Harrison Road	99,500	6	13600	2.580	00.0

It is evident that our present initial pressure at the plant will not carry us to this point under the assumed conditions. By changing the conditions slightly, that is, by taking off all of district #15 at Grand Street, and all of district #19 at Harrison Road, I find that it will require an initial pressure of 66.25 pounds gage at the plant in 1937 to furnish us with a working pressure at Howell. This is not an excessive pressure for peak loads on such a system.

The following table shows the pressure at various points on this line with an initial pressure at the plant of 66.25 pounds.

	CU.FT. PER HOUR	DIAMETER OF PIPE IN INCHES	DISTANCE IN FEET	DISTANCE IN MILES	PRESSURE IN POUNDS GAGE
Plant	153,424	12	----	-----	66.250
Chestnut and Willow Sts.	153,424	12	1300	0.250	66.164
Chestnut and Saginaw Sts.	148,424	12	2600	0.492	66.026
Saginaw at Grand Street	105,600	8	1900	0.360	65.560
Motor Wheel	73,850	8	2000	0.380	65.317
Harrison Road	70,850	6	13600	2.580	58.590
Okemos	30,000	6	----	4.000	56.577
Williamston	28,125	6	----	7.500	53.190
Webberville	21,365	4	----	5.500	39.900
Fowlerville	18,515	4	----	5.000	25.580
Howell	12,875	4	----	8.000	2.500

The line going south on Grand Street will carry gas for district #15 under the following conditions:

Saginaw and Grand to Lawrence Baking Company	31,750	6	4100	0.777	65.173
Lawrence Baking Co.to Horton St.	28,650	4	6900	1.308	61.893

On account of the peculiar loading of this eastern line, we probably will not reach this maximum condition except at odd times, and it can then be handled easily. However, at any time that it is

deemed fit, there can be installed an automatic compressor at Williamston to handle the 28,125 cubic feet of gas from that point on to Howell, thereby relieving the plant at Lansing and cheapening the operation. The pressure conditions will then be as shown by the following table:

TABLE NO.XXI.

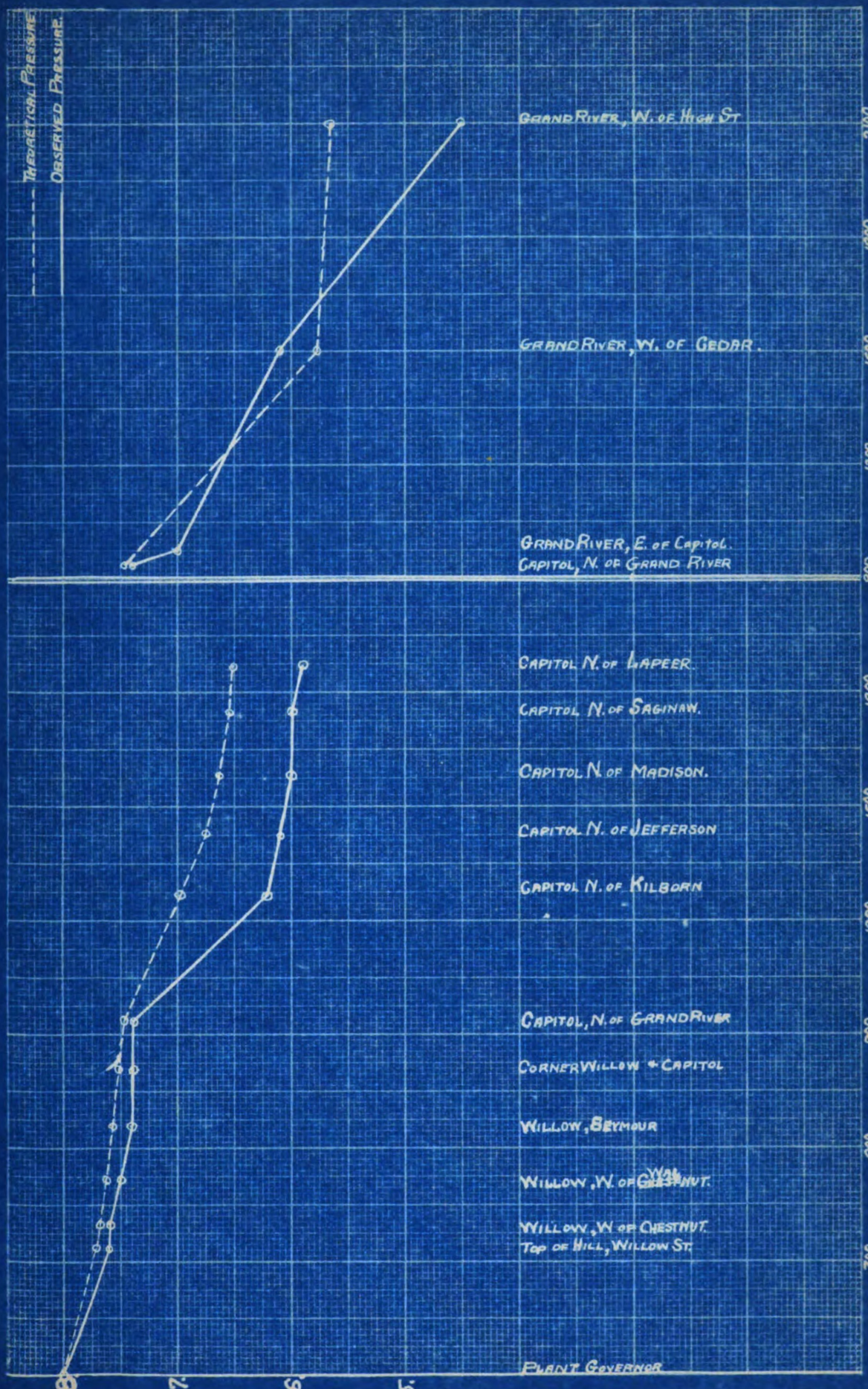
STATION	PRESSURE IN POUNDS GAGE
Plant	39.703
Chestnut and Willow Sts.	39.550
Chestnut and Saginaw Sts.	39.323
Saginaw at Grand Street	38.536
Motor Wheel Corporation	38.120
Harrison Road	24.896
Okemos	19.700
Williamston	2.500

In concluding I wish to say a word abouth the network of smaller lines that carry the gas away from the feed mains. I have included in my data the results of a pressure survey in each district except those districts fed by high pressure. This survey shows the pressure at the lowest pressure points in the city. These pressures were all taken during peak loads and all measure up to our standard of service showing me that these small lines as they stand are ample and that, as the districts grow, a construction program similar to the present one should be carried out.

I also wish to say that providing the program as laid out in this report, is carried out, that, by adding spurs running out from both the high and intermediate lines to the newer territories as in the case of the present Britten Ave.governor, and by gradually increasing plant pressures, the Consumers Power Company should be able to supply plenty of gas to this city with no further increase

in main sizes, for a considerably longer period of time than is covered by this report.

Comparative Pressure Drop - Low Pressure System.



PUBLISHED BY A. D. MACLACHLAN, INC., BOSTON

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	--	8.0"	28.93	1531.4	--	72.5	18.5	.935	1.039	--	27556.2	--	--
10:50	--	8.0	28.93	1536.0	4.6	72.5	18.5	.935	1.039	4.47	27562.0	5.8	10.27
10:55	--	8.0	28.93	1540.9	4.9	72.5	18.5	.935	1.039	4.76	27567.5	5.5	10.26
11:00	--	8.0	28.93	1545.7	4.8	72.5	18.5	.935	1.039	4.66	27573.2	5.7	10.36
11:05	--	7.9	28.93	1550.6	4.9	72.5	18.5	.935	1.039	4.76	27578.7	5.5	10.26
11:10	--	7.9	28.94	1555.3	4.7	72.5	18.5	.935	1.039	4.56	27584.4	5.7	10.26
11:15	--	7.9	28.94	1560.0	4.7	72.5	18.5	.935	1.039	4.56	27590.1	5.7	10.26
11:20	--	7.9	28.94	1564.7	4.6	73.0	18.5	.934	1.039	4.56	27595.7	5.6	10.16
11:25	--	7.9	28.95	1569.3	4.6	73.0	18.5	.934	1.039	4.46	27601.4	5.7	10.16
11:30	--	7.9	28.95	1573.8	4.5	73.0	18.5	.934	1.039	4.37	27607.1	5.7	10.07
11:35	--	7.9	28.95	1578.3	4.5	73.0	18.5	.934	1.039	4.37	27612.8	5.7	10.07
11:40	--	8.0	28.94	1582.8	4.5	73.5	18.5	.933	1.039	4.37	27618.5	5.7	10.07
11:45	--	8.1	28.94	1587.3	4.5	73.5	18.5	.933	1.039	4.37	27624.3	5.8	10.17
11:50	--	8.0	28.94	1591.7	4.4	73.5	18.5	.933	1.039	4.27	27630.1	5.8	10.07
11:55	--	8.1	28.94	1596.2	4.5	73.5	18.5	.933	1.039	4.37	27635.9	5.8	10.17
12:00	--	8.1	28.94	1600.8	4.6	73.5	18.5	.933	1.039	4.46	27641.7	5.8	10.26

Monday, October 24th., 1927.

Total Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. Tot PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45					---	2	7	19	671.2	--	--	--	--	--
10:50						2	7	13	666.8	4.4	4.4	--	14.67	176.0M
10:55						2	7	6	661.7	5.1	5.1	--	15.36	184.3
11:00						2	6	37	656.6	5.1	5.1	--	15.46	185.5
11:05						2	6	29	650.8	5.8	5.8	--	16.06	192.7
11:10						2	6	20	644.2	6.6	6.6	--	16.86	202.3
11:15						2	6	10	636.9	7.3	7.3	--	17.56	210.7
11:20						2	5	38	628.9	8.0	8.0	--	18.16	217.9
11:25						2	5	26	620.8	8.1	8.1	--	18.26	219.1
11:30						2	5	14	612.1	8.7	8.7	--	18.77	225.24
11:35						2	5	3	604.1	8.0	8.0	--	18.07	216.8
11:40						2	4	30	596.3	7.8	7.8	--	17.87	214.4
11:45						2	4	20	588.9	7.4	7.4	--	17.57	210.8
11:50						2	4	11	582.3	6.6	6.6	--	16.67	200.0
11:55						2	4	4	577.2	5.1	5.1	--	15.27	183.2
12:00						2	3	36	573.0	4.2	4.2	--	14.46	173.5

Maximum Sendout 225.24 M.Cu.Ft.
Avg.Sendout 205.5 M.

Monday, October 24, 1927.

Total Pressure

Sheet 2

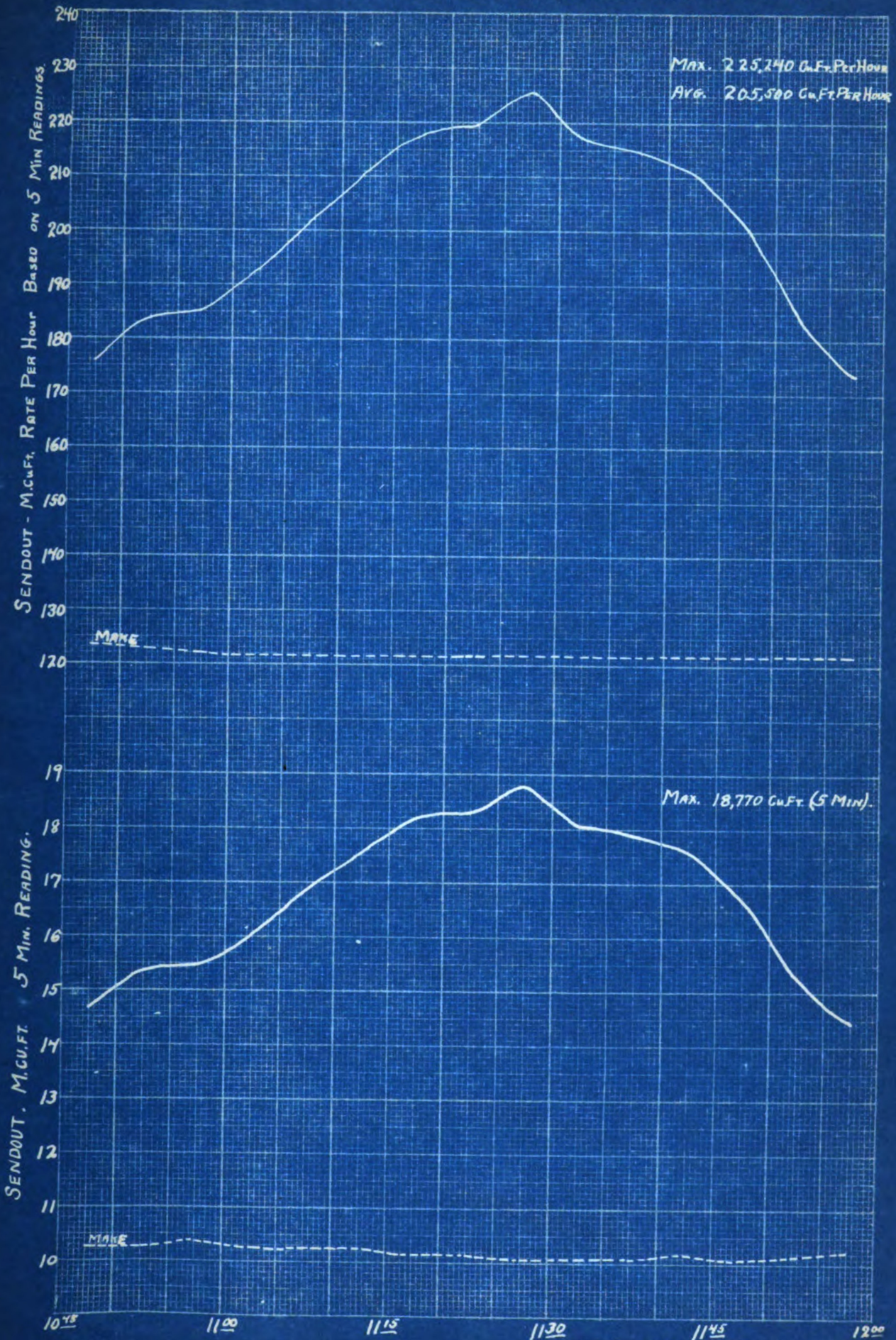
Send Out Data Sheet

PRESSURES

TIME	1 L. P. plant	2 Plant Driveway	3 1203 W. Willow	4 1617 Lansing	5 Lansing Paint Co.	6 1336 Robinson	7 1123 Hyland	8 1452 Comfort	9
10:45	8.0	7.3	6.1	6.0	5.7	5.3	5.1	5.1	
10:50	8.0	7.3	6.1	5.9	5.6	5.3	5.0	5.0	
10:55	8.0	7.3	6.0	5.9	5.5	5.2	5.0	5.0	
11:00	8.0	7.3	6.0	5.8	5.4	5.2	5.6	5.4	
11:05	7.9	7.3	6.0	5.8	5.4	5.1	5.4	5.4	
11:10	7.9	7.3	6.0	5.7	5.4	5.1	5.2	5.3	
11:15	7.9	7.1	5.9	5.6	5.5	5.0	5.1	5.2	
11:20	7.9	7.1	5.7	5.5	5.3	5.0	5.0	5.1	
11:25	7.9	7.1	5.7.	5.5	5.2	4.7	4.9	5.0	
11:30	7.9	7.1	5.7	5.5	5.2	4.8	4.9	5.0	
11:35	7.9	7.1	5.7	5.6	5.1	4.8	4.9	5.0	
11:40	8.0	7.1	5.7	5.7	5.1	4.8	4.9	5.0	
11:45	8.1	7.3	5.8	5.8	5.1	5.0	5.0	5.1	
11:50	8.0	7.3	5.8	5.9	5.1	4.8	5.2	5.2	
11:55	8.1	7.3	5.8	6.0	5.2	5.2	5.3	5.3	
12:00	8.1	7.3	6.0	6.1	5.3	5.4	5.4	5.5	

October 24 192[illegible]

Noon Sendout Charts. Monday, Oct. 24, 1927.



Published by A. D. MacLachlan, Inc., Boston

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	--	8.1	28.82	6302.8	--	76.0	16.0	---	---	--	39237.1	--	--
10:50	--	8.1	28.82	6306.5	3.7	76.	16.0	.918	1.032	3.51	39242.6	5.5	9.01
10:55	--	8.1	28.82	6310.3	3.8	76.	16.0	.918	1.032	3.6	39248.1	5.5	9.1
11:00	--	8.1	28.82	6314.0	3.7	76.	16.0	.918	1.032	3.5	39253.4	5.3	8.8
11:05	--	8.1	28.82	6317.8	3.8	76.	16.0	.918	1.032	3.6	39259.3	5.9	9.5
11:10	--	8.1	28.82	6321.5	3.7	76.	16.0	.918	1.032	3.5	39264.9	5.6	9.1
11:15	--	8.1	28.82	6325.2	3.7	76.	16.0	.918	1.032	3.5	39270.6	5.7	9.2
11:20	--	8.1	28.82	6328.8	3.6	76.	16.0	.918	1.032	3.4	39276.8	6.2	9.6
11:25	--	8.1	28.82	6332.4	3.6	76.	16.0	.918	1.032	3.4	39282.4	5.6	9.0
11:30	--	8.1	28.82	6335.9	3.5	76.	16.0	.918	1.032	3.3	39288.7	6.3	9.6
11:35	--	8.1	28.82	6339.4	3.5	76	16.0	.918	1.032	3.3	39294.3	5.6	8.9
11:40	--	8.1	28.82	6342.6	3.2	76	15.5	.918	1.031	3.0	39299.9	5.6	8.6
11:45	--	8.1	28.82	6345.7	3.1	76.5	15.0	.917	1.030	3.1	39305.4	5.5	8.4
11:50	--	8.1	28.82	6348.6	2.9	76.5	14.0	.917	1.027	2.7	39310.2	4.8	7.5
11:55	--	8.1	28.82	6351.3	2.7	76.5	13.5	.917	1.026	2.6	39315.9	5.7	8.3
12:00	--	8.1	28.82	6353.8	2.5	76.5	13.5	.917	1.026	2.4	39321.3	5.4	7.8

Monday , October 31, 1927.

Total Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						2	9	5	716.3	--	--	--	--	--
10:50						2	8	36	711.3	5.0	--	14.0	14.0	168.0
10:55						2	8	27	704.8	6.5	--	--	15.6	187.2
11:00						2	8	17	697.4	7.4	--	--	16.2	194.5
11:05						2	8	8	690.8	6.6	--	--	16.1	193.4
11:10						2	7	36	683.6	7.2	--	--	16.3	195.6
11:15						2	7	25	675.6	8.0	--	--	17.2	206.2
11:20						2	7	14	667.5	8.1	--	--	17.7	212.5
11:25						2	7	1	658.0	9.5	--	--	18.5	222.0
11:30						2	6	26	648.6	9.4	--	--	19.0	228.0
11:35						2	6	11	637.6	11.0	--	--	19.9	239.0
11:40						2	5	34	626.7	10.9	--	--	19.5	234.0
11:45						2	5	20	616.5	10.2	--	--	18.6	223.0
11:50						2	5	6	606.3	10.2	--	--	17.7	212.5
11:55						2	4	33	598.5	7.8	--	--	16.1	193.4
12:00						2	4	23	591.1	7.4	--	--	15.2	182.5

Maximum Sendout 239.0 M.Cu.Ft.
Avg.Sendout 206.1 M.Cu.Ft.

Monday, March 31, 1928.

Total Pressure
Sheet 2

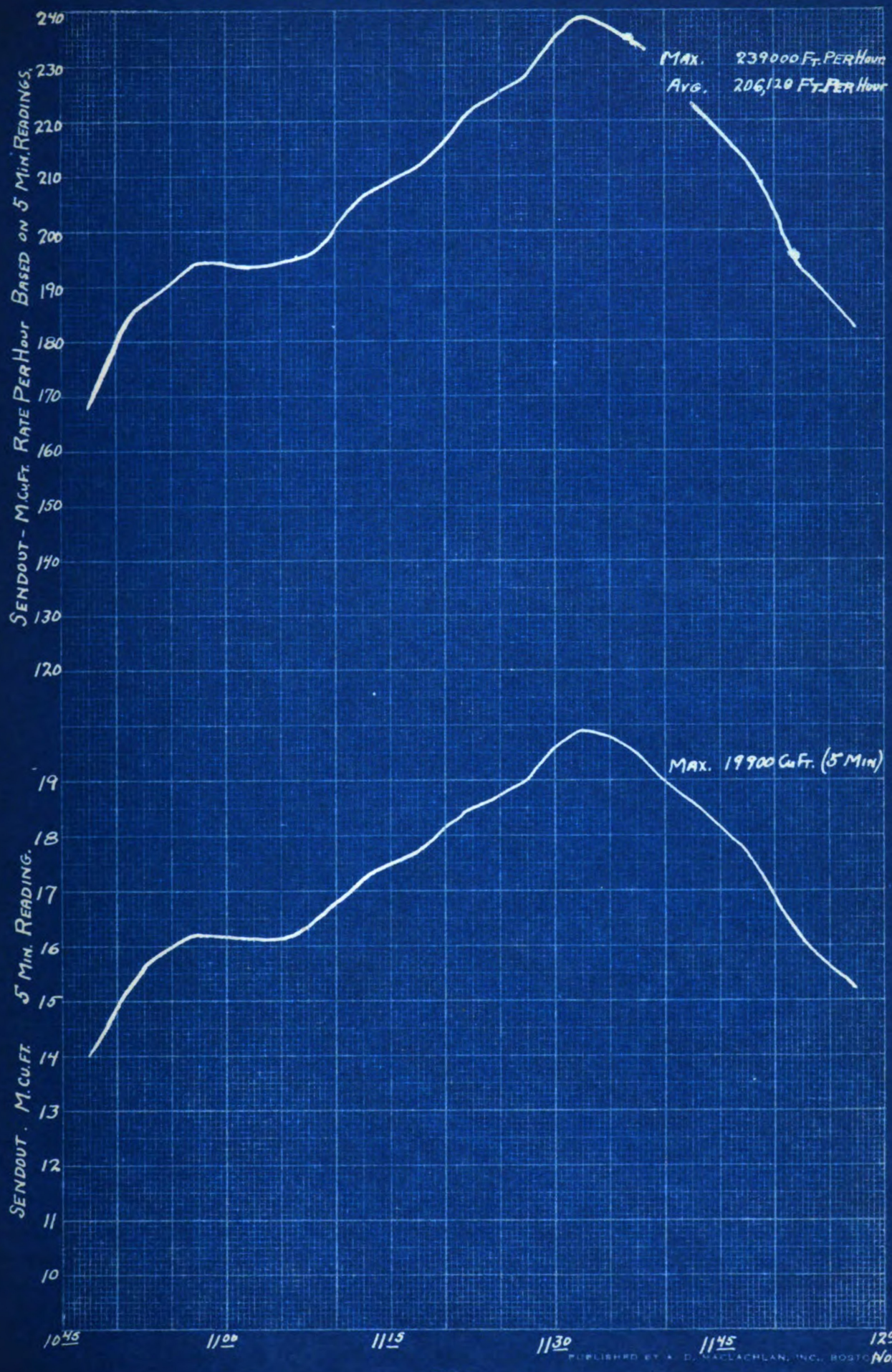
Send Out Data Sheet

PRESSURES

TIME	1 418 W. Jefferson	2 208 W. Jefferson	3 122 W. Jefferson	4 1216 N. Capitol	5 711 W. Kilborn	6	7	8	9
10:45	5.3	6.0	6.2	7.0	5.3				
10:50	5.2	5.9	6.1	7.0	5.2				
10:55	5.2	5.8	6.1	7.0	5.2				
11:00	5.1	5.7	6.05	6.95	5.3				
11:05	5.1	5.7	6.05	6.95	5.9				
11:10	5.0	5.7	6.0	6.95	5.1				
11:15	4.9	5.6	5.9	6.6	5.1				
11:20	4.8	5.6	5.8	6.6	5.0				
11:25	4.7	5.6	5.7	6.6	5.0				
11:30	4.6	5.7	5.6	6.6	5.0				
11:35	4.6	5.8	5.5	6.6	5.1				
11:40	4.5	5.9	5.6	6.6	5.1				
11:45	4.6	6.0	5.8	6.7	5.2				
11:50	4.7	6.1	5.6	6.75	5.3				
11:55	4.8	6.1	5.8	6.8	5.4				
12:00	4.9	6.2	6.0	6.8	5.5				

Dist. #2. October 31 1927

Noon Sendout Charts Monday, Oct. 31, 1927



Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV.		BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS		CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
	IN	OUT						BAR. AND TEMP.	PRESS.				
10:45	--	8.1	29.16	1149.9	--	67.5	21.0	--	--	--	50672.3	--	--
10:50	--	8.1	29.16	1155.4	5.5	67.5	21.0	.950	1.045	5.46	50678.5	6.2	11.66
10:55	--	8.1	29.16	1160.9	5.5	67.5	21.0	.950	1.045	5.46	50684.9	6.4	11.86
11:00	--	8.0	29.15	1166.4	5.5	67.5	21.0	.950	1.045	5.46	50691.2	6.3	11.76
11:05	--	8.0	29.15	1172.0	5.6	67.5	21.0	.950	1.045	5.56	50697.5	6.3	11.86
11:10	--	8.0	29.15	1177.5	5.5	67.5	21.0	.950	1.045	5.46	50703.9	6.4	11.86
11:15	--	8.0	29.15	1183.0	5.5	67.5	21.0	.950	1.045	5.46	50710.2	6.3	11.76
11:20	--	7.9	29.15	1188.5	5.5	67.5	21.0	.950	1.045	5.46	50716.6	6.4	11.86
11:25	--	8.0	29.14	1194.0	5.5	67.5	21.0	.950	1.045	5.46	50722.9	6.3	11.76
11:30	--	8.0	29.14	1199.6	5.6	67.5	21.0	.950	1.045	5.56	50729.2	6.3	11.86
11:35	--	8.0	29.14	1205.2	5.6	67.5	21.0	.950	1.045	5.56	50735.4	6.2	11.76
11:40	--	7.9	29.14	1210.8	5.6	67.5	21.0	.950	1.045	5.56	50741.7	6.3	11.86
11:45	--	7.9	29.14	1216.4	5.6	67.5	21.0	.950	1.045	5.56	50748.0	6.3	11.86
11:50	--	7.9	29.14	1221.9	5.5	67.5	21.0	.950	1.045	5.46	50754.3	6.3	11.76
11:55	--	8.0	29.14	1227.4	5.5	68.0	21.0	.950	1.045	5.46	50760.7	6.4	11.86
12:00	--	8.0	29.14	1232.9	5.5	68.0	21.0	.950	1.045	5.46	50767.0	6.3	11.76

Monday, November 7, 192 8.

Total Pressure

Sheet 1

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	--	8.1	29.16	1149.9	--	67.5	21.0	--	--	--	50672.3	--	--
10:50	--	8.1	29.16	1155.4	5.5	67.5	21.0	.950	1.045	5.46	50678.5	6.2	11.66
10:55	--	8.1	29.16	1160.9	5.5	67.5	21.0	.950	1.045	5.46	50684.9	6.4	11.86
11:00	--	8.1	29.15	1166.4	5.5	67.5	21.0	.950	1.045	5.46	50691.2	6.3	11.76
11:05	--	8.0	29.15	1172.0	5.6	67.5	21.0	.950	1.045	5.56	50697.5	6.3	11.86
11:10	--	8.0	29.15	1177.5	5.5	67.5	21.0	.950	1.045	5.46	50703.9	6.4	11.86
11:15	--	8.0	29.15	1183.0	5.5	67.5	21.0	.950	1.045	5.46	50710.2	6.3	11.76
11:20	--	7.9	29.15	1188.5	5.5	67.5	21.0	.950	1.045	5.46	50716.6	6.4	11.86
11:25	--	8.0	29.14	1194.0	5.5	67.5	21.0	.950	1.045	5.46	50722.9	6.3	11.76
11:30	--	8.0	29.14	1199.6	5.6	67.5	21.0	.950	1.045	5.56	50729.2	6.3	11.86
11:35	--	8.0	29.14	1205.2	5.6	67.5	21.0	.950	1.045	5.56	50735.4	6.2	11.76
11:40	--	7.9	29.14	1210.8	5.6	67.5	21.0	.950	1.045	5.56	50741.7	6.3	11.86
11:45	--	7.9	29.14	1216.4	5.6	67.5	21.0	.950	1.045	5.56	50748.0	6.3	11.86
11:50	--	7.9	29.14	1221.9	5.5	67.5	21.0	.950	1.045	5.46	50754.3	6.3	11.76
11:55	--	8.0	29.14	1227.4	5.5	68.0	21.0	.950	1.045	5.46	50760.7	6.4	11.86
12:00	--	8.0	29.14	1232.9	5.5	68.0	21.0	.950	1.045	5.46	50767.0	6.3	11.76

Monday, November 7, 1928.

Total Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	MIDDLE HOLDER S	MIDDLE HOLDER R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	LARGE HOLDER S	LARGE HOLDER R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						2	4	6	578.7	--	---	---	---	---
10:50						2	4	1	575.0	3.7	---	---	15.36	184.2
10:55						2	3	36	573.0	2.0	---	---	13.86	166.3
11:00						2	3	33	570.9	2.1	---	---	13.86	166.3
11:05						2	3	28	567.2	3.7	---	---	15.56	187.0
11:10						2	3	22	562.8	4.4	---	---	16.26	195.0
11:15						2	3	15	557.6	5.2	---	---	16.96	203.5
11:20						2	3	8	552.4	5.2	---	---	17.06	204.6
11:25						2	3	0	546.6	5.8	---	---	17.56	210.8
11:30						2	2	30	540.9	5.7	---	---	1756	210.8
11:35						2	2	21	534.3	6.6	---	---	18.36	220.2
11:40						2	2	14	529.1	5.2	---	---	17.06	204.6
11:45						2	2	7	524.0	5.1	---	---	16.96	203.5
11:50						2	2	0	518.9	5.1	---	---	16.86	202.5
11:55						2	1	33	515.4	3.5	---	---	15.36	184.2
12:00						2	1	30	513.2	2.2	---	---	13.96	167.5

Maximum Sendout 220.2 M.Cu.Ft. Monday, November 7, 192 7

Total Pressure

Sheet 2

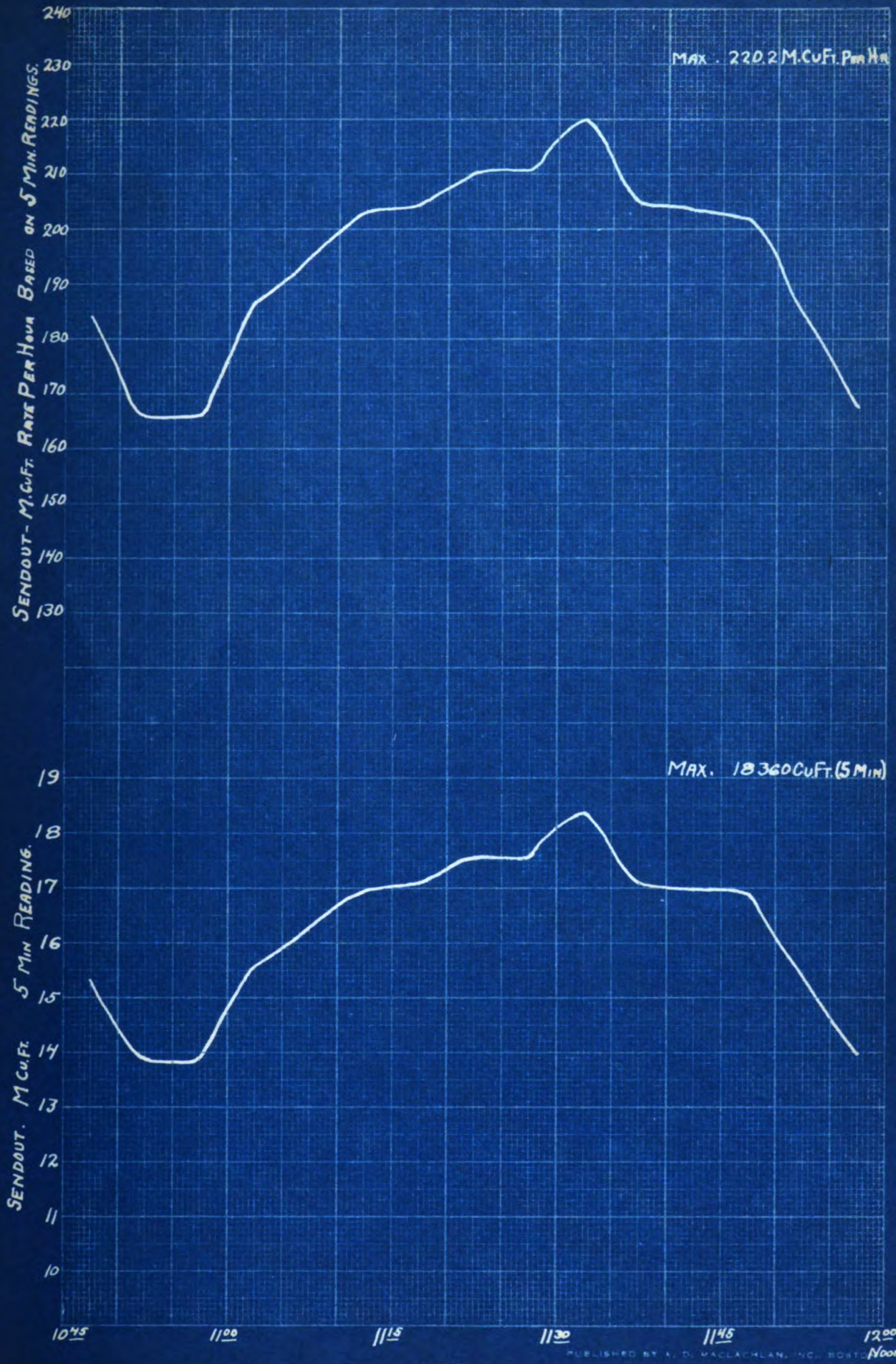
Send Out Data Sheet

PRESSURES

TIME	1 Saginaw & Capitol	2 112 E. Lapeer	3 500 N. Capitol	4 Jefferson & N.Capitol	5 104 E. Madison	6	7	8	9
10:45	5.8	5.1	5.6	5.9	5.3				
10:50	5.8	5.0	5.6	5.8	5.2				
10:55	5.8	5.0	5.5	5.8	5.1				
11:00	5.8	4.8	5.5	5.7	5.0				
11:05	5.6	4.7	5.4	5.6	4.9				
11:10	5.6	4.6	5.3	5.6	4.8				
11:15	5.6	4.5	5.3	5.5	4.4				
11:20	5.6	4.4	5.2	5.5	4.1				
11:25	5.6	4.4	5.2	5.4	4.5				
11:30	5.6	4.5	5.3	5.3	4.6				
11:35	5.6	4.5	5.3	5.4	4.8				
11:40	5.6	4.6	5.4	5.5	5.0				
11:45	5.6	4.9	5.5	4.8	5.3				
11:50	5.8	5.0	5.6	4.8	5.4				
11:55	5.8	5.2	5.6	4.6	5.3				
12:00	6.0	5.3	5.7	4.5	5.6				

District #3. November 7 1927

Noon Sendout Charts Monday, Nov. 7, 1927.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.3	29.0	5345.0	---	70.	16.0	---	---	--	60602.7	---	---
10:50	10.0	8.2	29.0	5349.1	4.1	70.	16.0	.941	1.032	3.99	60608.7	6.0	9.99
10:55	10.0	8.3	29.0	5353.1	4.0	70.	16.0	.941	1.032	3.89	60614.2	5.5	9.39
11:00	10.0	8.3	29.0	5357.2	4.1	70.	16.0	.941	10032	3.99	60619.7	5.5	9.49
11:05	10.0	8.1	29.0	5361.2	4.0	70.	16.0	.941	1.032	3.89	60625.3	5.6	9.49
11:10	10.0	8.2	29.0	5365.2	4.0	70	16.0	.941	1.032	3.89	60630.7	5.4	9.29
11:15	10.0	8.2	29.0	5369.2	4.0	70.	16.0	.941	1.032	3.89	60636.3	5.6	9.49
11:20	10.0	8.1	29.0	5373.2	4.0	70.	16.0	.941	1.032	3.89	60641.9	5.6	9.49
11:25	10.0	8.1	29.0	5377.3	4.1	70.	16.0	.941	1.032	3.99	60647.4	5.5	9.49
11:30	10.0	8.1	29.0	53813	4.0	70.	16.0	.941	1.032	3.89	60652.8	5.4	9.29
11:35	10.0	8.1	29.0	5385.3	4.0	70.	16.0	.941	1.032	3.89	60658.2	5.4	9.29
11:40	10.0	8.2	29.0	5389.2	3.9	70.	16.0	.941	1.032	3.79	60663.7	5.5	9.29
11:45	10.0	8.2	29.0	5393.2	4.0	70.	16.0	.941	1.032	3.89	60669.2	5.5	9.39
11:50	10.0	8.2	29.0	5397.3	4.1	70.	16.0	.941	1.032	3.99	60674.6	5.4	9.39
11:55	10.0	8.2	29.0	5401.2	3.9	70.	16.0	.941	1.032	3.79	60680.2	5.6	9.39
12:00	10.0	8.2	29.0	5405.2	4.0	70.	16.0	.941	1.032	3.89	60685.8	5.6	9.49

Monday, November 14, 1927.

Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	2	7	16	669.0		2	7	16	669.0	---	---	---	---	---
10:50						2	7	11	665.3	3.7	---	---	13.69	164.28
10:55						2	7	5	660.9	4.4	---	---	13.79	165.48
11:00						2	6	37	656.6	4.3	---	---	13.79	165.48
11:05						2	6	30	651.6	5.0	---	---	14.49	173.88
11:10						2	6	23	646.4	5.2	---	---	14.49	173.88
11:15						2	6	14	638.8	6.6	---	---	16.09	193.08
11:20						2	6	4	632.5	7.3	---	---	16.79	201.48
11:25						2	5	32	625.2	7.3	---	---	16.79	201.48
11:30						2	5	21	617.2	8.0	---	---	17.29	207.48
11:35						2	5	10	609.2	8.0	---	---	17.29	207.48
11:40						2	5	--	601.9	7.3	---	---	16.59	199.08
11:45						2	4	28	594.8	7.1	---	---	16.49	197.88
11:50						2	4	19	588.2	6.6	---	---	15.99	191.88
11:55						2	4	11	582.3	5.9	---	---	15.29	183.48
12:00						2	4	4	577.2	5.1	---	---	14.59	175.08

Maximum Sendout 207.48 M.Cu.Ft. Monday , November 14. 1927

Pressure

Sheet 2

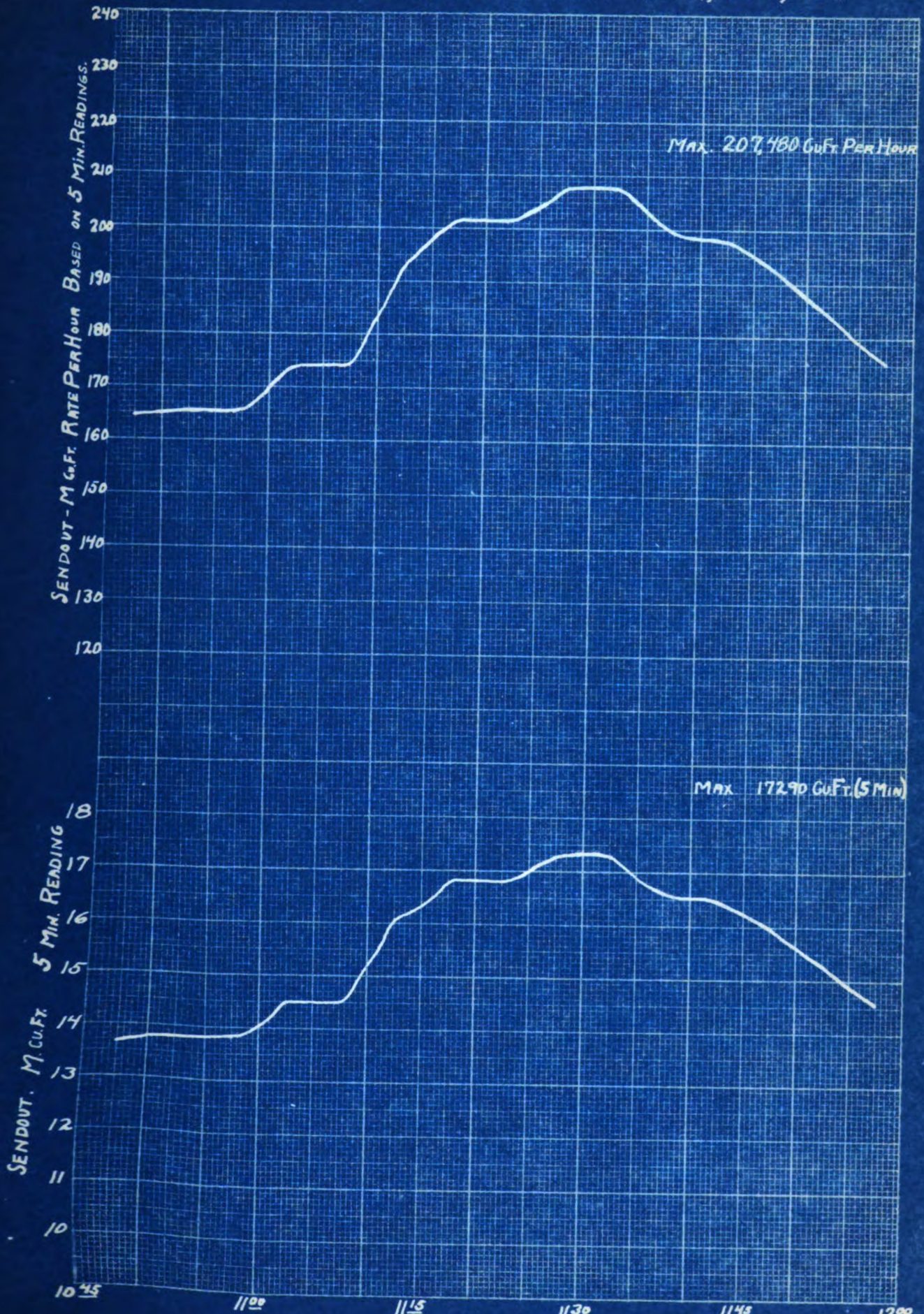
Send Out Data Sheet

PRESSURES

TIME	1 W.Willow & Lemrock Ct.	2 Lansing Paint Co.	3 1617 Lansing Ave.	4 1452 Comfort	5 1203 W. Willow St.	6	7	8	9
10:45	7.0	6.0	6.25	5.8	6.3				
10:50	7.0	5.95	6.25	5.75	6.3				
10:55	7.0	5.9	6.25	5.7	6.3				
11:00	6.9	5.8	6.2	5.6	6.2				
11:05	6.9	5.8	6.2	5.6	6.1				
11:10	6.8	5.75	6.2	5.5	6.05				
11:15	6.8	5.6	6.0	5.3	6.0				
11:20	6.8	5.5	5.9	5.2	5.9				
11:25	6.8	5.4	5.8	5.2	5.8				
11:30	6.9	5.3	5.7	5.15	5.7				
11:35	6.9	5.25	5.7	5.2	5.7				
11:40	7.0	5.25	5.7	5.2	5.6				
11:45	7.0	5.3	5.7	5.4	5.6				
11:50	7.1	5.4	5.8	5.6	5.7				
11:55	7.1	5.5	5.9	5.8	5.7				
12:00	7.1	5.7	6.0	5.9	5.9				

Dist.#1. November 14 192 7
2nd. reading

Noon Sendout Chart Monday, Nov. 14, 1927.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	12.1	8.2	28.8	0268.7	--	69	16.0	---	---	---	71444.2	---	---
10:50	12.1	8.2	28.8	0272.9	4.2	69.	16.0	.937	1.032	4.07	71451.8	7.6	11.67
10:55	12.1	8.2	28.8	0277.2	4.3	69.	16.0	.937	1.032	4.17	71459.5	7.7	11.87
11:00	12.1	8.2	28.8	0281.6	4.4	69.	16.0	.937	1.032	4.26	71466.8	7.3	11.56
11:05	11.6	8.1	28.8	0285.8	4.2	69.	16.0	.937	1.032	4.08	71474.5	7.7	11.78
11:10	10.2	8.1	28.8	0290.4	4.6	69.	15.0	.937	1.030	4.44	71482.1	7.6	12.04
11:15	10.2	8.1	28.8	0295.1	4.7	69.	15.0	.937	1.030	4.53	71489.9	7.8	12.33
11:20	10.2	8.1	28.8	0299.9	4.8	69	15.0	.937	1.030	4.64	71497.5	7.6	12.24
11:25	10.2	8.1	28.8	0304.8	4.9	69.	16.0	.937	1.032	4.74	71505.4	7.9	12.64
11:30	10.2	8.1	2818	0309.6	4.8	69.0	15.0	.937	1.030	4.64	71513.3	7.9	12.54
11:35	10.2	8.1	28.8	0314.6	5.0	69.	16.0	.937	1.032	4.84	71520.8	7.5	12.34
11:40	10.0	8.1	28.8	0319.3	4.7	69.	15.0	.937	1.030	4.53	71528.7	7.9	12.43
11:45	10.0	8.2	28.8	0324.0	4.7	68.5	15.0	.938	1.030	4.55	71536.6	7.9	12.45
11:50	10.0	8.2	28.8	0328.6	4.6	68.5	15.0	.938	1.030	4.45	71544.6	8.0	12.45
11:55	10.0	8.2	28.8	0333.1	4.5	68.5	15.0	.938	1.030	4.36	71552.6	8.0	12.36
12:00	10.0	8.2	28.8	0337.9	4.8	68.5	15.0	.938	1.030	4.65	71560.4	7.8	12.45

Monday ,November 21, 1927.

Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						3	1	9	752.9	---	----	----	---	---
10:50						3	1	3	748.4	4.5	---	---	16.17	194.0
10:55						3	0	15	741.9	6.5	---	---	18.37	220.4
11:00						3	0	10	735.1	6.8	---	---	18.36	220.3
11:05						3	0	5	728.2	6.9	---	---	18.68	224.2
11:10						2	9	9	719.3	8.9	---	---	20.94	251.3
11:15						2	8	36	711.3	8.0	---	---	20.33	244.0
11:20						2	8	28	705.5	5.8	---	----	18.04	216.5
11:25						2	8	19	698.9	6.6	---	---	19.24	230.9
11:30						2	8	9	691.6	7.3	---	---	19.84	238.1
11:35						2	7	37	684.3	7.3	---	---	19.64	235.7
11:40						2	7	27	677.1	7.2	---	---	19.63	235.6
11:45						2	7	17	669.7	7.4	---	---	19.85	238.2
11:50						2	7	8	663.1	6.6	---	---	19.05	228.6
11:55						2	6	38	656.6	6.5	---	---	18.86	226.3
12:00						2	6	31	652.3	4.3	---	---	16.75	201.0

Maximum Sendout 251.3 M.Cu.Ft. Monday ,November 21, 192 7.

Pressure
Sheet 2

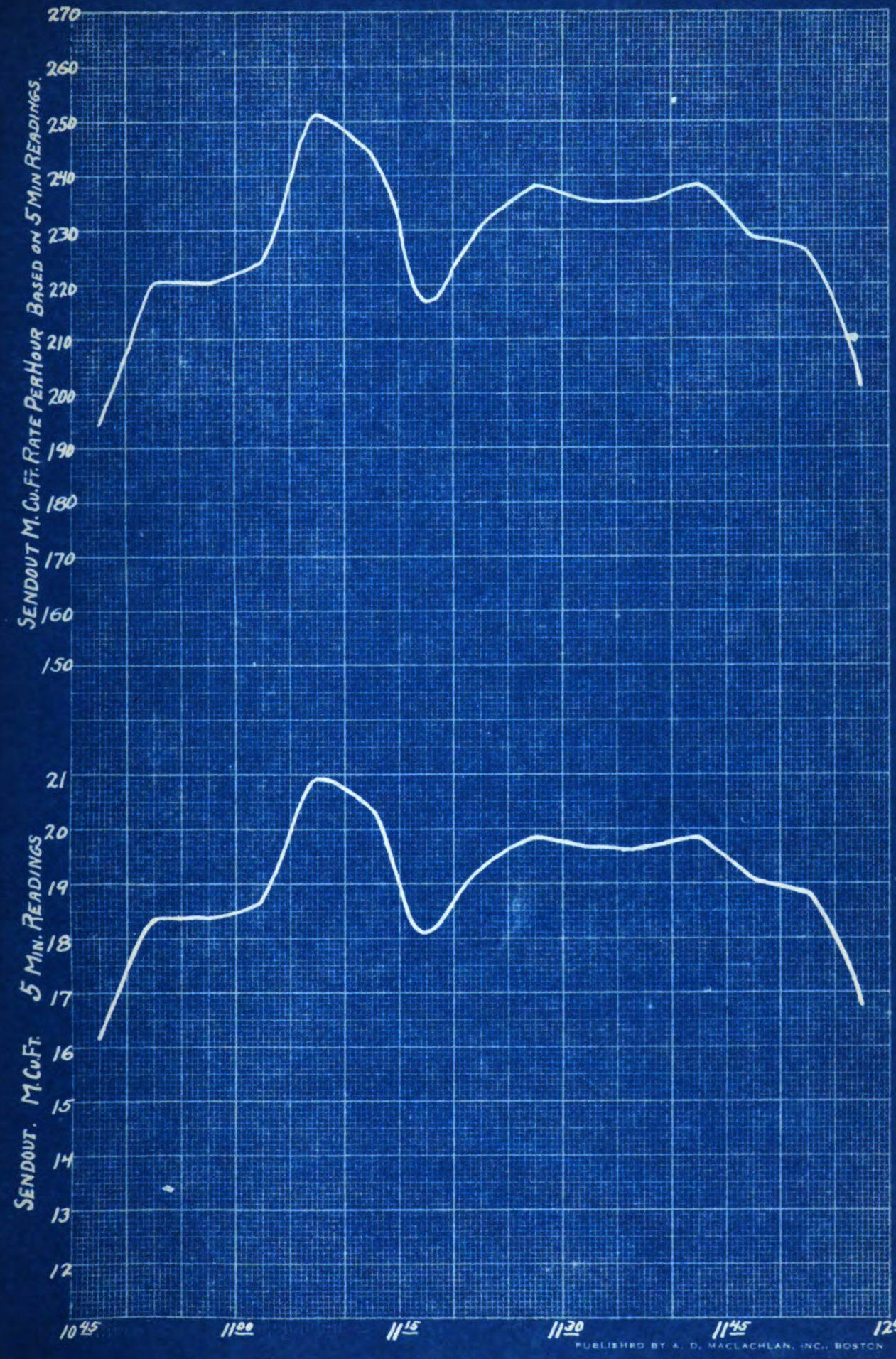
Send Out Data Sheet

PRESSURES

TIME	1 911 N. Logan St.	2 927 Cleo St.	3 1117 W. Saginaw	4 1019 W. Genesee	5 617 W. Saginaw St.	6	7	8	9
10:45	5.6	5.35	5.0	4.8	5.0				
10:50	5.6	5.3	5.0	4.8	4.9				
10:55	5.6	5.3	4.95	4.7	4.85				
11:00	5.6	5.2	4.9	4.7	4.7				
11:05	5.6	5.2	4.8	4.6	4.7				
11:10	5.55	5.2	4.7	4.2	4.6				
11:15	5.55	5.1	4.6	4.3	4.6				
11:20	5.55	5.0	4.6	4.3	4.45				
11:25	5.55	4.9	4.5	4.0	4.5				
11:30	5.5	4.8	4.4	3.9	4.6				
11:35	5.4	4.8	4.45	3.9	4.8				
11:40	5.4	4.6	4.8	4.0	5.0				
11:45	5.35	4.55	4.8	4.2	5.1				
11:50	5.3	4.6	5.0	4.6	5.2				
11:55	5.2	4.9	5.1	4.6	5.3				
12:00	5.1	5.0	5.2	4.7	5.4				

District #4 November 21 192 7

Noon Sendout Chart Monday, Nov. 21, 1927.



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Send Out Data Sheet

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.1	28.6	4298.6	--	69.0	150	--	--	--	83119.2	--	--
10:50	10.0	8.1	28.6	4303.0	4.4	68.5	15.	.933	1.030	4.23	83125.3	6.1	10.33
10:55	10.0	8.1	28.6	4307.3	4.3	68.5	15.0	.933	1.030	4.14	83131.3	6.0	10.14
11:00	10.0	8.1	28.6	4311.5	4.2	68.5	14.	.933	1.027	4.03	83137.4	6.1	10.13
11:05	10.0	8.1	28.6	4315.4	3.9	68.5	14.0	.933	1.027	3.74	83143.5	6.1	9.84
11:10	10.0	8.1	28.6	4319.4	4.0	68.5	14.	.933	1.027	3.83	83149.5	6.0	9.83
11:15	10.0	8.1	28.6	4323.4	4.0	68.5	15.	.933	1.030	3.84	83155.5	6.0	9.84
11:20	10.0	8.1	28.6	4327.5	4.1	68.5	14.	.933	1.027	3.93	83161.4	5.9	9.83
11:25	10.0	8.1	28.6	4331.8	4.3	68.5	15.	.933	1.030	4.13	83167.5	6.1	10.23
11:30	10.0	8.1	2816	4335.9	4.1	68.5	15.	.933	1.030	3.94	83173.5	6.0	9.94
11:35	10.0	8.1	28.6	4340.1	4.2	68.5	14.	.933	1.027	4.03	83179.4	5.9	9.93
11:40	10.0	8.1	28.6	4344.4	4.3	68.5	15.	.933	1.030	4.13	83185.3	5.9	10.03
11:45	10.0	8.1	28.6	4348.5	4.1	68.5	15.	.933	1.030	3.94	83191.2	5.9	9.84
11:50	10.0	8.1	28.6	4352.9	4.4	68.5	15.	.933	1.030	4.23	83197.0	5.8	10.03
11:55	10.0	8.1	28.6	4357.2	4.3	68.5	15.	.933	1.030	4.13	83202.9	5.9	10.03
12:00	10.0	8.1	28.6	4361.5	4.3	68.5	14.	.933	1.027	4.12	83208.8	5.9	10.02

Monday, November 28, 1927

Pressure
Sheet 1

Low Pressure
Sheet 2

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR ~~SENDOUT~~ XXXXX	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. Low PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	20	257.43	--	2	0	14	486.9	--	---	---	---	---
10:50	1	8	20	257.43	--	2	0	10	481.3	-5.6	- 5.6	---	15.93	191.2
10:55	1	8	20	257.43	--	2	0	6	477.3	-4.0	- 4.0	---	14.14	169.7
11:00	1	8	20	257.43	--	2	0	4	475.3	-2.0	- 2.0	---	12.13	145.6
11:05	1	7	28	247.17	10.26	2	0	10	481.3	+6.0	- 4.26	3.84	14.10	169.2
11:10	1	6	28	233.33	13.84	2	0	15	488.4	+7.1	-6.74	2.73	16.57	198.8
11:15	1	5	27	218.99	14.34	2	1	4	494.1	+5.7	-8.64	4.14	18.48	221.8
11:20	1	4	27	205.18	13.81	2	1	13	500.7	+6.6	-7.21	3.23	17.04	204.5
11:25	1	3	25	190.45	14.73	2	1	22	507.3	+6.6	-8.13	3.63	18.36	220.3
11:30	1	2	22	175.31	15.14	2	1	32	514.6	+7.3	-7.84	2.64	17.78	213.4
11:35	1	1	20	160.61	14.70	2	2	3	521.1	+6.5	-8.20	3.43	18.13	217.6
11:40	1	0	16	145.02	15.59	2	2	12	527.7	+6.6	-8.99	3.43	19.02	228.2
11:45	0	9	8	127.52	17.50	2	2	21	534.3	+6.6	-10.90	3.24	20.74	248.9
11:50	0	8	2	111.18	16.34	2	2	30	540.9	+6.6	-9.74	3.43	19.77	237.2
11:55	0	7	1	96.88	14.30	2	3	1	547.3	+6.4	-7.90	3.63	17.93	215.2
12:00	0	6	3	84.00	12.88	2	3	10	553.9	+6.6	-6.28	3.42	16.30	195.6

Maximum Sendout 248.9 M.Cu.Ft. Monday, November 28, 1927

Low Pressure

Sheet 2

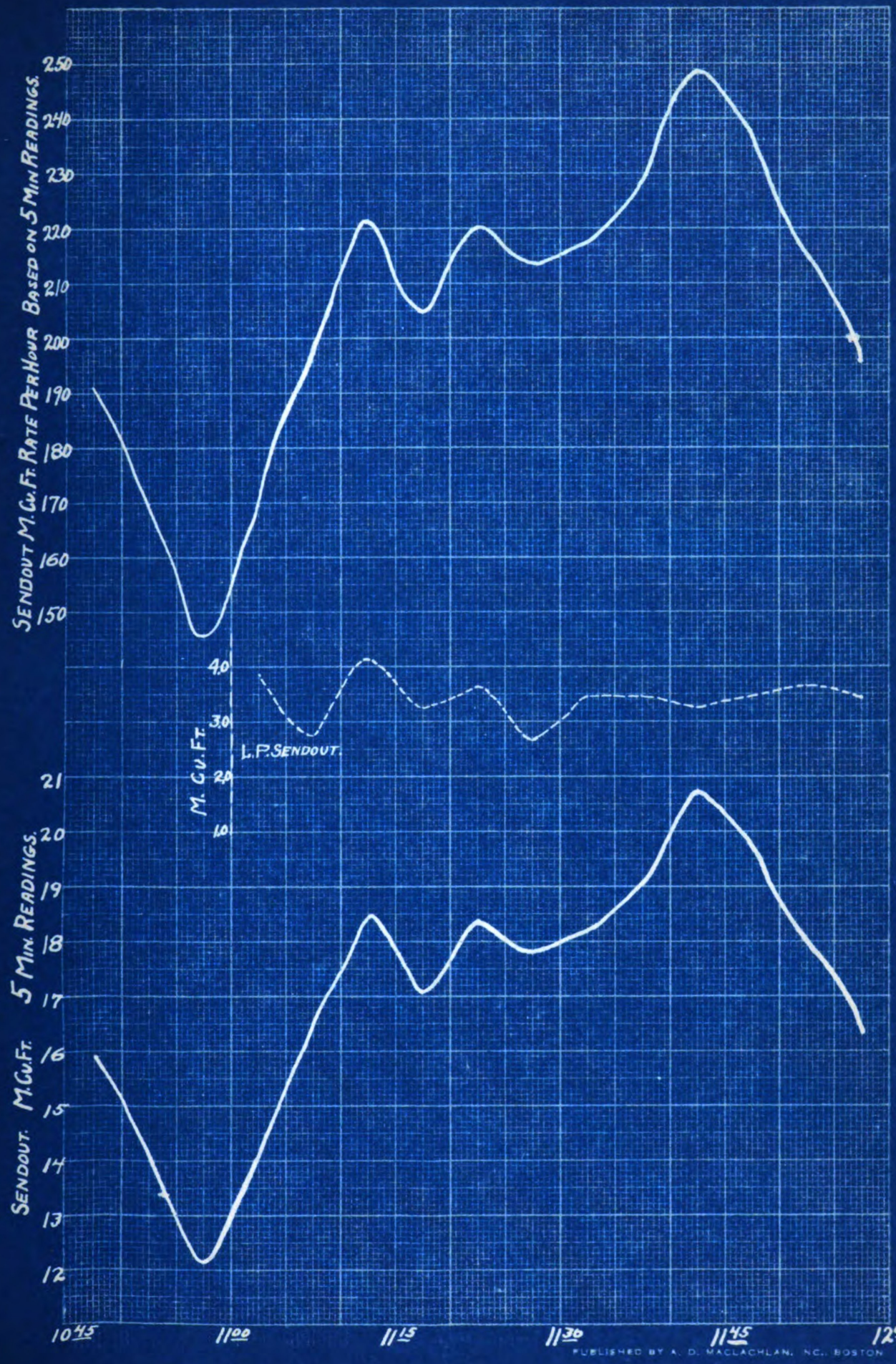
Send Out Data Sheet

PRESSURES

TIME	1 Old Y.W.C. S.Capitol	2 511 N. Capitol	3 332 S. Logan	4 221 W. Shiawassee	5 309 N. Capitol	6	7	8	9
10:45	5.2	5.6	6.1	5.2	5.3				
10:50	5.1	5.6	6.1	5.2	5.3				
10:55	5.0	5.6	6.1	5.2	5.2				
11:00	4.9	5.5	6.05	5.2	5.15				
11:05	4.8	5.4	6.0	5.2	5.05				
11:10	4.7	5.3	6.0	5.2	4.95				
11:15	4.7	5.2	6.0	5.2	4.9				
11:20	4.6	5.2	6.0	5.2	4.85				
11:25	4.6	5.15	5.95	5.2	4.8				
11:30	4.55	5.1	6.0	5.2	4.8				
11:35	4.6	5.1	6.0	5.2	4.75				
11:40	4.8	5.1	6.0	5.1	5.0				
11:45	4.9	5.2	6.1	5.1	5.05				
11:50	5.0	5.3	6.1	5.1	5.2				
11:55	5.1	5.4	6.1	5.1	5.4				
12:00	5.3	5.6	6.15	5.1	5.5				

District #5 November 28 1927

Noon Sendout Chart Monday. Nov. 28, 1927



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.2	28.78	8969.85	3.95	66.	14.	---	--	---	93471.0	--	--
10:50	10.0	8.2	28.78	8973.80	3.95	66.	14.	.944	1.027	3.83	93476.0	5.0	8.83
10:55	10.0	8.2	28.78	8977.80	4.00	66.	14.	.944	1.027	3.88	93481.0	5.0	8.88
11:00	10.0	8.2	28.78	8981.65	3.85	66.	14.	.944	1.027	3.73	93486.1	5.1	8.83
11:05	10.0	8.2	28.78	8984.93	3.28	66.	14.	.944	1.027	3.18	93491.2	5.1	8.28
11:10	10.0	8.2	28.78	8988.90	3.97	66.	14.	.944	1.027	3.85	93496.4	5.2	9.05
11:15	10.0	8.2	28.78	8992.72	3.82	66.	14.	.944	1.027	3.71	93501.7	5.3	9.01
11:20	10.0	8.2	28.78	8996.51	3.79	66.	14.	.944	1.027	3.67	93507.0	5.3	8.97
11:25	10.0	8.2	28.78	8999.35	3.84	66.	14.	.944	1.027	3.72	93512.3	5.3	9.02
11:30	10.0	8.1	28.76	9003.15	3.80	66.	14.	.940	1.027	3.67	93517.6	5.3	8.97
11:35	10.0	8.1	28.76	9007.93	3.78	67.	14.	.940	1.027	3.65	93522.9	5.3	8.95
11:40	10.0	8.1	28.76	9011.82	3.89	67.	14.	.940	1.027	3.76	93528.2	5.3	9.06
11:45	10.0	8.2	28.75	9015.65	3.83	67.	14.	1940	1.027	3.70	93533.4	5.2	8.90
11:50	10.0	8.2	28.74	9019.41	3.76	67.	14.	.940	1.027	3.64	93538.6	5.2	8.84
11:55	10.0	8.3	28.74	9023.25	3.84	67.	14.	.940	1.027	3.71	93543.8	5.2	8.91
12:00	10.0	8.3	28.74	9027.07	3.82	67.	14.	.940	1.027	3.69	93549.0	5.2	8.89

Monday, December 5, 1927.

Low, Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOWPRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	7	25	245.83	--	2	1	14	501.4	--	--	--	--	--
10:50	1	7	25	245.83	--	2	1	9	497.8	-3.6	-3.6	--	12.43	149.16
10:55	1	7	25	245.83	--	2	1	3	493.4	-4.4	-4.4	--	13.28	159.36
11:00	1	7	23	244.94	- .89	2	1	0	491.2	-2.2	-3.09	--	11.92	143.04
11:05	1	7	0	234.67	-10.27	2	1	8	497.0	5.8	-4.47	2.48	12.75	153.00
11:10	1	6	2	221.69	-12.98	2	1	18	504.4	7.4	-5.58	1.65	14.58	174.96
11:15	1	5	2	207.86	13.83	2	1	28	511.7	7.3	-6.53	1.71	15.54	186.48
11:20	1	4	1	193.57	-14.29	2	1	37	518.2	6.5	-7.79	2.47	16.76	201.12
11:25	1	3	2	180.21	-13.36	2	2	8	524.7	6.5	-6.86	2.52	15.88	190.56
11:30	1	2	1	165.95	-14.26	2	2	17	531.3	6.6	-7.66	2.37	16.63	199.56
11:35	1	1	0	151.70	-14.25	2	2	26	537.9	6.6	-7.65	2.35	16.60	199.20
11:40	0	9	10	128.30	-16.40	2	2	34	543.8	5.9	-10.50	3.16	19.56	234.72
11:45	0	8	12	115.48	-12.82	2	3	5	550.2	6.4	-6.42	2.50	15.32	183.84
11:50	0	7	14	102.60	-12.88	2	3	15	557.6	7.4	-5.48	1.44	14.32	171.84
11:55	0	6	17	90.16	-12.44	2	3	25	565.0	7.4	-5.04	1.51	13.95	167.40
12:00	0	5	22	78.48	-11.68	2	3	35	572.3	7.3	-4.38	1.59	13.27	159.24

Maximum Sendout 234.72 M.Cu.Ft. Monday, December 5, 1927

Low Pressure

Sheet 2

Send Out Data Sheet

PRESSURES

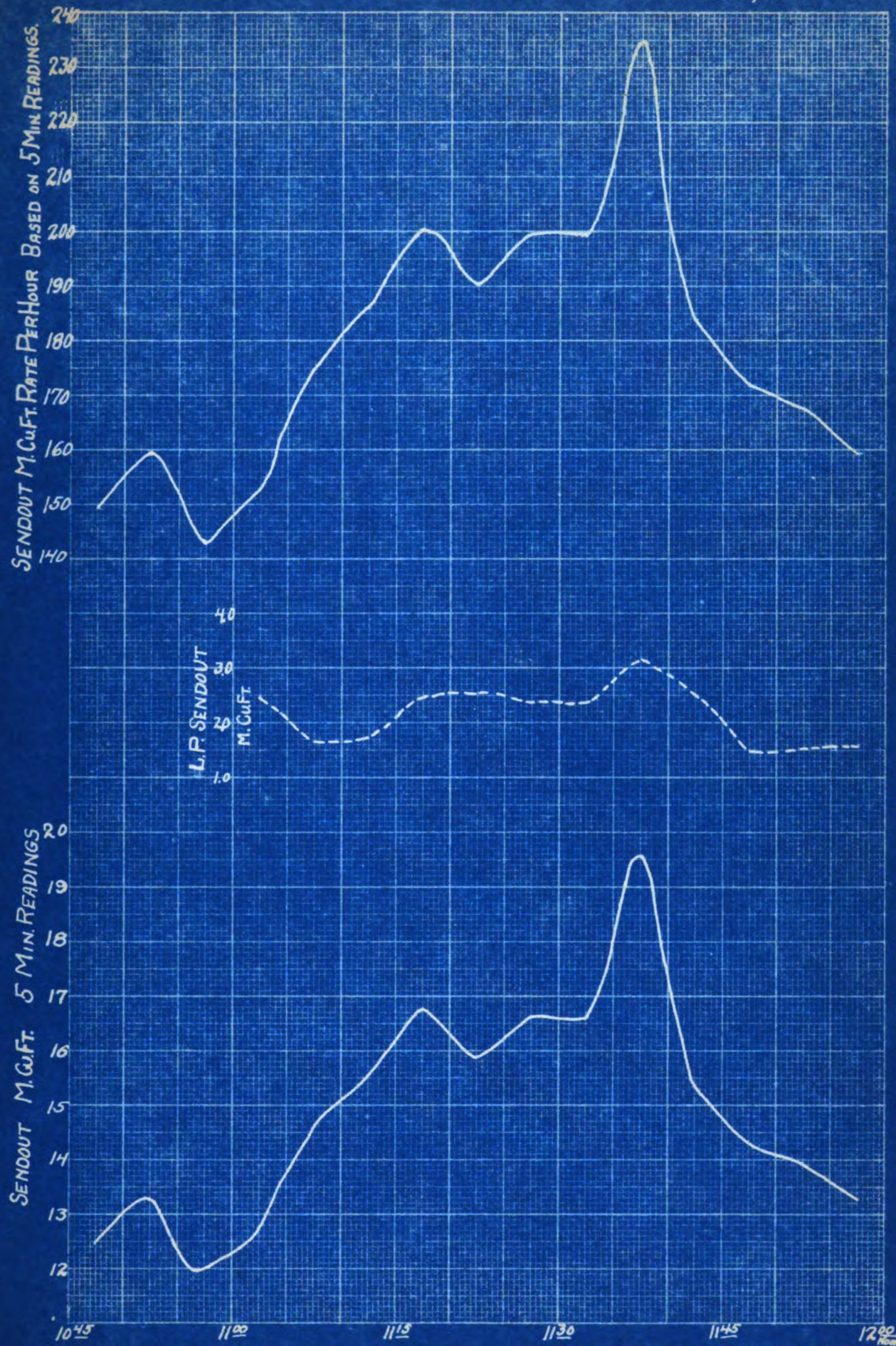
TIME	1 Plant Governor	2 816 W. Genesee	3 1024 W. Genesee	4 1015 W. Shiawassee	5 1023 W. Allegan.	6	7	8	9
10:45	8.2	5.2	5.2	5.4	5.2				
10:50	8.2	5.2	5.1	5.4	5.2				
10:55	8.2	5.1	5.0	5.4	5.1				
11:00	8.2	5.0	5.0	5.3	5.0				
11:05	8.2	5.0	4.9	5.2	5.0				
11:10	8.2	4.9	4.9	5.1	5.0				
11:15	8.2	4.9	4.8	5.0	4.9				
11:20	8.2	4.9	4.7	4.9	4.8				
11:25	8.2	4.8	4.6	4.8	4.7				
11:30	8.2	4.7	4.6	4.7	4.6				
11:35	8.1	4.6	4.7	4.8	4.5				
11:40	8.1	4.7	4.8	4.9	4.5				
11:45	8.2	4.8	4.8	5.0	4.5				
11:50	8.2	4.9	4.9	5.0	4.6				
11:55	8.3	5.0	5.0	5.3	4.8				
12:00	8.3	5.2	5.1	5.3	5.0				

Pressure in Inches of water.

Monday , December 5th. 192 8

Low Pressures Sheet 3

Noon Sendout Chart Monday. Dec. 5, 1927.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.4	28.96	3760.00	--	77.	19.	--	--	--	16270.9	--	--
10:50	10.0	8.3	28.96	3764.40	4.40	77.0	19.	.921	1.040	4.21	16277.2	6.3	10.51
10:55	10.0	8.3	28.96	3769.00	4.60	77.	19.	.921	1.040	4.41	16283.5	6.3	10.71
11:00	10.0	8.3	28.96	3773.55	4.55	77.	19.	.921	1.040	4.36	16289.8	6.3	10.66
11:05	10.0	8.2	28.96	3777,95	4.40	77.	19.	.921	1.040	4.21	16296.1	6.3	10.51
11:10	10.0	8.2	28.96	3782.48	4.53	77.	19.	.921	1.040	4.34	16302.4	6.3	10.64
11:15	10.0	8.1	28.95	3787.00	4.52	77.	19.	.920	1.040	4.33	16308.7	6.3	10.63
11:20	10.0	8.2	28.94	3791.49	4.49	78.	19.	.918	1.040	4.29	16318.0	6.3	10.59
11:25	10.0	8.2	28.94	3795.76	4.25	78.	19.	.918	1.040	4.06	16321.3	6.3	10.36
11:30	10.0	8.3	28.93	3800.20	4.44	78.	19.	.917	1.040	4.24	16327.6	6.3	10.64
11:35	10.0	8.3	28.93	3804.62	4.42	78.	19.	.917	1.040	4.22	16333.9	6.3	10.52
11:40	10.0	8.3	28.92	3808.96	4.34	78.	19.	.917	1.040	4.14	16340.2	6.3	10.44
11:45	10.0	8.3	28.92	3813.54	4.58	78.	19.	.917	1.040	4.38	16346.5	6.3	10.68
11:50	10.0	8.3	28.92	3818.22	4.68	78.	19.	.917	1.040	4.47	16352.8	6.3	10.77
11:55	10.0	8.4	28.92	3822.68	4.46	78.	19.	.917	1.040	4.26	16359.2	6.4	10.66
12:00	10.0	8.4	28.92	3827.35	4.67	78.	19.	.917	1.040	4.46	16365.5	6.3	10.76

Monday, February 13, 1928.

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR I&H. SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	0	262.23	---	2	3	12	555.4	--	---	---	---	---
10:50	1	7	29½	247.84	-14.39	2	3	23½	563.9	8.5	-5.89	2.01	16.40	196.8
10:55	1	7	4	236.45	-11.39	2	3	34½	571.6	7.7	-3.69	3.01	14.30	171.6
11:00	1	6	8	224.36	-12.09	2	4	8½	580.5	8.9	-3.19	1.76	13.85	166.7
11:05	1	5	10½	211.64	-12.72	2	4	19½	588.6	8.1	-4.62	2.41	15.13	181.6
11:10	1	4	14	199.39	-12.25	2	4	30	596.3	7.7	-4.55	2.94	15.19	182.3
11:15	1	3	13½	185.34	-14.05	2	5	2½	603.7	7.4	-6.64	3.23	17.27	207.2
11:20	1	2	13	171.2	-14.14	2	5	12½	611.0	7.3	-6.84	3.29	17.43	209.2
11:25	1	1	10	156.15	-15.05	2	5	22	617.9	6.9	-8.15	3.46	18.51	222.2
11:30	1	0	8	141.45	-14.60	2	5	32	625.2	7.3	-7.30	3.34	17.94	215.3
11:35	0	8	26	121.64	-19.81	2	6	5	633.2	8.0	-11.81	2.53	22.34	268.1
11:40	0	7	20½	105.46	-16.18	2	6	14½	640.2	7.0	-9.18	3.44	19.62	235.4
11:45	0	6	15½	89.5	-15.96	2	6	25	647.9	7.7	-8.26	2.98	18.94	227.3
11:50	0	5	14	74.96	-14.54	2	6	34½	654.9	7.0	-7.54	3.77	18.31	219.7
11:55	0	4	15½	61.82	-13.14	2	7	7	662.4	7.5	-5.64	3.16	16.30	195.6
12:00	0	3	20	50.00	-11.82	2	7	19½	671.6	9.2	-2.62	1.56	13.38	160.6

Maximum Sendout 268.1 M.Cu.Ft. Monday, February 13, 1928

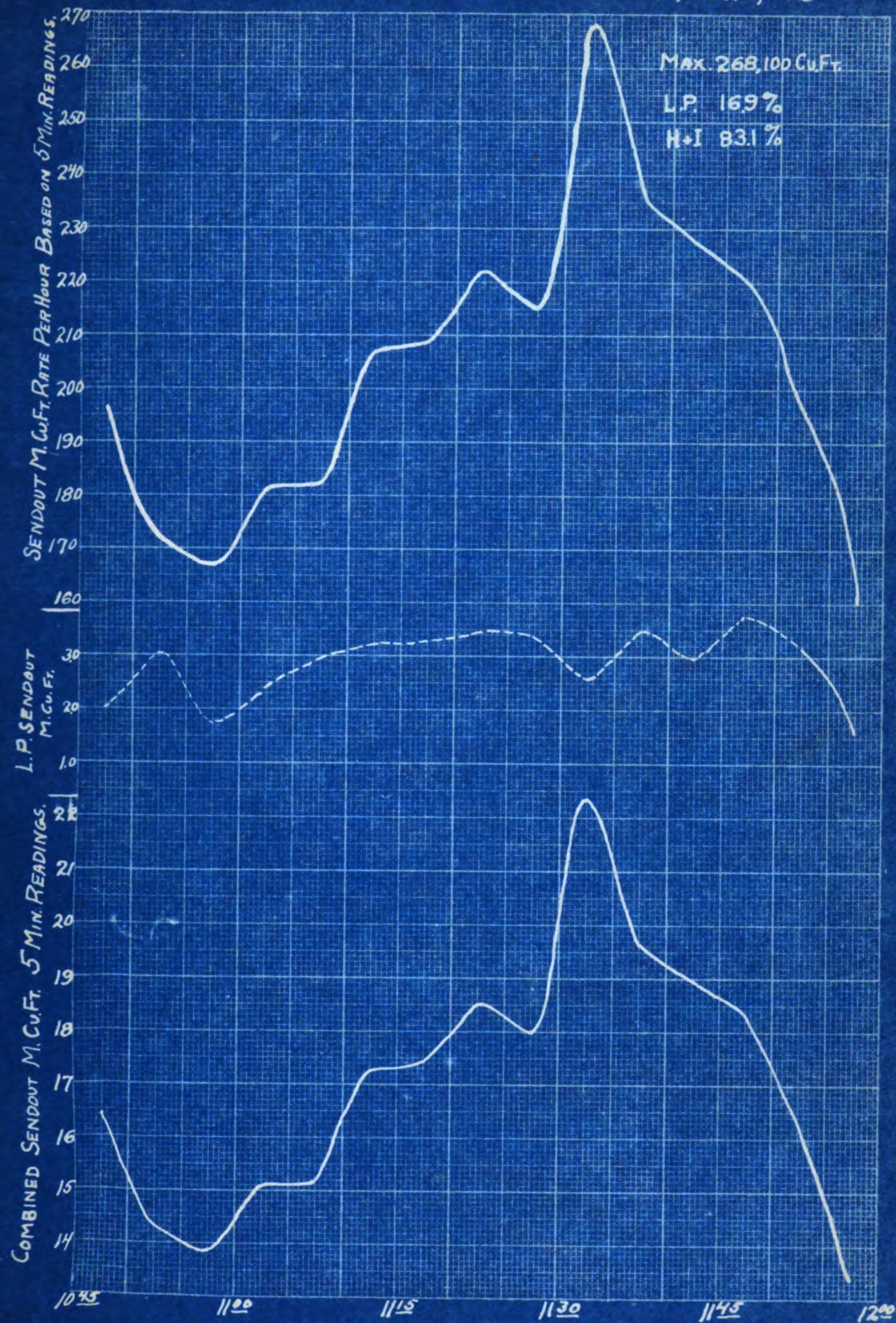
Low Pressure 16.9%

Hi & Int. 83.1%

Low Pressure

Sheet 2

Noon Sendout Chart Monday, Feb. 13, 1928



Published by A. D. MacLachlan, Inc., Boston

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.2	28.96	8679.30	---	--	22.	--	00	--	28500.3	--	--
10:50	10.0	8.2	28.96	8684.00	4.7	77	22.	.921	1.047	4.53	28506.6	6.3	10.83
10:55	10.0	8.2	28.96	8689.00	5.0	77	21.	.921	1.045	4.82	28513.0	6.4	11.22
11:00	10.0	8.2	28.96	8694.34	5.34	77	21.	.921	1.045	5.14	28519.4	6.4	11.54
11:05	10.0	8.1	28.95	8699.40	5.16	77	22	.921	1.047	4.98	28525.8	6.4	11.38
11:10	10.0	8.1	28.95	8704.41	5.01	77	21.	.921	1.045	4.82	28532.2	6.4	11.22
11:15	10.0	8.1	28.96	8709.45	5.04	77	20.	.921	1.042	4.84	28538.6	6.4	11.24
11:20	10.0	8.1	28.96	8714.00	4.55	77	18.5	.921	1.039	4.35	28545.0	6.4	10.75
11:25	10.0	8.1	28.96	8718.35	4.35	77	18.	.921	1.037	4.16	28551.3	6.3	10.46
11:30	10.0	8.1	28.96	8722.80	4.45	77	19.	.921	1.040	4.26	28557.5	6.2	10.46
11:35	10.0	811	28.96	8727.60	4.80	77	20.	.921	1.042	4.61	28563.8	6.3	10.91
11:40	10.0	8.2	28.96	8732.73	5.13	77	22.	.921	1.047	4.95	28570.1	6.3	11.25
11:45	10.0	8.2	28.96	8737.84	5.11	77	22.	.921	1.047	4.93	28576.4	6.3	11.23
11:50	10.0	8.2	28.96	8742.87	5.03	77	22.	.921	1.047	4.85	28582.8	6.4	11.25
11:55	10.0	8.2	28.96	8747.80	4.93	77	21.	.921	1.045	4.75	28589.2	6.4	11.15
12:00	10.0	8.3	28.96	8752.68	4.88	77	21.	.921	1.045	4.70	28595.6	6.4	11.10

Monday, February 20, 1928

High Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H.P. SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. I&I PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	4	24	203.85	---	2	2	34	543.8	--	--	--	--	--
10:50	1	4	17	200.73	- 3.12	2	2	32½	542.7	- 1.1	- 4.22	11.93	15.05	180.60
10:55	1	4	9½	197.37	-3.36	2	2	31	541.6	- 1.1	- 4.46	12.32	15.68	188.16
11:00	1	4	2	194.02	- 3.35	2	2	29	540.1	- 1.5	- 4.85	13.04	16.39	196.68
11:05	1	3	26	190.90	- 3.12	2	2	26	537.9	- 2.2	- 5.32	13.58	16.70	200.40
11:10	1	3	19	187.78	- 3.12	2	2	21½	534.6	- 3.3	- 6.42	14.52	17.64	211.68
11:15	1	3	12½	184.89	- 2.89	2	2	17	531.3	- 3.3	- 6.19	14.54	17.43	209.16
11:20	1	3	6	181.99	- 2.90	2	2	11½	527.3	- 4.0	- 6.90	14.75	17.65	211.80
11:25	1	2	30	178.87	- 3.12	2	2	5	522.5	- 4.8	- 7.92	15.26	18.38	220.56
11:30	1	2	23	175.75	- 3.12	2	1	36½	517.9	- 4.6	- 7.72	15.06	18.18	218.16
11:35	1	2	14	171.75	- 4.00	2	1	30	513.2	- 4.7	- 8.70	15.61	19.61	235.32
11:40	1	2	5½	167.96	- 3.79	2	1	24½	509.2	- 4.0	- 7.79	15.25	19.04	228.48
11:45	1	1	28½	164.45	- 3.51	2	1	20	505.8	- 3.4	- 6.91	14.63	18.14	217.68
11:50	1	1	19½	160.39	- 4.06	2	1	17½	504.0	- 1.8	- 5.84	13.05	17.11	205.32
11:55	1	1	11	156.60	- 3.79	2	1	16	502.9	- 1.1	- 4.89	12.25	16.04	192.48
12:00	1	1	4	153.48	- 3.12	2	1	16½	503.2	+ .3	- 2.82	10.80	13.92	167.04

Max. Sendout 235.32 M.Cu.Ft.

High Pressure 19.6%

Low & Int. 80.4%

Monday, February 20, 1928

High Pressure

Sheet 2

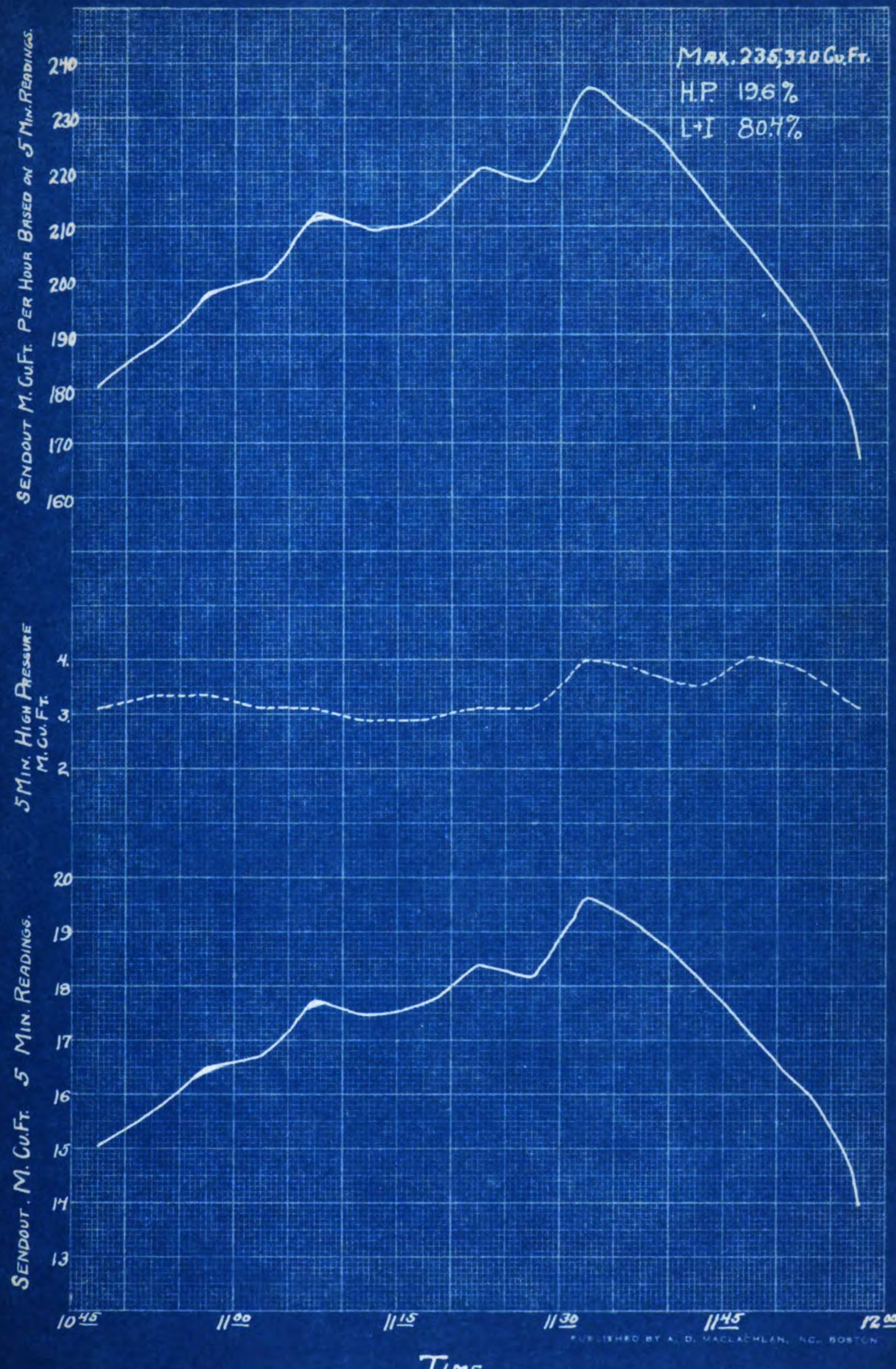
Send Out Data Sheet

PRESSURES

TIME	1Shiawassee & Logan	2 423 W. Michigan	3 1100 W. Genesee	4 407 S. Logan	5 1522 W. Michigan	6	7	8	9
10:45	5.6	5.0	5.6	4.9	5.3				
10:50	5.6	5.0	5.5	5.0	5.2				
10:55	5.4	4.9	5.4	5.2	5.1				
11:00	5.4	4.9	5.3	5.3	5.0				
11:05	5.4	4.9	5.3	5.4	5.0				
11:10	5.4	5.0	5.3	5.4	4.9				
11:15	5.3	5.1	5.2	5.5	4.8				
11:20	5.3	5.1	5.2	5.6	4.8				
11:25	5.2	5.2	5.1	5.7	4.7				
11:30	5.2	5.4	5.1	5.6	4.7				
11:35	5.3	5.4	5.1	5.6	4.7				
11:40	5.4	5.5	5.2	5.6	4.8				
11:45	5.4	5.6	5.2	5.6	4.9				
11:50	5.5	5.7	5.2	5.8	5.0				
11:55	5.7	5.8	5.4	5.8	5.2				
12:00	5.8	5.7	5.4	5.8	5.3				

District #6 February 20 1928

Noon Sendout Chart. Monday, Feb 20, 1928



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Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H&I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOWPRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	27	260.42	--	2	2	15½	530.3	--	--	--	--	--
10:50	1	8	1	248.95	-11.47	2	2	24	536.5	6.2	- 5.27	3.35	14.82	177.84
10:55	1	7	2½	235.78	-13.17	2	2	32½	542.7	6.2	- 6.97	3.61	16.78	201.36
11:00	1	6	4½	222.80	-12.98	2	3	3	548.8	6.1	- 6.88	3.63	16.61	199.32
11:05	1	5	5	209.19	-13.61	2	3	11½	555.0	6.2	- 7.41	3.61	17.22	206.64
11:10	1	4	4½	195.13	-14.06	2	3	20	561.2	6.2	- 7.86	3.38	17.44	209.28
11:15	1	3	2	180.21	-14.92	2	3	28	567.2	6.0	- 8.92	3.65	18.57	222.84
11:20	1	2	0	165.51	-14.70	2	3	36½	573.3	6.1	- 8.60	3.49	18.19	218.28
11:25	1	0	25	149.03	-15.48	2	4	7	579.4	6.1	- 9.38	3.54	19.02	228.24
11:30	0	9	9	127.96 xx	-16.07	2	4	15½	585.6	6.2	- 9.87	3.45	19.52	234.64
11:35	0	8	4	111.96	-16.00	2	4	23½	591.5	5.9	-10.10	3.74	19.74	236.88
11:40	0	6	28	95.00	-16.96	2	4	32	597.7	6.2	-10.76	3.48	20.44	245.28
11:45	0	5	24½	79.58	-15.42	2	5	2½	603.7	6.0	- 9.42	3.72	19.14	229.68
11:50	0	4	22½	64.90	-14.68	2	5	11	609.9	6.2	- 8.48	3.52	18.20	218.40
11:55	0	3	22	50.88	-14.02	2	5	18½	615.5	5.6	- 8.42	3.26	18.28	219.36
12:00	0	2	24½	38.18	-12.70	2	5	26½	620.8	5.3	- 7.40	4.50	17.20	206.40

xx Chart correction.

Maximum Sendout 245.28 M.Cu.Ft. Tuesday, February 21, 1928.

Low Pressure Sendout 19.85%

High & Intermediate 80.15%

Low Pressure
Sheet 2

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.1	29.28	9628.93	--	85.	17.	--	--	--	30304.0	--	--
10:50	10.0	8.1	29.28	9632.70	3.77	85.	17.	.909	1.035	3.55	30310.0	6.0	9.55
10:55	10.0	8.0	29.28	9636.64	3.94	85.	17.	.909	1.035	3.71	30316.1	6.1	9.81
11:00	10.0	8.0	29.28	9640.50	3.86	85.	17.	.908	1.035	3.63	30322.2	6.1	9.78
11:05	10.0	8.0	29.27	9644.44	3.94	85.	18.	.908	1.037	3.71	30328.3	6.1	9.81
11:10	10.0	8.0	29.27	9648.25	3.81	85.	17.	.908	1.035	3.58	30334.3	6.0	9.58
11:15	10.0	8.0	29.27	9652.13	3.88	85.	17.	.908	1.035	3.65	30340.3	6.0	9.65
11:20	10.0	8.0	29.27	9655.95	3.82	85.	17.	.908	1.035	3.59	30346.3	6.0	9.59
11:25	10.0	8.0	29.27	9659.82	3.87	85.	17.	.908	1.035	3.64	30352.3	6.0	9.64
11:30	10.0	8.0	29.27	9663.70	3.88	85.	17.	.908	1.035	3.65	30358.3	6.0	9.65
11:35	10.0	8.0	29.27	9667.57	3.87	85.	17.	.908	1.035	3.64	30364.3	6.0	9.64
11:40	10.0	8.0	29.27	9671.47	3.90	85.	18.	.908	1.037	3.68	30370.3	6.0	9.68
11:45	10.0	8.0	29.27	9675.32	3.85	85.	17.	.908	1.035	3.62	30376.4	6.1	9.72
11:50	10.0	8.0	29.26	9679.17	3.85	85.	17.	.908	1.035	3.62	30382.5	6.1	9.72
11:55	10.0	8.0	29.26	9683.06	3.89	85.	17.	.908	1.035	3.66	30388.7	6.2	9.86
12:00	10.0	8.1	29.26	9686.89	3.83	85.	17.	.908	1.035	3.60	30394.9	6.2	9.80

Tuesday, February 21, 1928

Low Pressure

Sheet 1

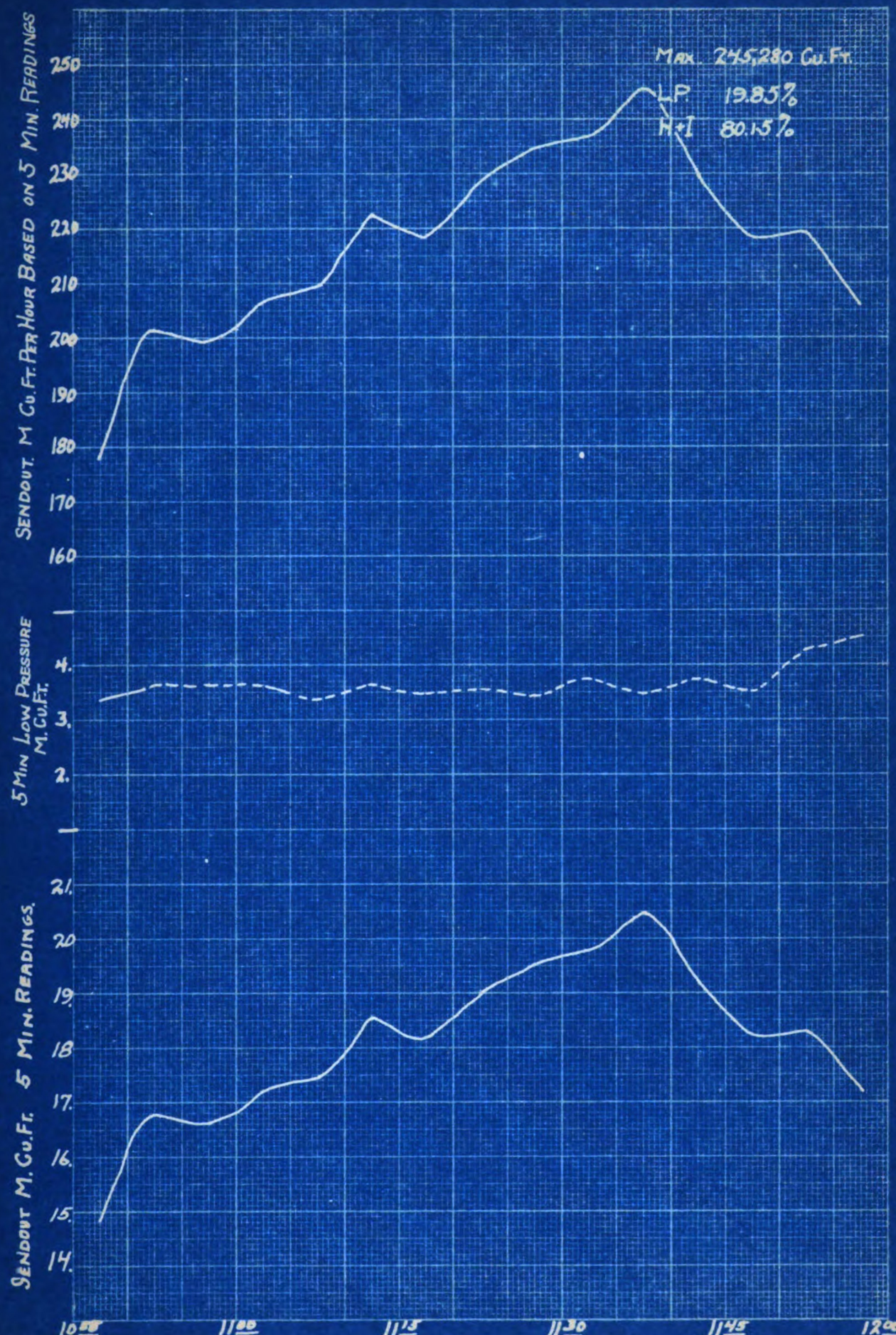
Send Out Data Sheet

PRESSURES

TIME	1 711 S. Capitol	2 329 S. Pine St.	3 525 W. Main St.	4 204 W. Kalamazoo	5 409 W. Kalamazoo St.	6	7	8	9
10:45	6.1	6.4	6.2	6.4	6.3				
10:50	6.0	6.3	6.2	6.3	6.3				
10:55	6.0	6.2	6.2	6.3	6.2				
11:00	6.0	6.1	6.2	6.2	6.1				
11:05	5.8	6.1	6.0	6.2	6.0				
11:10	5.7	6.0	5.9	6.1	5.9				
11:15	5.6	5.8	5.9	6.0	5.8				
11:20	5.6	5.7	5.8	5.9	5.8				
11:25	5.5	5.7	5.8	5.8	5.8				
11:30	5.5	5.7	5.7	5.8	5.8				
11:35	5.6	5.7	5.6	5.8	6.0				
11:40	5.6	5.8	5.7	5.8	6.1				
11:45	5.4	6.0	5.8	6.0	6.2				
11:50	5.4	6.1	6.0	6.1	6.3				
11:55	5.6	6.2	6.2	6.2	6.4				
12:00	6.3	6.3	6.2	6.2	6.6				

District #7 February 21 1928

Noon Sendout Chart. Tuesday, Feb. 21, 1928.



Published by A. C. MacLachlan, Inc. Bos

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.4	28.9	4060.87	--	79.	16.	--	--	--	41027.0	--	--
10:50	10.0	8.4	28.9	4064.52	3.65	79.	16.	.914	1.032	3.45	41032.5	5.5	8.95
10:55	10.0	8.4	28.9	4068.13	3.61	79.	16.	.914	1.032	3.41	41038.1	5.6	9.01
11:00	10.0	8.3	28.9	4071.68	3.55	79.	16.	.914	1.032	3.34	41043.9	5.8	9.14
11:05	10.0	8.2	28.9	4075.26	3.58	79.	16.	.914	1.032	3.39	41049.8	5.9	9.29
11:10	10.0	8.2	28.9	4078.80	3.54	79.	16.	.914	1.032	3.34	41055.5	5.7	9.04
11:15	10.0	8.2	28.9	4082.48	3.68	79.	16.	.914	1.032	3.47	41061.2	5.7	9.17
11:20	10.0	8.2	28.9	4086.18	3.70	79.	16.	.914	1.032	3.49	41066.9	5.7	9.19
11:25	10.0	8.2	28.9	4090.01	3.83	79.	17.	.914	1.035	3.63	41072.5	5.6	9.23
11:30	10.0	8.2	28.9	4093.92	3.91	79.	18.	.914	1.037	3.70	41078.1	5.6	9.30
11:35	10.0	8.2	28.9	4098.83	4.91	79.	23.	.914	1.050	4.71	41083.6	5.5	10.21
11:40	10.0	8.2	28.9	4104.54	5.71	79.	23.	.914	1.050	5.48	41089.1	5.5	10.98
11:45	10.0	8.2	28.9	4110.27	5.73	79.	23.	.914	1.050	5.50	41094.6	5.5	11.00
11:50	10.0	8.3	28.9	4116.01	5.84	79.	24.	.914	1.053	5.62	41100.0	5.4	11.02
11:55	10.0	8.4	28.9	4121.87	5.86	79.	24.	.914	1.053	5.82	41105.5	5.5	11.34
12:00	10.0	8.4	28.9	4127.71	5.84	79.	24.	.914	1.053	5.82	41111.0	5.5	11.32

Monday, February 27, 1928.

Intermediate. Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR Int. SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. L&H PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	10	266.69	--	2	2	26½	538.3	--	---	- --	--	--
10:50	1	8	26	259.97	-6.72	2	2	30	540.9	2.6	- 4.12	6.35	13.07	156.84
10:55	1	8	8½	252.30	-7.67	2	2	33½	543.4	2.5	- 5.15	6.51	14.18	170.16
11:00	1	7	20½	243.79	-8.51	2	2	37	545.9	2.5	- 6.01	6.64	15.15	181.80
11:05	1	7	0	234.67	-9.12	2	3	2½	548.4	2.5	- 6.62	6.79	15.91	190.92
11:10	1	6	10	225.28	-9.39	2	3	6	551.0	2.6	- 6.79	6.44	15.83	189.96
11:15	1	5	19	215.43	-9.85	2	3	9	553.2	2.2	- 7.65	6.97	16.82	201.84
11:20	1	4	27½	205.40	-10.03	2	3	12	555.4	2.2	- 7.83	6.99	17.02	204.24
11:25	1	4	2	194.02	-10.38	2	3	15½	557.9	2.5	- 7.88	6.73	17.11	205.32
11:30	1	3	8	182.88	-11.14	2	3	19	560.5	2.6	- 8.54	6.70	17.84	214.08
11:35	1	2	9½	169.74	-13.14	2	3	23	563.5	3.0	-10.14	7.21	20.35	244.20
11:40	1	1	17	159.27	-10.47	2	3	28	567.2	3.7	- 6.77	7.28	17.75	213.00
11:45	1	0	23	148.14	-11.13	2	3	33½	571.2	4.0	- 7.13	7.00	18.13	217.56
11:50	0	9	9	127.96	-13.18	2	4	1	575.0	3.8	- 9.38	7.22	20.40	244.80
11:55	0	8	25	121.20	- 6.76	2	4	6	578.7	3.7	- 3.06	7.64	18.98	227.76
12:00	0	8	11	115.04	- 6.16	2	4	11	582.3	3.6	- 2.56	7.72	19.04	228.48

Maximum Sendout 244.80M.Cu.Ft. Monday, February 27, 1928.

Intermediate sendout 59.0%

Low & High Press.Send.41.0%

Intermediate. Pressure

Sheet 2

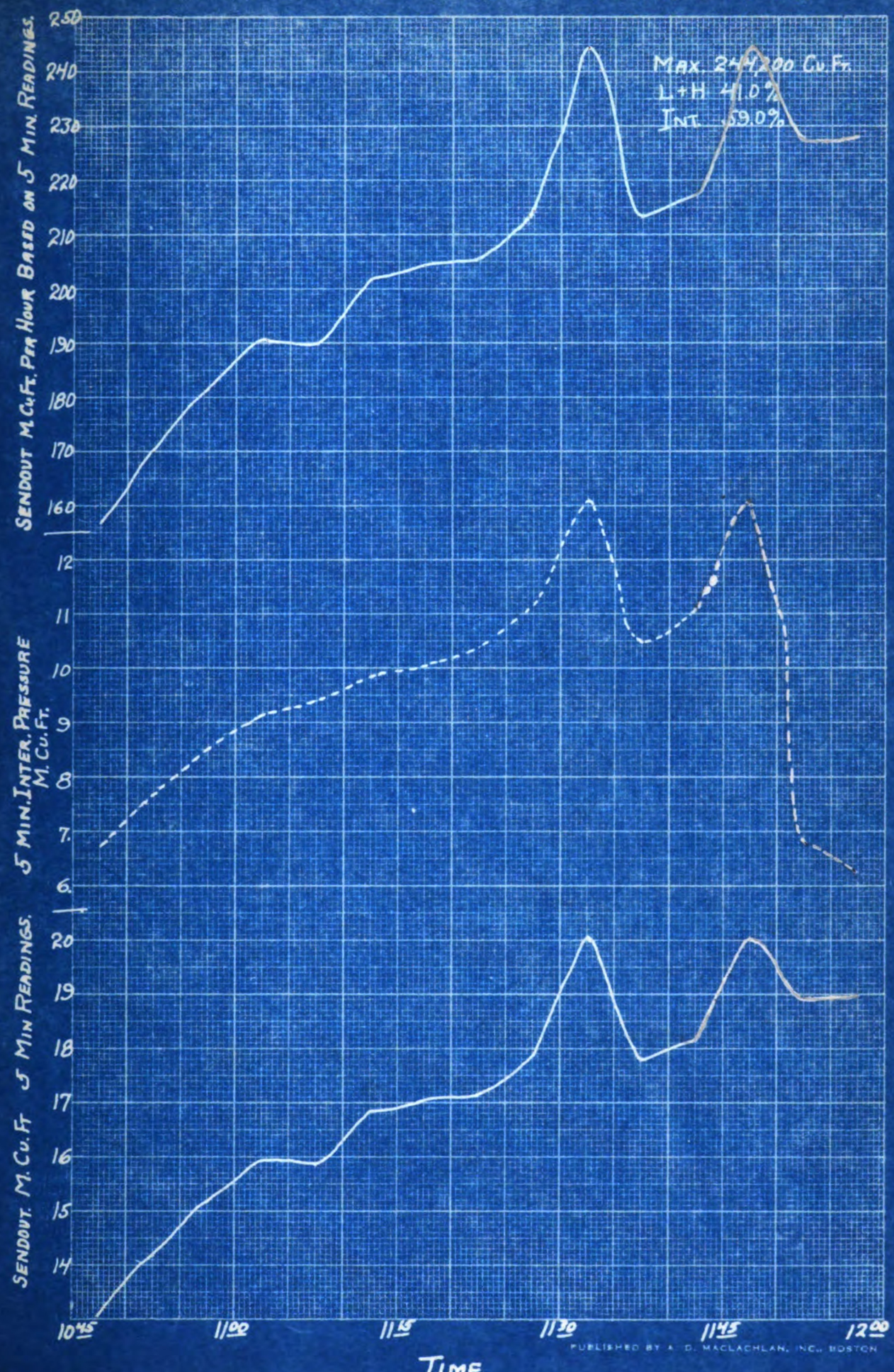
Send Out Data Sheet

PRESSURES

TIME	1 813 Buffalo	2 1417 Albert	3 1023 W. Main St.	4 710 S. Pine St.	5 1024 Isaac St.	6	7	8	9
10:45	6.8	6.4	6.6	6.6	6.9				
10:50	6.7	6.3	6.6	6.5	6.9				
10:55	6.6	6.1	6.6	6.5	6.8				
11:00	6.5	6.0	6.5	6.5	6.6				
11:05	6.4	5.9	6.5	6.4	6.6				
11:10	6.2	5.8	6.2	6.4	6.5				
11:15	6.1	5.8	6.1	6.4	6.4				
11:20	6.0	5.7	6.0	6.4	6.3				
11:25	5.9	5.6	6.0	6.3	6.2				
11:30	5.9	5.7	5.9	6.1	6.2				
11:35	5.9	5.8	5.8	6.1	6.3				
11:40	6.0	6.1	5.8	6.1	6.4				
11:45	6.1	6.2	6.0	6.1	6.6				
11:50	6.3	6.4	6.1	6.1	6.8				
11:55	6.5	6.5	6.4	6.1	6.9				
12:00	6.7	6.6	6.5	6.1	7.0				

District #9 February 27 1928

Noon Sendout Chart. Monday, Feb. 27, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.3	28.8	4897.90	--	91.	15.5	--	--	--	42783.1	--	--
10:50	10.0	8.3	28.8	4901.28	3.38	91.	15.5	.875	1.031	3.05	42789.3	6.2	9.25
10:55	10.0	8.2	28.8	4904.49	3.21	91.	15.5	.875	1.031	2.90	42795.5	6.2	9.10
11:00	10.0	8.2	28.8	4907.78	3.29	91.	15.5	.875	1.031	2.97	42801.7	6.2	9.17
11:05	10.0	8.1	28.8	4911.24	3.46	90.	15.5	.878	1.031	3.14	42807.8	6.1	9.24
11:10	10.0	8.1	28.8	4914.70	3.46	90.	15.5	.878	1.031	3.14	42813.9	6.1	9.24
11:15	10.0	8.1	28.8	4918.25	3.55	90.	16.0	.878	1.032	3.22	42820.0	6.1	9.32
11:20	10.0	8.1	28.8	4921.80	3.55	90.	16.0	.878	1.032	3.22	42826.1	6.1	9.32
11:25	10.0	8.1	28.8	4925.48	3.68	90.	16.0	.878	1.032	3.33	42832.2	6.1	9.43
11:30	10.0	8.1	28.8	4929.18	3.70	90.	16.0	.878	1.035	3.36	42838.2	6.0	9.36
11:35	10.0	8.1	28.8	4932.89	3.71	90.	17.0	.878	1.035	3.37	42844.2	6.0	9.37
11:40	10.0	8.2	28.8	4936.55	3.66	90.	17.0	.878	1.035	3.33	42850.1	5.9	9.23
11:45	10.0	8.2	28.8	4940.00	3.45	90.	17.0	.878	1.035	3.13	42856.0	5.9	9.03
11:50	10.0	8.2	28.8	4943.75	3.75	90.	17.0	.878	1.035	3.41	42862.0	6.0	9.41
11:55	10.0	8.3	28.8	4947.29	3.54	90.	16.5	.878	1.034	3.22	42828.1	6.1	9.32
12:00	10.0	8.3	28.8	4950.85	3.56	90.	16.5	.878	1.034	3.24	42834.2	6.1	9.34

Tuesday, February 28, 1928.

High Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR High SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. L&I PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	4	264.02	---	2	4	3	576.5	--	--	--	---	---
10:50	1	8	28	260.86	- 3.16	2	3	37½	574.0	- 2.5	- 5.66	11.75	14.91	178.92
10:55	1	8	21	257.87	- 2.99	2	3	33	570.9	- 3.1	- 6.09	12.20	15.19	182.28
11:00	1	8	13	254.31	- 3.56	2	3	28	567.2	- 3.7	- 7.26	12.87	16.43	197.16
11:05	1	8	4½	250.52	- 3.79	2	3	22½	563.2	- 4.0	- 7.79	13.24	17.03	204.36
11:10	1	7	26½	246.50	- 4.02	2	3	16	558.3	- 4.9	- 8.92	14.14	18.16	217.92
11:15	1	7	19	243.13	- 3.37	2.3	3	8½	552.8	- 5.5	- 8.87	14.82	18.19	218.28
11:20	1	7	11½	239.79	- 3.34	2	3	1	547.3	- 5.5	- 8.84	14.82	18.16	217.92
11:25	1	7	3½	236.23	- 3.56	2	2	31	541.6	- 5.7	- 9.26	15.13	18.69	224.28
11:30	1	6	27	232.89	- 3.34	2	2	22½	535.4	- 6.2	- 9.54	15.56	18.90	226.80
11:35	1	6	19	229.32	- 3.57	2	2	13½	528.8	- 6.6	-10.17	15.97	19.54	234.48
11:40	1	6	10½	225.50	- 3.82	2	2	4½	522.2	- 6.6	-10.42	15.83	19.65	235.80
11:45	1	6	2½	221.91	- 3.59	2	1	34	516.1	- 6.1	- 9.69	15.13	18.72	224.64
11:50	1	5	25	218.10	- 3.81	2	1	27	511.0	- 5.1	- 8.91	14.51	18.32	219.84
11:55	1	5	16½	214.32	- 3.78	2	1	22	507.3	- 3.7	- 7.48	13.02	16.80	201.60
12:00	1	5	8	210.53	- 3.79	2	1	18½	504.7	- 2.6	- 6.39	11.94	15.73	188.76

Maximum Sendout 235.80 M.Cu.Ft. Tuesday, February 28, 1928.

High Pressure Sendout 20.2%

Low & Int.Press " 79.8%

High Pressure
Sheet 2

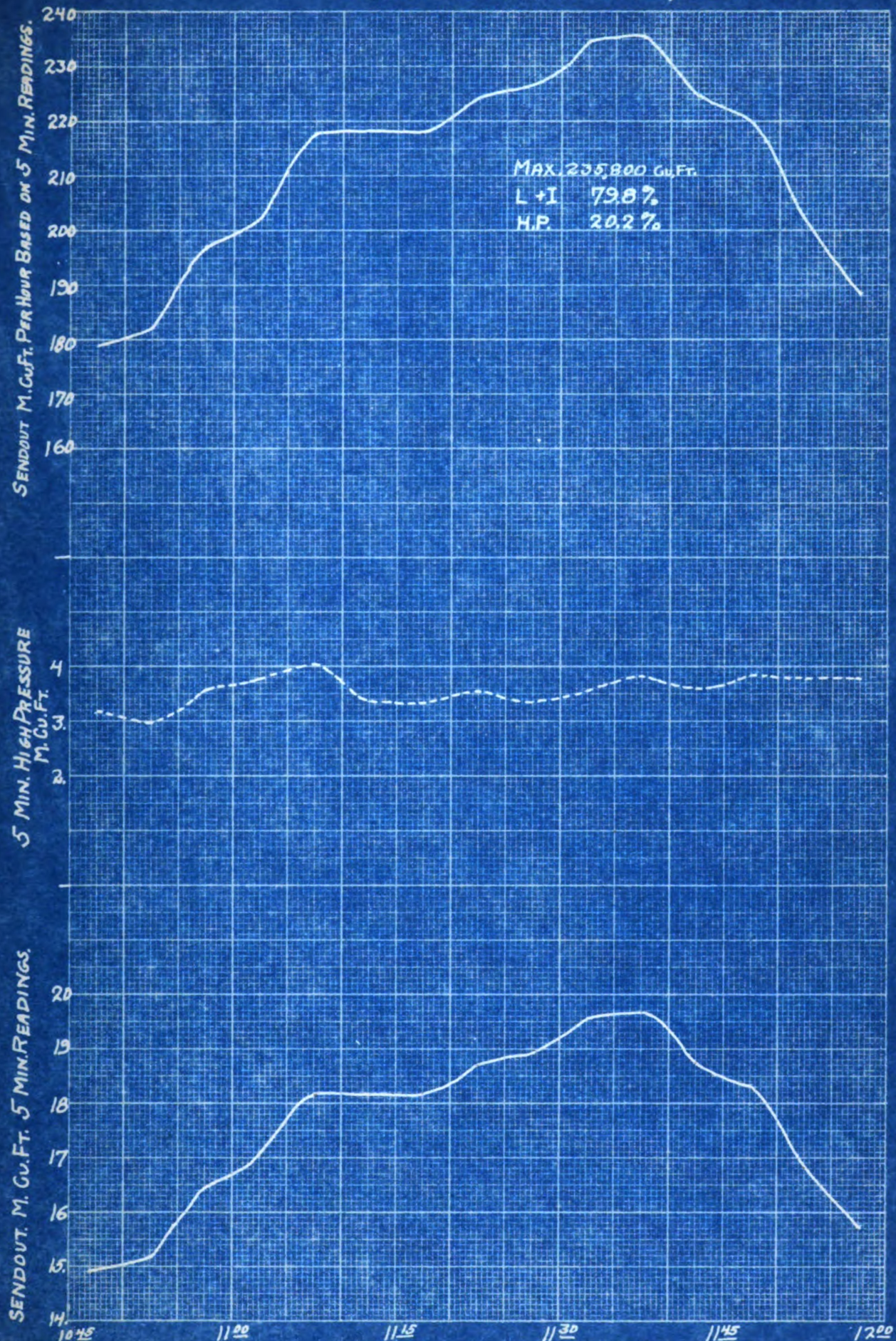
Send Out Data Sheet

PRESSURES

TIME	1 405 S. Grand Ave.	2 719 River St.	3 711 S. Capitol	4 203 E. Main St.	5 323 E. Lenawee	6	7	8	9
10:45	5.5	6.5	6.4	6.4	6.0				
10:50	5.4	6.3	6.3	6.3	5.9				
10:55	5.3	6.2	6.3	6.2	5.8				
11:00	5.2	6.1	6.2	6.1	5.7				
11:05	5.1	6.0	6.2	6.0	5.6				
11:10	5.0	6.0	6.1	6.0	5.6				
11:15	5.0	5.9	6.0	5.9	5.5				
11:20	5.0	5.8	5.8	5.8	5.5				
11:25	4.9	5.8	5.5	5.8	5.5				
11:30	5.0	5.7	5.4	5.9	5.6				
11:35	5.0	5.8	5.2	6.0	5.7				
11:40	5.1	5.8	5.6	6.2	5.9				
11:45	5.2	5.9	5.9	6.3	6.0				
11:50	5.3	6.0	6.2	6.4	6.2				
11:55	5.5	6.2	6.5	6.6	6.4				
12:00	5.7	6.3	6.6	6.7	6.5				

District # 8 February 28 192 8

Noon Sendout Chart Tuesday, Feb 28, 1928



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV.		BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS		CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
	IN	OUT						BAR. AND TEMP.	PRESS.				
10:45	7.5	7.1	29.14	9299.30	--	79.	15.	--	--	--	53537.2	--	--
10:50	7.5	7.1	29.14	9303.66	4.36	79.	15.	.921	1.030	4.14	53543.4	6.2	10.34
10:55	7.5	7.1	29.14	9307.94	4.28	79.	15.	.921	1.030	4.06	53549.7	6.3	10.36
11:00	7.5	7.1	29.14	9312.28	4.34	79.	15.	.921	1.030	4.12	53556.0	6.3	10.42
11:05	7.5	7.1	29.14	9316.66	4.38	79.	15.	.921	1.030	4.16	53562.2	6.2	10.36
11:10	7.5	7.1	29.14	9321.00	4.34	79.	15.	.921	1.030	4.12	53568.4	6.2	10.32
11:15	7.5	7.1	29.14	9325.42	4.42	79.	15.	.921	1.030	4.20	53574.6	6.2	10.40
11:20	7.8	7.3	29.14	9329.80	4.38	80.	16.	.921	1.032	4.16	53580.7	6.1	10.26
11:25	9.9	8.8	29.14	9334.04	4.24	80.	15.	.921	1.030	4.02	53586.8	6.1	10.12
11:30	10.0	8.2	29.14	9338.08	4.04	80.	15.	.921	1.030	3.83	53592.8	6.0	9.83
11:35	10.0	8.3	29.14	9342.12	4.04	80.	15.	.921	1.030	3.83	53598.8	6.0	9.83
11:40	10.0	8.3	29.14	9346.15	4.03	80.	15.	.921	1.030	3.82	53604.8	6.0	9.82
11:45	10.0	8.2	29.14	9350.14	3.99	80.	15.	.921	1.030	3.79	53610.8	6.0	9.79
11:50	10.0	8.2	29.14	9354.15	4.01	80.	15.	.921	1.030	3.81	53616.9	6.1	9.91
11:55	10.0	8.2	29.14	9358.15	4.00	80.	15.	.921	1.030	3.80	53623.1	6.2	10.00
12:00	10.0	8.2	29.14	9362.13	3.98	80.	15.	.921	1.030	3.78	53629.3	6.2	9.98

Monday , March 5th,. 1928

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR I&H SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	7	20	243.57	--	1	7	4	410.7	--	--	--	--	--
10:50	1	6	15	227.53	16.02	1	7	14	417.7	7.0	- 9.02	3.34	19.36	232.32
10:55	1	5	17	214.54	12.99	1	7	24½	425.0	7.3	- 5.69	3.06	16.05	192.60
11:00	1	4	17	200.73	13.81	1	7	35	432.4	7.4	- 6.41	3.02	16.83	201.96
11:05	1	3	15½	186.22	14.51	1	8	5½	439.5	7.1	- 7.41	3.26	17.77	213.24
11:10	1	2	13	171.20	15.02	1	8	13½	446.5	7.0	- 8.02	3.32	18.34	220.08
11:15	1	1	8½	155.38	15.82	1	8	21½	453.6	7.1	- 8.72	3.30	19.12	229.44
11:20	1	0	4	139.67	15.71	1	8	29	460.4	6.8	- 8.91	3.46	19.17	230.04
11:25	0	8	16	117.24 xx	15.43	1	9	5	466.2	5.8	- 9.63	4.32	19.75	237.00
11:30	0	7	12½	101.94	15.30	2	0	1	472.3	6.1	- 9.20	3.73	19.03	228.36
11:35	0	6	4½	84.66	17.28	2	0	5	476.3	4.0	-13.28	5.83	23.11	277.32
11:40	0	5	0	68.80	15.86	2	0	9½	480.8	4.5	-11.36	5.32	21.18	254.16
11:45	0	3	27	53.18	15.62	2	0	14	486.9	6.1	- 9.52	3.69	19.31	231.72
11:50	0	2	25	38.30	14.88	2	1	2½	493.0	6.1	- 8.78	3.81	18.69	224.28
11:55	0	1	26	25.04	13.26	2	1	12	500.0	7.0	- 6.26	3.00	16.26	195.12
12:00	--	-	--	---	---	2	1	21	506.6	6.6	- - - -	3.38	--	--

xx Chart correction 7.M Cu.Ft.

Maximum Sendout 277.32 M.Cu.Ft.

Low Pressure Sendout 19.87%

High & Intermediate 80.13%

Monday, March 5, 1928.

Low Pressure

Sheet 2

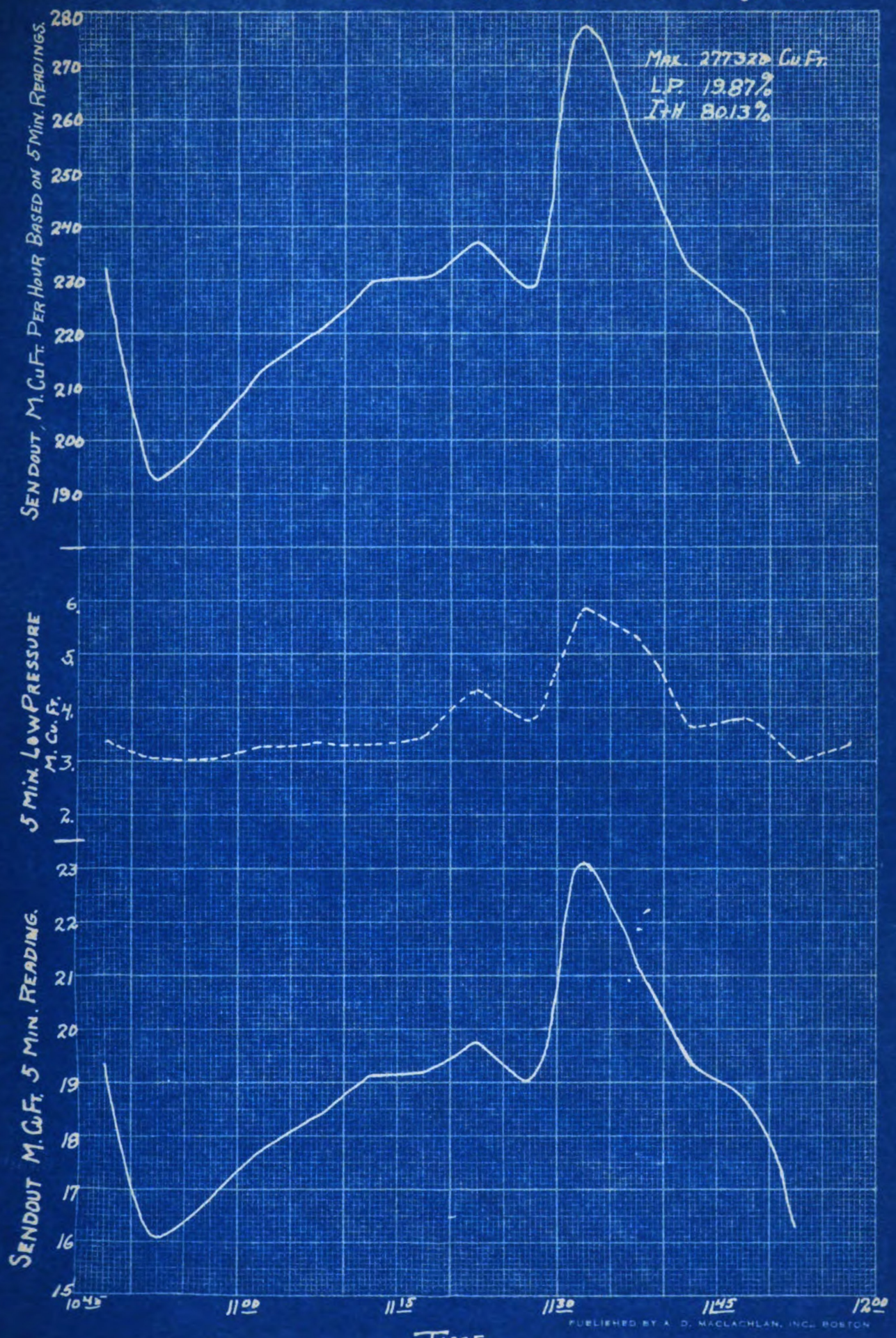
Send Out Data Sheet

PRESSURES

TIME	1 2204 Turner	2 1817 Indiana	3 720 Call St.	4 603 Ferris	5 1112 N. Larch St.	6	7	8	9
10:45	5.6	5.4	7.4	7.1	7.1				
10:50	5.6	5.3	7.3	7.0	7.0				
10:55	5.6	5.1	7.2	7.0	7.0				
11:00	5.6	5.0	7.2	6.9	7.0				
11:05	5.6	4.9	7.1	6.9	7.0				
11:10	5.5	4.8	7.1	6.9	6.9				
11:15	5.5	4.7	7.0	7.0	6.9				
11:20	5.4	4.5	7.1	7.0	6.9				
11:25	5.6	4.4	7.1	7.1	7.0				
11:30	5.7	4.3	7.2	7.2	7.0				
11:35	5.8	4.3	7.3	7.3	7.0				
11:40	6.0	4.5	7.4	7.5	7.2				
11:45	6.0	4.6	7.5	7.5	7.2				
11:50	6.1	5.0	7.6	7.5	7.2				
11:55	6.2	5.4	7.6	7.5	7.2				
12:00	6.3	5.6	7.7	7.5	7.2				

District # 10 March 5 1928

Noon Sendout Chart. Monday Mar. 5, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.2	29.26	0312.27	---	90.	17.	---	---	--	55235.9	--	--
10:50	10.0	8.2	29.26	0316.79	4.52	90.	17.	.894	1.035	4.19	55242.5	6.6	10.79
10:55	10.0	8.2	29.26	0321.15	4.36	90.	17.	.894	1.035	4.04	55249.1	6.6	10.64
11:00	10.0	8.1	29.26	0325.70	4.55	90.	17.	.894	1.035	4.22	55255.8	6.6	10.82
11:05	10.0	8.1	29.26	0330.09	4.39	90.	17.	.894	1.035	4.07	55262.3	6.6	10.67
11:10	10.0	8.1	29.26	0334.37	4.28	90.	17.	.894	1.035	3.97	55269.0	6.7	10.67
11:15	10.0	8.1	29.26	0338.93	4.56	90.	17.	.894	1.035	4.23	55275.7	6.7	10.93
11:20	10.0	8.1	29.26	0343.03	4.10	90.	16.	.894	1.032	3.80	55282.3	6.6	10.40
11:25	10.0	8.0	29.26	0347.09	4.66	90.	16.	1894	1.032	3.76	55288.9	6.6	10.36
11:30	10.0	8.0	29.26	0351.10	4.01	90.	16.	.894	1.032	3.71	55295.4	6.5	10.21
11:35	10.0	8.0	29.26	0355.57	4.47	90.	16.	.894	1.032	4.14	55301.9	6.5	10.54
11:40	10.0	8.1	29.26	0359.95	4.28	90.	16.	.894	1.032	3.97	55308.4	6.5	10.47
11:45	10.0	8.1	29.26	0364.23	4.38	90.	16.	.894	1.032	4.06	55314.9	6.5	10.56
11:50	10.0	8.1	29.26	0368.75	4.52	90.	16.	.894	1.032	4.18	55321.4	6.5	10.68
11:55	10.0	8.1	29.26	0373.02	4.37	90.	16.	.894	1.032	4.04	55327.9	6.5	10.54
12:00	10.0	8.2	29.26	0377.48	4.46	90.	16.	.894	1.032	4.13	55334.5	6.6	10.73

Tuesday, March 6. 1928.

Total Pressure
Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	MIDDLE HOLDER S	MIDDLE HOLDER R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	LARGE HOLDER S	LARGE HOLDER R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						2	4	17½	587.1	-	--	--	--	--
10:50						2	4	10	581.6	- 5.5	--	--	16.29	195.84
10:55						2	4	2	575.7	- 5.9	--	--	16.54	198.48
11:00						2	3	31	569.4	- 6.3	--	--	17.12	205.44
11:05						2	3	22	562.8	- 6.6	--	--	17.27	207.24
11:10						2	3	12½	555.8	- 7.0	--	--	17.67	212.04
11:15						2	3	2½	548.4	- 7.4	--	--	18.13	217.56
11:20						2	2	29½	540.5	- 7.9	--	--	18.30	219.60
11:25						2	2	17½	531.7	- 8.8	--	--	19.16	229.92
11:30						2	2	4½	522.2	- 9.5	--	--	19.71	236.52
11:35						2	1	29	512.4	- 9.8	--	--	20.34	244.08
11:40						2	1	16½	503.2	- 9.2	--	--	19.67	236.04
11:45						2	1	4	494.1	- 9.1	--	--	19.66	235.92
11:50						2	0	15	488.4	- 5.7	--	--	16.38	196.56
11:55						2	0	10	481.3	- 7.1	--	--	17.64	211.68
12:00						2	0	5	476.3	- 5.0	--	--	15.73	188.76

Maximum Sendout 244.08 M.Cu.Ft. Tuesday, March 6, 1928

Total Pressure

Sheet 2

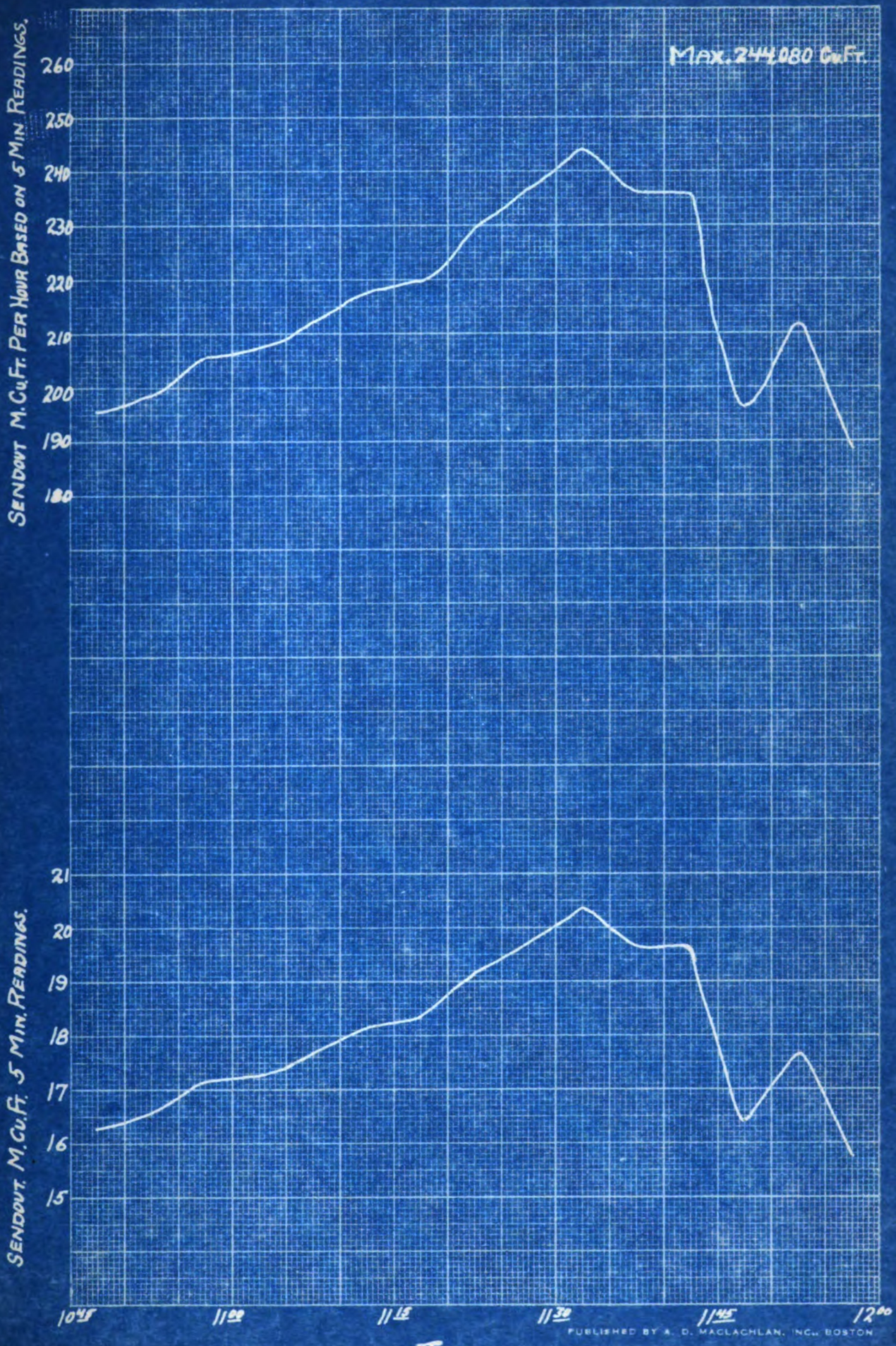
Send Out Data Sheet

PRESSURES

TIME	1 Cor. Cedar & Gd. River	2 700 Clark St.	3 630 N. Pennsylvania	4 807 E. Saginaw	5 708 N. Cedar St.	6	7	8	9
10:45	6.0	5.5	5.6	5.8	5.7				
10:50	5.9	5.4	5.5	5.8	5.6				
10:55	5.9	5.4	5.4	5.8	5.5				
11:00	5.9	5.2	5.4	5.8	5.4				
11:05	5.9	5.0	5.2	5.8	5.4				
11:10	5.9	4.9	5.1	5.8	5.3				
11:15	5.9	4.7	5.0	5.7	5.3				
11:20	5.8	4.7	4.9	5.7	5.2				
11:25	5.8	4.5	4.9	5.7	5.4				
11:30	5.9	4.6	5.0	5.9	5.5				
11:35	5.9	4.7	5.2	5.8	5.7				
11:40	5.9	4.9	5.5	5.8	6.0				
11:45	6.0	5.2	5.8	5.7	6.0				
11:50	6.0	5.7	6.0	5.6	6.1				
11:55	6.0	5.9	6.1	5.5	6.2				
12:00	6.0	6.0	6.2	5.4	6.2				

District #11 March 6 192 8

Noon Sendout Chart, Tuesday, Mar. 6, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV.		BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS		CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
	IN	OUT						BAR. AND TEMP.	PRESS.				
10:45	10.0	8.4	28.64	4845.72	--	83	16.	--	--	--	65874.7	--	--
10:50	10.0	8.3	28.64	4850.67	4.95	83.	16.	.893	1.032	4.56	65880.1	5.4	9.96
10:55	10.0	8.2	28.64	4855.48	4.81	83.	16.	.893	1.032	4.43	65885.7	5.6	10.03
11:00	10.0	8.2	28.64	4860.34	4.86	83.	16.	.893	1.032	4.48	65891.3	5.6	10.08
11:05	10.0	8.2	28.63	4865.19	4.85	83.	16.	.893	1.032	4.47	65897.0	5.7	10.17
11:10	10.0	8.2	28.63	4869.90	4.71	83.	16.	.893	1.032	4.34	65902.7	5.7	10.04
11:15	10.0	8.2	28.63	4874.74	4.84	83.	16.	.893	1.032	4.46	65908.2	5.5	9.96
11:20	10.0	8.2	28.63	4879.50	4.76	83.	16.	.893	1.032	4.38	65913.8	5.6	9.98
11:25	10.0	8.2	28.63	4884.27	4.77	83.	16.	.893	1.032	4.39	65919.4	5.6	9.99
11:30	10.0	8.2	28.62	4889.07	4.80	83.	16.	.892	1.032	4.42	65924.9	5.5	9.92
11:35	10.0	8.2	28.62	4893.93	4.86	83.	16.	.892	1.032	4.48	65930.1	5.2	9.68
11:40	10.0	8.2	28.62	4898.78	4.85	83.	16.	.892	1.032	4.47	65935.4	5.3	9.77
11:45	10.0	8.2	28.62	4903.62	4.84	83.	16.	.892	1.032	4.46	65940.8	5.4	9.86
11:50	10.0	8.3	28.62	4908.50	4.88	83.	16.	.892	1.032	4.50	65946.3	5.5	10.00
11:55	10.0	8.3	28.62	4913.38	4.88	83.	16.	.892	1.032	4.50	65951.8	5.5	10.00
12:00	10.0	8.3	28.62	4918.28	4.90	83.	16.	.892	1.032	4.52	65957.5	5.7	10.22

Monday , March 12, 1928

Intermediate Pressure
Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	15	268.92	--	2	0	11	482.4	--	--	--	--	--
10:50	1	8	24	259.08	- 9.84	2	0	14	486.9	4.5	- 5.34		15.30	183.60
10:55	1	8	3½	250.07	- 9.01	2	0	16½	490.8	3.9	- 5.11		15.14	181.68
11:00	1	7	13	240.46	- 9.61	2	1	3½	493.8	3.0	- 6.61		16.69	200.28
11:05	1	6	21	230.22	-10.24	2	1	8	497.0	3.2	- 7.04		17.21	206.52
11:10	1	5	28	219.44	-10.78	2	1	13	500.7	3.7	- 7.08		17.12	205.44
11:15	1	5	4½	208.97	-10.47	2	1	18	504.4	3.7	- 6.77		16.73	200.76
11:20	1	4	10½½	197.83	-11.14	2	1	24	508.8	4.4	- 6.74		16.72	200.64
11:25	1	3	15	186.00	-11.83	2	1	30	513.2	4.2	- 7.63		17.62	211.44
11:30	1	2	20	174.42	-11.58	2	1	35	516.8	3.6	- 7.98		17.90	214.80
11:35	1	1	23	161.95	-12.47	2	2	1	519.6	2.8	- 9.67		19.35	232.40
11:40	1	0	20½	147.00	-14.95	2	2	4	521.8	2.2	- 12.75		22.52	270.24
11:45	0	9	12	129.28	-10.72	2	2	7½	524.3	2.5	- 8.22		18.08	216.96
11:50	0	8	21	119.44	- 9.84	2	2	11½	527.3	3.0	- 6.84		16.84	202.08
11:55	0	8	6	112.30	- 7.14	2	2	15½	529.9	2.6	- 4.54		14.54	174.48
12:00	0	7	22	106.12	- 6.18	2	2	20	533.5	3.6	- 2.58		12.58	150.96

Maximum Sendout 270.24M.Cu.Ft.

Intermediate Sendout 61.21 %

High & Low Pressure 28.79 %

Monday, March 12, 1928

Intermediate Pressure

Sheet 2

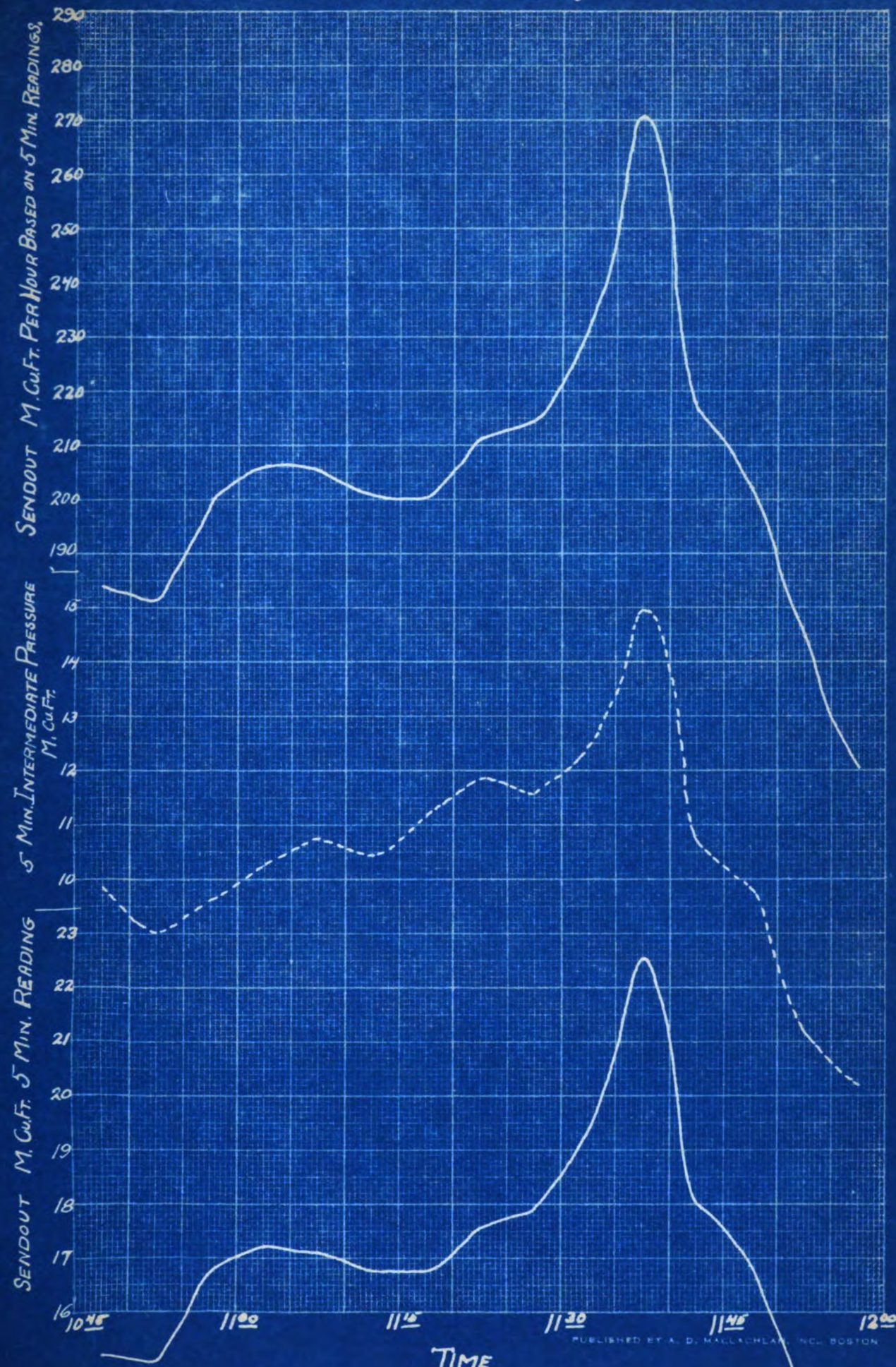
Send Out Data Sheet

PRESSURES

TIME	1 515 E. Saginaw St.	2 109 N. Pennsylvania	3 512 E. Kalamazoo	4 616 Lesher St.	5 S.E.Cor. Mich.&Cedar	6	7	8	9
10:45	5.9	5.7	5.6	5.4	5.7				
10:50	5.8	5.6	5.6	5.3	5.6				
10:55	5.8	5.5	5.5	5.1	5.5				
11:00	5.7	5.4	5.4	5.1	5.4				
11:05	5.6	5.3	5.3	5.0	5.3				
11:10	5.5	5.2	5.1	4.8	5.2				
11:15	5.4	5.2	5.1	4.7	5.2				
11:20	5.4	5.4	5.0	4.6	5.1				
11:25	5.4	5.6	4.9	4.5	5.1				
11:30	5.4	5.9	5.2	4.5	5.2				
11:35	5.5	6.0	5.4	4.7	5.4				
11:40	5.7	6.2	5.7	5.2	5.6				
11:45	5.8	6.3	5.9	5.5	5.8				
11:50	6.0	6.3	6.0	5.7	5.9				
11:55	6.2	6.4	6.1	5.9	6.0				
12:00	6.3	6.4	6.2	6.0	6.0				

District #12 March 12 192 8

Noon Sendout. Chart, Monday Mar. 12, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.1	8.0	28.35	5795.19	--	94.	14.5	.853	1.029	--	67519.2	--	--
10:50	10.1	8.0	28.35	5799.43	4.24	94.	14.5	.853	1.029	3.72	67524.5	5.3	8.82
10:55	10.1	8.0	28.36	5803.67	4.24	94.	14.5	.853	1.029	3.72	67529.9	5.4	9.12
11:00	10.1	8.0	28.36	5807.87	4.20	94.	14.5	.853	1.029	3.69	67535.3	5.4	9.09
11:05	10.1	7.9	28.35	5811.05	4.18	94.	14.5	.853	1.029	3.67	67540.6	5.3	8.97
11:10	10.1	7.9	28.35	5816.12	4.07	94.	14.0	.853	1.027	3.57	67546.0	5.4	8.97
11:15	10.1	7.9	28.35	5820.19	4.07	94.	14.0	.853	1.027	3.57	67551.4	5.4	8.97
11:20	10.1	7.9	28.35	5824.16	3.97	94.	14.0	.853	1.027	3.47	67556.8	5.4	8.87
11:25	10.1	7.9	28.35	5828.04	3.88	94.	14.0	.853	1.027	3.40	67562.0	5.2	8.60
11:30	10.1	7.9	28.36	5832.01	3.97	94.	14.0	.853	1.027	3.48	67567.0	5.0	8.48
11:35	10.1	7.9	28.36	5835.99	3.98	94.	14.0	.853	1.027	3.49	67572.0	5.0	8.49
11:40	10.1	7.9	28.36	5840.10	4.11	94.	14.0	.853	1.027	3.62	67576.8	4.8	8.42
11:45	10.1	7.9	28.36	5844.25	4.15	94.	14.0	.853	1.027	3.64	67581.5	4.7	8.34
11:50	10.1	7.9	28.36	5848.37	4.12	94.	14.0	.853	1.027	3.61	67586.3	4.8	8.41
11:55	10.1	8.0	28.36	5852.60	4.23	94.	14.0	.853	1.027	3.71	67591.2	4.9	8.61
12:00	10.1	8.0	28.36	5856.85	4.25	94.	14.0	.853	1.027	3.73	67596.0	4.8	8.53

Tuesday, March 13, 1928.

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H & I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	22	258.16	--	2	3	23½	563.9	--	---	---	----	--
10:50	1	7	24½	245.50	12.66	2	3	32	570.1	6.2	- 6.46	2.62	15.28	183.36
10:55	1	6	27	232.89	12.61	2	4	2½	576.1	6.0	- 6.61	3.12	15.73	188.76
11:00	1	6	0	220.79	12.10	2	4	11	582.3	6.2	- 5.90	2.89	14.99	179.88
11:05	1	5	0	206.97	13.82	2	4	19½	588.6	6.3	- 7.52	2.67	16.49	197.88
11:10	1	3	29	192.23	14.74	2	4	27½	594.5	5.9	- 8.84	3.07	17.81	213.72
11:15	1	2	28	177.98	14.25	2	4	35½	600.2	5.7	- 8.55	3.27	17.52	210.24
11:20	1	1	25½	163.06	14.92	2	5	5	605.5	5.3	- 9.63	3.67	18.60	223.20
11:25	1	0	20	146.80	16.26	2	5	12	610.7	5.2	-11.06	3.40	19.66	235.92
11:30	0	9	5	126.20	13.60 X	2	5	17	614.3	3.6	-10.00	4.88	18.48	231.76
11:35	0	7	28½	108.98	17.22	2	5	23½	619.0	4.7	-12.52	3.79	21.01	252.12
11:40	0	6	18	90.60	18.38	2	5	29½	623.4	4.4	-13.98	3.92	22.30	267.60
11:45	0	5	12	74.18	16.42	2	5	35½	627.8	4.4	-12.02	3.94	20.36	244.32
11:50	0	4	9½	59.11	15.07	2	6	3½	632.2	4.4	-10.67	4.01	19.08	228.96
11:55	0	3	9½	45.38	13.73	2	6	10	636.9	4.7	- 9.03	3.91	17.64	211.68
12:00	0	2	12	32.68	12.70	2	6	17	642.0	5.1	- 7.60	3.43	16.13	193.56

Maximum Sendout 267.60 M.Cu.Ft.

Low Pressure - - - 19.40%

Int. & High Press. - 80.60%

Tuesday, March 13, 1928.

Low Pressure

Sheet 2

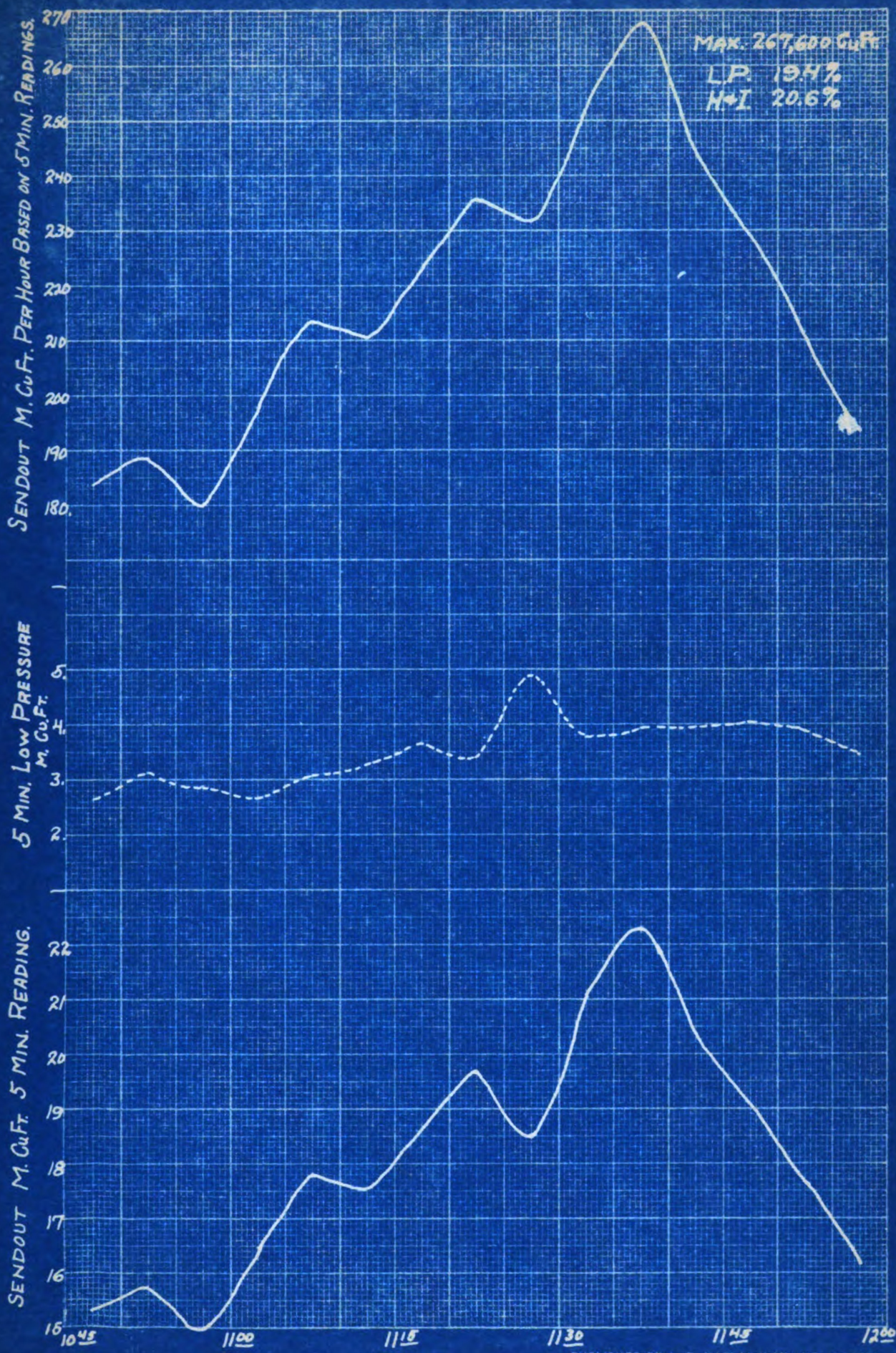
Send Out Data Sheet

PRESSURES

TIME	1 1039 S. Pennsylvania	2 801 S. Pennsylvania	3 321 S. Cedar St.	4 515 E. Elm St.	5 506 E. St. Joe.	6	7	8	9
10:45	5.5	6.0	5.6	6.2	6.0				
10:50	5.4	5.9	5.5	6.2	5.9				
10:55	5.2	5.8	5.4	6.1	5.7				
11:00	5.0	5.7	5.3	6.1	5.6				
11:05	4.9	5.5	5.2	6.1	5.4				
11:10	4.8	5.4	5.1	6.0	5.3				
11:15	4.7	5.3	5.0	6.0	5.2				
11:20	4.6	5.1	4.9	5.9	5.1				
11:25	4.5	5.1	4.8	5.8	5.1				
11:30	4.5	5.0	5.0	5.8	5.0				
11:35	4.7	5.0	5.5	5.7	5.0				
11:40	5.2	5.4	5.6	5.7	5.5				
11:45	5.6	5.8	5.8	5.8	5.9				
11:50	5.8	6.1	6.0	5.8	6.1				
11:55	5.9	6.3	6.1	5.9	6.3				
12:00	5.9	6.4	6.2	6.0	6.4				

District #13 March 13, 192 8

Noon Sendout Chart. Tuesday Mar. 13, 1928.



Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.2	28.7	0505.94	--	70.	12.	.931	1.022	--	78160.2	--	13--2
10:50	10.0	8.2	28.7	0511.11	5.17	70.	12.	.931	1.022	4.92	78166.8	6.6	11.52
10:55	10.0	8.1	28.7	0516.14	5.03	70.	12.	.931	1.022	4.78	78173.4	6.6	11.38
11:00	10.0	8.0	28.7	0521.20	5.06	70.	12.	.931	1.022	4.82	78180.0	6.6	11.42
11:05	10.0	8.0	28.7	0526.27	5.07	70.	12.	.931	1.022	4.83	78186.5	6.5	11.33
11:10	10.0	8.0	28.7	0531.38	5.11	70.	12.	.931	1.022	4.86	78192.9	6.4	11.26
11:15	10.0	8.0	28.7	0536.49	5.11	70.	13.	.931	1.025	4.87	78199.4	6.5	11.37
11:20	10.0	8.0	28.7	0541.58	5.09	70.	14.	.931	1.027	4.86	78205.9	6.5	11.36
11:25	10.0	8.0	28.7	0546.75	5.17	70.	14.	.931	1.027	4.94	78212.4	6.5	11.44
11:30	10.0	8.0-	28.7	0551.86	5.11	70.	14.	.931	1.027	4.89	78218.8	6.4	11.29
11:35	10.0	8.0	28.7	0557.03	5.17	70.	14.	.931	1.027	4.94	78225.2	6.4	11.34
11:40	10.0	8.0	28.7	0562.25	5.22	70.	14.	.931	1.027	4.99	78231.7	6.5	11.49
11:45	10.0	8.0	28.7	0567.44	5.19	70.	14.	.931	1.027	4.96	78238.2	6.5	11.46
11:50	10.0	8.1	28.7	0572.71	5.27	70.	14.	.931	1.027	5.04	78244.7	6.5	11.54
11:55	10.0	8.1	28.7	0577.97	5.26	70.	14.	.931	1.027	5.03	78251.3	6.6	11.63
12:00	10.0	8.2	28.7	0583.17	5.20	70.	14.	.931	1.027	4.97	78257.9	6.6	11.57

Monday, March 19, 1928

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H & I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	19	270.70	---	1	9	6	467.2	---	----	--	--	--
10:50	1	8	27	260.42	10.28	2	0	4	475.3	8.1	- 2.18	3.42	13.70	164.40
10:55	1	8	0	248.51	11.91	2	0	11½	483.0	7.7	- 4.21	3.68	15.59	187.08
11:00	1	7	1½	235.34	13.17	2	0	17	491.2	8.2	- 4.97	3.22	16.39	196.68
11:05	1	6	2½	221.92	13.42	2	1	9½	498.2	7.0	- 6.42	4.33	17.75	213.00
11:10	1	5	3	208.31	13.61	2	1	20½	506.2	8.0	- 5.61	3.26	16.87	202.44
11:15	1	4	1	193.57	14.74	2	1	31	513.9	7.8	- 7.04	3.67	18.41	220.92
11:20	1	2	29	178.43	15.14	2	2	3	521.1	7.2	- 7.94	4.16	19.30	231.60
11:25	1	1	24½	162.61	15.82	2	2	12½	528.1	7.0	- 8.82	4.44	20.26	243.12
11:30	1	0	27	149.92	12.69	2	2	22½	535.4	7.3	- 5.39	3.99	16.68	200.16
11:35	0	9	0	124.00	18.92	2	2	32½	542.7	7.3	-11.62	4.04	22.96	275.52
11:40	0	7	24½	107.22	16.78	2	3	4½	549.9	7.2	- 9.58	4.29	21.07	252.84
11:45	0	6	19	90.04	17.18	2	3	14½	557.2	7.3	- 9.88	4.16	21.34	256.08
11:50	0	5	17½	76.50	13.54	2	3	25	565.0	7.8	- 5.74	3.74	17.28	207.36
11:55	0	4	18	62.92	13.58	2	3	36	573.0	8.0	- 5.58	3.63	17.21	206.52
12:00	0	3	20	50.00	12.92	2	4	9	580.9	7.9	- 5.02	3.67	16.59	199.08

Maximum Sendout 275.52 M.Cu.Ft.

Low Pressure -- -- 21.26%

High & Intermediate -- 78.74%

Monday, March 19, 1928

Low Pressure

Sheet 2

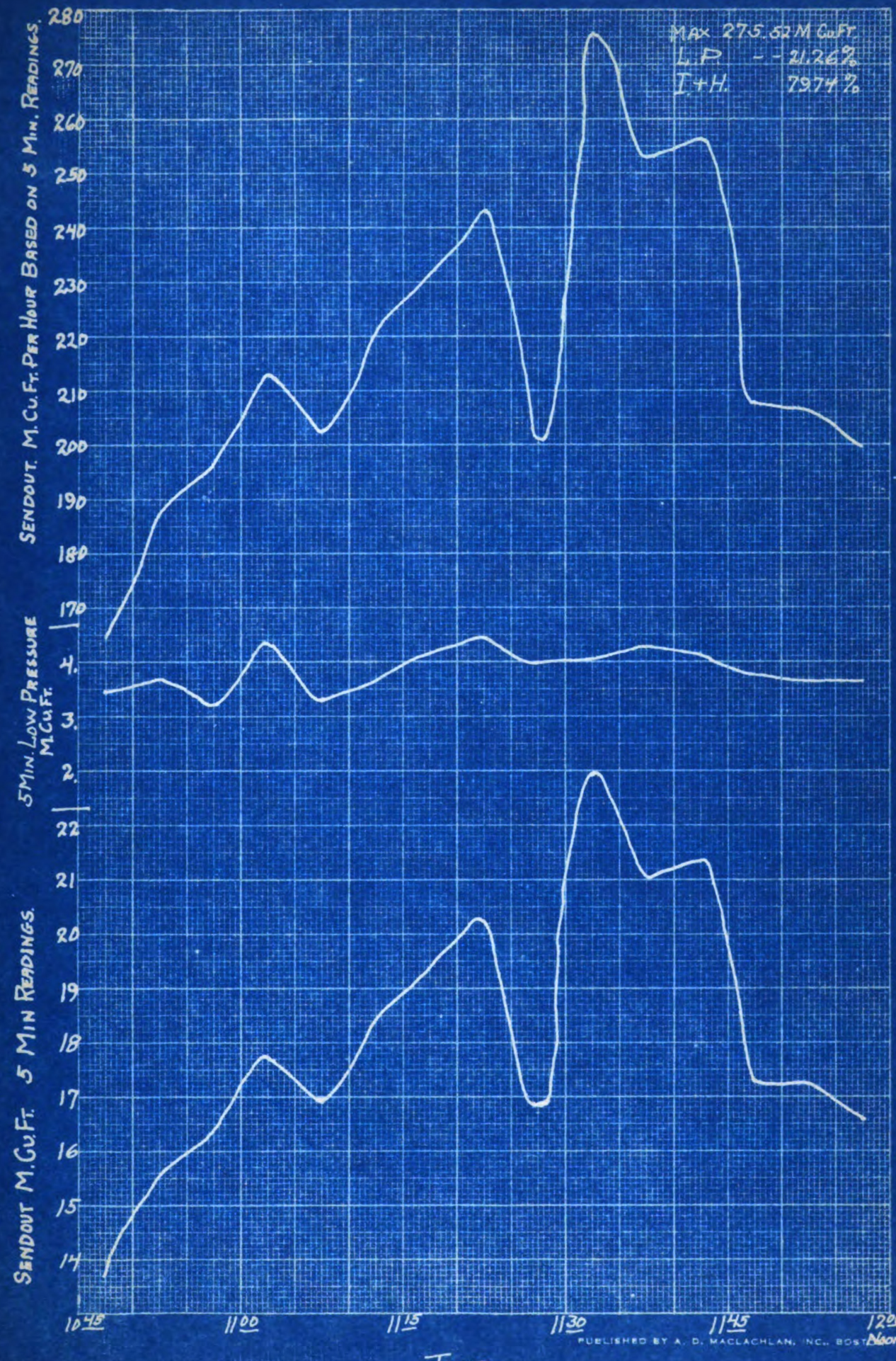
Send Out Data Sheet

PRESSURES

TIME	1 403 S. Pennsylvania	2 1027 Lathrop	3 400 S. Holmes	4 329 Regent	5 1240 McCullough	6	7	8	9
10:45	6.1	5.2	5.9	5.6	5.3				
10:50	6.1	5.0	5.9	5.6	5.2				
10:55	6.0	4.9	5.8	5.5	5.0				
11:00	6.0	4.8	5.8	5.5	4.7				
11:05	5.9	4.8	5.7	5.4	4.4				
11:10	5.7	5.0	5.6	5.1	4.3				
11:15	5.6	5.6	5.5	5.1	4.2				
11:20	5.6	6.1	5.3	5.0	4.1				
11:25	5.5	6.4	5.2	4.9	4.2				
11:30	5.4	6.5	5.1	4.8	4.6				
11:35	5.6	6.5	5.0	4.7	5.0				
11:40	5.9	6.6	5.3	4.9	5.4				
11:45	6.0	6.6	5.5	5.2	5.6				
11:50	6.2	6.7	5.8	5.4	5.7				
11:55	6.3	6.7	5.9	5.6	5.8				
12:00	6.4	6.5	6.0	5.7	5.9				

District #14 March 19 192 8

Noon Sendout Chart Monday March 19, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.1	28.8	1412.65	--	76.	10.5	.918	1.019	---	79962.8	--	--
10:50	10.0	8.1	28.8	1416.73	4.08	76.	10.5	.918	1.019	3.82	79969.1	6.3	10.12
10:55	10.0	8.1	28.8	1421.00	4.27	76.	10.5	.918	1.019	4.00	79975.3	6.2	10.20
11:00	10.0	8.0	28.8	1425.19	4.19	76.	11.0	.918	1.020	3.92	79981.5	6.2	10.12
11:05	10.0	8.1	28.8	1429.40	4.21	76.	11.0	.918	1.020	3.94	79987.8	6.3	10.24
11:10	10.0	8.0	28.8	1433.26	3.86	76.	10.0	.918	1.018	3.60	79994.1	6.3	9.90
11:15	10.0	8.0	28.8	1437.19	3.93	76.	10.5	.918	1.019	3.68	80000.3	6.2	9.88
11:20	10.0	7.9	28.8	1441.12	3.93	76.	10.5	.918	1.019	3.68	80006.5	6.2	9.88
11:25	10.0	7.9	28.8	1445.31	4.19	76.	11.0	.918	1.020	3.92	80012.7	6.2	10.12
11:30	10.0	7.9	28.8	1449.35	4.04	76.	11.0	.918	1.020	3.78	80018.9	6.2	9.98
11:35	10.0	7.9	28.8	1453.45	4.10	76.	11.0	.918	1.020	3.84	80025.1	6.2	10.04
11:40	10.0	8.0	28.8	1457.64	4.19	76.	11.0	.918	1.020	3.92	80031.2	6.1	10.02
11:45	10.0	8.0	28.8	1461.77	4.13	76.	11.0	.918	1.020	3.87	80037.2	6.0	9.87
11:50	10.0	8.0	28.8	1465.89	4.12	76.	11.0	.918	1.020	3.86	80043.3	6.1	9.96
11:55	10.0	8.1	28.8	1470.08	4.29	76.	11.0	.918	1.020	4.02	80049.4	6.1	10.12
12:00	10.0	8.1	28.8	1474.20	4.12	76.	11.0	.918	1.020	3.86	80055.6	6.2	10.06

Tuesday, March 20, 1928.

Intermediate Pressure
Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF OR Int. SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. H&L PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	27½	260.64	---	2	4	27	594.1	---	---	--	---	--
10:50	1	8	4	250.30	10.34	2	4	30½	596.7	2.6	- 7.74	7.52	17.86	214.32
10:55	1	7	13	240.46	9.84	2	4	35	599.4	2.7	- 7.14	7.50	17.34	208.08
11:00	1	6	19½	229.54	10.92	2	5	00½	602.2	2.8	- 8.12	6.92	18.24	218.88
11:05	1	5	24	217.66	11.88	2	5	5	605.5	3.3	- 8.58	7.34	18.82	225.84
11:10	1	5	0	206.97	10.69	2	5	8½	608.1	2.6	- 8.09	7.30	17.99	215.88
11:15	1	4	3½	194.68	12.29	2	5	12½	611.0	2.9	- 9.39	6.98	19.27	231.24
11:20	1	3	4	181.10	13.58	2	5	16½	613.9	2.9	-10.68	6.98	20.56	246.72
11:25	1	2	6	169.18	12.92	2	5	20	616.5	2.6	-10.32	7.52	20.44	245.28
11:30	1	1	8	155.26	12.92	2	5	23½	619.0	2.5	-10.42	7.48	20.40	244.80
11:35	1	0	8	141.45	13.81	2	5	26½	621.2	2.2	-11.61	7.84	21.65	259.80
11:40	0	9	0	124.00	10.45	2	5	29½	623.4	2.2	- 8.25	7.82	18.27	219.24
11:45	0	8	6	112.74	11.26	2	5	33	626.0	2.6	- 8.66	7.27	18.53	222.36
11:50	0	7	14	102.60	10.14	2	5	36½	628.5	2.5	- 7.64	7.46	17.60	211.20
11:55	0	6	22½	92.36	10.24	2	6	2½	631.4	2.9	- 7.34	7.22	17.46	209.52
12:00	0	6	0	82.58	9.78	2	6	7½	635.0	3.6	- 6.18	6.46	16.24	194.88

Maximum Sendout 259.80 M.Cu.Ft. Tuesday, March 20, 1928.

Intermediate -- -- -- 60.95%

High & Low -- -- -- 39.05%

Intermediate Pressure

Sheet 2

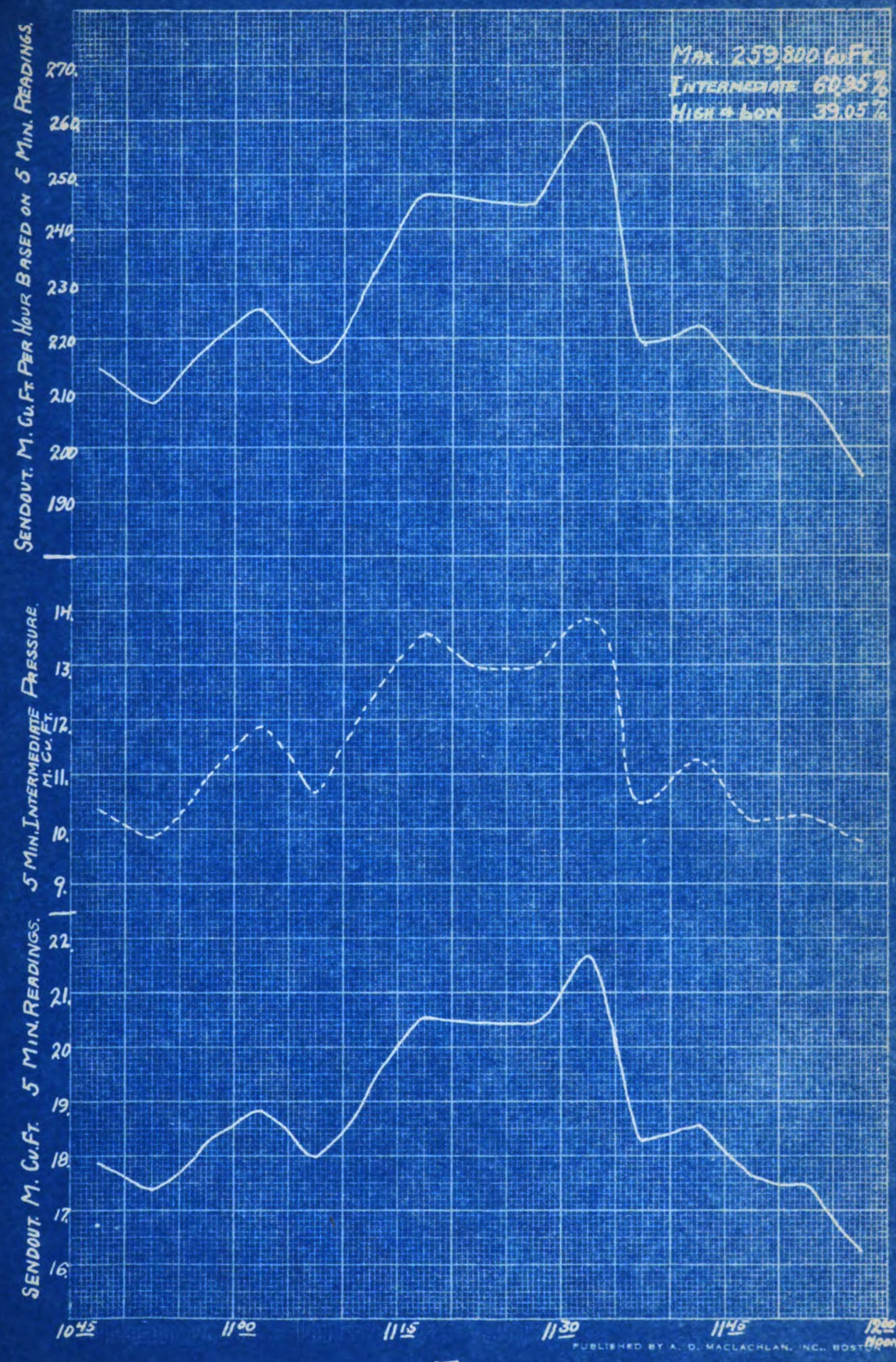
Send Out Data Sheet

PRESSURES

TIME	1 1513 Boston Blvd.	2 1015 Moores Riv.	3 2318 Rundle	4 1032 Kelsey	5 1122 Hammond	6	7	8	9
10:45	5.7	6.2	5.7	5.8	5.6				
10:50	5.6	6.2	5.7	5.8	5.6				
10:55	5.5	6.1	5.6	5.7	5.6				
11:00	5.4	6.0	5.5	5.6	5.5				
11:05	5.2	5.9	5.4	5.5	5.4				
11:10	5.1	5.7	5.3	5.4	5.2				
11:15	5.0	5.6	5.2	5.3	5.2				
11:20	5.0	5.5	5.0	5.2	5.2				
11:25	4.9	5.5	4.9	5.1	5.1				
11:30	5.2	5.4	4.9	5.1	5.0				
11:35	5.4	5.4	4.9	5.4	5.0				
11:40	5.6	5.8	5.2	5.6	5.2				
11:45	5.8	6.0	5.4	5.8	5.2				
11:50	5.8	6.2	5.6	5.9	5.4				
11:55	5.9	6.3	5.7	6.0	5.4				
12:00	6.0	6.4	5.8	6.0	5.5				

District #16 March 20 192 8

Moon Sendout Chart. Tuesday, March 20, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.1	8.3	28.18	5383.55	--	84.	11.	.875	1.020	---	90341.9	--	--
10:50	10.0	8.4	28.18	5387.92	4.37	84.	11.	.875	1.020	3.90	90348.0	6.1	10.0
10:55	10.0	8.4	28.18	5392.27	4.35	84.	11.	.875	1.020	3.88	90354.1	6.1	9.98
11:00	10.0	8.3	28.18	5396.66	4.39	84.	11.	.875	1.020	3.92	90360.1	6.0	9.92
11:05	10.0	8.2	28.18	5401.04	4.38	84.	11.	.875	1.020	3.91	90366.2	6.1	10.01
11:10	10.0	8.2	28.18	5405.40	4.36	84.	11.	.875	1.020	3.89	90372.2	6.0	9.89
11:15	10.0	8.2	28.17	5409.74	4.34	84.	11.	.875	1.020	3.87	90378.1	5.9	9.77
11:20	10.0	8.2	28.17	5414.13	4.39	84	11.	.875	1.020	3.92	90384.0	5.9	9.82
11:25	10.0	8.2	28.17	5418.48	4.35	84.	11.	.875	1.020	3.88	90389.9	5.9	9.78
11:30	10.0	8.15	28.17	5422.86	4.38	84.	11.	.875	1.020	3.91	90395.8	5.9	9.81
11:35	9.9	8.2	28.17	5427.24	4.38	84.	11.	.875	1.020	3.91	90401.5	5.7	9.61
11:40	9.9	8.2	28.16	5431.61	4.37	84.	11.	.875	1.020	3.90	90407.2	5.7	9.60
11:45	9.9	8.2	28.16	5436.00	4.39	84.	11.	.875	1.020	3.92	90413.1	5.9	9.82
11:50	9.9	8.3	28.16	5440.36	4.36	84.	11.	.875	1.020	3.89	90418.9	5.8	9.69
11:55	9.9	8.3	28.16	5440.36	4.36	84.	11.	.875	1.020	3.89	90424.7	5.8	9.69
12:00	9.9	8.3	28.16	5449.12	4.40	84.	11.	.875	1.020	3.93	90430.5	5.8	9.73

Monday, March 26th. 1928.

Total Pressure

Sheet 1

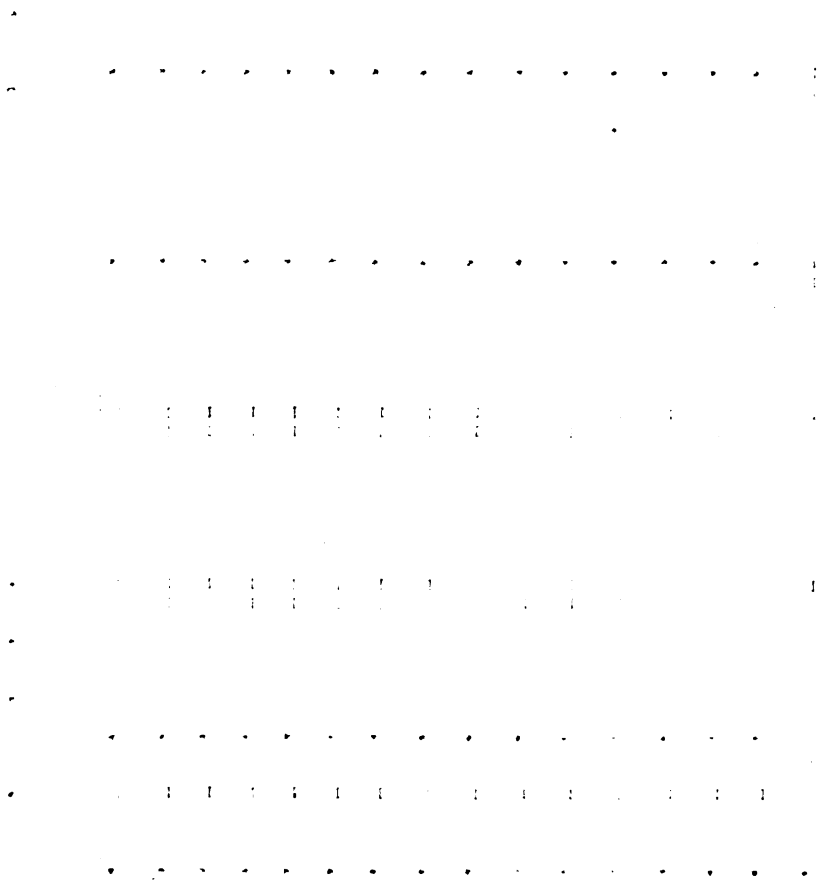
Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						2	8	21	700.4	--	--	--	--	--
10:50						2	8	16	696.7	- 3.7	--	--	13.70	164.40
10:55						2	8	9½	692.0	- 4.7	--	--	14.68	176.16
11:00						2	8	2½	686.8	- 5.2	--	--	15.12	181.44
11:05						2	7	33	681.5	- 5.3	--	--	15.31	183.72
11:10						2	7	25	675.6	- 5.9	--	--	15.79	189.48
11:15						2	7	16	669.0	- 6.6	--	--	16.37	196.44
11:20						2	7	7	662.4	- 6.6	--	--	16.42	197.04
11:25						2	6	34½	654.9	- 7.5	--	--	17.28	207.36
11:30						2	6	24	647.2	- 7.7	--	--	17.51	210.12
11:35						2	6	13	639.1	- 8.1	--	--	17.71	212.52
11:40						2	6	2	631.0	- 8.1	--	--	17.70	212.40
11:45						2	5	29	623.0	- 8.0	--	--	17.82	213.84
11:50						2	5	20	616.5	- 6.5	--	--	16.19	194.28
11:55						2	5	11	609.9	- 6.6	--	--	16.29	195.48
12:00						2	5	4	604.8	- 5.1	--	--	14.83	177.96

Maximum Sendout 213.84 M.Cu.Ft. Monday March 26,1928.

Total Pressure

Sheet 2



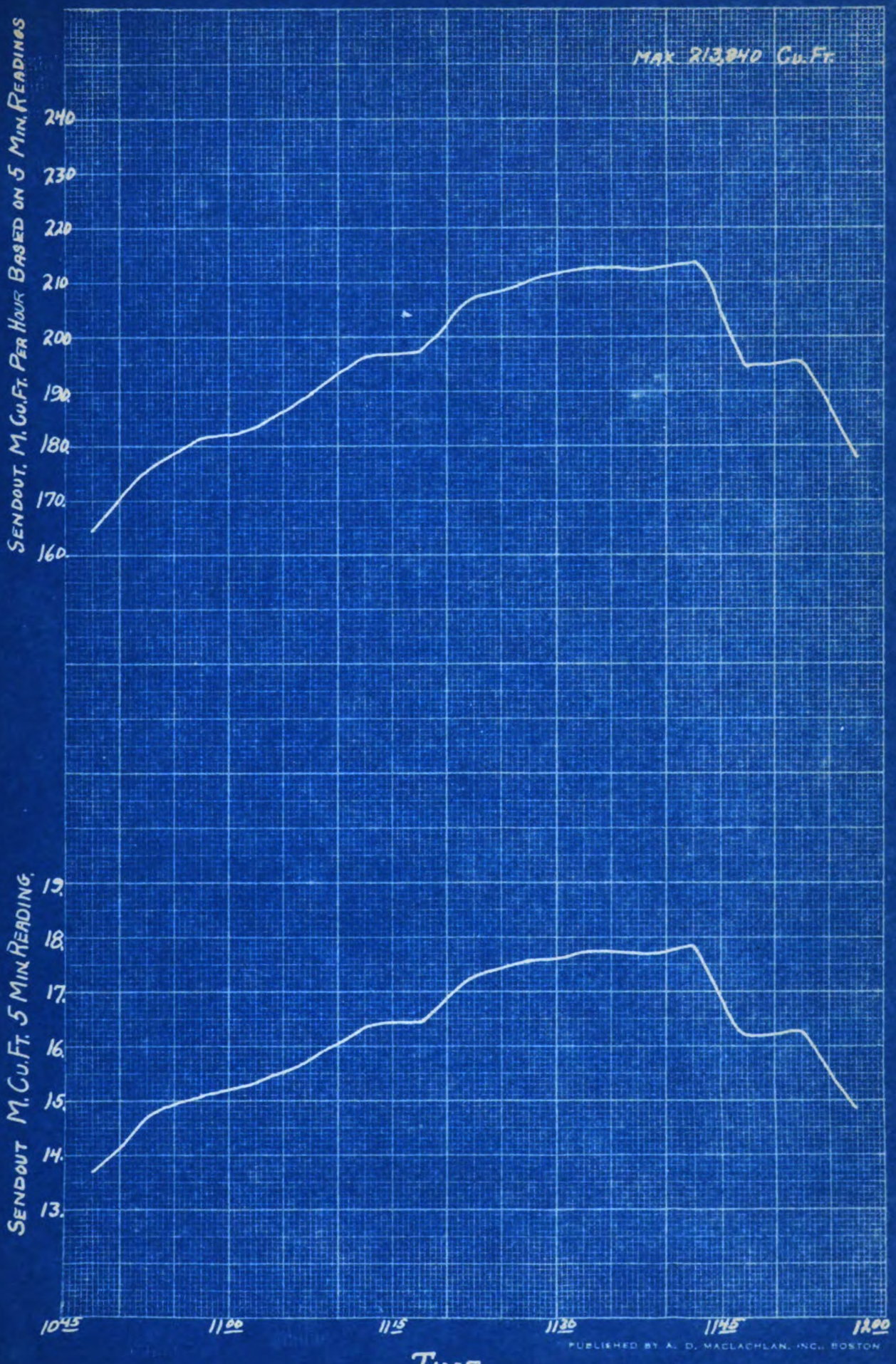
Send Out Data Sheet

PRESSURES

TIME	1 1111 E. Mt. Hope	2 504 E. Mt. Hope	3 1524 S. Pennsylvania	4 410 Greenlawn	5	6	7	8	9
10:45	5.7	5.6	5.2	5.8					
10:50	5.7	5.5	5.2	5.8					
10:55	5.7	5.3	5.1	5.7					
11:00	5.6	5.1	5.0	5.6					
11:05	5.4	5.0	4.8	5.4					
11:10	5.2	4.9	4.7	5.3					
11:15	5.0	4.8	4.6	5.2					
11:20	5.0	4.8	4.5	5.0					
11:25	5.0	4.8	4.4	4.9					
11:30	4.9	5.0	4.4	4.9					
11:35	4.9	5.4	4.6	5.0					
11:40	5.1	5.7	5.0	5.3					
11:45	5.4	5.8	5.2	5.5					
11:50	5.6	5.9	5.3	5.8					
11:55	5.8	6.0	5.4	5.9					
12:00	6.0	6.0	5.5	6.0					

District #17 March 26 1928

Noon Sendout Chart. Monday, March 26, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	7.5	7.0	29.0	5773.81	--	71.	12.	.938	1.022	--	14269.4	--	--
10:50	7.5	7.0	29.0	5778.04	4.23	71.	12.	.938	1.022	4.06	14275.9	6.5	10.56
10:55	7.7	7.2	29.0	5782.24	4.20	71.	12.	.938	1.022	4.03	14282.6	6.7	10.73
11:00	9.8	9.0	29.0	5786.10	3.86	71.	12.	.938	1.022	3.70	14288.9	6.3	10.00
11:05	9.8	7.9	29.0	5789.63	3.53	71.	12.	.938	1.022	3.38	14295.6	6.7	10.08
11:10	9.8	8.0	29.0	5793.18	3.55	71.	12.	.938	1.022	3.40	14302.1	6.5	9.90
11:15	9.8	8.0	29.0	5796.70	3.52	71.	12.	.938	1.022	3.37	14308.7	6.6	9.97
11:20	9.8	8.9	29.0	5800.10	3.40	71.	12.	.938	1.022	3.25	14315.3	6.6	9.85
11:25	9.8	7.9	29.0	5803.63	3.53	71.	12.	.938	1.022	3.39	14322.0	6.7	10.09
11:30	9.8	7.8	29.0	5807.15	3.52	71.	12.	.938	1.022	3.37	14328.6	6.6	9.97
11:35	9.8	7.9	29.0	58106.3	3.48	71.	12.	.938	1.022	3.34	14335.2	6.6	9.94
11:40	9.8	7.9	29.0	5814.13	3.50	71.	12.	.938	1.022	3.35	14341.6	6.4	9.75
11:45	9.8	8.0	29.0	5817.71	3.58	71.	12.	.938	1.022	3.43	14147.9	6.3	9.73
11:50	9.8	8.0	29.0	5821.22	3.51	71.	12.	.938	1.022	3.36	14154.2	6.3	9.66
11:55	9.8	8.1	29.0	5824.74	3.52	72.	13.	.935	1.025	3.38	14559.6	6.4	9.78
12:00	9.8	8.2	29.0	5828.27	3.53	72.	13.	.935	1.025	3.39	14557.1	6.5	9.89

Monday, April 9, 1928.

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H & I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	7	17	242.24	---	1	8	19½	452.0	--	--	----	--	--
10:50	1	6	19	229.32	-12.92	1	8	28	459.2	7.2	- 5.72	3.36	16.28	195.36
10:55	1	5	21	216.32	-13.00	1	9	4½	465.7	6.5	- 6.50	4.23	17.23	206.76
11:00	1	4	23	203.41	-12.91	1	0	0	471.3	5.6	- 7.31	4.40	17.31	207.72
11:05	1	3	24½	190.23	-13.18	2	0	5½	476.8	5.5	- 7.68	4.58	17.76	213.12
11:10	1	2	25	176.65	-13.58	2	0	11	482.4	5.6	- 7.98	4.30	17.98	215.76
11:15	1	1	24	162.39	-14.26	2	0	15½	489.1	6.7	- 7.56	3.27	17.53	210.36
11:20	1	0	24	148.58	-13.81	2	1	5	494.8	5.7	- 8.11	4.15	17.96	215.52
11:25	0	9	9	127.96	-13.62	2	1	12	500.0	5.2	- 8.42	4.89	18.51	222.12
11:30	0	8	4	111.96	-16.00	2	1	20	505.8	5.8	-10.20	4.17	20.17	242.04
11:35	0	6	29	95.44	-16.52	2	1	28	511.7	5.9	-10.62	4.04	20.56	246.72
11:40	0	5	24	79.36	-16.08	2	1	36	517.6	5.9	-10.18	3.75	19.93	239.16
11:45	0	4	20	63.80	-15.56	2	2	5½	522.9	5.3	-10.26	4.53	19.99	239.88
11:50	0	3	18	49.12	-14.68	2	2	13	528.4	5.5	- 9.18	4.16	18.84	226.08
11:55	0	2	20	36.20	-12.92	2	2	21	534.3	5.9	- 7.02	3.88	17.80	213.60
12:00	0	1	22½	23.50	-12.70	2	2	28½	539.8	5.5	- 7.20	4.39	17.09	205.08

Maximum Sendout 246.72 M.Cu.Ft.

Low Pressure -- 22.6%

High & Intermediate - 77.4%

Monday, April 9, 1928.

Low Pressure

Sheet 2

Send Out Data Sheet

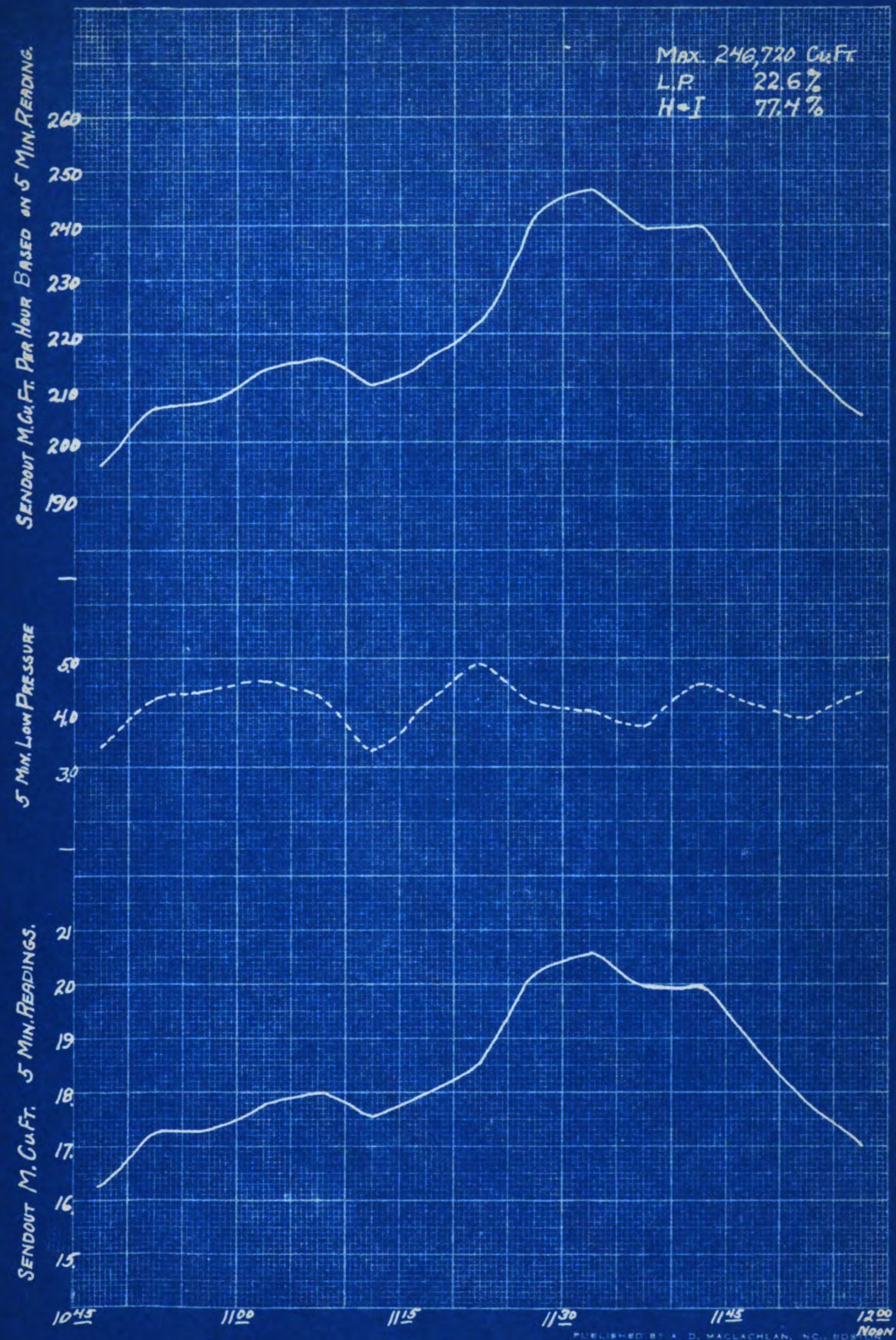
PRESSURES

TIME	1 Plant Gov.	2 Top of Lane	3 Willow St. Tap	4 418 W. Willow	5 218 W. Willow	6 201 W. Gr.River.	7	8	9
10:45	7.0	7.0	6.8	6.8	6.8	6.5			
10:50	7.0	7.0	6.8	6.8	6.8	6.5			
10:55	7.2	7.1	7.0	7.0	6.8	6.5			
11:00	9.0	8.5	8.4	8.4	7.4	6.5			
11:05	7.9	7.7	7.6	7.6	7.3	6.5			
11:10	8.0	7.8	7.6	7.6	7.3	7.0			
11:15	8.0	7.8	7.6	7.6	7.4	7.0			
11:20	7.9	7.7	7.6	7.6	7.4	6.9			
11:25	7.9	7.7	7.6	7.6	7.4	6.9			
11:30	7.8	7.7	7.6	7.6	7.4	6.9			
11:35	7.9	7.7	7.6	7.6	7.4	7.0			
11:40	7.9	7.6	7.6	7.6	7.5	7.0			
11:45	8.0	7.6	7.6	7.6	7.6	7.1			
11:50	8.0	7.7	7.6	7.6	7.5	7.2			
11:55	8.1	7.8	7.8	7.8	7.8	7.2			
12:00	8.2	7.8	7.8	7.8	7.8	7.3			

Monday, April 9,1928.

Low Pressures Sheet 3

Noon Sendout Chart. Monday, April 9, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	10.0	8.2	29.06	1190.05	---	79.	14.0	.919	1.027	--	26267.0	--	---
10:50	10.0	8.2	29.06	1193.93	3.88	79.	14.0	.919	1.027	3.66	26273.4	6.4	10.06
10:55	10.0	8.1	29.06	1197.78	3.85	79.	14.0	.919	1.027	3.63	26279.7	6.3	9.93
11:00	10.0	8.0	29.06	1201.64	3.86	79.	14.0	.919	1.027	3.64	26286.0	6.3	9.94
11:05	10.0	7.9	29.06	1205.55	3.91	79.	14.5	.919	1.029	3.69	26292.3	6.3	9.99
11:10	10.0	7.9	29.06	1209.40	3.85	79.	14.5	.919	1.029	3.63	26298.6	6.3	9.93
11:15	10.0	7.9	29.06	1213.12	3.62	79.	14.0	.919	1.027	3.41	26304.9	6.3	9.71
11:20	10.0	7.9	29.06	1216.97	3.85	79.	14.0	.919	1.027	3.63	26311.2	6.3	9.93
11:25	10.0	7.9	29.06	1220.65	3.68	79.	14.0	.919	1.027	3.47	26317.4	6.2	9.67
11:30	10.0	7.9	29.05	1224.40	3.75	79.	14.0	.919	1.027	3.54	26323.5	6.1	9.64
11:35	10.0	8.0	29.05	1228.20	3.80	79.	14.0	.919	1.027	3.58	26329.6	6.1	9.68
11:40	10.0	8.0	29.04	1232.07	3.87	79.	14.0	.919	1.027	3.65	26335.7	6.1	9.75
11:45	10.0	8.0	29.04	1235.91	3.84	79.	14.0	.919	1.027	3.62	26341.8	6.1	9.72
11:50	10.0	8.1	29.04	1239.83	3.92	79.	14.5	.919	1.029	3.70	26347.9	6.1	9.80
11:55	10.0	8.2	29.04	1243.72	3.89	79.	14.5	.919	1.029	3.67	26354.1	6.2	9.87
12:00	10.0	8.2	29.04	1247.59	3.87	79.	14.5	.919	1.029	3.65	26360.3	6.2	9.85

Monday, April 16th., 1928.

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. ORI & H SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	7	23½	245.16	11.83	2	0	12	483.9	--	--	---	---	---
10:50	1	6	28	233.33	11.83	2	0	16½	490.6	6.7	- 5.13	3.36	15.19	182.28
10:55	1	6	2½	221.99	11.34	2	1	9	497.8	7.2	- 4.14	2.73	14.07	168.84
11:00	1	5	5½	209.41	12.58	2	1	18½	504.8	7.0	- 5.58	2.94	15.52	186.24
11:05	1	4	8	196.69	12.72	2	1	28	511.7	6.9	- 5.82	3.09	15.81	189.72
11:10	1	3	7½	182.66	14.03	2	1	36	517.6	5.9	- 8.13	4.03	18.06	216.72
11:15	1	2	6	168.18	14.48	2	2	6	523.3	5.7	- 8.78	4.01	18.49	221.88
11:20	1	1	4	153.48	14.70	2	2	14	529.1	5.8	- 8.90	4.13	18.83	225.96
11:25	1	0	2	138.88	14.60	2	2	22	535.0	5.9	- 8.70	3.77	18.37	220.44
11:30	0	8	17 x	117.68 x	14.20	2	2	30	540.9	5.9	- 8.30	3.74	17.94	215.28
11:35	0	7	11½	101.50	16.18	2	2	37½	546.3	5.4	-10.78	4.28	20.46	245.52
11:40	0	6	6	85.32	16.18	2	3	7	551.7	5.4	-10.78	4.35	20.53	246.36
11:45	0	5	2½	69.90	15.42	2	3	15½	558.0	6.3	- 9.12	3.42	18.84	226.08
11:50	0	4	3	56.32	13.58	2	3	24	564.3	6.3	- 7.28	3.50	17.08	204.96
11:55	0	3	5½	43.52	12.80	2	3	33	570.9	6.6	- 6.20	3.27	16.07	192.84
12:00	0	2	9	31.36	12.16	2	4	4	577.2	6.3	- 5.86	3.55	15.71	188.52

Maximum Sendout 246.36 M.Cu.Ft.

Low Pressure -- -- 20.75%

High & Intermediate -- - 79.25%

Monday, April 16, 1928.

Low Pressure

Sheet 2

Send Out Data Sheet

PRESSURES

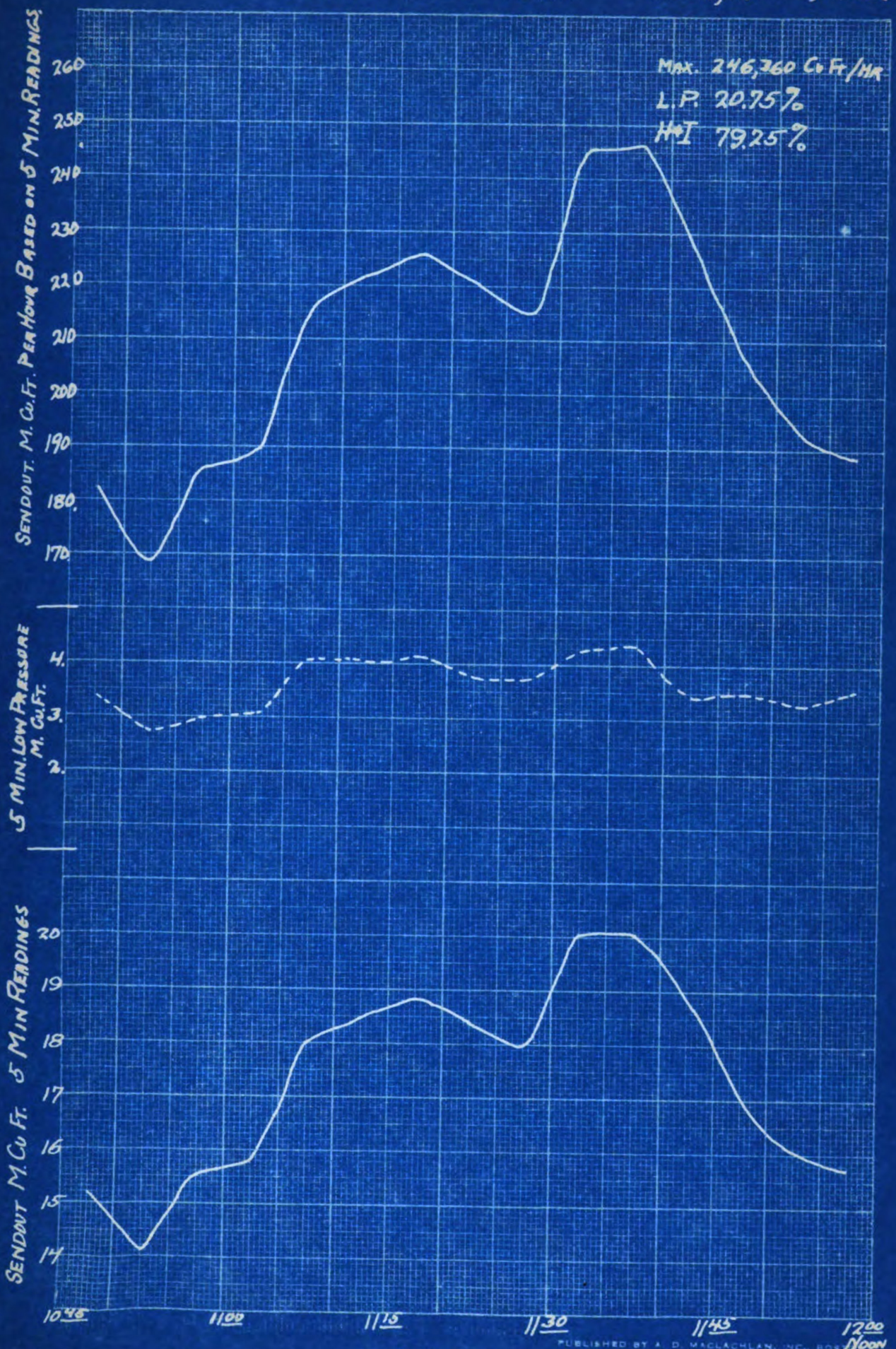
TIME	1 Plant Gov.	2 Top of Lane	3 Willow St.	4 418 W. Willow.	5 326 W. Willow.	6 218 W. Willow.	7 1229 N. Capitol.	8 1131 N. Capitol.	9
10:45	8.2	7.7	7.7	7.7	7.4	7.5	7.5	7.2	
10:50	8.2	7.7	7.7	7.7	7.3	7.4	7.4	7.2	
10:55	8.1	7.7	7.7	7.7	7.3	7.4	7.4	7.2	
11:00	8.0	7.6	7.7	7.7	7.2	7.3	7.3	7.2	
11:05	7.9	7.6	7.6	7.6	7.2	7.2	7.2	7.2	
11:10	7.9	7.6	7.6	7.6	7.1	7.1	7.1	7.1	
11:15	7.9	7.5	7.4	7.4	7.2	7.1	7.1	7.1	
11:20	7.9	7.5	7.3	7.3	7.3	7.1	7.1	7.1	
11:25	7.9	7.5	7.4	7.4	7.3	7.2	7.2	7.2	
11:30	7.9	7.5	7.4	7.4	7.4	7.3	7.3	7.3	
11:35	8.0	7.6	7.6	7.6	7.5	7.3	7.3	7.4	
11:40	8.0	7.6	7.6	7.6	7.5	7.4	7.4	7.4	
11:45	8.0	7.6	7.6	7.6	7.6	7.4	7.4	7.4	
11:50	8.1	7.7	7.7	7.7	7.6	7.5	7.5	7.4	
11:55	8.2	7.7	7.7	7.7	7.7	7.5	7.5	7.4	
12:00	8.2	7.8	7.7	7.7	7.6	7.6	7.6	7.4	

246.36 M.Cu.Ft./Hr.
11:35-11:40 A.M.

Monday, April 16th. 1928.

Low Pressures Sheet 3

Noon Sendout Chart. — Monday, April 16, 1928.



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Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	7.4	7.2	28.5	7766.85	--	84.	13.	.886	1.025	--	39725.5	--	--
10:50	7.5	7.2	28.5	7771.23	4.38	84.	13.	.886	1.025	3.98	39731.3	5.8	9.78
10:55	7.5	7.2	28.5	7775.83	4.60	84.	14.	.886	1.027	4.19	39737.2	5.9	10.09
11:00	7.5	7.2	28.5	7780.10	4.27	84.	14.	.886	1.027	3.89	39742.9	5.7	9.59
11:05	9.4	8.0	28.5	7784.50	4.40	84.	14.	.886	1.027	4.01	39748.6	5.7	9.71
11:10	9.8	8.0	28.5	7788.27	3.77	84.	12.	.886	1.022	3.42	39754.3	5.7	9.12
11:15	9.8	8.0	28.5	7792.06	3.79	84.	12.	.886	1.022	3.44	39760.1	5.8	9.24
11:20	9.8	8.0	28.5	7795.69	3.63	84.	12.	.886	1.022	3.29	39765.9	5.8	9.09
11:25	9.8	8.0	28.5	7799.31	3.62	84.	12.	.886	1.022	3.28	39771.5	5.6	8.88
11:30	9.8	8.0	28.5	7803.00	3.69	84.	12.	.886	1.022	3.35	39777.2	5.7	9.05
11:35	9.9	8.0	28.5	7806.66	3.66	84.	12.	.886	1.022	3.32	39782.8	5.6	8.92
11:40	9.9	8.0	28.5	7810.34	3.68	84.	12.	.886	1.022	3.34	39788.5	5.7	9.04
11:45	9.9	8.1	28.5	7813.90	3.56	84.	12.	.886	1.022	3.23	39794.3	5.8	9.03
11:50	9.9	8.2	28.5	7817.60	3.70	84.	12.	.886	1.022	3.35	39800.2	5.9	9.25
11:55	9.9	8.2+	28.5	7821.40	3.80	84.	12.	.886	1.022	3.45	39806.1	5.9	9.35
12:00	9.9	8.4	28.5	7825.28	3.88	84.	12.	.886	1.022	3.52	39812.1	6.0	9.52

Tuesday, April 24, 1928.

Low. Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H & I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. LOW PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	17	256.09	---	1	8	10½	443.9	--	---	----	---	--
10:50	1	7	18	242.68	-14.41	1	8	18	450.6	6.7	- 7.71	3.08	17.49	209.88
10:55	1	6	20½	230.00	-12.68	1	8	26	457.7	7.1	- 5.58	2.99	15.67	188.04
11:00	1	5	20½	215.87	-14.13	1	9	3	464.2	6.5	- 7.63	3.09	17.22	206.64
11:05	1	4	20	202.07	-13.80	1	9	7	468.2	4.0	- 9.80	5.71	19.51	234.12
11:10	1	3	17	186.89	-15.18	2	0	2	473.3	5.1	- 10.08	4.02	19.20	230.40
11:15	1	2	13½	171.47	-15.42	2	0	6	477.3	4.0	- 11.42	5.24	20.66	247.92
11:20	1	1	6	154.37	-17.10	2	0	10	481.3	4.0	- 13.10	5.09	22.19	266.28
11:25	0	9	14	130.16	x -17.21	2	0	14	486.9	5.6	- 11.61	3.28	20.49	245.88
11:30	0	8	7½	113.50	-16.66	2	1	0	491.2	4.3	- 12.36	4.75	21.41	256.92
11:35	0	6	29	95.44	-18.06	2	1	5½	495.2	4.0	- 14.06	4.92	22.98	275.76
11:40	0	5	15½	75.52	-19.92	2	1	12½	500.4	5.2	- 14.72	3.84	23.76	285.12
11:45	0	4	10	59.30	-16.22	2	1	20½	506.2	5.8	- 10.42	3.23	19.45	233.40
11:50	0	3	7	44.28	-15.02	2	1	27	511.0	4.8	- 10.22	4.45	19.47	233.64
11:55	0	2	5½	29.82	-14.46	2	1	35	516.8	5.8	- 8.66	3.55	18.01	216.12
12:00	0	2	3½	28.94	-00.88	2	1	27	511.0	-5.8	- 6.68	----	16.20	194.20

Maximum Sendout 285.12 M.Cu.Ft.

Low Pressure Sendout -- 20.63%

High & Intermediate -- 79.37%

Tuesday, April 24, 1928

Low Pressure

Sheet 2

Send Out Data Sheet

PRESSURES

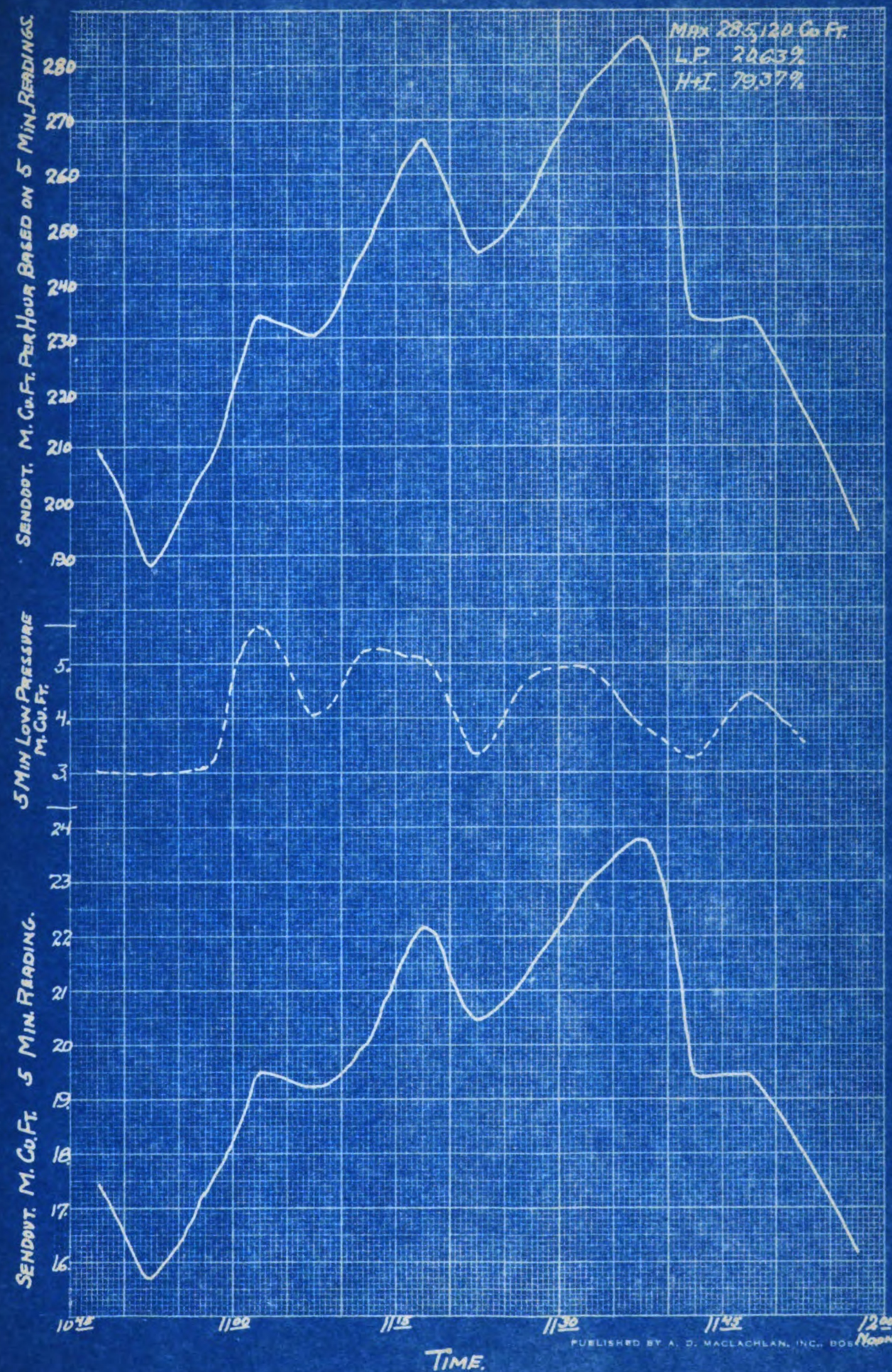
TIME	1 Paint Gov.	2 Head of Lane	3 Willow St.	4 1011 N. Capitol	5 900 N. Capitol	6 811 N. Capitol	7 711 N. Capitol.	8 601 N. Capitol.	9
10:45	7.2	6.8	6.8	6.0	5.9	5.9	5.9	5.8	
10:50	7.2	6.8	6.8	6.0	5.9	5.9	5.9	5.7	
10:55	7.2	6.8	6.8	6.0	5.9	5.9	5.9	5.7	
11:00	7.2	6.9	6.9	5.9	5.9	5.8	5.8	5.7	
11:05	8.0	7.4	7.4	5.9	5.9	5.9	5.9	5.8	
11:10	8.0	7.5	7.4	6.0	6.0	5.9	5.8	5.7	
11:15	8.0	7.7	7.5	6.2	6.1	5.9	5.8	5.7	
11:20	8.0	7.7	7.6	6.2	6.1	5.9	5.9	5.7	
11:25	8.0	7.7	7.6	6.2	6.1	5.9	5.9	5.7	
11:30	8.0	7.7	7.5	6.2	6.1	5.9	5.9	5.7	
11:35	8.0	7.7	7.5	6.2	6.1	6.0	5.9	5.8	
11:40	8.0	7.8	7.6	6.2	6.1	6.0	6.0	5.9	
11:45	8.1	7.8	7.6	6.3	6.2	6.1	6.0	6.0	
11:50	8.2	7.8	7.7	6.3	6.2	6.2	6.1	6.1	
11:55	8.3	8.0	7.9	6.5	6.4	6.3	6.3	6.2	
12:00	8.4	8.2	8.1	6.6	6.4	6.4	6.4	6.4	

Max. 285.12 M.Cu.Ft.
11:35-11:40 A.M.
Low Press. 20.63% or 57,024 Cu.Ft.

Tuesday, April 24, 1928.

Low Pressures Sheet 3

NOON SENDOUT CHART — TUESDAY, APRIL 24, 1928.



PUBLISHED BY A. D. MACLACHLAN, INC., BOSTON

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45						3	0	8	732.3	--	--	---	----	--
10:50						2	9	1	716.0		--	---	---	--
10:55						2	9	1	713.4	- 2.6	---	---	12.78	153.36
11:00						2	8	32½	708.8	- 4.6	---	---	15.00	180.00
11:05						2	8	25	703.3	- 5.5	---	---	15.81	189.72
11:10						2	8	16½	697.0	- 6.3	---	---	16.85	202.20
11:15						2	8	5½	689.0	- 8.0	---	---	18.29	219.48
11:20						2	7	32½	681.1	- 7.9	---	---	18.35	220.20
11:25						2	7	21	672.7	- 8.4	---	---	18.45	221.40
11:30						2	7	9½	664.3	- 8.4	---	---	18.85	226.20
11:35						2	6	35½	655.6	- 8.7	---	---	18.99	227.80
11:40						2	6	23	646.4	- 9.2	---	---	19.40	232.80
11:45						2	6	11	637.6	- 8.8	---	---	19.11	229.32
11:50						2	6	1	630.3	- 7.3	---	---	17.35	208.20
11:55						2	5	30½	624.2	- 6.1	---	---	16.22	194.64
12:00						2	5	22½	618.3	- 5.9	---	---	15.70	188.40

Maximum Sendout 232.80 M.Cu.Ft.
11:35 / 11:40

Tuesday, May 1, 1928.

Total Pressure

Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	12.0	8.0	28.66	3713.32	--	80.	17.	.903	1.035	--	51449.4	--	---
10:50	10.0	8.0	28.66	3717.36	4.04	80.	17.	.903	1.035	3.78	51455.6	6.2	9.98
10:55	10.0	8.0	28.66	3721.62	4.26	80.	17.	.903	1.035	3.98	51461.8	6.2	10.18
11:00	10.0	8.0	28.66	3726.11	4.49	80.	17.	.903	1.035	4.20	51468.0	6.2	10.40
11:05	10.0	8.0	28.66	3730.50	4.39	80.	17.	.903	1.035	4.11	51474.2	6.2	10.31
11:10	9.9	8.0	28.66	3735.16	4.66	80.	17.	.903	1.035	4.35	51480.4	6.2	10.55
11:15	9.9	8.0	28.66	3739.64	4.48	80.	17.	.903	1.035	4.19	51486.5	6.1	10.29
11:20	9.8	8.0	28.66	3744.18	4.54	80.	17.	.903	1.035	4.25	51492.7	6.2	10.45
11:25	9.8	8.0	28.66	3748.40	4.22	80.	17.	.903	1.035	3.95	51498.8	6.1	10.05
11:30	9.8	8.0	28.66	3753.06	4.66	80.	17.	.903	1.035	4.35	51504.9	6.1	10.45
11:35	9.8	8.0	28.66	3757.45	4.39	81.	17.	.900	1.035	4.09	51511.1	6.2	10.29
11:40	9.8	8.1	28.66	3761.85	4.40	81.	17.	9900	1.035	4.10	51517.2	6.1	10.20
11:45	9.8	8.1	28.66	3766.37	4.52	81.	17.	.900	1.035	4.21	51523.3	6.1	10.31
11:50	9.8	8.1	28.66	3770.50	4.13	81.	17.	.900	1.035	3.85	51529.5	6.2	10.05
11:55	9.8	8.2	28.66	3774.60	4.10	81.	17.	.900	1.035	3.82	51535.8	6.3	10.12
12:00	9.8	8.2	28.66	3778.25	3.65	81.	17.	.900	1.035	3.40	51542.2	6.4	9.80

Tuesday, May 1, 1928.

Total Pressure

Sheet 1

Send Out Data Sheet

PRESSURES

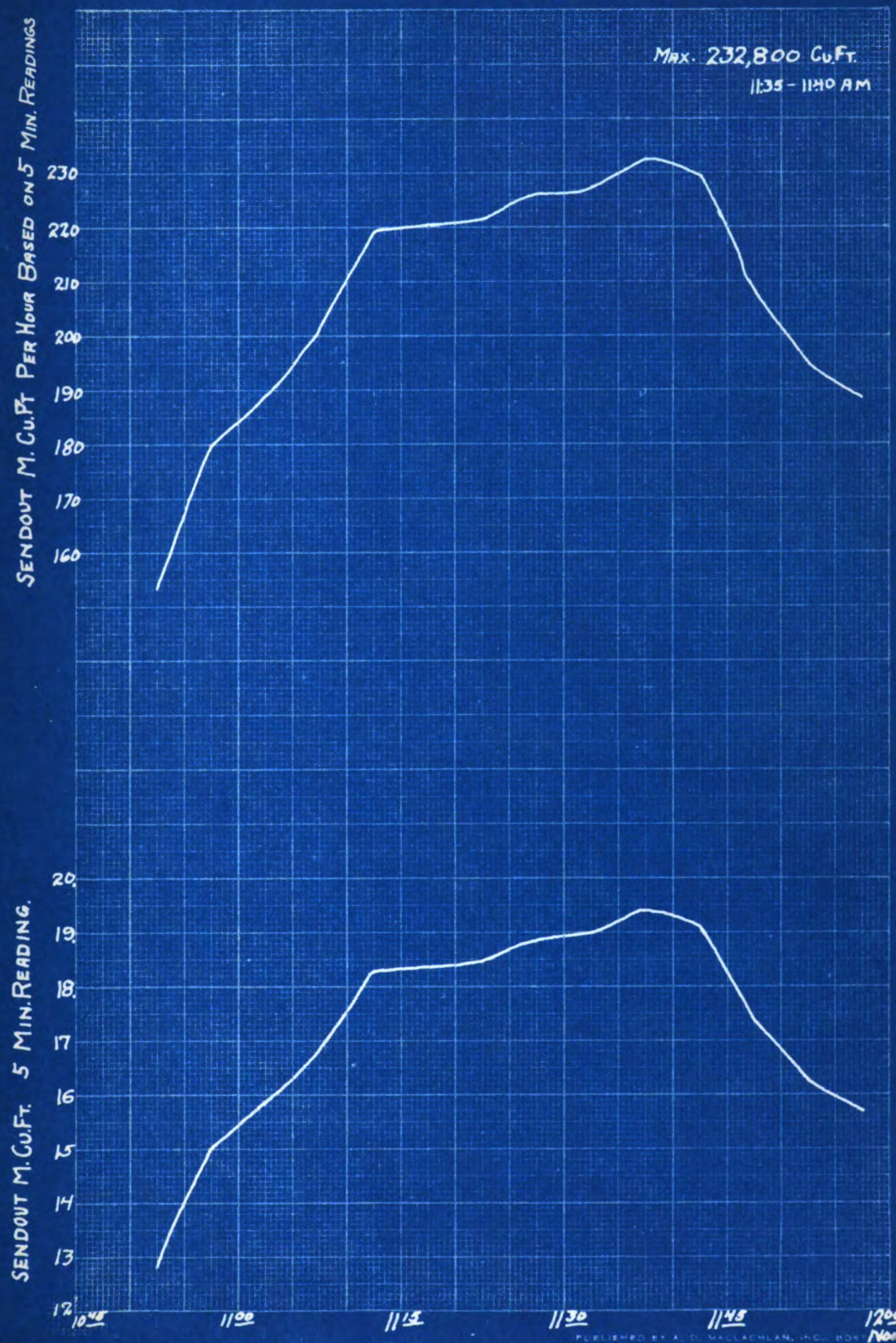
TIME	1 Plant Gov.	2 Top of hill	3 Willow St. Drip	4 1211 N. Capitol	5 122 W. Gr. River	6 426 E. Gr. River	7 510 E. Gr. River.	8 924 E. Gr. River	9
10:45	8.0	8.0	7.9	7.5	7.1	6.1	5.8	5.6	
10:50	8.0	8.8	7.7	7.5	7.0	6.1	5.8	5.5	
10:55	8.0	7.7	7.7	7.4	7.0	6.0	5.8	5.5	
11:00	8.0	7.7	7.7	7.4	7.0	6.1	5.8	5.4	
11:05	8.0	7.7	7.7	7.4	7.0	6.1	5.8	5.3	
11:10	8.0	7.7	7.7	7.4	6.9	6.1	5.8	5.1	
11:15	8.0	7.7	7.7	7.3	6.9	6.1	5.8	5.0	
11:20	8.0	7.7	7.7	7.3	6.9	6.1	5.8	4.8	
11:25	8.0	7.7	7.7	7.3	6.9	6.1	5.8	4.7	
11:30	8.0	7.7	7.7	7.3	7.0	6.1	5.9	4.6	
11:35	8.0	7.7	7.7	7.3	7.0	6.1	5.9	4.5	
11:40	8.1	7.7	7.7	7.4	7.0	6.1	6.0	4.5	
11:45	8.1	7.7	7.7	7.4	7.1	6.1	6.1	4.5	
11:50	8.1	7.8	7.8	7.5	7.2	6.1	6.1	4.5	
11:55	8.2	7.9	7.9	7.5	7.2	6.1	6.1	4.8	
12:00	8.2	8.0	8.0	7.6	7.3	6.2	6.1	5.2	

Max. 232.80M.Cu.Ft.

Tuesday, May 1, 1928.

Total Pressures Sheet 3

Noon Sendout Chart Tuesday, May 1, 1928



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Send Out Data Sheet

TIME	PRESSURE AT P. GOV. IN Inch Hg.	PRESSURE AT P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	11.5		29.2	8673.77	--	90	13.5	.895	1.026	--	61471.2	--	--
10:50	11.5		29.2	8678.07	4.30	90	13.5	.895	1.026	3.95	61478.1	6.9	10.85
10:55	11.5		29.2	8682.22	4.15	90	13.5	.895	1.026	3.81	61485.0	6.9	10.71
11:00	11.5		29.2	8686.47	4.25	90.	13.5	.895	1.026	3.90	61492.0	7.0	10.90
11:05	11.5		29.2	8690.93	4.46	90.	13.5	.895	1.026	4.09	61498.8	6.8	10.89
11:10	11.5		29.2	8695.25	4.32	90.	13.5	.895	1.026	3.96	61505.7	6.9	10.86
11:15	11.5		29.2	8699.37	4.12	90.	13.5	.895	1.026	3.78	61512.6	6.9	10.68
11:20	11.4		29.2	8703.45	4.08	90.	13.5	.895	1.026	3.74	61519.5	6.9	10.64
11:25	11.3		29.2	8707.83	4.38	90.	13.5	.895	1.026	4.02	61526.4	6.9	10.92
11:30	11.3		29.2	8712.04	4.21	90.	13.5	.895	1.026	3.86	61533.0	6.6	10.46
11:35	11.3		29.2	8716.56	4.52	90.	13.5	.895	1.026	4.15	61539.7	6.7	10.85
11:40	11.4-		29.2	8720.95	4.39	90.	13.5	.895	1.026	4.03	61546.5	6.8	10.83
11:45	11.7		29.2	8725.37	4.42	90.	13.5	.895	1.026	4.06	61553.2	6.7	10.76
11:50	11.7+		29.2	8730.17	4.80	90.	14.5	.895	1.029	4.42	61559.9	6.7	11.12
11:55	11.8		29.2	8734.96	4.79	90.	14.5	.895	1.029	4.40	61566.8	6.9	11.30
12:00	11.9		29.2	8739.60	4.64	90.	14.5	.895	1.029	4.27	61573.8	7.0	11.27

Monday, May 7, 1928

Low Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR H&I SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. Low PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	8	16	255.64	--	1	3	33½	325.0	--	---	--	--	--
10:50	1	7	17	242.24	13.40	1	4	7½	333.4	8.4	- 5.00	2.45	15.85	190.20
10:55	1	6	17½	228.65	13.59	1	4	19	341.4	8.0	- 5.59	2.71	16.30	195.60
11:00	1	5	17	214.54	14.09	1	4	31½	350.1	8.7	- 5.39	2.20	16.29	195.48
11:05	1	4	15	199.84	14.70	1	5	5½	359.2	9.1	- 5.60	1.79	16.49	197.88
11:10	1	3	11	184.22	15.62	1	5	18	367.3	8.1	- 7.52	2.76	18.38	220.56
11:15	1	2	6	168.18	16.04	1	5	29½	375.4	8.1	- 7.94	2.58	18.62	223.42
11:20	1	1	½	151.92	16.26	1	6	3	383.4	8.0	- 8.26	2.64	18.90	226.80
11:25	0	9	10	128.30	16.62	1	6	15½	392.2	8.8	- 7.82	2.12	18.74	224.88
11:30	0	8	4	111.96	16.34	1	6	28	400.9	8.7	- 7.64	1.76	18.10	217.20
11:35	0	6	26	94.12	17.84	1	7	1	408.6	7.7	- 10.14	3.15	20.99	251.88
11:40	0	5	17	76.28	17.84	1	7	13	417.0	8.4	- 9.44	2.43	20.27	243.24
11:45	0	4	8	58.52	17.76	1	7	25	425.4	8.4	- 9.36	2.36	20.12	241.44
11:50	0	3	1	41.68	16.84	1	7	37½	434.2	8.8	- 8.04	2.32	19.16	229.92
11:55	0	1	29	26.36	15.32	1	8	9½	443.1	8.9	- 6.42	2.40	17.72	212.64
12:00	0	1	10	18.00	8.36	1	8	12	445.2	2.1	- 6.26	---	17.53	210.36

Maximum sendout 251.88 M.Cu.Ft.
Low Pressure sendout - 13.16%
High & Intermediate - 86.84%

Monday, May 7, 1928.

Low Pressure
Sheet 2

Send Out Data Sheet

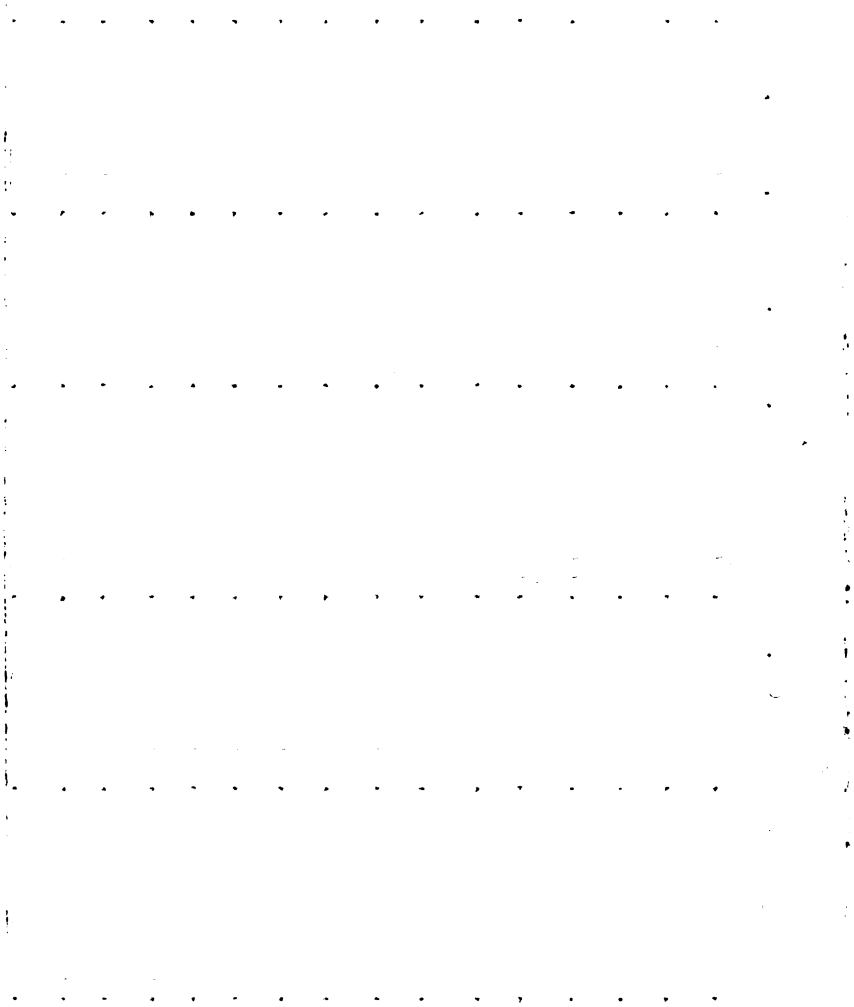
PRESSURES

TIME	1 Plant Booster	2 Pine & Ionia Gov.	3 Isaac St. Governor	4 Britten St. Gov.	5 Sparrow St. Gov.	6 Reo Governor	7	8	9
10:45	5.65	4.70	3.87	3.67	3.67	3.53			
10:50	5.65	4.46	3.82	3.43	3.53	3.46			
10:55	5.65	4.41	3.77	3.43	3.48	3.34			
11:00	5.65	4.41	3.77	3.43	3.48	3.27			
11:05	5.65	4.41	3.77	3.38	3.43	3.20			
11:10	5.65	4.31	3.63	3.23	3.28	3.09			
11:15	5.65	4.12	3.48	3.04	3.14	2.99			
11:20	5.59	3.97	3.28	2.84	2.84	2.91			
11:25	5.54	3.82	3.14	2.84	2.84	2.83			
11:30	5.54	3.87	3.09	2.79	2.84	2.73			
11:35	5.54	3.87	3.09	2.79	2.79	2.91			
11:40	5.59	3.87	3.14	2.94	2.84	3.09			
11:45	5.73	3.97	3.28	3.18	3.18	3.27			
11:50	5.73	4.21	3.77	3.53	3.67	3.64			
11:55	5.78	4.66	4.07	3.92	3.97	3.82			
12:00	5.83	4.75	4.21	4.12	4.17	4.00			

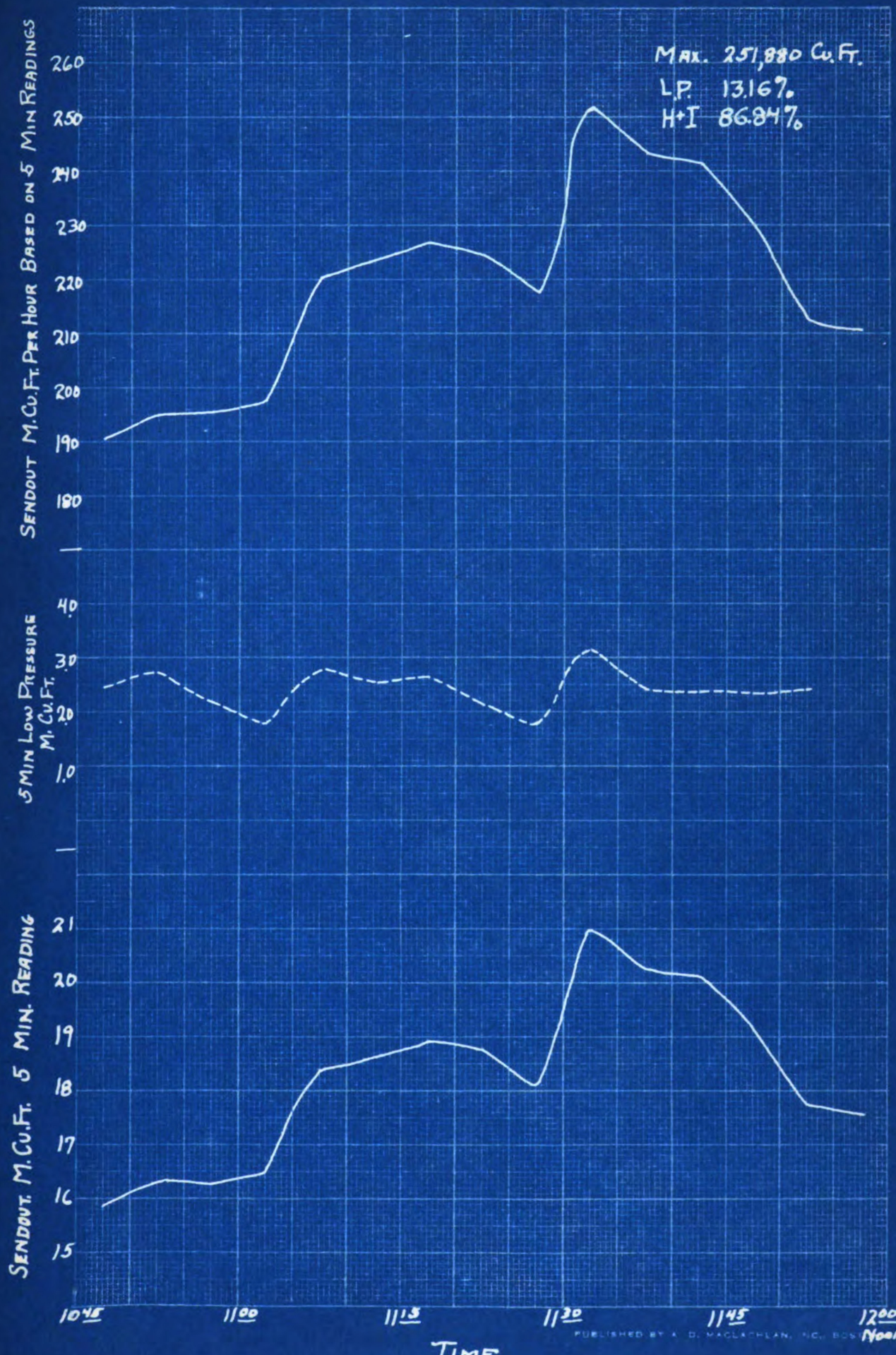
Pressures Lbs. Gage.

Monday, May 7, 1928.

Intermediate Pressures Sheet 3



Noon Sendout Chart. Monday, May 7, 1928.



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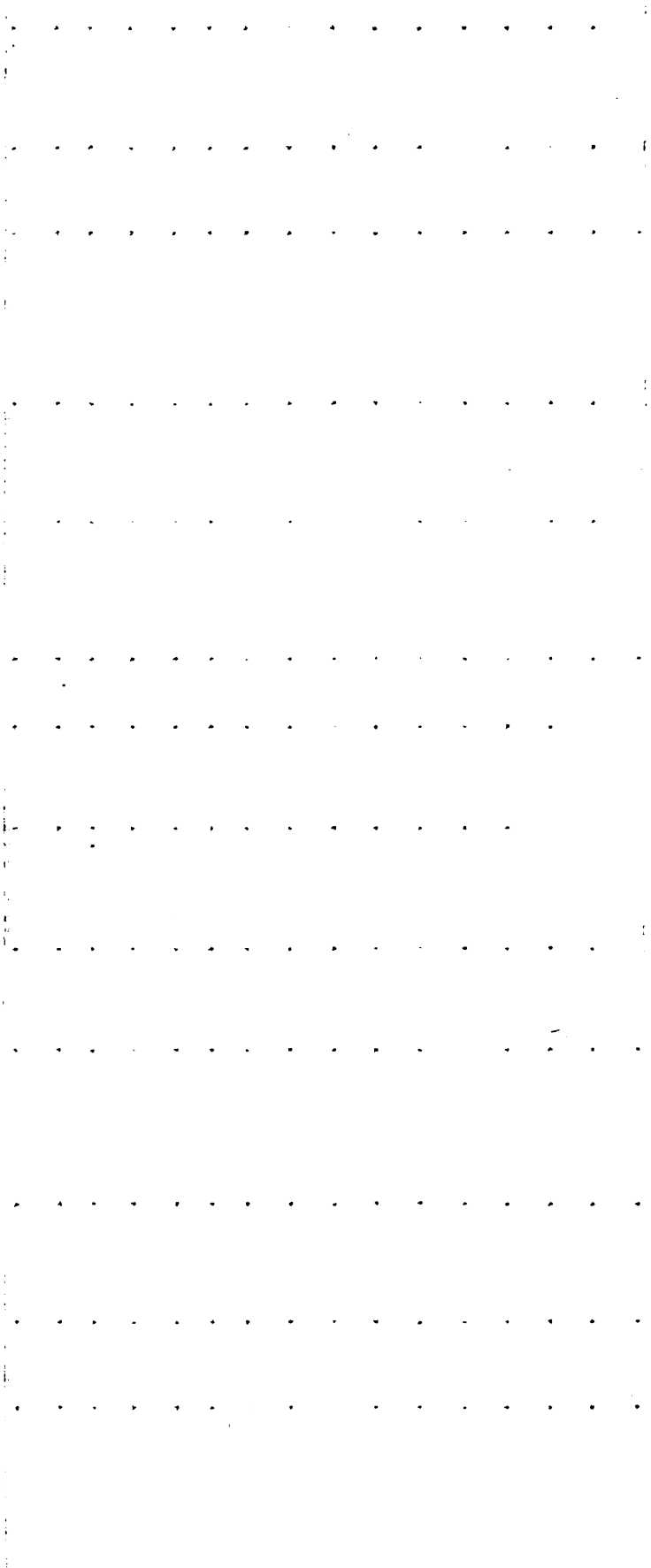
Send Out Data Sheet

TIME	PRESSURE AT L. P. GOV. IN	PRESSURE AT L. P. GOV. OUT	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45	11.2	5.49	29.3	4936.60	--	94	14	.882	1.027	--	73802.9	--	--
10:50	11.2	5.49	29.3	4941.66	5.06	94	14	.882	1.027	4.58	73809.2	6.3	10.88
10:55	11.1	5.44	29.3	4946.70	5.04	94	14.	.882	1.027	4.56	73815.4	6.2	10.76
11:00	11.1	5.44	29.3	4951.70	5.00	94.	14.	.882	1.027	4.52	73821.5	6.1	10.62
11:05	11.0	5.39	29.3	4956.54	4.84	94.	14.	.882	1.027	4.38	73827.5	6.0	10.38
11:10	11.0	5.39	29.3	4960.98	4.44	94.	13.5	.882	1.026	4.02	73833.7	6.2	10.22
11:15	10.9	5.34	29.3	4965.45	4.47	94.	13.0	.882	1.025	4.05	73839.9	6.2	10.25
11:20	11.0	5.39	29.3	4969.70	4.25	94.	13.0	.882	1.025	3.84	73846.0	6.1	9.94
11:25	11.1	5.44	29.3	4974.00	4.30	94.	13.0	.882	1.025	3.89	73852.1	6.1	9.99
11:30	11.1	5.44	29.3	4978.23	4.23	94.	13.0	.882	1.025	3.83	73858.0	5.9	9.73
11:35	11.2	5.49	29.3	4982.48	4.25	94.	13.0	.882	1.025	3.84	73864.0	6.0	9.84
11:40	11.2	5.49	29.3	4986.85	4.37	94.	13.0	.882	1.025	3.95	73870.0	6.0	9.95
11:45	11.4	5.59	29.3	4991.09	4.24	94.	13.0	.882	1.025	3.84	73876.0	6.0	9.84
11:50	11.8	5.78	29.3	4995.53	4.44	94.	13.0	.882	1.025	4.02	73882.0	6.0	10.02
11:55	11.9	5.83	29.3	5000.02	4.49	94.	13.0	.882	1.025	4.06	73888.0	6.0	10.06
12:00	12.0	5.88	29.3	5004.64	4.62	94.	13.0	.882	1.025	4.17	73894.0	6.0	10.17

Monday, May 14, 1928

Intermediate Pressure
Sheet 1



Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR Int. SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. H&L PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	9	11	267.13	--	1	8	18	450.6	--	--	--	--	--
10:50	1	8	19	256.98	10.15	1	8	24½	456.4	5.8	- 4.35	5.08	15.23	182.76
10:55	1	7	27½	246.94	10.04	1	9	1	462.2	5.8	- 4.24	4.96	15.00	180.00
11:00	1	7	1½	235.34	11.60	1	9	6	467.2	5.0	- 6.60	5.62	17.22	206.64
11:05	1	6	8½	224.36	10.98	2	0	0	471.3	4.1	- 6.88	6.28	17.26	207.12
11:10	1	5	13½	212.98	11.38	2	0	3	474.3	3.0	- 8.38	7.22	18.60	223.20
11:15	1	4	16	200.28	12.70	2	0	6	477.3	3.0	- 9.70	7.25	19.95	239.40
11:20	1	3	18½	187.56	12.72	2	0	9	480.3	3.0	- 9.72	6.94	19.66	235.92
11:25	1	2	20	174.42	13.14	2	0	12	483.9	3.6	- 9.54	6.39	19.53	234.36
11:30	1	1	22½	161.72	12.70	2	0	14½	487.2	3.3	- 9.40	6.43	19.13	229.56
11:35	1	0	24	148.58 x	13.14	2	0	16½	490.5	3.3	- 9.84	6.54	19.68	236.16
11:40	0	9	12	129.28	12.30	2	1	3½	493.8	3.3	- 9.00	6.65	18.95	227.40
11:45	0	8	20	119.00	10.28	2	1	8	497.0	3.2	- 7.08	6.64	16.92	203.04
11:50	0	7	25½	107.66	11.34	2	1	12½	500.3	3.3	- 8.04	6.72	18.06	216.72
11:55	0	7	3½	97.98	9.68	2	1	17	503.6	3.3	- 6.38	6.76	16.44	197.28
12:00	0	6	18	90.60	7.38	2	1	22	507.3	3.7	- 3.68	6.47	13.85	166.20

Maximum Sendout 239.40 M.Cu.Ft. Monday, May 14, 1928.

Intermediate sendout -- 63.85%

High & Low Pressure -- 36.15

Intermediate Pressure

Sheet 2

Send Out Data Sheet

PRESSURES

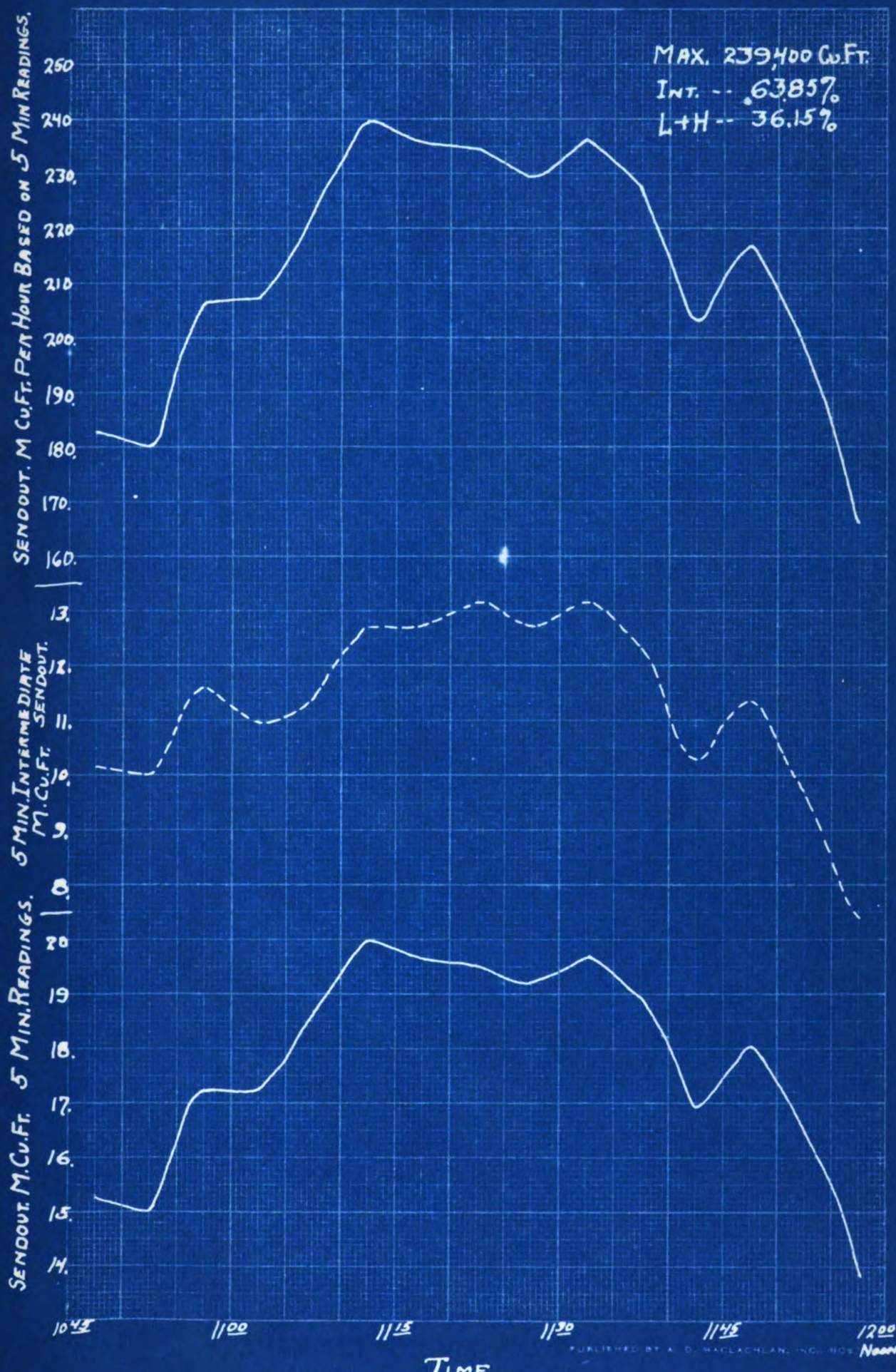
TIME	1 Plant Booster	2 Pine & Ionia Gov,	3 Isaac St. Gov.	4 Britten St. Gov.	5 Sparrow St. Gov.	6 Reo Governor	7 Gr. River & Cedar St Governor	8 Beach St. Governor	9
10:45	5.49	4.412	3.77	3.53	3.53	3.33	4.90	4.80	
10:50	5.49	4.41	3.77	3.53	3.53	3.33	4.85	4.80	
10:55	5.44	4.41	3.77	3.43	3.38	3.33	4.75	4.80	
11:00	5.44	4.17	3.72	3.23	3.23	3.33	4.75	4.66	
11:05	5.39	4.21	3.53	3.18	3.18	3.28	4.66	4.61	
11:10	5.39	4.07	3.53	3.14	3.04	3.14	4.61	4.56	
11:15	5.34	4.07	3.38	2.84	2.89	3.14	4.51	4.46	
11:20	5.39	3.92	3.28	2.79	2.79	3.09	4.51	4.36	
11:25	5.44	3.92	3.14	2.74	2.84	2.84	4.56	4.36	
11:30	5.44	3.92	3.19	2.84	2.84	2.99	4.51	4.31	
11:35	5.49	3.92	3.19	2.89	2.94	3.09	4.54	4.51	
11:40	5.49	4.02	3.28	3.04	3.09	3.19	4.70	4.61	
11:45	5.59	4.17	3.38	3.33	3.58	3.28	4.85	4.70	
11:50	5.78	4.56	3.82	4.02	4.07	4.02	5.20	5.20	
11:55	5.83	4.80	4.31	4.21	4.31	4.23	5.39	5.39	
12:00	5.88	5.00	4.61	4.31	4.46	4.36	5.49	5.44	

Lbs./Sq.In.Gage Pressures.

Monday , May 14, 1928

Intermediate Pressures Sheet 3

Noon Sendout Chart. Monday, May 14, 1928.



Send Out Data Sheet

TIME	PRESSURE AT HP. GOV. IN	PRESSURE AT HP. GOV. OUT # Gas.	BARO-METER	WATER GAS METER	W. G. MAKE	TEMP.	PRESS.	CORR. FACTORS BAR. AND TEMP.	CORR. FACTORS PRESS.	CORR W. G. MAKE	COAL GAS METER	C. G. MAKE	TOTAL MAKE
10:45		30.0	28.8	1247.87	--	94.	15.	.866	1.030	--	87489.6	--	--
10:50		31.0	28.8	1251.90	4.03	94.	15.	.866	1.030	3.60	87495.9	6.3	9.90
10:55		31.0	28.8	1256.04	4.14	94.	15.	.866	1.030	3.70	87502.2	6.3	10.00
11:00		31.0	28.8	1260.20	4.16	94.	15.	.866	1.030	3.72	87508.5	6.3	10.02
11:05		30.5	28.8	1264.27	4.07	94.	15.	.866	1.030	3.63	87514.6	6.1	9.73
11:10		30.5	28.8	1268.28	4.01	94.	15.	.866	1.030	3.58	87520.8	6.2	9.78
11:15		30.5	28.8	1272.24	4.96	94.	15.	.866	1.030	3.53	87527.0	6.2	9.73
11:20		30.5	28.8	1276.30	4.06	94.	15.	.866	1.030	3.62	87533.2	6.2	9.82
11:25		30.5	28.8	1280.37	4.07	94.	15.	.866	1.030	3.63	87539.4	6.2	9.83
11:30		30.5	28.8	1284.51	4.14	94.	15.	.866	1.030	3.70	87545.4	6.0	9.70
11:35		30.0	28.8	1288.62	4.11	94.	15.	.866	1.030	3.67	87551.5	6.1	9.77
11:40		30.0	28.8	1292.75	4.13	94.	15.	.866	1.030	3.69	87557.7	6.2	9.89
11:45		30.0	28.8	1296.85	4.10	94.	15.	.866	1.030	3.66	87563.8	6.1	9.76
11:50		30.0	28.8	1300.72	3.97	94.	15.	.866	1.030	3.54	87569.9	6.1	9.64
11:55		30.0	28.8	1304.82	4.10	94.	15.	.866	1.030	3.66	87576.1	6.2	9.86
12:00		30.0	28.8	1308.82	4.00	94.	15.	.866	1.030	3.57	87582.3	6.2	9.77

Tuesday, May 22, 1928

High Pressure

Sheet 1

Send Out Data Sheet

TIME	MIDDLE HOLDER L	S	R	CUBIC FEET	DIFF. OR High SENDOUT	LARGE HOLDER L	S	R	CUBIC FEET	DIFF.	NET HOLDERS DIFF.	FIVE MIN. I&I PRESS. SENDOUT	FIVE MIN. TOTAL SENDOUT	RATE PER HOUR SENDOUT
10:45	1	1	11	156.60	---	2	6	13½	639.5	--	--	--	--	--
10:50	1	1	2	152.59	4.01	2	6	11	637.6	1.9	5.91	11.80	15.81	189.72
10:55	1	0	23	148.14	4.45	2	6	8	635.4	2.2	6.65	12.20	16.65	199.80
11:00	1	0	14	144.13	4.01	2	6	4½	632.9	2.5	6.51	12.52	16.53	198.36
11:05	1	0	5	140.12	4.02	2	5	37½	629.7	3.2	7.21	12.93	16.94	203.28
11:10	0	9	13	129.72	3.40	2	5	33	626.0	3.7	7.10	13.48	16.88	202.56
11:15	0	9	8	127.52	2.20	2	5	26½	621.2	4.8	7.00	14.53	16.73	200.76
11:20	0	9	2	124.88	2.64	2	5	19½	616.2	5.0	7.64	14.82	17.46	209.52
11:25	0	8	23½	120.54	4.34	2	5	12	610.7	5.5	9.84	15.33	19.67	236.04
11:30	0	8	15½	117.02	3.52	2	5	3½	604.5	6.2	9.72	15.90	19.42	233.04
11:35	0	8	6½	112.96	4.06	2	4	33	598.5	6.0	10.06	15.77	19.83	237.96
11:40	0	7	27	108.32	4.64	2	4	25	592.6	5.9	10.54	15.79	20.43	245.16
11:45	0	7	19½	105.02	3.30	2	4	17½	586.7	5.9	9.20	15.66	18.96	227.52
11:50	0	7	10½	100.74	4.28	2	4	11½	582.7	4.0	8.28	13.64	17.92	215.04
11:55	0	7	1	96.88	3.86	2	4	7	579.4	3.3	7.16	13.16	17.02	204.24
12:00	0	6	22½	92.36	4.52	2	4	3	576.5	2.9	7.42	12.68	17.19	206.28

Max. Sendout 245.16 M.Cu.Ft.

High Press. Sendout- 21.40%

Low & Intermediate- 78.60%

Tuesday, May 22, 1928.

High Pressure

Sheet 2

Send Out Data Sheet

PRESSURES

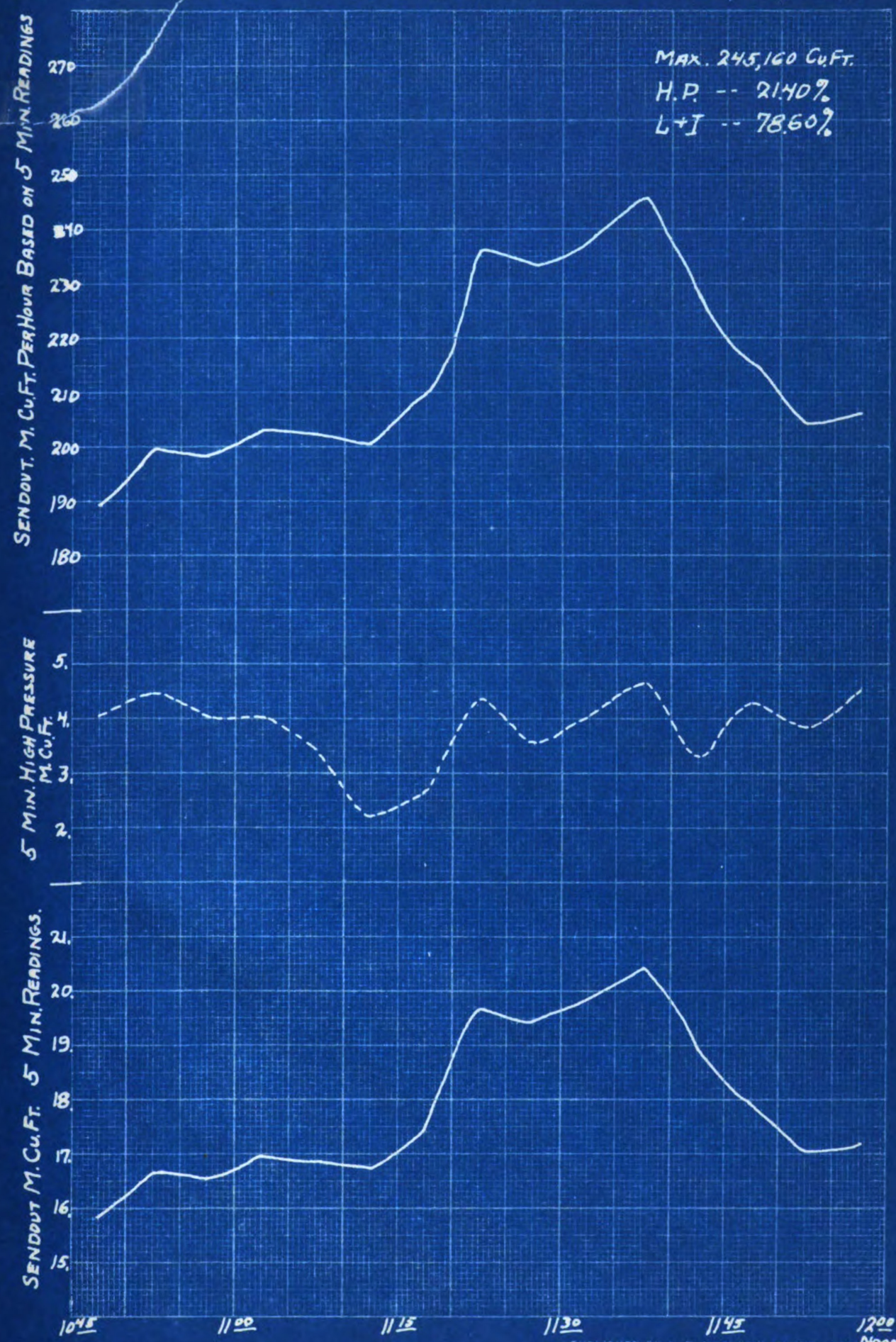
TIME	1 Plant Compressor	2 Durant Plant.	3 Grand Ledge	4 Mason	5 Lawrence Bakery	6 820. W. Mich. Av. of Harrison Road.	7	8	9
10:45	30.00	25.00	25.00	23.50	25.25	23.00			
10:50	31.00	25.50	25.25	23.50	25.25	23.50			
10:55	31.00	25.75	25.50	23.75	25.50	23.50			
11:00	31.00	25.75	25.50	24.00	25.75	24.00			
11:05	30.5	25.75	25.50	24.00	26.00	23.75			
11:10	30.50	25.75	25.50	24.00	25.75	23.50			
11:15	30.50	26.00	25.75	24.00	25.75	23.50			
11:20	30.50	25.75	25.50	24.00	26.00	23.25			
11:25	30.50	25.75	25.50	24.00	26.00	23.00			
11:30	30.50	25.75	25.50	24.00	26.00	22.50			
11:35	30.00	25.50	25.50	24.10	26.00	22.00			
11:40	30.00	25.50	25.25	24.10	26.00	21.25			
11:45	30.00	25.25	25.00	24.00	26.00	21.00			
11:50	30.00	25.00	25.00	24.00	25.75	20.50			
11:55	30.00	25.00	25.00	24.00	25.75	20.25			
12:00	30.00	25.00	25.00	24.00	25.75	20.25			

Lbs. Gage Pressure.

Tuesday, May 22, 1928.

High Pressures Sheet 3

Noon Sendout Chart Tuesday, May 22, 1928.



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