

September 30, 1964

City of Florence
Florence, Oregon

Attention: Cliff Sanders

Gentlemen:

Enclosed are copies of the results, and log reports on the construction and testing of the 12" Test Well and two observation wells, which were installed in the Fine Sands, at Florence, Oregon.

We have forwarded the original data to the attention of R. T. Worthington and Associates, in Corvallis, Oregon.

We wish to thank the City Council for the opportunity of working with the city, on their water exploration project, and if we can be of any further service to you on your continuance of this project, please call upon us.

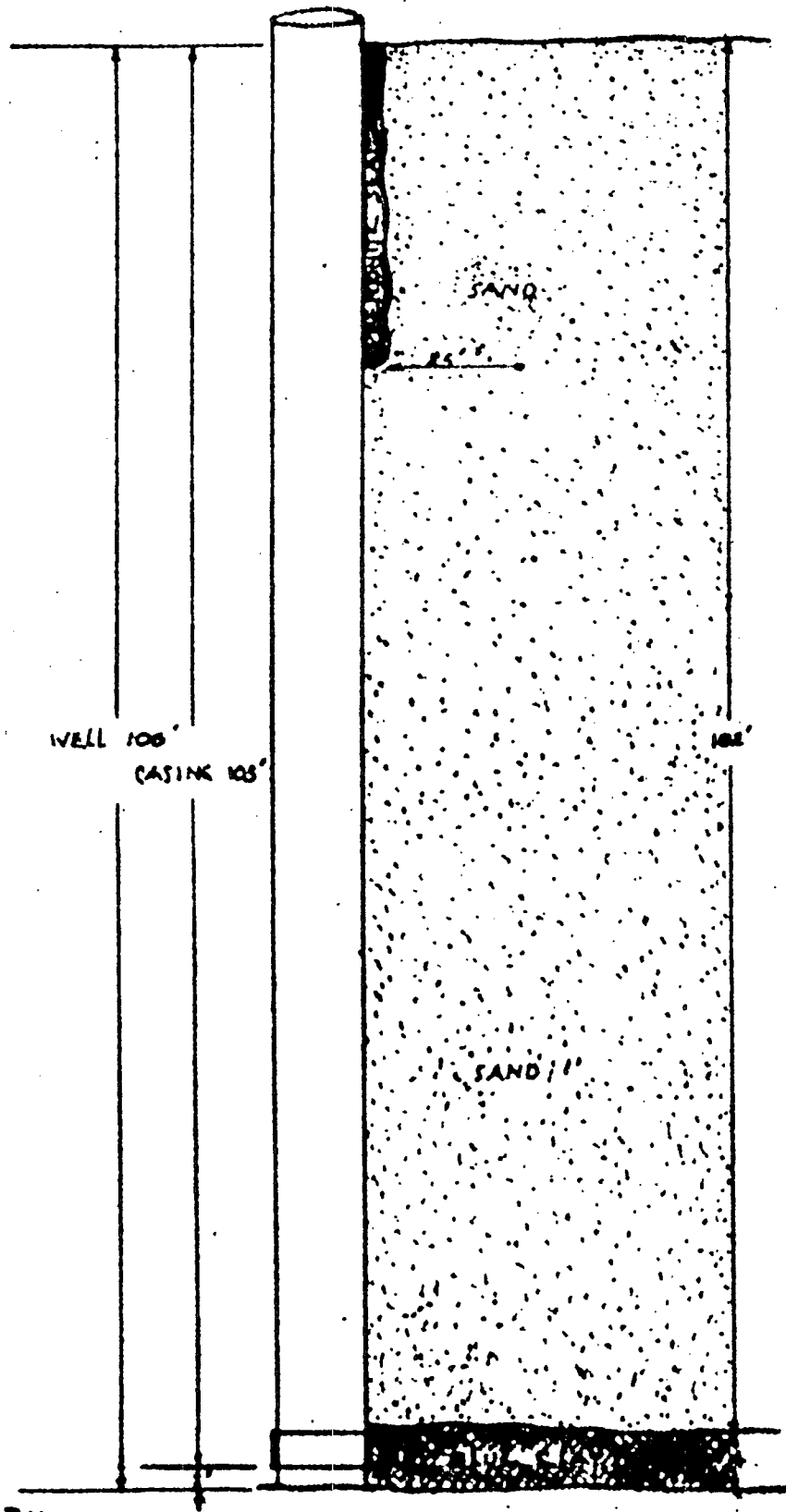
Very truly yours,

CARTER'S DRILLING & PUMP SERVICE

James I. Carter

JIC/ed

CITY OF FLORENCE ORE.



By-
Carler's Drilling & Pump Service
well log

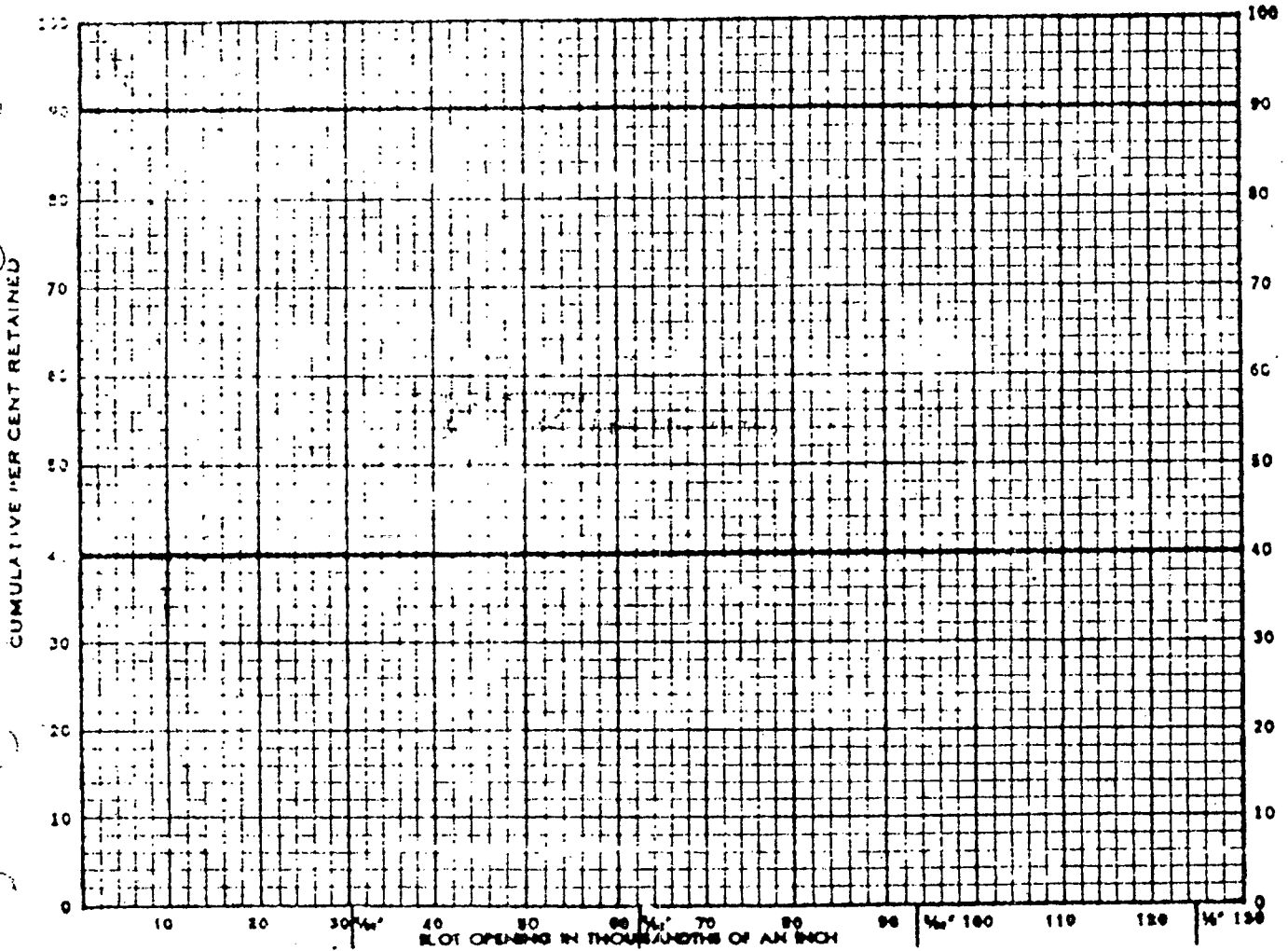
AUG 15 - 1906

SAND ANALYSIS

EDWARD E. JOHNSON, INC.

311 NORTH PIERCE STREET
SAINT PAUL 4, MINN.

Sample No. _____
 Town _____ State NEB Date 11-17-52
 From well of _____
 Remarks _____



SIEVE OPENINGS	CUMULATIVE PER CENT RETAINED
151	
093	
055	
040	
033	
023	
016	
012	
008	
006	
SCREEN	
SLOT	

NOTES: _____

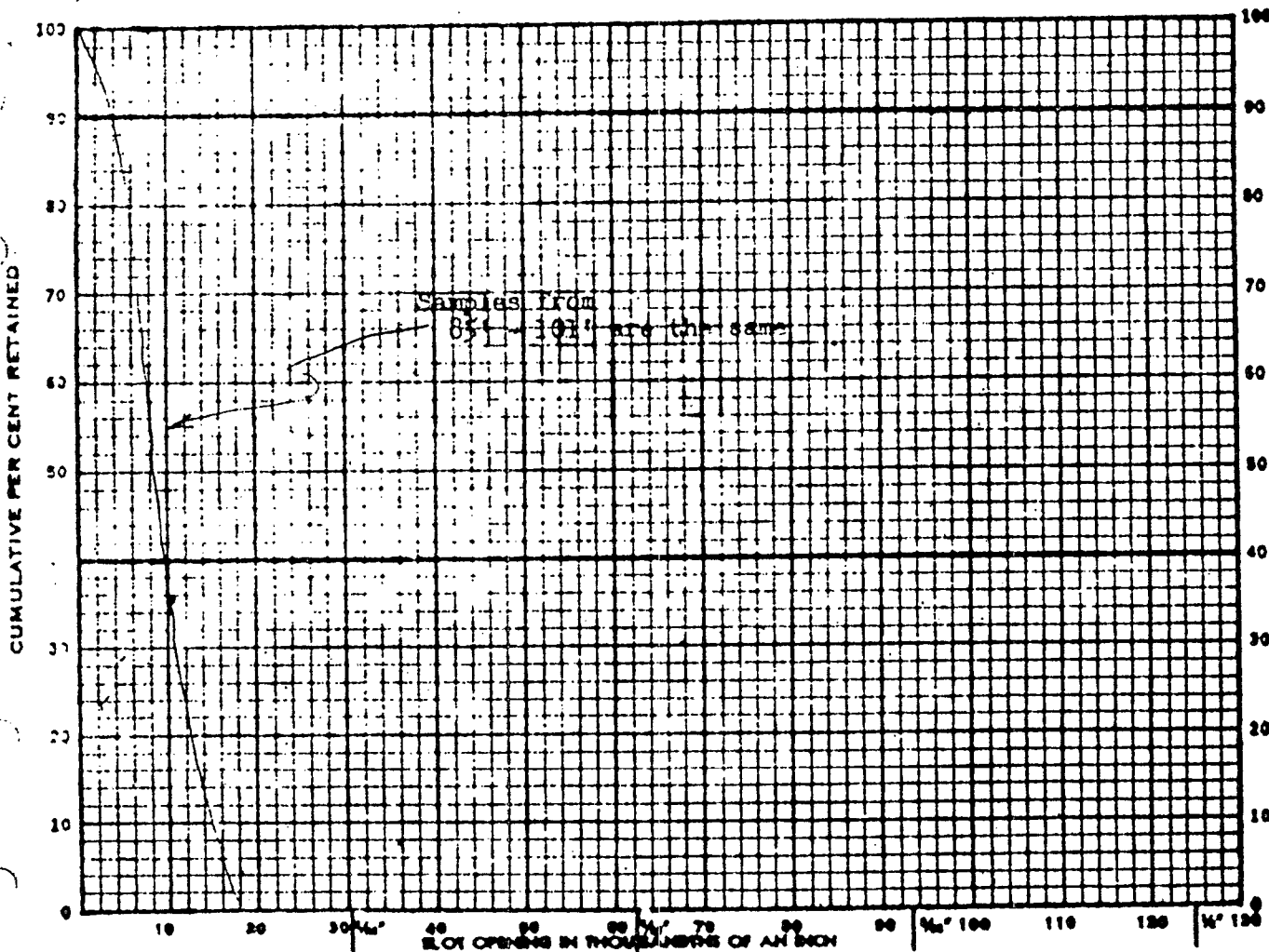
 SLOT OPENING RECOMMENDED: _____

 RECOMMENDED SCREEN: DIA. _____ IN. LENGTH _____ FT.
 Type of Sand _____
 TRADE NO. = 385 BY: T.M.

SO MANY CONSIDERATIONS ENTER INTO THE MAKING OF A GOOD WELL THAT, WHILE WE BELIEVE SLOT SIZES FURNISHED OR RECOMMENDED FROM SAND SAMPLES ARE CORRECT WE ASSUME NO RESPONSIBILITY FOR THE SUCCESSFUL OPERATION OF JOHNSON WELL SCREENS

SAND ANALYSIS
EDWARD E. JOHNSON, INC.
 315 NORTH PIERCE STREET
 SAINT PAUL 4, MINN.

sample sent in by Carter Drilling & Pump Service
 Town Springfield State Oregon Date 19 August 1964
 From well of City of Florence, Oregon
 Remarks _____



SIEVE OPENINGS	CUMULATIVE PER CENT RETAINED
.150	
.075	
.060	
.048	
.038	
.030	
.024	3
.018	
.015	
.012	
.008	60
.006	
SCREEN 91	
SLOT	

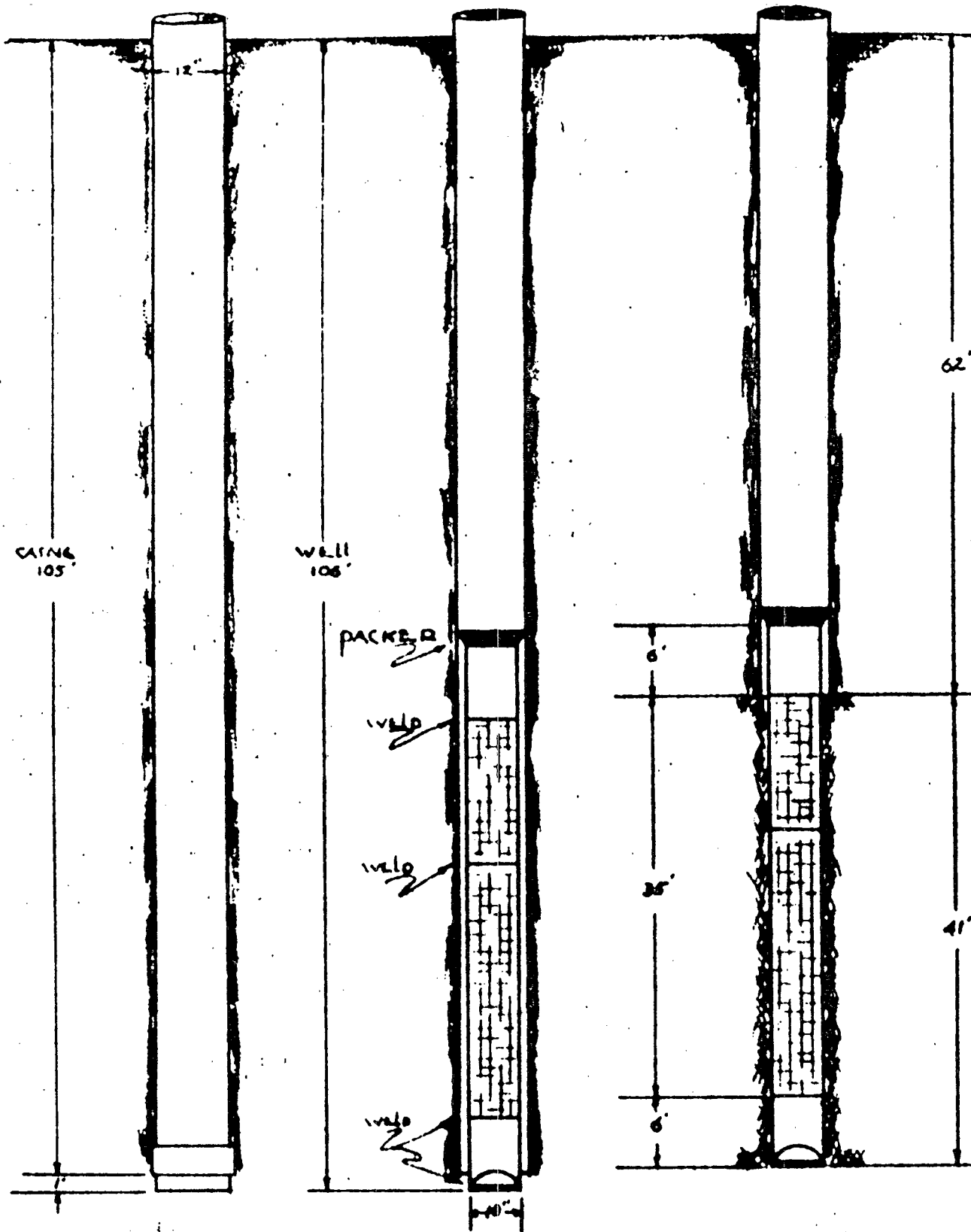
NOTES: _____

 SLOTTING RECOMMENDED: _____
 RECOMMENDED SCREEN: DIA. _____ IN. LENGTH _____ FT.

 BY: _____

SO MANY CONSIDERATIONS ENTER INTO THE MAKING OF A GOOD WELL THAT, WHILE WE BELIEVE SLOTTING RECOMMENDED OR RECOMMENDED FROM SAND SAMPLES ARE CORRECT WE ASSUME NO RESPONSIBILITY FOR THE SUCCESSFUL OPERATION OF JOHNSON WELL SERVICES

CITY OF FLORENCE ORE.

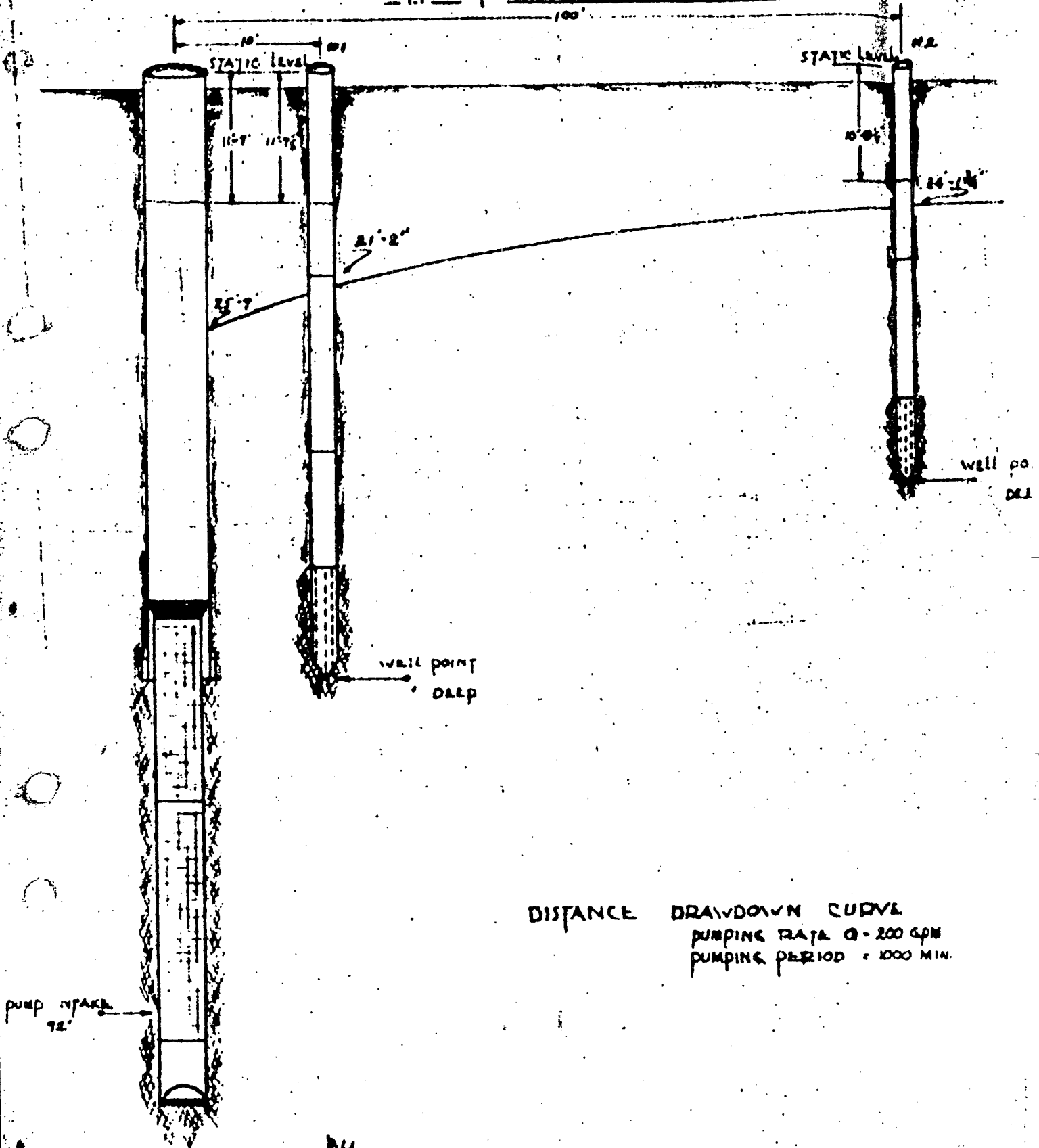


By -
Carter's Drilling & Pump Service

FINAL SCREEN SETTING

SEPT. 1 - 1909

CITY OF FLORENCE ORE



DISTANCE DRAWDOWN CURVE
PUMPING RATE Q - 200 GPM
PUMPING PERIOD = 1000 MIN.

By
Carrier's Drilling & Pump Service

SEP. 15-1964



Carter Drilling & Pump Service

325 So. Second St.
Springfield, Oregon
Telephone 747-7402

CITY OF FLORENCE

WELL TEST

PUMP INTAKE - 92'		WELL # 1 80' OF AIRLINE		WATER TEMP 56° SEPTEMBER 14, 1964	
TIME	OPM	12" WELL FEET TO WATER STATIC LEVEL	OBS WELL #1-10' FEET TO WATER	OBS WELL #2-100' FEET TO WATER	
11:48 AM	0	11' - 7"	11' - 7 1/2"	10' - 8 1/2"	
NOON - 9/14/64					
12:15 PM	START PUMP	-	-	-	
12:21	198	39' - 6"	17' - 7 3/4"	11' - 1 1/2"	
12:25	200	41' - 0"	19' - 5"	11' - 3"	
12:30	200	41' - 4"	20' - 2 1/2"	11' - 5"	
12:35	200	41' - 4"	21' - 0"	11' - 5 3/4"	
12:40	200	42' - 6"	21' - 6"	11' - 7 1/2"	
12:45	200	42' - 6"	21' - 9 3/4"	11' - 8 1/2"	
1:00	201	44' - 0"	22' - 7 1/2"	11' - 11"	
1:15	201	44' - 8"	23' - 1 3/4"	12' - 1 1/2"	
1:30	202	45' - 4"	23' - 4 3/4"	12' - 1 1/2"	
1:48	202	45' - 4"	23' - 7 3/4"	12' - 2 1/2"	
2:00	206	45' - 4"	23' - 10 1/2"	12' - 3 1/2"	
2:15	201	45' - 4"	24' - 0"	12' - 3 1/2"	
2:18	PUMP OFF 4 MINUTES TO CHANGE GASKET IN DISCHARGE LINE				
3:00	201	46' - 0"	20' - 10 1/2"	12' - 2"	
3:15	201	46' - 0"	21' - 4 1/2"	12' - 3"	
3:30	200	44' - 0"	21' - 9 1/2"	12' - 3 1/2"	
3:45	200	46' - 6"	22' - 3/4"	12' - 4 1/2"	
4:00	201	46' - 0"	22' - 4"	12' - 4 3/4"	
4:15	202	46' - 0"	22' - 7 1/2"	12' - 4 3/4"	
4:30	202	46' - 0"	22' - 9 3/4"	12' - 5"	
4:45	202	45' - 4"	23' - 0"	12' - 4 3/4"	
5:00	202	46' - 0"	23' - 1 3/4"	12' - 4 3/4"	
5:30	202	46' - 0"	23' - 5 1/2"	12' - 5"	
6:00	202	45' - 4"	23' - 7 3/4"	12' - 5"	
6:30	202	45' - 4"	23' - 9 3/4"	12' - 5 1/2"	
7:00	202	45' - 4"	23' - 10 3/4"	12' - 5 1/2"	
7:30	202	45' - 4"	23' - 11 3/4"	12' - 5 1/2"	
8:00	202	45' - 4"	24' - 3 1/4"	12' - 5 1/2"	
8:30	202	45' - 4"	24' - 2"	12' - 5 1/2"	
9:00	202	45' - 4"	24' - 2"	12' - 5 1/2"	
9:30	201	45' - 4"	24' - 2"	12' - 5 3/4"	



*Carter Drilling
& Pump Service*

325 So. Second St.
Springfield, Oregon
Telephone Y67-7483

**CITY OF FLORENCE
WELL TEST # 1**

9/14/64
SHEET # 2

TIME	OPM	12" WELL FT. TO WATER	18" WELL FT. TO WATER	24" WELL FT. TO WATER
10:00 PH	201	45' - 4"	24' - 2 1/2"	12' - 5 3/4"
10:30	207	45' - 4"	24' - 1 3/4"	12' - 5 1/2"
11:00	203	46' - 6"	24' - 3 1/2"	12' - 5 3/4"
11:30	200	45' - 4"	26' - 2 3/4"	12' - 6"
MIDNIGHT				
12:00 AM	206	46' - 6"	24' - 4"	12' - 6"
9/15/64				
1:00	200	45' - 4"	24' - 5"	12' - 6"
2:00	198	45' - 4"	26' - 2 3/4"	12' - 5 3/4"
3:00	199	45' - 4"	27' - 3"	12' - 6"
4:00	200	45' - 4"	28' - 5"	12' - 6 1/4"
5:00	206	47' - 8"	28' - 6 1/2"	12' - 6 1/4"
6:00	202	45' - 4"	26' - 1 3/4"	12' - 6"
7:00	205	46' - 6"	27' - 5"	12' - 6 1/4"
8:00	206	45' - 4"	24' - 4 1/2"	12' - 6 1/4"
9:00	203	45' - 4"	24' - 4 1/2"	12' - 6 1/4"
9:30	203	45' - 4"	24' - 4 1/2"	12' - 6 1/4"
9:31	STOP PUMP AND CHANGE TO #2 OFFICE			
9:45	START PUMP			
	250	51' - 2"		
9:50	250	50' - 7"	20' - 9 1/2"	12' - 5 1/2"
9:55	250	54' - 7"	20' - 10 1/2"	12' - 7 1/2"
10:00	250	54' - 7"	21' - 8 1/2"	12' - 9 1/2"
10:15	250	55' - 3"	22' - 7 1/2"	12' - 10 1/2"
10:30	250	55' - 3"	22' - 7 1/2"	12' - 11"
10:45	250	55' - 3"	23' - 7 1/2"	12' - 11 1/2"
11:00	250	55' - 3"	23' - 8 1/2"	12' - 11 1/2"
11:30	250	55' - 3"	24' - 7 1/2"	12' - 11 1/2"
12:00 PM	250	55' - 3"	25' - 7 1/2"	12' - 11 1/2"
12:30	250	55' - 3"	25' - 10 1/2"	12' - 11 1/2"
1:00	250	55' - 3"	26' - 2 3/4"	12' - 11 1/2"
1:30	250	55' - 3"	26' - 8"	12' - 11 1/2"
2:00	250	55' - 3"	26' - 11 1/2"	12' - 11 1/2"
2:30	250	55' - 3"	27' - 1 3/4"	12' - 11 1/2"
3:00	250	55' - 3"	27' - 4 1/2"	12' - 11 1/2"
4:00	250	55' - 3"	27' - 6"	12' - 11 1/2"
5:00	250	55' - 3"	27' - 10"	12' - 11 1/2"
6:00	250	56' - 9"	27' - 10 3/4"	12' - 2"
7:00	250	56' - 2"	27' - 11 1/2"	12' - 2"
8:00	250	56' - 6"	27' - 11 1/2"	12' - 2"
8:15	252	55' - 4"	27' - 11 1/2"	12' - 2"
8:16	INCREASED CAPACITY			



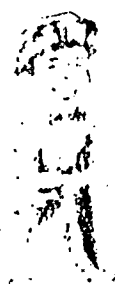
*Carter Drilling
& Pump Service*

325 So. Second St.
Springfield, Oregon
Telephone 747-7432

CITY OF FLORENCE
WELL TEST # 1

9/14/64
SHEET # 3

TIME	OPK 4 1/2" CRIFICE	12" WELL	OBS #1	OBS #2
8:30 PM	290	60' - 4"	28' - 0"	13' - 2 1/2"
8:40	290	62' - 8"	28' - 2"	13' - 3"
8:50	289	62' - 8"	28' - 3 3/4"	13' - 5"
9:00	289	62' - 8"	28' - 6"	13' - 5 1/2"
9:15	289	62' - 8 1/2"	28' - 7 3/4"	13' - 6 1/2"
9:30	289	62' - 8"	28' - 7 3/4"	13' - 6 1/2"
10:00	289	62' - 8"	28' - 15 1/2"	13' - 6 1/2"
10:30	289	62' - 8"	29' - 8"	13' - 7 1/2"
11:00	290	63' - 11"	29' - 9"	13' - 7 1/2"
11:30	290	63' - 11"	29' - 10"	13' - 8"
MIDNIGHT				
12:00 AM	289	62' - 8"	30' - 0"	13' - 8"
9/16/64				
1:00	289	62' - 8 1/2"	30' - 1 1/2"	13' - 8 1/2"
2:00	289	62' - 8 1/2"	30' - 4"	13' - 8 1/2"
3:00	289	62' - 8 1/2"	30' - 1 1/2"	13' - 8 1/2"
4:00	289	62' - 8 1/2"	30' - 4"	13' - 8 3/4"
5:00	289	62' - 8 1/2"	30' - 2 1/2"	13' - 8 3/4"
6:00	288	62' - 8 1/2"	30' - 1 1/2"	13' - 8 3/4"
7:00	289	62' - 8 1/2"	30' - 1 1/2"	13' - 8 3/4"
8:00	289	61' - 8 1/2"	30' - 1 1/2"	13' - 9 1/2"
9:00	289	61' - 6 1/2"	29' - 1 1/2"	13' - 9 1/2"
10:00	288	61' - 6 1/2"	29' - 9 1/2"	13' - 9 1/2"
11:00	294	60' - 6 1/2"	30' - 3 1/2"	13' - 9 1/2"
BOOK				
12:00 PM	294	64' - 6 1/2"	30' - 6 3/4"	13' - 9 1/2"
1:00	294	58' - 6 1/2"	30' - 5 1/2"	13' - 9 1/2"
1:15	310	69' - 3 1/2"	30' - 9 1/2"	13' - 10 1/2"
1:30	310	69' - 3 1/2"	31' - 3 1/2"	13' - 0"
2:00	320	69' - 3 1/2"	31' - 8 1/2"	14' - 1 1/2"
2:45	320	69' - 8 1/2"	32' - 0"	14' - 1 1/2"
3:00	325	69' - 8 1/2"	32' - 1 1/2"	14' - 1 3/4"
3:10	325	69' - 8 1/2"	32' - 1 1/2"	14' - 1 3/4"
3:15	STOPPED PUMP			
3:18	0	25' - 9 1/2"	21' - 2 1/2"	14' - 1 3/4"
3:20	0	10' - 9 1/2"	21' - 8 1/2"	13' - 9 1/2"
3:25	0	16' - 6 1/2"	18' - 6 1/2"	13' - 3"
3:30	0	14' - 5 1/2"	18' - 11 1/2"	12' - 9"
3:35	0	14' - 8 1/2"	18' - 4 1/2"	12' - 5 1/2"
3:45	0	13' - 9 1/2"	18' - 1 1/2"	12' - 4 1/2"
3:50	0	13' - 6 1/2"	18' - 9 1/2"	11' - 10 1/2"



*Central Drilling
& Pump Service*

325 So. Broad St.
Springfield, Oregon
Telephone 747 7182

**CITY OF FLORENCE
WELL TEST # 1**

9/14/64
SHEET # 1

TIME	GPM 4" OFFICE	12" WELL FT. TO WATER	OBS #1	OBS #2
3:55 PM	0	13' - 3"	14' - 5"	11' - 9 1/2"
4:00	0	13' - 0"	14' - 2 1/2"	11' - 9"
4:05	0	12' - 9"	13' - 11"	11' - 7"
4:10	0	12' - 6"	13' - 10"	11' - 6 1/2"
4:15	0	12' - 0"	13' - 7"	11' - 5"
4:30	0	12' - 0"	13' - 3"	11' - 4 1/2"
4:45	0	11' - 11 1/2"	12' - 11 1/2"	11' - 2 1/2"
5:00	0	11' - 11 1/2"	12' - 9 1/2"	11' - 1 1/2"
5:15	0	11' - 11"	12' - 7 1/2"	11' - 1"
5:30	0	11' - 10 1/2"	12' - 6"	11' - 0"
6:00	0	11' - 10"	12' - 4"	10' - 11 1/2"
6:30	0	11' - 9 3/4"	12' - 2"	10' - 10 1/2"
7:00	0	11' - 9 1/2"	12' - 1 1/2"	10' - 9 3/4"
7:30	0	11' - 9"	11' - 11"	10' - 9 3/4"
8:00	0	11' - 8 1/2"	11' - 8 3/4"	10' - 9 1/2"
NOON				
9/17/64				
12:00 PM	0	11' - 7"	11' - 8 1/2"	10' - 8 3/4"

TEST WELL NO. 1-12
WELL TEST - 1515-1518
CITY OF INDEPENDENCE ORE

FEET TO WATER

200 GPM

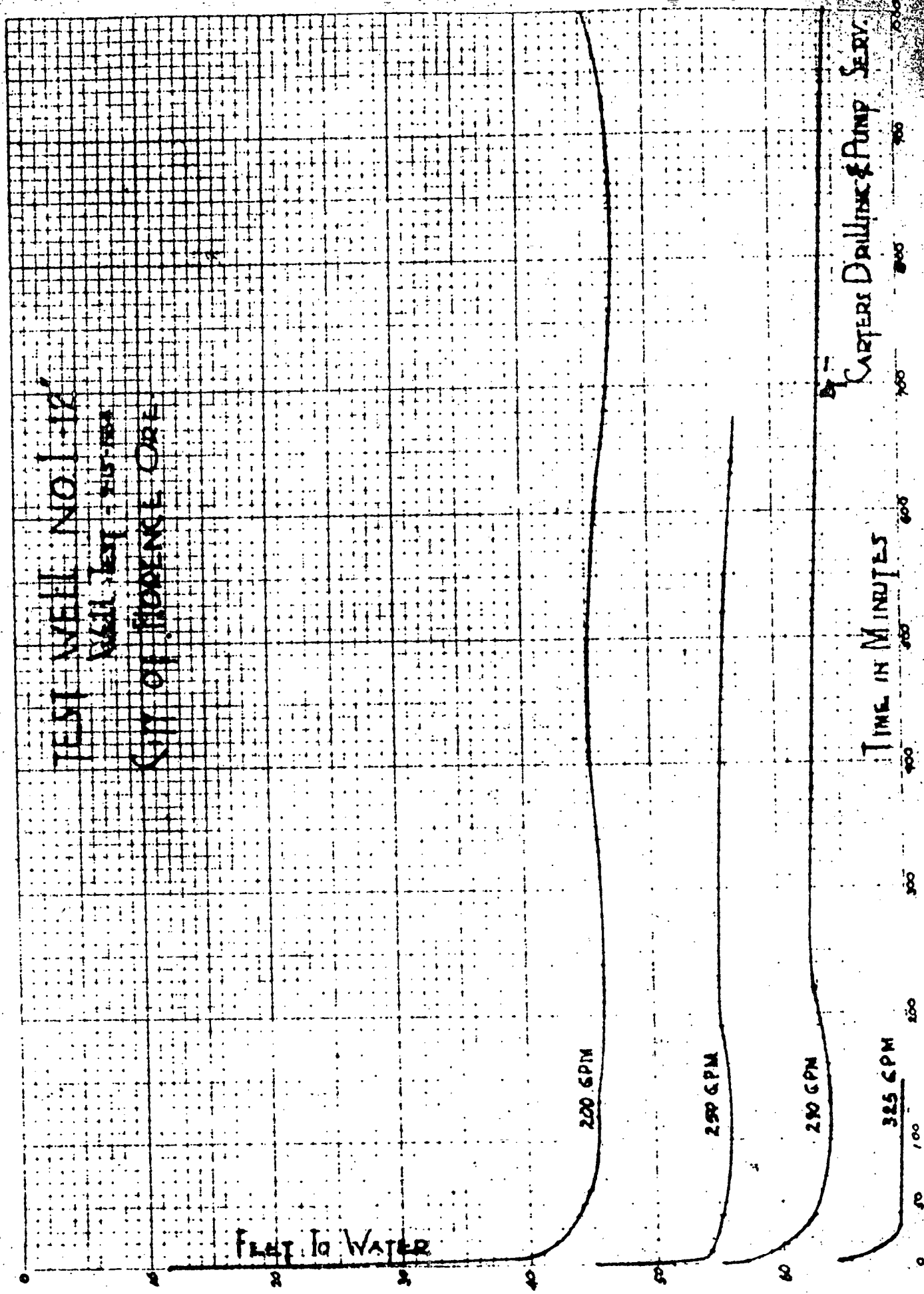
250 GPM

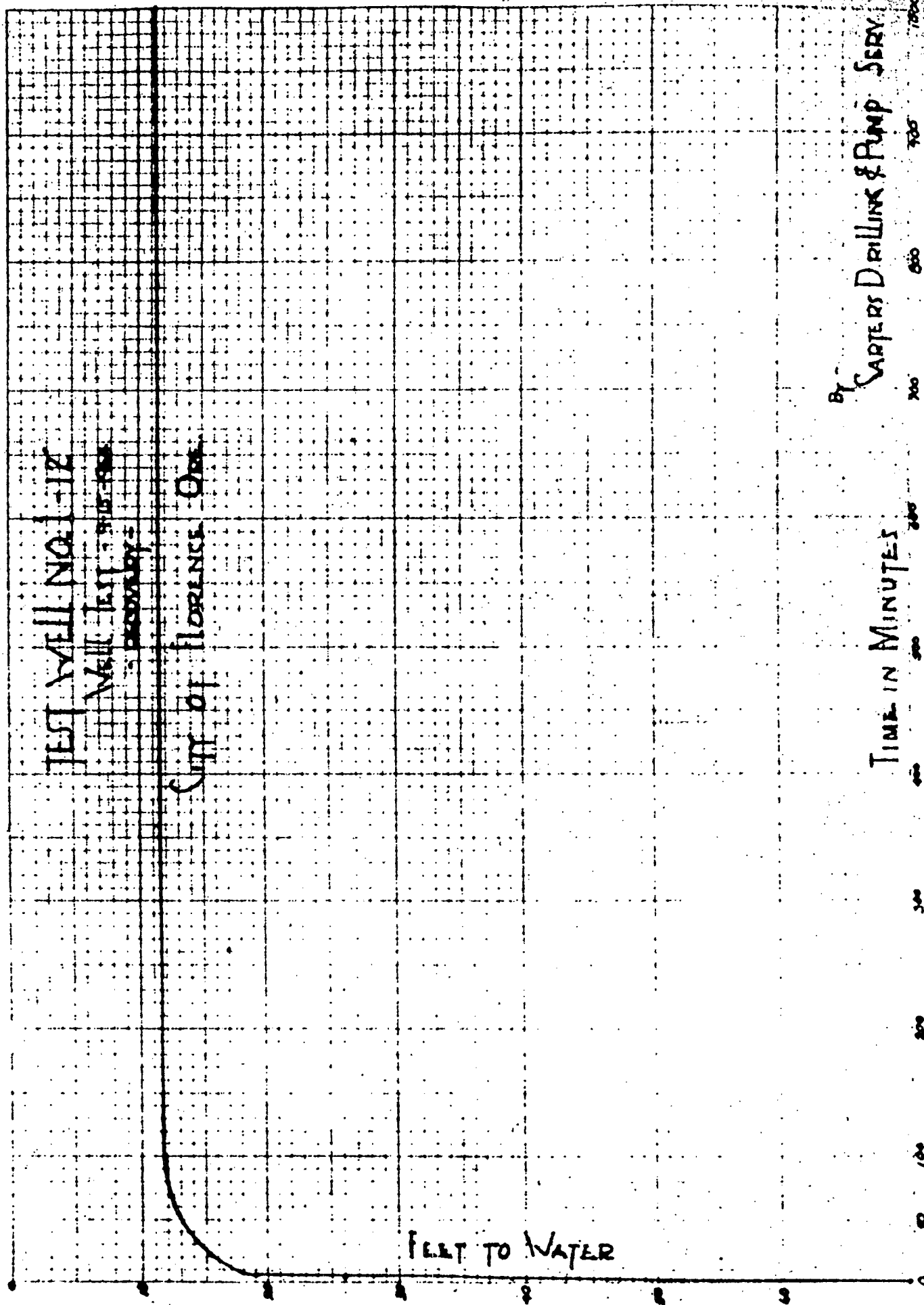
250 GPM

325 GPM

TIME IN MINUTES

CARTERS DRILLING & PUMP SERV.





TEST WELL NO. 1-12
 TEST WELL TEST RESULTS
 PROBABILITY
 CITY OF FLORENCE, OHIO

FEET TO WATER

TIME IN MINUTES

BY CARTERS DRILLING & PUMP SERV.

0 100 200 300 400 500 600 700 800 900 1000

September 21, 1964

Carter Drilling & Pump Service
330 S. 3rd Street
Springfield, Oregon

Dear Sir:

The water sample you submitted for domestic mineral analysis on September 21, 1964, was assigned our laboratory serial number 409-143. The determination was as follows:

Water 409-143 (City of Florence)

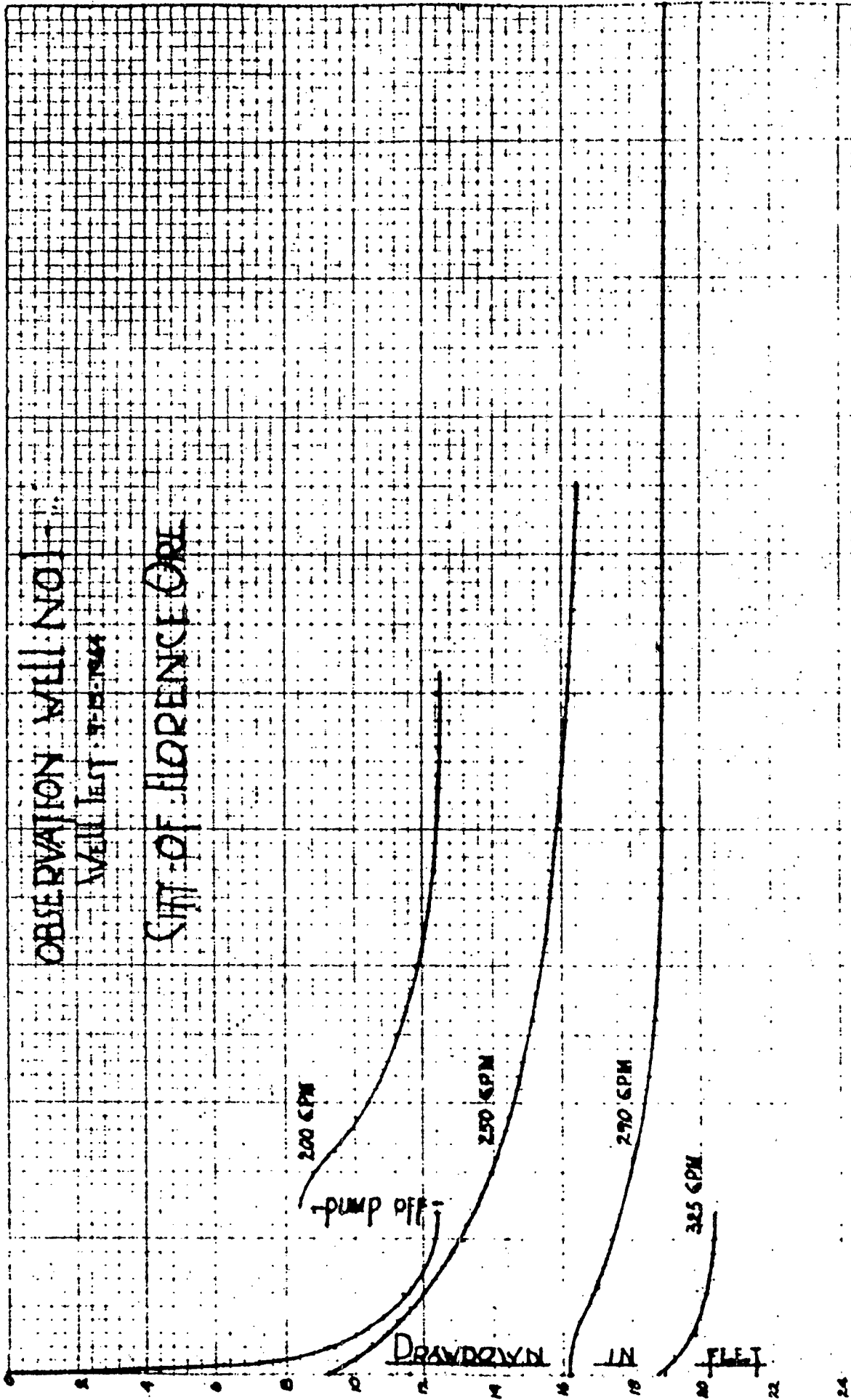
pH (glass electrode)	6.75
Chlorides	31.8 mg/liter
Iron	2.95 mg/liter
Hardness	49 mg/liter as CaCO_3
Total solids	125 mg/liter
Fixed residue	69 mg/liter

Very sincerely yours,

ANALYTICAL SERVICES, INC.

Marcia Brooks
Manager

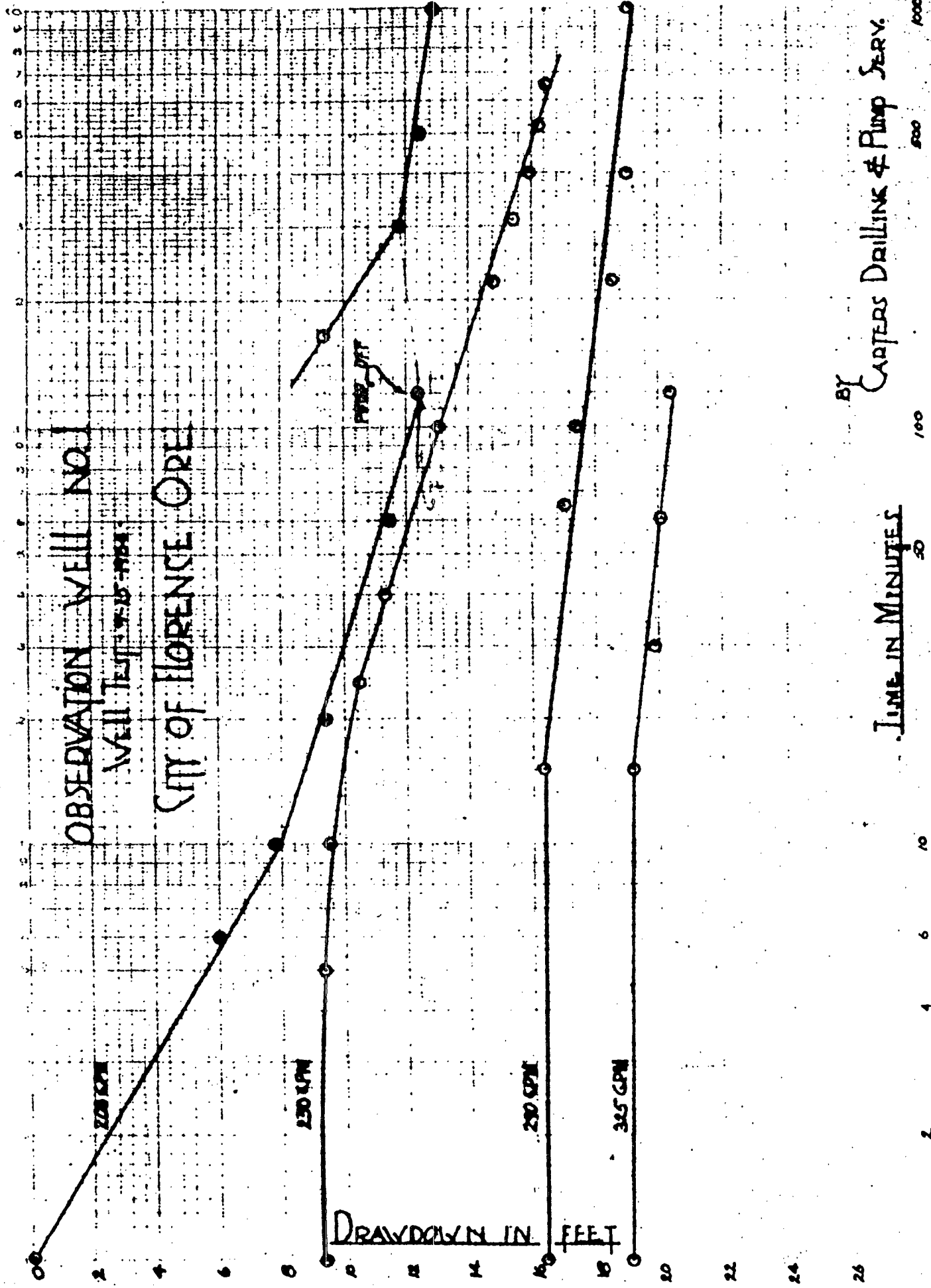
OBSERVATION WELL NO. 11
WELL TEST NUMBER
CITY OF LORENCE, OHIO



BY CARTERS DRILLING & PUMP SERV.

TIME IN MINUTES

0 50 100 150 200 250 300 350 400 450 500 550 600 650 700 750



BY CARTERS DRILLING & PUMP SERV.

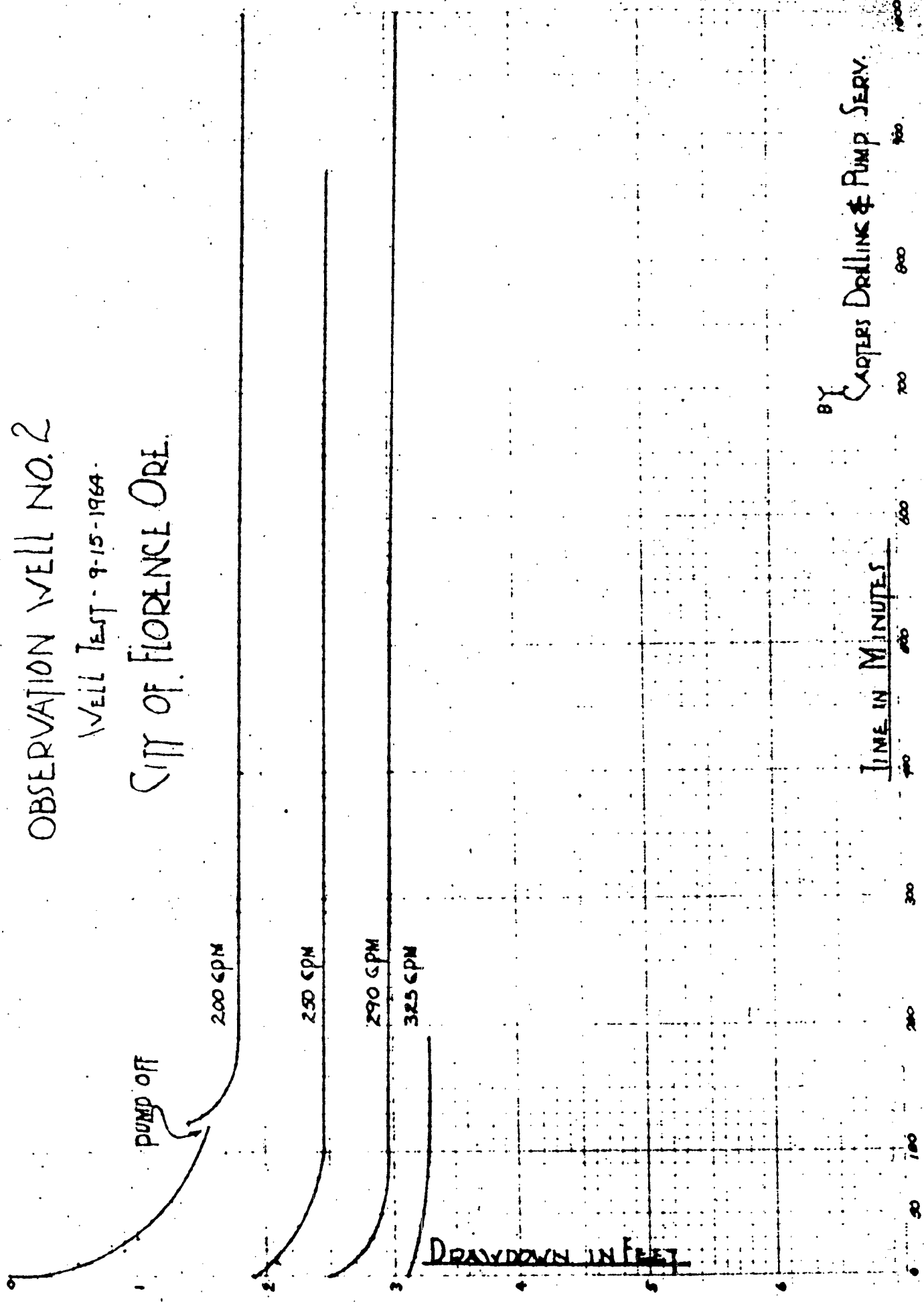
TIME IN MINUTES

2 4 6 10 20 50 100 500 1000

OBSERVATION WELL NO. 2

WELL TEST - 9-15-1964

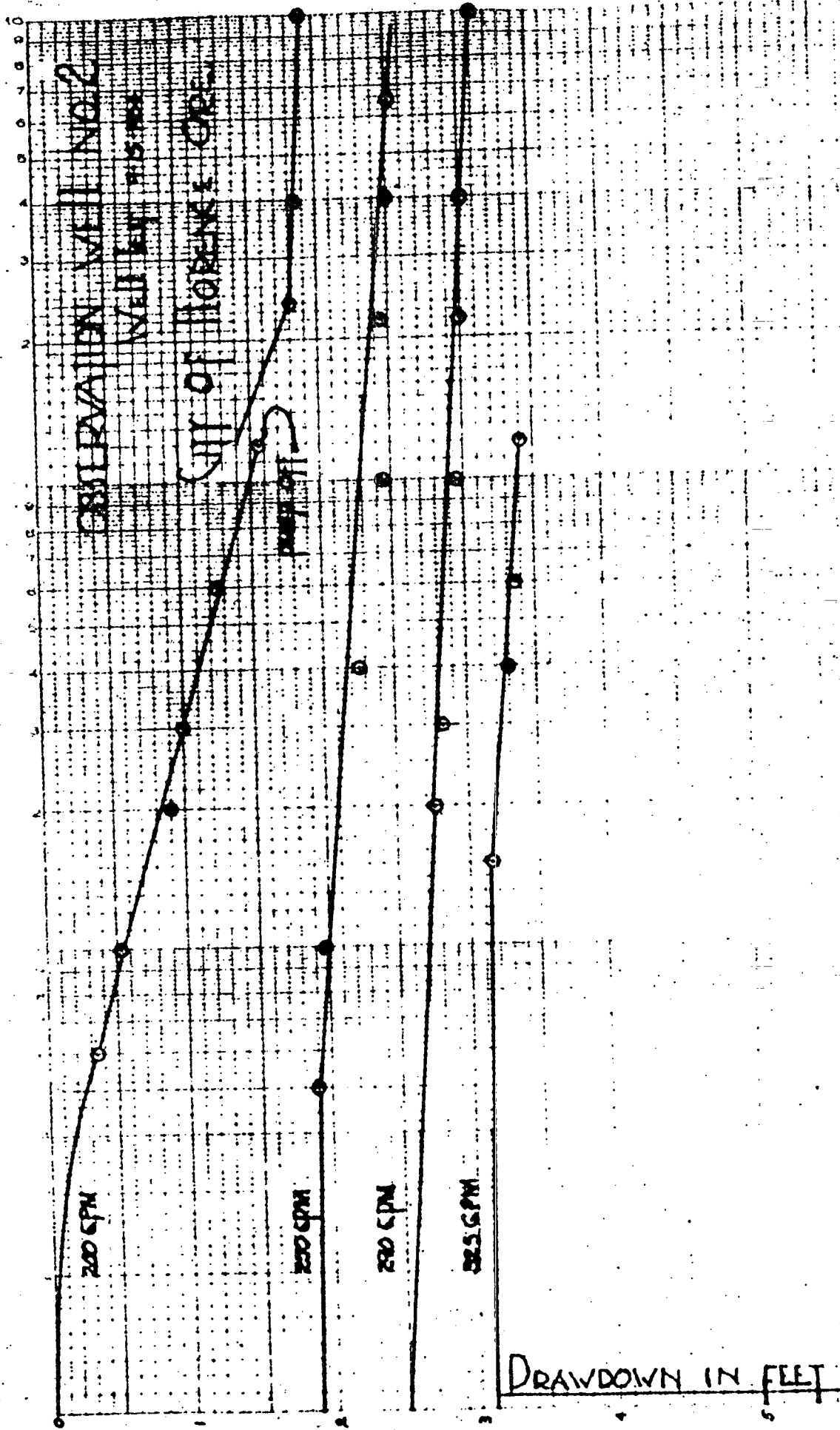
CITY OF FLORENCE ORL.



BY CAPT. J. S. DRILLING & PUMP SERV.

TIME IN MINUTES

0 100 200 300 400 500 600 700 800 900 1000



By CARTERS DRILLING & PUMP SERV.

TIME IN MINUTES

500 1000

100

0

4

2

DRAWDOWN IN FEET

WELL TEST

CITY OF FLORENCE, ORE.
15-1988

WELL RECOVERY

OBS. #2

OBS. #1

FEET TO WATER

12" WELL

TIME IN MINUTES

