

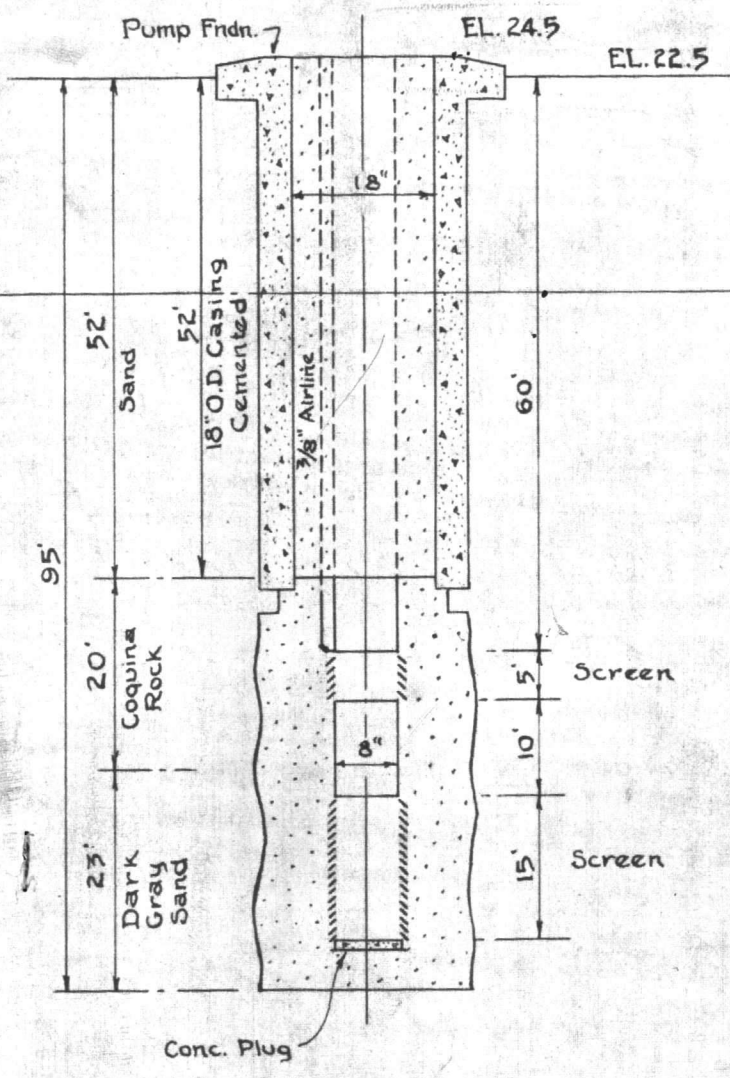
FILE FOLDER

DESCRIPTION ON TAB:

M.P. Well 243

- Outside/inside of actual folder did not contain hand written information**
- Outside/inside of actual folder did contain hand written information**
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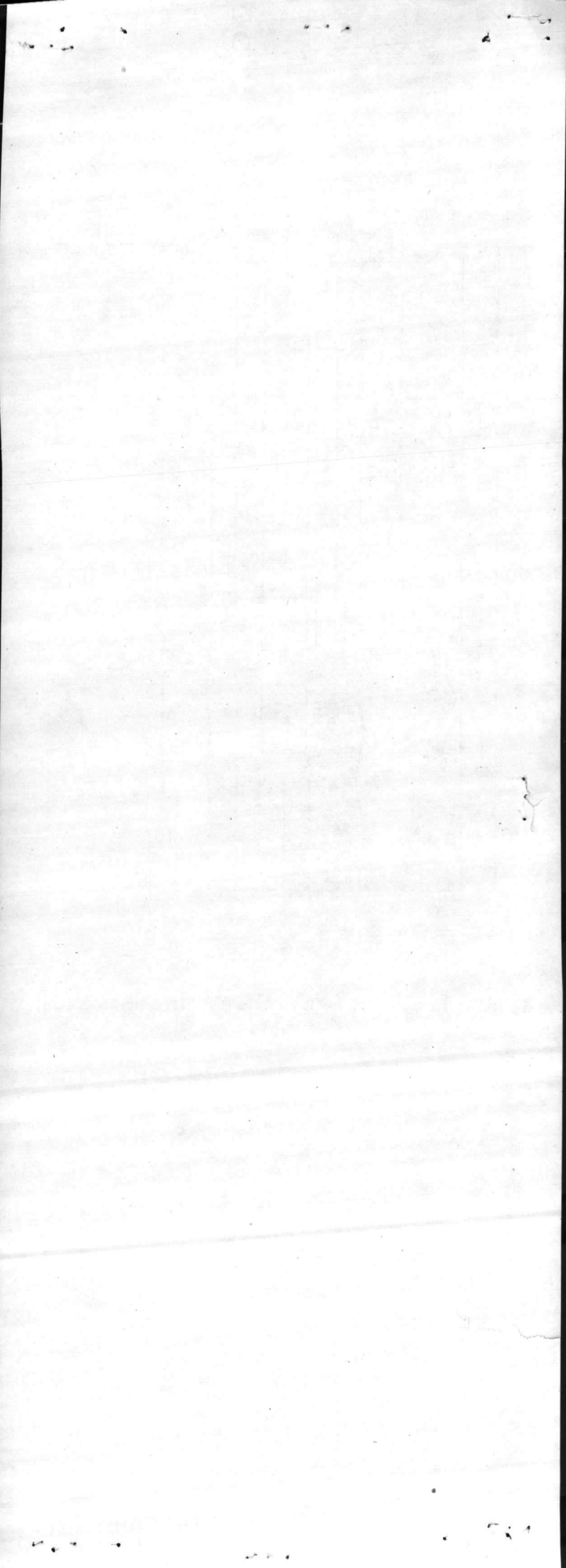
150 G.P.M. - SINGLE DRIVE - 10 H.P.



Armco Iron Screen Used In This Well

60 ft air line 10-30-57
new pump.

MONTFORD POINT WELL No. "Z-2"



WATER ANALYSIS

HUNGERFORD & TERRY, INC.

Manufacturers of Water Treating Plants

CLAYTON, NEW JERSEY



For U.S. Marine Corps Source Montford Point, Well Z-2
Camp LeJeune, N.C. clear

Date Taken 4/10/57 Received 4/15/57 Analyzed 4/16/57

pH 6.9

Suspended Matter organic

Odor none

Parts per Million

Grains per Gallon

	Parts per Million	Grains per Gallon
Turbidity (as SiO ₂)	2.	
Color (Platinum-Cobalt Standard)	1.	
Carbonate hardness (as CaCO ₃)	120.	7.0
Non-carbonate hardness " "	22.	1.3
Total hardness	142.	8.3
Calcium	136.	7.9
Magnesium	6.	0.4
Sodium (as CaCO ₃ Calculated)	1.	0.05
Na (as CaCO ₃ Flame Photometer)	21.	1.2
M.P.M.O. Alkalinity (as CaCO ₃)	120.	7.0
Phen. Alkalinity " "	0.0	0.0
Chloride (as Cl)	10.	
Sulphate (as SO ₄)	9.	
Free Carbon Dioxide (as CO ₂)	6.	
Silica (as SiO ₂)	15.	
Iron (total) (as Fe)	0.2	
Iron (dissolved) (as Fe)	-	
Manganese (as Mn)	trace	
Chlorine (by Ortho-Tolidine)	negative	
Residual Alumina (as Al ₂ O ₃)	-	

Remarks: The Mn. is less than 0.05 ppm.

By BW
 Chemist

HUNGERFORD & TERRY, INC.

Manufacturers of Water Treating Plants
CLAYTON NEW HERRY



For U.S. Marine Corps
Camp Belonne, N.C.
Source: Montford Point, Well 2-S
clear

Date Taken: 11/10/57 Received: 11/15/57 Analyzed: 11/15/57

pH: 6.9

Suspended Matter: organic
Odor: none

Gains per Gallon

Losses per Million

2.	Turbidity (as SiO ₂)
1.	Color (Platinum-Cobalt Standard)
120.	Carbonate hardness (as CaCO ₃)
22.	Non-carbonate hardness "
142.	Total hardness "
136.	Calcium "
6.	Magnesium "
1.	Sodium (as CaCO ₃ Calculated)
21.	Alkalinity (as CaCO ₃ Titrimetric)
120.	Free Alkalinity (as CaCO ₃)
0.0	Total Alkalinity "
10.	Chloride (as Cl)
9.	Sulfate (as SO ₄)
9.	Free Carbon Dioxide (as CO ₂)
12.	Silica (as SiO ₂)
0.2	Iron (total) (as Fe)
--	Iron (dissolved) (as Fe)
TRACE	Manganese (as Mn)
NEGATIVE	Chlorine (by Ortho-Toluidine)
--	Residual Alkalinity (as Al ₂ O ₃)

7.0
1.3
8.3
7.9
0.1
0.02
1.2
7.0
0.0

Remarks: The pH is less than 0.05 ppm.

M 243

Depth 81'-4"

Water Level 18'-8"

60' From Head To Impellor

10' Tail piece w/strainer

7-Stage Impellor

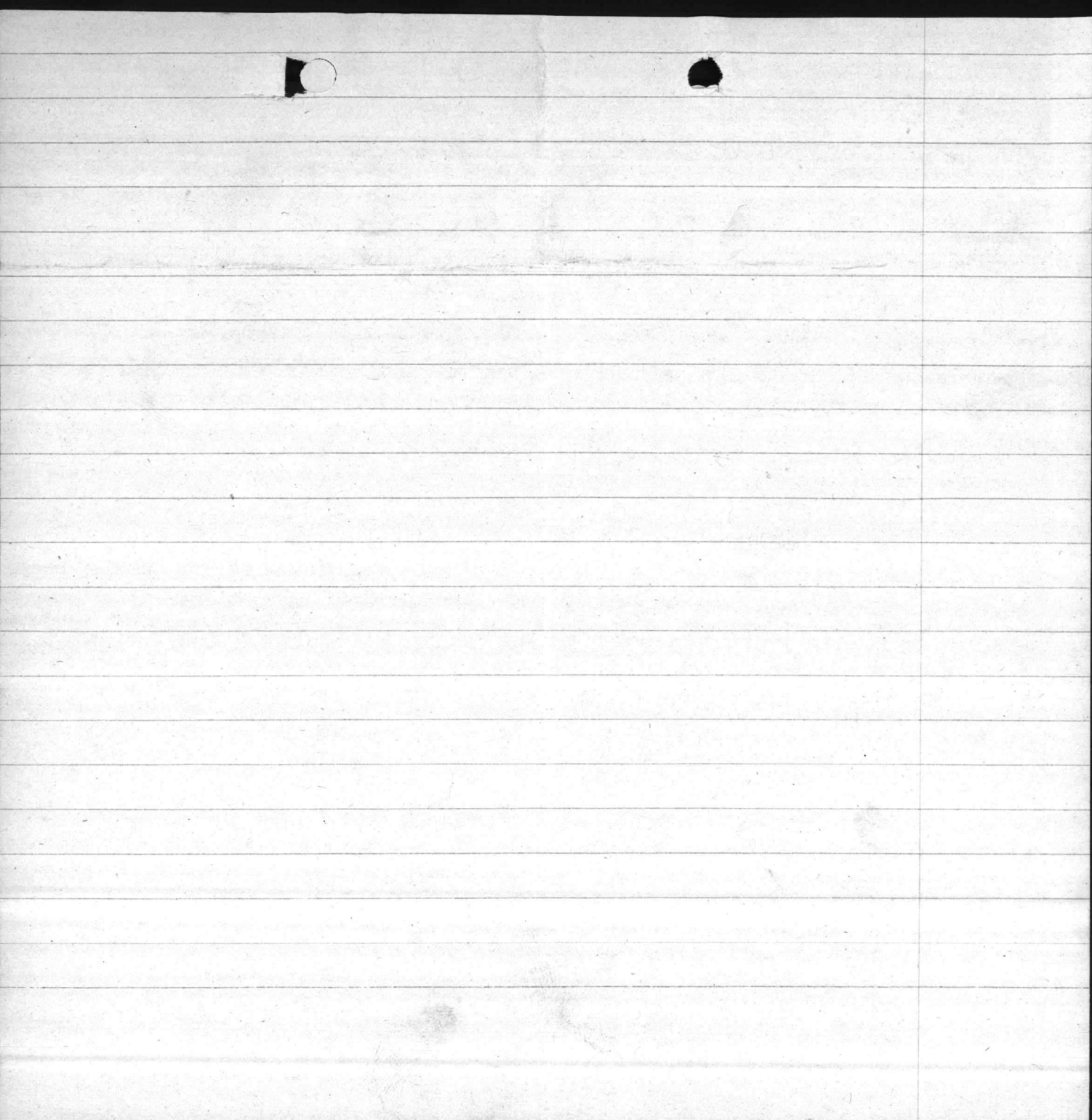
New Impellor Shaft

New Collets

Pulled 13 March 78

Blowed 15 March 78

Installed 20 March 78



DATE	WELL #	LINE PRESS.	STATIC	PUMPING LEVEL	D.D.	G.P.M.	S.L.
7-5-67	Z-2	30	35'	25'	10'	78	- 9.5
7-5-67	Z-2	48	35'	22'	13'	86	- 12.5
7-5-67	Z-2	(46)	35'	19'	16'	92	- 15.5
7-5-67	Z-2	44	35'	16 1/2'	18.5	73.98	- 18
7-5-67	Z-2	42	35'	13 1/2'	21.5	80 106	- 21
7-5-67	Z-2	40	35'	10 1/2'	24.5	88 115	- 24
7-5-67	Z-2	38	35'	9'	26.	94 122	- 25.5

GAUGE READING

DIRECT READING

25	35'	10'	
25	38'	13'	
25	41	16'	
25	43.5	18.5	
25	46.5	21.5	
25	49.5	24.5	MAX



11/21/11

Montford Point Well 2-2 Bldg 243

Depth - 95'

Casing - 8"

Pump - size ~~4~~ 5" ~~PUMP~~ MOTOR H.P.

setting 60' ~~PUMP SETTING~~

GPM - 150 original at present 75

T.D.H. = 148'

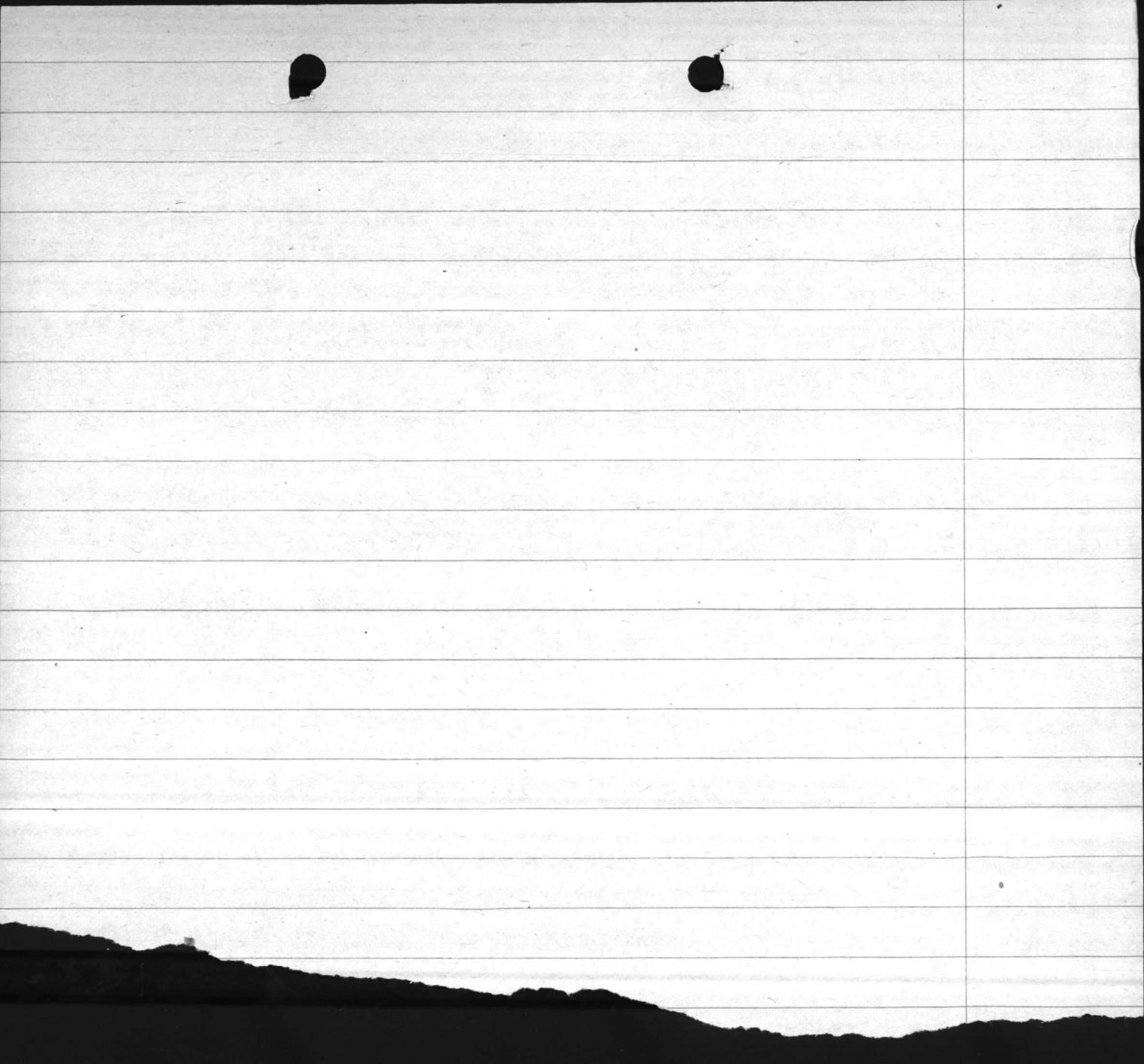
Pumping level - 50'

Static - 23' or + 1.5

D.P. - 22' ~~20~~ or - 25.5'

airline - 60' + 24.5
- 35.5

10 FT ABOVE TOP SCREEN



DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
OFFICE OF WATER DATA COORDINATION
INVENTORY OF HYDROLOGIC DATA STATIONS
QUALITY OF WATER

APPROVED.
Budget Bureau No. 42-R1485
Approval Expires June 30, 1968

1. AGENCY CODE MCQC MC	2. TYPE Q	3. LATITUDE ° ' " N 34 43 41	4. LONGITUDE ° ' " W 77 24 48	5.
6. AGENCY STATION NO. M243		7. STATION NAME M178-22		
8. DRAINAGE BASIN CODE No. Letter 06 N		9. STATE CODE 32	10. COUNTY CODE 133	11. COUNTY NAME ONSTLOW
12. PERIOD OF RECORD Began 1945 Discontinued		Y <input type="checkbox"/> Continuous <input type="checkbox"/> Interruption Exceeds 1 Year		13. 14.
15. SITE				
<input type="checkbox"/> 101 Stream <input type="checkbox"/> 102 Canal		<input type="checkbox"/> 103 Lake <input type="checkbox"/> 104 Reservoir <input type="checkbox"/> 105 Estuary		<input type="checkbox"/> 106 Spring <input checked="" type="checkbox"/> 107 Well <input type="checkbox"/> 110 Other
16. FREQUENCY OF MEASUREMENT				
<input type="checkbox"/> 201 Continuous Recorder <input type="checkbox"/> 202 Telemetered		<input type="checkbox"/> 203 Daily <input type="checkbox"/> 204 Weekly <input type="checkbox"/> 205 Monthly <input type="checkbox"/> 206 Quarterly		<input type="checkbox"/> 207 Seasonal <input type="checkbox"/> 208 Annual <input type="checkbox"/> 209 Other Periodic <input checked="" type="checkbox"/> 210 Occasional
17. TYPES OF DATA AVAILABLE				
Physical		Chemical		Organic
<input type="checkbox"/> 311 Temperature <input type="checkbox"/> 312 Specific Conductance <input type="checkbox"/> 313 Turbidity <input type="checkbox"/> 314 Color <input type="checkbox"/> 315 Odor <input type="checkbox"/> 316 Radioactivity <input type="checkbox"/> 317 pH (field) <input checked="" type="checkbox"/> 318 pH (lab) <input type="checkbox"/> 319 Eh <input type="checkbox"/> 320 Other		<input type="checkbox"/> 331 Dissolved solids <input checked="" type="checkbox"/> 332 Chlorides Only <input type="checkbox"/> 333 Nutrients (Nitrogen and phosphorus compounds) <input type="checkbox"/> 334 Common ions <input checked="" type="checkbox"/> 335 Hardness <input type="checkbox"/> 336 Radiochemical <input type="checkbox"/> 337 Dissolved oxygen <input type="checkbox"/> 338 Other Gases <input type="checkbox"/> 339 Other		<input type="checkbox"/> 351 Pesticides (insecticides, herbicides, etc.) <input type="checkbox"/> 352 Synthetic detergents <input type="checkbox"/> 353 Other Biologic <input type="checkbox"/> 361 Coliforms <input type="checkbox"/> 362 Other Micro-organisms <input type="checkbox"/> 363 BOD <input type="checkbox"/> 364 Other Sediment <input type="checkbox"/> 371 Concentration <input type="checkbox"/> 372 Particle size <input type="checkbox"/> 373 Other
18. SUPPLEMENTARY DATA FOR SITE				
<input type="checkbox"/> 421 Surface Water Station <input type="checkbox"/> 422 Ground Water Station		<input type="checkbox"/> 423 Water Stage or Level <input checked="" type="checkbox"/> 424 Water discharge		<input type="checkbox"/> 425 Time of Travel <input type="checkbox"/> 426 Drainage Area
19. STORAGE OF DATA				
<input type="checkbox"/> 501 Periodic Report <input type="checkbox"/> 502 Areal Report		<input checked="" type="checkbox"/> 503 Not Published <input type="checkbox"/> 504 Data on Punchcard		<input type="checkbox"/> 505 Data on Magnetic Tape <input type="checkbox"/> 506 Other
20. OFFICE AT WHICH DATA AVAILABLE				
Office <u>BASE MAINTENANCE DEPARTMENT, UTILITIES DIVISION</u>				
Street No. <u>MARINE CORPS BASE</u>				City Code
City, State, Zip <u>CAMP LEJEUNE, N. C. 28542</u>				<u>0735</u>
21. OFFICE COMPLETING FORM <u>BASE MAINTENANCE DEPARTMENT</u>				
22. COMPILER'S NAME <u>F. E. TEW, JR.</u>				23. DATE Month <u>09</u> Year <u>1966</u>



WELL # 2-2

PLACE - Montford Point

DATE - 21 Dec 1956

ORIGINAL WELL CAPACITY

G.P.M. 150

2 Jan 1957

ORIGINAL WELL		TESTING	
Depth of Well	95	Depth after Cleaning	95
Pump Size		Test Pump Setting	60'
Pump Setting	60	Measured Static Water Level	23'
Static Water Level		Depth of Air Line	60'

Static on gauge 26'

CONDITION OF WELL - Well in good condition. Some sludge in bottom.

STATIC LEVEL ON GAUGE

Inches of water in dizometer tube	G.P.M.	30 Min.	45 Min.	60 Min.	1 Hour
	75	PL	PL	PL	PL 45'
	90	PL	PL	PL	PL 47
	110	PL	PL	PL	PL 49
	125	PL	PL	PL	PL 53
	140	PL	PL	PL	PL 56
	150	PL	PL	PL	PL 59
		PL	PL	PL	PL
		PL	PL	PL	PL
		PL	PL	PL	PL
		PL	PL	PL	PL
		PL	PL	PL	PL

RECOVERY	
10 Sec.	50
20	PL 42
30	PL 40
40	PL 40
50	PL 40
60	PL 39.5
2 Min.	PL 39
4	PL 38
8	PL 31
16	PL 29
32	PL 28
60	26



DATE	DESCRIPTION	AMOUNT

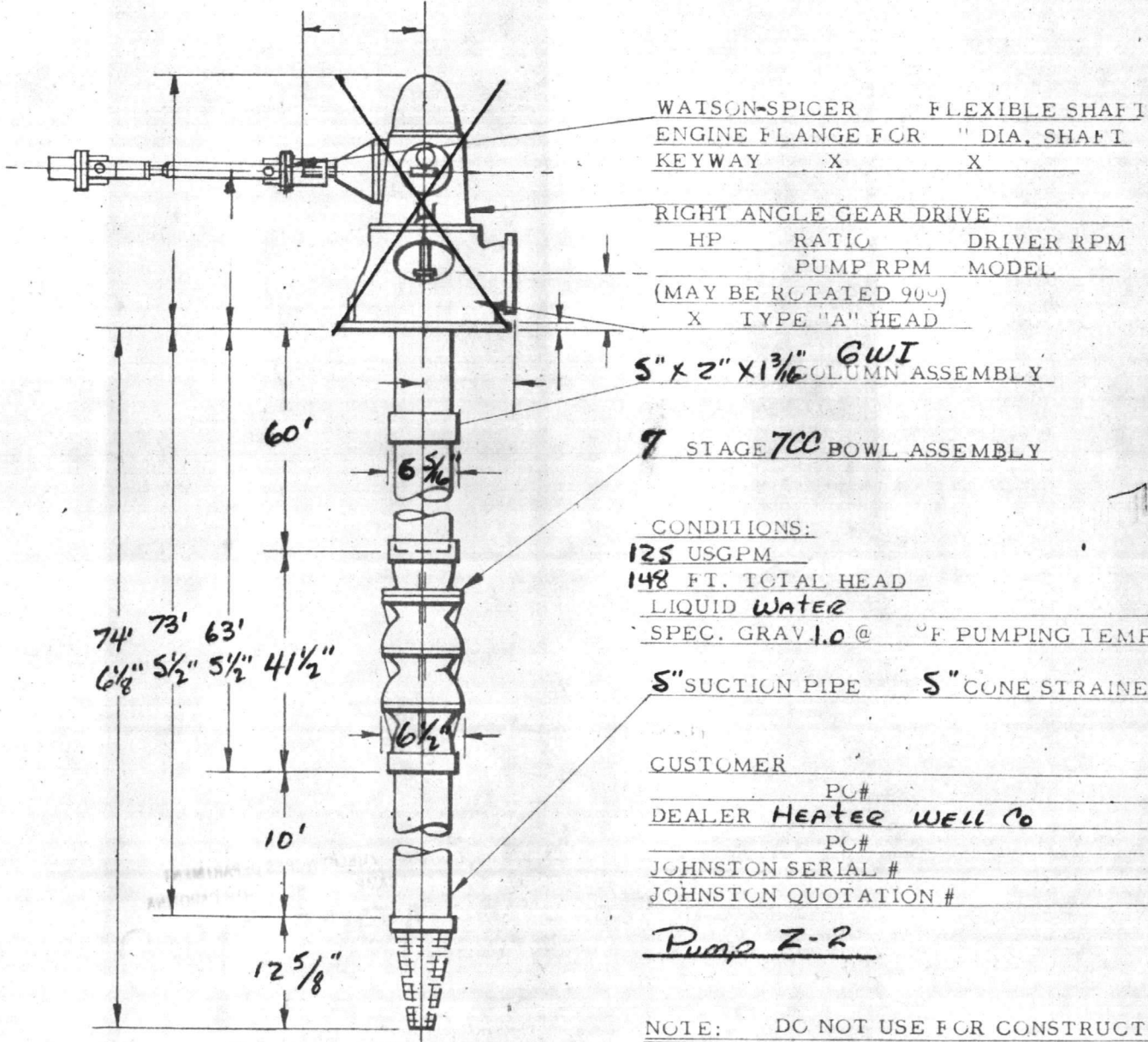
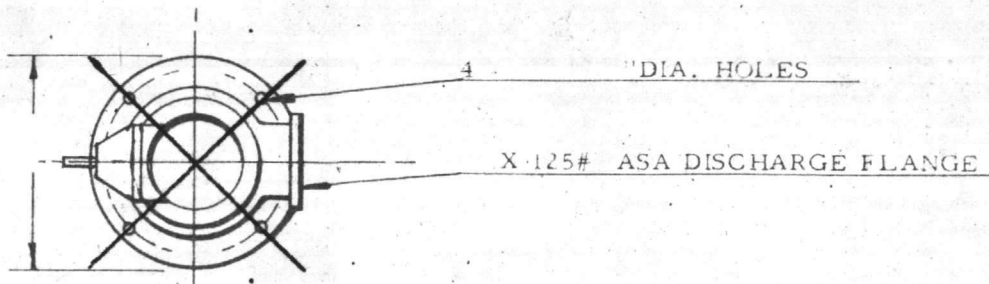
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STATEMENT OF BALANCE

DATE	DESCRIPTION	AMOUNT

Blank lined area on the left side of the page for additional notes.

JOHNSTON VERTICAL TURBINE PUMP



74' 73' 63'
6 1/8" 5 1/2" 5 1/2" 4 1/2"

60'

6 5/16"

6 1/2"

10'

12 5/8"

647001-1

1-1000000

PUBLIC WORKS DEPARTMENT
CAMP LEJEUNE, NORTH CAROLINA

APPROVED

SUBJECT TO CONTRACT REQUIREMENTS

CONTRACT NO. 3885 SPEC. NO. 3885/56

TITLE Repairs to Hill House, etc.

DATE: 6 Mar 57, W. J. Evans, Jr.

BY DIRECTION OF OFFICER
IN CHARGE OF CONSTRUCTION

HYDRAULIC PERFORMANCE IS CONTINGENT ON WELL FINISHING PUMP WITH CLEAR, FRESH NON-AERATED OR NON-GASEOUS WATER FREE FROM DETRITUS WITH NO SUCTION LIFT AND TEMPERATURE NOT TO EXCEED 85 DEGREES FAHRENHEIT

NOTE: ALL COLUMN LOSSES ARE INCLUDED

CUSTOMER: _____

P.O.# _____

DEALER: Heater Well Co

P.O.# _____

JOHNSTON SERIAL: _____

Pump 2-2

CHANGE EFFICIENCY AS FOLLOWS	NUMBER OF POINTS	FOR NUMBER OF STAGES

NOTE: ANY CHANGE IN EFFICIENCY CHANGES EITHER THE HEAD OR HORSEPOWER IN PROPORTION

647001-1

TOTAL HEAD IN FEET

165
145
125
105
85
65

Head/Capacity

Operating Conditions
148' TDH. AT 125 GPM
Pumping WATER Sp Gr 1.0

80
75
70
65
60
% EFFICIENCY

Brake Efficiency

Brake HP Req'd.

85 125 165 205 245

U. S. GALLONS PER MINUTE

8
7
6

HORSE POWER

IMPELLER Bez.
5 1/4 DIA.

JOHNSTON PUMP CO.



VERTICAL PUMPS

PASADENA • CALIFORNIA • USA

PERFORMANCE 7 STAGE

7CC DEEP WELL TURBINE PUMP

1760 R. P. M.

DATE: 2-18-57 BY: JDM

CURVE SHEET NO. _____

1-100672

PUBLIC WORKS DEPARTMENT
CAMP LEJEUNE, NORTH CAROLINA

APPROVED

SUBJECT TO CONTRACT REQUIREMENTS

CONTRACT NO. 3885 SPEC. NO. 3885/86

TITLE Repairs to Hill Perimeter.

DATE: 6 Mar 57 H. J. Evans Jr.
BY DIRECTION OF OFFICER
IN CHARGE OF CONSTRUCTION ish

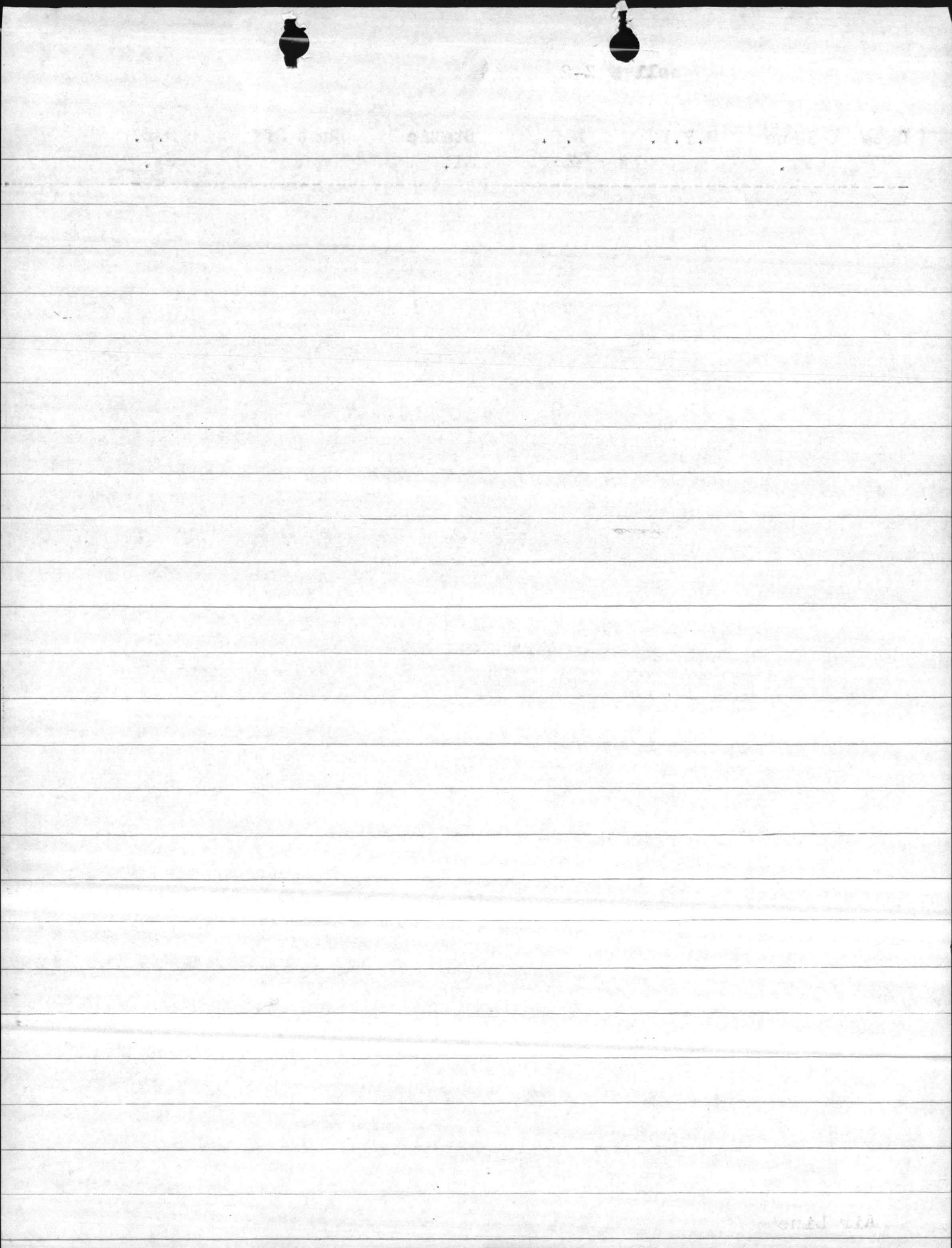
Well # Z-2

Date	Line	G.P.M.	D.D.	Static	Shut Off	D.D.
	Ft.		El.	El.	Head	Ft.

5-5-58

40ft alt.

Air Line



W E L L D A T A

Well Z-2

MONTFORD POINT

SPECIFICATION

Pump Base Elev. 24.5
Ground Elev. 22.5
Static Elev. /6.2
Maximum Allowed D.D. -37.5
Total Discharge 150
Total Head 160.0

TEST

<u>G.P.M.</u>	<u>PRESSURE</u>	<u>DRAW-DOWN</u> <u>Elev</u>
210	37#	-34.1
175	40#	-31.5
170	45#	-29.2
155	50#	-24.8 = 165.8'

Recovers to Elev. / 1.2 in 3 Mi.

W E I D A T A

Well 1-S

MONTFORD POINT

SPECIFICATION

Total Head 100.0
Total Discharge 150
Maximum Allowed D.D. -27.5
Static Elev. 42.5
Ground Elev. 22.5
Pump Base Elev. 24.5

TEST

<u>C.P.M.</u>	<u>PRESSURE</u>	<u>DRAW-DOWN</u>
155	204	-24.8 = 17.2
170	154	-29.5
175	104	-31.8
210	37	-34.1

Recovery to Elev. 41.5 in 2 min.

WELL TEST DATA

Well No. Z-2 Date 25 JULY 1955 Tested By SJ MORRIS

Elev. Pump Foundation 24.5 (a)

Length of Air Tube 62. (b)

Elev. Bottom of Air Tube -37.5 (c)

Determination Static Water Level - (Pump should be cut off for at least 30 minutes)

Gauge Reading NONE p.s.i. x 2.31 = _____ feet (d)

Elevation Static Water Level (c + d) INDETERMINATE (e)

Flow Test

Elev. of Gauge on discharge piping

OFFICE HEAD INCHES

Test No.	Time	Flow G.P.M.	Discharge Pressure p.s.i. FT	Well Gauge Reading p.s.i.	(f) Feet p.s.i. x 2.31	(g) Drawdown Elev. (f - d)	Drawdown Feet (d - g)	D.D. per 100 gals.	
1	11:20	175	80	AIR LINE TUBES PREVENTED ANY GAUGE READINGS				17 1/2"	
2	11:25	163	85					15"	
3	11:27	155	95					13 1/2"	
4	11:30	123	110					8"	
5	11:32	100	120					5"	
6	11:35	145	100					12"	
7									
8									

Make of Pump LAYNE Serial No. 12839

Motor H.P. 10 Volts _____ Amps. _____ KW _____

Depth of setting UNKNOWN

NOTE! THIS PUMP IS PRESENTLY BEING OPERATED UNDER A THROTTLED DISCHARGED CONDITION TO PRODUCE A MINIMUM HEAD OF 10 PSI IN ORDER TO PREVENT EXCESSIVE DRAWDOWN

Remarks: Pressure on supply main with well off 77'

Out off head on pump (Pressure on gauge with discharge valve closed) 175'

10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20

Table of data on discharge pump

Time	Flow rate (gpm)	Pressure (psi)	Motor current (amps)	Notes
11:30 AM	100	100	100	
11:35 AM	100	100	100	
11:40 AM	100	100	100	
11:45 AM	100	100	100	
11:50 AM	100	100	100	
11:55 AM	100	100	100	
12:00 PM	100	100	100	
12:05 PM	100	100	100	
12:10 PM	100	100	100	
12:15 PM	100	100	100	
12:20 PM	100	100	100	
12:25 PM	100	100	100	
12:30 PM	100	100	100	
12:35 PM	100	100	100	
12:40 PM	100	100	100	
12:45 PM	100	100	100	
12:50 PM	100	100	100	
12:55 PM	100	100	100	
1:00 PM	100	100	100	

15829

NOTE: THIS PUMP IS PRESENTLY BEING...
 77
 172