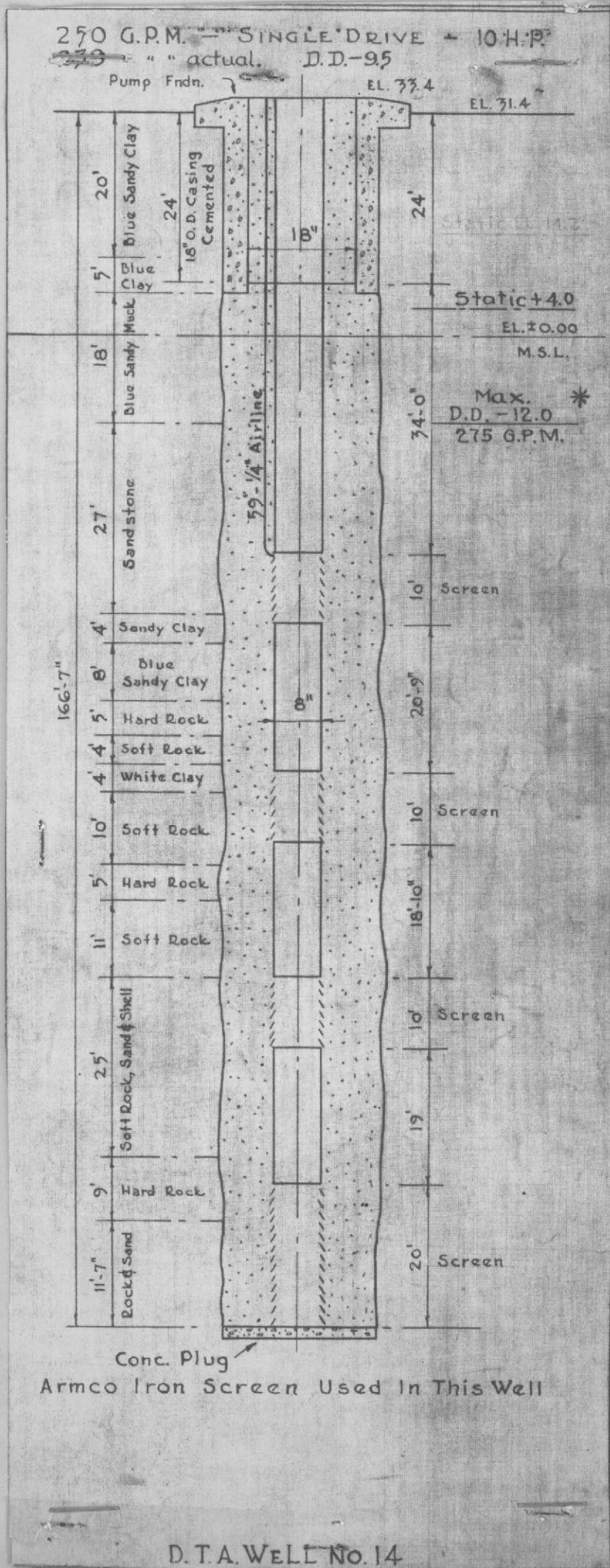


*Well Caved 11/29/78 WRP
 casing filled with sand + gravel to 98'*

Water table 72'



Well Caved 11/29/78 WRP
Casing filled with sand & gravel to 98'

Water table 72'

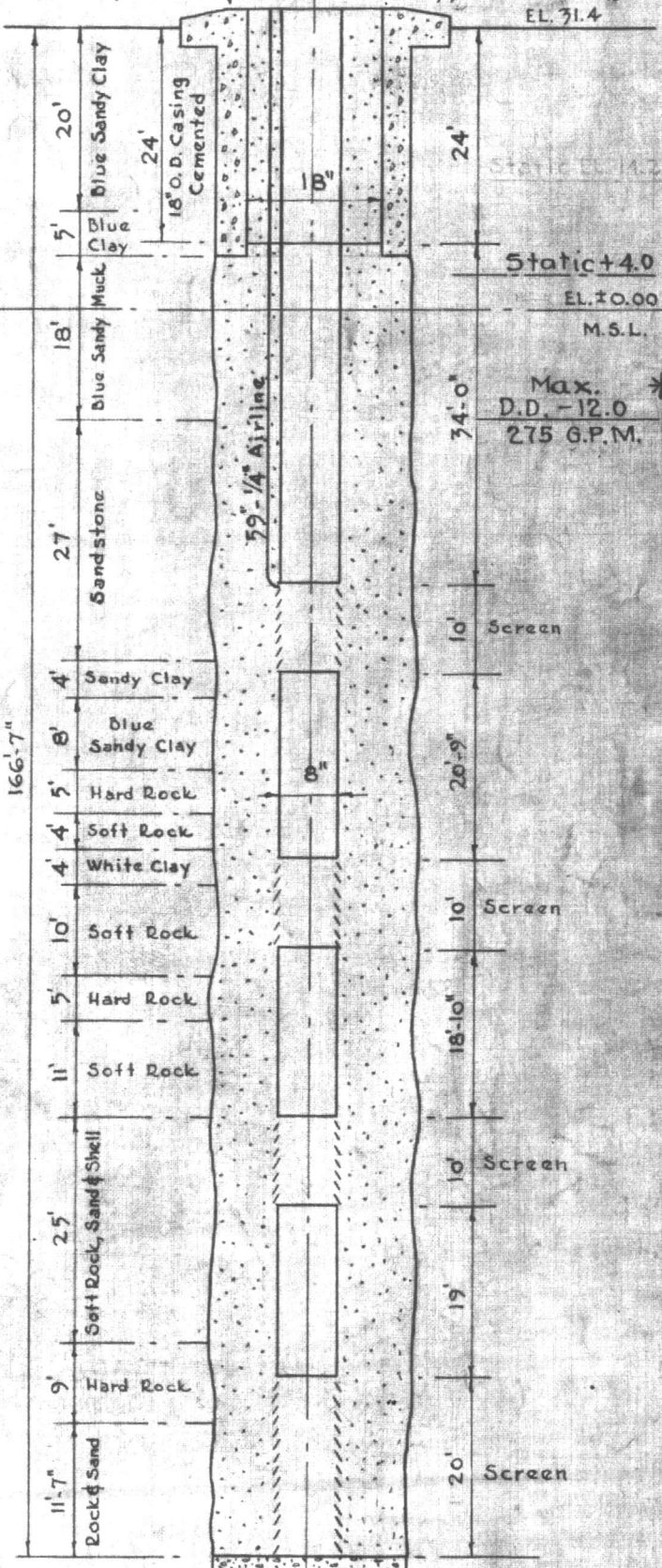
270 G.P.M. — SINGLE DRIVE — 10 H.P.

239 " " actual. D.D.-95

Pump Fdn.

EL. 33.4

EL. 31.4



Static EL. 14.2

Static +4.0

EL. 10.00

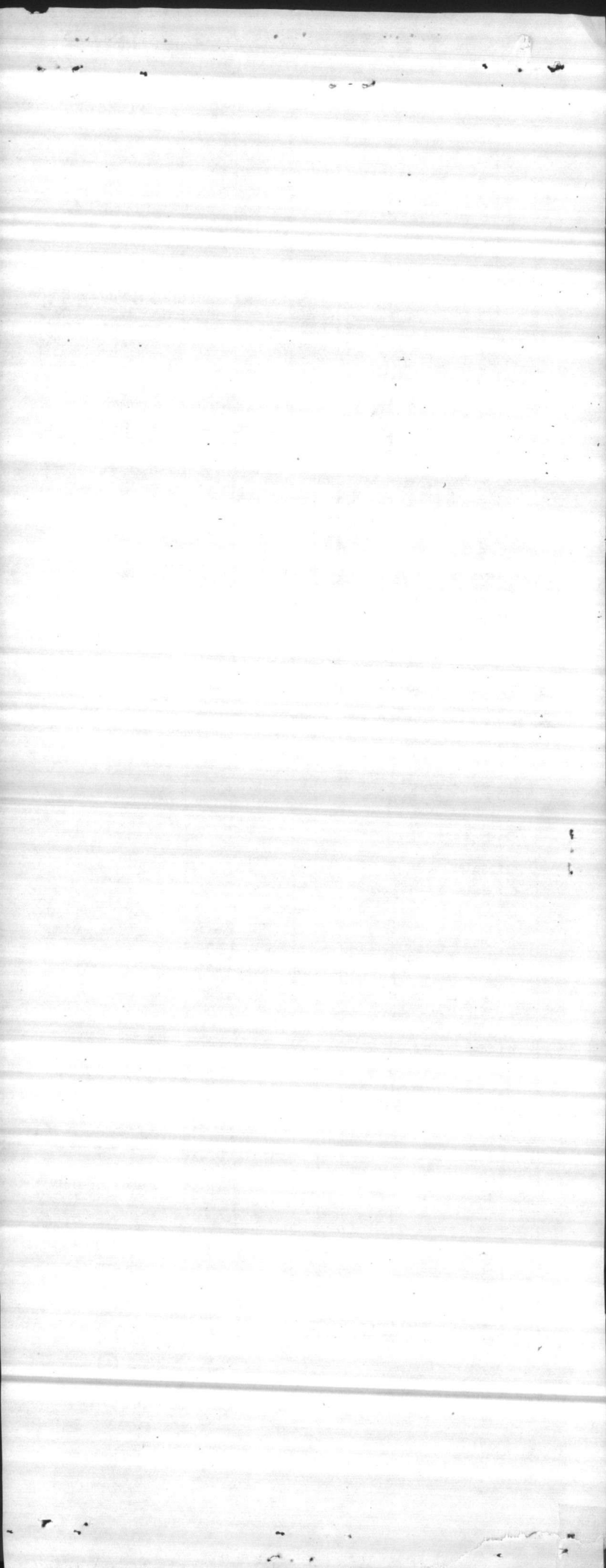
M.S.L.

Max. D.D. -12.0 *
275 G.P.M.

166'7"

Conc. Plug

Armco Iron Screen Used In This Well



WELL #

614

LENGTH OF AIR LINE

STATIC LEVEL

PUMPING LEVEL

DRAW DOWN

DISCHARGE PRESSURE

CAP. PER FOOT OF DRAW DOWN

GPM TOTAL CAP.

DATE

4/1/77

53

39

30

100

40

28

104

40

26

108

41

24

115

42

22

122

44

20

125

REMARKS:

MAX

PUMP

151 GPM

AT

0 PSI

P/L

48'

DEPTH OF

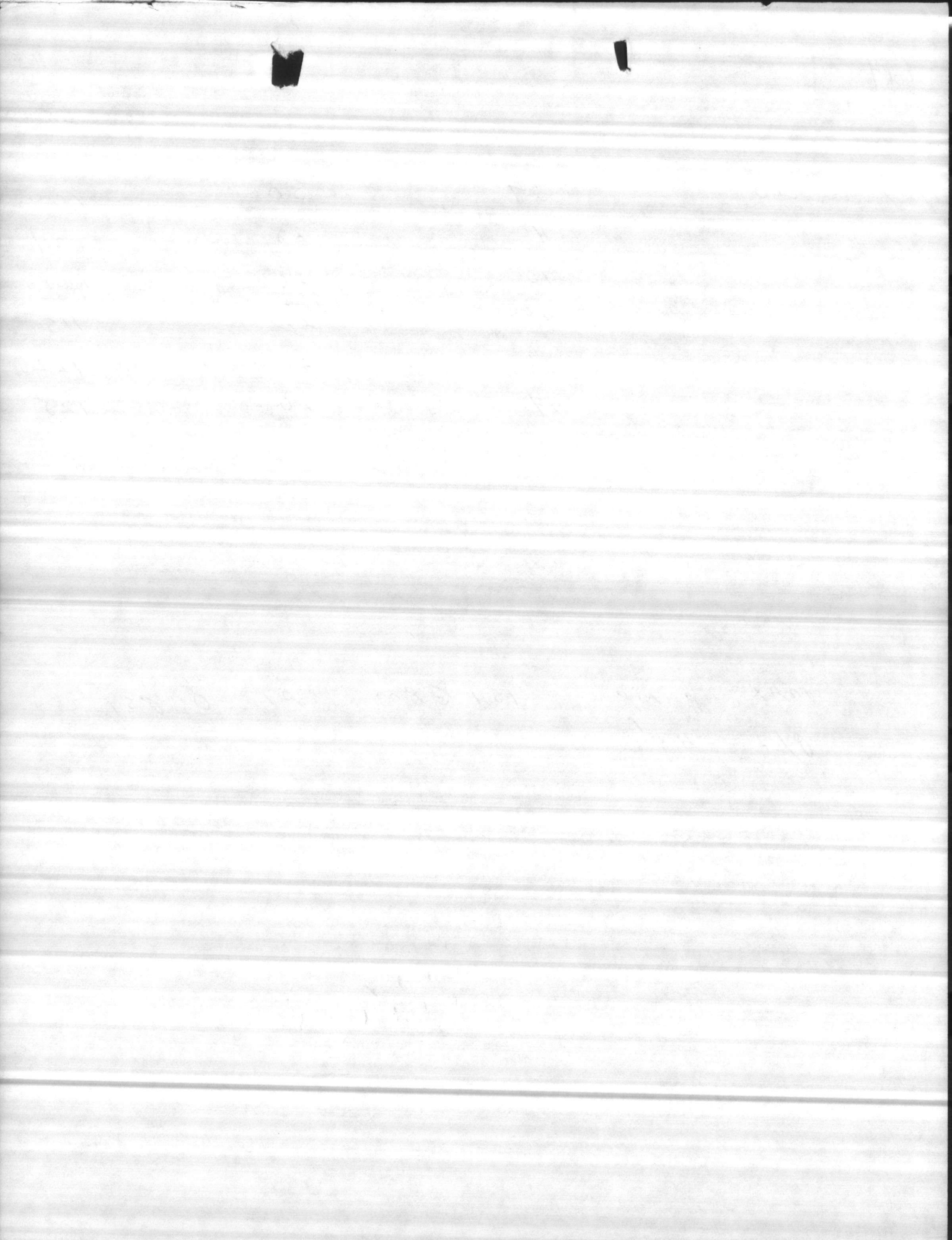
WELL:

AIRLINE

ELEVATION:

DATE

INSTALLED:



U.S. 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 MC	2. TYPE Q	3. LATITUDE ° ' " N 34 42 36	4. LONGITUDE ° ' " W 77 20 21	5.
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6. AGENCY STATION NO. 614	7. STATION NAME HP-20 614
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8. DRAINAGE BASIN CODE No. Letter 06 N	9. STATE CODE 32	10. COUNTY CODE 133	11. COUNTY NAME ONslow
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12. PERIOD OF RECORD Began Discontinued 1942	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 <i>Physical</i> <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	<i>Chemical</i> <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	<i>Organic</i> <input type="checkbox"/> 351 Pesticides (insecticides, herbicides, etc.) <input type="checkbox"/> 352 Synthetic detergents <input type="checkbox"/> 353 Other <i>Biologic</i> <input type="checkbox"/> 361 Coliforms <input type="checkbox"/> 362 Other Micro-organisms <input type="checkbox"/> 363 BOD <input type="checkbox"/> 364 Other <i>Sediment</i> <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 Punched Card	<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 LEJUNE, N. C. 28512</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 Year <u>19</u>
--	---------------------------------------

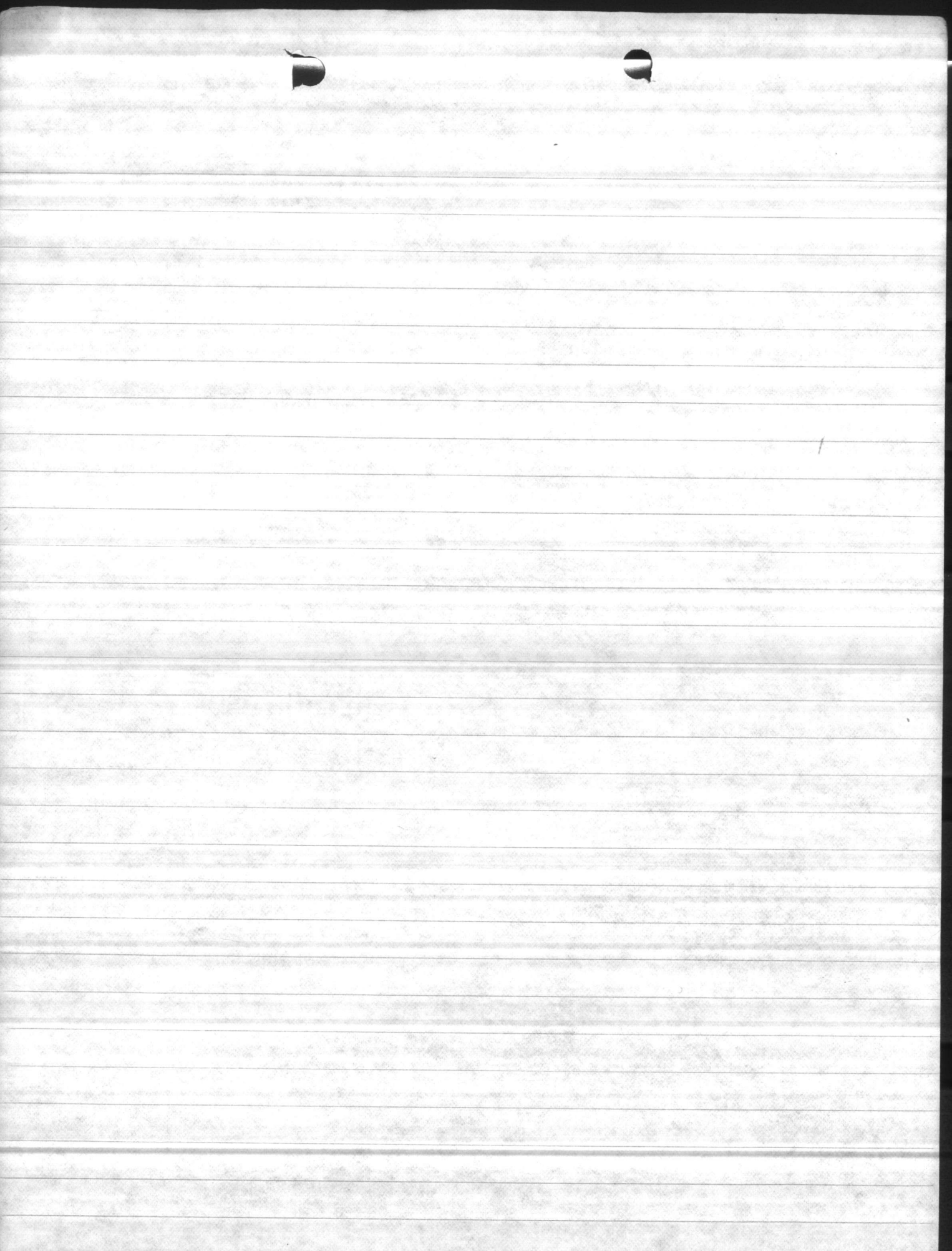


614

9-5-85

AL	SL	PL	PO	PSI	GPM	TIME
90	23	46	23	98	170	1000
		51	28	92	205	15 min
		56	33	84	218	15
		62	39	76	243	15
		64	41	70	254	15
		66	43	64	263	15
		68	45	58	275	15
		71	48	50	287	15
		73	50	40	312	15
		75	52	35	317	15
		78	55	30	320	15

used direct reading gauge



WATER ANALYSIS

By N. H. Kellam

Date 6/30/42

Sample from Well No. 14 Reg area

Total Solids 264 PPM Dissolved Solids 228 PPM

Suspended Solids 36 PPM Volatile Solids _____ PPM

Phenol. Alk. as CaCO₃ 0 PPM Silica as SiO₂ 24 PPM

Total Alk. " " 190 " Ferrous Iron as Fe 0 "

Carbonates " " 0 " Total Iron as Fe 1.5 "

Bicarbonates " " 190 " Aluminum as Al. 4.7 "

Chlorides as Cl. 15 " Calcium as Ca. 70.6 "

Sulphates as SO₄ 18 " Magnesium as Mg. 8.8 "

Nitrites as NO₂ 0 " Sodium as Na. 6.1 "

Carbon Dioxide as CO₂ 0 0 "

pH 7.8 Soap Hardness as CaCO₃ 236 PPM

Odor slight Turbidity 20

REMARKS (1) pumped with air lift

WATER ANALYSIS

BY

DATE

Date

Sample from

PM

Dissolved Solids

PM

Total Solids

PM

Volatile Solids

PM

Suspended Solids

PM

Alumina as Al_2O_3

PM

Total Alk. as $CaCO_3$

"

Permanganate Iron as Fe_2O_3

"

Total Alk. "

"

Total Iron as Fe_2O_3

"

Carbonates "

"

Aluminum as Al_2O_3

"

Phosphates "

"

Calcium as CaO

"

Chlorides as Cl_2

"

Magnesium as MgO

"

Sulphates as SO_4

"

Sodium as Na_2O

"

Nitrates as NO_3

PM

Total Hardness as $CaCO_3$

Other

Remarks

Blank lines for additional notes or data.

Marine Barracks
New River, N. C.
1 August 1942

WELLS-PERMANENT WATER SUPPLY-REGIMENTAL AREA
By Layne Atlantic Company

Project P-108-4

Report On Well 14

Location: 4850 feet west of station 355 / 37 on main access road as shown on M.B. Drawing No. 577.

Date Drilled: July 1942

Drilling Equipment: Rotary Rig and Rotary Bits

Status: 23" diameter hole reamed and cased with 18" I.D. steel casing to a depth of 24 ft. The annular space around this was filled with cement grout. A 17" hole was then drilled to a depth of 178'.

Log of Formation:	0 to 20'	Blue Sandy Clay
	20' to 25'	Blue Clay
	25' to 43'	Blue Sandy Muck
	43' to 70'	Sand Stone
	70' to 74'	Sandy Clay
	74' to 82'	Blue Sand and Clay
	82' to 87'	Hard Coquina Rock
	87' to 91'	Soft Coquina Rock
	91' to 95'	White Clay, Sand and Shells
	95' to 105'	Soft Rock
	105' to 110'	Hard Rough Rock
	110' to 121'	Soft Rock
	121' to 146'	Soft Rock with Sand and Shells
	146' to 155'	Hard Rock (rough drilling)
	155' to 178'	Rock and Fine Sand
	178'	Sand and Clay

Remarks: Due to the presence of fine sand it was necessary to construct a gravel wall well.

Gravel Wall Construction: An 8" steel pipe with sections of armor iron screen was placed in the 17" hole to a depth of 166' - 7". The annular space around the 8" pipe and screen was filled with a special $\frac{1}{4}$ " washed gravel to ground level.

Log of Screen Settings:	0	to 58'	Steel Pipe
	58'	to 68'	Iron Screen
	68'	to 88'9"	Steel Pipe
	88'9"	to 98'9"	Iron Screen
	98'9"	to 117'7"	Steel Pipe
	117'7"	to 127'7"	Iron Screen
	127'7"	to 146'7"	Steel Pipe
	146'7"	to 166'7"	Iron Screen

A total of 50' of screen was used.

Air Line: - 59' of $\frac{1}{4}$ " pipe was placed in the well for air line.

Static Level: 18' below surface.

Pumping: Well was pumped for 36 hours to wash out mud and sand.

Well pumps 225 G.P.M. with a 24 ft. D.D. from static level. Recovers to static in 3 mi. This is approximately 9.4 gallons per foot of drawdown.

See separate report for chemical analysis.

Report will be made of pump instalations.

N. H. Kellam
Asst. Chem. Eng.

1941
1942
1943
1944
1945
1946
1947
1948
1949
1950

1951

1952

1953

1954

1955

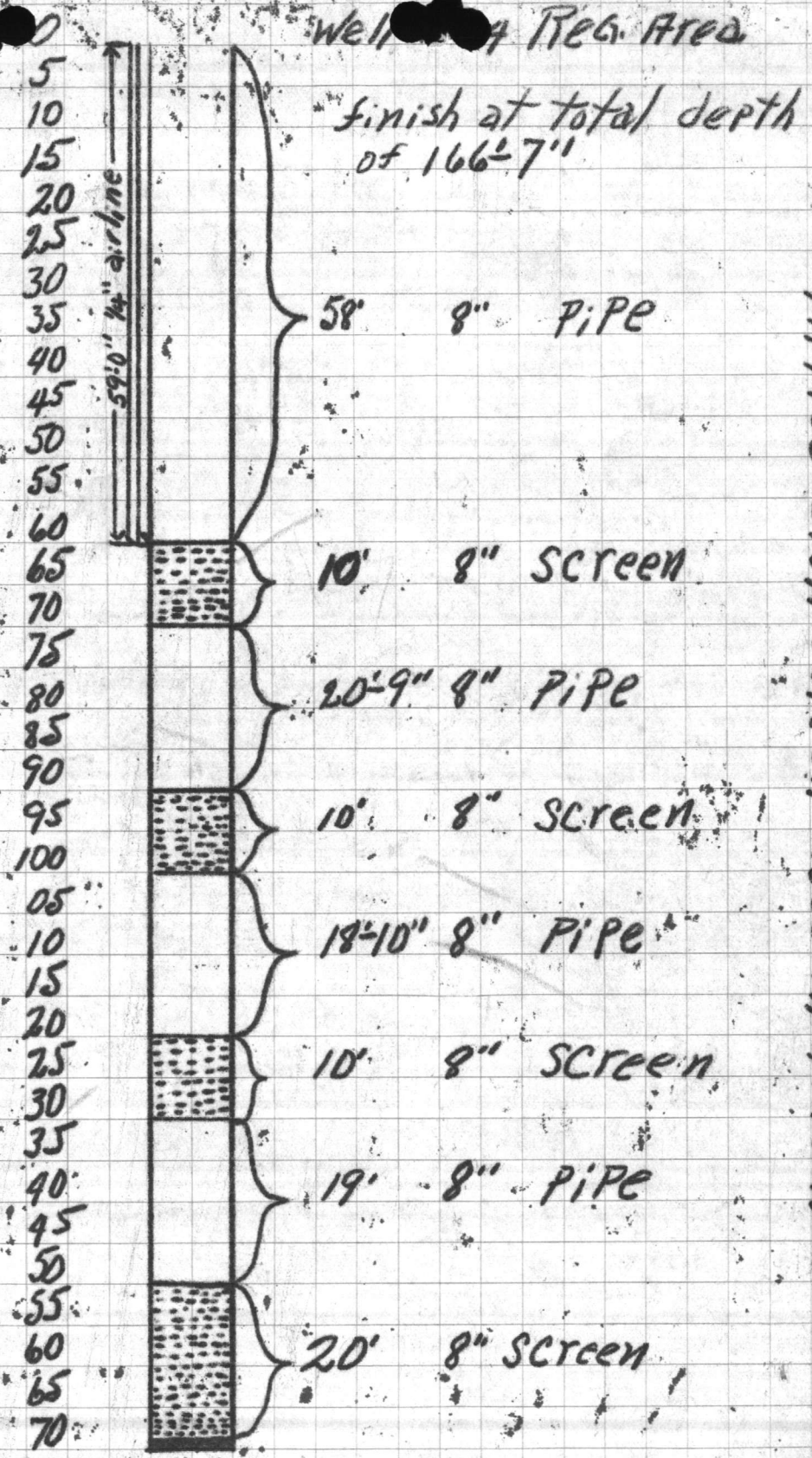
1956

1957

1958

24" dia. 18' Caserite S. and Cemented
 Well Pumps 225 G.P.M. With 4' dd. below Surface
 Well Recovers To 18'-0" below Surface in 3 Minutes
 Static 18' below Surface

Well #7 Reg. Area



ARMCO IRON SCREEN used in this well

CC. MR. MONTGOMERY
 MR. KELLAM

ALUMINUM TUBES SCREEN USED IN THIS WELL

DEPTH OF TOTAL WELL

28' 8" PIPE
 10' 8" SCREEN
 20'-2" 8" PIPE
 10' 8" SCREEN
 18'-10" 8" PIPE
 10' 8" SCREEN
 12' 8" PIPE
 20' 8" SCREEN



DEPTH IN FEET

0
 2
 10
 12
 20
 25
 30
 32
 40
 42
 50
 52
 60
 62
 70
 72
 80
 82
 90
 92
 100
 102
 110
 112
 120
 122
 130
 132
 140
 142
 150
 152
 160
 162
 170
 172

STANDARD
 10' 8" SCREEN
 18'-10" 8" PIPE
 10' 8" SCREEN
 12' 8" PIPE
 20' 8" SCREEN
 28' 8" PIPE
 10' 8" SCREEN

MR. WILLIAMS
 MR. KELLAM

LOG of formation Well # 14 Neg area

0' To 20'	Blue Sandy Clay
20' To 25'	Blue Clay
25' To 43'	Blue Sandy muck
43' To 70'	Sandstone
70' To 74'	Sandy Clay
74' To 82'	Blue blue sandy Clay
82' To 87'	Very hard Rock
87' To 91'	Soft Rock
91' To 95'	White Clay sand and shells
95' To 105'	Soft Rock
105' To 110'	hard rough Rock
110' To 121'	Soft Rock
121' To 146'	Soft Rock with Sand and shells in layers
146' To 155'	hard Rock (rough drilling)
155' To 178'	Rock and fine sand
178' to 0'	Sandy Clay

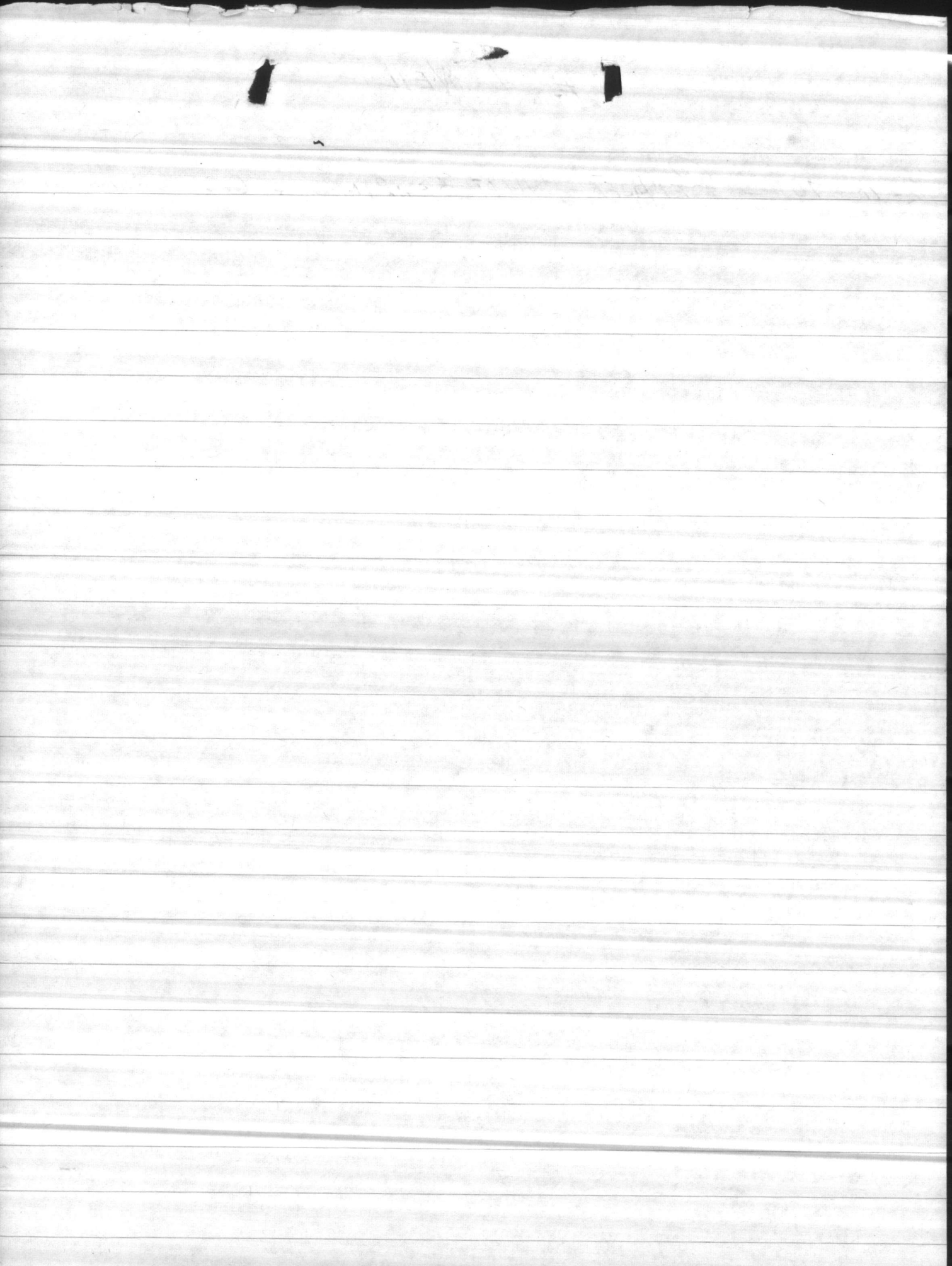
Well Finished at 166'-7" deep

C.C. MY MONTOR
MY KEHAM

14 Reg. Area
M Kellam

14 WELL

2-18-70 - REPLACED SHAFT BEARINGS + OIL SEAL



WELL # 14

Date	Line Ft.	G.P.M.	D.D. El. FT	Static El. FT	Shut Off Head FT	D.D. Ft.
6-4-53	55	?	-10.1	+6.4	?	16.5
5-21-54	77	250	45	?	?	?
"	60	300	50			
"	67					
5-24-54	52	300	-53.5	33?		
"	75	250	50	-		
6-4-54			52	33		19

Pump out of order 6-7-57 - Cut off

4/15/58							
4/15/58		230					
11/8/66	50'	190	-25'	24'		-12.1	SEE WELL
8/5/69	53.5'	130		24'			TEST.
9-4-69		130	-13.1'	+3.9'		17.0'	

As of 3/1/67 Well 14 has Johnston pump on Logans Base
 PUMP BASE TO "WATER" 19' - 10" = 4-11-58

24'-6" PUMPED OUT WITH AIR TO 166'-6" - 5-14-54
 28'-6" to water level. 5-14-54.

Depth from ~~surface~~ ^{ground} - 15'-6" (measured 5-13-54)

Air Line 53'-6" NEW AIR LINE - 24-7. (59 FT OLD AIR LINE)

20.00 to water tank
Right from ~~the~~ 1.21

W E L L D A T A

Well No. 14

SPECIFICATIONS

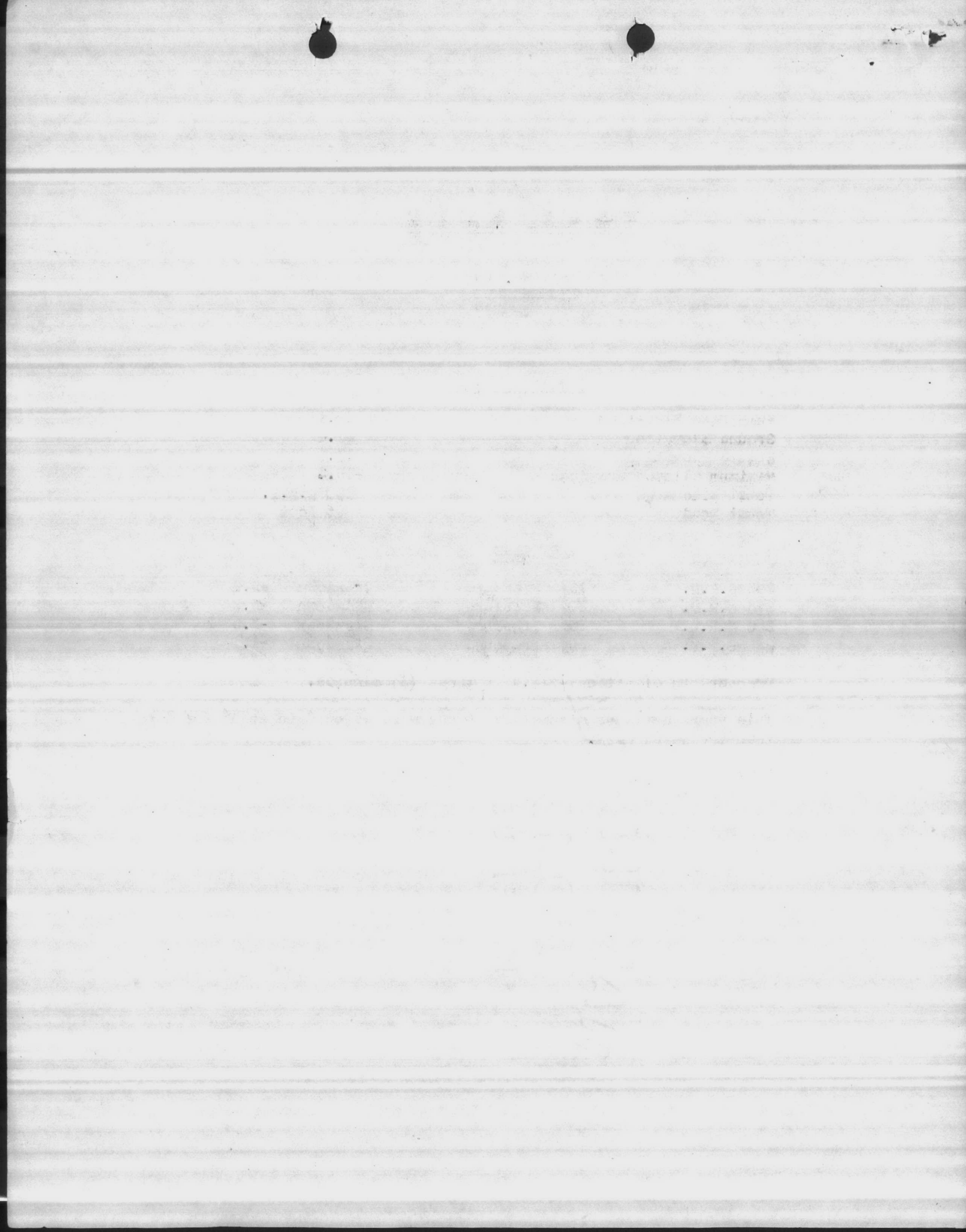
Pump Base Elevation	33.4
Ground Elevation	31.4
Static Elevation	13.4
Maximum allowed Drawdown	-13.3
Total Discharge	250 G.P.M.
Total Head	96 Feet

TEST

295 G.P.M.	15#	Pressure	Drawdown	-5.8
275 G.P.M.	20#	Pressure	Drawdown	-5.5
250 G.P.M.	25#	Pressure	Drawdown	-3.5
220 G.P.M.	30#	Pressure	Drawdown	-1.1

Recovers to elevation + 13.4 in three (3) minutes.

This pump should be discharged to waste if allowed to stand for more than three (3) days.



W E L L D A T A

Well No. 14

SPECIFICATIONS

Pump Base Elevation	33.4
Ground Elevation	31.4
Static Elevation	13.4
Maximum allowed Drawdown	13.3
Total Discharge	250 G.P.M.
Total Head	96 Feet

TEST

295 G.P.M.	15#	Pressure	Drawdown	-5.8
275 G.P.M.	20#	Pressure	Drawdown	-5.3
250 G.P.M.	25#	Pressure	Drawdown	-3.5
220 G.P.M.	30#	Pressure	Drawdown	-1.1

Recovers to elevation + 13.4 in three (3) minutes.

This pump should be discharged to waste if allowed to stand for more than three (3) days.

Air line 62'

E I I

Well No. 14

SPEDIFICATION

88.4	Pump Base Elevation
81.4	Ground Elevation
23.4	Static Elevation
15.3	Maximum Allowed Drawdown
800 G.P.M.	Total Discharge
98 feet	Total Head

TEST

885 G.P.M.	Pressure	125	Drawdown	-2
875 G.P.M.	Pressure	120	Drawdown	-1.5
860 G.P.M.	Pressure	115	Drawdown	-1.2
850 G.P.M.	Pressure	110	Drawdown	-1.1

Recovery to elevation + 15.4 in three (3) minutes.
The pump should be discharged to water if allowed to stand for more than three (3) days.

H.P. Well 614