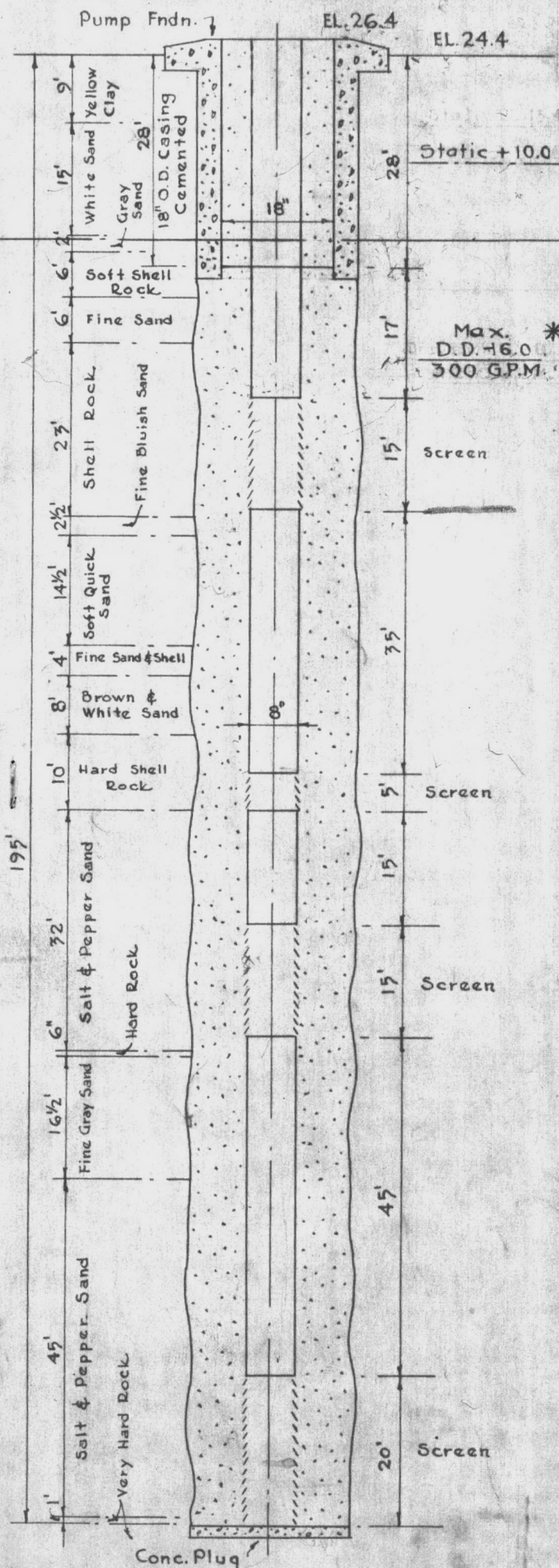


250 G.P.M. — DUAL DRIVE — 7 1/2 H.P.
 237 — actual Record 300 G.P.M. 10 H.P.



D.T.A. WELL No. 1



B-20-H.P.

PHYSICAL CHEMICAL ANALYSIS OF WATER

SAMPLE NO. WW 2-8

FROM: (Station or unit) U. S. Marine Corps Base, Camp Lejeune, North Carolina

DATE 1 March 1960

TO: (Name and location of laboratory) DPWD Sanitary Engineering Laboratory, Bldg. 4-29, Naval Base, Norfolk 11, Virginia

SAMPLE FROM (Location of sampling point) Hadnot Point Area Well No. 1, Bldg. No. 601

COLLECTED BY Mr. R. L. Cox DATE 3 Feb. 1960 HOUR - SOURCE (Designate ground, surface, raw, treated) Ground

REASON FOR EXAMINATION E. S. R. DPWD PROJECT NO. 09-2455 EXAMINATION REQUESTED BY Mr. R. L. Cox

NOTE: All results reported in parts per million unless otherwise noted except for pH, temperature, and specific conductance. One liter of potable water is assumed to weigh one kilogram.

Table with 2 main sections: I. Laboratory Field Analysis (pH 7.25, Temp 24°C) and III. Routine Laboratory Analysis (Color, Turbidity, Hardness, etc.)

FIELD ANALYSIS BY: The temperature of the water was 19°C at the time the sample was collected.

Table II. Special Laboratory Analyses (As, Se, Pb, B, Cu, Zn, Cr, PO4, Cd, CN, Phenolic Compounds, Aluminum, etc.)

REMARKS (Such as unusual appearance, taste, odor, etc.) Well pump auxiliary powered by a gasoline engine. Note: At the time of analysis, there was a small quantity of sediment in the bottom of the sample bottle. The well was in service at the time the sample was collected (discharge pressure = 24 psig).

LABORATORY ANALYSIS BY George I. Earnest, Jr., Chemist DATE OF ANALYSIS 29 Feb. 1960

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, 1966

1. AGENCY CODE MO	2. TYPE Q	3. LATITUDE ° 34 ' 40 " 19 N	4. LONGITUDE ° 77 ' 20 " 19 W	5.
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6. AGENCY STATION NO. 601	7. STATION NAME HP20-601
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8. DRAINAGE BASIN CODE No. 06 Letter N	9. STATE CODE 32	10. COUNTY CODE 133	11. COUNTY NAME ONslow
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12. PERIOD OF RECORD Began 1942 Discontinued	Y <input type="checkbox"/> Continuous <input type="checkbox"/> Interruption Exceeds 1 Year	13.	14.
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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
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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
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17. TYPES OF DATA AVAILABLE	<i>Physical</i>	<i>Chemical</i>	<i>Organic</i>
	<input type="checkbox"/> 311 Temperature	<input type="checkbox"/> 331 Dissolved solids	<input type="checkbox"/> 351 Pesticides (insecticides, herbicides, etc.)
	<input type="checkbox"/> 312 Specific Conductance	<input type="checkbox"/> 332 Chlorides Only	<input type="checkbox"/> 352 Synthetic detergents
	<input type="checkbox"/> 313 Turbidity	<input checked="" type="checkbox"/> 333 Nutrients (Nitrogen and phosphorus compounds)	<input type="checkbox"/> 353 Other
	<input type="checkbox"/> 314 Color	<input type="checkbox"/> 334 Common ions	<i>Biologic</i>
	<input type="checkbox"/> 315 Odor	<input checked="" type="checkbox"/> 335 Hardness	<input type="checkbox"/> 361 Coliforms
	<input type="checkbox"/> 316 Radioactivity	<input type="checkbox"/> 336 Radiochemical	<input type="checkbox"/> 362 Other Micro-organisms
	<input type="checkbox"/> 317 pH (field)	<input type="checkbox"/> 337 Dissolved oxygen	<input type="checkbox"/> 363 BOD
	<input checked="" type="checkbox"/> 318 pH (lab)	<input type="checkbox"/> 338 Other Gases	<input type="checkbox"/> 364 Other
	<input type="checkbox"/> 319 Eh	<input type="checkbox"/> 339 Other	<i>Sediment</i>
	<input type="checkbox"/> 320 Other		<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
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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
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20. OFFICE AT WHICH DATA AVAILABLE	Office <u>BASE MAINTENANCE DEPT., 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>

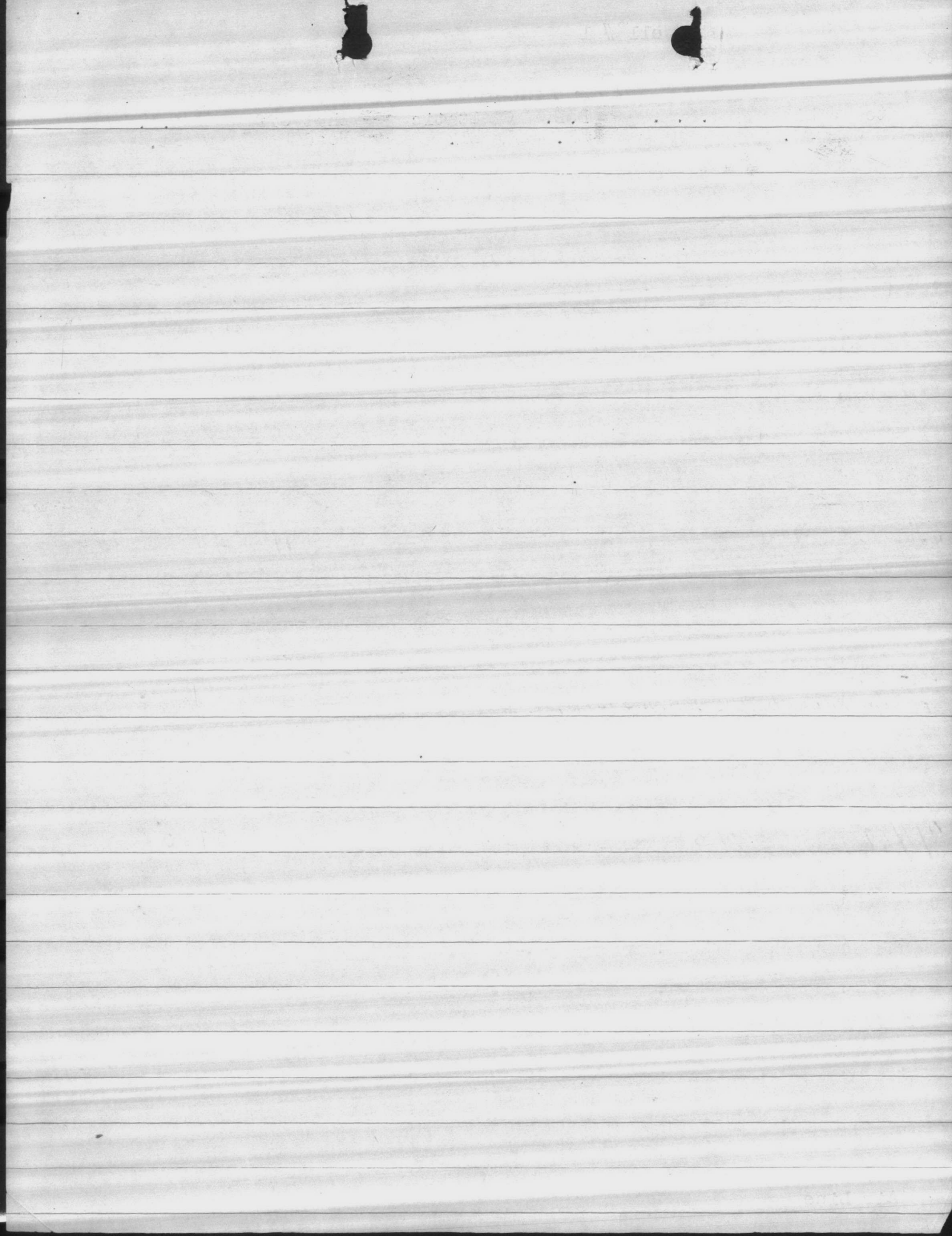
21. OFFICE COMPLETING FORM	<u>BASE MAINTENANCE DEPARTMENT</u>
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22. COMPILER'S NAME	<u>P. E. TEW, JR.</u>
23. DATE	Month <u>SEPT.</u> Year <u>1966</u>



Date	Line Ft.	G.P.M.	Pump. Lead. D.D. El.	Static El.	Shut Off Head	D.D. Ft.	
11-10-52	38	160	-7		66		
9-15-53	47		Stage #.	gaps ft			
7-22-54	43	246	55	30	P	25	New Pump
"	44	243	54	30		24	F. BANKS - MO " RSE
"	50	226	50	30		20	"
7-27-54	43	-	60	30		30	
10-14-54	44	-	61	-		30	
6-7-56	water	Level	Pump Base to water	13'-10"			P.H.B + 12.7
4-4-58	"	"	"	"	"	11'-8 1/2"	P.H.B + 14.8
6-7-56	Pump pulled by Henderson. Lower part of pump broken. Part from #3 pump used.						
NEW LAGRE PUMP 4-4-58 - THOMAS - WATER LEVEL PUMP BASE TO WATER						11'-8 1/2"	+ 14.8
3-3-64	PUMP PULLED FOR REPAIR (HEAD) WATER LEVEL " " " " 15' 8"						
11-8-66	47'	164	25	38'	34	14'	SEI
8/11/69		143	21	38	34	11	WELL TEST
9/4/69		143	-22.6'	+4.4'		27.0'	

lagre 4 stage 5' setting 60' suction 10'



WATER ANALYSIS

By N. H. Kellam

Date Oct 2 41

Sample from Well No 1 Per Area

Regimental Area

By Larve Atlantic Co

Total Solids 274 PPM Volatile Solids 50 PPM

Suspended Solids 24 " Dissolved Solids 240 "

Phenolphthalein Alkalinity 0 " Silica 27.2 "

Total Alkalinity 194 " Ferrous Iron 0 "

Chlorides 16 " Total Iron 0.7 "

Sulphates 12.8 " Aluminum 3.1 "

Carbonates 0 " Calcium 64.4 ~~137.2~~ "

Bicarbonates 194 " Magnesium 1.9 "

CO₂ 2 Sodium 1.6 "

pH 7.7 Soap Hardness as CaCO₃ 180 "

Mineral Hardness as CaCO₃ _____ "

Odor Slight H₂S - Hot faint organic

Turbidity 15

REMARKS NITRITES faint trace

[Faint, illegible handwriting on lined paper, possibly bleed-through from the reverse side. The text is mirrored across the center line.]

PUMPING TEST
AT
WELL NO. 1

B. E. H. Plant
(Location)

Shut-Off Head Pressure.....	<u>90</u>
Static Level Reading from height of gauge on base...	<u>19'-4"</u>

<u>50</u> 60 Lb. Head Pressure.....G.P.M.	<u>155</u>
D/d.....	<u>38 ft</u>

<u>45</u> 55 Lb. Head Pressure.....G.P.M.	<u>165</u>
D/d.....	<u>39</u>

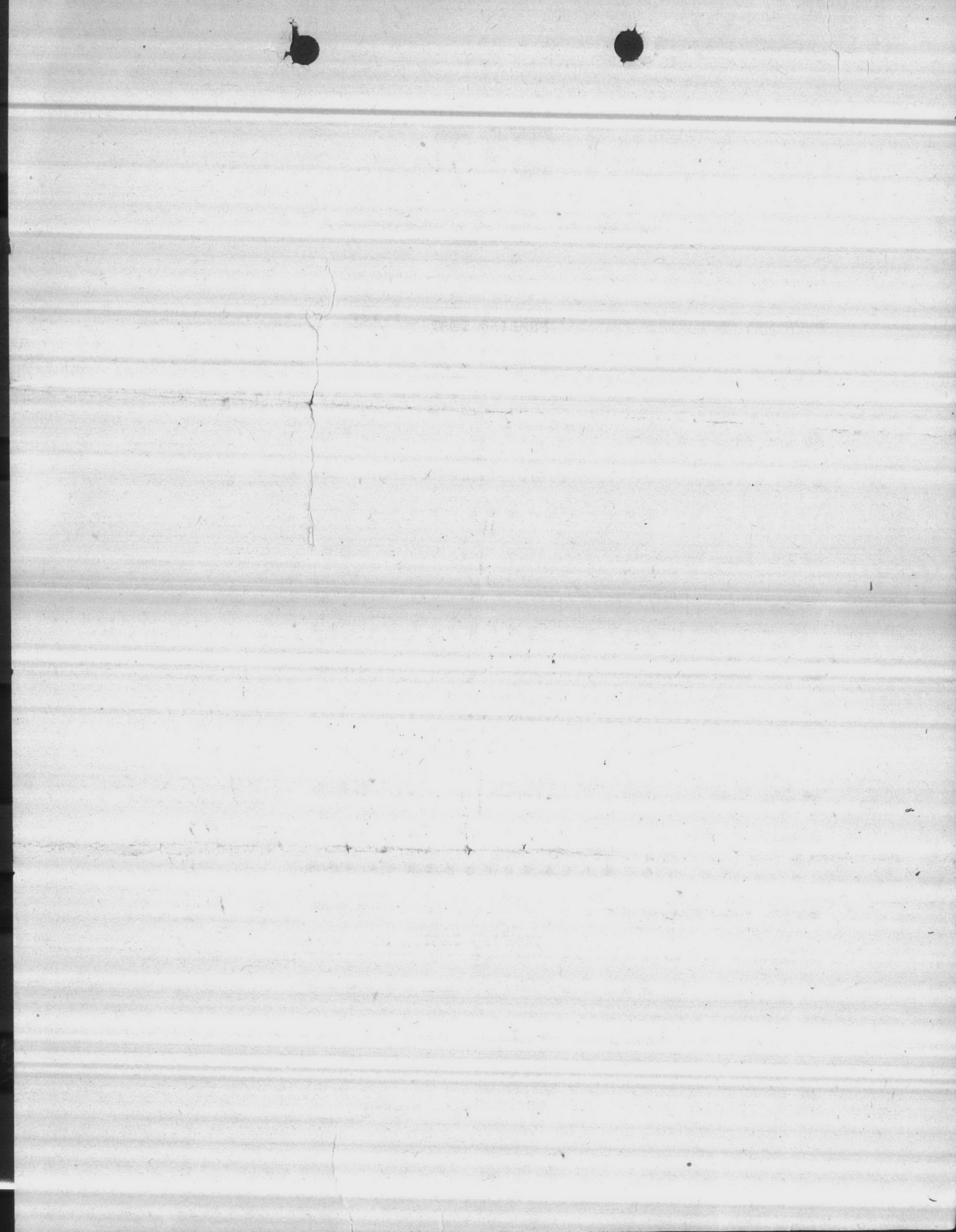
<u>36</u> 40 Lb. Head Pressure.....G.P.M.	<u>175</u>
D/d.....	<u>41 1/2 ft</u>

<u>30</u> 35 Lb. Head Pressure.....G.P.M.	<u>180</u>
D/d.....	<u>45 ft</u>

<u>12</u> 20 Lb. Head Pressure.....G.P.M.	<u>190</u>
D/d.....	<u>45</u>

Well Recovers to 25 Ft. in 3 Minutes.

Depth of well is 84'-9"
Depth of air line is 50 ft.
Date Tested April 9th 1945
Depth of Pump setting is 71 ft. overall



Well No. 7

WATER

DATE 250 G.P.M. 78' Head

M.H.	Elev. Pump Base	26.4
	Elev. Ground	24.4

M.H.	Static level	15.4
	DRAW DOWN 32'	-16.6

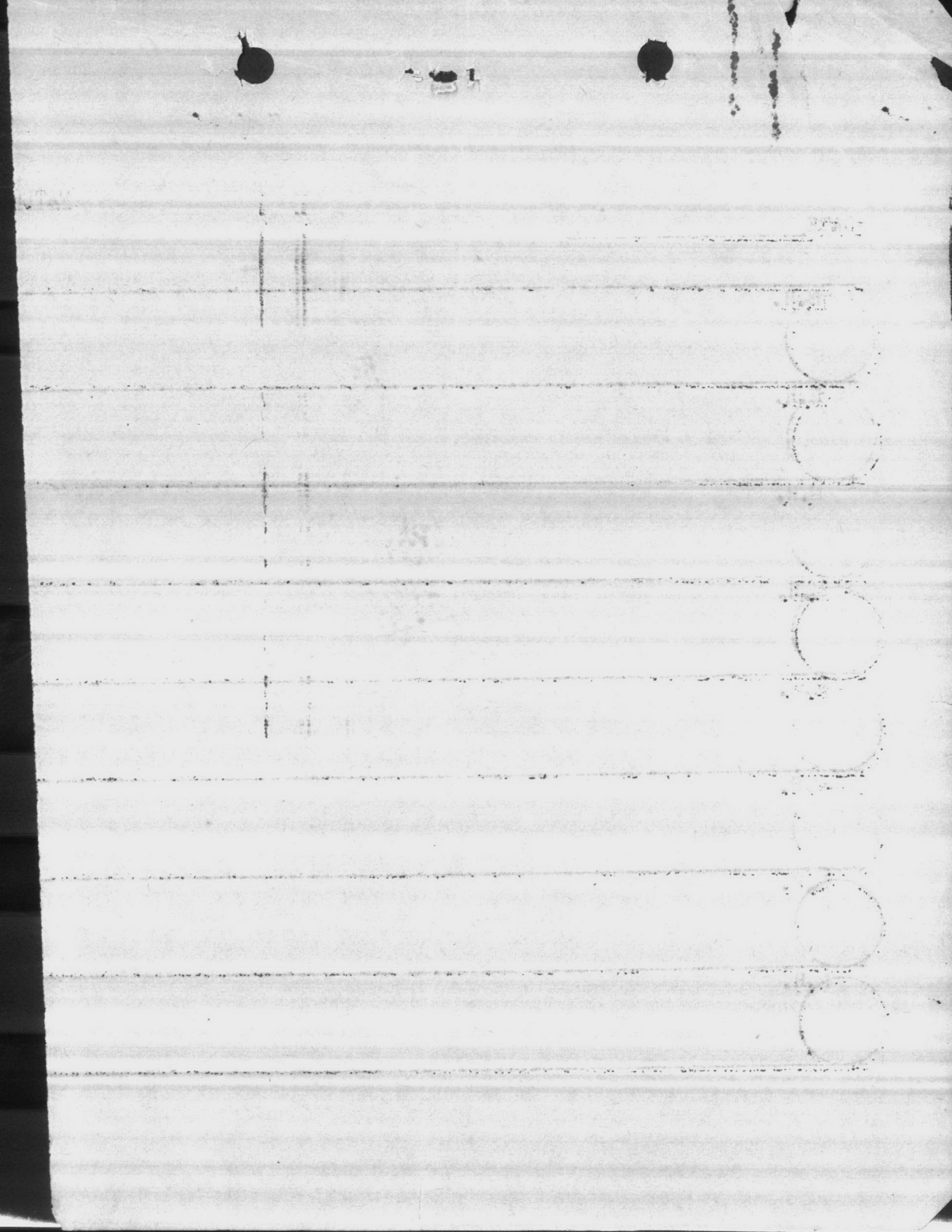
M.H.	Air line 50 ft. (P)	
	Elev. Draw Down Gauge	27.0

M.H.	Recovers to +9 in 3 mi.	
------	-------------------------	--

M.H.	260 GPM	15"	Pressure DD.	- 7.5
	250	" 18"	" DD.	- 6.5
	240	" 20	" DD.	- 4.5
	230	" 21	" DD.	- 4.0

M.H.				
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M.H.				
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WELLS-PERMANENT WATER SUPPLY-REGIMENTAL AREA
By Layne Atlantic Company

Project P-106-1

REPORT ON 1ST LAYNE WELL

Location: Approximately 100' NW of the intersection of the Main Access Road and Cedar Street (Supply and Industrial Area).

Date Drilled: September, 1941.

Drilling Equipment: Rotary Rig and Rotary Drilling Bit, tools and equipment.

Status: A 23" diameter hole cased with 18" diameter pit casing to a depth of 26' below surface. The annular space around the pipe filled with Portland cement grouts. A 17" diameter hole drilled to a total depth of 204'. This portion of the well below the 18" casing was under cut with a hydraulic under reaming making the new diameter of the well through this depth 36" more or less.

Log of Formations:

0'-9'	Yellow Clay
9-24'	Fine White Sand
24-26	Grey Sand
26-32	Shell Rock very soft, water bearing
32-38	Fine sand
38-61	Shell rock
61-64	Fine blue sand
64-78	Soft quick sand
78-82	Fine sand with some shell rock (little water)
82-90	Brown and white sand with little shell rock
90-100	Hard shell rock, water bearing
100-133	Salt and pepper sand, water bearing
133-149	Fine grey sand
149-194	Salt and pepper sand, water bearing
195	Depth of finished well
194-204	Very hard rock

Remarks: Because of the sand content within the water bearing Coquina rock stratas, it was necessary to construct a well of gravel wall construction.

Gravel Wall Construct'n: An 8" pipeline was lowered into the 17" diameter well to a depth of 195' below surface. The portions of this line between 45' to 60', 95' to 100', 115' to 130', and 175' to 195' (depths) were 8" silicon bronze shutter screen with welded joints. The remainder being 8" steel pipe with screw joint connections. A concrete plug was placed on the bottom of this line. The annular space around the 8" pipe was fill with special 1/4" gravel.

Static Water Level: 9'-0" from surface.

Faint, illegible text, possibly bleed-through from the reverse side of the page. The text is arranged in several paragraphs and appears to be a formal document or report. Some words are difficult to discern but seem to include terms like "The following information", "It is noted", and "The results of the study".

Report on 1st Layne Well - Page 2

Tests

Equipment-

4" Pipe line to 188' below surface 1" (pipe)
airline outside 4" pipe to point 183' below
surface with a turn up to inside of 4" pipe
at bottom,
Air Compressor, U.S. Navy #192
12" Wier in earth ditch.

Cleaning-

Air compressor attached to airline in well and
water discharged from well at rate of 150-200
gallons per minute) for 24 hours.

Well was agitated while cleaning- this done by
building up the air pressure to approximately
100# per sq. inch, and then suddenly releasing
same into airline.

Test Data-

2 October 1941

250 gallons per minute (3-7/8" over 12" wier)
was pumped by air compressor for 12 hours con-
tinuously, with a constant draw down (from static
level) of 31'.

Further pumping and testing to be done after deep well turbine pump installed.
See latter report on pump, setting, and testing.
See separate report on water analysis.

Jennings B. Kneebel,
Asst. Construction Engineer



[The text in this section is extremely faint and illegible due to the quality of the scan. It appears to be several paragraphs of a document.]

H.P. Well 601