MAR 21 1984

SHEREX

SHEREX CHEMICAL COMPANY, INC.

SUBSIDIARY OF SCHERING AG, WEST GERMANY

US EPA RECORDS CENTER REGION 5

498498

US ROUTE 24 ● P.O. BOX 9
MAPLETON, IL 61547
TEL (309) 697-6220

March 16, 1984

Anne C. Sause
Ecology and Environment, Inc.
223 West Jackson Blvd.
Chicago, IL 60606

Dear Ms. Sause:

Per phone conversation with Dr. H. Hickman, please find enclosed the data on #8 well at the Mapleton plant.

Sincerely,

Edward Germain

gn

CC: Dr. H. Hickman

PUMP RECORD

PUMP No. 43305

For SHEREX CHEMICAL COMPANY

MAPLETON, ILLINOIS

WELL NO. 8

Date OCTOBER 31, 1979

Manufactured By

LAYNE-WESTERN COMPANY, INC.

721 West Illinois Avenue

Aurora, Illinois 60506

LAYNE & BOWLER, INC.

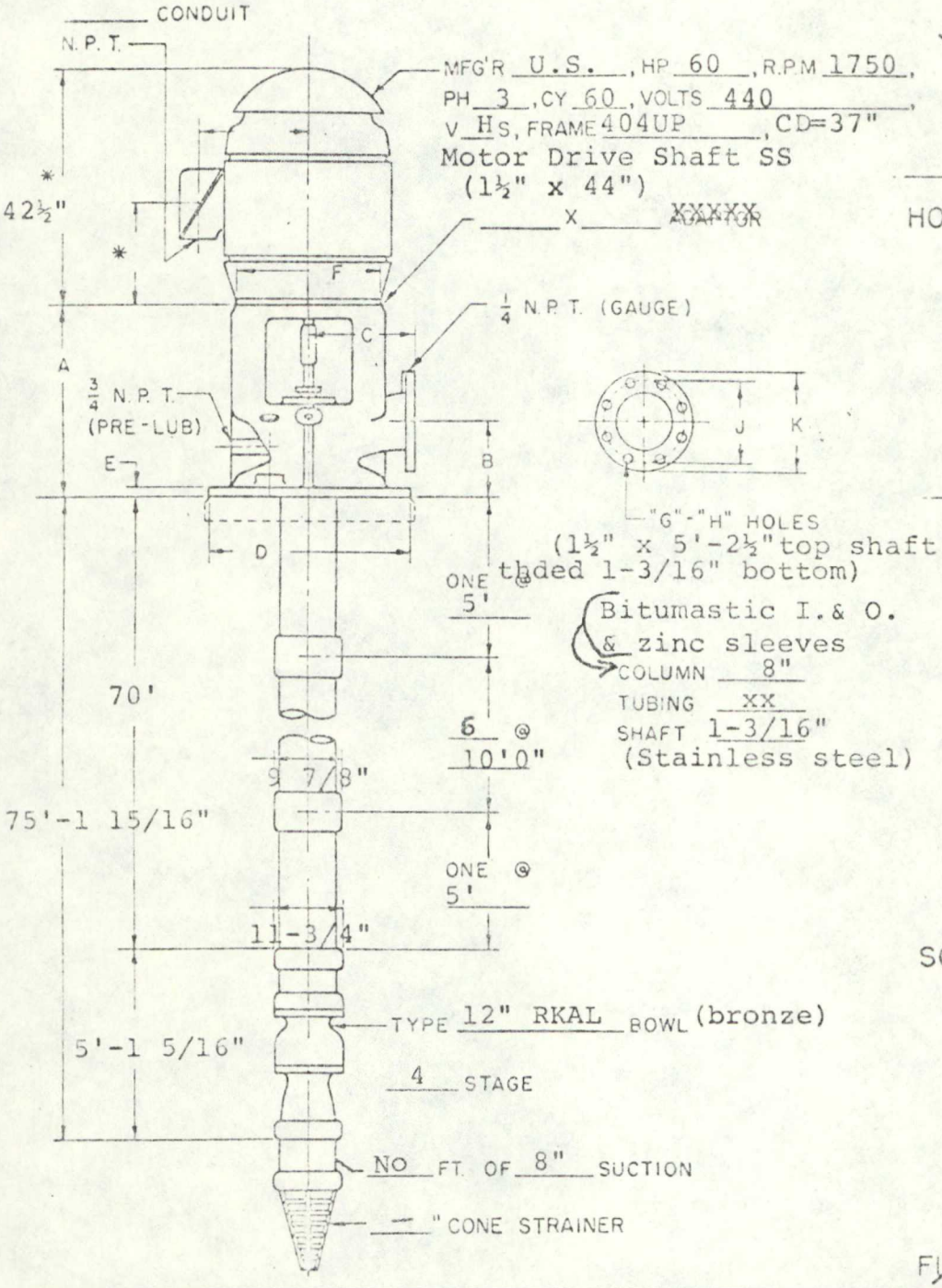
MEMPHIS, TENNESSEE U.S.A.

INSTALLATION PLAN

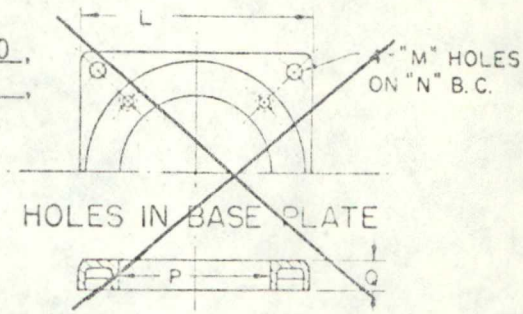
TYPE 8 SDH DISCHARGE HEAD

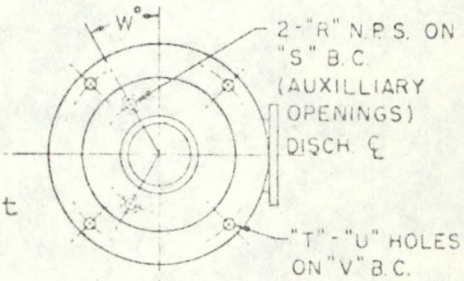
SECTION 3100
PAGE 3
DATE 6/1/77
SUPERSEDES

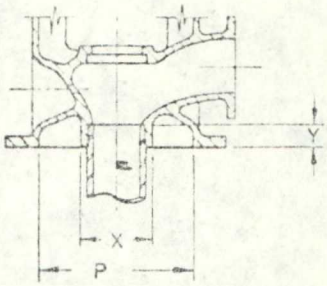
Layne
A Marley Company

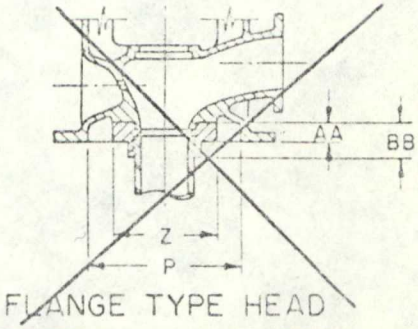


USE THESE DIMENSIONS ONLY WHEN CERTIFIED BY FACTORY





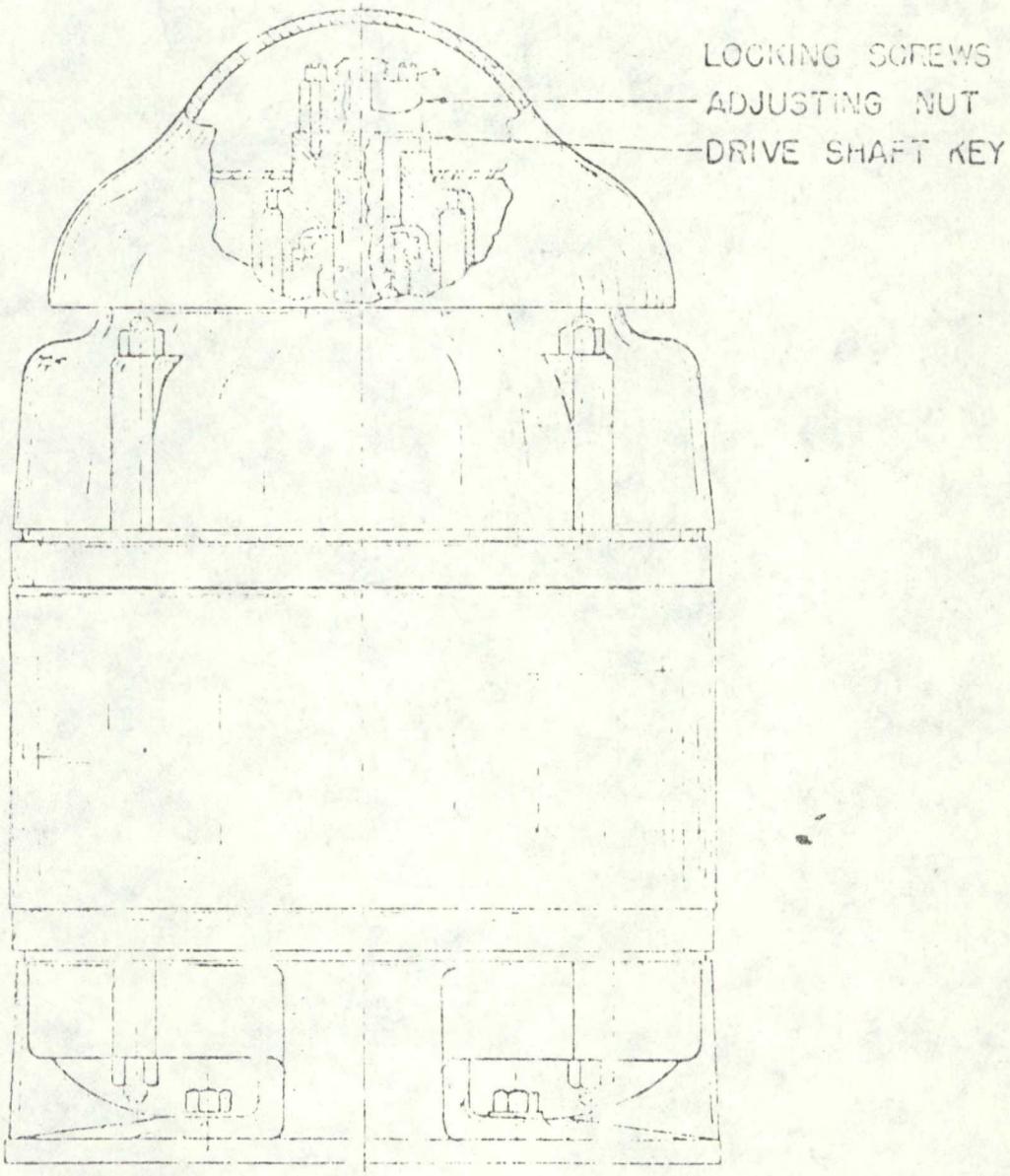




CUSTOMER: Sherex Chemical Company	YOUR NO:	G.P.M. 700
LOCATION: Mapleton IL Well #8	OUR NO: C-3316L	T.D.H. 248
FOR APPROVAL:	PUMP NO: 43305	R.P.M. 1750
CERTIFIED:	DATE: 10/25/79	B.H.P. 54

TYPE HEAD	A	B	C	D	E	F	HEAD DISCHARGE FLANGE 125# ASA FLANGE G	H	J	K	250# ASA FLANGE G	H	J	K	L	M	N	P	Q	R	S	HEAD BASE STD T	U	125# T	U	V	W	X	Y	Z	AA	BB
SDH 3	14	5¼	7½	13⅝	¾	10	4	¾	6	7½	8	¾	6⅝	8½	13¾	¾	15¾	4	1½	1	7½	4	¾	8	⅞	11¾	24	4⅛	1¼	5½	1¼	3¾
SDH 4	16½	6	9	16	¼	12	8	¾	7½	9	8	⅞	7½	10	16½	¾	18¼	11¼	1½	½	8½	4	¾	12	1	14¼	18½	5½	1 13/16	7	1⅜	3¾
SDH 6	20	7	11½	21	¼	16½	8	⅞	9½	11	12	⅞	10⅝	12½	21¼	1	24¼	14½	2	¾	11½	4	¾	12	1⅛	18¼	20	7¾	2⅛	9⅝	1⅜	4¼
* SDH 8	22	8½	13	23½	⅞	16½	8	⅞	11¼	13½	12	1	13	15	23¾	1	27¼	16½	2	1	14	4	⅞	16	1⅛	21¼	20	10	2⅛	11½	1⅜	4¼
SDH 10	25	11	15	27½	1	20	12	1	14¼	16	16	1⅛	15¼	17½	27¾	1⅛	31½	20½	2	1	17	4	⅞	20	1¼	25	24	12¼	2 7/16	14½	2¼	5¼
SDH 12	26	11½	17	32 1/16	⅛	24½	12	1	17	19	16	1¼	17¾	20½	32¼	1½	37	24½	2	1	19¼	4	⅞	20	1½	29½	17	14	2 3/16	16½	2⅛	5¼

* INCLUDES 3" HIGH MOTOR ADAPTOR WHEN USED



MOTOR

MAKE TS

60 H.P. 1800 R.P.M.

220/440 VOLTS 3 PHASE

60 CYCLES

FRAME NO. 40HUP

PART LIST

PART NO.	PART NAME
1/4-20-1 3/4"	LOCKING SCREWS
AN15	ADJUSTING NUT
F272	DRIVE SHAFT KEY

LMA 277

Effective
December 7, 1960

Supersedes
June 27, 1960

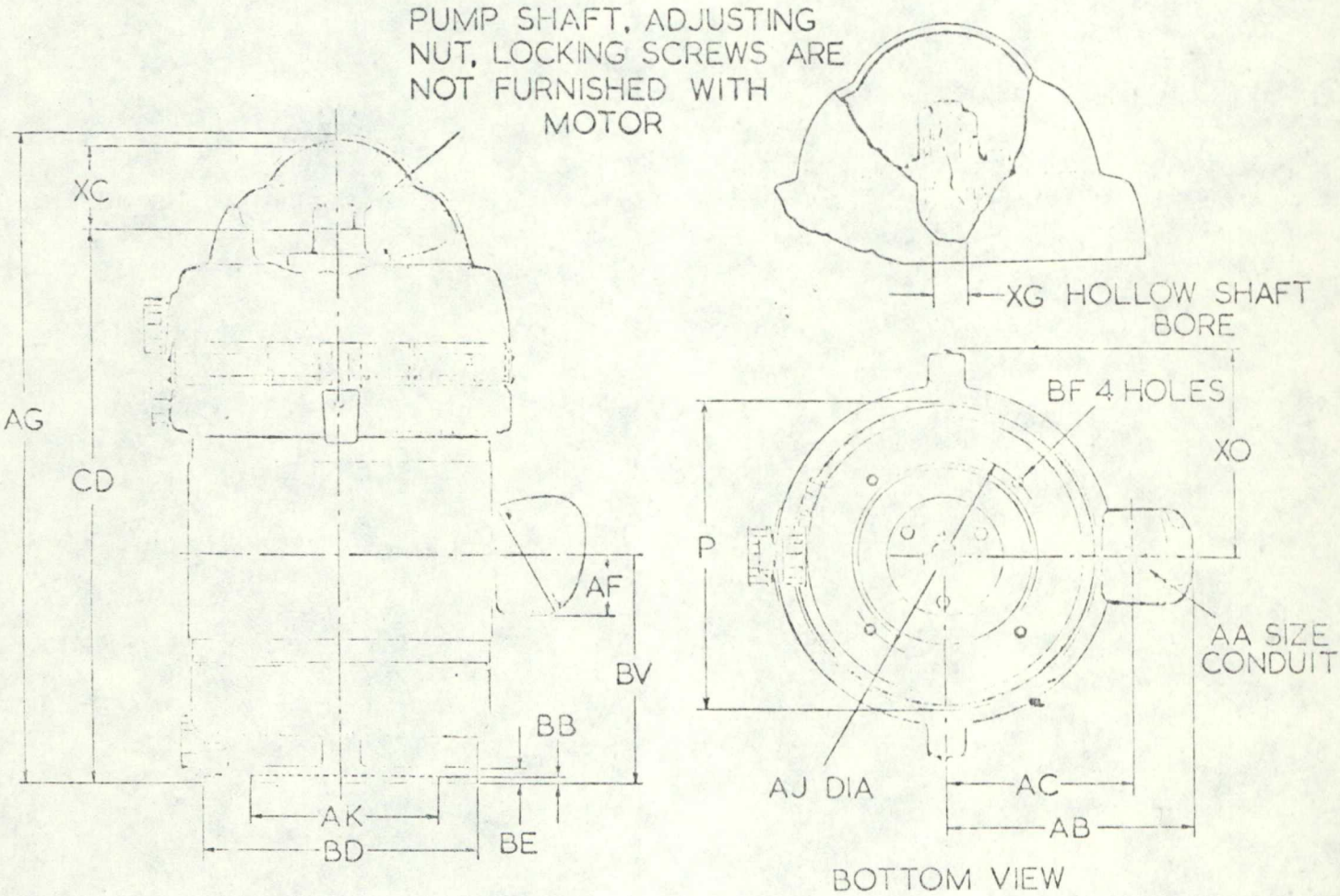
S. Vertical Hollowshaft M S

WITH NEMA STYLE P PUMP BASE

HIGH THRUST

NEMA RERATED

TYPE HU



ALL DIMENSIONS ARE IN INCHES

FRAME NO.	P DIA. STATOR	AA STANDARD CONDUIT	AB	AC	AF	AG	AJ DIA.	AK	BB	BD BASE DIA.	BE	BF SIZE HOLE	BV	CD	XC	XG	XO	BRACKET PART NO.
182P, 184P	10-3/8	3/4	8-3/16	6-1/4	1-13/16	20-3/16	9-1/8	6-1/4	3/16	10	5/16	7/16	7-1/4	17-3/16	2-3/4	1.047	6-3/4	[illegible]
213P, 215P	10-3/8	3/4	8-3/16	6-1/4	1-13/16	20-3/16	9-1/8	6-1/4	3/16	10	5/16	7/16	7-1/4	17-3/16	2-3/4	[illegible]	6-3/4	[illegible]
254UP, 256UP	12-1/2	1	10-5/16	7-15/16	2	25-3/16	9-1/8	8-1/4	3/16	10	5/16	7/16	8-7/8	21-3/4	3-1/2	[illegible]	6-1/4	[illegible]
254UPH, 256UPH	12-1/2	1	10-5/16	7-15/16	2	25-3/16	9-1/8	8-1/4	3/16	12	5/16	7/16	8-7/8	21-3/4	3-1/2	1.047	8-1/4	107051
284UP, 286UP	13-13/16	1-1/4	11-5/16	9-13/16	2-5/8	28-3/4	9-1/8	8-1/4	3/16	12	5/8	7/16	10-5/16	24-7/16	3-13/16	[illegible]	9	[illegible]
284UPH, 286UPH	13-13/16	1-1/4	11-5/16	9-13/16	2-5/8	28-3/4	14-3/4	13-1/2	1/4	16-1/2	5/8	11/16	10-5/16	24-7/16	3-13/16	1.255	9	[illegible]
324UP, 326UP	15-7/8	2	13-9/16	10-5/16	3-1/4	32-9/16	14-3/4	13-1/2	1/4	16-1/2	11/16	11/16	11-1/4	28-3/16	3-13/16	1.505	10-1/16	[illegible]
324UPY, 326UPY	15-7/8	2	13-9/16	10-5/16	3-1/4	32-9/16	16-1/8	15-1/4	3/16	12	11/16	7/16	11-1/4	28-3/16	3-13/16	1.505	10-1/16	110339
364UP, 366UP	17-1/2	3	16-1/2	12-7/16	4-5/8	37	14-3/4	13-1/2	1/4	16-1/2	3/4	11/16	12-9/16	32-1/4	4-5/16	1.550	11	[illegible]
404UP, 405UP	19-11/16	3	17-9/16	13-1/2	4-5/8	42-1/2	14-3/4	13-1/2	1/4	16-1/2	3/4	11/16	14-3/16	37	5	1.860	12-1/2	[illegible]
404UPH, 405UPH	19-11/16	3	17-9/16	13-1/2	4-5/8	42-1/2	14-3/4	13-1/2	1/4	20	3/4	11/16	14-3/16	37	5	1.860	12-1/2	112059
444UP, 445UP	22	3	18-1/16	13-13/16	4-7/8	48	14-3/4	13-1/2	1/4	20	3/4	11/16	16-3/8	42-5/8	4-7/8	1.972	14	100429
444UPH, 445UPH	22	3	18-1/16	13-13/16	4-7/8	48	14-3/4	13-1/2	1/4	16-1/2	3/4	11/16	16-3/8	42-5/8	4-7/8	1.972	14	123107
444UPY, 445UPY	22	3	18-1/16	13-13/16	4-7/8	48	14-3/4	13-1/2	1/4	24-1/2	3/4	11/16	16-3/8	42-5/8	4-7/8	1.972	14	110881

Conduit box can be located in four directions by turning in steps of 90°. Standard as shown with conduit down. Standard conduit opening is listed above. When specified on the order, a smaller conduit opening will be provided.

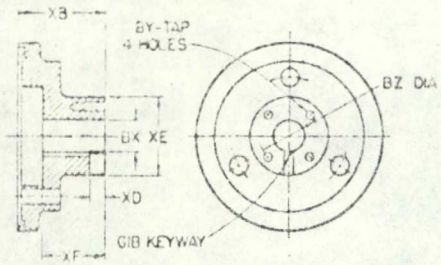
Dimension "AK" female registered fit is machined with +.003" tolerance on frames 182P through 286UP & 286UPH, and +.005" tolerance on frames 324UP and larger.

All rough casting dimensions may vary by 1/4" due to casting variations.

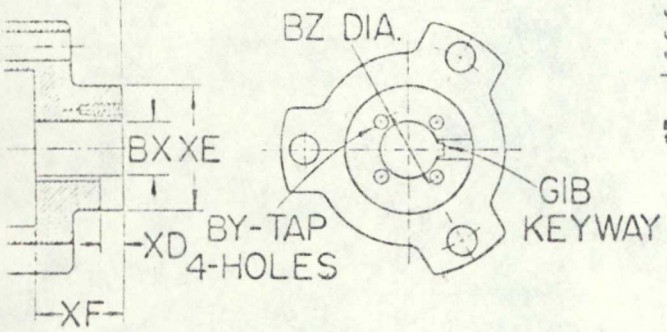
DRIVE COUPLING DIMENSIONS - See reverse.

Do not use for construction unless certified on reverse.

FRAMES 182P-215P



FRAMES 254UP & LARGER



DIMENSIONS ARE IN INCHES

FRAME NO.	COUPLING PART NO.	BX BORE NOMINAL	BX BORE ACTUAL	BY SIZE TAP	BZ DIA. B.C.	SQ. KEY SIZE	XB	XD	XE	XF
182P,184P	102989	3/4	.751	10-32	1-5/8	3/16	2-3/4	11/16	1-5/8	3-1/2
&										
213P,215P	102990	1	1.001	10-32	1-5/8	1/4	2-3/4	11/16	1-5/8	3-1/2
254UP,254UPH	102982	3/4	.751	10-32	1-3/4	3/16	2-1/8	13/16	2-1/4	3-1/4
&										
256UP,256UPH	102983	1	1.001	10-32	1-3/4	1/4	2-1/8	13/16	2-1/4	3-1/4
284UP,284UPH	120950	3/4	.751	10-32	2-1/2	3/16	2-1/2	[illegible]	[illegible]	[illegible]
&										
286UP,286UPH	102993	1	1.001	10-32	1-3/4	1/4	2-1/2	[illegible]	[illegible]	[illegible]
	104720	1-3/16	1.188	1/4-20	1-3/4	1/4	[illegible]	[illegible]	[illegible]	[illegible]
324UP,324UPY	112000	1	1.001	10-32	2-1/2	1/4	[illegible]	[illegible]	[illegible]	[illegible]
	108186	1-3/16	1.188	1/4-20	1-3/4	1/4	[illegible]	[illegible]	[illegible]	[illegible]
&										
326UP,326UPY	519021	1-1/4	1.251	1/4-20	2-1/2	3/8	[illegible]	[illegible]	[illegible]	[illegible]
	106219	1-1/2	1.501	1/4-20	2-1/2	3/8	[illegible]	[illegible]	[illegible]	[illegible]
364UP,365UP	120951	1	1.001	1/4-20	1-3/4	1/4	2-15/16	[illegible]	[illegible]	[illegible]
	108587	1-3/16	1.188	1/4-20	1-3/4	1/4	2-15/16	[illegible]	[illegible]	[illegible]
	516160	1-1/4	1.251	1/4-20	1-3/4	1/4	2-15/16	[illegible]	[illegible]	[illegible]
	108588	1-1/2	1.501	1/4-20	2-1/2	3/8	2-15/16	[illegible]	[illegible]	[illegible]
404UP,404UPH	120952	1-3/16	1.188	1/4-20	1-3/4	1/4	3-13/32	[illegible]	[illegible]	[illegible]
	517070	1-1/4	1.251	1/4-20	1-3/4	3/8	3-13/32	[illegible]	[illegible]	[illegible]
&										
405UP,405UPH	102159	1-1/2	1.501	1/4-20	2-1/2	3/8	3-13/32	[illegible]	[illegible]	[illegible]
	109100	1-3/4	1.751	1/4-20	2-1/2	3/8	3-13/32	[illegible]	[illegible]	[illegible]
444UP,445UP	120953	1-1/2	1.501	1/4-20	2-1/2	3/4	4	[illegible]	[illegible]	[illegible]
444UPH,445UPH	109476	1-11/16	1.688	1/4-20	2-1/2	3/8	4	[illegible]	[illegible]	[illegible]
444UPY,445UPY	120954	1-3/4	1.751	1/4-20	2-1/2	3/8	4	[illegible]	[illegible]	[illegible]
	109477	1-15/16	1.938	1/4-20	2-1/2	1/2	4	[illegible]	[illegible]	[illegible]

Coupling bore dimension "BZ" is machined with a tolerance of -.000"; +.001".

Blank bore couplings can be furnished with 5/8" bore on frames 182P through 256UP & 256UPH, and 3/4" bore on frames 284UP through 445UP, 445UPH and 445UPY.

f Properly Endorsed This Print is Correct For
ustomer's Name and Address

[illegible]

Customer Order [illegible] Our Order [illegible]

uan.	H.P.	Frame	Phase	Cycles	Speed	Poles	Volts	Type	Description
3	[illegible]	[illegible]	3	[illegible]	1800	4	220/440	[illegible]	[illegible]

NOTE: "[illegible]"

U.S. ELECTRICAL MOTORS Inc.

By [illegible] Date 6-2-62 [illegible]

LAYNE & BOWLER, INC.
MEMPHIS, TENN.

DEEP WELL TURBINE PUMP
PERFORMANCE CHART

SHEET NO. 1522-T
DATE

THESE CURVES SHOW THE GENERAL SHAPE OF THE PUMP BOWL CHARACTERISTICS UNDER SHOP TESTS AT THE CONSTANT SPEED INDICATED. A TOLERANCE OF PLUS OR MINUS 2% MUST BE ALLOWED IN THE GUARANTEED CAPACITY, HEAD, AND EFFICIENCY AT THE RATED POINT WHEN PUMPING NON GASEOUS WATER FREE FROM DEBRIS, AT A TEMPERATURE NOT OVER 86° FAHR., AND WITH THE LOWEST IMPELLER SUBMERGED.

FOR Sherex Well #8

ADDRESS

TYPE OF PUMP FIG. KVTTL R.P.M. 1770

SIZE OF PUMP 12 INS. 8 STAGES 6 IMPELLER —

FIELD PERFORMANCE

THE FIELD PERFORMANCE AS SHOWN BELOW, MAKES ALLOWANCE FOR ALL THE HYDRAULIC AND MECHANICAL LOSSES IN THE COLUMN AND SHAFT OF THE INSTALLATION ACCORDING TO THE STANDARDS OF THE HYDRAULIC INSTITUTE. THE FIELD PUMPING HEAD IS THE LIFT FROM THE WELL PLUS THE DISCHARGE HEAD MEASURED AT THE DISCHARGE CONNECTION AT THE SURFACE.

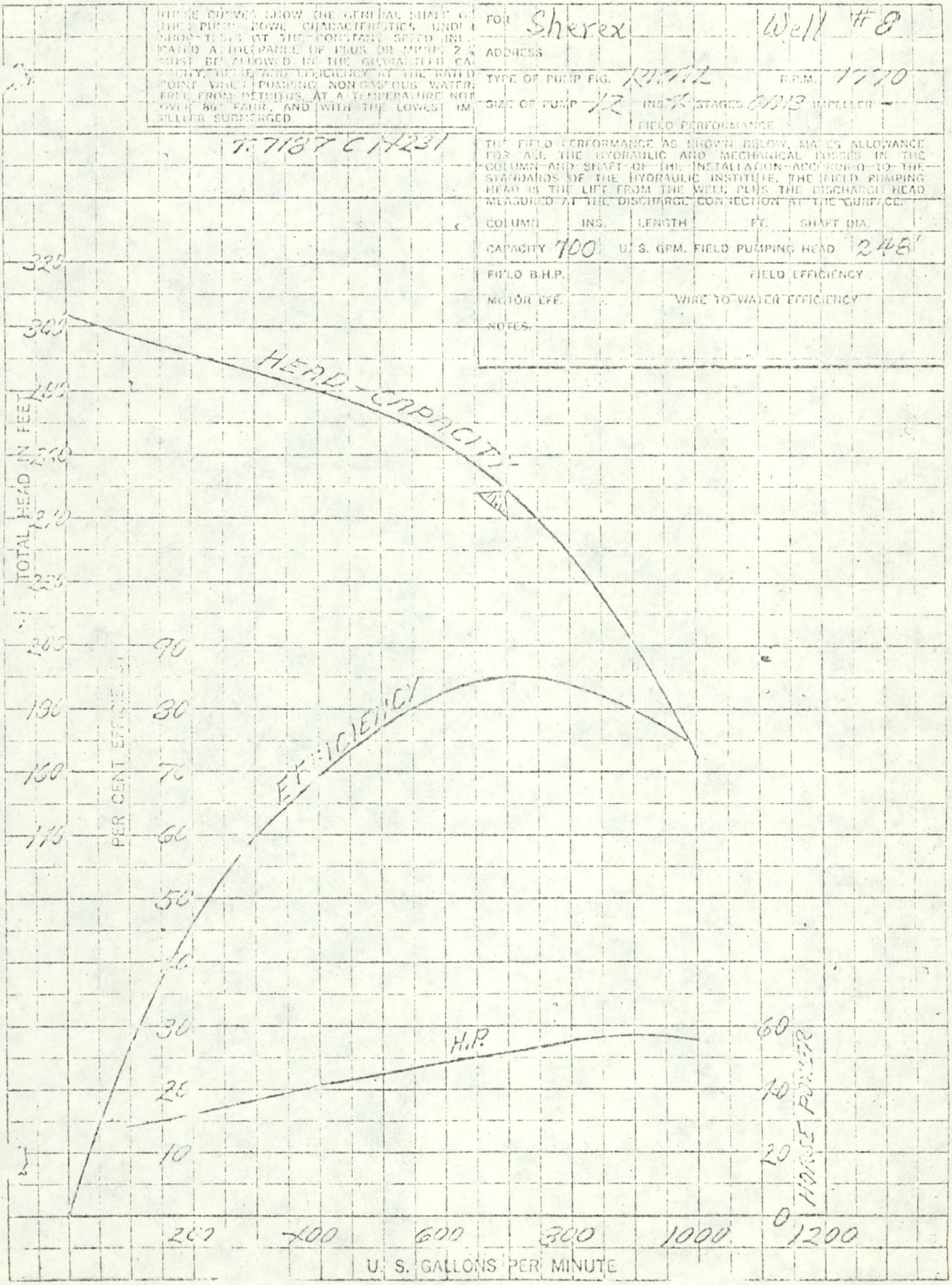
COLUMN INS. LENGTH FT. SHAFT DIA.

CAPACITY 700 U. S. GPM. FIELD PUMPING HEAD 248'

FIELD B.H.P. FIELD EFFICIENCY

MOTOR EFF. WIRE TO WATER EFFICIENCY

NOTES.



LAYNE & BOWLER, INC.
MEMPHIS, TENN.

DEEP WELL TURBINE PU
PERFORMANCE CHART

CURVE SHEET NO. 15227
DATE

THESE CURVES SHOW THE GENERAL SHAPE OF THE PUMP BOWL CHARACTERISTICS UNDER SHOP TESTS AT THE CONSTANT SPEED INDICATED. A TOLERANCE OF PLUS OR MINUS 2% MUST BE ALLOWED IN THE GUARANTEED CAPACITY, HEAD AND EFFICIENCY AT THE RATED POINT WHEN PUMPING NON GASEOUS WATER FREE FROM DETRITUS, AT A TEMPERATURE NOT OVER 80° FAHR., AND WITH THE LOWEST IMPELLER SUBMERGED.

FOR Sherex Well #6

ADDRESS

TYPE OF PUMP FIG. RHAL R.P.M. 1770

SIZE OF PUMP 12 INS. X STAGES 6 IMP IMPELLER —

FIELD PERFORMANCE

THE FIELD PERFORMANCE AS SHOWN BELOW, MAKES ALLOWANCE FOR ALL THE HYDRAULIC AND MECHANICAL LOSSES IN THE COLUMN AND SHAFT OF THE INSTALLATION ACCORDING TO THE STANDARDS OF THE HYDRAULIC INSTITUTE. THE FIELD PUMPING HEAD IS THE LIFT FROM THE WELL PLUS THE DISCHARGE HEAD MEASURED AT THE DISCHARGE CONNECTION AT THE SURFACE.

COLUMN INS. LENGTH FT. SHAFT DIA.

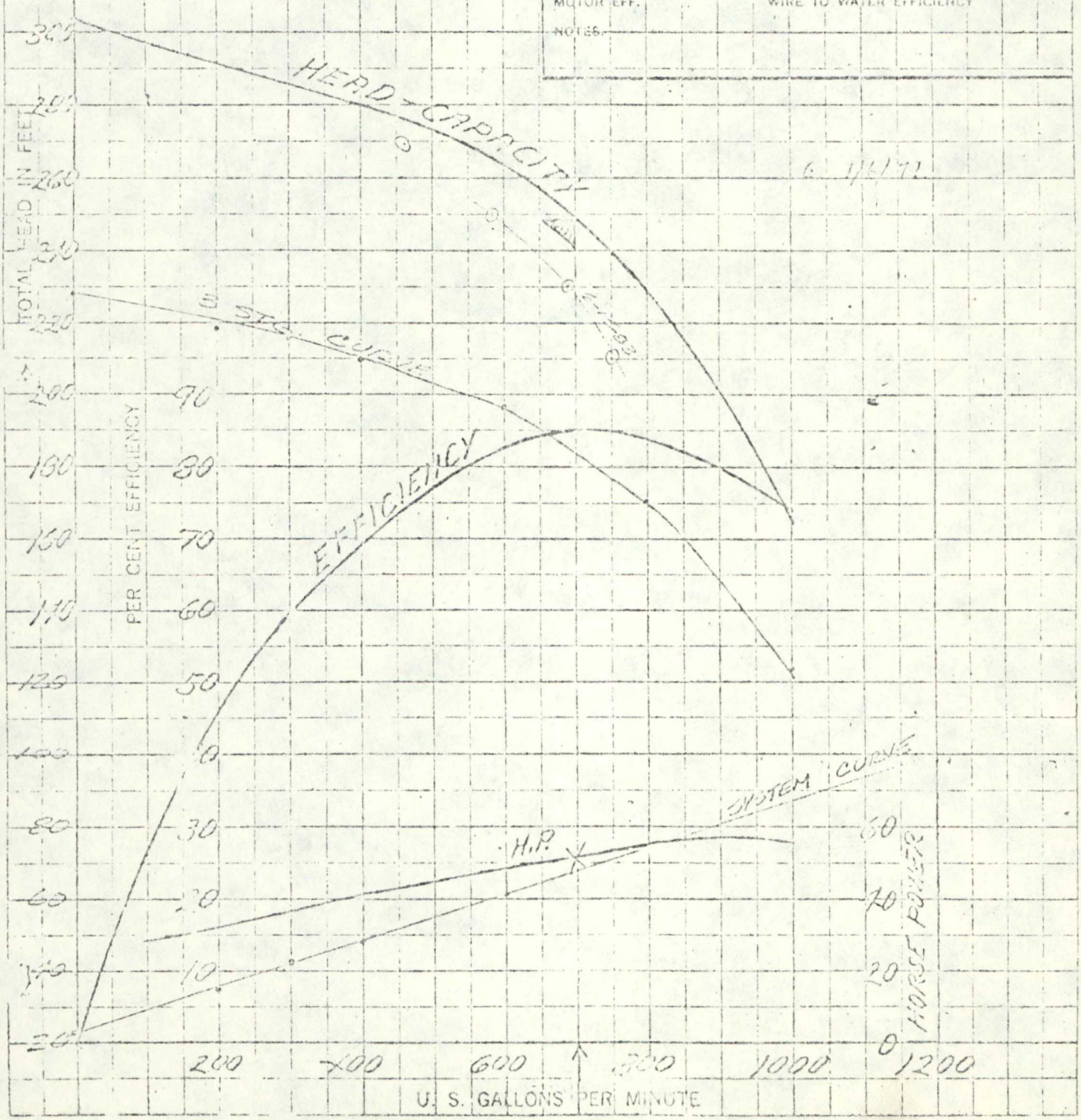
CAPACITY U. S. GPM. FIELD PUMPING HEAD

FIELD B.H.P. FIELD EFFICIENCY

MOTOR EFF. WIRE TO WATER EFFICIENCY

NOTES

T-7187 C 14-31



6 1/4/71

WELL RECORD
Sherex Chemical Company
Mapleton, Illinois
Well No. 8
Section 28, Twp. 7N, Range 7E
Peoria County, Illinois

WELL INFORMATION – DRIFT WELLS

Layne-Western Company, Inc.

WATER SUPPLY CONTRACTORS

721 West Illinois Avenue • Aurora, Illinois 60507 • Phone: 312/897-6941

Name of Job: Sherex Chemical Company (C-3264L) Date: September 28, 1979

City or Village: Mapleton State: Illinois

Well No.: 8 Drillers: Kopp

Well Location: 3000 ft. (S) and 100 ft. (E) of the NW corner of

Section 28, Twp. 7 (N), Range 7 (E) Peoria County.

Otherwise located as: Approximately 300' SE of Well No. 7.

Work Began: 9/17/79 Work Completed: 9/28/79 Well Depth: 80'

All measurements made from existing ground level at time well was drilled. – grade built up approx. 6' above the ground level when T.H. #1-78 was drilled.

Casing Record:

Amount	Dia.	Wt. or Thickness	Material					
79' ~~85'~~	16"	3/8" wall	steel	with	welded	joints from	~~±20~~ +/4'	to 65'
				with		joints from		to

Screen Record: Type: Johnson

Amount	Dia.	Opening	Material					
15'	18"	100 Slot	stainless	with	welded	joints from	65'	to 80'
				with		joints from		to

Type of Seal at Bottom: stainless steel plate

Hole Record:

48 inch from 0 to 10'

42 inch from 10' to 84' T.D.

Gravel Pack Record:

Amount	Size	Source	From	To
App. 30 ton	#3 Well Pack	Northern Gravel Co. Muscatine IA	45'	80'

Cementing Record: 5 bag redi-mix from 20' to 5'

Backfill Record: bank run sand and bentonite from 45' to 20'

LW-94

SEE OTHER SIDE

WELL LOG

Feet		Feet	Description
0	to	6	Clay fill
6	to	12	Soft black and brown silty clay
12	to	20	Dark gray organic material with wood, shells, etc.
20	to	32	Gray fine to medium sand and gravel
32	to	64	Soft gray silty clay with traces of sand and gravel,
	to		wood, shells
64	to	80	Fine sand to coarse gravel, boulders
80	to	82	Gray shale
	to		
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	to		

Well Test Data: Static Level 10' ; pumping level 22 after 8 hours pumping at 1023 g.p.m.

Length of test 8 hrs. See Well Test Data Sheet Dated 9/27/79

REMARKS:

Grade when drilling this well was built up approximately 6' above ground level when T.H. #1-78 was drilled at this location.

WELL TEST DATA SHEET

Layne-Western Company, Inc.

WATER SUPPLY CONTRACTORS

721 West Illinois Avenue • Aurora, Illinois 60506 • Phone: 312/897-6941

Job: Sherex Chemical (C-3264L) Well No. 8 Date Tested: September 27, 1979

Location: Mapleton IL Tested By: Kopp

Dia. of Well: 42" x 16" Driver: GMC 671

Depth of Well: 80' Pump Used: Column and Shaft: 10" x 1-15/16" W.L.

Length of Airline: Electric Bowls: 14" - 2 Stage

Non-Pumping Level: 10' Manufacturer: Layne

Orifice Size: 8" x 6" Serial No.: Test Pump

Time	Piezometer Reading (in.)	G.P.M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
6:00	44	1023	19'	19'	9'				
6:15	43.5	1018	19'	19'	9'				Clear, no sand
6:30	44	1023	20'4"	20'4"	10'4"				
6:45	44	1023	20'6"	20'6"	10'6"				
7:00	44	1023	21'1"	21'1"	11'1"				
7:30	44	1023	22'	22'	12'				
8:00	44	1023	21'6"	21'6"	11'6"				
8:30	44	1023	21'6"	21'6"	11'6"				
9:00	44	1023	21'6"	21'6"	11'6"				
9:30	44	1023	21'6"	21'6"	11'6"				
10:00	44	1023	21'8"	21'8"	11'8"				
10:30	44	1023	22'	22'	12'				
11:00	44	1023	22'	22'	12'				
11:30	44	1023	22'	22'	12'				
12:00	44	1023	22'	22'	12'				
12:30	44	1023	22'	22'	12'				
1:00	44	1023	22'	22'	12'				
1:30	44	1023	22'	22'	12'				
2:00	44	1023	22'	22'	12'				S.C. = 85

Illinois Institute of Natural Resources

State Water Survey Division

605 East Springfield
Champaign, IL 61820
Mail: Box 232, Urbana, IL 61801
217/333-2210

December 4, 1979

Mr. Darrell G. Lohmeier
Layne-Western Company
721 W. Illinois Avenue
Aurora, Illinois 60506

Dear Mr. Lohmeier:

We are enclosing two copies of the partial analysis made on a sample of water collected September 28, 1979, from an eighty foot well recently drilled southeast of Mapleton for the Sherex Chemical Company.

The analysis shows this sample to be moderately mineralized but very hard and to contain sufficient iron and manganese to cause staining of porcelain ware, etc. It is noted that the sample also contains considerable turbidity which appears to be due mostly to the iron content.

The hardness in this sample is sufficient to cause the formation of an exceptionally large amount of soft scale in boilers and hot water heaters and to consume an exceptionally large amount of soap if used for washing or laundry purposes.

Very truly yours,
ILLINOIS STATE WATER SURVEY

James C. Whitney

James C. Whitney
Head, Analytical Laboratory
217/333-0802

JCW/pcb
Enclosures
cc: Sherex Chemical Company

State Water Survey Division

Illinois Institute of Natural Resources

605 East Springfield
Champaign, IL 61820
Mail: Box 232, Urbana, IL 61801
217/333-2210

December 4, 1979

PARTIAL ANALYSIS

Sample of water collected September 28, 1979, from a well southeast of Mapleton, Illinois, in Peoria County, owned by the Sherex Chemical Company. Location of well: 3000'S, 100'E, of the NW corner of Section 28, T7N, R7E. Depth of well: 80 feet.

LABORATORY NO. 212176

		mg/l	me/l				mg/l	me/l
Iron(total)	Fe	3.3		Phosphate(filt)		P	0.0	
Manganese	Mn	.07		(unfilt)		P	0.0	
				Fluoride		F	0.1	
				Nitrate		NO_3	0.7	.01
				Chloride		Cl	108	3.05
				Sulfate		SO_4	127.1	2.64
				Alkalinity	(as	$CaCO_3$)	480	9.60
Turbidity		58		Hardness	(as	$CaCO_3$)	576	11.52
Color		0						
Odor		Ch		Total Dissolved Minerals			808	

mg/l = milligrams per liter
me/l = milliequivalents per liter
mg/l x .0583 = grains per gallon

ILLINOIS STATE WATER SURVEY

Kenni W. James

Kenni W. James
Assistant Chemist
Analytical Laboratory

JCW

KWJ/pcb

PERMIT FEE
$10.00

STATE OF ILLINOIS
DEPARTMENT OF MINES AND MINERALS
DIVISION OF OIL AND GAS

GEORGE R. LANE
PETROLEUM ENGINEER

Nº 88547

AUTHORITY TO DRILL A WATER WELL

(This permit expires one year from date of issuance.)

Sherex Chemical Co.
Rt. #24, Box #9
Mapleton, IL

Drilling Contractor: James Carson, Aurora, IL

Sec. 28 Twp. 7N Rge. 7E
County Peoria

Springfield, Ill., August 8, 1979

This is your authority under the State Oil and Gas Conservation Act and the Rules and Regulations of this Division, to drill a well for industiral (Well #8) on the above described premises.

Exact location of well to be 3000' south and 100' east, of the NW corner of the above described section.

Said well to be drilled with rotary tools to a contemplated depth of 73 ft.

IMPORTANT: DRILLERS' LOG MUST BE FILED WITH THE STATE GEOLOGICAL SURVEY, URBANA, ILLINOIS.

(Yes) Drilling samples collected at five-foot intervals are to be sent to the State Geological Survey.

This permit or legible photostatic copy must be posted at the well site before drilling commences.
If necessary to plug this well, notify

Edward L. Wirth 815-699-7012

Inspector Telephone

DIVISION OF OIL AND GAS

George R. Lane

Petroleum Engineer

(7046—10M Sets—6-78)

White Copy – Ill. Dept. of Public Health
Yellow Copy – Well Contractor
Blue Copy – Well Owner

INSTRUCTIONS TO DRILLERS

FILL IN ALL PERTINENT INFORMATION REQUESTED AND MAIL ORIGINAL TO STATE DEPARTMENT OF PUBLIC HEALTH, CONSUMER HEALTH PROTECTION, 535 WEST JEFFERSON, SPRINGFIELD, ILLINOIS, 62761. DO NOT DETACH GEOLOGICAL/WATER SURVEYS SECTION. BE SURE TO PROVIDE PROPER WELL LOCATION.

ILLINOIS DEPARTMENT OF PUBLIC HEALTH
WELL CONSTRUCTION REPORT

1. Type of Well
   a. Dug____. Bored____. Hole Diam.____in. Depth____ft.
   Curb material_____. Buried Slab: Yes_____No_____
   b. Driven_____. Drive Pipe Diam.____in. Depth____ft.
   c. Drilled X. Finished in Drift X. In Rock_____.
   Tubular_____. Gravel Packed X.
   d. Grout:

(KIND)	FROM (Ft.)	TO (Ft.)
redi-mix	20'	5'

2. Distance to Nearest:
   Building _____ Ft. Seepage Tile Field _____
   Cess Pool _____ Sewer (non Cast iron) _____
   Privy _____ Sewer (Cast iron) _____
   Septic Tank _____ Barnyard _____
   Leaching Pit _____ Manure Pile _____
3. Well furnishes water for human consumption? Yes X No_____
4. Date well completed 9/28/79
5. Permanent Pump Installed? Yes____ Date _____ No X
   Manufacturer _____ Type _____ Location _____
   Capacity_____gpm. Depth of Setting _____ Ft.
6. Well Top Sealed? Yes X No_____ Type _____
7. Pitless Adapter Installed? Yes_____ No X
   Manufacturer _____ Model Number _____
   How attached to casing? _____
8. Well Disinfected? Yes X No_____
9. Pump and Equipment Disinfected? Yes_____ No_____
10. Pressure Tank Size_____gal. Type _____
    Location _____
11. Water Sample Submitted? Yes X No_____

REMARKS:
Drilled by Layne-Western Company

GEOLOGICAL AND WATER SURVEYS WELL RECORD

10. Property owner Sherex Chemical Well No. 8
    Address Mapleton IL
    Driller J.R. Carson License No. 102-13
11. Permit No. 88547 Date 8/8/79
12. Water from Sand & Gravel (Formation) 13. County Peoria
    at depth 65 to 80 ft. Sec. 28
    14. Screen: Diam. 18 in. Twp. 7N
    Length: 15 ft. Slot 100 Rge. 7E
    Elev. _____

SHOW LOCATION IN SECTION PLAT

15. Casing and Liner Pipe

Diam. (In.)	Kind and Weight	From (Ft.)	To (Ft.)
16	3/8" steel	+20	65

16. Size Hole below casing: 42 in.
17. Static level 10 ft. below ~~casing~~ ~~[illegible]~~ ~~[illegible]~~ ground level. Pumping level 22 ft. when pumping at 20 gpm for 8 hours.

18. FORMATIONS PASSED THROUGH	THICKNESS	DEPTH OF BOTTOM
See attached log		

(CONTINUE ON SEPARATE SHEET IF NECESSARY)

SIGNED D. G. Lohmeier, P.E. DATE 10/2/79

IDPH 4.065
1/74 – KNB-1

November 5, 1979

WELL PRODUCTION TEST
SHEREX CHEMICAL COMPANY, WELL NO. 8
PEORIA COUNTY

By
Layne-Western Company Inc.

Well Owner:	Sherex Chemical Co.
Well Location:	3000 ft S. and 100 ft E. of the NW corner of Section 28, T7N, R7E
Date Well Completed:	September, 1979
Date of Production Test:	September 27, 1979
Length of Production Test:	8 hr.
Aquifer:	sand and gravel

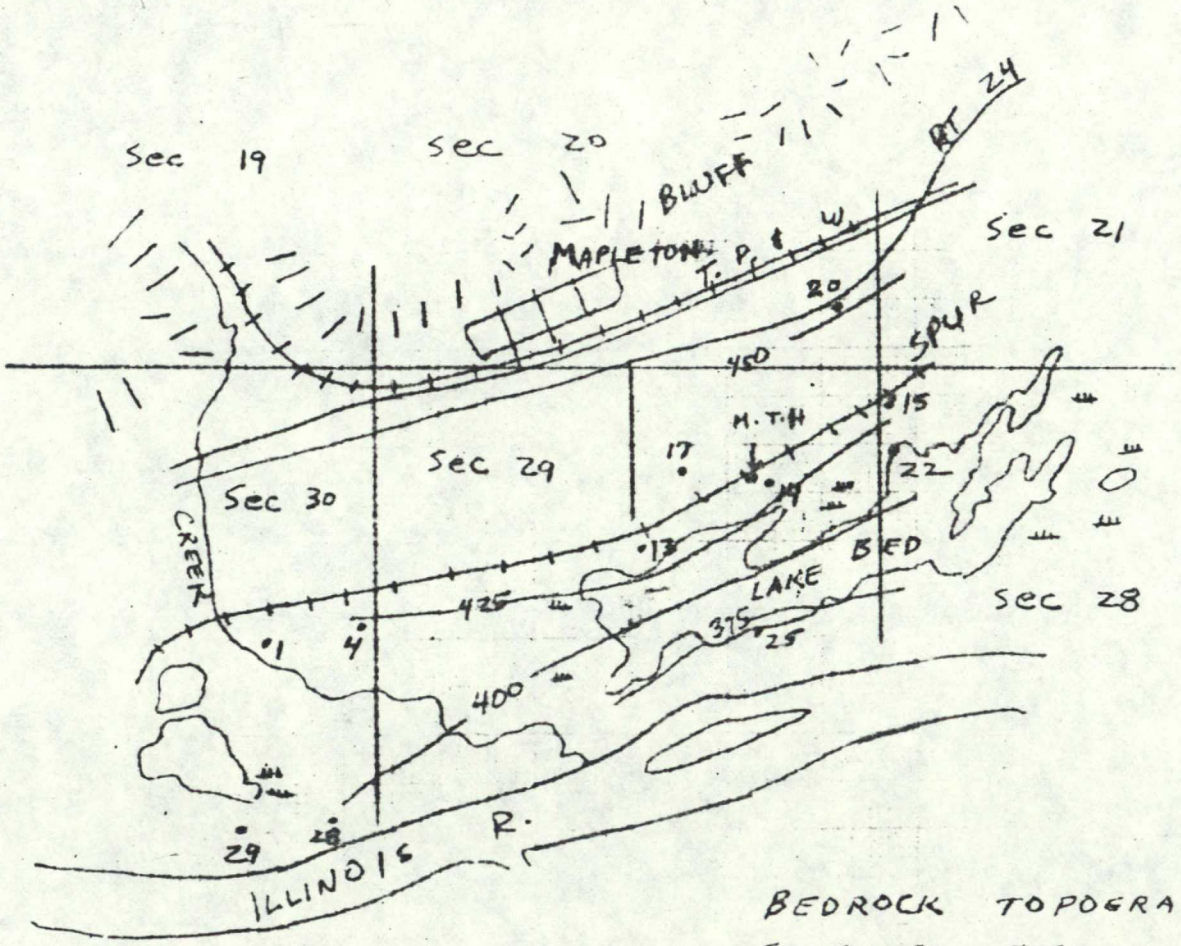
PUMPED WELL DATA

Well No:	8
Depth:	80 ft.
Drilling Contractor:	Layne-Western Co., Aurora
Hole Record:	48 in. 0-10 ft, 42 in. 10-84 ft
Casing Record:	16 in. steel + 20-65 ft.
Screen Record:	18 in. Johnson stainless steel No. 100 slot from 65-80 ft.
Annulus and Gravel Pack Record:	5 bags of Redi-mix from 5-20 ft., bank run sand and bentonite from 20-45 ft, and about 30 ton of No. 3 Northern Gravel from 45-80 ft.
Nonpumping Water Level:	10 ft.
Measuring Equipment:	80 ft. airline, 6x8 in. orifice
Test Pump and Power:	14 in., 2 stage Layne test pump; powered by a GMC engine

Remarks: Grade when drilling this well was built up approximately 6 ft. above land surface when T.H. 1-78 was drilled at this location.

DRILLERS LOG
Well No. 8

Formation	Thickness	Depth
Clay fill	6	6 ft
Soft black and brown silty clay	6	12
Dark gray organic material with wood, shells, etc.	8	20
Gray fine to medium sand and gravel	12	32
Soft gray silty clay with traces of sand and gravel, wood, shells	32	64
Fine sand to coarse gravel, boulders	16	80
Gray shale	2	82



BEDROCK TOPOGRAPHY &
SELECTED TEST HOLES
IN VICINITY OF MAPLETON,
T 7 N, R 7 E, PEORIA CO.

• 17 . TEST HOLE

—400— CONTOUR, BEDROCK SURFACE

SCALE 1/24,000 - PEKIN QUAD.
ILLINOIS STATE GEOLOGICAL SURV

Eugene J. Daily, Chairman
John P. Higgins, President
Otis E. Michels, Vice President
James F. Dallmeyer
Laboratory Director

Daily Analytical Laboratories

7807 N. Pioneer Lane • Peoria, Illinois 61615 Tel. 309-692-5252

TO: Sherex Chemical Company
Route 24
Mapleton, IL 61547

ATTENTION: Mr. Harold Jesperson

DATE RECEIVED 6-15-83
CLIENT P.O. #
D/A PROJECT # 5060.00
DATE OF REPORT 7-8-83

D/A SAMPLE NO.		3166-40	3166-41	3166-42	3166-43	3166-44
SAMPLE DESCRIPTION		N1 18 Acre As Received	N2 18 Acre As Received	N3 18 Acre As Received	18 Acre As Received	18 Acre As Received
SAMPLE DATE						
% Solids	mg/kg	13	20	15	27	16
% Volatile Solids	mg/kg	80	77	76	87	85
pH	Units	7.6	7.4	7.9	7.8	7.6
Phosphate	mg/kg	260	410	380	350	310
Nitrogen Ammonia	mg/kg	530	740	540	850	530
Chloride	mg/kg	690	670	590	690	520
Cadmium	mg/kg	130	180	200	220	124
Copper	mg/kg	170	220	250	230	130
Copper, Soluble	mg/kg	0.85	1.0	1.3	0.84	0.36
Mercury	mg/kg	0.18	0.26	0.20	0.20	0.2
Nickel	mg/kg	96	120	120	130	77
Silver	mg/kg	0.27	0.30	0.17	0.28	0.18

abbreviated report sheet

Analysis Certified By: Kurt C. Stepping
Kurt C. Stepping, Staff Chemist

Analysis and Testing shall be performed in accord with U.S. EPA's current manual of practice or with other procedures acceptable to U.S. EPA and IEPA.

MEMORANDUM

TO K. C. Johnson

DATE March 12, 1975

FROM H. B. Jespersen

COPIES TO E. Germain
L. Gagneron
W. Rowell
R. Sterrett

SUBJECT ANALYSIS OF NITRIC ACID SOLUTION TO SLUDGE POND

Attached is a copy of Daily and Associates report on the copper and cadmium content of the nitric acid solution after cleaning the H.P.H. reactor.

Approximately 2,000 gallons of this material was pumped into the sludge settling pond on March 11, 1975.

HBJ/kle
Attach.

H B Jespersen

Eugene J. Daily Pres

Robert M. Randolph
John P. Higgins
Walter H. Johansen
Otis E. Michels
Lyn A. Denton
Woodrow C. Chenau
Thomas B. Jordan
Arnold B. Bandstra
Thomas J. Foster

Daily & Associates, Engineers, Inc.

1703 West Luthy Drive • Peoria, Illinois 61614 Tel 309-691-5300

ANALYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

TO: Ashland Chemical Company
Route #24
Mapleton, Illinois 61547

ATTENTION: Mr. Harold Jesperson

DATE RECEIVED 3/6/75
CLIENT P.O. # 393-06195-DS
D/A PROJECT # 5060.00
DATE OF REPORT 3/10/75

D/A SAMPLE NO.						
SAMPLE DESCRIPTION		Nitric Acid Solution (Total)	Nitric Acid Solution (Soluble)			
SAMPLE DATE		3/6/75	3/6/75			
Acids, Volatile Organic	mg/l					
Acidity, (as $CaCO_3$)	mg/l					
Alkal., P'phthalein	mg/l					
Alkal., Total, (as $CaCO_3$)	mg/l					
Bicarbonates	mg/l					
BOD-5, Total	mg/l					
BOD-5, Soluble	mg/l					
BOD-20, Total	mg/l					
BOD-20, Carbonaceous	mg/l					
BOD-20, Nitrogenous	mg/l					
Bromide	mg/l					
Carbonates	mg/l					
Chloramine, Mono-	mg/l					
Chloramine, Di-	mg/l					
Chloride	mg/l					
Chlorine-Demand	mg/l					
-Comb. Residual	mg/l					
-Free Residual	mg/l					
-Total Residual	mg/l					
Color	Unit					
C.O.D.	mg/l					
Cyanide, Free	mg/l					
Cyanide, Total	mg/l					
Dissolved Oxygen	mg/l					
Fluoride	mg/l					
Hardness (as $CaCO_3$)	mg/l					
Nitrogen, Ammonia (as N)	mg/l					
Nitrogen, Kjeldahl (as N)	mg/l					
Nitrogen, Organic (as N)	mg/l					

Ashland Chemical Company
J.N. 5060.00 3/10/75

LYTICAL & ENVIRONMENTAL ENGINEERING LABORATORY

	Nitric Acid Solution (Total)	Nitric Acid Solution Soluble)			
/l					
/l					
/l					
/l					
/l					
/l					
/l					
/l	420	370			
/l					
/l					
/l					
/l					
mg/l	7300	5500			
mg/l					
mg/l					
mg/l					
mg/l					
ppb					
mg/l					
mg/l					
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llion

Analysis Certified By: [signature]

Kirk E. Sweetland,
Chief Chemist

alysis and Testing performed in accordance with procedures described in Standard Methods r the Examination of Water and Waste water 13th Edition,(1971) A.P.H.A.;ASTM Standards rt 23, "Water,Atmospheric Analysis",(1972),A.S.T.M.; and other equivalent procedures.

ll analysis by Atomic Absorption Spectrophotometry unless otherwise specified.
Analysis by wet chemistry procedures.

100% Recycled Paper

10. Aerator Times

The wiring diagrams for the use of timers on the aerators are available for proper timer selection. We have not reached agreement on the necessity of automatic timers, but specific costs will be obtained to assist in evaluating the alternatives.

11. pH Levels in the 100-Acre Lake

Mr. Stein had a sample of the 100 acre lake analyzed by the AWARE labs in Nashville to determine the cause of the rise in pH level of the 100 acre lake. The results of the analyses on the 100-acre lake indicated that the high pH levels are due to algae. It is recommended that Mr. Stein further elaborate on the situation at the December Meeting and indicate the affect this would have on obtaining an NPDES discharge permit and what pH levels can be expected in the future.

12. Sludge Disposal from Sludge Lagoon

a.) Sludge analysis - AWARE's labs conducted a detailed analysis of the sludge (attached). Mr. Stein indicates in his memorandum that the Illinois Pollution Control Board would approve the disposal of this sludge into an approved landfill. Mr. Jesperson is investigating the four (4) companies listed to determine the economics of each.

b.) Sludge dewatering - The degree of sludge dewatering will be based on the cost of disposal. At this time it is assumed that some dewatering will be necessary. (The sludge sample analyzed had 7.7% solids). Mr. Stein has proposed to forward the details of a sludge dewatering program in a memo to Mr. Jesperson.

13. High Pressure Alcohol (HPA) Clean-out Waste

In a memorandum from Mr. Sturm to Mr. Germain of November 13, 1975, the question of the effect of the overflow from the sludge lagoon was analyzed. In this memorandum, it was recommended that no more of the HPA clean-out be added to the lagoon. Mr. Stein has agreed with this policy not only from the standpoint of possible toxic effects in the biological system, but also in the potential long term disposal problems resulting from the increased copper and cadmium concentrations in the sludge. Mr. Germain had indicated that the next clean-out will be dumped in the sludge lagoon. Because of the possible problems mentioned, it is strongly recommended that the copper/cadmium/nitric acid clean-out solution be stored until we can decide what to do with it.

I have consulted with Mr. W. F. Rahles on the alternatives. He has referred me to the HPA OPERATING INSTRUCTIONS, dated 9/16/63, in which he outlined a procedure for catalyst recovery. This can be found in section S, Catalyst Recovery, pages 15-16. Mr. Rahles suggests pH adjustment to 3.5 with caustic, then sodium carbonate or sodium bicarbonate is added to bring the solution to a pH of 8 and precipitate the catalytic metals. The slurry is filtered and the cake can then be drummed for reuse.

#6 WELL

Layne-Western Company

721 ILLINOIS AVENUE AURORA, ILLINOIS

Well Information—Drift Wells

Name of Job: Archer Daniels Midland Co. Date: Feb. 20, 1965

City or Village: Napleton State: Ill.

Well No.: 6 Drillers: Siefers

Well Location: ____ ft. (____) and ____ ft. (____) of the ____ corner of

Section ____, Twp. ____ (____), Range ____ (____) ____ County.

Otherwise located as 300' east of #5 well

Work Began: Feb. 3, 1965 Work Completed: Feb. 16, 1965 Well Depth: 88'-10½" top of c sing whic is approx. 14½ above G.L.

All measurements made from existing ground level at time well was drilled.

Casing Record:

Amount	Dia.	Wt. or Thickness	Material					
63'10½"	16	3/8"	Steel pipe	with	welded	joints from	49' below G.L.	to Approx. 14½ above G.L.
				with		joints from		to

Screen Record: Type Shutter

Amount	Dia.	Opening	Material					
25'	16"	85	Stainless Steel	with	welded	joints from	49'	to 74'
				with		joints from		to

Type of Seal at Bottom Steel plate

Hole Record:

48"	inch from	0	to	10'
42	inch from	10	to	76'

Gravel Pack Record:

Amount	Size	Source	From	To
32 ton	#3	Muscatine	75'	27' of G.L.

Cementing Record: None

Backfill Record: Sand from pit, from 7' of G.L. to G.L.

SEE OTHER SIDE

WELL LOG

Feet		Feet	Description
0	to	7	Dirty silt and sand
7	to	48	Soft to hard gray clay
48	to	55	Sand, gravel and boulders
55	to	74½	Fine to coarse red sand, some gravel
74½	to	76	Coal and slate and shale
	to		
	to		
	to		
	to		
	to		
	to		
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	to		
	to		
	to		
	to		
	to		
	to		
	to		

Well Test Data: Static Level 9'5" pumping level 25'9" after 8 hours pumping at 1018 g.p.m.

Length of test 8 hrs. See Well Test Data Sheet Dated Feb. 15, 1965

REMARKS:

Static level readings taken from natural G.L.

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job: Archer Daniels Co.
Location: Mapleton, Ill.
Dia. of Well: 42" x 16"
Depth of Well: 74'8" G.L.
Length of Airline: steel tape
Non-Pumping Level: 9'5"
Orifice Size: 8" x 6"

WELL #6
Site of Test Hole #B-3

Pump Used:

Date Tested: Feb. 15, 1965
Tested By: Siefers - Malaker
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

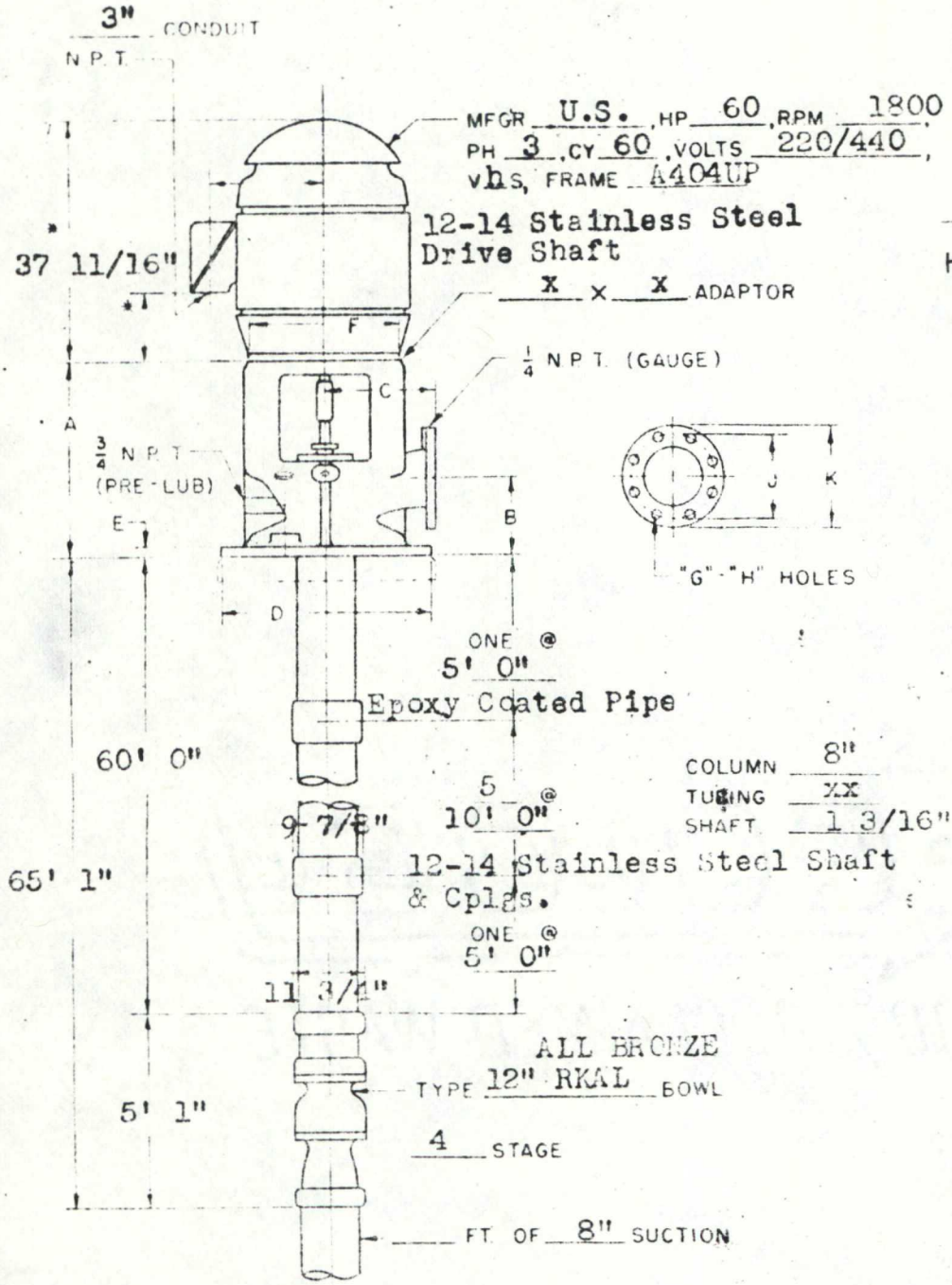
Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
8:55	0	0		9'5"	0				Static L.L.
9:00	11	533		20'5"	11'0"				
9:15	11	533		21'5"	12'0"				
9:30	11.5	545		21'9.5"	12'4½"				
9:35	24	776		27'4"	17'11"				
9:45	24.5	784		28'1½"	18'8½"				
10:00	25	791		28'4"	19'0"				
10:02	43	1012		34'4"	24'11"				
10:30	43	1012		35'0"	25'7"				
11:00	43	1012		35'3"	25'10"				
11:30	43	1012		35'2"	25'9"				
12:00	43	1012		35'0"	25'7"				
12:30	43	1012		35'2½"	25'9½"				
1:00	43	1012		35'2"	25'9"				
1:30	43	1012		34'10"	25'5"				
2:00	43	1012		35'2"	25'9"				
2:30	43	1012		35'5"	26'0"				
3:00	43.5	1018		35'2½"	25'9½"				
3:30	43.5	1018		35'1"	25'8"				
4:00	43.5	1018		35'2"	25'9"				
4:30	43.5	1018		35'4"	25'11"				
5:00	43.5	1018		35'2"	25'9"				
		Recovery in 2 minutes to			10'4"				

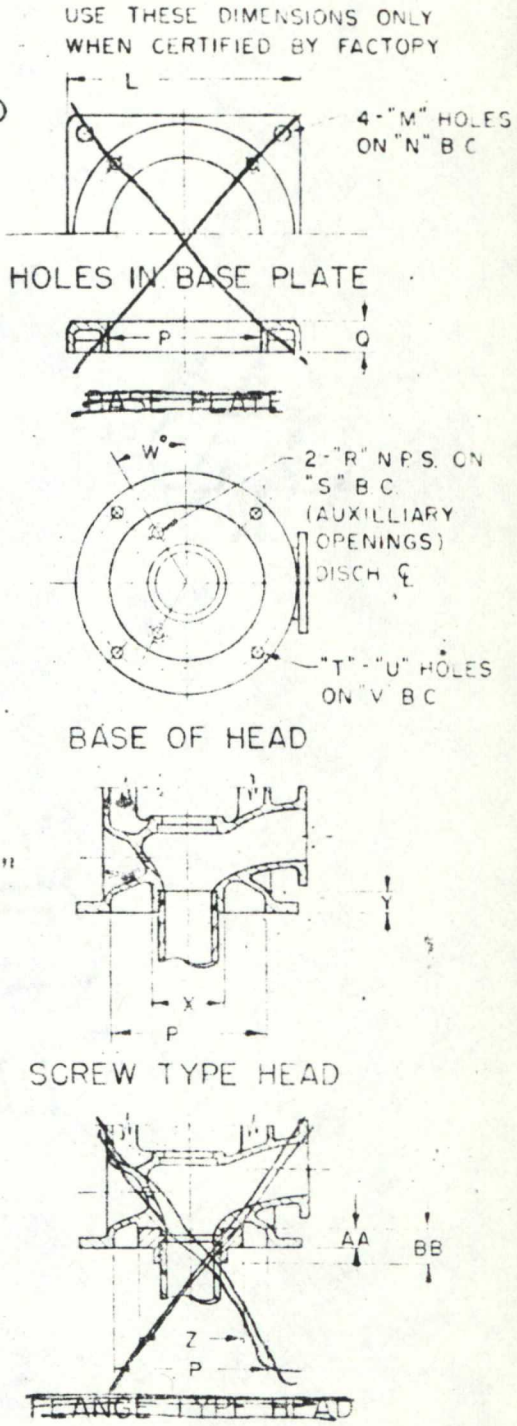
127-WP-6

INSTALLATION PLAN

TYPE 8 SDH DISCHARGE HEAD

LAYNE & BOWLER, INC. MEMPHIS, TENNESSEE





CUSTOMER: Archer Daniels Midland Company	YOUR NO. CR-7908-228	G.P.M. 700
LOCATION: Mapleton, Ill.	OUR NO: 65D-1094	T.D.H. 248
FOR APPROVAL:	PUMP NO. 51448	R.P.M. 1770
CERTIFIED: Tom Morrow	DATE: 3/1/65	B.H.P.

TYPE HEAD	A	B	C	D	E	F	HEAD DISCHARGE FLANGE 125# ASA FLANGE G	H	J	K	250# ASA FLANGE G	H	J	K	L	M	N	P	Q	R	S	HEAD BASE STD T	U	125# T	U	V	W	X	Y	Z	AA	BB
SDH 3	14	5 1/4	7 1/2	3 1/2	3/4	10	4	3/4	6	7 1/2	8	7/8	6 5/8	8 1/4	13 3/4	3/4	15 3/4	9 1/4	1 1/2	1/2	7 3/8	4	3/4	8	7/8	11 3/4	24	4 1/4	1 3/8	5 1/2	[illegible]	3 1/2
SDH 4	6 1/2	6	9	16	3/4	12	8	3/4	7 1/2	9	8	7/8	7 7/8	10	16 1/4	3/4	18 1/4	11 1/4	1 1/2	1/2	8 1/2	4	3/4	12	1	14 1/4	18 1/2	5 1/2	1 5/16	7	[illegible]	3 3/4
SDH 6	20	7	11 1/2	20	3/4	16 1/2	8	7/8	9 1/2	11	12	7/8	10 5/8	12 1/4	21 1/4	1	24 1/4	14 1/2	1 1/2	3/4	11 1/2	4	3/4	12	1 1/8	15 1/4	20	7 1/4	2	7 1/8	[illegible]	4 1/2
SDH 8	22	5 1/2	13	3 1/4	7/8	16 1/2	8	7/8	11 3/4	13 1/2	[illegible]				23 3/4	1	27 1/4	16 1/2	2	1	14	4	7/8	[illegible]		21 1/4	20	9	2 1/2	11 1/2	1 1/8	3 1/2
SDH 10	25	11	15	27 1/2	1	20	12	1	14 1/4	16	16	1 1/8	15 1/4	17 1/2	27 3/4	1 1/8	31 1/2	20 1/2	2	1	17	4	7/8	20	1 1/4	25	24	11 1/4	2	14 1/2	3 1/2	5 1/4
SDH 12	16	11	17	32	1 1/8	24 1/2	12	1	17	19	16	1 1/4	17 3/4	20 1/2	32 1/4	1 1/8	37	24 1/2	2	1	19 1/4	4	7/8	20	1 3/8	29 1/2	17	14*	2 1/2	16 1/2	3 1/4	[illegible]

* INCLUDES 3" HIGH MOTOR ADAPTOR WHEN USED

PBO 119

Layne-Western Company

721 ILLINOIS AVENUE AURORA, ILLINOIS

Well Information—Drift Wells

Name of Job: Archer Daniels Midland Co. Date: Feb. 20, 1965

City or Village: Kapleton State: Ill.

Well No.: 6 Drillers: Siefers

Well Location: _____ ft. (_____) and _____ ft. (_____) of the _____ corner of

Section _____, Twp. _____ (_____), Range _____ (_____) _____ County.

Otherwise located as: 300' east of #5 well

Work Began: Feb. 3, 1965 Work Completed: Feb. 16, 1965 Well Depth: 88'-10½" top of c sing whic is approx. 14½ above G.L.

All measurements made from existing ground level at time well was drilled.

Casing Record:

Amount	Dia.	Wt. or Thickness	Material					
63'10½"	16	3/8"	Steel pipe	with Welded	joints from	49' below G.L.	to	Approx. 14½ above G.L.
				with	joints from		to	

Screen Record: Type: Shutter

Amount	Dia.	Opening	Material					
25'	16"	#5	Stainless Steel	with Welded	joints from	49'	to	74'
				with	joints from		to	

Type of Seal at Bottom: Steel plate

Hole Record:

48"	inch from	0	to	10'
42	inch from	10	to	76'

Gravel Pack Record:

Amount	Size	Source	From	To
32 ton	#3	Muscatine	75'	27' of G.L.

Cementing Record: None

Backfill Record: Sand from pit, from 27' of G.L. to G.L.

SEE OTHER SIDE

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job: Archer Daniels Co.
Location: Mapleton, Ill.
Dia. of Well: 42" x 16"
Depth of Well: 74'8" G.L.
Length of Airline: steel tape
Non-Pumping Level: 9'5"
Orifice Size: 8" x 6"

WELL #6
Site of Test Hole
#B-3

Pump Used:

Date Tested: Feb. 15, 1965
Tested By: Siefers - Malaker
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pirometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
8:55	0	0		9'5"	0				Static W.L.
9:00	11	533		20'5"	11'0"				
9:15	11	533		21'5"	12'0"				
9:30	11.5	545		21'9.5"	12'4½"				
9:35	24	776		27'4"	17'11"				
9:45	24.5	784		28'1½"	18'8½"				
10:00	25	791		28'4"	19'0"				
10:02	43	1012		34'4"	24'11"				
10:30	43	1012		35'0"	25'7"				
11:00	43	1012		35'3"	25'10"				
11:30	43	1012		35'2"	25'9"				
12:00	43	1012		35'0"	25'7"				
12:30	43	1012		35'2½"	25'9½"				
1:00	43	1012		35'2"	25'9"				
1:30	43	1012		34'10"	25'5"				
2:00	43	1012		35'2"	25'9"				
2:30	43	1012		35'5"	26'0"				
3:00	43.5	1018		35'2½"	25'9½"				
3:30	43.5	1018		35'1"	25'8"				
4:00	43.5	1018		35'2"	25'9"				
4:30	43.5	1018		35'4"	25'11"				
5:00	43.5	1018		35'2"	25'9"				
		Recovery in 2 minutes to 10'4"							

WELL LOG

Feet		Feet	Description
0	to	7	Dirty silt and sand
7	to	46	Soft to hard gray clay
46	to	55	Sand, gravel and boulders
55	to	74½	Fine to coarse red sand, some gravel
74½	to	76	Coal and slate and shale
	to		
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	to		

Well Test Data: Static Level 9'5"; pumping level 25'9" after 6 hours pumping at 1016 g.p.m.

Length of test 6 hrs. See Well Test Data Sheet Dated Feb. 15, 1965

REMARKS:

water level readings taken from natural G.L.

State Water Testing

127 WP-6

cc D W Laudenslager
Norm Lafond
Lee Jerome

127-WP-6

November 2, 1983

State Water Testing Service
121 Fourth Avenue
Rock Island, Illinois 61201

Attention: Betty Ann Mussley

Gentlemen

We have recently completed a new water well at our Mapleton, Illinois plant and would like it tested for potable purposes. It is my understanding the State Water Testing Service will perform these tests.

Please forward to my attention the necessary sampling instructions and sample bottle.

Very truly yours

Harold M Lockwood
Superintendent of Services

HML:sjm

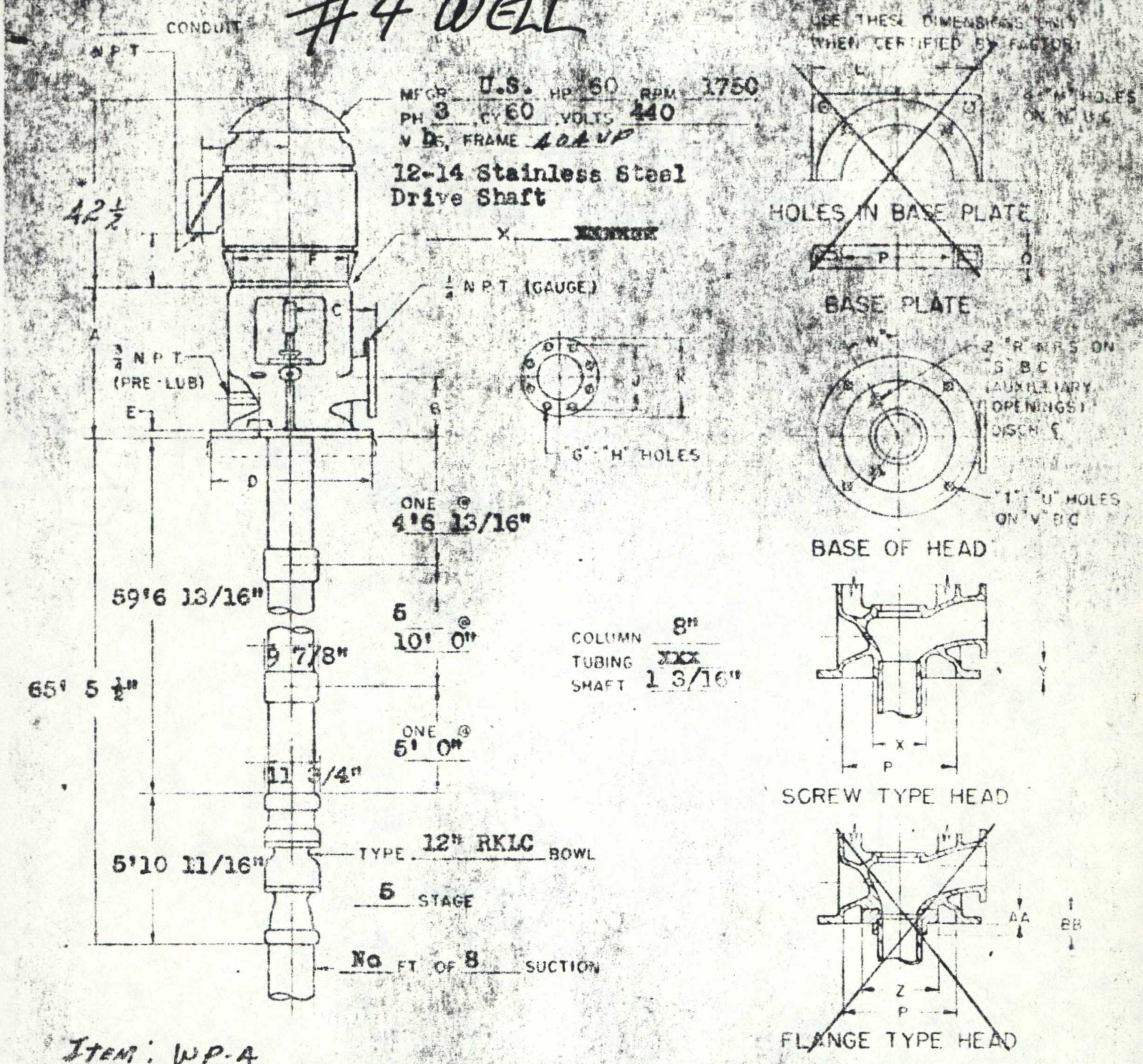
1.

INSTALLATION PLAN
TYPE 8 SDH DISCHARGE HEAD

LAYNE & BOWLER, INC. MEMPHIS, TENNESSEE

REVISED

#4 WELL



Item: WP-4

CUSTOMER: Archer Daniels Midland Co.	YOUR NO. C-6277-1005	G.P.M. 700
LOCATION: Mapleton, Ill.	OUR NO: D-3412	T.D.H: 248
FOR APPROVAL:	PUMP NO. 43307	R.P.M. 1750
CERTIFIED: Tom Munroe	DATE 6/19/61	B.H.P:

TYPE HEAD	A	B	C	D	E	F	HEAD DISCHARGE FLANGE 125# ASA FLANGE G	H	J	K	250# ASA FLANGE G	H	J	K	L	M	N	P	Q	R	S	HEAD BASE STD. T	U	125# T	U	V	W	X	Y	Z	AA	BF
SDH 3	14	5 1/4	7 1/2	13 1/2	3/4	10	4	3/4	6	7 1/2	8	7/8	6 5/8	8 1/4	13 3/4	3/4	15 3/4	9 1/4	1 1/2	3/4	6 3/8	4	3/4	8	7/8	11 3/4	24	4 1/8	1 1/2	5 1/2	1 1/4	2 7/16
SDH 4	16 1/2	6	9	16	3/4	12	8	3/4	7 1/2	9	8	7/8	7 7/8	10	16 1/4	3/4	18 1/4	11 1/4	1 1/2	3/4	8 [illegible]	4	3/4	12	1	14 1/4	19 1/2	5 1/4	1 15/16	7	1 [illegible]	3
SDH 6	20	7	11 1/2	21	3/4	16 1/2	9	7/8	9 1/2	11	12	7/8	10 5/8	12 1/2	21 1/4	1	24 1/4	14 1/2	1 1/2	1	11 1/2	4	3/4	12	1 1/8	18 3/4	20	7 3/4	2 1/16	9 3/8	1 3/8	3 1/4
XXX SDH 8	22	8 1/2	13	23 1/2	7/8	16 1/2	8	7/8	11 3/4	13 1/2	XXXXXXXXXXX				23 1/4	1	27 1/4	16 1/2	2	1 1/4	14	4	7/8	XXXXX		21 1/4	20	10	2 5/16	11 1/2	1 3/8	3 3/8
SDH 10	25	11	15	27 1/2	1	20	12	1	14 1/4	16	16	1 1/8	15 [illegible]	17 1/2	27 1/2	1 1/8	31 1/2	20 1/2	2	1 1/4	17	4	7/8	20	1 1/4	25	24	12 1/4	2 15/16	14 1/2	2 1/4	4 1/8
SDH 12	26	11 1/2	17	32	1 1/8	24 1/2	12	1	17	19	16	1 1/4	17 3/4	20 1/2	32 1/4	1 1/8	37	24 1/2	2	1 1/4	19 1/4	4	7/8	20	1 1/4	29 1/2	17	14	2 15/16	16 1/2	2 1/4	4 1/8

* INCLUDES 3" HIGH MOTOR ADAPTOR WHEN USED

DRAWING NO. D-3412

VERTICAL CENTRIFUGAL PUMP

Installation of Pump Bowls and Column

Butt Joint Column

Rubber Bearing Water Lubricated

Derrick Installation of a Layne Pump requires a derrick 30 to 40 feet in height and a hand winch or power hoist of sufficient size to handle the total weight.

Foundation The concrete foundation for the pump base should be built in accordance with foundation plans furnished by the factory. Where a separate pump base plate is used it should be set in position on the concrete foundation before the pump bowls and column are installed but not grouted into position until the installation is completed.

Dimensions of Well Check the inside diameter of the well and the outside diameter of the pump bowls and column flanges or couplings to be sure that the pump and column will go in the well with ample clearance. The well casing must be straight and without obstructions that might bend the line shaft. Measure the static level of the water in the well to determine if the pump has been furnished with the proper depth of setting. The pump bowls should be submerged when the pump is operating and we do not recommend or guarantee satisfactory operation with a suction lift.

Check Material Check all parts of the pump against the packing list to find out whether all parts have been received. If any parts are missing claim should be made at once to the railroad company.

Clean All Joints All threads and flanged couplings of the discharge pipe and protective tubing should be carefully cleaned and at the time of installation coated with a mixture of red lead and shellac. Care should be taken that there be absolutely no sand or grit between flanges or couplings when making up the joints.

Suction If a basket suction is used it should be lowered into the well first and held by pipe clamps. The suction pipe is picked up and screwed into the coupling at top of basket suction. The basket suction and suction pipe are then lowered into the well until about 18 inches of suction pipe extend above the well casing. The suction pipe is clamped in this position with pipe clamps. When the suction pipe has only threads at the top end care should be taken to place the clamps under the small lug welded on the pipe.

Pump Bowls The pump bowls should be carefully inspected before placing in the well. Rotate impeller shaft several times by hand to be sure that it does not bind at any point. The impeller shaft should have about ¼-inch or more end play. DO NOT STRAIN SHAFT IN ANY WAY THAT MIGHT BEND IT AND DO NOT LIFT PUMP BOWLS BY THE SHAFT. The pump bowls can best be handled by a pair of pipe clamps. The bowls should be lifted into position and screwed or bolted to the suction pipe. The clamps on the suction pipe are then removed and the bowls and suction pipe lowered into the well until the top of the discharge nozzle is about 18 inches above the well casing or top of foundation. The bowls are then supported at this point by pipe clamps.

Discharge Column Pipe The first section of discharge column pipe above the pump bowl is 5'0" in length. The balance of the column pipe is made up in lengths of 10'0". The top length which connects to the pump head is 5'0" in length and is equipped with a special adjustable flange.

Shafting The line shaft is made up in lengths to correspond to the discharge column pipe; that is there is one 5'0" length with each standard pump and one 10'0" length for each 10'0" length of column pipe. The motor drive shaft extends thru the top 5'0" length of column pipe so there is not a length of line shaft to correspond to the top length of column pipe.

Each length of line shaft is equipped with a monel metal bearing sleeve spaced to correspond with the supporting spiders in the column pipe holding the rubber bearings.

Installing Discharge Column Arrange the 5'0" length of column pipe so that the threads are at the lower end to connect to the pump bowl. If the pump bowl requires a flanged connection arrange the pipe with the proper flange on the lower end.

Slide the 5'0" length of line shaft into the 5'0" length of column pipe so that the monel sleeve will come at the top end. With the bottom end of the shaft about eight inches below the pipe take several half hitches around the shaft and the pipe. Raise the assembled section of pipe and shaft until it is hanging vertically in the derrick. Swing into position over the pump bowls. BE SURE THE THREADS IN THE SHAFT COUPLING AND THE THREADS ON BOTH SHAFTS AND THE ENDS OF THE SHAFT ARE PERFECTLY CLEAN. Screw the shaft into the shaft coupling until the ends butt solidly together.

Clean the threads on the pipe and the threads in the pump bowl and coat with red lead and shellac (or Layncote). If the bowl connection is flanged clean both flange faces and coat with red lead and shellac (or Layncote). Then lower the column pipe and screw or bolt to the pump bowl as the case may be. If the connection is screw type be sure that the pipe butts solidly on the machined shoulder in the pump bowl.

Caution If the column is screw coupled type with spiders cast integral be sure to guide the pipe as it is lowered to be sure the shaft enters the rubber bearing without hitting the spider hub which might damage the thread or the end of the shaft.

Remove the clamps from the pump bowls and lower the bowls and first section of column into the well until the column extends about 18 inches above the foundation. Clamp the discharge column in this position.

When screw couplings are used the shaft should now be extending through the rubber bushing so that the bushing is in the approximate center of the monel sleeve.

When flanged column is used slip a spider over the shaft and fit it into the recess in the flange. The rubber bearings are installed in the spider before shipment from the factory.

Each section of discharge column is installed as described above. When screw couplings are used care should be taken in starting the pipe in the coupling. The pipe should start by hand and screw by hand to within 5 or 6 threads of butting. If the thread appears tighter than this check carefully for a damaged thread as the pipe should not be forced into the coupling. The last 5 or 6 threads should be made up with a chain tong, making sure that the joint is tight with the pipe butting against the shoulder in the coupling.

The top length of column pipe and the head shaft should be installed together as described above. Additional care should be used as this shaft will project above the pipe and can be damaged if not watched to prevent undue strains.

The adjustable flange must be set to the proper point to bring the top end of the head shaft in the correct location.

In case the discharge column does not check out within reasonable limits notify the factory to furnish correct lengths.

NOTE: Wash off all no-oxide from shaft with kerosene. Shaft must be free from oil or grease to prevent injury to rubber bearing.

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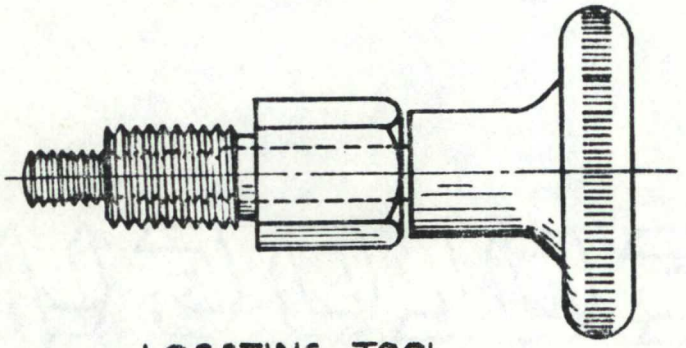
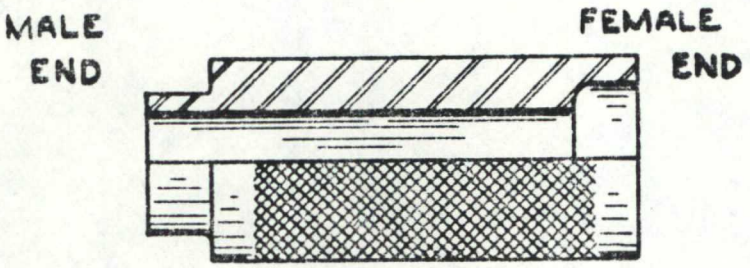
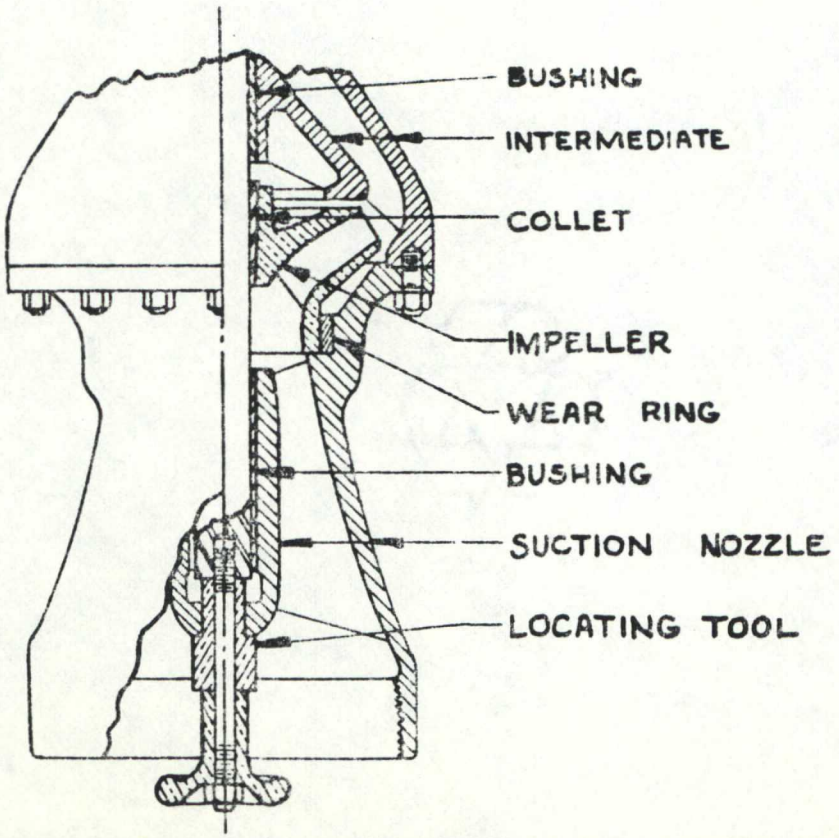
INSTRUCTIONS FOR ASSEMBLYING AND DISMANTLING PUMP BOWLS WITH COLLETS



LOCATING TOOL



COLLET DRIVER



TO ASSEMBLE BOWL

1. Remove cap screw from the bottom of the suction nozzle.
2. Screw locating tool into bottom end of suction nozzle hub.
3. Insert impeller shaft into suction nozzle bearing and turn handwheel of locating tool until impeller shaft is pulled down tight against the shoulder of the tool.
4. Place the impeller over the shaft. Slip the collet over the shaft with the small end first. (A screw driver can be used to spread collet for ease in slipping over shaft). Hold the impeller firmly into the wear ring recess and drive the collet into place with the male end of the collet driver.
5. Remove collet driver and assemble first intermediate stage. Place the next impeller over the shaft and continue to assemble as explained above.
6. When the bowl is completely assembled remove locating tool and replace cap screw in suction nozzle.

TO DISMANTLE BOWL

1. Remove discharge nozzle. Place collet driver over shaft with the female end first and while holding the impeller out of the wear ring recess, drive the impeller off of the collet. Remove the collet and impeller.
2. Remove the intermediate shell and drive the impeller off of the next collet. Continue to dismantle in like manner.

LMA 83

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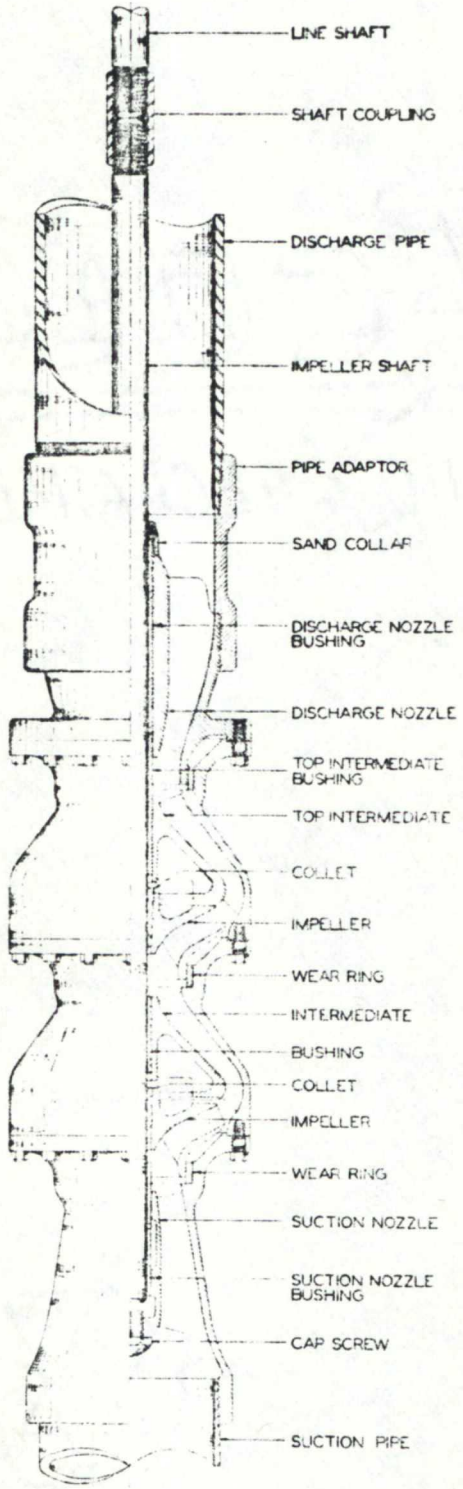

Screw Coupled Type

8"U 12"RK
10"K 12"W
14"W

MA 637

Layne Vertical Centrifugal Pump

with

OPEN LINE SHAFT

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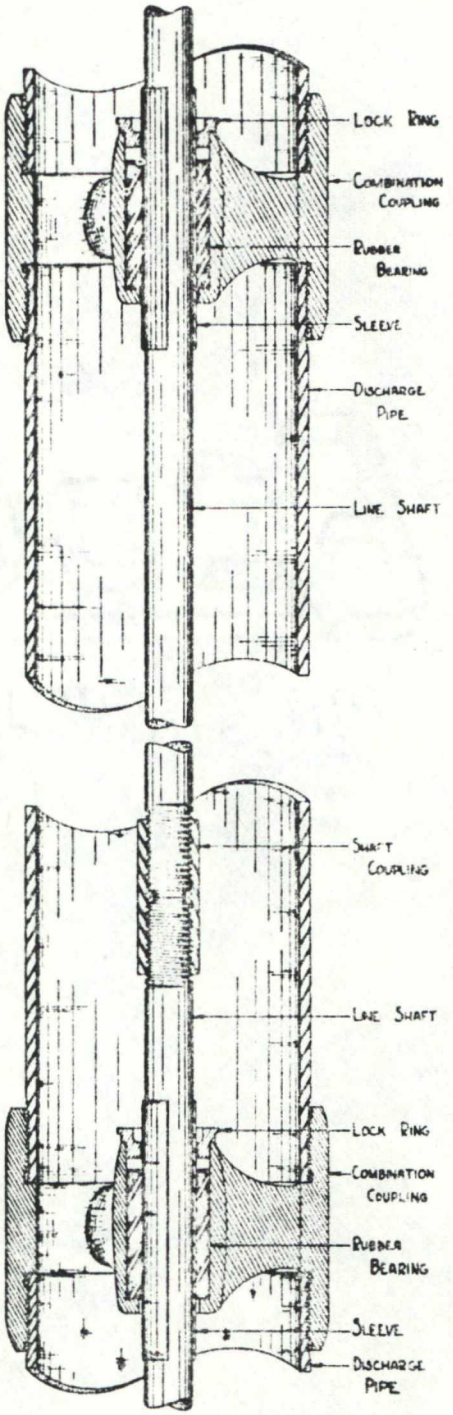

SCREW COUPLED DISCHARGE COLUMN

OPEN LINE SHAFT CONSTRUCTION WITH RUBBER BEARINGS

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VERTICAL CENTRIFUGAL PUMP

Installation of TF Pump Head Using Hollow Shaft Motor or Right Angle Gear Drive

For Water Lubrication

With Top Lantern Relief Type Packing Box

Disassemble and Clean before installation the pump head and all parts should be thoroughly cleaned with kerosene.

Mount Discharge Ell The top length of discharge column pipe is fitted with a special flange to fit the bottom of the discharge ell. In the case of deep settings, an adjustable flange is furnished by which the effective length of the column may be varied several inches. Clean the face of this flange and the bottom flange of the discharge ell and coat with red lead and shellac (or Layncote). The head shaft is already in place so that care should be taken in the installation of the head to be sure that the shaft is not damaged. Bolt the discharge ell to the top column flange and lower the complete assembly until the discharge ell rests on the concrete foundation or on the base plate (which was placed on the foundation before installing the pump bowls and column).

Packing Box Clean the flange face of the packing box and the face of the discharge ell where the packing box rests and coat with red lead and shellac (or Layncote). Lower the packing box over the shaft and bolt the packing box in place. The raised letters on the two bosses "G" for grease connection and "R" for water relief connection are used to identify these bosses and insure that the correct connections are made. Connect the prelubrication line to the pipe nipple and ell.

Alignment The head shaft should now be in the EXACT center of the pump head and EXACTLY perpendicular to the machined surface of the discharge ell. This can be checked with a straight edge, square and pair of callipers. The pump head can be shifted slightly on the foundation or tilted with shims until the shaft is properly aligned.

Packing Insert six rings of ⅜" square centrifugal pump packing with a bronze separator ring between each ring of packing. Drop the lantern ring in place, install the split packing gland and tighten down on the packing.

Fill the No. 7585 Alemite Grease Gun with LAYNGREASE and note on the gun that it requires 9 strokes for ⅛th ounce and 36 strokes for ½ ounce. For the original installation apply grease in the following manner: for 1" and 1 3-16" shaft use 1¼ oz. or 90 strokes, for 1½" and 1 11-16" shaft use 1½ oz. and for 1 15-16" and 2 3-16" shaft use 1¾ oz. For larger size shafts use proportionally more grease. During normal operation apply grease at the rate of 2 strokes for every 24 hours of operation. If LAYNGREASE is not available, any good waterproof grease such as Shell "Retinax P" or equal is recommended.

Prelubrication The pre-lubrication inlet should be connected to a tank of suitable size to contain sufficient water for wetting the line shaft bearings above the static water level. The proper valves should be placed in this line to allow the tank to fill while pump is operating and check the flow back until the operator is ready to start the pump after a shut down period, at which time he should open the valve and empty the tank into the discharge column.

If desired the pre-lubrication pipe can be connected to the pressure side of the discharge line or into a main beyond the check valve so that water will enter the discharge column at all times while the pump is idle and eliminate the necessity of manually opening a valve before starting the pump. This system allows fully automatic starting and stopping of the pump without fear of damaging the bearings due to lack of pre-lubrication.

The pre-lubrication line can be connected to a tank of suitable capacity with a valve controlled by a solenoid which will open when actuated by the proper controls. It is necessary in this hook-up to have a time delay relay to allow the tank to empty before the motor starts, thus allowing time for the pre-lubrication water to enter the discharge column. In general it requires 5 seconds to prelubricate every 10 feet of vertical shaft.

In most instances a water slinger is furnished. This should be locked to the motor drive shaft with the set screw as shown on the cut of the discharge ell.

Mount Motor or Gear Drive Lower the hollow shaft motor or geardrive over the drive shaft taking care not to disturb the alignment. To insure proper operattion of the pump, it is necessary that the motor or gear drive be centered exactly, so great care should be taken in this operation. Bolt the motor or gear drive to the discharge ell with cap screws.

When a hollow shaft motor or gear drive is used the drive shaft is keyed to a removable top drive coupling which is in turn held in position on the rotor coupling by dowel pins. Some of the small hollow shaft motors use a jaw type coupling, instead of the dowel pin type, which engages the rotor coupling. Place this coupling over the shaft and seat it firmly on the rotor coupling. Install the gib key in the motor coupling and drive shaft.

Screw on and tighten the drive shaft adjusting nut until the impellers are picked up from the bottom of the bowl and the shaft is free to turn. Note the position of the adjusting nut and continue to tighten the adjusting nut counting the number of turns until the impellers are drawn against the top of the pump bowl. The number of turns of the nut between the lower and upper position of the impellers gives the total lateral in the pump. The shaft can not be rotated in the upper position. The nut should then be loosened to adjust the impellers for the best running position. All bowls are designed to operate with the impellers midway of the lateral. Perhaps the best arbitrary adjustment is to lower the impellers ¼th the total lateral for settings up to 200 ft. For settings over 200 ft. Lower the impellers ½ turn of the adjusting nut or until the shaft turns freely. The best check of the lateral adjustment can be made with an ammeter, adjusting the impellers for minimum power reading. Install the machine screws with the AN type nut or the gib head key with the MN type nut to lock the adjusting nut in the desired position.

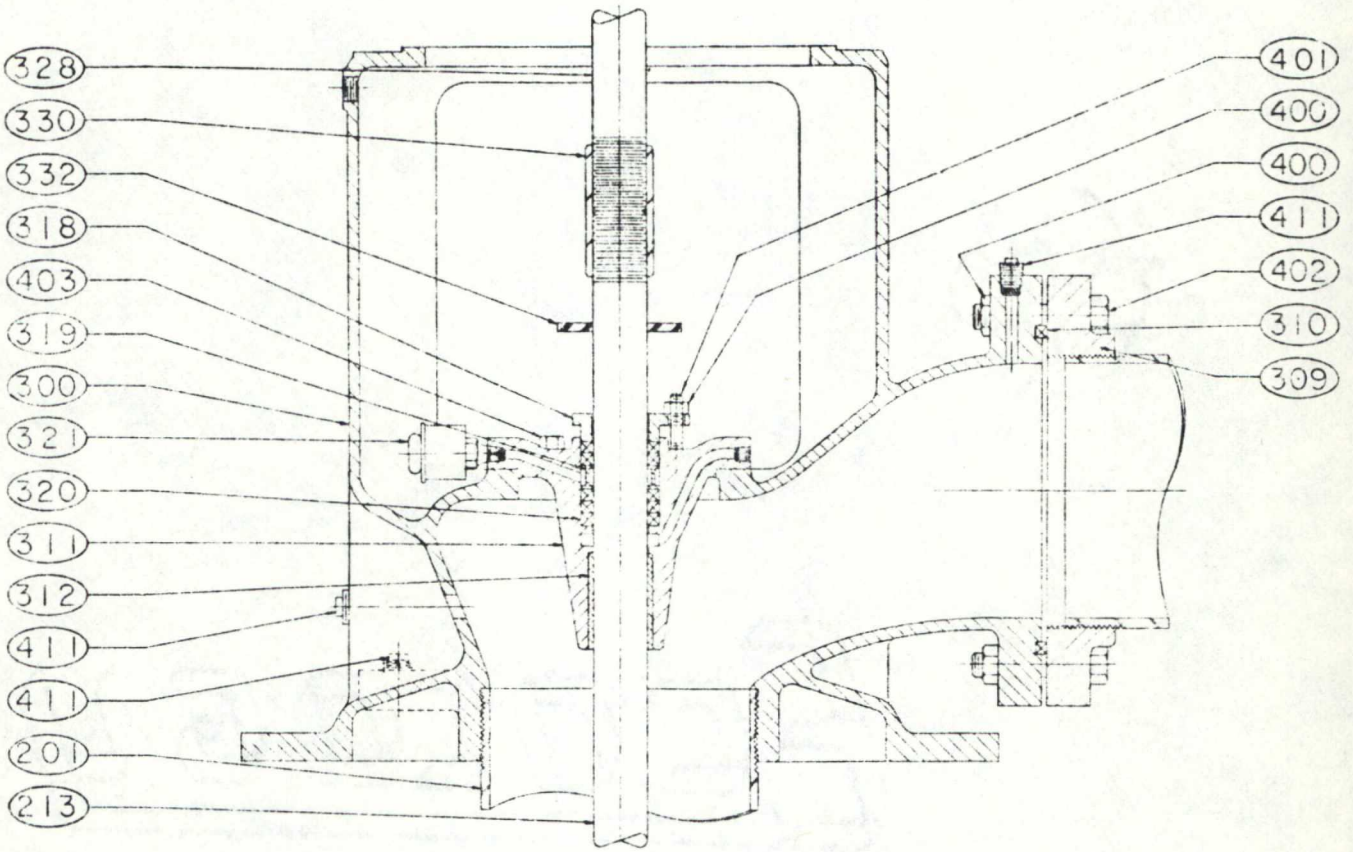
Grout Base and Connect Discharge Grout the discharge ell (or base plate) in position being careful not to disturb the alignment of the pump head. In case the discharge nipple is to be connected to a main, a Dresser Coupling should be used. The main should be placed as nearly in line with the pump discharge as possible. The Dresser Coupling prevents throwing any strain on the pump head if the discharge nipple and the main are not exactly in line.

Starting Pump Check direction of motor or gear drive rotation very carefully before applying power. The pump must operate in a left hand or counter clock-wise direction.

After the pump has been in operation a few hours, shut down and check the adjustment of the pump impellers. The pump shaft may have been screwed up tighter by the power applied and thereby shortened.

TYPE SDH DISCHARGE HEAD

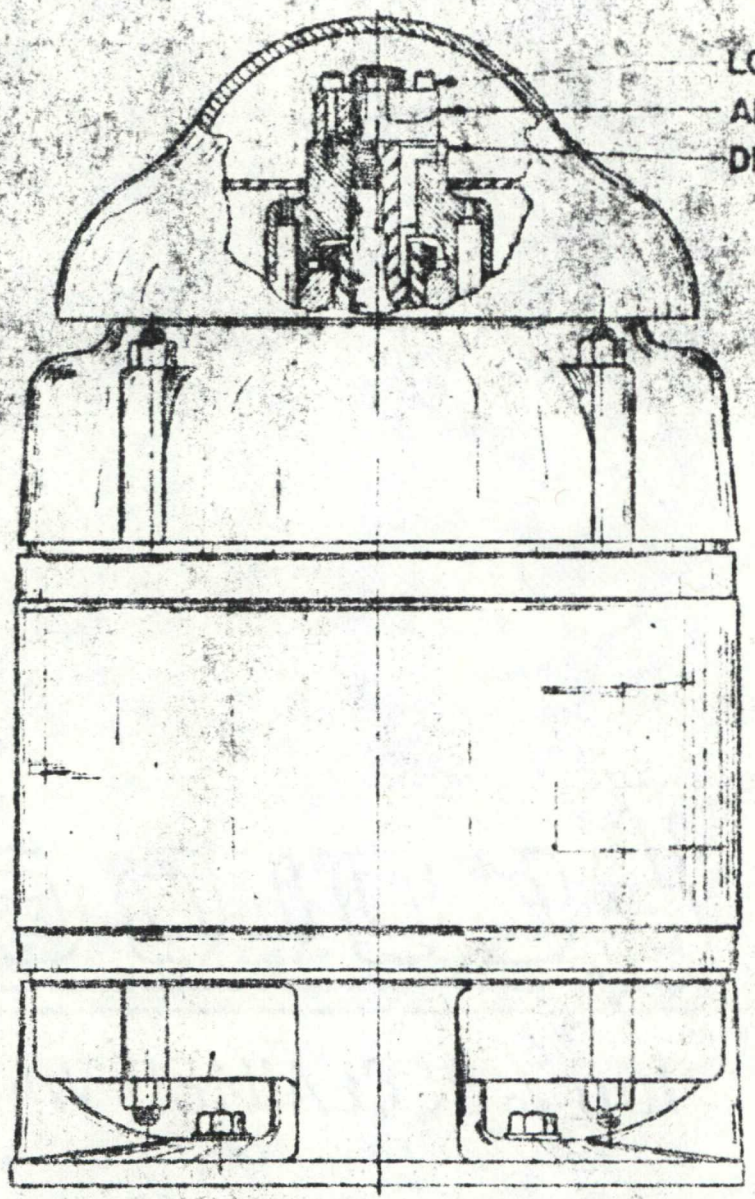
LAYNE & BOWLER, INC - MEMPHIS, TENN.



PART NO.		DESCRIPTION
201		TOP COLUMN PIPE
213		LINE SHAFT, TOP PIECE
300		DISCHARGE HEAD
309		COMPANION FLANGE
310		PACKING, COMPANION FLANGE
311		STUFFING BOX
312		BEARING, STUFFING BOX
318		PACKING GLAND
319		LANTERN RING
320		PACKING, STUFFING BOX
321		GREASE CUP

PART NO		DESCRIPTION
328		MOTOR DRIVE SHAFT
330		HEAD COUPLING
332		WATER SLINGER
400		HEX NUT, COMPANION FLANGE
400		HEX NUT, STUFFING BOX
401		STUD, STUFFING BOX
402		MACHINE BOLT, COMPANION FLG
403		CAPSCREW, STUFFING BOX
411		PIPE PLUG, PRESSURE GAUGE
411		PIPE PLUG, PRE-LUBRICATION
411		PIPE PLUG, AUXILLARY OPN'G (2)

IN ORDERING REPLACEMENT PARTS, ALWAYS SPECIFY PART NO, DESCRIPTION, HEAD SIZE, TYPE, & PUMP SERIAL NO.



MOTOR

MAKE US

60 H.P. 1800 R.P.M.

220/440 VOLTS 3 PHASE

60 CYCLES

FRAME NO. [redacted] 404UF

PART LIST

PART NO.	PART NAME
1/4-20-1 3/4"	LOCKING SCREWS
AN15	ADJUSTING NUT
F272	DRIVE SHAFT KEY

LMA 277

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL #4
Dia. of Well: 16"
Depth of Well: 74
Length of Airline:
Non-Pumping Level: 8'-10½"
Orifice Size: 7"

Pump Used:

Date Tested: 2-16-61
Tested By:
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Piezometer Reading, (in.)	G. P. M.	Air Gauge Reading, (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs	Disch. Pressure Feet	~~Pumping Level~~ ELEV.	Remarks
8:20 AM	—			8'-10½	—			438.66	
9:01	33½	1209		22'-9"	13'-10½"			424.75	
9:02	33½	1209		23'-6"	14'-7½			424.0'	
9:03	33¾	1213		24'-0	15'-1½			423.5	
9:04	33¾	1213		24'-5½	15'-7"			423.04	
9:05	33½	1209		24'-9"	15'-10½			422.75	
9:06	33¾	1213		25'-0"	16'-1½"			422.5'	
9:07	33	1200		25'-1"	16'-2½"			422.4	
9:08	33¼	1205		25'-2"	16'-3½			422.33	
9:09	33½	1209		25'-5"	16'-6½"			422.08	
9:10	33¾	1213		25'-7"	16'-8½"			421.75	
9:20	33¾	1213		26'-1½	17'-3"			421.38	
9:30	33½	1209		26'-5"	17'-6½"			421.08	
9:40	33¾	1213		26'-8½"	17'-10"			420.79	
9:50	34	1218		26'-9"	17'-10½"			420.76	
10:00	34	1218		26'-10"	17'-11½"			420.66	
10:10	34¼	1223		26'-10"	17'-11½"			420.66	
10:20	34	1218		26'-10"	17'-11½			420.66	
10:30	34¼	1223		26'-10"	17'-11½"			420.66	
10:40	34¼	1223		26'-11"	18'-½"			420.58	
11:40 AM	34½	1227		27'-0"	18'-1½"			420.5	
12:40 PM	34½	1227		27'-0"	18'-1½			420.5	
1:40	34¼	1223		27'-¾"	18'-2¼"			420.44	
2:40	34	1218		27'-¾"	18'-2¼"			420.44	
3:40	34	1218		27'-¾"	18'-2¼"			420.44	
4:40 PM	34	1218		27'-¼"	18'-1¾"			420.48	

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL # 4
Dia. of Well: 16"
Depth of Well: 74'
Length of Airline:
Non-Pumping Level: 8'-10½"
Orifice Size:

Pump Used:

Date Tested: 2-16-61
Tested By:
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pirometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	ELEV ~~Total Pumping Head~~	Remarks
5:40 PM	33¾	1213		27'-½"	18'-2"			420.46	
6:40	33¾	1213		26'-11½	18'-1"			420.54	
7:40	33¾	1213		26'-11½	18'-1"			420.54	
8:40	33¾	1213		26'-11¾	18'-1¼"			420.52	NOTE: Pumping
9:00 PM	33¾	1213		26'-11¾	18'-1¼"			420.52	stopped at 9:00 PM
									2-16-61.
	↓	RECOVERY	↓	WATER LEVEL					
9:01 PM				12'-6"				435.0	
:02				11'-11½"				435.54	
:03				11'-5¼"				436.06	
:04				11'-1"				436.42	
:05				10'-11"				436.58	
:06				10'-8"				436.83	
:07				10'-5"				437.08	
:08				10'-4½"				437.13	
:09				10'-3"				437.25	
:10				10'-2"				437.33	
:20				9'-6½"				437.96	
:30				9'-5"				438.07	
:40				9'-4"				438.17	
:50				9'-3"				438.25	
:20				9'-2¼"				438.27	
:40 PM				9'-1¾				438.35	
-17-61									
45 AM				9'-00"				438.0	

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL #5
Dia. of Well: 16"
Depth of Well:
Length of Airline:
Non-Pumping Level: 9'-3 3/4"-
Orifice Size:

Pump Used:

Date Tested: 2-16-61
Tested By:
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pirometer Reading (in.)	C. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	ELEV. Remarks
3:10 AM				9'-3 3/4					438.49
:14				11'-11 3/4					435.83
:24				12'-4"					435.47
:30				12'-5"					435.39
:40				12'-5 3/4"					435.32
:50				12'-6 1/2"					435.26
9:00				12'-6 3/4"					435.24
9:10				12'-6 3/4					435.24
9:20				12'-7 1/8					435.21
9:30				12'-7 1/8"					435.21
9:40				12'-7 3/8"					435.19
:40 AM				12'-8 1/8"					435.13
11:40 PM				12'-8 1/4"					435.11
:40				12'-8 1/2"					435.09
:40				12'-8 7/8"					435.06
3:40				12'-9 1/8"					435.04
:40				12'-9 1/8"					435.04
:40				12'-9 1/4"					435.03
:40				12'-9 1/4					435.03
:40				12'-9 1/4"					435.03
:40				12'-9 1/2"					435.01
:00 PM				12'-9 1/2				435.01	NOTE: PUMPING STOPPED AT 9:00 PM 2-16-61

CAPACITY TEST OF WELL NO.4

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL #5
Dia. of Well: 16"
Depth of Well:
Length of Airline:
Non-Pumping Level: 9'-3 3/4
Orifice Size:

Pump Used:

Date Tested: 2-16-61
Tested By:
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	ELEVS.	Remarks
	↓	RECOVERY	↓	WATER LEVEL						
2:02 PM				11'-7 1/2"					436.17	
2:03				11'-2 1/8"					436.63	
:04				10'-10 5/8"					436.92	
:05				10'-9 3/8"					437.02	
:07				10'-6 1/4"					437.28	
2:08				10'-4 5/8"					437.41	
2:09				10'-3 1/4"					437.53	
2:10				10'-2 3/8"					437.60	
2:11				10'-1 5/8"					437.66	
2:12				10'-1 1/8"					437.71	
2:14				10'-0 3/8"					437.77	
2:15				9'-11 7/8"					437.81	
2:17				9'-11"					437.90	
2:19				9'-10 1/4"					437.95	
:23				9'-9 3/8"					438.02	
:33				9'-8 1/8"					438.13	
:41 PM				9'-7 1/2"					438.18	
-17-61										
:50 AM				9'-3 7/8"					438.48	

STEP TEST OF WELL #4

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

447.50

PAGE 1

Job: ADM

Location: MAPLETON

Dia. of Well: 16"

Depth of Well: 74'

~~Length of Airline~~ WELL No: 4

Non-Pumping Level: 9'-0" FROM TOP OF CASING

Orifice Size: 10-7

Pump Used:

Date Tested: 2-20-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs	Disch. Pressure Feet	Total Pumping Head	Remarks
3:30 AM	—	—							
3:41	8½	617		15'-9"	6'-9"				431.75
3:42	8½	617		15'-8"	6'-8"				431.54
3:43	9	633		16'-9½"	6'-9½				431.71
3:44	9¼	641		16'-1½"	7'-1½				431.86
3:45	9¼	641		16'-3¼	7'-2¼				431.25
3:46	8½	617		16'-2½	7'-2½"				431.30
3:47	8¾	625		16'-3"	7'-3"				431.25
3:48	8½	617		16'-4½"	7'-4½				431.13
3:49	8¾	625		16'-5¼	7'-5¼				431.07
3:50	8¾	625		16'-6¼	7'-6¼				430.98
4:00	9½	650		17'-1¼	8'-1¼"				430.30
4:10	9¾	658		17-3¾"	8'-3¾				430.19
7:11	19	910		20'-1½"	11'-1½"				427.88
7:12	19	910		20'-4"	11'-4"				427.17
7:13	19	910		20'-6"	11'-6"				427.00
7:14	19	910		20'-7"	11'-7"				426.92
7:15	19	910		20'-8"	11'-8"				426.84
7:16	19	910		20'-9"	11'-9"				426.75
7:17	19¼	916		20'-10'	11'-10"				426.67
7:18	19	910		20'-10"	11'-10"				426.67
7:19	19¼	916		20'-10¾"	11'-10¾"				426.61
7:20	19¼	916		20'-11¼	11'-11¼"				426.57
7:30	19¼	916		21'-1¾"	12'-1¾"				426.36
7:40	19¼	916		21'-3"	12'-3"				426.25

WELL TEST DATA SHEET

447.50

PAGE 2

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job: ADM

Date Tested: 2-20-61

Location: MAPLETON

Tested By:

Dia. of Well: 16"

Driver:

Depth of Well: 74'

Pump Used:

Column and Shaft:

~~Length of Air Line~~ WELL No 4

Bowls:

Non-Pumping Level: 9'-0" FROM TOP OF CASING

Manufacturer:

Orifice Size: 10-7

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs	Disch. Pressure Feet	~~Total Pumping Head~~ Total	Remarks
9:41	33	1200		24'-9½"	16'-9½"			422.71	
9:42	33¼	1205		25'-1"	16'-1"			422.42	
9:43	33¼	1205		25'-2½	16'-2½"			422.29	
9:44	33¼	1205		25'-3"	16'-3"			422.25	
9:45	33¼	1205		25'-4½"	16'-4½"			422.12	
9:46	33¼	1205		25'-5"	16'-5"			422.08	
9:47	33¼	1205		25'-5"	16'-5"			422.08	
9:48	33¼	1205		25'-6"	16'-6"			422.00	
9:49	33	1200		25'-6"	16'-6"			422.00	
9:50	33¼	1205		25'-6½	16'-6½"			421.96	
9:00	33¼	1205		25'-10"	16'-10"			421.87	
9:10 AM	33¼	1205		25'-11¼"	16'-11¼"			421.86	

PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
2-6618

APPLICATION FOR WATER SUPPLY PERMIT
SUBMIT APPLICATION IN DUPLICATE

Property Address US Rte 24, Mapleton, Ill. Township Hollis

Legal Description A part of Sec 20, Township 7 North, Range 7 East ~~[illegible]~~ of 4th Principal Meridian.

Owner Archer-Daniels-Midland Co Present Address Mapleton, Illinois

Tenant _____ New Installation X Repair Existing Installation _____

REMARKS Well #4

Number of properties to be served by this water supply 1 industrial site.

LOCATION

Number of feet from well to: Septic tank — ft. Sewer — Ft. Tile field — ft.
Privy vault — ft. Other potential source of contamination — ft.
EXPLAIN Imhoff Tank located approximately 2000 feet north.

CONSTRUCTION

Approximate depth 74 ft. Diameter of casing 16". Casing material Steel
BORED OR DUG WELL -- Construction according to Circular #14A. YES ( ) NO ( )
Water tight top 10 ft. ( )Yes. Describe _____

DRILLED WELL -- Construction according to Circular #14B. YES ( ) NO ( )
OTHER CONSTRUCTION. DESCRIBE Reverse rotary method per Girdler Spec 5172-127
PITLESS UNIT. YES ( ) NO ( ). Make _____

PUMP

Type Layne 12" RKLC Pressure system ( )Yes ( )no
Remarks _____
Storage reservoir (X)Yes ( )No. Describe ~~100,000~~ 300,000 gal compartment overhead ta
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply _____

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

Plant Manager — Mapleton, Illinois — 4-24-62
Applicant's signature — Present address — Date

(THIS SPACE FOR OFFICE USE ONLY)

Application Approved ✓ App. # 555 Date well constructed APRIL-1962

Not approved ____ Permit # 1126 By GIRDLER CORP

Signed [illegible] Date 5-3-62 Date approval of construction 5-3-62 Rd W.S.

ANALYSIS DATA Date approval of analysis _____

Date sample analysis _____

Date final approval _____

Results _____ + _____ -

2/23/60 S-4

PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
682-6618

Well #4

WATER SUPPLY PERMIT Date 5-4-62

This permit is issued to:

Archer-Daniels-Midland Co. Mapleton, Illinois
(NAME) (ADDRESS)

For the purpose of constructing a p rivate water well at:

Pt. Sec. 20 - Hollis Twp.
(LEGAL DESCRIPTION)

Final approval of this water supply cannot be given until inspections of the location and construction of the well have been made by a representative of the Peoria County Health Department and a copy of a satisfactory bacteriological analysis of the water has been filed with the Peoria County Health Department.

WHEN CONSTRUCTION IS COMPLETED, PLEASE CALL THE PEORIA COUNTY HEALTH DEPARTMENT. WATER FROM THIS SUPPLY SHALL BE ANALYZED BEFORE PLACING WELL IN SERVICE.

THIS PERMIT IS VOID 6 MONTHS FROM DATE UNLESS CONSTRUCTION HAS BEEN STARTED.

Application # 555

Permit # 1126

Harold L. Pettis
Harold L. Pettis, Senior Sanitarian

2/23/60 S-7

OTHER CONSTRUCTION. DESCRIBE Reverse rotary method per circular spec 31/2-12/wi
PITLESS UNIT. YES ( ) NO ( ). Make
PUMP
Type Layne 12" RKLC Pressure system ( )Yes ( )no
Remarks
Storage reservoir (X)Yes ( )No. Describe ~~100,000~~ 300,000 gal compartment overhead tank
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

J. W. Rudnslager
Plant Manager
Applicant's signature

Mapleton, Illinois
Present address

4-24-62
Date

(THIS SPACE FOR OFFICE USE ONLY)

Application Approved ✓ App. # 555

Not approved ____ Permit # 1126

Signed HLP Date 5-3-62

ANALYSIS DATA
Date sample analysis

Results + -

Date well constructed APRIL-1962

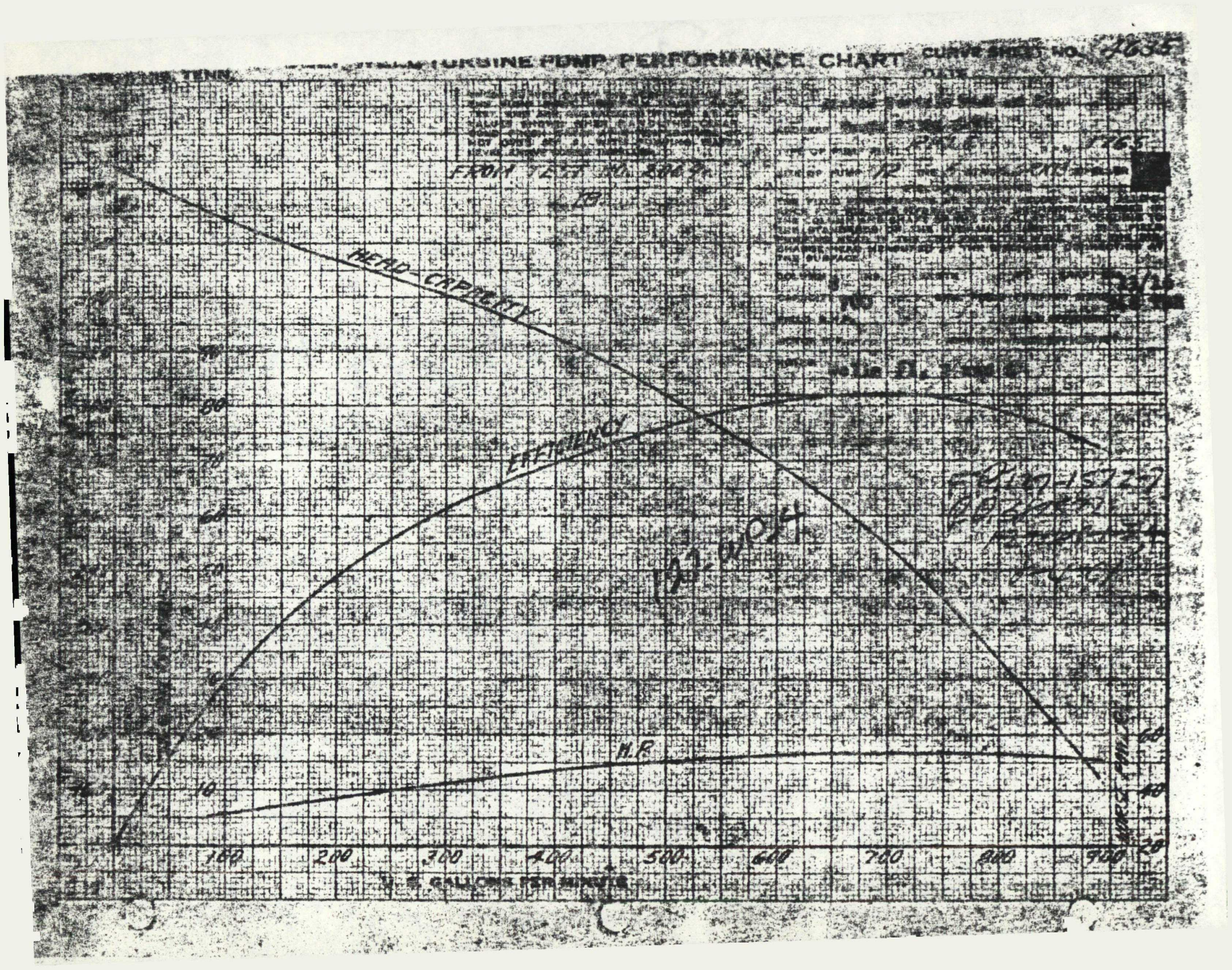
By GIRDER CORP

Date approval of construction 5-3-62 RL W.S.

Date approval of analysis

Date final approval

2/23/60 S-4


TURBINE PUMP PERFORMANCE CHART
TENN.
FROM TEST NO. 2063
HEAD-CAPACITY
EFFICIENCY
H.P.
100
200
300
400
500
600
700
800
900
GALLONS PER MINUTE

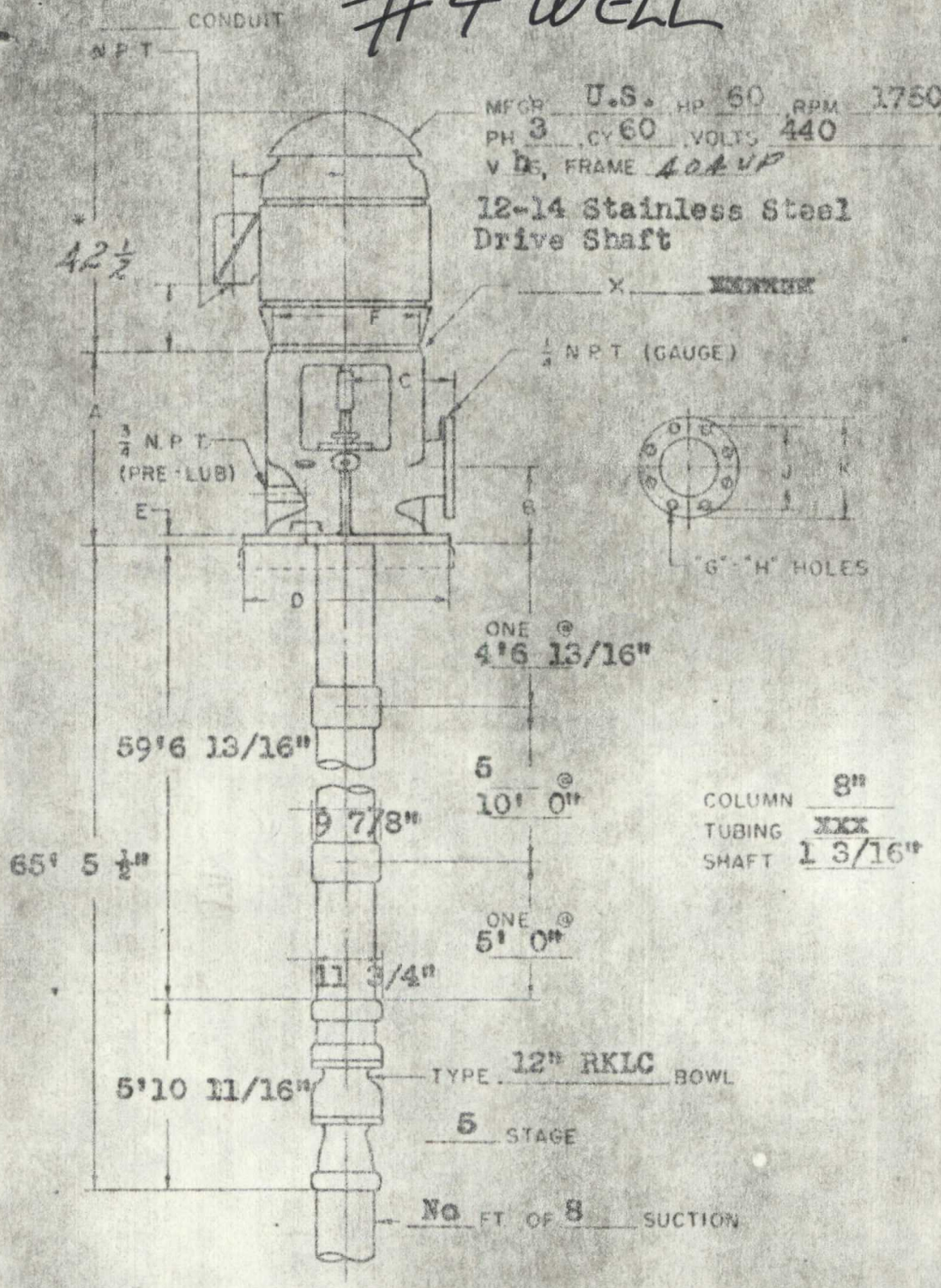
INSTALLATION PLAN

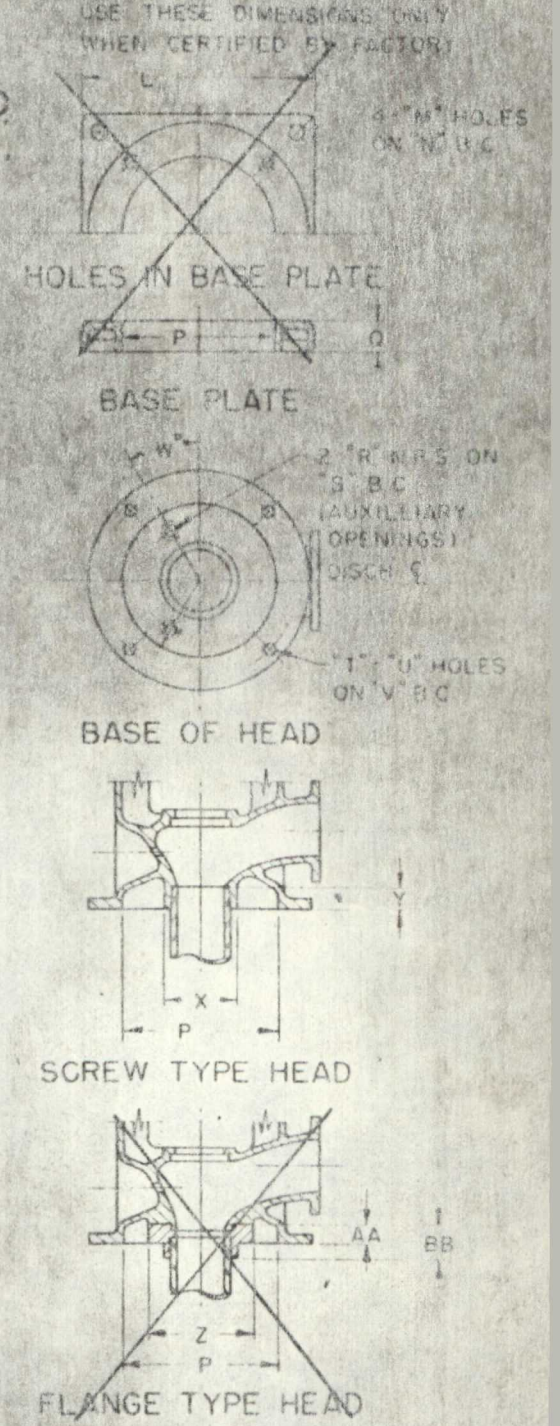
TYPE 8 SDH DISCHARGE HEAD

LAYNE & BOWLER, INC. MEMPHIS, TENNESSEE

REVISED

#4 WELL





Item: WP-4

CUSTOMER: Archer Daniels Midland Co.	YOUR NO. C-6277-1005	G.P.M. 700
LOCATION: Mapleton, Ill.	OUR NO. D-3412	T.D.H. 248
FOR APPROVAL:	PUMP NO. 43307	R.P.M. 1750
CERTIFIED: Tom Munroe	DATE 6/19/61	B.H.P.

TYPE HEAD	A	B	C	D	E	F	HEAD DISCHARGE FLANGE 125# ASA FLANGE G	H	J	K	250# ASA FLANGE G	H	J	K	L	M	N	P	Q	R	S	HEAD BASE STD. T	U	125# T	U	V	W	X	Y	Z	AA	BB
SDH 3	14	5 1/4	7 1/2	13 1/2	3/4	10	4	3/4	6	7 1/2	8	7/8	6 1/4	8 1/4	13 3/4	3/8	15 3/4	9 1/8	1 1/2	1	6 1/4	4	3/4	8	7/8	11 1/2	24	4 1/2	1 1/2	5 1/2	1 1/4	2 7/16
SDH 4	16 1/2	6	9	16	3/4	12	8	3/4	7 1/2	9	8	7/8	7 1/8	10	16 1/4	3/4	18 1/4	11 1/4	1 1/2	1	8	4	3/4	12	1	14 1/4	18 1/2	5 1/2	1 15/16	7	1 3/8	3
SDH 5	20	7	11 1/2	21	3/4	16 1/2	8	3/4	9 1/2	11	12	7/8	10 1/2	12 1/2	21 1/4	1	24 1/2	14 1/2	1 1/2	1	11 1/2	4	3/4	12	1 1/8	18 1/2	20	7 1/2	2 1/16	9 1/2	1 3/8	3 1/4
XXX SDH 8	22	8 1/2	13	23 1/2	7/8	16 1/2	8	3/4	11 1/4	13 1/2	XXXXXXXXXXXXXXXX				23 1/4	1	27 1/4	16 1/2	2	1 1/8	14	4	7/8	XXXXXXXXXXXXXXXX		21 1/4	20	10	2 3/16	11 1/2	1 3/8	3 3/8
SDH 10	25	11	15	27 1/2	1	20	12	1	14 1/2	16 1/2	16	1 1/8	15 1/2	17 1/2	27 1/2	1 1/8	31 1/2	20 1/2	2	1 1/8	17	4	7/8	20	1 1/8	25	24	12 1/2	2 3/16	14 1/2	2 1/4	4 1/8
SDH 12	26	11 1/2	17	32	1 1/8	24 1/2	12	1	17	19	16	1 1/8	17 1/2	20 1/2	32 1/2	1 1/8	37	24 1/2	2	1 1/4	19 1/4	4	7/8	20	1 1/8	29 1/2	17	14	2 3/16	16 1/2	2 1/8	4 1/8

* INCLUDES 3" HIGH MOTOR ADAPTOR WHEN USED

DRAWING NO. D-3412

VERTICAL CENTRIFUGAL PUMP

Installation of Pump Bowls and Column

Butt Joint Column

Rubber Bearing Water Lubricated

Derrick Installation of a Layne Pump requires a derrick 30 to 40 feet in height and a hand winch or power hoist of sufficient size to handle the total weight.

Foundation The concrete foundation for the pump base should be built in accordance with foundation plans furnished by the factory. Where a separate pump base plate is used it should be set in position on the concrete foundation before the pump bowls and column are installed but not grouted into position until the installation is completed.

Dimensions of Well Check the inside diameter of the well and the outside diameter of the pump bowls and column flanges or couplings to be sure that the pump and column will go in the well with ample clearance. The well casing must be straight and without obstructions that might bend the line shaft. Measure the static level of the water in the well to determine if the pump has been furnished with the proper depth of setting. The pump bowls should be submerged when the pump is operating and we do not recommend or guarantee satisfactory operation with a suction lift.

Check Material Check all parts of the pump against the packing list to find out whether all parts have been received. If any parts are missing claim should be made at once to the railroad company.

Clean All Joints All threads and flanged couplings of the discharge pipe and protective tubing should be carefully cleaned and at the time of installation coated with a mixture of red lead and shellac. Care should be taken that there be absolutely no sand or grit between flanges or couplings when making up the joints.

Suction If a basket suction is used it should be lowered into the well first and held by pipe clamps. The suction pipe is picked up and screwed into the coupling at top of basket suction. The basket suction and suction pipe are then lowered into the well until about 18 inches of suction pipe extend above the well casing. The suction pipe is clamped in this position with pipe clamps. When the suction pipe has only threads at the top end care should be taken to place the clamps under the small lug welded on the pipe.

Pump Bowls The pump bowls should be carefully inspected before placing in the well. Rotate impeller shaft several times by hand to be sure that it does not bind at any point. The impeller shaft should have about ¼-inch or more end play. DO NOT STRAIN SHAFT IN ANY WAY THAT MIGHT BEND IT AND DO NOT LIFT PUMP BOWLS BY THE SHAFT. The pump bowls can best be handled by a pair of pipe clamps. The bowls should be lifted into position and screwed or bolted to the suction pipe. The clamps on the suction pipe are then removed and the bowls and suction pipe lowered into the well until the top of the discharge nozzle is about 18 inches above the well casing or top of foundation. The bowls are then supported at this point by pipe clamps.

Discharge Column Pipe The first section of discharge column pipe above the pump bowl is 5'0" in length. The balance of the column pipe is made up in lengths of 10'0". The top length which connects to the pump head is 5'0" in length and is equipped with a special adjustable flange.

Shafting The line shaft is made up in lengths to correspond to the discharge column pipe; that is there is one 5'0" length with each standard pump and one 10'0" length for each 10'0" length of column pipe. The motor drive shaft extends thru the top 5'0" length of column pipe so there is not a length of line shaft to correspond to the top length of column pipe.

Each length of line shaft is equipped with a monel metal bearing sleeve spaced to correspond with the supporting spiders in the column pipe holding the rubber bearings.

Installing Discharge Column Arrange the 5'0" length of column pipe so that the threads are at the lower end to connect to the pump bowl. If the pump bowl requires a flanged connection arrange the pipe with the proper flange on the lower end.

Slide the 5'0" length of line shaft into the 5'0" length of column pipe so that the monel sleeve will come at the top end. With the bottom end of the shaft about eight inches below the pipe take several half hitches around the shaft and the pipe. Raise the assembled section of pipe and shaft until it is hanging vertically in the derrick. Swing into position over the pump bowls. BE SURE THE THREADS IN THE SHAFT COUPLING AND THE THREADS ON BOTH SHAFTS AND THE ENDS OF THE SHAFT ARE PERFECTLY CLEAN. Screw the shaft into the shaft coupling until the ends butt solidly together.

Clean the threads on the pipe and the threads in the pump bowl and coat with red lead and shellac (or Layncote). If the bowl connection is flanged clean both flange faces and coat with red lead and shellac (or Layncote). Then lower the column pipe and screw or bolt to the pump bowl as the case may be. If the connection is screw type be sure that the pipe butts solidly on the machined shoulder in the pump bowl.

Caution If the column is screw coupled type with spiders cast integral be sure to guide the pipe as it is lowered to be sure the shaft enters the rubber bearing without hitting the spider hub which might damage the thread or the end of the shaft.

Remove the clamps from the pump bowls and lower the bowls and first section of column into the well until the column extends about 18 inches above the foundation. Clamp the discharge column in this position.

When screw couplings are used the shaft should now be extending through the rubber bushing so that the bushing is in the approximate center of the monel sleeve.

When flanged column is used slip a spider over the shaft and fit it into the recess in the flange. The rubber bearings are installed in the spider before shipment from the factory.

Each section of discharge column is installed as described above. When screw couplings are used care should be taken in starting the pipe in the coupling. The pipe should start by hand and screw by hand to within 5 or 6 threads of butting. If the thread appears tighter than this check carefully for a damaged thread as the pipe should not be forced into the coupling. The last 5 or 6 threads should be made up with a chain tong, making sure that the joint is tight with the pipe butting against the shoulder in the coupling.

The top length of column pipe and the head shaft should be installed together as described above. Additional care should be used as this shaft will project above the pipe and can be damaged if not watched to prevent undue strains.

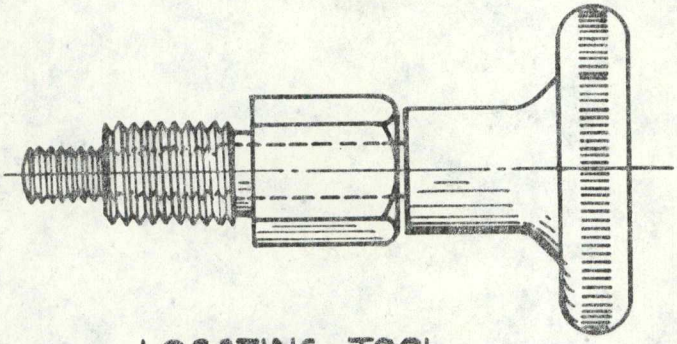
The adjustable flange must be set to the proper point to bring the top end of the head shaft in the correct location.

In case the discharge column does not check out within reasonable limits notify the factory to furnish correct lengths.

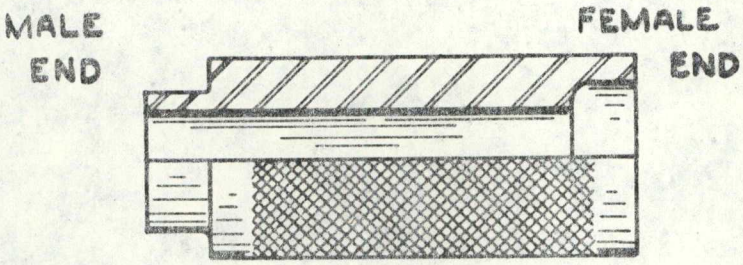
NOTE: Wash off all no-oxide from shaft with kerosene. Shaft must be free from oil or grease to prevent injury to rubber bearing.

PRINTED IN U. S. A.

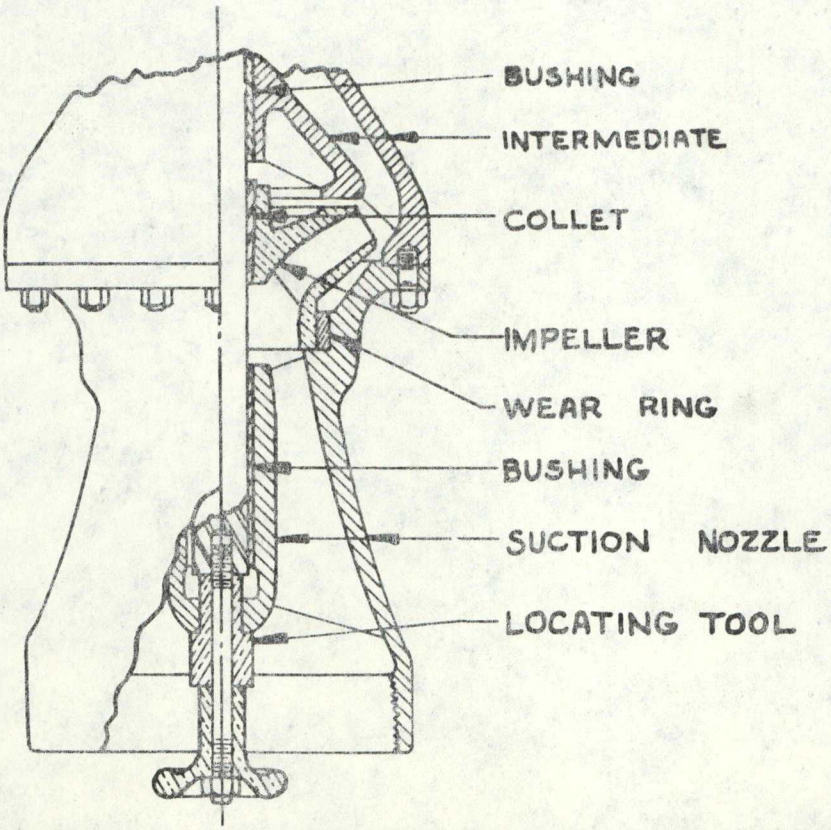
INSTRUCTIONS FOR ASSEMBLYING AND DISMANTLING PUMP BOWLS WITH COLLETS



LOCATING TOOL



COLLET DRIVER



TO ASSEMBLE BOWL

1. Remove cap screw from the bottom of the suction nozzle.
2. Screw locating tool into bottom end of suction nozzle hub.
3. Insert impeller shaft into suction nozzle bearing and turn handwheel of locating tool until impeller shaft is pulled down tight against the shoulder of the tool.
4. Place the impeller over the shaft. Slip the collet over the shaft with the small end first. (A screw driver can be used to spread collet for ease in slipping over shaft). Hold the impeller firmly into the wear ring recess and drive the collet into place with the male end of the collet driver.
5. Remove collet driver and assemble first intermediate stage. Place the next impeller over the shaft and continue to assemble as explained above.
6. When the bowl is completely assembled remove locating tool and replace cap screw in suction nozzle.

TO DISMANTLE BOWL

1. Remove discharge nozzle. Place collet driver over shaft with the female end first and while holding the impeller out of the wear ring recess, drive the impeller off of the collet. Remove the collet and impeller.
2. Remove the intermediate shell and drive the impeller off of the next collet. Continue to dismantle in like manner.

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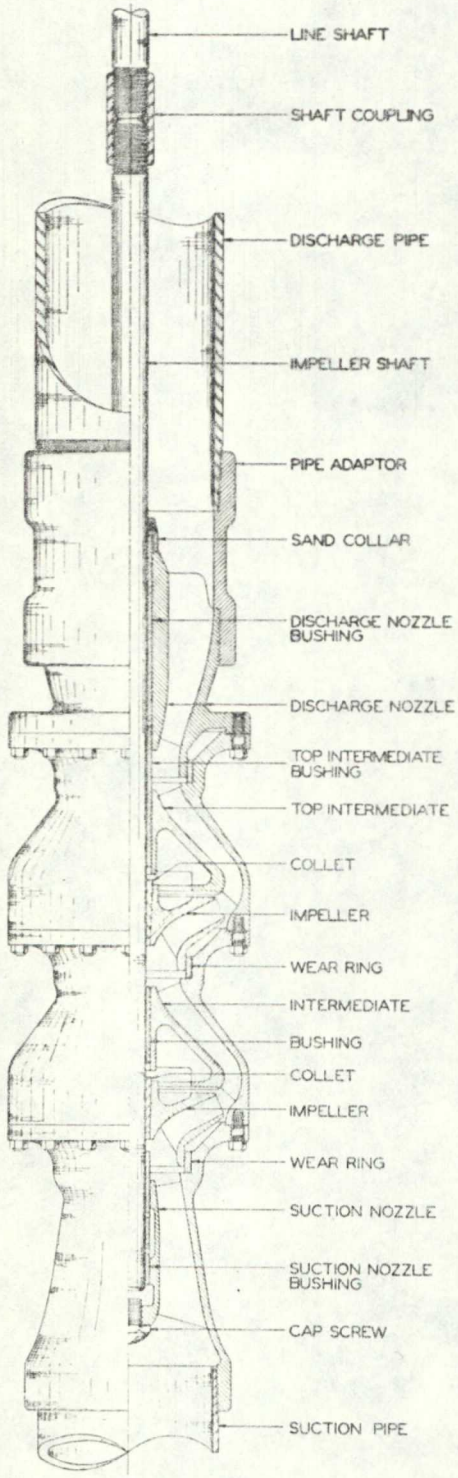


Screw Coupled Type

8"U 12"RK
10"K 12"W
14"W

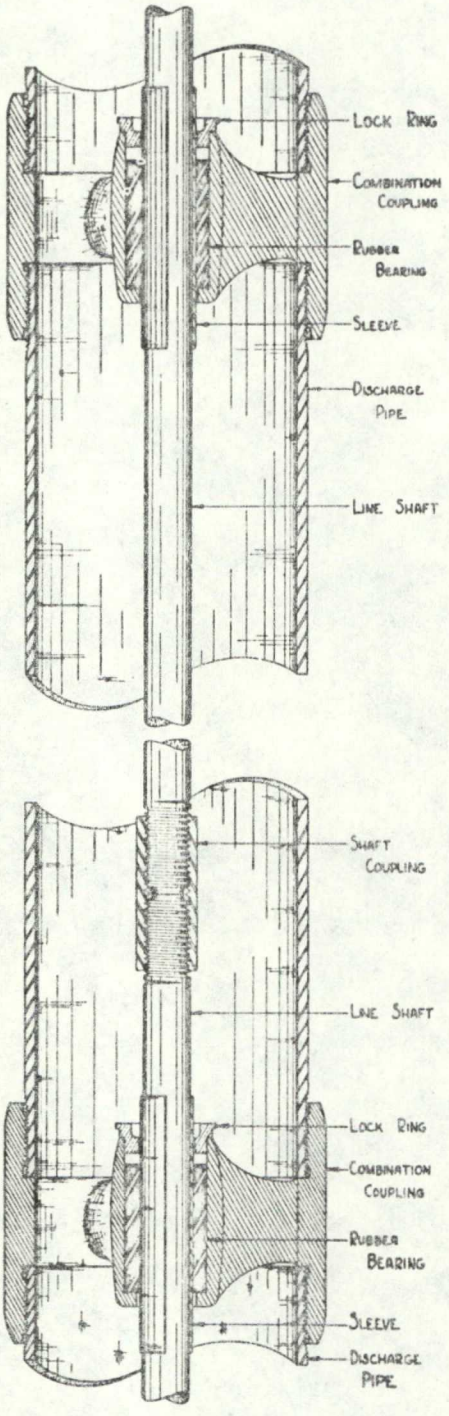
MA 637

Layne Vertical Centrifugal Pump

with

OPEN LINE SHAFT

PRINTED IN U.S.A.



SCREW COUPLED DISCHARGE COLUMN

OPEN LINE SHAFT CONSTRUCTION WITH RUBBER BEARINGS

PRINTED IN U. S. A.

VERTICAL CENTRIFUGAL PUMP

Installation of TF Pump Head Using Hollow Shaft Motor or Right Angle Gear Drive

For Water Lubrication

With Top Lantern Relief Type Packing Box

Disassemble and Clean Before installation the pump head and all parts should be thoroughly cleaned with kerosene.

Mount Discharge Ell The top length of discharge column pipe is fitted with a special flange to fit the bottom of the discharge ell. In the case of deep settings, an adjustable flange is furnished by which the effective length of the column may be varied several inches. Clean the face of this flange and the bottom flange of the discharge ell and coat with red lead and shellac (or Layncote). The head shaft is already in place so that care should be taken in the installation of the head to be sure that the shaft is not damaged. Bolt the discharge ell to the top column flange and lower the complete assembly until the discharge ell rests on the concrete foundation or on the base plate (which was placed on the foundation before installing the pump bowls and column).

Packing Box Clean the flange face of the packing box and the face of the discharge ell where the packing box rests and coat with red lead and shellac (or Layncote). Lower the packing box over the shaft and bolt the packing box in place. The raised letters on the two bosses "G" for grease connection and "R" for water relief connection are used to identify these bosses and insure that the correct connections are made. Connect the prelubrication line to the pipe nipple and ell.

Alignment The head shaft should now be in the EXACT center of the pump head and EXACTLY perpendicular to the machined surface of the discharge ell. This can be checked with a straight edge, square and pair of calipers. The pump head can be shifted slightly on the foundation or tilted with shims until the shaft is properly aligned.

Packing Insert six rings of ⅜" square centrifugal pump packing with a bronze separator ring between each ring of packing. Drop the lantern ring in place, install the split packing gland and tighten down on the packing.

Fill the No. 7585 Alemite Grease Gun with LAYNGREASE and note on the gun that it requires 9 strokes for ¼th ounce and 36 strokes for ½ ounce. For the original installation apply grease in the following manner: for 1" and 1 3-16" shaft use 1¼ oz. or 90 strokes, for 1½" and 1 11-16" shaft use 1½ oz. and for 1 15-16" and 2 3-16" shaft use 1¾ oz. For larger size shafts use proportionally more grease. During normal operation apply grease at the rate of 2 strokes for every 24 hours of operation. If LAYNGREASE is not available, any good waterproof grease such as Shell "Retinax P" or equal is recommended.

Prelubrication The pre-lubrication inlet should be connected to a tank of suitable size to contain sufficient water for wetting the line shaft bearings above the static water level. The proper valves should be placed in this line to allow the tank to fill while pump is operating and check the flow back until the operator is ready to start the pump after a shut down period, at which time he should open the valve and empty the tank into the discharge column.

If desired the pre-lubrication pipe can be connected to the pressure side of the discharge line or into a main beyond the check valve so that water will enter the discharge column at all times while the pump is idle and eliminate the necessity of manually opening a valve before starting the pump. This system allows fully automatic starting and stopping of the pump without fear of damaging the bearings due to lack of pre-lubrication.

The pre-lubrication line can be connected to a tank of suitable capacity with a valve controlled by a solenoid which will open when actuated by the proper controls. It is necessary in this hook-up to have a time delay relay to allow the tank to empty before the motor starts, thus allowing time for the pre-lubrication water to enter the discharge column. In general it requires 5 seconds to prelubricate every 10 feet of vertical shaft.

In most instances a water slinger is furnished. This should be locked to the motor drive shaft with the set screw as shown on the cut of the discharge ell.

Mount Motor or Gear Drive Lower the hollow shaft motor or geardrive over the drive shaft taking care not to disturb the alignment. To insure proper operattion of the pump, it is necessary that the motor or gear drive be centered exactly, so great care should be taken in this operation. Bolt the motor or gear drive to the discharge ell with cap screws.

When a hollow shaft motor or gear drive is used the drive shaft is keyed to a removable top drive coupling which is in turn held in position on the rotor coupling by dowel pins. Some of the small hollow shaft motors use a jaw type coupling, instead of the dowel pin type, which engages the rotor coupling. Place this coupling over the shaft and seat it firmly on the rotor coupling. Install the gib key in the motor coupling and drive shaft.

Screw on and tighten the drive shaft adjusting nut until the impellers are picked up from the bottom of the bowl and the shaft is free to turn. Note the position of the adjusting nut and continue to tighten the adjusting nut counting the number of turns until the impellers are drawn against the top of the pump bowl. The number of turns of the nut between the lower and upper position of the impellers gives the total lateral in the pump. The shaft can not be rotated in the upper position. The nut should then be loosened to adjust the impellers for the best running position. All bowls are designed to operate with the impellers midway of the lateral. Perhaps the best arbitrary adjustment is to lower the impellers ¼th the total lateral for settings up to 200 ft. For settings over 200 ft. Lower the impellers ½ turn of the adjusting nut or until the shaft turns freely. The best check of the lateral adjustment can be made with an ammeter, adjusting the impellers for minimum power reading. Install the machine screws with the AN type nut or the gib head key with the MN type nut to lock the adjusting nut in the desired position.

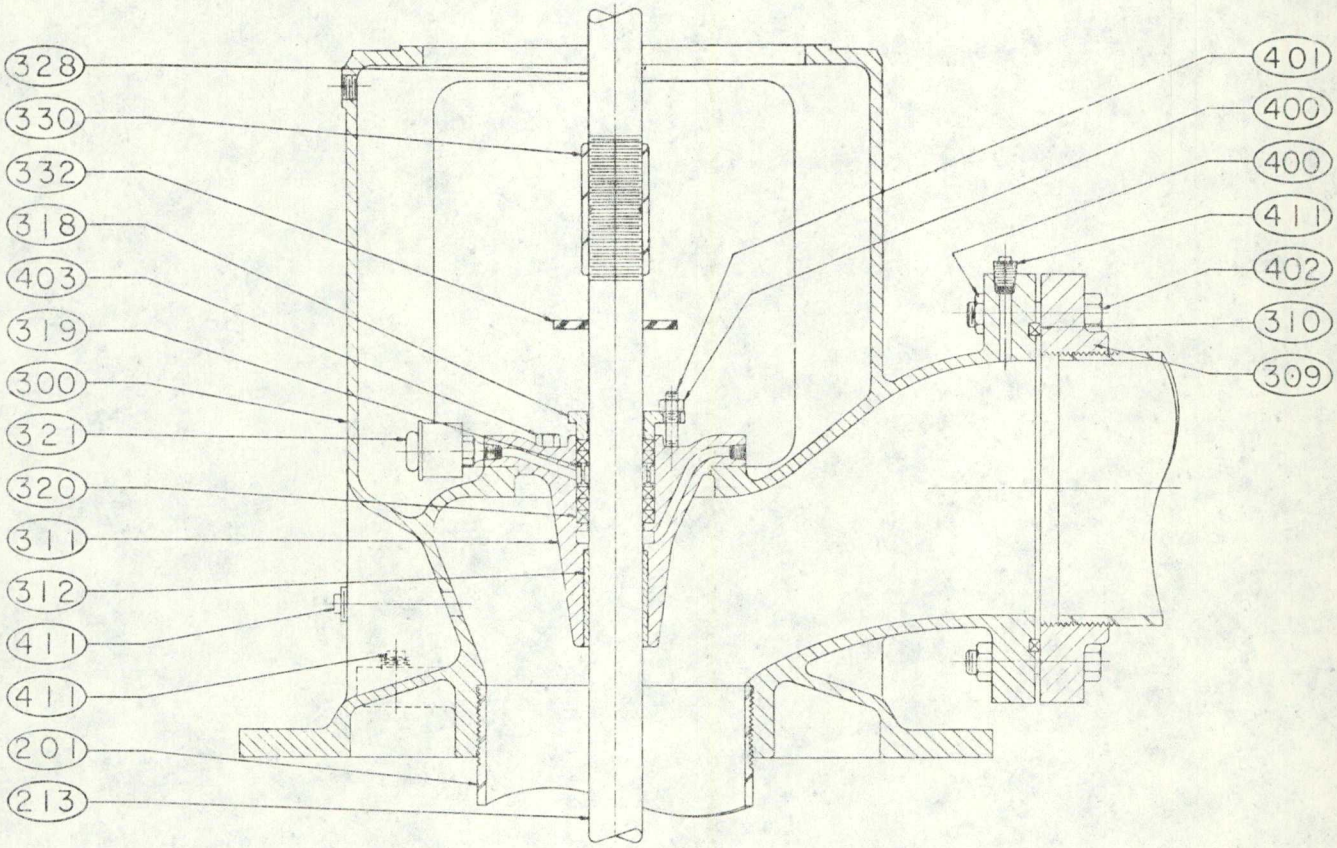
Grout Base and Connect Discharge Grout the discharge ell (or base plate) in position being careful not to disturb the alignment of the pump head. In case the discharge nipple is to be connected to a main, a Dresser Coupling should be used. The main should be placed as nearly in line with the pump discharge as possible. The Dresser Coupling prevents throwing any strain on the pump head if the discharge nipple and the main are not exactly in line.

Starting Pump Check direction of motor or gear drive rotation very carefully before applying power. The pump must operate in a left hand or counter clock-wise direction.

After the pump has been in operation a few hours, shut down and check the adjustment of the pump impellers. The pump shaft may have been screwed up tighter by the power applied and thereby shortened.

TYPE SDH DISCHARGE HEAD

LAYNE & BOWLER, INC - MEMPHIS, TENN.

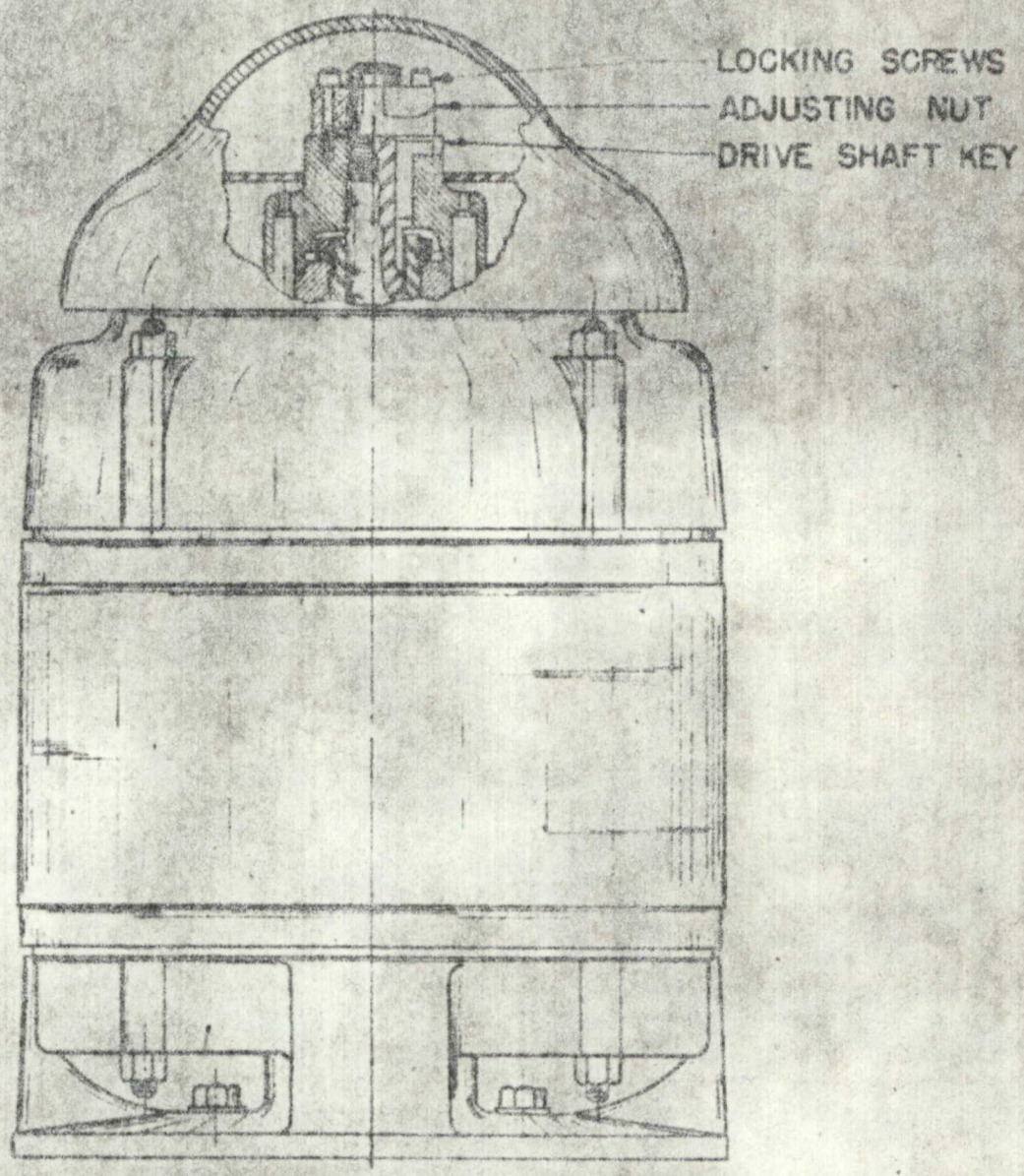


PART NO.		DESCRIPTION
201		TOP COLUMN PIPE
213		LINE SHAFT, TOP PIECE
300		DISCHARGE HEAD
309		COMPANION FLANGE
310		PACKING, COMPANION FLANGE
311		STUFFING BOX
312		BEARING, STUFFING BOX
318		PACKING GLAND
319		LANTERN RING
320		PACKING, STUFFING BOX
321		GREASE CUP

PART NO.		DESCRIPTION
328		MOTOR DRIVE SHAFT
330		HEAD COUPLING
332		WATER SLINGER
400		HEX NUT, COMPANION FLANGE
400		HEX NUT, STUFFING BOX
401		STUD, STUFFING BOX
402		MACHINE BOLT, COMPANION FLG
403		CAPSCREW, STUFFING BOX
411		PIPE PLUG, PRESSURE GAUGE
411		PIPE PLUG, PRE-LUBRICATION
411		PIPE PLUG, AUXILLARY OPN'G (2)

IN ORDERING REPLACEMENT PARTS, ALWAYS SPECIFY PART NO, DESCRIPTION, HEAD SIZE, TYPE, & PUMP SERIAL NO.

PBS100



MOTOR

MAKE US

60 H.P. 1800 R.P.M.

220/440 VOLTS 3 PHASE

60 CYCLES

FRAME NO. 404UF

PART LIST

PART NO.	PART NAME
1/4-20-1 3/4"	LOCKING SCREWS
AN15	ADJUSTING NUT
F272	DRIVE SHAFT KEY

LMA 277

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL #4
Dia. of Well: 16"
Depth of Well: 74
Length of Airline:
Non-Pumping Level: 8'-10½"
Orifice Size: 7"

Pump Used:

Date Tested: 2-16-61
Tested By:
Driver:
Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	ELEV. ~~Total Pumping Head~~	Remarks
9:20 AM	—			8'-10½	—			438.626	
9:01	33½	1209		22'-9"	13'-10½"			424.75	
9:02	33½	1209		23'-6"	14'-7½			424.0	
9:03	33¾	1213		24'-0	15'-1½			423.5	
9:04	33¾	1213		24'-5½	15'-7"			423.04	
9:05	33½	1209		24'-9"	15'-10½			422.75	
9:06	33¾	1213		25'-0"	16'-1½"			422.5	
9:07	33	1200		25'-1"	16'-2½"			422.4	
9:08	33¼	1205		25'-2"	16'-3½"			422.33	
9:09	33½	1209		25'-5"	16'-6½"			422.08	
9:10	33¾	1213		25'-7"	16'-8½"			421.75	
9:20	33¾	1213		26'-1½"	17'-3"			421.38	
9:30	33½	1209		26'-5"	17'-6½"			421.08	
9:40	33¾	1213		26'-8½"	17'-10"			420.79	
9:50	34	1218		26'-9"	17'-10½"			420.76	
10:00	34	1218		26'-10"	17'-11½"			420.66	
10:10	34¼	1223		26'-10"	17'-11½"			420.66	
10:20	34	1218		26'-10"	17'-11½			420.66	
10:30	34¼	1223		26'-10"	17'-11½"			420.66	
10:40	34¼	1223		26'-11"	18'-½"			420.58	
11:40 AM	34½	1227		27'-0"	18'-1½"			420.5	
12:40 PM	34½	1227		27'-0"	18'-1½"			420.5	
:40	34¼	1223		27'-¾"	18'-2¼"			420.44	
:40	34	1218		27'-¾"	18'-2¼"			420.44	
:40	34	1218		27'-¾"	18'-2¼"			420.44	
:40 PM	34	1218		27'-¼"	18'-1¾"			420.48	

CAPACITY TEST OF WELL #4

WELL #4

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS

Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:

Location: WELL # 4

Dia. of Well: 16"

Depth of Well: 74'

Length of Airline:

Non-Pumping Level: 8'-10½"

Orifice Size:

Date Tested: 2-16-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	ELEV ~~Total Pumping Head~~	Remarks
5:40 PM	33¾	1213		27'-½"	18'-2"			420.46	
6:40	33¾	1213		26'-11½	18'-1"			420.54	
7:40	33¾	1213		26'-11½	18'-1"			420.54	
8:40	33¾	1213		26'-11¾	18'-1¼"			420.52	NOTE: Pumping
9:00 PM	33¾	1213		26'-11¾	18'-1¼"			420.52	stopped at 9:00 PM
									2-16-61.
		RECOVERY		WATER LEVEL					
9:01 PM				12'-6"				435.0	
9:02				11'-11½"				435.54	
9:03				11'-5¼"				436.06	
9:04				11'-1"				436.42	
9:05				10'-11"				436.58	
9:06				10'-8"				436.83	
9:07				10'-5"				437.08	
9:08				10'-4½"				437.13	
9:09				10'-3"				437.25	
9:10				10'-2"				437.33	
9:20				9'-6½"				437.96	
9:30				9'-5"				438.08	
9:40				9'-4"				438.17	
9:50				9'-3"				438.25	
10:20				9'-2¼"				438.27	
10:40 PM				9'-1¾				438.35	
2-17-61									
7:45 AM				9'-00"				438.0	

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job.....

Location WELL #5

Dia. of Well 16"

Depth of Well.....

Length of Airline.....

Non-Pumping Level 9'-3 3/4"

Orifice Size.....

Pump Used:

Date Tested 2-16-61

Tested By.....

Driver.....

Column and Shaft.....

Bowls.....

Manufacturer.....

Serial No.....

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	ELEV. Remarks
3:10 AM				9'-3 3/4					438.49
:14				11'-11 3/4					435.83
:24				12'-4"					435.47
:30				12'-5"					435.39
:40				12'-5 3/4"					435.32
:50				12'-6 1/2"					435.26
9:00				12'-6 3/4"					435.24
9:10				12'-6 3/4"					435.24
9:20				12'-7 1/8					435.21
9:30				12'-7 1/8"					435.21
9:40				12'-7 3/8"					435.19
:40 AM				12'-8 1/8"					435.13
:40 PM				12'-8 1/4"					435.11
:40				12'-8 1/2"					435.09
:40				12'-8 7/8"					435.06
3:00				12'-9 1/8"					435.04
:40				12'-9 1/8"					435.04
:40				12'-9 1/4"					435.03
:40				12'-9 1/4"					435.03
:40				12'-9 1/4"					435.03
:40				12'-9 1/2"					435.01
:00 PM				12'-9 1/2"				435.01	NOTE: PUMPING STOPPED AT 9:00 PM 2-16-61

CAPACITY TEST OF WELL NO. 4

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS
Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job:
Location: WELL #5
Dia. of Well: 16"
Depth of Well:
Length of Airline:
Non-Pumping Level: 9'-3 3/4
Orifice Size:

Date Tested: 2-16-61
Tested By:
Driver:
Pump Used: Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
	↓	RECOVERY	↓	WATER LEVEL					ELEVS.
2:02 PM				11'-7 1/2"					436.17
2:03				11'-2 1/8"					436.63
2:04				10'-10 5/8"					436.92
2:05				10'-9 3/8"					437.02
2:07				10'-6 1/4"					437.28
2:08				10'-4 5/8"					437.41
2:09				10'-3 1/4					437.53
2:10				10'-2 3/8"					437.60
2:11				10'-1 5/8"					437.66
2:12				10-1 1/8"					437.71
2:14				10-0 3/8"					437.77
2:15				9-11 7/8"					437.81
2:17				9'-11"					437.89
2:19				9'-10 1/4"					437.95
2:23				9'-9 3/8"					438.02
2:33				9'-8 1/8"					438.13
2:41 PM				9'-7 1/2"					438.18
-17-61									
:50 AM				9'-3 7/8"					438.48

STEP TEST OF WELL #4

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE AURORA, ILLINOIS
Phone: AURORA TW 7-4261 CHICAGO ENterprise 1204

447.50

PAGE 1

Job: ADM

Location: MAPLETON

Dia. of Well: 16"

Depth of Well: 74'

~~Length of Airline~~ WELL No. 4

Non-Pumping Level: 9'-0" FROM TOP OF CASING

Orifice Size: 10-7

Date Tested: 2-20-61

Tested By:

Driver:

Pump Used:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
3:30 AM	—	—							
3:41	8½	617		15'-9"	6'-9"				431.75
3:42	8½	617		15'-8"	6'-8"				431.84
3:43	9	633		15'-9½"	6'-9½"				431.71
3:44	9¼	641		16'-1½"	7'-1½"				431.38
3:45	9¼	641		16'-3¼	7'-3¼"				431.23
3:46	8½	617		16'-2½"	7'-2½"				431.30
3:47	8¾	625		16'-3"	7'-3"				431.25
3:48	8½	617		16'-4½"	7'-4½"				431.13
3:49	8¾	625		16'-5¼	7'-5¼"				431.07
3:50	8¾	625		16'-6¼	7'-6¼"				430.98
4:00	9½	650		17'-1¼	8'-1¼"				430.40
4:10	9¾	658		17-3¾"	8'-3¾"				430.19
4:11	19	910		20'-1½"	11'-1½"				427.38
4:12	19	910		20'-4"	11'-4"				427.17
4:13	19	910		20'-6"	11'-6"				427.00
4:14	19	910		20'-7"	11'-7"				426.92
4:15	19	910		20'-8"	11'-8"				426.84
4:16	19	910		20'-9"	11'-9"				426.75
4:17	19¼	916		20'-10"	11'-10"				426.67
4:18	19	910		20'-10"	11'-10"				426.67
4:19	19¼	916		20'-10¾"	11'-10¾"				426.61
4:20	19¼	916		20'-11¼	11'-11¼"				426.57
4:30	19¼	916		21'-1¾"	12'-1¾"				426.36
4:40	19¼	916		21'-3"	12'-3"				426.25

WELL TEST DATA SHEET

WELL -4

447.50

PAGE 2

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVENUE — AURORA, ILLINOIS

Phone: AURORA TW 7-4261 — CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well: 16"

Depth of Well: 74'

~~Length of this line~~ WELL No. 4

Non-Pumping Level: 9'-0" FROM TOP OF CASING

Orifice Size: 10-7

Date Tested: 2-20-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	~~Total Pumping Head~~ El.	Remarks
9:41	33	1200		24'-9½"	15'-9½"			422.71	
9:42	33¼	1205		25'-1"	16'-1"			422.42	
9:43	33¼	1205		25'-2½	16'-2½"			422.29	
9:44	33¼	1205		25'-3"	16'-3"			422.25	
9:45	33¼	1205		25'-4½"	16'-4½"			422.12	
9:46	33¼	1205		25'-5"	16'-5"			422.08	
9:47	33¼	1205		25'-5"	16'-5"			422.08	
9:48	33¼	1205		25'-6"	16'-6"			422.00	
9:49	33	1200		25'-6"	16'-6"			422.00	
9:50	33¼	1205		25'-6½	16'-6½"			421.96	
9:00	33¼	1205		25'-10"	16'-10"			421.67	
9:50 AM	33¼	1205		25'-11¼"	16'-11¼"			421.56	

PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
2-6618

APPLICATION FOR WATER SUPPLY PERMIT
SUBMIT APPLICATION IN DUPLICATE

Property Address US Rte 24, Mapleton, Ill. Township Hollis

Legal Description A part of Sec 20, Township 7 North, Range 7 East ~~xxxxxxxxxx~~ of 4th Principal Meridian.

Owner Archer-Daniels-Midland Co Present Address Mapleton, Illinois

Tenant _____ New Installation X Repair Existing Installation _____

REMARKS Well #4

Number of properties to be served by this water supply 1 industrial site .

LOCATION

Number of feet from well to: Septic tank — ft. Sewer — Ft. Tile field — ft.
Privy vault — ft. Other potential source of contamination — ft.
EXPLAIN Imhoff Tank located approximately 2000 feet north.

CONSTRUCTION

Approximate depth 74 ft. Diameter of casing 16" . Casing material Steel
BORED OR DUG WELL -- Construction according to Circular #14A. YES ( ) NO ( )
Water tight top 10 ft. ( )Yes. Describe _____

DRILLED WELL -- Construction according to Circular #14B. YES ( ) NO ( )
OTHER CONSTRUCTION. DESCRIBE Reverse rotary method per Girdler Spec 5172-127
PITLESS UNIT. YES ( ) NO ( ). Make _____

PUMP

Type Layne 12" RKLC Pressure system ( )Yes ( )no
Remarks _____
Storage reservoir (X)Yes ( )No. Describe ~~100,000~~ 300,000 gal compartment overhead ta
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply _____

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

Plant Manager — Mapleton, Illinois — 4-24-62
Applicant's signature — Present address — Date

(THIS SPACE FOR OFFICE USE ONLY)

Application Approved ✓ App. # 555 — Date well constructed April-1962

Not approved ____ Permit # 1126 — By Girdler Corp

Signed HLP Date 5-3-62 — Date approval of construction 5-3-62 RL W.S.

ANALYSIS DATA — Date approval of analysis _____

Date sample analysis _____ — Date final approval _____

Results _____ + _____ -

2/23/60 S-4

PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
682-6618

Well #4

WATER SUPPLY PERMIT Date 5-4-62

This permit is issued to:

Archer-Daniels-Midland Co. Mapleton, Illinois
(NAME) (ADDRESS)

For the purpose of constructing a p rivate water well at:

Pt. Sec. 20 - Hollis Twp.
(LEGAL DESCRIPTION)

Final approval of this water supply cannot be given until inspections of the location and construction of the well have been made by a representative of the Peoria County Health Department and a copy of a satisfactory bacteriological analysis of the water has been filed with the Peoria County Health Department.

WHEN CONSTRUCTION IS COMPLETED, PLEASE CALL THE PEORIA COUNTY HEALTH DEPARTMENT. WATER FROM THIS SUPPLY SHALL BE ANALYZED BEFORE PLACING WELL IN SERVICE.

THIS PERMIT IS VOID 6 MONTHS FROM DATE UNLESS CONSTRUCTION HAS BEEN STARTED.

Application # 555

Permit # 1126

Harold L. Pettis
Harold L. Pettis, Senior Sanitarian

2/23/60 S-7

OTHER CONSTRUCTION. DESCRIBE Reverse rotary method per driller spec sheet
PITLESS UNIT. YES ( ) NO ( ). Make
PUMP
Type Layne 12" RKLC Pressure system ( )Yes ( )no
Remarks
Storage reservoir (X)Yes ( )No. Describe ~~400,000~~ 300,000 gal compartment overhead tank
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

J. H. Freudenberger
Plant Manager
Applicant's signature

Mapleton, Illinois
Present address

4-24-62
Date

(THIS SPACE FOR OFFICE USE ONLY)

Application Approved ✓ App. # 555

Not approved ____ Permit # 1126

Signed HLP Date 5-2-62

Date well constructed APRIL-1962

By GIRDER CORP

Date approval of construction 5-2-62 RL W.S.

ANALYSIS DATA
Date sample analysis

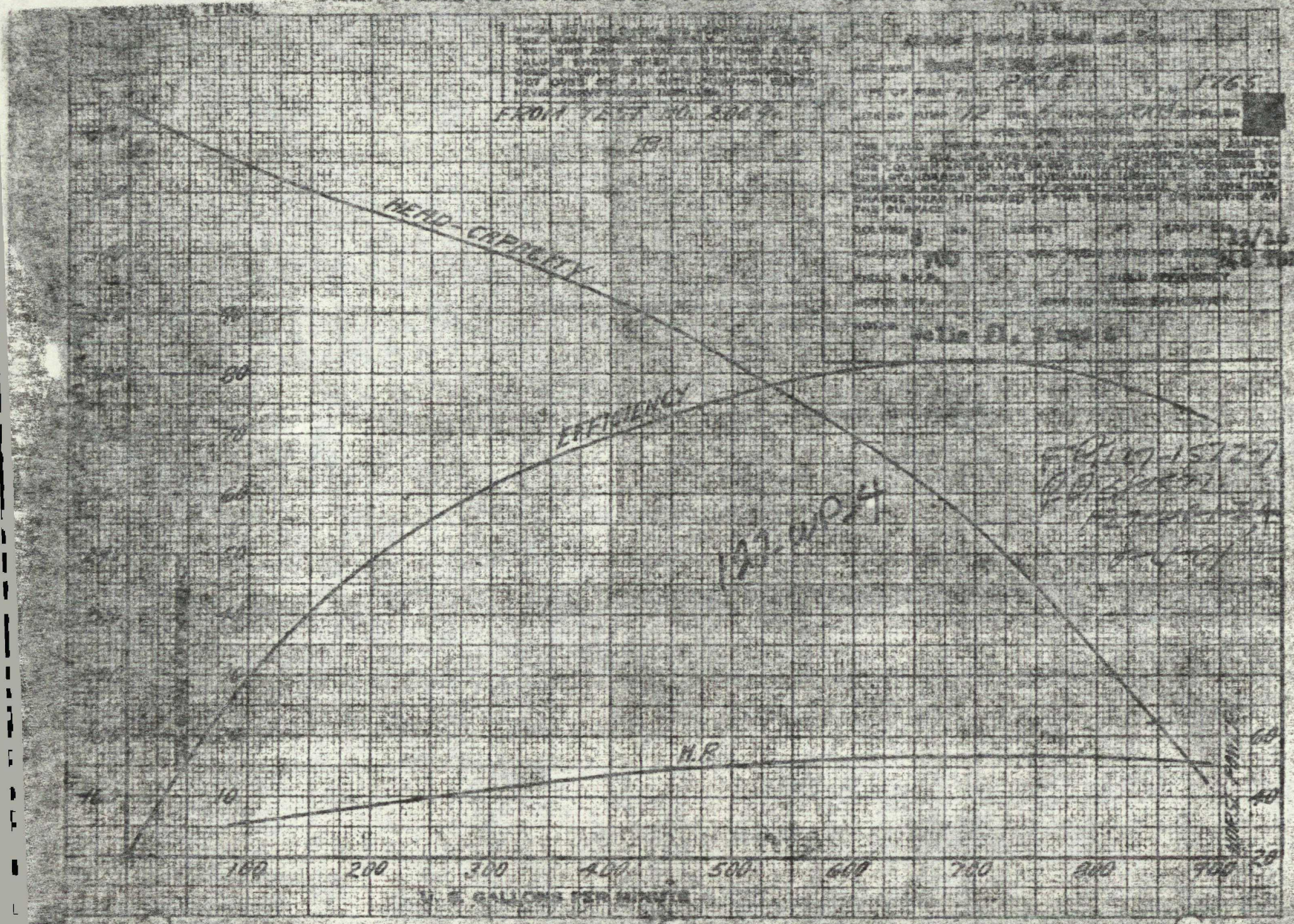
Date approval of analysis

Results + -

Date final approval

2/23/60 S-4

TENN. TURBINE PUMP PERFORMANCE CHART CURVE SHEET NO. 4635



INSTALLATION PLAN

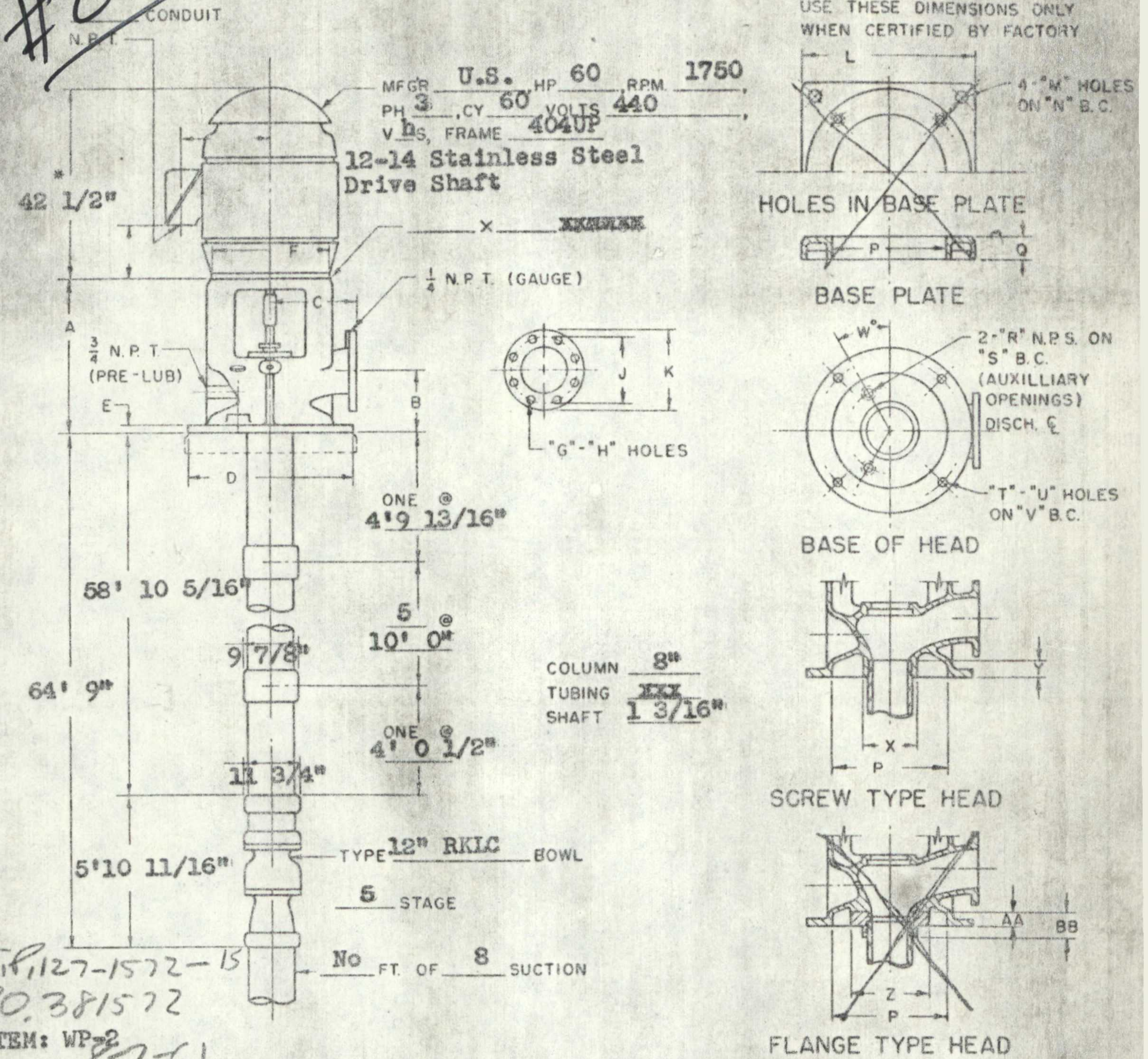
TYPE 8 SDH DISCHARGE HEAD

LAYNE & BOWLER, INC. MEMPHIS, TENNESSEE

REVISED 7-27-61

#2WEL

USE THESE DIMENSIONS ONLY WHEN CERTIFIED BY FACTORY



FP,127-1572-15
P.O. 381572

ITEM: WP-2

8-7-61

CUSTOMER: Archer Daniels Midland Co.
LOCATION: Mapleton, Ill.
FOR APPROVAL:
CERTIFIED: Tom Morrow

YOUR NO C-6277-1005
OUR NO: D-3412
PUMP NO. 43306
DATE: 7/27/61

G.P.M. 700
T.D.H. 248
R.P.M. 1750
B.H.P.

TYPE HEAD	A	B	C	D	E	F	HEAD DISCHARGE FLANGE 125# ASA FLANGE G	H	J	K	250# ASA FLANGE G	H	J	K	L	M	N	P	Q	R	S	HEAD BASE STD. T	U	125# T	U	V	W	X	Y	Z	AA	BB
SDH 3	14	5 1/4	7 1/2	13 1/2	3/4	10	4	3/4	6	7 1/2	8	7/8	6 5/8	8 1/4	13 3/4	3/4	15 3/4	9 1/4	1 1/2	1/2	6 3/4	4	3/4	8	7/8	11 3/4	24	4 1/4	1 1/4	5 1/2	1 1/4	2 7/16
SDH 4	16 1/2	6	9	16	3/4	12	8	3/4	7 1/2	9	8	7/8	7 7/8	10	16 1/4	3/4	18 1/4	11 1/4	1 1/2	3/4	8 1/2	4	3/4	12.	1	14 1/4	18 1/2	5 1/2	1 13/16	7	1 5/16	3
SDH 6	20	7	11 1/2	21	3/4	16 1/2	8	7/8	9 1/2	11	12	7/8	10 5/8	12 1/2	21 1/4	1	24 1/4	14 1/2	1 1/2	1	11 1/2	4	3/4	12	1 1/8	18 3/4	20	7 1/2	2 1/16	9 3/8	1 [illegible]	3
XXX SDH 8	22	8 1/2	13	23 1/2	7/8	16 1/2	8	7/8	11 3/4	13 1/2	XXXXXXXX				23 3/4	1	27 1/4	16 1/2	2	1 1/4	14	4	7/8	XXXX		21 1/4	20	10	2 5/16	11 1/2	1 [illegible]	3
SDH 10	25	11	15	27 1/2	1	20	12	1	14 1/4	16	16	1 1/8	15 1/4	17 1/2	27 3/4	1 1/8	31 1/2	20 1/2	2	1 1/4	17	4	7/8	20	1 1/4	25	24	12 1/4	2 13/16	14 1/2	2 1/4	4
SDH 12	26	11 1/2	17	32	1 1/8	24[illegible]	[illegible]	[illegible]	[illegible]	19	16	1 1/4	17 3/4	20 1/2	32 1/4	1 1/8	37	24 1/2	2	1 1/4	19 1/4	4	7/8	20	1 3/8	29 1/2	17	14	2 5/16	16 1/2	2 1/4	4

* INCLUDES 3" HIGH MOTOR ADAPTER WHEN USED

DRAWING NO. PRO 119

STEP TEST OF WELL NO. 2

PAGE 1

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

Layne-Western Company

WATER SUPPLY CONTRACTORS

ELEV. TOP OF CASING. 443.55

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL NO. 1

Non-Pumping Level: 4'-6"

Orifice Size:

Pump Used:

Date Tested: 3-14-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	~~Pumping~~ H2O Level	Drawdown	~~Disch. Head~~ Dec.	Pressure Feet	~~Pumping Head~~ WATER ELEV.	Remarks
10:25				4'-6"	—	4.5		439.05	
10:32				6'-3"	1'-9"	1.75		437.30	
10:34				7'-0½"	2'-6½	2.54		436.51	
10:36				7'-5¾"	2'-11¾	2.98		436.07	
10:38				7'-10¼	3'-4¼	3.35		435.70	
10:40				8'-1⅜	3'-7⅜	3.61		435.44	
10:45				8'-6⅛	4'-0⅛	4.01		435.04	
10:50				8'-9"	4'-3"	4.25		434.80	
10:55				8'-10¾	4'-4¾	4.40		434.65	
10:59				8'-11¾	4'-5¾	4.48		434.57	
11:02				8'-7"	4'-1"	4.08		434.97	
11:04				8'-4½	3'-10½	3.88		435.17	
11:06				8'-3⅛	3'-9⅛	3.76		435.29	
11:08				8'-2⅝	3'-8⅝	3.70		435.35	
11:10				8'-1⅝	3'-7⅝	3.64		435.41	
11:15				8'-1	3'-7"	3.58		435.47	
11:20				8'-0⅜	3'-6⅜	3.53		435.52	
11:25				8'-0	3'-6"	3.50		435.55	
11:29				7'-11⅞	3'-5⅞	3.49		435.56	
11:32				7'-8¼	3'-2¼	3.19		435.86	
11:34				7'-6½"	3'-0½	3.04		436.01	
11:36				7'-5½	2'-11½	2.96		436.09	
11:38				7'-4¾	2'-10¾	2.90		436.15	
11:40				7'-4¼	2'-10¼	2.85		436.20	
11:45				7'-3½	2'-9½	2.80		436.25	

TAKEN FROM BOOK #11

WELL TEST DATA SHEET

Layne-Western Company

ELEV. TOP OF CASING 443.55

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

~~Length of Airline~~ WELL NO. 1

Non-Pumping Level: 4'-6"

Orifice Size:

Pump Used:

Date Tested: 3-14-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	~~Pumping~~ H2O Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
11:50				7'-2 7/8	2'-8 7/8	2.74		436.31	
11:55				7'-2 5/8	2'-8 5/8	2.72		436.33	
11:59				7'-2 1/2	2'-8 1/2	2.71		436.34	
12:01				7'-6 3/8	3'-0 3/8	3.03		436.02	
12:02				8'-3	3'-9"	3.75		435.30	
12:03				8'-7 3/8	4'-1 3/8	4.11		434.94	
12:05				9'-1 3/8	4'-7 3/8	4.61		434.44	
12:06				9'-3 1/2	4'-9 1/2	4.79		434.26	
12:08				9'-6 7/8	5'-0 7/8	5.03		434.02	
12:10				9'-9 3/4	5'-3 3/4	5.31		433.74	
12:12				9-10 1/4	5'-4 1/4	5.35		433.70	
12:14				9-11 7/8	5'-5 7/8	5.47		433.58	
12:16				10'-0 7/8	5'-6 7/8	5.55		433.50	

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

Layne-Western Company

WATER SUPPLY CONTRACTORS

ELEV. TOP OF CASING 445.72

721 ILLINOIS AVE. AURORA, ILL.
Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MADLETON

Dia. of Well:

Depth of Well:

~~Length of Airline~~ WELL NO. 2

Non-Pumping Level:

Orifice Size:

Pump Used:

Date Tested: 3-14-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
10:30					0				
10:31	26 1/2	1074			16.80				
10:32					16.94				
10:33					17.21				
10:34					18.67				
10:35					19.01				
10:36					19.17				
10:37					19.42				
10:39					19.85				
10:40					19.93				
10:50					20.66				
11:00					20.96				
11:01	14 1/2	799			16.04				
11:02					15.79				
11:03					15.67				
11:04					15.57				
11:05					15.54				
11:06					15.45				
11:07					15.44				
11:08					15.41				
11:09					15.37				
11:10					15.34				
11:20					15.3				
11:30	14 1/2	799			15.11				
11:31	—	617			12.14				

STEP TEST OF WELL NO. 2

PAGE 4

WELL TEST DATA SHEET

TAKEN FROM BOOK # 11

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL No. ~~Length of Stroke~~: 2

Non-Pumping Level:

Orifice Size:

Date Tested: 3-14-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Piezometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
11:32	—	617			11.80				
11:33	—	610			11.74				
11:34					11.65				
11:35					11.60				
11:36					11.56				
11:37					11.55				
11:38					11.52				
11:39					11.49				
11:40		617			11.46				
11:50		610			11.35				
12:00		617			11.31				
12:01.5		1356			24.70				
12:03		1356			25.63				
12:05		1345			26.20				
12:07		1341			26.53				
12:09		1341			26.71				
12:12		1337			26.95				
12:14		1341			27.05				
12:16		1341			27.13				

PAGE 8

TAKEN FROM BOOK #11

ELEV. TOP OF CASING 447.39

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL NO. 3

Non-Pumping Level: 8'-4 5/8" = 8.39

Orifice Size:

Pump Used:

Date Tested: 3-14-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pirometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
10.22				8'-4 5/8				439.00	
10:32				9-1 1/2	0-8 7/8	0.74		438.26	
10:34				10'-2	1'-9 3/8	1.78		437.22	
10:36				10'-7 1/4	2'-2 5/8	2.22		436.78	
10:38				11'-0 5/8	2'-8	2.67		436.33	
10:40				11'-4	2'-11 3/8	2.95		436.05	
10:45				11'-8 5/8	3'-4	3.33		435.67	
10:50				12'-0"	3'-7 3/8	3.61		435.39	
11:00				12'-2	3'-9 3/8	3.78		435.22	
11:02				12'-0 1/8	3'-7 1/2	3.63		435.37	
11:04				11'-9 1/8	3'-4 1/2	3.38		435.62	
11:06				11'-8	3'-3 3/8	3.28		435.72	
11:08				11'-6 3/4	3'-2 1/8	3.18		435.82	
11:10				11'-6	3'-1 3/8	3.11		435.89	
11:15				11'-5 1/8	3'-0 1/2	3.04		435.96	
11:20				11'-4 5/8	3'-0	3.0		436.00	
11:25				11'-4 1/4	2'-11 5/8	2.97		436.03	
11:30				11'-4 1/4	2'-11 5/8	2.97		436.03	
11:32				11'-3 1/8	2'-10 1/2	2.88		436.12	
11:34				11'-0 3/8	2'-7 3/4	2.65		436.35	
11:36				10'-10 3/4	2'-6 1/8	2.51		436.49	
11:38				10'-10 1/4	2'-5 5/8	2.47		436.53	
11:40				10'-9 3/4	2'-5 1/8	2.43		436.57	
11:45				10'-9	2'-4 3/8	2.36		436.64	
11:50				10'-8 5/8	2'-4	2.33		436.67	

STEP TEST OF WELL No. 2

PAGE 6

TAKEN FROM BOOK #11

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING 447.39

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL NO. 3

Non-Pumping Level:

Orifice Size:

Date Tested: 3-14-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
11:55				10'-8 3/8	2'-3 3/4	2.31		436.69	
12:00				10'-8 1/4	2'-3 5/8	2.30		436.70	
12:02				11'-2	2'-9 3/8	2.78		436.22	
12:04				11'-9 1/2	3'-4 7/8	3.41		435.59	
12:06				12'-2 3/8	3'-9 3/4	3.81		435.19	
12:08				12'-5 3/4	4'-0 1/8	4.01		434.99	
12:10				12'-8 1/4	4'-3 5/8	4.30		434.70	
12:12				12'-9 3/4	4'-5 1/8	4.43		434.57	
12:14				12'-11 1/2	4'-6 7/8	4.57		434.43	
12:16				13'-0 1/2	4'-7 7/8	4.66		434.34	

STEP TEST OF WELL NO. 2

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

ELEV. TOP OF CASING 447.92

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.
Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Date Tested: 3-14-61

Location: MADLETON

Tested By:

Dia. of Well:

Driver:

Depth of Well:

Pump Used:

Column and Shaft:

~~Length of Airline~~ WELL NO 5

Bowls:

Non-Pumping Level: 8'-10¼ -8.85

Manufacturer:

Orifice Size:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
10:24				8'-10¼	-	8.5		439.07	
10:32				9'-1¾	0'-3½	0.79		438.78	
10:34				9'-4⅜	0'-6⅛	0.51		438.56	
10:36				9'-6⅜	0'-8⅛	0.68		438.39	
10:38				9'-9¼	0'-11	0.92		438.15	
10:40				9'-11½	1'-1¼	1.10		437.97	
10:45				10'-2⅝	1'-4⅞	1.36		437.71	
10:50				10'-4½	1'-6¼	1.52		437.55	
10:55				10'-5⅝	1'-7⅜	1.61		437.46	
11:00				10'-6¼	1'-8	1.67		437.40	
11:02				10'-6	1'-7¾	1.65		437.42	
11:04				10'-4⅛	1'-5⅞	1.49		437.58	
11:06				10'-4⅝	1'-6¾	1.56		437.51	
11:08				10'-4⅛	1'-5⅞	1.49		437.58	
11:10				10'-3⅝	1'-5⅜	1.45		437.62	
11:15				10'-3¼	1'-5	1.42		437.65	
11:20				10'-2¾	1'-4½	1.38		437.69	
11:25				10'-2¾	1'-4½	1.38		437.69	
11:30				10'-2⅝	1'-4⅜	1.36		437.71	
11:32				10'-2⅜	1'-4⅛	1.34		437.73	
11:34				10'-1½	1'-3¼	1.27		437.80	
11:36				10'-1⅛	1'-2⅞	1.24		437.83	
11:38				10'-0⅝	1'-2⅜	1.20		437.87	
11:40				10'-0⅛	1'-1⅞	1.16		437.91	
11:45				9'-11⅝	1'-1⅜	1.11		437.96	

TEST OF WELL NO. 5

PAGE 8

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

Layne-Western Company

ELEV. TOP OF CASING 447.92

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

~~Engine or Motor~~ WELL NO. 5

Non-Pumping Level:

Orifice Size:

Pump Used:

Date Tested: 3-14-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
11:50				9'-11 3/8	1'-1 1/8	1.09		437.98	
11:55				9'-11 3/8	1'-1 1/8	1.09		437.98	
12:00				9'-11 1/4	1'-1"	1.08		437.97	
12:02				10'-0 3/8	1'-2 1/8	1.18		437.89	
12:04				10'-2 3/8	1'-4 1/8	1.34		438.03	
12:06				10'-4 7/8	1'-6 3/8	1.53		437.54	
12:08				10'-6 3/4	1'-8 3/8	1.70		437.37	
12:10				10'-8 1/8	1'-9 7/8	1.82		437.55	
12:12				10'-9 1/4	1'-11	1.92		437.15	
12:14				10'-10	1'-11 3/4	1.98		437.09	
12:16				10'-10 3/4	2'-0 3/4	2.06		437.01	

TAKEN FROM BOOK No. 11

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING - 443.55

Job: ADM

Location: MAPLETON

Dia. of Well: 16"

Depth of Well:

WELL No. 1

Non-Pumping Level: 4'-6½"

Orifice Size:

Pump Used:

Date Tested: 3-13-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	WATER Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	WATER ELEV.	Remarks
8:10				4'-6½"	—	4.54		439.01	PUMPING STARTED
8:20				6'-6¼"	1'-11¾"	1.98		437.03	AT 8:17 AM.
8:25				8'-2¾	3'-8¼"	3.69		435.32	
8:30				8'-11½	4'-5"	4.42		434.59	
8:35				9'-3⅞	4'-9⅜"	4.78		434.23	
8:40				9'-6⅛	4'-11⅝"	4.97		434.01	
8:45				9'-7½	5'-1"	5.08		433.93	
8:50				9'-9⅜	5'-2⅞	5.24		433.77	
8:55									
9:00				9'-9½	5'-3"	5.25		433.76	
:05				9'-10"	5'-3½"	5.29		433.72	
:10				9'-10¼	5'-3¾	5.31		433.70	
:15				9'-10½	5'-4"	5.33		433.68	
0:10				9'-11⅞	5'-5⅜	5.45		433.56	
1:10 AM				10'-0½	5'-6"	5.5		433.51	
2:10 PM				10'-1"	5'-6½"	5.54		433.47	
1:10				10'-1⅛	5'-6⅝"	5.55		433.46	
:05				10'-1⅛	5'-6⅝	5.55		433.46	
3:15				10-0⅞	5'-6⅜	5.53		433.48	
1:15				10'-0⅞	5'-6⅜"	5.53		433.48	
5:10				10'-0⅞	5'-6⅜	5.53		433.48	
6:18				10'-1⅛	5'-6⅝	5.55		433.46	
7:21				10'-1⅛	5'-6⅝	5.55		433.46	

CAPACITY TEST OF #2 WELL

PAGE 2

WELL TEST DATA SHEET

TAKEN FROM BOOK No. 11

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1304

ELEV. TOP CASING 443.55.

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

~~Length of Airline~~ WELL NO. 1

Non-Pumping Level: 4'-6½"

Orifice Size:

Date Tested: 3-13-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	WATER ~~Pumping~~ Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	WATER ~~Total Pumping Head~~ ELEV.	Remarks
		↓	RECOVERY		↓				
3:18 PM				8'-9"		8.75		434.80	PUMPING STOPPED
3:20				7'-7"		7.68		435.97	AT 8:17 PM.
3:22				7'-0⅜		7.03		436.52	
3:23				6'-7½		6.63		436.92	
3:25				6'-3¾		6.31		437.24	
3:26				6'-0⅜		6.03		437.52	
3:27				5'-10¾		5.9		437.65	
3:28				5'-9¼		5.77		437.78	
3:33				5'-4⅝		5.39		438.16	
3:38				5'-2"		5.17		438.38	
3:40				5'-1¼		5.1		438.45	
3:45				4'-11"		4.92		438.63	
3:50 PM				4'-10¾		4.90		438.65	

CAPACITY TEST OF NO. 2 WELL

TAKEN FROM BOOK NO. 11

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING 446.72

Job: ADM

Location: MAPLETON

Dia. of Well: 16"

Depth of Well: 72'-6" ABOVE GRD LEVEL

Pump Used:

WELL NO. 2

Non-Pumping Level: 7'-0" - 4

Orifice Size: 10 x 7

Date Tested: 3-13-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
8:17 AM				7'-0"	—	7.0		438.72	PUMPING STARTED
8:18	34	1218		26'-3"	19'-3	19.25		419.47	AT 8:17 AM.
:19				27'-0½	20'-0½	20.04		418.68	
:20				27'-3½	20-3½	20.29		418.43	
:21				27'-8½	20'-8½	20.7		418.02	
:22				28-4½	21'-4½	21.38		417.34	
:23				28'-8"	21'-8"	21.67		417.05	
:24				29'-1"	22'-1"	22.08		416.64	
:25				29'-3"	22'-3"	22.25		416.47	
:26				29'-5"	22'-5"	22.42		416.30	
:27				29'-6½	22'-6½	22.54		416.18	
:28				29'-8"	22'-8	22.67		416.05	
:38				30'-4"	23'-4	23.33		415.39	
:48				30'-8"	23'-8"	23.67		415.05	
:58				30'-9½	23-9½	23.80		414.92	
9:08				30'-11	23'-11	23.92		414.80	
:18				30'-11	23'-11	23.92		414.80	
:28				30'-11	23'-11	23.92		414.80	
:38				31'-0"	24'-0	24.0		414.72	
:48				31-0	24'-0	24.0		414.72	
:58				31-0	24'-0	24.0		414.72	
:58				31'-3"	24'-3	24.25		414.47	
:58 AM				31'-4"	24'-4	24.33		414.39	
:58 PM				31'-4"	24'-4"	24.33		414.39	
:58				31'-5"	24'-5"	24.42		414.30	

CA [illegible] TEST OF NO. 2 WELL PAGE 4

TAKEN FROM BOOK #11

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.
Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV TOP OF CASING 446.72

Job: ADM
Location: MAPLETON
Dia. of Well: 16"
Depth of Well: 72'-6"
~~Length of Line~~ WELL NO. 2
Non-Pumping Level: 7'-0"
Orifice Size: 10 x 7

Date Tested: 3-13-61
Tested By:
Driver:
Pump Used: Column and Shaft:
Bowls:
Manufacturer:
Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	Pumping Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
2:58 PM	34	1218		31'-5"	24'-5"	24.42		414.30	
3:58				31'-4½	24'-4½	24.38		414.34	
4:58				31'-4¼	24'-4¼	24.35		414.37	
5:58				31'-4½	24'-4½	24.38		414.34	
6:58				31'-6"	24'-5"	24.42		414.30	
7:58				31'-5½	24'-5½	24.46		414.26	
8:15	34	1218		31'-5¾	24'-5¾	24.48		414.24	
[illegible]		RECOVERY							
8:18				11'-4½"		11.38		434.34	PUMPING STOPPED
8:19				10'-4"		10.33		435.39	AT 8:17 PM
8:20				9'-8"		9.67		436.05	
8:21				9'-3"		9.25		436.47	
8:22				8'-11½"		8.96		436.76	
8:23				8'-8½		8.70		437.02	
8:24				8'-5½		8.46		437.26	
8:25				8'-3"		8.25		437.47	
8:26				8'-1½"		8.13		437.59	
8:27				8'-0"		8.0		437.0	
8:37				7'-3½		7.29		438.43	
8:47				7'-0"		7.0		438.0	
8:57 PM				6'-11		6.92		438.80	

TAKEN FROM BOOK # 11

WELL TEST DATA SHEET

Layne-Western Company

ELEV. TOP OF CASING 447.39

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL NO. 3

Non-Pumping Level: 8'-6"

Orifice Size:

Date Tested: 3-13-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	WATER Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
8:15 AM				8'-5"	—	8.42		438.97	PUMPING -
8:20				10'-4⅞"	1'-11⅞"	1.99		436.08	STARTED AT
8:25				10'-7⅜	3'-2⅜	3.20		435.77	8:17 AM.
8:30				12'-2⅛"	3'-9⅛"	3.76		435.21	
8:35				12'-5½"	4'-0½"	4.04		434.93	
8:40				12'-7⅝	4'-2⅝	4.22		434.75	
8:45				12'-8⅞"	4'-3⅜	4.32		434.65	
8:50				12'-9¾"	4'-4¾	4.40		434.57	
8:55				12'-10⅛	4'-5⅛	4.43		434.54	
9:00				12'-10½	4'-5½	4.46		434.51	
9:10				12'-11¼	4'-6¼	4.52		434.45	
9:15				12'-11½	4'-6½	4.54		434.43	
9:24				13'-0½"	4'-7⅛	4.60		434.37	
9:26 AM				13'-1"	4'-7⅝"	4.64		434.33	
12:30 PM				13'-1½"	4'-8½"	4.70		434.27	
1:30				13'-1⅝"	4'-8⅝	4.72		434.25	
2:20				13'-1⅝	4'-8⅝	4.72		434.25	
3:37				13'-1⅜	4'-8⅜	4.70		434.27	
4:27				13'-1¾	4'-8¾	4.73		434.24	
5:27				13'-1½"	4'-8½	4.71		434.26	
6:33				13'-1¾	4'-8¾	4.73		434.24	
7:35 PM				13'-2"	4'-9"	4.75		434.22	

CAPACITY TEST OF NO. 2 WELL

TAKEN FROM BOOK #11

WELL TEST DATA SHEET

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING 447.39

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

~~Length of Line~~ WELL No. 3

Non-Pumping Level:

Orifice Size:

Pump Used:

Date Tested: 3-13-61

Tested By:

Driver:

Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	~~Pumping~~ WATER Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
	↓	RECOVERY	↓						PUMPING
3:18 PM				13'-0"		13.0		434.39	STOPPED AT
3:20				12'-1⅛"		12.09		435.30	8:17 PM.
:22				10'-2"		10.17		437.22	
:25				10'-4⅞		10.41		436.98	
:27				9'-11"		9.92		437.47	
:28				9'-8"		9.67		437.72	
:29									
:30				9'-5½"		9.46		437.93	
:33				9'-3¾"		9.31		438.08	
:35				9'-2"		9.17		438.22	
:37				9'-0½"		9.04		438.35	
:41				8'-11"		8.92		438.47	
:44				8'-10⅞		8.86		438.53	
:50				8'-10"		8.83		438.56	
:57				8'-8½"		8.71		438.68	
4:00 PM									

CAPACITY TEST OF NO. 2 WELL

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

Layne-Western Company

WATER SUPPLY CONTRACTORS

ELEV. TOP CASING 447.48

721 ILLINOIS AVE. AURORA, ILL.
Phone: AURORA 7-4261 CHICAGO ENterprise 1204

Job: ADM

Location: MAPLETON

Dia. of Well:

Depth of Well:

WELL NO. 4

Non-Pumping Level: 8'-5¼" = 8.44

Orifice Size: 8:10AM → H.O LEVEL 439.04

Date Tested: 3-13-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	WATER ~~Pumping~~ Level	Drawdown	Disch. Pressure Lbs.	Disch. Pressure Feet	Total Pumping Head	Remarks
8:20 AM				9'-3⅜	0'-10⅛"	.84		438.20	PUMPING
8:25				10'-4¼"	1'-11"	1.92		437.12	STARTED AT
8:30				10'-9½	2'-4¼	2.38		436.66	8:17 AM
8:35				11'-0½	2'-7¼"	2.62		436.52	
8:40				11'-2"	2'-8¾"	2.73		436.31	
8:45				11'-3¼	2'-10"	2.83		436.21	
8:50									
8:55				11'-4⅜"	2'-11⅛"	2.93		436.11	
9:05				11'-5"	2'-11¾	2.98		436.06	
9:15				11'-5¼"	3'-0"	3.0		436.04	
9:22				11'-6½	3'-1¼"	3.1		435.94	
9:22 AM				11'-7"	3'-1¾"	3.15		435.89	
9:22 PM				11'-7⅝"	3'-2⅜	3.2		435.84	
9:15				11'-7⅝"	3'-2⅜	3.2		435.84	
9:16				11'-7⅝"	3'-2⅜"	3.2		435.84	
9:35				11'-7½	3'-2¼	3.19		435.85	
9:24				11'-6½	3'-1¼	3.10		435.94	
9:23				11'-7⅝"	3'-2⅜	3.2		435.84	
9:30				11'-7¾"	3'-2½	3.21		435.83	
9:33				11'-7¾"	3'-2½	3.21		435.83	
	↓	RECOVERY	↓						PUMPING
9:23 PM				10'-4⅝		10.39		437.09	STOPPED AT
9:30				9'-4¾		9.40		438.08	8:17 PM.
9:38				8'-11¾		8.98		438.50	
9:45				8'-9¾		8.81		438.67	
9:53 PM				8'-8⅞		8.74		438.74	

CAPACITY TEST OF ROUE WELL PAGE 3

WELL TEST DATA SHEET

TAKEN FROM BOOK #11

Layne-Western Company

WATER SUPPLY CONTRACTORS

721 ILLINOIS AVE. AURORA, ILL.

Phone: AURORA 7-4261 CHICAGO ENterprise 1204

ELEV. TOP OF CASING 447.02

Job: ADM

Location: MARETON

Dia. of Well:

Depth of Well:

WELL NO. 5

Non-Pumping Level: 8'-10¼"

Orifice Size:

Date Tested: 3-13-61

Tested By:

Driver:

Pump Used: Column and Shaft:

Bowls:

Manufacturer:

Serial No.:

Time	Pizometer Reading (in.)	G. P. M.	Air Gauge Reading (feet)	WATER Level	Drawdown	Dec. Pressure Feet	WATER ELEV.	Remarks
8:16 AM				8'-10¼	—	8.85	439.07	PUMPING
:22				9'-8"	0'-9¾"	0.81	438.26	STARTED AT
:27				10'-3"	1'-4¾	1.40	437.67	8:17 AM.
:32				10'-5⅝"	1'-7⅜	1.61	437.46	
:37				10'-7½"	1'-9¼"	1.77	437.30	
:42				10'-8⅝	1'-10⅜"	1.86	437.21	
:50				10'-9½	1'-11¼'	1.94	437.13	
:00				10'-10¼	2'-0"	2.0	437.07	
:10				10'-10¾"	2'-0½"	2.04	437.03	
9:17				10'-11⅞	2'-1⅝"	2.14	436.93	
:18 AM				10'-0⅛	2'-1⅞"	2.16	436.91	
:20PM				11'-0½"	2'-2¼"	2.19	436.88	
:13				11'-0¾"	2'-2½"	2.21	436.86	
:13				11'-0¾	2'-2½"	2.21	436.86	
:30				11'-0⅝	2'-2⅜"	2.2	436.87	
:22				11'-0¾	2'-2½"	2.21	436.86	
:20				11'-0¾	2'-2½"	2.21	436.86	
:27				11'-0¾	2'-2½"	2.21	436.86	
:29 PM				11'-1¼	2'-3"	2.25	436.82	
	↓ RECOVERY ↓							PUMPING
:19 PM				10'-11"		10.92	437.00	STOPPED AT
:27				9'-11¾"		9.98	437.94	8:17 PM.
:33½				9'-5⅝"		9.47	438.45	
:42				9'-2⅞"		9.24	438.68	
:49 PM				9'-1¾"		9.15	438.77	

LAYNE & BOWLER, INC.
MEMPHIS, TENN.

DEEP WELL TURBINE PUMP PERFORMANCE CHART

CURVE SHEET NO. 4635

DATE

THESE CURVES SHOW THE PERFORMANCE OF THE PUMP WHEN ASSEMBLY UNDER SHOP TEST AND ARE GUARANTEED WITHIN 2% OF VALUES GIVEN WHEN HANDLING CLEAR COLD FRESH WATER AT 60° TEMPERATURE AND NOT OVER 25 FT. WITH PUMPING WATER LEVEL ABOVE LOWER TUBE END.

FROM TEST NO. 2069
EB.

FOR Anchor Hocking Glass Co.

ADDRESS Dunkirk, Ind.

TYPE OF PUMP FIG. RKLC R.P.M. 1765

SIZE OF PUMP 12 INS. 5 STAGES 6RN13 IMPELLER

FIELD PERFORMANCE

THE FIELD PERFORMANCE AS SHOWN BELOW, MAKES ALLOWANCE FOR ALL THE HYDRAULIC AND MECHANICAL LOSSES IN THE COLUMN AND SHAFT OF THE INSTALLATION ACCORDING TO THE STANDARDS OF THE HYDRAULIC INSTITUTE. THE FIELD PUMPING HEAD IS THE LIFT FROM THE WELL PLUS THE DISCHARGE HEAD MEASURED AT THE DISCHARGE CONNECTION AT THE SURFACE.

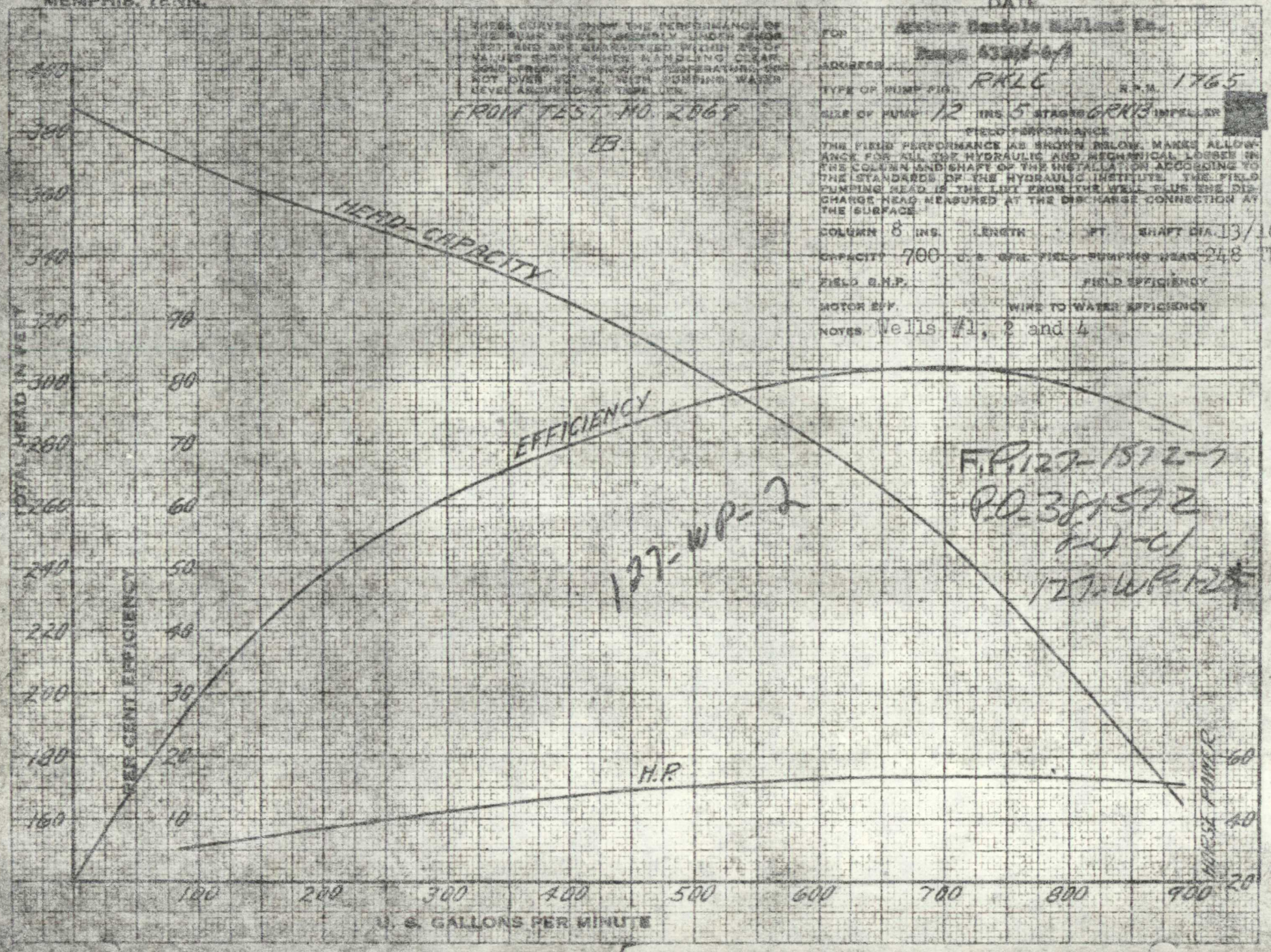
COLUMN 8 INS. LENGTH FT. SHAFT DIA. 13/16

CAPACITY 700 U.S. GPM. FIELD PUMPING HEAD 248 TDH

FIELD B.H.P. FIELD EFFICIENCY

MOTOR EFF. WIRE TO WATER EFFICIENCY

NOTES. Wells #1, 2 and 4



PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
682-6618

Well #2

WATER SUPPLY PERMIT Date 5-4-62

This permit is issued to:

Archer-Daniels-Midland Co., Mapleton, Illinois
(NAME) (ADDRESS)

For the purpose of constructing a p rivate water well at:

Pt. Sec. 20 - Hollis Twp.
(LEGAL DESCRIPTION)

Final approval of this water supply cannot be given until inspections of the location and construction of the well have been made by a representative of the Peoria County Health Department and a copy of a satisfactory bacteriological analysis of the water has been filed with the Peoria County Health Department.

WHEN CONSTRUCTION IS COMPLETED, PLEASE CALL THE PEORIA COUNTY HEALTH DEPARTMENT. WATER FROM THIS SUPPLY SHALL BE ANALYZED BEFORE PLACING WELL IN SERVICE.

THIS PERMIT IS VOID 6 MONTHS FROM DATE UNLESS CONSTRUCTION HAS BEEN STARTED.

Application # 553

Permit # 1124

Harold L. Pettis
Harold L. Pettis, Senior Sanitarian

2/23/60 S-7

OTHER CONSTRUCTION. DESCRIBE [illegible]
PITLESS UNIT. YES ( ) NO ( ). Make
PUMP
Type Layne 12" RKLC Pressure system (X)Yes ( )no
Remarks
Storage reservoir (X)Yes ( )No. Describe ~~100,000~~ 300,000 gal compartment overhead tank
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

Plant Manager — Mapleton, Illinois — 4-24-62
Applicant's signature — Present address — Date

(THIS SPACE FOR OFFICE USE ONLY)

Application
Approved ✓ App. # 553

Not approved ____ Permit # 1124

Signed NEO Date 5-3-62

ANALYSIS DATA
Date sample analysis

Results ____ + ____ -

Date well constructed April 1962

By GIBBER CORP.

Date approval of construction 5-2-62

Date approval of analysis

Date final approval

RS
W.S.

2/23/60 S-4

PEORIA COUNTY HEALTH DEPARTMENT
4614 Prospect Road
2-6618

APPLICATION FOR WATER SUPPLY PERMIT
SUBMIT APPLICATION IN DUPLICATE

Property Address US Rte 24, Mapleton, Ill. Township Hollis

Legal Description A part of Sec 20, Township 7 North, Range 7 East ~~xxxxxxxxxx~~ of 4th Principal Meridian.

Owner Archer-Daniels-Midland Co. Present Address Mapleton, Illinois

Tenant _____ New Installation X Repair Existing Installation _____

REMARKS Well No. 2

Number of properties to be served by this water supply 1 industrial site.

LOCATION

Number of feet from well to: Septic tank — ft. Sewer — Ft. Tile field — ft.
Privy vault — ft. Other potential source of contamination — ft.
EXPLAIN Imhoff Tank located approximately 2000 feet north.

CONSTRUCTION

Approximate depth 72 ft. Diameter of casing 16". Casing material Steel
BORED OR DUG WELL -- Construction according to Circular #14A. YES ( ) NO ( )
Water tight top 10 ft. ( )Yes. Describe _____

DRILLED WELL -- Construction according to Circular #14B. YES ( ) NO ( )
OTHER CONSTRUCTION. DESCRIBE Reverse rotary method per Girdler Spec 5172-127WI
PITLESS UNIT. YES ( ) NO ( ). Make _____

PUMP

Type Layne 12" RKLC Pressure system (X)Yes ( )no
Remarks _____
Storage reservoir (X)Yes ( )No. Describe ~~100,000~~ 300,000 gal compartment overhead tar
Cross connection between this water supply and another water supply.( )Yes ( )No
Describe other supply _____

APPROVAL OF THIS WATER SUPPLY IS BASED ON A FINAL VISUAL INSPECTION AND THE RESULTS OF A BACTERIOLOGICAL ANALYSIS OF THE WATER. SAID ANALYSIS TO BE FILED WITH THE PEORIA COUNTY HEALTH DEPARTMENT BEFORE SAID WELL IS PLACED IN SERVICE.

Plant Manager — Mapleton, Illinois — 4-24-62
Applicant's signature — Present address — Date

(THIS SPACE FOR OFFICE USE ONLY)

Application Approved ✓ App. # 553

Not approved ____ Permit # 1124

Signed HCP Date 5-3-62

ANALYSIS DATA
Date sample analysis _____

Results _____ + _____ -

Date well constructed April 1962

By GIRDLER CORP.

Date approval of construction 5-3-62

Date approval of analysis _____

Date final approval _____

RS
W.S.

2/23/60 S-4

SHEREX

DENNIS A. JUREWICZ

SUPERINTENDANT OF SERVICES

SHEREX CHEMICAL COMPANY
P.O. BOX 9 ● MAPLETON, ILLINOIS 61547

(309) 697-6220
Home: (309) 925-3071

IL-0179-12

Layne-Western Company

721 ILLINOIS AVENUE AURORA, ILLINOIS

Well Information—Drift Wells

Name of Job: Archer Daniels Midland Co. Date: Feb. 20, 1965

City or Village: Mapleton State: Ill.

Well No.: 6 Drillers: Siefers

Well Location: _____ ft. (_____) and _____ ft. (_____) of the _____ corner of

Section _____, Twp. _____ (_____), Range _____ (_____) _____ County.

Otherwise located as: 300' east of #5 well

Work Began: Feb. 3, 1965 Work Completed: Feb.16,1965 Well Depth: 88'-10½" top of casing which is approx.14½ above G.L.

All measurements made from existing ground level at time well was drilled.

Casing Record:

Amount	Dia.	Wt. or Thickness	Material					
63'10½"	16	3/8"	Steel pipe	with	Welded	joints from	49' below G.L.	to Approx.14½ above G.L.
				with		joints from		to

Screen Record: Type: Shutter

Amount	Dia.	Opening	Material					
25'	16"	#5	Stainless Steel	with	Welded	joints from	49'	to 74'
				with		joints from		to

Type of Seal at Bottom: Steel plate

Hole Record:

48"	inch from	0	to	10'
42	inch from	10	to	76'

Gravel Pack Record:

Amount	Size	Source	From	To
32 ton	#3	Muscatine	75'	27' of G.L.

Cementing Record: None

Backfill Record: Sand from pit, from 27' of G.L. to G.L.

SEE OTHER SIDE

WELL LOG #6

Feet		Feet	Description
0	to	7	Dirty silt and sand
7	to	48	Soft to hard gray clay
48	to	55	Sand, gravel and boulders
55	to	74½	Fine to coarse red sand, some gravel
74½	to	76	Coal and slate and shale
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Well Test Data: Static Level 9'5" pumping level 25'9" after 8 hours pumping at 1018 g.p.m.

Length of test 8 hrs. See Well Test Data Sheet Dated Feb. 15, 1965

REMARKS:

Water level readings taken from natural G.L.