Albuquerque Bernalillo County
Water Utility Authority

PO Box 1293
Albuquerque, NM 87103
505-768-2500
www.abcwua.org

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Website
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November 23, 2010

Mr. Ludie Wayne Bitner Jr, YF02, USAF
Chief, Restoration Section
377 MSG/CEANR
2050 Wyoming Blvd. SE, Suite 118
Kirtland AFB, NM 87117-5270

Re: Geophysical Logs for Albuquerque Bernalillo County Water Utility Authority Burton and Ridgecrest wells.

Dear Mr. Bitner:

In a letter dated August 6, 2010 from Mr. James Bearzi, Chief, Hazardous Waste Bureau, New Mexico Environment Department (NMED), to Colonel Maness and Mr. Pike, regarding the BULK FUELS FACILITY SPILL, SWMUS ST-106 AND SS-111 DIRECTIVE FOR CONDUCTING INTERIM MEASURES AND NOTICE OF DISAPPROVAL OF INTERIM MEASURES WORK PLAN, JUNE 2010; VADOSE ZONE WORK PLAN, JUNE 2010; GROUNDWATER INVESTIGATION WORK PLAN, JUNE 2010 KIRTLAND AIR FORCE BASE, EPA ID# NM9570024423 HWB-KAFB-10-015, HWB-KAFB-10-016, HWB-KAFB-10-019, NMED suggested that the geophysical logs for Water Authority Ridgecrest well 3 "would be useful in assisting in the interpretation of the stratigraphy of the area of interest..."(page 5, section 9, paragraph 3).

A search of documents yielded well logs and lithography data for Albuquerque Bernalillo County Water Authority Burton Wells 1, 2, and 3 and Ridgecrest Wells 1, 2, 3, 4 and 5. We hope that this information may be of use to you.

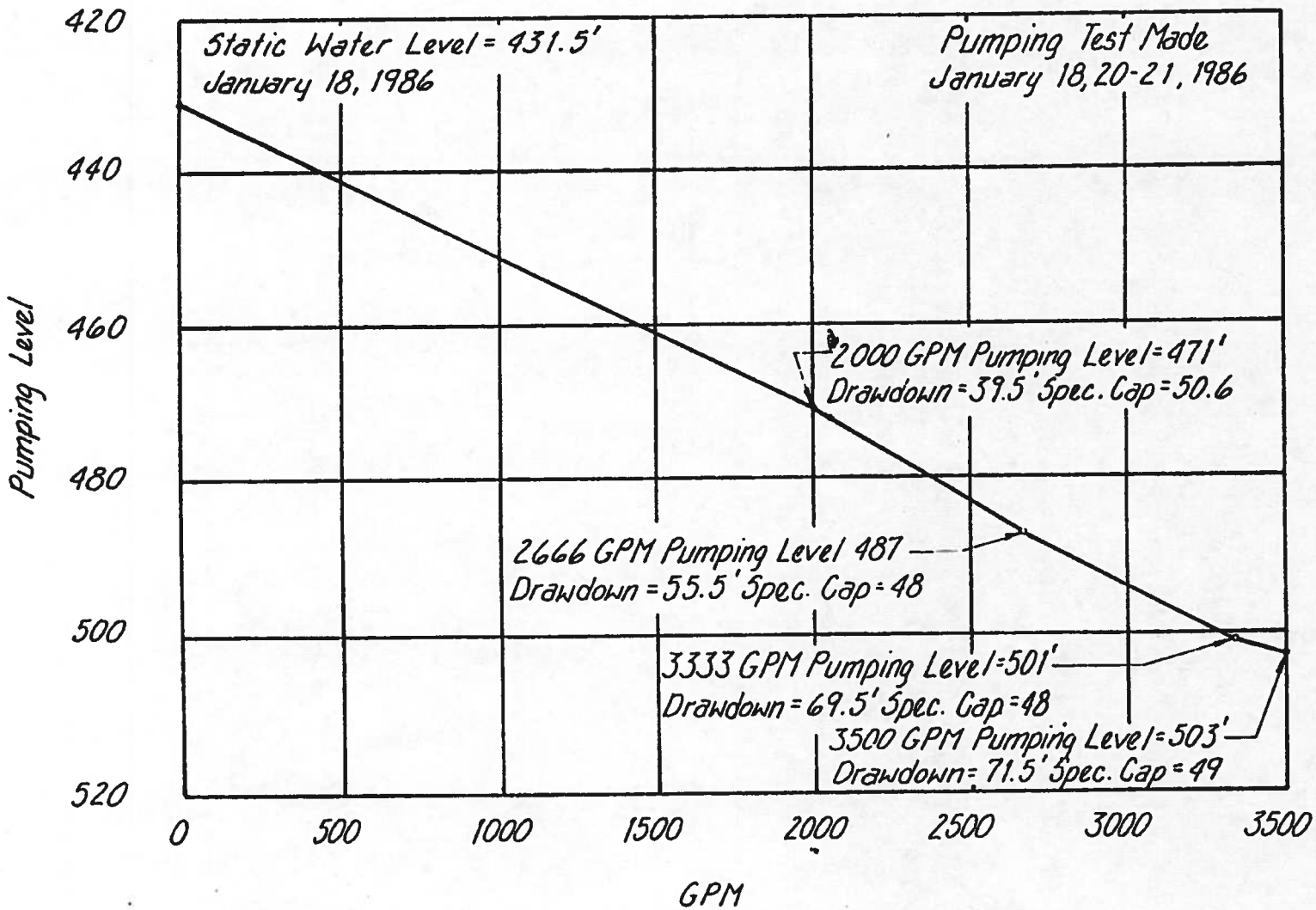
Should you have questions about the attached information, please contact me at 505-857-8278 or bgastian@abcwua.org.

Sincerely,

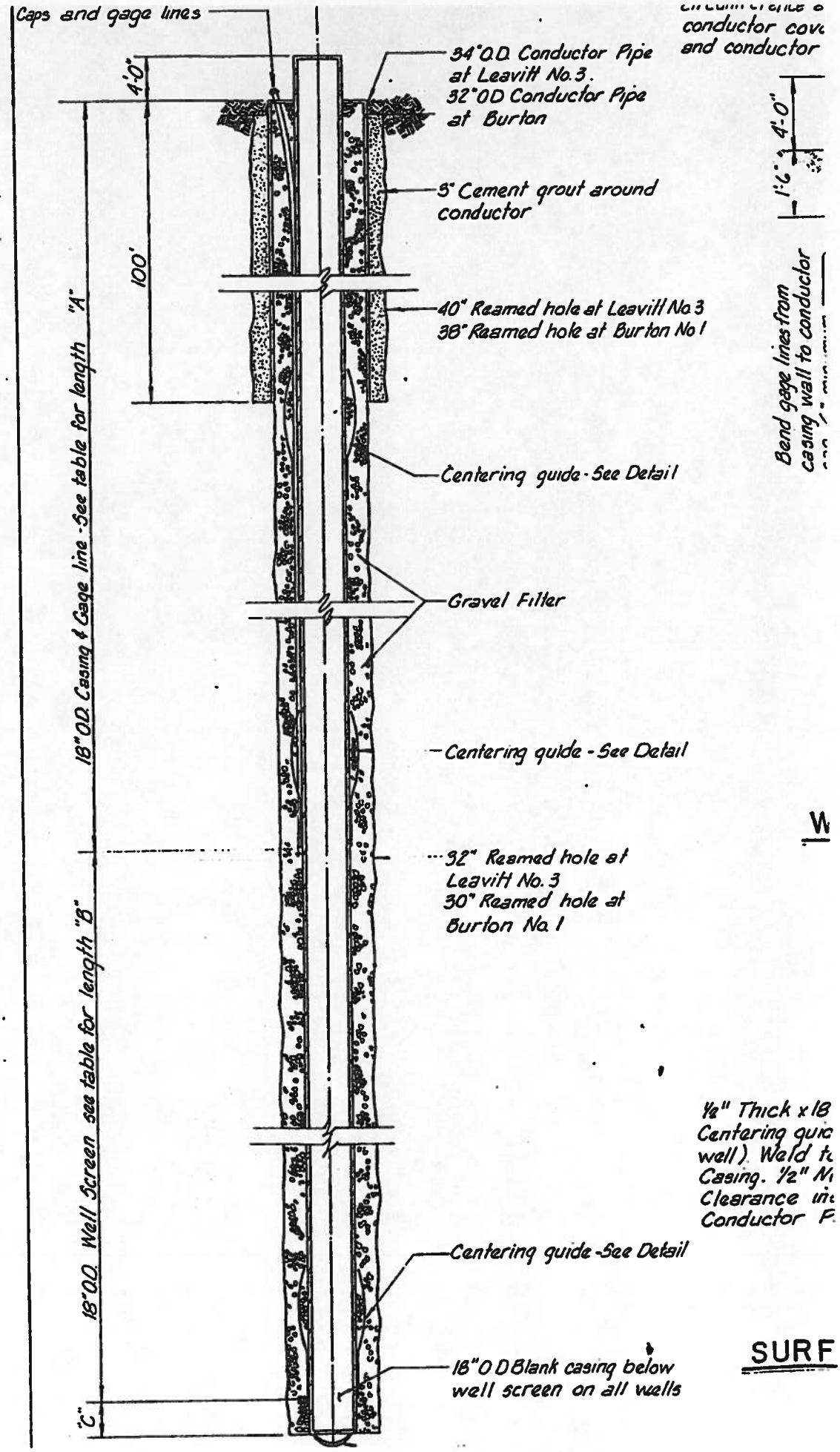
Barbara Gastian
Compliance Division Manager
Albuquerque Bernalillo County Water Utility Authority

Cc: James Bearzi, Chief Hazardous Waste Bureau
John M. Stomp III, P.E., Chief Operating Officer, ABCWUA

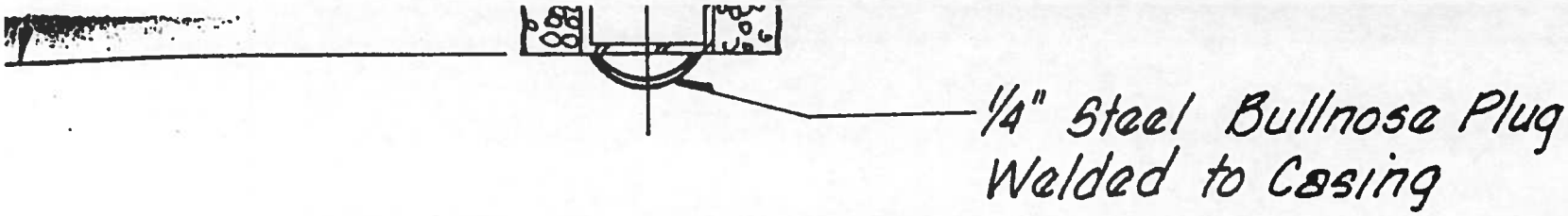
Attachments: Burton Well No. 1, 10 pages
Driller's Log – Burton No.2, 3 pages
Driller's Log – Burton No.3, 3 pages
Ridgecrest #1 Well Log, Roscoe Moss Company, 8 pages
Ridgecrest #2 Well Log, Roscoe Moss Company, 8 pages
Ridgecrest Well No.3 Well Drilling 1973, May 3, 1974, 6 pages
Ridgecrest #4, State Engineer Office Well Record, 6 pages
State Engineer Office Well Record, Ridgecrest #5, 6 pages



Burton Well No. 1



Caps and gage lines
34" O.D. Conductor Pipe at Leavitt No. 3.
32" OD Conductor Pipe at Burton
4'-0"
100'
5" Cement grout around conductor
40" Reamed hole at Leavitt No. 3
38" Reamed hole at Burton No 1
18" O.D. Casing & Gage line - See table for length "A"
Centering guide - See Detail
Gravel Filter
Centering guide - See Detail
32" Reamed hole at Leavitt No. 3
30" Reamed hole at Burton No. 1
18" O.D. Well Screen see table for length "B"
Centering guide - See Detail
18" O.D. Blank casing below well screen on all wells
"C"
conductor cov
and conductor
4'-0"
1'-6"
Bend gage lines from casing wall to conductor
W
½" Thick x 18
Centering guic
well). Weld t
Casing. ½" N
Clearance in
Conductor F
SURF



WELL DETAIL

DIMENSION TABLE			
WELL	DIM. "A"	DIM. "B"	DIM. "C"
BURTON NO. 1	676	616	20'
LEAVITT NO.3	514	986	20'

CE

Burton No. 1 – New Well

18" Blank +4 to –676
18" .010" ww Screen –676 to –1292
18" Blank –1292 to –1312
w/Plug

Lithology Log

0-10 Sandy loam, top soil, some caliche
10-20 Caliche, calcite nodules & poorly sorted sand
20-30 ~~20~~ Quartz sand, poorly sorted, some clay
30-40 Quartz sand, medium-coarse, various colors
40-~~50~~ " " poorly sorted, gray and black.
Limestone pebbles and calcite nodules
70-90 Fine to coarse, poorly sorted quartz sand of various colors, limestone pebbles, calcite nodules
90-100 Fine-med grained quartz sand, limestone pebbles and porous calcite pebbles
100-110 Fine-med grained quartz sand, well sorted, rounded grains, clear to milky
110-120 Well sorted ~~quart~~ quartz and limestone gravel
120-130 Med-grained well sorted quartz sand w/some porous calcite nodules
130-140 Med-coarse grained quartz sand, fairly well sorted, some black limestone
140-150 Coarse quartz sand, fairly well sorted, various colors (clear, milky, red, black) w/some porous ~~calcite~~ nodules
calcite

Burton No. 1 Cont

50-160 ~~very~~ very coarse - gravel size quartz, various colors
160-170 very coarse, sub angular quartz sand, various colors
170-180 Med-coarse grained, sub-rounded quartz sand, various colors
180-190 " " " quartz sand, poorly sorted, clay streak
190-200 " " " " " , rounded, well sorted
200-210 Med-coarse quartz gravel, poorly sorted, sub angular
210-240 Med grained, well sorted rounded quartz sand, various colors w/some clay & calcite 230-240
240-250 Quartz gravel, sub rounded
250-270 Med grained, rounded, well sorted quartz sand, some coarse limestone gravel
270-280 Coarse gravel, mostly quartz but some limestone
280-300 Med-coarse grained, fairly well sorted sub-rounded quartz sand
300-310 Fine-med grained, well sorted, rounded quartz sand, various colors
310-320 As above, med-grained
320-350 Med-coarse grained sand & fine gravel
350-400 Gravel, coarse, med-rounded
400-420 Sand, med-coarse grained, clean
420-480 Gravel, coarse, w/clay - probably stringers
480-490 Gravel, coarse, cleaner than above
490-500 Sand, coarse to medium grained, clean
500-570 Coarse gravel, sand & clay
570-580 Coarse gravel, coarse sand w/some clay
580-590 Sand & clay w/some med-gravel
590-600 Gravel, coarse sand w/some clay

Section 1 Cont

600-610 Gravel, some clay
610-640 Mostly clay, some sand and gravel
640-660 Clay, sand & gravel
660-700 Gravel, sand & clay
700-720 Med-grained sand
720-730 Gravel, some clay
730-740 Very coarse sand, clay
740-750 Med-grained sand
750-770 Sand & gravel, some clay
770-780 Sand, some clay
780-790 Sand & gravel, some clay
790-810 Med-grained sand
810-820 Clay, some med-sand
820-830 Med-grained sand, silt, clay, small gravel
830-840 Coarse sand to small gravel
840-850 Coarse sand to coarse gravel, trace clay
850-860 Clay & fine sand & silt
860-870 Clay, some sand & very small gravel
870-890 Clay, trace sand & small gravel
890-900 Clay
900-940 Clay, some sand & gravel
940-960 Clay
960-1010 Clay, small gravel, sand
1010-1030 Med. gravel, coarse sand, trace clay
1030-1040 Clay, some sand & small gravel
1040-1050 Small gravel, sand, some clay
1050-1070 Clay, some small gravel & sand
~~1070-75~~

Burton #1 Cont

1070-1080 Med sand, small gravel, clay
080-1090 Coarse sand, to small gravel, clean
090-1100 Med sand, clay, small gravel
1100-1110 Clay, sand & med gravel
1110-1130 Med-coarse sand w/some clay
1130-1140 Coarse sand to small gravel, clean
1140-1150 Coarse sand, med gravel, clay
1150-1180 Small gravel, coarse sand, trace clay
1180-1200 Med-coarse sand, small gravel, clay
1200-1300 Clean, med-coarse, fairly well sorted sands, some clay 1260-1270
310-13x Clay, some sand
1320-1330 Med grained sand, clay
1330-1450 Mostly clay, few sand stringers, some gravel
1450-1470 Sand & gravel, clay
TD Pilot Hole

60 80 100 Specific Cap

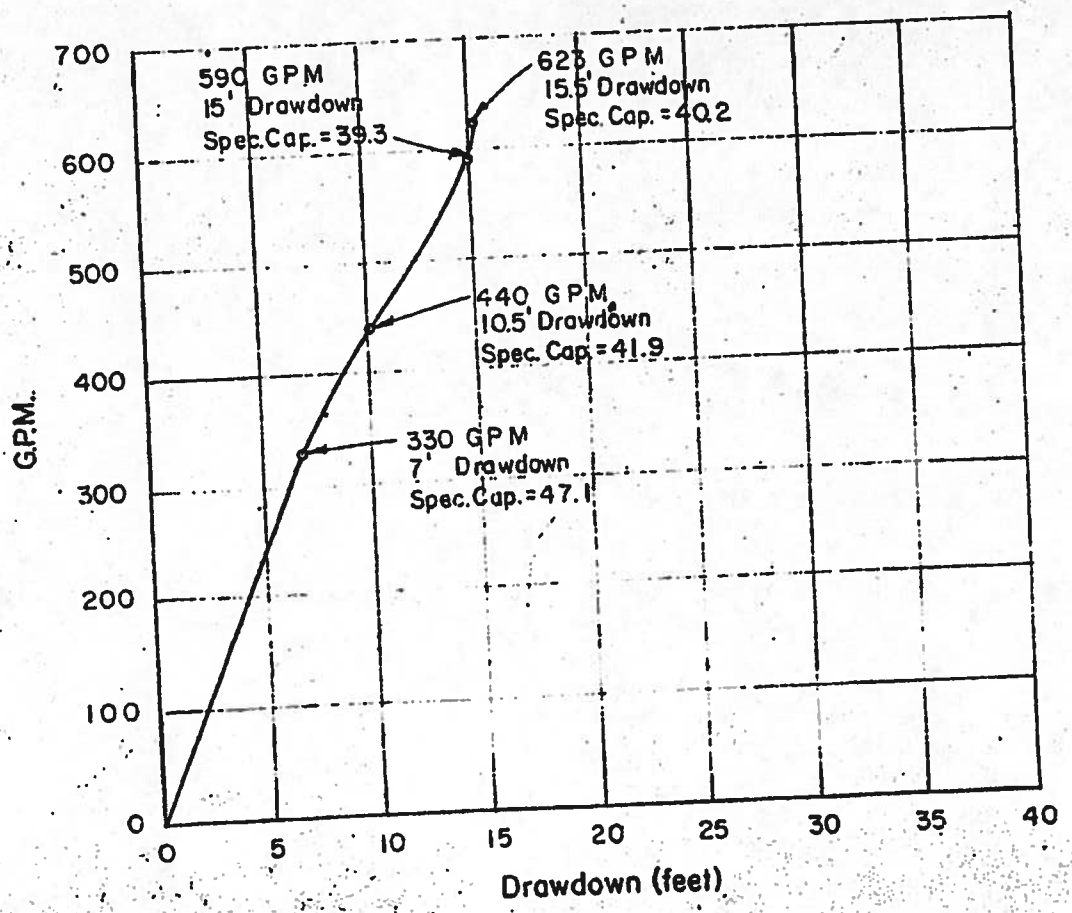
eet)

City of Albuquerque

Burton Well No. 1 Redevelopment

Curve based on Static Water Level of 389'

Test made June 24-29, 1964



3000 GPM
39' Drawdown
Spec. Cap. = 76.9

0 GPM
Drawdown
Cap. = 71.4

30 90

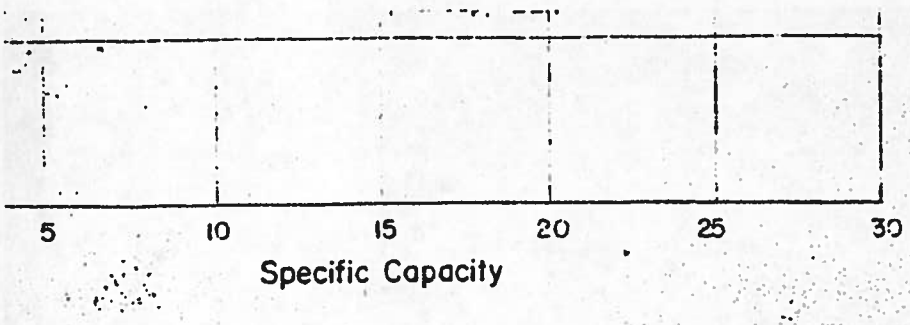
City of Albuquerque

San Jose Well No. 10

Curve based on Static Water Level of 20'

Test made Feb. 24, 1964

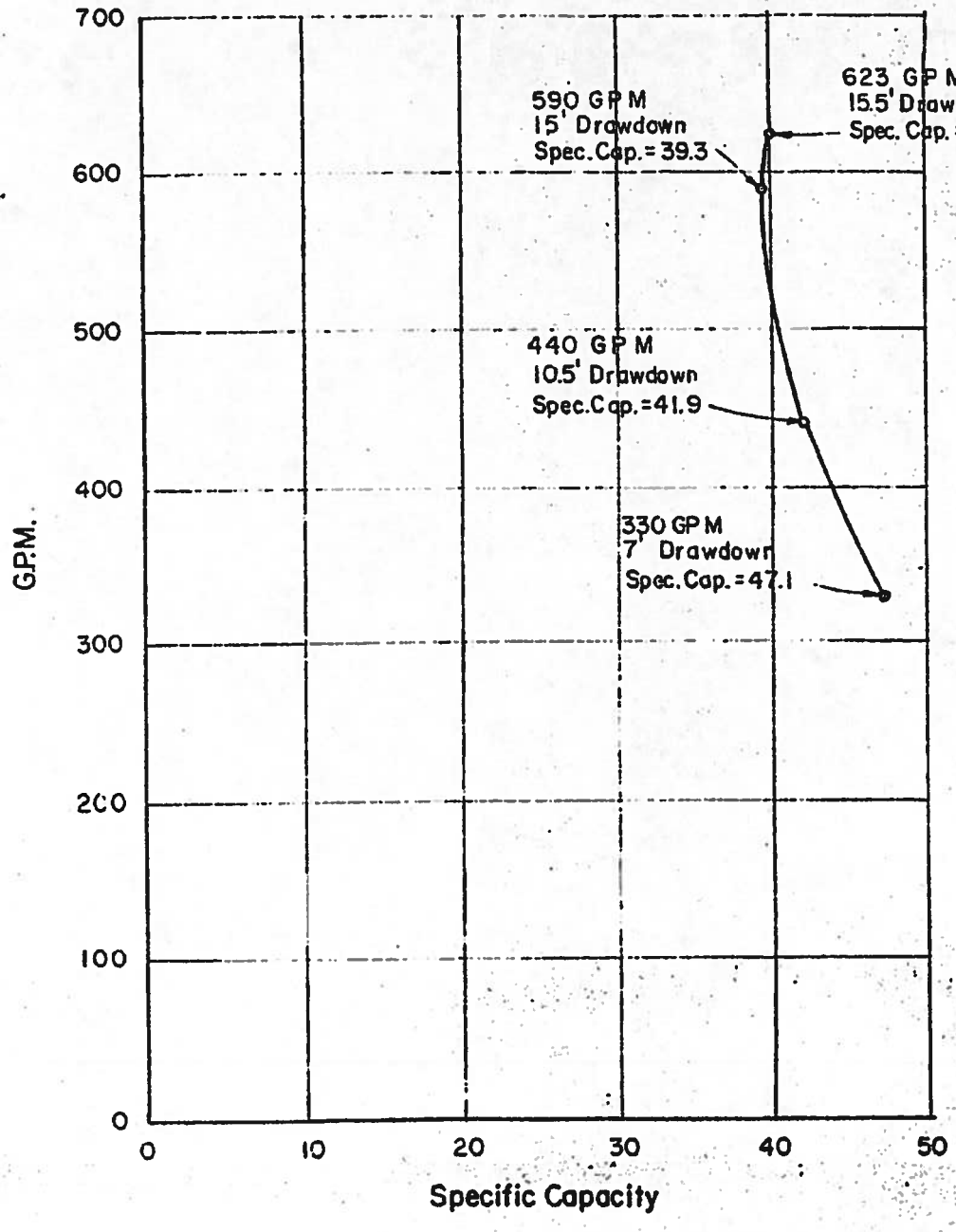
2800 2500 GPM 2800

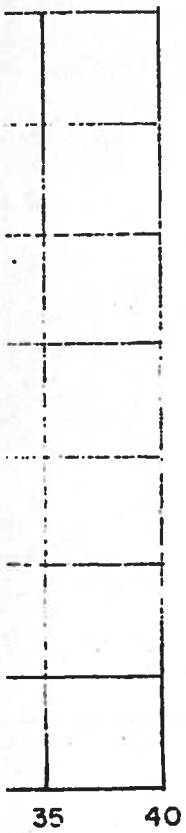


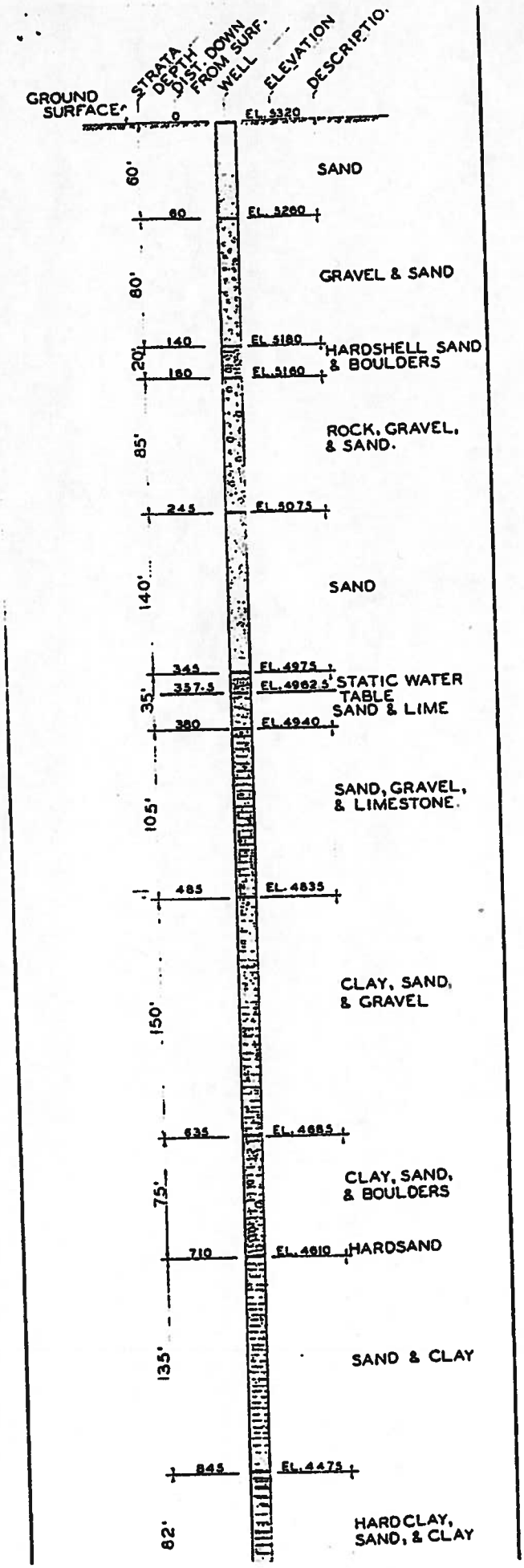
City of Albuquerque

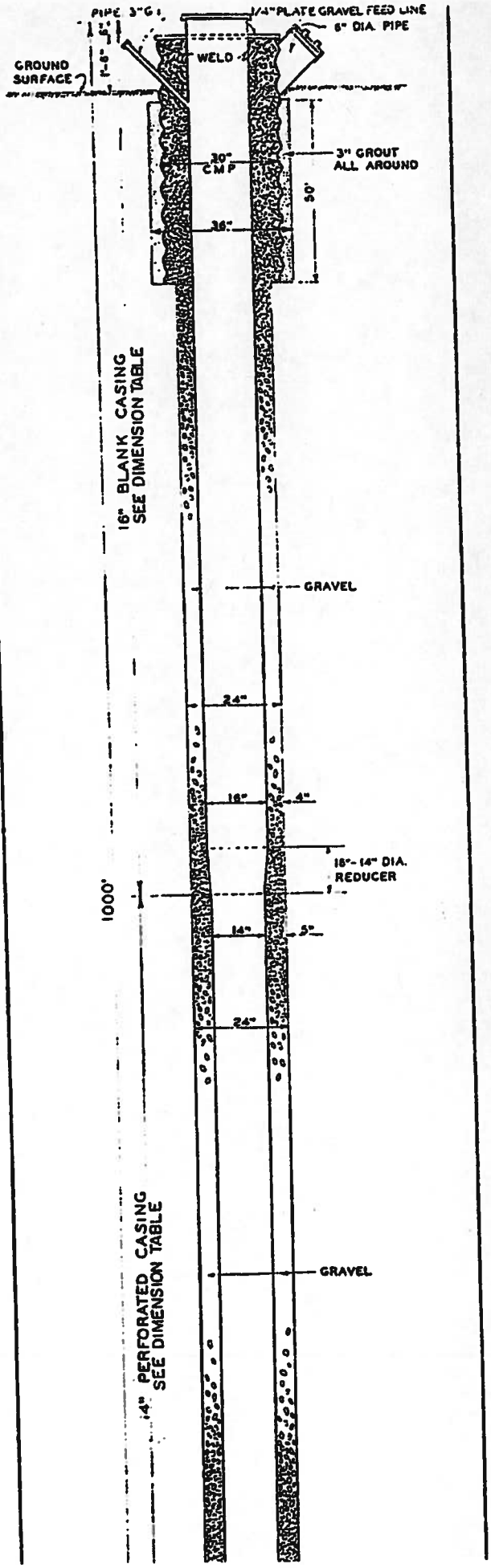
Burton Well No. I Redevelopment

Curve based on Static Water Level of 389'
Test made June 24–29, 1964





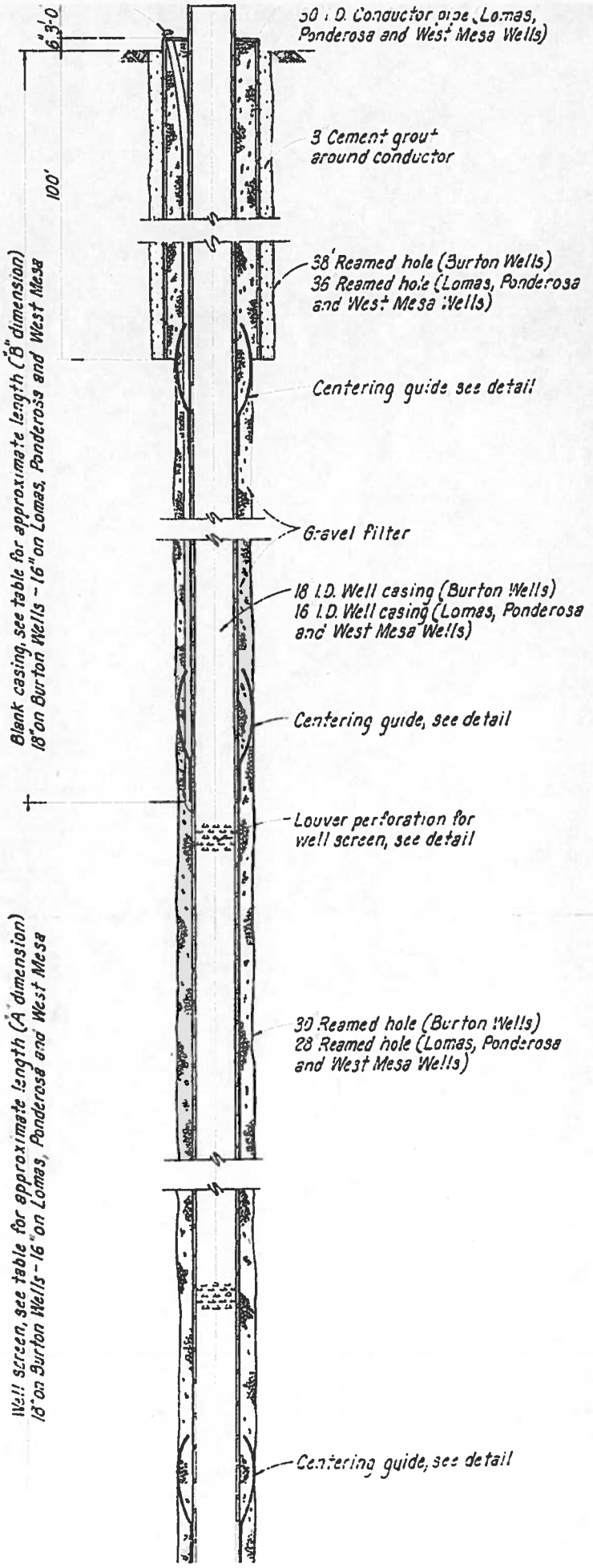

STRATA
DEPTH DIST. DOWN FROM SURF. WELL
ELEVATION
DESCRIPTION
GROUND SURFACE
0
EL. 5320
60'
SAND
60
EL. 5260
80'
GRAVEL & SAND
140
EL. 5180
20'
HARDSHELL SAND & BOULDERS
160
EL. 5160
85'
ROCK, GRAVEL, & SAND.
245
EL. 5075
140'
SAND
345
EL. 4975
357.5
EL. 4962.5'
STATIC WATER TABLE
35'
SAND & LIME
380
EL. 4940
105'
SAND, GRAVEL, & LIMESTONE.
485
EL. 4835
150'
CLAY, SAND, & GRAVEL
635
EL. 4685
75'
CLAY, SAND, & BOULDERS
710
EL. 4610
HARDSAND
135'
SAND & CLAY
845
EL. 4475
82'
HARD CLAY, SAND, & CLAY


PIPE 3"Ø
1/4" PLATE GRAVEL FEED LINE
6" DIA. PIPE
GROUND SURFACE
WELD
30" CMP
3" GROUT ALL AROUND
36"
50'
16" BLANK CASING SEE DIMENSION TABLE
GRAVEL
24"
16"
4"
18"-14" DIA. REDUCER
1000'
14"
5"
24"
GRAVEL
14" PERFORATED CASING SEE DIMENSION TABLE

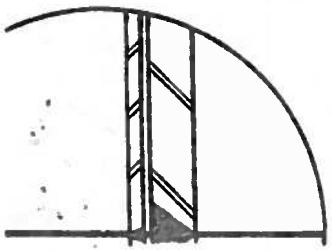
WELL NAME: [illegible] - [illegible] NO. 2
LOCATION: NE¼ NE¼ NE¼ Sec 24 T10N R3E

0 - 5	Clay
5 - 30	Sand
30 - 45	Clay
45 - 54	Sand and gravel
54 - 59	Clay
59 - 130	Sand and gravel
130 - 170	Clay and gravel streaks
170 - 188	Clay streaks and boulders
188 - 206	Clay streaks and large gravel
206 - 240	Sand and gravel
240 - 270	Clay and boulders
270 - 290	Sand and gravel
290 - 350	Sand and clay streaks
350 - 355	Clay
355 - 375	Gravel
375 - 395	Clay
395 - 400	Gravel
400 - 410	Sand and gravel
410 - 411	Clay streak and sand
411 - 450	Sand and gravel
450 - 455	Clay
455 - 471	Hard sand and gravel
471 - 501	Clay and hard sand streaks
501 - 560	Sand and gravel
560 - 575	Clay
575 - 600	Sand and gravel
600 - 695	Sand and clay streaks
695 - 720	Sand and gravel with clay streaks
720 - 725	Clay
725 - 750	Sand and clay
750 - 755	Sand
755 - 780	Sand and clay
780 - 788	Clay
788 - 800	Sand and gravel
800 - 801	Hard streak sand
801 - 818	Clay and sand streaks
818 - 820	Hard streaks and cemented sand
820 - 870	Sand and clay streaks
870 - 915	Hard streaks cemented sand
915 - 930	Hard streak, sand, gravel boulders
930 - 940	Sand and clay streaks
940 - 965	Sand and gravel streaks
965 - 970	Gravel & clay
970 - 973	Sand
973 - 978	Gravel and clay
978 - 985	Sand, gravel and clay streaks
985 - 987	Clay and gravel
987 - 992	Gravel
992 - 998	Sand
998 - 1030	Sand and clay streaks
1030 - 1033	Sand and gravel
1033 - 1038	Clay
1038 - 1050	Sand and gravel

Well Log. 3

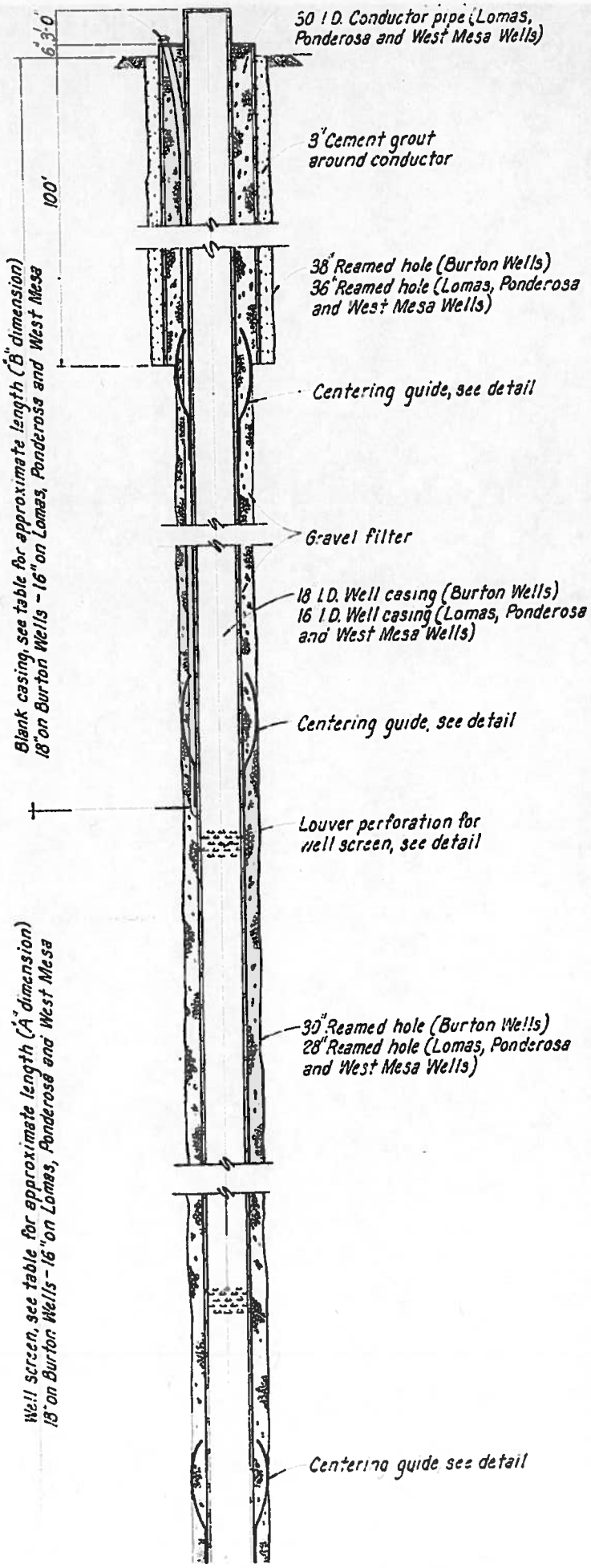

6'-3"
100'
30" I.D. Conductor pipe (Lomas, Ponderosa and West Mesa Wells)
3" Cement grout around conductor
38" Reamed hole (Burton Wells)
36" Reamed hole (Lomas, Ponderosa and West Mesa Wells)
Centering guide see detail
Gravel filter
18" I.D. Well casing (Burton Wells)
16" I.D. Well casing (Lomas, Ponderosa and West Mesa Wells)
Centering guide, see detail
Louver perforation for well screen, see detail
30" Reamed hole (Burton Wells)
28" Reamed hole (Lomas, Ponderosa and West Mesa Wells)
Centering guide, see detail
Blank casing, see table for approximate length ("B" dimension) 18" on Burton Wells - 16" on Lomas, Ponderosa and West Mesa
Well screen, see table for approximate length ("A" dimension) 18" on Burton Wells - 16" on Lomas, Ponderosa and West Mesa

DIMENSION TABLE			
WELL	Approx. Dimension "A"	Approx. Dimension "B"	Approx. Dimension "X"
Burton No. 2	~~635'~~ 425+12 Bottom	~~365'~~ 420	365'
Burton No. 3	568'	432'	432'
West Mesa No. 2	1060'	340'	340'
Lomas No. 1	577'	723'	723'
Ponderosa No. 1	556'	769'	769'



DRILLERS LOG - BURTON NO. 3

0 - 5	Top Soil
5 - 49	Gravel
49 - 77	Fine Sand
77 - 195	Sand and gravel
195 - 220	Soft yellow clay
220 - 390	Sand, gravel and clay streaks
390 - 411	Clay
411 - 430	Gravel and boulders
430 - 462	Sand, gravel and clay streaks
462 - 463	Rock
463 - 468	Sand and gravel
468 - 472	Clay
472 - 475	Sand, gravel and boulders
475 - 498	Tough clay
498 - 518	Gravel and hard sand
518 - 523	Sand
523 - 530	Sand and boulders
530 - 592	Sand, good drilling
592 - 614	Hard gravel and clay
614 - 651	Sand, good drilling
651 - 673	Clay
673 - 693	Large gravel
693 - 765	Sand, clay streaks
765 - 766	Hard clay
766 - 800	Hard sand
800 - 864	Clay and gravel
864 - 887	Clay and boulders
887 - 900	Sand and boulders
900 - 918	Clay
918 - 960	Sand and gravel
960 - 965	Sand and clay streaks
965 - 1000	Gravel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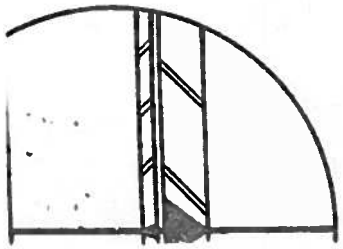


ROSCOE MOSS COMPANY

4360 WORTH STREET
LOS ANGELES, CAL.

Ridgecrest #1

WELL CONTRACTORS — RENTAL TOOLS

Log of Well No. _____ Drilled for City of Albuquerque (Water Dept

Of Albuquerque, New Mexico.

Exact Location NW-1/4, SW-1/4, NE-1/4, Sec 29, Twp 10-N

Started Work December 17, 1963 R-4-E, McKinley, County.

Completed Work January 13, 1964

Total depth 1260 Size of shoe _____

60	ft. of	30	inch	1/4	Conductor	and left in Well
636	" "	16	"	5/16	Blank	and " " "
624	" "	16	"	5/16	Perforated	and " " "

Type of Perforator used Louver

Perforated 636 ft. to 1260 ft. 10 Holes per 2-2/3 inches

Make diagram of perforation in square, showing dimensions.

Diameter of Perforations 3/32 inches

Length of Perforations 2-1/2 "

Depth at which water was first found _____ ft.

Standing level before perforating _____ "

Standing level after perforating _____ "

Note below your observation of any change in water level while drilling _____

Water level when first started Test 511 ft.

Draw down from standing level 41 "

No. of gallons per minute pumped when Test first started 885

No. of gallons per minute pumped when Test completed 1700

Draw down at completion of Test 70 ft.

Hours Testing Well 63

Formation: Mention size of water gravel—

0	ft. to	10	ft. Hard clay
10	" "	55	" Coarse sand, gravel and rocks
55	" "	68	" Coarse and red clay
68	" "	110	" Coarse sand, gravel and rocks
110	" "	115	" Clay, gravel and rocks
115	" "	170	" Sand, gravel and rocks
170	" "	323	" Sand, gravel, rocks and clay
323	" "	407	" Clay and coarse sand
407	" "	420	" Clay, gravel and rocks
420	" "	620	" Hard coarse sand
620	" "	730	" Hard coarse sand and clay
730	" "	810	" Sandy clay with sand streaks
810	" "	876	" Sandy clay with streaks of rocks
876	" "	1075	" Clay with stks of cemented sand and gravel
1075	" "	1107	" Hard coarse sand with some rocks
1107	" "	1260	" Clay with streaks of hard sand

110	115	Clay, gravel and rocks
115	170	Sand, gravel and rocks
170	323	Sand, gravel, rocks and clay
323	407	Clay and coarse sand
407	420	Clay, gravel and rocks
420	620	Hard coarse sand
620	730	Hard coarse sand and clay
730	810	Sandy clay with sand streaks
810	876	Sandy clay with streaks of rocks
876	1075	Clay with stks of cemented sand and gravel
1075	1107	Hard coarse sand with some rocks
1107	1260	Clay with streaks of hard sand

If reducing strings of casing were cut off, state how cut

Depth from surface cut _____ ft.

Size of casing cut _____ in.

Lap in larger casing _____ ft.

Was adapter or cement used? _____

If casing was swedged or repaired, state depth, describe repairs and condition in which casing was left and probable future effect:

Make drawing of adapter in square, showing dimensions.

Is well straight, top to bottom? Practically

If not, what is the variation? _____

Will there be any detrimental effect on pump? No.

If so, what effect? _____

No. of tons of gravel installed in well 166 yards

Give any additional data which may be of future value 636' 1-1/2" gage line installed in well. Top of conductor casing left 6 inches above ground level. Top of inner casing left four feet above ground level.

Driller must fill in report as work progresses and report must be complete for his successor.

Date of report January 20, 1964

John Norris, S. I.Bechtol, Wayne Willingham

Type and Rig No. used Rotary #8 L.D.Kirkland-D.A.Jones.

Driller

Superintendents

RM-11

4360 Worth St., Los Angele 3, Calif.

WELL TEST REPORT

Customer City of Albuquerque Date 8-17-64

Address City Hall, Albuquerque, New Mexico.

Well No. or Name Ridgecrest #1,

Location NW-1/4, SW-1/4, NE-1/4, Sec 29, Twp 10-N, Range 4-East

TEST RESULTS.

Note: Pump at least one hour or until well has stabilized for each flow.

	Beginning of Development	FINAL TEST				
		High	Second	Third	Fourth	Low
GPM	885	1700	1475	1210	910	720
Pumping level	552'	584'	565'	560'	549'	540'
Static level	511'	514'	514'	514'	514'	514'
Draw-down	41'	70'	51'	46'	35'	26'
Specific yield	21.5	24.2	28.9	26.3	26.0	27.6
Pump RPM		1650	1575	1525	1475	1400

Static Level after completion of test (5 minute recovery) 517 feet.

Total pumping time 63 hours.

Pumping Equipment used:

Pump Bowls: Nominal Diam 16 inches. R. M. Co. serial no _____

Column diam 10 in. Shaft diam. 2-3/16 in. Tubing diam. 3-1/2 in.

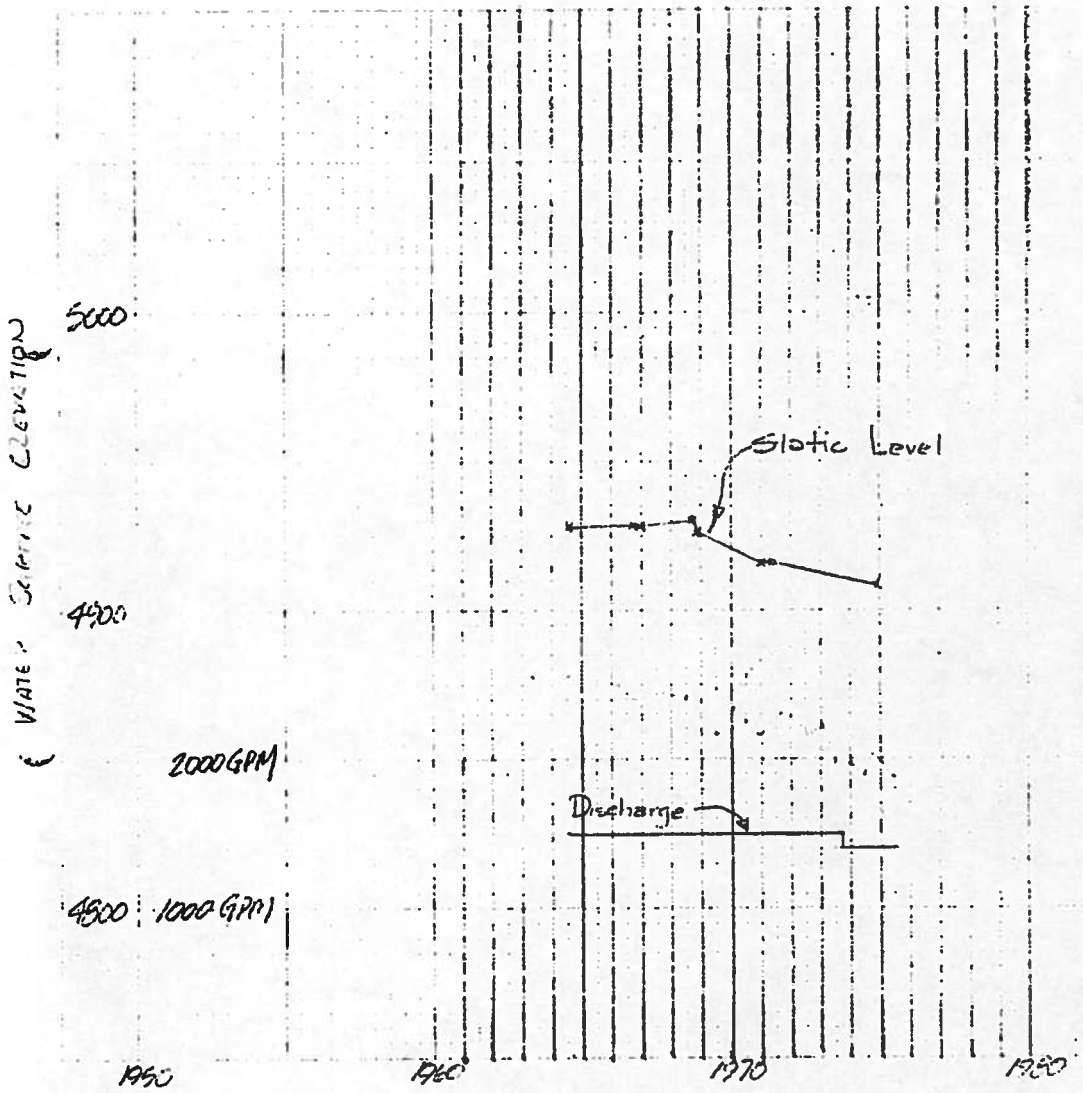
Depth of setting to top of bowls 600 feet. Pump pulley diam. 16 in.

Engine: Manufacturer Quad Model no. _____ R. M. Co. Serial no. __

Total fuel consumed 1800 gallons. Total oil consumed 16 gallons.

REMARKS 15 minute water recovery after pumping static 514 feet.

W. R. McM-ahon.
OPERATOR.



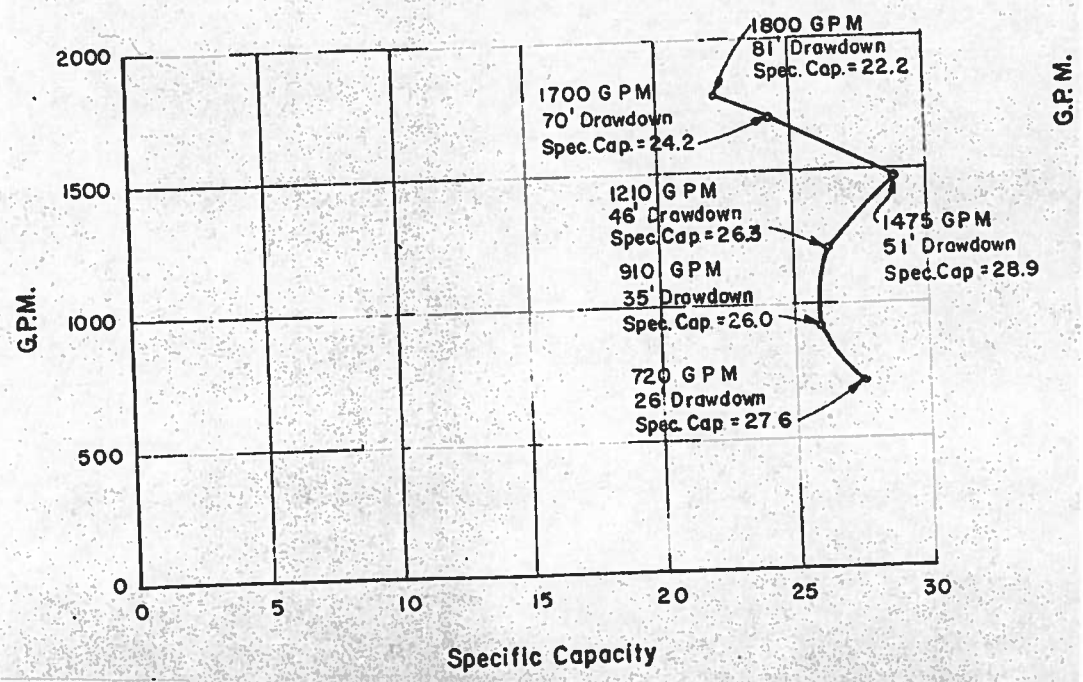
Ridgecrest Well #1
surface elev: 5442
Drilled 1964
total depth 1255
- 4187
top of Bowls - 611
- 4831

9/9/76
KPM

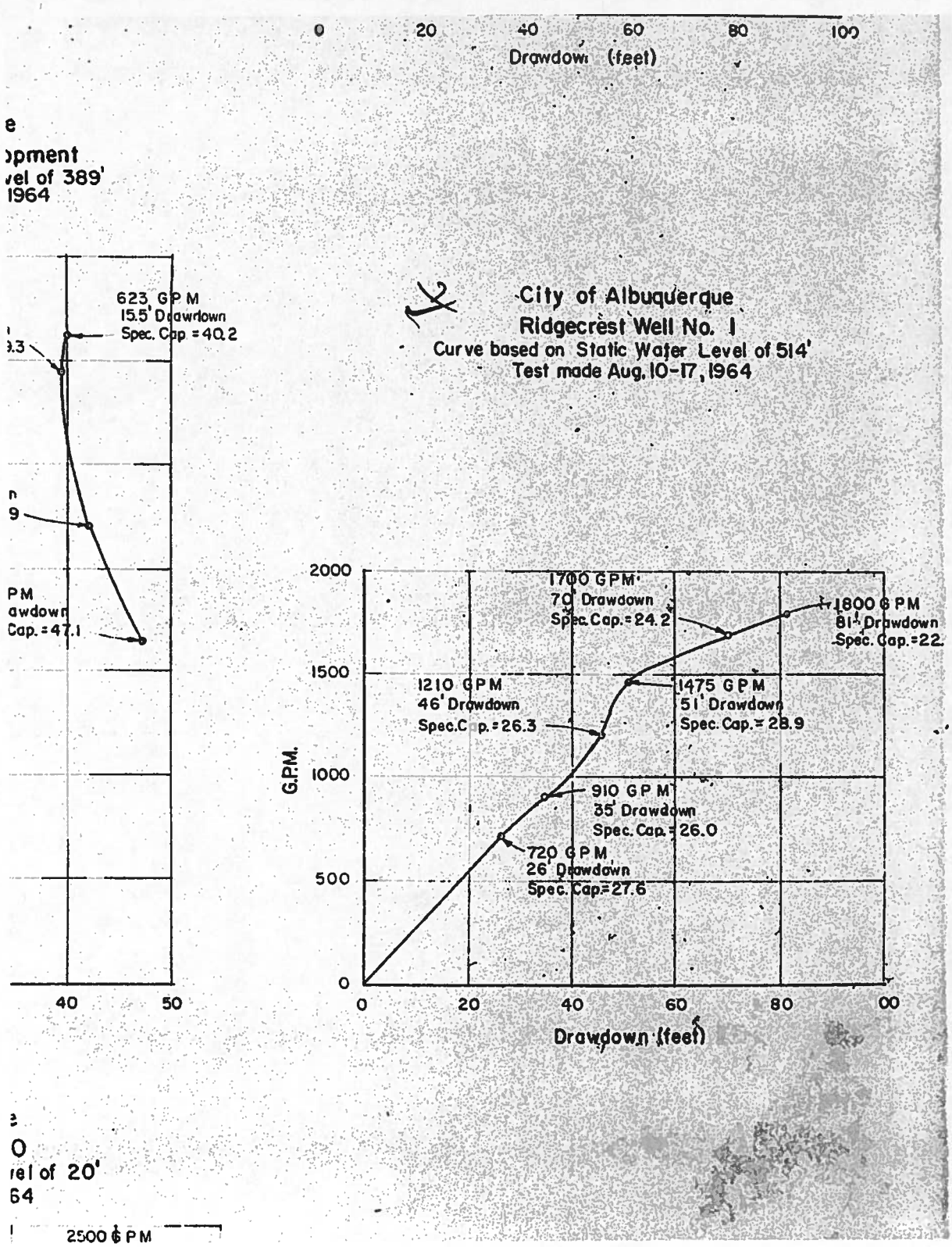
PROJECT NAME
PROJECT NO.
SHEET ___ OF ___
DATE ___

Specific Capacity

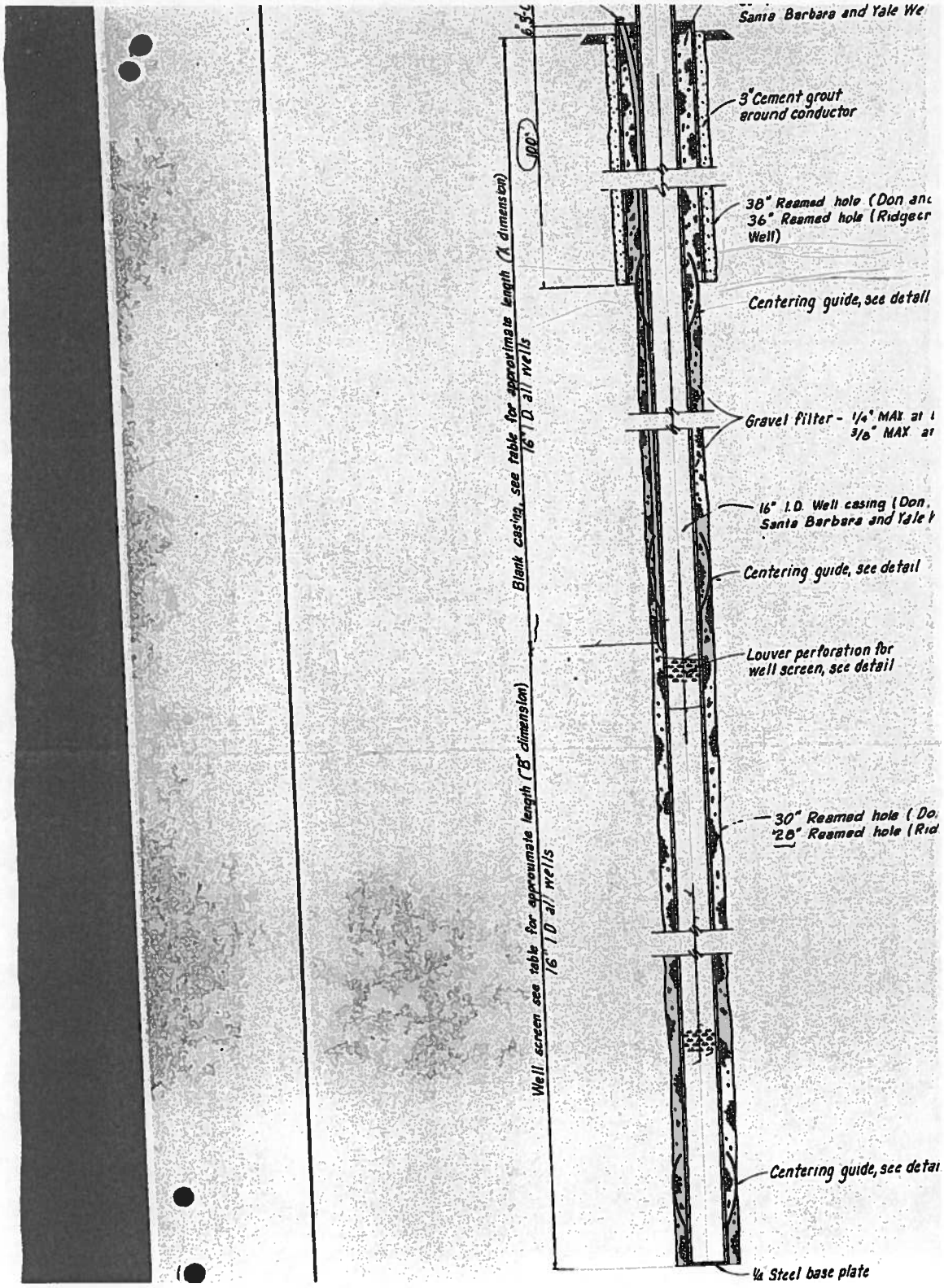
City of Albuquerque
Ridgecrest Well No. 1
Curve based on Static Water Level of 514'
Test made Aug. 10-17, 1964



N-11-07



0
20
40
60
80
100
Drawdown (feet)
e
opment
vel of 389'
1964
623 GPM
15.5' Drawdown
Spec. Cap = 40.2
.3
n
9
PM
awdown
Cap. = 47.1
40
50
City of Albuquerque
Ridgecrest Well No. 1
Curve based on Static Water Level of 514'
Test made Aug. 10-17, 1964
2000
1500
1000
500
0
G.P.M.
1700 GPM
70' Drawdown
Spec. Cap. = 24.2
1800 GPM
81' Drawdown
Spec. Cap. = 22.
1210 GPM
46' Drawdown
Spec. Cap. = 26.3
1475 GPM
51' Drawdown
Spec. Cap. = 28.9
910 GPM
35' Drawdown
Spec. Cap. = 26.0
720 GPM
26' Drawdown
Spec. Cap. = 27.6
0
20
40
60
80
00
Drawdown (feet)
e
0
vel of 20'
64
2500 GPM


Santa Barbara and Yale We
3" Cement grout around conductor
38" Reamed hole (Don an
36" Reamed hole (Ridgecr
Well)
Centering guide, see detail
Gravel filter - 1/4" MAX at
3/8" MAX a
16" I.D. Well casing (Don.
Santa Barbara and Yale
Centering guide, see detail
Louver perforation for well screen, see detail
30" Reamed hole (Do
28" Reamed hole (Rid
Centering guide, see deta
1/4 Steel base plate
Blank casing see table for approximate length ("A" dimension)
16" I.D. all wells
Well screen see table for approximate length ("B" dimension)
16" I.D. all wells
100'

CITY OF ALBUQUERQUE

RIDGECREST WELL NO. 1

Depth	Length	Size, Kind of Material
+3'-6"		16" O.D. Blank casing extends +3'-6" above surface
+0'-6"		30" O.D. Surface casing extends +0'-6" above surface
59'-6"	60'	30" O.D. Surface casing
632'-6"	636'	16" O.D. Blank casing
632'-6" to 1256'-6"	624'	16" O.D. Moss black welded shutter screen
633'	636'	1½" Gage line

DRILLER'S LOG

10-55	Coarse sand and gravel with rock
58-68	Coarse sand and red clay
68-110	Coarse sand and gravel with rock
110-115	Clay, gravel and rock
115-170	Sand, gravel and rock
170-323	Sand, gravel and rock with clay
323-407	Clay and coarse sand
407-420	Clay, gravel and rock
420-620	Hard coarse sand
620-730	Hard coarse sand with clay
730-810	Sandy clay with streaks of sand
810-876	Sandy clay with streaks of rock
876-1075	Clay with cemented streaks of sand and gravel
1075-1107	Hard coarse sand with some rock
1107-1255	Coarse sand with clay streaks

Ridgecrest #2 — 2

1.

ROSCOE MOSS COMPANY

4360 WORTH STREET
LOS ANGELES, CAL.

Form 8m116

Well No. Ridgecrest #2 Drilled for City of Albuquerque

Name City Of Albuquerque

Address P.O. Box 1293
Albuquerque, New Mexico 87103

Location Ridgecrest - Central & Gen. Chenault

Started Work 10-20-77

Completed Work 11-18-77

Total Depth Drilled 1543

Total Depth Completed

Drilled By Hydraulic, Reverse Rotary

	DIAMETER	FROM	TO
PILOT BORE	15 in.	105 ft.	1543 ft.
	in.	ft.	ft.
CONDUCTOR BORE	38 in.	0 ft.	105 ft.
	in.	ft.	ft.
COMPLETED WELL BORE	30 in.	105 ft.	1512 ft.
	in.	ft.	ft.
	in.	ft.	ft.

CASING AND SCREEN SCHEDULE

Conductor Casing

Material Copper Bearing

Diameter (OD) (ID) 32 in. Wall Thickness 5/16 in.

Installed From 0 ft. To 90 ft.

Cemented From 6 ft. To 90 ft.

Well Casing

DIAMETER (ID)	WALL	MATERIAL	FROM	TO
18	5/16	Copper Bearing	0	730
18	5/16	" "	1500	1512

Screen

Type Shutter Screen

Material Copper Bearing Spiral

DIAM. (ID)	WALL	NO. PERF. PER ROW	ROWS PER FOOT	SIZE	FROM	TO
18	5/16	10	4.5	5/32	730	1500

Water level when first started Test 505 ft.

Drawdown from standing level 92 ft.

No. of gallons per minute pumped when Test first started 400

No. of gallons per minute pumped when Test completed 3740

Drawdown at completion of Test 92 ft.

Hours Testing Well 64:30

No. of tons gravel installed 200

Gravel size: From # To #12 (Screen Size)

Formation: Mention size of water gravel —

0 ft.	to 105 ft.	Surface gravel and sand
105	220	Sand and gravel
220	230	Sand and gravel w/clay
230	240	Coarse gravel
240	445	Sand and gravel w/clay
445	470	Gravel
470	485	Sandy clay
485	530	Sand and gravel
530	742	Sandy clay and gravel
742	760	Clay
760	863	Sandy clay
863	922	Sand and gravel
922	1130	Sand and gravel w/clay
1130	1265	Sand and gravel
1265	1357	Sand and gravel w/clay
1357	1420	Sand and gravel
1420	1543	Sand and gravel w/clay

Development Record

Was Well Swabbed? Yes

Method Cable tool

No. of Hours 72

Total Material Removed

Gravel Added

Rig No. 49 Developer A. Wilson

Give any additional data which may be of future value

Date of report

Driller

Type and Rig No. used Rig 10 Larry Cauble

Ridgecrest #2

1.

ROSCOE MOSS COMPANY

Form 6a116

4360 WORTH STREET
LOS ANGELES, CAL.

Well No. Ridgecrest #2 Drilled for City of Albuquerque

Name City Of Albuquerque

Address P.O. Box 1293
Albuquerque New Mexico 87103

Location Ridgecrest - Central & Gen. Chenault

Started Work 10-20-77

Completed Work 11-18-77

Total Depth Drilled 1543

Total Depth Completed

Drilled By Hydraulic, Reverse Rotary

	DIAMETER	FROM	TO
PILOT BORE	15 in.	105 ft.	1543 ft.
	in.	ft.	ft.
CONDUCTOR BORE	38 in.	0 ft.	105 ft.
	in.	ft.	ft.
COMPLETED WELL BORE	30 in.	105 ft.	1512 ft.
	in.	ft.	ft.
	in.	ft.	ft.

CASING AND SCREEN SCHEDULE

Conductor Casing

Material Copper Bearing

Diameter (OD) (ID) 32 in. Wall Thickness 5/16 in.

Installed From 0 ft. To 90 ft.

Cemented From 6 ft. To 90 ft.

Well Casing

DIAMETER (ID) (OD)	WALL	MATERIAL	FROM	TO
18	5/16	Copper Bearing	0	730
18	5/16	" "	1500	1512

Screen

Type Shutter Screen

Material Copper Bearing Spiral

DIAM. (ID) (OD)	WALL	NO. PERF. PER ROW	ROWS PER FOOT	SIZE	FROM	TO
18	5/16	10	4.5	5/32	730	1500

Water level when first started Test 505 ft.

Drawdown from standing level 92 ft.

No. of gallons per minute pumped when Test first started 400

No. of gallons per minute pumped when Test completed 3740

Draw down at completion of Test 92 ft.

Hours Testing Well 64:30

No. of tons gravel installed 200

Gravel size: From # ~~MIN~~ To #12 ~~MAX~~ (Screen Size)

Formation: Mention size of water gravel —

0 ft. to	105 ft.	Surface gravel and sand
105	220	Sand and gravel
220	230	Sand and gravel w/clay
230	240	Coarse gravel
240	445	Sand and gravel w/clay
445	470	Gravel
470	485	Sandy clay
485	530	Sand and gravel
530	742	Sandy clay and gravel
742	760	Clay
760	863	Sandy clay
863	922	Sand and gravel
922	1130	Sand and gravel w/clay
1130	1265	Sand and gravel
1265	1357	Sand and gravel w/clay
1357	1420	Sand and gravel
1420	1543	Sand and gravel w/clay

Development Record

Was Well Swabbed? Yes

Method Cable tool

No. of Hours 72

Total Material Removed

Gravel Added

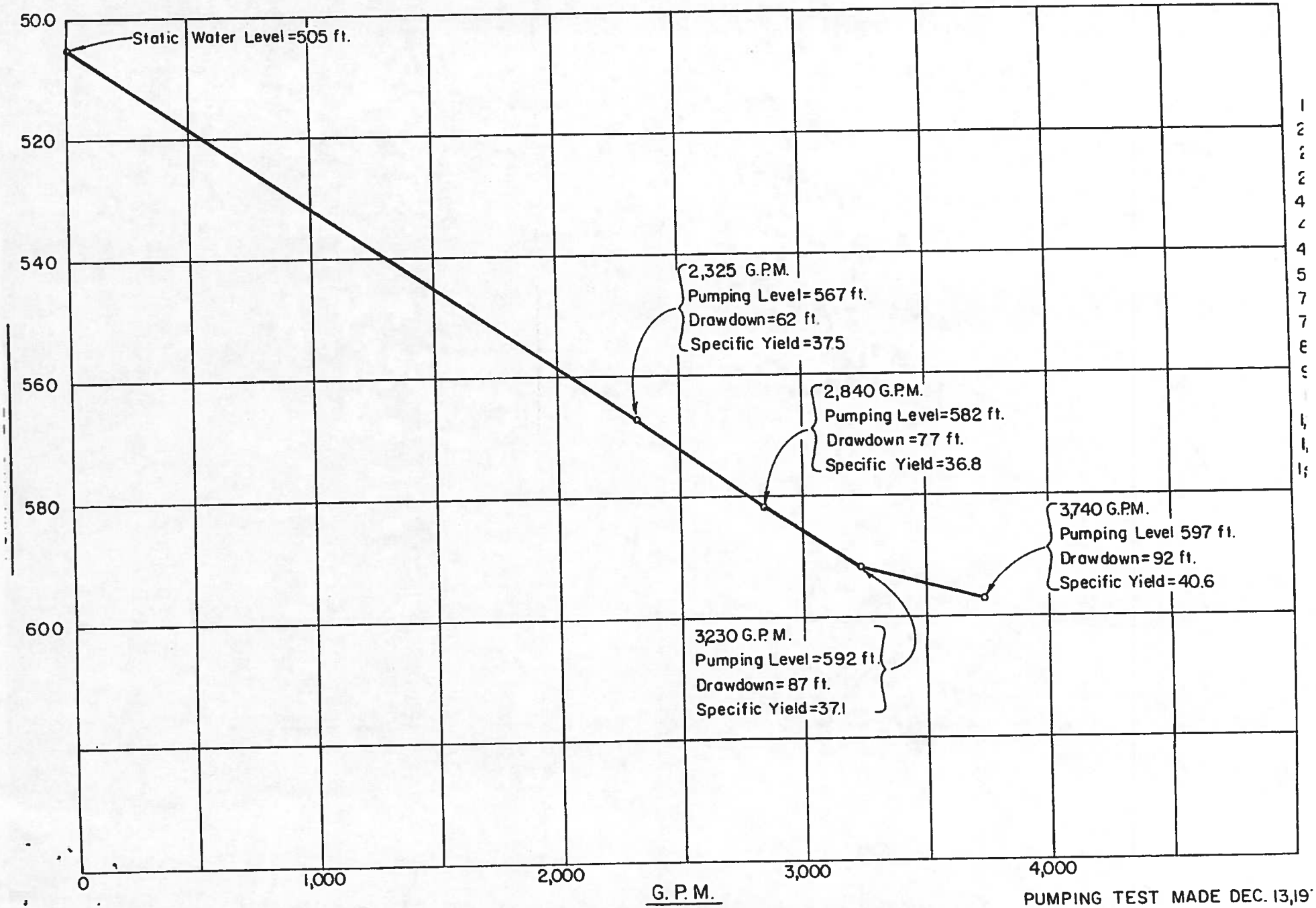
Rig No. 49 Developer A. Wilson

Give any additional data which may be of future value

Date of report

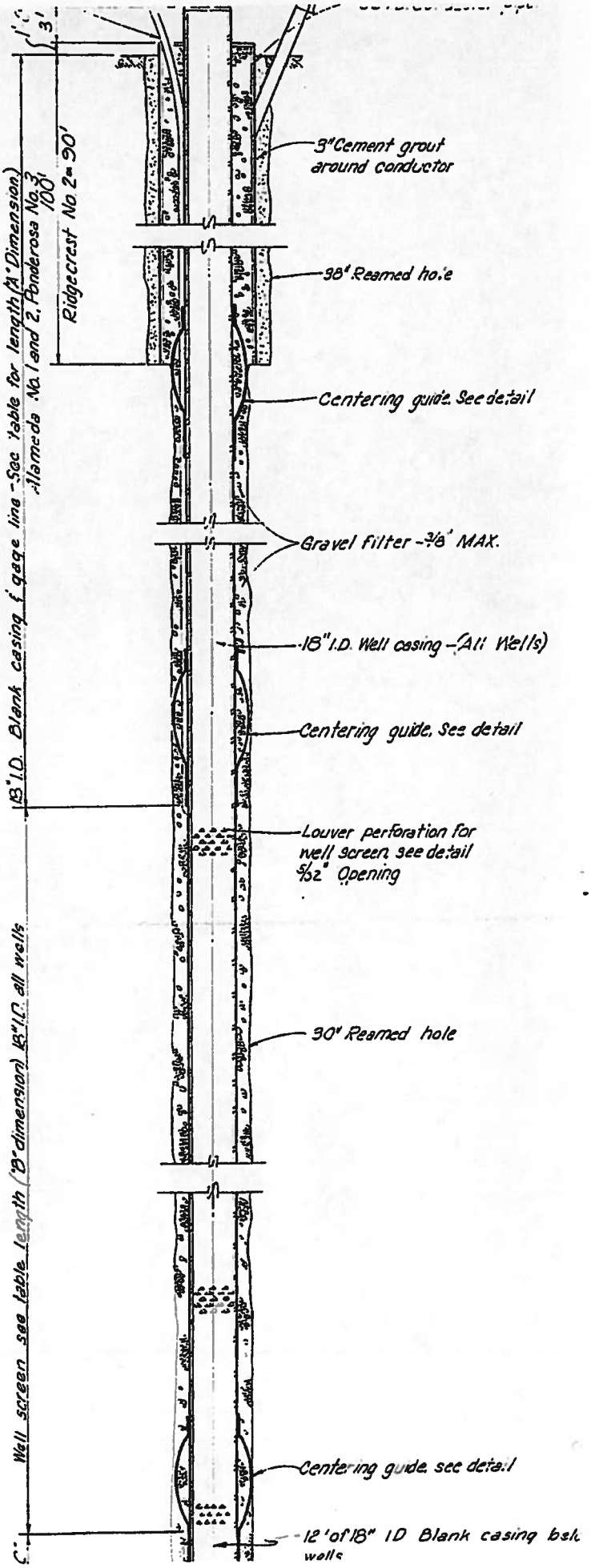
Driller

Type and Rig No. used Rig 10 Larry Cauble



PUMPING TEST MADE DEC. 13,19

RIDGECREST WELL NO. 2


3'
3" Cement grout around conductor
38" Reamed hole
Centering guide. See detail
Gravel filter - 3/8" MAX.
18" I.D. Well casing - (All Wells)
Centering guide. See detail
Louver perforation for well screen. see detail 5/32" Opening
30" Reamed hole
Centering guide. see detail
12' of 18" ID Blank casing
Ridgecrest No. 2 = 90'
Alameda No. 1 and 2, Ponderosa No. 3 100'
Well screen see table length ('B' dimension) 18" I.D. all wells
18" I.D. Blank casing length ('A' Dimension) see table for

DIMENSION TABLE

WELL	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"
Ridgecrest No. 2	734'	770'	12'
Ponderosa No. 3	874'	720'	12'
Alameda No. 1	624'	725'	12'
Alameda No. 2	612'	726'	12'

May 3, 1974

Water Industries, Inc.
6500 Montgomery NE
Albuquerque, New Mexico 87100

Re: Well Drilling 1973-Ridgecrest Well No. 3

Based on analyses of electric logs and drill cutting samples, you are hereby directed to ream pilot hole and install casing in subject wells according to the following schedule:

Ridgecrest Well No. 3

Description	Depth
30" x ¼" Conductor Pipe	+6" to 99'-6"
16" x 5/16" Blank Casing	+3'-6" - 620'-6"
16" x 5/16" Perforated Casing 3/32" opening	-620'-6" to 1436'-6"
16" x 5/16" Blank Casing with Plug	-1436'-6" to 1448'-6"

GLENN HAMMOCK
mbc

cc: William Otto
E. F. Hensch

COPY

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well City of Albuquerque, New Mexico Owner's Well No. Ridgecrest #3

Street or Post Office Address

City and State Albuquerque, New Mexico

Well was drilled under Permit No. and is located in the:

a. ____ ¼ ____ ¼ ____ ¼ ____ ¼ of Section ____ Township ____ Range ____ N.M.P.M.

b. Tract No. ____ of Map No. ____ of the ____

c. Lot No. ____ of Block No. ____ of the ____
Subdivision, recorded in ____ County.

d. X= ____ feet, Y= ____ feet, N.M. Coordinate System ____ Zone in the ____ Grant.

(B) Drilling Contractor Water Industries, Inc. License No. WD-349

Address P. O. Box 871, Hereford, Texas 79045

Drilling Began Apr. 24, 1974 Completed Nov. 15, 1974 Type tools Rotary Size of hole 28 in.

Elevation of land surface or ____ at well is 5375 ft. Total depth of well 1448.5 ft.

Completed well is [X] shallow [ ] artesian. Depth to water upon completion of well 472 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
519	863	344	Gravel, Sand, Some Clay	2500
1047	1109	62	Gravel and Sand	300
1195	1270	75	Sand and Gravel	750
1280	1376	96	Sand and Gravel	1000

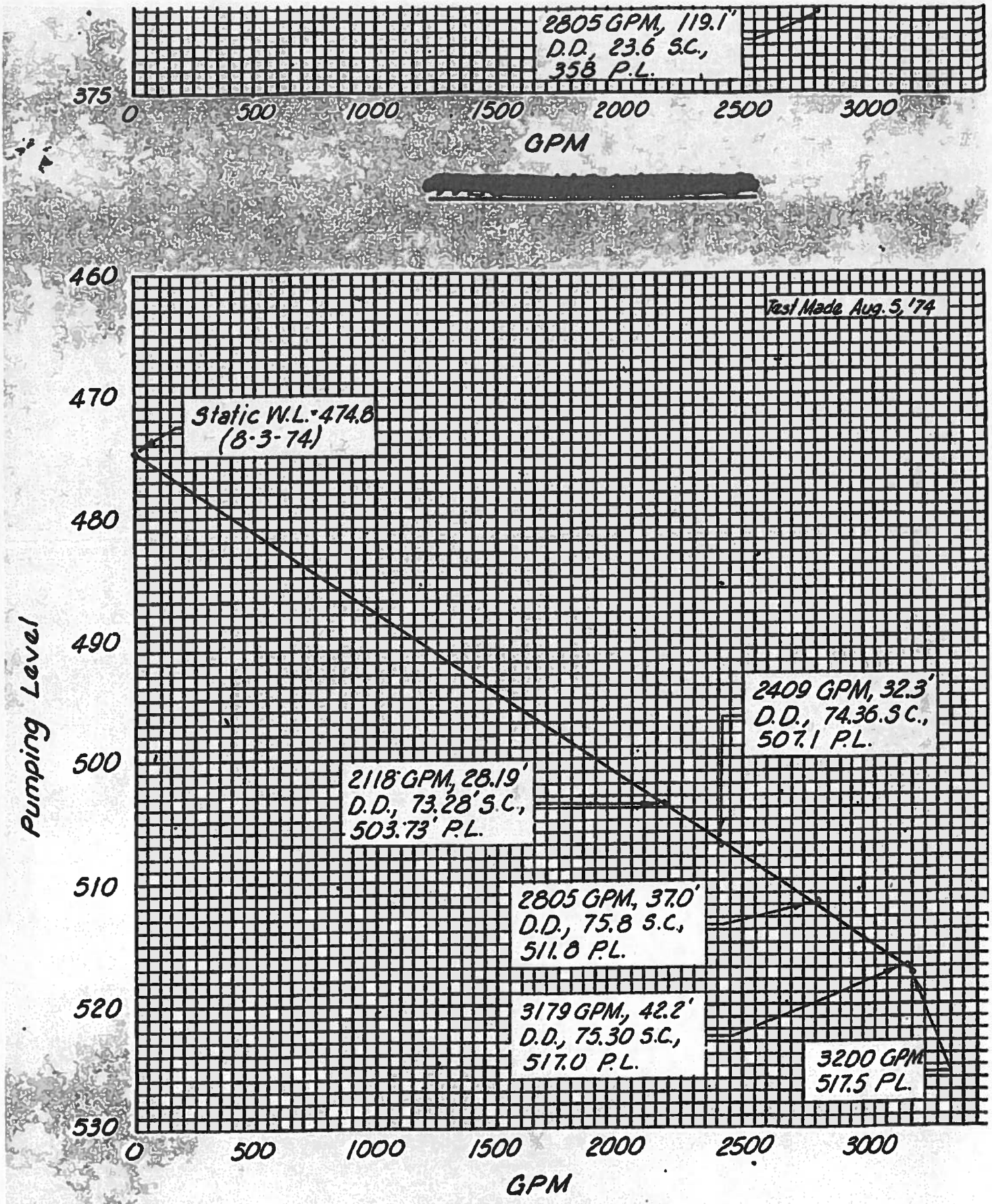
Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
30		P.E.	+ .6	- 99.5	100.0	None		
16		P.E.	+3.5	1446.5	1452	Ball Plug	620.5	1436.5

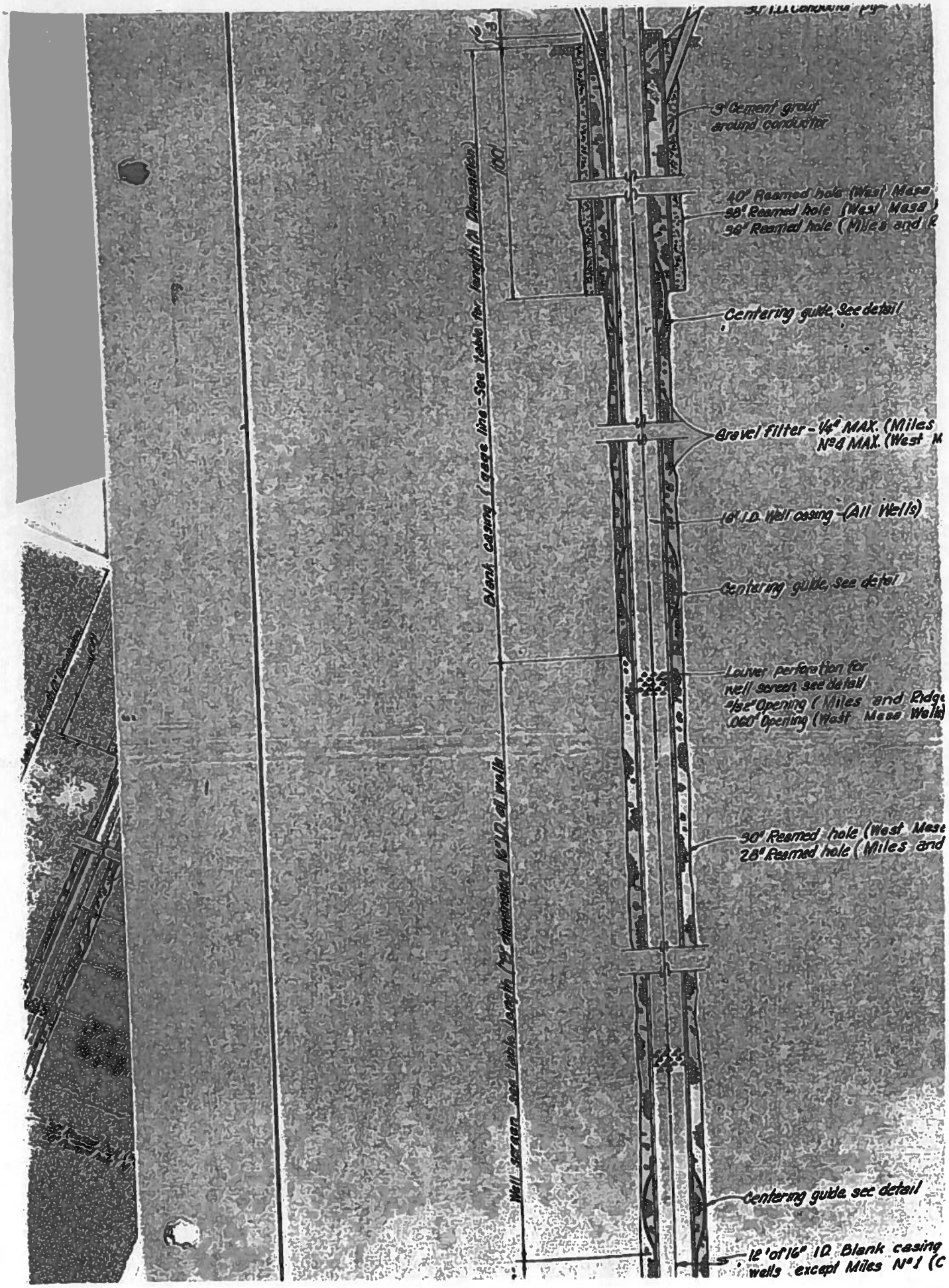
Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	99.5	36	--	324	Pumped and Circulated

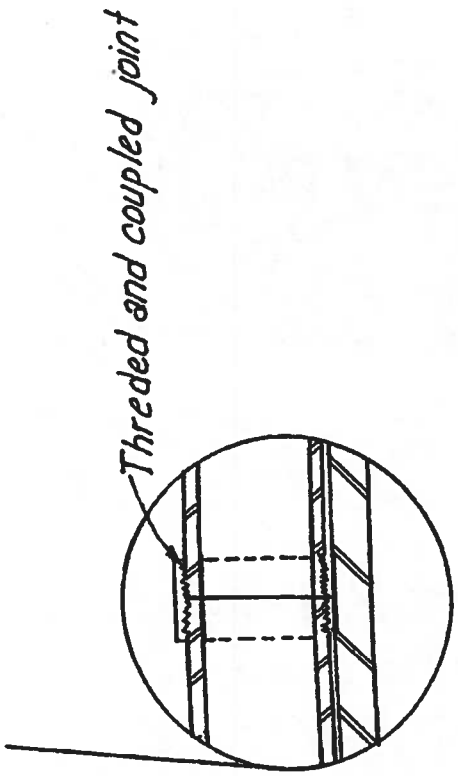
0 - 36	Top ~~Soil,~~ Gravel, Boulders
36 - 50	Red Clay and Coarse Gravel
50 - 100	Gravel (pea and coarse)
100 - 110	Gravel and Limestone
110 - 150	Pea Gravel
150 - 242	Brown Redish Clay
242 - 283	Pea Gravel and Clay
283 - 298	Gravel and Clay
298 - 308	Sand
308 - 317	Clay and Gravel
317 - 333	Sand
333 - 348	Clay and Gravel
348 - 398	Sand and Gravel
398 - 426	Gravel and Clay
426 - 458	Gravel, Sand and Clay
458 - 519	Gravel and Sand
519 - 674	Gravel, Sand and Clay
674 - 789	Gravel and Sand
789 - 863	Gravel, Sand and Clay
863 - 894	Clay, Sand, Some Gravel
894 - 1047	Sand and Clay
1047 - 1078	Clay, Sand, Some Gravel
1078 - 1109	Gravel and Sand
1109 - 1195	Clay and Sand
1195 - 1270	Sand and Gravel
1270 - 1280	Clay
1280 - 1376	Sand and Gravel
1376 - 1406	Sand and Clay
1406 - 1475	Blue Gray Clay and Gravel



RIDGECREST No. 3



3" Cement grout around conductor
40" Reamed hole (West Mesa
38" Reamed hole (West Mesa
36" Reamed hole (Miles and R
Centering guide, See detail
Gravel filter - 1/4" MAX. (Miles
No 4 MAX. (West M
16" I.D. Well casing - (All Wells)
Centering guide, see detail
Louver perforation for well screen see detail
3/32" Opening (Miles and Ridge
.060" Opening (West Mesa Wells)
30" Reamed hole (West Mesa
28" Reamed hole (Miles and
Centering guide see detail
12' of 16" I.D. Blank casing wells except Miles No 1 (C
Blank casing (gage line - See table for length & Dimension)
Well screen see table length (Dimension) 16" I.D. all wells
100'



DIMENSION TABLE

WELL	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"
Ridgecrest № 3	620'-6"	816	12'
Ridgecrest № 4	572'-6'	840	12'
West Mesa № 3	404'-6"	948	12'
West Mesa № 4	386'-6"	888	12'
Miles № 1	404'-6"	761	0

Revised June 1972

STATE ENGINEER OFFICE

WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well City of Albuquerque, New Mexico Owner's Well No. Ridgecrest #4

Street or Post Office Address

City and State Albuquerque, New Mexico

Well was drilled under Permit No. _____ and is located in the:

a. ____ ¼ ____ ¼ ____ ¼ ____ ¼ of Section ____ Township ____ Range ____ N.M.P.M.

b. Tract No. ____ of Map No. ____ of the ____

c. Lot No. ____ of Block No. ____ of the ____
Subdivision, recorded in ____ County.

d. X= ____ feet, Y= ____ feet, N.M. Coordinate System ____ Zone in the ____ Grant.

(B) Drilling Contractor Water Industries, Inc. License No. WD-349

Address P. O. Box 871, Hereford, Texas 79045

Drilling Began Jan. 27, 1974 Completed Dec. 11, 1974 Type tools Rotary Size of hole 28 in.

Elevation of land surface or ____ at well is 5343 ft. Total depth of well 1424.5 ft.

Completed well is [X] shallow [ ] artesian. Depth to water upon completion of well 431 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
450	692	242	Sand, Small and Medium Gravel	1250
815	888	73	Foa Gravel, Sand	750
894	1125	131	Clay, Gravel, Sand	650
1215	1420	205	Sand, Gravel, Some Clay	800

Section 3. RECORD OF CASING

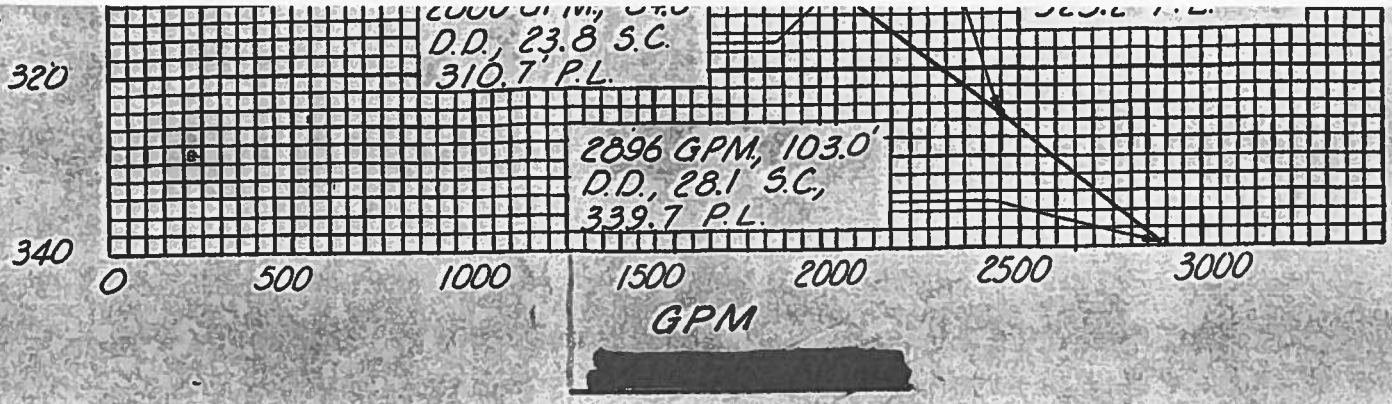
Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
30		P.E.	+ .5	-99.5	100	None		
16		P.E.	+3.5	-1424.5	1428	Bull Plug	572.5	1412.5

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
0	99.5	36"	---	324	Pumped and Circulated

RIDGECREST # 4

0 - 10	Top Soil
10 - 30	Sand, Small Gravel
30 - 60	Sand, Clay, Medium Gravel
60 - 120	Gravel, Clay
120 - 147	Large Gravel, Clay
147 - 183	Clay and Gravel
183 - 229	Clay and Sand
229 - 245	Clay and Gravel
245 - 274	Clay, Gravel and Sand
274 - 365	Sand and Small Gravel
365 - 394	Sand
394 - 422	More Sand
422 - 485	Sand, Small Gravel
485 - 692	Sand, Medium Gravel
692 - 815	Sand, Small Gravel
815 - 842	Pea Gravel
842 - 877	Pea Gravel, Sand
877 - 888	Small Gravel and Sand
888 - 894	Clay, Gravel and Granite
894 - 1090	Clay, Gravel
1090 - 1123	Sand
1123 - 1215	Sand and Clay
1215 - 1338	Sand, Gravel and Clay
1338 - 1363	Sand
1363 - 1450	Sand and Clay



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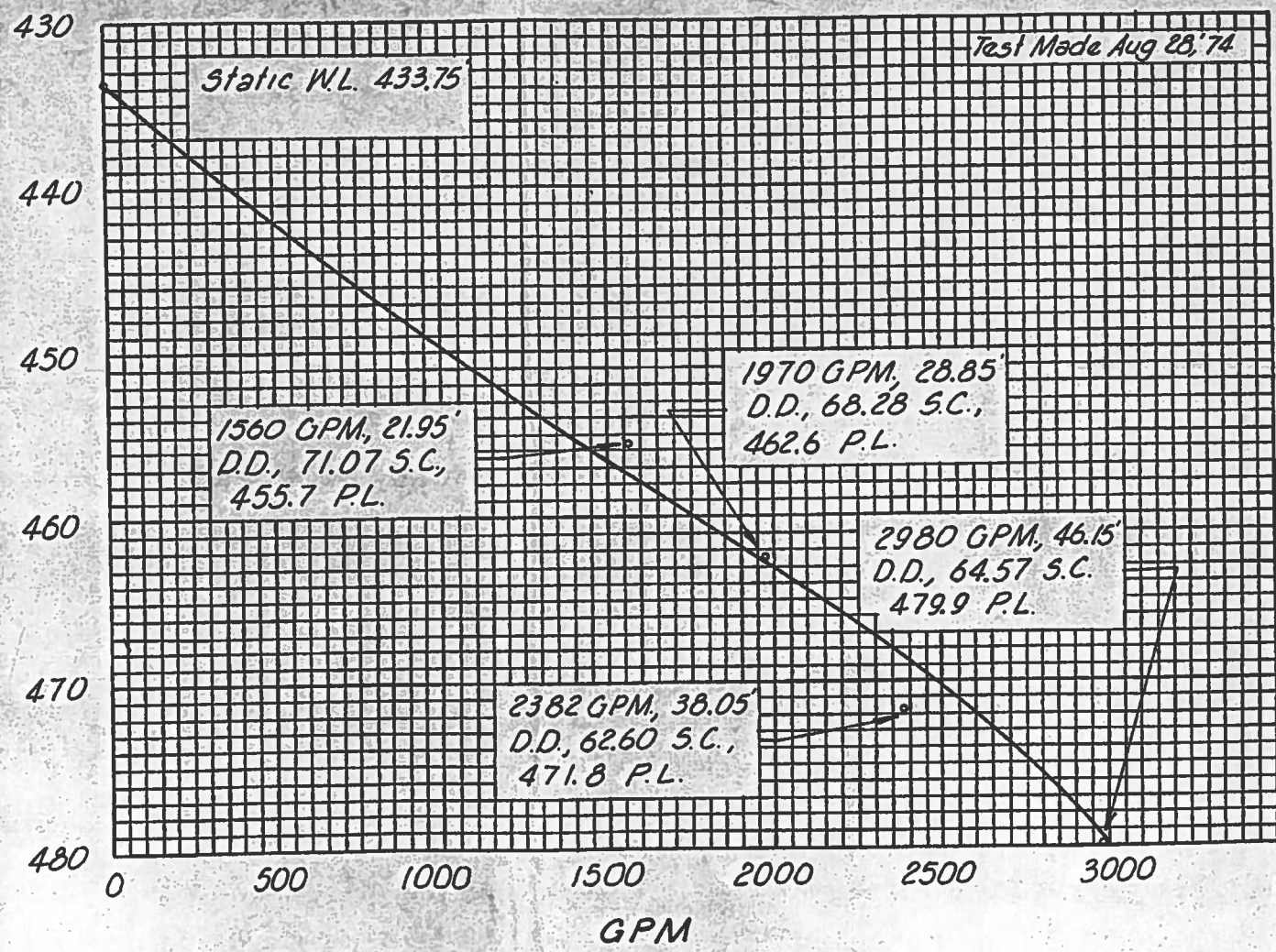
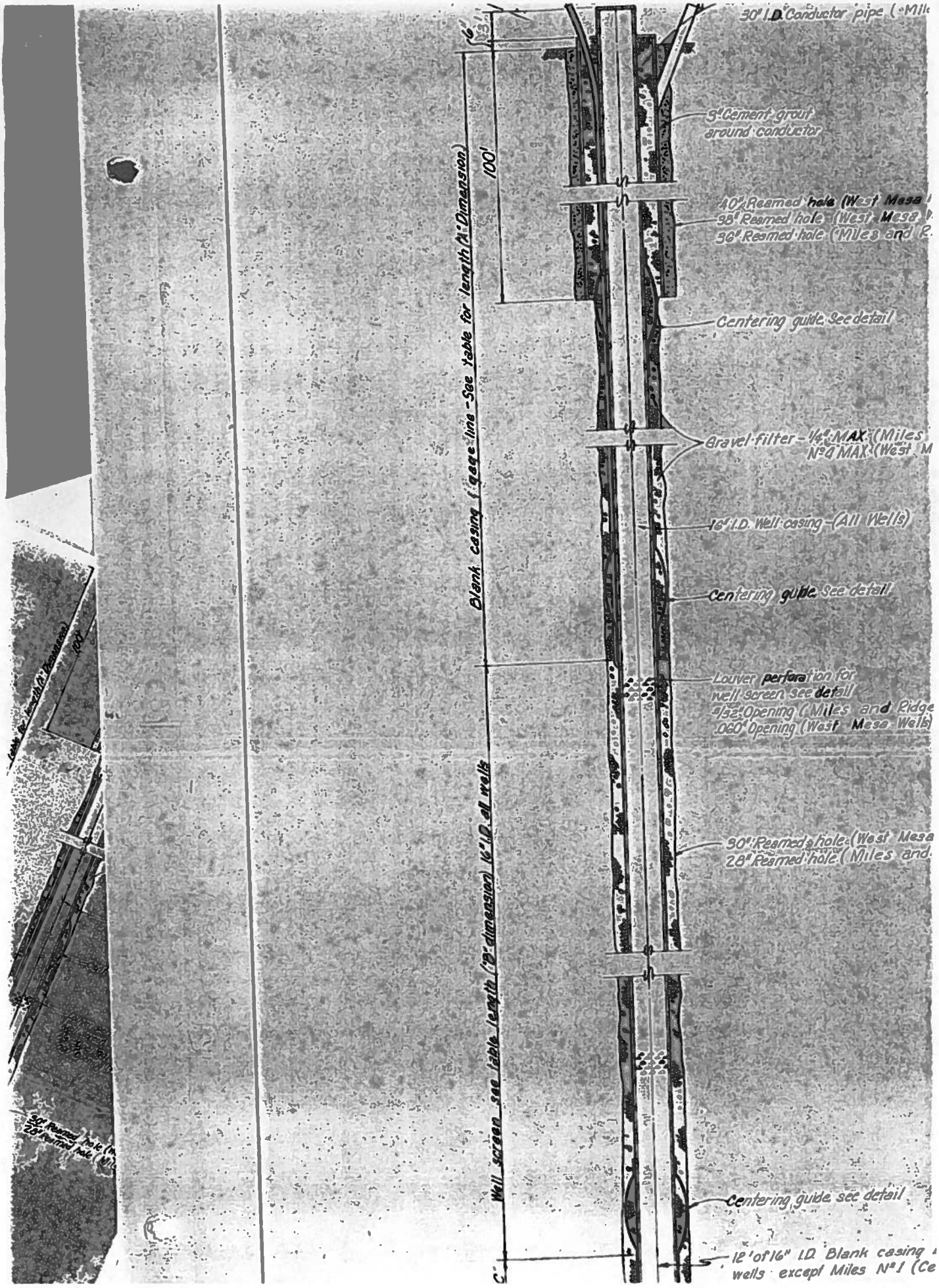
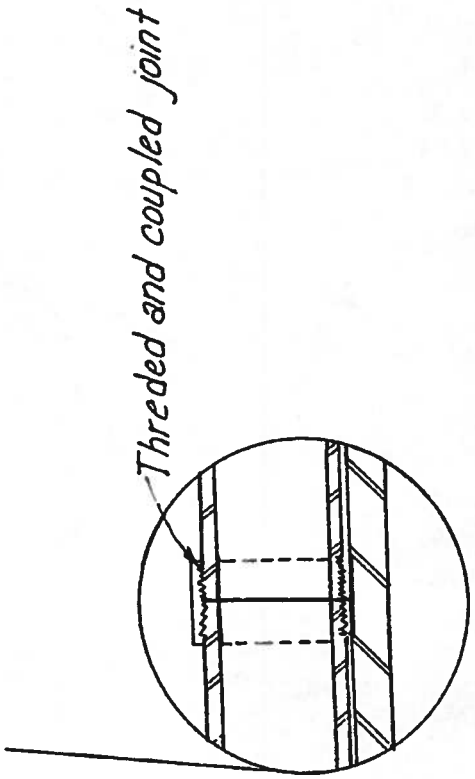


RIDGECREST No. 4



30" I.D. Conductor pipe (Mil
6"
3'
100'
Blank casing (gage line - See table for length ("A" Dimension)
3" Cement grout around conductor
40" Reamed hole (West Mesa
38" Reamed hole (West Mesa
36" Reamed hole (Miles and R
Centering guide See detail
Gravel filter - 1/4" MAX (Miles
No 4 MAX (West M
16" I.D. Well casing - (All Wells)
Centering guide See detail
Louver perforation for well screen see detail
5/32" Opening (Miles and Ridge
.060" Opening (West Mesa Wells)
Well screen see table length ("B" dimension) 16" I.D. all wells
30" Reamed hole (West Mesa
28" Reamed hole (Miles and
Centering guide see detail
12' of 16" I.D. Blank casing
wells except Miles No 1 (Ce



DIMENSION TABLE

WELL	DIMENSION "A"	DIMENSION "B"	DIMENSION "C"
Ridgecrest № 3	620'-6"	816	12'
Ridgecrest № 4	572'-6'	840	12'
West Mesa № 3	404'-6"	948	12'
West Mesa № 4	386'-6"	888	12'
Miles № 1	404'-6"	761	0

GORDON HERKENHOFF and ASSOCIATES INC.
ENGINEERS
albuquerque

PLANNERS
santa fe

February 27, 1974

Water Industries, Inc.
6500 Montgomery N.E.
Albuquerque, New Mexico

RE: WELL DRILLING 1973 - RIDGECREST WELL NO. 4
WEST MESA WELL NO. 3

Based on analyses of electric logs and drill cutting samples, you are hereby directed to ream pilot hole and install casing in subject wells according to the following schedule:

West Mesa Well No. 3

Description	Depth
32" x 1/4" Conductor Pipe	+6" to -99'-6"
16" x 5/16" Blank Casing	+3'-6" to -404'-6"
16" x 5/16" Perforated Casing .060" opening	-404'-6" to -1352'-6"
16" x 5/16" Blank Casing w/plug	-1352'-6" to -1364'-6"

Ridgecrest Well No. 4

30" x 1/4" Conductor Pipe	+6" to -99'-6"
16" x 5/16" Blank Casing	+3'-6" to -572'-6"
16" x 5/16" Perforated Casing 3/32" opening	-572'-6" to -1412'-6"
16" x 5/16" Blank Casing w/plug	-1412'-6" to -1424'-6"

Glenn Hammock

GLENN HAMMOCK
kg

cc: William Otto
E.F. Hensch

818

230 blank & L.C.

302 eighth street n.w. albuquerque, new mexico ph. 505-247-0295 87101

Revised June 1973

STATE ENGINEER OFFICE
WELL RECORD

Section 1. GENERAL INFORMATION

(A) Owner of well City of Albuquerque Owner's Well No. Ridgecrest 5
Street or Post Office Address P. O. Box 1293
City and State Albuquerque, New Mexico 87103

Well was drilled under Permit No. RG-9302-S4 and is located in the:

a. ____ ¼ ____ ¼ ____ ¼ ____ ¼ of Section ____ Township ____ Range ____ N.M.P.M.

b. Tract No. ____ of Map No. ____ of the ____

c. Lot No. ____ of Block No. ____ of the ____
Subdivision, recorded in ____ County.

d. X= 1,481,733 feet, Y= 407,700 feet, N.M. Coordinate System Central Zone in the ____ Grant.

(B) Drilling Contractor Joe T. Salazar Drilling, Inc. License No. NMWD-975

Address P. O. Box 916 Grants, New Mexico 87020

Drilling Began Aug. 23, 1990 Completed Dec. 8, 1990 Type tools Mud Rotary Size of hole 34 in.

Elevation of land surface or land surface at well is 5,354 ft. Total depth of well 1,550 ft.

Completed well is ☒ shallow ☐ artesian. Depth to water upon completion of well 490 ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet From	Depth in Feet To	Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
690	1,530	840	Sand and gravel layers	3,000.
				specific capacity approx. 75 gpm/ft

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet Top	Depth in Feet Bottom	Length (feet)	Type of Shoe	Perforations From	Perforations To
36	142.68	welded	g.l.	200	200	open pipe	conductor csg.	
20-5/8	81.11	weld collars	-3 1,530	690 1,550	693 20	bullnose	upper blank csg. lower blank csg.	
20-5/8	67.8	weld collars	690	1,530	840		690	1,530

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet From	Depth in Feet To	Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
12	1,550	34-in	gravel pack (6-16 gradation)		poured from surface

Section 5. PLUGGING RECORD

Plugging Contractor ____
Address ____
Plugging Method ____
Date Well Plugged ____
Plugging approved by:
____
State Engineer Representative

No.	Depth in Feet Top	Depth in Feet Bottom	Cubic Feet of Cement
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received

Quad ____ FWL ____ FSL ____

File No. ____ Use ____ Location No. ____

Depth in Feet From	Depth in Feet To	Thickness in Feet	Color and Type of Material Encountered
0	180	180	Sand and gravel layers, sand medium to v. coarse grained, gravel upto 3 cm, subangular to rounded, moderately well sorted, poorly cemented, primarily composed of quartz, minor fine grained mafic fragments.
180	210	30	Clay, reddish brown, crumbly with embedded gravel.
210	650	440	Sand and gravel layers, percentage of sand ranges from about 40% to 85% in layers upto 100-feet thick, primarily composed of quartz, minor fine grained mafic fragments.
650	1,630	980	Sand and gravel layers, percentage of sand as above in layers up to 300-feet thick, sand is fine to coarse grained, subangular, poorly sorted, and poorly cemented; gravel is angular; composed of quartz and feldspar, mica, minor mafic fragments.

Section 7. REMARKS AND ADDITIONAL INFORMATION

The undersigned hereby certifies that, to the best of his knowledge and belief, the foregoing is a true and correct record of the above described hole.

Joe Salazar

Driller

INSTRUCTIONS: This form should be executed in triplicate, preferably typewritten, and submitted to the appropriate district office of the State Engineer. All sections, except Section 5, shall be answered as completely and accurately as possible when any well is drilled, repaired or deepened. When this form is used as a plugging record, only Section 1(a) and Section 5 need be completed.

JOHN W. SHOMAKER, INC.
GEOLOGY-HYDROGEOLOGY
[redacted] 2703 BRIDGEPORT PARKWAY NE, SUITE D
[redacted] ALBUQUERQUE, NEW MEXICO 87107
[redacted] (505) 345-3407

WELL NO. Ridgecrest No. 5
_____ SEC. _____ TWP. _____ RGE. _____
ELEV.(GL) _____ (KB) _____

DATE 9-13-90

Core No.	Sample	DEPTH FROM	DEPTH TO	THICKNESS	LITHOLOGY	REMARKS
		0	10	10	Grv: grysh., 2mm-1cm, sbrndd to sbang., mod. srt., wk. cmt., pbl. F.Q.G., C.Q.G.; rd., or., wh., purp. f.gr. blk. volc.; Grt., Bas., frags.	AAPG format for sample descriptions.
		10	80	70	Sdy-Grv: grysh., v. crs., sbang. to ang., mod. srt., wk. cmt., pred. F.Q.G., C.Q.G.; wh., rd., or., purp.; Musc., Biot., Grt., Bas., frags.	
		80	90	10	Grv: grysh., 3mm-5mm, pbl. up to 3cm., sbang., wl. srt., pred. F.Q.G., C.Q.G.; wh., yel.; Grt., ls, f.gr. blk volc. frags.	
		90	140	50	Grv: grysh., 2mm-4mm, sbang. to ang., wl. srt., wk. cmt., pred. F.Q.G., C.Q.G.; wh., yel., org., rd.; Musc., Biot., Grt., f.gr. blk. volc., frags.	
		140	150	10	Sdy-Grl: grysh., med.-crs., sbang. to ang., wl. srt., wk. cmt., pred. F.Q.G., C.Q.G.; wh., yel., org., rd., purp; Musc., Biot., f.gr. blk. volc., fspr. frags.	
		150	160	10	Grv: a.a. 90-140.	
		160	180	20	Sdy-Grl: a.a. 140-150.	
		180	230	50	Slty-Grl: rdsh.-brn., crmbly, pbl. up to 3cm, plag. fsprs., Musc., Biot.	
		230	240	10	Sd: grysh., med., sbrndd. to sbang., wl. srt., wk. cmt.; F.Q.G., C.Q.G., wh., rd., org., yel., hi. Amt. f.gr. blk. volc. frags., obsdn., wh. plag. fsprs.	

JOHN W. SHOMAKER, INC.
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2703 BROADMONT PARKWAY NE, SUITE D
ALBUQUERQUE, NEW MEXICO 87107
(505) 345-3407

WELL No. Ridgecrest No. 5
_____ SEC. _____ TWP. _____ RGE. _____
ELEV.(GL) _____ (KB) _____

DATE 9-13-90

DEPTH FROM	DEPTH TO	THICKNESS	LITHOLOGY	REMARKS
240	260	20	Grv: grysh., 3mm-4mm, sbrndd. to sbang., wl. srt., wk. cmt., F.Q.G., C.Q.G., wh., rd., org., hi. Amt. f.gr. blk. and gn. volc., obsdn.,	AAPG format for sample descriptions
260	330	70	Sndy-Grv: grysh., v. crs., sbrndd. to sbang., mod. srt., wk. cmt., hi. Amt. pbl. up to 5mm, F.Q.G., C.Q.G., wh., rd., org., yel., purp., hi Amt. f.gr. blk. and gn. volc., obsdn.,	
330	380	50	Grv: a.a. 240-260	
380	510	130	Snd: grysh-yel., crs. to v.crs., ang., wl. srt., wk. cmt., F.Q.G., C.Q.G., wh., org., rd., yel., yel-org., hi Amt. f.gr. volc.; blk. gn., blk-gn., blk-purp.	
510	670	160	Sndy-Grv: grysh, v. crs., rndd. to sbang., wl. srt., pbl. up to 1cm., lith. a.a. 380-510.	
670	710	40	Grv: grysh., 2mm-5mm, sbrndd. to ang., v. wl. srt., F.Q.G., C.Q.G., wh., org., rd., yel., yel-org., rs., purp., v. hi. Amt. f.gr. volc.; blk., gn., blk-gn., blk-purp.	
710	820	110	Sndy-Grv: grysh-yel., med. to crs. mod. srt., lith. a.a. 670-710	
820	870	50	Grv: a.a. 670-710	

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(505) 345-3407

WELL No. Ridgecrest No. 5

SEC. ____ TWP. ____ RGE. ____

DATE 9-13-90

ELEV. (GL) ____ (KB) ____

Core No.	Sample	DEPTH FROM	DEPTH TO	THICKNESS	LITHOLOGY	REMARKS
		870	1110	240	Sndy-Grv: grysh., med. to crs., ang. mod. srt, wk. cmt., pbl. to lcm F.Q.G., C.Q.G., wh., red., org., yel., rs., purp., v. hi amt. f.gr. volc.; blk., dk. gn, dk. purp. plag. fspr, Grt., Ls. frags.	AAPG formal for sample descriptions
		1110	1300	290	Snd: grysh., med., ang., mod. srt, wk. cmt., lith. a.a. 870-1110	
		1300	1580	280	Grv: grysh., 2mm-4mm, sbang. to ang., v. wl. srt., lith. a.a. 870-1110, w/ sml. Amt. f.gr. volc.	
		1580	1610	30	Sndy-Grv: a.a. 870-1110 w/ sml. Amt. f. gr. volc.	
		1610	1630	20	Snd: a.a. 1110-1300.	