



WATER-RIGHT DOCKET

George Washington Memorial Parkway

Docket No: 1

NPS WELL AT GREAT FALLS

Supporting Hydro Data

00-00-0000: pumping test

USGS Well : Mont-Ee42

PUMPING TEST AT Great Falls, Montgomery County
Well ^{open hole} ~~screened~~ from 23 feet to 365 feet below land surface.
Pump turned on at 1100 am; July 29 1980; pumped at 23 gpm until 1:15 pm.
July 29, 1980; Static level 25.36 feet below M.F. which is top of coupling welded to top of
casing, 1.5 feet above land surface and feet above land surface.
Total number of minutes pumped: 245. & measured with 5 gallon bucket.
Temp. at 1125 am 57 °F.

Time				Water level		Time		Yield	
Hour	t	t ₁	t/t ₁	Electric tape	Mark + or - Depth	Hour	Conductance	Manometer See top of 0.664 ft. bucket	gpm
10:55				50.00	24.64 25.36				
11:58				25	0.4 25.4				
11:00	0.00			Pump turned on					
11:01:10	1.17			40	.6 40.6				
11:02:35	2.25			50	.85 50.85				
11:03:50	3.83			62	.95 62.95				
11:05:00	5.0								
11:05:55	5.92			72	.7 72.7				
11:06:45	6.75			75	.65 75.65				
11:07:55	7.92			79	.8 79.8				
11:08:50	8.83			82	.3 82.3				
11:09:35	9.58			84	.25 84.25				
11:10:20	10.33			85	.8 85.8				
11:11:10	11.17			87	.4 87.4				
11:12:00	12.0			88	.9 88.9				
11:13:30	13.5			91	.2 91.2				
11:14:20	14.33			92	.2 92.2				
11:15:05	15.08			93	.1 93.1				
11:16:00	16.0			93	.9 93.9				
11:17:05	17.08			94	.9 94.9				
11:19:30	19.5			96	.6 96.6				
11:21:10	21.17			97	.4 97.4				
11:25:00	25.0			100.0	-1.0 99.0				
							385 μ m	57°F	

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.

Sheet 1 of 8

Mont-Ee 42

PUMPING TEST AT Great Falls, Montgomery County
 Well screened from 21 feet to 365 feet below land surface.
 Pump turned on at 1100 am; July 29 1980; pumped at 23 gpm until 1:15 pm.
July 29, 1980; Static level 25.36 feet below M.F. which is Top of casing welded to
land surface and 1.5 feet above sea level and 0.00 feet land surface sea level.
 Total number of minutes pumped: 245. & measured with 5 gallon bucket.
 Temp. at 1125 am 57° F.

Time				Water level			Time		Yield	
Hour	t	t ₁	t/t ₁	Electric tape			Hour	t	Conductance	gpm
				Mark	+ or -	Depth			Manometer	
									no. to 11	
									2669 feet	
1364	136.8	1.75	78	80.0	+3.3	83.3				
13705	137.1	2.08	66	75.0	+0.2	75.2	2	24	80.0 +0.2 80.2	
137745	137.8	2.75	50	75.0	-0.4	74.1				
13805	138.1	3.08	45	70.0	+0.4	70.9				
13830	138.5	3.5	37.6	70.0	-1.6	68.4				
13845	138.8	3.8	36.6	65.0	+0.6	65.6				
13920	139.3	4.3	32.4	60.0	+2.0	62.0				
13940	139.7	4.7	30			59.9				
1320100	140.0	5.0	28	55.0	+2.1	57.1				
132025	140.4	5.4	26	55.0	+0.3	55.3				
132040	140.7	5.7	24.7	55.0	-1.5	53.5				
132115	141.3	6.25	22.6	50.0	+0.7	50.7				
132135	141.6	6.6	21.5	50.0	-0.9	49.1				
132150	141.8	6.8	20.9	45.0	+2.75	47.8				
132220	142.3	7.3	19.5	45.0	+8.3	53.3	2	24	45.0 +0.2 45.2	
132300	143.0	8.0	17.7	45.0	-1.6	43.4				
132330	143.5	8.5	16.9	40.0	+1.95	41.95				
132350	143.8	8.8	16.3	40.0	+0.6	40.6				
132420	144.3	9.3	15.5	40.0	-0.75	39.25				
132445	144.8	9.8	14.8	40.0	-1.7	38.3				
132500	145.0	10.0	14.5	35.0	+2.6	37.6				
132525	145.4	10.4	14.0	35.0	+1.7	36.7				
132600	146.0	11.0	13.3	35.0	+0.6	35.6				

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.Sheet 3 of 8.

Mont-Ee 42

PUMPING TEST AT Great Falls, Montgomery County
Well screened from 21 feet to 365 feet below land surface.

Pump turned on at 11:00 am; July 29 1980; pumped at 23 gpm until 11:15 pm,
July 29, 1980; Static level 25.36 feet below M.F. which is top of casing welded to top
casing, 1.5 feet above sea level and _____ feet above land surface.

Total number of minutes pumped: 245. & measured with 5 gallon bucket.

Temp. at 11:25 am 57° F.

Time				Water level			Time		Yield		
Hour	t	t ₁	t/t ₁	Electric tape			Hour	i	Conductance	Manometer	gpm
				Mark	+	or - Depth				sec. to fill 0.667 ft ³ /sec	
13:26:40	146.7	11.7	12.5	35.0	-0.5	34.5					
13:28:00	148.0	13.0	11.1	35.0	-2.0	33.0					
13:29:00	149.0	14.0	10.6	35.0	-3.1	31.9					
13:30:50	150.8	15.8	9.5	35.0	-4.2	30.8					
13:32:20	152.3	17.3	8.80	30.0	+0.6	30.1					
13:37:00	157.0	22.0	7.14	30.0	-0.85	29.15					
13:39:00	159.0	24.0	6.62	30.0	-1.00	29.0					
13:43:38	163.6	28.6	5.72	30.0	-1.45	28.55					
13:45:50	168.8	33.8	5.00	30.0	-1.75	28.25					
13:58:15	178.8	43.3	4.13	30.0	-2.2	27.8					
14:08:50	188.8	53.8	3.51	30.0	-2.7	27.3					
14:14:30	194.5	59.5	3.27	25.0	12.15	27.25					
14:20:00	0.00			Pump back on							
14:23:45	3.75			30.0	+1.50	30.5				77	3.9
14:24:35	4.4			30.0	+1.50	30.50					
14:27	7.0									126	2.4
14:28:30	8.5			30.0	+0.20	30.2					
14:30:25	10.4			30.0	+0.20	30.2					
14:33:15	13.25			30.0	+0.20	30.2					
14:37:00	17.0			30.0	+0.20	30.2				132	2.3
14:41:00	20.0	0.00		Increase pumping rate						41	7.3
14:42:41	22.2	2.23		35.0	-0.70	34.3					

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.

Sheet 4 of 8.

Mont - Ec 42

PUMPING TEST AT Great Falls, Montgomery County
 Well screened from 21 feet to 36.5 feet below land surface.

Pump turned on at 11:00 am; July 29 1980; pumped at 2.3 gpm until 1:15 pm,
July 29, 1980; Static level 25.36 feet below M.F. which is top of casing welded
1.5 feet above land surface and feet above land surface.

Total number of minutes pumped: 245. & measured with 5 gallon bucket
 Temp. at 11:25 am 57° F.

Time				Water level		Time		Yield	
Hour	t	t ₁	t/t ₁	Electric tape	Mark + or - Depth	Hour	t	Conductance	gpm
1442:40	22.7	2.66		Direct reading	34.9				
1443:20	23.3	3.33		" "	35.53				
1444:00	24.0	4.00		" "	36.1				
1444:30	24.5	4.5		35.0 +1.53	36.53				
1445:05	25.1	5.08		35.0 +1.95	36.95				
1445:50	25.8	5.8		35.0 +2.3	37.3				
1446:20	26.3	6.3		35.0 +2.5	37.5				
1446:50	26.8	6.8		35.0 +2.72	37.7				
1447:30	27.5	7.5		35.0 +3.0	38.0				
1448:10	28.2	8.2		35.0 +3.2	38.2				
1449:00	29.0	9.0		35.0 +3.45	38.45				
1450:00	30.0	10.0		35.0 +3.75	38.75				
1452:15	32.3	12.3						4.3	6.9
1452:55	32.9	12.9		40.0 -0.70	39.3				
1453:50	35.8	15.8		40.0 -0.50	39.5				
1503:05	43.1	23.1		40.0 -0.15	39.85				
1508:15	48.3	28.3		40.0 -0.18	39.82				
1510:00	50.0	30.0	0.0	Increase pumping rate				30	9.9
1511:20	51.3	31.3		40.0 +1.9	41.9				
1511:40	51.7	31.7		40.0 +2.4	42.4				
1512:00	52.0	32.0	2.0	40.0 +2.75	42.75				
1512:25	52.4	32.4		40.0 +3.10	43.10				
1512:50	52.8	32.8		40.0 +3.50	43.5				

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.

Sheet 5 of 8

Mont- Ec 42

PUMPING TEST AT Great Falls, Montgomery County
Well screened from 21 feet to 365 feet below land surface.

Pump turned on at 11:00 a.m.; July 29 1980; pumped at 23 gpm until 1:15 p.m.
July 29, 1980; Static level 25.36 feet below M.P. which is top of coupling welded to
being 1.5 feet above land surface and feet above land surface sea level.

Total number of minutes pumped: 245 & measured with 5 gallon bucket.
Temp. at 11:25 a.m. 57° F.

Time				Water level		Time		Yield	
Hour	t	t ₁	t/t ₁	Electric tape	Mark + or - Depth	Hour	t	Conductance	gpm
								Sec. to fill 0.664 p. 5.2 bucket	
1511:15	53.3	33.3		45.0	-1.1	43.9			
1513:45	53.8	33.8		45.0	-0.7	44.3			
1516:30	54.5	34.5		45.0	-0.20	44.8			
1519:00	55.0	35.0	5.0	45.0	+0.20	45.2			
1521:45	55.7	35.7		45.0	+0.55	45.55			
1524:35	56.4	36.4		45.0	+0.90	45.9			
1527:25	57.4	37.4	7.4	45.0	+1.3	46.3			
1530:00	59.0	39.0	9.0	45.0	+2.7	47.7			
1532:25	60.4	40.4	10.4	45.0	+2.15	47.15			
1535:30	61.5		11.5						31 9.6
1538:00	62.0	42.0	12.0	45.0	+2.40	47.4			
1540:10	63.2	43.2	13.7	45.0	+2.65	47.65			
1542:35	64.4	44.4		45.0	+2.80	47.8			
1545:00	66.0	46.0	16.0	45.0	+2.9	47.9			
1547:20	67.3	47.3	17.3	45.0	+3.0	48.0			
1549:00	67.0	47.0	19.0						31 9.6
1551:25	69.4	49.4	19.4	45.0	+3.2	48.2			
1553:00	70.0	50.0	20.0	Increase pumping rate				23	13
1555:30	71.5	51.5	21.5	50.0	+0.60	50.6			
1558:00	71.9	51.9	21.9	50.0	+1.1	51.1			
1600:15	72.3	52.3	22.3	50.0	+1.55	51.55			

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.

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Mont-Ee 42

PUMPING TEST AT Great Falls, Montgomery County
 Well screened from 21 feet to 364 feet below land surface.

Pump turned on at 11:00 am; July 29, 1980; pumped at 23 gpm until 1:15 pm.
July 29, 1980; Static level 25.36 feet below M.F. which is top of casing welded to
Casing 1.5 feet above land surface and feet above land surface. See 16-1.
 Total number of minutes pumped: 245. & measured with 5 gallon bucket.
 Temp. at 11:25 am 57° F.

Time				Water level			Time		Yield	
Hour	t	t ₁	t/t ₁	Electric tape			Hour	t	Conductance	gpm
				Mark	+ or -	Depth				
1542:40	72.7	52.7	2.7	50.0	+1.96	51.96				
1543:10	73.2	53.2	3.2	50.0	+2.35	52.35				
1543:30	73.5	53.5		50.0	+2.75	52.75				
1544:00	74.0	54.0		50.0	+3.18	53.18				
1544:40	74.7	54.7		50.0	+3.60	53.60				
1545:30	75.5	55.5		50.0	+4.15	54.15				
1546:20	76.3	56.3	6.3	50.0	+4.65	54.65				
1548:00	78.0	58.0	8.0	50.0	+5.38	55.38				
1549:55	84.9	64.9	14.9	55.0	+2.0	57.0			23	13
1547:45	87.7	67.7	17.7	55.0	+2.3	57.3				
1549	89.0								23	13
1549:20	89.3			55.0	+2.45	57.45				
1550:00	90.0			Increase pumping rate						19 15.7
1551:45	91.8			60.0	+0.9	60.9				
1552:15	92.3			60.0	+1.5	61.5				
1552:40	92.7			60.0	+2.1	62.1				
1553:05	93.1			60.0	+2.6	62.6				
1553:35	93.6			60.0	+3.2	63.2				
1554:00	94.0			60.0	+3.6	63.6				
1554:30	94.5			65.0	-0.9	64.1				
1555:20	95.3			65.0	-0.2	64.8				

t = no. min. elapsed since pumping started.

t₁ = no. min. elapsed since pumping stopped.Sheet 7 of 8.

Mont-Ee4.

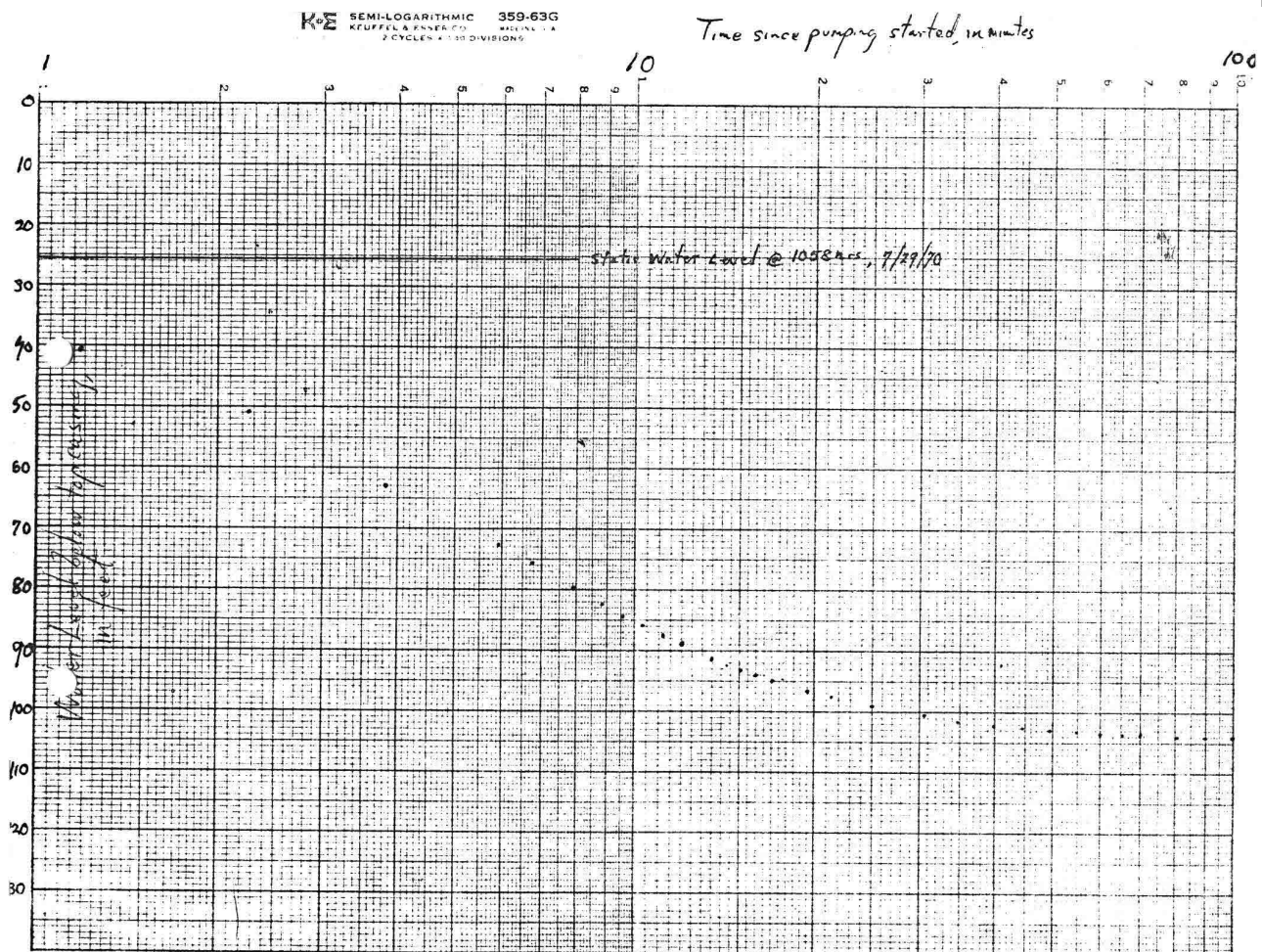
PUMPING TEST AT Great Falls, Montgomery County
Well open from 21 feet to 365 feet below land surface.

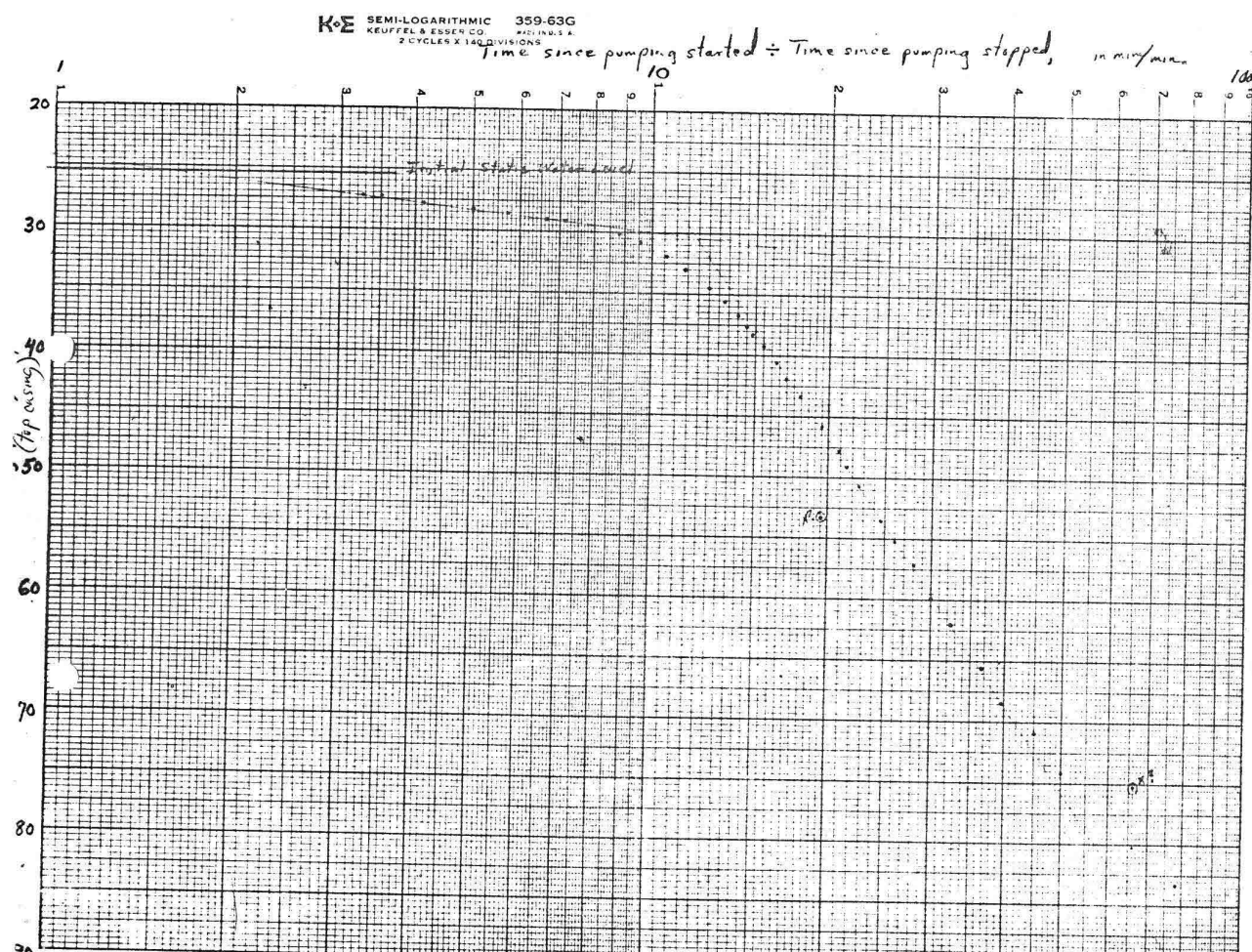
Pump turned on at 11:00 am; July 29 1980; pumped at 23 gpm until 1:15 pm,
July 29, 1980; Static level 25.36 feet below M.P. which is top of coupling with
depth 1.5 feet above land surface and 66.0 feet land surface sea level.
Total number of minutes pumped: 245. & measured with 5 gallon bucket.
Temp. at 11:25 am 57° F.

Time				Water level		Time				Yield	
Hour	t	t ₁	t/t ₁	Electric tape	Mark + or - Depth	Hour	t	Conductance	Temperature	gpm	
15:56	96.8			65.0	+0.75 65.75						
15:57:45	97.8			65.0	+1.3 66.3						
15:58:35	98.6			65.0	+1.75 66.75						
16:00:10	100.2			65.0	+2.35 67.35						
16:01:25	101.4			65.0	+2.75 67.75						
16:02:45	102.8									19	16
16:03:00	103.0	13.0		70.0	-1.8 68.2						
16:03:46	103.7	13.7		70.0	-1.65 68.35						
16:09:30	109.5			70.0	-0.75 69.25			375 μ mhos/cm			
16:10:00	110.0			Pump off		Hour	t	t ₁	Mark	+ or -	Depth
16:10:20	110.3			65.00	+1.3 66.3	16:15:00	115.0	5.0	40.00	-0.40	39.6
16:10:40	110.7			65.00	-1.8 63.2	16:16:35	116.0	6.4	35.0	+0.3	35.3
16:11:10	111.2			60.00	-0.65 59.35	16:18:30	118.5	8.5	30.0	+2.0	32.0
16:11:25	111.4			60.00	-2.45 57.55	16:20:15	120.3	10.2	30.0	+0.2	30.2
16:11:55	111.7			55.00	-0.7 54.3	16:21:55	121.9	11.9	30.0	-0.75	29.25
16:12:20	112.3			50.00	+1.4 51.4	16:23:30	123.5	13.5	30.0	-1.25	28.75
16:12:35	112.6			50.00	+0.0 50.0	16:25:25	125.4	15.4	30.0	-1.65	28.35
16:12:55	112.9			50.0	-1.5 48.5	16:32:00	132.0	22.0	30.0	-2.3	27.7
16:13:10	113.2			45.0	+1.95 46.95	16:38:10	138.2	28.2	30.0	-2.6	27.4
16:13:45	113.8			45.0	-0.9 44.1	16:57:40	154.7	44.7	25.0	+1.9	26.9
16:14:15	114.3			40.0	+2.1 42.1						
16:14:40	114.7			40.0	+0.75 40.75						

t = no. min. elapsed since pumping started.

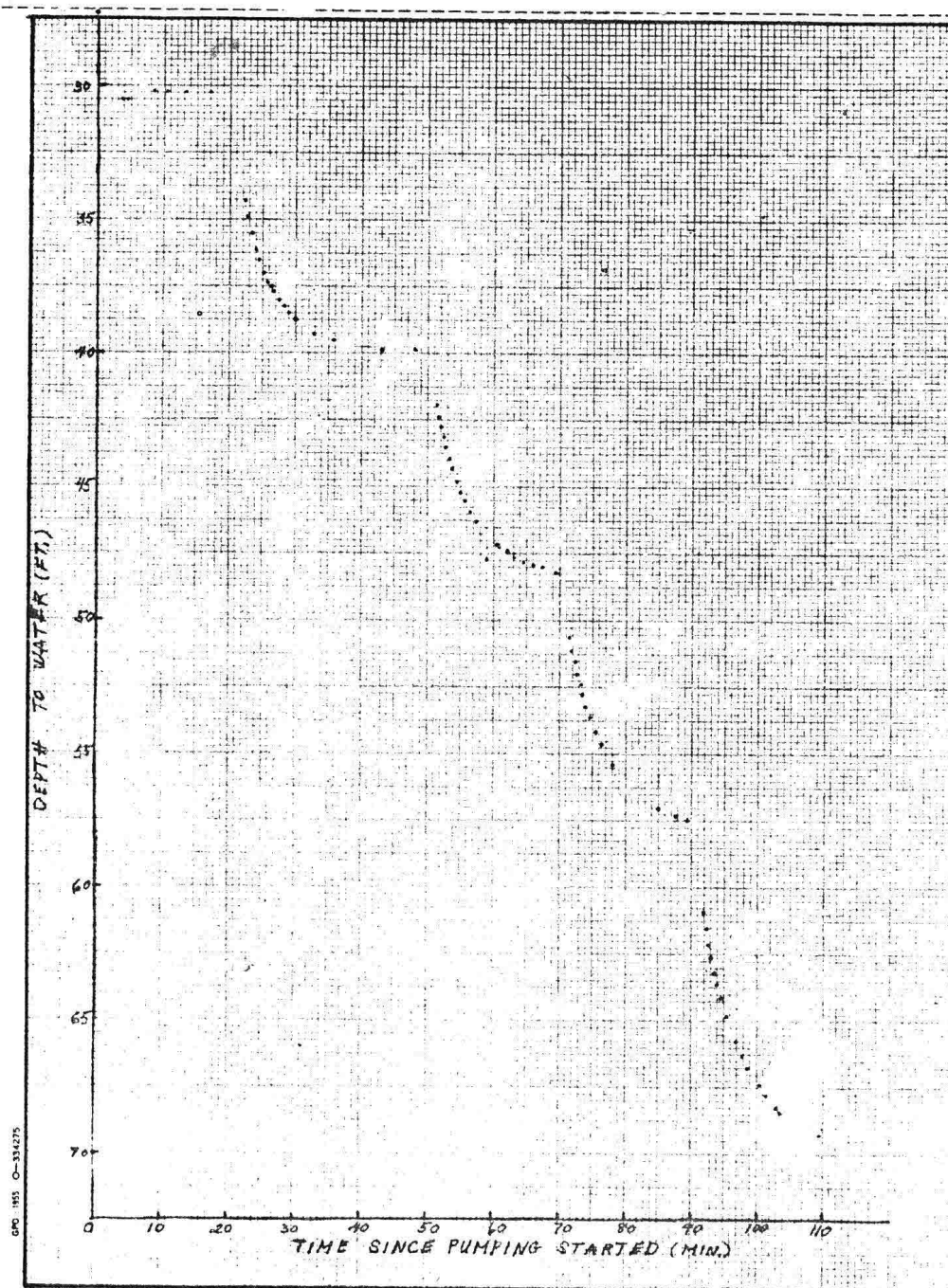
t₁ = no. min. elapsed since pumping stopped.Sheet 8 of 8





NGAL 1949
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GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

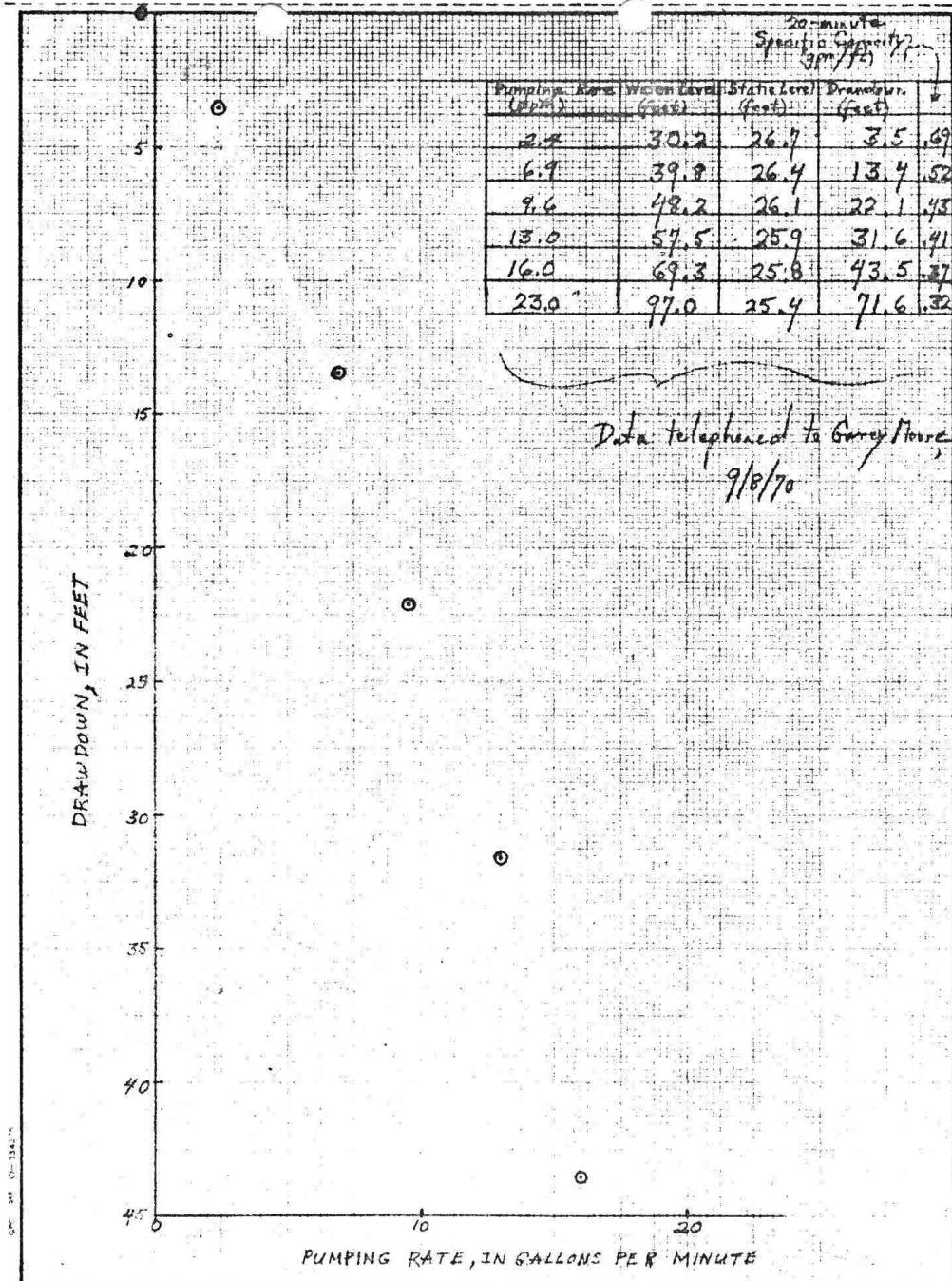
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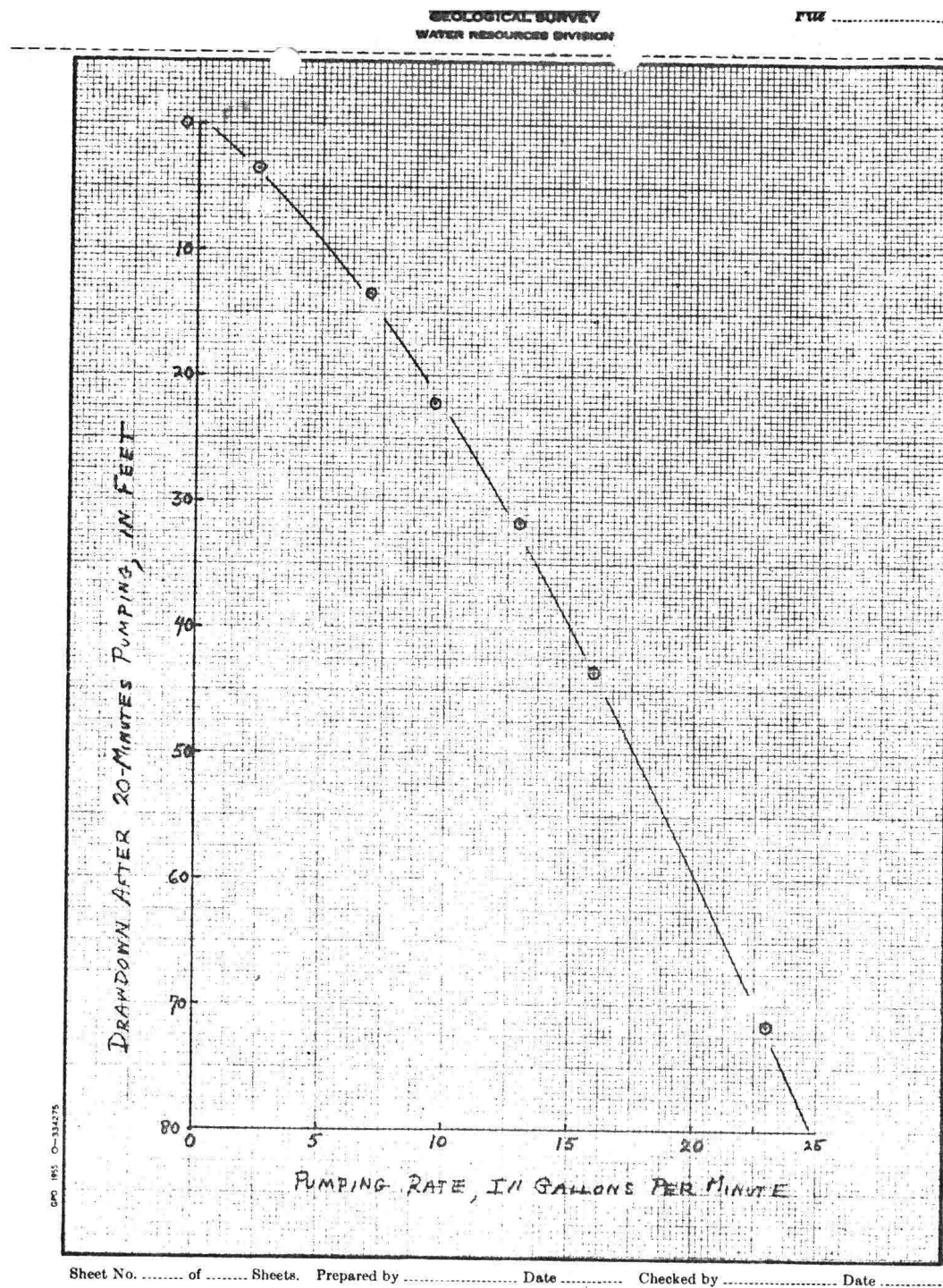
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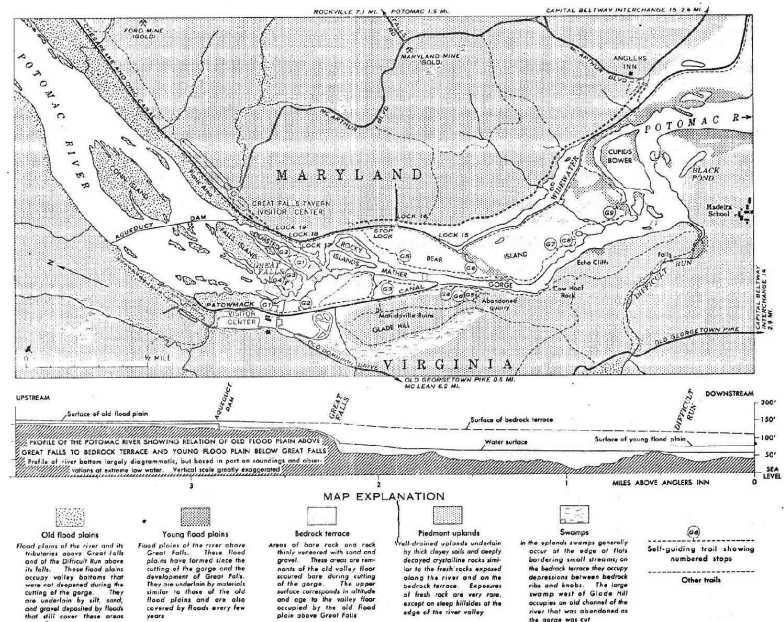
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Maps and Miscellaneous Information



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