

El Cajon Valley Test
Wells and Pumping Plants

Document No. 9043

Filed - March 6th - 1905.

H. W. Vincent.
City Clerk.

By Percy L. Day, Deputy.

Transit Book - El Cajon Valley
Test Wells and Pumping Plants.

Presented to Council and

Ordered filed Mar 6th 1905.

W35

Table showing the difference of latitude and departure in running 80 chains at any course from 1 to 60 minutes.

MINUTES	LKS.	MINUTES	LKS.	MINUTES	LKS.
1	2 1/3	21	49	41	95 2/3
2	4 2/3	22	51 1/3	42	98
3	7	23	53 2/3	43	100 1/3
4	9 1/3	24	56	44	102 2/3
5	11 2/3	25	58 1/3	45	105
6	14	26	60 2/3	46	107 1/3
7	16 1/3	27	63	47	109 2/3
8	18 2/3	28	65 1/3	48	112
9	21	29	67 2/3	49	114 1/3
10	23 1/3	30	70	50	116 2/3
11	25 2/3	31	72 1/3	51	119
12	28	32	74 2/3	52	121 1/3
13	30 1/3	33	77	53	123 2/3
14	32 2/3	34	79 1/3	54	126
15	35	35	81 2/3	55	128 1/3
16	37 1/3	36	84	56	130 2/3
17	39 2/3	37	86 1/3	57	133
18	42	38	88 2/3	58	135 1/3
19	44 1/3	39	91	59	137 2/3
20	46 2/3	40	93 1/3	60	140

TABLE FOR RUNNING ON SLOPES.

In the following table the first column shows the angle, the second the number of links to be added to a chain on the slopes, to make one chain, horizontal measurement.

Angle	COR. IN LINKS	Angle	COR. IN LINKS	Angle	COR. IN LINKS	Angle	COR. IN LINKS
0		0		0		0	
4	0.24	11	1.88	18	5.14	25	10.54
5	0.38	12	2.24	19	5.76	26	11.26
6	0.55	13	2.63	20	6.42	27	12.24
7	0.76	14	3.06	21	7.11	28	13.37
8	0.98	15	3.53	22	7.85	29	14.34
9	1.24	16	4.02	23	8.64	30	15.47
10	1.55	17	4.56	24	9.47	35	22.07

Table sh
run

MINUTES

I
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

In the

Angle

0
4
5
6
7
8
9
10

Field Notes of the
Examination of the sands
& gravels & Pumping plants
in El Cajon Valley.

Under Ordinances 1780 & 1798

Commencing Nov. 9th 1904

C. S. Alverson
In charge

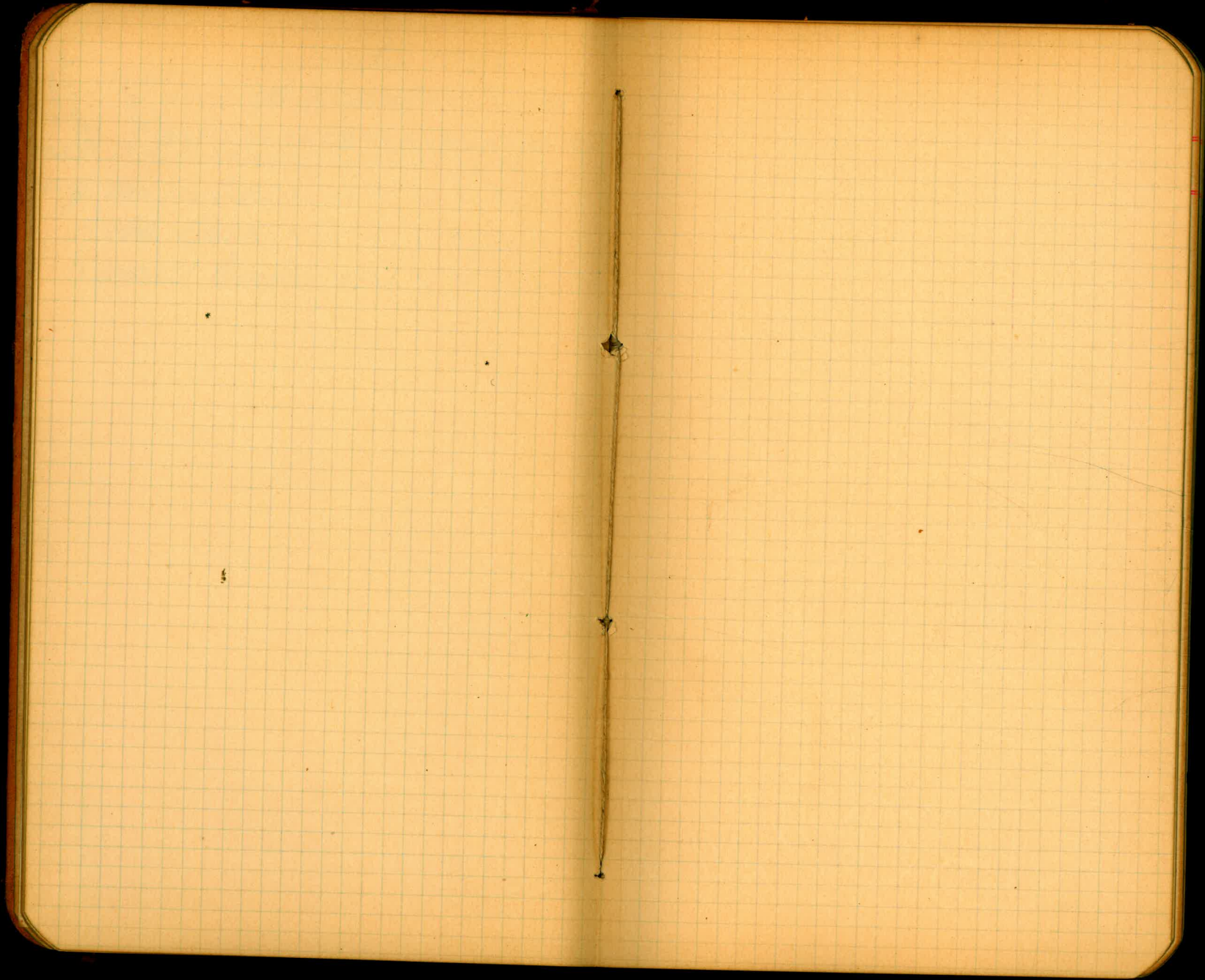
November 1954

Time Account

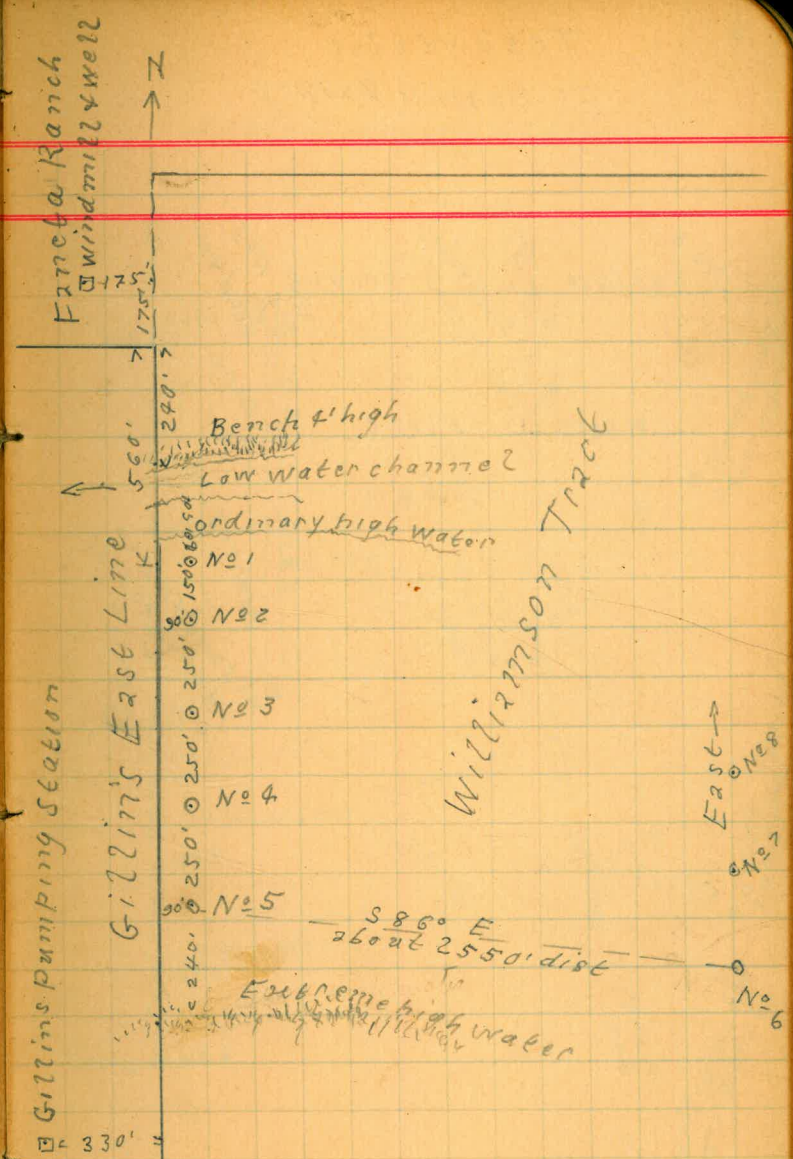
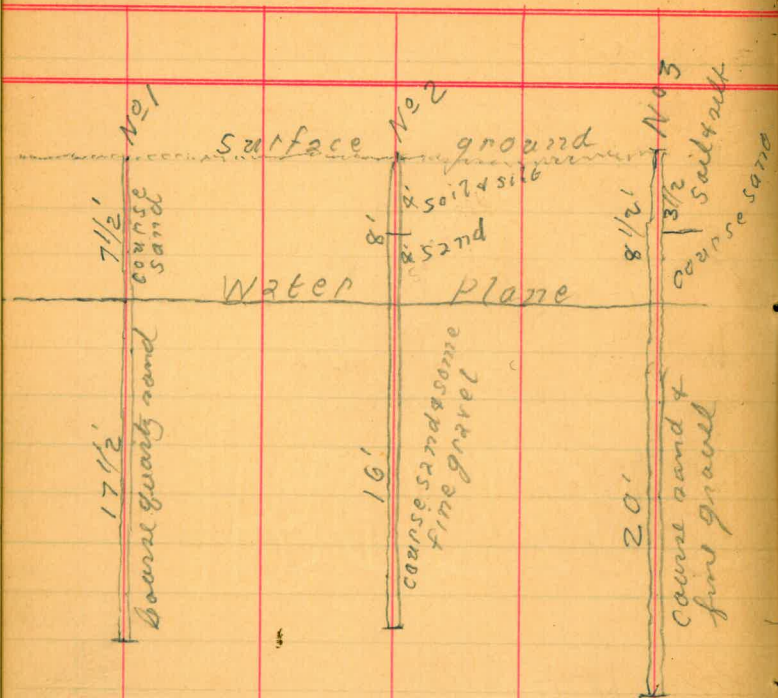
	9	10	11	12	14
L S Alvarson	1	1	1	1	1
J W McInnis	1	1	1	1	1
A H Coats	1	1	1	1	1
Everett Cooper	1/2	1	1	1	1

on test wells etc

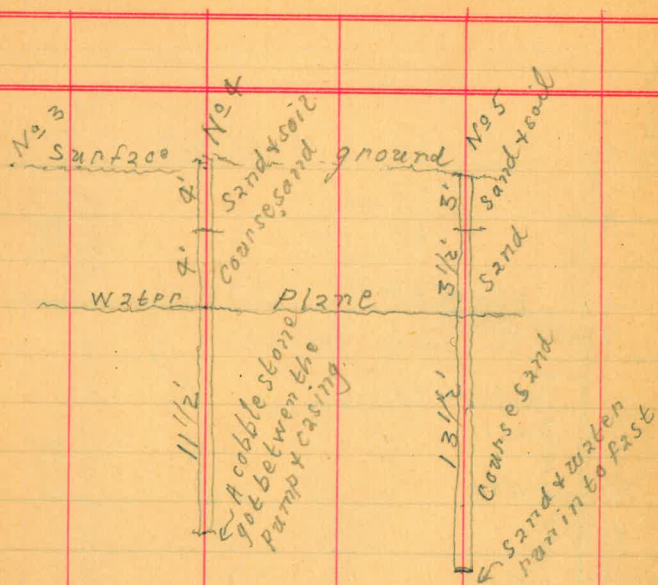
15	16	17	18	19	21	22	23	24	25	26	Total	Rate per diem
1	1	1	1	1	1	1	1	0	1	1	15	\$15.00
1	1	1	1	1	1	1	1	1/2	0		13 1/2	4.00
1	1	1	1	1	1	1	1	1	1/2		14 1/2	
1	1	1	1	1	1	1	1	0	0		12 1/2	



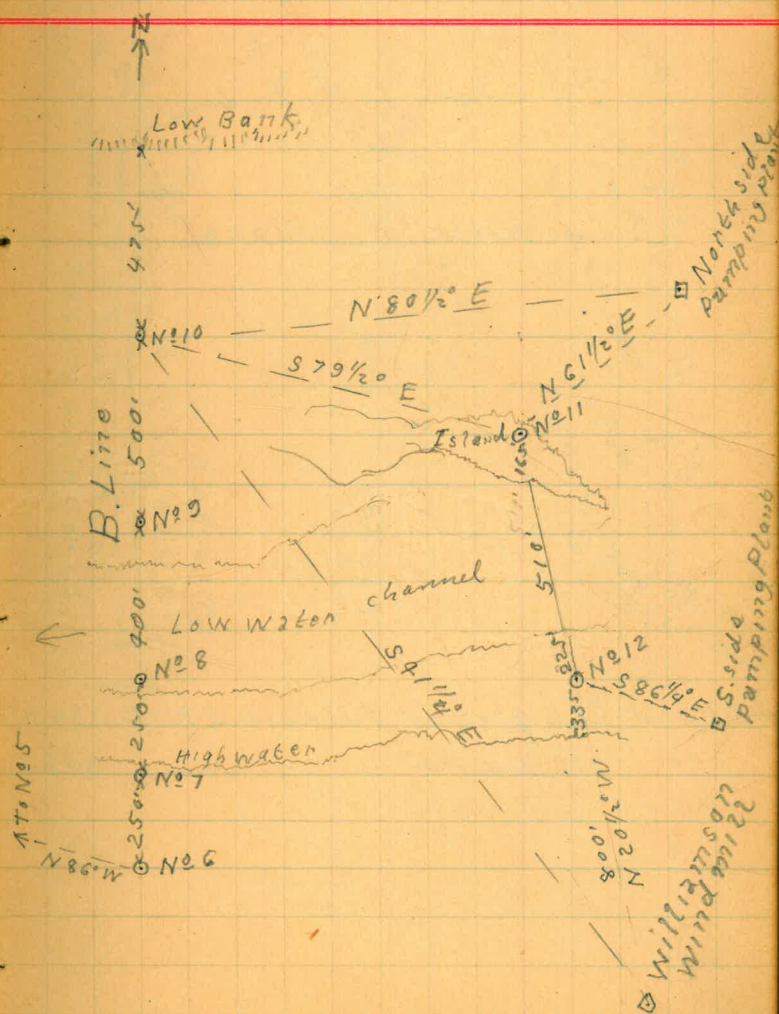
Test Wells
El Cajon Valley



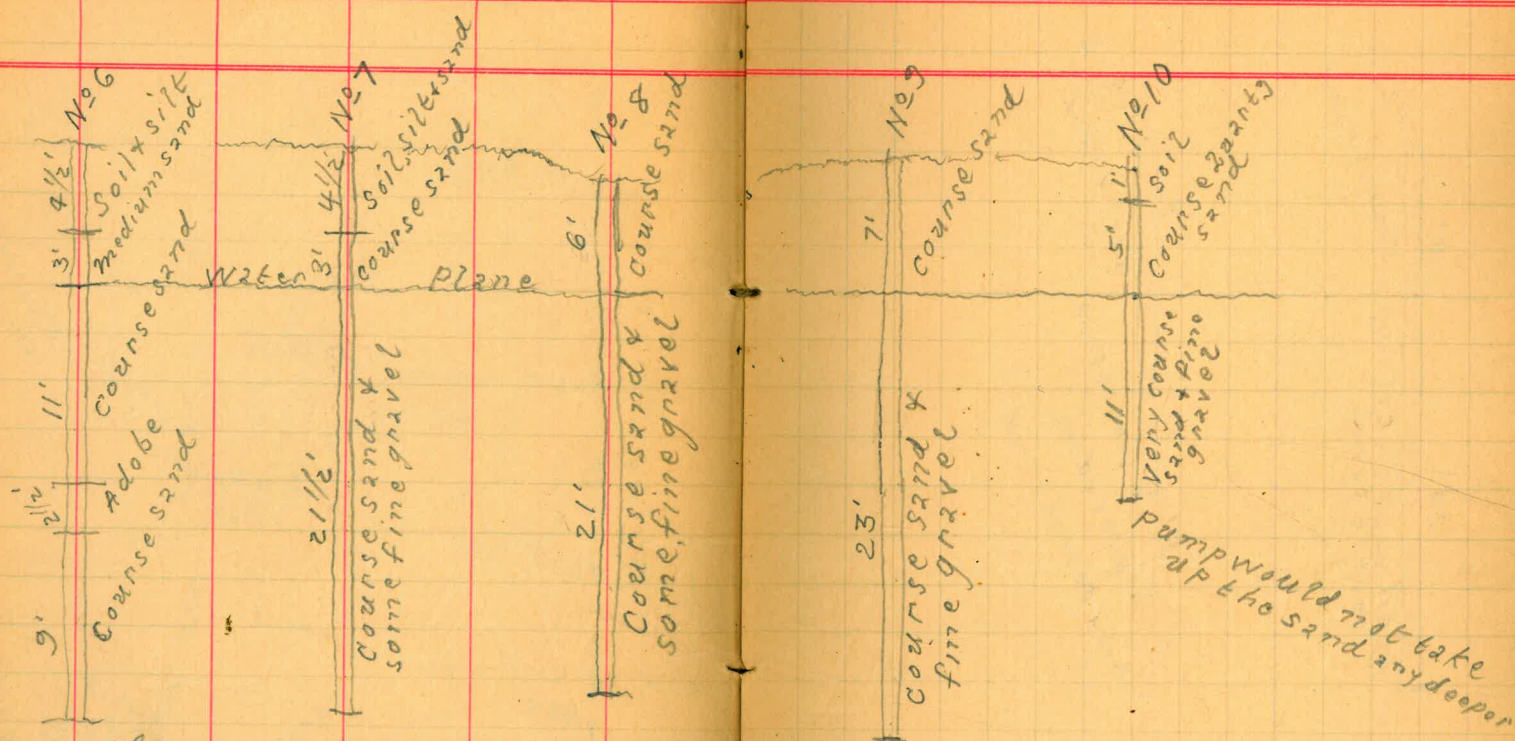
Test Wells
El Cajon Valley



Angles are Approx.



Test Wells El Cajon Valley



(Approx) Elev. ground surface at No. 6 = 338.0

" " Water " " 330.5

20'
 good water bearing
 coarse sand
 8'
 No. 1
 coarse sand

5'
 5'
 11'
 9'
 good, coarse sand
 silt & adobe
 coarse sand
 No. 2
 soil & sand

11/10/07

Levels from Santee Sta

Sta	+	HI	-	Elv.
	1.70	365.70		364.00
T.P.	0.20	357.20	8.70	357.00
T.P.	1.75	151.10	7.85	348.35
T.P.	5.10	348.45	7.75	343.35
T.P.	4.75	348.75	4.45	344.00
			4.75	344.00
B.M.			2.10	346.65
				341.00
				332.00

Levels run with a transit &
are only APPROX

run northerly to Williamson's Hse

Assumed E.L.V.

Top of p212 at Santee Station

ground E.L.V. at Williamson's Windmill
E.L.V. of water in well 332.5

N.W. cor Post of corner near windmill corner

E.L.V. ground surface at Well No 12

" water " " " " No 12

A. Line
Levels near Dr. Gillin's
Pumping Sta

Stn	+	HI	-	ELV
		337.00		
			3.50	333.50
			12.50	324.50
			16.50	320.00
			5.00	332.00
			13.00	324.00
			5.50	331.50
			13.00	324.00
			2.00	335.00
			17.50	319.50
			8.50	328.50
			13.00	324.00

4 from station St 2
 APPROX from levels taken to center
 surface of ground by Gillin's Pumping Sta
 center of centrifugal pump " "
 surface of water at rest in " "
 surface of ground at Well No 2
 " " water " " No 2
 " " ground " " No 1
 " " water " " No 1
 " " ground at Fanita Windmill well
 " " water " " "
 surface of ground in Riv channel opposite ^{point} 300'
 " water " " "

B. Line

on wells 6-7-8-9-10.

Stk	+	H I	-	Elev
		341.00		
			3.00	338.00
			10.50	330.50
			3.50	337.50
			10.50	330.50
			6.00	335.00
			10.50	330.50
			4.00	337.00
			10.50	330.50
			5.00	336.00
			10.50	330.50

(Note) height of Instrument is
Approximate from former levels

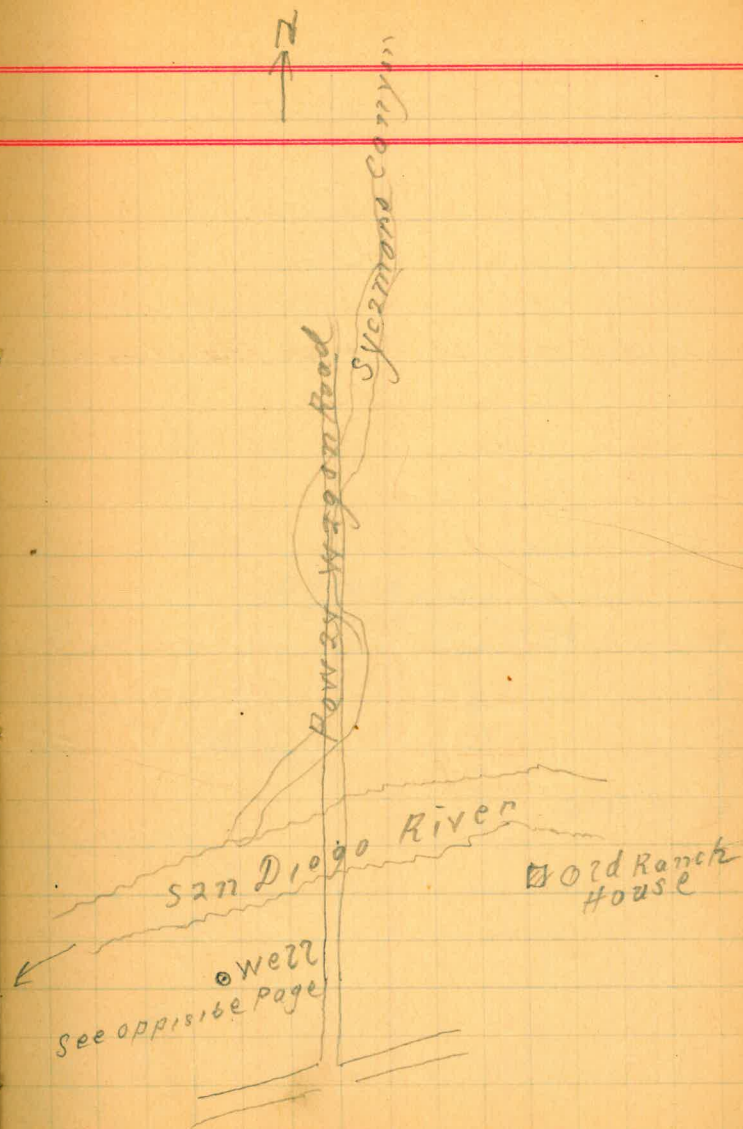
surface of ground at Well N^o 6.
 " water " " 6.
 " ground " " 7.
 " Water " " 7.
 " ground " " 8.
 " water " " 8.
 " ground " " 9.
 " water " " 9.
 " ground " " 10.
 " water " 10.

Examination of the
F. McKoon Well

Well 35 ft deep dug 11/19/04
27 ft of soil, sand, concrete, and
gravel, then they dug in 7 ft of Blue
clay did not go through the clay that
is of unknown depth.

The water stands at about 10 ft
below the surface.

They put in a 6" bush point.



Well No 5

S 86° E

Well No 6

N 85° E

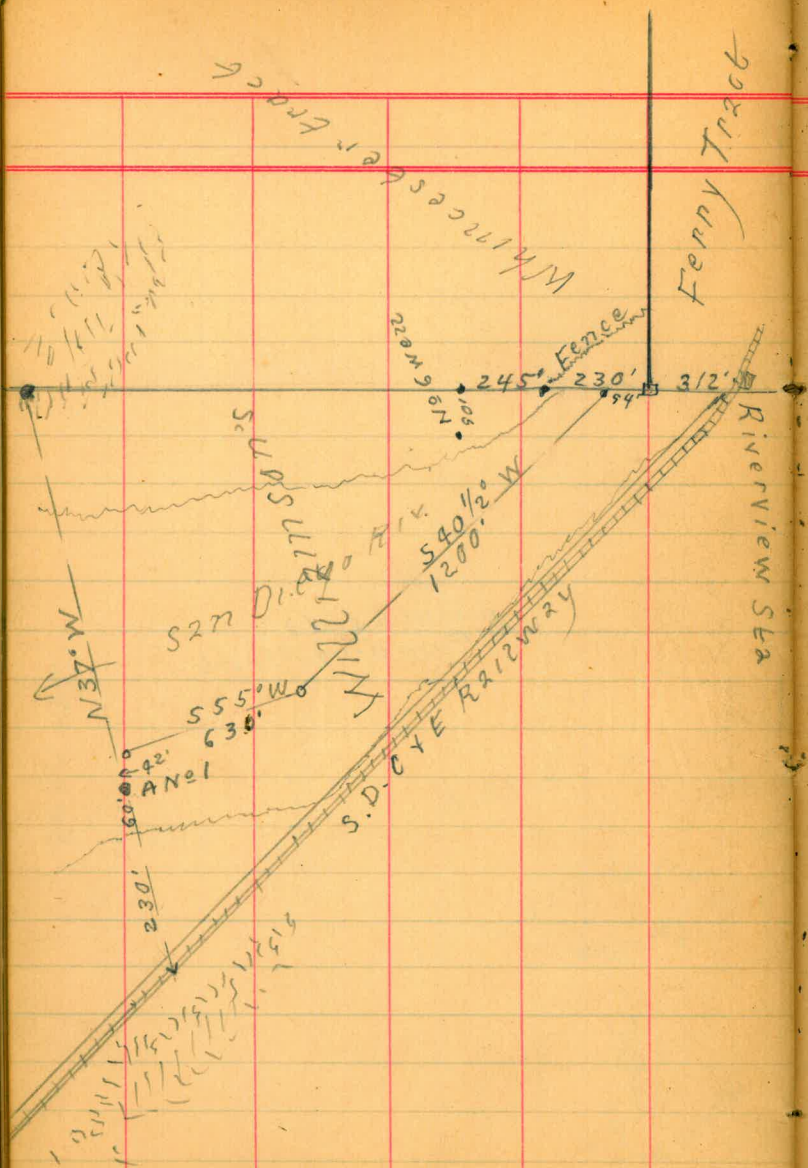
77° × 56 1/2°

Williamson
Windmill

25°

Stone
Section

South side
Pumping Plant



Test of Dr. Gillen's
Pumping Plant

on the 203+ Acre tract

This is an Open curved well
motive power 10 H.P. West Coast
gasoline engine on surface of the
ground. A 4" Starnis centrifugal
pump set down into the well.

A 5" suction pipe

A 4" discharge pipe

Discharge 12.5 above center of pump
and discharges into a wood pipe

Engine pulley 22" dia

Pump " " 9" "

Elv. surface of ground 333.50

" center centrifugal pump 324.50

" surface of water at rest 320.50

Commenced pumping 9.20 A.M.

Engine revolutions 248 per mi

Pump " " 605 " "

Elv. surface of water 9.20 A.M. 320.50

" " " 11.30 " 311.00

At 11.30 A.M. after 2 hours
continuous pumping
Water surface 13.5 below center pump
Discharge 12.5 above " "
Engine revolutions 255 per mi
pump " " 618 " "

Theoretical discharge would
be from 1 1/5 to 1 1/2 cu-ft per sec.

11/12/04

Test of H.D. Williamson's

South Side Pumping Plant

20 H.P. Lambert Gasoline Engine

N^o 6 Sampson Centrifugal pump

7" suction pipe

7" discharge pipe

Lift above center of pump into ^{top flume} 8 1/2 ft

" below " " about 17 1/2 "

after 8 hours continuous pumping

The engine revolutions 180 per min

" pump " 4.65 " "

some air in the suction pipe

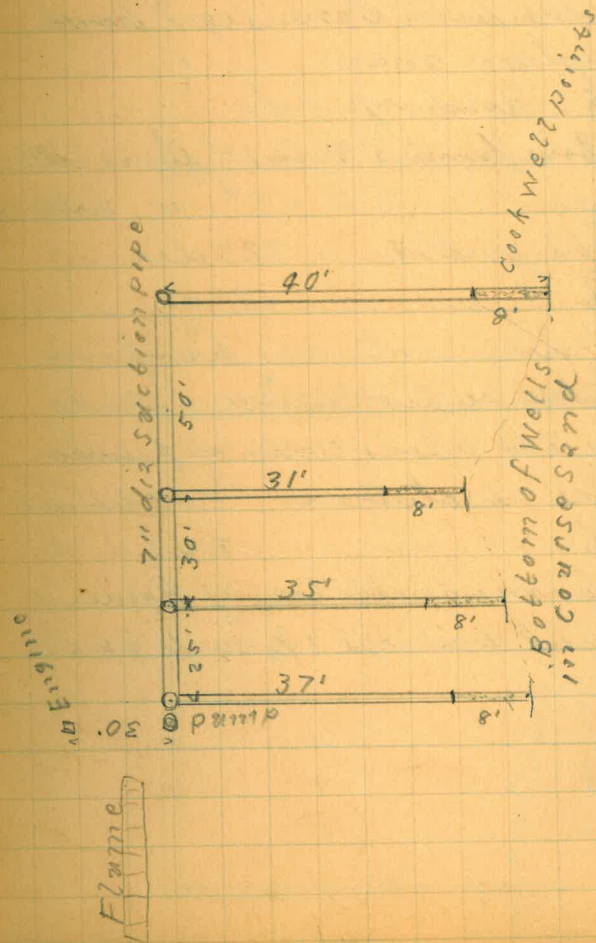
Water measured by floats in the flume

Water area in flume = .875 cu-ft

central surface velocity 4 ft per sec

Average velocity would be 3.2 ft per sec.

.875 cu-ft x 3.2 = 2.8 cu-ft per sec.

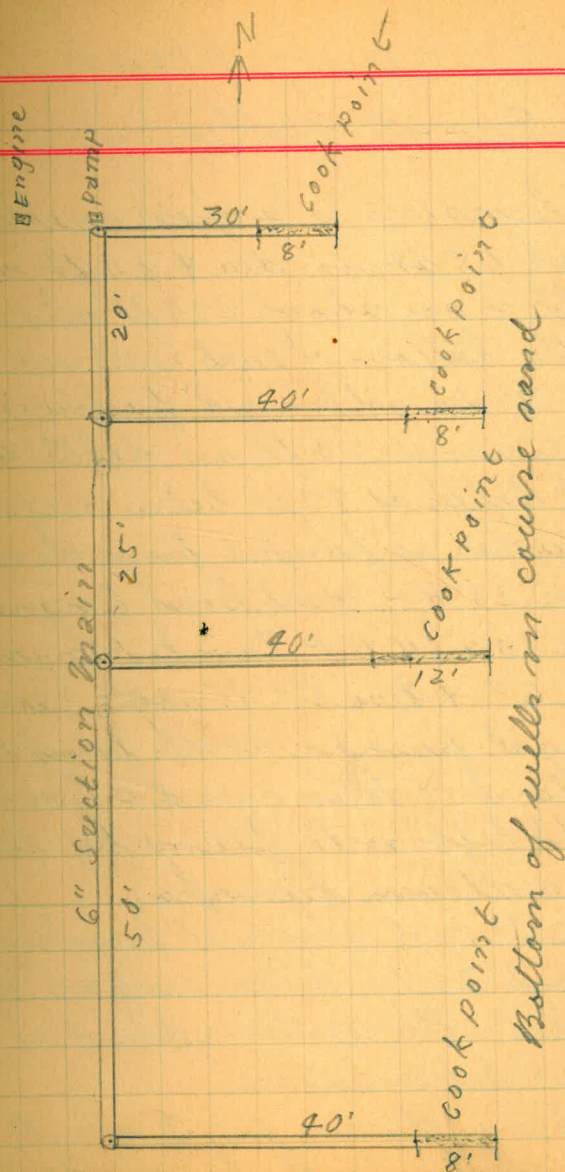


11/9/04

Test of H. D. Williamson's

North Side Pumping Plant

20 H.P. Model Gardner Engine
 No 5 Sampson Centrifugal pump
 6" suction main
 7" x 8" discharge pipe
 Lift above pump 3' 3" to 1st flame bottom
 " " " 8' 3" " 2d " bottom
 Engine pulley 32" dia
 Pump " 12" "
 After 9 hours continuous pumping
 water 17 1/2' below suction main & stands
 in pipe 8 ft above center of pump
 Engine revolutions 248 per min
 Pump " 640 " "
 showing considerable loss of power
 Theoretical discharge 1 3/4 cu-ft per sec



11/10/09

San Diego Flume Co's

Pumping Plant

In Monte Valley

Consists of 4 open wells about 15 ft. in dia. & 20 ft in depth & are about 200 ft apart. In the bottom of each well are four 8" dia galvanized perforated points about 50 ft. in depth a total depth of 70 ft. below surface. The water is pumped from the wells by two 25 H.P. West Coast Engines and a 10 & 14 H.P. Lambert engines & two 6" & two 5" Krogh centrifugal pumps. Water pumped into tank & then raised about 300 ft. lift into flume by two snow steam pumps.

Water level when not pumping is about 26 ft. below surface of river bed. after continuous pumping it is 36 ft. below surface.

Claim they can pump about four million galls. per 24 hours

TRAVERSE TABLE FOR TRANSIT BOOK.

From 1° to 90° for a distance of 100.

Degrees.	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		Degrees.
	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	
0			100.00	0.44	100.00	0.87	99.99	1.31	89
1	99.98	1.75	99.98	2.18	99.97	2.62	99.95	3.05	88
2	99.94	3.49	99.92	3.93	99.91	4.36	99.88	4.80	87
3	99.86	5.23	99.84	5.67	99.81	6.10	99.79	6.54	86
4	99.76	6.98	99.73	7.41	99.69	7.85	99.66	8.28	85
5	99.62	8.72	99.58	9.15	99.54	9.58	99.50	10.02	84
6	99.45	10.45	99.41	10.89	99.36	11.32	99.31	11.75	83
7	99.25	12.19	99.20	12.62	99.14	13.05	99.09	13.49	82
8	99.03	13.92	98.97	14.35	98.90	14.78	98.84	15.21	81
9	98.77	15.64	98.70	16.07	98.63	16.50	98.56	16.93	80
10	98.48	17.36	98.40	17.79	98.33	18.22	98.25	18.65	79
11	98.16	19.08	98.08	19.51	97.99	19.94	97.80	20.36	78
12	97.81	20.79	97.72	21.22	97.63	21.64	97.53	22.07	77
13	97.44	22.50	97.34	22.92	97.24	23.34	97.13	23.77	76
14	97.03	24.19	96.92	24.62	96.81	25.04	96.70	25.46	75
15	96.59	25.88	96.48	26.30	96.36	26.72	96.25	27.14	74
16	96.13	27.56	96.00	27.98	95.88	28.40	95.76	28.82	73
17	95.63	29.24	95.50	29.65	95.37	30.07	95.24	30.49	72
18	95.11	30.90	94.97	31.32	94.83	31.73	94.69	32.14	71
19	94.55	32.56	94.41	32.97	94.26	33.38	94.12	33.79	70
20	93.97	34.20	93.82	34.61	93.67	35.02	93.51	35.43	69
21	93.36	35.84	93.20	36.24	93.04	36.65	92.88	37.06	68
22	92.72	37.46	92.55	37.86	92.39	38.27	92.22	38.67	67
23	92.05	39.07	91.88	39.47	91.71	39.87	91.53	40.27	66
24	91.35	40.67	91.18	41.07	91.00	41.47	90.81	41.87	65
25	90.63	42.26	90.45	42.66	90.26	43.05	90.07	43.44	64
26	89.88	43.84	89.69	44.23	89.49	44.62	89.30	45.01	63
27	89.10	45.40	88.90	45.79	88.70	46.17	88.50	46.56	62
28	88.29	46.95	88.09	47.33	87.88	47.72	87.67	48.10	61
29	87.46	48.48	87.25	48.86	87.04	49.24	86.82	49.62	60
30	86.60	50.00	86.38	50.38	86.16	50.75	85.94	51.13	59
31	85.72	51.50	85.49	51.88	85.26	52.25	85.04	52.62	58
32	84.80	52.99	84.57	53.36	84.34	53.73	84.10	54.10	57
33	83.87	54.46	83.63	54.83	83.39	55.19	83.15	55.56	56
34	82.90	55.92	82.66	56.28	82.41	56.64	82.16	57.00	55
35	81.92	57.36	81.66	57.71	81.41	58.07	81.16	58.42	54
36	80.90	58.78	80.64	59.13	80.39	59.48	80.13	59.83	53
37	79.86	60.18	79.60	60.53	79.34	60.88	79.07	61.22	52
38	78.80	61.57	78.53	61.91	78.26	62.25	77.99	62.59	51
39	77.71	62.93	77.44	63.27	77.16	63.61	76.88	63.94	50
40	76.60	64.28	76.32	64.61	76.04	64.94	75.76	65.28	49
41	75.47	65.61	75.18	65.93	74.90	66.26	74.61	66.59	48
42	74.31	66.91	74.02	67.24	73.73	67.56	73.43	67.88	47
43	73.14	68.20	72.84	68.52	72.54	68.84	72.24	69.15	46
44	71.93	69.47	71.63	69.78	71.33	70.09	71.02	70.40	45
45	70.71	70.71							
Degrees.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Dep.	Lat.	Degrees.
	DEGREES.		¼ DEGREE.		½ DEGREE.		¾ DEGREE.		

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