

Rainfall Records

December 1916

to

July - 1918 Inclusive

LEVEL BOOK

373

65

W 98

!



# KEUFFEL & ESSER CO.

DRAWING MATERIALS

AND

SURVEYING INSTRUMENTS.

NEW YORK.

CHICAGO.

SAN FRANCISCO.

ST. LOUIS.

## TABLES FOR EXCAVATIONS AND EMBANKMENTS.

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.  
 ROADWAY 18 FEET WIDE. SIDE SLOPES 1 TO 1.  
 FOR SINGLE TRACK EXCAVATION.

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	.1	.2	.3	.4	.5	.6	.7	.8	.9	
1	9.0	9.2	9.3	9.4	9.5	9.6	9.7	9.8	9.9	0
2	10.0	10.1	10.2	10.3	10.4	10.5	10.6	10.7	10.8	10.9
3	11.0	11.1	11.2	11.3	11.4	11.5	11.6	11.7	11.8	11.9
4	12.0	12.1	12.2	12.3	12.4	12.5	12.6	12.7	12.8	12.9
5	13.0	13.1	13.2	13.3	13.4	13.5	13.6	13.7	13.8	13.9
6	14.0	14.1	14.2	14.3	14.4	14.5	14.6	14.7	14.8	14.9
7	15.0	15.1	15.2	15.3	15.4	15.5	15.6	15.7	15.8	15.9
8	16.0	16.1	16.2	16.3	16.4	16.5	16.6	16.7	16.8	16.9
9	17.0	17.1	17.2	17.3	17.4	17.5	17.6	17.7	17.8	17.9
10	18.0	18.1	18.2	18.3	18.4	18.5	18.6	18.7	18.8	18.9
11	19.0	19.1	19.2	19.3	19.4	19.5	19.6	19.7	19.8	19.9
12	20.0	20.1	20.2	20.3	20.4	20.5	20.6	20.7	20.8	20.9
13	21.0	21.1	21.2	21.3	21.4	21.5	21.6	21.7	21.8	21.9
14	22.0	22.1	22.2	22.3	22.4	22.5	22.6	22.7	22.8	22.9
15	23.0	23.1	23.2	23.3	23.4	23.5	23.6	23.7	23.8	23.9
16	24.0	24.1	24.2	24.3	24.4	24.5	24.6	24.7	24.8	24.9
17	25.0	25.1	25.2	25.3	25.4	25.5	25.6	25.7	25.8	25.9
18	26.0	26.1	26.2	26.3	26.4	26.5	26.6	26.7	26.8	26.9
19	27.0	27.1	27.2	27.3	27.4	27.5	27.6	27.7	27.8	27.9
20	28.0	28.1	28.2	28.3	28.4	28.5	28.6	28.7	28.8	28.9
21	29.0	29.1	29.2	29.3	29.4	29.5	29.6	29.7	29.8	29.9
22	30.0	30.1	30.2	30.3	30.4	30.5	30.6	30.7	30.8	30.9
23	31.0	31.1	31.2	31.3	31.4	31.5	31.6	31.7	31.8	31.9
24	32.0	32.1	32.2	32.3	32.4	32.5	32.6	32.7	32.8	32.9
25	33.0	33.1	33.2	33.3	33.4	33.5	33.6	33.7	33.8	33.9
26	34.0	34.1	34.2	34.3	34.4	34.5	34.6	34.7	34.8	34.9
27	35.0	35.1	35.2	35.3	35.4	35.5	35.6	35.7	35.8	35.9
28	36.0	36.1	36.2	36.3	36.4	36.5	36.6	36.7	36.8	36.9
29	37.0	37.1	37.2	37.3	37.4	37.5	37.6	37.7	37.8	37.9
30	38.0	38.1	38.2	38.3	38.4	38.5	38.6	38.7	38.8	38.9
31	39.0	39.1	39.2	39.3	39.4	39.5	39.6	39.7	39.8	39.9
32	40.0	40.1	40.2	40.3	40.4	40.5	40.6	40.7	40.8	40.9
33	41.0	41.1	41.2	41.3	41.4	41.5	41.6	41.7	41.8	41.9
34	42.0	42.1	42.2	42.3	42.4	42.5	42.6	42.7	42.8	42.9
35	43.0	43.1	43.2	43.3	43.4	43.5	43.6	43.7	43.8	43.9
36	44.0	44.1	44.2	44.3	44.4	44.5	44.6	44.7	44.8	44.9
37	45.0	45.1	45.2	45.3	45.4	45.5	45.6	45.7	45.8	45.9

Calculated by Julien A. Hall, M. Am. Soc. C. E.

MICROFILMED  
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1965



1916 December	Morena	Barrett	Lyon Valley	Lyon Cottonwood	Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	Bonita
1											
2	0.09			0.05		0.03		0.02	0.10		
3	0.03	0.03				0.04					
4	0.11	0.06		0.04		0.09		0.01	0.01		
5									0.02		
6	0.02								0.04		
7											
8						0.03			0.07		
9						0.01					
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25	2.45	2.77		3.20		1.19		2.30	1.03		
26	0.10			0.16		0.03					
27	0.55	0.30				0.09		0.24	0.14		
28											
29									0.01		
30											
31											
	3.35	3.16		3.45		1.47		2.57	1.35		

1 1/2" Stone on ground AM of 25<sup>th</sup>  
 3" " " " AM of 26<sup>th</sup>

TRACE  
Trace

0.75



1916 December	Jamul Ranch	Jamul Store	Winetka Valley	Skye Valley	Potrero	Grigsbys Ranch	Dulzura P.O.	Marron Valley	Alpine	Campbells Ranch	Japatul
1		0.10						0.04			
2						0.07					
3									0.15		0.16
4		0.15		0.18					0.10		0.10
5											
6				Dec. 15 <sup>th</sup>							
7				to							
8				27 <sup>th</sup>							0.07
9				2.86							
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											Trace
22											
23											
24											0.02
25		1.88			3.15	2.49	1.17	1.72	2.24		2.94
26						0.30					0.09
27		0.23			1.27	0.13	0.19		0.74		0.36
28											
29											Trace
30											
31											
		2.36	0.00	2.98	4.42	2.99	1.36	1.76	3.23		3.74



1916  
 December Buckman Springs Descanso Dehesa La Presa Hook's Ranch La Posta Lauterbach Valley Mitchem Dulzura Hausen Laguna Ranger St.

Day	Buckman Springs	Descanso	Dehesa	La Presa	Hook's Ranch	La Posta	Lauterbach Valley	Mitchem	Dulzura Summit	Hausen Green	Laguna Ranger St.
1									0.03		
2		0.34			0.18		0.05			Trace	
3		0.22			0.18				0.21		
4							0.04				
5											
6											
7											
8											
9											
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23										Trace	
24											
25					2.10	2.46	2.46		2.38	2.35	
26					0.73				0.19	0.35	
27					0.40		0.28				
28											
29											
30											
31											
					3.59	2.46	2.83		2.81	2.70	

Dec. 1st 1916 to June 16-1917 - 8.00"



1916  
December

Casebeers Ranch	Harper's Ranch	Upper Stay
--------------------	-------------------	---------------

1

2 0.07 0.09

3 0.05 0.03

4 0.02 0.10

5

6

7 0.02

8

9

10

11

12

13

14

15

16

17

18

19

20

Trace

21

22

23

24

2.70

1.00

25

0.70

0.06

26

0.02

27

28

29

30

31

3.40

0.16

1.30



1917 January	Morena	Bartlett	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	Bonita
1											
2	0.08	0.08				0.12			0.04		
3	1.05	1.20		0.82		0.33			0.63		
4	0.53	0.50		0.22		0.12			0.11		
5											
6											
7											
8		0.01				0.03			0.07		
9	0.04					0.01			0.01		
10											
11											
12											
13	1.72	1.53		1.66		1.24	1.55		1.04		
14	0.47	0.22				0.13			0.28		
15	0.08	0.03				Trace			0.07		
16	0.87	0.49		0.42		0.38	0.46		0.23		
17	0.02	0.01		Trace							
18	0.17	0.24		0.23		0.33	0.24		0.45		
19	0.54	0.54		0.93		1.09	0.80		1.22		
20	0.50	0.48		0.48		0.43	0.40		0.54		
21	0.38	0.28				0.16	0.19		0.08		
22	0.03	Trace									
23											
24											
25											
26											
27											
28											
29											
30											
31											
	6.48	5.61		4.76	2.89	4.37	3.64		4.77		



1917 January	Buckman Springs	Descanso	Dehesa	La Presa	Hook's Ranch	La Posta	Lautëbachs	Kitchen Valley	Dulzura Summit	Hanser Creek	Laguna Rang-Sta	
1		Rainfall: \$1.00 Dec 1 <sup>st</sup> 1916 to Jan 17-1917				0.95	0.04		0.07	0.10		
2					1.27	0.20	1.03		0.73	1.36		
3					0.30		0.32		0.25			
4												
5												
6												
7							0.01			0.03		
8								0.03				
9												
10												
11						1.53			1.28			
12					1.83	0.28	1.80		0.22	1.65		
13					0.20	0.11	0.15		0.03			
14							0.02		0.52	0.60		
15					0.70	1.06	0.47		0.53	0.40		
16							0.04		0.18			
17		0.35			0.50	0.02	0.23		0.70	<del>0.35</del>		
18		0.70			0.50		0.65		0.51	0.50		
19		0.40			0.65	0.38	0.44		0.19	0.45		
20		0.40				0.01	0.22			0.25		
21							0.01			Trace		
22												
23					0.20							
24					0.10							
25												
26												
27												
28												
29												
30												
31												
		1.85			6.25				4.71	5.66		
						4.55	5.45					



1917  
January

Lasebeer's  
Ranch Harper's  
Ranch Upper  
Otay

1	0.09		
2			0.12
3	1.00		0.38
4	0.25		0.11
5			
6			
7		0.01	
8		0.21	
9			
10			0.61
11			
12			
13	1.72	1.71	1.14
14	0.10	0.20	0.15
15	0.71	0.05	0.02
16	0.30	0.57	0.48
17	0.20	0.03	
18		0.18	0.38
19	0.46	0.66	0.95
20	0.39	0.29	0.42
21	0.30	0.07	0.15
22	0.10	0.05	
23	Trace.		
24			
25			
26			
27			
28			
29			
30			

5.62 4.03 4.30



1917

February	Morena	Barrett	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	Bonita
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13	0.07	Trace		0.21		0.40			0.13		
14	0.01	0.01		0.03							
15											
16											
17	Trace.								0.09		
18	1.35	1.43		0.99		0.82	1.08		0.80		
19	0.67	0.53		0.49		0.57	0.62		0.11		
20	0.26	0.13		0.49		0.08	0.09		0.07		
21	0.02	0.01				0.01			0.01		
22	0.09	0.03				0.01			0.07		
23	0.93	0.67				0.50	0.44		0.92		
24	0.01			Trace		Trace			0.02		
25	0.10	0.13		0.09		0.03	0.03		0.06		
26	0.11			0.07		0.02	0.02		0.01		
27											
28											
	3.67	2.94		2.37	3.60	2.44	2.28		2.29		



1917

February

Jannul  
RanchJannul  
StoreWinetka  
ValleySkye  
Valley

Potrero

Grigsby  
RanchDulzura  
Post OfficeMarran  
Valley

Alpine

Campbell  
Ranch

Japatul

1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12									0.40		
13					0.12		0.22				0.04
14											Trace
15											" " "
16											
17						Trace			0.82		" " "
18				1.20	1.64	1.55	1.38		0.30		1.90
19	2.35			1.02	0.68	0.75	0.46		0.50		0.71
20	0.13			0.10	0.21	0.13	0.08		0.10		0.10
21					0.02	Trace			0.11		0.02
22				0.15	0.09	0.05			0.65		0.07
23	0.82				0.75	0.82	0.27				0.57
24	0.01			0.80			0.04				
25	0.03			0.05	0.12	0.03			0.05		0.12
26	0.01			Trace	0.05	0.02					
27						Trace					
28											Trace.
	3.35			3.32	3.68	3.35	2.45	2.93			3.53



1917

February	Buckman Springs	Descanso	Dehesa La Presa	Hook's Ranch	La Posta	Lauterbach	Kitchen Valley	Dulzura Summit	Hausen Creek	Laguna Fang. Sta.
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11								0.18		
12								0.02	Trace	
13		0.17		0.20			0.16			
14						Trace				
15		Trace								
16										
17		0.90						0.91	1.10	
18		1.15		1.10	2.27		1.48	0.46	0.65	
19		0.65		0.80			0.67	0.07	0.55	
20		0.08		0.15			0.12		0.35	
21							0.02	0.05	Trace	
22		1.70		0.20	1.34	0.07		0.50	0.10	
23		0.02		1.20		0.64		0.03	0.55	
24		0.05						0.02		
25		0.21		0.10	0.01	0.03		0.05	0.35	
26						0.04				
27										
28										
		4.93		3.75	3.62	3.23		2.29	3.65	



1917

February

Casebere  
RanchHarpers  
RanchUpper  
Otay

1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13		0.05	0.21
14		0.04	
15			
16			
17		0.01	
18	1.32	0.57	1.01
19	1.04	0.22	0.55
20	0.20	0.18	0.14
21	0.02	0.04	<del>0.11</del>
22	0.10	0.12	0.02
23	1.24	1.09	0.74
24			0.01
25	0.12	0.14	0.04
26		0.05	0.02
27			
28			
<hr/>			
	4.04	2.51	2.74



1917 March.	Moreno.	Barrett.	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	Bonita
1											
2				0.03							
3											
4											
5											
6											
7											
8											
9											
10	0.37	0.32				0.23	0.19		0.15		
11	0.20	0.39		0.43		0.11	0.03		0.13		
12	0.34	0.26		0.42		0.34	0.35		0.11		
13				0.09							
14											
15	0.04	0.06				0.01			0.03		
16											
17											
18											
19											
20											
21											
22				Trace							
23											
24											
25											
26											
27											
28											
29											
30											
31	Trace	Trace		Trace							
	0.95	1.05		0.97	1.48	0.69	0.57		0.42		

Larvin on the a ground.



1917

March.

Jamul  
RanchJamul  
StoreWinetka  
ValleySkye  
Valley

Potrero

Griqsby  
RanchDulzura  
Post OfficeMarron  
ValleyWillows  
or  
AlpineCampbell  
Ranch

Japatul

1											
2				Trace	Trace						
3											Trace
4											
5											
6											
7											
8											
9											
10				0.45	0.32	0.34	0.31	0.08			0.29
11				0.25	0.20	0.22	0.07	0.39			0.25
12				0.20	0.38	0.34	0.37	0.31			0.07
13											Trace
14											
15					0.16	0.03		0.01			0.04
16				0.03							
17											
18											
19											
20											
21											
22					0.04						0.01
23											
24											
25											
26											
27											
28											
29											
30					Trace						
31						Trace					
				<u>0.93</u>	<u>1.10</u>	<u>0.93</u>	<u>0.75</u>	<u>0.79</u>			<u>0.66</u>



1917  
 March. Buckman Springs Descanso Delhesa La. Prasa Hook's Ranch La. Posta Lauterbach Kitchen Valley Dulzura Summit Hausar Creek Laguna Rang. Sta.

Day	Buckman Springs	Descanso	Delhesa	La. Prasa	Hook's Ranch	La. Posta	Lauterbach	Kitchen Valley	Dulzura Summit	Hausar Creek	Laguna Rang. Sta.
1									0.05	Trace	From Dec. 1-1916 To March 16-1917 - 14.29"
2		Trace									
3						Trace	Trace				
4											
5											
6											
7											
8											
9		0.65							0.25	Trace	
10		0.15			0.50		0.30		0.12	0.25	
11		0.26			0.30	0.80	0.18		0.37	0.35	
12					0.30		0.31			0.20	
13											
14		0.16			0.10	0.01			0.05		
15							0.01			0.10	
16								2.30?			
17											
18											
19											
20											
21											
22							Trace				
23											
24											
25											
26											
27											
28											
29					0.05						
30					Trace						
31											

1.22

1.25

0.81

0.80

0.84

0.90



1917 March.	Casabere Ranch.	Harpers Ranch	Upper Otay.	Laguna Ranch-Hs.	Jess Morris
1					
2	Trace				
3		0.05			
4					
5					
6					
7					
8					
9	0.21	0.18	0.20		
10	0.15	0.25	0.06		
11	0.20	0.07	0.23		
12					
13					
14	Trace				
15		0.05			
16					
17					
18					
19					
20					
21					
22		0.01			
23					
24					
25					
26					
27					
28					
29					
30					
31		0.01			
	0.56	0.62	0.49		

From Dec. 1-1916  
 To March 16-1917  
 To March 16-1917 - 22.13"  
 To March 16-1917 - 4.00"  
 Jan. 31-1917



1917	Morena	Barrett	Lyon valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo stora	Bonita
1											
2											
3											
4											
5											
6											
7											
8											
9	0.29	0.17		0.12		0.13	0.20		0.07		
10	0.51	0.40		0.49		0.40	0.41		0.28		
11	0.02	0.05		0.03							
12											
13											
14											
15	Trace			Trace		Trace					
16	0.67	0.42		0.30		0.17	0.07		0.44		
17	1.72	1.43		1.32		0.84	1.10		0.75		
18	Trace	0.05				0.01	Trace		0.07		
19	Trace										
20											
21											
22											
23											
24											
25									0.02-		
26		Trace				0.05			0.05		
27	0.10	Trace		0.09		0.02	0.04		0.15		
28	0.03	0.08		0.10		0.02			0.01		
29	0.05					0.02	0.02		Trace		
30											
	3.39	2.60		2.45	3.08	1.66	1.84		1.84		

Gage read once a month.











1917 Casabara Harpers Upper Laguna Jess  
 April Ranch. Ranch Otay Ranch House Mooris

1				
2				
3				
4				
5				
6				
7				
8	Trace			
9	0.12	0.11	0.13	
10	0.57	0.42	0.20	
11		0.01		
12				
13				
14	Trace	0.01		
15	0.60	0.55	0.16	
16	1.70	1.13	0.76	
17	0.05	0.04		
18				
19				
20				
21				
22				
23				
24				
25				
26	Trace		0.01	
27	"	0.01	0.02	
28	"	0.01	0.01	
29		Trace		
30				

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3.04 2.29 1.29



May  
1917

	Morana	Barroth	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	J. Dunn at Bonita
1											
2											
3											
4											
5											
6											
7											
8	✓ 0.09	0.09		0.03		0.01	0.02		0.02		
9	✓ 0.01	0.01		Trace		0.01	Trace		0.06		
10	✓ 0.02	Trace					Trace		0.07		
11	✓ Trace										
12											
13											
14											
15											
16											
17											
18	✓ 0.19	0.19				0.07	0.10		0.01		Trace
19	✓ 0.23	0.34		0.23		0.10	0.15		0.24		0.16
20	✓ 0.04										
21	✓ trace										
22											
23	✓ trace										
24	✓ 0.10	0.12		Trace		0.06	0.05		0.10		0.09
25	✓ 0.33	0.28		0.12		0.10	0.12		0.10		0.05
26	✓ 0.03										
27											
28											
29	✓ 0.03	Trace		0.08		0.03					
30	✓ Trace	Trace				Trace	0.02		0.03		0.01
31	✓ 0.01					Trace			0.02		0.07
	1.08	1.03		0.46	0.94	0.38	0.46		0.64		0.38

Darker once a month



May 1917	Jamul Ranch	Jamul Store	Winarka Valley	Skye Valley	Potrero	Grigsbys Ranch	Dulgura Post Office	Marron Valley	The Willows or Alpine	Campbell Ranch	Japatul
1											
2											
3											Trace
4											0.01
5											Trace
6											
7				Trace		0.05					
8					0.07		0.04				0.04
9					Trace	Trace	Trace	0.03			0.02
10					0.01			Trace			0.02
11											Trace
12											Trace
13											0.07
14											
15											
16											
17											
18				0.10	0.09	0.16	0.03	0.03			
19				0.36	0.34	0.27	0.15	0.52			0.12
20											0.01
21											Trace
22											Trace
23					0.02						0.01
24				0.05	0.13	0.05	0.01				0.08
25				0.34	0.22	0.20	0.16				0.19
26											0.01
27							0.05				
28							Trace	Trace			Trace
29				0.03	0.03			0.07			0.03
30					Trace			Trace			0.01
31											0.02
				0.88	0.91		0.73	0.44	0.60		0.64







Mays 1917	Casbara Ranch	Harpors Ranch	Uppar Otay	Laguna Ranch Housa	Jess Mooris'
--------------	------------------	------------------	---------------	--------------------------	-----------------

1					
2					
3		100			
4		200			
5					
6					
7		300			
8	0.02	0.02	0.02		
9	Trace	0.02	0.02		
10		0.01			
11		Trace			
12					
13					
14					
15					
16					
17		400			
18	0.13	0.12	0.14		
19	0.15	0.24	0.13		
20		0.02			
21		500			
22					
23	Trace	600			
24	0.10	0.10	0.17		
25	0.12	0.19	0.03		
26		0.02	Trace		
27					
28		700			
29	0.03	0.09			
30		Trace			
31		Trace	0.04		
	0.55	0.83	0.55		

Borden

3.26



1917

Juva

Morena

Barratt

Lyon  
Valley

Cottonwood

Lyon  
PeakLower  
OtarHarvey  
Ranch

Tecate

Chollas

Campo  
StoraDunn's  
Bonita

1  
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NoR  
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n  
f  
a  
l  
lNoR  
a  
i  
n  
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a  
l  
lNoR  
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i  
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f  
a  
l  
lNoR  
a  
i  
n  
f  
a  
l  
lNoR  
a  
i  
n  
f  
a  
l  
l

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1917  
June

Jamul  
Ranch

Jamul  
Store

Minetka  
Valley

SKYE  
Valley

Potrero

Grigsby  
Ranch.

Dulzura  
Post. Office

Mormon  
Valley

The Willows  
or  
Alpine

Campbell  
Ranch

Japatul

1  
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27  
28  
29  
30

			No	No	No	No	No		Trace
			R	R	R	R	R		
			a	a	a	a	a		
			i	i	i	i	i		
			n	n	n	n	n		
			s	s	s	s	s		
			a	a	a	a	a		
			l	l	l	l	l		
			l	l	l	l	l		
			l	l	l	l	l		

0.00 0.00 0.00 0.00 0.00 0.00 0.00



1917  
June

Buckman  
Springs

Duncan

Delosa

La Rosa

Hook's  
Ranch

La Posta

Lauterbach

Kitchen  
Valley

Dulzura  
Summit

Housar  
Creek

Laguna  
Ranger  
Station

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No

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No

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f  
a  
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No

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a  
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1917 June.	Casabara Ranch	Harpars Ranch	Upper Otay	Laguna Ranch House	Jess Mooris
1					
2					
3					
4					
5	No	No			
6					
7					
8	P	P			
9	a	a			
10	i	i			
11	n	n			
12	s	s			
13	a	a			
14	r	r			
15	a	a			
16	r	r			
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30	0.00	0.00			
			0.00		

0.00 0.00

0.00



1917

July

Morana Barratt

Lyon  
Valley

Cottonwood

Lyon  
PeakLower  
OtayHarvey  
Ranch

Tecate

Chollas

Campo  
StoreJ. Dunn  
at  
Bonita1  
2  
3  
4  
5  
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26  
27  
28  
29  
30  
31

Trace

Trace

0.27

Trace

Trace

Trace

0.09

0.02

~~Trace~~

Trace

Trace

Trace

0.14

0.52

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Trace

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1917

July

Jamul  
RanchJamul  
StoreWinetka  
ValleySkye  
Valley

Potrero

Grigsby  
RanchDulzura  
Post OfficeMarron  
ValleyThe Willows  
or  
AlpineCampbell  
Ranch

Japatul

1  
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29  
30  
31

Trace

Trace

Trace Trace

0.01

Trace

Trace

0.10

Trace

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0.03

Trace

0.10

0.01

0.00

0.03



1917  
July

Buckman  
Springs

Descanso

Dehesa

La Presa

Hooks  
Ranch

La Posta

Hauterbach

Kitchen  
Valley

Dulzura  
Summit

Hausor  
Creek

Laguna  
Ranger  
Station

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21  
22  
23  
24  
25

Trace

Trace

0.37

0.10

0.05

0.20

0.10

0.10

0.30

0.37

0.85

0.00 0.00

0.00 0.08

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a  
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Trace

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" 0.06

" Trace

" "

" "

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1917	Casebara	Harpers	Upper	Laguna	Jess
July	Ranch	Ranch	Otay	Ranch	Morris

1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11		Trace			
12	1.12	0.01			
13		Trace			
14		"			
15		"			
16		0.27			
17		Trace			
18					
19					
20					
21					
22	0.15	"			
23	Trace	"			
24	Trace	"			
25	0.28	0.39			
26	Trace				
27	0.07	0.75			
28		0.36			
29	Trace				
30	0.16	0.03			
31		0.76			
	1.78	2.57	0.00		



1917  
August

Morena Barrett

LYON  
Valley

Cottonwood

LYON  
Peak.

Lower  
Otay

Harvey  
Ranch

Tecate

Chollas

Campo  
Store

J. Dunn  
at  
Bonita

1

2

3

4

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14

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17

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Trace

Trace  
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Trace.

Trace  
Trace.

Trace  
Trace

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0.00

0.00

0.50

0.57

0.00



1917	Jamul	Jamul	Winetka	Skye	Grigsby	Dulzura	Marron	The Willows or	Campbell	Japatul
August	Ranch	Store	Valley	Valley	Potrero	Ranch	Post Office	Valley	Alpine	Ranch

1  
2  
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25  
26  
27  
28  
29  
30  
31

Trace

Trace

Trace

0.00 0.00

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1917  
August

Buckman  
Springs

Descanso

Dehesa

La Presa

Hooks  
Ranch

La Posta

Lauterbach

Kitchen  
Valley

Dulzura  
Summit

Hausen  
Creek

Laguna  
Ranger  
Station

1  
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29  
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31

0.30

0.30

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0.30

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0.00

0.04

0.00

0.04 Trace

Trace. Trace

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1917 August	Casabare Ranch	Harpers Ranch	Upper Otay	Laguna Ranch House	Jess Mootis
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11		Trace			
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22	Trace				
23		Trace			
24		0.01			
25		0.01			
26					
27					
28					
29					
30					
31					
	0.00	0.02	0.00		



1917  
September

	Morena	Barriatt	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Stora.	Dunn's Bonita
1											
2											
3	Trace				No						
4								No			
5											
6											
7											
8											
9		Trace									
10		" "		Trace						Trace	
11											
12											
13											
14											
15											
16											
17											
18											
19											
20	Trace	Trace									
21	0.74										
22											
23											
24											
25											
26											
27											
28							0.01				
29											
30											
	0.74	0.00		0.00	0.00	0.01		0.00	0.00		

No

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a  
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Trace

Trace  
Trace



1917  
September

Jamul  
Ranch

Jamul  
Store

Winnetka  
Valley

Skye  
Valley

Potrero

Grigsby  
Ranch

Dulzura  
Post  
Office

Marron  
Valley

"The  
Willows"  
or  
Alpine

Campbell  
Ranch

Japatul

1  
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28  
29  
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Trace  
Trace

Trace

Trace

Trace

0.00 0.00

0.00 0.00

0.00 Trace



1917  
September

Buckman  
Springs

Descanso

Dehesa

La Presa

Hooks  
Ranch

La Posta

Lauterbach

Kitchen  
Valley

Dulzura  
Summit

Hausen  
Creek

Laguna  
Ranger  
Station

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0.02

Trace

0.01

0.60

Trace

0.04

0.60

0.02

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0.61



1917 Cosebere Harpers Upper Laguna Jess  
September Ranch Ranch Otay House Morris

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0.68

0.73

0.00

Trace  
0.46

Trace

0.17

0.10

Trace



1917	Morena	Barrett	Lyon Valley	Cottonwood	Lyon Peak.	Lower Otoy	Harvey Ranch	Tecote	Chollas	Campo	Dumms' Bonita
1											
2											
3											
4											
5											
6											
7											
8									Trace		
9											
10											
11		Trace									
12		"									
13											
14		"							0.07		
15		"									
16						0.08	Trace		0.03		0.02
17	0.03	Trace		Trace		0.02	Trace				
18											
19											
20											
21											
22											
23											
24											
25											
26									Trace		
27											
28											
29											
30											
31									Trace		
	0.03	0.00		0.00	0.00	0.10	0.00		0.10		0.02



1917

October

Jamul  
RanchJamul  
StoreWinetka  
ValleySkye  
Valley

Potrero

Grigsby  
RanchDulzura Morron  
Post Office ValleyThe  
Willows  
or  
AlpineCampbell  
Ranch

Japatul

1

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22

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24

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27

28

29

30

31

Trace

0.08 0.02

0.10

Trace  
0.06  
Trace

0.10 0.00

0.08 0.02

0.06



1917

October

Buckman

Springs

Descanso

Dehasa

LaPrasa

Hooks

Ranch

LaPosta

Lauterbach

Kitchen  
ValleyDulzura  
Summit.Hawsar  
Crack  
StationLaguna  
Ranger  
Station.

1

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3

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31

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0.20

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0.00

0.05

0.00

0.10

0.10

Trace  
Trace

0.07

Trace

0.01

0.04

Trace

Trace



1917  
October

Casabere  
Ranch

Harper  
Ranch

Upper  
Otay

Laguna  
Ranch  
House

Jess  
Moon's

Dunne  
Bonita

1  
2  
3  
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5  
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27  
28  
29  
30  
31

Trace

0.01

0.03

Trace

Trace

0.08

0.01

0.03



1917

November

Morena

Barrett

Lyon  
Valley

Cottonwood

Lyon  
PeakLower  
OtayHarvey  
Ranch

Tecate

Chollas

Campo

Dunnos'  
Bonita

1  
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26  
27  
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30

0.49

0.31

0.34

0.09

0.24

Trace

0.10

Trace  
Trace

Trace

0.49

0.31

0.34

0.00

0.09

0.24

0.10



1917

November

Jamul  
RanchJamul  
storeWinetka  
ValleySkye  
Valley

Potrero

Grisby  
RanchDulzura  
P.O.Marron  
Valley"Willows"  
AlpinaCampbell's  
Ranch

Sapatul

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0.43

0.42

0.34

0.23

0.40  
Trace

Trace

0.37

0.43

0.42

0.34

0.23

0.40



1917  
 November Buckman Springs Descanso Debasia La Presa Hook's Ranch La Posta Laterbach Kitchen Valley Dulzura Summit Hauser Creek Laguna Ranget Station

1									
2									
3									
4									
5						0.22			
6					0.41			0.30	
7		0.70			0.30		0.38	0.21	
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23								Trace	
24									
25									
26									
27									
28									
29									
30									

0.70

0.30

0.41

0.22

0.38

0.55



1917  
November

Castore Ranch	Harper Ranch	Upper Otay
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0.17

Trace

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0.28

0.17



1917.

December	Morena	Barnett	Lyon Valley	Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo	Dunne's Barrita
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31

Trace

Trace  
Trace

Trace

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1917

December

Jamul  
Ranch

Jamul  
Store

Winetka  
Valley

Skye  
Valley

Potrero

Grigsby  
Ranch

Dulzuna  
Post Office

Marron  
Valley

"Willows"  
Alpine

Campbell  
Ranch

Japatul

1

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3

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1917	Buckman	Descanso	Debesa	La Presa	Hook's	La Posta	Lauterbach	Kitchen	Dolzuna	Hauson	Laguna
December	Springs				Ranch			Valley	Summit	Creek	Palmer
											Station
1											
2											
3											
4											
5											
6											
7											
8											
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11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25										Trace	
26											
27											
28											
29											
30											
31											

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1917  
December Casbere Harpen Uppen Laguna Jesse Telegraph  
Ranch Ranch Otay Ranch House Morris Canyon

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1918

January	Moreno	Barrett	Lyon Valley	Cottonwood	Lyon Peak	Lower Clay	Harvey Ranch	Tecate	Chollas	Compostura	Dunnes Bonita
1											
2											
3											
4											
5									Trace		
6									Trace		
7											
8											
9											
10											
11											
12											
13	1.18	1.08		0.52		0.52	0.83	0.86	0.71		0.79
14	0.02										
15	trace	trace		0.04							
16						0.01					
17											
18											
19											
20											
21											
22											
23											
24											
25	0.12	0.22		0.28		0.16	0.20	0.24	0.35		0.28
26	0.92	0.73		0.47		0.28	0.32	0.48	0.72		0.56
27	0.05	0.21		0.25		0.17	0.08	0.21	0.02		0.35
28											
29											
30											
31											
	<del>2.29</del>	<del>2.24</del>		<del>1.56</del>		<del>1.14</del>	<del>1.45</del>	<del>1.79</del>	<del>1.80</del>		<del>1.98</del>



1918	Jamul Ranch	Jamul Store	Winetko Valley	Skye Valley	Potrero	Grigsby Ranch	Dulzura Post Office	Marron Valley	Willows Alpine	Campbell Ranch	Japatul
1											
2											
3											
4											
5											
6											
7											
8											
9											
10											
11											
12											
13		0.91	0.78	0.94	0.94	1.25	0.90	1.03	1.12		0.93
14					0.101						Trace
15											"
16											
17											
18											
19											
20											
21											
22											
23											
24											
25		0.22	0.31	0.17	0.25	0.07	0.27		0.22		0.23
26		0.46	0.89	0.87	0.60	0.53			0.75		0.60
27		0.10	0.25	0.08	0.13	0.09	0.21	0.90	0.31		0.15
28											
29											
30											
31											
		1.69	2.23	2.06	1.93	1.94	1.38	1.93	2.40		1.91



1918

January

Buckman  
Springs

Descanso

Debesa

La Presa

Hook's  
Ranch

La Posta

Lauterbach

Kitchen  
ValleyDulzura  
SummitHauser  
CreekLaguna  
Ranger  
station

1

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31

1.35

1.15

0.99  
0.620.57  
0.03

0.85

2.26  
1.28

0.10

0.28

0.34

0.02

0.03

0.70

0.53

0.56

0.04

0.07

0.19

0.16

0.02

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2.63

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2.02

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2.01

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1.66

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0.96



1918  
January

Casberg  
Ranch

Harper  
Ranch

Upper  
Olay

Laguna  
Ranch  
House

Jesse  
Morris

Telegraph  
Canyon

1

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22

23

24

25

26

27

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31

Trace

1.05

0.78

0.65

trace

0.21

0.11

0.72

0.35

0.30

0.13

0.45

~~2.28~~

~~1.37~~

1.10



1918

February

	Morena	Barrett	Lyon Valley	Barrett P.O. Cottonwood	Lyon Peak	Lower Otay	Harvey Ranch	Tecate	Chollas	Campo Store	Dunne's Bonita
1											
2											
3											
4											
5				0.04							
6											
7	0.05	0.03		1.1		0.03	0.01		0.03		Trace
8	Trace	Trace				0.03	0.01				0.03
9											
10											
11											
12											
13											
14											
15											
16											
17											
18	0.92	1.32		1.05		0.86	0.94	0.90	0.72		0.65
19	0.43	0.58		0.54		0.17	0.23	0.52	0.10		0.10
20	0.03	0.04		0.03		Trace	Trace				
21	Trace										
22	0.70	0.56		0.30		0.32	0.38	0.45	0.55		0.32
23	0.17	0.13		0.20		0.16	0.11	Trace	0.15		0.14
24	Trace	Trace				Trace			0.02		Trace
25	0.21	0.12				0.12	0.14	0.10	0.15		0.09
26	0.12	0.09		<sup>24-25-26</sup> 0.23		0.09	0.15	0.08	0.07		0.07
27	0.08	0.14				0.09	0.07	0.15	0.07		0.08
28	0.02					0.01	Trace				0.02
	<u>2.73</u>	<u>3.01</u>		<u>2.39</u>		<u>1.88</u>	<u>2.04</u>	<u>2.20</u>	<u>1.86</u>		<u>1.50</u>



1918  
February

Jamul  
Ranch

Jamul  
Store

Winetka  
Valley

Skye  
Valley

Potrero

Grigsby  
Ranch

Dulzora  
Post Office

Marroh  
Valley

"Willows"  
Alpine

Campbell  
Ranch

Japatul

1  
2  
3  
4  
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24  
25  
26  
27  
28

1.02  
0.28  
0.02

1.0

1.12  
0.26  
Trace

1.20  
0.86  
Trace

1.51  
0.91  
0.02

1.23  
0.42  
Trace

1.05  
0.66  
Trace

1.12  
0.62  
0.02

1.27  
0.48  
0.02

Trace

0.34

0.60

0.49

0.40

0.30

0.74

0.23

0.05

0.13

0.11

0.58

0.12

0.20

0.02

0.01

0.02

Trace

Trace

0.11

0.22

0.14

0.09

0.20

0.12

0.13

0.06

0.07

0.17

0.11

0.17

0.05

0.11

0.07

Trace

0.12

0.08

0.62

Trace

0.06

Trace

2.22

2.32

3.11

3.20

2.51

2.67

2.43

3.09



1918  
February

Buckman  
Springs

Descanso

Debesa

La Presa

Hook's  
Ranch

La Posta

Lauterbach

Kitchen  
Valley

Dalzburg  
Summit

Hauser  
Creek

Laguna  
Road  
Stations

Day	Buckman Springs	Descanso	Debesa	La Presa	Hook's Ranch	La Posta	Lauterbach	Kitchen Valley	Dalzburg Summit	Hauser Creek	Laguna Road Stations
1											
2											
3											
4											
5											
6											
7					0.04	Trace			0.03		
8						"		0.04	0.03	0.03	
9							0.03				
10											
11											
12											
13											
14											
15											
16											
17			0.65						1.03		
18			0.65		1.08	1.35	1.40			1.20	
19			0.70		0.62	0.65	0.50		0.39	0.51	
20					0.04		0.02		0.02	0.02	
21			0.60			0.01			0.52		
22			22-26 away from gauge =		0.75	0.66	0.43		0.19	0.52	
23					0.14	0.14	0.15			0.15	
24							0.02		0.13	Trace	
25					0.15	0.05	0.08		0.08	0.20	
26			0.58		0.16	0.10	0.11		0.11	0.11	
27					0.05	Trace	0.07		0.01	Trace	
28							Trace				
					<u>3.03</u>	<u>2.96</u>	<u>2.86</u>		<u>2.54</u>	<u>2.74</u>	



1918. Casbere Harper Upper Laguna  
 February Ranch Ranch Otay Ranch  
 House Jesse Telegraph  
 Morris Canyon

1					
2					
3					
4					
5					
6					
7		0.04	0.03		0.02
8		0.02	0.06		
9					
10					
11					
12					
13					
14					
15					
16					
17					
18		0.81	0.86		0.90
19		0.65	0.15		0.15
20		0.05	Trace		
21		0.01			
22		0.90	0.31		0.32
23		0.10	0.12		0.22
24		0.03	Trace		
25		0.22	0.09		0.05
26		0.05	0.08		0.10
27		0.10	0.09		0.09
28			Trace		
		<hr/> 2.98	<hr/> 1.79		
				<hr/> 1.84	



1918.

Barrett  
Smith

March Morena Barrett Lyon Valley Cottonwood Lyon Peak Lower Otay Harvey Ranch Tecate Chollas Campo Store Dunne's  
Benita

1															
2															
3															
4															
5															
6	Trace	Trace			Trace	Trace	Trace								
7	0.42	0.42		0.22	0.13	0.13	0.23	0.15	0.10						
8	1.80	1.04		1.40	0.94	1.23		0.66	0.65						
9															
10															
11	2.04	1.71		1.72	0.96	1.20	2.03	1.37	1.03						
12	3.97	2.48		2.10	1.18	1.44	1.30	2.00	1.45						
13	1.25	0.78		0.53	0.24	0.30		0.18	0.13						
14															
15															
16															
17															
18															
19	0.12	0.81		0.1	0.12	0.12	0.10	0.07	0.07						
20	1.13	1.22		0.15	0.85	0.95	1.12	1.57	0.90						
21	0.05	0.10		1.51	Trace	Trace	0.10								
22	Trace														
23															
24															
25															
26															
27	Trace	Trace				Trace		Trace							
28		0.01		Trace		Trace									
29	0.02				Trace										
30															
31															
<hr/> 10.80		<hr/> 8.97		<hr/> 7.63		<hr/> 4.42		<hr/> 5.37		<hr/> 4.88		<hr/> 6.00		<hr/> 4.33	



1918	Jamul Ranch	Jamul <del>Store</del>	Winetka Valley	Skye Valley	Patrero	Grigsby Ranch	Dolzuro P. O.	Marron Valley	"Willows" Alpine Ranch	Campbell Ranch	Japatul
1											
2											
3											
4											
5											
6					trace	trace					trace
7		0.20		0.48	0.27	0.32	0.21				0.31
8		1.16		1.47	1.61		1.43	1.42			1.53
9								0.02			trace
10											
11		1.60		1.75	1.96	2.10	1.45	0.35			1.83
12		2.20		3.07	2.77	2.20	2.05	2.61			2.64
13		0.51		0.65	1.14	1.25	0.60	0.49			0.53
14											
15											
16											
17											
18											
19				0.10	0.12	0.09	0.14	1.12			0.13
20		1.48		1.20	1.14	1.17	1.03				1.09
21				0.03	0.04	0.02					0.05
22						trace					trace
23											
24											trace
25											
26											
27					0.01						trace
28											0.01
29											
30											
31											
	7.15		8.75	9.06	7.15	6.91	6.01				8.12



1918.	Buckman				Hook's			Kitchen	Datzora	Hauser	Laguna
March.	Springs	Descanso	Debesa	La Presa	Ranch	La Posta	Lauterbach	Valley	Summit	Creek	Ranger
											Station
1.											
2.											
3.											
4.											
5.		trace							trace		
6.		0.53				0.38	trace		0.24		
7.		1.73			0.40	1.36	0.17		1.41	1.30	
8.		trace			1.60		1.50			<del>1.55</del>	
9.										0.65	
10.		2.53				2.07			1.89		
11.		4.18			2.10	3.64	1.88		2.12	1.75	
12.		0.89			3.75	1.35	2.22		0.43	4.20	
13.					1.30		0.56			0.65	
14.											
15.											
16.											
17.											
18.						0.14			0.12		
19.		1.70			0.12	1.26	0.09		1.42	0.20	
20.		0.10			1.15	0.02	1.17		0.03	1.10	
21.					0.05	trace	0.02			0.10	
22.					0.04						
23.											
24.											
25.											
26.											
27.						trace			trace	trace	
28.							trace				
29.											
30.											
31.											
		<u>11.66</u>			<u>10.51</u>	<u>10.22</u>	<u>7.81</u>		<u>7.66</u>	<u>8.95</u>	



1918 Casbere Harper Upper Laguna  
 March Ranch Ranch Otay Ranch House Jesse Morris Telegraph Canyon

Day	Casbere Ranch	Harper Ranch	Upper Otay	Laguna Ranch House	Jesse Morris	Telegraph Canyon
1.						
2.						
3.						
4.						
5.						
6.		trace	trace			
7.		0.63	0.12			0.12
8.		1.68	0.97			0.75
9.		0.02				
10.						
11.		2.86	1.38			1.15
12.		3.52	1.09			1.54
13.		1.00	0.17			
14.						
15.						
16.						
17.						
18.						
19.		0.06	0.10			0.09
20.		1.15	0.87			1.00
21.		0.03	0.02			
22.						
23.						
24.						
25.						
26.						
27.		trace				
28.		0.10	trace			
29.			trace			
30.						
31.						
		11.00 4.72				4.65?



1918

Barrett  
P.O.

APRIL Morena Barrett Lyon Valley Cottonwood Lyon Peak Lower Otay Harvey Ranch Tecate Chollas Campo Store Dunne's Barita

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26.  
27.  
28.  
29.  
30.

trace trace

trace trace

0.03 0.05  
trace trace  
0.05 tracetrace trace trace  
trace trace trace  
trace 0.01e

0.08 0.05

None

0.00 0.01 0.00 0.00

trace

0.00

No Rainfall



1918  
 APRIL Jamol Jamol<sup>PO</sup> Winetka Skye Grigsbys' Dolzura Marron "Willows" Campbell  
 Ranch Store Valley Valley Patrero Ranch P.O. Valley Alpine Ranch Japatul

1.										
2.										
3.										
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.				0.03				0.07		
13.				trace	0.03			trace		0.01
14.					trace	trace		trace		trace
15.					0.04	0.05		0.05		0.02
16.										
17.										
18.										
19.										
20.										
21.										
22.										
23.										
24.										
25.										
26.										
27.										
28.										trace
29.										trace
30.										

0.00

0.03

0.07

0.05

0.12

0.00

0.03



1918

APRIL Buckman Springs Descanso Debesa La Presa Hook's Ranch La Posta Lauterbach Valley Kitchen Dulzura Summit Hauser Creek Laguna Ranger Station

1.  
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27.  
28.  
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trace

trace

0.05  
trace  
0.06

trace

0.05

trace

"  
0.02

0.02  
trace  
0.02

0.02

0.00

0.11

trace

0.05

0.02

0.04

0.02



1918

APRIL

Casbere Ranch	Harper Ranch	Upper Otay	Laguna Ranch House	Jesse Morris	Telegraph Canyon
------------------	-----------------	---------------	--------------------------	-----------------	---------------------

1.

2.

3.

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	trace	trace			
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	trace	trace			
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		trace			
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0.01					
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	0.00				
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			0.00		
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1918

Barnett P.O.

Smith

MAY

Marana Barrett Lyon Valley Cottonwood Lyon Peak Lower Otay Harvey Ranch Tecate Chollas Campo Shore Dunne  
 Bonita

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 3  
 4  
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 18  
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 20  
 21  
 22  
 23  
 24  
 25

0.09 0.09  
 0.09 0.06  
 trace

0.17  
 0.02

0.18  
 0.02

0.10  
~~0.01~~

0.03  
 trace

trace  
 trace

0.06  
 0.02

26  
 27

Trace Trace  
 0.05 0.02

Trace

Trace

trace

trace

Trace Trace

Trace

0.02

trace

0.04

trace

30

"

31

0.23

0.17

0.19

0.20

0.12

0.03

0.04

0.08



1918	Jamul Ranch	Jamul P.O.	Winetka Valley	Skye Valley	Potrero	Grigsby Ranch	Dutzura P.O.	Morrera Valley	"Willows" Alpine	Campbell Ranch	Jopatul
1											
2											
3											
4											
5											
6											
7											
8						trace	trace (0.25)				0.01
9					0.09	0.14	0.05	0.13			trace
10					0.07	0.09		trace			0.07
11											trace
12											
13							trace				
14											
15											
16											
17											
18											
19											
20											
21											
22											
23											
24											
25											
26											
27											
28						trace	0.01				trace
29					0.03	trace	trace	0.01			0.03
30											trace
31											
	<u>0.00</u>		<u>0.00</u>		<u>0.19</u>	<u>0.23</u>	<u>0.26</u>				<u>0.11</u>

none



1918 Buckman  
 MAY Springs Descanso Debesa La Presa Hook's Ranch La Posta Lauterbach Kitchen Valley Dulzura Summit Hauser Creek Laguna Ranger Station

Day	Spring	Descanso	Debesa	La Presa	Hook's Ranch	La Posta	Lauterbach	Kitchen Valley	Dulzura Summit	Hauser Creek	Laguna Ranger Station
1.											
2.											
3.											
4.											
5.											
6.											
7.									trace		
8.		0.28				0.03	trace		0.18	trace	
9.		0.10			0.08	0.02	0.08		0.07	0.02	
10.					0.05		0.04			0.03	
11.											
12.											
13.											
14.											
15.											
16.											
17.											
18.											
19.											
20.											
21.											
22.											
23.											
24.											
25.											
26.											
27.		trace				trace					
28.		0.05				0.02	trace		0.02	trace	
29.					0.04		0.01		trace	trace	
30.											
31.											
		0.43			0.17	0.07	0.13		0.27	0.05	



1918

MAY

Casper  
RanchHarper  
RanchUpper  
OtayLaguna  
Ranch  
HouseJesse  
MorrisTelegraph  
Canyon

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

26.

27.

28.

29.

30.

31.

trace

trace

0.16

0.20

0.10

trace

0.02

trace

0.01

Trace

0.17

0.03

0.02

trace

0.34

0.25

0.12



1918

Barrett P.O.

Smith

June Morena Barrett Lyon Valley Cottonwood Lyon Peak Lower Otay Harvey Ranch Tecate Chollas Campo Store Dunne  
Barziza

1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.	trace	trace			trace		trace	Trace
11.					trace			
12.								
13.								
14.		trace						
15.							trace	
16.	0.11	trace			trace			0.04
17.	0.03	0.16						Trace
18.		trace						
19.	0.04	trace		trace				
20.	0.40					0.15		
21.				trace				0.15
22.								
23.								
24.					0.01	0.02	0.02	0.01
25.					trace.	trace		
26.								
27.								
28.								
29.		trace			trace		trace	
30.						0.01		0.01
	0.58	0.16		trace	0.01	0.02	0.03	0.06



1918

June

Sarnal  
RanchSarnal  
P.O.Winetka  
ValleySkye  
Valley

Potrero

Grigsby  
RanchDulzora  
P.O.Marron  
Valley"Willows" Campbell  
Alpine Ranch

Japatul

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

11.

12.

13.

14.

15.

16.

17.

18.

19.

20.

21.

22.

23.

24.

25.

26.

27.

28.

29.

30.

trace

trace

trace

trace

trace

05

10

0.36

0.06

0.01

15

0.14

0.22

12

0.05

0.76

0.09

0.05

trace

0.02

0.02

trace

0.00

0.52



1918  
 June  
 Buckman Springs Descanso Debesa La Presa Hook's Ranch La Posta Lauterbach Kitchen Valley Dulzora Summit Hauser Creek Laguna Ranger Station

1.  
2  
3  
4  
5  
6  
7  
8  
9  
10.  
11.  
12.  
13.  
14.  
15.  
16.  
17.  
18.  
19.  
20.  
21.  
22.  
23.  
24  
25  
26  
27  
28  
29  
30  
31

trace

1.85

0.13

0.47

2.45

0.10

0.03

0.02

0.08

0.03

0.18

0.34

trace

trace

0.02

trace

0.02

trace

trace

0.01

trace

trace

trace

0.01

1.85

.30

.85

2.00



1918.	Casbere Ranch	Harper Ranch	Upper Otoy	Laguna Ranch House	Jesse Morris	Telegraph Canyon
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.			trace			trace
11.		trace				
12.						
13.						
14.		"				
15.						
16.		0.04	trace			trace
17.		0.11				
18.		0.01				
19.						
20.						
21.						
22.						
23.						
24.			0.01		10.50	0.01
25.			trace			
26.						
27.						
28.						
29.						
30.		trace				
		<hr/> 0.16	<hr/> 0.01			<hr/> 0.01 No Card



1918

JULY

Moreno Barrett Lyon Valley <sup>Barrett P.O.</sup> Cottonwood <sup>Smith</sup> Lyon Peak Lower Otay Harvey Ranch Tecate Chollas Campo Store Dunne Borita

0.03

1

2

3

4

5

6

7

8

9

trace

10

11

12

13

14

15

16

17

18

trace trace

19

trace

trace

trace

trace

20

21

22

23

24

25

26

27

28

29

30

31

trace

trace

None

0.03







Tecate  
 Mission  
 Combsby

608

1	
2	
3	
4	
5	
6	
7	
8	
9	0.20
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	
23	
24	
25	
26	
27	
28	
29	
30	
31	
32	
33	
34	
35	
36	

0.03

None

DISTANCES FROM CENTER OF ROADWAY FOR CROSS-SECTIONING.

ROADWAY 14 FEET WIDE. SIDE SLOPES 1 1/2 TO 1.

FOR SINGLE TRACK EMBANKMENT.

	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	7.0	7.2	7.3	7.5	7.6	7.8	7.9	8.1	8.2	8.4	0
1	8.5	8.7	8.8	9.0	9.1	9.3	9.4	9.6	9.7	9.9	1
2	10.0	10.2	10.3	10.5	10.6	10.8	10.9	11.1	11.2	11.4	2
3	11.5	11.7	11.8	12.0	12.1	12.3	12.4	12.6	12.7	12.9	3
4	13.0	13.2	13.3	13.5	13.6	13.8	13.9	14.1	14.2	14.4	4
5	14.5	14.7	14.8	15.0	15.1	15.3	15.4	15.6	15.7	15.9	5
6	16.0	16.2	16.3	16.5	16.6	16.8	16.9	17.1	17.2	17.4	6
7	17.5	17.7	17.8	18.0	18.1	18.3	18.4	18.6	18.7	18.9	7
8	19.0	19.2	19.3	19.5	19.6	19.8	19.9	20.1	20.2	20.4	8
9	20.5	20.7	20.8	21.0	21.1	21.3	21.4	21.6	21.7	21.9	9
10	22.0	22.2	22.3	22.5	22.6	22.8	22.9	23.1	23.2	23.4	10
11	23.5	23.7	23.8	24.0	24.1	24.3	24.4	24.6	24.7	24.9	11
12	25.0	25.2	25.3	25.5	25.6	25.8	25.9	26.1	26.2	26.4	12
13	26.5	26.7	26.8	27.0	27.1	27.3	27.4	27.6	27.7	27.9	13
14	28.0	28.2	28.3	28.5	28.6	28.8	28.9	29.1	29.2	29.4	14
15	29.5	29.7	29.8	30.0	30.1	30.3	30.4	30.6	30.7	30.9	15
16	31.0	31.2	31.3	31.5	31.6	31.8	31.9	32.1	32.2	32.4	16
17	32.5	32.7	32.8	33.0	33.1	33.3	33.4	33.6	33.7	33.9	17
18	34.0	34.2	34.3	34.5	34.6	34.8	34.9	35.1	35.2	35.4	18
19	35.5	35.7	35.8	36.0	36.1	36.3	36.4	36.6	36.7	36.9	19
20	37.0	37.2	37.3	37.5	37.6	37.8	37.9	38.1	38.2	38.4	20
21	38.5	38.7	38.8	39.0	39.1	39.3	39.4	39.6	39.7	39.9	21
22	40.0	40.2	40.3	40.5	40.6	40.8	40.9	41.1	41.2	41.4	22
23	41.5	41.7	41.8	42.0	42.1	42.3	42.4	42.6	42.7	42.9	23
24	43.0	43.2	43.3	43.5	43.6	43.8	43.9	44.1	44.2	44.4	24
25	44.5	44.7	44.8	45.0	45.1	45.3	45.4	45.6	45.7	45.9	25
26	46.0	46.2	46.3	46.5	46.6	46.8	46.9	47.1	47.2	47.4	26
27	47.5	47.7	47.8	48.0	48.1	48.3	48.4	48.6	48.7	48.9	27
28	49.0	49.2	49.3	49.5	49.6	49.8	49.9	50.1	50.2	50.4	28
29	50.5	50.7	50.8	51.0	51.1	51.3	51.4	51.6	51.7	51.9	29
30	52.0	52.2	52.3	52.5	52.6	52.8	52.9	53.1	53.2	53.4	30
31	53.5	53.7	53.8	54.0	54.1	54.3	54.4	54.6	54.7	54.9	31
32	55.0	55.2	55.3	55.5	55.6	55.8	55.9	56.1	56.2	56.4	32
33	56.5	56.7	56.8	57.0	57.1	57.3	57.4	57.6	57.7	57.9	33
34	58.0	58.2	58.3	58.5	58.6	58.8	58.9	59.1	59.2	59.4	34
35	59.5	59.7	59.8	60.0	60.1	60.3	60.4	60.6	60.7	60.9	35
36	61.0	61.2	61.3	61.5	61.6	61.8	61.9	62.1	62.2	62.4	36

Calculated by Julien A. Hall, M. Am. Soc. C. E.

Kenneth E. Dunning - January 7, 1918.

MADE IN GERMANY.