1918-19
April

Summit Station
Cisco - Yankee
Daggett - Pass
Marietta Lake

Saturday, Mar 29/1919.

Summit Station

Course - Du Flat.

1.	115.3	112	48"
2	~~108.5~~ 106.3	101.3	44.4
3	~~108.2~~ 106.7	101.5	45.0
4	~~108.5~~ 107.5	100.7	42.8
Rem.	106.5	102	43.7
5	~~119~~ 118.5	115	49.2
			230.3
6.	107.8	103.2	44.7
7	~~110~~ 109.5	102.5	44.8
8	112.5	109.2	46.3
9	111.0	101.5	(41.4)
Rem	~~116~~ 114.5	107.3	44.3
10	~~105~~ 101	99	38.4
11	101	95.7	39.8
			488.6

23 D.3

			488.6	
12	106.5	98.7	41.5	
13	~~98.5~~ 97.5	88.7	37.5	
	~~94.5~~ 94.0	94.0	38.0	
14	~~114.4~~ 114.1	105.0	57.0	
Rem	~~116.0~~ 115.7	102.8	54.1	
15	~~102~~ 101	100	41.9	
16	115	111.3	48.3	
17	111	106.5	46.9	
			762.2	

			762.2
18	~~114.5~~ 113.5	109.8	47.2
19	~~115~~ 114	111.4	47.9
20	~~116~~ 115.5	115	46.8
21	~~111.5~~ 108.5	103.5	43.8
22	~~92~~ 91	83.5	35.8
Rem	~~89.5~~ 89.5	83	35.6

✓ 22) 983.7

44.71

approx 44 8 hrs

108.2

2 2) 2382.2

W. S.B. 9/T 8-in

E S.B.

Av. 22 means 9/T 1-in

Course 1- Back of Station

1.	120	108.3	52.9
	118.5		
Rem	109	104	52.2

Bat. not reached
Rem. ~~125~~ Shelland again

	124.7	121.2	52.7
2,	112.2	105.3	46.6
	111.2		
3	~~97~~ 95	88	40.4

13.9.9

			139.9	
4	~~101~~ 100.4	97.9	41.7	
5	~~98~~ 97?	83.3	38.0	
Rem.	86	84.8	37.5	
6	~~97.3~~ 97.0	94.2	40.3	
7.	101.8	96.2	42.7	
8	100.2	97.3	40.0	
			342.1	

				342.1
9	95	92.5	37.7	
10	102	99.4	41.2	
				421.60

101.3
101.3.3

101.3
108.2
209.6
104.8 Av. 2 Courses

✓ 42.16
4471
86.87
43.44

Disco.

Course 1.

	a	b	
1.	68.8	65.2	27.3
2.	~~b2 5~~ 80.6	~~76.5~~	32
3	86	82	34.7
4	84.7	78.5	34.3
5	82.6	77.8	34.4
6	81.3	77	31.6
7	89.1	82.2	34.4

	A	b	
8	82.6	81.1	33.6
9	82.8	79.4	33.1
10	80.5	75	32.8
11	78.5	76.6	33.2
12	77.4	72.3	31.7
13	76.1	72	31.7

A	b		
14	78.8	74.5	32.6
15	78.	67.5	31.3
Rem	77.3	70.8	33.7
Rem	77.5	69.4	34.4
16	77.5	70.2	33.9
Snow melt below			
17	77	73.2	34.2

A	D	b	
18	76.6	71.8	33
19	78.7	72.5	34.2
20	76.5	70	34.8
21	77.3	71	33.1
22	76	67	32

22) 727.0 / 33.04

136 in Pol.

Cannez.

	D	L	
1	87,5	80,4	36.7
			2.9
			33.8
Rem	87,4	80,7	34,6
Rem	88.3	85	36
2	91	89,4	38.3
3	86.4	83,4	34,7
4	86	83,8	36
5	85,5	76	36.2

6 a.m. Sunday March 30.

	D	L	
6.	83.2	78,5	34.7
7	88,3	83,5	37,8
8	83,2	74,4	40.4
9	78,6	76	34,9
10	73 3	65,6	36,4
11	79	74.5	33.9

12	735	53.7	32.4
13	68.5	60.4	27
Dem	686	66	30.7
14	74.5	72.3	73.7

33.7?

14) 495.70

35.41

Av. of 1+2 34.23

11 ft from Middle of Barn

March 30 - Zof 7 Rel Mt. Hill

1.	124	111.7	48.2
	Rem 121 .3 = 120.7	118.7	50.0
2.	103		43.3
	Rem. 124 .8 = 123.2	122.5	52.0
3.	119 1.5 = 117.5	114.5	50.3
4.	115.5 .4 = 115.1	112.4	49.3
5.	113.4 1.0 = 112.4	111.5	48.0
6.	119 1 = 118	117	49.3
7.	116 1 = 115	111.4	49.3
8.	114.5	106.5	51.7
9.	121.6 .5 = 121.1	118.5	51.8
10.	105 2 = 103	89	43.5
	Rem 99	97.8	45.0

11.	113.5	109	47.3
12	122.5 .5 122.0	120.0	52.7
13.	115.7 .3 115.4	112.5	50.1
14.	105		
Rem	100 .7 99.3	91.6	43.8

9ca crystals under tree.

173 in. + tree

14) 690.60
49.38

114.8
14) 1606.7
14
20
14
6.7
5.6
1.01

Sawmill Flat

Course 2 - Cross Section

* Trees 2½' tans in grove
clumps of fir W + red
lone red fir 3+' in diam
one large blazon each

1.	117.5	112.2	42.9
	2.5	2.5	
	115.0	109.7	
2.	92.5	88.8	33.9
Rem.	119.0	113.5	55.9
	1.5		
	117.5		
3.	123.8	115.5	52.2
	1.5		
	122.3		
4.	120.8	114.5	44.2
	1.5		
	119.3		
5.	124.5	120.7	48.4
	1.0		
	123.5		
6.	121.0	117.7	54.2
	2.0		
	119.0		

26/o + 4 triple-blazed red firs

6) 297.80

av, 49.63

Course 1 – N.D.S.
Between single blazes, ~~not~~ triples

1. 121.0   111.1   52.2
    .3
    120.7

2. 120   111.3   58.2

* 3. 118   88
Had to shellac sampler

* 121   116.7   55.1
    1
    120

* 4. 116   114.5   52.9

* Indicate also advancement of shellac

5. 127   115.3   63.7
Very hard crusts.

6. 123.7   120   54.5
    .5
    123.2

7. 122   118   55.5

8. 121.5   114   53.5

9. 122.3   107.5   53.9
    1
    121.3

10. 123.3   115.7   62.0

11. 127.3   117.8   58.3

12 156.8   149.5   139.5 [illegible]
    67.4
    72.1

Lost 1 in. ice crystals at

√3	150	136.5	132.3
	2.5		67.4
	147.5		64.9
Rem	148.5	145.2	64.0
	2.0	2.0	
	146.5	143.2	

13) 756.80

av. 58.22

Corrected for being Trampled down

Snow trampled down

Finished 5:25 p.m.

Gen. av. 53.93

12 6.6
13) 1645.6
13
34
26
8
78
76

X Spent night at Tenleytown

Monday - March 31.

Mail Box Flat.

1.	108.0	107.3	47.2
	S. of Dale -		
2.	113.0	106.7	
	.5		
	112.5		
Rem.	111.0	109.5	50.0
3.	112.5	107.5	48.0
4.	90.3	85.0	37.5
	In creek bed.		
	Should be discarded		

In its place have been added the following:

Between No. 1 and Hazel lane.

5.	115.5	108.2	44.2
Rem.			
	117.5	114.8	46.8
6.	117.7	116.3	49.0
	.5		
	117.2		
7.	122.5	117.7	52.4
	.3		
	122.2		
Rem.	114.0	110.5	50.1

111.2
1 | 7787 —

7) 330.90
47.27

First 4 means. 4) 182.70
45.68.

Furnace Flat

Course 1

1.	111.3	109.5	46.5
2.	115.2	111.8	50.8
	.5		
	114.7		
3.	109.2	105.8	51.0
	.5		
	108.7		
	Heavy crust		
4.	119.6	118.4	52.2
5.	118.5	116.3	50.0

6.	118.7 + 1.2 = 117.5	118.2 + 1.2 = 117.0	50.8
7.	118.8 + 1.5 = 117.3	116.8 + 1.5 = 115.3	51.2
8.	111.8 + 4 = 107.8	111.0 + 4 = 107.0	47.2
9.	110.3 + 1.0	109	47.2

In Saxer Abandon Norq hereafter

9) 446.90

49.65

Course 2 -

Meas. instead of 10.

1. Adj 25 ft. from forward tan			
* Core.	125.8	125.5	52.3
2.	129.0 + .3 = 128.7	126.2	56.1
3.	117.5 + .3 = 117.2	115.7	52.2
* 4.	121.2 + .5 = 120.7	120.8	52.1
		Recv. 43.2%	
5.	124.3 + 1.5 = 122.8	123.9 + 1.5 = 122.4	52.0

6.	112.0	108.8	54.4
	3.5	3.5	
	108.5	105.3	
7.	115		
	Rain 113.0	110.4	51.5
8.	117.6	112.4	55.1
	1.0		
	116.6		
9.	118.5	115.5	54.6
	2.0		
	116.5		
	Hard winds - just E of		
	Concrete		
10.	119.6	119.2	52.9
	1.5	1.5	
	118.1		
11.	116.0	114.5	49.2
	1.0		
	115.0		
12.	114.0	112.8	49.0

Nos. 3–12 correspond with Trowbridge Nos. 1–10.

Nos 3–12 - 10) 523.00

52.30

av. 1 + 2, 50.98 ins

Daggetts Pass - Cruise
Friday Apr. 4. 12:05 pm

No
double
1. 50 ft. from Form Strip flagged N side (15 in diam) + 41 1/2 ft. W. of large Jeffrey (3 ft diam)

44.5 16.6

2. 44.5 .3 16.3

soil dry. Same cy ?? mods fine.

3 55.8 .5 19.6

4. 38.5 .3 14.0

5. 38.6 14.4

Run to N on [illegible] course.

34.0 12.2

6. 37.7 14.2

7. 42.8 17.0

5 ft E of N of 6 ft red fir.

8. 41.8 .2 14.7

9 44.2 16.8

Sand dry

Line passes 2 ft S. of 50 ft white fir (diam. 1 ft)

No 10 31.8 .4 12.0

11.	48.8	16.9
	.3	
12	42.0	15.9
13	~~38.6~~ Rem. 39.0	13.6
14.	32.0	12.2
	.3	
15.	27.6	9.4
16.	39.3	14.3

Line passes 3 ft N of 4 ft red fir

17	40.0	13.8
18	52.0	19.8
19	41.2	14.6
20	29.5	8.6

Line passes 6 ft N of tall yellow pine burned on N base.

Mid. slope [illegible]

21	8.2	2.4

near Top of rise

22	17.5	4.9

Crystals moderately coarse.

23	31.0	11.6
24	27.3	10.6
	.2	

25 Snow moderately coarse melting?

25	16.6	5.7

26 31,2 10,7

Sand moist so can be molded with hands

27 38.5

44,0 16.4

Crystals mod. coarse

Rem to straighten line

43.0 17,1

28 39,0 13,6

Snow but below.

near top of chart rise.

29 28.5 7,6

Line fines 3 to 4 from large yellow pine (diam 44)

30, 23,4 7.6

31, 12,0 3,6

32, 59,7 22.6

Granular but now dry & friable

33, 31.8 10,8

.5

Soil moist but frozen again

34, 43,6 14,6

35. 47,4 16.8

.4

36	46.0	16,0
37	34,5	11.9
38.	37.0	14,3
39.	12 Ft N + 1 Ft E of large umbrella Pine.	
	39,2	15,4
40 -	50 Ft feather on in straight line.	
	32,0	12,2

Blazes renewed + increased

Ended 4:25 pm

40) 526.70
13,17

N tree trip blazed 75 ft

SE of nearest tree ~ 60 ft

SW from highest ~~of~~ knoll of rock – another knoll to N.

Marlette Lake.

Sunday April 6 / 19 afternoon 9:30 a

Snow beneath 6 ft.

Course 2. In aspens

S. ~~E~~ of line of tall trees

base of rocky knoll at

S. end of lake. N & S.

Every 25 ft, begin 25 ft from

triple-blazed aspen 7 in diam

1. 67 - 63.15

.5

Rem. 65.5 63.7 27.9

.12 2

2 57.0 53.5 20.8

~~5~~8.8 .8

3 70.9 - 67.2 28.3

4 ⁷/₁₀ 62.5 28.6

Began

~~4~~ 71.1 56.5 27.4

5 68.0 57.0 26.9

.5 .5

Hole at bottom of 4 + 5

6, 73.2 67.7 27.2

1.5

1

lost from cutter

Rem.

72.5 67.0 28.2

.4 from cutter

7.	72.0	67.5	28.9
8.	72.5	66.5	27.0
		Settled .5	
9.	68.5	66.7	25.9
	1.2	1.2	
10.	65.5	61.0	26.0
	1.5	1.5	
11.	72.3	68.1	~~30.2~~
Rem	72.2	66.7	30.4
	.5	.5	

26 ft to Trip. Hazed aspen (8 in diam)
post in front of Lacque
dead aspen 16 in diam.

11) 298.90 / 27.17

Course 1-
Relined.
W shore of lake
From (NE tamarack) 3 large aspens
(S.W. aspen dead) 15 in diam.
NE to lone red tamarack with dead top
in front of clump of tamarack
near lake shore.
Course parallels lake shore

Every 25 ft, begin 12 ft
from ~~NE~~ tamarack, NE perpen

1. 72.8
~~74.6~~
76.0 69.0 32.5
.3

2. ~~73.7~~ ~~63.5~~
73.3 66.7 25.9
.7 .7
Hole at bottom of snow.

3. 64.2 51.5 25.9

Rerun
6?.9 59.3 27.0

4 65.0 60
.

~~58~~
57.2 45.3 20.5

Reran 6 times. Evidently
hole below, for case suddenly
drops
—

5.			
	62.5	54.3	24.5
	0.5	.5	
6	52.3	45.0	21.9
	.7	.5	
Rem	52.4	49.5	22.1
	.5	.5	
7			
7	51.0	1	
	50.8	49.3	21.5
8	52.5	51.0	22.5
	.2	.2	
9	50.5	45.5	21.5
10	57.8	52.6	24.0
	1.5		
11	60.1	49.4	23.0
Rem	60.1	51.4	24.0
	.7		
12	60.1	52.5	24.2
	.3	.3	
	56.1	54.6	25.0
Rem			
13	76.0	66.3	35.5
14	74.2	66.3	36.0

Snow at bottom very wet. Spring ground all thru here. Hence wet snow.

14	66.5	58.0	26.8
15	66.0	53.2	25.7
	.7	.7	
Rem.	66.5	61.0	29.5
	.5	.5	
Rem	64.5	58.5	26.6
	.4	.4	

Core dropped after sampler was down.

16.	62.8	59.5	26.7
	.5	.5	
17.	60.0	59.5	24.9
18	64.5	56.5	27.5
	.5	.5	

Rem.	63.7		
	65.0		
	63.0	59.3	26.7
19	63.2	61.0	26.5
	1.7	1.7	
20	59.5	57.3	24.3
	.5	.5	

Finished 1:05 pm
Go to Marietta Lodge for first dinner

C. F. Slade (Chas. F.) and Wm Hawkins. (Bill) helping.

20 | 672.70
25.64

124) 57.0 | 42
496
240
248

22) 983.7 | 4471
88
103
88
157
154
30
27

Campbell

120.7) 5210 | 431
4828
3820
3621
1990
1207
783

1917-18

Summit Station

Cisco East 4:44 pm

17 ft 8 in [illegible]

115–125

150–160

100

90

1917–18

Course at Ames

Saturday, March 23, 1918

T 1:30 pm

Course A- S.W to N.E. Survey 25 feet
Beginning with Southern of 3 Large
Pines at mouth of Ravine S. end of Flat.
Tree triple blazed - 1 Course to Telephone
Pole just Right of line to south end of
Red Bridge
1. 25 feet from Tree triple blazed Tree

1.	54.0		21.6
2.	64.0		24.6
3.	67.5		24.6
4	67.0		26.0
5	67.2		24.8
	Coarse crystals		at bottom Moist
6	63.5		27.3
	[63.5	60.8	26.0]
7	71.5		25.0
8	67.8		24.9

9	65.5		25.3
	Core slid out 15 in but remained intact. Lower 6 in. coarsely crystaline - water has evidently run out. But not much I think		
10.	65.7		24.6
11	64.2		25.6
12	61.0		25.0
13	63.0		23.7
14	63.0		25.9
15	63.6	61.8	23.2
	Crystals coarse and moist		

16,	65.0	62.7	23.7
17.	64.7	63.4	24.1+
18,	58.3		23.4
19.	65.6	63	25.1
20	62.2	60.2	24.1

No 20 is 25 ft S + 7 ft W of Metal post (iron pipe) with sign Cisco Hotel ↑ 1/2 M ↑ General Store etc and ← Emigrant Gap

21.	61.5		25.6
22	55.6	52.0	22.4

17 ft + 8 in. to telephone pole.

Approx 500 feet NE to S. end of Red Bridge over River.

This pole is a trunk line pole along the river near junction of road to Cisco & Emigrant Gap. Nearest pole to Bridge and first one from E in flat. Triple blazed.

Total(22) 540.5
av. 24.57

Course B-

From Northern of 3 large pines mentioned Course A – [50 feet E of pole with cleats, check telephone]
Course N. to lonely lone tamarack in center of flat.
Every 25 feet.

1. 25 feet N. of Triple blazed pine

64.5 24.3

2- 71.0 26.2

3. 67.7 61.5 22.2?

5 drivings but core slips down & breaks off. Rock bottom can't get bottom of earth.

#: Core also dry & friable because granules are coarse and crumble off

readily.

2 ft E [64.0 63.2 23.3]

4. 65.2 63.0 25.4

5. 65.4 63.6 25.2

Rocks — all in rock

6. 64.6 62.3 24.4

7. 63.5 26.6

8 61.5 54.3 Confined 28.0

[59.7 57.3 25.7

9. 60.5 53.2 24.8

[60.5 58.5 23.3

10. 57.9 56.0 22.7

Av. of Courses 1 + 2 24.36

11. ~~63.5~~

: 61.6 58.3 23.1

12. 55.6 52.6 22.3

13. 52.2 49.0 21.7

14. 15 feet S. 7 cents of creek now partly open and running gently — 50.5 before being trampled

Muck 49.5 48.3 23.0

Muck

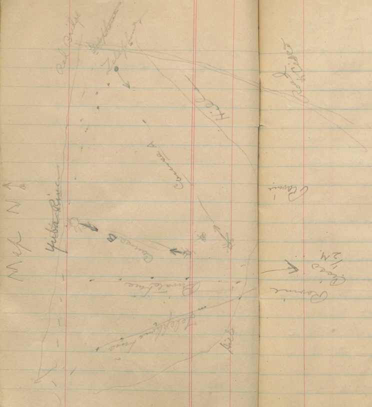
15 7 feet N of middle of creek

42.8 41.7 21.2

Snow for rim of watershed

32 ft 5 in to Tamarack about 5 rods S of telephone line. Triple blazed

Total 15 362.2 Av. 24.15



5 30 pm

Snow Cover on Ground

15 feet for big winter
1916-17 - 13½
1917-18 - 8¼ feet.
March 23 - At snow board approx. 5 feet.
Snow started melting as soon as it fell.

Rudd to Forbestown Road

Wagon road from Quincy via Webber and Meadow Lake. Trail from Cisco over Red Bridge on Yuba and up cañon between Red and Rattlesnake Mts. 7 mi. from Cisco.

* Probably higher than Yuba Bridge.

Lake Spaulding 6 mi. below Cisco on Yuba River

Survey Hard to Crystal Lake for a snow course site? Elevation? Only ½ mi. out of Cisco on wagon road to Donner Gap.

Surveying Single-handed

Place stake toward far end of course exactly in line between two ends of course and sight by this in laying out course several points at which to sample.

In laying out points, fasten end of tape line to stake and set stake at each stretch line. Then put

marker at point and return for staff. Set staff at marker, remove marker and advance again. Repeat operation. Only delay is in doubling back on course each time.

Be careful to keep course straight by sighting over stake and back by course each time.

—

Reason in using Cisco as Site for Course

January thaw sometimes (Mrs. Johnson Hotel keeper). This year could hear water trickling or running under banks

How about Federal Dam?

Courses at Summit

Sunday, March 24, 1918.

Snow Board W. of Station
N & S 8.4 feet
E & W 7.8 ft.

Snow Board E. of Station
6.7 ft.

9:30 a.m.

Course A. Evening 10 feet.
From window by warehouse door in cement Station to triple-flagged tam, first maple under wires directly in line with telegraph poles.

1.	91	88	36.2

Bottom 2 in. coarsely granular and moist, but snow not honeycombed as at Cisco. Practically no loss of water yet.

2.	97.7	93.5	36.6
	[97.9	94.7	36.7 37.0

Snow very soft & dry for approx. 6 in. just above bottom crust 1/2 or 3 in.

3.	89.5	84.5	37.0
	[89.5	86.2	36.7]

4. 86.0 (trampled ≈84.6) 82.4 32.8

Grass in bottom of core.
Snow barely melted.

5. 86.7 79.3 32.8

approx. 37.9% density.

[87.0 81.8 33.7

Crusts crush down.

6. 82.4 79.7 28.3

7. 80.5 76.6 29.1

[86.0 84.4 33.0]

Grass

8. 84.0 80.3 27.7

[87.0 83.7 29.7]

9. 83.1 81.8 27.6

10. 79.0 77.5 27.9

11. 80.6 80.2 27.9

---

12. 5ft 8 in from triple aged tamarack

62.0 59.8 20.1

Seasonal percentage 73.85

Ended 11 a.m.

36.2
37.0
37.0
32.8
33.7
28.3
33.0
29.7
27.6
27.8
323.1

43.75) 32.810 [73.85
30625
16850
13125
37250
35000
2250
2187.5 (10)
62.5

32.31

Course B

11:45 am. to stake off course with aid of Mr Sellears (?) Horn.

Course B - Every 25 feet

24 ft 9 in below tree from last point of measure.

Lunch 12:15 pm.

Began sampling 12:50 p.

1	93.0	85	36.8
	[95.0	92.3	38.3]

Soil barely moist. Crystals medium coarse and water leaves but not dripping. Very little loss yet or practically none.

2.	86.0	79.5	31.2
	[86.2	80.5	30.4]
	86.5	82.8	30.8

Lowest crust crushes in

3. 85.5 78.0 29.6
[85.2 80.2 32.6
[85.0 82 32.6

4. 80.5 75 aff 29.8
[80.7 75 aff 29.8]
Inner crust very tough
Bring toothed cutter next time

5. 87.6 80.0 33.8

6. 85.5 80.2 29.2
[85.3 82.5 28.3]

7. 86.9 81.8 30.7

8. ~~87.8~~
86.9 84.4 31.6

9. 88.2 82 aff 29.0
Among med. trees
Snow held up by burned scrub (?) Depression / middle of course in late spring
[89.5 87.3 29.3]

10. 88.9 80.5 25.5
In midst of burned scrub
[87.0 79.3 28.6]
[84.8 74.8 27.7

11. 96.1 93.0 32.2

12. 89.~~2~~5 76.3 37.4
In water runnel ?

1 ft W. [90.5 79.9 33.7
Among scrub.

13, 68.0 59.7 ~~26.4~~
In cup under med. tam

15 in S.E. [75.2 71.2 27.6]
Soil dry very moist.

Open —
14. In N. edge of Road.
100 97.5 34.6
Some mud.

S. Side of Road 15. 73.6 71.3 26.5
Rock ?

2 ft E [76.5 73.3 27.3]
Rock

16. 87.0 83.2 31.1

17. 81.7 75.9 28.2
~~[80.9~~ Another crust
[90.0 87.7 33.2]

18. 95.6 92.5 34.7

19. 95.0 89.4 33.0
~~[94.5~~
[95.2 84.8 31.6]
Buried tree

2 ft NW [93.4 86.6 31.6]

20. ~~96.6~~
97.5 95.9 33.6
Bottom 2½ in honeycombed & granulary, but dry mud.

21. 86.2 83.5 31.3
Bottoms granular + wet.

24 yt. 9 in to Large tam
Trifola blazed

Ended 3:45 pm.

Total
21) 671.1
av. 31.96.

1, 7.2 2.5
34.7%

2, Crust 9 in.
17.6 5.0
28.4

3, 7 incipient crusts in upper half approx ½ in apart, lower half sat. with water zones of water ½ in thick, lower inch gran. snow.
All losses live snow
13.3 5.2
39.1%

4, 4 crusts 1 ¼ in apart
5.5 2.4
43.6%

5, 1 incip. crust 9 in down
27.5 10.7
38.9%

6 – 2 crusts in upper 6 inches. ⅓ in thick & 6 in apart.
18.5 7.0
Snow very granular.
Soil moist once, now dry –
37.8%

Total 89.6 32.8
36.6%

The granular snow caused the poor sampling and some small losses in weights,
Not granular at Sand Creek
At least core shrinkage was only ½ in.

Summit Station

Monday Apr. 15/18

10 am ☆ get ready & lay out course

Sampling 10:25 am

W. Board 6 ft 3 in +

A.

1.	66.2	63.3	31.6
	− .5		

Bottom quite wet

~~Wed.~~ Ground quite wet

2.	74.0	66.7	33.7
	74.3	67.9	34.8
	− .6		
*	73.7	69.3	33.7
	− .4		

3.	69.6	63.3	34.3
4.	69.0	68.3	32.4
	− 1.6	1.6	
5.	71.2	67.5	32.8
	− 1.3		
6.	68.5	63.0	32.6
	68.3	61.8	32.4
7.	69.4	66.1	30.0
	− .2		
8.	61.1	59.7	29.8
	61.5	59.8	29.6 +
9.	71.3	69.7	31.9

6 7 old holes found

10,	65,3	60.5	28.8
	− 1.0		

Dirt only moist — elsewhere i.e. 1-9 quite wet

Av. 31.90 in

11.	57.3	52,8	27.0
	−.2		
	56.8	52.6	26.4
12.	59.7	56,3	27.1
	−.8		
13	52.2	49.3	22.9
	−.6		

Old hole found — density light because under tree —

U.S.W.B. holes found, 1½ ft – 6 ft east of line

6 old stations found and at one station 2 old holes. at five stations 1 hole each.
Finished 11:50 a.m.

E. Snowboard 5ft. 9 in

Sci. Amer.
Brussels carpet covering for leather shoes
Ed. Rons

1st 10 mean 7.23 approx.

B In flat

12 - 1 pm. Course laid out + prof. made. Sampling 1 -
At stations *-d, old holes found.

* 1.	77 / ,8	68.9	35.3
	77.7 / -.3	66	36.0
	79.2 / .4	72.3 / -.4	36.6

Telescopes half way down

* 2.	67.6	61.3	30.4
3.	69.9	65.6	31.0
* 4.	62.7 / -.2	58.0	26.9
* 5.	71.6	67.4	34.3

Needles not very wet

*? Hole 1 1/2 ft. from 5 found. Also 5 ft?

6	71.5	67.2	31.7

Core moist at bottom

7.	72.1	67.8	32.5
* 8.	68.6 / -.2	64.6	31.2

Holes 1 1/2 ft. farther

9	86.9	86.1	36.6

*10,	76.7	67.8	24.6	
3½ ft farther on	Three limbs of scrub.			
	New old meas.			
	67.3	65.3	26.8	
11,	73.1	69.7	30.6	
	Drawn ft S recorder			
	Core.			
	74.3	72.2	31.6	
*12,	71.6	66.5	29.5	
Old holes 1 ft away Sec. meas 3½ ft further on	−2.0			
	In edge of scrub			
*13	56.0	52.2	21.7+	
Old hole 4 ft further	In edge of bend of trail			
14,	59.8	58.1	26.3	
	−.5			
15.	60.2	58.8	28.0	
	Middle of Lincoln Highway or main road.			
16.	60.2	58.2	27.4	
17,	71.4	66.2	35.3	
	71.5	67.5	35.1	
	−.2			
18,	76.6	72.9	35.6	
19,	66.2	65.9	31.4	

20. 78.4 76.0 34.6

21. 74.7 73.7 34.9

22. 58.0 54.3 25.2

Edge of bark of tree

54.7 in to Triple-blazed tree

22) 679.5
30.89 in.

A. 5 ft 10 in. behind last mess of earlier series

NB - Several more backs found holes 4 feet off.

3:42 pm

Cross-Section

Hole redug + cleared out.
Weighing 4:15 p.m.

1. 3,8 1,4
Coarse granular wet
Stratum varies from 3,8 - 10"

2 9,9 3,6
Crust 1/3 in. - large
coarse granules of
ice

3. 9,2 4,7
15 incipient crusts
Granules more coarse
and dirty. Tridel

4. 5,8 2,8
Fragment 1/3 in.
Incip. crust halfway down.

5. 3,5 1,8
4 crusts - 3, about 1 in
apart - one 3/8" thick
Strata

6. 9,8 4,6
1 thin crust 4½" down
Snow less granular

7 15,3 7,6
Snow as in 6.

Crust in mid. 6.4"
down. Double 1/2"
thick

8, 163 8.0

1- 4.6 down Asimby
7.7 " } Very
15.8 " ice } granular

Total app 7½"

87) 33,10 (37,9
261
690
609
810
783

W. W. Waggoner, ~~Asst Engineer~~ Hydraulic
~~Nevada City~~
Northern Water & Power Co.
Nevada City, Calif.
Belongs to W. B. Banner

French Lane, Faucheria,
Sawmill Flat, Banner -
all on Canon Creek

(Jack Swears
Pete Barquet)

1916-17

Seemmet

Wood Creek

North Peavine

Summit Station
Sunday, June 3, 1917.

Old Board at Hatch.

Torn down -

But snow gone.

Close to pole; Estimated at 1 ft.

E + W. Boards at Station

0 -

Cross-section -

1 - Old snow - no surface crust.

6.5 3.2+

was melting yesterday.

Rain 6.5 3.0

2. Uniform structure except top crust ½ in thick and 3 crusts within 5 in below.

5 in.

Meas. here →

Uniform

(a) Substratum

4.5⁻ 2.3⁻

(b) 20.5 11.6

at bottom white ice ⅓ in.

6 in from bottom a crust + decomposed snow. 4 in above that another crust ¼ in thick, wide but not well defined

4 of 6½ doubtful

Entire cross-section

31.3 16.7

Cross-Section Measured when sun had warmed snow

1. 4.2½ cc 2.2+
No crust - all old snow
51.2%

2. 4.7 4.8 55.8% 2.6
Crust at top of this stratum pronounced, and ½ in. thick.

3. Total of 3.
20.6 20.4 53.9% 11.1+

(a) 11 10.9 5.7+

Two incipient crusts 3¾+
7 in below top of stratum.
One 7 in below is quite firm.

(b) 3.3 1.6

c. 6.3 cc 3.6
A series of crusts
1.7 in. at the top;
above this water has apparently accumulated during melting.
Ice on ground .7 in thick
above this snow well saturated.
Yet water finds its way to the soil.
Ice .7 at bottom = 1+ Water
Therefore little more than saturated snow

Total of cross section
28.9 28.7 15.8

Course in Flat.

1 –	0		
2 –	4.5	2.2	
3 –	27.8	13.6	
4 –	22.2	11.3	
5 –	29.1	15.4	
6 –	26.7	13.6	
7 –	26.5	14.6	
8 –	17.8	8.4	
9 –	52.0	47.8	23

Scrub? So far cores have been complete – thanks to the frozen snow.

Ram 50.2 47.2 (22.8)
1.5 1.5
48.7

Core compressed at least 1 in. in driving thru top crust.

10 –	31.3	29.7	15.6
11 –	34.8	33.6	16.3

1.0
33.8

Ground wet. In 1 – 10 ground merely moist, due to freezing of snow during night. Here ground is lower and water can be seen at bottom of old sampler holes, possibly in rivulet, for water is flowing. Some old sampler holes have increased at least 1 inch in diameter thruout their length. Also || funnels are being formed – Are these the effect of gyratory current thus accelerated and evap.? Does the same effect increase the

rate of evap. in para 1/4 full?

12 – 26.2 26.2 11.8
.3
25.9

13 – 11.2 5.6
13) 151.2
11.63

14 – Just S. of thick scrub and in Open flat
20.5 19.3 8.6
Core tapered at both ends. Hole at bottoms

15 – Just S. of a road
6.8 6.2 3.3+

16 – 24.9 24.7 (Correct) 11.8
.4 ?
24.5

17 – 22.0 21.0 (Correct) 11.4
.7
21.3

18 – 37.5 33.2 17.2
Core broke off?
Recv
38 37 cc (18.4)
1.0?
37.0
Had to drive down farther to raise core.

19 – 44.3 44 practically cc 21.7+

20 – 34.4 33.7 18.4
.2
34.2

21 – 22.1 cc 9.7

22 – 18.2 17.9 8.4
.2
18.0

9) 91.7
10.19

Average – In Timber 13 meas 11.63 in
In Open Flat 9 " 10.19 in
(av. 10.91)

12:05 a.m. Began about
7:30 a.m.

U.S.W.B. June 21 U.S.W.B. 9 ins.
aver. spreads 20-22 ins

Holes + Domes (under branch)

2 pm

Run-off –

Water running very freely since noon, and at about normal, for warm weather has returned.

\# N3. * Query: How does rate of melting in cold and warm periods compare with the run-off in these periods? Is not the loss thru slow melting quite out of proportions with that in rapid melting?

Holes – are perhaps broader but not relatively more deep than last trip. But funnels are now forming in the sampler holes, and some holes are 2½ inches in diameter.

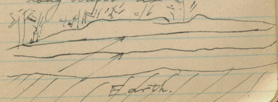
Domes – are forming everywhere in the shade of the trees, and are 5 feet deep, tho ground in immediate vicinity is bare.

These bare spots are among trees where snow was originally shallow or on uplifted hillsides where sun was more effective.

In level flat, there are very few bare spots, the snow melting quite evenly.

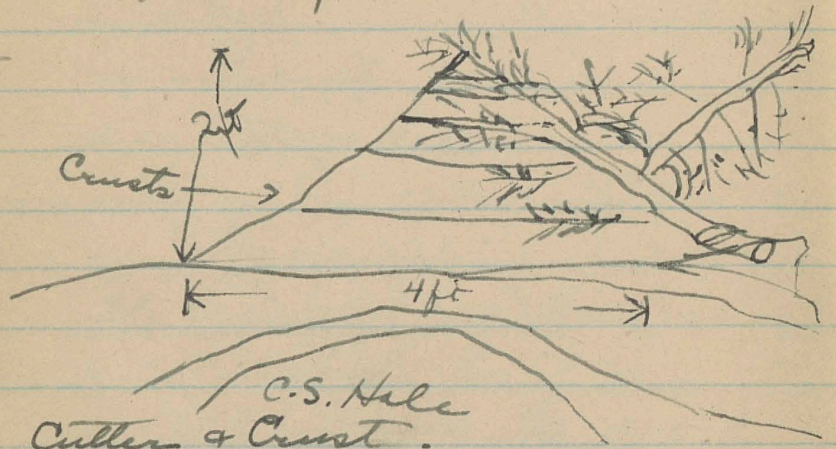
Strata marks.

The strata marks are very conspicuous on long drifts, as



Artificial Hanger - made by ~~five~~ branch, showing effect of shading.

just ☐ of Cross-section Hole,



Cutter & Crust.

In moving when snow is frozen hard the cutter is not adapted to cut the snow without plunging slightly or possibly using wrench

But when snow has warmed thru and ice crystals are loose, the sampler cuts rapidly with only light force exerted with the hands.

H However in frozen snow there is but little impression of the core and the core lifts readily.

But when snow is soft, if there are resistant crusts, the cores are compressed and besides slide down thru the cutter when lifted.

NB.— Better, therefore, to have corrugated cutter and work in frozen snow

Cone up June 10 + photog.
Cone + branches
Branches been there at least
2 + prob. 4 weeks

2:45 pm
Behind Station -
1. 0

2. 0
Water hole

3. 23 cc . 15.4
Very dense, but 5½ in water
logged from lying in pool of
water and 5½ in. more
very wet; However, water
does not run from core.
Besides snow in this spot
is always exceptionally dense.
Compare No. 4.

4. 16 16 8.7
Top of Core ↑ 16

5- Just beyond WB, Tower.
9.3 4.8

6- ff. all 0.

Cross-section
17.4 10
Water ran from core. 57.5%
Bottom of cross-section
just dips into water, but
in driving core was carried
thru snow + down farther into
water. Core was drained
considerably before being weighed

"May 5–15 was melting about 3 inches a day." Sellers

U.S.W.B. Temps. at Summit (Ext.)

	Max.	Min.	
May 21	45	34	↑ Snow held up well only 1 inch a day.
22	46	36	
23	47	36	
24	45	32	
25	44	34	
26	46	37	
27	48	37	
28	52	42	
29	52	40	
30	53	41	↓ Last 3 days ⇒ has been falling rapidly, 4–5 inches a day.
31	54	41	
June 1	55	44	
2	56	45	
3	56	43	

Snow was hard + frozen last night and water abated toward morning to resume after noon. So if snow hardens at 43° in sheds

it is probable that run-off was slow when temps ranged Max. 40's Min. 30's.

However, 50's - 40's seem to have been very effective in accelerating melting.

But see May 5-17, when only max. was high.

Thru at 3:40 p.m.

At Tahoe City, compare temps & run-off.

Van Norden, Spalding Lodge opened into river when snow elsewhere on watershed has been used:

1890 - Aug. 28
Other heavy years Aug. 4-8
This year July 25.

Visit to Lake Van Norden.

Lake now breaking up. Lanes of water everywhere. Apparently no ice; only snow floating on surface of water.

at head of lake

Snow in flat from 1½-2 ft. deep. On hillside north of lake snow is nearly gone.

Autos will be delayed 1 week yet on level and two or three weeks by snow in cuts.

Summit Station

June 10/17

In Flat -

Cross-section gone -

Cornice in Flat -

1 - 0

2 - 0

3 - 0 But 2 ft W. (1")
4.3 2.4

4 - 0

5 - 0

6 - 0 But 3 ft. S.
9.8 10 5.1

7 - 0 But 4 ft S.
6.3 CC 3.3

8 - 0 But only 7 ft S. from drift.

9 - Outer of Bank
23.2 CC 11.7 Dead
Rem. 33.6 32.8 16.2

10 - Among close trees
11.9 5.4

11 - 0 But 1½ ft N.
5.2 2.5

12 - 0
But small patch of snow 7 ft S.

13 - 0

14 - 0 On N edge of brook flowing N. side of road.

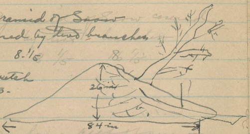
15 - 0 [In S edge of wagon road]

Photos —

Pyramid of Snow
covered by dead branches.

2 Views. 8-1/5   8-1/5

See Sketch June 3.



2. Long reef of snow

2 Views 8-1/5   8-1/10

Snow at sampler 51 in. deep
Compare strata with sketch June 3

3. View down Course
from N. field (Ringed triple legged tree).
8-1/10

4. View S. from Road or just
below scrub in center of
Course. ?
4 pm - 8 - 2/5

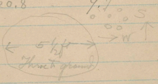
5. Sampler with Background
of Scrub 10 - 2/5   16-2/5. 27 ...

16 — 0

17 — 0

18 — N. edge of continuous field
8.6   4.2+

19 — 20.8   9.7



20 — 7.5   3.7

21 — 0

22 — 0

— End —   Av. approx. 2.28

Loss in 7 days 8.63
but approx shallow ... plots

Five autos came thru bound E
at 4:20 pm [June 10/17].
Have beaten the forecast.
20 in. snow 1 week ago, but

hot days last week cut it out. Horses also have been plowing thru snow. Have snow on wheels. Will they get thru the subway?

—

June 4	-	56	44	
" 5		58	44	
" 6		58	46	
" 7	-	67	52	
" 8		71	56	
" 9		56	48	Strong wind 4 pm
" 10		54	42	

Sworn at [illegible] Rotos
Van Vleck

June 11, 1917 -
Left Tahoe City 6:40 a.m.

Ward Creek

Watercourses - Water running ½ inch deep & wide. Deep over all meadows. An average ½ ankle deep.

Ground generally wet. Steeper slopes drained dry on surface.

Drifts in timber according to thickness & density. Some drifts even in open.

Streams running well. The snow drifts (are) hard from last night's freeze. Tahoe City 24° or 26°?

It will evidently require 2 or 3 days for the soil to drain but the water accumulated from last week's high temperatures even if present fall in temp. and wind cuts down the melting seriously.

However, it is doubtful so late in the season whether a freeze sufficiently severe can endure to stop melting & the point of drying out the soil. So a normal flow should occur in any event.

South slopes are heavily covered with snow from top down to 7000 feet and there are many fields & patches even to the lake.

The Truckee side, however, is rapidly losing all snow.

Run-off in lake (i.e. rise yesterday was 9.51 despite heavy drafts

What then is corrected rise?

About June 15/1916 Weber(?) came to Ward Creek & found snow gone, this season snow is 1½ ft deep on June 11.

Course upper Ward Creek, among aspens - 7000.

9:30 a.m.

Wind heavy at times and fresh abundantly(?).

Every 25 ft.

W. of aspen

8 ft N.	[23+	20.6	10.8]
1.	20.7+	19.5	9.2
2.	23.2+	CC	12.4

E.

1.	33.8+	31.0	15.8
2.	39.2+ / .5	36.4	19.0

S. –

1.	24.0+	23.3	12.3
2.	20.3+ / .7	19.3	10.2

N –

1 – 39.5* 39.4 21.0

2 46.6* 45.8 25.2

Can't find old holes farther

3 –

43.8 42.2 23.2

4 – 43.0 42 21.4

5 – 45.5 cc 24.2

6 – 53.2 49.2 27.3

cc. Hole below.

7 – In S. edge of brush and aspens N & North. Tiny ravine just S of hole, but large ravine also on N. side of brush.

25.4 25.3 13.1

W – cont.

?* 3 – 40.0 37.5 20.6
.3

4 34.8 34 17.4

5 32.2 31.3 16.7
.4

6 – 35 ~~34.5~~ 17

Not Regular Coarse
HB.

North of Ravine

From highest aspen on blazed toward Tall Tree with topped top and short stub ~~[illegible]~~ at its S. base

1. 21.5 21 10.6

2. * 12.9 ce 6.4

3. 0 under aspens

4. 0 " "

5 15.5 15 7.8

6 * 10.2 10 5.2

7 * 10.5 4.6
In willows, bushes

8. 7.8 3.8

Rem 13.8 x 9 6.6

Rem * 0
In edge of oval hole
6 x 4 - Hole in soil
approx 3 feather than
7.8 above

9 - * Holes in soil
0

10 x' Hole in soil
But melting fresh
assoc by sampling.
And holes of snow between
So extra 1/2 ft beyond
7.5 3.6

11. * Hole in soil
0

12 * 14.8 7.6

13. In tiny ravine + streambed.
16.3 8.2

14.* 2.3 4.7*

Large bare area of ground

15* O

16* O

17 5.2 2.6

18* 6 ft N of tiny streambed

15.6

1.2 13.8 7.4

Face SE. Has more heat in Spring + less in Fall than in winter.

* Indicates that old stakes were found 1:30 pm Wind and finding of old holes hampered that work.

Page's Meadow -

Snow gone; ground drying rapidly, and in places. But two rondettes are still running three grounders.

1918-19

May, 1919

Summit - Lodges,
Wood Cards,
Rubicon Peak

Summit Station

Sunday, Apr. 27

Beakey, Armstrong, Roering, Kurtz -

Core no. 1 -

	Depth	Core	Water Cont.
1.	52	49.3	28.3.
Rem.	52.5	50.2	28.6
2	53.5	47	28.5.
Re.M.	53.2.	49	28.6
3	48.2 -.8 47.4	43.2	23.2
4	57.4 -1. 56.4	50.4	28.2 ✓

J. A. Beakey
Harry A Armstrong
Ed Roering.

	Depth	Core	Water Contents
5	50.8 -.5 50.3	45.5	24.1
6	45.3	45.	24.2
Re.M	47.6	45.5 C.C.	24.1
7	49.5	48.2 -0.5	24.5
8	51.5	50.5 -1.0	24.0
9	54.3	51.0 -0.5	25.6
10	51.8	≠51.6?	25.7
Re-M	52.3	50.8 -0.5	27.8 26.8 0.K. ✓

Summit Course #2

April 27-19

Meas. #	Depth	Core	Water Content
1	57.0	47.0 ?	23.1 ?
Rem	69.8 -0.1	68.2 -0.2	32.8
Note: 1st Meas - bottom not reached			
#2	62.8	61.5	~~30.5~~ 30.2
#3	69.2	65.0	33.3
#4	63.0	62.6 -2.0	29.2
#5	68.3	67.4	33.0
#6.	56.0	55.3 -0.5	26.7
Rem.	68.8 -0.1	65.5 -0.7	29.8
#7.	70.0 -.5	66.0 -.5	34.1
#8.	64.8 -.5	63.0	30.8
#9.	77.5 -1.0	74.5	108.5 - 73.2 = 35.3
Rem.	76.0 -1.0	73.0	33.4
#10.	64.5 -.8	63.5 -.8	26.2
#11.	70.5 -.7	70.2 -.7	32.8
#12.	59.0		
Rem.	66.5	56.0	
Rem.	66.2 -.5	62.0 -.5	31.8
	Scrub		
#13.	49.0 1.5	~~47.8~~ 46.2 -1.7	21.5
#14.	71.0	63.5	35.0
	Prof. C.C.		
Rem.	72.3	61.0	34.9

~~#~~ 15. 57.5

Rem. 57.5 56.0 27.7
−1.0 ~~27.7~~

#16. 66.3 63.5 31.4

#17. 67.3

Rem. 69.3

Rem. 69.0 68.5 34.0
−1.7 −1.7

#18. ~~72.3~~
75.0 71.0 34.3
+1.0

#19. 74.0 71.0 36.0
app. −1.5

#20. 73.3 72.2 35.4
−1.0

✓

#21. 68.0 64.8 31.9
−1.0

#22. 58.5 56.5 27.6
−1.5

Note - all holes of Apr. 1 found and followed.

Course 1 + 2

61.8
3)185.4 3)951.7 29.7

✓

+ Apl. 29th 1919 Ed Koening H. Armstrong Beakey

Sta 3 Red Mt. Course #1

	Depth	Core	Water Cont'd
	93	91.3	
	-0.5	-0.5	
#1	92.5	90.8	45.8
#2	~~85.4~~		
	87.0		46
	-1.5		
	85.5	84	
#3	75.		
	-1.4		
	73.6	73.5	37.2
#4	73.		
	-1.5		
	71.5	70. ✓	37.3

X

	Depth	Core	Water Content
#5	~~71.3~~ 72.5	-	
	-0.7	71	36.8
	71.8		
#6	77		36.
	-.5	67.	
	76.5		
Re.M.	78.		
	-0.6		
	77.4	76.5	41.5
#7	74.	71.2	38.5.
#8	~~76~~ 7	~~70.3~~	
	76.5	74.8	42
#9	82.3	82.0	44.
			✓

No crust under snow

	Depth	Core	Water Cm
#10	67.5 -0.8 66.7	64.3 -0.8 63.5	36.7
#11	75.2	73.5	41.
#12	~~73.5~~ 75	73.	40.5
13	69 -1.5 67.5	68.0 +1.5 66.5	34.2
#14	54.5 -1 53.5	51.5	27.

✓

14 | 1043.0 → 74.5 (98, 63, 56, 70)

14 | 584.5 → 41.8 (56, 24, 14, 105, 112)

Sta #4 - Saw Mill Flat.

Course #1. #2

	Depth Nos. every 50'	Core	Water Content
#1	79	78	.43 1
#2	84 -1.0 83.	83.0 -1.0 82.0	45.0
#3	88.0 -1.0 87.0	86.4 1.0 85.4	51.0
#4	83.5 0	81.0 +.5 81.5	46 5
#5	77.8	80.5 -4.0 76.5	44 8
#6	74.5 1.0 73.5	79.5 7.0 72.5	39 5

✓

Apr 29 1914

Ed Roening - Sampler
J. A. Beaver
Harry L. Armstrong Recorder.

Snow Gage 6'-10"

#1

Course #2. every 50'

#1	72.0 -0.5 71.5	67.2 -0.5 66.7	38 3
#2	77.5 1.0 76.5	78.3 7.0 71.3	42.0
#3	78.5 1.0 77.5	77.5 6.0 71.5	43.8
#4	81.0 -0.5 80.5	80.0 -0.5 79.5	41.9 1
#5	86.5 0.5 86.0	81.5 ✓	49 5.
#6	80.5.	79.5	45.9
#7	83.0 0.5 82.5	81.5 0.5 81.0	46.0
#8	84.0	82.0	48.5

✓

Course #1 (cont.)

#9	75.°	73.°	43.3
10	81.5 1.0 80.	74.0 to mid.	47.6
Re M.	81.° 2.° 79.°	79.3 2.° 77.3 good.	47.3
#11	85.°	85.°	48.6
#12	86.5	85.4	51.8
#13	108.5 1. 107.5	106.° 1.° 105.°	58.2

81.9
19 | 1555.8
152
35
19
168
171

460.5
19 | 8749
76
114
114
90

Course 2

Furnace Flat

	Depth	Core	Water Content
#1	92.5 -0.6 92.0	91.	46.0
#2	94. -.6 93.4	92 -0.6 91.4	41.9
#3	74.5	71.8	37.5
#4	79.5	78.5	39.5
#5	87 -0.5 86.5	86.5 -0.5 86.0	45.1
#6	79.5	76.	42.3
#7	78.5	73	42.9 ✓

	Dept	Core	Water Content
#7 Rep.	78	74.8	42.8
#8	80	77.	43.8
#9	80	79	46.
#10	78	77	40
#11	75	73.	38.4
#12	73	71.5	38.

✓

Course 1
50' apart

~~4/28/19~~
4/29/19

Furnace Flat

	Depth	Core	Water Content
#1	72 -6.5 71.5	68.8	35.1
#2	76.5 -0.5 76.0	72.1	39.1
#3	74.5 -1.5 73.	73.	40.9
#4	81.5 -1 80.5	79.5	41.4
#5	80 -1. 79	75.6	41.3
#6	77.5	76.5	40.7

✓

	Depth	Core	Water Content
#7	78.5	77.	41.0
#8	74	72.	38.1
9	67.5	67	~~38.5~~ 33.~~6~~9

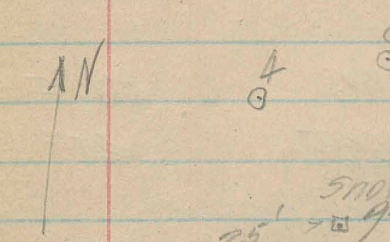
✓

Sta. 6 Mail Box Flat
Fordyce Lake

April 30 1919 A.M.
Ed Koening
A.J. Beshey
Barry C. Armstrong

gage 5'-2"

	Depth	Core	Water Content
1	65.5 + 1.5 = 64°	65° + 1.5 = 63.5	31.8
2	66.3	64.5	31.8
3	48.5	44.5	22.0
3'	57.0	50.5	29°
Re M.	60.0	55.0	32.1.
4	~~68°~~ 68°	67.0	32.3



3' = 25' from stake - some radial line
30' " " " "
Re M - core saturated lower half

✓

copied
State Dept. of Engg.
Armstrong
✓ 5/7/19

Sta #1 Ward Creek

Course #1.

West Series

1	55.5	46	24.5
Re M.	72.5 2.5 67.0 c.c.	69.5 2.5	35° OK.
2	77.5	73.5	33.8
3	77.5	77.5	37.5
4	79.5 6.0 73.5	75.5 6.0 69.5	37.5
5	75.5	71.5	37.3
6	74.5 2 72.5	67.5	36.7
7	76.5 1.5 75.0	72.5	38.8

Holes of April 2 found & followed - distances appear to be less than 25'

Robt Watson
A.J. Beaker
Barry C. Armstrong

May 4, 1919

Station 1. - Ward Creek

Course 1 - Head of Ward Cr. elev. 7000 ft.; in flat at base of glacial cirque, S of ravine, among aspen. Four series, viz. E, W, N and S from topped aspen. W series on line with triple-blazed fir forming east post of small grove at foot of cirque. Meas. of each series every 25 feet, W series beginning at topped aspen, to which E, N & S begin 25 ft from it. Total Meas. 13: E, 2; W, 7; N, 2; S, 2. Average of all meas. Taken irrespective of series.

South Series

1.	66	64.5	
	-1 / 65.	-1.5 / 63.5	36.0
2.	57	54.5	26.5

East Series

1.	63	62.5	29.5
	-1 / 62.	-1. / 61.5	
2	64		
	-2.0 / 62.	58.5	27.5

North Series

1	68.0		
	-1.5 / 66.5	62.5	33.0
2	72.0	70.0	33.5

12) 442.60
34.05

Course 2

North of ravine and adjacent to preceding. One series, from highest and outermost aspen (blazed) on N edge of ravine NE toward triple blazed tree with topped top and short stub at its S base. Meas. every 25 ft from blazed aspen. Total meas. 13

Monday -

Course #2

1	46.5	46	22°
2	54.5 2.0 52.5	51.	24°
3	52 1.5 50.5	51 1.5 49.5	24°
4	49 2.5 46.5	46.0	22.3
5	47		
Rem	50 1 49	48	23°
6	53	52	24°
7	54		
Rem	57 4 53	53	25.5 -0.5
8	56 1 55	54	25.5

✓

Monday - May 4

9	50.5	50.0	26.5
10	31.0 3.0 28.0	28.0 3.0 25.0	10.5
11	36 2 34	35.0 2.0 33	16.0
12	48.5 2.0 46.5	47.0 2 45.0	22.5
13	50.5 2.0 48.5	51 4 47.0	23.0

13) 288.30
22.18

✓

Station #2. Rubicon Peak

May 6, 1919. A.M.

Barometer corrected reads 7.340

Myron L. Smith
A. J. Beaker
Harry A. Armstrong - H.A.A. recorder

Course #2

Meas.	Depth	Core	Water Content	Distances paced
#1	28.0 -2.5 25.5	27.0 -2.5 24.5	10.8	#1 = 50' N of S ℄ pine
#2	33.0 ✓ 0	33.0 -2.0 31.0	13.8	#2 = 25' beyond #1 twin fir at 100' N of S pine
#3	27.0 -1.5 25.5	26.0 -1.5 24.5	11.2	#3 = 110' N of S pine
#4	24.0 -1.0 23.0	23.0 -1.0 22.0	9.6	#4 = 150' N of S pine
#5	35.5 +0.5 36.0	35.5 ✓	15.8	#5 = 50' from prev. meas.
#6	17.0 -1.5 15.5	17.0 -1.5 15.5	7.8	#6 = " " " "
#7	42.0	39.5	19.0	" " " " + 15' from 42" fir (? or hemlock) with stub at base.

Ground bare beneath all trees

✓

see next page for further notes

✓

At distance 185' is a 48" blazed fir with broken off top
All blazes on this course are very faint

30°

1	45°	42.0	20.5
2	35.0 -1.0 34°	33.5 -1.0 32.5	13.8
3	38.5 -1.0 37.5	37.5 ✓	15.5
4	29.5 -1.0 28.5	28.0	12.5
5	16.5		
Re-M	22.5	20.0	
Re-M.	16.5 -2.5	15.5 -2.5	
Re-M.	14.5		
Re-M.	15 -1.7 13.3	14.5 -1.7 12.8	5.7
#6	21.0 -0.5 20.5	18.0	~~13.8~~ 8.2

✓

May 6 1919 10 A.M.

This Course is the one laid out by Arthur Smith; is approx 1000' ~~Southerly~~ Westerly from Course #2, and approx 125' W of double granite knoll. S from 42" triple-blazed fir to 18" fir in a clump of 3 and sugar pine by it ± N.E. thereof.

Barometer (corrected) = 7.500'
Distances every 25' beginning 25' S of N. fir. Distances ~~paced~~ measured with sampler.
#5 = 10' S of large fir blazed on S side & blaze marked "H. M Pomin April 19, 1917"

✓

7	49.0	41.0	18.4	lost some C-7
Re-M	50.0			
	1.2			
	48.8	48.5	21.0	
8	42.5			= 12' N. of S. blazed tree.
	1.3			
	41.2	41.5	18.6	

8) 115.80

14.48

(Note - Had no descriptions of this course. H.G.G.).

Station #2 Rubicon Peak.

May 6. 1919 Noon.
H.G.G. recorder

Course #1

Meas.	Depth	Core	Water Content	
#1	94.5	94.2	41.3	Bar. = 8.130
2	102.0	101.0	45.2	All holes found and followed. (Samples taken vertically - not perpendicular to surface)
3	110°	108°	51.2	
4	77°	69°	34.8	felt like hole at bottom.
Re-M.	76°	71°	34°	
5	40.5	36.0	18.8	7' above large tree.
6	85.0 -1.0 84.0	75.0 -1.0 74.0	34.0	
7	83.0			
Re-M	87.5 2.5 85.0	87.5 -2.5 85.0	37.5	
8	87.0 -1.5 85.5	83.5	39.5	
9	35.3 -2 33.3	33.5 -2.0 31.5	15.0	
10	77.2	77.2	35.2	
11	96.1	96.5	39.8	
Re-M.	93°	93°	39°	

12	85°	80°	38.5
13	66.5	65.2	29.2
14	44.0 -1.5 42.5	42.5	18.5
15	74°	66.5	33.8
Re-M	67.8	65.8	31°
16	86.5	86.0	35°
17	54.5	54.5	23.8
18	81.5 -0.5 81.0	81.5 -0.5 81.0	35.0
19	55°	51°	24.8
20	92.0	91.5	41°
21	95° -0.5 94.5	94.5 -0.5 94.0	41°
22	117.0 -0.5 116.5	117.0 -0.5 116.5	48.8
23	63° -0.5 62.5	57.5 0.5 57.0	26°

in thick cluster of trees.

32) 1,142.70
35.71

24	61.0	56.5	27.5	
25	113.0 -0.5 112.5	109.3	50.5	
26	105.5			
Re-M	108.5	96.0	48.0	to dirt.
Re-M	101.5 -0.5 101.0	101.5 0.5 101.0 CC	43.5	
27	74.5 -0.5 74.0	70.0 -0.5 69.5	30.0	
28	118.5	118.5	50.0	
29	81.5 -3.5 78.0	77.5		Cylinders #2
Re-M	79.5 -1.0 78.5	78.3	33.5	
30	67	66.4	32.0	
31	68.0 -0.5 67.5	63.0 -0.5 62.5	31.0	
32	113.5 0.2 113.3	113.5 -0.2 113.3	52.5 ✓	2:00 P.M.

✓ Copied by State Dept. of Engineering Hydrometry May 8, 1919

✓

87.
78.8
7

95.7
67.4
28.3

83.5
12.3
71.2

78

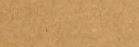
76.1
2

77.8
9
68.8

435

81.8
6
75.67

"For Families"



Summit
Stations

B/10

Summit Station
and Fordyce Lake

1919-20

Course 7.

P.	59.0	59.0	20.5
Rem	83.0		
	81.3	79	30.0
2.	72.0	68	25
	71.0		
3	60.5	60.5	
	5		23.5
	55.5	56.5	
4	76.6	Sail 16.5 in	
Rem	60.5		
	2		
	58.5	58.5	24.0
5.	72.5	62	26.5
Rem	82.5		
	80.5	79.5	34.5

Dead tree has fallen
But have an sight
by and with dark Top
is almost in line

6.	74.0 − 5.5 68.5	65.0	29.6	Have to ride wrench Cant hoist enough to penetrate [illegible], snow
7.	72.0 2.8 69.2	71.5 2.8 68.7	26.0	Bottom not so dense So weight ~~goods~~ less than in previous meas.
8.	81.5 2 79.5	80 2 78	32.5	Driving easier. in [illegible]
9	99.5 1.8 97.7	97.5 1.8 96.7	41.0	Very easy driving ✓

10. 71.0 68.0 28.5 Cut in crank

11. 70.5 71.5
2.8 2.8 28.0
67.7 68.3

12. 53.0 52.5 20.0
Ream

13. 58.5
2.6 52.5 Slipt
55.9

Ream 60.6
6.0 54.0 22.5
54.6

14. 64.5 64.0
2.5 2.5 27.0
62.0 61.5

11:45 a.m. Dinner

In crank

2 pm

15	64 2.5 61.5	62.5	23.5	
16	75.0 3 72.0	68.5	28.0	
17	80.0 1.8 78.2	71.5	31.8	
	Plunged by standing on vessel So core short			
18	81.5 82.7	82.7	35.3	No crust at all.
19	90.5	85.2	34.0	
	Rem. 90.7	86.0	34.0	Near sound.

20	93.7	86.0	35.0
21	90.5	85.8	34.0
22	58.0	58.0	20.0
		1.5	
		56.5	

4 ft to tree

Pellets over base.

22) 1597.10 = 72.6   av   22) 634.2 = 28.83

Norm. 39.7%

at 42 ft. Normal = 68.6%

4 ft to tree

Scrub

Course 3 - across flat

Every 50 ft - Beginning 50 feet from N' end

1.	49.0	49.0	18.0	Crust
Rem.	66.0	61.7	24.0	
	Passed over evidently 17 in. deep and 6 in water			
2.	50	46.5	20.0	Ice
	74.0	68.0	32.4	
	Jarred in driving 32.4			
3.	77.0	75.0	31.7	No crust; no ice

4	68.0	Cave	lost	
Rem	66.5	57.8	25.5	Rode wrench -
"	73.5	61.5	29.5	Can't know under-current
"	74.5	70.3	32.0	pressed down
5	84.0	79.0	32.0	No current, lighter
1	3.5			
	80.5			
6	72.0	66.3	29.5	Rode wrench, too short.
	2.0			
	70.0			
7	76.5	73.5	31.0	
	2.3			
	74.2			
8	82.0	70.5	34.5	Used wrench
	1.8			
	80.2			

9. 77.5 7 in dirt.
71.0
1.8 69.2 25.5
69.2

10. 70 in. S. of clump of scrub mesquite from tallest & nearest one of scrub. Crust – Broke thru it.
74.5 68.0
2.3 29.0
72.2

11. 91.0 88.0 35.0 No crust

12 83.0 74 31.0 Core
2.5
80.5

Rem. 82.5
2.5 74 32.0
80.0

.13 - 96.5   92.0   34.0
1.0
95.5

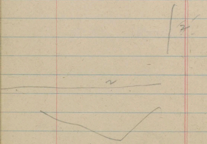
44 ft. ti. triple blaze

4:10 pm

13) 1004.30
77.3

13) 402.6
ave. 40%. 30.97 in

av. 2+3, 29.90 = 71.6%



among trees,
so very light

(V)

Survey Summit Station
June 1, 1920

Snow gone on slopes facing S and in flat when ground is open or thinly forested. But drifts are occasionally found N. of stream especially where shade is good.

But across stream where ground slopes slightly away from sun or is even level and is well wooded, the snow is almost continuous and covers entire south wall & valley.

Course 2 -

Apparently one spot in gully where meas. has been made, but it is out of place. Otherwise O. So all course T.

Cleared of scrub and partly of rocks. At one point, meas. comes close to tiny eroded gully, at another just N. of road, meas. is only 5 in. S. of large boulder

Soil moist on lower half of both courses

June 1, 1920

Course 3 -
Cleared course of brush and all except occasional boulder

43 ft 8 in to End of Course.
18.6 S.C. 10.0
Dens. 53.8 %

Other drifts in neighborhood where tamarack is thicker. Max. drift nearly - 42 & 46 in.

Average there tam S. of stream 2 feet.

(Better use every 25 feet than every 50 feet because of tiny hillocks and gully. However ground very level and clear. Ed. will spend a day)

digging out all stones

Van Hoosen – (Cap 5,280 A.F.)
Max. depth 27 ft.
Normally fills 3½ times (18)

41 in. total precip. (water) for season. (1919-20).
1919-20. Van Hoosen will fill about 2½ times

—

~~20 sq. mi.~~

Lake Spaulding

1918-19. Filled only once, but lost 60 000 A.F. over spillway during winter + 48 000 miners inches every day thru ditches

1919-20

Nearly empty last autumn. None lost in winter but 19 000 miners inches daily past thru ditches.

Now is full and estimated (by Roney) that 15 000 - 20 000 A.F. will go over spillway.

Lake Fordyce - (20,400(?) A.F.)

1919-20 - Filled for long time leakage thru dam too great to estimate filling of Lake.

If dam would hold tight everything corralled above the dam should be 40 000 A.F. or 2 times.

\# This is nearly the lightest season known at Fordyce. (But will look up records at Fordyce).

Memo. - Gus Anderson only 1 day in May (at Meadow Lake).

Timber and Forest

In Tamarack Valley - before timber was cut when snow was out of valley we closed spillway ("check up") # Cascade Lakes for season.

Then when Cascade decreased, checked up Van Norden.

But now snow in Tamarack goes out much early than it used to.

Now must get above 6500 ft to get hardest snow.

It is climatically colder in winter at Fordyce than at Cisco. Not certain about the temp in summer.

Shasta

Creeks running vigorously
Tho not full. Spilling
at Van Norden running
3 in. deep. Lakes now
full and much more
snow on hills

We (1.) Have Ed clear all
channels of stones to
prevent injury to cutter
Make cutters long-lived.
(2) Make boxes for tape line
flush with staff or
use clasp to put on
staff when tape is used.

Feather -

Snow at Tunnel Flat
few days ago 15 in. Now
probably 8 in.

Snow continuous at
Lake Stirling and Meadow
Lake. Easily 25 sq. mi.
8 snow yet.

P. G. & E.

When snow is about
out of water for irrigation
in order to save waters
for power.

More snow and consequently a later flood would be valuable for power and incidentally for irrigation. Present

year powers probably as good or even better than last year.

Last year Lake Spaulding began to fall? about June 6. It may hold this year to June 20 difference is due to lower temperature this season despite less snow.

Red Mt. 4/3/20

1	37.7
re-	39.2
2	40.8
3	39.6
4	36.0
re-	37.8
5	36.0
6	39.1
7	36.8
8	38.8
re.	38.4
9	37.2
10	34.2
11	38.2
12	39.2
13	35.2
14	36.2

2916

Approx. 80%

Wardella 69%

—

Improvements.

1. In lining up the [illegible] work for [illegible]

2. Carry bag for [illegible] while measuring.

32) 230 (7.2
224
60

79
55
24

Fred Harris

Red Mountain

39.20 *
40.80 *

80.00 *
37.80 *
36.00 *
39.10 *
36.80 *
38.80 *
38.40 *
37.20 *
34.20 *
38.20 *
39.20 *
35.20 *
26.20 *

592.70
74.40
518.30

2.00
35.40
74.80

592.70 *
74.40
14) 518.30
37.02

Furnace Flat

No. 1

37.00 *
42.30 *
36.10 *
41.00 *
40.40 *
41.80 *
40.60 *
44.20 *
36.50 *

9) 359.90 *
39.99

35.50 *
36.00 *
40.70 *
39.30 *
38.00 *
40.80 *
230.30 *

No. 2

37.50 *
36.00 *
40.00 *
39.30 *
38.00 *
41.00 *
42.40 *
41.70 *
40.80 *
37.20 *

10) 393.90 *
39.39

Sawmill Flat

No. 1

29.10 *
36.20 *
35.80 *
37.10 *
39.60 *
40.10 *
37.30 *
39.30 *
37.00 *
37.00 *
39.20 *
52.30 *

12) 460.60 *
38.38

No. 2

43.20 *
42.90 *

41.80 ±
41.00 ±
35.00 ±
34.10 ±

6) 238.00 ±
39.67

59.70 ±
41.00 ±
40.80 ±

141.50 ±

Sterling Lace
Edged
Southern Belt

59.70 ±
41.00 ±

100.70 ±

No. 1

40.80 ±
41.00 ±
44.60 ±
41.30 ±
42.70 ±
43.00 ±
41.70 ±

Add Extra # No. 1 — 295.00 ±
Total 9) 395.70
43.97

No. 2

43.20 ±
37.40 ±
42.70 ±
41.90 ±
40.40 ±
36.00 ±

6) 241.60 ±
40.25

Madam Lace
No. 2

42.00 ±
38.60 ±
41.20 ±
43.80 ±
39.00 ±
40.80 ±
42.10 ±
43.50 ±

331.10 ±
.60
8) 331.70
41.46

No. 1

41.50 ±
44.50 ±
40.70 ±
41.10 ±
37.20 ±
37.60 ±
39.00 ±

277.10 ±

37.60 ±
44.50 ±
40.00 ±
41.10 ±
37.50 ±
41.60 ±
44.00 ±

7) 286.40 ±
40.91

Wash Lace Flat

42.70 ±
37.50 ±
34.00 ±
39.00 ±

4) 153.20 ±
38.30

33066

UNIVERSITY OF NEVADA
BUSINESS OFFICE
RENO

PURCHASE ORDER

ORDER NO.....

DATE.....

DEPT.....

ROOM.....BLDG.

PLEASE FURNISH THE UNIVERSITY OF NEVADA WITH THE FOLLOWING ARTICLES:

QUANTITY	ARTICLE

Appropriation.....

Estimated Cost.....

Dept. No.....

Date Approved.....

Amount Voucher.....

TO THE PRESIDENT—The above order has been placed on the date above indicated. You will be notified of payment when the vendor's bill has been audited and vouchered. A list of all vouchers paid thru either state or local funds will be sent you.

38.3
31.2
32.6
29.8
33.8
29.2
30.7
31.6
29.3
28.6
32.2
37.4
27.6
34.6
27.3
31.1
33.2
34.7
33.0
33.6
31.3

9
10

$$\begin{array}{r|l} 21)671.1 & 31.95 \\ 63 & \\ \hline 41 & \\ 21 & \\ \hline 201 & \\ 189 & \\ \hline 120 & \\ 105 & \\ \hline 150 & \\ 147 & \end{array}$$

31.90
30.69
6279
31.395