

Comparison of Precipitation Gages  
at Soda Springs near Donner Summit (Cont.)  
(Inches Water Equiv.)

W - Weight  
D - Depth

Parenthesis indicates stick-depth of snow and in case of individual gages the stick depth of the water or slush contents.

- Hotel -

Date	Accum. Snowfall (Max.)	No. 1 Unshielded	No. 2 Stevens W. Recorder	No. 3 Army Engrs. Check (Depth only)	No. 4 Check	No. 5 Friez Recorder	Stevens S Unshielded	Plastic Collar Unshielded	Reducing Collar	Prestone Unshielded
1943-44 WINTER										
Nov. 1 - Dec. 1		1.94	2.48	0.5 (15.3)	2.55	2.42				
Nov. 16-17		0.06	0	2.50		0.07				
Nov. 19-22	(5)	1.29	1.88			1.71				
Dec. 1 - Jan. 1		2.82	Reversed	2.2 (15.9)	3.05	2.79				
Dec. 5		0.035	0			0.07				
Jan. 1 - Feb. 4		8.92		10.3 (20.6)	10.73 (11.1)	10.38				
Jan. 1-17	Jan. 2, (26) " 6, (40) " 17, (29)	3.38		6.6 (17.6)	4.70 (4.5)	4.51 Rechg.				
Jan. 17- Feb. 4	Jan. 23 & 30, (8) Feb. 4, (9)	5.54		3.7 (20.6)	6.03 (6.6) Rechg.	5.87		Jan. 29-Feb. 4 4.67 (2.6)	Jan. 24-Feb. 4 2.55 (2.86)	Jan. 20-Feb. 4 5.75 (5.45)
Feb. 4 - Mch. 1		5.73		11.8 (22.0)	6.41	7.65		5.06	7.22	4.69
Feb. 4-10	Feb. 8, (15)	1.37	Siphon pen and cross-section paper installed	3.3 (19.5)	1.59 (19)	1.61		1.37 (1.5)	0.31 (1.52)	1.21 (1.4)
Feb. 10-22	Feb. 21 and 22, (10)	1.26	1.60 (?)	4.5 (20.8)	1.99	1.91		1.29	2.10	1.16
Feb. 22-Mch. 1	Feb. 28, (26) Feb. 29, (20) Mar. 1, (11)	3.10	4.20	4.0 (22.0)	2.83	4.10		2.40	3.81	2.32
Mch. 1 - Apr. 1		2.70		4.1 (23.2)	4.0	3.71				
Mch. 4	(19)	1.65	(Wet ice)	(Wet ice)	(Snow 2 in. below rim)	(Can full; snow in neck)		1-1/2 in. below rim	Capacity ?	1-2 in. below
Mch. 5	(3)	0.24	(Wet slush)	(All slush)	(16; ice slush) 9-10 in. below rim)			Snow 10-1/2 in. below rim		Dry snow on slush 7 in. down
Mch. 1-6		1.89	3.64	3.1 (22.9)	3.16	2.56 Rechg.		1.09	0.57	0.73
Mch. 12		0.45	0.50			0.17			Mch. 8 Found leaking	
Mch. 6-16	(Mch. 9: ice in all cans melted)	0.81	1.02	1.0 (23.2)	0.80 Rechg.	0.86		0.62 (0.50) Rechg.	Repd.	0.67 (0.61) Rechg. with calc. chl.
Mch. 16-Apr. 1	(No. 10 oil)	0	0*	0 (23.22)	+0.04 (-0.02)	0	Set	0.75 (0.30)	0	-0.01 (-0.04)
Nov. 1 - Apr. 1		22.11 = 61.5%		28.9 D. 28.0	26.74	26.95				

Normals

Precip. Nov. 1-Mch 31 35.98 in. (No. 1 gage) = 61.5%  
Snow Cover Apr. 1 38.60 in. = 67.1%

\*\* Nov. 1-18 by No. 1, 0.06 in.

\* 0.38 in. but moved forward by Ernie Mack while testing batteries.

Apr 1-May 1

Apr 5

0.35 0

0.30

Apr 8

Apr 11

1.54 1.40  
2.18?

Apr 12

2.43

Apr 14

Rechg

Apr 15

3.14

3.14

(24.7) 3.85 (3.72)

W.H.13 D.2.60 X-

3.20 (3.14)



March 25

No. 6

W. 5.25 Not  
leaving.

No. 7

No. 8

No. 9

No. 10

April 1

W. 5.26 D. 4.18 W. 17.35

W. 5.25 D. 4.1

W. 7.03 D. 5.1

W. 8.53 D. 6.1



# FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State.....  
 Drainage Basin Tests in Snow Melting  
 Snow Course Essential Data.  
 Party.....  
 Date.....

*Description or Number of Course	**Sample Number	Depth of Snow Inches	Length of Core Inches	Weight of Empty Tube	Weight of Tube and Core	Water Content Inches	Density Per Cent	Remarks	
<i>Core No. Test</i>	<i>Dens %</i>	<i>Crystals</i>	<i>Temp. of F</i>	<i>Moist. Mass M, W, D</i>	<i>Mass Water oz</i>	<i>t<sub>hat</sub> °C</i>	<i>Mass Snow oz</i>	<i>t<sub>final</sub> °C</i>	<i>C colonies</i>
<i>3 1/2 in</i>									
<i>3 1/2 in</i>		<i>2 mm</i>	<i>32°</i>	<i>W</i>	<i>10.71</i>	<i>49</i>	<i>3.43</i>	<i>30.1</i>	<i>24.14</i>
<i>9 in</i>					<i>9.895</i>	<i>?</i>	<i>4.81</i>		
<i>1.5 in</i>	<i>6/15</i>	<i>1/2 mm</i>	<i>33°</i>	<i>M-Frag</i>	<i>9.92</i>	<i>50.2</i>	<i>8.0</i>	<i>6.4</i>	<i>61.31</i>
<i>Apr 27</i>	<i>Shovel</i>	<i>2 mm</i>		<i>W</i>	<i>9.92</i>	<i>20.9</i>	<i>1.5*</i>	<i>16.0*</i>	<i>24.41</i>
<i>May 2</i>	<i>W</i>					<i>61°C</i>			
<i>5:30 pm</i>	<i>10.04</i>	<i>17.3</i>	<i>35F</i>	<i>W</i>	<i>10.248</i>		<i>10.04</i>	<i>5.8</i>	
<i>Core</i>	<i>17.3</i>	<i>2-4 mm</i>							

\*Show number or description as given on sketch map, i.e., "Course No. 1," or "Major Course," or "N 5° E," etc.

\*\*Always start measurements for sampling from the initial point as shown by the sketch map of the course and follow the spacing for samples as indicated. Particular care should be taken to note any irregular spacing between samples.

No. .... of ..... sheets. Comp. by ..... Checked by .....



Apr.

	Apr. 16-21 Snowfall	21-28 or. sf.	Apr. 28-May 6	May 6-7
Stevens S	1.22	0.18	0.59	0.08
No. 1	1.12	0.136	0.60	0.09

	May 7-July 2 or. sf.	July 2- <del>Aug. 1</del> <sup>14</sup>	July 14-Aug. 1*
Stevens S	3.77	0	1.11
No. 1	3.51	0	0.35 (End?)
No. 5			

	May 7	July 2	July 14	Aug. 1
No. 4 (Shielded)	11.56	15.67 = 4.11 [2.85]	Not 0	3.98 = 1.13

Plastic C.	10.74	14.93 = 4.19 [3.24]	0?	4.375 = 1.135
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Reduced  
Shielded

25 - 8.02

26 - 0.105

"Rained hard"

27 - 0.102



Apr.

	Apr. 16-21 Snowfall	21-28 0.8 ft.	Apr. 28-May 6	May 6-7
Stevens 5	1.22	0.18	0.59	0.08
No. 1	1.12	0.136	0.60	0.09

	May 7-July 2 0.5 ft.	July 2-Aug. 14	July 14-Aug. 1*
Stevens 5	3.77	0	1.11
No. 1	3.51	0	0.35 (Emp.?)
No. 5 (Frig)	3.89		Manifest error
Plastic	4.19		*
No. 4	4.11		

July 14 - Shower  
Hail  
15 - 10.26  
16 - Showers  
17 - T  
24 - Showers  
25 - 0.02  
26 - 0.05  
"Rained hard"  
27 - 0.02

7.006

101

.12

.13

7.99

6.88

1.11

17.54

13.77

2.77

13.77

13.69

.08

13.10

12.92

.18

.09

.04

.74

May

.21

.51

.64

.32

June

Snowfall



## FEDERAL AND STATE COOPERATIVE SNOW SURVEYS

State \_\_\_\_\_ Drainage Basin \_\_\_\_\_

Snow Course \_\_\_\_\_

Party \_\_\_\_\_ Date \_\_\_\_\_

Date and Weather	No. of test	Length of Core ins.	Dens. of snow %	Grain size mm	Temp. of snow °F	Mois- ture* W, M, D, P, C.	Mass hot water (ozs) ins.	Temp. hot water °C	Mass snow ins. (ozs)	Final temp. °C	Calories
May 3. Calm & cloudy 38°F	5	6.5		2-3 mm	33°F 8 in down	M, P, C	9.880	58.6	4.51	24.9	
	6	8.5		3-4 mm	33°F 12 in down	M-P	10.71	63.4	4.38	30.0	
	7 [5-6]	17.5 ice buttons				Soils drifting	10.285 10.44	62?	8.52	5.4	
	8			4-10 mm at base of trestle			10.58	35.4	7.822	0.05	a few crystals unmelted
	8 <sup>a</sup>	4		"			10.37	62.6	1.262	49.5	

\* W = wet; M = moist; D = dry  
P = packs; C = crumbles



TELETERMINOSCOPE TESTS  
of (except where noted)

Date and location	Merc. Thermo. in Case	No. 1 in Case	No. 2 3 ft. above ground	No. 3 2 ft. above ground	No. 4 1 ft. above ground	
March 1. Orig. shelf 14 ft. above ground so box was placed on mid-braces.						
Hole dug, then filled in with snow. Ray K. Linsley cooperator.						
March 1 - Hotel Platform			33	33	36	Why No. 4 so high. Same?
March 6 " "	36	36	33	33	36.5	No. 4 erratic, oscillates between 36 - 46 Merc. 3 in. beneath snow 0.2°C (32.36) 6 in. beneath snow 0.3°C (32.54)
March 11 " "	48	48	33	30	35.6, 34.6, 34.0	
	51.1	53.1	33	33		Merc. in snow: 2 ft. above ground 32.2 Therm. 1 ft. " " 31.8
	50.0	52.0				
	51.0	53.0				
	45.0	47.5	33	33	34.1, 36.6?	Try in early morning.
March 12 " " Morning	28.4	28.0	33*	33	39.6**	*Merc. in snow 31.6 ***Therm. " " 32.1-
Min. for night 22						
Evening	57.8	60.0	33	33	35.7	Snow frozen solid at surface. No time before train to excavate.
4:30 p.m.						
March 20 Thermal units cleared of snow						
Temp. in shelter on platform 36.8	36	36.5	( In Air 52.5*	( In Water ) 51.1**	75 (Merc.71) (Merc.66)	*In snow pit exposed to sun; in frozen snow persistently 35.
No. 4 in warm water. Difficult to read without assistant.					72	**Close to snow, bottom touches snow.
					***	***Unit and merc. in can of water. Thermal units unaffected by immersion in snow or water. Call Ernie Back to check instrument.



TELETHERMOSCOPE TESTS

-2-

Date and Location	Herc. Therm. in Case	No. 1 in Case	No. 2	No. 3	No. 4
March 26. Assisted by Linsley	45.0	45.0	( 41 )	( -In Air- ) 40.5 app.	( -In water- ) 73.0 (Herc. 73.0)

\*No water in unit  
Structurally sound. Ask Thickstun.

April 2. Barnes suggests that alternation of hot and cold water in Hotel sewer flowing beneath Platform may have caused fluctuation in temp. reading of No. 4 unit.

Desired a test in Pasture, where snow is more uniform and deeper at present. Objects also to the wooden trellis.

( -In snow- )	(-In can of snow-)	*In shade	Herc. in sealed tube in shade (6 ft. from No. 4)
33.0	33.0	36"	35.0

Harmony and sensitiveness.

Pasture

Telethermoscope erected on timbers attached to Trestle. Assistant, Hans Zorbach.

Units inserted in snow by means of snow sampler.	Herc. in Case	In Case	2 ft. above ground 8 in. below surface	1 ft. above Ground 20 in. below surface	2 in. beneath soil
April 24 5 p.m.	50.0	48.8	32.2	32.2	41.0
April 25 7:35 p.m.	33.0	33.0	33.0	33.0	47.0
1:45 p.m.	36.5	36.5	33.0	33.0	104.05*
5:30 p.m.	42.5	43.5	33.0	33.0	38,43,70*
	41.0+	43.4			*Reversion to old action?
	39.8	41.6	33.0 (1 in. deep merc. 33.5	33.0 (1 ft. above bottom 32 )	54.2+*
April 26 8:20 a.m.	28.0	27.0	At Surface		*No. 4 acts slowly and finally. shifts back toward more normal reading.
	30.2	28.8	30.6	33.2	*Later 40.0 but merc. in wet soil 33.
	34.0	33.0	30.8	33.1	35.4



TELETHERMOSCOPE TESTS

-3-

Date and Location	Mercur. Therm. in Case	No. 1 in Case	No. 2	No. 3	No. 4 (In wet soil)
April 26. 5:50 p.m.	42.5	43.8	Bulk visible down hole 109.0	Snow shrunk from cable 33.0	91.5*
April 27. 9:30 a.m. Raining and snowing	36.5	37.0	Near surface below new snow + never enough	1 ft. above bottom 33.2°	In wet soil 47.8
May 1 11:50 a.m. Fast clouds - broken	54.0	54.2	Lying on snow in semi-shade 32.8 Covered by 1 in. of snow 32.4	1 ft. above ground and 5 in. below surface 32.6	Soil water 55.0 (Mercur. 38.0°) 47.8*

\*It may be well to obtain another thermal unit in place of No. 4.

\*Barnes has been here. Thinks the telethermoscope impossible. - A. Couillard

May 1 2:30 p.m.	60.5	61.3	On snow in sun. 32.7 Covered again by snow 32.5	1 ft. above a ground. Hole slightly open. 32.8 Hole tightened 32.7	53.6 54.6
May 1 4:40 p.m. Sun bright on snow Later	61.2 61.6	61.7 63.0	In hole toward sun 68.4 Covered again by snow 73.2 Later when cooled 32.7	In snow 33.1 Hole slightly open to top of unit 34.7 Covered again by handful of snow 35.0	51.6 Later 54.3
May 2 9:55 a.m. Min. last night 28.0° F	44.2	45.0			40.8*

Holding button down long enough to balance instrument does not appear to heat the circuit as Barnes suggests.

\*Ice on surface of water but thin shell.



TELETHERMOSCOPE TESTS

-4-

Date and Location	Temp. Therm. in Case	No. 1 In Case	No. 2 In Case	No. 3	No. 4	
May 5 8 a.m. Snow surface moist, very thin ice. Min. 30.5	34.2	35.2	On snow in open pocket 34.7	1 ft. above ground, just beneath surface 34.5	39.6*	*Second trial.
May 7 Noon	42.1	54.6	Partly in sun 59.0	In shade 57.0	Cooled partly in wind and in sun 65.7	
			- Tested in bucket of water -			
	37.0		38.0	38.3	62.7	
	37.5		39.3	39.0	63.0	
	In Case	In Case	40.1	40.1	62.8	
2 p.m.	61.2	59.5				
	64.0	62.5				
			- Tested again in bucket of water -			
	45.0		47.0	47.0	62.2	
					64.6	
May 8 Telethermoscope brought to storeroom by aid of A. Couillard.	( 58.6	- In Case - 59.5 )	- All units dry in air -			
			( 56.0	- On floor - 56.0	67.5 )	
			Water Test for Nos. 2, 3, and 4. with mercurial			
	46.7		46.5	46.9	50.0	
	47.1		47.0	47.0	51.5	
	47.1		48.2	48.2	50.5	
Connections found tight. No. 4 does not seem so discordant. Shall we have a new unit?						



Comparison of Precipitation Gages  
at Soda Springs near Donner Summit,  
California  
(Inches water equivalent)

Date	Hotel		Pasture								Snow Survey	
	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10		
1942-43												
WINTER	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10		
Nov. 1-Apr. 1	Unshielded	Stevens W	Army Engrs.	Check	Friez	Check	Stevens Q	Unshielded	3 ft. deep	3 feet deep		
	51.03 =	Batteries failed			56.25		53.51					38.4 =
	141.8% of normal (Nov.-Mch.)											98.2% of Apr. normal
Dec. 1-June 1 Adjusted	43.05 =		47.66 wt.	45.42	48.33	50.62	47.05	42.67	50.18	51.54		0
	137.3% of normal (Dec.-Mch.)											
April	2.60		2.50 dpth.	41.55	3.83	3.87	3.72	3.55	4.09	4.15		11.8
May	2.23		2.88 dpth.	2.38	2.34	2.23	2.22	2.05	2.37	2.39		0



Comparison of Precipitation Gages  
at Soda Springs near Donner Summit (Continued)

(Inches water equivalent)

Date 1943	Hotel					Pasture					Snow Survey	Remarks
	No. 1 Unshielded	No. 2 Stevens W.	No. 3 Army Engrs.	No. 4 Check	No. 5 : Friez :	No. 6 Check	No. 7 Stevens Q	No. 8 Unshielded	No. 9 3 feet deep	No. 10 3 feet deep		
June 2-25	0.40			0.77	0.42	0.75	0.60	0.68	0.78	0.78		
June 26-												
July 10	0.25		2.0	0.25	0.21	0.24	0.20	2.26!	0.25	0.25		No evap.
July 11- 25	0.14	Reset	Recharged (dpth. 4.45 in.)		0.14		0.03					
July 26-												
Sept. 1	0	0	-0.12 (dpth. 4.33)	-0.01		-0.03	+0.02	-0.01	0	+0.01		Slight evap.
Sept. 2- 24	0	0		-0.01	0	-0.01	0	-0.01	-0.02	-0.02		"
Sept. 25- Oct. 1	0	0	+1.0 (dpth. 4.50)	+0.04	0	+0.01	0	+ T	0	0		"
Oct. 2- Nov. 1	2.64	2.56	+1.0 (dpth. 4.90)	2.88	2.80	2.79	2.88	2.55	2.95	2.97		



Comparison of Precipitation Gages  
at Soda Springs near Donner Summit (Continued)  
(Inches water equivalent)

Date	No. 1	No. 2	Hotel			No. 5	No. 6	No. 7	No. 8	No. 9	Pasture		Prestone	Hotel	
1943-44	Unshield-	Stevens	No. 3	No. 4	Friez	Check	Stevens	Unshield-	3 feet	3 feet	Snow	Survey:	Plastic	Reduc-	
WINTER	ed	W	Army	Check	:	:	Q	ed	deep	deep	:	:		ing Colla	
			Engrs.		:										
Nov. 16-17	0.06	0	Rechgd. (dpth.15.2)		0.07		0.08								
Nov. 19-22	1.29	1.28			1.71		1.70								
Nov. 21-22	1.35	2.08			1.78		1.90								
Nov. 2-															
Dec. 1	1.94	2.72	1.0 (dpth.15.3)	2.55	2.42	2.41	2.50	2.21+	2.63	2.65	0				
Dec. 2-															
Jan. 1	2.82	(Reversed)	3.0 (dpth.15.9)	3.05	2.55	2.89	2.93	2.43	3.15	3.10	15dpth.				
Jan. 2-17	3.38		5.0 (dpth.17.6)	4.70	3.85	4.25	3.10	3.07	4.72	4.80	29dpth.				
Jan. 18-															
Feb. 4	5.54		11.0 (dpth. 20.6)	6.03	5.83 est.	5.72	7.43	5.02	6.60	6.60	Feb. 1: (48.7dpth) (12.2water)	Set	Set	Set	
Feb. 5-10	1.37		-4.0 (dpth. 19.5)	1.59	?	1.34	1.51	1.02	1.80	1.59	Feb. 11: (57.5dpth) 18.1 water)	1.21	1.37	1.43	
Nov. 1-															
Feb. 10	15.05=														
	41.8% of														
	N. (Nov.-Mch.)														
Dec. -															
Feb. 10	13.11=										Feb. 11 18.1=				
	41.8% of										N. 46.9% of				
	N. (Dec.-Mch.)										Apr. 1				



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	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10		
1942-43												
WINTER	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	No. 10		
Nov. 1-Apr. 1	Unshielded	Stevens W	Army Engrs.	Check	Friez	Check	Stevens Q	Unshielded	3 ft. deep	3 feet deep		
	51.03 =	Batteries failed			56.25		53.51					38.4 =
	141.8% of normal (Nov.-Mch.)											98.2% of Apr. normal
Dec. 1-June 1 Adjusted	43.05 =		47.66 wt.	45.42	48.33	50.62	47.05	42.67	50.18	51.54		0
	137.3% of normal (Dec.-Mch.)											
April	2.60		2.50 dpth.	41.55	3.83	3.87	3.72	3.55	4.09	4.15		11.8
May	2.23		2.88 dpth.	2.38	2.34	2.23	2.22	2.05	2.37	2.39		0



Comparison of Precipitation Gages  
at Soda Springs near Donner Summit (Continued)

(Inches water equivalent)

Date 1943	Hotel										Pasture		Snow Survey	Remarks
	No. 1 Unshielded	No. 2 Stevens W.	No. 3 Army Engrs.	No. 4 Check	No. 5 : Friez :	No. 6 Check	No. 7 Stevens Q	No. 8 Unshielded	No. 9 3 feet deep	No. 10 3 feet deep				
June 2-25	0.40			0.77	0.42	0.75	0.60	0.68	0.78	0.78				
June 26-														
July 10	0.25		2.0	0.25	0.21	0.24	0.20	2.26!	0.25	0.25			No evap.	
July 11-														
25	0.14	Reset	Recharged (dpth. 4.45 in.)		0.14		0.03							
July 26-														
Sept. 1	0	0	-0.12 (dpth. 4.33	-0.01		-0.03	+0.02	-0.01	0	+0.01			Slight evap.	
Sept. 2-	0	0		-0.01	0	-0.01	0	-0.01	-0.02	-0.02			"	
24														
Sept. 25-	0	0	+1.0											
Oct. 1			(dpth. 4.50)	+0.04	0	+0.01	0	+ T	0	0			"	
Oct. 2-	2.64	2.56	+1.0	2.88	2.80	2.79	2.88	2.55	2.95	2.97				
Nov. 1			(dpth. 4.90)											



Comparison of Precipitation Gages  
at Soda Springs near Donner Summit (Continued)  
(Inches water equivalent)

Date	No. 1	No. 2	Hotel No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	Pasture No. 10	Snow	Prestone	Hotel Plastic	Reduc- ing Collar
	Unshield- ed	Stevens W	Army Engrs.	Check	Friez	Check	Stevens Q	Unshield- ed	3 feet deep	3 feet deep	Survey:			
1943-44														
Nov. 16-17	0.06	0	Rechgd. (dpth.15.2)		0.07		0.08							
Nov. 19-22	1.29	1.28			1.71		1.70							
Nov. 21-22	1.35	2.08			1.78		1.90							
Nov. 2-10														
Dec. 1	1.94	2.72	1.0 (dpth.15.3)	2.55	2.42	2.41	2.50	2.21+	2.63	2.65	0			
Dec. 2-10														
Jan. 1	2.82	(Reversed)	3.0 (dpth.15.9)	3.05	2.55	2.89	2.93	2.43	3.15	3.10	15dpth.			
Jan. 2-17	3.38		5.0 (dpth.17.6)	4.70	3.85	4.25	3.10	3.07	4.72	4.80	29dpth.			
Jan. 18-19														
Feb. 4	5.54		11.0 (dpth. 20.6)	6.03	5.83 est.	5.72	7.43	5.02	6.60	6.60	Feb. 1 : (48.7dpth) (12.2water)	Set	Set	Set
Feb. 5-10	1.37		-4.0 (dpth. 19.5)	1.59	?	1.34	1.51	1.02	1.80	1.59	Feb. 11 : (57.5dpth) (18.1 water)	1.21	1.37	1.43
Nov. 1-10														
Feb. 10	15.05 = 41.8% of N. (Nov.-Mch.)													
Dec. 1-10														
Feb. 10	13.11 = 41.8% of N. (Dec.-Mch.)										Feb. 11 18.1 = N. 46.9% of Apr. 1			