REPORT NO. 17

SUPPLEMENT NO. 1
t
to

DAILY STREAM FLOW DEPLETIONS

in

UPPER AND CENTRAL DIVISIONS

of

BEAR RIVER BASIN

(May 22, 1951)

Additional data on Depletion method principally concerning tributaries of Smiths Fork.

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August 20, 1951

SUMMARY

1- Depletion [illegible] indicate pine or springs [illegible]ring Creek are near water

2- Relation of Border & Harer.

3- Plates showing Lower Wyo on basis of 25%, 30% and 35% depletions 1944 thru 1948

4- Harer = .20 Border

COMPUTED NATURAL INFLOW
into
LOWER WYOMING SECTION

In the report by W. V. Iorns, "Daily Stream Flow Depletions in Upper and Central Divisions of Bear River Basin" dated May 22, 1951, on Page 13 are listed the streams supplying natural inflow into the Lower Wyoming Section. Given in that report is an equation by which this total natural inflow can be computed from recorded flows at three gaging stations. This report is to present the data showing how the equation was derived and to illustrate the close agreement of results obtained. Figures are also given showing different percentage distribution for depletion and delivery at the Border gaging station.

An examination of the drainage area indicates the following streams make up the surface supply above diversions of the Lower Wyoming Section:

Bear River above Sublette Creek
Sublette Creek
Smiths Fork above Diversions
Tributaries to Smiths Fork below First Diversion
- Tuffed Creek
- Howland Creek
- Larson Creek
- Chapple Creek
- Grade Creek
- Pine Creek
- Muddy Creek
- Corral Creek

Birch Creek
Chalk Creek

It was observed during the years 1944 to 1947 that the supply furnished by the following creeks after the end of the highwater period was practically nil.

Tuffed Creek
Larson Creek
Chapple Creek
Muddy Creek
Corral Creek
Birch Creek
Chalk Creek

These streams can therefore be eliminated from the list as sources of supply during periods when a water scarcity would exist.

Two springs, Pine Creek Springs and Spring Creek, contribute measurable supplies to lower Smiths Fork. From their location it would appear that all or a part of their source may be return flow from lands irrigated from Grade Creek and Pine Creek. During the period 1944 to 1948, discharge records were collected on the springs and it was observed that their flow was quite constant although they had a tendency to decrease slightly in mid summer. As a means of investigating if these springs are new water or return flow, a summation of inflows and outflow into the portion of Smiths Fork basin above Cokeville gaging station was made for 1944, 1946, 1947, and 1948. Approximately 3,500 acres are irrigated in this area and consequently a net depletion should result if all water is taken into account. The depletion study is made for the months June to September as little irrigation takes place before June 1 and also prior to June 1, some runoff occurs from miscellaneous small creeks which are practically dry for the balance of the summer. In the following tabulations, Spring Creek and Pine Creek Springs have been used as part of the inflow supply.

Smiths Fork Between Border and Cokeville Gaging Stations
Acre-Feet

1944 Irrigation Season

	June	July	Aug.	Sept.	
Smiths Fork near Border	31,600	15,060	8,330	5,990	
Howland Creek	591	315	208	134	
Grade Creek	416	299	207	151	
Pine Creek	1,140	1,095	1,041	966	
Spring Creek	251	222	260	250	
Pine Creek Springs	396	388	449	485	
Total Inflow	34,394	17,379	10,495	7,976	70,244
Smiths Fork at Cokeville	27,110	8,050	3,330	3,040	41,530
Tanner, Hunt, & Garrett	401	535	388	320	
Whites Water Canal	1,658	2,073	1,271	680	
Covey Canal System	4,648	4,639	3,543	2,430	
Spring Cr. to Collett Cr.	152	102	52	68	
Total Outflow	33,969	15,399	8,584	6,538	64,490
Depletion	425	1,980	1,911	1,438	

1946 Irrigation Season

	June	July	Aug.	Sept.	
Smiths Fork near Border	29,310	13,690	8,440	6,350	
Howland Creek	473	313	235	179	
Grade Creek	306	278	198	153	
Pine Creek	1,200	1,130	1,061	1,004	
Spring Creek	274	250	269	286	
Pine Creek Springs	522	341	461	479	
Total Inflow	32,085	16,002	10,664	8,451	67,202
Smiths Fork at Cokeville	22,170	8,160	3,530	6,010	39,870
Tanner, Hunt & Garrett	733	392	347	293	
Whites Water Canal	2,571	1,835	1,866	173	
Covey Canal System	5,706	4,580	2,022	686	
Spring Cr. to Collett Cr.	347	195	154	312	
Total Outflow	31,527	15,162	7,919	7,474	62,082
Depletion	558	840	2,745	977	

1947 Irrigation Season

	June	July	Aug.	Sept.	
Smiths Fork near Border	38,210	19,270	11,030	7,110	
Howland Creek	607	402	291	196	
Grade Creek	378	304	218	162	
Pine Creek	1,206	1,163	1,101	1,071	
Spring Creek	274	206	272	284	
Pine Creek Springs	493	457	452	467	
Total Inflow	41,168	21,802	13,364	9,290	85,624
Smiths Fork at Cokeville	34,570	13,780	7,530	6,546	
Tanner, Hunt & Garrett	1,104	867	613	117	
Whites Water Canal	2,018	1,365	1,696	949	
Covey Canal System	3,549	5,274	2,801	937	
Spring Cr. to Collett Cr.	0	0	92	122	
Total Outflow	41,241	21,286	12,732	8,671	83,930
Depletion	-73	516	632	619	

1948 Irrigation Season

	June	July	Aug.	Sept.
Smiths Fork near Border	33,770	14,090	8,370	5,920
Howland Creek	603	345	243	172
Grade Creek	503	313	235	167
Pine Creek	1,450	1,305	1,196	1,100
Spring Creek	272	231	260	263
Pine Creek Springs	493	429	446	442
Total Inflow	37,091	16,713	10,750	8,064
Smiths Fork at Cokeville	27,390	7,540	2,530	2,960
Tanner, Hunt & Garrett	1,515	563	217	8
Whites Water Canal	2,154	1,600	1,811	1,146
Covey Canal System	5,814	5,941	4,155	3,246
Spring Cr. to Collett Cr.	0	0	0	0
Total Outflow	36,873	15,644	8,713	7,360
Depletion	218	1,069	2,037	704

Summary of Monthly Depletions

	June	July	Aug.	Sept.	Total
1944	425	1,980	1,911	1,438	
1946	558	840	2,745	977	
1947	-73	516	632	619	
1948	218	1,069	2,037	704	
Average	282	1,101	1,831	935	4,149

Monthly Totals of Spring Creek and Pine Creek Springs

	June	July	Aug.	Sept.	Total
1944	647	610	709	735	
1946	796	591	730	765	
1947	767	663	724	751	
1948	765	660	706	705	
Average	744	631	717	739	2,831

Depletion per acre including supply from Springs = $\frac{4149}{3500}$ = 1.18

Depletion per acre excluding supply from Springs = $\frac{1318}{3500}$ = 0.38

The depletion rate of 1.18 acre-feet per acre appears to be far more reasonable than the 0.38 value. It would therefore appear that the major

portion of the supply from the springs should be classed as new water and included as surface supply into Smiths Fork.

The total natural inflow into the Lower Wyoming Section during periods when a water shortage would exist would therefore apparently be the surface flow of the following streams.

1. Smiths Fork near Border
2. Howland Creek
3. Grade Creek above diversions
4. Pine Creek above diversions
5. Pine Creek Springs
6. Spring Creek
7. Sublette Creek
8. Bear River above Sublette Creek

It was noted that the total flow of Howland Creek, Grade Creek above diversions and Sublette Creek, was approximately 5 to 8 percent of the flow of Smiths Fork near Border. Also that the combined flow of Pine Creek Springs and Spring Creek was approximately 50 to 65 percent of the flow of Pine Creek above diversions. These relations suggested the possibility of computing the total natural inflow into the Lower Wyoming Section on the basis of three gaging stations instead of eight. After studying daily, weekly, and monthly relations, the following equation was selected as furnishing a reliable figure of total inflow based on Smiths Fork near Border, Pine Creek above diversions, and Bear River above Sublette Creek.

Total natural inflow = 1.07 x Smiths Fork near Border, + 1.55 x Pine Creek above diversions + Bear River above Sublette Creek.

On Plates 1 to 50, are shown the summation of the several streams and the equivalent flow computed by the equation for the years 1944 to 1948. An inspection of the figures shows the close agreement of the two methods of determination.

Shown also on Plates 1 to 50, are depletion percentages of 25%, 30%, and 35% and corresponding required flows at Border based on the equation

figures for the depletion method of division. For comparison of deliveries and depletions, the actual discharge of Bear River at Border, when Border was less than 450 second-feet, and the actual depletion in the Wyoming section, computed by subtracting the Border discharge (one day later) from the total inflow, are also given in the tabulations.

As a check on the equation for its application in 1951, discharge measurements of the various streams were made on August 3, 1951. These measurements were made following a period of intermittent heavy rains, one of which occurred on the date of the measurements and which may have had some effect on the results obtained. Following are the results of that series of discharge measurements:

Stream	Discharge - Sec.-Ft.	
Smiths Fork near Border	220	
Howland Creek	5.3	
Grade Creek	4.5	
Sublette Creek	6.5	
Total		236.3
Pine Creek above diversions	21.8	
Pine Creek Springs	21.1	
Spring Creek	10.8	
Total		53.7
Bear River above Sublette Creek	220	
Total Inflow		510.0

1.07 Smiths Fork near Border = 236
1.55 Pine Creek above div. = 34
Bear River above Sublette = 220
Total equation inflow = 490

Difference = 20

% Difference = $\frac{20}{510}$ = 3.9%

The tributary flow of Howland Creek, Grade Creek and Sublette Creek, continued to be 7% of the flow of Smiths Fork, but the combined flow of Spring Creek and Pine Creek Springs at the time of the measurements was 146% of Pine Creek above diversions instead of 55%, as noted in the years 1944 to 1948.

This would indicate that the flow of these two springs may not bear any relation to the flow of Pine Creek above diversions. It may be that the base flow of the two springs during years of lesser water supply will be close to 55% of the flow of Pine Creek, but during years of plentiful water supply, their combined flow is a much greater percentage.

It is interesting to note that the flow of Bear River near Border on the same date was 380 second-feet, which is 74.6% of the total measured inflow and 77.5% of the computed inflow.

Another set of check measurements was made on August 14, 1951. The heavy rains had stopped shortly after August 3, and the results obtained indicated the relationship had returned almost to that observed in the years 1944 to 1948. Following are the results of discharge measurements on August 14, 1951:

Stream	Discharge - Sec.-Ft.	
Smiths Fork near Border	187	
Howland Creek	5.0	
Grade Creek	4.1	
Sublette Creek	2.8	
Total		198.9
Pine Creek above div.	21.7	
Pine Creek Springs	13.1	
Spring Creek	4.6	
Total		39.4
Bear River above Sublette Creek	186	
Total Inflow		424

1.07	Smiths Fork near Border =	200
1.55	Pine Creek above Div. =	34
	Bear River above Sublette =	186
	Total equation inflow =	420

Difference = 4

% Difference = 0.9%

The combined flow of Howland Creek, Grade Creek and Sublette Creek was 6.4% of Smiths Fork near Border and the combined flow of Pine Creek Springs and Spring Creek was 82% of Pine Creek above diversions.

RELATION OF DISCHARGES OF BEAR RIVER AT BORDER
and
BEAR RIVER AT HARER

The Bear River at Border gaging station records the surface flow delivered to Idaho from the Lower Wyoming Section. In addition to the recorded flows passing this gaging station, the supply for the Upper Idaho Section is augmented by surface and groundwater flows from Thomas Fork, return flows from the Cook Canal lands, and possibly some underflow from the Lower Wyoming Section.

In the Upper Idaho Section, the water right decree describes 22,734 acres as being irrigated. It was determined by planimetering these described lands on land use maps that approximately 23,278 acres were irrigated, which is a reasonably close check; however, some individual canal descriptions showed considerable deviation. Between the Bear River at Border and Bear River at Harer gaging stations, the decree describes 3,648 acres as being irrigated, while it was found on the land use maps that approximately 3,082 acres were actually irrigated.

The return flows from canals diverting between the Border and Harer gaging stations are available for downstream canals in the Upper Idaho Section. Very little of the return flows from canals diverting between the Harer gaging station and Stewart Dam returns to the river above Stewart Dam for reuse by the Upper Idaho Section canals.

The total divertible flow available for Upper Idaho Section canals is therefore closely equivalent to the flow of Bear River at Border plus the natural gain between Border and Harer plus the return flows between Border and Harer. In the 1944 to 1948 Bear River Hydrometric Data Reports, are shown computations and hydrographs of the daily gain including return flow between Border and Harer and between Harer and Stewart Dam. It has been observed that the total divertible flow available for the Idaho canals is practically equal to 120

percent of the flow of Bear River at Border gaging station.

The following discharge measurements were made in 1950 and 1951:

Measurement Station	10/4/50	10/11/50	11/9/50	7/19/51	8/3/51	8/15/51
Bear River at Border	294	294	330	427	380	353
Thomas Fork near Raymond	25	25	37	30	30	26
Bear R. below Thomas Fork*	357	356	417	480	-	403
Bear River at Harer	350	352	409	514	460	415
Bear River below Thomas Fork						
% of Border	122	121	126	112	-	114
% of Border ∠ Thos. Fk.	112	112	114	105	-	106
Bear River at Harer						
% of Border	119	120	124	120	121	118
% of Border ∠ Thos. Fk.	110	110	111	112	112	110

* In SW¼ sec. 21, T. 14 S., R. 46 E., B.M.

Irrigation diversions between Border and Harer gaging stations are not taken into account in the above tabulation.

Additional data on the annual and monthly increase between Border and Harer are shown in the following tabulation and on Plates 51 to 54.

Water Year	Bear River at Border Acre-Feet	Bear River at Harer Acre-Feet
1938	317,800	380,700
1939	216,600	270,300
1940	79,290	103,000
1941	173,900	202,600
1942	242,000	272,800
1943	326,500	389,900
1944	316,100	353,000
1945	227,800	281,000
1946	345,100	432,100
1947	381,300	451,500
1948	312,700	384,700
1949	254,000	313,500
1950	520,500	640,000

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING May - 1944

PLATE # 1

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	163	645	4	4	17	6	8	8	855	845	211	634
2	160	660	4	4	17	6	8	6	865	857	214	643
3	148	670	4	4	17	6	8	5	862	854	214	640
4	158	675	4	4	16	6	8	5	876	869	217	652
5	187	670	4	4	16	6	8	5	900	895	224	671
6	234	540	6	5	16	6	8	6	821	815	204	611
7	252	490	6	5	17	6	8	5	789	786	196	590
8	255	500	7	6	17	6	8	5	804	799	200	599
9	271	520	8	6	17	6	8	4	840	853	214	639
10	307	550	8	6	17	6	8	4	906	905	226	679
11	303	580	9	7	17	5	8	4	933	930	232	698
12	314	600	11	8	17	5	8	4	967	962	240	722
13	334	640	11	8	17	5	8	4	1027	1026	256	770
14	359	680	12	9	18	5	8	4	1095	1092	274	818
15	413	720	13	10	18	5	8	4	1191	1190	298	892
16	428	760	13	10	18	5	8	4	1246	1246	312	934
17	495	820	13	10	18	5	8	5	1374	1378	344	1034
18	459	880	13	10	18	5	8	5	1398	1399	350	1049
19	398	960	12	9	18	5	8	5	1416	1413	353	1060
20	366	980	12	9	18	5	8	5	1403	1400	350	1050
21	356	1000	12	9	18	5	7	5	1412	1409	352	1057
22	348	1000	12	9	18	5	7	5	1404	1400	350	1050
23	356	990	12	9	18	5	7	5	1402	1399	350	1049
24	342	930	11	9	18	5	7	5	1327	1324	332	992
25	334	710	10	8	18	5	7	4	1096	1096	274	822
26	331	690	10	7	18	5	7	4	1072	1072	268	804
27	352	700	10	7	18	5	7	4	1103	1104	276	828
28	395	710	10	7	18	5	7	4	1156	1161	290	871
29	428	710	10	7	18	5	7	4	1189	1196	299	897
30	451	710	10	7	18	5	7	4	1212	1221	305	916
31	475	710	10	7	18	5	7	4	1236	1246	312	934

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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May - 1944 (Continued)

PLATE 2

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	254	522	296	549								
2	257	600	300	557								
3	256	598	299	555								
4	261	608	305	565								
5	268	626	313	582								
6	244	570	285	530								
7	236	550	275	511								
8	240	559	280	519								
9	256	597	298	554								
10	272	634	317	588								
11	279	651	326	604								
12	289	673	337	625								
13	308	718	359	667								
14	328	764	382	710								
15	357	833	416	774								
16	374	872	436	810								
17	413	965	482	896								
18	420	979	490	909								
19	424	989	494	918								
20	420	980	490	910								
21	423	986	493	916								
22	420	980	490	910								
23	420	979	490	909								
24	397	927	463	861								
25	329	767	384	712								
26	322	750	375	697								
27	331	773	386	718								
28	348	813	406	755								
29	359	837	419	777								
30	366	855	427	794								
31	374	872	436	810								

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LOWER WYOMING June - 1944

PLATE 3

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs. Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	535	730	10	9	18	5	7	10	1324	1331	333	998
2	551	780	10	9	18	5	7	9	1389	1397	349	1048
3	543	880	10	9	18	5	8	8	1481	1489	372	1117
4	519	990	10	9	18	5	8	7	1566	1563	391	1172
5	495	1030	10	9	18	5	8	6	1581	1588	397	1191
6	475	1040	10	9	18	5	8	6	1571	1576	394	1182
7	503	1040	10	9	18	5	8	7	1600	1600	400	1200
8	499	1000	10	9	18	5	8	8	1557	1562	390	1172
9	666	970	12	10	18	5	8	8	1697	1710	428	1282
10	763	950	13	11	18	5	8	9	1777	1794	448	1346
11	727	1140	13	11	18	5	8	10	1932	1947	487	1460
12	683	1140	13	11	18	5	8	10	1888	1899	475	1424
13	644	1050	13	11	18	5	8	9	1758	1767	442	1325
14	611	990	12	10	19	5	8	8	1663	1757	439	1318
15	595	940	11	10	20	5	7	8	1596	1608	402	1206
16	583	860	11	9	22	5	7	7	1504	1518	380	1138
17	567	800	11	9	22	5	7	7	1428	1436	359	1077
18	535	730	11	9	21	5	7	6	1324	1336	334	1002
19	515	790	10	8	21	5	7	6	1362	1374	343	1031
20	511	620	10	8	20	5	7	6	1187	1198	300	898
21	507	520	9	8	19	5	7	6	1081	1091	273	818
22	495	480	9	7	20	5	7	5	1028	1039	260	779
23	463	480	8	7	20	5	7	6	996	1006	252	754
24	447	480	8	7	20	5	7	6	980	989	247	742
25	440	480	8	7	20	5	7	6	973	982	246	736
26	459	480	8	7	20	5	7	6	992	1003	251	752
27	440	480	8	6	20	5	6	6	971	982	246	736
28	402	500	7	6	19	5	6	5	950	959	240	719
29	384	580	7	6	19	5	6	5	1012	1020	255	765
30	373	620	7	6	19	5	6	4	1040	1048	262	786

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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June - 1944 (Continued)

PLATE 4

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.				
1	399	932	466	865							
2	419	978	489	908							
3	447	1042	521	968							
4	469	1094	547	1016							
5	476	1112	556	1032							
6	473	1103	552	1024							
7	480	1120	560	1040							
8	469	1093	547	1015							
9	513	1197	598	1112							
10	538	1256	628	1166							
11	584	1363	681	1266							
12	570	1329	665	1234							
13	530	1237	618	1148							
14	527	1230	615	1142							
15	482	1126	563	1045							
16	455	1063	531	987							
17	431	1005	503	933							
18	401	935	468	868							
19	412	962	481	893							
20	359	839	419	779							
21	327	764	382	709							
22	312	727	364	675							
23	302	704	352	654							
24	297	692	346	643							
25	295	687	344	638							
26	301	702	351	652							
27	295	687	344	638							
28	288	671	336	623							
29	306	714	357	663							
30	314	734	367	681							

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LOWER WYOMING July - 1944

PLATE 5

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	362	620	7	6	19	5	6	4	1029	1037	259	778
2	352	610	7	6	19	5	6	4	1009	1016	254	762
3	338	610	7	6	19	5	6	4	995	1001	250	751
4	324	600	7	6	19	5	6	4	971	976	244	732
5	314	570	6	6	19	5	6	4	930	935	234	701
6	307	540	6	6	19	5	6	4	893	897	224	673
7	294	520	6	5	19	5	6	4	859	864	216	648
8	287	490	6	5	18	5	6	4	821	826	206	620
9	277	440	6	5	18	5	6	4	761	765	191	574
10	271	390	6	5	18	5	6	5	706	708	177	531
11	258	350	6	5	18	5	6	6	654	654	164	490
12	252	330	6	5	18	5	6	5	627	628	157	471
13	246	300	5	5	18	5	6	4	589	592	148	444
14	240	260	5	5	18	5	6	4	543	545	136	409
15	237	230	5	5	18	5	6	4	510	512	128	384
16	231	220	5	5	18	5	6	4	494	495	124	371
17	225	210	5	5	18	5	6	4	478	479	120	359
18	222	200	5	5	18	5	6	4	465	466	116	350
19	222	200	4	5	18	5	7	4	465	466	116	350
20	228	190	4	5	17	5	7	4	460	460	115	345
21	213	180	4	4	17	5	7	4	434	434	108	326
22	207	170	4	4	17	5	7	4	418	418	104	314
23	202	160	4	4	17	5	7	4	403	402	100	302
24	202	160	4	4	17	5	7	4	403	402	100	302
25	199	150	4	4	17	5	7	4	390	389	97	292
26	193	140	4	4	17	5	7	4	374	372	93	279
27	184	140	4	4	17	5	7	4	365	363	91	272
28	182	140	4	4	17	5	7	4	363	361	90	271
29	179	140	4	4	17	5	7	3	359	358	90	268
30	176	130	4	4	17	5	7	3	346	344	86	258
31	171	120	4	4	17	5	7	3	331	329	82	247

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

July - 1944 (Continued)

PLATE 6

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	311	726	363	674								
2	305	711	356	660								
3	300	701	350	651								
4	293	683	342	634								
5	280	654	327	608								
6	269	628	314	583								
7	259	605	302	562								
8	248	578	289	537								
9	230	536	268	497								
10	212	496	248	460								
11	196	458	229	425								
12	188	440	220	408		447	180					
13	178	414	207	385		387	202					
14	164	382	191	354		348	195					
15	154	358	179	333		317	193					
16	148	346	173	322		306	188					
17	144	335	168	311		300	178					
18	140	326	163	311		289	176					
19	140	326	163	302		295	170					
20	138	322	161	299		295	165					
21	130	304	152	282		290	154					
22	125	293	146	272		269	149					
23	121	281	141	261		269	134					
24	121	281	141	261		267	136					
25	117	272	136	253		260	130					
26	112	260	130	242		245	129					
27	109	254	127	236		236	129					
28	108	253	126	235		223	140					
29	107	251	125	233		229	130					
30	103	241	120	224		216	130					
31	99	230	115	214		220	111					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

LOWER WYOMING August - 1944 PLATE 7

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	168	110	4	4	17	5	7	3	318	316	79	237
2	165	110	4	4	17	5	7	4	316	313	78	235
3	163	100	4	4	17	5	7	4	304	300	75	225
4	163	100	4	4	17	5	7	4	304	300	75	225
5	158	90	4	4	17	5	7	4	289	285	71	214
6	155	90	4	4	17	5	7	3	285	282	70	212
7	151	80	4	4	17	5	7	3	271	268	67	201
8	148	80	4	4	17	5	7	3	268	264	66	198
9	146	75	4	4	17	5	7	3	261	257	64	193
10	144	70	4	4	17	5	7	3	259	250	62	188
11	142	70	4	4	17	5	7	3	252	248	62	186
12	137	65	4	4	17	5	7	3	242	238	60	170
13	137	65	4	4	17	5	7	3	242	238	60	170
14	135	60	3	4	17	5	7	3	234	231	58	173
15	135	60	3	4	17	5	7	3	234	231	58	173
16	133	60	3	4	17	5	7	3	232	228	57	171
17	133	60	3	3	17	5	7	3	231	228	57	171
18	128	60	3	3	17	5	7	3	226	223	56	167
19	130	60	3	3	17	5	7	3	228	225	56	169
20	126	60	3	3	17	5	7	3	224	221	55	166
21	126	60	3	3	17	5	7	3	224	221	55	166
22	124	60	3	3	17	5	7	3	222	219	55	164
23	124	60	3	3	17	5	7	3	222	219	55	164
24	122	60	3	3	17	5	7	3	220	217	54	163
25	119	60	3	3	17	5	7	3	217	213	53	160
26	119	55	3	3	17	5	7	3	212	208	52	156
27	117	55	3	3	17	5	7	3	210	206	52	154
28	115	55	3	3	17	5	7	3	208	204	51	153
29	115	55	3	3	17	5	7	3	208	204	51	153
30	113	55	3	3	16	5	7	3	205	201	50	151
31	111	55	3	3	16	5	7	3	203	199	50	149

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	95	221	111	205		210	108					
2	94	219	110	203		200	116					
3	90	210	105	195		198	106					
4	90	210	105	195		194	110					
5	86	200	100	185		188	101					
6	85	197	99	183		182	103					
7	80	188	94	174		176	95					
8	79	185	92	172		180	88					
9	77	180	90	167		172	89					
10	75	175	88	162		169	85					
11	74	174	87	161		169	83					
12	71	167	83	155		174	68					
13	71	167	83	155		169	73					
14	69	162	81	150		165	69					
15	69	162	81	150		153	81					
16	68	160	80	148		153	79					
17	68	160	80	148		150	81					
18	67	156	78	145		147	79					
19	68	158	79	146		142	86					
20	66	155	77	144		140	84					
21	66	155	77	144		137	87					
22	66	153	77	142		121	101					
23	66	153	77	142		123	99					
24	65	152	76	141		121	99					
25	64	149	74	138		118	99					
26	62	146	73	135		118	94					
27	62	144	72	134		116	94					
28	61	143	71	133		113	95					
29	61	143	71	133		113	95					
30	60	141	70	131		113	92					
31	60	139	70	129		105	98					

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING September - 1944

PLATE 9

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	113	55	3	3	17	5	7	3	206	202	50	152
2	117	55	3	3	17	5	7	3	210	206	51	155
3	117	55	3	3	16	5	7	3	209	205	51	154
4	115	50	3	3	16	5	7	3	202	198	50	148
5	113	50	3	3	16	5	7	2	199	196	49	147
6	111	50	3	3	16	5	9	2	199	194	48	146
7	109	50	2	3	16	5	9	2	196	192	48	144
8	105	50	2	3	16	5	8	2	191	187	47	140
9	103	50	2	3	16	5	9	2	190	185	46	139
10	103	45	2	3	16	5	9	2	185	180	45	135
11	101	45	2	3	16	5	10	2	184	178	44	134
12	101	45	2	3	16	5	9	2	183	178	44	134
13	97	45	2	3	17	5	9	2	180	174	44	130
14	95	40	2	3	16	5	9	2	172	167	42	125
15	95	40	2	3	16	5	8	2	171	167	42	125
16	93	40	2	3	16	5	8	2	169	165	41	124
17	97	40	2	3	16	5	8	2	173	169	42	127
18	103	40	2	3	16	5	8	2	179	175	44	131
19	101	40	2	3	17	5	8	2	178	174	44	130
20	97	40	2	3	17	5	8	2	174	170	42	128
21	95	40	2	2	16	5	8	2	170	167	42	125
22	93	40	2	2	16	5	8	2	168	165	41	124
23	93	40	2	2	16	5	8	2	168	165	41	124
24	92	40	2	2	16	5	8	2	167	163	41	122
25	92	40	2	2	16	5	8	2	167	163	41	122
26	92	40	2	2	16	5	8	2	167	163	41	122
27	92	40	2	2	16	5	8	2	167	163	41	122
28	92	40	2	2	16	5	8	2	167	163	41	122
29	92	40	2	2	17	5	8	2	168	164	41	123
30	101	40	2	2	17	5	8	2	177	174	44	130

Bear River Sublette estimated.

Equation = 1.67 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

September - 1944 (Continued)

PLATE 10

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	61	141	71	131		107	99					
2	62	144	72	134		107	103					
3	62	144	72	133		104	105					
4	59	139	69	129		102	100					
5	59	137	69	127		104	95					
6	58	136	68	126		104	95					
7	58	134	67	125		102	94					
8	56	131	65	122		102	89					
9	56	130	65	120		102	88					
10	54	126	63	117		104	81					
11	53	125	62	116		104	80					
12	53	125	62	116		104	79					
13	52	122	61	113		107	73					
14	50	117	58	108		105	67					
15	50	117	58	108		107	64					
16	50	116	58	107		105	64					
17	51	118	59	110		107	66					
18	52	122	61	114		112	67					
19	52	122	61	113		116	62					
20	51	119	60	110		116	58					
21	50	117	58	108		116	54					
22	50	116	58	107		116	52					
23	50	116	58	107		116	52					
24	49	114	57	106		116	51					
25	49	114	57	106		116	51					
26	49	114	57	106		118	49					
27	49	114	57	106		118	49					
28	49	114	57	106		120	47					
29	49	115	57	107		126	42					
30	52	122	61	113		131	46					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

LOWER WYOMING May - 1945 PLATE 11

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	165	300	3	3	14	5	9	6	506	499	125	374
2	222	280	4	4	14	5	9	5	543	540	135	405
3	284	260	4	4	14	5	9	5	585	586	146	439
4	338	240	4	4	14	5	9	5	619	624	156	468
5	395	220	5	4	14	5	8	6	658	665	167	498
6	451	210	7	5	13	5	8	8	707	713	178	535
7	503	200	8	6	13	5	8	10	753	758	189	568
8	495	190	10	8	14	5	8	10	740	742	185	556
9	499	180	10	8	14	5	9	10	735	736	184	552
10	499	170	10	8	14	5	9	10	725	726	181	545
11	459	160	10	8	14	5	9	10	675	674	168	505
12	440	160	10	8	14	5	9	10	656	653	163	489
13	455	155	9	7	14	5	8	10	663	663	166	497
14	417	155	9	7	14	5	8	10	625	623	155	467
15	398	155	9	7	14	5	8	7	603	603	150	452
16	380	155	8	7	14	5	9	4	582	583	146	437
17	410	155	9	7	14	5	9	5	615	616	154	462
18	428	150	9	7	14	5	9	7	629	630	157	473
19	428	140	9	7	14	5	8	6	617	620	155	465
20	406	120	9	7	14	5	8	6	575	577	144	433
21	395	120	10	7	15	5	7	6	565	566	141	425
22	380	120	10	7	15	5	7	5	549	549	137	412
23	366	110	10	7	15	5	7	5	525	525	131	394
24	380	100	10	7	15	5	6	4	527	529	132	397
25	395	90	10	7	15	5	6	4	532	536	134	402
26	425	70	10	7	15	5	6	4	542	548	137	411
27	444	60	9	7	15	5	7	4	551	558	140	418
28	440	50	9	7	15	5	8	4	538	544	136	407
29	451	50	9	7	15	5	9	4	550	555	139	416
30	479	50	8	7	15	5	9	4	577	586	146	440
31	559	50	9	7	15	5	10	6	661	671	168	503

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District

May - 1945 (Continued)

PLATE 12

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.				
1	150	349	175	324							
2	162	378	189	351							
3	176	410	205	381							
4	187	436	218	405							
5	199	465	233	432							
6	214	499	250	463							
7	228	530	266	493							
8	222	518	260	483							
9	221	515	258	478							
10	218	508	254	472							
11	202	472	236	438							
12	196	457	229	424							
13	199	464	232	431							
14	187	436	218	405							
15	181	422	211	392							
16	175	408	204	379							
17	185	431	216	400							
18	189	441	220	419							
19	186	434	217	403							
20	178	404	202	375							
21	170	396	198	368							
22	165	384	192	356							
23	157	367	184	341							
24	159	370	185	342							
25	161	375	188	348							
26	165	384	192	356							
27	168	390	195	362							
28	163	380	190	353							
29	166	388	194	360							
30	176	410	205	381							
31	201	470	235	436							

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....
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LOWER WYOMING June - 1945

PLATE 13

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	575	55	9	8	15	5	11	7	685	693	173	520
2	579	70	9	8	15	5	11	7	704	713	178	535
3	587	90	10	8	15	5	12	7	734	741	185	556
4	591	120	10	8	16	5	13	7	770	778	194	584
5	591	140	10	8	16	5	13	8	791	798	200	598
6	619	200	11	8	16	5	13	9	881	888	222	666
7	619	340	11	8	17	5	13	8	1021	1029	257	772
8	619	640	12	10	17	5	13	7	1323	1329	332	997
9	619	650	12	10	17	5	13	7	1333	1339	335	1004
10	644	650	12	10	17	5	13	7	1358	1365	341	1024
11	619	640	13	10	18	4	13	7	1324	1331	333	998
12	611	620	13	10	18	4	9	6	1291	1302	326	976
13	636	590	12	10	18	4	9	6	1285	1298	324	974
14	632	550	12	10	18	4	8	6	1240	1254	314	940
15	607	520	12	10	18	4	9	6	1186	1198	300	898
16	575	470	12	10	19	4	9	5	1106	1114	278	836
17	547	440	12	9	19	4	9	5	1045	1054	263	790
18	547	390	11	9	19	4	9	5	994	1004	251	753
19	567	340	11	9	19	4	9	5	964	976	244	732
20	591	290	10	9	19	4	9	5	937	952	238	714
21	623	250	10	9	19	4	9	5	929	946	236	710
22	644	240	10	9	19	4	8	5	939	957	239	718
23	657	230	10	9	19	4	8	5	942	963	241	722
24	632	260	10	9	19	4	8	5	947	965	241	724
25	607	300	9	8	18	4	8	5	959	978	244	734
26	595	360	9	8	18	4	8	5	1007	1025	256	769
27	595	410	9	8	18	4	8	5	1057	1075	269	806
28	551	420	8	8	18	4	8	5	1022	1038	260	778
29	515	420	8	8	18	4	10	5	988	999	250	749
30	475	410	8	8	18	4	11	5	939	946	236	710

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

June - 1945 (Continued)

PLATE 14

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	208	485	242	450								
2	204	498	249	463								
3	222	519	260	482								
4	233	545	274	505								
5	240	558	279	518								
6	266	620	310	576								
7	308	720	360	668								
8	398	930	465	864								
9	401	937	468	870								
10	410	955	478	888								
11	400	932	466	865								
12	391	911	456	847								
13	389	908	454	843								
14	377	880	440	815								
15	360	840	420	780								
16	334	780	390	725								
17	316	738	369	685								
18	301	704	352	653								
19	293	683	342	635								
20	286	666	333	618								
21	284	663	331	615								
22	287	670	335	622								
23	289	674	337	626								
24	289	675	338	627								
25	293	684	342	635								
26	308	718	359	666								
27	323	753	376	700								
28	311	726	363	675								
29	300	700	350	650								
30	284	662	311	615								

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING July - 1945

PLATE 15

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Fine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	440	400	8	8	18	5	11	5	895	899	225	674
2	421	380	8	7	18	5	10	5	854	858	214	644
3	425	360	8	7	19	5	9	5	838	844	211	633
4	428	340	7	7	19	5	10	5	821	827	207	620
5	421	300	7	7	18	5	10	5	773	778	194	584
6	406	280	7	7	18	5	9	5	737	742	186	556
7	395	250	7	7	19	5	8	4	695	702	176	526
8	387	240	7	7	19	5	8	4	677	683	171	512
9	373	220	7	7	19	5	8	4	643	648	162	486
10	370	210	7	7	18	5	8	4	629	634	158	476
11	359	200	7	6	19	5	8	4	608	613	153	460
12	348	200	7	6	19	5	8	4	597	601	150	451
13	328	200	7	6	19	5	9	4	578	580	145	436
14	317	200	7	6	19	5	9	4	567	568	142	426
15	310	200	7	6	20	5	9	3	560	563	141	422
16	303	200	7	6	19	5	8	3	551	553	138	415
17	297	180	7	6	18	5	8	3	524	526	132	394
18	290	170	6	6	18	5	8	4	507	508	127	381
19	284	160	6	6	18	5	8	4	491	492	123	369
20	277	140	6	6	19	5	8	4	465	465	116	349
21	271	130	6	6	19	5	8	4	449	449	112	337
22	265	130	6	6	21	5	8	4	443	447	112	335
23	255	120	6	6	19	5	8	4	423	422	106	316
24	265	120	6	6	18	5	8	4	432	432	108	324
25	246	140	5	5	18	5	8	4	431	432	108	324
26	234	140	5	5	18	5	8	4	419	418	104	314
27	231	130	5	5	18	5	7	4	405	405	101	304
28	222	120	5	5	18	5	7	4	386	386	96	290
29	213	110	5	5	18	5	7	3	366	366	92	274
30	210	110	5	5	18	5	7	3	363	362	90	272
31	207	100	5	5	18	5	7	3	350	350	88	262

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near border + 1.55 Pine Creek + Bear River above Sublette.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

July - 1945 (Continued)

PLATE 16

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	270	629	314	584								
2	258	601	300	558								
3	268	626	295	537								
4	248	579	290	538								
5	233	545	272	505								
6	222	519	260	482								
7	210	491	246	456								
8	205	478	239	444								
9	194	453	227	421								
10	190	443	220	411								
11	184	428	214	398								
12	180	421	210	380								
13	174	406	203	377		428	150					
14	170	398	199	369		431	136					
15	169	394	197	366		416	149					
16	166	387	194	360		409	142					
17	158	368	184	342		383	141					
18	152	355	178	330		366	141					
19	148	344	172	320		342	149					
20	139	348	163	302		325	140					
21	135	314	157	292		306	143					
22	134	313	156	290		293	150					
23	126	295	147	274		304	119					
24	129	302	151	281		304	128					
25	129	302	151	281		302	129					
26	125	292	146	272		297	122					
27	122	284	142	263		293	112					
28	116	270	135	250		277	109					
29	110	256	128	238		271	95					
30	109	254	127	235		264	99					
31	105	245	122	228		255	95					

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington .....
District .....

9—9331

LOWER WYOMING August - 1945 PLATE 17

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	204	90	5	5	18	5	8	3	338	336	84	252
2	204	90	4	5	18	5	8	3	337	336	84	252
3	204	90	4	5	18	5	8	3	337	336	84	252
4	202	100	4	5	18	5	8	3	345	344	84	250
5	193	100	4	5	18	5	8	3	336	335	84	251
6	187	90	4	5	18	5	8	4	321	318	80	238
7	193	80	4	4	19	5	8	4	317	316	79	237
8	190	90	4	4	19	5	8	4	324	322	80	242
9	187	90	4	4	18	5	8	4	320	318	80	238
10	179	100	4	4	18	5	8	4	322	320	80	240
11	171	100	4	4	18	5	8	4	314	311	78	233
12	171	100	4	4	18	5	8	5	315	311	78	233
13	176	110	4	4	18	5	8	4	329	326	82	244
14	163	150	4	4	18	5	8	4	356	352	88	264
15	163	200	4	4	17	5	8	4	405	400	100	300
16	158	240	4	4	17	5	8	4	440	435	109	326
17	151	240	4	4	18	5	8	4	434	429	107	322
18	151	230	4	4	18	5	8	4	424	419	105	314
19	163	220	4	4	18	5	8	5	427	422	105	316
20	168	210	4	4	17	5	8	5	421	416	104	312
21	160	210	4	4	17	5	8	5	413	407	102	305
22	148	240	4	4	17	5	8	4	430	424	106	318
23	144	280	4	4	17	5	8	4	466	460	115	345
24	142	280	4	4	17	5	8	4	464	458	114	344
25	142	250	4	4	17	5	8	4	434	428	107	321
26	139	220	4	3	17	5	8	4	400	395	99	296
27	137	220	4	3	17	5	8	4	398	393	98	295
28	135	200	4	3	17	5	8	4	376	370	92	278
29	133	190	4	3	17	5	8	4	364	358	90	268
30	130	180	4	3	17	5	8	4	351	345	86	259
31	130	160	4	3	17	5	8	4	331	325	81	244

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork [illegible] Border + 1.55 Pine Creek + Bear River above Sublette.

9-239

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

August - 1945 (Continued)

PLATE 18

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch Border	Actual Depl.					
1	101	235	118	218		240	98					
2	101	235	118	218		231	106					
3	101	235	118	218		229	108					
4	103	241	120	224		233	112					
5	100	234	117	218		227	109					
6	95	222	111	206		222	99					
7	95	221	110	205		229	88					
8	97	226	103	209		227	97					
9	95	222	111	206		229	91					
10	96	224	112	208		238	84					
11	93	218	109	202		253	61					
12	93	218	109	202		260	65					
13	98	228	114	212		262	67					
14	106	246	123	229		280	76					
15	120	280	140	240		306	99					
16	130	304	152	283		332	108					
17	129	300	150	279		337	97					
18	126	293	146	272		373	51					
19	127	296	148	274		397	30					
20	125	291	145	312		402	19					
21	122	285	142	264		388	25					
22	127	297	148	276		383	47					
23	138	322	161	299		426	40					
24	140	327	164	304		416	48					
25	128	300	150	278		392	42					
26	118	276	138	257		368	32					
27	118	275	137	296		371	22					
28	111	259	130	240		352	24					
29	107	251	125	233		330	34					
30	103	242	121	224		313	38					
31	97	228	114	211		293	38					

9-2230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....
... 3—9338

LOWER WYOMING September - 1945

PLATE 19

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	130	150	3	3	17	5	8	4	320	315	79	236
2	130	140	3	3	17	5	8	4	310	305	76	229
3	130	140	3	3	17	5	8	4	310	305	76	229
4	128	130	3	3	17	5	8	3	297	293	73	220
5	126	120	3	3	17	5	9	3	286	281	70	211
6	146	110	3	3	17	5	11	4	299	292	73	219
7	153	110	3	3	17	5	9	4	304	300	75	225
8	133	110	3	3	17	5	8	4	283	278	69	208
9	126	110	3	3	17	5	8	4	276	271	68	203
10	122	110	3	3	17	5	8	3	271	267	67	200
11	119	100	2	3	17	5	8	3	257	253	63	190
12	117	95	2	3	17	5	8	3	250	246	61	184
13	117	90	2	3	17	5	8	3	245	241	60	181
14	117	85	2	3	17	5	8	3	240	236	59	177
15	115	80	2	3	17	5	8	3	233	229	57	172
16	117	75	2	3	17	5	8	3	230	226	57	170
17	119	75	2	3	17	5	8	3	232	228	57	171
18	119	75	2	3	17	5	8	3	232	228	57	171
19	117	70	2	3	17	5	8	3	225	221	55	166
20	115	70	2	3	17	5	8	3	223	219	55	164
21	119	70	3	3	17	5	9	3	229	223	56	167
22	119	70	3	3	17	5	9	3	229	223	56	167
23	117	70	3	3	17	5	9	3	227	221	55	166
24	113	70	3	3	17	5	8	3	222	217	54	163
25	109	70	3	3	17	5	8	3	218	213	53	160
26	109	70	3	3	17	5	8	3	218	213	53	160
27	111	70	3	3	17	5	8	3	220	215	54	161
28	111	70	3	3	17	5	8	3	220	215	54	161
29	107	75	3	3	17	5	8	3	221	215	54	161
30	105	80	3	3	17	5	8	3	224	218	55	164

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

September - 1945 (Continued)

PLATE 20

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	94	220	110	205		275	45					
2	92	214	107	198		277	33					
3	92	214	107	198		282	28					
4	88	205	102	190		255	42					
5	84	197	98	183		269	17					
6	88	204	102	190		311	-12					
7	90	210	105	195		313	-9					
8	83	194	97	180		306	-23					
9	81	190	95	176		293	-17					
10	80	187	93	173		291	-20					
11	76	177	89	164		280	-23					
12	74	172	86	160		271	-21					
13	72	169	84	157		262	-17					
14	71	165	83	153		255	-15					
15	69	160	80	149		247	-14					
16	68	158	79	147		249	-19					
17	68	159	80	148		242	-10					
18	68	159	80	148		233	-1					
19	66	155	77	143		209	16					
20	66	153	77	142		214	9					
21	67	156	78	145		218	11					
22	67	156	78	145		216	13					
23	66	155	77	144		209	18					
24	65	152	76	141		205	17					
25	64	149	75	138		200	18					
26	64	149	75	138		196	22					
27	65	150	75	140		200	20					
28	65	150	75	140		207	13					
29	65	150	75	140		205	16					
30	65	152	76	142		200	24					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING May - 1946

PLATE 21

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	677	1120	27	22	22	5	11	20	1904	1879	470	1409
2	614	1120	25	20	22	5	10	19	1835	1812	453	1359
3	591	1120	24	18	23	5	10	19	1810	1789	447	1342
4	614	1110	24	18	23	5	10	19	1823	1804	451	1353
5	652	1050	24	18	23	5	10	19	1801	1784	446	1338
6	682	920	23	17	23	5	11	18	1699	1686	422	1264
7	687	900	23	17	23	5	11	18	1684	1671	418	1253
8	667	900	22	16	23	5	11	18	1662	1650	412	1238
9	662	900	20	15	24	5	12	18	1656	1646	412	1234
10	609	890	18	14	24	5	12	17	1589	1579	395	1184
11	555	850	17	13	24	5	12	17	1493	1481	370	1111
12	568	770	16	13	23	5	11	16	1422	1414	354	1060
13	516	650	16	13	22	5	11	16	1249	1237	309	928
14	495	540	15	13	22	5	11	15	1116	1104	276	828
15	483	460	14	13	22	5	11	15	1023	1012	253	759
16	470	420	14	12	22	5	11	14	968	957	239	718
17	478	390	14	12	22	5	11	14	946	936	234	702
18	504	350	14	12	22	5	11	13	931	924	231	693
19	525	310	14	12	22	5	12	13	913	906	226	680
20	516	280	14	12	22	5	12	12	873	866	216	650
21	525	210	14	12	22	5	12	12	812	806	202	604
22	534	160	14	12	22	5	12	12	771	766	192	574
23	542	160	13	11	22	5	12	10	775	775	194	581
24	529	180	12	10	22	6	12	10	781	781	195	586
25	508	240	12	10	22	7	12	10	821	818	204	614
26	516	310	12	10	22	6	12	10	898	897	224	673
27	521	400	12	10	21	6	11	9	990	991	248	743
28	551	460	12	10	21	6	10	9	1079	1083	271	812
29	560	490	11	9	22	5	10	8	1115	1124	281	843
30	525	500	11	9	22	5	10	8	1090	1096	274	822
31	499	500	11	9	22	5	10	8	1064	1068	267	801

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

9-230

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

May - 1946 (Continued)

PLATE 22

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	564	1315	658	1221								
2	544	1268	634	1178								
3	537	1252	626	1163								
4	541	1263	631	1173								
5	535	1249	624	1160								
6	506	1180	590	1096								
7	501	1170	585	1086								
8	495	1155	578	1072								
9	494	1152	576	1070								
10	474	1105	553	1026								
11	444	1037	518	963								
12	424	990	495	919								
13	371	866	433	804								
14	331	773	386	718								
15	304	708	354	658								
16	287	670	335	622								
17	281	655	328	608								
18	277	647	323	601								
19	272	634	317	589								
20	260	606	303	563								
21	242	564	282	524								
22	230	536	268	498								
23	232	542	271	504								
24	234	547	273	508								
25	245	573	286	532								
26	269	628	314	583								
27	297	694	347	644								
28	325	758	379	704								
29	337	787	393	731								
30	329	767	384	712								
31	320	748	374	694								

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District

LOWER WYOMING June - 1946

PLATE 23

Date	Sm.Fk. Border	Bear R. Sub-lette	How-Land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	491	480	11	9	22	5	10	8	1036	1039	260	779
2	478	440	10	9	22	5	10	8	982	986	246	740
3	478	410	10	8	21	5	10	8	950	955	239	716
4	525	370	10	8	21	5	9	8	956	965	241	724
5	600	340	10	8	20	5	9	8	1000	1014	254	760
6	657	280	10	8	20	5	9	8	997	1015	254	761
7	662	190	10	8	20	5	10	8	913	930	232	698
8	633	180	10	7	20	5	10	8	873	889	222	667
9	619	240	10	7	20	5	9	8	917	933	244	689
10	619	300	9	7	21	5	9	7	977	995	249	746
11	609	350	8	7	21	5	9	7	1016	1035	259	776
12	586	360	8	7	20	5	9	7	1002	1017	254	763
13	560	360	8	6	20	5	9	7	975	990	248	742
14	542	350	8	6	20	5	9	7	947	961	240	721
15	534	330	8	6	20	5	9	7	919	933	233	700
16	521	300	8	6	20	5	9	7	876	889	222	667
17	504	280	8	6	20	5	9	6	838	851	213	638
18	495	260	8	6	20	5	9	6	809	821	205	616
19	474	240	7	6	20	5	9	6	767	779	195	584
20	441	230	7	6	19	5	9	6	723	731	183	548
21	425	220	7	6	20	5	9	6	698	706	176	530
22	413	210	7	6	20	5	9	6	676	683	171	512
23	401	200	6	6	20	5	9	6	653	660	165	495
24	405	190	6	6	19	5	8	6	645	652	163	489
25	397	180	6	6	19	5	8	5	626	637	159	478
26	362	160	6	6	20	5	8	5	572	578	144	434
27	350	150	6	6	20	5	8	5	550	555	139	416
28	343	150	6	5	20	5	8	5	542	548	137	411
29	332	140	6	5	20	5	8	5	521	526	132	394
30	320	140	6	5	20	5	8	5	509	513	128	385

..... Bear River Sublette estimated.

..... Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington ..... District .....

June - 1946 (Continued)

PLATE 24

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	312	727	364	675								
2	296	690	345	641								
3	286	668	334	621								
4	290	676	338	627								
5	304	710	355	659								
6	304	710	355	660								
7	279	651	326	604								
8	267	622	311	578								
9	280	653	326	606								
10	298	696	348	647								
11	310	724	362	673								
12	305	712	356	661								
13	297	693	346	644								
14	288	673	336	625								
15	280	653	326	606								
16	267	622	311	578								
17	255	596	298	553								
18	246	575	287	534								
19	234	545	273	506								
20	219	512	256	475	21							
21	212	494	247	459	22							
22	205	478	239	444	23	452	224					
23	198	462	231	429	24	445	208					
24	196	456	228	424	25	438	207					
25	191	446	223	414	26	412	214					
26	173	405	202	376	27	383	189					
27	166	388	194	361	28	366	184					
28	164	384	192	356	29	342	200					
29	158	368	184	342	30	318	203					
30	154	359	180	333	Jul. 1	304	205					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

LOWER WYOMING July - 1946

PLATE 25

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	310	130	6	5	20	5	7	4	487	493	123	370
2	302	125	6	5	19	5	7	4	473	477	119	358
3	296	120	6	5	19	5	7	4	462	466	116	350
4	285	115	6	5	19	5	7	4	446	449	112	337
5	285	110	6	5	19	5	7	4	441	444	111	333
6	272	105	6	5	19	5	7	4	423	425	106	319
7	262	100	6	5	19	5	7	4	408	409	102	307
8	252	100	6	5	19	5	7	4	398	399	100	299
9	240	95	6	5	19	5	7	4	381	381	95	286
10	237	95	6	5	18	5	7	4	377	377	94	283
11	226	95	6	5	18	5	7	4	366	365	91	274
12	223	95	6	5	18	5	7	4	363	362	90	272
13	220	95	6	5	19	5	7	4	361	360	90	270
14	212	90	5	5	19	5	7	4	347	346	86	260
15	209	90	5	4	18	5	7	4	342	342	86	256
16	209	90	5	4	18	5	7	4	342	342	86	256
17	204	90	5	4	18	5	7	4	337	336	84	252
18	199	90	4	4	18	5	7	4	331	331	83	248
19	196	90	4	4	18	5	7	4	328	328	82	246
20	194	90	4	4	18	5	6	4	325	326	82	244
21	189	90	4	4	18	5	6	4	320	320	80	240
22	184	90	4	4	18	5	6	4	315	315	79	236
23	186	90	4	4	18	5	6	4	317	317	79	238
24	186	90	4	4	18	5	6	4	317	317	79	238
25	207	90	4	4	18	5	6	4	338	340	85	255
26	226	90	4	4	18	5	6	4	357	360	90	270
27	189	90	5	4	18	5	6	4	321	320	80	240
28	180	90	5	4	18	5	6	4	312	311	78	233
29	177	90	5	4	18	5	6	4	309	308	77	231
30	173	90	4	4	18	5	6	4	304	303	77	227
31	173	90	4	4	18	5	6	4	304	303	76	227

Bear River Sublette estimated
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

9-9323

July - 1946 (Continued)

PLATE 26

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	148	345	172	320	2	291	196					
2	143	334	167	310	3	380	93					
3	140	326	163	303	4	325	137					
4	135	314	157	292	5	318	128					
5	133	311	155	289	6	328	113					
6	128	298	149	276	7	337	86					
7	123	286	143	266	8	308	100					
8	120	279	140	259	9	288	110					
9	114	267	133	248	10	275	106					
10	113	264	132	245	11	264	113					
11	110	256	128	237	12	260	106					
12	109	253	127	235	13	258	105					
13	108	252	126	234	14	244	117					
14	104	242	121	225	15	233	114					
15	103	239	120	222	16	227	115					
16	103	239	120	222	17	214	128					
17	101	232	118	218	18	198	139					
18	99	232	116	215	19	188	143					
19	98	230	115	213	20	178	150					
20	98	228	114	212	21	167	158					
21	96	224	112	208	22	156	164					
22	94	220	110	205	23	165	150					
23	95	222	111	206	24	163	154					
24	95	222	111	206	25	163	154					
25	102	238	119	221	26	203	135					
26	108	252	126	234	27	233	124					
27	96	224	112	208	28	240	81					
28	93	218	109	202	29	222	90					
29	92	216	108	200	30	218	91					
30	91	212	106	197	31	207	97					
31	91	212	106	197	Aug. 1	196	108					

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington
District

LOWER WYOMING August - 1946 PLATE 27

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	166	90	4	4	17	5	7	3	296	294	74	220
2	164	90	4	4	17	5	7	3	294	292	73	219
3	160	90	4	4	17	5	7	3	290	287	72	215
4	155	90	4	4	17	5	7	3	285	282	70	212
5	153	85	4	4	18	5	7	3	279	277	69	208
6	151	85	4	4	18	5	7	3	277	275	69	206
7	147	80	4	4	18	5	7	3	268	265	66	199
8	143	80	4	4	17	5	7	3	263	259	65	194
9	143	75	4	3	17	5	7	3	257	254	64	190
10	141	75	4	3	17	5	7	3	255	252	63	189
11	137	75	4	3	17	5	7	3	251	248	62	186
12	137	75	4	3	18	5	7	3	252	250	62	188
13	141	75	4	3	18	5	7	3	256	254	64	190
14	135	75	4	3	18	5	7	3	250	248	62	186
15	133	75	4	3	17	5	7	3	247	243	61	182
16	131	75	4	3	17	5	7	3	245	241	60	181
17	127	70	4	3	17	5	7	3	236	232	58	174
18	127	70	4	3	17	5	7	3	236	232	58	174
19	123	70	4	3	17	5	7	3	232	228	57	171
20	123	65	4	3	17	5	7	3	227	223	56	167
21	123	65	4	3	17	5	7	3	227	223	56	167
22	127	60	4	3	17	5	8	3	227	222	56	166
23	137	70	4	3	17	5	8	3	247	243	61	182
24	153	75	4	3	17	5	8	3	268	265	66	199
25	133	85	4	3	17	5	8	3	258	253	63	190
26	137	75	4	3	17	5	8	3	252	248	62	186
27	127	70	4	3	17	5	8	3	237	232	58	174
28	125	60	3	3	17	5	8	3	224	220	55	165
29	121	55	3	3	17	5	8	3	215	211	53	158
30	118	50	3	3	18	5	8	3	208	204	51	153
31	116	50	3	3	18	5	8	3	206	202	50	152

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington
District

August - 1946 (Continued)

PLATE 28

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.
1	88	206	103	191	2	190	106
2	88	204	102	190	3	188	106
3	86	201	100	186	4	184	106
4	85	197	99	183	5	180	105
5	83	194	97	180	6	194	85
6	82	192	96	179	7	190	87
7	80	186	93	172	8	182	86
8	78	181	91	168	9	178	85
9	76	178	89	165	10	169	88
10	76	176	88	164	11	169	86
11	74	174	87	161	12	167	84
12	75	175	88	162	13	169	83
13	76	178	89	165	14	171	85
14	74	174	87	161	15	163	87
15	73	170	85	158	16	160	87
16	72	169	84	157	17	153	92
17	70	162	81	151	18	151	85
18	70	162	81	151	19	142	94
19	68	160	80	148	20	142	90
20	67	156	78	145	21	144	83
21	67	156	78	145	22	148	79
22	67	155	77	144	23	160	67
23	73	170	85	158	24	165	82
24	80	186	93	172	25	167	101
25	76	177	88	164	26	203	55
26	74	174	87	161	27	180	72
27	70	162	81	151	28	169	68
28	66	154	77	143	29	169	55
29	63	148	74	137	30	165	50
30	61	143	71	133	31	162	46
31	61	141	71	131	Sept 1	165	41

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

LOWER WYOMING September - 1946 PLATE 24

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	116	50	3	3	18	5	8	2	205	202	50	152
2	116	50	3	3	17	5	8	2	204	200	50	150
3	112	50	3	3	17	5	8	2	200	196	49	147
4	112	50	3	3	18	5	8	2	201	198	50	148
5	114	50	3	3	17	5	8	2	202	198	50	148
6	114	50	3	3	18	5	9	2	204	200	50	150
7	118	50	3	3	18	5	10	2	209	204	51	153
8	123	50	3	3	18	5	9	2	213	210	52	158
9	114	50	3	3	17	5	9	2	203	198	50	148
10	112	50	3	3	17	5	8	2	200	196	49	147
11	108	50	3	3	17	5	8	2	196	192	48	144
12	105	50	3	3	17	5	8	2	193	188	47	141
13	105	50	3	2	17	5	8	2	192	188	47	141
14	103	50	3	2	17	5	8	2	190	186	46	140
15	103	50	3	2	17	5	8	2	190	186	46	140
16	108	50	3	2	16	5	8	2	194	191	48	143
17	112	50	3	2	16	5	8	2	198	195	49	146
18	108	50	3	2	16	5	8	2	194	191	48	143
19	105	50	3	3	16	5	8	2	192	187	47	140
20	103	50	3	3	16	5	8	2	190	185	46	139
21	103	50	3	3	17	5	8	2	191	186	46	140
22	103	50	3	3	17	5	8	2	191	186	46	140
23	101	50	3	3	17	5	8	2	189	184	46	138
24	100	50	3	3	17	5	8	2	188	183	46	137
25	100	50	3	3	17	5	8	2	188	183	46	137
26	98	50	3	3	17	5	8	2	186	181	45	136
27	98	50	3	3	16	5	8	2	185	180	45	135
28	96	50	3	2	16	5	8	2	182	178	44	134
29	96	50	3	2	16	5	8	2	182	178	44	134
30	96	50	3	2	16	5	8	2	182	178	44	134

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington
District

September - 1946 (Continued)

PLATE 30

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.
1	61	141	71	131	2	176	29
2	60	140	70	130	3	172	32
3	59	137	69	127	4	171	29
4	59	139	69	129	5	176	25
5	59	139	69	129	6	176	26
6	60	140	70	130	7	178	26
7	61	143	71	133	8	196	13
8	63	147	74	136	9	200	13
9	59	139	69	129	10	207	-4
10	59	137	69	127	11	203	-3
11	58	134	67	125	12	188	8
12	56	132	66	122	13	188	5
13	56	132	66	122	14	184	8
14	56	130	65	121	15	184	6
15	56	130	65	121	16	180	10
16	57	134	67	124	17	186	8
17	58	136	68	127	18	186	12
18	57	134	67	124	19	186	8
19	56	131	65	122	20	186	6
20	56	130	65	120	21	184	6
21	56	130	65	121	22	180	11
22	56	130	65	121	23	176	15
23	55	129	64	120	24	186	3
24	55	128	64	119	25	184	4
25	55	128	64	119	26	178	16
26	54	127	63	118	27	174	12
27	54	126	63	117	28	176	9
28	53	125	62	116	29	178	4
29	53	125	62	116	30	174	8
30	53	125	62	116	Oct. 1	173	9

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

LOWER WYOMING May - 1947 PLATE 21

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	480	210	18	16	19	5	10	14	772	753	188	565
2	638	200	22	18	19	5	10	16	928	913	228	685
3	819	190	25	20	19	5	10	18	1106	1094	273	819
4	923	220	29	25	20	5	10	22	1254	1239	285	854
5	968	260	32	26	20	5	10	23	1344	1295	324	971
6	982	420	35	28	20	5	10	24	1524	1456	364	1092
7	982	560	34	25	20	5	10	20	1656	1596	399	1197
8	1020	660	33	24	21	5	10	18	1791	1702	425	1276
9	1080	720	32	23	21	5	10	17	1908	1909	477	1432
10	988	780	30	22	21	5	10	16	1872	1819	455	1364
11	1030	830	29	20	22	5	10	15	1961	1964	491	1473
12	930	900	27	18	22	5	10	14	1926	1929	482	1447
13	819	960	26	17	22	5	10	13	1972	1870	467	1402
14	744	990	28	16	22	5	10	12	1827	1820	455	1365
15	714	1000	24	14	22	5	10	10	1799	1798	449	1348
16	714	990	23	14	22	5	10	9	1787	1788	447	1341
17	744	970	22	14	22	5	10	9	1796	1800	450	1350
18	744	900	20	13	21	5	9	9	1721	1729	432	1297
19	744	680	19	13	21	5	9	8	1499	1509	377	1132
20	732	560	18	13	21	5	9	8	1366	1376	344	1032
21	744	500	17	12	21	5	9	8	1316	1329	332	997
22	762	430	16	12	20	5	9	8	1262	1276	319	957
23	720	400	16	12	20	5	9	8	1190	1201	300	900
24	687	390	16	12	20	5	9	8	1147	1156	289	867
25	682	410	15	12	21	5	9	8	1162	1173	293	880
26	698	410	14	11	21	5	9	8	1176	1191	298	893
27	709	400	13	11	21	5	9	8	1176	1191	298	893
28	720	400	12	11	21	5	9	8	1186	1203	301	902
29	649	460	12	11	21	5	9	8	1175	1128	282	846
30	607	520	12	10	21	5	9	8	1192	1203	301	902
31	612	550	12	10	21	5	9	8	1227	1238	307	928

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

May - 1947 (Continued)

PAGE 32

Date	30% Depl.	70% Border	35% Depl.	65% Border	Actual Disch. Border	Actual Depl.
1	226	527	264	489		
2	274	639	320	593		
3	328	766	383	711		
4	372	867	434	805		
5	388	906	453	842		
6	437	1019	510	946		
7	479	1117	558	1037		
8	511	1191	596	1106		
9	573	1336	668	1240		
10	546	1273	637	1182		
11	589	1374	687	1277		
12	579	1350	675	1253		
13	561	1309	654	1215		
14	546	1274	637	1183		
15	539	1259	629	1169		
16	536	1252	626	1162		
17	540	1260	630	1170		
18	519	1210	605	1124		
19	453	1056	528	980		
20	413	963	482	894		
21	399	930	465	864		
22	383	893	447	829		
23	360	841	420	780		
24	347	809	405	751		
25	352	821	410	762		
26	357	834	417	774		
27	357	834	417	774		
28	361	842	421	782		
29	338	790	394	733		
30	361	842	421	782		
31	371	867	433	805		

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

LOWER WYOMING June - 1947 PLATE 32

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	602	560	11	10	21	5	9	7	1225	1238	309	928
2	597	570	11	10	21	5	9	7	1230	1241	310	931
3	633	570	11	9	21	5	9	7	1265	1280	320	960
4	617	590	11	9	20	5	9	7	1268	1281	320	961
5	597	600	11	9	20	5	9	6	1257	1269	317	952
6	628	580	10	8	20	5	9	6	1266	1283	321	962
7	597	560	10	8	20	5	9	6	1215	1229	307	922
8	649	530	10	8	20	5	9	5	1236	1245	311	934
9	774	500	10	8	20	5	9	5	1331	1359	339	1019
10	744	510	10	7	20	5	9	5	1310	1337	334	1003
11	756	650	10	7	21	5	9	5	1463	1493	373	1120
12	756	900	10	7	21	5	8	5	1713	1743	436	1307
13	726	1260	11	7	20	5	8	5	2043	2068	517	1551
14	698	1400	11	7	20	5	8	5	2153	2179	545	1634
15	687	1440	11	7	20	5	8	5	2182	2206	551	1654
16	692	1440	10	7	20	5	8	5	2187	2211	553	1658
17	709	1440	10	7	20	5	8	5	2204	2229	557	1672
18	704	1260	10	7	20	5	8	5	2019	2045	511	1534
19	698	1100	10	7	20	5	8	5	1853	1879	469	1409
20	709	910	10	7	21	5	8	4	1674	1701	425	1276
21	682	910	10	7	21	5	7	4	1646	1673	418	1255
22	665	930	10	6	21	5	7	4	1648	1675	419	1256
23	597	1000	10	6	20	5	7	4	1649	1669	417	1252
24	572	1100	10	6	20	5	7	4	1724	1743	461	1382
25	557	1250	10	6	20	5	7	4	1859	1877	469	1408
26	553	1270	10	6	20	5	7	4	1875	1893	473	1420
27	548	1260	10	6	20	5	7	4	1860	1878	469	1408
28	520	1140	10	6	20	5	7	4	1712	1727	432	1295
29	502	900	10	6	20	5	7	4	1454	1469	367	1102
30	497	700	10	6	20	5	7	4	1249	1263	316	947

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

GPO 9—9833

June - 1947 (Continued)

PLATE 34

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	371	867	433	805								
2	372	869	434	807								
3	384	896	448	832								
4	384	897	448	833								
5	381	888	444	825								
6	385	898	449	834								
7	369	860	430	799								
8	374	872	436	809								
9	408	951	476	883								
10	401	936	468	869								
11	448	1045	508	970								
12	523	1220	610	1133								
13	620	1448	724	1344								
14	654	1525	763	1416								
15	662	1544	772	1434								
16	663	1548	774	1437								
17	669	1560	780	1449								
18	614	1432	716	1329								
19	564	1315	658	1221								
20	510	1191	595	1106								
21	502	1171	586	1087								
22	502	1172	586	1089								
23	501	1168	584	1084								
24	523	1220	610	1133								
25	563	1314	657	1220								
26	568	1325	662	1230								
27	563	1315	657	1221								
28	518	1209	604	1122								
29	441	1028	514	955								
30	379	884	442	821								

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING July - 1947

PLATE 35

Date	Sm. Fk Border	Bear R Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	454	650	10	6	20	5	7	4	1156	1167	292	875
2	442	580	9	6	20	5	7	4	1073	1084	271	813
3	437	550	8	6	20	5	7	4	1037	1048	262	786
4	425	520	8	6	20	5	7	4	995	1006	251	754
5	413	480	8	6	20	5	7	4	943	953	238	715
6	405	460	8	6	19	5	7	4	914	923	231	692
7	393	430	8	6	19	5	7	4	872	879	220	659
8	385	400	8	6	19	5	7	4	834	841	210	631
9	373	360	7	5	19	5	7	4	780	788	197	591
10	362	320	7	5	19	5	7	4	729	737	184	553
11	350	300	7	5	20	5	7	4	698	705	178	529
12	335	320	7	5	20	5	7	4	703	709	178	532
13	328	330	6	5	20	5	7	4	705	712	178	534
14	317	320	6	5	19	5	7	4	683	688	172	516
15	310	300	6	5	19	5	7	4	656	661	165	496
16	306	260	6	5	19	5	7	4	612	617	154	463
17	299	230	6	5	19	5	7	3	574	579	145	434
18	285	210	6	5	19	5	7	3	540	544	136	408
19	275	220	6	5	19	5	7	3	540	543	136	407
20	265	220	6	5	19	5	7	3	530	533	133	400
21	259	200	5	5	18	5	7	3	502	505	126	379
22	256	180	5	5	18	5	7	3	479	482	121	362
23	252	170	5	5	18	5	7	3	465	468	117	351
24	240	160	5	4	18	5	7	3	442	445	111	334
25	234	150	5	4	18	5	7	3	426	428	107	321
26	232	140	5	4	18	5	7	3	414	416	104	312
27	226	130	5	4	18	5	7	3	398	400	100	300
28	223	120	5	4	18	5	7	3	395	387	97	290
29	217	105	5	4	18	5	7	3	364	365	86	259
30	212	100	5	4	18	5	7	3	354	355	89	266
31	207	100	5	4	18	5	7	3	349	350	87	262

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

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July - 1947 (Continued)

PLATE 36

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	350	817	408	758								
2	325	759	379	705								
3	314	734	367	681								
4	302	704	352	654								
5	286	667	334	619								
6	277	646	323	560								
7	264	615	308	571								
8	252	589	294	547								
9	236	551	276	512								
10	221	515	258	478								
11	212	493	247	458								
12	212	496	248	460								
13	214	498	249	463								
14	206	482	241	447								
15	198	462	231	429								
16	185	432	216	401	17	451	161					
17	174	405	202	376	18	426	148					
18	163	381	190	354	19	410	130					
19	163	380	190	353	20	406	134					
20	160	373	187	346	21	388	142					
21	151	354	177	328	22	364	138					
22	144	337	169	313	23	356	123					
23	140	328	164	304	24	325	140					
24	134	312	156	289	25	306	136					
25	128	300	150	278	26	299	127					
26	125	291	145	270	27	285	129					
27	120	280	140	260	28	276	122					
28	116	271	135	252	29	265	130					
29	109	256	128	237	30	260	104					
30	106	248	124	231	31	253	101					
31	105	245	122	228	Aug. 1	247	102					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

LOWER WYOMING August - 1947 PLATE 37

Date	Sm.Fk. Border	Bear R Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	207	100	5	4	18	5	8	3	350	350	87	262
2	207	100	5	4	18	5	8	3	350	350	87	262
3	207	95	5	4	18	5	8	3	345	345	86	259
4	207	95	5	4	18	5	8	3	345	345	86	259
5	204	90	5	4	18	5	7	3	336	336	84	252
6	194	90	5	4	18	5	7	3	326	326	81	244
7	194	90	5	4	18	5	7	3	326	326	81	244
8	209	90	5	4	18	5	7	3	341	342	85	256
9	214	100	5	4	18	5	7	3	356	357	89	268
10	226	140	5	4	18	5	7	3	408	410	103	308
11	212	160	5	4	18	5	7	3	414	415	104	311
12	194	140	5	4	18	5	7	3	376	376	94	282
13	184	130	5	4	18	5	7	3	356	355	89	266
14	180	150	5	4	18	5	7	3	372	371	93	278
15	175	150	5	4	18	5	7	3	367	365	91	274
16	173	140	5	4	18	5	7	3	355	353	88	265
17	168	130	5	4	18	5	7	3	340	338	85	254
18	164	120	5	3	18	5	7	3	325	324	81	243
19	162	110	5	3	18	5	7	3	313	311	78	233
20	162	100	5	3	18	5	8	3	304	301	75	226
21	175	100	5	3	18	5	9	3	318	315	79	236
22	177	105	4	3	18	5	8	3	323	322	81	242
23	162	105	4	3	18	5	7	3	307	306	77	230
24	158	105	4	3	18	5	7	3	303	302	75	226
25	155	100	4	3	17	5	7	3	294	290	72	218
26	151	95	4	3	17	5	7	3	285	283	71	212
27	155	95	4	3	17	5	7	3	289	287	72	215
28	155	95	4	3	18	5	7	3	290	289	72	217
29	147	95	4	3	18	5	7	3	282	280	70	210
30	143	95	4	3	18	5	7	3	278	276	69	207
31	139	95	4	3	18	5	7	3	274	272	68	204

Bear River Sublette estimated.
Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

August - 1947 (Continued)

PLATE 38

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.
1	105	245	122	228	2	238	112
2	105	245	122	228	3	240	110
3	103	241	121	224	4	245	100
4	103	241	121	224	5	265	80
5	101	235	118	218	6	251	85
6	98	228	114	212	7	242	84
7	98	228	114	212	8	256	70
8	103	240	120	222	9	267	74
9	107	250	125	232	10	278	78
10	123	287	143	267	11	368	40
11	124	290	145	270	12	388	26
12	113	263	132	244	13	340	36
13	106	249	124	231	14	313	43
14	111	260	130	241	15	323	49
15	110	256	128	237	16	323	44
16	106	247	123	229	17	297	58
17	101	236	118	220	18	281	59
18	97	227	113	211	19	269	56
19	93	218	109	202	20	260	53
20	90	211	105	195	21	269	35
21	94	220	110	205	22	294	24
22	97	226	113	209	23	278	45
23	92	214	107	199	24	265	42
24	91	211	105	196	25	262	41
25	87	203	102	189	26	253	41
26	85	198	99	184	27	247	38
27	86	201	100	186	28	251	38
28	87	202	101	188	29	251	39
29	84	196	98	182	30	247	35
30	83	193	97	179	31	247	31
31	82	190	95	177	Sept. 1	234	40

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington ..... District .....

o-9333

LOWER WYOMING September - 1947 PLATE 39

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	135	90	4	3	18	5	7	3	265	262	65	196
2	135	85	4	3	18	5	7	3	260	257	64	193
3	133	85	4	3	18	5	7	3	258	255	64	191
4	131	85	4	3	18	5	7	3	256	253	64	190
5	129	85	4	3	18	5	7	3	254	251	63	188
6	127	85	4	3	18	5	8	3	253	249	62	187
7	123	80	4	3	18	5	8	3	244	240	60	180
8	123	80	4	3	18	5	8	3	244	240	60	180
9	127	75	4	3	18	5	8	3	243	239	60	179
10	127	75	3	3	18	5	8	3	242	239	60	179
11	123	70	3	3	18	5	8	3	233	230	57	172
12	121	70	3	3	18	5	8	3	231	229	57	172
13	119	70	3	3	18	5	8	3	229	225	56	169
14	118	70	3	3	18	5	8	3	228	224	56	168
15	118	70	3	3	18	5	8	3	228	224	56	168
16	116	70	3	3	18	5	8	3	226	222	55	166
17	121	70	3	3	18	5	9	3	232	228	57	171
18	133	80	3	3	18	5	9	3	254	250	63	188
19	121	90	3	3	18	5	9	3	252	248	62	186
20	116	90	3	3	18	5	8	3	246	242	61	182
21	114	70	3	3	18	5	8	3	224	220	55	165
22	112	70	3	3	18	5	8	3	222	218	55	164
23	110	70	3	3	18	5	8	3	220	216	54	162
24	110	70	3	3	18	5	8	3	220	216	54	162
25	110	80	3	3	18	5	8	3	230	226	57	170
26	108	80	3	3	18	5	8	3	228	224	56	168
27	108	80	3	3	18	5	8	3	228	224	56	168
28	106	70	3	3	18	5	8	3	216	211	53	158
29	105	70	3	3	18	5	8	3	215	210	53	158
30	105	70	3	3	18	5	8	3	215	210	53	158

Bear River Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

September - 1947 (Continued)

PLATE 40

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	79	181	92	170	2	223	42					
2	78	180	90	167	3	217	43					
3	77	179	89	166	4	203	55					
4	76	177	89	165	5	203	53					
5	75	176	88	163	6	207	47					
6	75	174	87	162	7	207	46					
7	72	168	84	156	8	207	37					
8	72	168	84	156	9	213	31					
9	72	167	84	155	10	217	26					
10	72	167	84	155	11	215	27					
11	69	161	80	150	12	219	14					
12	69	160	80	149	13	234	-3					
13	68	158	79	146	14	225	4					
14	67	157	78	146	15	223	5					
15	67	157	78	146	16	223	5					
16	67	155	78	144	17	228	-2					
17	68	160	80	148	18	258	-26					
18	75	175	88	162	19	265	-11					
19	74	174	87	161	20	258	-6					
20	73	169	85	157	21	236	10					
21	66	154	77	143	22	223	1					
22	65	153	76	142	23	213	9					
23	65	151	76	140	24	213	7					
24	65	151	76	140	25	209	11					
25	68	158	79	147	26	211	19					
26	67	157	78	145	27	209	19					
27	67	157	78	145	28	209	19					
28	63	148	74	137	29	205	11					
29	63	147	74	136	30	263	12					
30	63	147	74	136	Oct. 1	197	18					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

0—9333

LOWER WYOMING May - 1948 PLATE 41

Date	Sm. Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	362	912	13	11	20	6	12	10	1344	1329	332	997
2	317	912	13	11	20	6	12	10	1301	1283	321	962
3	299	912	12	11	20	6	12	10	1282	1263	316	947
4	320	840	12	10	20	6	12	10	1230	1214	304	910
5	320	696	11	11	20	6	12	10	1086	1070	268	802
6	390	635	11	12	20	6	12	10	1096	1084	271	813
7	538	586	12	13	20	6	12	10	1197	1193	298	895
8	558	547	14	13	21	6	12	12	1183	1178	294	884
9	455	563	15	14	22	6	12	13	1100	1085	271	784
10	403	595	16	14	23	6	12	15	1084	1062	266	796
11	395	608	17	14	24	6	12	15	1091	1068	267	801
12	366	603	16	14	24	6	10	16	1055	1032	258	774
13	403	547	16	14	24	6	10	18	1038	1015	254	761
14	491	469	18	16	24	6	10	19	1053	1031	258	773
15	573	388	21	18	25	6	10	20	1061	1041	260	781
16	682	364	24	21	26	6	10	22	1155	1134	284	850
17	801	382	27	23	27	6	9	24	1299	1282	320	962
18	878	447	30	24	28	6	9	26	1448	1430	358	1072
19	884	547	30	24	28	5	9	26	1553	1537	384	1153
20	1040	643	29	24	27	5	9	26	1803	1799	450	1349
21	1030	770	27	24	27	5	9	26	1918	1914	478	1436
22	1040	840	25	22	28	5	9	24	1993	1997	499	1498
23	962	837	23	20	29	5	9	22	1907	1912	478	1434
24	938	930	21	18	30	5	9	20	1971	1981	445	1536
25	932	1040	19	16	30	5	9	18	2069	2084	521	1563
26	914	1110	18	15	30	5	9	16	2117	2134	534	1600
27	896	1180	17	14	29	5	9	14	2164	2185	546	1639
28	926	1180	17	13	29	5	9	13	2192	2217	554	1663
29	926	1200	16	12	28	5	9	13	2209	2235	559	1676
30	866	1200	15	12	28	5	9	12	2147	2170	542	1628
31	860	1210	14	12	27	5	9	12	2149	2173	543	1630

~~Bear River Sublette estimated.~~

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. Washington .....
District .....

May - 1948 (Continued)

PLATE 42

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	399	930	465	864								
2	385	898	489	834								
3	379	884	442	821								
4	364	850	425	789								
5	321	749	374	696								
6	325	759	379	705								
7	358	835	418	775								
8	353	825	412	766								
9	326	760	380	705								
10	319	743	372	690								
11	320	748	374	694								
12	310	722	361	671								
13	304	710	355	660								
14	309	722	361	670								
15	312	729	364	677								
16	340	794	397	737								
17	385	897	449	833								
18	429	1001	500	930								
19	461	1076	540	999								
20	540	1259	630	1169								
21	574	1340	670	1244								
22	599	1398	699	1298								
23	574	1338	669	1243								
24	594	1387	693	1288								
25	625	1459	729	1355								
26	640	1494	747	1387								
27	656	1530	765	1420								
28	665	1552	776	1441								
29	670	1564	782	1453								
30	651	1519	760	1410								
31	652	1521	760	1412								

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING June - 1948 PLATE 4.5

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	866	1170	14	12	27	5	8	11	2113	2139	535	1604
2	872	1050	14	12	27	5	9	10	1999	2025	506	1519
3	884	945	13	11	28	5	9	10	1905	1935	484	1451
4	801	921	13	11	28	5	9	10	1798	1821	455	1366
5	749	933	12	11	28	5	9	10	1756	1778	444	1334
6	732	960	12	10	27	5	9	10	1764	1786	446	1342
7	738	982	12	10	26	5	9	10	1791	1812	453	1359
8	738	900	12	10	25	5	9	10	1708	1729	432	1297
9	726	721	12	10	25	5	9	10	1517	1537	384	1153
10	699	506	12	9	25	5	9	9	1273	1286	322	964
11	661	469	12	9	25	5	9	9	1198	1216	304	912
12	629	348	11	9	24	5	9	9	1043	1058	264	794
13	588	226	11	8	24	5	9	9	919	892	223	669
14	563	213	10	8	23	5	9	9	839	852	213	639
15	529	188	10	8	23	5	9	9	780	791	198	593
16	500	178	9	8	23	5	9	9	740	794	198	596
17	482	165	9	8	23	5	9	9	709	718	180	538
18	460	158	9	8	23	5	8	9	680	686	172	514
19	424	136	9	8	23	5	9	9	622	626	156	470
20	424	118	9	8	24	5	8	9	605	609	152	457
21	424	113	8	7	24	5	9	8	598	604	151	453
22	478	112	8	7	24	5	9	8	651	661	165	496
23	437	112	8	7	23	5	9	8	610	616	154	462
24	420	113	8	7	23	5	8	8	592	599	150	449
25	403	152	8	7	23	5	8	8	614	620	155	465
26	386	150	8	7	23	5	8	8	595	599	150	449
27	374	125	8	6	23	5	8	8	577	562	140	422
28	358	118	8	6	22	5	8	8	533	536	134	402
29	347	114	8	6	22	5	8	8	518	520	130	390
30	335	110	7	6	22	5	8	8	501	502	126	376

~~Bear River~~ Sublette estimated.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington
District

June - 1948 (Continued)

PLATE 44

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.				
1	642	1497	748	1390							
2	608	1418	709	1316							
3	580	1354	677	1258							
4	546	1275	637	1184							
5	533	1245	622	1156							
6	536	1250	625	1161							
7	544	1269	634	1178							
8	519	1210	605	1124							
9	461	1076	538	999							
10	386	900	450	836							
11	365	851	426	790							
12	317	741	370	688							
13	268	624	312	580							
14	256	596	298	554							
15	237	554	277	514							
16	238	556	278	516							
17	215	503	251	467							
18	206	480	240	446							
19	188	438	219	407							
20	183	426	213	396							
21	181	423	211	393							
22	198	463	231	430							
23	185	431	216	400							
24	180	419	210	389							
25	186	434	217	483							
26	180	419	210	389		446	149				
27	169	393	197	365		413	164				
28	161	375	188	348		398	135				
29	156	364	182	338		386	132				
30	151	351	176	326		386	115				

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

LOWER WYOMING July - 1948

PLATE 45

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	324	106	7	6	23	5	8	7	486	489	122	367
2	317	102	7	6	23	5	8	7	475	477	119	358
3	306	97	7	6	23	5	8	7	461	460	115	345
4	295	93	7	6	22	5	8	7	443	443	111	332
5	288	89	7	6	22	5	8	7	432	431	108	323
6	278	121	7	6	22	5	8	7	454	453	113	340
7	269	89	7	6	22	5	7	7	412	411	103	308
8	262	84	6	6	21	5	7	7	398	398	100	298
9	256	100	6	6	21	5	7	7	408	407	102	305
10	250	94	6	5	21	5	7	7	395	395	99	296
11	243	80	6	5	21	5	7	7	374	373	93	280
12	237	76	6	5	21	5	7	7	364	363	91	272
13	231	73	6	5	21	5	7	7	355	354	88	266
14	225	70	6	5	21	5	7	7	346	344	86	258
15	225	66	5	5	21	5	7	7	341	340	85	255
16	216	61	5	5	21	5	7	7	327	325	81	244
17	214	49	5	5	21	5	7	6	312	311	78	233
18	208	66	5	5	21	5	7	6	323	322	80	242
19	202	61	5	5	21	5	7	6	312	310	78	232
20	202	58	5	5	21	5	7	6	309	307	77	230
21	197	55	5	5	21	5	7	6	301	299	75	224
22	194	52	5	5	21	5	7	6	295	293	73	220
23	191	52	5	5	21	5	7	6	292	289	72	217
24	194	53	5	5	21	5	7	6	296	294	74	220
25	188	51	5	4	21	5	7	6	287	285	71	214
26	186	48	5	4	21	5	7	5	281	280	70	210
27	180	46	5	4	21	5	7	5	273	272	68	204
28	183	47	5	4	20	5	7	5	276	274	68	206
29	186	48	5	4	20	5	7	5	280	278	70	208
30	180	48	5	4	20	5	7	5	274	272	68	204
31	175	48	5	4	21	5	7	5	270	268	67	201

~~Bear River Sublette Estimated~~.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

July - 1948 (Continued)

PLATE 46

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	147	342	171	318		373	113					
2	143	334	167	310		344	131					
3	138	322	161	299		323	138					
4	133	310	155	288		306	137					
5	129	302	151	280		308	124					
6	136	317	158	294		294	160					
7	123	288	144	267		258	164					
8	119	279	139	259		247	151					
9	122	285	142	264		274	134					
10	118	276	138	257		265	130					
11	112	261	130	242		258	116					
12	109	254	127	236		240	124					
13	106	248	124	230		232	123					
14	103	241	120	224		225	121					
15	102	238	119	221		217	124					
16	98	228	114	211		221	106					
17	93	218	109	202		221	91					
18	97	225	118	209		232	91					
19	93	217	108	202		238	74					
20	92	215	107	200		213	96					
21	90	209	105	194		213	88					
22	88	205	102	190		201	94					
23	87	202	101	188		211	81					
24	88	206	103	195		201	95					
25	86	200	100	185		199	88					
26	84	196	98	182		193	88					
27	82	190	95	177		182	81					
28	82	192	96	178		180	96					
29	83	195	97	181		178	102					
30	82	190	95	177		173	101					
31	80	188	94	174		164	106					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

LOWER WYOMING August - 1948 PLATE 47

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	172	48	5	4	21	5	7	5	267	265	66	199
2	168	48	5	4	20	5	7	5	262	259	65	194
3	165	44	5	4	20	5	7	5	255	252	63	189
4	162	41	4	4	20	5	7	5	248	245	61	184
5	162	45	4	4	20	5	7	5	252	249	62	187
6	160	48	4	4	20	5	7	4	252	252	63	189
7	155	48	4	4	20	5	7	4	247	245	61	184
8	152	49	4	4	20	5	7	4	245	243	61	182
9	152	51	4	4	20	5	7	3	246	245	61	184
10	150	51	4	4	19	5	7	3	243	240	60	180
11	148	50	4	4	20	5	7	3	241	239	60	179
12	145	48	4	4	20	5	7	3	236	234	58	176
13	138	48	4	4	20	5	7	3	229	227	57	170
14	136	47	4	4	20	5	7	3	226	224	56	168
15	134	46	4	4	19	5	7	3	222	218	54	164
16	132	46	4	4	19	5	7	3	220	216	54	162
17	129	46	4	4	19	5	7	3	217	213	53	160
18	127	44	4	4	19	5	7	3	213	209	52	157
19	123	43	4	4	19	5	7	3	208	204	51	153
20	123	42	4	4	19	5	7	3	207	203	51	152
21	123	42	4	4	19	5	7	3	207	203	51	152
22	123	42	4	4	19	5	7	3	207	203	51	152
23	123	42	4	4	19	5	7	3	207	203	51	152
24	121	41	4	4	19	5	7	3	204	199	50	149
25	121	41	4	4	19	5	7	3	204	199	50	149
26	121	41	4	4	19	5	7	3	204	199	50	149
27	114	41	4	4	19	5	7	3	197	192	48	144
28	112	40	4	3	19	5	7	3	193	189	47	142
29	112	38	3	3	19	5	7	3	190	187	47	140
30	110	40	3	3	19	5	7	3	190	187	47	140
31	108	40	3	3	19	5	7	3	188	185	46	139

~~Bear River~~ Sublette ~~estimated~~.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. | Washington .....
District .....

August - 1948 (Continued)

PLATE 48

Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	80	186	93	172		165	102					
2	78	181	91	168		165	97					
3	76	176	88	164		164	91					
4	74	172	86	160		167	81					
5	75	174	87	162		167	85					
6	76	176	88	164		167	85					
7	74	172	86	160		164	83					
8	73	170	85	158		171	74					
9	74	172	86	160		173	73					
10	72	168	84	156		169	74					
11	72	167	84	155		167	74					
12	70	164	82	152		162	74					
13	68	159	79	148		155	74					
14	67	157	78	146		142	84					
15	65	153	76	142		140	82					
16	65	151	76	140		137	83					
17	64	149	74	138		134	83					
18	63	146	73	136		132	81					
19	61	143	71	133		122	86					
20	61	142	71	132		125	82					
21	61	142	71	132		127	80					
22	61	142	71	132		130	77					
23	61	142	71	132		134	73					
24	60	139	70	129		130	74					
25	60	139	70	129		119	85					
26	60	139	70	129		117	87					
27	58	134	67	125		119	78					
28	57	132	66	123		115	78					
29	56	131	65	122		115	75					
30	56	131	65	122		112	78					
31	56	130	65	120		103	85					

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....
*** 3-0333

LOWER WYOMING September - 1948 PLATE 47

Date	Sm.Fk. Border	Bear R. Sub-lette	How-land Cr.	Grade Cr.	Pine Cr.	Spring Cr.	Pine Cr. Sprgs.	Sub-lette Cr.	Total	Equa-tion	25% Depl.	75% Border
1	106	40	3	3	19	5	7	3	186	182	46	136
2	106	40	4	3	19	5	7	3	187	182	46	136
3	104	38	4	3	19	5	7	3	183	178	44	134
4	102	37	3	3	19	5	7	3	179	175	44	131
5	104	37	3	3	19	5	7	3	181	177	44	133
6	102	37	3	3	19	5	7	3	179	175	44	131
7	102	37	3	3	19	5	7	3	179	175	44	131
8	104	40	3	3	19	5	7	3	184	180	45	135
9	102	41	3	3	19	5	7	3	183	179	45	134
10	101	39	3	3	19	5	7	3	180	176	44	132
11	101	38	3	3	19	5	7	3	179	175	44	131
12	101	38	3	3	19	5	7	3	179	175	44	131
13	99	37	3	3	18	5	7	3	175	173	43	130
14	95	37	3	3	18	5	7	3	171	167	42	125
15	95	36	3	3	18	5	7	3	170	166	42	124
16	97	36	3	3	18	5	7	3	172	168	42	126
17	102	38	3	3	18	5	7	3	179	175	44	131
18	101	40	3	3	18	5	7	3	180	176	44	132
19	112	44	3	3	18	5	8	3	196	192	48	144
20	106	44	3	3	18	5	8	3	190	185	46	139
21	101	45	3	3	18	5	8	3	186	181	45	136
22	97	45	3	3	18	5	8	3	182	177	44	133
23	95	44	3	3	19	5	8	3	180	175	44	131
24	95	42	3	3	19	5	8	3	178	173	43	130
25	93	43	3	3	19	5	8	3	177	172	43	129
26	92	46	3	3	18	5	8	3	178	172	43	129
27	93	43	3	3	18	5	8	3	176	171	43	128
28	93	43	3	3	18	5	8	3	176	171	43	128
29	93	43	3	3	18	5	8	3	176	171	43	128
30	92	43	3	3	18	5	8	3	175	169	42	127

~~Bear River Sublette estimated~~.

Equation = 1.07 Smiths Fork near Border + 1.55 Pine Creek + Bear River above Sublette.

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

File No. { Washington .....
District .....

September - 1948 (Continued)

PLATE 50

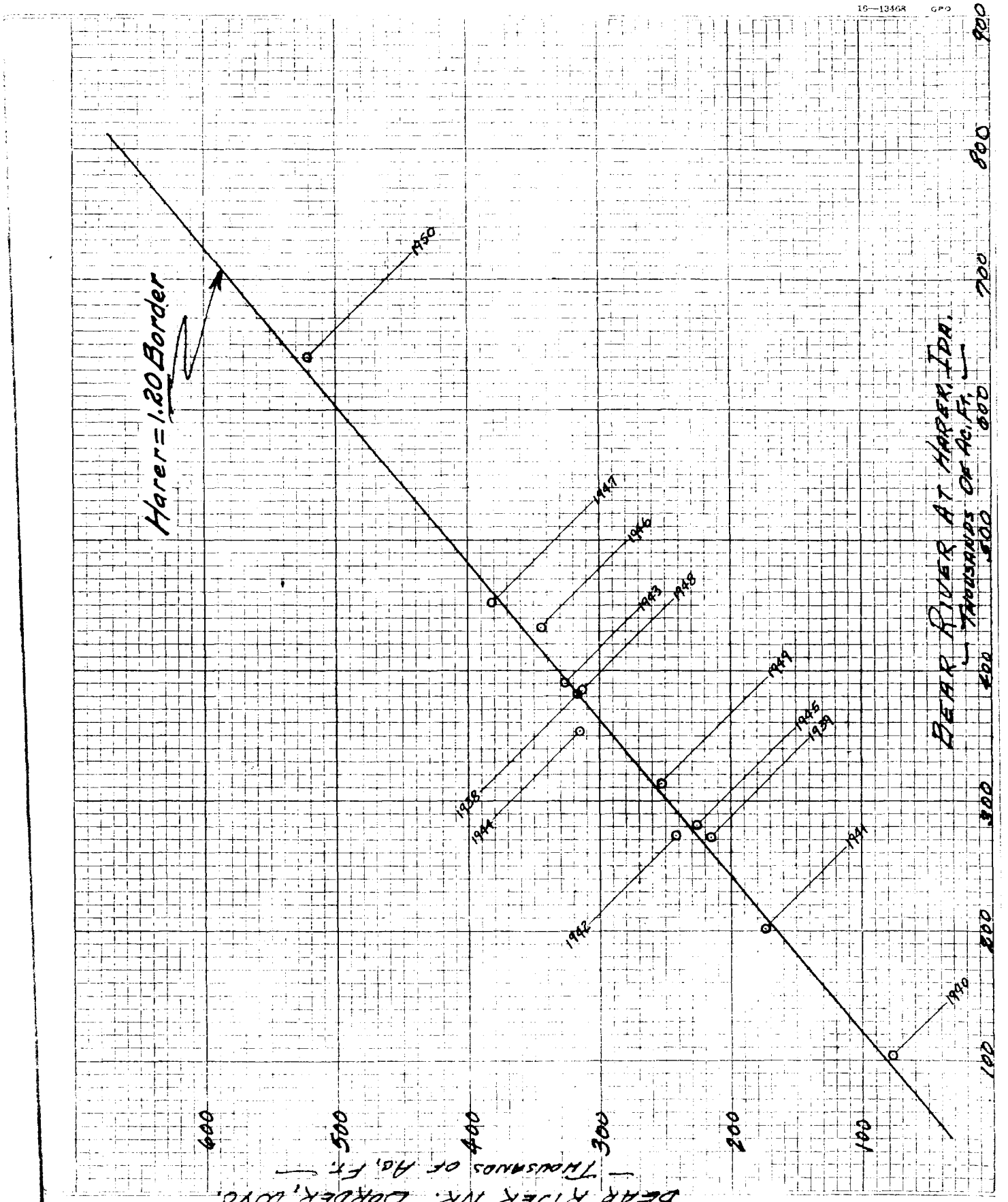
Date	30% Depl.	70% Border	35% Depl.	65% Border		Actual Disch. Border	Actual Depl.					
1	55	127	64	118		104	82					
2	55	127	64	118		100	87					
3	53	125	62	116		97	86					
4	52	122	61	114		94	85					
5	53	124	62	115		96	85					
6	52	122	61	114		93	86					
7	52	122	61	114		91	88					
8	54	126	63	117		98	86					
9	54	125	63	116		104	79					
10	53	123	62	114		103	77					
11	52	122	61	114		111	68					
12	52	122	61	114		111	68					
13	52	121	60	112		109	66					
14	50	117	58	108		109	62					
15	50	116	58	108		109	61					
16	50	118	59	109		115	57					
17	52	122	61	114		123	56					
18	53	123	62	114		142	38					
19	58	134	67	125		147	49					
20	56	130	65	120		151	39					
21	54	127	63	118		147	39					
22	53	124	62	115		132	50					
23	52	122	61	114		128	52					
24	52	121	60	112		127	51					
25	52	120	60	112		130	47					
26	52	120	60	112		132	46					
27	51	120	60	111		139	37					
28	51	120	60	111		142	34					
29	51	121	60	111		146	30					
30	51	118	59	110		146	29					

vember 1939)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

File Number { Washington ____ District ____

PLATE 5



of ____ sheets. Prepared by ____ Plat ____ Checked by ____ Date ____

GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Sheet _____ of _____ Sheets

Monthly ~~and annual~~ discharge, in sec. ft, of Bear River at or near Border, Wyo.

[Drainage area, _____ square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1938	143	172	158	137	144	356	949	1,443	1,067	356	141	196	439
1939	193	199	176	164	160	702	704	685	286	136	90	82	299
1940	152	140	127	94	128	158	130	104	122	75	42	38	109
1941	129	119	108	96	111	279	234	356	846	301	166	136	240
1942	164	234	202	149	156	868	1,246	629	641	166	94	73	334
1943	121	147	108	102	132	470	1,252	1,142	1,031	497	241	164	451
1944	185	189	133	129	156	197	1,160	1,090	1,285	448	156	110	435
1945	153	154	114	125	144	272	871	558	883	442	306	249	315
1946	186	239	217	216	173	615	1,516	1,316	637	244	170	183	477
1947	191	188	225	156	212	800	640	1,324	1,537	536	276	220	527
1948	214	236	206	186	173	283	1,027	1,421	918	245	147	118	431
1949	164	157	117	107	123	275	714	882	985	424	162	95	351
1950	221	239	169	169	217	589	1,268	1,928	2,460	822	317	224	719

PLATE 52

U. S. GOVERNMENT PRINTING OFFICE 9-8186

GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Sheet _____ of _____ Sheets

Monthly ~~and annual~~ mean discharge, in sec. ft., of Bear River ~~at~~ near Hazen, Idaho

[Drainage area, _____ square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1938	178	215	202	183	194	438	4102	1,706	1,177	450	194	259	526
1939	283	268	237	207	188	823	862	823	361	179	119	115	373
1940	190	178	166	159	172	186	158	128	151	95	59	62	142
1941	142	139	131	126	143	333	273	421	909	366	205	169	280
1942	208	278	228	176	181	272	1371	692	690	218	128	97	377
1943	141	165	127	121	151	525	1,516	1,504	1,148	562	290	203	539
1944	224	233	175	164	193	242	1,324	1,135	1,352	495	185	131	486
1945	183	187	133	146	172	342	435	683	1,111	599	366	296	388
1946	236	301	242	243	207	764	1,867	1,772	765	311	220	221	597
1947	239	244	265	181	256	907	768	1,582	1,742	663	348	278	624
1948	270	307	262	222	218	317	1,154	1,792	1,159	344	182	151	530
1949	207	209	170	165	173	328	837	1,115	1,166	472	206	133	433
1950	264	281	226	232	271	656	1,564	2,509	2,973	965	374	276	884

PLATE 53

U. S. GOVERNMENT PRINTING OFFICE
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GEOLOGICAL SURVEY
WATER RESOURCES BRANCH

Sheet _____ of _____ Sheets

PERCENT HAREK OF BORDER

~~Monthly and annual discharge, in _____, of _____~~ River at near _____

[Drainage area, _____ square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1938	125	125	127	134	135	123	116	118	110	126	138	132	119
1739	147	135	134	127	118	117	122	120	126	132	132	140	125
1742	125	127	131	168	135	118	121	123	124	127	139	162	130
1741	115	117	121	131	129	119	116	118	107	122	123	124	116
1742	121	119	113	118	116	101	110	110	108	131	130	133	113
1743	116	112	117	118	115	112	121	132	111	113	120	124	119
1744	121	123	131	127	123	123	114	104	105	111	118	120	112
1745	120	122	116	117	119	125	117	123	126	135	119	119	123
1746	127	126	111	112	120	124	123	135	120	128	129	121	125
1747	125	120	115	116	120	113	120	120	113	124	126	124	118
1748	126	130	127	119	126	112	112	126	124	140	127	129	123
1749	127	133	145	154	141	123	117	126	118	111	128	140	123
1750	121	118	134	137	125	111	123	130	121	118	120	123	123
ave	124	124	126	129	124	117	118	122	118	124	128	130 ave	120

PLATE 54

U. S. GOVERNMENT PRINTING OFFICE

Canal	Original Plan. ac.	Adjusted ac. 9-12-51
Quinme-Bourne	318	179 *
* fallow and [illegible] 1951: Extra land in 318 ac is brush that shows [illegible] indication of having ever been cultivated		
PINE CREEK (Lund Farm) 1881 – 172, 1881 – 287, 1915 – 326.17		360
Includes 81 ac. Winter Wheat (1951) not irrig this year but apparently has been in the past. New land in North ½ Sec 33 now in winter wheat not included		
Pine Cr (Stover V-H Ranch) 1905 – 640, 1910 – 153.24		575*
* An additional 138 ac in winter wheat in 1951		
Bruner Creek └ Wyman Spring adj.	153.8	8.0 approx
GRADE CREEK	382	372 *
* An additional 143 acres new dry farm land on southeast side and 40 acres farmed above the ditch are not included.		
SHEEP CR. (Idaho)		348 *
* incl subirrigated pasture: Does not include water to come under canal		
[illegible] PINE CR	110	* 22
* above Covey Canal		