

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 2-7375

Exam Date: 5/22/2013

1. Current Owner: IDAHO POWER CO
C/O JON BOWLING
PO BOX 70
BOISE ID 83707
(208)388-2905
2. Accompanied by: Jon Bowling
Phone No: 388-2905
Address: PO Box 70
Relationship to Permit Holder: Idaho Power Company engineer

This Beneficial Use Field Report was completed by Michele Edl and is primarily a synopsis of reports written by FERC's Operations personnel and IDWR's Dam Safety personnel. Specifically, I reviewed Operation Reports from 1995, 1997, and 1999 which were written by staff in FERC's Portland Region Office and Record of Inspection of Dam reports from 2003, 2005 and 2007 which were written by the dam safety engineer in IDWR's Southern Region Office.

Additional generation and project-specific operation information was provided and discussed during a meeting with Jon Bowling on 5/22/2013. No additional site visit was carried out.

3. SOURCE

SNAKE RIVER

TRIBUTARY

COLUMBIA RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
Decreed right 2-2056 is associated with the original powerhouse which was constructed circa 1936. This right, 2-7375, is associated with the new powerhouse, which was constructed circa 1995. The FERC issued a major license for the two separate powerhouses as a single project (FERC Project No. 18), on January 18, 1991. That license will expire on December 31, 2040. I recommend that IDWR use the term of the FERC license as the term for the Water Right License. This means that IDWR must also consider both powerhouses a single project with a single fixed term. Decree 2-2056 is not conditioned with any term date.

2. Other water rights with the same point of diversion:
Decreed right 2-2056 diverts from the same headwater pool as this right. The original powerhouse and the new powerhouse each have a single turbine-generator and each turbine has its own intake and penstock. The two intakes are sited approximately 50 feet from each other, in the non-overflow, concrete gravity section of the Twin Falls Dam.

To be consistent with possible use of the first 1050 cfs through either turbine, right 2-2056 should have two diversion points in the NE1/4NW1/4, Sec. 4, Twp 10S, Rge 18E.

C. DIVERSION AND DELIVERY SYSTEM

1.

LOCATION OF POINT(S) OF DIVERSION:

SNAKE RIVER NE1/4NW1/4, Sec. 4, Twp 10S, Rge 18E, B.M.

TWIN FALLS County

Method of Determination:

I found no record of GPS coordinates for either penstock intake. However, both the old and the new intake structures are visible in aerial photography. I compared photography available in the inspection and operation reports with aerial photography to determine the POD.

2.

PLACE OF USE: POWER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
10S	18E	4					X												

Method of Determination:

I found no record of GPS coordinates for either powerhouse. However, both old and new powerhouses are visible in aerial photography. I compared photography available from the inspection and operation reports with aerial photography to determine the POU.

3.

☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable. (see EBASCO Services Incorporated Project Profile drawing and Site Plan drawing available in the IDWR state office Dam Safety library)

☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

☒ Aerial Photo Attached (required for irrigation of 10+ acres).

☒ Photo of Diversion and System Attached (see any IDWR Record of Inspection of Dam report)

4.

Well or Diversion ID No.

<u>Generator Make</u>	<u>Hp</u>	<u>Generator Type.</u>	<u>Turbine Make</u>	<u>Turbine Discharge Size</u>
ABB Energi	44,300 kW or 59067 HP	Synchronous	Toshiba	4,000 cfs at 144 ft effective head

The turbine type is a vertical shaft Kaplan. Idaho Power Company refers to this turbine-generator unit as Unit #2

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>

2. Measurements:

During the development period of this permit, turbine discharge readings were available from instrumentation displays in the powerhouse. The type of flow meter, accuracy of measurements and calibration date(s) are not known.

Instantaneous readings confirming turbine discharge and attendant generation were recorded in the FERC inspector's May 19, 1999, Operation Report. In his report, Richard B. Taug, P.E. (civil), cited generation and flow for each turbine.

"At the time of the inspection, Unit 1 in the old powerhouse was passing 926 cfs and generating 9 MW.
Unit 2 in the new powerhouse was passing 3,948 cfs and was producing 42.5 MW."

Headwater and tailwater elevations and instantaneous turbine discharge readings were recorded in IDWR dam inspection reports from 2003, 2005, and 2007.

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method:

See data provided Jon Bowling and my explanatory memo dated May 22, 2013.

F. VOLUME CALCULATIONS Not Applicable

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} =$$

2. Volume Calculations for Other Uses:

Effective 3/29/2012, the Beneficial Use Examination Rules exempt on-stream, run-of-the-river, power generation from the volume reporting requirement. The Twin Falls project matches this description. Therefore, no volume is required and none is recommended for this right.

G. NARRATIVE/REMARKS/COMMENTS

This permit requested additional water for power use in a new power plant constructed in 1996 for Idaho Power Company at the Twin Falls Dam site.

The FERC considers the two power generation facilities at Twin Falls Dam to be a single project. The original FERC license was issued to the old powerhouse June 23, 1933. That license expired in 1984 but the project operated under an annual license until the new (relicense) was issued. Construction of the second powerhouse was authorized as an expansion of Project 18 by FERC in its relicense order dated January 18, 1991. The FERC license term is 50 years.

Beneficial use of water for power purposes is confirmed by the information contained in the FERC inspector's May 19, 1999 Operation Report.

The FERC inspector was on-site during a period of very high flow conditions. Flows were overtopping the arch dam section of the Twin Falls Dam. Because a single instance is not likely to be the maximum beneficial use, I requested additional data from Idaho Power Company.

Streamflow measurement

USGS station #13090000, Snake River nr Kimberly, ID is currently maintained by IPCo. During the development period of this permit, this gauging station was maintained by USGS. It is located approximately 1200 ft downstream from the Twin Falls project. Flow data from this station represents the total flow of the river. Without companion generation records, the stream flow data is not sufficient to confirm beneficial use.

At low streamflow conditions, the original powerhouse was capable of diverting and putting the entire flow of the Snake River to beneficial use generating power. Now, low flows near 300 cfs can represent the FERC license requirement for aesthetic flow over the falls. The aesthetic flow is diverted from outlet works constructed on the north side of the new intake structure and it bypasses both turbines. IDWR's August 12, 2003 dam inspection report records no flow through either turbine and the bypass flow at 325 cfs.

Ownership

The senior water right for power use at the Twin Falls project is 2-2056. It was recommended in the SRBA court to Idaho Power Company but was decreed on January 12, 2012 to the State of Idaho. The permit holder for this right is Idaho Power Company. Both right 2-2056 and right 2-7375 are diverted at the Twin Falls Dam and are used to generate power in Idaho Power Company's powerhouses. Any necessary clarification of the ownership of this water right can be accomplished outside of the licensing process.

Idaho Power Company is regulated utility and a subsidiary of IDACORP, Inc., which is listed with ISOS as #C122636. The FERC license stated that the project would be located partially on lands administered by the BLM. I confirmed with BLM personnel that there are no private uses on BLM land at/near the Twin Falls Power Plant.

According to available Twin Falls County taxlot information, the permit holder owns the property in gov t lot 3 (NENW).

Point of Diversion & Place of Use

The permit authorized development of a water use from the Snake River in gov t lot 3 (NWNE) of section 4, which is BLM land. Both the new intake (the POD) and the new powerhouse (the POU) are actually located in the channel of the Snake River, in the NENW, not the NWNE. The 40-acre tract is listed only for ease in locating features in IDWR's database. Both the POD and POU are closer to gov t lot 3 than any other gov t lot. An amendment may be required before licensing.

I created the POD and POU shapes based on a comparison of aerial photography with photos provided in FERC and IDWR inspection reports.

Point of Discharge

Both turbines discharge back into the Snake River. However, the tailwater area of the original plant has been altered to accommodate the new powerhouse and its penstock. A portion of the discharge from the older turbine (Unit #1) can be rediverted from its tailwater pool to join the tailrace constructed for the new turbine, (Unit #2). The water is conveyed from one tailwater pool to the other through a culvert under the access road constructed for the new powerhouse.

Storage

No storage is authorized either by this permit or by Decreed Water Right 2-2056. The existing reservoir (aka Dierkes Lake) is approximately 1.5 miles long and has a normal surface area of 85 acres. The reservoir is used primarily for power production and secondarily for recreation.

Although Francis type turbines (unit 1) and Kaplan type turbines (unit 2) have a flexible range of operation, the Twin Falls project has very limited load following capability and is operated as a run-of-the-river project.

IDWR Dam Safety has certified the Twin Falls Dam to impound water less than or equal to an elevation 3511.4 ft. Unless revoked, that impoundment certificate expires December 31, 2016. At normal pool elevation, the reservoir has a storage capacity of approximately 1000 AF.

Both FERC and IDWR classify the Twin Falls Dam as Low Hazard.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS

Based on the information provided by Jon Bowling, the Twin Falls Project can beneficially use 5007 cfs. 1050 cfs is authorized through decreed right 2-2056. Therefore, for this license I recommend 3957 cfs, which is 3960 cfs when rounded to three significant figures.

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
POWER	1/01 to 12/31	3960.00 cfs	N/A
<u>Totals:</u> 3,960.00 CFS			

2. Recommended Amendments

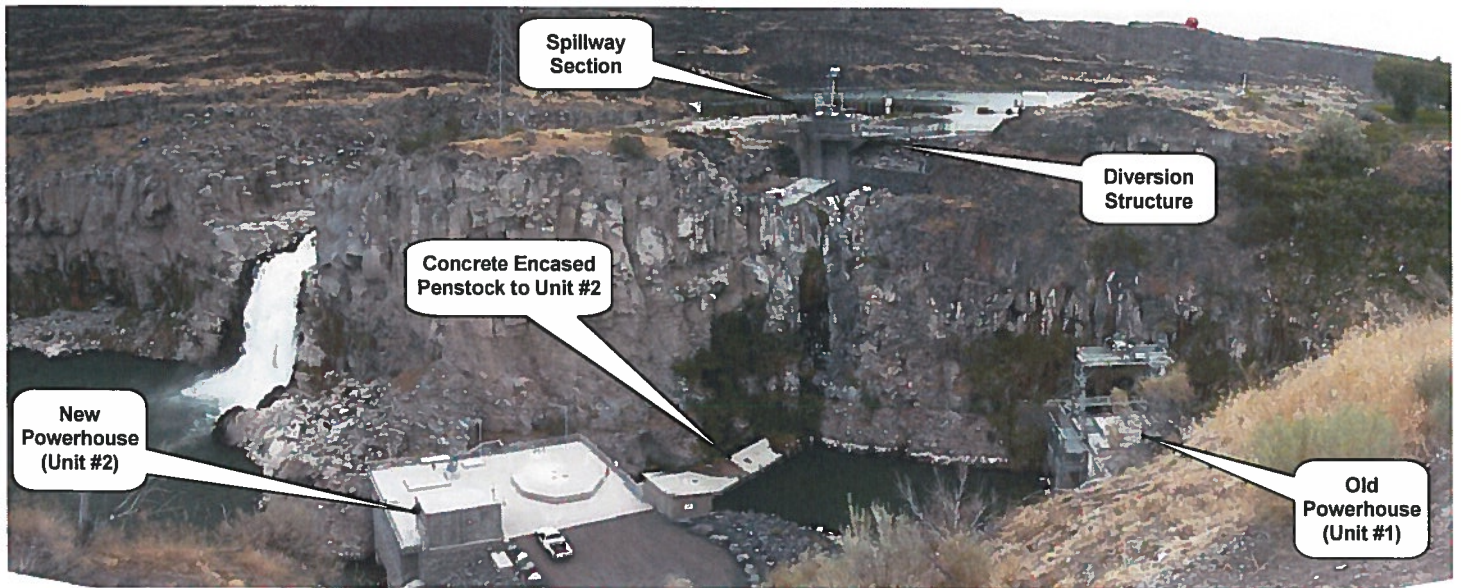
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

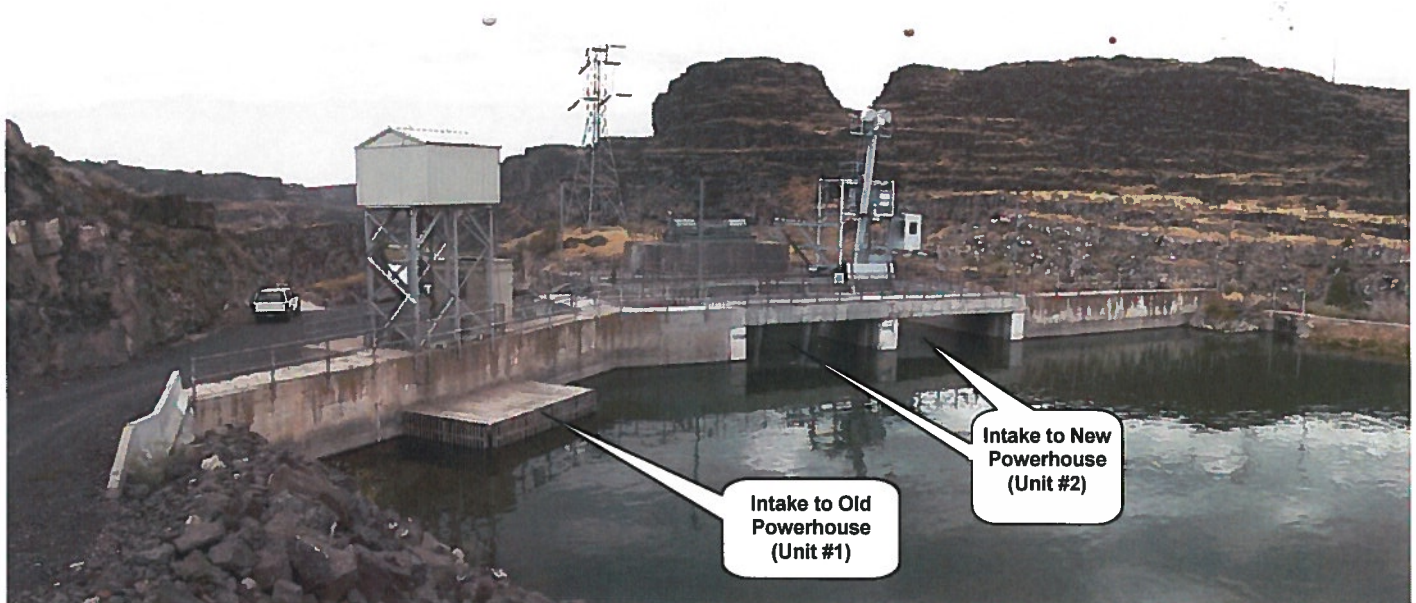
Field Examiner's Name Michelle D. De Date 7/15/2013

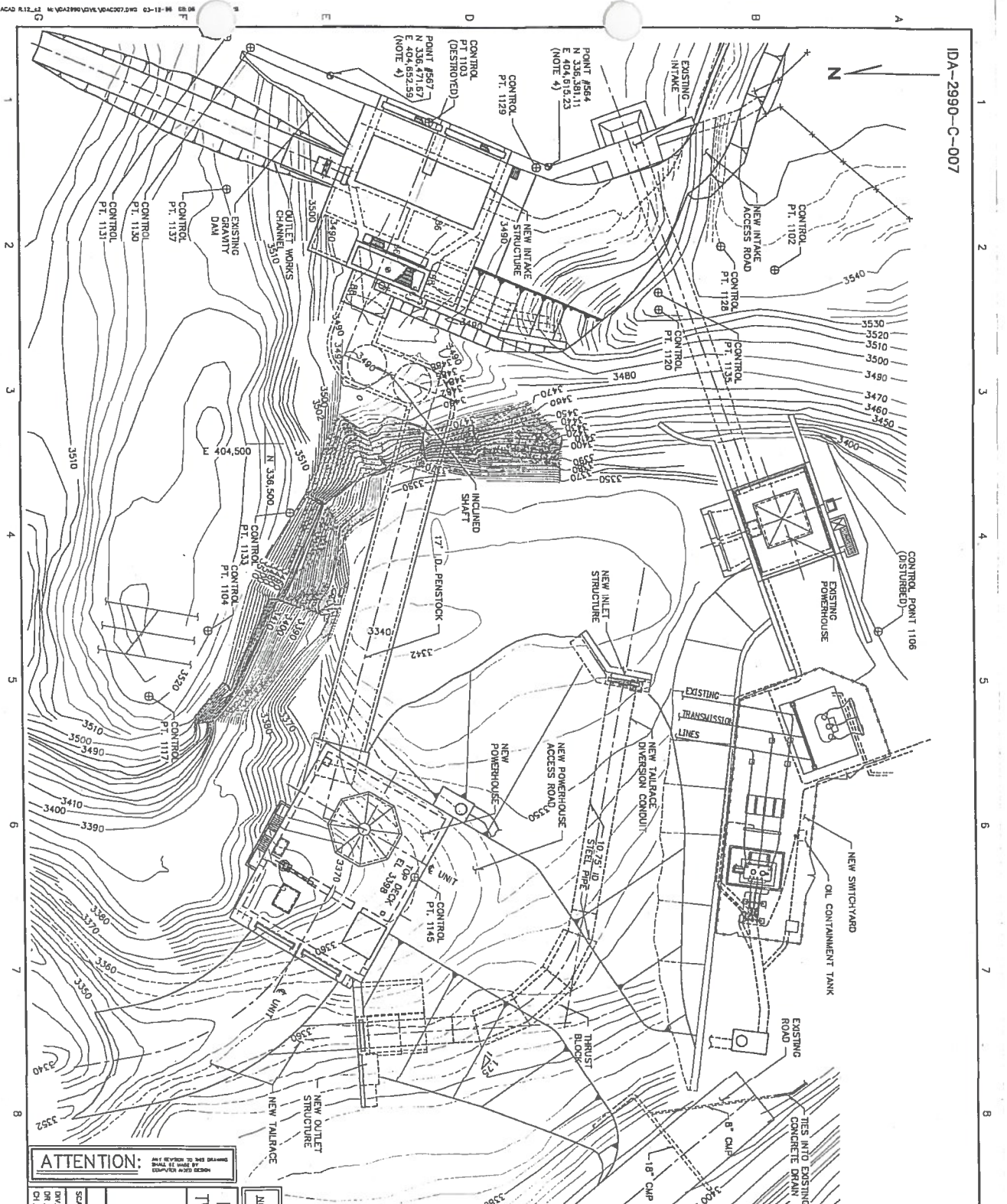
Reviewer _____ Date _____



ABOVE: View of the Twin Falls project from the right (south) side with the locations of various points of interest indicated.

BELOW: View of the upstream face of the intake structure at the left (south) side of the dam.





ATTENTION:

02-2827-847-345

SCALE: 1"=50'-0"

UNLESS NOTED

BY: D. SURVEILL

DATE: 2-1-83

REV: 6

BP

CE

IDA-2990-C-007

APR 25 1985

RECEIVED

EASCO SERVICES INCORPORATED

R. FOTHERINGHAM

DATE: 2-1-83

REV: 6

IDAHO POWER COMPANY
TWIN FALLS HYDROELECTRIC PROJECT

FINAL RECORD DRAWING

TWIN FALLS TAILRACE STUDY AND
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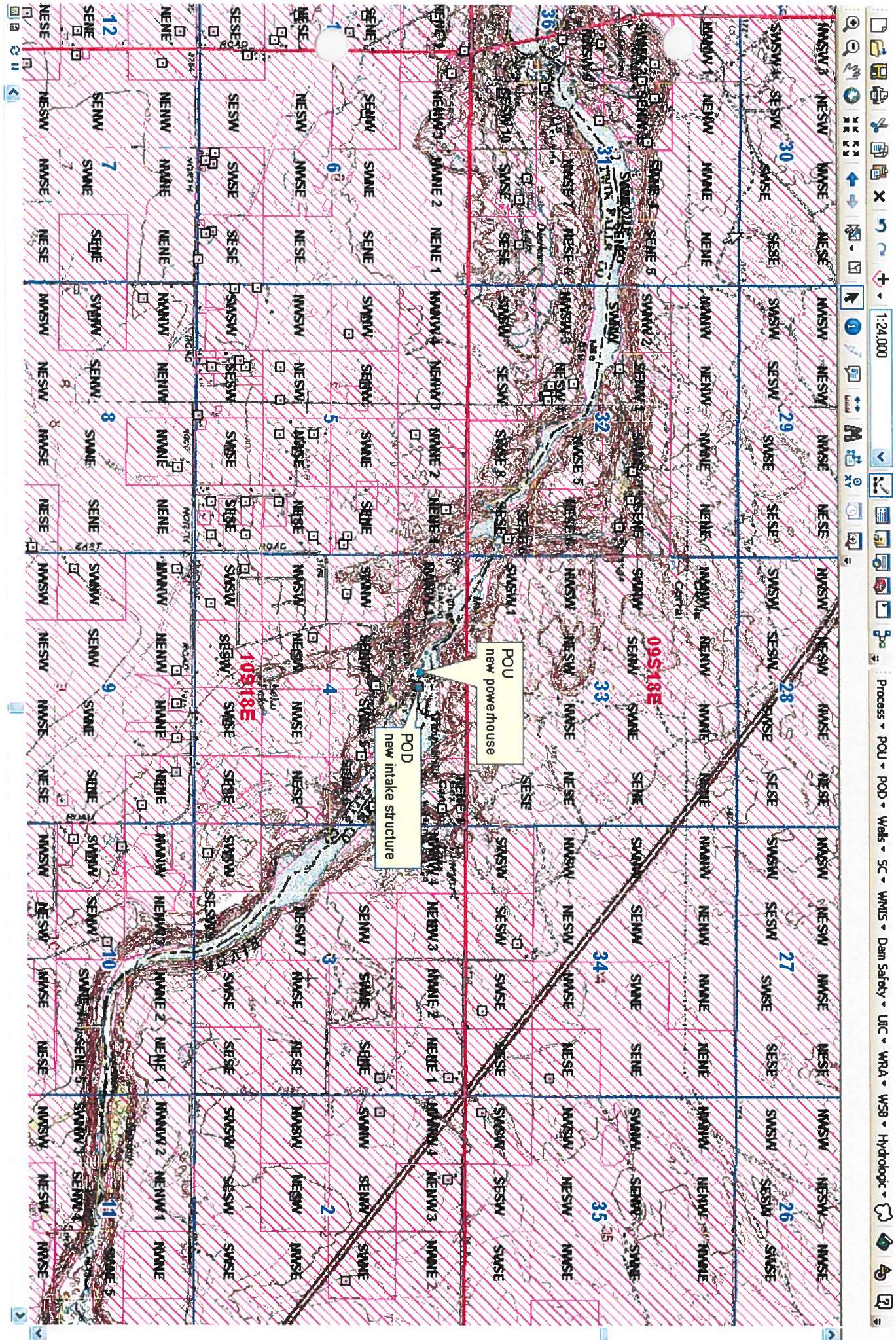


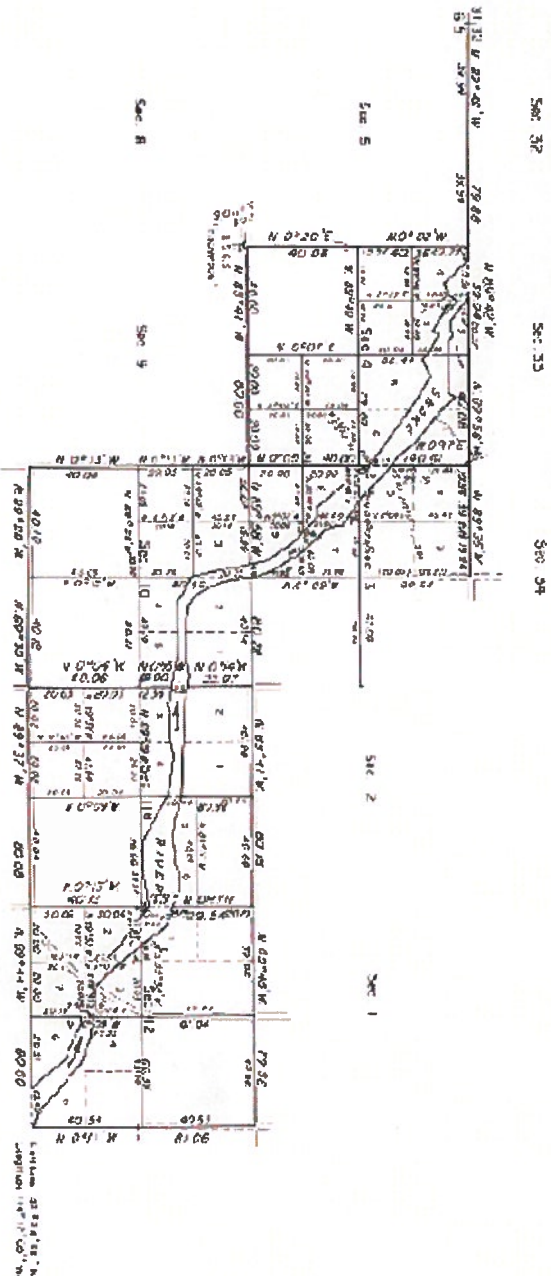
9		10		BY		CH		APPROVED	
NO	DATE	REVISION							
0	12/1/92	ISSUED FOR BD TRF 104	DS	KM	BP	CE	JRF		
1	1/11/93	ISSUED FOR FABRICATION TRF 104	DS	KM	BP	CE	JRF		
2	2/1/93	REVISED AS CIRCLED ISSUED FOR BD	PL	BP	CE		JRF		
3	2/20/93	REVISED AS CIRCLED ISSUED FOR ADDITIONAL NO 1	CT	KM	BP		JRF		
4	6/10/93	ISSUED FOR CONTRACT AWARD TRF-12	DS	CE			JRF		
5	11/1/95	FINAL DOCUMENT DRAWING AS DOCUMENTED BY TITLE FIELD OFFICE	CT						

PENSTOCK PROFILE

APR 25 1996





TOWNSHIP 10 SOUTH, RANGE 18 EAST OF THE BOISE MERIDIAN, IDAHO.
DEPENDENT RESURVEY & SUBDIVISION

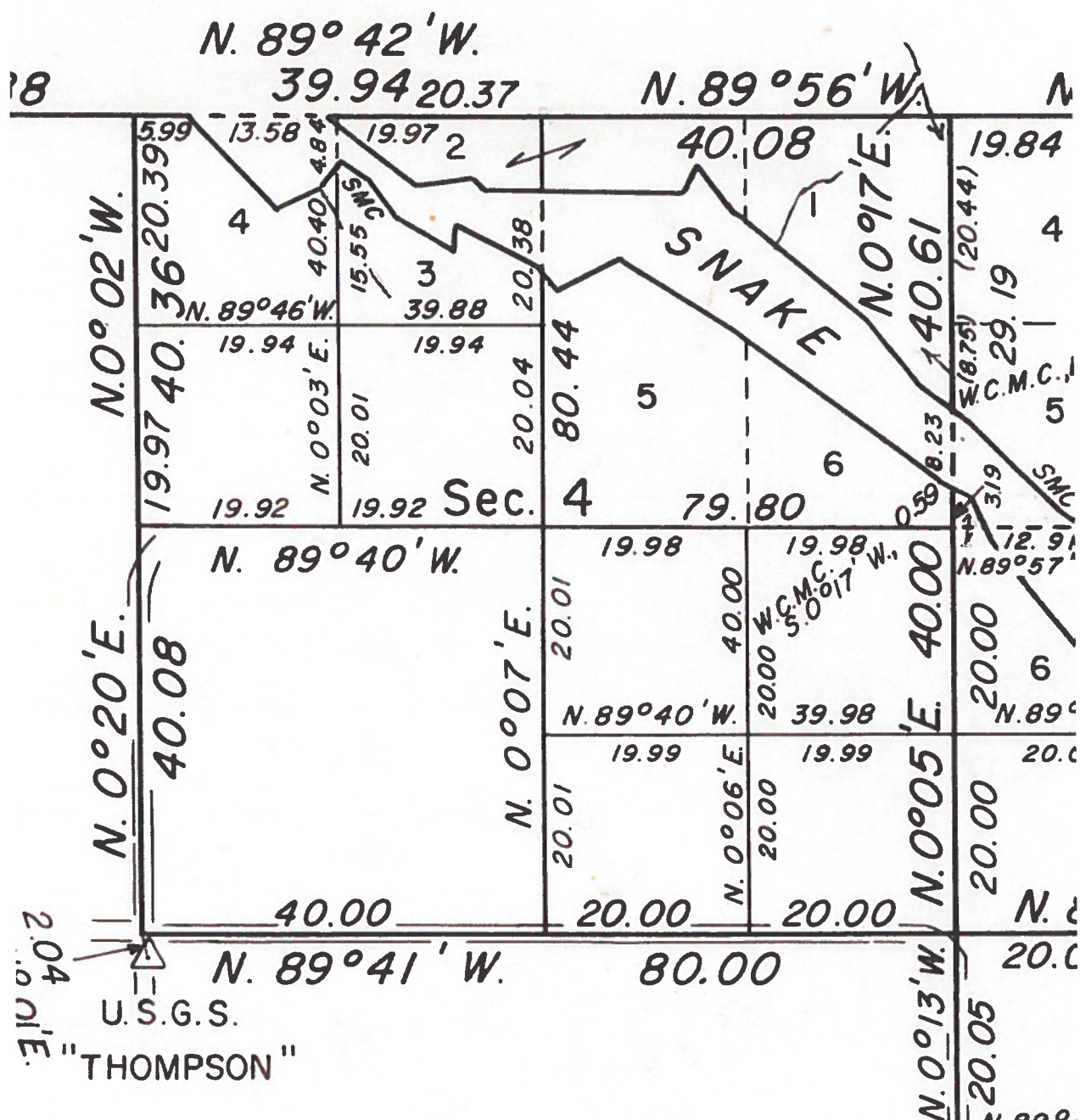
THIS STATE IS STRICTLY CONTROLLABLE BY THE NATIONAL
FUND, AND THE NATIONAL FUND IS THE ONLY ONE
WHICH IS NOT IN THE HANDS OF THE NATIONAL FUND.
THE NATIONAL FUND IS THE ONLY ONE WHICH IS NOT IN THE
HANDS OF THE NATIONAL FUND.

for the future

John B. Collins
Chief Technical Supervisor, FBI

[illegible]

Sec. 33






National Water Information System: Web Interface

[USGS Water Resources](#) (Cooperator Access)

Data Category:
 Geographic Area:

[News](#) - updated May 28,2013 

USGS Surface-Water Monthly Statistics for Idaho

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The statistics generated from this site are based on approved daily-mean data and may not match those published by the USGS in official publications. The user is responsible for assessment and use of statistics from this site. For more details on why the statistics may not match, [click here](#).

USGS 13090000 SNAKE RIVER NR KIMBERLY ID

 Available data for this site Time-series:

Twin Falls County, Idaho
 Hydrologic Unit Code 17040212
 Latitude 42°35'27", Longitude 114°21'37" NAD83
 Drainage area 22,340 square miles
 Gage datum 3,362.67 feet above NGVD29

Output formats

[HTML table of all data](#)
[Tab-separated data](#)
[Reselect output format](#)

00060, Discharge, cubic feet per second,												
YEAR	Monthly mean in cfs (Calculation Period: 1923-10-01 -> 2012-09-30)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1923										4,929	6,018	5,462
1924	4,492	5,920	4,378	1,279	389.2	395.9	397.5	411.1	431.0	439.7	4,138	3,886
1925	4,451	5,378	4,390	7,920	11,760	6,961	4,807	695.0	1,971	5,615	6,544	6,343
1926	5,172	5,971	5,216	2,985	424.6	428.0	444.6	458.2	491.5	482.6	622.2	1,321
1927	3,213	1,928	1,166	1,060	3,563	12,400	6,573	609.0	1,380	1,666	6,536	8,986
1928	7,799	7,356	6,916	5,494	16,520	6,608	856.6	635.9	1,112	5,669	3,856	4,105
1929	3,200	2,749	5,555	9,237	2,003	978.4	596.7	610.4	1,583	1,877	6,770	5,071
1930	5,991	2,877	739.6	508.3	514.8	507.8	499.8	611.4	891.0	1,300	3,483	4,647
1931	2,119	1,478	771.2	445.2	407.8	412.5	429.8	539.3	489.3	1,244	1,368	1,188
1932	1,235	1,742	1,266	438.8	438.6	453.2	517.3	457.4	542.0	847.7	971.8	1,782
1933	1,652	1,840	1,510	848.7	469.5	404.2	420.9	454.6	531.2	1,064	912.2	1,002
1934	994.7	921.1	500.8	388.9	372.0	379.9	387.8	408.5	514.7	545.6	536.2	730.5
1935	747.3	583.4	465.4	339.7	330.5	369.9	358.5	465.2	658.9	708.1	663.0	678.6
1936	793.5	776.9	466.1	433.3	4,290	6,995	491.8	580.0	754.0	746.5	672.3	631.9

1937	1,331	710.4	_,274	3,410	2,280	431.5	472.8	584.5	644.2	683.7	683.3	680.6
1938	699.3	549.5	491.5	6,426	5,818	6,169	5,127	400.0	503.2	958.6	946.5	1,210
1939	2,520	3,800	6,211	4,589	1,132	357.0	378.2	405.4	596.2	807.3	898.9	852.9
1940	832.3	922.4	544.5	1,711	504.2	366.9	397.5	502.0	693.7	888.6	1,032	873.6
1941	933.4	885.5	471.3	404.8	334.0	362.0	391.5	549.5	809.5	1,059	1,380	844.3
1942	955.3	1,621	1,247	4,136	2,365	580.4	375.4	542.1	794.4	1,800	1,834	2,590
1943	2,474	4,766	5,873	9,388	2,579	12,660	4,763	557.2	885.3	3,807	4,224	3,716
1944	3,221	1,061	3,649	5,271	1,382	6,486	601.6	505.9	603.3	904.6	1,176	1,027
1945	2,333	2,347	2,272	2,591	2,642	5,731	1,068	554.3	611.0	2,465	5,323	5,780
1946	6,580	5,761	5,729	10,010	1,802	3,989	425.3	504.0	687.8	2,538	3,670	3,985
1947	4,369	4,340	1,529	2,169	2,443	8,478	456.4	677.0	819.0	1,994	2,768	4,068
1948	4,059	2,811	2,059	5,284	5,885	8,958	723.7	673.7	733.7	1,216	1,655	4,600
1949	5,794	7,050	6,377	2,780	533.1	2,463	561.4	769.3	1,010	2,678	2,442	2,245
1950	3,253	4,193	5,447	8,448	5,124	8,674	5,299	870.3	1,040	3,166	3,515	4,389
1951	7,562	10,600	9,977	4,940	9,334	3,277	892.1	1,152	1,144	4,443	4,646	4,598
1952	5,839	9,461	10,230	11,000	7,752	5,620	1,526	800.5	734.4	1,735	736.2	1,417
1953	2,466	4,247	5,415	2,446	589.7	5,585	734.7	794.5	695.4	815.0	1,035	2,174
1954	2,424	2,481	2,914	3,204	2,211	903.4	821.7	792.6	659.2	2,155	2,558	2,192
1955	2,420	1,314	2,746	4,995	1,158	813.5	609.9	449.0	471.0	1,061	824.4	1,182
1956	3,208	4,435	6,402	7,825	7,006	11,570	674.5	719.0	804.6	2,540	2,247	2,544
1957	3,337	2,778	4,811	6,087	9,825	1,516	556.5	745.5	772.5	1,445	1,038	1,841
1958	2,600	2,923	3,426	3,487	1,317	701.7	618.3	663.6	713.3	1,353	1,109	1,110
1959	1,141	1,338	1,419	675.2	476.6	365.6	383.6	464.6	692.8	2,020	1,259	1,036
1960	1,150	986.9	872.2	1,642	342.6	354.1	592.7	606.1	664.6	603.4	670.9	771.5
1961	814.5	870.0	584.7	561.3	453.3	310.6	347.5	384.1	408.8	696.0	752.4	768.9
1962	841.6	1,186	4,324	3,927	3,965	915.3	490.4	783.0	875.1	1,896	1,407	1,912
1963	1,653	1,399	1,378	1,203	2,664	9,582	607.9	709.9	718.7	656.3	1,400	1,969
1964	1,916	1,733	1,713	5,054	7,369	8,483	676.1	751.4	764.0	1,338	3,248	3,635
1965	5,036	10,910	10,420	8,260	5,399	842.7	999.0	859.3	758.9	2,294	3,894	9,105
1966	8,558	7,844	4,454	491.3	399.9	391.1	555.0	716.9	740.7	656.8	727.0	896.8
1967	930.4	796.3	725.8	584.3	881.5	3,564	1,361	694.3	759.7	1,238	2,702	4,594
1968	4,286	4,928	1,409	455.8	386.2	1,612	631.1	669.7	833.0	1,649	2,982	4,556
1969	9,080	9,089	9,482	5,256	2,707	412.2	495.2	633.0	744.3	888.2	711.3	1,798
1970	3,593	3,135	1,112	4,208	8,456	5,518	1,681	482.0	781.0	2,691	3,554	6,465
1971	8,570	8,959	5,840	18,830	15,460	8,913	3,330	553.4	1,087	9,540	10,980	9,632
1972	9,556	10,260	10,050	15,670	7,141	7,899	618.5	748.1	977.9	6,947	8,642	9,343
1973	9,001	9,077	7,898	6,143	541.3	381.7	400.6	423.3	452.8	757.5	1,944	3,665
1974	3,953	7,454	12,280	15,330	11,110	6,691	2,571	605.5	650.5	1,798	3,270	5,772
1975	7,148	7,570	9,702	14,170	12,930	5,213	408.4	501.9	998.6	3,149	4,981	7,780
1976	8,239	8,896	10,810	17,280	16,070	7,415	398.8	619.1	1,224	3,354	4,005	5,614
1977	4,378	3,551	2,838	484.0	343.8	357.7	384.5	405.7	408.4	386.4	609.8	954.1
1978	1,399	1,797	2,732	5,713	4,818	496.9	617.5	797.7	1,356	2,159	4,224	4,681
1979	6,602	6,318	8,375	6,410	549.9	428.6	534.0	1,958	955.2	484.2	751.9	870.3

1980	1,018	849.9	1,180	2,615	6,985	8,553	512.2	651.8	624.9	696.2	2,528	3,043
1981	2,997	1,639	1,315	3,762	1,808	6,118	609.4	654.5	1,290	1,923	1,701	1,635
1982	1,872	2,706	5,401	14,510	13,290	4,401	2,527	1,816	2,465	5,284	10,460	11,070
1983	10,660	8,245	4,499	8,995	16,280	12,640	6,180	1,875	2,274	8,686	12,120	12,030
1984	14,850	7,482	5,025	14,370	18,230	19,890	4,585	2,938	2,385	10,450	13,240	9,075
1985	11,510	9,780	7,701	9,699	5,779	1,760	1,430	1,819	1,872	1,515	3,459	4,902
1986	5,725	6,736	14,300	16,840	17,100	12,580	1,421	1,449	2,255	9,643	8,050	10,870
1987	7,958	2,721	1,567	936.1	446.4	541.7	1,079	1,104	1,554	1,943	1,249	1,124
1988	1,115	1,066	437.9	259.1	309.8	662.7	912.2	955.4	549.9	622.9	1,088	991.1
1989	967.8	1,059	830.0	369.0	306.4	607.6	1,103	1,129	914.9	775.0	1,770	1,778
1990	1,224	1,035	353.4	270.6	318.6	359.8	712.1	681.4	714.6	420.7	1,050	935.9
1991	1,757	950.9	331.8	249.1	293.5	318.8	780.7	902.4	600.3	755.4	942.5	1,301
1992	1,458	960.8	482.6	276.0	260.8	276.9	314.9	335.8	394.1	669.2	877.3	1,131
1993	1,224	768.9	1,027	701.8	1,130	5,475	1,568	1,479	596.6	793.3	1,875	2,874
1994	2,848	2,323	2,446	2,049	1,908	1,872	1,911	901.4	600.3	580.5	757.5	864.4
1995	1,028	802.3	505.1	447.2	6,630	8,408	2,029	1,990	1,667	648.1	2,643	3,408
1996	4,724	7,805	17,400	14,360	5,968	7,819	2,535	2,056	985.6	729.8	2,563	3,812
1997	9,206	18,330	19,430	13,240	8,738	24,150	3,670	4,261	7,039	7,028	5,966	8,169
1998	6,980	7,328	7,388	9,314	10,850	9,575	2,811	2,056	2,113	2,322	4,818	8,335
1999	8,604	8,116	7,857	10,080	10,410	11,800	1,999	2,086	1,784	2,469	4,090	4,825
2000	7,033	3,153	3,341	4,908	774.2	878.5	1,972	2,044	1,218	1,264	1,160	1,024
2001	906.7	905.2	819.4	489.2	1,055	379.0	349.6	379.9	397.1	511.5	943.7	978.9
2002	891.6	830.7	828.2	234.6	232.9	267.4	452.3	605.2	632.3	730.5	806.7	883.8
2003	800.1	876.6	825.8	458.0	467.1	475.4	326.1	342.6	374.1	372.0	724.5	819.1
2004	764.3	795.1	797.7	512.1	482.4	396.0	310.8	322.7	333.4	448.6	803.5	898.7
2005	857.9	841.8	740.3	453.7	429.2	872.8	1,881	676.8	336.6	766.8	935.5	544.7
2006	980.5	2,700	2,621	9,873	5,943	660.9	2,904	1,351	622.1	776.5	757.6	2,204
2007	3,158	2,142	1,274	751.1	468.7	896.9	1,935	997.5	512.1	511.0	520.2	837.7
2008	855.8	879.5	740.6	454.4	496.1	513.0	2,431	2,405	597.4	588.0	920.8	1,010
2009	1,055	957.1	922.7	8,475	5,466	6,725	5,095	1,234	725.0	1,571	1,551	2,535
2010	3,007	2,664	1,647	811.9	2,831	510.7	1,090	1,059	797.8	989.7	1,115	852.6
2011	4,171	4,644	3,799	10,500	15,710	13,640	4,490	4,363	5,430	6,260	6,153	6,195
2012	4,520	4,526	4,775	4,435	713.9	2,720	1,888	1,147	380.3			
Mean of monthly Discharge	3,770	3,860	3,970	4,940	4,270	4,160	1,420	939	1,010	2,090	2,800	3,330

** No Incomplete data have been used for statistical calculation

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URL: <http://waterdata.usgs.gov/id/nwis/monthly?>



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Available data for this site Time-series: Daily data GO

► Site Information

Discharge records furnished by [Idaho Power](#) and reviewed by U.S. Geological Survey beginning April 2001.

This station managed by the **Boise Field Office**. dott@usgs.gov; 208 387-1335.

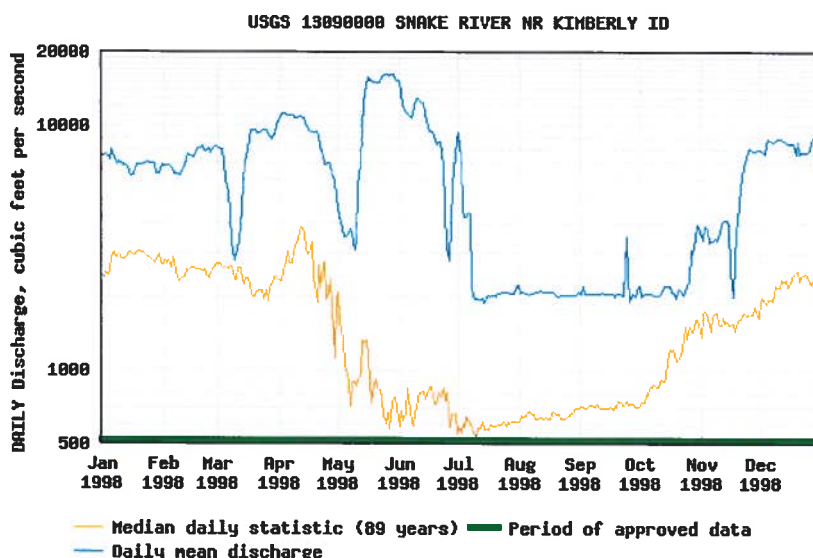
Available Parameters	Period of Record	Output format	Days (364)
☐ All 2 Available Parameters for this site		☐ Graph	-- or --
☒ 00060 Discharge(Mean)	1923-10-01 2012-09-30	☒ Graph w/ stats	Begin date 1998-01-01
☒ 00010 Temperature, water(Max.,Min.,Mean)	1997-06-08 2004-09-30	☐ Graph w/ meas	End date 1998-12-31
		☐ Graph w/ (up to 3) parms NEW	
		☐ Table	
		☐ Tab-separated	

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Summary of all available data for this site

Instantaneous-data availability statement

Discharge, cubic feet per second



Add up to 2 more sites and replot for "Discharge, cubic feet per second"

☒ Add site numbers

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P00060 DD01

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Available data for this site Time-series: Daily data

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► Site Information

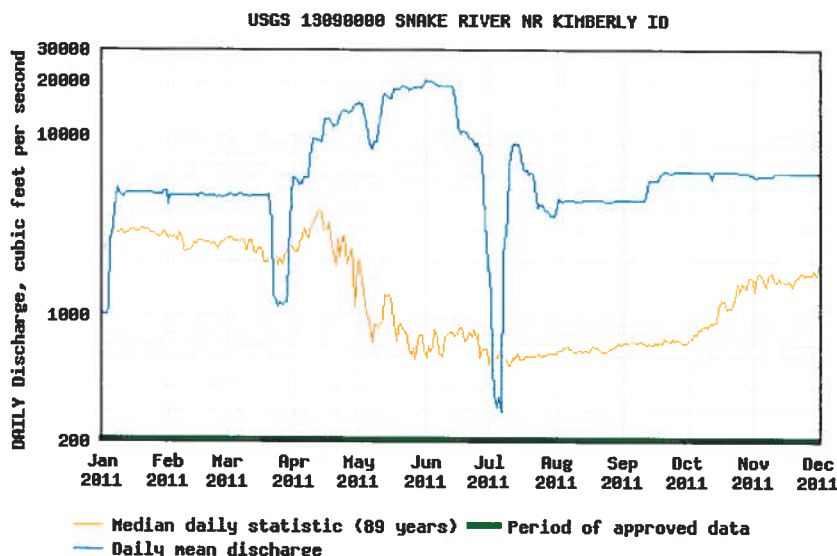
Discharge records furnished by [Idaho Power](#) and reviewed by U.S. Geological Survey beginning April 2001.

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Available Parameters	Period of Record	Output format	Days (334)
☐ All 2 Available Parameters for this site		☐ Graph	-- or --
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		☐ Graph w/ (up to 3) parms NEW	End date
		☐ Table	2011-12-01
		☐ Tab-separated	
			GO

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Discharge, cubic feet per second



Add up to 2 more sites and replot for "Discharge, cubic feet per second"

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P00060 DD01

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