INS 1

Application No. INS 70251 FW

Permit No. _____

Certificate No. Retained

Stream Index, Page No. 6
Rock or Boundary

Name OR Dept. of Fish & Wildlife

By Randy Fisher, Director

Address PO Box 59 or 2901 SW First Avenue

Portland, OR 97207

Date filed March 21, 1990

Priority _____

Action suspended until _____

Return to applicant _____

Date of approval _____

FEES PAID

Date	Amount	Receipt No.
	Cert. Fee	

FEES REFUNDED

Date	Amount	Check No.

ASSIGNMENTS

Date	To Whom	Address	Volume	Page

CONSTRUCTION

Date for beginning _____

Date for completion _____

Extended to _____

Date for application of water _____

Extended to _____

PROSECUTION OF WORK

Form "A" filed _____

Form "B" filed _____

Form "C" filed _____

FINAL PROOF

Blank mailed _____

Proof received _____

Date certificate issued _____

REMARKS

SP*70900-119

Instream Application No. 70251 Certificate No. _____

STATE OF OREGON

WATER RESOURCES DEPARTMENT

Application for Instream Water Right by a State Agency

There is no fee required for this application.

A. Applicant: Randy Fisher (Director) for Oregon Dept. of Fish & Wildlife (Agency)

Mailing Address: 2501 S.W. First Ave., P. O. Box 59

Portland (City), OR (State) 97207 (Zip) 229-5400 Ext. 438 (Phone No.)

B. Applicant: _____ (Director) for _____ (Agency)

Mailing Address: _____

_____ (City), _____ (State) _____ (Zip) _____ (Phone No.)

C. Applicant: _____ (Director) for _____ (Agency)

Mailing Address: _____

_____ (City), _____ (State) _____ (Zip) _____ (Phone No.)

1. The name of stream or lake of the proposed instream water right is Rock Creek, a tributary or source (if lake) of John Day River.

2. The public use(s) this instream water right is based upon include:
Upstream passage of adult and juvenile fish including summer steelhead and resident rainbow trout.

Instream Application No. 70251 Certificate No. _____

3. The amount of water needed by month and/or year for each category of public use. If more space is needed, use a separate sheet of paper.

List quantities in either cfs, acre-feet, or lake elevation above Mean Sea Level

Use(s)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Migration of Anadromous fish and resident fish												
	34	57	57	57	57	34	34	34	34	34	34	34

4. The reach of the stream identified for an instream water right is from the:

upstream end at USGS Guaging station @ White Park (Station #14047390)
River Mile (if known) RM 40.0
within the NE 1/4 of the SW 1/4 of
Section 36 Township 3S Range 22E W.M.,
County Gilliam.

downstream end at The mouth
River Mile (if known) 0.0
within the NE 1/4 of the SW 1/4 of
Section 11 Township 1N Range 19E W.M.,
County Gilliam.

Lake identified for an instream water right is
within the _____ 1/4 of the _____ 1/4 of
Section _____ Township _____ Ra V.M.,
County _____.

method allowed by Rule 635-400-015(9) MM

5. Method(s) used to determine the requested amounts:
Flow required to operate proposed fish passage facilities during migration period for adults and juveniles. Required flows are based on engineering determinations using USGS data and passage facility design.

Instream Application No. 70251 Certificate No. _____

6. When were the following state agencies notified of the intent to file for the instream water right?

Department of Environmental Quality	Date	2-7-90
Department of Fish and Wildlife	Date	
Parks and Recreation Division	Date	2-7-90

7. If possible, include recommendations for measuring locations or methods:

Measure @ USGS station 14047390 and by staff gauge @ the mouth RM 0.0

8. If possible, include recommendations for assisting the Water Resources Department (WRD) in measuring and monitoring procedures:

Local watermaster will measure w/ periodic assistance from ODFW. Monitoring plan to be developed.

9. If possible, include other recommendations for methods or conditions necessary for managing the water right to protect the public uses (see OAR 690-77-020 (5)(c)):

Monitoring plan to be developed.

Remarks: The Department of Fish and Wildlife is aggressively persuing the completion of a series of passage facilities at eight existing irrigation diversion structures. Once adult steelhead have access to the upper reaches of Rock Creek we expect an annual return of 1000 adults. Upstream passage of juvenile fish will be a critical component of the passage facilities function.

This application must be accompanied by a basin map with the applicable lake or stream reach identified.

An instream water right may be allowed for an instream beneficial use of water subject to existing water rights with an effective date prior to the filing date of this application.

This type of beneficial use is for the benefit of the public and a certificate issued confirming an instream water right shall be held in trust by the Water Resources Department for the people of the State of Oregon, pursuant to ORS 537.341.

3/21/90	Nancy M. MacHugh
Date	Signature
Oregon Dept. of Fish & Wildlife	Assistant Director
Agency	Title

Instream Application No. 70251 Certificate No. _____

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return them for:

_____

_____

_____

In order to retain its priority, this application must be returned to the Water Resources Department with corrections on or before _____, 19 ____.

Date: _____, 19 ____.

_____
Water Resources Department

_____
Title

This document was first received at the Water Resources Department in Salem, Oregon, on the 21st day of March, 19 90, at 2:50 o'clock P. M.

WATER RESOURCES DEPARTMENT
3850 Portland Road NE
SALEM, OREGON 97310

Date: November 25, 1995

OREGON WATER RESOURCES DEPARTMENT

SATISFACTORY REPORT OF TECHNICAL REVIEW

FOR AN INSTREAM WATER RIGHT APPLICATION

OBJECTIONS TO THE PROPOSED WATER INSTREAM WATER RIGHT TECHNICAL REVIEW REPORT, AS DESCRIBED BELOW, MUST BE RECEIVED IN WRITING BY THE OREGON WATER RESOURCES DEPARTMENT, 158 12th ST NE, SALEM, OREGON 97310, ON OR BEFORE 5 PM: February 1, 1995

1. APPLICATION FILE NUMBER - IS 70251

2. APPLICATION INFORMATION

Application name/address/phone:

Oregon Department of Fish and Wildlife
P.O. Box 59
Portland, Oregon 97207
503-229-5400

Date application received for filing and/or tentative date of priority: 3/21/1990

Source: ROCK CR tributary to JOHN DAY R

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT.

The amount of water (in cubic feet per second) requested by month:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1st½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
2nd½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHITE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

3. TECHNICAL REVIEW

The application is complete and free of defects.

The proposed use is not restricted or prohibited by statute.

The following supporting data has been submitted by the applicant:

(a) Fish and Wildlife Resources of the John Day Basin, Oregon, and Their Water Requirements; September, 1979.

(b) Determining Minimum Flow Requirements for Fish, ODFW Report January 20, 1984.

(c) Developing and Application of Spawning Velocity and Depth Criteria for Oregon Salmonids, Alan K. Smith, Transactions of the American Fisheries Society, April 1973.

(d) Determining Stream Flows for Fish Life, Oregon State Game Commission Report, March 1972.

An assessment with respect to conditions previously imposed on other instream water rights granted for the same source has been completed.

An assessment with respect to other Commission administrative rules, including but not limited to the applicable basin program has been completed.

An evaluation of the information received from the local government(s) regarding the compatibility of the proposed instream water use with land use plans and regulations has been completed.

The level of instream flow requested is based on the methods of determining instream flow needs that have been approved administrative rule of the agency submitting this application.

The evaluation of the estimated average natural flow available from the proposed source during the time(s) and in the amounts requested in the application is described below. The recommended flows take into consideration planned uses and reasonably anticipated future demands for water from the source for agricultural and other uses as required by the standards for public interest review:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1st½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	
2nd½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	REQUESTED
	36.0	77.7	125	116	32.0	11.0	4.7	3.09	2.47	2.72	6.67	21.8	AVG FLOW
1st½	35.0	35.0	50.0	50.0	50.0	35.0	20.0	10.0	10.0	10.0	20.0	35.0	
2nd½	35.0	50.0	50.0	50.0	50.0	35.0	10.0	10.0	10.0	10.0	20.0	35.0	MIN FLOW

4. REPORT CONCLUSIONS

The proposed water use, as conditioned, passed this technical review. The information contained in the application along with the supporting data submitted by the applicant indicate that the flow levels set out in this report are necessary to protect the public use.

The supporting data states that the recommended flows are necessary to meet the biological requirements for spawning and rearing of salmonids and resident game fish. Consideration of habitat type, stream depth and water velocity were considered by the applicant in development of the flow levels. (*See Determining Minimum Flow Requirements for Fish, ODFW Report January 20, 1984.*) The recommended flow volumes are necessary to ensure appropriate levels of dissolved oxygen, turbidity, pH and temperature.

The listed flows would provide desirable levels of natural fish production for fishery management purposes.

5. PROPOSED CERTIFICATE CONDITIONS

[The following proposed conditions will apply to water use and will appear on the face of the certificate.]

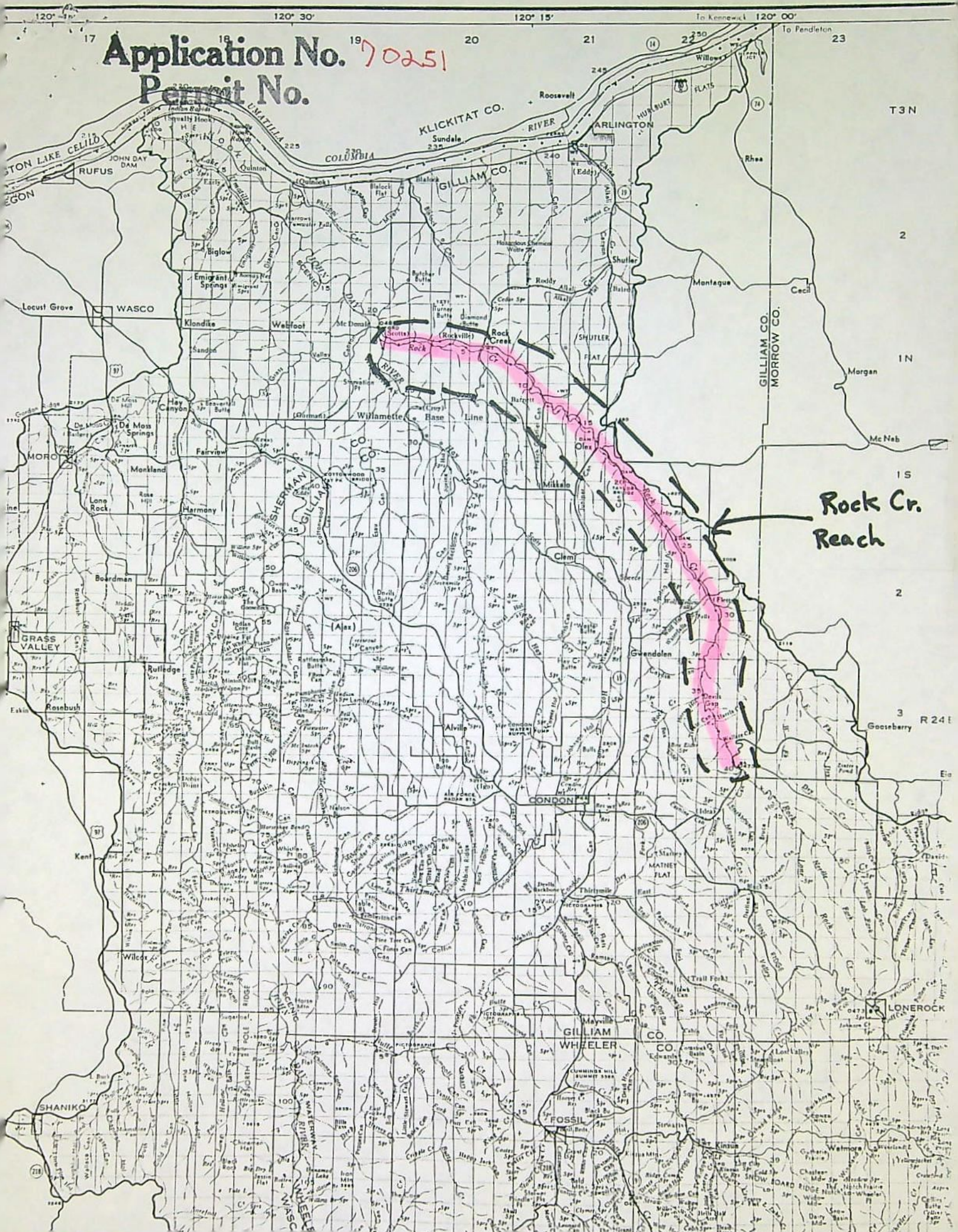
1. The right is limited to not more than the amounts, in cubic feet per second, during the time periods listed below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34	57	57	57	32	11	4.7	3.09	2.47	2.72	6.67	21.8

2. The water right holder shall measure and report the in-stream flow along the reach of the stream or river described in the certificate as may be required by the standards for in-stream water right reporting of the Water Resources Commission.

3. This instream right shall not apply to permits for appropriation for domestic or livestock use or to use of water legally stored or legally released from storage.

4. The instream flow allocated pursuant to this water right is not in addition to other instream flows created by a prior water right or designated minimum perennial stream flow.


Application No. 70251
Permit No.
Rock Cr. Reach
Rock Creek
Rockville
SHUTLER FLAT
Willamette
Base Line
Olex
Millale
Clem
Gwendolen
Alvillo
CONDON
Gooseberry
Rutledge
Rosebush
Boardman
GRASS VALLEY
Kent
Wilcox
SHANIKO
FOSSIL
LONEROCK
Mayville
Thirtymile
MATNEY FLAT
Trail Fork
Monkland
Fairview
Harmony
Lone Rock
De Moss Springs
Hay Canyon
Webfoot
Klondike
Biglow
Emigrant Springs
Locust Grove
WASCO
MORO
RUFUS
JOHN DAY DAM
ARLINGTON
Roosevelt
Sundale
Quinton
Rhea
Shutler
Montague
Cecil
Morgan
McNab
Willows
FLATS
HUNTZINGER
KLICKITAT CO.
GILLIAM CO.
MORROW CO.
SHERMAN CO.
WHEELER CO.
COLUMBIA RIVER
JOHN DAY SCENIC
To Kennewick
To Pendleton
T3N
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R24E

Oregon Water Resources Department
Water Rights/Adjudication Section

Water Right Application Number: IS 70251

Proposed Final Order

Summary of Recommendation: The Department recommends that the attached draft certificate be issued with conditions.

Application History

On 3/21/90, the Oregon Department of Fish and Wildlife submitted an application to the Department for the following instream water right certificate.

Source: ROCK CR tributary to JOHN DAY R

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT

The amount of water (in cubic feet per second) requested by month:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1st½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
2nd½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHITE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

The Department mailed the applicant notice of its Technical Review on November 25, 1995, determining that the requested flows exceeded the estimated average natural flow during some months but that flows at a reduced amount, with exceptions for human and livestock consumption, are appropriate. The objection period closed February 1, 1995. Objections and comments were received (from A DAVID CHILDS, OREGON DEPT OF FISH AND WILDLIFE, WATER FOR LIFE, WATERWATCH OF OREGON).

The following supporting data was submitted by the applicant:

(a) Engineering determined by using USGS data and passage facility design.

(b) A letter dated April 5, 1996, stating that the flows requested in this application are the minimum amount necessary to restore, protect and enhance populations and habitats of native wildlife species at self-sustaining levels

In reviewing applications, the Department may consider any relevant sources of information, including the following:

- comments by or consultation with another state agency
- any applicable basin program
- any applicable comprehensive plan or zoning ordinance
- the amount of water available
- the proposed rate of use
- pending senior applications and existing water rights of record
- the Scenic Waterway requirements of ORS 390.835
- applicable statutes, administrative rules, and case law
- any comments received

An assessment with respect to conditions previously imposed on other instream water rights granted for the same source has been completed.

An evaluation of the information received from the local government(s) regarding the compatibility of the proposed instream water use with land use plans and regulations has been completed.

The level of instream flow requested is based on the methods of determining instream flow needs that have been approved by administrative rule of the agency submitting this application.

Findings of Fact

The John Day Basin Program **allows** the proposed use.

Senior water rights exist on this source or on downstream waters.

The source of water is not above a State Scenic Waterway.

The source of water is not withdrawn from appropriation by order of the State Engineer or legislatively withdrawn by ORS 538.

The estimated average natural flow for the lower end of the requested reach is as follows (in cubic feet per second):

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
36.0	77.7	125	116	32.0	11.0	4.7	3.09	2.47	2.72	6.67	21.8

Water is **NOT** available for further appropriation (at a 50 percent exceedance probability) for the period **May, June, July, August, September, October, November and December.**

The flows available for further appropriation are shown below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
35.82	77.5	123.8	110.8	24.22	1.53	-8.0	-7.41	-4.57	-0.43	6.48	21.62

Conclusions of Law

Under the provisions of ORS 537.153, the Department must

> presume that a proposed use will not impair or be detrimental to the public interest if the proposed use is allowed in the applicable basin program established pursuant to ORS 536.300 and 536.340 or given a preference under ORS 536.310(12), if water is available, if the proposed use will not injure other water rights and if the proposed use complied with rules of the Water Resources Commission.

The proposed use requested in this application is allowed in the John Day Basin Plan.

No preference for this use is granted under the provisions of ORS 536.310(12).

The proposed use will not injure other water rights.

The proposed use complies with rules of the Water Resources Commission.

The proposed use complies with the State Agency Agreement for land use.

The proposed instream flows do not fully appropriate this source of water year round. Water is available for additional storage.

While the proposed use meets the other tests, the full amount of water requested is not available during some months of the year.

Water is not available for the proposed use at the amount requested during May, June, July, August, September, October, November and December because the unappropriated water available is less than the amounts requested during these months.

For these reasons, the presumption set forth in ORS 537.153, as discussed above, has not been established. The application therefore has been processed without the statutory presumption.

"When instream water rights are set at levels which exceed current unappropriated water available the water right not only protects remaining supplies from future appropriation but establishes a management objective for achieving the amounts of instream flows necessary to support the identified public uses." OAR 690-77-015(2).

"The amount of appropriation for out-of-stream purposes shall not be a factor in determining the amount of an instream water right." "The amount allowed during any time period for the water right shall not exceed the estimated average natural flow ..." (excerpted from OAR 690-77-015 (3) and (4)).

Because the proposed use exceeds the available water, it can not be presumed to be in the public interest. However, under the direction of OAR 690-77-015 (2)(3) and(4), the proposed use is in the public interest up to the limits of the estimated average natural flow.

Oregon law allows certain uses of water to take precedence over other uses in certain circumstances. When proposed uses of water are insufficient for all who desire to use them, preference shall be given to human consumption purposes over all other uses and for livestock consumption over any other use (excerpted from ORS 536.310 (12)).

The Department therefore concludes that

- the proposed use, as limited in the draft certificate, will not result in injury to other water rights,
- the proposed use, as limited in the draft certificate, will not impair or be detrimental to the public interest as provided in ORS 537.170.
- the proposed use, as limited in the draft certificate, for purposes of water distribution, this instream right shall not have priority over human or livestock consumption.
- the flows are to be measured at the lower end of the stream reach to protect necessary flows throughout the reach.
- the stream flows listed below represent the minimum flows necessary to support the public use.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	34	57	57	57	57	11	4.7	3.09	2.47	2.72	6.67	21.8
1996	38.50	79.20	120	88.4	89.5	14	3.13	1.54	1.61	2.74	8.92	20.60

7025

taken from IR

new 50% exceedance

Recommendation

The Department recommends that the attached draft certificate be issued with conditions.

DATED AUGUST 20, 1996

for

Steven P. Applegate
Administrator
Water Rights and Adjudications Division

Protest Rights

Under the provisions of ORS 537.153(6) or 537.621(7), you have the right to submit a protest against this proposed final order. Your protest *must* be in writing, and must include the following:

- Your name, address, and telephone number;
- A description of your interest in the proposed final order, and, if you claim to represent the public interest, a precise statement of the public interest represented;
- A detailed description of how the action proposed in this proposed final order would impair or be detrimental to your interest;
- A detailed description of how the proposed final order is in error or deficient, and how to correct the alleged error or deficiency;

- Any citation of legal authority to support your protest, if known; and
- If you are not the applicant, the $200 protest fee required by ORS 536.050.
- Proof of service of the protest upon the applicant.

Your protest must be received in the Water Resources Department no later than October 4, 1996.

After the protest period has ended, the Director will either issue a final order or schedule a contested case hearing. The contested case hearing will be scheduled *only* if a protest has been submitted *and* if

- upon review of the issues the director finds that there are significant disputes related to the proposed use of water, *or*
- the applicant requests a contested case hearing within 30 days after the close of the protest period.

DRAFT

STATE OF OREGON

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

STATE OF OREGON
WATER RESOURCES DEPARTMENT
SALEM, OREGON 97310

The specific limits for the use are listed below along with conditions of use.

Source: ROCK CR tributary to JOHN DAY R

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHITE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

The right is established under Oregon Revised Statutes 537.341.

The date of priority is 3/21/90.

The following conditions apply to the use of water under this certificate:

1. The right is limited to not more than the amounts, in cubic feet per second, during the time periods listed below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34	57	57	57	57	11	4.7	3.09	2.47	2.72	6.67	21.8

2. The water right holder shall measure and report the in-stream flow along the reach of the stream or river described in the certificate as may be required by the standards for in-stream water right reporting of the Water Resources Commission.

3. For purposes of water distribution, this instream right shall not have priority over human or livestock consumption.

4. The instream flow allocated pursuant to this water right is not in addition to other instream flows created by a prior water right or designated minimum perennial stream flow.

5. The flows are to be measured at the lower end of the stream reach to protect necessary flows throughout the reach.

Witness the signature of the Water Resources Director affixed this 1st day of _____, 19__.

_____
Water Resources Director

Recorded in State Record of Water Right Certificate number _____.

IS70863

BEFORE THE WATER RESOURCES DEPARTMENT OF OREGON
WATER RIGHTS DIVISION

In the Matter of Surface Water Application IS 70251 in the Name of Oregon Water Resources Department for Instream Water Use, Gilliam County	PROTEST TO PROPOSED FINAL ORDER

Protestant A. David Childs, in accordance with ORS 537.153 (6) and OAR 690-77-043, submits the following Protest to Proposed Final Order for Application IS 70251.

I. INTRODUCTION

Protestant's address is 1806 Thompson Street, The Dalles, Oregon 970558; phone number (541) 298-1499. Protestant is a landowner in the Rock Creek subbasin, where the instream water right has been applied for.

Protestant asserts that the Proposed Final Order ("PFO") by the Water Resources Department ("WRD" or "Department") is defective and in error and that there are elements of the water right as approved that will impair or be detrimental to the public interest, based on the facts and issues set forth below. The action proposed in the Proposed Final Order if not modified will result in excessive and unrealistic instream flows, set at quantities that do not and have not historically flowed in Rock Creek to the detriment of the Protestant.

The Protestant's interest as a landowner and user of Rock Creek for recreational and aesthetic purposes would be impaired by instream water rights granted in excessive amounts unrelated to the true flows of the stream. The Protestant is interested in the restoration of Rock Creek and possible upstream reservoir development for stream enhancement. In order for restoration work to be carried forward for Rock Creek, instream water rights must reflect the true conditions in the stream and actual flows available. If excessive quantities are granted that are not attainable, the restoration of Rock Creek will suffer as a result and flows would not be available for possible storage projects for stream enhancement.

II. ODFW'S APPLICATION IS DEFECTIVE AND SHOULD BE REJECTED

The application filed by the Oregon Department of Fish & Wildlife ("ODFW") should be rejected by the WRD due to the deficiencies set forth below.

A. METHOD USED BY ODFW IS UNACCEPTABLE METHODOLOGY FOR INSTREAM WATER RIGHT APPLICATION

ODFW's application under part 5. as to the "Method(s) used to determine the requested amounts" states: "Flow required to operate *proposed* fish passage facilities during migration period for adults and juveniles. Required flows are based on engineering determi (sp)

using USGS data and passage facility design." (emphasis added). The flows requested are not based on any acceptable methodology for determining a flow rate for an instream water right application under the rules of the applicant agency, the Oregon Department of Fish & Wildlife. See OAR 635-400-015 for the "Instream Flow Measurement Methodologies" that are acceptable.

The Water Resources Department's rules governing instream applications require that "all applications for instream water rights shall be based on methods of determining instream flows needs that have been approved by administrative rule of the agencies submitting the applications." OAR 690-77-020 (3). Therefore the application submitted is defective and should be rejected by the Department since the application is based on a *proposed* fish passage facility.

Any assertion that ODFW's request represents a methodology acceptable under OAR 635-400-015 (9) is not valid. First, there is no information or data in the WRD file to indicate that ODFW conducted any "Site-specific studies...to determine flows necessary for...maintaining passage for fish migration or other specific requirements." The only information in support of ODFW's specific request is a letter from Al Mirati of ODFW to Michael Mattick of WRD dated November 15, 1994 with attached material regarding a proposed fishway in response to a WRD information request (Exhibit 1). That Exhibit reveals that the sole basis for the requested flows is a proposed "functional design for the Harper Dam Fishway on Rock Creek" (Exhibit 1 at 2). A design for a proposed fishway is not the same as a site-specific study, it is simply a proposed design for a fishway and nothing more.

Secondly, the information submitted on the proposed design shows that "the fishway is designed to accommodate passage" when adult steelhead are expected to be present "during the months of February through May..." (Exhibit 1 at 5). Therefore, at most, the requested flows are only valid for the months of February through May and there is no supporting data whatsoever for the months of June through January. Moreover, the design information makes it clear that 34 cubic feet per second is the "minimum" flow supposedly needed for the fishway to function. Since ORS 537.332 (2) sets forth that the standard for instream water rights is the "minimum quantity of water necessary to support the public use requested by an agency", 34 cfs is the highest amount that should be granted.

The requested flows are also obviously defective and the "methodology" is flawed, however, since the "*proposed*" fish passage facility was never constructed. Instead of the designed fishway on which the instream water right application is based, the fish ladder constructed at Harper Dam (aka Baird Dam) is of a different design. The fishway actually constructed does not require flows anywhere near even the 34 cfs minimum requested by ODFW. See Exhibit 2, Photocopy of picture of Harper fish ladder taken on August 31, 1996 by the Protestant.

B. BASIN INVESTIGATION FLOW REQUIREMENT NOT FOLLOWED BY ODFW

As noted above, ODFW's application is based solely on proposed design flows of a fishway that was not constructed. The flow requests were not based on the John Day River Basin Investigation. ODFW's own rules require that "Instream flow requirements in the OSGC Environmental Basin Investigation Reports shall be used to apply for instream water rights for waterways listed in the reports." (emphasis added; OAR 635-400-015 (13)). This mandatory requirement was not followed by ODFW. The failure by ODFW to follow the requirement contained in its rules to use the Basin Investigation Reports again results in a application whereby the agency failed to follow the "methods of determining instream flow needs that have been approved by administrative rule of the agencies submitting the applications." OAR 690-77-020 (3). The application should be rejected on this basis.

If the Department chooses instead to modify the instream water right allowed, the flow rates granted should at least be reduced for January through April to the minimum flows recommended by ODFW's predecessor in the Basin Investigation for the John Day River Basin. These amounts are as follows: January - 35 cfs; February - 35/50 cfs; March - 50 cfs; April - 50 cfs.

C. ODFW FAILED TO COMPARE FLOWS REQUESTED WITH EXISTING GAGING DATA

ODFW failed to compare the flows it requested with existing gaging data, as required by OAR 635-400-015 (10). Subsection (a) of that same administrative rule requires ODFW to further evaluate their instream flow requests: "Instream flow requirements greater than 70 percent or less than 30 percent of the naturally occurring stream flows...for any given time period shall be evaluated for appropriateness of the requirement in relation to naturally occurring stream flows or water surface elevations."

Despite the availability of gaging data at both the Whyte Park gage (#14047390) and the Cayuse Canyon gage (#14047400) ODFW failed to gather the information and make any comparisons or evaluations. This additional failure by ODFW to follow its own rules on instream applications results in submission of a defective application to the WRD.

D. NO TECHNICAL DATA OR SUPPORTING INFORMATION SUBMITTED BY ODFW

Where applicable, ODFW must also submit supporting data to show that the standards and criteria contained in their rules has been followed. OAR 690-77-020 (4)(g). No such submission was made to the WRD in this case, with the possible exception of the information on the "proposed" fishway and design flows for it. Therefore, Application IS-70251 failed to include sufficient technical data or information to support the flow rates requested by said agency, as required by OAR 690-77-020 and ORS 537.336.

OAR 690-77-020 (4)(g) requires an application to include at a minimum "a description of the *technical data* and methods used to determine the requested amounts;" (emphasis added). The only information submitted in support of the application was the flow rate amounts set forth in ODFW's application. ODFW later submitted information regarding the proposed fish ladder, including designed flows rates for that specific fishway. Since the proposed fishway was never constructed, it is obvious that there is no validity as to the "technical data" submitted. Even if the fishway had been constructed, the design flows were *only* applicable to the months of February through May (Exhibit 1 at 5). No technical data or supporting information whatsoever was submitted for the months of June through January.

In this case, the Department under OAR 690-77-020 (7) requested "additional information needed to complete the review". The additional information submitted by ODFW (Exhibit 1) was still defective and incomplete as noted above. Therefore, ODFW's application is defective and incomplete and should be returned to them for resubmission in accordance with OAR 690-77-027 (1): "If the Department determines that the application is incomplete or defective, the Department shall return the application."

II. "EANF" CALCULATIONS ARE DEFECTIVE and INCOMPLETE

A. LACK OF INFORMATION IN WRD FILE TO SUPPORT "EANF" CALCULATIONS

There are no calculations or information in the WRD file to show what "ratios" were used or how adjustments were made to any gaged flows to determine the estimated average natural flows ("EANF"). See OAR 690-77-010 (11) . Particularly where the "EANF" review under OAR 690-77-015 (4) is literally the only analysis of the requested flows by the WRD, it is critical that the basis for the "EANF" calculations be available for review. The only information available are the *conclusions* of what the WRD has determined the "EANF" flows are. There is also no information in the WRD file or the Technical Review to show the type of statistics or model used, the actual figures used to calculate "EANF", or any adjustments that were made (see "Methods for Determining Streamflows and Water Availability in Oregon", Robison, p. 22 and 23). The Protestant maintains that the EANF calculations are defective, resulting in high EANF levels and thus allowing excessive recommended flows by the WRD.

B. REVISED "EANF" CALCULATIONS NOT USED IN WRD'S ANALYSIS

The "EANF" flows calculated by WRD and used in the PFO review were revised by WRD staff. Nevertheless, the revised "EANF" calculations were not used to analyze the application and prepare the PFO (Personal communication with Rick Cooper, WRD, October 1, 1996). The Protestant asserts that the latest, revised "EANF" calculations must be used as required by OAR 690-77-015 (4). Protestant also requests that a copy of the revised "EANF" flows and the basis thereof be provided to counsel, since no such information was included in the WRD file.

C. GAGED INFORMATION and MISCELLANEOUS MEASUREMENTS NOT UTILIZED FOR "EANF" REVIEW: HIGHLIGHT ZERO STREAMFLOWS IN SUMMER MONTHS

The "EANF" calculations done by WRD staff utilized gaged flow information for Rock Creek from the Whyte Park gage at river mile 40.8 (#14047390); the review did not, however, utilize additional gaged flow information from the Cayuse Canyon gage (#14047400), approximately 5 miles downstream from Whyte Park (Personal communication with Rick Cooper, WRD, October 1, 1996). There is no Cayuse Canyon gage information in the WRD file.

The 13 years of information from the Cayuse Canyon gage is important to the determination of "EANF" because it provides a clear picture of Rock Creek flows and the behavior of the stream without any out-of-stream diversions. A review of the Cayuse Canyon gage information shows a clear pattern of zero flow during significant stretches of time and mean flows that are much lower than the "EANF" calculations for most months. For example, the mean flows in July, August and September are well below the "EANF" figures for 12 out of the 13 years of record; for June, 11 out of the 13 years are lower than "EANF" and for May 9 out of 13 years are lower. See Exhibit 3, Cayuse Canyon Gage #14147400, State Engineer-Water Resources Department, 1966-1978. These gaged flows establish that the "EANF" figures used in the PFO are higher than the actual flows in Rock Creek and therefore must be adjusted.

A comparison of the gaged flows from the two gages also shows that during the summer months, stream flow downstream is equal to or lower than the flow upstream (Exhibit 3). Thus, the normal assumption of increasing flow as one proceeds downstream with added flow from tributaries is shown not to be true for Rock Creek.

The Cayuse Canyon gage fall within the "base period" of 1958-1987 used by the WRD to calculate "EANF" and overlaps with the Whyte Park gage for comparison purposes. The Cayuse Canyon gage also meets the criteria noted by the WRD in its "Water Availability File" dated January 25, 1994 (Memo on "A Methodology for Estimating Water Availability Based on Mean Daily Flows", January 26, 1994 in that it measured "unregulated streamflow", was "unaffected by large diversions" and had "at least three years of record (mean daily flows)".

That Rock Creek flows do not necessarily increase from tributaries as it flows downstream, is further buttressed by documentation in the John Day River Basin Report, Water Resources Department, November 1986, at page 193: "The Lower Subbasin can be characterized as an area that receives water, as opposed to one that produces it. Most streams in the subbasin are nearly ephemeral, almost ceasing to flow in summer." (Exhibit 4 at 5). Note the statement that "Generally, streams tributary to the John Day are already dry or nearly dry by the time regulation for minimum flows is required." (Exhibit 4 at 6). For other information regarding "tributary streams" which "dry up in summer months" see Rock Creek

Watershed Improvement Plan, Soil and Water Conservation District of Gilliam Morrow and Wheeler Counties, (May 22, 1991), Exhibit 8 at 7.

These general statements regarding streamflow in Rock Creek's subbasin are also supported by the Protestant's personal knowledge from diary entries which, for example, note that during the years 1959 through 1974 Rock Creek went dry every year (ranch location below French Charlie). The earliest date the creek went dry during that period was April 2nd and the latest was June 27th (diary entries not submitted at this time).

A comparison of flow at the two gages clearly highlights the fact that the flow of Rock Creek in the summer does not increase as it flows downstream. See Water Availability for Oregon's Rivers and Streams: Volume 2; Technical Guide and Appendixes, E. George Robison, May 1991, Appendix B, Table 5, page 23 and Appendix F, Table 5, page 16 (Exhibit 5), which shows comparisons of the Whyte Park and Cayuse Canyon gaged flows.

WRD's file for Application IS-70251 does contain miscellaneous flow measurements of the flow of Rock Creek, most of which are within the "base period" of 1958-1987 used for "EANF" calculations (see Exhibit 6, Miscellaneous Measurements, Rock Creek). Apparently these flow measurements were not used to calculate or adjust the "EANF" figures. A comparison of the miscellaneous flows with WRD's calculations of "estimated average natural flow" ("EANF") provides evidence that the EANF calculations are too high. A substantial number of these *actual* miscellaneous flows recorded are significantly lower than the EANF flows eventually used by the Department to analyze the application. Since the EANF flows are the only analysis or review conducted by the Department to determine whether requested flows meet the criteria for instream water rights, it is critical that EANF flows not be calculated at excessive levels. The Protestant maintains that these miscellaneous measurements should have been used to adjust the "EANF" calculations.

The other pattern that is abundantly clear when one scrutinizes all the gage records is that sudden heavy rainstorms will often drastically skew the averages higher. "Sudden severe convectional storms in summer months can lead to extreme localized flood peaks." Rock Creek Watershed Improvement Plan, Soil and Water Conservation District of Gilliam Morrow and Wheeler Counties, (May 22, 1991), Exhibit 8 at 4. A perfect example of this is shown by the miscellaneous gage readings for gage #14047480 (not in WRD file) for the year 1965 (Exhibit 9 at 7). The flow of Rock Creek, having just gone through nearly two months of zero flow in July and August, spikes up to 148 cfs on August 22nd and 128 cfs on August 23rd. The next day the flow drops all the way to 4.7 cfs. The result is a mean flow of 9.39 cfs for the month of August, despite the fact that 24 out of 31 days had zero flow.

The unmistakable pattern of flows *lower* than the "EANF" calculations, especially in the summer months, plus periods of zero streamflow is also shown in Exhibit 9. That exhibit contains twelve

sets of gage flow readings from various locations in the proposed 40 mile reach, for five different years. See also Exhibit 10 at 2, John Day Project, Department of the Interior, U.S. Reclamation Service (February 1916) for discharge readings in 1905 and 1911. These readings along with all the other gaged information should be taken into account when the WRD attempts to determine "EANF" figures.

D. ADDITIONAL INFORMATION - ACTUAL FLOWS ARE LOWER THAN "EANF"

The John Day River Basin Report, Water Resources Department, November 1986 provides further evidence that the "EANF" flows as calculated are too high and need to be adjusted. Section IX on the Lower Subbasin of the John Day River, which includes Rock Creek, furnishes important information on climate, land cover and surface water that apparently were not considered when the "EANF" flows were calculated. In particular, information contained on page 193 regarding surface water flows in Rock Creek notes that Rock Creek's "mean monthly flows range from 120 cfs in March to less than 1 cfs in September." (emphasis added; Exhibit 4 at 5). By contrast, "EANF" for September was calculated at 2.47 cfs (PFO at 2).

Another area of concern is the use of an irrigation add-back utilized by the WRD staff to calculate "EANF" in this case (Personal communication, Rick Cooper, WRD, October 1, 1996). Part of the "EANF" flow figure was generated by adding to the gaged flows from the Whyte Park gage, in order to arrive at the estimate of the "EANF" flows at the mouth of Rock Creek. In most streams, such an add-back for irrigation use makes sense. For Rock Creek, however, one must be extremely cautious in utilizing an add-back for irrigation use since regulation of water use in Rock Creek "normally begins in May and June." (John Day River Basin Report, Exhibit 4 at 6).

Exhibit 7, Watermaster's Compilation for Rock Creek, shows normal cut-off dates for irrigation water rights in Rock Creek. Since no specific information regarding the irrigation add-back amounts was contained in the WRD file, it is impossible for the Protestant to ascertain if the add-back accurately reflects the true situation in Rock Creek. It is clear, however, from the Watermaster's Compilation that there should be little or no add-back for the months of July through October, since the regulation of even the earliest right on the stream (1868 priority) begins by August 1st (Exhibit 7). In fact, the John Day River Basin Report at page 193 states that "Rock Creek's flow stopped at some point nine years of the same period [13 year period]....Generally, no-flow conditions last from August through September." (Exhibit 4 at 5).

The Final Environmental Impact Statement, Rock Creek Watershed Project, Soil Conservation Service, U.S. Dept. of Agriculture (April 1975), contained the following information regarding Rock Creek flows:

> "It [Rock Creek] is an unmodified perennial stream for approximately 20 miles in its upper reaches, an unmodified intermittent stream for 21 miles, and a modified

> intermittent stream for 30.7 miles in its lower reaches where it passes through cropland... Rock Creek has a typical snowmelt runoff pattern of high spring flows and low to nonexistent surface flows during the summer and fall... Rock Creek averages no flow for 30 days each year in the vicinity of Cayuse Canyon. In the seven years of record at this location the dry period ranged from 0 to 80 days. (17) In the lower reaches of Rock Creek the stream is essentially dry from June through November on the average."

(emphasis added; Exhibit 11 at 2, 3). The EIS also includes a table of average monthly stream discharges at three locations which shows zero flow during several months at two of the locations, including the mouth of Rock Creek (Exhibit 11 at 3).

The Rock Creek Watershed Improvement Plan, Soil and Water Conservation Districts of Gilliam, Morrow and Wheeler Counties, (May 22, 1991) also provides evidence that "[L]ate season baseflow has become unreliable and, in fact, is nonexistent through much of the summer." (Exhibit 8 at 2). "Summer flows for irrigation and instream use is minimal to nonexistent. Stream hydrographs shown in Appendix A reinforce what irrigators know: during much of the summer, there is no water available in Rock Creek." (Exhibit 8 at 5; see also page 6).

The Water Resources Department itself noted the problem with "late season water shortages. This situation is most serious along smaller tributaries [to the John Day River] because late summer flows are often extremely low or nonexistent." John Day River Basin, State Water Resources Board, March 1962, page 35 (Exhibit 12 at 2).

E. POTENTIAL PROBLEMS WITH REVISED EANF CALCULATIONS

As noted above, no specific information regarding the basis for the "EANF" calculations is contained in the WRD's file. Thus, it is not possible to adequately review the "EANF" calculations and determine their accuracy for Rock Creek. One of the problems for Rock Creek is that the stream flow is heavily dependent, if not entirely based, on large spring flows in the summer months. As noted in the WRD report discussing poor performance of regression models at page 24, "The Water Availability Program - A Progress Report - 1993" (April 1993): "The reason for much of the poor performance apparently is related to hydrologic processes (i.e. large spring flow) that cannot be accounted for in the existing models." Therefore, if a regression model is used for Rock Creek, problems can be expected due to the makeup of summer flows.

III. FLOW PROPOSED FOR MAY INADVERTENTLY EXCEEDS "EANF" FLOW

Although the WRD calculated in May the "estimated average natural flow" for Rock Creek was 32 cubic feet per second, the PFO failed to limit the flow for May to that amount. In accordance with OAR 690-77-015 (3) and (4), the flow rate for May should be reduced

to 32 cfs. The Technical Review dated November 25, 1995 did comply with the "EANF" limitation and proposed a flow in May of 32 cfs.

IV. PROPOSED FLOW RATES ARE IN EXCESS OF MINIMUM QUANTITY NECESSARY

The instream water right flow rates proposed are excessive and unnecessary for the use applied for. The flow rates proposed are higher than the minimum quantity of water necessary for the public use of the instream water right, and are, therefore, contrary to the definition of "In-stream flow" of ORS 537.332 (2) and OAR 690-77-010 (14). Water use of the instream right, if approved, would adversely affect the Protestant and potential water users from the stream by appropriating excess quantities of water and preventing any other new appropriations of water.

The flow rates granted must be reduced to the minimum quantity of water necessary for the fishery purpose of the application. At the very least, the flow rates should be reduced to the lesser of: (1) the revised "EANF" flow rates (see part II.B. above); or (2) the minimum flows recommended in the John Day River Basin Investigation (see part I.B. above).

V. WRD FAILED TO ANALYZE FLOW NEEDS

The flow levels approved by the Proposed Final Order are not based on any analysis of the need for the flows requested. ORS 537.332 (2) sets out the definition of "In-stream flow" which the Department is supposed to follow when determining instream water rights: the "minimum quantity of water necessary to support the public use requested by an agency". The Proposed Final Order does not address the minimum quantity of water or flow levels necessary to support the uses applied for: fishery needs. Fish passage was the sole basis for the ODFW application; the WRD unfortunately relied on a "proposed" fishway design that never was built.

A review of the WRD file shows that no analysis of any kind regarding flow needs occurred. The only review undertaken by the WRD was a check to see if the requested flows are less than the average estimate natural flow ("EANF"; OAR 690-77-015 (4)).

VI. REACH PROBLEMS - INTERMITTENT FLOW IN SUMMER MONTHS

The fact that spring flows at limited locations provide all of the flow of Rock Creek and that a dry streambed exists for the great majority of Rock Creek during low flow season must be taken into account by the WRD. Granting instream water rights for a 40 mile reach of stream, when the only flow in summer is provided in short stretches fed by springs, fails to account for the actual streamflow that exists. A detailed discussion and documentation of facts regarding the reach of the application and the variance of stream flows from upstream to downstream locations is set forth above under part II. C. and D.

OAR 690-77-015 (9) contains the requirement that the "amount, timing and location" of the instream water right shall serve a public use or uses. The specific circumstances regarding Rock Creek need to be viewed in light of this requirement. A 40 mile reach has been proposed. In the summer, evidence exists to show that the surface flow of Rock Creek often ceases for the majority of the stream (see above); the only flow exists in small sections of Rock Creek where water from springs feeds the streambed. This variance of surface flow at different locations in Rock Creek was also measured and noted by Watermaster Bob Main in a letter to Walter N. Perry of the State Engineer's Office on June 6, 1975 (Exhibit 13). As noted in the Rock Creek Watershed Improvement Plan, Soil and Water Conservation District of Gilliam Morrow and Wheeler Counties, (May 22, 1991), "near the mouth of Rock Creek a spring in the streambed produces flow continuously, whereas except for several springs, no water may be found upstream until above the town of Olex." (Exhibit 8 at 3). Any instream right granted for Rock Creek should be limited accordingly and note the likelihood of dry streambed throughout most of the reach.

CONCLUSION

This Protest is filed in accordance with OAR 690-77-043. The issues raised should be considered as part of a contested case hearing. The WRD's Proposed Final Order is inadequate and defective and has failed to follow applicable rules. A thorough review of the application is necessary to determine the minimum quantity of water necessary to support the public uses applied for.

For the reasons set forth above, the protestant asserts that the application is defective and should be returned to the applicants. The flow levels requested are excessive and are not necessary to support the public uses proposed. Flow levels set at the rates proposed will interfere with future maximum economic development of the waters of the State of Oregon. Excessive flow rates for instream water rights represent a wasteful and unreasonable use of the water involved (ORS 537.170 (8)(e)).

Based on the points discussed above, the Proposed Final Order should deny the application for a permit or modify the Proposed Final Order accordingly.

Respectfully submitted this 4th day of October, 1996.

By: David C. Moon
David C. Moon
Attorney for Protestant

CERTIFICATE OF FILING AND SERVICE

I hereby certify that on the 4th day of October, 1996 I filed the original of the foregoing Protest to the Proposed Final Order on the Water Resources Department by causing said original to be personally delivered to the Water Resources Department at the address set forth below. I further certify that on the 4th day of October, 1996 I served a true and accurate copy of the foregoing Protest to the Proposed Final Order on the applicant by mailing said copy by first class mail, postage prepaid, by depositing said copy in the United States Post Office in Eugene, Oregon, addressed as set forth below:

Oregon Water Resources Department
Commerce Building
158 12th Street N.E.
Salem, Oregon 97310-0210

Oregon Department of Fish & Wildlife
2501 SW First Avenue
P.O. Box 59
Portland, Oregon 97207

By: David C. Moon
David C. Moon
Attorney for Protestant

70251

50% Exceedance Streamflows for Some Watersheds in the John Day Basin

Natural streamflows and water availability for the John Day basin were first calculated in late 1994. At that time 5 watersheds with ISWR applications were analyzed: 69960, 70250, 70251, 70263, and 70648. The natural streamflows for these ungaged watersheds were estimated by an area - precipitation ratio with similar gaged watersheds. Estimates for these five watersheds were revised in 1996. A regression analysis was used to make these new estimates. At that time, additional streamflow data for Bridge Creek were incorporated. Streamflows for all other watersheds with ISWR applications in the John Day basin also were estimated in 1996.

Natural streamflows for 5 original watersheds calculated from area - precipitation ratio (Late 1994)

no matter - cert

69960	654.00	1250.00	1850.00	3200.00	3460.00	1630.00	346.00	157.00	140.00	168.00	243.00	494.00
~~70250~~	6.23	13.50	21.60	20.10	5.54	1.90	0.81	0.54	0.43	0.47	1.16	3.77
70251	36.00	77.70	125.00	116.00	32.00	11.00	4.70	3.09	2.47	2.72	6.67	21.80
~~70263~~	5.08	11.00	17.60	16.40	4.52	1.55	0.66	0.44	0.35	0.38	0.94	3.07
70648	93.40	138.00	166.00	385.00	891.00	697.00	128.00	56.00	49.30	53.70	65.80	75.30

used →

Natural streamflows for 5 original watersheds calculated from regression analysis and incorporating additional gage information for Bridge Creek (Early 1996)

69960	652.00	1250.00	1830.00	3180.00	3480.00	1640.00	359.00	164.00	144.00	171.00	243.00	492.00
70250	7.25	6.23	10.00	20.80	31.50	28.80	6.41	2.95	4.69	4.45	4.80	5.05
70251	38.50	79.20	120.00	88.40	30.50	14.00	3.13	1.56	1.61	2.74	8.92	20.60
70263	6.41	6.02	9.94	16.80	15.90	12.30	2.75	1.36	2.00	2.02	3.13	4.48
70648	112.00	135.00	163.00	547.00	1310.00	701.00	155.00	69.60	58.60	67.60	86.30	105.00

cert
cert
cert

Natural streamflows for remaining watersheds with ISWR applications (Early 1996)

69949	11.60	11.70	15.90	32.30	47.80	28.20	13.20	7.62	8.18	10.40	12.20	11.50
69951	8.08	7.84	10.40	21.40	34.40	21.70	10.50	5.97	6.33	7.92	8.91	8.18
69958	13.10	15.40	19.10	76.80	194.00	70.90	13.10	4.10	4.00	5.57	9.26	12.10
69959	7.10	8.90	11.40	43.70	92.80	37.90	6.38	2.31	2.04	2.95	4.09	6.39
69961	4.40	4.70	6.31	20.50	33.40	26.00	4.82	3.38	3.01	3.49	4.25	3.99
69963	4.47	5.41	9.51	14.80	12.80	8.19	2.33	0.55	0.37	1.74	3.31	4.03
70640	9.92	8.95	10.50	19.40	36.20	28.40	16.60	9.20	9.57	11.50	11.90	10.30
70641	5.11	4.45	5.28	10.00	20.20	16.00	9.07	5.10	5.18	6.18	6.33	5.38
70642	3.76	3.34	4.19	8.31	16.10	11.60	5.97	3.46	3.47	4.24	4.53	3.91
70643	2.47	3.10	6.32	15.60	20.40	11.10	2.88	1.32	1.06	1.38	2.05	2.43
70644	4.76	5.83	11.90	29.40	41.90	24.60	6.63	2.55	2.10	2.73	4.11	4.65
70645	7.03	10.10	20.30	45.10	50.20	25.10	6.77	3.02	2.45	3.23	4.92	6.78
70646	2.93	3.14	3.76	5.54	7.15	9.85	2.63	1.88	1.24	1.48	2.01	2.60
70647	16.70	15.40	15.80	32.70	210.00	260.00	72.60	36.30	28.60	28.20	23.50	15.70
70649	2.88	3.19	4.25	18.20	45.00	19.10	3.11	0.97	0.83	1.21	1.81	2.59
70650	6.06	6.00	7.29	19.60	109.00	97.20	20.30	10.20	8.27	8.46	7.80	5.60
70651	3.79	8.26	18.00	29.00	17.30	7.94	1.53	0.78	0.55	0.76	1.07	2.72
70652	5.91	7.50	12.80	29.60	43.80	27.60	5.50	3.97	3.73	4.30	5.09	5.24
70653	7.76	11.30	19.50	42.30	57.00	36.40	7.47	4.56	4.27	5.06	5.41	6.52
70654	3.77	5.01	8.65	18.20	24.40	11.20	2.79	0.69	0.76	0.91	2.15	2.94
70655	1.96	2.82	4.93	7.98	7.04	2.49	0.85	0.13	0.09	0.45	1.24	1.69

These are the best latest numbers available

9/2+/5
MM

4-30-13

use newest EANF for F.O.

Send letter to protestant w/ draft FO + cert

Water Availability Analysis
Detailed Reports

ROCK CR > JOHN DAY R - AT MOUTH
JOHN DAY BASIN
Water Availability as of 4/29/2013

Watershed ID #: 70251
Date: 4/29/2013

Exceedance Level: 50%
Time: 11:16 AM

Water Availability Calculation | Consumptive Uses and Storages | Instream Flow Requirements | Reservations
Water Rights | Watershed Characteristics

Water Availability Calculation

Monthly Streamflow in Cubic Feet per Second
Annual Volume at 50% Exceedance in Acre-Feet

Month	Natural Stream Flow	Consumptive Uses and Storages	Expected Stream Flow	Reserved Stream Flow	Instream Flow Requirement	Net Water Available
JAN	36.10	0.01	36.10	10.00	34.00	-7.95
FEB	78.00	0.02	78.00	21.70	57.00	-0.71
MAR	123.00	5.29	118.00	33.60	57.00	27.10
APR	75.60	8.10	67.50	18.80	57.00	-8.27
MAY	33.10	20.70	12.40	3.45	33.1 57.00	-48.00 -24.15
JUN	12.60	16.70	-4.13	0.00	11.00	-15.10
JUL	3.69	5.58	-1.89	0.00	4.70	-6.59
AUG	2.29	2.23	0.06	0.00	3.09	-3.03
SEP	2.24	1.15	1.09	0.00	2.47	-1.38
OCT	3.26	0.56	2.70	0.00	2.72	-0.02
NOV	8.61	0.01	8.60	2.39	6.67	-0.46
DEC	19.10	0.00	19.10	5.31	21.80	-8.01
ANN	23,800.00	3,660.00	20,500.00	5,700.00	18,900.00	1,660.00

Patricia McCarty

From: Patricia McCarty
Sent: Thursday, August 29, 2013 3:35 PM
To: 'Pagel, Martha'
Subject: RE: Instream Water Right Applications

Any time after 8 is fine.

Patricia

From: Pagel, Martha [mailto:MPagel@SCHWABE.com]
Sent: Thursday, August 29, 2013 3:02 PM
To: Patricia McCarty
Subject: RE: Instream Water Right Applications

Patricia,

Can I call you tomorrow morning to talk more about this? I'm still trying to develop a proposal for Mr. Childs as to what I might be able to help him achieve, and I will also need to have a follow-up conversation with John Sample at PacifiCorp.

What would be a good time to call you?
Thanks.

MARTHA O. PAGEL | Attorney at Law
SCHWABE, WILLIAMSON & WYATT
Direct: 503-540-4260 | Fax: 503-796-2900 | Cell: 503-507-7293 | Email: mpagel@schwabe.com

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From: Patricia McCarty [mailto:patricia.e.mccarty@state.or.us]
Sent: Thursday, August 29, 2013 9:21 AM
To: Pagel, Martha
Subject: Instream Water Right Applications

Martha,
I've discussed your question to the department regarding instream water right applications and the impacts on storage opportunities. Dwight and Tim have informed me that the department is not currently contemplating a change to the water availability exceedance value used in processing instream water right applications.

I also discussed your proposal to the department to bring interested parties together to have a policy exploration/discussion about the same topic. A settlement discussion between the department, ODFW and protestants for the purpose of resolving a protest on an application is something I will be able to arrange, but the broader policy discussion is beyond the protest program's reach. Let me know if you would like for me to work on setting up a meeting with ODFW on either the Rock Creek application or on the applications protested by PacifiCorp.

Also, thank you for the reference to ORS 537.352 and Div. 77. Tim, Dwight and I are looking at that now, and will welcome your input on how it can be applied. We will need to look at the legislative history, as it is not entirely clear to us how it fits in with a Division 33 recommendation from ODFW, among other things.

I will be out of the office September 2nd through the 13th. I will be back in September 16th. I look forward to talking with you then.

Patricia

From: Pagel, Martha [mailto:MPagel@SCHWABE.com]
Sent: Monday, August 26, 2013 11:53 AM
To: Patricia McCarty
Subject: RE: Instream Water Right Applications

Thank you.

FYI – I spent some time reviewing the statutes and rules and was reminded of ORS 537.352, which could help address the concern about preserving the ability to approve new storage in the future. However, I was surprised to see OAR 690-077—0100, which seems to be contrary to the statute in allowing discretion for the Water Resources Commission to deny a request for "precedence." It could go a long way to address protest concerns if instream water right certificates were issued with reference to the statutory requirement of 537.352, but I'm worried about the rule provision...

Martha

MARTHA O. PAGEL | Attorney at Law
SCHWABE, WILLIAMSON & WYATT
Direct: 503-540-4260 | Fax: 503-796-2900 | Cell: 503-507-7293 | Email: mpagel@schwabe.com

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From: Patricia McCarty [mailto:patricia.e.mccarty@state.or.us]
Sent: Monday, August 26, 2013 11:35 AM
To: Pagel, Martha
Subject: RE: Instream Water Right Applications

Here is the list

Patricia

From: Pagel, Martha [mailto:MPagel@SCHWABE.com]
Sent: Monday, August 26, 2013 9:41 AM
To: Patricia McCarty
Subject: Instream Water Right Applications

Hi Patricia,

Do you have a list of all the pending instream water right applications that were protested? Could I get a copy?

Thanks,
Martha

MARTHA O. PAGEL | Attorney at Law
SCHWABE, WILLIAMSON & WYATT
530 Center St. NE, Ste. 400, Salem, OR 97301
Direct: 503-540-4260 | Fax: 503-796-2900 | Cell: 503-507-7293 | Email: mpagel@schwabe.com
Assistant: Karen Donohue| Direct: 503-540-4262 | kdonohue@schwabe.com
Legal advisors for the future of your business®
www.schwabe.com

70251									
1994 EANF -used in IR									
J	F	M	A	M	J	J	A	S	O
36	77.7	125	116	32	11	4.7	3.09	2.47	2.72
1996 EANF									
J	F	M	A	M	J	J	A	S	O
38.5	79.2	120	88.4	39.5	14	3.13	1.56	1.61	2.74
Current EANF-should use for Cert on 70251									
J	F	M	A	M	J	J	A	S	O
36.1	78	123	75.6	33.1	12.6	3.69	2.29	2.24	3.26
IS70251 amount applied for									
J	F	M	A	M	J	J	A	S	O
34	57	57	57	57	34	34	34	34	34
Max allowed for cert based amount applied for									
J	F	M	A	M	J	J	A	S	O
34	57	57	57	33.1	12.6	3.69	2.29	2.24	3.26

N	D
6.67	21.8
N	D
8.92	20.6
N	D
8.61	19.1
N	D
34	34
N	D
8.61	19.1

Oregon
John A. Kitzhaber, MD, Governor

Water Resources Department
North Mall Office Building
725 Summer Street NE, Suite A
Salem, OR 97301-1271
503-986-0900
FAX 503-986-0904

August 5, 2013 —via first class mail

David Childs
1806 Thompson St.
The Dalles, OR 97058

Re: Protest to ODFW Instream Water Right Application S-70251

Dear Mr. Childs,

The Oregon Department of Fish and Wildlife filed numerous applications for instream water rights in 1990 on various streams across Oregon. You protested Application # 70251 for Rock Creek.

After a review of the issues raised in the protest Water Resources has determined that a certificate should be issued. The estimated average natural flow in Rock Creek has been revised since 1996 and the proposed certificate reflects those changes. The instream certificate priority date is March 21, 1990, junior to all other existing surface water rights on Rock Creek and its tributaries in the vicinity of the instream reach.

You will receive a copy of the Final Order on the application. Enclosed is a draft of the final order and certificate. If you still have concerns regarding the proposed order and certificate please let me know by contacting me directly at the number or email below.

Sincerely,

Patricia McCarty

Patricia McCarty
Protest Program Coordinator
Water Right Services Division
503-986-0820

Oregon Water Resources Department
Water Right Services Division

Instream Water Right Application
Number IS 70251

Final Order

Application History

On March 21, 1990, the Oregon Department of Fish and Wildlife submitted an application to the Department for an instream water right. On August 20, 1996, the Department issued a Proposed Final Order proposing to issue the certificate with conditions. The amount requested in the application exceeds the estimated average natural flow. Pursuant to OAR 690-077-0015(4) the amounts allowed during any time period were reduced to amounts not exceeding the estimated average natural flow occurring from the drainage basin.

On October 4, 1996, David Childs submitted a protest to the Proposed Final Order.

The findings of fact and conclusions of law in the Proposed Final Order are incorporated into this Final Order. After the issuance of the Proposed Final Order the Department updated the values for the estimated average natural flow for the reach of Rock Creek in which this right is to be maintained. The right as described in the certificate is therefore limited to the amount requested, further limited to an amount not exceeding the current estimated average natural flow.

The proposed use would not impair or be detrimental to the public interest.

NOTICE OF RIGHT TO PETITION FOR RECONSIDERATION OR JUDICIAL REVIEW

This is an order in other than a contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.484(2). Pursuant to ORS 183.484, ORS 536.075 and OAR 137-004-0080, you may petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Order

IT IS HEREBY ORDERED that Application IS 70251 be approved as provided in the attached certificate.

Issued _____

_____
Dwight W. French
Water Right Services Administrator, for
Phillip C. Ward
Director

STATE OF OREGON

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

OREGON WATER RESOURCES DEPARTMENT
725 SUMMER ST NE, STE A
SALEM, OREGON 97301

The specific limits for the use are listed below along with conditions of use.

Source: ROCK CREEK TRIBUTARY TO JOHN DAY RIVER

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHYTE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

The right is established under Oregon Revised Statutes 537.341.

The date of priority is MARCH 21, 1990.

The following conditions apply to the use of water under this certificate:

1. The right is limited to not more than the amounts, in cubic feet per second, during the time periods listed below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34	57	57	57	33.10	12.6	3.69	2.29	2.24	3.26	8.61	19.10

2. The water right holder shall measure and report the in-stream flow along the reach of the stream or river described in the certificate as may be required by the standards for in-stream water right reporting of the Water Resources Commission.

3. For purposes of water distribution, this instream right shall not have priority over human or livestock consumption.

4. The instream flow allocated pursuant to this water right is not in addition to other instream flows created by a prior water right or designated minimum perennial stream flow.

5. The flows are to be measured at the lower end of the stream reach to protect necessary flows throughout the reach.

Issued _____

_____
Dwight W. French
Water Right Services Administrator, for
Phillip C. Ward
Director

Oregon

WATER
RESOURCES
DEPARTMENT

WAIT UNTIL

August 30, 1996

DAVID CHILDS
1806 THOMPSON ST
THE DALLES OR 97058

RE: Instream Water Right Application IS-70251

Dear Mr. Childs,

Thank you for your interest in the above referenced application.

After a careful review of the situation regarding the mailing of the notice and the protest date we have decided not to extend the protest deadline which is 5:00 pm, Friday, October 4, 1996, for this application.

However, we will accept comments up to 5:00, October 14, 1996. Further, if you file a protest by the deadline (October 4, 1996), we will allow you to file supplementary information until 5:00, October 14, 1996.

I'm sorry for any inconvienience this may have caused you. It is our intent to give concerned citizens a fair opportunity to participate in the water rights review process.

If you have any more questions regarding the water rights review process or this application in particular, please give Mike Mattick or myself a call. I can be reached toll free from within Oregon at 1 (800) 624-3199 extension 268. Mike's extension is 276.

Sincerely,

Dwight French
Water Rights Section Manager

cc: file

Commerce Building
158 12th Street NE
Salem, OR 97310-0210
(503) 378-3739
FAX (503) 378-8130

COPY CHECK-OFF SHEET FOR PROPOSED FINAL ORDERS

CC: FILE # IS 70251

WATERMASTER # KELLY RISE

REGIONAL MANAGER: KENT SEARLES

ODF&W - County: GILLIAM

DEQ

PARKS

OTHER STATE AGENCY IF NECESSARY:

DIVISION 33 LIST: ___ COLUMBIA RIVER INTERTRIBAL FISH COMMISSION; U.S. FISH & WILDLIFE;
(CHECK ONLY IF APPLICABLE) NORTHWEST POWER PLANNING COUNCIL & NATIONAL MARINE FISHERIES

POWER BUILDER UPDATER; FRONT COUNTER

WATER FOR LIFE (TODD HEIDGERKEN)

OTHER ADDRESSES OF PEOPLE WHO PAID THE $10 FEE:

PEOPLE WITH OBJECTIONS, COMMENTS OR REQUESTED COPY W/O $10 (SEND THE $10 LETTER):

CASEWORKER : CINDY SMITH

PFO AND FO NOTIFICATION LIST FOR FILE NUMBER:

IS-70251 BASIN # 6

A DAVID CHILDS	1806 THOMPSON ST	THE DALLES	OR,97058
GILLIAM COUNTY SOIL AND WA	PO BOX 206	CONDON	OR,97823
MORROW COUNTY SOIL AND WAT	PO BOX 127	HEPPNER	OR,97823
OREGON DEPT OF FISH AND WI	PO BOX 59	PORTLAND	OR,97207
WATER FOR LIFE	PO BOX 12248	SALEM	OR,97309
WATERWATCH OF OREGON	213 SW ASH SUITE 208	PORTLAND	OR,97204

For some with long names or addresses, the complete name and address are located in the file. Those who receive the Departments weekly public notice do not receive additional notice.

A David Childs
1806 Thompson St
The Dalles, OR 97058
January 31 1995
503/ 298/1499

Mr Mike Mattick
Instream Water Rights
Water Resources Department
Commerce Building
158 12th Street NE
Salem, Oregon, 97310-0210

Dear Mike.

The proposed instream water right , (application No. 70251) for Rock Creek Gilliam County is seriously flawed.

1 / The forty mile stream-reach described for the Instream Water Right is dry for much of its distance during August, September, and October.

2 / The stream reach above The Gage Station is also dry for much of its distance up to the divide during this period.

3./ The period of summer dry-up with no water was about 30 days at our former ranch below French Charlie In the era of 1900.

Interview (1976) and visit with Ethel Sprinkel. She was born on the ranch in 1888, and lived there until 1906. I asked, "When you were here, the creek never went dry did it?" She responded, " It went dry every August for about a month.

My father came to Rock Creek in 1903, lived with his mentor-family, Tip and Mrs Mobley, until 1910. Tip settled on Rock Creek near Olex in 1867. Father ranched In the community until his death in 1946. I was born in 1923 and started fishing with my Dad in 1927. I rode horseback for 3 miles and forded the creek twice each day riding to school at Olex.

My mother, myself, and children went to grade school at Olex.

My grandfather came to the area in 1881 and retired in his "new" home along its banks in 1898. (Earl Weatherford ranch 2 miles below Olex bridge.)

Rock Creek now is dry for long reaches every year with no water for any use. see notes and Photos.

Rock Creek reaches go dry every year:

From Wolf Hollow to near the Harper fish ladder (Mile 29 to mile 25)

From Olex bridge to a mile below French Charlie. (Mile 17 to mile 9)

From Rock Creek Station to Welp's Spring, about a mile above the mouth, the stream is dry annually . (Mile 7 to Mile 1)

Rock Creek goes nearly dry to dry every year in the five mile Reach between Whyte Park Gage, mile 40, and former Cayuse Gage station, mile 35, downstream . There are no out-of-stream withdrawals between these gage locations Both gages were in operation at the same time for the years 1976 to 1978. The Cayuse gage was installed in cooperation with the State Engineer in 1965 and operated through 13 years. It was taken out after the gage was operating at Whyte park.

Enclosed are copies and synopsis of the Cayuse records showing months that flows were not met. I've also included miscellaneous data and pictures.

My thinking and reasons for submitting objections to using the proposed flows for instream rights are:

First; these flows haven't existed in the last 60 years, if ever.

Second; I believe Rock Creek can again become a viable Trout and Steelhead rearing stream , but in order to get the cooperative effort, in the magnitude necessary, we will have to truly picture conditions as they are.

I would be happy to discuss the instream or additional proposals further.

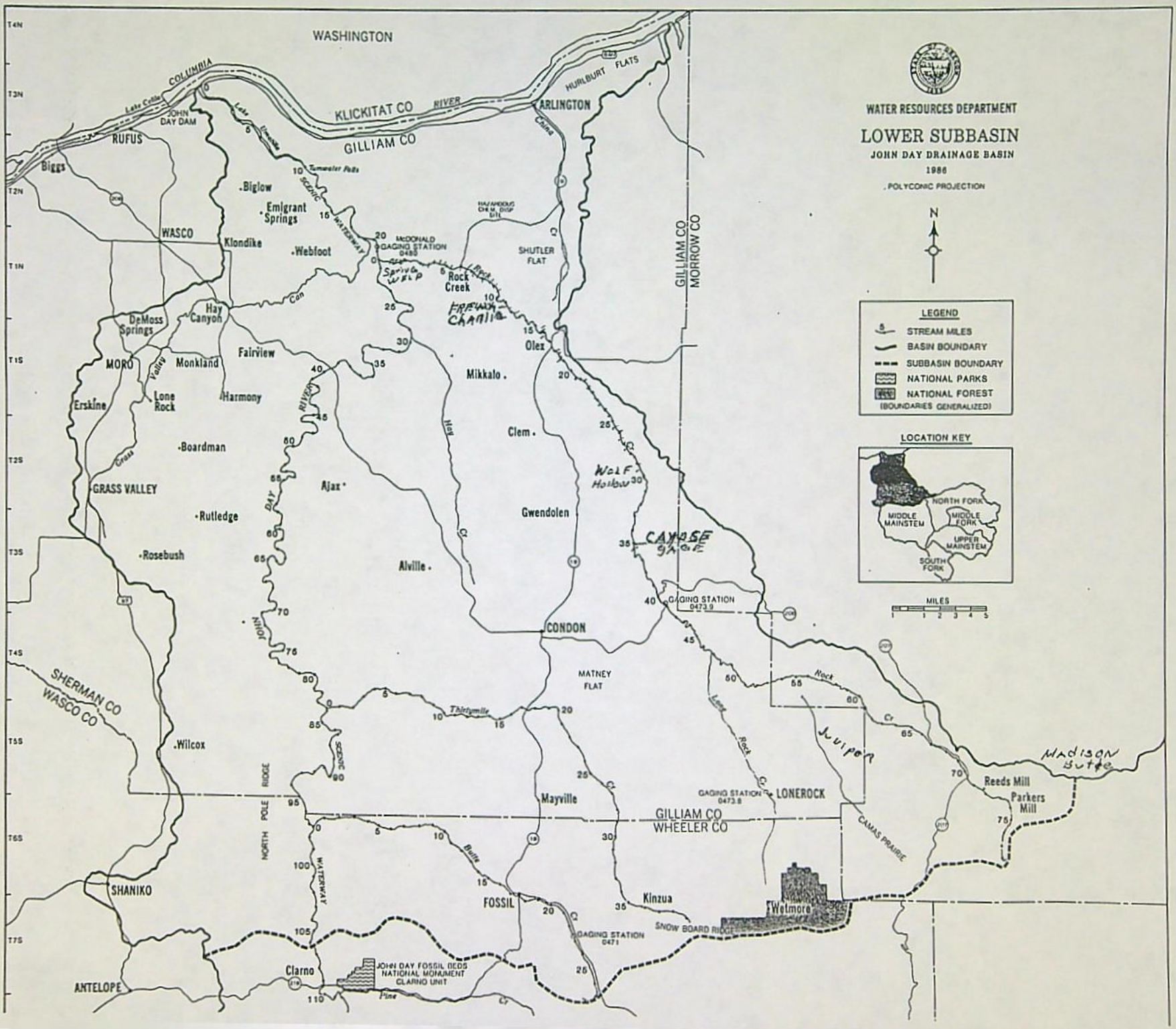
Sincerely,

David Hild

David Childs' ranch below French Charlie: Notes from diary

Year	Rock Creek stopped flowing	Rock Creek started flowing
1957		Prior to Dec 6
1959	June 21	Dec 12
1960	June 23 'last trickle'	
1961	June 16	Dec 25
1962	June 20 'bone dry'	
1963	June 15 'just a trickle'	
1964	June 22 'water quit at dam'	Dec 10
1965	June 10 'water done for'	Nov 3
1966	May 4 'creek absolutely dry'	Nov 18
1967	June 12 'water quit'	Last week Jan 1968
1968	April 2	Nov 19
1969	June 27	Dec 3
1970	May 20 'creek practically dry'	
1971	June 24 'creek quit again'	
1972	June 8 'waterspout' June 15	After Nov 24
1973	May 10	
1974	June 12	

MAP OF THE LOWER SUBBASIN



Environmental Considerations.

Rock Creek is intermittently dry in its lower reaches for several months during the summer and fall. Conversely, large fluctuations in runoff occur during the winter and early spring. During the dry period, water supplies for wildlife become very limited, and there is little available fish habitat either due to high water temperatures or the lack of flowing water.

From: Rock Creek Watershed Work Plan 1974
Gilliam and Morrow Counties, Oregon
U.S. Department of Agriculture
Soil Conservation Service

Table indicates number of days per month proposed flows were met at Cayuse gage five miles downstream from Whyte gage within the 40 mile reach.

4

PROPOSED

Mile 40 → flows	4.7 July		3.09 AUG		2.47 SEPT		2.72 Oct				
1966	2		0		0		0				
1967	0		0		0		0				
1968	0		0		0		0				
1969	0		0		0		0				
1970	0		0		0		0				
1971	4		0		0		0				
1972	0		0		0		0				
1973	0		0		0		0				
1974	0		0		0		0				
1975	3		0		0		0				
1976	0		25		25		0				
1977	0		1		0		0				
1978	0		1		0		0				

5-1

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft below county road bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1965, to Sept. 30, 1966.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge, 364 cfs Mar. 14 (gage height, 2.48 ft); no flow at times.

1965, 1966: Maximum discharge, that of Mar. 14, 1966; no flow at times.

Remarks.--Records good except for period of no gage-height record, which are poor.

CAYUSE 66-78

Discharge, in cubic feet per second for the year ending September, 30, 19..66

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	2.9	3.9	8.3	6.1	12	19	174	9.7	3.3	1.9	0.2	0
2	2.9	4.1	8.0	9.7	11	17	158	9.3	3.8	4.1	.1	0
3	2.9	4.3	8.0	12	12	14	121	8.8	3.8	3.8	0	0
4	2.9	5.1	8.0	12	11	14	98	8.2	3.8	2.8	0	0
5	3.2	5.1	8.0	16	11	14	83	7.7	3.8	2.1	0	0
6	2.8	5.1	8.3	26	11	16	74	7.1	3.8	1.6	0	0
7	3.1	5.1	8.3	33	12	* 16	65	7.1	4.1	1.9	0	0
8	3.1	5.3	5.1	29	12	* 21	58	6.7	4.1	1.6	0	0
9	3.1	5.5	a 5.5	30	11	64	52	6.4	4.1	1.4	0	0
10	3.1	* 5.5	a 5.5	23	11	*202	51	5.5	3.8	1.3	0	0
11	3.1	5.5	a 5.5	21	10	114	50	5.5	3.8	1.3	0	0
12	* 3.2	5.8	a 5.5	19	10	109	* 45	5.2	3.8	1.1	0	0
13	3.4	6.9	a 5.5	18	10	217	41	5.0	3.6	1.3	.1	0
14	3.4	8.6	a 5.5	17	10	266	28	5.0	3.3	11	.1	0
15	3.5	8.3	a 5.5	17	10	* 234	20	5.0	2.8	6.7	.1	.4
16	3.5	8.6	a 5.5	17	9.7	165	29	5.0	2.4	a 4	* .1	.6
17	3.5	8.3	a 5.5	15	* 10	104	27	5.0	1.9	a 3	.1	.6
18	3.7	8.3	a 6	14	10	94	26	4.4	1.9	a 2	0	.6
19	3.9	7.6	a 6	14	10	89	23	* 4.1	1.9	a 1	0	.6
20	3.9	7.2	a 6.5	* 13	11	81	* 22	3.8	1.6	a 1	0	.6
21	3.9	7.2	* 6.7	13	11	69	21	3.6	1.6	a .5	0	.4
22	3.9	7.2	5.5	14	12	58	21	3.3	1.6	a .5	0	.4
23	3.9	7.6	4.7	13	14	58	20	3.3	1.6	a .5	0	.2
24	3.9	8.6	7.8	13	16	59	18	3.3	1.9	a .4	0	.2
25	3.9	10	6.4	13	18	87	16	3.1	1.9	a .4	0	.2
26	3.9	10	6.7	13	21	144	14	2.6	1.6	a .2	0	.2
27	3.9	9.6	7.1	13	20	198	13	2.6	* 1.4	a .2	.1	.2
28	3.9	8.6	7.4	13	20	230	12	2.6	1.3	* .1	.1	.2
29	3.9	8.0	7.4	13		234	11	2.6	1.1	.2	.1	.2
30	3.9	8.0	7.4	13		230	10	2.8	1.1	.6	* .1	.2
31	3.9		7.8	13		195		* 3.3		.5	.1	
	108.0	208.9	204.9	505.8	346.7	3432	1401	157.4	80.5	59.0	1.3	5.8
Mean	3.48	6.96	6.61	16.3	12.4	111	46.7	5.08	2.68	1.90	0.04	0.19
Acre Feet	214	414	406	1,000	688	6,810	2,780	312	160	117	2.6	12

Calendar year	1965	Max	-	Min	-	Mean	-	Acre-ft	-
Period Water year	1965-66	Max	266	Min	0	Mean	17.8	Acre-ft	12,910

* Discharge measurement made on this day.

a No gage-height record.

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

5-2

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft downstream from county bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1962, to Sept. 30, 1967.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year, 832 cfs Jan. 28 (gage height, 3.27 ft); no flow at times.

1965-67: Maximum discharge, that of Jan. 28, 1967; no flow at times.

Remarks.--Records good except for period of no gage-height record, which are poor.

Discharge, in cubic feet per second for the year ending September, 30, 1967...

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.4	1.4	25	32	* 236	48	83	240	21	2.0	0.2	0
2	.4	1.4	58	32	195	51	89	240	19	1.8	** .2	0
3	.4	1.4	51	* 30	169	47	104	208	16	1.6	.2	0
4	.4	1.6	47	29	156	39	117	179	13	1.2	.2	0
5	.4	1.8	52	35	142	39	119	153	12	a 1.2	.1	0
6	.4	2.4	* 52	36	119	41	125	138	9.8	* 1.1	.1	0
7	.4	2.4	50	35	110	40	130	125	8.8	1.1	.1	0
8	.4	2.4	46	33	100	39	121	114	8.0	1.1	.1	0
9	.2	2.4	40	31	93	39	110	104	7.2	1.1	.1	0
10	.4	2.6	41	30	83	42	110	112	6.8	1.1	.1	0
11	.4	3.3	62	31	76	42	140	112	6.5	.8	.1	0
12	.4	a 5	70	36	.71	38	125	98	6.1	.8	.1	0
13	.5	a 7	256	39	70	42	110	94	5.7	.5	.1	0
14	.6	a10	290	81	66	38	104	80	5.7	.5	.1	.1
15	.8	a15	142	142	59	34	100	70	5.0	.5	.1	.1
16	.8	a20	100	181	54	34	98	62	4.7	.4	.1	.1
17	.8	a15	79	123	54	91	91	54	4.1	.4	0	.1
18	1.0	a10	67	94	66	100	94	49	3.4	.4	0	.1
19	.9	a40	61	76	58	87	89	45	3.1	.4	0	.1
20	.8	a150	57	89	46	80	78	40	2.5	.4	0	.1
21	1.3	a 70	57	106	51	93	71	33	3.4	.4	0	.1
22	1.6	a 50	46	79	48	94	73	* 30	6.5	.4	0	.1
23	1.6	a 40	39	64	* 51	110	68	27	10	.4	0	.1
24	1.6	a 30	31	62	51	104	75	25	7.6	.3	0	.1
25	1.6	a 25	37	65	51	87	145	23	5.7	.3	0	.1
26	* 1.6	a 20	27	62	48	76	*153	21	4.7	.2	0	.1
27	1.4	a 18	26	70	43	71	166	18	4.1	.2	0	.1
28	1.4	a 15	25	368	45	68	175	18	3.8	.2	0	.1
29	1.4	* 19	32	731		75	148	21	3.1	.2	0	.1
30	1.4	24	35	483		78	145	22	2.5	.2	0	.2
31	1.4		32	305		*76		21		.2	0	
Total	27.4	606.2	2033	3610	2411	1943	3356	2576	219.9	21.6	2.0	1.8
Mean	0.88	20.2	65.6	116	86.1	62.7	112	83.1	7.33	0.70	0.06	0.06
Max	1.6	150	290	731	236	110	175	240	21	2.0	.2	0.2
Min	0.2	1.4	25	29	43	34	68	16	2.5	0.2	0	0
Ac-ft	54	1,200	4,030	7,160	4,780	3,850	6,660	5,110	436	43	4.0	3.6

Cal yr	1966	Mean	23.7	Max	290	Min	0	Ac-ft	17,170
Wtr yr	1967	Mean	46.0	Max	290	Min	0	Ac-ft	33,340

* Discharge measurement made on this day. ** Field estimated made on this day.
a No gage-height record.

STATE OF OREGON
OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

5-3

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft downstream from county bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1965, to Sept. 30, 1968.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year not determined; no flow at times.

1965-68: Maximum recorded discharge, 832 cfs Jan. 28, 1967; no flow at times.

Remarks.--Records good except for periods of ice effect or no gage-height record, which are poor.

Revisions.--The maximum daily discharge for water year 1967 is corrected to 731 cfs.

Discharge, in cubic feet per second for the year ending September 30, 1968.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.2	a 0.9	a 1.4	a 7	16	37	10	4.2	3.1	* 0.6		
2	.2	* .9	a 1.6	a 6	* 15	34	* 9.6	* 4.2	3.1	a .5		
3	* .2	a .9	a 2.0	*b 5	15	29	10	3.8	3.1	a .4		
4	a .2	a .9	a 2.3	a 4	17	* 27	9.6	3.4	* 2.8	a .3		
5	a .2	a .9	* 2.8	*b 2.5	24	25	10	3.1	2.4	a .3		
6	a .2	a .9	2.8	b 3.0	29	24	9.6	3.4	2.2	a .2		
7	a .2	a .9	a 2.5	b 3.0	28	22	9.6	* 3.4	2.4	a .2		
8	a .2	a 1.0	a 2.2	b 3.0	a 25	21	9.2	3.1	2.0	a .1		
9	a .2	a 1.0	a 2.0	b 3.5	a 21	21	8.0	2.8	2.0	a .1		
10	a .2	a 1.1	a 1.5	b 4.0	a 19	21 ✓	7.1	2.4	1.7	a .1		
11	a .2	a 1.1	a 1.5	b 4.5	a 16	20	6.3	2.4	1.9	a .1		
12	a .2	a 1.2	a 1.4	5.5	a 14	19	6.3	2.4	2.0	a .1		
13	a .2	a 1.2	a 1.2	6.3	a 12	19	6.3	2.4	1.9	a 0		
14	a .2	a 1.2	a 1.0	7.5	a 11	18	5.9	2.4	1.7	a 0		
15	a .2	a 1.2	a .8	18	a 11	17	5.9	2.2	1.5	0		
16	a .2	a 1.3	a .8	49	a 11	16	5.9	2.0	1.5	0		
17	a .2	a 1.3	a .8	31	a 12	b 14	5.9	2.0	1.5	0		
18	a .2	a 1.3	a .8	22	a 14	b 13	5.6	1.9	1.3	0		
19	a .2	a 1.3	a .9	19	a 17	b 13	5.2	1.9	1.3	0		
20	a .2	a 1.3	a 1.0	16	a 25 ✓	15	5.2	5.2	1.3	0		
21	a .3	a 1.3	a 1.3	25	a 120 ✓	14	5.6	4.2	1.1	0		
22	a .4	a 1.3	a 1.6	70	a 280	14	5.6	4.5	1.0	0		
23	a .5	a 1.3	a 2.2	46	a 90	13	5.6	3.8	1.1	0		
24	a .5	a 1.3	a 2.6	36	a 70	12	5.9	4.2	1.1	0		
25	a .5	a 1.3	a 4.0	30	a 60	12	5.9	4.8	.8	0		
26	a .6	a 1.3	a 8.0	b 12	a 55	14	5.6	4.8	.6	0		
27	a .6	a 1.3	a 17	b 8	a 50	16	5.6	4.8	.5	0		
28	a .8	a 1.3	a 25	b 9	a 45	14	5.6	4.5	.5	0		
29	a 1.5	a 1.3	a 15	b 10	a 40	13	4.8	4.2	.6	0		
30	a 1.4	a 1.3	a 10	b 12		11	4.5	3.8	.6	0		
31	a 1.1		a 8.0	b 14		10		3.4		0		
Total	12.2	34.8	126.0	491.8	1162	568	205.9	105.6	48.6	3.0	0	0
Mean	0.39	1.16	4.06	15.9	40.1	18.3	6.86	3.41	1.62	0.10	0	0
Max	1.5	1.3	25	70	280	37	10	5.2	3.1	0.6	0	0
Min	0.2	0.9	0.8	2.5	11	10	4.5	1.9	0.5	0	0	0
Ac-ft	24	69	250	975	2,300	1,130	408	209	96	6.0	0	0

Cal yr 1967 : Mean 39.2 Max 731 Min 0 Ac-ft 28,390
Wtr yr 1968 : Mean 7.54 Max 280 Min 0 Ac-ft 5,470

* Discharge measurement made on this day.
a No gage-height record.

5-4

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

PERIOD OF RECORD.--April 12, 1965, to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 1,010 cfs June 10 (gage height, 3.69 ft); minimum observed, 0.1 cfs Oct. 2 (gage height, 0.67 ft); and may have been no flow sometime Oct. 1.

Period of record: Maximum recorded discharge, 1,010 cfs June 10, 1969 (gage height, 3.69 ft); no flow at times.

REMARKS.--Records good except for periods of no gage height record, which are poor.

Discharge, in cubic feet per second for the year ending September 30, 1969

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	a .1	a .5	a 10	b 2.0	b 24	65	* 665	85	10	* 7.7	.4	.3
2	* .2	a .8	a 13	b 2.0	b 24	62	542	82	8	7.7	.4	.3
3	.3	a 1.5	a 18	b 2.0	b 26	65	415	75	7.4	7.4	.4	.3
4	a .3	a .9	* 23	b 2.5	b 30	62	390	70	6.5	6.8	.4	.3
5	a .3	a .7	24	b 3.0	b 35	68	440	61	5.9	6.8	.4	.3
6	a .4	a .7	24	b 4.0	30	78	446	54	5.9	6.8	.4	.3
7	a .4	a .7	23	b 7.0	40	83	395	49	5.9	5.6	.4	.3
8	a .4	*1.1	29	b 9.0	42	71	385	44	21	5.3	.4	.3
9	a .5	a 5.0	46	b 20	45	70	350	39	* 23	5.0	.4	.3
10	a .5	a 4.5	71	b 30	41	65	375	34	127	4.4	.3	.3
11	a .8	a 5.4	145	b 60	111	70	320	31	a 35	4.2	.3	.3
12	a 2.0	a 5.0	85	105	442	66	296	28	a 20	3.9	.3	.3
13	a 1.0	a 4.5	62	130	282	71	268	26	a 17	3.6	.3	.3
14	a .9	a 4.0	52	171	204	80	228	25	a 14	3.6	.3	.3
15	a .9	a 3.5	45	119	165	89	199	28	a 12	3.3	.3	.3
16	a .9	a 4.5	45	107	148	130	172	26	a 10	2.8	.3	.4
17	a .9	a 5.6	38	99	140	218	163	22	a 9.0	* 2.5	.3	.4
18	a .9	a 8.0	34	76	128	436	232	20	a 9.0	2.2	* .3	3.0
19	a .9	a 12	29	80	115	274	181	* 27	a 8.0	2.0	.3	2.0
20	a .9	a 10	26	71	101	242	155	33	* 6.8	1.7	.3	1.7
21	a .9	a 9.0	12	* 65	93	282	* 140	30	6.2	1.5	.3	1.3
22	a .8	a 7.0	b 15	36	78	358	135	25	6.2	1.5	.3	* 1.1
23	a .8	a 5.0	b 20	b 32	78	481	132	19	7.7	1.3	.3	1.1
24	a .7	a 5.0	b 25	b 30	60	406	148	16	10	1.3	.3	.9
25	a .7	a 4.0	b 30	b 28	62	* 376	148	14	12	1.1	.3	.9
26	a .5	a 3.0	b 15	b 26	60	495	118	15	9.2	.9	.3	.9
27	a .4	a 3.0	b 8.0	b 25	53	632	100	18	8.6	.9	.3	.9
28	a .4	a 3.0	b 7.0	b 24	* 65	551	92	19	8.0	.8	.3	.9
29	a .4	a 4.0	b 5.0	b 24		696	125	16	8.0	.8	.3	.9
30	a .4	a 7.0	b 4.0	b 24		736	100	14	8.6	.6	.3	.9
31	a .4		1.9	b 24		794		12		.4	.3	
Total	19.9	128.9	984.9	1437.5	2731	8172	7855	1057	4459	1044	10.2	218
Mean	0.64	4.30	31.8	46.4	97.5	264	262	34.1	14.9	3.37	0.33	0.73
Max	2.0	12	145	171	442	794	665	85	127	7.7	0.4	3.0
Min	0.1	0.5	1.9	2.0	24	62	92	12	5.9	0.4	0.3	0.3
Ac-ft	39	256	1,950	2,850	5,420	16,210	15,580	2,100	884	207	20	43

Cal yr	1968 :	Mean	10.2	Max	280	Min	0	Ac-ft	7,380
Wtr yr	1969 :	Mean	62.9	Max	794	Min	0.1	Ac-ft	45,560

* Discharge measurement made on this day.
a No gage height record.
b Stage-discharge relation affected by ice.

5-5

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

PERIOD OF RECORD.--April 12, 1965, to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 2,420 cfs Jan. 23 (gage height, 4.73 ft); minimum, 0.1 cfs Aug. 25, 26 (gage height, 0.73 ft).

Period of record: Maximum recorded discharge, 2,420 cfs Jan. 23, 1970 (gage height, 4.73 ft); no flow at times.

REMARKS.--Records good.

4 PM Started

Discharge, in cubic feet per second for the year ending September 30, 1970

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.9	3.3	4.4	8.6	157	67	93	43	7.5	2.6	0.5	0.2
2	.9	3.3	4.2	8.0	138	74	87	39	6.8	2.6	.5	.3
3	1.1	3.3	3.9	6.2	128	72	79	35	5.8	2.4	.6	.3
4	1.1	3.6	4.2	6.8	107	70	74	33	4.8	2.9	.5	.6
5	1.1	4.4	4.4	4.4	101	72	72	32	4.1	2.2	.4	.8
6	1.1	4.7	4.4	7.1	112	97	74	29	4.1	1.8	.4	.8
7	1.1	4.7	4.7	7.1	203	355	76	29	4.8	1.6	.4	1.0
8	1.1	4.7	4.4	8.0	192	350	72	27	6.5	1.6	.4	1.0
9	1.1	4.7	4.4	22	172	234	67	35	7.5	1.6	.4	1.2
10	1.1	4.4	4.4	78	154	186	72	39	8.8	1.4	.4	1.2
11	1.1	4.4	5.0	52	148	160	76	35	8.4	1.2	.3	1.2
12	1.1	4.4	5.6	121	145	157	67	33	8.4	1.2	.3	1.2
13	.9	4.4	5.9	53	365	157	60	36	10	1.4	.3	1.2
14	.9	4.4	6.2	58	305	217	56	31	11	1.2	.2	1.4
15	.9	4.4	6.5	55	242	281	52	26	12	1.0	.2	1.4
16	1.5	4.4	7.1	60	* 217	* 234	47	23	* 11	1.0	.2	1.4
17	1.5	4.4	6.8	60	317	224	47	20	9.3	.8	* .2	1.4
18	1.5	* 4.4	7.7	157	228	189	43	19	7.5	.6	.2	1.4
19	1.3	4.4	8.0	232	178	160	46	18	6.1	.6	.2	1.4
20	1.3	4.4	10	* 332	160	145	48	16	5.5	* .6	.1	1.4
21	1.3	4.2	21	542	145	132	* 46	14	4.4	.5	.1	1.6
22	1.3	4.2	34	630	130	120	43	* 13	* 3.5	.5	.1	1.4
23	1.3	4.2	* 28	1,090	114	112	41	12	3.2	.6	.1	* 1.6
24	1.5	4.2	21	1,660	105	105	39	11	3.2	.6	.1	1.6
25	1.5	4.4	17	640	97	99	40	9.8	2.9	.8	.1	1.6
26	1.7	4.4	13	360	91	91	42	8.4	2.6	.8	.1	1.6
27	* 2.0	4.4	13	689	87	93	45	8.0	2.9	1.0	.1	1.6
28	2.2	4.4	12	* 465	85	91	45	7.5	2.6	.8	.1	1.6
29	2.5	4.4	11	325		89	45	8.0	2.6	.8	.1	1.4
30	2.8	4.4	10	245		93	45	8.4	2.9	.8	.2	1.4
31	3.0		9.2	200		107		8.4		.6	.2	
Total	43.7	128.3	301.4	8,182	4,623	4,633	1,739	706.5	179.9	38.1	8.0	36.2
Mean	1.41	4.28	9.72	264	165	149	58.0	22.8	6.00	1.23	0.26	1.21
Max	3.0	4.7	34	1,660	365	355	93	43	12	2.9	0.6	1.6
Min	0.9	3.3	3.9	4.4	85	67	39	7.5	2.6	0.5	0.1	0.2
Ac-ft	87	254	598	16,230	9,170	9,190	3,450	1,400	357	76	16	72

Cal yr	1969 :	Mean	61.1	Max	794	Min	0.3	Ac-ft	44,250
Wtr yr	1970 :	Mean	56.5	Max	1,660	Min	0.1	Ac-ft	40,900

* Discharge measurement made on this day.

5-6

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

DRAINAGE AREA.--350 sq mi.

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--6 years (1965-71), 37.7 cfs (27,310 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 774 cfs Jan. 20 (gage height, 3.52 ft); no flow Aug. 6-27.

Period of record: Maximum recorded discharge, 2,420 cfs Jan. 23, 1970 (gage height, 4.73 ft); no flow at times.

REMARKS.--Records good.

Discharge, in cubic feet per second for the year ending September 30, 1971

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	1.4	2.4	11	12	117	30	142	58	20	2.6	0.1	0.2
2	1.4	2.4	13	6.8	101	25	133	54	22	2.3	.1	.3
3	1.4	2.6	13	b 6.0	77	33	126	50	18	1.8	.1	.3
4	1.2	2.6	11	b 5.4	74	30	122	44	18	1.5	.1	.4
5	1.2	2.9	11	b 5.0	59	25	145	40	16	1.3	.1	.4
6	1.2	3.2	11	b 5.8	44	25	126	38	14	1.3	0	.4
7	1.4	3.8	19	b 7.0	43	28	124	34	12	1.0	0	.5
8	1.6	4.1	48	b 10	43	24	103	30	11	.9	0	.5
9	1.6	4.1	39	13	43	26	99	27	10	1.0	0	.5
10	1.6	4.1	29	24	48	25	97	25	10	2.0	0	.5
11	1.4	5.8	24	33	67	28	90	22	10	2.0	0	.5
12	1.4	5.8	20	29	62	44	84	20	10	1.5	0	.5
13	1.4	6.5	15	22	60	50	76	22	9.6	1.0	0	.4
14	1.4	6.5	18	28	59	43	69	23	8.3	.8	0	.4
15	1.4	6.5	18	32	67	43	65	21	7.4	.8	0	.4
16	1.4	* 5.8	18	89	64	37	60	22	6.7	.7	0	.4
17	1.4	5.8	16	480	54	34	65	20	6.0	.7	0	.4
18	1.4	6.5	11	610	50	* 32	70	18	6.7	.7	0	.4
19	1.4	6.5	12	574	46	32	65	17	11	.6	0	.4
20	1.6	6.1	14	518	43	33	* 58	16	7.4	* .6	0	.4
21	1.6	6.8	* 13	232	38	37	69	16	5.6	.5	0	.5
22	1.6	5.5	13	158	* 40	48	93	15	5.0	.4	0	* .5
23	1.6	6.1	12	131	43	140	103	14	3.9	.4	0	.5
24	1.6	11	12	113	44	330	101	12	3.6	.4	0	.5
25	1.8	16	12	99	43	276	92	* 12	* 3.6	.3	0	.5
26	1.8	16	9.8	* 92	30	*500	93	18	3.3	.3	0	.6
27	2.0	13	12	90	35	310	83	27	3.3	.3	0	.6
28	* 2.0	11	12	86	30	216	74	23	3.3	.2	.1	.7
29	2.0	11	12	79		219	69	20	3.6	.2	.1	.7
30	2.0	11	11	83		216	62	12	3.3	.2	.1	.8
31	2.2		12	111		177		14		.1	.1	
Total	48.4	201.4	501.8	3784.0	1524	3116	2758	784	2726	28.4	0.9	14.1
Mean	1.56	6.71	16.2	122	54.4	101	91.9	25.3	9.10	0.92	0.03	0.47
Max	2.2	16	48	610	117	500	145	58	22	2.6	0.1	0.8
Min	1.2	2.4	9.8	5.0	30	24	58	12	3.3	0.1	0	0.2
Ac-ft	96	399	995	7,510	3,020	6,180	5,470	1,560	541	56	1.8	28

Cal yr 1970	: Mean	57.3	Max	1,660	Min	0.1	Ac-ft	41,450
Wtr yr 1971	: Mean	35.7	Max	610	Min	0	Ac-ft	25,850

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

STATE OF OREGON
OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

5-7

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

DRAINAGE AREA.--350 sq mi.

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years (1965-72), 41.6 cfs (30,140 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,500 cfs June 8 (gage height, 8.87 ft); no flow at times.

Period of record: Maximum recorded discharge, 12,500 cfs June 8, 1972 (gage height, 8.87 ft); no flow at times.

REMARKS.--Records good.

Discharge, in cubic feet per second for the year ending September 30, 1972

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.8	2.0	43	b 18	b 44	278	80	40	6.8	a 0.5	0	0
2	.7	2.0	34	b 17	45	218	78	38	6.1	a .5	0	0
3	.7	2.0	32	16	45	395	74	3[illegible]	6.1	a .5	0	0
4	.7	2.3	28	15	60	294	72	30	6.1	a .5	0	0
5	.7	2.3	28	b 16	80	290	78	28	6.1	a .5	0	0
6	.7	2.3	147	b 18	88	*314	80	25	5.6	a .6	0	0
7	.6	2.6	101	b 22	86	266	82	23	6.4	a .7	0	0
8	.6	2.6	69	27	*90	222	74	30	1.200	a 1.0	0	0
9	.6	2.6	b 60	b 26	80	218	66	45	3.640	a .8	0	0
10	.6	2.8	b 50	26	62	298	60	41	a 50	a .7	0	0
11	.6	3.1	b 45	* 27	55	330	57	36	a 20	a .6	0	0
12	.7	3.9	b 42	b 27	55	390	59	29	a 10	a * .6	0	0
13	.7	4.3	b 40	b 27	72	550	64	25	a 8.0	a .6	0	0
14	.7	4.3	b 39	b 28	92	436	72	22	a 6.0	a .5	0	0
15	.8	4.6	b 38	b 28	84	310	86	19	a * 5.0	a .5	0	0
16	.8	5.0	* 38	b 29	145	278	92	18	3.8	a .5	0	0
17	.9	5.3	35	31	270	266	98	16	3.2	a .4	0	0
18	.9	* 5.0	37	34	278	250	90	17	2.2	a .4	0	0
19	1.0	5.0	38	74	258	212	84	18	1.5	.4	0.6	0
20	* 1.0	5.0	38	148	335	185	78	16	1.0	.5	.7	0
21	1.0	5.0	37	687	250	167	74	10	1.3	.6	1.1	0
22	1.3	5.0	35	425	212	158	72	33	.8	.5	.7	0
23	1.5	5.3	46	270	185	161	66	32	.7	.5	.6	0.3
24	1.5	5.6	50	179	155	142	62	* 25	.8	.5	* .5	.5
25	1.5	6.3	50	142	135	128	59	23	.8	.5	.1	.6
26	1.3	7.9	50	96	126	116	55	19	.6	.4	0	* .6
27	1.3	20	38	43	128	108	51	16	.6	.4	0	.6
28	1.5	28	27	b 42	350	102	47	13	.6	.4	0	.6
29	1.3	24	b 23	b 41	425	* 94	45	11	.5	.3	0	.6
30	1.5	43	b 21	b 41		88	44	9.5	a .5	.1	0	.6
31	2.0		b 20	b 42		84		7.7		0	0	
Total	30.5	219.1	1,379	2,662	4,290	7,348	2,099	758.2	5,001.1	15.5	4.3	4.4
Mean	0.98	7.30	44.5	85.9	148	237	70.0	24.5	167	0.50	0.14	0.15
Max	2.0	43	147	687	425	550	98	45	3,640	1.0	1.1	.6
Min	0.6	2.0	20	15	44	84	44	7.7	.5	0	0	0
Ac-ft	60	435	2,740	5,280	8,510	14,570	4,160	1,500	9,920	31	8.5	8.7

Cal yr	1971	: Mean	38.1	Max	610	Min	0	Ac-ft	27,590	
Wtr yr	1972	: Mean	65.1	Max	3,640	Min	0	Ac-ft	47,230	

* Discharge measurement made on this day.
a No gage height record.
b Stage-discharge relation affected by ice.

5-8

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m) downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--8 years (1965-73), 37.2 ft^3/s (1.05 m^3/s), 26,950 acre-ft/yr (33.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge undetermined; no flow June 30 to Sept. 23.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. Revised figures of discharge, in cubic feet per second, for the water year 1972, superceding those published in 1972, are given herewith:

Date	Discharge	Month	ft^3/s-days	Maximum	Mean	Acre-ft
June 9, 1972	300	June 1972	1,661.1	1,200	55.4	3,290
	Water year	ft^3/s-days	Maximum	Mean	Acre-ft	
	1972	20,471.1	1,200	55.9	40,600	

Discharge, in cubic feet per second for the year ending September 30, 1973

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	.6	1.1	5.1	21	16	124	44	8.8	1.2			
2	.6	1.2	5.1	17	17	120	42	8.0	1.2			0
3	.6	1.6	5.0	15	17	121	35	8.0	1.2			
4	.6	2.4	4.5	11	16	80	33	8.4	1.1			
5	.6	2.6	4.0	12	18	74	35	8.2	1.0			0
6	.6	2.8	3.8	11	20	68	32	8.8	1.2			
7	.6	3.0	2.6	10	17	64	34	7.3	1.0			
8	.6	3.0	2.8	10	15	59	31	6.7	1.0			
9	.6	3.2	2.8	10	18	57	30	6.4	.9			0
10	.7	3.2	2.8	13	18	61	29	5.8	.8			0
11	1.0	3.4	2.8	20	18	76	29	5.2	.8			0
12	1.0	3.4	2.8	35	18	63	28	4.7	1.2			
13	1.5	3.4	2.8	66	18	54	31	4.1	.8			
14	1.2	3.4	2.8	113	18	48	32	3.2	.7			0
15	1.0	3.6	2.8	82	18	46	28	2.5	.6			
16	.9	3.6	4.0	164	20	43	24	2.2	.6			
17	.9	4.1	10	200	24	47	24	2.1	.6			
18	.9	4.1	26	132	25	47	26	2.0	.6			
19	.9	4.1	24	82	25	44	28	1.8	.6			
20	.9	4.1	24	55	25	43	29	1.6	.5			
21	.9	4.1	32	40	24	43	28	1.4	.5			
22	.8	3.8	84	35	21	42	25	1.3	.5			
23	.8	3.8	72	30	24	40	23	1.2	.5			
24	.9	3.8	74	34	24	37	21	1.7	.4			.1
25	.9	3.8	64	32	28	42	18	2.0	.7			.1
26	.9	3.8	47	18	40	42	14	2.0	.5			.1
27	1.0	4.3	42	16	57	40	12	1.8	.4			.1
28	1.1	5.1	40	22	64	35	11	1.8	.2			.1
29	1.1	5.1	32	26		34	10	1.7	.1			.1
30	1.1	5.1	28	26		34	0.6	1.3	0.0			.1
31	1.1		25	21		40		1.2				
Total	26.9	104.0	680.0	1,403	676	1,778	905.6	124.4	21.5	0	0	1.7
Mean	0.87	3.47	21.9	45.3	24.1	57.4	26.9	4.01	0.72	0	0	0.02
Max	1.5	5.1	84	200	64	129	44	9.2	1.2	0	0	0.1
Min	0.6	1.1	2.8	10	15	34	9.6	1.2	0	0	0	0
Ac-ft	53	206	1,350	2,780	1,340	3,530	1,600	247	43	0	0	1.4

Cal yr 1972	: Mean	53.7	Max	1,200	Min	0	Ac-ft	38,980
Wtr yr 1973	: Mean	15.4	Max	200	Min	0	Ac-ft	11,150

GPO 837700-119

JOHN DAY RIVER BASIN

14-0474. ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m), downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--9 years (1965-74), 45.7 ft^3/s (1.29 m^3/s), 33,150 acre-ft/yr (40.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 6,050 ft^3/s (171 m^3/s), Jan. 18, gage height, 6.87 ft (2.094 m); no flow Oct. 9.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s), June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1974

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.1	0.9	854	75	145	108	365	116	12	0.7	0.4	0.1
2	.1	.9	380	70	118	112	302	110	11	.7	.4	.1
3	.1	.8	179	70	104	92	246	96	10	.7	.4	.1
4	.1	.9	113	70	102	94	222	86	11	.7	.3	.1
5	.1	1.1	76	70	98	90	229	78	11	.7	.3	.1
6	.1	1.2	49	70	80	102	254	70	14	.8	.3	.1
7	.1	1.7	656	70	96	86	218	62	13	.7	.3	.1
8	.1	2.6	543	70	98	70	191	59	9.9	.8	.3	.1
9	0	54	258	70	94	70	185	50	8.6	.9	.2	.1
10	.1	140	179	70	90	70	179	48	7.7	.8	.2	.2
11	.1	155	149	70	88	70	161	44	7.3	.8	.2	.2
12	.1	312	132	70	88	92	152	41	6.4	1.1	.2	.2
13	.1	208	108	80	82	102	135	38	5.9	1.3	.2	.2
14	.1	118	90	2000	82	100	130	37	5.9	1.2	.2	.2
15	.1	96	88	1000	90	120	126	38	4.8	1.2	.2	.2
16	.1	155	143	2120	161	286	124	36	4.6	1.1	.2	.2
17	.1	155	266	2050	182	430	116	36	4.1	1.2	.2	.2
18	.1	113	330	2620	152	345	114	37	3.8	1.4	.2	.2
19	.1	86	197	2590	222	286	118	37	3.6	1.4	.2	.2
20	.1	78	155	806	194	212	106	37	3.4	1.3	.2	.2
21	.2	68	506	442	167	191	96	34	3.2	1.2	.2	.2
22	.2	63	562	322	135	191	90	30	3.0	1.1	.1	.2
23	.2	57	345	254	124	182	122	27	2.8	.9	.1	.2
24	.2	54	224	220	120	170	254	26	2.6	.8	.1	.2
25	.2	52	167	209	114	173	236	24	2.4	.7	.1	.2
26	.2	49	113	167	116	203	194	22	1.8	.6	.1	.2
27	.2	47	86	145	108	209	176	21	1.5	.6	.1	.2
28	.2	70	124	138	98	274	176	18	1.4	.6	.1	.2
29	.3	400	121	128		246	148	16	1.1	.5	.1	.2
30	.3	782	96	118		538	124	15	.9	.5	.1	.2
31	.6		82	118		460		13		.4	.1	
Total	4.7	3322.1	7671	14581	3348	5774	5289	1402	178.7	27.4	6.3	5.1
Mean	0.15	111	247	470	120	186	176	45.2	5.96	0.88	0.20	0.17
Max	0.6	782	854	2,620	222	538	365	116	14	1.4	0.4	0.2
Min	0	0.8	82	70	82	70	90	13	0.9	0.4	0.1	0.1
Ac-ft	9.3	6,590	15,220	28,920	6,640	11,450	10,490	2,780	354	54	12	10

Cal yr 1973	: Mean	43.3	Max	200	Min	0	Ac-ft	31,350
Wtr yr 1974	: Mean	114	Max	2,620	Min	0	Ac-ft	82,530

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STATE OF OREGON

WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m) downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years (1965-75), 45.8 ft^3/s (1.30 m^3/s), 33,180 acre-ft/yr (40.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 496 ft^3/s (14.0 m^3/s) Mar. 2, gage height, 3.20 ft (0.975 m); no flow at times.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1975

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	.2	1.4	3.8	5.9	40	375	254	164	21	2.4	0.1	0.2
2	.2	1.4	3.8	5.4	38	395	218	152	22	2.2	.1	.2
3	.3	1.4	4.1	5.6	30	278	236	152	22	1.8	.1	.2
4	.3	1.4	4.1	6.1	28	206	218	148	21	1.6	.1	.2
5	.3	1.4	4.1	6.1	23	167	179	130	15	1.5	.1	.2
6	.3	1.5	4.1	6.1	21	132	176	114	13	1.2	.1	.1
7	.4	1.8	4.1	6.4	21	114	176	108	10	1.2	.1	.1
8	.4	2.0	4.3	7.3	22	104	173	104	8.0	1.3	.1	.1
9	.4	1.8	4.3	6.4	18	132	164	98	7.0	4.9	.1	.1
10	.4	1.8	4.3	6.4	26	124	173	100	6.0	15	.1	.1
11	.5	2.0	4.6	6.1	28	104	179	100	5.0	40	.1	.1
12	.5	2.0	4.6	5.9	43	86	250	92	4.0	2.4	.1	.1
13	.5	1.8	4.6	7.7	212	78	365	82	3.4	1.3	.1	.1
14	.5	1.8	4.6	8.6	179	66	350	72	3.0	.7	0	.1
15	.6	1.8	4.8	9.9	110	64	274	62	2.5	.6	0	.1
16	.6	1.8	4.8	15	102	64	246	51	2.1	.5	0	.1
17	.6	2.0	4.8	18	72	62	212	45	2.0	.5	0	.1
18	.7	2.6	4.8	43	62	62	197	41	2.0	.5	0	.1
19	.7	2.6	4.8	50	53	130	212	37	2.4	.4	.1	.1
20	.7	2.6	4.8	41	92	126	218	37	2.8	.4	.2	.1
21	.7	2.6	5.6	34	59	108	215	36	3.4	.4	.2	.1
22	.8	2.8	6.1	25	64	88	222	32	3.6	.3	.2	.1
23	.8	3.0	5.9	23	60	90	218	28	3.2	.3	.2	.1
24	.8	3.4	5.6	23	53	94	226	26	2.8	.2	.2	.1
25	.8	3.4	5.9	108	55	158	395	24	2.6	.2	.2	.1
26	.9	3.4	6.1	215	59	148	266	22	2.6	.2	.2	.1
27	1.0	3.4	6.1	106	57	132	240	21	2.4	.2	.2	.1
28	1.2	3.4	6.4	64	134	128	200	19	2.4	.2	.2	.1
29	1.4	3.4	5.4	53		152	176	19	2.2	.1	.2	.1
30	1.4	3.6	[illegible]	32		266	173	20	2.4	.1	.2	.1
31	1.3		5.4	26		340		20		.1	.2	
Total	20.2	69.3	152.8	975.9	1,761	4,573	6,801	2,156	201.8	82.7	3.8	3.5
Mean	0.65	2.31	4.93	31.5	62.9	148	227	69.5	6.73	2.67	0.12	0.12
Max	1.4	3.6	6.4	215	212	395	395	164	22	40	0.2	0.2
Min	0.2	1.4	3.8	5.4	18	62	164	19	2.2	0.1	0	0.1
Ac-ft	40	137	303	1,940	3,490	8,670	13,490	4,280	400	164	7.5	6.9

Cal yr	1974 :	Mean	84.5	Max	2,620	Min	0.1	Ac-ft 61,200
Wtr yr	1975 :	Mean	46.0	Max	395	Min	0	Ac-ft 33,320

5-11

STATE OF OREGON

WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ Sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge, and 9 mi (14 km) northeast of condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--11 years (1965-76), 44.2 ft^3/s (1.252 m^3/s), 32,020 acre-ft/yr (39.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 302 ft^3/s (8.55 m^3/s) Apr. 9, gage height, 2.83 ft (0.863 m); no flow at times.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1976

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.1	2.2	5.9	23	37	36	96	51	9.5	0.8	0	4.1
2	.1	2.2	6.1	18	35	37	90	47	9.9	.7	0	3.8
3	.1	2.4	7.7	33	34	34	104	44	9.5	.7	.1	3.6
4	.1	2.4	9.0	34	17	36	114	41	8.6	.6	.1	3.4
5	.2	2.6	9.5	37	14	27	145	37	8.2	.5	.1	3.0
6	.2	3.0	9.0	35	17	30	209	32	7.3	.5	.2	2.8
7	.3	3.4	9.5	33	20	32	185	29	6.8	.5	10	2.6
8	.3	3.4	9.9	106	25	28	176	25	5.9	.4	14	2.6
9	.3	3.4	11	116	25	28	266	23	5.9	.4	6.8	2.2
10	.3	4.1	10	82	22	34	203	20	5.9	.4	5.6	1.2
11	.4	4.1	9.5	66	20	38	179	18	5.6	.3	4.6	.6
12	.4	4.1	9.0	57	21	34	173	18	5.4	.3	4.1	.4
13	.4	4.1	9.0	44	23	37	176	14	4.6	.3	3.8	.3
14	.4	4.1	7.7	45	26	41	152	11	4.3	.2	4.3	1.0
15	.5	4.1	7.7	74	30	41	138	10	4.1	.2	5.9	2.8
16	.5	4.3	8.6	167	29	47	130	9.5	3.8	.2	7.3	3.6
17	.5	4.3	8.6	179	45	94	116	9.0	3.4	.2	12	3.4
18	.5	4.3	8.2	152	50	173	114	8.6	3.2	.2	11	3.2
19	.5	4.3	8.2	112	50	202	102	8.6	3.0	.1	9.5	3.0
20	.5	4.3	7.7	86	40	126	108	9.0	2.4	.1	8.6	2.8
21	.6	4.3	7.3	68	33	110	110	9.5	2.2	.1	7.7	2.8
22	.7	4.3	7.3	59	32	110	94	8.6	2.0	.1	6.8	3.2
23	.8	4.6	7.7	59	29	108	98	8.2	1.7	.1	6.4	3.2
24	.8	4.6	9.9	51	28	114	70	7.3	1.7	.1	8.1	3.4
25	1.0	4.6	11	43	32	150	84	7.3	1.5	0	8.2	3.4
26	1.6	5.1	13	37	41	114	76	6.8	1.5	0	7.7	3.2
27	2.4	6.4	45	37	55	102	70	6.4	1.2	0	6.8	3.2
28	2.6	6.4	45	36	66	98	66	6.4	1.0	0	6.1	3.2
29	2.4	6.1	40	44	55	84	64	6.4	.8	0	5.6	3.0
30	2.2	5.9	59	45		84	59	6.8	.9	0	5.1	2.8
31	2.0		50	40		100		7.7		0	4.6	
Total	237	1234	4670	2018	951	2329	3767	546.1	131.8	8.0	181.1	81.8
Mean	0.76	4.11	15.1	65.1	32.8	75.1	126	17.6	4.39	0.26	5.84	2.73
Max	2.6	6.4	59	179	66	202	266	51	9.9	0.8	14	4.1
Min	0.1	2.2	5.9	18	14	27	59	6.4	0.8	0	0	0.3
Ac-ft	47	245	926	4,000	1,890	4,620	7,470	1,080	261	16	359	162

Cal yr	1975 :	Mean 47.0	Max 395	Min 0	Ac-ft 34,060
Wtr yr	1976 :	Mean 29.0	Max 266	Min 0	Ac-ft 21,080

WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge and 9 mi (14 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--12 years (1965-77), 41.1 ft^3/s (1.164 m^3/s), 29,780 acre-ft/yr (36.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 112 ft^3/s (3.17 m^3/s) April 6, gage height, 2.25 ft (0.686 m); no flow July 16 to Sept. 30.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS.-- 1972, see 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1977

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	2.8	3.0	3.6	4.6	5.4	8.2	18	4.6	6.1	.2		
2	2.8	3.0	4.1	4.6	5.1	8.6	20	4.8	6.1	.2		
3	2.6	3.0	4.3	4.8	5.1	9.5	20	5.4	5.6	.2		
4	2.6	3.0	4.6	4.3	5.1	9.9	37	5.4	5.6	.2		
5	2.6	3.0	4.6	3.0	5.0	9.0	64	5.6	5.1	.2		
6	2.6	3.0	4.6	2.8	4.9	8.6	88	5.9	4.6	.2		
7	2.6	3.0	4.6	2.7	4.8	9.5	78	7.3	3.8	.2		
8	2.6	3.2	4.6	2.6	4.8	11	64	7.7	3.4	.2		
9	2.6	3.6	4.6	2.6	4.8	16	44	7.7	3.0	.2		
10	2.6	3.6	4.6	2.8	4.9	18	35	9.9	2.8	.2		
11	2.6	3.6	4.8	3.0	5.1	17	28	35	2.4	.1		
12	2.4	3.6	4.8	3.3	5.4	16	24	35	2.4	.1		
13	2.2	3.6	4.8	3.7	5.9	16	21	34	2.2	.1		
14	2.2	3.8	4.8	4.0	6.4	13	20	26	2.2	.1		
15	2.2	3.8	4.8	4.5	6.8	13	17	27	1.7	.1		
16	2.2	4.3	4.8	5.2	6.4	12	16	21	1.5	0		
17	2.2	4.3	4.8	5.9	6.1	12	14	19	1.3	0		
18	2.4	4.3	4.8	5.9	6.1	12	13	18	1.3	0		
19	2.6	4.6	4.8	5.9	6.1	12	12	16	.8	0		
20	2.6	4.6	3.8	5.6	6.1	12	11	15	.8	0		
21	2.6	4.8	4.8	5.4	6.4	12	9.9	13	.8	0		
22	2.4	4.8	4.6	5.4	6.4	11	9.5	11	.7	0		
23	2.4	4.8	5.1	5.4	6.8	12	8.2	10	.6	0		
24	2.4	4.6	4.6	5.4	6.4	14	6.8	11	.5	0		
25	2.6	4.7	5.1	5.4	6.4	16	6.1	11	.4	0		
26	2.6	4.8	4.8	4.6	6.4	16	5.9	11	.3	0		
27	2.6	4.1	4.8	4.6	6.4	17	5.6	9.5	.3	0		
28	2.6	4.6	4.6	5.1	7.3	18	5.1	9.5	.3	0		
29	2.8	3.6	4.8	4.8		18	4.8	9.0	.2	0		
30	2.8	3.6	4.8	4.6		18	4.6	8.2	.2	0		
31	2.8		4.8	4.8		17		7.3		0		
Total	78.6	116.3	144.0	137.5	162.8	412.3	710.5	420.8	67.0	2.5	0	0
Mean	2.54	3.88	4.65	4.44	5.81	13.3	23.7	13.6	2.23	0.08	0	0
Max	2.8	4.8	5.1	5.9	7.3	18	88	35	6.1	0.2	0	0
Min	2.2	3.0	3.6	2.6	4.8	8.2	4.6	4.6	0.2	0	0	0
Ac-ft	156	231	286	273	323	818	1,410	835	133	5.0	0	0

Cal yr 1976 : Mean 28.3 Max 266 Min 0 Ac-ft 20,530
Wtr yr 1977 : Mean 6.17 Max 88 Min 0 Ac-ft 4,470

5-13
LAST PAGE

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge and 9 mi (14 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--13 years (1965-78), 41.2 ft^3/s (1.167 m^3/s), 29,850 acre-ft per (36.8 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 478 ft^3/s (13.5 m^3/s) Feb. 7, gage height, 3.18 ft (0.969 m); no flow Oct. 1-19.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good except for August which are fair.

REVISIONS.--1972, see 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1979

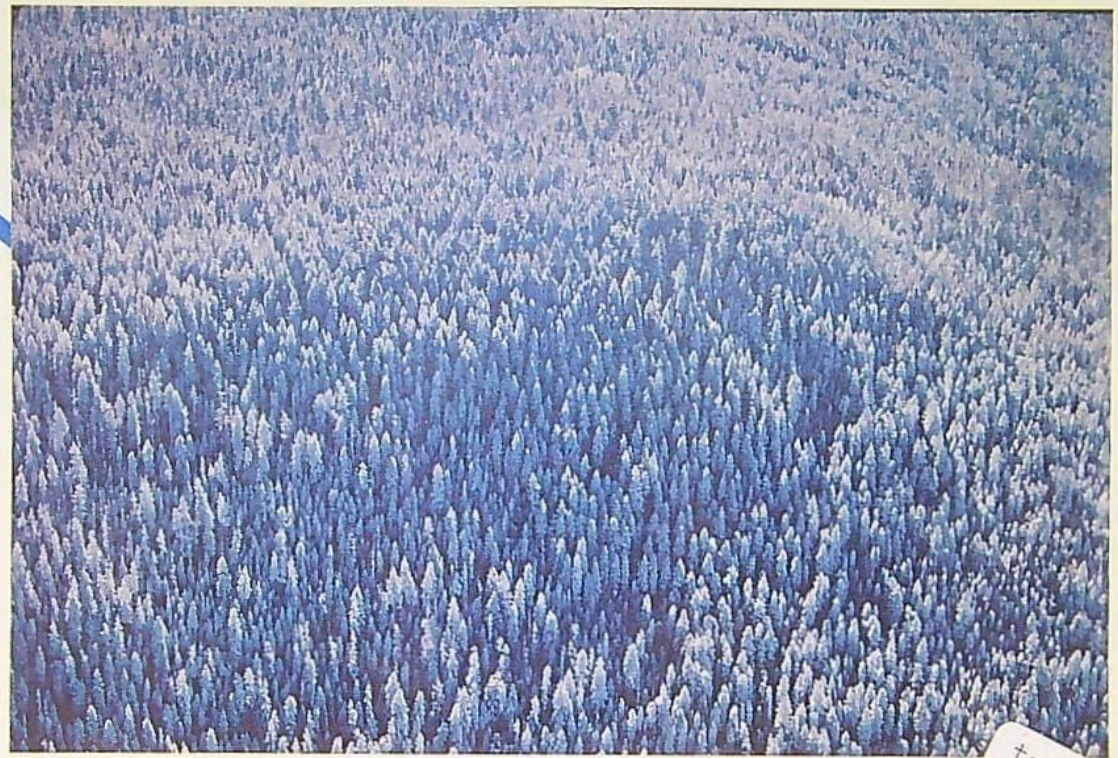
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0	0.3	28	8.4	64	145	74	66	12	4.3	0.2	1.4
2	0	.3	23	9.9	66	124	96	55	9.6	4.6	.2	1.3
3	0	.3	29	13	64	108	76	48	8.6	7.3	.2	1.2
4	0	.3	28	26	72	106	68	44	7.3	10	.2	1.2
5	0	.4	23	82	80	104	64	43	5.6	9.9	.2	1.3
6	0	.4	19	90	135	112	62	40	5.1	7.7	.2	1.4
7	0	.4	17	62	218	118	70	36	5.1	6.1	.2	1.5
8	0	.5	16	59	365	152	66	29	4.8	8.0	.2	1.6
9	0	.5	14	114	240	298	53	27	4.8	13	.2	1.6
10	0	.5	13	170	194	246	45	28	4.1	9.5	.2	1.6
11	0	.6	13	142	150	203	40	27	4.3	7.3	.2	1.5
12	0	.6	13	135	118	185	37	25	4.3	6.4	.2	1.5
13	0	.7	18	142	120	164	36	25	4.9	5.4	.2	1.5
14	0	.7	130	188	106	142	35	24	5.4	4.6	.2	1.6
15	0	.8	185	310	104	126	33	33	5.6	3.8	.2	1.7
16	0	.8	118	335	84	116	35	40	5.1	3.6	.2	1.7
17	0	.9	80	282	80	110	37	30	4.8	3.6	.2	1.8
18	0	1.2	55	197	84	110	36	26	4.3	3.4	.2	2.2
19	0	1.4	37	182	102	102	32	23	3.8	3.0	.2	2.2
20	.1	1.1	28	158	135	96	29	19	3.2	2.5	.2	2.2
21	.1	1.4	25	132	140	90	28	17	1.5	2.2	1.0	2.2
22	.1	1.5	24	124	135	86	27	16	1.0	1.8	4.0	2.2
23	.1	1.6	23	102	138	84	28	18	1.8	1.6	3.0	2.0
24	.1	2.8	23	82	140	106	28	17	3.0	1.4	2.0	2.0
25	.1	9.8	24	76	164	90	26	17	3.6	1.2	1.4	2.0
26	.1	56	26	62	170	76	71	17	3.6	1.0	1.0	2.2
27	.2	44	24	68	194	66	170	16	3.4	.7	.7	2.0
28	.2	35	22	66	161	59	122	16	2.8	.5	.5	2.0
29	.2	29	22	64		53	94	15	13	.4	.5	2.0
30	.2	32	21	70		50	76	13	7.2	.3	.8	2.0
31	.3		19	68		50		12		.2	1.5	
Total	1.8	225.9	1,140	3,619.3	3,823	3,677	1,694	862	151.3	135.3	20.4	52.6
Mean	0.06	7.53	36.8	117	137	199	56.5	27.8	5.05	4.37	0.66	1.76
Max	0.3	56	185	335	365	298	170	66	13	13	4.0	2.2
Min	0	0.3	13	8.4	64	50	26	12	1.0	0.2	0.2	1.2
Ac-ft	3.6	448	2,260	7,180	7,580	7,290	3,360	1,710	300	268	40.5	104

Cal yr	1977	Mean	8.99	Max	185	Min	0	Ac-ft 6,510
Wtr yr	1978	Mean	42.2	Max	365	Min	0	Ac-ft 30,550

tributary to
Wall Creek drainage

tributary to
Rock Creek drainage

tributary to
Ditch Creek drainage



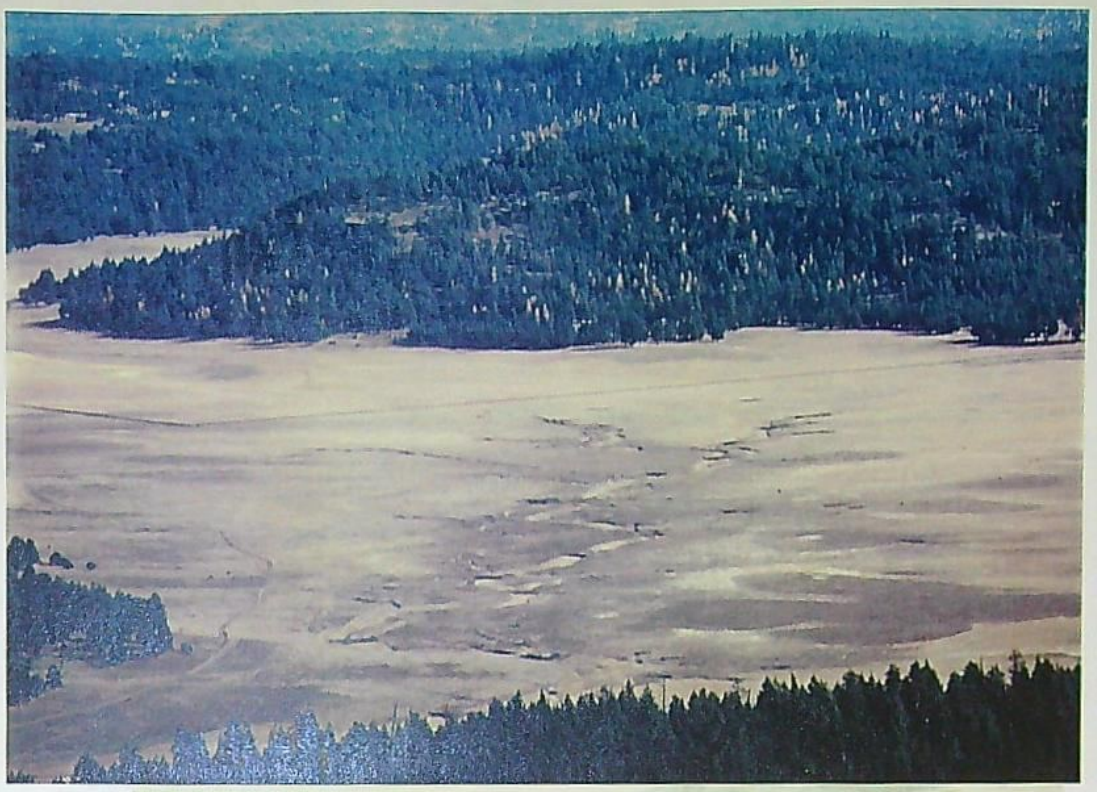
tributary to
Ray Creek drainage

Madison Butte

The way it was
wet and shaded
with lots of forest duff

(1)

CAMAS PRAIRIE



1½ MILES BELOW
FRENCH CHARLIE

12-25-75

1½ MILES ABOVE OLEX

AXEL OLSEN PLACE

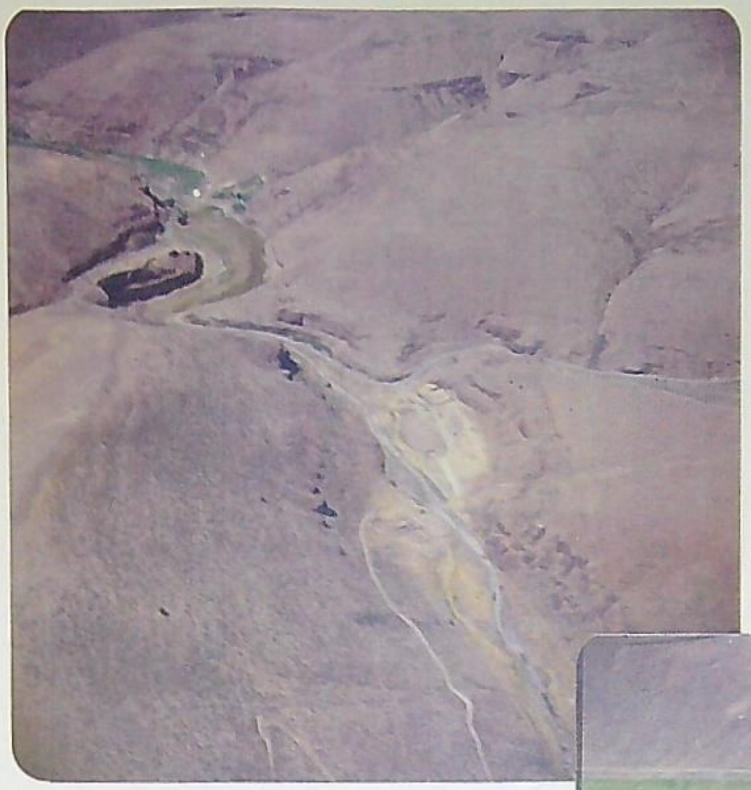
9-19-85

HEADWATERS

WINTER

SPRING

SUMMER

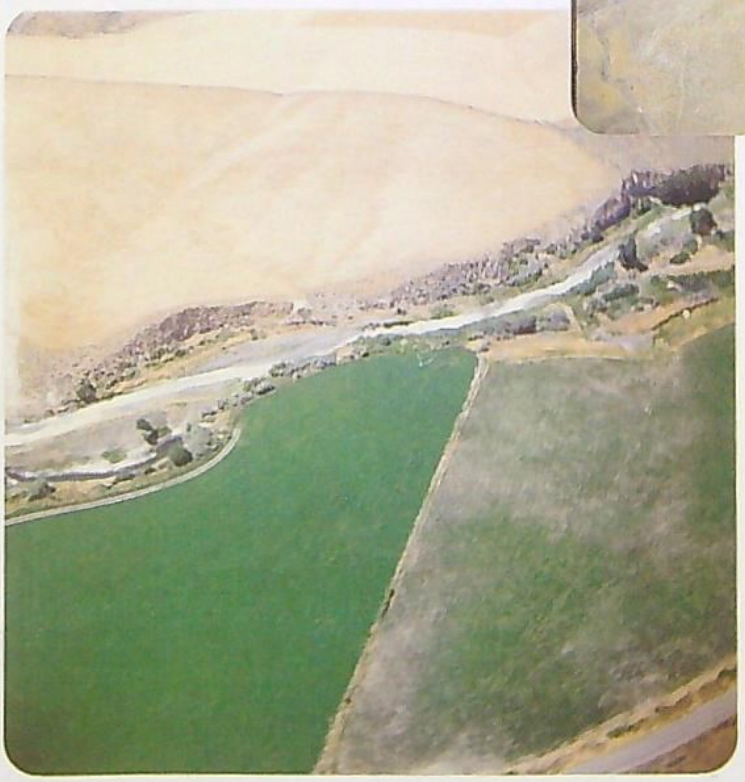


UPPER ROCK CREEK
MOUTH OF JUNIPER

8-10-75

WOLF HOLLOW BRIDGE

8-10-75



LOWER ROCK CREEK
1½ MILES BELOW
FRENCH CHARLIE

8-10-75

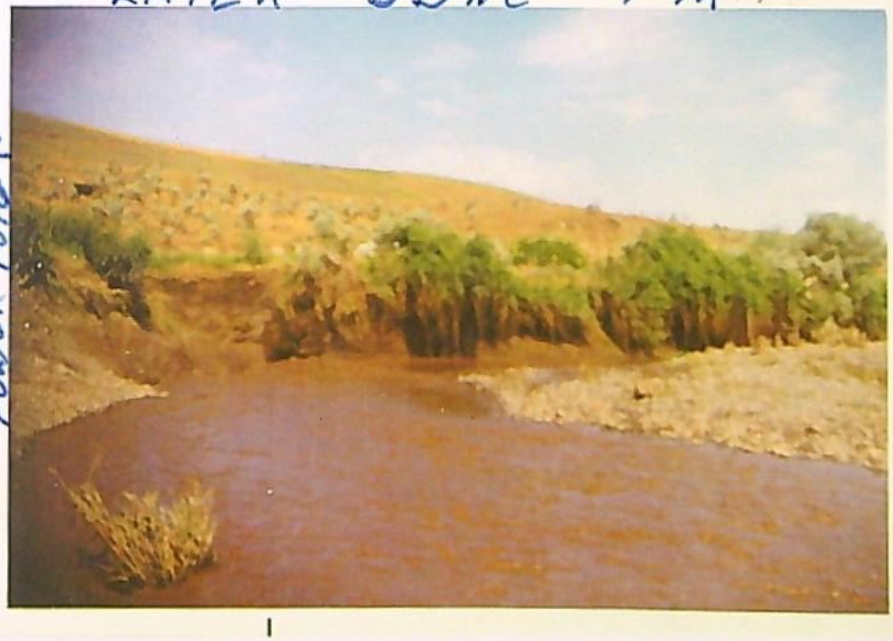
DEBRIS

1974

1/19/74 Earl Weatherford

1/19/74 Field at Earl Weatherfords

LATER JUNE 9TH 1972



POWER POLE ↑

BETTENCOURT
SPRING

JANUARY 13, 1979

OLEX

JANUARY 13,1979

MARVEL BRIDGE

3/4 MILE ABOVE
FRENCH CHARLIE

JANUARY 13, 1979

MOUTH OF ROCK CREEK

JANUARY 1979

SPRING NEAR MOUTH
OF ROCK CREEK

AUGUST 30, 1989

Oregon

DEPARTMENT OF
FISH AND
WILDLIFE

HABITAT
CONSERVATION
DIVISION

November 15, 1994

Mike Mattick
Water Resources Department
158 12th Street, NE
Salem, OR 97310

RE: Instream Water Right 70251; supporting information

Dear Mike:

Attached is the subject material you requested. Hopefully it will serve to support our application for sufficient water to operate the fishway at Harper Dam on Rock Creek (John Day River).

Sincerely,

Albert H. Mirati, Jr.
Fish Passage Coordinator

c: Burchfield

EXHIBIT 1
PAGE 1 OF 10

2501 SW First Avenue
PO Box 59
Portland, OR 97207
(503) 229-6967

For Rock Cr.
IWR

Rock Cr., John Day

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
1002 NE HOLLADAY STREET - ROOM 620
PORTLAND, OREGON 97232
503/230-5400

January 24, 1990

F/NWR5

IWR 70251

Sharon Conyers
Oregon Department of Fish and Wildlife
506 S.W. Mill Street
P.O. Box 59
Portland Or. 97207

Dear Ms. Conyers,

Attached is the functional design for the Harper Dam Fishway on Rock Creek (Enclosed). This is the second fishway of a series of upwards of 6 that is needed to insure safe and efficient adult anadromous fish passage into the upper basin of Rock Creek in the John Day River Basin. It is our understanding that the Oregon Department of Fish and Wildlife (ODFW) plans to construct the Harper Fishway during the summer of 1990 with funds carried over from FY89.

As you recall the National Marine Fisheries Service (NMFS) volunteered to help design the first couple of fishways to expedited the project. The first fishway at Ramsey Dam was designed by NMFS last September and ODFW personnel constructed it in October.

Please have your engineering staff review the enclosed functional design for the Harper Fishway. Detailed structural design is required before construction can begin on this fishway. The NMFS is not prepared to do the structural design for the Harper Dam site so the ODFW will need to either do the structural design or contract it out to a private engineering firm. As nearly $18,000 in engineering related funding was provided to ODFW by NMFS for this project, the design costs should be covered.

Technical comments or questions on the design should be directed to Mr. Randy Lee at 230-5411. Any other comments or questions can be directed to Mr. Mike Delarm of my staff at 230-5412. We look forward to moving ahead with this project.

Sincerely,

Robert Z. Smith
Director, Columbia River
Fisheries Development Program

EXHIBIT 1
PAGE 2 OF 10

Harper Dam Fishway
Rock Creek
John Day River Basin

Background

Rock Creek enters the John Day River at river mile 21.6. The Oregon Department of Fish and Wildlife (ODFW) personnel indicated that 75 miles of habitat would be opened by correcting passage problems on Rock Creek. According to ODFW, steelhead is the only species of anadromous fish which utilize the Rock Creek drainage. Steelhead currently utilize the lower 25 miles of the creek.

There are six irrigation dams within a 20 mile creek reach. The dams are located at creek miles 7 (Ramsey Dam), 19.75 (#2), 23.5 (Irby Dam), 25.5 (Harper Dam), 27 (McCoin Dam), and 28 (#6). Steelhead passage is entirely blocked at the Harper damsite, but all the other dams probably delay or block passage during low to moderate flows (possibly during higher flows).

In October of 1989, ODFW constructed a fishway designed by the National Marine Fisheries Service (NMFS) at the Ramsey damsite. In general, the fishway consists of two pools with a vertical slot insert placed between the pools.

The following presents a functional design for providing safe and efficient passage of adult steelhead at Harper Dam.

Harper Dam Fishway
Rock Creek
John Day River Basin

Summary

Location: Approximate creek mile 25.5
T2S, R22E, Sec. 5
Gilliam County, Oregon

Fishway type: Vertical Slot
Floor slope 1 vertical to 8 horizontal
7 vertical slots with one 15-inch entrance
Pool dimensions 6 foot wide by 8 foot long
Vertical slot either can be formed concrete or inserts.

Design Flows: 57 cfs maximum
47 cfs normal
34 cfs minimum

EXHIBIT 1
PAGE 4 OF 10

Hydraulic Design

The proposed fishway at the Harper Dam is a vertical slot type with each slot having a width of one foot. Field surveys by ODFW taken May 4, 1988 indicated a head of approximately 8 feet will need to be managed by the fishway. This results in a fishway with 7 vertical slots and one 15-inch wide entrance to satisfactorily manage the 8 foot drop. Due to cost and space limitations, the fishway proposed is to have a slope of 1 vertical to 8 horizontal and have pool dimensions of 6 foot wide by 8 foot long. This is considered to be minimum dimensions for this type of fishway. Vertical slots can be either formed concrete or fabricated metal inserts which may be constructed offsite and installed in the flume when completed.

It is expected that adult steelhead will be present during the months of February through May, therefore, the fishway is designed to accomodate passage during this period. Design flows for the fishway are as follows: 57 cubic feet per second (cfs) maximum, 47 cfs normal and 34 cfs minimum. From high water marks, there appears to be 4 feet of head over the dam crest. Using the standard weir formula, this converts to a streamflow of approximately 1259 cfs. At this streamflow the effectiveness of the fishway entrance flow to attract fish is negligible without auxiliary water, however, at this high streamflow it appears fish may choose to pass over the dam or wait and use the fishway when streamflows subside.

Stoplogs at the entrance are utilized to control the discharge from the fishway. To increase operational flexibility and ease of adjustments, a gate may be considered. Adjustments to the logs or gate will be necessary to insure a hydraulic drop of 1.25 feet across the entrance. This will result in and entrance jet velocity of approximately 9 feet per second. A short flow deflecting wall is constructed between the entrance pool and the first slot upstream from the fishway entrance. The purpose of this wall is to dissipate the energy from the oncoming jet. Additionally, for dewatering purposes, stoplog slots are located at the exit. A coarse trashrack is also located at the exit. To allow passage of fish past the trashrack, the spacing between vertical rack bars are 9 inches and the spacing between horizontal members are 2 feet. To facilitate cleaning of debris from the rack, the rack face is set at a slope or 4 vertical to 1 horizontal. To insure safety, it is recommended the fishway be covered by the use of metal walkway grating.

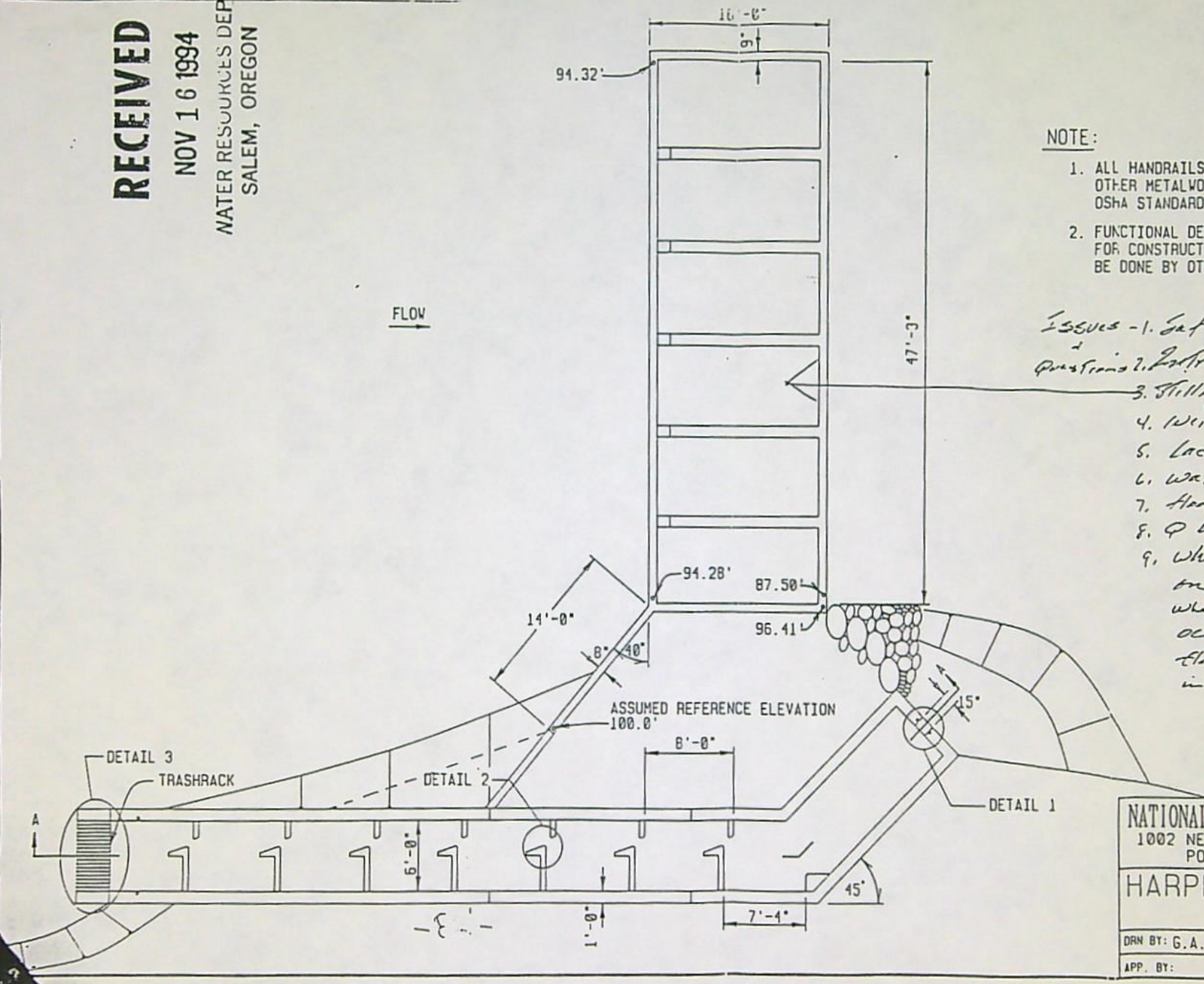
EXHIBIT 1
PAGE 6 OF 10

SHEET NO.	TITLE
1	INDEX TO DRAWINGS
2	PLAN
3	SECTION
4	HYDRAULIC PROFILE
5	DETAILS

PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY
INDEX TO DRAWINGS



NOTE:

1. ALL HANDRAILS, GRATING, PLATFORMS AND OTHER METALWORK SHALL CONFORM TO OSHA STANDARDS.
2. FUNCTIONAL DESIGN ONLY. NOT TO BE USED FOR CONSTRUCTION. STRUCTURAL DESIGN TO BE DONE BY OTHERS.

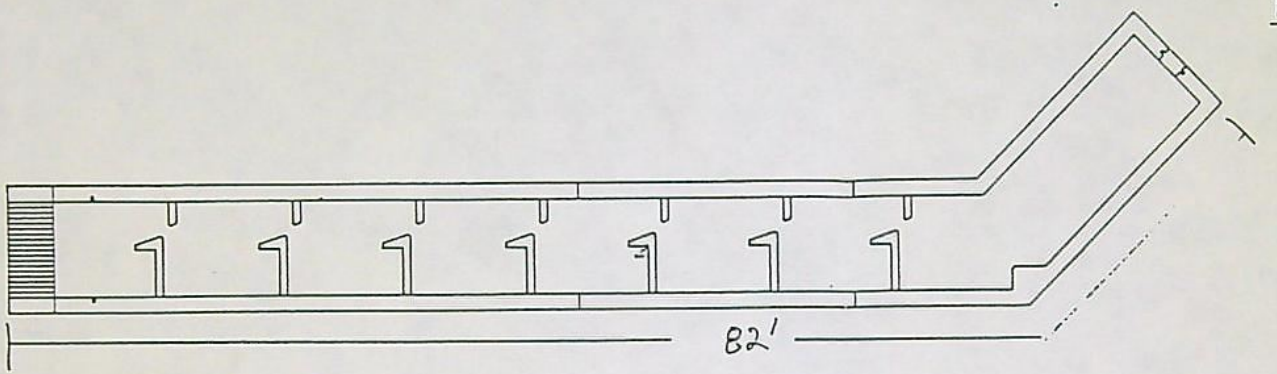
Issues - 1. Safety Grating over ladder
Questions 2. Entrance location & apron.
3. Stilling basin entrapment
4. Weir offset
5. Ladder Q
6. Wall HT to prevent
7. Flood damage
8. Q based on USGS Records
9. What about passage on low flows years when early irrigation occurs ie: Passage at flows less than 34 cfs in ladder.

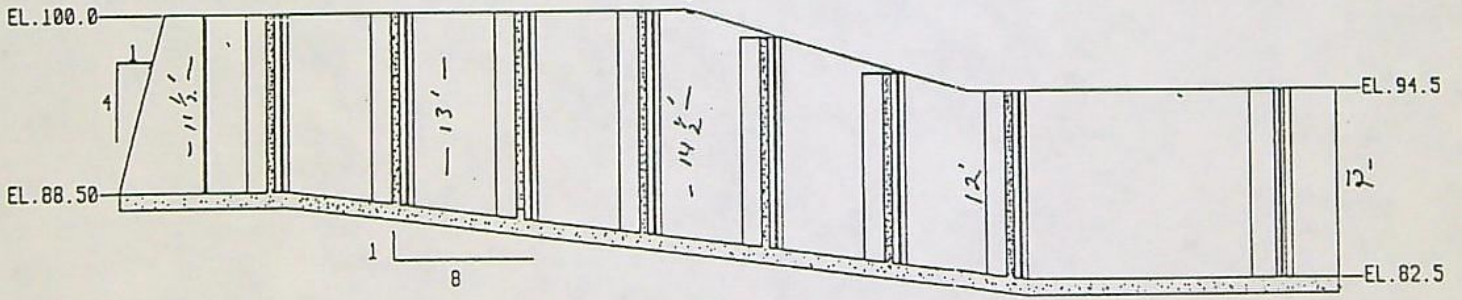
PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE 1002 NE HOLLADAY STREET - RM 620 PORTLAND, OREGON 97232			
HARPER DAM FISHWAY PLAN			
DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	2

EXHIBIT 1
PAGE 8 OF 10

NOTE:





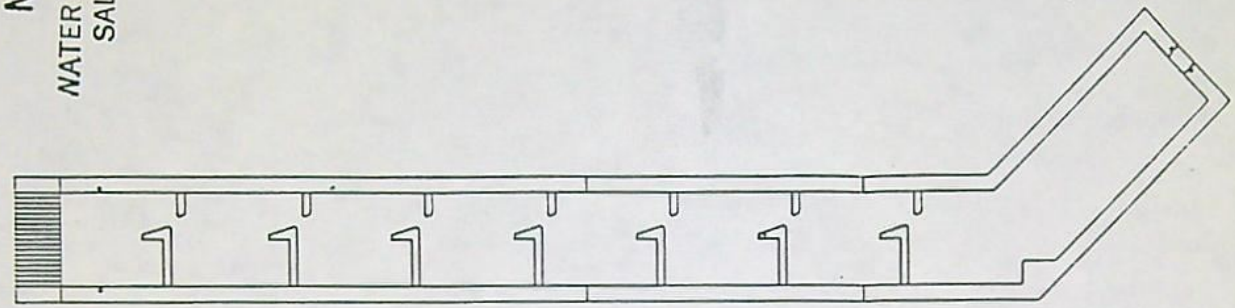
SECTION A - A

PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

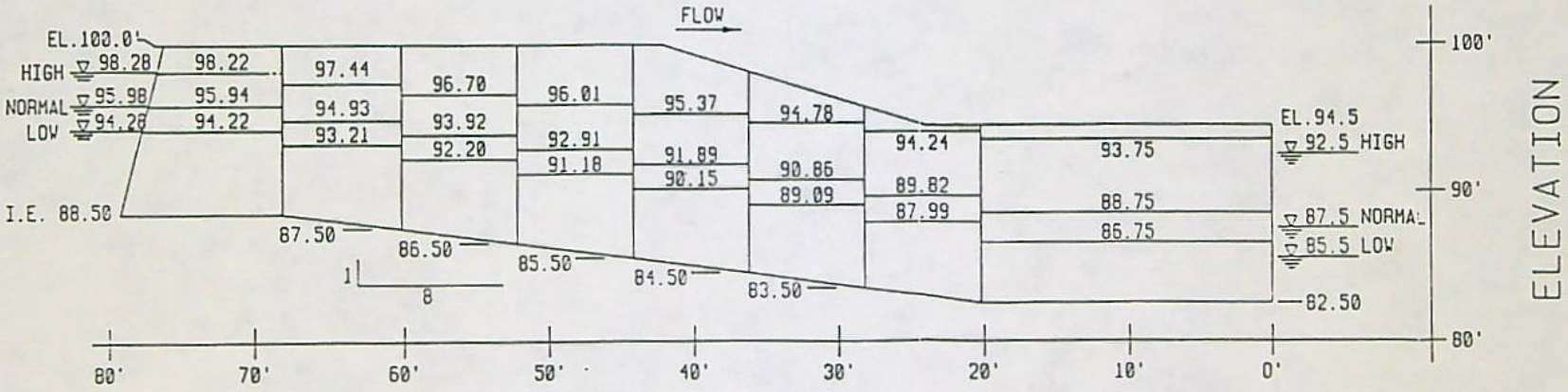
HARPER DAM FISHWAY
SECTION

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SH
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	3



NOTE:

1. AT HIGH, NORMAL AND LOW FOREBAY, THE DISCHARGES THROUGH THE FISHWAY, ARE APPROX. 57, 47, AND 34 cfs, RESPECTIVELY.
2. TOP OF WING WALL, RIGHT BANK OF FOREBAY IS ASSUMED TO BE ELEVATION 100.0'



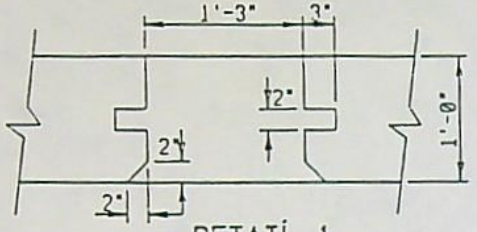
PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

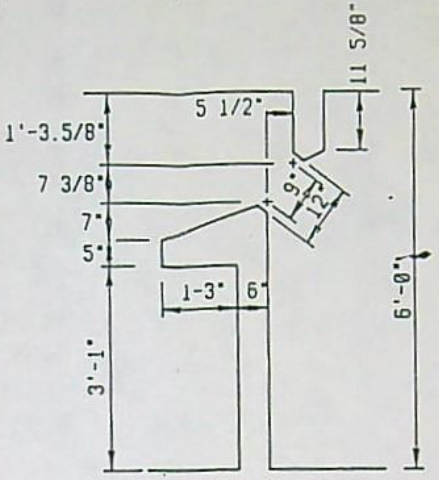
HARPER DAM FISHWAY
HYDRAULIC PROFILE

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	4

EXHIBIT 1
PAGE 10 OF 10



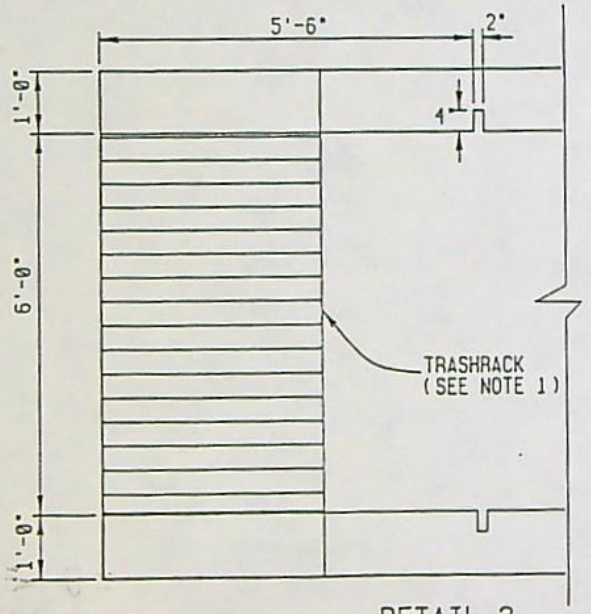
DETAIL 1
FISHWAY ENTRANCE
SCALE: 1" = 1'



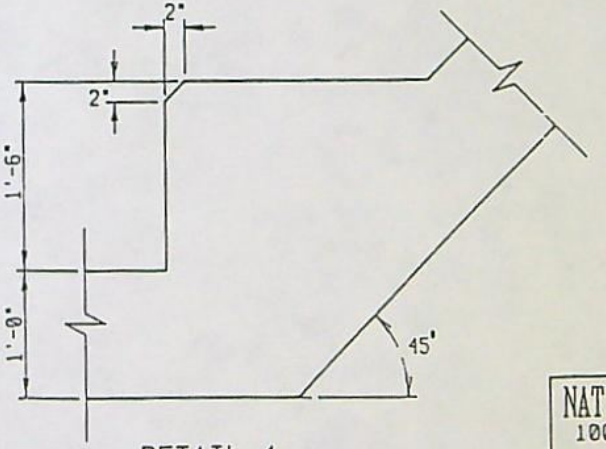
DETAIL 2
VERTICAL SLOT WEIR
SCALE: 1/2" = 1'

NOTE:

1. 9" ± CLEAR SPACE BETWEEN VERTICAL BARS 2'-0" MIN. CLEAR SPACE BETWEEN HORIZONTAL BARS. VERTICAL BARS ON UPSTREAM FACE TO FACILITATE DEBRIS REMOVAL.



DETAIL 3
FISHWAY EXIT
SCALE: 1/2" = 1'



DETAIL 4
FLOW DEFLECTING STUBWALL
SCALE: 1" = 1'

PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY
DETAILS

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
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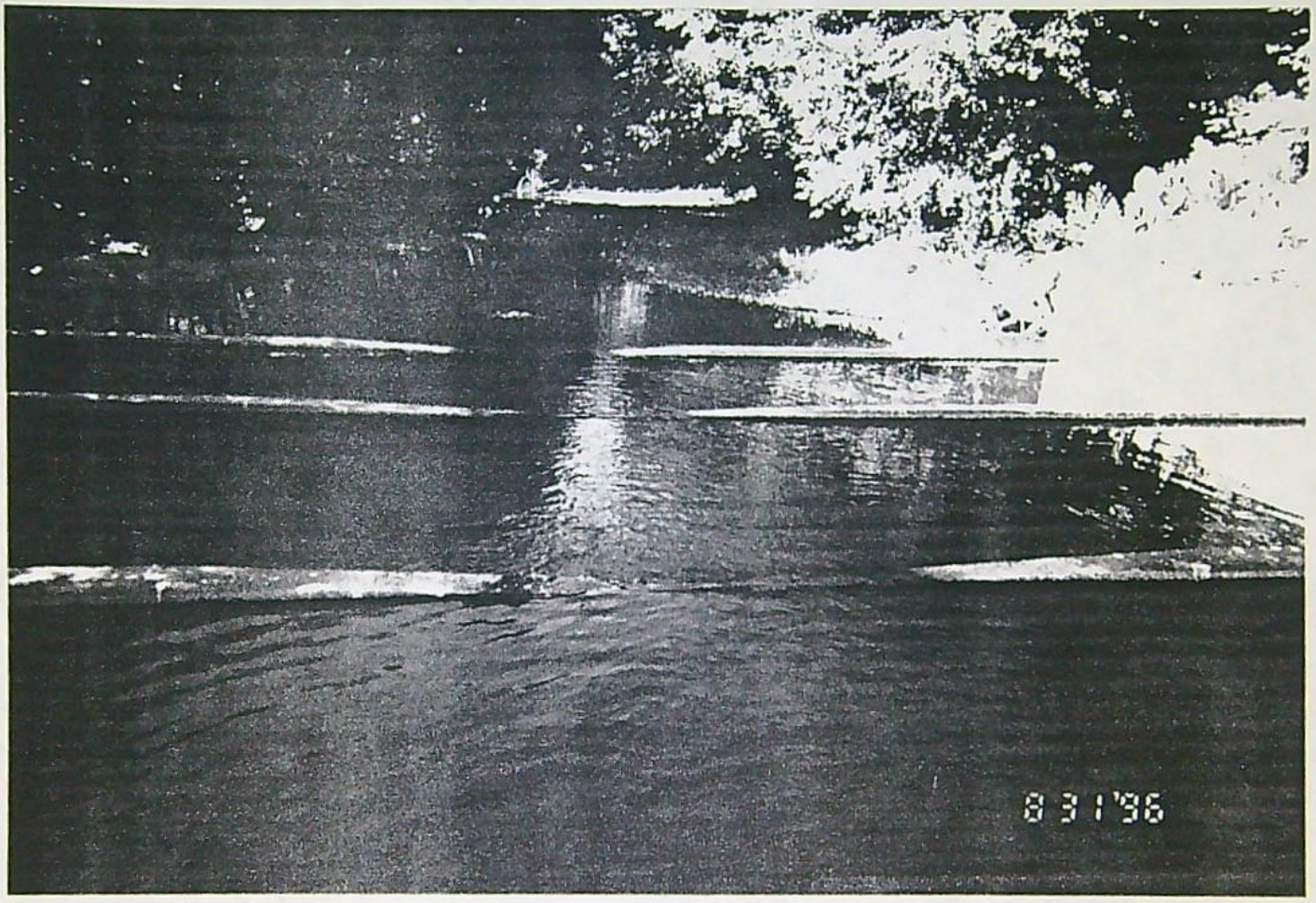

EXHIBIT 2
PAGE 1 OF 1

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft below county road bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1965, to Sept. 30, 1966.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge, 364 cfs Mar. 14 (gage height, 2.48 ft); no flow at times.

1965, 1966: Maximum discharge, that of Mar. 14, 1966; no flow at times.

Remarks.--Records good except for period of no gage-height record, which are poor.

Cayuse 66-78

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Discharge, in cubic feet per second for the year ending September, 30, 19 66

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	2.9	3.9	8.3	6.1	12	19	174	9.7	3.3	1.9	0.2	0
2	2.9	4.1	8.0	9.7	11	17	158	9.3	3.8	4.1	.1	0
3	2.9	4.3	8.0	12	12	14	121	[illegible]	3.8	3.8	0	0
4	2.9	5.1	8.0	12	11	14	98	8.2	3.2	2.8	0	0
5	3.2	5.1	8.0	16	11	14	83	[illegible]	3.0	2.1	0	0
6	2.8	5.1	8.3	26	11	16	74	7.1	3.8	1.6	0	0
7	3.1	5.1	8.3	33	12	* 16	65	7.1	4.1	1.9	0	0
8	3.1	5.3	5.1	29	12	* 21	58	6.7	4.1	1.6	0	0
9	3.1	5.5	a 5.5	30	11	64	52	6.4	4.1	1.4	0	0
10	3.1	* 5.5	a 5.5	23	11	*202	51	5.5	3.8	1.3	0	0
11	3.1	5.5	a 5.5	21	10	114	50	5.5	3.8	1.3	0	0
12	* 3.2	5.8	a 5.5	19	10	109	* 45	5.2	3.8	1.1	0	0
13	3.4	6.9	a 5.5	18	10	217	41	5.0	3.6	1.3	.1	0
14	3.4	8.6	a 5.5	17	10	266	28	5.0	3.3	11	.1	0
15	3.5	8.3	a 5.5	17	10	* 234	20	5.0	2.8	6.7	.1	.4
16	3.5	8.6	a 5.5	17	9.7	165	29	5.0	2.4	a 4	* .1	.6
17	3.5	8.3	a 5.5	15	* 10	104	27	5.0	1.9	a 3	.1	.6
18	3.7	8.3	a 6	14	10	94	26	4.4	1.9	a 2	0	.6
19	3.9	7.6	a 6	14	10	89	23	* 4.1	1.9	a 1	0	.6
20	3.9	7.2	a 6.5	* 13	11	81	* 22	3.8	1.6	a 1	0	.6
21	3.9	7.2	* 6.7	13	11	69	21	3.6	1.6	a .5	0	.4
22	3.9	7.2	5.5	14	12	58	21	3.3	1.6	a .5	0	.4
23	3.9	7.6	4.7	13	14	58	20	3.3	1.6	a .5	0	.2
24	3.9	8.6	7.8	13	16	59	18	3.3	1.9	a .4	0	.2
25	3.9	10	6.4	13	18	87	16	3.1	1.9	a .4	0	.2
26	3.9	10	6.7	13	21	144	14	2.6	1.6	a .2	0	.2
27	3.9	9.6	7.1	13	20	198	13	2.6	* 1.4	a .2	.1	.2
28	3.9	8.6	7.4	13	20	230	12	2.6	1.3	* .1	.1	.2
29	3.9	8.0	7.4	13	----	234	11	2.6	1.1	.2	.1	.2
30	3.9	8.0	7.4	13	----	230	10	2.8	1.1	.6	* .1	.2
31	3.9	----	7.8	13	----	195	----	* 3.3	----	.5	.1	----
	1 08.0	2 08.9	2 04.9	5 05.8	3 46.7	3,432	1,401	157.4	80.5	59.0	1.3	5.8

Mean	3.48	6.96	6.61	16.3	12.4	111	46.7	5.08	2.68	1.90	0.04	0.19
Acre Feet	214	414	406	1,000	688	6,810	2,780	312	160	117	2.6	12

Calendar year	1965	Max	-	Min	-	Mean	-	Acre-ft	-	
Period Water year	1965-66	Max	266	Min	0	Mean	17.8	Acre-ft	12,910	

* Discharge measurement made on this day.

a No gage-height record.

STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft downstream from county bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1962, to Sept. 30, 1967.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year, 832 cfs Jan. 28 (gage height, 3.27 ft); no flow at times.

1965-67: Maximum discharge, that of Jan. 28, 1967; no flow at times.

Remarks.--Records good except for period of no gage-height record, which are poor.

Discharge, in cubic feet per second for the year ending September, 30, 1967...

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.4	1.4	25	32	* 236	48	83	240	21	2.0	0.2	0
2	.4	1.4	58	32	195	51	89	240	19	1.8	** .2	0
3	.4	1.4	51	* 30	169	47	104	206	16	1.6	.2	0
4	.4	1.6	47	29	156	39	117	179	13	1.2	.2	0
5	.4	1.8	52	35	142	39	119	153	12	a 1.2	.1	0
6	.4	2.4	* 52	36	119	41	125	138	9.8	* 1.1	.1	0
7	.4	2.4	50	35	110	40	130	125	8.8	1.1	.1	0
8	.4	2.4	46	33	100	39	121	114	8.0	1.1	.1	0
9	.2	2.4	40	31	93	39	110	104	7.2	1.1	.1	0
10	.4	2.6	41	30	83	42	110	112	6.9	1.1	.1	0
11	.4	3.3	62	31	76	42	140	112	6.6	.8	.1	0
12	.4	a 5	70	36	.71	38	125	98	6.1	.8	.1	0
13	.5	a 7	256	39	70	42	110	94	5.7	.5	.1	0
14	.6	a10	290	81	66	38	104	80	5.7	.5	.1	.1
15	.8	a15	142	142	59	34	100	70	5.0	.5	.1	.1
16	.9	a20	100	181	54	34	98	62	4.7	.4	.1	.1
17	.9	a15	79	123	54	91	91	54	4.1	.4	0	.1
18	1.0	a10	67	94	66	100	94	49	3.4	.4	0	.1
19	.9	a40	61	76	58	87	89	45	3.1	.4	0	.1
20	.9	a150	57	89	46	80	78	40	2.5	.4	0	.1
21	1.3	a 70	57	100	51	93	71	33	3.4	.4	0	.1
22	1.6	a 50	46	79	48	94	73	* 30	6.5	.4	0	.1
23	1.6	a 40	39	64	* 51	110	68	27	10	.4	0	.1
24	1.6	a 30	31	62	51	104	75	25	7.6	.3	0	.1
25	1.6	a 25	37	65	51	87	145	23	5.7	.3	0	.1
26	* 1.6	a 20	27	62	48	76	* 153	21	4.7	.2	0	.1
27	1.4	a 18	26	70	43	71	166	18	4.1	.2	0	.1
28	1.4	a 15	25	368	45	68	175	18	3.8	.2	0	.1
29	1.4	* 19	32	731		75	148	21	3.1	.2	0	.1
30	1.4	24	35	483		78	145	22	2.5	.2	0	.2
31	1.4		32	305		*76		21		.2	0	
Total	27.4		2033		2411		3356		219.9		2.0	
		606.2		3610		1943		2576		21.6		1.8

Mean	0.88	20.2	65.6	116	86.1	62.7	112	83.1	7.33	0.70	0.06	0.06
Max	1.6	150	290	731	236	110	175	240	21	2.0	.2	0.2
Min	0.2	1.4	25	29	43	34	68	16	2.5	0.2	0	0
Ac-ft	54	1,200	4,030	7,160	4,780	3,850	6,660	5,110	436	43	4.0	3.6

Cal yr	1966	Mean	23.7	Max	290	Min	0	Ac-ft	17,170
Wtr yr	1967	Mean	46.0	Max	290	Min	0	Ac-ft	33,340

* Discharge measurement made on this day. ** Field estimated made on this day.
a No gage-height record.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

Location.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., on left bank about 200 ft downstream from county bridge, 15 miles northeast of Condon, Gilliam County.

Records available.--April 12, 1965, to Sept. 30, 1968.

Gage.--Water-stage recorder.

Extremes.--Maximum discharge during year not determined; no flow at times.

1965-68: Maximum recorded discharge, 832 cfs Jan. 28, 1967; no flow at times.

Remarks.--Records good except for periods of ice effect or no gage-height record, which are poor.

Revisions.--The maximum daily discharge for water year 1967 is corrected to 731 cfs.

Discharge, in cubic feet per second for the year ending September 30, 1968.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.2	a 0.9	a 1.4	a 7	16	37	10	4.2	3.1	* 0.6		
2	.2	* .9	a 1.6	a 6	* 15	34	* 9.6	* 4.2	3.1	a .5		
3	* .2	a .9	a 2.0	*b 5	15	29	10	3.8	3.1	a .4		
4	a .2	a .9	a 2.3	a 4	17	* 27	9.6	3.4	* 2.8	a .3		
5	a .2	a .9	* 2.8	*b 2.5	24	25	10	3.1	2.4	a .3		
6	a .2	a .9	2.8	b 3.0	29	24	9.6	3.4	2.2	a .2		
7	a .2	a .9	a 2.5	b 3.0	28	22	9.6	* 3.4	2.4	a .2		
8	a .2	a 1.0	a 2.2	b 3.0	a 25	21	9.2	3.1	2.0	.1		
9	a .2	a 1.0	a 2.0	b 3.5	a 21	21	8.0	2.8	2.0	a .1		
10	a .2	a 1.1	a 1.5	b 4.0	a 19	21	7.1	2.4	1.7	a .1		
11	a .2	a 1.1	a 1.5	b 4.5	a 16	20	6.3	2.4	1.9	a .1		
12	a .2	a 1.2	a 1.4	5.5	a 14	19	6.3	2.4	2.0	a .1		
13	a .2	a 1.2	a 1.2	6.3	a 12	19	6.3	2.4	1.9	a 0		
14	a .2	a 1.2	a 1.0	7.5	a 11	18	5.9	2.4	1.7	a 0		
15	a .2	a 1.2	a .8	18	a 11	17	5.9	2.2	1.5	0		
16	a .2	a 1.3	a .8	49	a 11	16	5.9	2.0	1.5	0		
17	a .2	a 1.3	a .8	31	a 12	b 14	5.9	2.0	1.5	0		
18	a .2	a 1.3	a .8	22	a 14	b 13	5.6	1.9	1.3	0		
19	a .2	a 1.3	a .9	19	a 17	b 13	5.2	1.9	1.3	0		
20	a .2	a 1.3	a 1.0	16	a 25	15	5.2	5.2	1.3	0		
21	a .3	a 1.3	a 1.3	25	a 120	14	5.6	4.2	1.1	0		
22	a .4	a 1.3	a 1.6	70	a 280	14	5.6	4.5	1.0	0		
23	a .5	a 1.3	a 2.2	46	a 90	13	5.6	3.8	1.1	0		
24	a .5	a 1.3	a 2.6	36	a 70	12	5.9	4.2	1.1	0		
25	a .5	a 1.3	a 4.0	30	a 60	12	5.9	4.8	.8	0		
26	a .6	a 1.3	a 8.0	b 12	a 55	14	5.6	4.8	.6	0		
27	a .6	a 1.3	a 17	b 8	a 50	16	5.6	4.8	.5	0		
28	a .8	a 1.3	a 25	b 9	a 45	14	5.6	4.5	.5	0		
29	a 1.5	a 1.3	a 15	b 10	a 40	13	4.8	4.2	.6	0		
30	a 1.4	a 1.3	a 10	b 12		11	4.5	3.8	.6	0		
31	a 1.1		a 8.0	b 14		10		3.4		0		
Total	12.2	34.8	126.0	491.8	1162	568	205.9	105.6	48.6	3.0	0	0
Mean	0.39	1.16	4.06	15.9	40.1	18.3	6.86	3.41	1.62	0.10	0	0
Max	1.5	1.3	25	70	280	37	10	5.2	3.1	0.6	0	0
Min	0.2	0.9	0.8	2.5	11	10	4.5	1.9	0.5	0	0	0
Ac-ft	24	69	250	975	2,300	1,130	408	209	96	6.0	0	0

Cal yr	1967	: Mean	39.2	Max	731	Min	0	Ac-ft	28,390
Wtr yr	1968	: Mean	7.54	Max	280	Min	0	Ac-ft	5,470

* Discharge measurement made on this day.
a No gage-height record.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

PERIOD OF RECORD.--April 12, 1965, to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 1,010 cfs June 10 (gage height, 3.69 ft); minimum observed, 0.1 cfs Oct. 2 (gage height, 0.67 ft); and may have been no flow sometime Oct. 1.

Period of record: Maximum recorded discharge, 1,010 cfs June 10, 1969 (gage height, 3.69 ft); no flow at times.

REMARKS.--Records good except for periods of no gage height record, which are poor.

Discharge, in cubic feet per second for the year ending September 30, 1969

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	a .1	a .5	a 10	b 2.0	b 24	65	* 665	85	10	* 7.7	.4	.3
2	* .2	a .8	a 13	b 2.0	b 24	62	542	82	8	7.7	.4	.3
3	.3	a 1.5	a 18	b 2.0	b 26	65	415	75	7.4	7.4	.4	.3
4	a .3	a .9	* 23	b 2.5	b 30	62	390	70	6.5	6.8	.4	.3
5	a .3	a .7	24	b 3.0	b 35	68	440	61	5.9	6.8	.4	.3
6	a .4	a .7	24	b 4.0	30	78	446	54	5.9	6.8	.3	.3
7	a .4	a .7	23	b 7.0	40	83	395	49	5.9	5.6	.4	.3
8	a .4	*1.1	29	b 9.0	42	71	385	44	21	5.3	.4	.3
9	a .5	a 5.0	46	b 20	45	70	350	39	* 23	5.0	.4	.3
10	a .5	a 4.5	71	b 30	41	65	375	34	127	4.4	.3	.3
11	a .8	a 5.4	145	b 60	111	70	320	31	a 35	4.2	.3	.3
12	a 2.0	a 5.0	85	105	442	66	296	28	a 20	3.9	.3	.3
13	a 1.0	a 4.5	62	130	282	71	268	26	a 17	3.6	.3	.3
14	a .9	a 4.0	52	171	204	80	228	25	a 14	3.6	.3	.3
15	a .9	a 3.5	45	119	165	89	199	28	a 12	3.3	.3	.3
16	a .9	a 4.5	45	107	148	130	172	26	a 10	2.8	.3	.4
17	a .9	a 5.6	38	99	140	218	163	22	a 9.0	* 2.5	.3	.4
18	a .9	a 8.0	34	76	128	436	232	20	a 9.0	2.2	* .3	3.0
19	a .9	a 12	29	80	115	274	181	* 27	a 8.0	2.0	.3	2.0
20	a .9	a 10	26	71	101	242	155	33	* 6.8	1.7	.3	1.7
21	a .9	a 9.0	12	* 65	91	282	* 140	30	6.2	1.5	.3	1.3
22	a .8	a 7.0	b 15	36	78	358	135	25	6.2	1.5	.3	* 1.1
23	a .8	a 5.0	b 20	b 32	78	481	132	19	7.7	1.3	.3	1.1
24	a .7	a 5.0	b 25	b 30	60	406	148	16	10	1.3	.3	.9
25	a .7	a 4.0	b 30	b 28	62	* 376	148	14	12	1.1	.3	.9
26	a .5	a 3.0	b 15	b 26	60	495	118	15	9.2	.9	.3	.9
27	a .4	a 3.0	b 8.0	b 25	53	632	100	18	8.6	.9	.3	.9
28	a .4	a 3.0	b 7.0	b 24	* 65	551	92	19	8.0	.8	.3	.9
29	a .4	a 4.0	b 5.0	b 24		696	125	16	8.0	.8	.3	.9
30	a .4	a 7.0	b 4.0	b 24		736	100	14	8.6	.6	.3	.9
31	a .4		1.9	b 24		794		12		.4	.3	
Total	19.9	128.9	984.9	1,437.5	2,731	8,172	7,855	1,057	445.9	104.4	10.2	21.8
Mean	0.64	4.30	31.8	46.4	97.5	264	262	34.1	14.9	3.37	0.33	0.73
Max	2.0	12	145	171	442	794	665	85	127	7.7	0.4	3.0
Min	0.1	0.5	1.9	2.0	24	62	92	12	5.9	0.4	0.3	0.3
Ac-ft	39	256	1,950	2,850	5,420	16,210	15,580	2,100	884	207	20	43

Cal yr 1968 : Mean 10.2 Max 280 Min 0 Ac-ft 7,380
Wtr yr 1969 : Mean 62.9 Max 794 Min 0.1 Ac-ft 45,560

* Discharge measurement made on this day.
a No gage height record.
b Stage-discharge relation affected by ice.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

PERIOD OF RECORD.--April 12, 1965, to current year.

GAGE.--Water-stage recorder.

EXTREMES.--Current year: Maximum discharge, 2,420 cfs Jan. 23 (gage height, 4.73 ft); minimum, 0.1 cfs Aug. 25, 26 (gage height, 0.73 ft).

Period of record: Maximum recorded discharge, 2,420 cfs Jan. 23, 1970 (gage height, 4.73 ft); no flow at times.

REMARKS.--Records good.

4 PM started

Discharge, in cubic feet per second for the year ending September 30, 1970

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.9	3.3	4.4	8.6	157	67	93	43	7.5	2.6	0.5	0.2
2	.9	3.3	4.2	8.0	138	74	87	39	6.8	2.6	.5	.3
3	1.1	3.3	3.9	6.2	128	72	79	35	5.8	2.4	.6	.3
4	1.1	3.6	4.2	6.8	107	70	74	33	4.8	2.9	.5	.6
5	1.1	4.4	4.4	4.4	101	72	72	32	4.1	2.2	.4	.8
6	1.1	4.7	4.4	7.1	112	97	74	29	4.1	1.8	.4	.8
7	1.1	4.7	4.7	7.1	203	355	76	29	4.8	1.6	.4	1.0
8	1.1	4.7	4.4	8.0	192	350	72	27	6.5	1.6	.4	1.0
9	1.1	4.7	4.4	22	172	234	67	35	7.5	1.6	.4	1.2
10	1.1	4.4	4.4	78	154	186	72	39	8.8	1.4	.4	1.2
11	1.1	4.4	5.0	52	148	160	76	35	8.4	1.2	.3	1.2
12	1.1	4.4	5.6	121	145	157	67	33	8.4	1.2	.3	1.2
13	.9	4.4	5.9	53	365	157	60	36	10	1.4	.3	1.2
14	.9	4.4	6.2	58	305	217	56	31	11	1.2	.2	1.4
15	.9	4.4	6.5	55	242	281	52	26	12	1.0	.2	1.4
16	1.5	4.4	7.1	60	* 217	* 234	47	23	* 11	1.0	.2	1.4
17	1.5	4.4	6.8	60	317	224	47	20	9.3	.8	* .2	1.4
18	1.5	* 4.4	7.7	157	228	189	43	19	7.5	.6	.2	1.4
19	1.3	4.4	8.0	232	178	160	46	18	6.1	.6	.2	1.4
20	1.3	4.4	10	* 332	160	145	48	16	5.5	* .6	.1	1.4
21	1.3	4.2	21	542	145	132	* 46	14	4.4	.5	.1	1.6
22	1.3	4.2	34	630	130	120	43	* 13	* 3.5	.5	.1	1.4
23	1.3	4.2	* 28	1,090	114	112	41	12	3.2	.6	.1	* 1.6
24	1.5	4.2	21	1,660	105	105	39	11	3.2	.6	.1	1.6
25	1.5	4.4	17	640	97	99	40	9.8	2.9	.8	.1	1.6
26	1.7	4.4	13	360	91	91	42	8.4	2.6	.8	.1	1.6
27	* 2.0	4.4	13	689	87	93	45	8.0	2.9	1.0	.1	1.6
28	2.2	4.4	12	* 465	85	91	45	7.5	2.6	.8	.1	1.6
29	2.5	4.4	11	325		89	45	8.0	2.6	.8	.1	1.4
30	2.8	4.4	10	245		93	45	8.4	2.9	.8	.2	1.4
31	3.0		9.2	200		107		8.4		.6	.2	
Total	43.7	128.3	301.4	8,182.2	4,623	4,633	1,739	706.5	179.9	38.1	8.0	36.2
Mean	1.41	4.28	9.72	264	165	149	58.0	22.8	6.00	1.23	0.26	1.21
Max	3.0	4.7	34	1,660	365	355	93	43	12	2.9	0.6	1.6
Min	0.9	3.3	3.9	4.4	85	67	39	7.5	2.6	0.5	0.1	0.2
Ac-ft	87	254	598	16,230	9,170	9,190	3,450	1,400	357	76	16	72

Cal yr 1969 : Mean 61.1 Max 794 Min 0.3 Ac-ft 44,250
Wtr yr 1970 : Mean 56.5 Max 1,660 Min 0.1 Ac-ft 40,900

* Discharge measurement made on this day.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

DRAINAGE AREA.--350 sq mi.

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--6 years (1965-71), 37.7 cfs (27,310 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 774 cfs Jan. 20 (gage height, 3.52 ft); no flow Aug. 6-27.

Period of record: Maximum recorded discharge, 2,420 cfs Jan. 23, 1970 (gage height, 4.73 ft); no flow at times.

REMARKS.--Records good.

Discharge, in cubic feet per second for the year ending September 30, 1971

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	1.4	2.4	11	12	117	30	142	58	20	2.6	0.1	0.2
2	1.4	2.4	13	6.8	101	25	133	54	22	2.3	.1	.3
3	1.4	2.6	13	b 6.0	77	33	126	50	18	1.8	.1	.3
4	1.2	2.6	11	b 5.4	74	30	122	44	18	1.5	.1	.4
5	1.2	2.9	11	b 5.0	59	25	145	40	16	1.3	.1	.4
6	1.2	3.2	11	b 5.8	44	25	126	38	14	1.3	0	.4
7	1.4	3.8	19	b 7.0	43	28	124	34	12	1.0	0	.5
8	1.6	4.1	48	b 10	43	24	103	30	11	.9	0	.5
9	1.6	4.1	39	13	43	26	99	27	10	1.0	0	.5
10	1.6	4.1	29	24	48	25	97	25	10	2.0	0	.5
11	1.4	5.8	24	33	67	28	90	22	10	2.0	0	.5
12	1.4	5.8	20	29	62	44	84	20	10	1.5	0	.5
13	1.4	6.5	15	22	60	50	76	22	9.6	1.0	0	.4
14	1.4	6.5	18	28	59	43	69	23	8.3	.8	0	.4
15	1.4	6.5	18	32	67	43	65	21	7.4	.8	0	.4
16	1.4	* 5.8	16	89	64	37	60	22	6.7	.7	0	.4
17	1.4	5.8	16	480	54	34	65	20	6.0	.7	0	.4
18	1.4	6.5	11	610	50	* 32	70	18	6.7	.7	0	.4
19	1.4	6.5	12	574	46	32	65	17	11	.6	0	.4
20	1.6	6.1	14	518	43	33	* 58	16	7.4	* .6	0	.4
21	1.6	6.8	* 13	232	38	37	69	16	5.6	.5	0	.5
22	1.6	5.5	13	158	* 40	48	93	15	5.0	.4	0	* .5
23	1.6	6.1	12	131	43	140	103	14	3.9	.4	0	.5
24	1.6	11	12	113	44	330	101	12	3.6	.4	0	.5
25	1.8	16	12	99	43	276	92	* 12	* 3.6	.3	0	.5
26	1.8	16	9.8	* 92	30	*500	91	18	3.3	.3	0	.6
27	2.0	13	12	90	35	310	83	27	3.3	.3	0	.6
28	* 2.0	11	12	86	30	216	74	23	3.3	.2	.1	.7
29	2.0	11	12	79		219	69	20	3.6	.2	.1	.7
30	2.0	11	11	83		216	62	12	3.3	.2	.1	.8
31	2.2		12	111		177		14		.1	.1	
Total	48.4	201.4	501.8	3784.0	1524	3116	2758	784	272.6	28.4	0.9	14.1
Mean	1.56	6.71	16.2	122	54.4	101	91.9	25.3	9.10	0.92	0.03	0.47
Max	2.2	16	48	610	117	500	145	58	22	2.6	0.1	0.8
Min	1.2	2.4	9.8	5.0	30	24	58	12	3.3	0.1	0	0.2
Ac-ft	96	399	995	7,510	3,020	6,180	5,470	1,560	541	56	1.8	28

Cal yr 1970	: Mean	57.3	Max	1,660	Min	0.1	Ac-ft	41,450
Wtr yr 1971	: Mean	35.7	Max	610	Min	0	Ac-ft	25,850

* Discharge measurement made on this day.
b Stage-discharge relation affected by ice.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft downstream from county bridge, and 15 miles northeast of Condon.

DRAINAGE AREA.--350 sq mi.

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--7 years (1965-72), 41.6 cfs (30,140 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 12,500 cfs June 8 (gage height, 8.87 ft); no flow at times.

Period of record: Maximum recorded discharge, 12,500 cfs June 8, 1972 (gage height, 8.87 ft); no flow at times.

REMARKS.--Records good.

Discharge, in cubic feet per second for the year ending September 30, 1972

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.8	2.0	43	b 18	b 44	278	80	40	6.8	a 0.5	0	0
2	.7	2.0	34	b 17	45	218	78	39	6.1	a .5	0	0
3	.7	2.0	32	16	45	395	74	3[illegible]	6.1	a .5	0	0
4	.7	2.3	28	15	60	294	72	30	6.1	a .5	0	0
5	.7	2.3	28	b 16	80	290	78	28	6.1	a .5	0	0
6	.7	2.3	147	b 18	88	*314	80	25	5.6	a .6	0	0
7	.6	2.6	101	b 22	86	266	82	23	6.4	a .7	0	0
8	.6	2.6	69	27	*90	222	74	30	1,200	a 1.0	0	0
9	.6	2.6	b 60	b 26	80	218	66	45	3,640	a .8	0	0
10	.6	2.8	b 50	26	62	298	60	41	a 50	a .7	0	0
11	.6	3.1	b 45	* 27	55	330	57	36	a 20	a .6	0	0
12	.7	3.9	b 42	b 27	55	390	59	29	a 10	a * .6	0	0
13	.7	4.3	b 40	b 27	72	550	64	25	a 8.0	a .6	0	0
14	.7	4.3	b 39	b 28	92	436	72	22	a 6.0	a .5	0	0
15	.8	4.6	b 38	b 28	84	310	86	19	a * 5.0	a .5	0	0
16	.8	5.0	* 38	b 29	145	278	92	18	3.8	a .5	0	0
17	.9	5.3	35	31	270	266	98	16	3.2	a .4	0	0
18	.9	* 5.0	37	34	278	250	90	17	2.2	a .4	0	0
19	1.0	5.0	38	74	258	212	84	18	1.5	.4	0.6	0
20	* 1.0	5.0	38	148	335	185	78	16	1.0	.5	.7	0
21	1.0	5.0	37	687	250	167	74	10	1.3	.6	1.1	0
22	1.3	5.0	35	425	212	158	72	33	.8	.5	.7	0
23	1.5	5.3	46	270	185	161	66	32	.7	.5	.6	0.3
24	1.5	5.6	50	179	155	142	62	* 25	.8	.5	* .5	.5
25	1.5	6.3	50	142	135	128	59	23	.8	.5	.1	.6
26	1.3	7.9	50	96	126	116	55	19	.6	.4	0	* .6
27	1.3	20	38	43	128	108	51	16	.6	.4	0	.6
28	1.5	28	27	b 42	350	102	47	13	.6	.4	0	.6
29	1.3	24	b 23	b 41	425	* 94	45	11	.5	.3	0	.6
30	1.5	43	b 21	b 41		88	44	9.5	a .5	.1	0	.6
31	2.0		b 20	b 42		84		7.7		0	0	
Total	30.5	219.1	1,379	2,662	4,290	7,348	2,099	758.2	5,001.1	15.5	4.3	4.4
Mean	0.98	7.30	44.5	85.9	148	237	70.0	24.5	167	0.50	0.14	0.15
Max	2.0	43	147	687	425	550	98	45	3,640	1.0	1.1	.6
Min	0.6	2.0	20	15	44	84	44	7.7	.5	0	0	0
Ac-ft	60	435	2,740	5,280	8,510	14,570	4,160	1,500	9,920	31	8.5	8.7

Cal yr	1971	: Mean	38.1	Max	610	Min	0	Ac-ft	27,590
Wtr yr	1972	: Mean	65.1	Max	3,640	Min	0	Ac-ft	47,230

* Discharge measurement made on this day.
a No gage height record.
b Stage-discharge relation affected by ice.

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. Rock Creek above Cayuse Canyon, near Condon, Oreg.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m) downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--8 years (1965-73), 37.2 ft^3/s (1.05 m^3/s), 26,950 acre-ft/yr (33.2 hm^3/yr).

EXTREMES.--Current year: Maximum discharge undetermined; no flow June 30 to Sept. 23.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. Revised figures of discharge, in cubic feet per second, for the water year 1972, superceding those published in 1972, are given herewith:

Date	Discharge	Month	ft^3/s-days	Maximum	Mean	Acre-ft
June 9, 1972	300	June 1972	1,661.1	1,200	55.4	3,290
	Water year	ft^3/s-days	Maximum	Mean	Acre-ft	
	1972	20,471.1	1,200	55.9	40,600	

Discharge, in cubic feet per second for the year ending September 30, 1973

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	.6	1.1	5.1	21	16	124	44	e.8	1.2			
2	.6	1.2	5.1	17	17	120	42	e.5	1.2			
3	.6	1.6	5.0	15	17	121	35	e.5	1.2			
4	.6	2.4	4.5	11	16	80	33	e.4	1.1			
5	.6	2.6	4.0	12	18	74	35	e.2	1.0			
6	.6	2.8	3.8	11	20	68	32	e.8	1.2			
7	.6	3.0	2.6	10	17	64	34	7.3	1.0			
8	.6	3.0	2.8	11	15	59	31	6.7	1.0			
9	.6	3.2	2.8	13	18	57	30	6.4	.9			
10	.7	3.2	2.8	13	18	61	29	5.0	.8			
11	1.0	3.4	2.8	20	18	76	28	[illegible]	.8			
12	1.0	3.4	2.8	35	18	63	28	4.7	1.2			
13	1.5	3.4	2.8	66	18	54	31	4.1	.8			
14	1.2	3.4	2.8	113	18	48	32	3.2	.7			
15	1.0	3.6	2.8	92	18	46	28	2.5	.6			
16	.8	3.6	4.0	168	20	43	24	2.2	.6			
17	.8	4.1	10	200	24	47	24	2.1	.6			
18	.9	4.1	26	132	25	47	26	2.0	.6			
19	.8	4.1	24	82	25	44	28	1.8	.6			
20	.9	4.1	24	55	25	43	28	1.6	.5			
21	.9	4.1	32	48	24	43	28	1.4	.5			
22	.8	3.8	84	35	21	42	25	1.3	.5			
23	.8	3.6	72	30	24	40	23	1.2	.5			
24	.8	3.8	74	34	24	37	21	1.7	.4			.1
25	.8	3.8	64	32	28	42	18	2.0	.7			.1
26	.9	1.8	47	16	48	49	14	2.0	.5			.1
27	1.0	4.3	40	16	57	40	12	1.8	.4			.1
28	1.1	5.1	40	22	64	35	11	1.8	.2			.1
29	1.1	5.1	32	26		34	10	1.7	.1			.1
30	1.1	5.1	28	26		34	e.6	1.3	0.0			.1
31	1.1		25	21		40		1.2				
Total	26.9	104.0	680.0	1,403	576	1,778	905.6	124.4	21.5	0	0	.7
Mean	0.87	3.47	21.9	45.3	24.1	57.4	26.9	4.01	0.72	0	0	0.02
Max	1.5	5.1	84	200	64	129	44	9.2	1.2	0	0	0.1
Min	0.6	1.1	2.8	10	15	34	9.6	1.2	0	0	0	0
Ac-ft	53	206	1,350	2,780	1,340	3,530	1,600	247	43	0	0	1.4

Cal yr 1972 : Mean 53.7 Max 1,200 Min 0 Ac-ft 38,980
Wtr yr 1973 : Mean 15.4 Max 200 Min 0 Ac-ft 11,150

EXHIBIT 3
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STATE OF OREGON

OFFICE OF STATE ENGINEER—WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14-0474. ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m), downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 12, 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--9 years (1965-74), 45.7 ft^3/s (1.29 m^3/s), 33,150 acre-ft/yr (40.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 6,050 ft^3/s (171 m^3/s), Jan. 18, gage height, 6.87 ft (2.094 m); no flow Oct. 9.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s), June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1974

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.1	0.9	854	75	145	108	365	116	12	0.7	0.4	0.1
2	.1	.9	380	70	118	112	302	110	11	.7	.4	.1
3	.1	.8	179	70	104	92	246	96	10	.7	.4	.1
4	.1	.9	113	70	102	94	222	86	11	.7	.3	.1
5	.1	1.1	76	70	98	90	229	78	11	.7	.3	.1
6	.1	1.2	49	70	80	102	254	70	14	.8	.3	.1
7	.1	1.7	656	70	96	86	218	62	13	.7	.3	.1
8	.1	2.6	543	70	98	70	191	59	9.9	.8	.3	.1
9	0	54	258	70	94	70	185	50	8.6	.9	.2	.1
10	.1	140	179	70	90	70	179	48	7.7	.8	.2	.2
11	.1	155	149	70	88	70	161	44	7.3	.8	.2	.2
12	.1	312	132	70	88	92	152	41	6.4	1.1	.2	.2
13	.1	208	108	80	82	102	135	38	5.9	1.3	.2	.2
14	.1	118	90	200	82	100	130	37	5.9	1.2	.2	.2
15	.1	96	88	1,000	90	120	126	38	4.8	1.2	.2	.2
16	.1	155	143	2,120	161	286	124	36	4.6	1.1	.2	.2
17	.1	155	266	2,050	182	430	116	36	4.1	1.2	.2	.2
18	.1	113	330	2,620	152	345	114	37	3.8	1.4	.2	.2
19	.1	86	197	2,590	222	286	118	37	3.6	1.4	.2	.2
20	.1	78	155	806	194	212	106	37	3.4	1.3	.2	.2
21	.2	68	506	442	167	191	96	34	3.2	1.2	.2	.2
22	.2	63	562	322	135	191	90	30	3.0	1.1	.1	.2
23	.2	57	345	254	124	182	122	27	2.8	.9	.1	.2
24	.2	54	224	220	120	170	254	26	2.6	.8	.1	.2
25	.2	52	167	209	114	173	236	24	2.4	.7	.1	.2
26	.2	49	113	167	116	203	194	22	1.8	.6	.1	.2
27	.2	47	86	145	108	209	176	21	1.5	.6	.1	.2
28	.2	70	124	138	98	274	176	18	1.4	.6	.1	.2
29	.3	400	121	128		246	148	16	1.1	.5	.1	.2
30	.3	782	96	118		538	124	15	.9	.5	.1	.2
31	.6		82	118		460		13		.4	.1	
Total	4.7	3,322.1	7,671	14,581	3,348	5,774	5,289	1,402	178.7	27.4	6.3	5.1
Mean	0.15	111	247	470	120	186	176	45.2	5.96	0.88	0.20	0.17
Max	0.6	782	854	2,620	222	538	365	116	14	1.4	0.4	0.2
Min	0	0.8	82	70	82	70	90	13	0.9	0.4	0.1	0.1
Ac-ft	9.3	6,590	15,220	28,920	6,640	11,450	10,490	2,780	354	54	12	10

Cal yr 1973	: Mean	43.3	Max	200	Min	0	Ac-ft	31,350
Wtr yr 1974	: Mean	114	Max	2,620	Min	0	Ac-ft	82,530

EXHIBIT 3
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JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m) downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years (1965-75), 45.8 ft^3/s (1.30 m^3/s), 33,180 acre-ft/yr (40.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 496 ft^3/s (14.0 m^3/s) Mar. 2, gage height, 3.20 ft (0.975 m); no flow at times.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1975

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	.2	1.4	3.8	5.9	40	375	254	164	21	2.4	0.1	0.2
2	.2	1.4	3.8	5.4	38	395	218	152	22	2.2	.1	.2
3	.3	1.4	4.1	5.6	30	278	236	152	22	1.8	.1	.2
4	.3	1.4	4.1	6.1	28	206	218	148	21	1.6	.1	.2
5	.3	1.4	4.1	6.1	23	167	179	130	15	1.5	.1	.2
6	.3	1.5	4.1	6.1	21	132	176	114	13	1.2	.1	.1
7	.4	1.8	4.1	6.4	21	114	176	108	10	1.2	.1	.1
8	.4	2.0	4.3	7.3	22	104	173	104	8.0	1.3	.1	.1
9	.4	1.8	4.3	6.4	18	132	164	98	7.0	4.9	.1	.1
10	.4	1.8	4.3	6.4	26	124	173	100	6.0	15	.1	.1
11	.5	2.0	4.6	6.1	28	104	179	100	5.0	40	.1	.1
12	.5	2.0	4.6	5.9	43	86	250	92	4.0	2.4	.1	.1
13	.5	1.8	4.6	7.7	212	78	365	82	3.4	1.3	.1	.1
14	.5	1.8	4.6	8.6	179	66	350	72	3.0	.7	0	.1
15	.6	1.8	4.8	9.9	110	64	274	62	2.5	.6	0	.1
16	.6	1.8	4.8	15	102	64	246	51	2.1	.5	0	.1
17	.6	2.0	4.8	18	72	62	212	45	2.0	.5	0	.1
18	.7	2.6	4.8	43	62	62	197	41	2.0	.5	0	.1
19	.7	2.6	4.8	50	53	130	212	37	2.4	.4	.1	.1
20	.7	2.6	4.8	41	92	126	218	37	2.8	.4	.2	.1
21	.7	2.6	5.6	34	59	108	215	36	3.4	.4	.2	.1
22	.8	2.8	6.1	25	64	88	222	32	3.6	.3	.2	.1
23	.8	3.0	5.9	23	60	90	218	28	3.2	.3	.2	.1
24	.8	3.4	5.6	23	53	94	226	26	2.8	.2	.2	.1
25	.8	3.4	5.9	108	55	158	395	24	2.6	.2	.2	.1
26	.9	3.4	6.1	215	59	148	266	22	2.6	.2	.2	.1
27	1.0	3.4	6.1	106	57	132	240	21	2.4	.2	.2	.1
28	1.2	3.4	6.4	64	134	128	200	19	2.4	.2	.2	.1
29	1.4	3.4	5.4	53		152	176	19	2.2	.1	.2	.1
30	1.4	3.6		39		266	173	20	2.4	.1	.2	.1
31	1.3		5.4	26		340		20		.1	.2	
Total	20.2	69.3	152.8	975.9	1,761	4,573	6,901	2,156	201.8	82.7	3.8	3.5
Mean	0.65	2.31	4.93	31.5	62.9	148	227	69.5	6.73	2.67	0.12	0.12
Max	1.4	3.6	6.4	215	212	395	395	164	22	40	0.2	0.2
Min	0.2	1.4	3.8	5.4	18	62	164	19	2.2	0.1	0	0.1
Ac-ft	40	137	303	1,940	3,490	8,670	13,490	4,280	400	164	7.5	6.9

Cal yr	1974 :	Mean	84.5	Max	2,620	Min	0.1	Ac-ft 61,200
Wtr yr	1975 :	Mean	46.0	Max	395	Min	0	Ac-ft 33,320

EXHIBIT 3
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JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'15", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank about 200 ft (60 m) downstream from county bridge, and 15 mi (24 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--10 years (1965-75), 45.8 ft^3/s (1.30 m^3/s), 33,180 acre-ft/yr (40.9 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 496 ft^3/s (14.0 m^3/s) Mar. 2, gage height, 3.20 ft (0.975 m); no flow at times.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1975

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	.2	1.4	3.8	5.9	40	375	254	164	21	2.4	0.1	0.2
2	.2	1.4	3.8	5.4	38	395	218	152	22	2.2	.1	.2
3	.3	1.4	4.1	5.6	30	278	236	152	22	1.8	.1	.2
4	.3	1.4	4.1	6.1	28	206	218	148	21	1.6	.1	.2
5	.3	1.4	4.1	6.1	23	167	179	130	15	1.5	.1	.2
6	.3	1.5	4.1	6.1	21	132	176	114	13	1.2	.1	.1
7	.4	1.8	4.1	6.4	21	114	176	108	10	1.2	.1	.1
8	.4	2.0	4.3	7.3	22	104	173	104	8.0	1.3	.1	.1
9	.4	1.8	4.3	6.4	18	132	164	98	7.0	4.9	.1	.1
10	.4	1.8	4.3	6.4	26	124	173	100	6.0	15	.1	.1
11	.5	2.0	4.6	6.1	28	104	179	100	5.0	40	.1	.1
12	.5	2.0	4.6	5.9	43	86	250	92	4.0	2.4	.1	.1
13	.5	1.8	4.6	7.7	212	78	365	82	3.4	1.3	.1	.1
14	.5	1.8	4.6	8.6	179	66	350	72	3.0	.7	0	.1
15	.6	1.8	4.8	9.9	110	64	274	62	2.5	.6	0	.1
16	.6	1.8	4.8	15	102	64	246	51	2.1	.5	0	.1
17	.6	2.0	4.8	18	72	62	212	45	2.0	.5	0	.1
18	.7	2.6	4.8	43	62	62	197	41	2.0	.5	0	.1
19	.7	2.6	4.8	50	53	130	212	37	2.4	.4	.1	.1
20	.7	2.6	4.8	41	92	126	218	37	2.8	.4	.2	.1
21	.7	2.6	5.6	34	59	108	215	36	3.4	.4	.2	.1
22	.8	2.8	6.1	25	64	88	222	32	3.6	.3	.2	.1
23	.8	3.0	5.9	23	60	90	218	28	3.2	.3	.2	.1
24	.8	3.4	5.6	23	53	94	226	26	2.8	.2	.2	.1
25	.8	3.4	5.9	108	55	158	395	24	2.6	.2	.2	.1
26	.9	3.4	6.1	215	59	148	266	22	2.6	.2	.2	.1
27	1.0	3.4	6.1	106	57	132	240	21	2.4	.2	.2	.1
28	1.2	3.4	6.4	64	134	128	200	19	2.4	.2	.2	.1
29	1.4	3.4	5.4	53		152	176	19	2.2	.1	.2	.1
30	1.4	3.6		12		266	173	20	2.4	.1	.2	.1
31	1.3		5.4	26		140		20		.1	.2	
Total	20.2	69.3	152.8	975.9	1,761	4,573	6,901	2,156	201.8	82.7	3.8	3.5
Mean	0.65	2.31	4.93	31.5	62.9	148	227	69.5	6.73	2.67	0.12	0.12
Max	1.4	3.6	6.4	215	212	395	395	164	22	40	0.2	0.2
Min	0.2	1.4	3.8	5.4	18	62	164	19	2.2	0.1	0	0.1
Ac-ft	40	137	303	1,940	3,490	8,670	13,490	4,280	400	164	7.5	6.9

Cal yr 1974 : Mean 84.5 Max 2,620 Min 0.1 Ac-ft 61,200
Wtr yr 1975 : Mean 46.0 Max 395 Min 0 Ac-ft 33,320

EXHIBIT 3
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STATE OF OREGON

WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ Sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge, and 9 mi (14 km) northeast of condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--11 years (1965-76), 44.2 ft^3/s (1.252 m^3/s), 32,020 acre-ft/yr (39.5 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 302 ft^3/s (8.55 m^3/s) Apr. 9, gage height, 2.83 ft (0.863 m); no flow at times.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS (WATER YEARS).--1972. See 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1976

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0.1	2.2	5.9	2.3	3.7	3.6	9.6	5.1	9.5	0.8	0	4.1
2	.1	2.2	6.1	1.8	3.5	3.7	9.0	4.7	9.9	.7	0	3.8
3	.1	2.4	7.7	3.3	3.4	3.4	10.4	4.4	9.5	.7	.1	3.6
4	.1	2.4	9.0	3.4	1.7	3.6	11.4	4.1	8.6	.6	.1	3.4
5	.2	2.6	9.5	3.7	1.4	2.7	14.5	3.7	8.2	.5	.1	3.0
6	.2	3.0	9.0	3.5	1.7	3.0	20.9	3.2	7.3	.5	.2	2.8
7	.3	3.4	9.5	3.3	2.0	3.2	18.5	2.9	6.8	.5	1.0	2.6
8	.3	3.4	9.9	10.6	2.5	2.8	17.6	2.5	5.9	.4	1.4	2.6
9	.3	3.4	11	11.6	2.5	2.8	26.6	2.3	5.9	.4	6.8	2.2
10	.3	4.1	10	8.2	2.2	3.4	20.3	2.0	5.9	.4	5.6	1.2
11	.4	4.1	9.5	6.6	2.0	3.8	17.9	1.8	5.6	.3	4.6	.6
12	.4	4.1	9.0	5.7	2.1	3.4	17.3	1.8	5.4	.3	4.1	.4
13	.4	4.1	9.0	4.4	2.3	3.7	17.6	1.4	4.6	.3	3.8	.3
14	.4	4.1	7.7	4.5	2.6	4.1	15.2	1.1	4.3	.2	4.3	1.0
15	.5	4.1	7.7	7.4	3.0	4.1	13.8	1.0	4.1	.2	5.9	2.8
16	.5	4.3	8.6	16.7	2.9	4.7	13.0	9.5	3.8	.2	7.3	3.6
17	.5	4.3	8.6	17.9	4.5	9.4	11.6	9.0	3.4	.2	12	3.4
18	.5	4.3	8.2	15.2	5.0	17.3	11.4	8.6	3.2	.2	11	3.2
19	.5	4.3	8.2	11.2	5.0	20.2	10.2	8.6	3.0	.1	9.5	3.0
20	.5	4.3	7.7	8.6	4.0	12.6	10.8	9.0	2.4	.1	8.6	2.8
21	.6	4.3	7.3	6.8	3.3	11.0	11.0	9.5	2.2	.1	7.7	2.8
22	.7	4.3	7.3	5.9	3.2	11.0	9.4	8.6	2.0	.1	6.8	3.2
23	.8	4.6	7.7	5.9	2.9	10.8	9.8	8.2	1.7	.1	6.4	3.2
24	.8	4.6	9.9	5.1	2.8	11.4	7.0	7.3	1.7	.1	8.1	3.4
25	1.0	4.6	11	4.3	3.2	15.0	8.4	7.3	1.5	0	8.2	3.4
26	1.6	5.1	13	3.7	4.1	11.4	7.6	6.8	1.5	0	7.7	3.2
27	2.4	6.4	4.5	3.7	5.5	10.2	7.0	6.4	1.2	0	6.8	3.2
28	2.6	6.4	4.5	3.6	6.6	9.8	6.6	6.4	1.0	0	6.1	3.2
29	2.4	6.1	4.0	4.4	5.5	8.4	6.4	6.4	.8	0	5.6	3.0
30	2.2	5.9	5.9	4.5		8.4	5.9	6.8	.9	0	5.1	2.8
31	2.0		5.0	4.0		10.0		7.7		0	4.6	
Total	23.7	123.4	467.0	201.8	95.1	232.9	376.7	546.1	131.8	8.0	181.1	81.8
Mean	0.76	4.11	15.1	65.1	32.8	75.1	126	17.6	4.39	0.26	5.84	2.73
Max	2.6	6.4	59	179	66	202	266	51	9.9	0.8	14	4.1
Min	0.1	2.2	5.9	18	14	27	59	6.4	0.8	0	0	0.3
Ac-ft	47	245	926	4,000	1,890	4,620	7,470	1,080	261	16	359	162

Cal yr	1975 :	Mean	47.0	Max	395	Min	0	Ac-ft	34,060
Wtr yr	1976 :	Mean	29.0	Max	266	Min	0	Ac-ft	21,080

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WATER RESOURCES DEPARTMENT

JOHN DAY RIVER BASIN

14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge and 9 mi (14 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--12 years (1965-77), 41.1 ft^3/s (1.164 m^3/s), 29,780 acre-ft/yr (36.7 hm^3/yr).

EXTREMES.--Current year: Maximum discharge, 112 ft^3/s (3.17 m^3/s) April 6, gage height, 2.25 ft (0.686 m); no flow July 16 to Sept. 30.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good.

REVISIONS.--1972, see 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1977

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	2.8	3.0	3.6	4.6	5.4	8.2	1 8	4.6	6.1	.2		
2	2.8	3.0	4.1	4.6	5.1	8.6	2 0	4.8	6.1	.2		
3	2.6	3.0	4.3	4.8	5.1	9.5	2 0	5.4	5.6	.2		
4	2.6	3.0	4.6	4.3	5.1	9.9	3 7	5.4	5.6	.2		
5	2.6	3.0	4.6	3.0	5.0	9.0	6 4	5.6	5.1	.2		
6	2.6	3.0	4.6	2.8	4.9	8.6	8 8	5.9	4.6	.2		
7	2.6	3.0	4.6	2.7	4.8	9.5	7 8	7.3	3.8	.2		
8	2.6	3.2	4.6	2.6	4.8	1 1	6 4	7.7	3.4	.2		
9	2.6	3.6	4.6	2.6	4.8	1 6	4 4	7.7	3.0	.2		
10	2.6	3.6	4.6	2.8	4.9	1 8	3 5	9.9	2.8	.2		
11	2.6	3.6	4.8	3.0	5.1	1 7	2 8	3 5	2.4	.1		
12	2.4	3.6	4.8	3.3	5.4	1 6	2 4	3 5	2.4	.1		
13	2.2	3.6	4.6	3.7	5.9	1 6	2 1	3 4	2.2	.1		
14	2.2	3.6	4.6	4.0	6.4	1 3	2 0	2 6	2.2	.1		
15	2.2	3.6	4.8	4.5	6.8	1 3	1 7	2 7	1.7	.1		
16	2.2	4.3	4.8	5.2	6.4	1 2	1 6	2 1	1.5	0		
17	2.2	4.3	4.8	5.9	6.1	1 2	1 4	1 9	1.3	0		
18	2.4	4.3	4.8	5.9	6.1	1 2	1 3	1 8	1.3	0		
19	2.6	4.6	4.8	5.9	6.1	1 2	1 2	1 6	.8	0		
20	2.6	4.6	4.8	5.6	6.1	1 2	1 1	1 5	.8	0		
21	2.6	4.8	4.8	5.4	6.4	1 2	9.9	1 3	.8	0		
22	2.4	4.8	4.6	5.4	6.4	1 1	9.5	1 1	.7	0		
23	2.4	4.8	5.1	5.4	6.8	1 2	8.2	1 0	.6	0		
24	2.4	4.6	4.6	5.4	6.4	1 4	6.8	1 1	.5	0		
25	2.6	4.7	5.1	5.4	6.4	1 6	6.1	1 1	.4	0		
26	2.6	4.8	4.8	4.6	6.4	1 6	5.9	1 1	.3	0		
27	2.6	4.1	4.8	4.8	6.4	1 7	5.6	9.5	.3	0		
28	2.6	4.6	4.6	5.1	7.3	1 8	5.1	9.5	.3	0		
29	2.8	3.6	4.8	4.8		1 8	4.8	9.0	.2	0		
30	2.8	3.6	4.8	4.6		1 8	4.6	8.2	.2	0		
31	2.8		4.8	4.8		1 7		7.3		0		
Total	7 8.6	1 1 6.3	1 4 4.0	1 3 7.5	1 6 2.8	4 1 2.3	7 1 0.5	4 2 0.8	6 7.0	2.5	0	0
Mean	2.54	3.88	4.65	4.44	5.81	13.3	23.7	13.6	2.23	0.08	0	0
Max	2.8	4.8	5.1	5.9	7.3	18	88	35	6.1	0.2	0	0
Min	2.2	3.0	3.6	2.6	4.8	8.2	4.6	4.6	0.2	0	0	0
Ac-ft	156	231	286	273	323	818	1,410	835	133	5.0	0	0

Cal yr 1976	: Mean	28.3	Max	266	Min	0	Ac-ft	20,530
Wtr yr 1977	: Mean	6.17	Max	88	Min	0	Ac-ft	4,470

EXHIBIT 3
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14047400 ROCK CREEK ABOVE CAYUSE CANYON, NEAR CONDON, OREG.

LOCATION.--Lat 45°20'11", long 120°03'40", in NW¼SW¼ sec.3, T.3 S., R.22 E., Gilliam County, on left bank 200 ft (60 m) downstream from county bridge and 9 mi (14 km) northeast of Condon.

DRAINAGE AREA.--350 mi^2 (906 km^2).

PERIOD OF RECORD.--April 1965 to current year.

GAGE.--Water-stage recorder.

AVERAGE DISCHARGE.--13 years (1965-78), 41.2 ft^3/s (1.167 m^3/s), 29,850 acre-ft/yr (36.8 m^3/yr).

EXTREMES.--Current year: Maximum discharge, 478 ft^3/s (13.5 m^3/s) Feb. 7, gage height, 3.18 ft (0.969 m); no flow Oct. 1-19.

Period of record: Maximum recorded discharge, 12,500 ft^3/s (354 m^3/s) June 8, 1972, gage height, 8.87 ft (2.704 m); no flow at times.

REMARKS.--Records good except for August which are fair.

REVISIONS.--1972, see 1973 publication.

Discharge, in cubic feet per second for the year ending September 30, 1979

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.
1	0	0.3	28	8.4	64	145	74	66	11	4.3	0.2	1.4
2	0	.3	23	9.9	66	124	96	55	8.8	4.6	.2	1.3
3	0	.3	29	13	64	108	76	48	8.4	7.3	.2	1.2
4	0	.3	28	26	72	106	68	44	7.8	10	.2	1.2
5	0	.4	23	82	80	104	64	43	5.8	9.9	.2	1.3
6	0	.4	19	90	135	112	62	40	5.1	7.7	.2	1.4
7	0	.4	17	62	218	118	70	36	5.1	6.1	.2	1.5
8	0	.5	16	59	365	152	66	29	4.8	8.0	.2	1.6
9	0	.5	14	114	240	298	53	27	4.3	13	.2	1.6
10	0	.6	13	170	194	246	45	28	4.1	9.5	.2	1.6
11	0	.6	13	142	150	203	40	27	4.3	7.3	.2	1.5
12	0	.6	13	135	118	185	37	25	4.3	6.4	.2	1.5
13	0	.7	18	142	120	164	36	25	4.5	5.4	.2	1.5
14	0	.7	130	188	106	142	35	24	5.2	4.6	.2	1.6
15	0	.6	185	310	104	126	33	33	5.6	3.8	.2	1.7
16	0	.8	118	335	84	116	35	40	5.1	3.6	.2	1.7
17	0	.9	80	282	80	110	37	30	4.8	3.6	.2	1.8
18	0	1.2	55	197	84	110	36	26	4.3	3.4	.2	2.2
19	0	1.4	37	182	102	102	32	23	3.8	3.0	.2	2.2
20	.1	1.1	28	158	135	96	29	19	3.2	2.5	.2	2.2
21	.1	1.4	25	132	140	90	28	17	1.5	2.2	1.0	2.2
22	.1	1.5	24	124	135	86	27	16	1.0	1.8	4.0	2.2
23	.1	1.6	23	102	138	84	28	18	1.8	1.6	3.0	2.0
24	.1	2.8	23	82	140	106	28	17	3.0	1.4	2.0	2.0
25	.1	9.8	24	76	164	90	26	17	3.6	1.2	1.4	2.0
26	.1	56	26	62	170	76	71	17	3.6	1.0	1.0	2.2
27	.2	44	24	68	194	66	170	16	3.4	.7	.7	2.0
28	.2	35	22	66	161	59	122	16	2.8	.5	.5	2.0
29	.2	29	22	64		53	94	15	13	.4	.5	2.0
30	.2	32	21	70		50	76	13	7.2	.3	.8	2.0
31	.3		19	68		50		12		.2	1.5	
Total	1.8	225.9	1,140	3,619.3	3,823	3,677	1,694	862	151.3	135.3	20.4	52.6
Mean	0.06	7.53	36.8	117	137	199	56.5	27.8	5.05	4.37	0.66	1.76
Max	0.3	56	185	335	365	298	170	66	13	13	4.0	2.2
Min	0	0.3	13	8.4	64	50	26	12	1.0	0.2	0.2	1.2
Ac-ft	3.6	448	2,260	7,180	7,580	7,290	3,360	1,710	300	268	40.5	104

Cal yr	1977	Mean	8.99	Max	185	Min	0	Ac-ft	6,510
Wtr yr	1978	Mean	42.2	Max	365	Min	0	Ac-ft	30,550

EXHIBIT 3
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JOHN DAY RIVER BASIN

STATE OF OREGON
WATER RESOURCES DEPARTMENT
SALEM, OREGON

November 1986

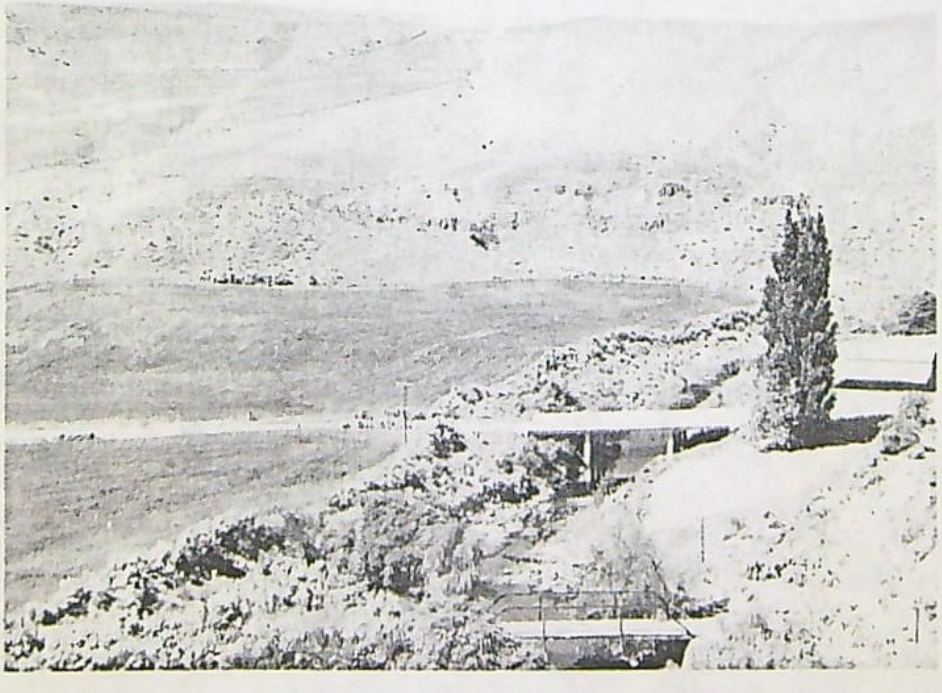
SECTION IX

LOWER SUBBASIN

A. LOCATION AND DESCRIPTION

The Lower Subbasin (see Figure 35) drains an area of about 2,030 square miles below Clarno and is located in Wheeler, Gilliam, Sherman, Morrow, and Wasco Counties. It is an area which is physiographically different from the upstream subbasins. The subbasin generally lacks the mountainous terrain and elevations which accumulate significant snowpack. Elevations range from about 200 feet at the mouth of the John Day River, to over 5,700 feet south of Heppner. The Lower Subbasin is a nearly level to rolling, loess covered plateau of Columbia River Basalt which is deeply dissected by the John Day River and its tributaries. Unlike the rest of the basin, it is a major dryland farming area and includes some large scale irrigation, using ground water.

The Lower Subbasin has a well developed transportation network. Interstate 84 and a rail line in the extreme north parallel the Columbia River. State routes 19, 206, and 218 connect subbasin communities such as Fossil, Condon, and Arlington. The Columbia River provides the Port of Arlington with a transportation route to the Pacific.



Small streams, such as Rock Creek, are important water sources in the dry Lower Subbasin.

1. CLIMATE

The climate is semiarid. Precipitation is low and the subbasin exhibits small daily ranges in both summer and winter temperatures. The length and character of summer and winter extremes are influenced by the rain shadow effect of the Cascade Mountains, and the wind tunnel effect of the Columbia River Gorge.

Precipitation ranges from slightly more than 9 inches annually at Arlington and 13 inches at Condon, to about 40 inches in the mountains. Annual average temperatures are 54° F at Arlington and 48° F at Condon.

2. LAND OWNERSHIP

Like the Middle Mainstem Subbasin, the predominance of private land ownership sets the Lower Subbasin apart from the other subbasins. Federal ownership (mostly BLM) accounts for only about 11 percent of the land area (see Figure 36). BLM-managed lands are concentrated along the John Day River canyon, and in Hay and Thirtymile Creeks. About 40 square miles of Umatilla National Forest lands are located in the uplands around Kinzua in Wheeler County. The Corps of Engineers manage a small amount of land near the mouth of the John Day River along the Columbia River.

The 100 miles of the John Day River between Clarno and Tumwater Falls are part of the designated State Scenic Waterway. The John Day River State Wildlife Refuge, from the mouth upriver for 84 miles to Thirtymile Creek, provides a resting area for ducks and geese and provides habitat for various raptor species and other wildlife.

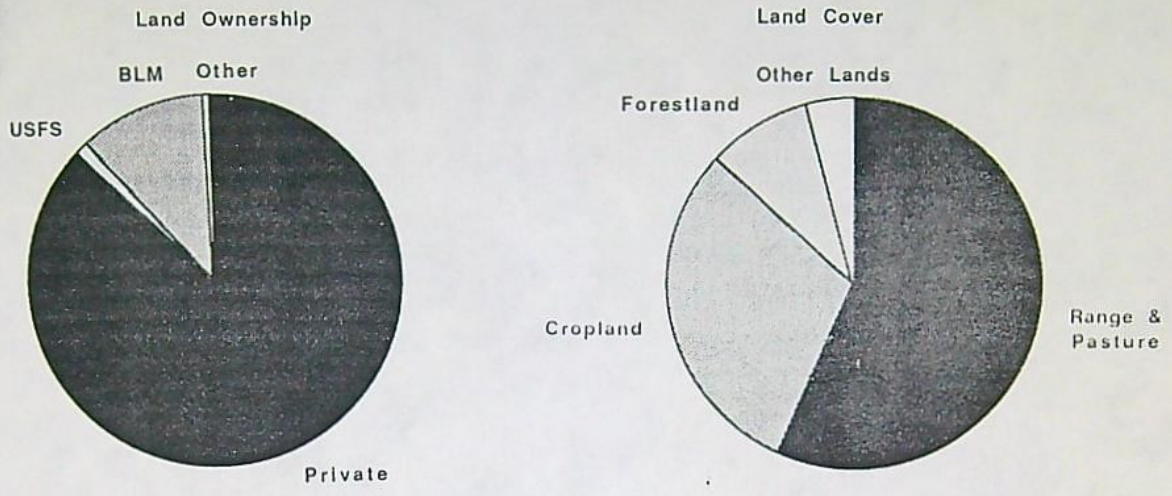
3. LAND COVER AND LAND USE

Rangeland comprises about 57 percent of the subbasin area (see Figure 36 and Table 60). Most range is in private ownership although there is extensive use made of public range allotments on BLM land. There are 636,765 acres of private rangeland in Wheeler County alone. According to the SCS, deteriorated range is a major resource problem in Wheeler County, with 80 percent of privately owned range in poor (222,868 acres) or fair (286,544 acres) condition. The BLM has rated the majority of the public range in the Lower Subbasin as fair to poor. The condition of private rangeland is similar. Only 20 percent of privately owned range is in good or excellent condition.

About 30 percent of the subbasin is cropland, but less than 1 percent of the subbasin is irrigated. Dryland wheat farming is practiced on over 350,000 acres of loessal plateau soil. Loess is a materail formed from deposits of wind-transported silt. Loessal soil can be eroded easily by both wind and water. Conservation tillage practices such as contour plowing, terracing, no-till, and crop residue management have been encouraged to minimize erosion. The practice of clean cultivation during the fallow year continues to contribute to erosion and sedimentation. Erosion hazard for these plateau soils range from slight to severe with annual soil losses ranging from 2.5 to 15 tons per acre.

Figure 36

LOWER SUBBASIN
LAND OWNERSHIP AND LAND COVER



Riparian areas make up less than 1 percent of subbasin area, yet are often the most heavily used for recreation, grazing, agriculture, and wildlife habitat. A riparian inventory conducted on public land by the BLM in 1981 indicates that most areas under its management are in stable condition. Only a small fraction of riparian areas are deteriorating.

Table 60

LOWER SUBBASIN LANDCOVER
(acres)

Type	Acres
Range and Pasturelands	758,911
Forestland (grazed)	116,600
Forestland (not grazed)	0
Cropland	405,740
Other	54,400
	1,335,651

Source: Department of Agriculture Small Watershed Reconnaissance Study, 1984.

EXHIBIT 4
PAGE 4 OF 6

McDonald Ferry is 1,475,500 acre-feet. Peak flow for the period of record occurred on December 24, 1964, when discharge reached 42,800 cfs. On other occasions, such as in 1966, 1973, and 1977, the river ceased flowing. There are also gages on Rock Creek, Lone Rock Creek, and Butte Creek.

Peak discharge occurs from late March to early June, with 22 percent of runoff occurring in April and 21 percent in May. Low flows occur from July through November.

The Lower Subbasin can be characterized as an area that receives water, as opposed to one that produces it. Most streams in the subbasin are nearly ephemeral, almost ceasing to flow in summer.

Of the three gaged streams, Rock Creek is the largest. The mean monthly flows range from 120 cfs in March to less than 1 cfs in September. Both Butte Creek and Lone Rock Creek (a tributary of Rock Creek) average less than 1 cfs from July through October. Mean monthly minimum flows average 0.2 cfs or less on Butte Creek throughout the entire year. On Rock and Lone Rock Creeks, mean monthly minima drop to zero July through September.

All three streams have stopped flowing completely at times. Lone Rock Creek stopped flowing at some time at least 10 out of the 13 years between 1966 (first year of record) and 1978 (last year of published record). Rock Creek's flow stopped at some point nine years of the same period. Butte Creek dropped to zero flow four of the seven years between 1972 (first year of record) and 1978. Generally, no-flow conditions last from August through September. In especially dry years, flows can stop as early as July and do not resume until October.

2. GROUND WATER

Columbia River Basalt, Alkali Canyon Formation, Clarno Formation, and Quaternary Alluvium are the major hydrogeologic units in the subbasin. The Columbia River Basalt Group is a sequence of basalt flows more than 3,000 feet thick in the vicinity of the Columbia River. Data from 57 wells producing from basalt in Sherman County west of the John Day River show a range of production between 4 and 300 gpm. Usable data from 38 wells producing from basalts within Gilliam County indicate wells yielded from less than 1 to 1,500 gpm. Pump tests from 13 large-diameter wells (greater than 12 inches in diameter) in the northeastern part of Gilliam County showed well yields to be from 50 to 2,000 gpm. These deep, large-diameter wells may more accurately represent the hydrologic potential of the basalt. However, it is not known if recharge is adequate to sustain a great number of these wells.

The Alkali Canyon Formation occurs to the south and west of Arlington. Negligible data are available from wells pumping from the formation. Nearly all wells drilled in the area penetrate through the formation and tap the Columbia River Basalt. The Alkali Canyon Formation is not considered an important aquifer.

The extensive environmental quality monitoring activities around the Chem-Security Systems, Inc., hazardous waste storage site near Arlington have identified no pollution problems for surface or ground water. Outside of this area, ground water quality is unknown due to lack of water quality data.

Table 64

LOWER SUBBASIN
SEWAGE TREATMENT PLANTS

Source	Type of Facility	Year Built	Design Population	Connected Population	Design Flow (MGD)	Connected Flow (MGD)	Current Raw Waste (#BOD) Load (Day)	Current Treated Waste (#BOD) Load (Day)	Current Permitted Waste (#BOD) Load (Day)
Arlington	Activated Sludge and Sand Filter	1974	1000	455	0.125	0.04	62	4	31, discharge to Columbia River.
Condon	Activated Sludge and Lagoon	1971	1200	950	0.15	0.10	160	40	25, discharge to Thirty Mile Creek via Condon Canyon.
Fossil	Trickling Filter	1952	1000	535	0.15	0.05	90	20	38, discharge to Butte Creek.
Moro	Lagoon	1970	430	250	0.045	0.035	43	No Discharge	No discharge, irrigation near Barnum Canyon Creek.

Source: Department of Environmental Quality, 1985.

D. WATER USE AND CONTROL

1. WATER RIGHTS

Irrigation accounts for about 87 percent of the appropriated water in the Lower Subbasin. Over 40 percent of the irrigation water use is in the Rock Creek drainage. Municipal uses by the communities of Condon, Fossil, and Arlington also are important. Table 65 summarizes water rights in the subbasin.

Regulation of water use by the watermaster normally begins in May and June. The Rock Creek drainage, until recently, was the area of most intensive regulation. In the last 10 years, many Rock Creek water users have begun pumping from newly drilled wells for use as supplemental irrigation water supplies, reducing the need for regulation by the watermaster. Generally, streams tributary to the John Day are already dry or nearly dry by the time regulation for minimum flows is required. As a result, use of tributary waters generally is not affected by regulation for minimum streamflows.

EXHIBIT 4
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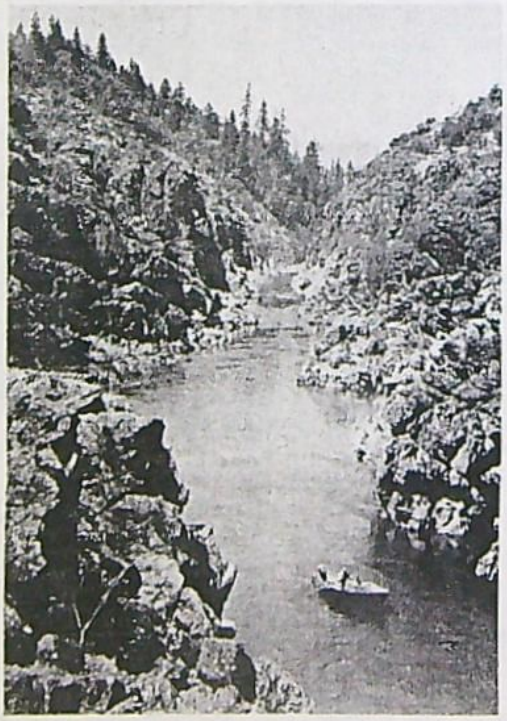
Hydrology Report # 1

WATER AVAILABILITY FOR OREGON'S RIVERS AND STREAMS: VOLUME 2; Technical Guide and Appendixes.

By

E. George Robison



Water Resources Department

William H. Young
Director

May 1991

EXHIBIT 5
PAGE 1 OF 3

Appendix B; Table 5: (Contd.)

N. Fk. John Day R. at Monument #14046000 (F)
Located in the NW quarter of th quarter of sec. 2, town. 9s and range 27e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	573	810	1313	2013	2563	1119	238	95	100	138	186	314
50% Exceed.	1233	1578	2528	3358	3962	1890	439	148	135	173	303	635

John Day R. at Service Cr. #14046500 (F)
Located in the NW quarter of the NE quarter of sec. 18, town. 9s, and range 23e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	1034	1390	2048	2848	3381	1566	288	87	116	284	419	626
50% Exceed.	1973	2536	3883	4890	5460	2681	619	193	194	363	608	1079

Butte Cr. near Fossil #14047100 (LT)
Located in the SE quarter of the SE quarter of sec. 13, town. 7s, and range 21e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	0.3	0.6	0.9	0.9	0.7	0.5	0.3	0.2	0.1	0.1	0.1	0.2
50% Exceed.	0.9	1.8	2.7	2.7	1.7	1.0	0.6	0.3	0.2	0.2	0.2	0.4

Lone Rock Cr. near Lone Rock #14047380 (F)
Located in the SE quarter of the NE quarter of sec. 36, town. 5s, and range 23e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	8.8	15.5	21.2	16.5	5.4	1.3	0.1	0.0	0.0	0.2	1.0	3.4
50% Exceed.	26.6	41.0	52.3	40.9	12.2	2.7	0.5	0.1	0.0	0.6	2.7	8.8

Rock Cr. above Whyte Park near Condon #14047390 (LT)
Located in the NE quarter of the SW quarter of sec. 36, town. 3s, and range 22e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	18.7	28.6	53.9	33.1	8.7	2.9	0.5	0.1	0.7	0.9	5.3	13.2
50% Exceed.	60.2	107.3	139.6	87.5	29.0	7.4	1.8	0.7	2.3	2.6	10.6	31.9

Rock Cr. above Cayuse Canyon near Condon #14047400 (LT)
Located in the NW quarter of the SW quarter of sec. 3, town. 3s, and range 22e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	27.7	43.9	61.9	40.2	13.9	3.2	0.5	0.2	1.0	0.7	2.6	7.3
50% Exceed.	78.5	110.6	146.9	100.2	32.4	8.8	1.7	0.7	1.7	1.8	6.4	19.9

John Day R. at McDonald Ferry #14048000 (F)
Located in the NE quarter of the NW quarter of sec. 11, town. 1n, and range 19e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	1114	1579	2152	2890	3373	1646	302	74	96	268	433	656
50% Exceed.	2208	3009	4264	5174	5671	2893	680	195	180	360	625	1163

Buckhorn Cr. near Lone Rock (Historical misc. measurement site)
Located in sec. 8, town. 6s, and range 24e

Flows	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
80% Exceed.	4.0	6.1	7.6	6.2	2.7	0.9	0.1	0.0	0.0	0.3	0.8	1.9
50% Exceed.	10.7	14.9	17.7	14.6	5.9	1.9	0.6	0.1	0.1	0.6	1.9	4.5

EXHIBIT 5
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Appendix F; Table 5. Water availability analysis for selected sites in the John Day basin.

John Day R. at McDonald Ferry (Applic)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gaged 80% Ex. Flow	1114	1580	2152	2891	3374	1647	303	75	97	269	434	657
Gaged 50% Ex. Flow	2208	3010	4265	5175	5672	2893	681	196	180	361	626	1163
Instream Wat. Right	20	20	20	20	20	20	20	20	20	20	20	20
80% Ex. Flow W.A.	1094	1560	2132	2871	3354	1627	283	55	77	249	414	637
50% Ex. Flow W.A.	2188	2990	4245	5155	5652	2873	661	176	160	341	606	1143

Rock Cr. above Cayuse Canyon near Condon (Cert)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gaged 80% Ex. Flow	28	44	62	40	14	3	0	0	1	1	3	7
Gaged 50% Ex. Flow	78	111	147	100	32	9	2	1	2	2	6	20
Instream Wat. Right	34	57	57	57	57	34	34	34	34	34	34	34
80% Ex. Flow W.A.	-6	-13	5	-17	-43	-31	-34	-34	-33	-33	-31	-27
50% Ex. Flow W.A.	44	54	90	43	-25	-25	-32	-33	-32	-32	-28	-14

Rock Cr. above Whyte Park near Condon (Applic)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gaged 80% Ex. Flow	19	29	54	33	9	3	1	0	1	1	5	13
Gaged 50% Ex. Flow	60	107	140	88	29	7	2	1	2	3	11	32
Instream Wat. Right	34	57	57	57	57	34	34	34	34	34	34	34
80% Ex. Flow W.A.	-15	-28	-3	-24	-48	-31	-33	-34	-33	-33	-29	-21
50% Ex. Flow W.A.	26	50	83	31	-28	-27	-32	-33	-32	-31	-23	-2

Note: The actual flow was based on record extension of the entire record to the 1967-1986 period.

John Day R. at Service Cr. (Cert)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gaged 80% Ex. Flow	1034	1390	2049	2848	3382	1566	289	87	117	284	419	627
Gaged 50% Ex. Flow	1974	2537	3883	4891	5461	2681	619	194	195	364	608	1079
Instream Wat. Right	30	30	30	30	30	30	30	30	30	30	30	30
80% Ex. Flow W.A.	1004	1360	2019	2818	3352	1536	259	57	87	254	389	597
50% Ex. Flow W.A.	1944	2507	3853	4861	5431	2651	589	164	165	334	578	1049

N. Fk. John Day R. at Monument (Applic)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Gaged 80% Ex. Flow	573	810	1314	2013	2564	1119	239	96	101	138	186	314
Gaged 50% Ex. Flow	1234	1578	2528	3359	3962	1891	440	149	136	173	304	635
Instream Wat. Right	235	235	380	380	380	235	175	175	175	175	235	235
80% Ex. Flow W.A.	338	575	934	1633	2184	884	64	-79	-74	-37	-49	79
50% Ex. Flow W.A.	999	1343	2148	2979	3582	1656	265	-26	-39	-2	69	400

EXHIBIT 5
PAGE 3 OF 3

MISCELLANEOUS MEASUREMENT No. 36 | STREAM D4 | TRIBUTARY TO OR DIVERTING FROM 17070204 | 283 | COUNTY

Rock Creek — John Day River — GILLIAM

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Dec. 23, 1975	NW¼NE¼ sec.10, T.1 S., R.21 E.		6.49
Jan. 27, 1976	do		41.2
Feb. 25, 1976	do		34.7
Mar. 23, 1976	do		114
May 6, 1976	do		33.2
May 26, 1976	do		13.6
June 7, 1976	do		6.22
June 22, 1976	do		2.96
July 27, 1976	do		0.40
Aug. 24, 1976	do		5.09
Dec. 23, 1975	NE¼NE¼ sec.31, T.1 N., R.21 E., 5 mi nw of Olex ab French Charlie Canyon		4.32
Jan. 27, 1976			37.6
Feb. 25, 1976			31.7
Mar. 23, 1976			108
May 6, 1976	do		32.4
May 26, 1976	do		9.65
June 6			

MISCELLANEOUS MEASUREMENT No. 36 | STREAM D4 | TRIBUTARY TO OR DIVERTING FROM 17070204 | 1063 | COUNTY

Rock Creek — John Day River — Gilliam Co.

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Apr. 28, 1931	At Condon		14.1
May 24, 1934	Bl springs .5 mi ab West's Dam, 2.3 mi ab mouth, nr Klondike		1.1
May 24, 1934	300 yds ab West's dam		1.1
June 1948	At mouth, nr Rock Creek station		* 763
Nov. 10, 1965	SW¼NW¼ sec.32, T.1 S., R.22 E.,		4.33
Mar. 8, 1966	NE¼SW¼ sec.36, T.3 S., R.22 E. ab Heppner Condon Hwy		21.4
Mar. 8, 1966	SE¼SE¼ sec.22, T.2 S., R.22 E., bl Dry Cr., nr Dam site (Condon)		21.5
Mar. 8, 1966	SW¼NE¼ sec.24, T.1 S., R.21 E., nr Condon		19.9
do	SE¼NW¼ sec.32, T.1 N., R.21 E., 300 ft bl barn.		18.2
do	NE¼NW¼ sec.24, T.1 N., R.20 E., ab Rock Cr, 2.5 mi.		17.8
do	SW¼NE¼ sec.15, T.1 N., R.20 E., Rock Creek, 30 ft ab bridge		15.5

MISCELLANEOUS MEASUREMENT No. 36 | STREAM D4 | TRIBUTARY TO OR DIVERTING FROM 17070204 | 283 | COUNTY

Rock Creek — John Day River — Gilliam

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Oct. 28, 1975	SW¼NE¼ sec.15, T.1 N., R.20 E., at Hwy Bridge		0.21
Nov. 25, 1975	do		0.27
Dec. 23, 1975	do		0.55
Jan. 27, 1976	do		38.0
Feb. 25, 1976	do		32.8
Mar. 23, 1976	do		107
June 9, 1976	do		0.39
June 22, 1976	do		0.56
July 27, 1976	do		0.56
Aug. 24, 1976	do		0.17

MISCELLANEOUS MEASUREMENT No. 36 | STREAM D4 | TRIBUTARY TO OR DIVERTING FROM 17070204 | 283 | COUNTY

Rock Creek — John Day River — G1111am

EXHIBIT 6
PAGE 2 OF 2

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Mar. 10, 1966	SE¼SW¼ sec.15, T.2 S., R.22 E., above bridge		153
Oct. 25, 1966	Sec.36, T.3 S., R. 22 E., ab bridge Hwy 206		3.47
Oct. 26, 1966	Sec.6, T.4 S., R.23 E., at Murtah Ranch		0.67
Dec. 6, 1966	Sec.26, T.2 S., R.22 E., bl Dry Cr.		51.6
do	Sec.15, T.2 S., R.22 E., 9/10 mile bl Wolf Hollow Br.		50.1
Dec. 3, 1970	SE¼SW¼ sec.15, T.2 S., R.22 E.		14.6
Dec. 3, 1970	NE¼ sec.10, T.1 S., R.21 E.		13.1
Mar.25, 1971	NW¼NE¼ sec.10, T.1 S.,R.21 E.		284
Mar. 25, 1971	SE¼SW¼ sec.15, T.2 S.,R.22 E.		260
Mar 26, 1971	NW¼NE¼ sec.13, T.1 N., R.19 E.		277
Mar.26, 1971	SE¼SW¼ sec.15, T.1 N., R.20 E.		245
May 25, 1971	SE¼SW¼ sec.15, T.2 S., R.22 E.		9.34
do	NW¼NE¼ sec.10, T.1 S., R.21 E.		9.28
Oct. 28, 1975	NW¼NE¼ sec.10, T.1 S., R.21 E. at		0.52
Nov. 25, 1975	Hwy brdg at Olex		0.84

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DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
June 6, 1976	do		0.77
June 22, 1976	do		0.77
Aug. 24, 1976	do		2.21
Oct.28, 1975	SW¼NE¼ sec.24, T.1 N., R.20 E., 6 mi nw of Olex		0.38
Nov. 25, 1975	do		0.30
Dec. 23, 1976	do		0.51
Jan. 27, 1976	do		38.0
Feb. 25, 1976	do		31.5
Mar. 23, 1976	do		107
May 6, 1976	do		20.8
May 24, 1976	do		0.20
June 9, 1976	do		2.0
June 22, 1976	do		1.19
July 27, 1976	do		0.51
Aug. 24, 1976	do		0.43

SP*23948-119

MISCELLANEOUS MEASUREMENT No. 34 STREAM Rock Creek TRIBUTARY TO OR DIVERTING FROM 17070201 John Day River COUNTY Grant Co

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Sept. 17, 1949	Mouth, 6 mi northwest of Dayville		0
Aug. 31, 1951	Mouth		0.8 Est
Aug.23, 1951	Mouth, in E½ sec.18, T.12 S., R.26		0.36
Aug.4, 1952	do		0.83
July 15, 1953	do		20.4
Sept. 8, 1953	do		2.15
July 27, 1955	do		* 1.5 Est
	Drainage area, 292		* 9.03
Sept. 18, 1956	0.5 mi abo mouth		76.0
July 16, 1957	At mouth		3.30
Aug. 18, 1959	do		2.19
Aug. 12, 1960	NE¼ sec.21, T.12 S., R.25 E.		
July 18, 1961	NE¼ sec.18, T.12 S., R.26 E., 6.5 mi northwest of Dayville(292 sq mi Dr.Ar.)		1.87
Aug. 24, 1962			7.65
July 30, 1963			7.22
Jan. 6, 1964			38.0
Feb. 11, 1964			32.6

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Name	Priority	Acres	CFC	Creek Flow	Approximate Average Cut-off Date
Marick *	1868	45.6	1.14	1.14	August 1
West *	1868	12.6	0.32	1.46	August 1
V. O. West	1869	11.6	0.29	1.75	July 15
West *	1879	126.7	3.17	4.92	June 22
Crum	1880	12.8	0.32	5.24	June 20
Marick *	1883	46.4	1.16	6.4	June 15
Marick *	1884	2.8	0.07	6.47	June 14
West/Marick	1884	9.6	0.24	6.71	June 13
Irby	1884	19.7	0.49	7.2	June 12
Childs *	1886	131.0	3.28	10.48	June 8
West *	1888	19.6	0.49	10.97	June 7
H. Weatherford	1890	48.1	1.2	12.17	June 6
V. O. West	1890	17.5	0.14	12.61	June 5
Pettyjohn	1893	51.0	1.28	13.89	June 3
Olson	1893	10.2	0.26	14.15	June 3
Marvel	1893	31.1	0.78	14.93	June 2
Bettencourt	1894	93.1	2.33	17.26	May 29
West *	1894	69.6	1.74	19.00	May 25
Bettencourt	1895	29.0	0.73	19.73	May 25
Ries	1895	15.5	0.39	20.12	May 24
Wheelhouse	1895	54.2	1.36	21.48	May 22
Pettyjohn	1896	58.3	1.46	22.94	May 20
Davis *	1896	37.7	0.94	23.88	May 18
Beamer	1897	17.4	0.44	24.32	May 18
Welps	1900	30.1	0.75	25.09	May 17
Brooks *	1900	36.7	0.92	25.99	May 15
V. O. West	1903	10.5	0.26	26.25	May 14
Beamer	1905	13.3	0.33	26.58	May 13
Childs	1905	17.4	0.44	27.02	May 13
H. Weatherford	1906	96.4	2.41	29.43	May 12
Welp	1910	16.2	0.41	29.84	May 12
West	1911	12.5	0.31	30.15	May 12
Pettyjohn	1913	51.	1.28	31.43	May 11
Welp	1914	15.26	0.38	31.81	May 11
H. Weatherford	1914	167.1	4.18	35.99	May 10
Bill West	1922	35.	0.44(1/80)	36.43	May 10
D'Albero	1936	24.	0.5 (1/80)	36.93	May 10
Bettencourt	1951	34.22	0.86(1/80)	37.79	May 9
E. Weatherford	1951	120.2	1.5 (1/80)	39.29	May 9
Irby	1952	5.6	0.14(1/80)	39.43	May 8
Bemaer	1953	152.2	2.0 (1/80)	41.43	May 8
Irby	1966	81.2	2.03(1/80)	43.36	May 7
D'Albero	1967	23.8	0.6	44.06	May 6
Litte Brooke	1967	18.3	0.46	44.52	May 6
Ries	1971	15.2	0.38	44.9	May 5
Welp	1973	34.7	0.5 (1/80)	45.4	May 5
Ries	1975	3.	0.08	45.48	May 5
Pettyjohn	1975	75.	1.9	47.38	May 5
H. Weatherford	1975	71.4	1.9	49.18	May 5
E. Weatherford	1975	20.2	0.51	49.69	May 4
Irby	2/6/76	52.4	1.56	51.25	May 4
Wilcke	2/19/76	6.	0.15	51.4	May 3
V. O. West	3/1/76	22.1	0.55	51.95	May 3
D'Albero	3/8/76	22.	0.55	52.5	May 3
Ries	6/28/76	18.4	0.46	52.96	May 3
H. Weatherford	7/8/76	38.	0.95	53.91	May 2
Bettencourt	12/1/76	28.8	0.72	54.63	May 2

*Subject to Stipulation

EXHIBIT 7
PAGE 1 OF 1

ROCK CREEK WATERSHED

IMPROVEMENT PLAN

Sponsored By:

Gilliam County Soil and Water Conservation District
P.O. Box 106
Condon, OR 97823

Morrow County Soil and Water Conservation District
P.O. Box 127
Heppner, OR 97836

Wheeler County Soil and Water Conservation District
P.O. Box 425
Fossil, OR 97830

EXHIBIT 8
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INTRODUCTION

History

The Rock Creek region was settled between 1860 and 1885 by cattle ranchers. As settlement expanded in the region, sheep-raising supplemented cattle. By the early 1900's the number of sheep greatly exceeded cattle. Sheep grazed grasses that replaced the depleted native bunchgrass stands and were easier to trail to mountain areas for summer pasture. Shortly after the depression, numbers of other livestock built steadily and began to exceed sheep.[1] Today livestock grazing, from traditional Hereford to newly-developed breeds, is standard throughout the watershed,

The broad, rolling plateau of Rock Creek Watershed supported dryland wheat production while irrigation developed in canyon bottoms. Surface irrigation systems included diversion structures along the mainstem and in tributary streams. These structures provided flood irrigation for a variety of crops; currently the primary crop is alfalfa. Many gravity-flow diversion systems do not appear to be in use. Numerous stock ponds, small impoundments, and mill ponds have been built over the years. Many of these structures for surface irrigation and storage have fallen into disrepair or washed out entirely. Late season baseflow has become unreliable and, in fact, is nonexistent through much of the summer.[2]

The headwaters areas consist of timber and grassy prairies (meadows). Historically, the headwaters have been managed for timber production and livestock grazing. Forest timber includes Douglas-fir, ponderosa pine and tamarack. The remains of logging mills are seen at Cone Mill, on Buckhorn Creek, and at Spoo Mill, on the Middle Fork of Rock Creek.

Rock Creek Watershed has a history of extensive flooding and streambank erosion. Residents along Rock Creek, particularly the lower end, have individually and collectively made many attempts to alleviate problems. A Rock Creek Water Control District (RCWCD) was formed in 1965 and pursued construction of a reservoir for flood control, for irrigation water, and recreation.[3] Due to rising costs and lack of a consensus among affected parties, no reservoir was built.

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[1]Ray W. Chapin, Soil Conservation Survey of the Rock Creek Project. (Region 11: USDA, Soil Conservation Service, 1939), p. 5.

[2]Joe Irby, Olex resident, discussion about Rock Creek, November 15 1990.

[3]Minutes of RCWCD, February 24, 1965.

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The movement of water through the watershed is a function of characteristics of land cover, soils and geology.[8] As indicated by hydrographs in Appendix A, water passes through the watershed in the winter and early spring months. Over 70% of runoff occurs in the three months of January, February, and March. According to numerous landowners, flooding most commonly occurs in two situations: (1) rapid runoff on frozen ground during winter months; and, (2) sudden localized storms in summer months.

The location of numerous springs is a function of the geology and soil characteristics of the region. The intermittent characteristics of flow in the main channel of Rock Creek is related to the geology and soil deposits in the valley floor. For example, near the mouth of Rock Creek a spring in the streambed produces flow continuously, whereas except for several springs, no water may be found upstream until above the town of Olex. In numerous wider canyon bottoms, where the soils are deeper and widespread, as the canyon narrows, flow surfaces. These areas are found on the major tributaries and mainstem at the following locations: T5S R24E Sec 2, 5; T4S R24E Sec. 36; T5S R23E Sec. 10.

Soils

Soil types and depths vary within the watershed. On the uplands, soils are generally a shallow to deep, well drained, silt loam complex. Associations include Ritzville, Mikkalo, Lickskillet, Wrentham, Condon, Valby,[9] Rhea, Morrow and Bakeoven.[10] The wind-deposited soils on the Plateau are also found in the intercanyon range county between the Plateau and creek bottoms. Winds predominately from the southwest deposit soils to a greater depth on north-facing slopes. In the broader valley bottoms such as in the Lonerock area the silt loams range to a cobbly or stony loam. Associations here include the Waha, Gwinly, Rockly, Tubs, Simas, Ukiah, and Waterbury.[11]

Upper Basin rangeland soil associations include Waterbury, Waha and Rockly. In forested areas, soils are generally very shallow over a rock complex. Associations here include Hankins, Klicker

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[8]Ray K. Linsley and others, Hydrology for Engineers, (New York: McGraw-Hill series in water resource and environmental engineering, 1975), p. 224.

[9]Richard E. Hosler, Soil Survey of Gilliam County, Oregon, (Washington, D.C.: USDA, Soil Conservation Service, 1984), p. 173.

[10]Richard E. Hosler, Soil Survey of Morrow County Area, Oregon, (Washington, D.C.: USDA, Soil Conservation Service, 1983), p. 226.

[11]Hosler, Soil Survey of Gilliam County, Oregon, p. 173.

over a rock complex. Associations here include Hankins, Klicker and Boardtree. Mountain prairies or meadows, however, are composed of a poorly-drained fine loam/clay/ash complex of considerable depth.

Climate

The climate is typical for central Oregon. Average annual precipitation varies from 8 to 25 inches as elevation increases. The greatest portion of the precipitation occurs in the winter and spring months from storms approaching from the south and southwest. Sudden severe convectional storms in summer months can lead to extreme localized flood peaks. Temperatures have ranged from summer highs of over 100 °F to winter lows of less than minus 25 °F.[12]

Plant Communities

Plant species evolved in this region in relation to soils and climate described above. The grasses, forbs, shrubs, and trees within the headwaters, uplands, and riparian areas play a vital role in soil and water conservation. A common listing of native, introduced and non-desirable vegetation is shown in Appendix B. Douglas-fir, ponderosa pine, tamarack, aspen, and alder are found in the headwaters.

The rangelands are a true grassland. The potential native vegetation is approximately 90% composed of bluebunch wheatgrass, Idaho fescue, and Sandberg bluegrass.[13] Riparian areas show an extensive growth of alder with some willow and wetland plants such as sedges, rushes, grasses, cattails and other forbs.

Fishery Habitat

Rock Creek and tributaries have historically supported anadromous fish and resident native trout.[14] Warmwater species have been introduced in some areas.[15] During inventory along Rock Creek, observed accumulations of algal growth in isolated pools indicates warm water temperatures which

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[12]Chris L. Wheeler, An Engineering Report of the Rock Creek Watershed, (Salem: State Engineer of Oregon, 1968), p. 3.

[13]Hosler, Soil Survey of Gilliam County, Oregon, p.70.

[14]Errol Claire, Fisheries Biologist, Oregon Department of Fish and Wildlife, discussion in John Day, August 13, 1990.

[15]Shaun P. McKinney, Fisheries Biologist, Umatilla National Forest, Heppner Ranger District, discussion in headwaters, December 4, 1990.

Lack of stable streamflow/summer flows. Summer flows for irrigation and instream use is minimal to nonexistent. Stream hydrographs shown in Appendix A reinforce what irrigators know: during much of the summer, there is no water available in Rock Creek. Alternatives discussed among the RCPG include:

- Thin fir thickets
- Juniper thinning
- Structures in creek
- Flood irrigation versus sprinkler
- Spring developments to utilize range
- Riparian management
- July rains
- stock ponds

Too much water in winter - flooding. Noted damaging floods have occurred in 1914, 1954, 1956, 1964 and 1965.[20] Floods can affect a specific part of the watershed or can be widespread, as when overbank flows occur.

Widespread flooding occurs during sudden warming coupled with rain on frozen soil or snow. With frozen soils an impervious layer seriously reduces the water retention capability of the watershed. Surface runoff becomes concentrated and flooding develops in Rock Creek. Ice and debris carried by high flood waters jam in bridges and compound problems associated with flooding. Damage to buildings, roads, utility lines and loss of crop ground and livestock are results of flooding.

Localized convective summer storms also create damaging floods. For example, in late August 1990, a storm dropping 4 to 6 inches of rain in the lower end of Rock Creek watershed produced flooding in several draws, resulting in soil loss, cutbanks and property damage.

Field washing - soil loss from cropland. Soil loss from cropland has occurred in dryland areas and on irrigated bottoms. Alternatives discussed among the RCPG include:

- Conservation tillage
- Terraces
- Don't farm next to creek
- Plant grasses next to bank
- Check dams in creek
- CRP - plant grasses
- Subsoiling - frozen ground or stubble
- Rotations with grasses
- Flood irrigate versus sprinkler
- Crop residue

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[20]Gilliam County Soil and Water Conservation Service and others, Watershed Work Plan Rock Creek Watershed, (USDA, Soil Conservation Service, 1975), p. 36.

- Grazing management
- Early seeding - fall versus s|
- Type of crops

Distribution of stock water. Livestock grazing is practiced throughout the watershed. Grazing areas include rangelands, riparian areas, wheat stubble, and forestlands. Water availability is a strong limitation to the effective use of grazing areas. Alternatives discussed among the RCPG include:

- Spring developments
- Water impoundments
- Fencing
- Put water in correct places
- Haul water in
- Pipelines
- Drill wells

Lack of vegetation. Forage for livestock is limited in season and location. Diversity of grasses on the bottoms is limited. Great variability of grasses is found with changes in soil, slope and orientation. The inventory of range, as noted by the SCS, shows poor to excellent conditions. Rangeland condition is poorest on the valley bottoms and is excellent higher up on slopes.

Water conservation and management. Rock Creek watershed yield can vary considerably year to year. Streamflow records indicate approximately 20,000 to 40,000 acre-feet annually (see Appendix A). The pattern of release is such that water passes through the watershed during winter and early spring months. Water is not available in the creek during summer months. The emphasis was stressed to capture, store, and safely release water where it reaches the ground surface. This implies land treatment alternatives and solutions. Alternatives discussed among the RCPG include:

- Replant trees in upper watershed
- Build ponds or water basins
- Plant grass along roadsides
- Slow the water down in streams
- Install check dams
- Plant buffer strips along drainageways (grassed waterways)
- Encourage trashy fallow/residue
- Install more diversion ditches
- Practice subsoiling
- Use single shank on frozen soils on planted fields
- Improve grazing management
- Extend Conservation Reserve Program
- Develop upland water storage reservoirs
- Eliminate water use through noxious weed control
- Contour seeding
- Grass seeding on stream banks
- Improve construction of logging roads

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grasses in the timber understory and along tributaries. Proper grazing practices include leaving one half a years growth and using rotation and deferred/rotation patterns of grazing.[25] To provide options in water supply for livestock it is recommended to extensively pursue out of stream stock tanks (OOSST).

Tributaries in these areas could also be important for fish spawning.[26] Improvements to fish habitat, primarily through construction of small instream checks, will create more spawning pools. This will also help regulate water releases from the forestlands, falling within all three watershed objectives mentioned earlier. Unlike headcutting found in higher elevations, the primary soil loss in these reaches is through streambank erosion. Small checks in conjunction with vegetation will slow water down through these tributary streams. Locations for instream checks and OOSST are shown in Appendix H.

Upper Basin Rangelands

Continuing down the watershed it is appropriate to describe the rangeland and major tributaries from the forest/rangeland transition to the junction of Lonerock Creek with the mainstem. This area includes the following watercourses: the mainstem below Anson Wright Park, Rood Canyon, Middle Fork, Juniper Fork, Buttermilk Canyon, and Lonerock Creek. These areas are valuable for livestock grazing; they also contain important fish habitat. A future vision suggests management practices to improve livestock distribution. In general, livestock should be brought up off the bottoms. However, in some cases livestock density is too high around water source and feed areas on the Plateau.

Areas of juniper trees, particularly in the Lonerock Creek watershed, should be thinned and used as riprap in tributary streams. Mechanical treatment of rangeland and seeding to perennial grasses should be pursued in areas of heavy grazing pressure, on bottoms, and along abandoned roads. Noxious weed control should be actively pursued through existing programs (Gilliam and Morrow Weed Agents and Rock Creek Range Conservation Corporation). Although the tributary streams mentioned above dry up in summer months there are several perennial springs that could be developed for livestock use or as groundwater recharge (subirrigated). This would improve grass production in these areas, cool surface water, and improve baseflow. These springs include several areas on the left side of Lonerock Creek, Wick Creek and along the mainstem near Hardman.

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[25]Allen Koester, Gilliam District Conservationist, SCS, discussion of November 13, 1990.

[26]McKinney, discussion in headwaters, December 4, 1990.

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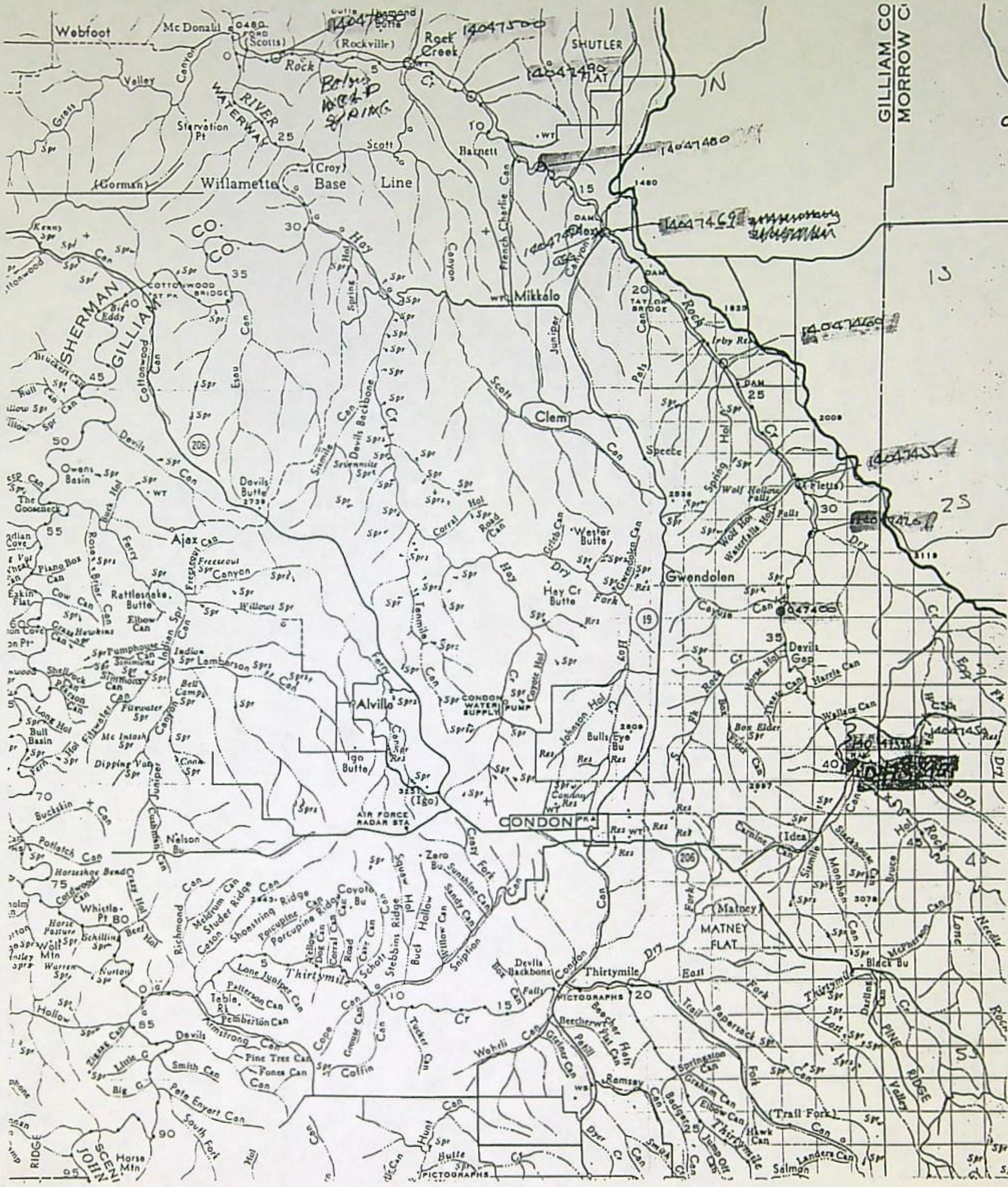

19E 20E 21E 22E

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9-192a—1-1-26.

EXHIBIT 9
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STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

14047000
Baker Wtr P
SP 26

File No. { U. S. G. S. ____ State 250

Daily Gage Height, in Feet, and Discharge, in Second-feet, of Rock Creek at near Rock Creek, Oreg. for the year ending Sept. 30, 1925.

Drainage area — — square miles. (Mrs. J. N. West, Observer) Gage read to Hundredths once a day twice

Table of use: Half tenths ____ ft. to ____ ft.

Used rating table dated 4-16-26

Maximum stage 1400 feet at 136 second-feet Discharge May 22
Minimum stage 1180 feet at 0 second-feet Discharge Sept 17
NOTE: ____

Day	OCT. Gage height	OCT. Discharge	NOV. Gage height	NOV. Discharge	DEC. Gage height	DEC. Discharge	JAN. Gage height	JAN. Discharge	FEB. Gage height	FEB. Discharge	MAR. Gage height	MAR. Discharge	APR. Gage height	APR. Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUG. Gage height	AUG. Discharge	SEPT. Gage height	SEPT. Discharge	Day
1													2.82	48	2.30	19	2.70	42	2.00	3.5	2.00	3.5	2.35	22	1
2													2.80	48	2.25 [2]	16	2.75	45	2.00	3.5	2.00	3.5	2.35	22	2
3													2.80	48	2.20	14	3.20	73	2.00	3.5	2.00	3.5	2.10	8.0	3
4													2.80	48	2.20	14	2.95	57	2.00	3.5	2.00	3.5	2.00	3.5	4
5													2.80	48	2.20	14	2.80	48	1.95	1.6	2.00	3.5	2.00	3.5	5
6													2.95	57	2.15	11	2.72	42	2.00	3.5	2.00	3.5	2.00	3.5	6
7													2.91	54	2.05	5.8	2.55	33	2.00	3.5	2.00	3.5	2.00	3.5	7
8													2.90	54	2.00	3.5	2.55	33	1.95	1.6	2.00	3.5	2.15	11	8
9													2.70	42	2.00	3.5	2.50	30	2.00	3.5	2.00	3.5	2.30	19	9
10													2.75	45	2.05	5.8	2.35	22	2.00	3.5	2.00	3.5	2.00	3.5	10
11													2.50	30	2.05	5.8	2.35	22	2.00	3.5	2.00	3.5	1.95	1.6	11
12													2.50	30	2.00	3.5	2.30	19	2.00	3.5	2.00	3.5	2.00	3.5	12
13													2.60	36	2.05	5.8	2.20	14	1.95	1.6	2.00	3.5	2.45	27	13
14													2.40	24	2.05	5.8	2.30	19	1.95	1.6	2.00	3.5	2.30	19	14
15													2.40	24	2.04	5.3	2.15	11	2.00	3.5	2.10	8.0	2.00	3.5	15
16													2.55	33	2.00	3.5	2.15	11	2.00	3.5	2.10	8.0	2.00	3.5	16
17											2.85	51	2.50	30	2.00	3.5	2.01	4.0	2.00	3.5	2.10	8.0	1.80	0	17
18											2.92	54	2.65	39	2.00 [3]	3.5	2.00	3.5	2.00	3.5	2.10	8.0	2.00	3.5	18
19											2.91	54	2.65	39	2.00	3.5	2.00	3.5	2.00	3.5	2.10	8.0	2.00	3.5	19
20											2.90	54	3.20	73	2.10	8.0	2.00	3.5	2.00	3.5	2.10	8.0	2.00	3.5	20
21											3.20	73	3.08	67	2.65	39	2.00	3.5	2.00	3.5	2.15	11.0	2.00	3.5	21
22											over gage	86	2.95	57	4.00	126	2.00	3.5	2.01	4.0	2.15	11.0	2.00	3.5	22
23											3.25	76	3.00	60	3.50	92	2.00	3.5	2.01	4.0	2.01	4.0	2.00	3.5	23
24											3.20	73	2.85	51	3.50	92	2.00	3.5	2.01	4.0	2.00	3.5	2.00	3.5	24
25											3.35	86	2.80	48	3.20	73	2.00 [4]	3.5	2.01	4.0	2.00	3.5	2.00	3.5	25
26											3.32	79	2.70	42	3.20	73	2.00	3.5	2.01	4.0	2.15	11	2.00	3.5	26
27											3.00	60	2.60	36	2.98	60	2.00	3.5	2.01	4.0	2.15	11	2.00	3.5	27
28											2.95	57	2.60	36	2.90	54	2.00	3.5	2.00	3.5	2.15	11	2.15	11	28
29											3.05	64	2.41	25	2.84	51	2.00	3.5	2.00	3.5	2.15	11	2.15	11	29
30									...	...	2.92	54	2.35	22	2.90	54	2.00	3.5	2.00	3.5	2.25	16	2.00	3.5	30
31			...	...					...	...	2.92	54	...	...	2.82 [4]	48	...	...	2.00	3.5	2.35	22	...	...	31
Total											975		1294		916.8		570.5		103.9		212.0		218.1		4290.3
Mean											15 da) 65.0		431		29.6		19.0		3.35		6.84		7.27		
Run-off in acre-ft.											1930		2566		1820		1130		206		420		433		8520
Maximum											86		73		126		73		4.0		22		27		
Minimum											51		22		3.5		3.5		1.6		3.5		0		

Quarter: 1st 2nd 3rd 4th — Computed: D.C.T.P. — Checked: J.H.R. — Date: 3-18-27
Quarter: 1st 2nd 3rd 4th — Computed: D.C.T.P. — Checked: J.H.R. — Date: 3-17-27
Quarter: 1st 2nd 3rd 4th — Ditch. applied: E.J.M. — Ditch. checked: D.C.T.P. — Date: 4-16-26
Quarter: 1st 2nd 3rd 4th — G. H. applied: — G. H. checked: — Date:
Period: —

1924—1-1-26.

EXHIBIT 9
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STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

14047000 [illegible]

File No. U. S. G. S. ____ State 250

Daily Gage Height, in Feet, and Discharge, in Second-feet, of Rock Creek near Rock Creek for the year ending Sept. 30, 1926

Table of use: Half tenths ____ ft. to ____ ft.

Drainage area — — square miles. (Mrs J.N. West, Observer) Gage read to hundredths once a day

Used rating table dated 4-16-26

Day	Oct. Gage height	Oct. Discharge	Nov. Gage height	Nov. Discharge	Dec. Gage height	Dec. Discharge	Jan. Gage height	Jan. Discharge	Feb. Gage height	Feb. Discharge	Mar. Gage height	Mar. Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23											2.77	(6) 48.
24												
25												
26												
27												
28												
29												
30									...	...		
31			...	...					...	...		
Total												45
Mean												
Run-off in acre-ft.												
Maximum												
Minimum												

Day	Apr. Gage height	Apr. Discharge	May Gage height	May Discharge	June Gage height	June Discharge	July Gage height	July Discharge	Aug. Gage height	Aug. Discharge	Sept. Gage height	Sept. Discharge
1	2.3	19	2.00	3.5	1.95	1.6	1.95	1.6	2.00	3.5	2.1	8.0
2	2.5	30	2.0	3.5	2.00	3.5	1.95	1.6	2.00	3.5	2.1	8.0
3	2.55	33	1.95	1.6	2.00	3.5	1.95	1.6	2.00	3.5	2.1	8.0
4	2.65	39	1.95	1.6	1.95	1.6	1.95	1.6	2.00	3.5	2.1	8.0
5	2.75	45	2.00	3.5	1.95	1.6	1.95	1.6	2.00	3.5	2.1	8.0
6	3.1	67	2.00	3.5	1.95	1.6	1.95	1.6	2.00	3.5	2.1	8.0
7	2.95	57	2.00	3.5	1.95	1.6	2.00	3.5	2.00	3.5	2.1	8.0
8	2.8	48	2.00	3.5	1.95 (7)	1.6	2.00	3.5	2.00	3.5	2.1	8.0
9	2.8	48	2.00	3.5	2.02	4.4	2.00	3.5	2.00	3.5	2.1	8.0
10	2.9	54	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
11	2.8	48	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
12	3.8	112	2.00	3.5	2.00	3.5	1.95	1.6	2.00	3.5	2.1	8.0
13	3.8	112	2.00	3.5	2.00	3.5	1.95	1.6	2.00	3.5	2.1	8.0
14	3.15	70	2.00	3.5	2.00	3.5	1.95	1.6	2.00	3.5	2.1	8.0
15	3.00	60	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
16	2.8	48	2.00	3.5	2.00	3.5	2.1	8.0	2.00	3.5	2.1	8.0
17	2.65	39	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
18	2.6	36	1.95	1.6	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
19	2.8	48	1.95	1.6	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
20	2.5	30	1.95	1.6	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
21	2.4	24	1.95	1.6	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
22	2.4	24	1.95	1.6	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
23	2.35	22	2.00	3.5	1.9	0	2.00	3.5	2.00	3.5	2.1	8.0
24	2.35	22	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
25	2.3	19	2.00	3.5	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
26	2.25	16	2.00	3.5	2.05	5.8	2.00	3.5	2.00	3.5	2.1	8.0
27	2.2	14	1.95	1.6	2.05	5.8	2.00	3.5	2.00	3.5	2.1	8.0
28	2.1	8.0	1.95	1.6	2.00	3.5	2.00	3.5	2.00	3.5	2.1	8.0
29	2.1	8.0	1.95	1.6	1.95	1.6	2.00	3.5	2.00	3.5	2.1	8.0
30	2.05	5.8	1.95	1.6	1.95	1.6	2.00	3.5	2.00	3.5	2.1	8.0
31	...	...	1.95	1.6	...	...	2.00	3.5	2.05	5.8	...	...
Total		1205.8		85.7		74.3		95.9		110.8		240.0
Mean		40.21		2.76		2.48		3.09		3.57		8.0
Run-off in acre-ft.		2390		170		147		190		220		476
Maximum		112		3.5		5.8		8.0		5.8		8.0
Minimum		5.8		1.6		0		1.6		3.5		8.0

Period total: 1,812.5 — Run-off: 3,600

Maximum stage 3.8 feet at on April 12-13 Discharge 112 second-feet
Minimum stage 1.9 feet at on June 18-23 Discharge 0 second-feet
NOTE:

Quarter — Computed: a.c.f.; Checked: J.H.R.; Date: 3-17-27
Quarter — Computed: a.c.f.; Checked: J.H.R.; Date: 3-17-27
Quarter — Disch. applied: a.c.f.; Disch. checked: A.R.H.; Date: 3-2-27
Quarter — G. H. applied; G. H. checked; Date

9-182-c 300 4-61

Year 1965

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek at Rock Creek,

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

Rock Creek sta-

File No. 14-047500

, Oregon, for the year ending September 30, 1965

Used rating table 1

Drainage area ____ Square Miles. Gage staff gage (Alvin A. West, Observer)

Gage heights used to hundredths.

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge		Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1													1			2.07	51									1
2													2			2.02	46									2
3													3			1.96	41									3
4													4			1.86	34									4
5													5			1.82	31									5
6													6			1.78	29									6
7													7			1.76	28									7
8													8			1.72	26			.73 3)	0.9					8
9													9			1.70	25	.86 5) 21	1.2			.66 3)	0.5			9
10													10			1.60	20									10
11													11			1.58 3)	16									11
12													12			1.00	3.0									12
13													13	2.36 1)	97	1.00	3.0									13
14													14			.90	2.1									14
15													15			.90	2.1							.64 21	0.3	15
16													16													16
17													17													17
18													18													18
19													19	2.42	109											19
20													20	2.54	137											20
21													21	2.56	141											21
22													22	2.56	141			1.18 3)	5.4							22
23													23	2.54	137											23
24													24	2.52	132											24
25													25	2.26	78	1.34 3)	9.5									25
26													26	2.24	74					.60 3)	.3					26
27													27	2.22 3)	71											27
28													28	2.16	62											28
29													29	2.10	54											29
30													30	2.09	53											30
31													31													31
TOTAL														1786		366.7		6.6		1.2		.5		.3		
Mean																										
Second-feet per sq. mi.																										
Run-off in inches																										
Run-off in acre-feet																										
Maximum																										
Minimum																										

Max. Disch. 141 Sec.-ft. on Apr. 21, 22
Min. Disch. 0.3 Sec.-ft. on Jul. 26, Sept. 15
NOTE:

Observed

Calendar Year

	Fourth	Third	Second	First	Quarter
Computed		C.A.G.	C.A.G.		
Checked		W.W.P.	W.W.P.		
Date		12-22-65	12-8-65		
Discharge applied					
Discharge checked					
Date					
G.H. copied		C.A.G.	C.A.G.		
G.H. checked		W.W.P.	W.W.P.		
Date		12-8-65	12-8-65		

Period
Year

EXHIBIT 9
PAGE 4 OF 13

Year 1975

STATE OF OREGON

OFFICE OF STATE ENGINEER

Water Resources Department

File No. 14-0474.9

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek near Rock Creek

Oregon, for the year ending September 30, 1975

Used rating table 1

Drainage area 483 Square Miles. Gage staff gage

(Wm Otto, Observer)

Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31			• • •	• • • •					• • •	• • • •		
TOTAL												

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1							0.50 -01	0.3	0.60 +08	0.4	0.59 -01	0.4
2							.50	.3	.60	.4	.59	.4
3							.50 -01	.3	.60	.4	.58	.4
4							.50 +12	.2	.60	.4	.58	.4
5							.50	.2	.60	.4	.58	.4
6							.50	.2	.60	.4	.58	.4
7							.50 +02	.2	.62	.6	.58	.4
8							.50 +03	.2	.62	.6	.58	.4
9							.50	.2	.62	.6	.58	.4
10							.50	.2	.62	.6	.58	.4
11							.50 +03	.2	.62	.6	.58	.4
12							.50 +04	.2	.62	.6	.58	.4
13							.50	.2	.62	.6	.58	.4
14							.50	.2	.62	.6	.58	.4
15							.50 +04	.2	.62 +06	.6	.58	.4
16							.50 +05	.2	.62 +08	.6	.58	.4
17					.60 +02	2.0	.50 +14	.2	.62	.6	.58	.4
18					.60 -01 +02	2.0	.60 +11	1.6	.62	.6	.58	.4
19					.60	2.0	.60 +05	.4	.62	.6	.58	.4
20					.60	2.0	.60 +06	.6	.62	.6	.58 +07	.4
21					.60 +03	2.0	.60	.6	.62	.6		
22					.60 +01	1.5	.60 +06	.6	.62	.6		
23					.60 +01	1.5	.60 +07	.5	.62	.6		
24					.60 +01	1.5	.60 +07	.5	.62	.6	.56 -01 -07	.3
25					.52 +01	1.5	.60	.5	.62 +07	.6		
26					.50	.5	.60 +07	.5	.60 -01 -07	.5		
27					.50	.3	.60 +08	.4	.59	.4		
28					.50	.3	.60 +08	.4	.59	.4		
29					.50	.3	.61 +08	.5	.59	.4		
30					.50 +01	.3	.60	.4	.59	.4		
31	• • •	• • • •			• • •	• • • •	.60 +08	.4	.59 -01	.4	• • •	• • • •

Max. Disch. ..... Sec.-ft. at ..... on .....

Min. Disch. ..... Sec.-ft. on ..... on .....

NOTE: ..... (G. H. ..... ft.). Max. G. H. ..... ft. at ..... on .....

..... (G. H. ..... ft.). Min. G. H. ..... ft. on .....

Calendar Year

Mean	
Second-feet per sq. mi.	
Run-off in inches	
Run-off in acre-feet	
Maximum	
Minimum	

DAY	Fourth	Third	Second	First	Quarter	Computed	Checked	Date
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16						Discharge applied	Discharge checked	Date
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								

Year

EXHIBIT 9
PAGE 5 OF 13

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of _____, Oregon, for the year ending September 30, 19__

No Date
No Reader
1976

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

West Dam
DV Cascade Heights
Pond

Year 1976

File No. 14-0474.9

Used rating table /

Drainage area _____ Square Miles. Gage _____ (_____, Observer)

Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1									1.16	35	1.24	44
2									1.14	34	1.20	39
3									1.12	32	1.10	30
4							1.10	30	1.08	28	1.10	30
5							1.10	30	.80	11	1.10	30
6							1.10	30	.80	11	1.04	25
7							1.10	30	.90	16	1.08	28
8							1.20	39	.90	16	1.10	30
9							1.90	1.64	1.06	27	1.08	28
10							1.70	118	1.04	25	1.10	30
11							1.50	80	1.04	25	1.10	30
12							1.50	80	1.04	25	1.10	30
13							1.40	64	1.04	25	1.08	28
14							1.38	59	1.08	28	1.16	35
15							1.28	49	1.10	30	1.20	39
16							2.38	280	1.10	30	1.20	39
17							2.80	470	1.10	30	1.24	44
18							2.40	314	1.26	46	1.62	102
19							2.10	218	1.24	44	2.58	380
20							1.80	140	1.24	44	2.04	207
21							1.50	80	1.18	37	1.85	159
22							1.40	64	1.10	30	1.70	116
23					0.50 est	.5 est	1.40	64	1.14	34	1.70 est	118
24							1.34	56	1.10	30	1.50	80
25			0.56 est	.3 est			1.24	44	1.18 est	33	1.90	164
26							1.24	44	1.16	32	1.70	118
27							1.18 est	38	1.26	49	1.68	114
28	0.60 est	.4 est					1.18	37	1.30	51	1.40	98
29							1.18	37	1.16	64	1.56	91
30							1.20	39	...	....	1.46	64
31			...	....			1.18	37	...	....	1.46	77
TOTAL												

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1	1.65	98			.70 -02	5.0	.60 -01	0.5	0.70 -20	0.3		
2	1.50	80			.70	5.0	.60 -01	.5	.70	.3		
3	1.50	80			.72	6.0	.60 -08	.4	.70	.3		
4	1.60	98			.74	7.0	.70 -09	1.5	.70 -20	.3		
5	1.68	114			.70	5.0	.70 -09	1.5	.70 -19	.4		
6	2.04	201	0.96 est	21	.68	4.0	.70 -10	1.0	.70	.4		
7	2.28	274			.66	3.0	.70 -10	1.0	.70	.4		
8	2.08	212			.65 -02 est	2.5	.70 -11	.9	.70	.4		
9	2.38	307			.64 -02	2.0	.70 -11	.9	.70 -17	.4		
10	2.38	307			.65	2.5	.70 -12	.9	.70 -18	.4		
11					.65	2.5	.70 -12	.9	.70	.4		
12					.64	2.0	.70 -13	.8	.70	.4		
13					.62	1.0	.70 -13	.8	.70	.4		
14					.64	2.0	.70 -14	.7	.70	.4		
15					.62	1.0	.70 -14	.7	.70 -18	.4		
16					.60	.9	.70 -15	.6	.70 -17	.5		
17					.60	.9	.70 -15	.6	.70	.5		
18					.60	.9	.70 -16	.6	.70	.5		
19					.60	.9	.70 -16	.6	.70	.5	0.62 -16	0.2
20					.60	.9	.68 -17	.4	.70	.5	.62	.2
21					.60 -02 est	.9	.68 -17	.4	.70 -17	.5	.62	.2
22					.61 -02 est	.9	.68 -18	.3	.70 -16	.6	.62	.2
23					.60 -03	.8	.68 -18	.3	.70 -16	.6	.62	.2
24			1.50 est -03 est	.2	.60 -03	.8	.68 -19	.3	.68 -16	.4	.62	.2
25			.50	.2	.60 -04	.7	.68 -19	.3	.80	11	.62	.2
26			.50	.2	.60 -04	.7	.68 -20	.2	.90	8.0	.62	.2
27			.70	1.5	.60 -05	.6	.78 -21	.3	.88	7.0	.62	.2
28			.68	3.5	.60 -05	.6	.65	.2	.84 -16	5.0	.62	.2
29			.70 -03	4.5	.60 -06	.6	.65 -21	.2			.62	.2
30			.72 -02	6.0	.60 -06	.6	.70 -20	.3			.62 -16	.2
31	...	....	.72 -02	6.0	...	....	.70 -20	.3			...	....

Mean
Second-feet per sq. mi.
Run-off in inches
Run-off in acre-feet
Maximum
Minimum

Max. G. H. _____ ft. at _____ on _____
Min. G. H. 0.50 ft. on May 24-26
(G. H. 2.80 ft.). Sec.-ft. on Jan. 17
(G. H. _____ ft.). Sec.-ft. on many days
Max. Discharge 470
Min. Discharge 0.2
NOTE: observed

Calendar Year

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

Year

Computed
Checked
Date

Discharge applied
Discharge checked
Date

G. H. copied
G. H. checked
Date

EXHIBIT 9
PAGE 6 OF 13

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek at Marvel Farm, near Rock Creek, Oregon, for the year ending September 30, 1965

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

80
14047450
C P Marvel

Year 1965
File No.
Used rating table 1

Drainage area ____ Square Miles. Gage staff gage (Charles P. Marvel, Observer) Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31			...	....					...	....		
TOTAL												
Mean												
Second-feet per sq. mi.												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1			1.54	38	0.88	5.0	0.60	0.1		0	0.65 e3	0.2
2			1.54	38	.76	2.0	.54	0		0	.65	.2
3			1.56	39	.72	1.1		0		0	.65	.2
4				a 36		a 2.2	.54	0		0	.65	.2
5			1.48	33	.82	3.4	.42	0		0	.56	.0
6			1.40	27	.68	.5	.60	.1		0	.56	.0
7			1.42	28	.60	.1	.40	0		0	.56	.0
8			1.40	27	.64	.3	.42	0		0	.56	0
9			1.30	21	.68	.5	.46	0		0	.54	0
10			1.28	20	.68	.5	.42	0		0	.56	0
11			1.28	20	.66	.4		0		0	.56	0
12			1.20	16	.68	.5		0		0	.54	0
13	2.00	101	1.18	16	.70	.6		0		0	.54	0
14			1.10	12	.70	.6		0		0	.54	0
15			1.00	9.0	.70	.6		0		0	.50	0
16				a 8.6	.70	.6		0		0	.56	0
17			.98	8.3	1.58	41		0		0	.54	0
18			1.02	9.7	1.36	25		0		0	.56	0
19	2.07	116	1.04	10	1.24	18		0		0	.62	.1
20	2.08	119	1.06	11	1.20	16		0		0	.54	0
21	2.00	101	1.14	14	.98	8.3		0		0	.54	0
22	2.12	128	1.18	16	.82	3.4		0	2.22	148	.52	0
23	2.02	105	1.24	18	.60	.1		0	a	128	.56	0
24		a 98	1.16	15	.58	.1		0	.90 e3	4.7	.56	0
25	1.94	90	1.12	13	.46	0		0	.94	5.8	.54	0
26	1.86	76	1.10	12	.68	.5		0	.88	4.2	.60	.1
27	1.80	67	1.00	9.0	.68	.5	.128	.20	.68	.4	.62	.1
28	1.74	59	.94	6.9	.64	.3	.88	5.0	.56	0	.66	.2
29	1.60	43	.74	1.5	.62	.2	.70	.6	.60	.1	.64	.2
30	1.58	41		a 2.7		0	.58	.1	.56	0	.62 e3	.1
31	...	....	.84	3.9	...	....		0	.54 e3	0	...	....
TOTAL			539.6		132.3			25.9		291.2		1.6
Mean			17.4		4.41			0.84		9.39		.05
Second-feet per sq. mi.												
Run-off in inches												
Run-off in acre-feet			1,070		262			51		578		3.2
Maximum			39		41			20		148		.2
Minimum			1.5		0			0		0		0

Max. Disch. 1400 observed Sec.-ft. at 2230 Aug 22 (G.H. 4.40 ft.); Max. G. H. ____ ft. at ____ on ____
Min. Disch. No flow Sec.-ft. on at times (G.H. ____ ft.); Min. G. H. ____ ft. on ____
NOTE: e - No gage-height record
s - Gage-height computed from stage graph

Calendar Year

Period
Year

	Fourth	Third	Second	First
Computed		G.A.G.	G.A.G.	G.A.G.
Checked		W.M.P.	W.M.P.	W.M.P.
Date		12-22-65	12-10-65	12-8-65

EXHIBIT 9
PAGE 7 OF 13

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek at Olex

, Oregon, for the year ending September 30, 1975

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

Olex

Year 1975

File No. 14-0474.69

Used rating table 1

Drainage area 460 Square Miles. Gage (Observer)

Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30									...	....		
31			...	....					...	....		
TOTAL												
Mean												
Second-feet per sq. mi.												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1							0.98 +04	0.9	0.99 +05	0.4	1.04 -01	0.5
2							.98	.9	.97 +05	.4	1.04	.6
3							.98	.9			1.04	.6
4							.96 +04	.8	.99 +05	.4	1.04 -08	.5
5									.98 -06	.3		
6									.98	.3		
7							.98 +04	.9	.97	.3		
8							.98	.9	.98	.3	1.03 -08	.5
9							.98 +04	.9	.97 -06	.4	1.00	.3
10							1.58	17	1.00 -01	.4	.86	.1
11							1.29	5.7	1.02	.5	.86	.1
12							1.32	6.6	1.03	.6	.86	.1
13							1.14 -01	2.0	1.04	.6	.86 -08	.1
14									1.01 -01	.4		
15							1.09 -02	1.3	1.00 -08	.3	.86 -07	.1
16					1.00 +03	1.0	1.02 +03	.7	1.00 -08	.3	.86	.1
17					1.02	1.2	.97 +04	.4			.85	.1
18					1.00	1.0	.92	.2	1.04 -08	.6	.86	.1
19					1.00	1.0	.91 +04	.2	1.06 -08	.7	.87	.1
20					1.00 +03	1.0			1.04 -09	.5	.88 -07	.1
21							.91 +04	.2	1.02	.4		
22							.94	.2	1.04	.5		
23					.98 +04	.9	.96	.3	1.04 -09	.5		
24					.98 +04	.9	.93	.3	1.04 -10	.4	.92 -04	.2
25					.98	.9	.97	.4	1.04 -10	.4		
26					.98	.9	.99 +04	.5	1.03 -10	.4		
27					.98	.9			1.02	.3		
28					.98	.9	.97 +04	.4	1.03	.4	.90 -06	.1
29					.98	.9	.97 +04	.4	1.02	.3	.90	.1
30					.98 +04	.9	1.00	.6	1.02 -10	.3	.90 -06	.1
31	...	....			...	....	1.00 +04	.6	1.04 -09	.5	...	....
TOTAL					12.4		44.2		12.1		4.3	
Mean												
Second-feet per sq. mi.												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

DAY | Fourth | Third | Second | First | Quarter | Computed | Checked | Date

Year

Max. G. H. 0.85 ft. at Sept 17 on
Min. G. H. 0.58 ft. (G. H. ft.).
Sec.-ft. 17 Sec.-ft. on July 10
Max. Disch. 0.1 Sec.-ft. on many days
Min. Disch.
NOTE: Observer

Calendar Year

Discharge applied | Discharge checked | Quarter | Fourth | Third | Second | First | Date

G. H. copied | G. H. checked | Quarter | First | Date

EXHIBIT 9
PAGE 8 OF 13

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek at Olex

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

Year 1976
File No. 14-0484.69
Used rating table 1

..... Oregon, for the year ending September 30, 1976

Drainage area 460 Square Miles. Gage staff gage (..... Observer) Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1	0.80	0.1					1.88	17				
2	.88	.1	1.15	.5			1.68	8.4	2.00	46		
3	.99	.3					1.80	13				
4									1.50	13		
5											1.86	34
6	.96	.2									1.88	3.6
7	.96	.2										
8	.96	.2										
9	.96	.2			1.68	5.4			1.80	30	1.88	3.6
10	.96	.2										
11	.96	.2										
12	.96	.2			1.70	6.0	2.50	70				
13	.96	.2	1.30	.5					1.70	23		
14	.98	.2									1.96	42
15	.98	.2	1.36	.6			2.38	68	1.84	33	2.00	46
16	.96	.2			1.62	6.6	3.50	188	1.84	33		
17	.98	.2			1.65	7.5	3.78	237				
18	.96	.2									3.20	175
19							2.86	134	2.16	61	3.40	201
20	.98	.2							2.00	46		
21	1.06	.3										
22	1.08	.4			1.66	7.2					2.70	115
23	1.08	.4	1.44	.7	1.62	6.6	2.26	71			2.68	113
24	1.09	.5			1.66	7.8	2.16	61	1.82	31		
25	1.09	.5	1.46	.9					1.84	33	2.70	115
26							2.00	46			2.70	115
27							1.94	41	2.20	65	2.80	105
28	1.11	.5					1.90	37	2.08	67		
29							1.98	44				
30			1.65	3.0			2.08	53	...	....	2.40	85
31			...	....					...	....	2.60	105
TOTAL		5.9		6.2		47.1		1083.4		481		1323

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1					1.34	7.2						
2					1.34	7.2						
3	2.60	105			1.32	6.6						
4					1.37	8.1						
5					1.37	8.1						
6	3.52	217	1.86	34								
7					1.30	6.0						
8	3.30	188			1.24	4.2						
9	3.84	260			1.23	3.9			2.16	61		
10	3.40	201			1.20	3.0						
11									1.28	5.4		
12	3.10	163							1.12	1.8		
13												
14	3.10	163			1.24	4.2						
15					1.13	2.0						
16	2.90	139										
17			1.22	3.6	1.10	1.5			1.28	8.4		
18			1.22	3.6	1.15	2.2			1.82	31		
19			1.29	3.0					1.38	6.6		
20			1.38	6.6								
21												
22					1.20	3.0						
23					1.24	4.2						
24					1.21	3.3			1.26	4.8		
25			1.36	4.8	1.18	2.7						
26	2.30	77	1.50	13					1.42	9.8		
27							.94	0.4				
28	2.24	69	1.37	8.7								
29			1.37	8.1								
30			1.37	8.1								
31	...	....	1.30	7.8	...	....					...	....
TOTAL		1582		101.3		77.4		.4		97.8		—

Mean
Second-feet per sq. mi.
Run-off in inches
Run-off in acre-feet
Maximum
Minimum

Max. G. H. 2.80 ft. on Apr 9
Min. G. H. 0.80 ft. on Oct 2
Max. Discharge 260 Sec.-ft. on Apr 9
Min. Discharge 0.1 Sec.-ft. on Oct 3-2
NOTE: observed

Calendar Year

Year: Fourth Quarter | Third Quarter | Second Quarter | First Quarter
Compiled
Checked
Date
Discharge applied
Discharge checked
G. H. applied
G. H. checked

EXHIBIT 9
PAGE 9 OF 13

9-162-c 500 4-61

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek below Spring Hollow, near Ukiah, Oregon, for the year ending September 30, 1968

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

14047460 Spring Hollow

Year ____

File No. ____

Used rating table 1

Drainage area ____ Square Miles. Gage staff gage Crest Flood 2.80 (____ David R. Baird ____, Observer)

Gage heights used to hundredths.

DAY	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH		DAY	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER		DAY
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge		Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1													1			1.41	50	1.00	12		a 3.8		a 0.8	0.62	+04 1.5	1
2													2				a 48		a 11	0.78	3.6	0.60	.8	.62	1.5	2
3													3			1.37	45	.96	9.7	.80	4.0	.60	.8	.62	1.5	3
4													4			1.32	39	.92	7.9		a 3.5	.55	.9	.60	+04 1.3	4
5													5			1.31	38	.90	7.0		a 3.0	.58	.7		a 1.2	5
6													6			1.30	37	.73	2.6	.72	2.4	.56	.5	.58	+03 .9	6
7													7			1.31	38	.75	3.0	.72	2.4	.56	.5	.56	.7	7
8													8			1.30	37	.78	3.6	.71	2.2	.58	.7	.58	+03 .9	8
9													9				a 34	.73	2.6	.74	2.8	.62	1.0	.66	+04 2.0	9
10													10			1.23	30	.72	2.4	.69	1.9	.67	1.6	.66	2.0	10
11													11			1.20	27	.76	3.2	.7	2.0	.65	1.4	.64	+04 1.8	11
12													12			1.18	25	.70	2.0	.7	2.0	.67	1.6		a 1.9	12
13													13	1.70	100	1.14	22	.72	2.4	.7	2.0	.68	1.8	.68	+04 2.4	13
14													14			1.06	15	.72	2.4	.7	2.0	.67	1.6	.68	+04 2.4	14
15													15			1.05	15	.70	2.0	.7	2.0	.69	1.9	.67	+04 2.2	15
16													16			1.02	13	.68	1.8	.7	2.0	.70	2.0	.70	+04 2.8	16
17													17			1.01	12	1.48	60	.7	2.0	.65	1.4	.68	+04 2.4	17
18													18				a 12	1.20	27	.7	2.0	.58	.7		a 2.4	18
19													19	1.80	123	1.02	13	1.30	37	.7	2.0	.58	.7		a 2.4	19
20													20		a 112	1.12	20		a 20	.7	2.0	.60	.8	.68	+04 2.4	20
21													21	1.70	100	1.13	21		a 15	.7	2.0	.58	.7	.64	1.8	21
22													22	1.80	123	1.11	19	.94	8.8		a 1.0	1.30	1290	.66	+04 2.0	22
23													23		a 105		a 16	.90	7.0	.53	.3	1.13	a 12		a 2.2	23
24													24	1.61	82	1.01	12	.90	7.0	.53	.3	.88	+06 8.8	.68	+04 2.4	24
25													25	1.62	84	1.02	13	.90	7.0		a .3	.70	+04 2.8		a 2.4	25
26													26	1.60	80	1.01	12	.90	7.0	.53	1.8	.69	+04 2.6		a 2.4	26
27													27	1.55	72		a 11	.90	7.0	.53	1.8		a 2.4	.68	+04 2.4	27
28													28	1.51	65	.96	9.7	.90	7.0	.7	2.0	.67	+04 2.2	.68	2.4	28
29													29	1.49	62		a 10	.80	4.0		a 1.5	.68	2.4	.66	2.0	29
30													30	1.42	52	.99	11	.80	4.0	.62	1.0	.68	+04 2.4	.58	+04 1.0	30
31													31			1.00	12			.61	.9		a 2.0			31
TOTAL																716.7		293.4		109.9		450.0		57.6	
Mean																23.1		9.78		3.55		14.5		1.92	
Second-feet per sq. mi.																									
Run-off in inches																									
Run-off in acre-feet																1,420		582		218		893		114	
Maximum																50		60		43		290		2.8	
Minimum																9.7		1.8		.3		.4		.7	

Max. Disch., observed 1,380 cfs at 1730 Aug 22
Min. Disch., 0.3 Sec.-ft. on July 23, 24
NOTE: At low gage height record was estimated from stage graph

Calendar Year

Period: Fourth | Third | Second | First
Quarter: Computed / Checked / Date
G.A.G. 12-22-65
W.W.P. 12-4-65
Discharge applied / Discharge checked / Date
G.A.G. 12-9-65
W.W.P.
G.H. applied / G.H. checked / Date

Year

EXHIBIT 9
PAGE 10 OF 13

Daily Gage Height, in Feet, and Discharge, in Cubic Feet per Second, of Rock Creek above Wolf Hollow, near Condon, Oregon, for the year ending September 30, 1965

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

19047 A55
Wolf Hollow.

Year 1965
File No. 21-3574
Used rating table 1

Drainage area ____ Square Miles. Gage Staff gage readings (V. Christopherson, Observer) Gage heights used to hundredths.

DAY	OCTOBER Gage height	OCTOBER Discharge	NOVEMBER Gage height	NOVEMBER Discharge	DECEMBER Gage height	DECEMBER Discharge	JANUARY Gage height	JANUARY Discharge	FEBRUARY Gage height	FEBRUARY Discharge	MARCH Gage height	MARCH Discharge
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30									...	....		
31			...	....					...	....		
TOTAL												
Mean												
Second-feet per sq. mi												
Run-off in inches												
Run-off in acre-feet												
Maximum												
Minimum												

DAY	APRIL Gage height	APRIL Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUGUST Gage height	AUGUST Discharge	SEPTEMBER Gage height	SEPTEMBER Discharge
1			1.98	55	1.48	12	1.27	4.7				
2			1.95	52	1.47	12	1.23	3.7				
3			1.94	50	1.46	11	1.22	3.4				
4			1.88	44	1.41	9.4	1.19	2.7				
5			1.88	44	1.40	9.0	1.20	2.9				
6			1.88	44	1.39	8.6	1.17	2.4				
7			1.87	43	1.38	8.3	1.15	2.0				
8			1.82	38	1.35	7.2	1.15	2.0				
9			1.77	33	1.31	5.8	1.13	1.7	0.75	0		
10			1.72	29	1.29	5.2	1.10	1.2				
11			1.71	28	1.29	5.2	1.11	1.4				
12			1.68	25	1.27	4.7	1.10	1.2				
13	2.30	94	1.66	24	1.27	4.7	a	1.2				
14	a	94	1.65	23	1.21	3.2	1.08	1.1				
15	a	92		a 21	1.22	3.4	1.05	.9				
16	a	90		a 20	1.27	4.7	1.02	.7				
17	a	100	1.59	18	1.28	55	1.00	.6				
18	a	90	1.58	18	1.80	36	1.00	.6				
19	2.40	108	1.57	17	1.56	17	1.02	.7				
20	a	110	1.68	25	1.66	24	1.09	1.1	1.01	.7		
21	2.38	105	1.74	31	1.68	18	1.08	1.1	.98	.5		
22	2.38	105	1.67	25	1.49	13	1.17	2.4	.80	Flood of 6/14		
23	2.31	95	1.62	21	1.47	12	1.07	1.0				
24	2.25	88	1.60	19	1.44	11	1.09	1.1				
25	a	82	1.57	17	1.38	8.3	a	8				
26	2.16	76	1.56	17	1.37	8.0	1.00	.6				
27	2.10	69	1.55	16	1.34	6.9						
28	2.04	62	1.49	13	1.29	5.2						
29	2.01	58	1.48	12	1.28	5.0						
30	1.98	55	1.49	13	1.27	4.7						
31	...	....	1.50	13	...	....					...	....
TOTAL			848		338.5							
Mean			27.4		11.3							
Second-feet per sq. mi												
Run-off in inches												
Run-off in acre-feet			1,680		671							
Maximum			55		55							
Minimum			12		3.2							

DAY	Fourth	Third	Second	First	Quarter
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
Period					
Year					

Computed: C.A.G. — W.N.P. — 12-22-65
Checked: C.A.G. — W.N.P. — 12-17-65
Discharge applied:
Discharge checked:
G. H. copied:
G. H. checked:

Max. Disch. 1,680 observed Sec.-ft. at 1500, Apr. 19
Min. Disch. 12 est. Sec.-ft. on Aug. 9
NOTE: A — No gage-height record.

Calendar Year

EXHIBIT 9
PAGE 11 OF 17

S-192a—1-1-26.

EXHIBIT 9
PAGE 12 OF 13

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

14047420 AT Bayside

File No. U. S. G. S. ____ State 254

Daily Gage Height, in Feet, and Discharge, in Second-feet, of Rock Creek at near Gwendolyn, Or. for the year ending Sept. 30, 1925

Drainage area — — square miles. (N. M. Johnson, Observer) Gage read once a day

Table of use: Half tenths ____ ft. to ____ ft.

Used rating table dated 5-10-27

Maximum stage 2.75 on March 21 22 feet at ____
Minimum stage 1.0 on July, Aug., Sept. feet at ____
NOTE: ____

Day	OCT. Gage height	OCT. Discharge	NOV. Gage height	NOV. Discharge	DEC. Gage height	DEC. Discharge	JAN. Gage height	JAN. Discharge	FEB. Gage height	FEB. Discharge	MAR. Gage height	MAR. Discharge	APR. Gage height	APR. Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUG. Gage height	AUG. Discharge	SEPT. Gage height	SEPT. Discharge	Day
1													2.35	64	1.95	28	2.10	40	1.05	0.4	1.0	0.1		.4	1
2													2.45	74	1.90	[2] 25	2.45	74	1.1	0.6		.1		.4	2
3													2.40	69	1.90	25	2.30	59	1.1	0.6	1.0	.1	1.05	.4	3
4													2.40	69	1.85	22	2.20	51	1.1	0.6				.4	4
5													2.40	69	1.85	22	2.15	44	1.05	0.4				.4	5
6													2.50	79	1.80	19	2.10	40	1.05	.4				.4	6
7													2.40	69	1.75	16	2.05	36	1.05	.4			1.05	.4	7
8													2.35	64	1.75	16	2.00	32	1.05	.4				.4	8
9													2.30	59	1.80	[3] 19	1.95	28	1.05	.4		.1	1.05	.4	9
10													2.25	54	1.80	19	1.90	25	1.03	.2				.4	10
11													2.20	49	1.75	16	1.85	22	1.03	.2				.4	11
12													2.20	49	1.70	14	1.80	19	1.00	.1				.4	12
13													2.20	49	1.65	13	1.70	16	1.05	.4			1.05	.4	13
14													2.1	40	1.65	13	1.75	16	1.00	.1	1.0	.1	1.60	11	14
15													2.1	40	1.75	17	1.70	14	1.00	.1			1.65	62	15
16													2.45	74	1.70	14	1.65	12	1.05	.4			1.10	0.6	16
17													2.30	59	1.80	19	1.60	11	1.05	.4		.1	1.10	.06	17
18											2.45	74	2.20	49	1.95	28	1.55	9.4	1.05	.4			1.05	.4	18
19											2.40	[1] 69	2.30	59	1.90	25	1.60	7.0					1.00	.1	19
20											2.45	74	2.65	96	2.90	128	1.45	6.5		.3			1.0	[5] .1	20
21											2.75	106	2.45	74	4.00	300	1.40	5.2			1.0	.1	1.0	.1	21
22											2.75	106	2.45	74	3.20	117	1.35	4.1				.1		.1	22
23											2.60	90	2.40	69	2.80	115	1.30	3.1		.2		.2		.1	23
24											2.55	84	2.30	59	2.60	90	1.80	5.2			1.03	.2		.1	24
25											2.50	79	2.20	49	2.50	79	1.34	[5] 3.9	1.00	.1		.2		.1	25
26											2.55	84	2.20	49	2.35	64	1.20	2.9				.2	1.0	.1	26
27											2.50	79	2.15	44	2.20	49	1.20	0.7				.3		.1	27
28											2.45	74	2.10	40	2.15	44	1.15	1.2				.3		.1	28
29											2.45	74	2.05	36	2.25	54	1.15	1.2		.1		.4	1.0	.1	29
30											2.45	74	2.00	32	2.20	49	1.10	0.6			1.05	.4	1.0	.1	30
31			...	...					...	...	2.40	69	...	...	2.11	[4] 41	...	...				.4	...	...	31
Total											1,136		1,760		1,500		591.6		8.7			4.8		25.2	5,026.3
Mean											14do 81.1		58.7		48.4		19.7		.28			.15		.84	
Run-off in acre-ft.											2,250		3,490		2,980		1,170		17.3			9.5		50.0	9,966.
Maximum											106		96		—		74		.6			.4		11.	
Minimum											69		32		13		0.6		.1			.1		.1	

Period Year

5-10-27 5-10-27 4-19-26

P-132a—1-1-26.

STATE OF OREGON
OFFICE OF STATE ENGINEER
Water Resources Department

9 Rockcreek 14047420 at Dry Creek Ashland

File No. U. S. G. S. ____ State 251

Daily Gage Height, in Feet, and Discharge, in Second-feet, of Rock Creek at near Gwendolyn, Oreg. for the year ending Sept. 30, 1926

Table of use: Half tenths ____ ft. to ____ ft.

Drainage area — — square miles. (Mrs. N. M. Johnson, Observer) Gage read to Hdts once a day

Used rating table dated 5-10-27

Maximum stage 1.30 feet at ____ on April 11 1926 Discharge 142 second-feet

Minimum stage ____ feet at ____ on June 27 1926 Discharge Dry second-feet

NOTE: ____

Day	OCT. Gage height	OCT. Discharge	NOV. Gage height	NOV. Discharge	DEC. Gage height	DEC. Discharge	JAN. Gage height	JAN. Discharge	FEB. Gage height	FEB. Discharge	MAR. Gage height	MAR. Discharge	APR. Gage height	APR. Discharge	MAY Gage height	MAY Discharge	JUNE Gage height	JUNE Discharge	JULY Gage height	JULY Discharge	AUG. Gage height	AUG. Discharge	SEPT. Gage height	SEPT. Discharge	Day
1													2.6	90	1.8	19	1.25	24							1
2													2.6	90	1.7	14	1.25	24							2
3													2.45	74	1.7	14	1.25	24							3
4													2.5	79	1.7	14	1.2	17							4
5													2.75	108	1.8	19	1.2	17							5
6													2.65	96	1.85	22	1.15	12							6
7													2.55	84	1.8	19	1.15	12							7
8													2.55	84	1.85	22	1.15	12							8
9													2.6	90	1.85	22	1.15	12							9
10													2.5	79	1.75	17	1.15	12							10
11													3.0	142	1.7	14	1.15	12							11
12													2.85	122	1.65	12	1.15	12							12
13													2.7	102	1.6	11	1.15	12							13
14													2.6	90	1.6	11	1.15	12							14
15													2.55	84	1.6	11	1.15	12							15
16													2.45	74	1.65	12	1.15	12							16
17													2.4	69	1.65	12	1.15	12							17
18													2.4	69	1.6	11	1.1	6							18
19													2.4	69	1.55	9.4	1.1	6							19
20													2.35	64	1.55	9.4	1.1	6							20
21													2.3	59	1.55	9.4	1.1	6							21
22													2.3	59	1.45	6.5	1.05	4							22
23													2.25	54	1.45	6.5	1.05	4							23
24											2.57	0.84	2.25	54	1.4	5.2	1.05	4							24
25													2.2	49	1.4	5.2	1.05	4							25
26													2.1	40	1.5	3.1	1.05	4							26
27													2.0	32	1.3	3.1	Dry	0							27
28													1.9	25	1.4	5.2		0							28
29													1.85	22	1.4	5.2		0							29
30									...	...			1.8	19	1.35	4.2		0							30
31			...	...					...	...			...	...	1.3	3.1	...	...					...	...	31
Total												8.41		2172		351.5		29.4							
Mean														72.4		11.3		2706 109.98							
Run-off in acre-ft.														4310		695		58							
Maximum														142		22		2.4							
Minimum														19		3.1		0							

Period 2552.9

5063.

Quarter 1st 2nd 3rd 4th — Computed GHR 5-11-27 — Checked DGP 5-11-27 — Date

Quarter 1st 2nd 3rd 4th — Disch. applied DGP A.R.H. 3-5-27 — Disch. checked — Date

Quarter 1st 2nd 3rd 4th — G. H. copied — G. H. checked — Date

EXHIBIT 9
PAGE 13 OF 13

OREGON COOPERATIVE WORK

DEPARTMENT OF THE INTERIOR
UNITED STATES RECLAMATION SERVICE
IN COOPERATION WITH
STATE OF OREGON

JOHN DAY PROJECT

Irrigation and Drainage

BY
JOHN T. WHISTLER
ENGINEER U. S. RECLAMATION SERVICE

JOHN H. LEWIS
STATE ENGINEER FOR OREGON

FEBRUARY 1916

Ectimated Monthly Discharge of Willow Creek near Arlington, Oregon, for 1905-1906.

MONTH	Discharge in Second Feet			Run-off	Accuracy
	Maximum	Minimum	Mean	Total in Acre-feet	
1905					
March	87	28	50.0	3,070	B.
April	103	.6	38.1	2,270	B.
May	145	.3	12.3	756	B.
June	488	.3	45.5	2,710	B.
July	1.3	.3	.67	41	B.
August 1-20	3.8	.3	1.24	49	
The period	488	.3	26.0	8,900	
1906					
March	625	44	115	7,070	C.
April	224	22	71.1	4,230	C.
May	1,640	10	109	6,700	D.
June	725	32	221	13,200	C.
July 1-21	32	19	22.1	920	C.
The period	1,640	10	115.0	32,100	

It will be noted from the tables that there is very little difference between the discharge of the river at McDonald and Clarno, during the period of low water. This would be expected, since the tributaries between the two stations are practically dry at this season of

Monthly Discharge of Rock Creek near Arlington, Oregon, for 1905 and 1911.

MONTH	Discharge in Second Feet			Run-off	Accuracy
	Maximum	Minimum	Mean	Total in Acre-feet	
1905					
March	256	32	93.2	5,730	B.
April	167	10	57.5	3,420	B.
May	50	10	22.7	1,400	B.
June	45	1	10.2	607	C.
July	10	0	.97	60	C.
The period	256	0.0	36.9	11,200	
1911					
April 6-31	73	7.3	36.7	1,880	B.
May	10	.9	4.91	302	B.
June	1.2	.6	.87	51.8	B.
July	1.2	.2	.57	35.0	B.
August	.4	.0	.21	13.0	B.
September	.9	.0	.37	22.0	B.
October 1-21	1.6	.6	1.40	58.3	B.
The period	73.0	0.0	.....	2,360	

the year. The tables show that by applying records at McDonald to the diversion site, assumptions will closely represent actual discharge at this point.

A gaging station was established on Camas Creek in April, 1914, and records have been kept since that time. The following records were furnished by the District Engineer, Water Resources Branch of the U. S. Geological Survey.

Monthly Discharge of Camas Creek below Cable Creek near Ukiah, Oregon.

MONTH	Discharge in Second Feet			Run-off
	Max.	Min.	Mean	Total in Acre-feet
1914				
May	265	42	145	8,920
June	585	36	112	6,660
July	36	10	17.7	1,090
August	10	6	7.5	460
September	13	5	10	600
The period	585	5	58.4	17,730
1914-15				
October	17	9	13.0	800
November	* 14	..	11.4	680
December	*...	..	7.0	430
January	*...	..	5.0	310
February	*...	..	10.0	560
March	*635	..	158	9,720
April	860	47	215	12,800
May	460	61	244	15,000
June	233	20	63.3	3,770
July	24	9	13.7	840
August	10	5	7.4	450
September	10	5	7.1	420
The year	860	5	63.0	45,780

SOILS.

Much difference of opinion has obtained as to the value of soils along Columbia River in this region, and it has therefore appeared desirable that this phase of the problem be given the fullest consideration.

A soil and agricultural survey of the irrigable lands was made June 10 to June 17, inclusive, 1915, by W. L. Powers, Associate Agronomist in Irrigation and Drainage, and C. V. Ruzek, Assistant Agronomist in Soils, of Oregon Agricultural College.

*Discharge from November 19 to March 12 estimated on account of ice. The monthly values are provisional and subject to revision when ... available. High water is very ...

EXHIBIT 10
PAGE 2 OF 2

USDA-SCS-EIS-WS-(ADM)-75-2(F)-OR

ROCK CREEK WATERSHED PROJECT
Gilliam and Morrow Counties, Oregon

FINAL ENVIRONMENTAL IMPACT STATEMENT

James W. Mitchell
State Conservationist
Soil Conservation Service

Sponsoring Local Organizations

Gilliam County Soil & Water Conservation Distric
Arlington, Oregon 97812

Morrow Soil & Water Conservation District
Heppner, Oregon 97836

Rock Creek Water Control District
Arlington, Oregon 97812

April 1975

PREPARED BY

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

1218 S. W. Washington Street
Portland, Oregon 97205

EXHIBIT 11
PAGE 1 OF 3

Soil Association 4 - Nearly Level to Very Steep Soils of Forested Uplands, Hankins-Klicker-Boardtree Association -

This association occupies a broad, rolling plateau with many small, concave drainages in the highest part of the area. Hankins soils are very deep, dark colored, clayey soils on gentle to steep slopes with northerly aspect.

Klicker soils are moderately deep, stony, silty soils over basalt bedrock. They occupy steep to very steep slopes and are intermingled with basalt outcrops.

Boardtree soils are gravelly loam soils underlaid by clayey sediments at depths of 20 to 40 inches. These soils occupy moderately steep to steep north-facing slopes.

The Hankins, Klicker, and Boardtree soils have a high moisture-supplying capacity for plants.

Minor areas of very shallow Rockly soils occur on ridgetops.

Ground Water Resources

The potential for obtaining an adequate and economical supply of ground water is poor in this watershed. Potential for ground water supply is fair to good in the areas underlain by the basaltic lavas and poor in the areas of John Day sediments. The lava flows dip gently north from the Blue Mountains and receive some recharge from the mountains and from the incised drainages within the watershed. The main problem inherent to water production from this formation is the unpredictability of the well yields. Generally, wells in these basalts can be expected to produce one gallon per minute per foot of depth below the water table with a bore diameter of 10 inches or larger. Values significantly smaller or larger than this may be experienced within short horizontal distances. The water table is generally at substantial depths.

Existing wells within the basaltic lava flows of the watershed are generally for domestic supplies only. Recently, however, a few large diameter irrigation wells were drilled along the flood plain of Rock Creek and provided yields ranging from 300 to 1,250 gallons per minute. Future ground water development will depend upon evaluation of the existing units, but present indications are that this source will not sustain a significant increase in withdrawal.

Surface Water Resources

Rock Creek is a tributary to the John Day River. The confluence of the creek and the river is 21.6 miles above the junction of the John Day with the Columbia River. (16) The principal tributaries of Rock Creek are Juniper, Lone Rock, Sixmile, and Dry Fork Creeks.

Rock Creek is 71.7 miles long with 143.4 miles of streambank. It is an unmodified perennial stream for approximately 20 miles in its

upper reaches, an unmodified intermittent stream for 21 miles, and a modified intermittent stream for 30.7 miles in its lower reaches where it passes through cropland. The stream width varies from 30 to 270 feet and depth varies from 5.5 to 11 feet. The headwaters of Rock Creek are at an elevation of 5,360 feet. The creek falls to an elevation of 420 feet at the mouth. (4)

The Creek varies from a small, incised, upland channel having no flood plain to a stream having an average channel top width of 85 feet with a 100-year flood plain averaging 550 feet in width.

Rock Creek has a typical snowmelt runoff pattern of high spring flows and low to nonexistant surface flows during the summer and fall. Generally, the highest runoff volume occurs in April with about 58 percent of the annual runoff from March through May, and 71 percent from February through May in the vicinity of Cayuse Canyon. At the mouth of Rock Creek it is estimated that 64 percent of the annual runoff occurs from March through May and 79 percent occurs from February through May. (17) On occasion, however, a warm front producing precipitation combines with a warming trend and depletes the winter snow pack producing high runoff (near 9,000 cfs for a 100-year event) during the winter months. Only 7.7 percent of the annual runoff occurs during June through mid-October in the vicinity of Cayuse Canyon. (17)

Average monthly stream discharges are:

Months	Rate of discharge in cfs		
	Rock Creek near Cayuse Canyon (vicinity of Ghost Camp)	Vicinity of Olex	Mouth of Rock Creek
October	4	0	0
November	11	0	0
December	34	37	38
January	42	46	47
February	61	66	67
March	71	77	79
April	98	105	108
May	82	77	79
June	27	9	0
July	4	0	0
August	0.5	0	0
September	0.9	0	0

EXHIBIT 11
PAGE 3 OF 3

Rock Creek averages no flow for 30 days each year in the vicinity of Cayuse Canyon. In the seven years of record at this location the dry period ranged from 0 to 80 days. (17) In the lower reaches of Rock Creek the stream is essentially dry from June through November on the average.

Sixty miles of riparian vegetation occur along the creek. The riparian vegetation is listed below.

Trees:	ponderosa pine	cottonwood	hawthorn	
	Douglas fir	alder	birch	
Shrubs:	willow	elderberry	golden current	rose
	choke cherry	bittercherry	serviceberry	

JOHN DAY RIVER BASIN

STATE WATER RESOURCES BOARD
SALEM, OREGON
March 1962

BOARD MEMBERS

LOUIS H. FOOTE, Chairman - Forest Grove
KARL W. ONTHANK, Vice Chairman - Eugene
LaSELLE E. COLES - Prineville GEORGE H. COREY - Pendleton
JOHN D. DAVIS - Stayton RUTH HAGENSTEIN - Portland
ROBERT W. ROOT - Medford

DONEL J. LANE, Secretary

EXHIBIT 12
PAGE 1 OF 2

acre per season for diversions from the main stem, North Fork, and Middle Fork of the John Day River, and four acre-feet from all other tributaries, as established by the John Day River adjudication of water rights. A duty of four acre-feet per acre per season was assumed for ground water rights.

The actual consumption of water for irrigation purposes is undoubtedly smaller, because only 49,000 acres are presently irrigated, not all rights can be exercised to their legal limit because of seasonal deficiencies in water supply, and because irrigation return flows are reused by downstream irrigators. Assuming a consumptive irrigation requirement of two acre-feet per acre, about 100,000 acre-feet would be needed each year to supply the consumptive requirements of the existing irrigated acres in the basin.

The average annual yield of the John Day River at its mouth is 1,410,000 acre-feet. Thus, the current use of irrigation water represents less than 10 percent of the gross basin water yield. However, there are many serious local and seasonal shortages relative to available water.

The amount of yield during the main irrigation season, April through September, generally represents from 45 to 75 percent of the total annual yield. However, the monthly yield progressively diminishes through the irrigation season to the extent that the yield for September ordinarily is less than one percent of the total annual yield. Hence, all irrigated lands, including those along the main rivers, can experience late season water shortages. This situation is most serious along smaller tributaries because late summer flows are often extremely low or nonexistent. A review of 42 small watersheds, covering 80 percent of the basin area and including most of the irrigated land in the basin, indicates that 32 of these watersheds have inadequate total or late season water supplies for existing irrigated lands.

Modifications of the runoff pattern through reservoir storage would be essential in order to provide a fully adequate water supply for much of the presently irrigated land. Many lands are overirrigated during the early part of the season when a large supply of water is available. In many cases, the entire seasonal quantity of water allowed by the water right is used during the high flow months. Reservoir storage, designed to alleviate existing shortages, could function primarily to distribute the water presently used over a longer period, that is, into the later, drier months, rather than to provide additional quantities of water.

There are very few existing storage facilities for irrigation purposes in the basin. The State Engineer has only 20 water rights on file for irrigation reservoirs totaling 3,930 acre-feet. The largest reservoir right is for 2,300 acre-feet; all others are under 500 acre-feet.

EXHIBIT 12
PAGE 2 OF 2

STATE
ENGINEER

WATER RESOURCES DEPARTMENT

P.O. BOX 261 • CANYON CITY, OREGON • 97820 • Phone 575-0119

TOM McCALL
GOVERNOR

CHRIS L. WHEELER
State Engineer

June 6, 1975

FILE NO.

Mr. Walter N. Perry
State Engineer's Office
1178 Chemeketa St. N.E.
Salem, Oregon 97310

Dear Newt;

In answer to a call from Dave Childs on May 28th, I arrived at his home at 1230 on June 2nd. We discussed the nature of Rock Creek and the water rights on Rock Creek. At 1600, we drove down to Rock Creek and looked at his weir on his ditch. His right calls for 1.6 cfs in his ditch, and he was receiving only 1.19 cfs. Since there are many upstream users pumping with later priority dates, water could have been acquired to meet his right. At Mr. Child's request, I did not shut anybody off. Instead, I measured the flow of the creek at various points to try to document the behavior of the creek at low flows.

For most of its length, the creek is incised into the Columbia River basalts. There are long stretches of gravel and alluvium beds between outcrops of the bedrock basalt. Because of this, the surface flow of the stream varies, higher on the bedrock outcrops, and lower on the gravel stretches. My measurements and their locations are as follows:

T.	R.	Section	Forty-acre tract		Discharge	Date
1N.	19 E.	11	SW¼SE¼	McDonald	4.5 cfs	June 2, 1975
1N.	20 E.	15	NW¼NE¼	R.C. Station	2.2 cfs	June 2, 1975
1N.	21 E.	30	SW¼SE¼	Childs	.5 cfs	June 3, 1975
1S.	21 E.	10	NW¼NE¼	Crums	1.5 cfs	June 3, 1975
2S.	22 E.	9	SW¼SE¼	Petty John	7.1 cfs	June 3, 1975

I will get the flow at Cayuse Canyon on my next measuring trip.

Bob Main
Watermaster, Dist.#4

cc: Dave Childs

EXHIBIT 13
PAGE 1 OF 1

DRAFT

STATE OF OREGON

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

STATE OF OREGON
WATER RESOURCES DEPARTMENT
SALEM, OREGON 97310

The specific limits for the use are listed below along with conditions of use.

Source: ROCK CR tributary to JOHN DAY R

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHITE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

The right is established under Oregon Revised Statutes 537.341.

The date of priority is 3/21/90.

The following conditions apply to the use of water under this certificate:

1. The right is limited to not more than the amounts, in cubic feet per second, during the time periods listed below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
34	57	57	57	~~57~~ 33.10	~~21~~ 12.60	~~4.7~~ 3.69	~~3.09~~ 2.29	~~2.47~~ 2.24	~~2.72~~ 3.26	~~6.67~~ 9.61	~~21.8~~ 19.10

2. The water right holder shall measure and report the in-stream flow along the reach of the stream or river described in the certificate as may be required by the standards for in-stream water right reporting of the Water Resources Commission.

3. For purposes of water distribution, this instream right shall not have priority over human or livestock consumption.

4. The instream flow allocated pursuant to this water right is not in addition to other instream flows created by a prior water right or designated minimum perennial stream flow.

5. The flows are to be measured at the lower end of the stream reach to protect necessary flows throughout the reach.

Witness the signature of the Water Resources Director affixed this 1st day of _____, 19__.

_____
Water Resources Director

Recorded in State Record of Water Right Certificate number _____.

IS70863

From Patricia — What is the brief explanation of the changes to the EA/FF for 70251?

Oregon Water Resources Department
Water Rights/Adjudication Section

Water Right Application Number: IS 70251

Proposed Final Order

Summary of Recommendation: The Department recommends that the attached draft certificate be issued with conditions.

Application History

On 3/21/90, the Oregon Department of Fish and Wildlife submitted an application to the Department for the following instream water right certificate.

Source: ROCK CR tributary to JOHN DAY R

County: GILLIAM

Purpose: UPSTREAM PASSAGE OF ADULT AND JUVENILE FISH INCLUDING SUMMER STEELHEAD AND RESIDENT RAINBOW TROUT

The amount of water (in cubic feet per second) requested by month:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1st½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
2nd½	34.0	57.0	57.0	57.0	57.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0

To be maintained in:

ROCK CREEK FROM USGS GAGING STATION AT WHITE PARK RM 40.0 (NESW, SECTION 36, T3S, R22E); TO THE MOUTH OF ROCK CREEK RM 0.0 (NESW, SECTION 11, T1N, R19E)

The Department mailed the applicant notice of its Technical Review on November 25, 1995, determining that the requested flows exceeded the estimated average natural flow during some months but that flows at a reduced amount, with exceptions for human and livestock consumption, are appropriate. The objection period closed February 1, 1995. Objections and comments were received (from A DAVID CHILDS, OREGON DEPT OF FISH AND WILDLIFE, WATER FOR LIFE, WATERWATCH OF OREGON).

The following supporting data was submitted by the applicant:

(a) Engineering determined by using USGS data and passage facility design.

(b) A letter dated April 5, 1996, stating that the flows requested in this application are the minimum amount necessary to restore, protect and enhance populations and habitats of native wildlife species at self-sustaining levels

In reviewing applications, the Department may consider any relevant sources of information, including the following:

- comments by or consultation with another state agency
- any applicable basin program
- any applicable comprehensive plan or zoning ordinance
- the amount of water available
- the proposed rate of use
- pending senior applications and existing water rights of record
- the Scenic Waterway requirements of ORS 390.835
- applicable statutes, administrative rules, and case law
- any comments received

An assessment with respect to conditions previously imposed on other instream water rights granted for the same source has been completed.

An evaluation of the information received from the local government(s) regarding the compatibility of the proposed instream water use with land use plans and regulations has been completed.

The level of instream flow requested is based on the methods of determining instream flow needs that have been approved by administrative rule of the agency submitting this application.

Findings of Fact

The John Day Basin Program allows the proposed use.

Senior water rights exist on this source or on downstream waters.

The source of water is not above a State Scenic Waterway.

The source of water is not withdrawn from appropriation by order of the State Engineer or legislatively withdrawn by ORS 538.

The estimated average natural flow for the lower end of the requested reach is as follows (in cubic feet per second):

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
36.0	77.7	125	116	32.0	11.0	4.7	3.09	2.47	2.72	6.67	21.8

Water is **NOT** available for further appropriation (at a 50 percent exceedance probability) for the period **May, June, July, August, September, October, November and December.**

The flows available for further appropriation are shown below:

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
35.82	77.5	123.8	110.8	24.22	1.53	-8.0	-7.41	-4.57	-0.43	6.48	21.62

Straight model run not a complete analysis w/adjustments to fit + data points.

Conclusions of Law

Under the provisions of ORS 537.153, the Department must

> presume that a proposed use will not impair or be detrimental to the public interest if the proposed use is allowed in the applicable basin program established pursuant to ORS 536.300 and 536.340 or given a preference under ORS 536.310(12), if water is available, if the proposed use will not injure other water rights and if the proposed use complied with rules of the Water Resources Commission.

The proposed use requested in this application is allowed in the John Day Basin Plan.

No preference for this use is granted under the provisions of ORS 536.310(12).

The proposed use will not injure other water rights.

The proposed use complies with rules of the Water Resources Commission.

The proposed use complies with the State Agency Agreement for land use.

The proposed instream flows do not fully appropriate this source of water year round. Water is available for additional storage.

While the proposed use meets the other tests, the full amount of water requested is not available during some months of the year.

Water is not available for the proposed use at the amount requested during May, June, July, August, September, October, November and December because the unappropriated water available is less than the amounts requested during these months.

For these reasons, the presumption set forth in ORS 537.153, as discussed above, has not been established. The application therefore has been processed without the statutory presumption.

"When instream water rights are set at levels which exceed current unappropriated water available the water right not only protects remaining supplies from future appropriation but establishes a management objective for achieving the amounts of instream flows necessary to support the identified public uses." OAR 690-77-015(2).

"The amount of appropriation for out-of-stream purposes shall not be a factor in determining the amount of an instream water right." "The amount allowed during any time period for the water right shall not exceed the estimated average natural flow ..." (excerpted from OAR 690-77-015 (3) and (4)).

Because the proposed use exceeds the available water, it can not be presumed to be in the public interest. However, under the direction of OAR 690-77-015 (2)(3) and(4), the proposed use is in the public interest up to the limits of the estimated average natural flow.

Oregon law allows certain uses of water to take precedence over other uses in certain circumstances. When proposed uses of water are insufficient for all who desire to use them, preference shall be given to human consumption purposes over all other uses and for livestock consumption over any other use (excerpted from ORS 536.310 (12)).

The Department therefore concludes that

- the proposed use, as limited in the draft certificate, will not result in injury to other water rights,
- the proposed use, as limited in the draft certificate, will not impair or be detrimental to the public interest as provided in ORS 537.170.
- the proposed use, as limited in the draft certificate, for purposes of water distribution, this instream right shall not have priority over human or livestock consumption.
- the flows are to be measured at the lower end of the stream reach to protect necessary flows throughout the reach.
- the stream flows listed below represent the minimum flows necessary to support the public use.

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	34	57	57	57	~~57~~ 33.10	~~21~~ 12.60	~~4.7~~ 3.69	3.09 2.29	2.47 2.24	2.72 3.24	6.67 8.61	21.8 19.10
Recommendation	36.10	78	123	75.60	33.10	12.60	3.69	2.29	2.24	3.24	8.61	19.10

7025

EANF 2013

The Department recommends that the attached draft certificate be issued with conditions.

DATED AUGUST 20, 1996

DFrench for

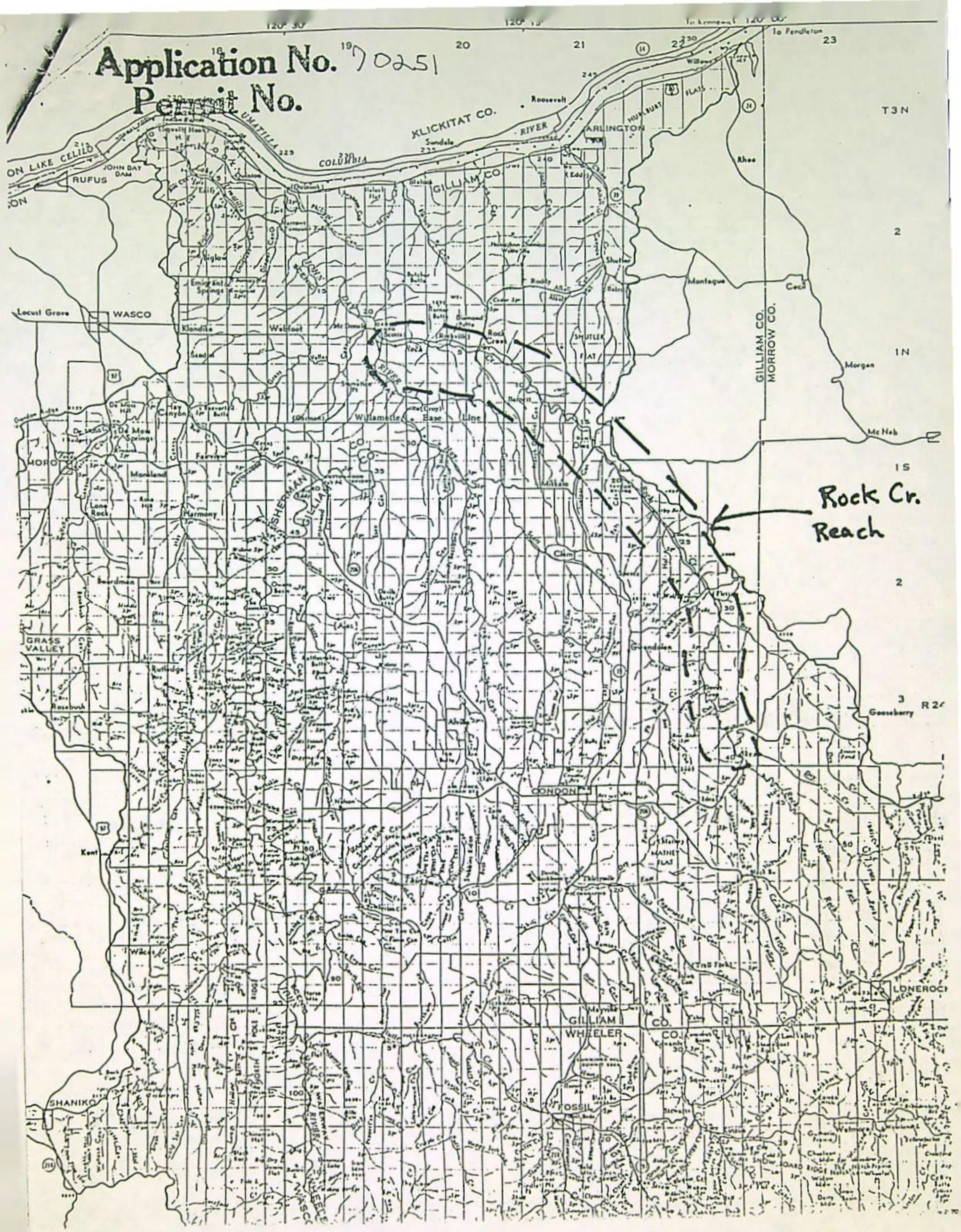
Steven P. Applegate
Administrator
Water Rights and Adjudications Division

Protest Rights

Under the provisions of ORS 537.153(6) or 537.621(7), you have the right to submit a protest against this proposed final order. Your protest *must* be in writing, and must include the following:

- Your name, address, and telephone number;
- A description of your interest in the proposed final order, and, if you claim to represent the public interest, a precise statement of the public interest represented;
- A detailed description of how the action proposed in this proposed final order would impair or be detrimental to your interest;
- A detailed description of how the proposed final order is in error or deficient, and how to correct the alleged error or deficiency;

Application No. 70251
Permit No.



70251

A David Childs
1806 Thompson St
The Dalles, OR 97058
February 10 1995
503/ 298/1499

Mr Mike Mattick
Instream Water Rights
Water Resources Department
Commerce Building
158 12th Street NE
Salem, Oregon, 97310-0210

Dear Mike.

Rather than as you suggest, I believe you expressed a strong knowledge of reality. I interpret your remarks of February 1st and your letter, of the 6th as truly remarkable. I have volunteered information many times. But this is a first for WRD (not the first apology , I have another, which I did accept.) You have nothing to apologize for. This was the first time I felt my input was asked for.

I participated in the Advisory committee for The John Day basin plan and also in the State Wide Basin Advisory committee and for the formative years of the Strategic Water Management Group I 've written reams of critique for stream benefit and worked hard for wetted-stream legislation, including being a member of the rule writing committee for instream water rights.)

` The answer to your first question is easy, none. The answer to the second question, for the moment, is thanks for asking.

---- " What is truly possible?" What a kind and generous question. The closest I ever got to influencing anyone in modern WRD. happened when I was told, "You had input, we chose not to use it."

I'll send you my answer to your second question, probably by Washington's birthday. Thanks for asking.

I am enclosing a corrected front sheet to my comment-letter of January first. in which I accidentally left out the word 'along'.

Sincerely,

David Childs

Copy 2
Addition correction.

A David Childs
1806 Thompson St
The Dalles, OR 97058
January 31 1995
503/ 298/1499

Mr Mike Mattick
Instream Water Rights
Water Resources Department
Commerce Building
158 128th Street NE
Salem, Oregon, 97310-0210

Dear Mike.

The proposed instream water right , (application No. 70251) for Rock Creek Gilliam County is seriously flawed.

1 / The forty mile stream-reach described for the Instream Water Right is dry for much of its distance during August, September, and October.

2 / The stream reach above The Gage Station is also dry for much of its distance up to the divide during this period.

3./ The period of summer dry-up with no water was about 30 days at our former ranch below French Charlie In the era of 1900.

Interview (1976) and visit with Ethel Sprinkel. She was born on the ranch in 1888, and lived there until 1906. I asked, "When you were here, the creek never went dry did it?" She responded, " It went dry every August for about a month.

My father came to Rock Creek in 1903, lived with his mentor-family, Tip and Mrs Mobley, until 1910. Tip settled on Rock Creek near Olex in 1867. Father ranched In the community until his death in 1946. I was born in 1923 and started fishing with my Dad in 1927. I rode horseback for 3 miles and forded the creek twice each day riding to school at Olex. ALONG,

DAVID CHILDS
1806 Thompson ST.
The Dalles OR 97058

THE DALLES OR
FEB 11
AM
1995
97058

MR MIKE MATTICK
INSTREAM WATER RIGHTS
WATER RESOURCES DEPARTMENT
COMMERCE BUILDING
158 12th STREET NE.
SALEM, OR 97310-0210

2/6 V/M 11:45

Oregon

DEPARTMENT OF FISH AND WILDLIFE

SENT BY FAX AND REGULAR MAIL

January 31, 1995

Water Resources Department
158 12th Street, NE
Salem, OR 97310

RE: Comments; 5 John Day River basin Instream Water Right Technical Reviews; Applications 69960, 70250, 70251, 70263 and 70648.

ODFW has reviewed the subject Technical Reviews and offer the following comments:

General Comments

1. ODFW has previously indicated it does not oppose reducing instream water right flow levels from amounts requested to the estimated average natural flow when this is less than requested flows.
This is consistent with OAR 690-77-045 (3e).

2. According to OAR 690-77-026 (1), WRD "shall undertake a technical review ... and prepare a report." This subsection further lists 8 [(a) through (h)] mandatory criteria which, at a minimum, must be assessed during the technical review. ODFW has concerns with the apparent level of assessment relative to subsection (c):

> *OAR 690-77-026 (1) (c)--Assessing the proposed instream water right with respect to conditions previously imposed on other instream water rights granted for use of water from the same source.*

In the subject John Day River basin reports of technical review, WRD is proposing to condition each application to exempt human and livestock consumption from regulation in favor of these instream rights as follows:

> *This instream right shall not apply to permits for appropriation for domestic or livestock use....*

2501 SW First Avenue
PO Box 59
Portland, OR 97207
(503) 229-5400
TDD (503) 229-5459

OR

This instream right shall not have priority over human or livestock consumption.

Instream water rights certificates in the John Day River basin based on conversion of minimum perennial streamflows generally contain similar conditioning language giving preference to the listed uses.

By rule, WRD's technical review process includes assessing conditions previously imposed on other instream water rights from the same source. If found to be appropriate, WRD may propose that new instream water rights contain the same exemption. There is no requirement that this exemption be automatically included as a proposed condition.

When ODFW reviewed WRD files on some of these applications for documentation of assessments of prior conditions, we found nothing to document that any such assessments had been done. ODFW, therefore, assumes the required assessments were not done, contrary to rule. ODFW also objects to the routine placement of exemptions on any of the subject applications on the grounds that to do so does not give adequate consideration to the public's interest in maintaining fishery resources in John Day River basin streams. OAR 690-11-195 (4dA).

Specific Comments

Application 70251; Rock Creek; RM 40 to 0--In its water availability analysis, WRD staff find that water is not naturally available to meet even ODFW's recommended minimum flows for fish in May through December. For the months of July through November, the water availability analysis indicates that only about 1/3 of the minimum recommended flow is available. When these calculated flows are compared with other measured flow records, it appears that the estimated average natural flow levels for July through December are potentially erroneous.

The estimated average natural flow and instream water right should be calculated and measured at the mouth of Rock Creek, the downstream limit of this application. Records for USGS gage 14047390 (50% exceedance; 1975-87; RM 40) indicate actual flows (after cumulative withdrawals above) are similar to what WRD staff

predict would be naturally available at the mouth of Rock Creek, 40 miles downstream.

	JUL	AUG	SEP	OCT	NOV	DEC
WRD Water Availability (RM 0)	4.7	3.1	2.5	2.7	6.7	21.8
USGS Gage Records (RM 40)	2.9	1.7	2.1	3.7	11.0	30.0
Robison, 1991 (RM 40)	1.8	0.7	2.3	2.6	10.6	31.9

The numbers above listed as "Robison, 1991" were extracted from WRD's 1991 Hydrology Report #1, "Water Availability for Oregon's River and Streams: Appendix B". Again, these are natural flow predictions (50% exceedance) for a gage 40 miles upstream from the mouth of Rock Creek, the point of natural flow measurement for the proposed instream water right.

Based on the observation that natural stream flows generally increase as a stream progresses downstream, it is doubtful that the flows cited above accurately represent the instream flow picture.

During physical stream surveys conducted by ODFW personnel in 1971, stream flows in Rock Creek were measured at 1 mile intervals for the lower 9 miles. During this survey, numerous active water diversions were noted. Despite the loss of flow at 22 diversions, measured instream flows (e.g., 4.8 cfs at RM 2) often exceeded the estimated average natural flow.

Although this comparison can not be considered conclusive, ODFW believes significant evidence exists to cast doubt on the results of the water availability analysis performed for this application and is the basis for our objection to same.

Application 70250; Bridge Creek; RM 19 to 13--WRD's water availability analysis indicates water is not naturally available to meet ODFW's recommended minimum flows 10 months out of 12, May through February. There are no gage records available to us for comparison here. We do, however, have limited instream flow measurements taken in July, 1971, that indicated the estimated average natural flow presented in this technical review underestimate natural flow.

The water availability analysis predicts less than one cfs would be available naturally in Bridge Creek during July. ODFW's measurements during July, 1971, recorded a flow at RM 13 of 7.2 cfs after an observed 7 active diversions. Although not conclusive evidence, these measurements, coupled with anecdotal information obtained from field personnel, leads ODFW to believe sufficient doubt exists as to the accuracy of the water availability analysis completed for Bridge Creek.

Application 70263; Bear Creek; RM 11 to 0

The situation on the lower 11 miles of Bear Creek is similar to that of Bridge Creek to which it is tributary. Although no gage data exists for comparison, flow measurements taken by ODFW in July, 1971, recorded flows between 2.2 and 6.2 cfs in this stream section. ODFW district personnel indicate that these observed levels of flow are not extraordinary.

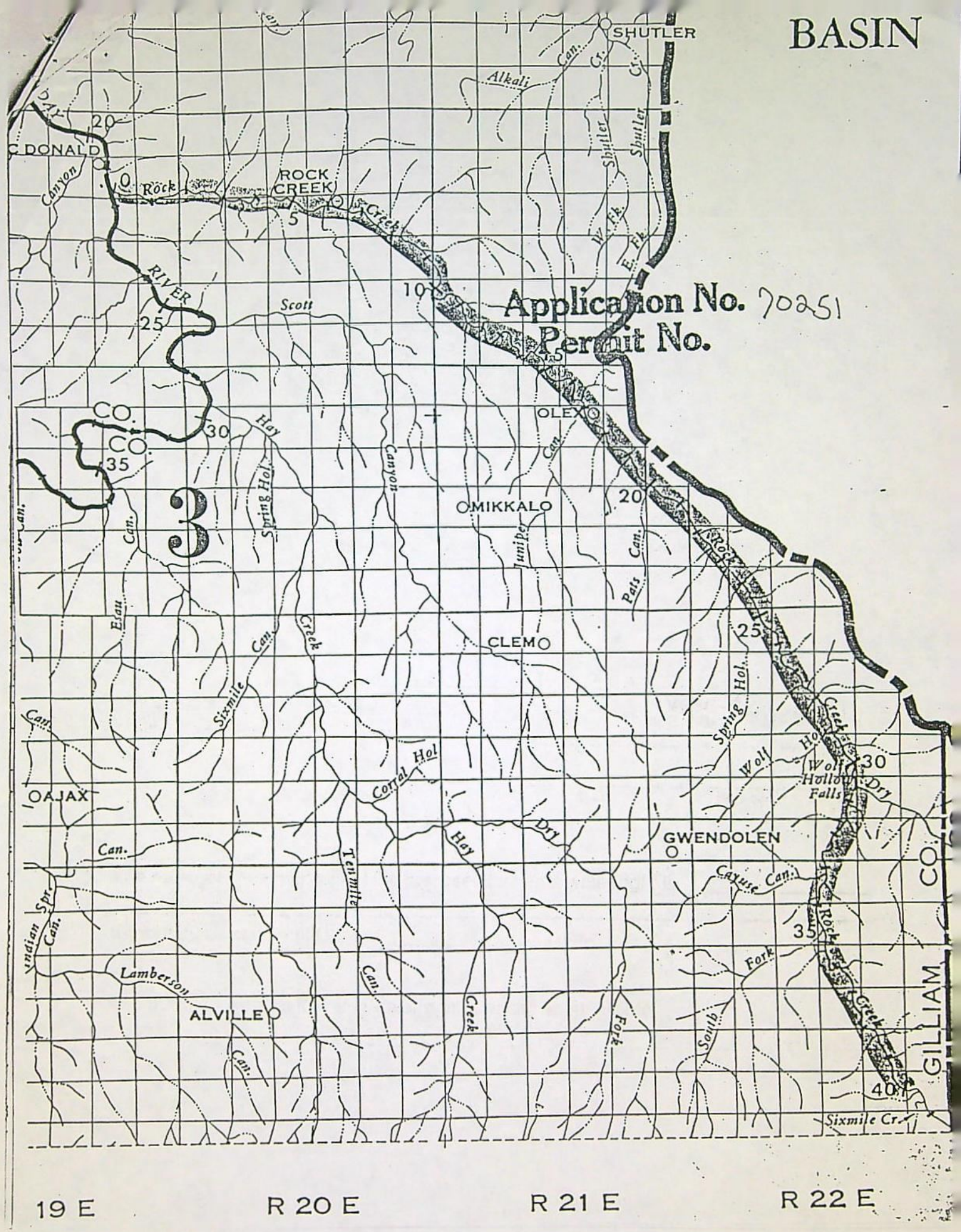
Thank you for this opportunity to review the subject technical reports. We appreciate WRD's efforts to move forward with these applications and encourage you to proceed to certification as quickly as possible.

Sincerely,

Stephanie Burchfield
Water Resources Program Manager
Habitat Conservation Division

c. Unterwegner, John Day
Lauman/Eddy, La Grande
WaterWatch of Oregon (public information request)

File: WRD/Instream Water Right/Comments


BASIN
Application No. 70251
Permit No.
SHUTLER
ROCK CREEK
C DONALD
OLEX
MIKKALO
CLEMO
OAJAX
GWENDOLEN
ALVILLE
RIVER
Canyon
Rock
Creek
Alkali
Can.
Cr.
Shutler
W. Fk.
E. Fk.
Scott
Hat
Spring Hol.
Canyon
Juniper
Pats
Rock
Etau
Sixmile
Corral Hol
Tenmile
Dry
Wolf Hollow Falls
Cayuse
Fork
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Indian Spr.
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WATER FOR LIFE'S OBJECTION TO TECHNICAL REVIEW: APPLICATION # 70251

Submitted to the Oregon Water Resources Department, January 31, 1995

Water for Life hereby submits the following objection to Application # 70251, an instream water right application filed by the Oregon Department of Fish & Wildlife ("ODFW"). Water for Life asserts that the technical review by the Water Resources Department ("WRD' or "Department") is defective and there are elements of the water right as approved that may impair or be detrimental to the public interest, based on the facts and issues set forth below. The applicant has requested flows that exceed the level of flow necessary to support the uses applied for (ORS 537.336 and OAR 690-77-015 (9)). For the reasons set out herein, the application should be rejected or returned to the applicant for the curing of defects.

A. WRD FAILED TO ANALYZE FLOW NEEDS

The flow levels approved by the technical review are not based on any analysis of the need for the flows requested. ORS 537.336 sets out the statutory standard which the Department is supposed to follow when determining instream water rights; the "quantity of water necessary to support those public uses." Water for Life asserts this standard means the minimum quantity necessary to support the public use. The technical review does not address the quantity of water or flow levels necessary to support the uses applied for. A review of the WRD file shows that no such analysis has occurred. The only review undertaken by the WRD was a check to see if the requested flows are less than the average estimate natural flow ("EANF"; OAR 690-77-015 (4)). At the very least, the flows approved should not exceed the lesser of EANF or the minimum flow recommended in the Basin Investigations.

B. NO SUPPORTING DATA SUBMITTED FOR REQUESTED FLOW LEVELS

An integral part of the technical review by the WRD is the analysis of the application and supporting data (see OAR 690-77-026 (1)(a)). OAR 690-77-015 also requires an application to include at a minimum "a description of the technical data and methods used to determine the requested amount;" (emphasis added).

No analysis of supporting data, or the lack thereof, appears in the WRD file for the application. The technical review is defective in that the WRD did not evaluate "whether the level of instream flow requested is based on the methods for determination of instream flow needs as directed by statute and approved by the administrative rules of the applicant agency." (OAR 690-77-026 (1)(h)).

ODFW does not have specific files for their instream water right applications. The original data supporting the Basin Investigation has apparently been lost or destroyed. Such information is essential to understand and evaluate the requested flows and assess their accuracy. No supporting data or "technical data" was submitted by the applicant as required by OAR 690-77-020 (4). Since no technical data was included with ODFW's application, the application should be returned to the applicant for curing of defects or resubmittal (OAR 690-77-021 and 022).

C. OREGON METHOD IS INHERENTLY FLAWED - WRD SHOULD REJECT APPLICATION

The methodology used for this application, the "Oregon Method", is inherently flawed in that it is based on a methodology that has been superseded and is not reliable, and is based on outdated or insufficient information (note testimony of Albert H. Mirati, Jr. on the Oregon Method at the Water Resources Commission, December 6, 1990 meeting).

The Oregon Method was further critiqued in Instream Flow Methodologies, EA Engineering, Science and Technology, Inc. (1986), a publication referenced ODFW's own publication also entitled Instream Flow Methodologies, Louis C. Fredd, Oregon Department of Fish and Wildlife (1989). In that critique at page 10-71, the authors stated:

> "The principal limitation is the arbitrariness of the flow criteria. There is no way of knowing if they are necessary or sufficient. The binary velocity and depth criteria are also arbitrary and can result in misleading conclusions. It [Oregon Method] is one of the earliest developments of the concept of depth, velocity, and especially substrate size and dissolved oxygen, but has now been superseded."

The determinations made for the Oregon Method are not reliable and should therefore be rejected by the WRD or the Commission as the final authority in determining the level of instream flows necessary to protect the public use (ORS 537.343).

D. OREGON METHOD WAS NOT FOLLOWED TO OBTAIN FLOW LEVELS REQUESTED

One of the requirements of the Department's technical review is contained in OAR 690-77-026 (1)(h): "Evaluating whether the level of instream flow requested is based on the methods for determination of instream flow needs as directed by statute and approved by the administrative rules of the applicant agency." This requirement does not mean the Department can simply accept ODFW's assertion that the "Oregon Method" is the basis for the requested flows. The Department must actively review the application to see if the Oregon Method and ODFW's instream rules are being followed. Where applicable, ODFW must also submit supporting data to show that the standards and criteria contained in their rules have been followed.

The actual measurements used by ODFW to set requested flow levels are totally inadequate to validate those amounts; these measurements were made by ODFW's predecessor, the Oregon State Game Commission, as shown in the Appendices to the Basin Investigations. Actual measurements of streamflow were not made at times when key life stages occurred and, in fact, the severe limitations of the data available show that they are inadequate to validate the requested flows: "Actual measurement of streamflow made at or near recommended instream flow requirements and made at times when key life stages occur are important to validate the methodology use, and to validate that the recommended instream flow requirements provide desirable habitat conditions." Instream Flow Methodologies, Louis C. Fredd, Oregon Department of Fish and Wildlife (1989), p. 12.

E. "EANF" CALCULATIONS ARE DEFECTIVE OR INCOMPLETE

There are no calculations or information in the WRD file to show what ratios or models were used or how adjustments were made to determine the 50% exceedance flows, and there is also no information in the technical review to show the type of statistics used (see "Methods for Determining Streamflows and Water Availability in Oregon", Robison, p. 22 and 23.) The EANF calculations are defective, resulting in high EANF levels and thus allowing excessive recommended flows by the WRD. The model used to calculate EANF should be reviewed and revised to properly set EANF figures.

F. FISH SPECIES MAY NOT BE PRESENT IN STREAM

The application is defective in that the purpose listed in the application (to provide required stream flows for several different types of fish species) listed fish species that may not be present in the stream. Insufficient information was submitted with the application to determine if the fish species listed in the application are actually present in the stream reach applied for. No supporting data was submitted to show the presence of the listed species as required by ODFW's rules (OAR 635-400-015 (8)(a)).

G. "REPORT CONCLUSIONS" CONTAIN BOILERPLATE LANGUAGE

The "Report Conclusions" of the technical review contain boilerplate language apparently agreed upon by the Department and ODFW, some of which is not applicable to this application. There is no information in the application file to indicate the "conclusions" were actually reached as part of the technical review.

H. "OPTIMUM FLOW" REQUEST IS CONTRARY TO STATUTORY STANDARD

ODFW applied for the "optimum" flow rates listed Basin Investigation. The statutory standard for instream water rights, however, is the quantity "necessary to support" the public uses allowed (ORS 537.336 (1)), not optimum flows.

The January 1963 South Coast Basin report listed minimum flow amounts in Table D as recommendations to "provide what is considered the basic flows necessary to meet present requirements for anadromous fish passage, spawning, and rearing. These are not considered optimum flows although they may approach optimum in some instances." (South Coast Basin, State Water Resources Board, January 1963, page 73).

When new information was developed from a 1969 survey, the Oregon State Game Commission prepared the April 1972 report (Basin Investigation, also known as "Environmental Investigation"). The new report did modify some minimum flow amounts, and added "recommended optimum flows ... designed to provide instream conditions capable of maintaining an optimum desirable level of natural production." (1972 Environmental Investigation, South Coast Basin, Appendix 2, page 58). It is obvious from the data involved that both EANF and the flows allowed by the technical review are excessive.

The flow rates allowed should be reduced to the minimum flow recommendations of the Basin Investigation or EANF, whichever is less.

I. "REACH" REQUESTED IS TOO EXTENSIVE

A significant defect in the application and supporting data that the Department failed to consider concerns the reach of the stream allowed under this instream water right. The flow rates allowed would be applicable to the entire reach requested. This reach is far too long for the flow rates allowed, especially in light of the incoming tributaries between the mouth and the upstream end of the reach (see basin maps). The instream right "shall be approved only if the amount, timing and location serve a public use or uses." OAR 690-77-015 (9).

OAR 690-77-015 (6) states that instream rights "shall, insofar as practical, be defined by reaches of the river rather than points on the river."; OAR 690-77-202 (4)(d) requires that the application shall include the stream "reach delineated by river mile." It is neither practical nor reasonable to approve the same flow rates for the entire reach given the length of the reach applied for, the water available in the stream and the additional tributaries that flow into the stream within the reach.

The stream reach is also excessive according to ODFW's own instream rules. OAR 635-400-015 (11) details the requirements for a specific stream reach. A stream reach is limited to a point where "Streamflow diminishes by at least 30%" (OAR 635-400-015 (11)(B)). OAR 635-400-015 (11)(C) also appears to have been violated since the "stream order" (OAR 635-400-010 (19)) changes within the reach requested due to the incoming tributaries.

The flow requests by ODFW are based on the old Basin Investigations. The Basin Investigations lists the location of the recommended flows in the appendix listing the recommended flows. It is clear that the flow recommendations in the Basin Investigation did not extend upstream and the facts cited above further prove that the reach approved should be limited significantly.

J. EXISTING INSTREAM WATER RIGHTS NOT TAKEN INTO ACCOUNT

An instream water right already exists within the reach of the stream at issue in this application. The amount of the existing instream right should be subtracted from any instream right allowed under this application.

OAR 690-77-015 (10) requires that the "combination of instream rights, for the same reach or lake, shall not exceed the amount needed to provide increased public benefits and shall be consistent with (4) and (5) above. Subsection (4) of that section deals with the "EANF" determination; the existing rights were also not accounted for in that calculation. See also OAR 690-77-015 (9).

If the existing instream water right is not subtracted from the approved flow levels, the Department should add a condition to the water right as follows: "The instream flow allocated pursuant to this water right is not in addition to any other instream water rights with a senior priority date and is not in addition to a designated minimum perennial stream flow."

K. ODFW'S GAGE RULE NOT FOLLOWED

The application fails to abide by another rule applicable to ODFW's instream applications, OAR 635-400-015 (10)(a). This rule requires ODFW to compare hydrological estimates or gaging data to the amount of water they request for instream flows ("instream flow requirements"). A specific evaluation is set out in subsection (10)(b) regarding appropriate levels for any given time period in relation to the naturally occurring stream flows. ODFW never performed this evaluation for the application.

CONCLUSION

This objection is filed in accordance with OAR 690-77-028. The issues raised should be considered as part of a contested case hearing. The WRD technical review is inadequate and defective and has failed to follow applicable rules. A thorough review of the application is necessary to determine the flow levels necessary to support the public uses applied for.

For the reasons set forth above, the objector asserts the application is defective and should be returned to the applicants. The flow levels requested are excessive and not necessary to support the public uses proposed. Flow levels set at the rates proposed interfere with future maximum economic development. Excessive flow rates for instream water rights represent a wasteful and unreasonable use of the water involved (ORS 537.170). The flow rates approved should be set the minimum quantity necessary to support the public use applied for.

Todd Heidgerken
Executive Director of Water for Life

WaterWatch

Rec. 2/1/95

Hand Delivered

January 31, 1995

Oregon Water Resources Department
Water Rights Section
158 12th Street NE
Salem, Oregon 97310

Re: Technical Reports for:
69960, 70250, 70251, 70263, 70648
ODFW, Instream Applications, John Day River Basin

WaterWatch of Oregon strongly supports the flows requested in the above referenced Oregon Department of Fish and Wildlife applications. These flows are essential for survival of resident salmonids, small-mouth bass, summer steelhead, rainbow trout, and channel catfish. Streamflows are critical to the survival of these fish. By this letter WaterWatch requests copies of any objections filed on these applications.

In addition, we file the following objections to the water availability analyses in the technical reports pursuant to OAR 690-77-028:

The Water Availability Analysis is Defective

Instream water rights are a means for the state to achieve equitable allocation of water and Oregon Statutes place a duty on the state to act in a way that will protect instream flows needed for fish populations. OAR 690-77-015(2), ORS 496.430, OAR 690-410-070(2)(h). The agencies administrative rules require the technical reports to contain an evaluation of the estimated average natural flow (ENAF) available from the proposed source. OAR 690-77-026(1)(g). The rules also state that the amount of appropriation for out of stream uses is not a factor in determining the amount protected under the instream water right. OAR 690-77-015(3).

> However, the technical reports state that they contain an:
> "evaluation of the estimated average natural flow available from the proposed source during the time(s) and in the amounts requested in the application . . . The recommended flows take into consideration planned uses and reasonable anticipated future demands for water from the source for agricultural and other uses as required by the standards for public interest review . . ."

Technical reports page 2 (emphasis added). Clearly, this analysis is contrary to the agencies rules because it takes into account out-of-stream uses. These instream water right application requests must be evaluated according to the higher ENAF figures.

WaterWatch of Oregon 921 SW Morrison, Suite 438 Portland, Oregon 97205
phone: (503) 295-4039; fax (503) 227-6847

The technical reports propose to issue instream water rights for the Department's lower "average flows" rather than those requested for several months of each year. The flows requested by ODFW are necessary for the requested beneficial use of water - fish life. These flows are needed for migration, spawning, egg incubation, fry emergence and juvenile rearing and for fish passage and habitat maintenance. There should be no reduction in the requested flows. ODFW's flow requests are either within the ENAF or are needed to account for high flow events that are needed for fish passage and habitat maintenance pursuant to OAR 690-77-015(4).

The proposed conditions are contrary to the public interest.

The technical reports propose to subordinate these instream flow requests to human consumption or livestock. The technical reports do not provide any support or reasoning behind its proposal. These uses, while they use small amounts of water individually, have cumulative adverse effects on streamflows needed for fish.

Streamflows are not only critical for fish survival, they help abate water quality problems. The Department of Environmental Quality (DEQ) has designated a segment of the John Day as water quality limited. The river is not able to support the designated beneficial use of aquatic life. Rivers can not assimilate pollution loadings unless there is sufficient water instream. Thus, streamflow protection is critical to pollution abatement.

These proposed conditions are contrary to the public interest in protecting the resource. The Commission's statewide policies recognize the importance of maintaining streamflows and place high priority on protecting streamflows. OAR 690-410-030(1). This policy directs the state to take action to restore flows in critical areas such as this system. Id. The public uses of the this river system have been impaired. Adoption of these instream water rights without conditions is just one small step towards restoring this system.

Adoption of these and other instream flows is critical to the health of Oregon's watersheds and must be a high priority for Oregon if the state is to develop solutions to the resource crises that threatens to destroy the livability of Oregon. Instream water rights not only help to achieve a more equitable allocation of water between instream and out of stream uses, they also establish management objectives for Oregon's rivers. WaterWatch supports the Department's efforts to finally begin to implement an Act that has been "on the books" for the past six years. We look forward to the adoption of these instream water rights.

Sincerely,

Kimberley Priestley
Legal/Policy Analyst

COPY CHECK-OFF SHEET FOR **INSTREAM TECHNICAL REVIEWS**

CC: FILE #

WATERWATCH

ODF&W (DEPENDING ON - IF NOT APPLICANT) COUNTY(IES): Gilliam

WATERMASTER # 4

REGIONAL MANAGER - NC

KEN STAHR

✓ David Childs, 1806 Thompson St, The Dalles, OR 97058

OTHER ADDRESSES: (OVER FOR MORE ADDRESSES)

AGRICULTURE, DEPARTMENT OF, VES GARNER

BOYER, JOHN, JR.

COALITION FOR REPONSIBLE WATER PLANNING

~~COOS COUNTY BOARD OF COMMISSIONERS, GORDON ROSS (COOS RIVER BASIN ONLY)~~

CROOK COUNTY STOCKGROWERS ASSOC., JEFF & RUNINDA MCCORMACK

DEPARTMENT OF ENVIRONMENTAL QUALITY

DOUGLAS COUNTY LIVESTOCK ASSOCIATION

CASEWORKER MM 11/10/94

ORIGINAL TO APPLICANT 10/14/94

COPY CHECK-OFF SHEET FOR **INSTREAM TECHNICAL REVIEWS**

OTHER ADDRESSES:

F. A. I. R.

FRUIT GROWERS LEAGUE

HURRICANE CREEK IRRIGATION DITCH CORPORATION, RICHARD A. BOUCHER, SEC./TREAS.

ILLINOIS VALLEY WATER RIGHT OWNERS ASSOC.

LAKE COUNTY STOCKGROWERS, ANN TRACY, PRESIDENT

MORROW COUNTY COMMISSIONER, RAY FRENCH

MOON, DAVID, ATTORNEY

OREGON ASSOCIATION OF NURSERYMEN, INC., CLAYTON W. HANNON, EXECUTIVE DIRECTOR

OREGON ASSOCIATION OF REALTORS, JERRY SCHMIDT, WATER CONSULTANT

OREGON CATTLEMEN'S ASSOC.

OREGON HOP GROWERS ASSOC.

OREGON SHEEP GROWERS ASSOCIATION, INC.

OREGON WHEAT GROWERS LEAGUE, MACK KERNS

WALLOWA COUNTY COURT, OFFICE OF THE JUDGE

WALLOWA COUNTY STOCKGROWERS ASSOC., C/O JEAN STUBBLEFIELD, SECRETARY

WATER FOR LIFE

WATER RESOURCES CONGRESS

REVISED: 10/14/94

✓ Paul Bates Gilliam-County SWCD, POBox 106, Condon, OR 97823

✓ Joe Rietmann, Morrow SWCD, POBox 127, Heppner, OR 97836

Oregon
DEPARTMENT OF
FISH AND
WILDLIFE

HABITAT
CONSERVATION
DIVISION

November 15, 1994

Mike Mattick
Water Resources Department
158 12th Street, NE
Salem, OR 97310

RE: Instream Water Right 70251; supporting information

Dear Mike:

Attached is the subject material you requested. Hopefully it will serve to support our application for sufficient water to operate the fishway at Harper Dam on Rock Creek (John Day River).

Sincerely,

Albert H. Mirati, Jr.
Fish Passage Coordinator

c: Burchfield

2501 SW First Avenue
PO Box 59
Portland, OR 97207
(503) 229-6967

Rock Cr., John Day

For Rock Cr.
IWR

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
ENVIRONMENTAL & TECHNICAL SERVICES DIVISION
1002 NE HOLLADAY STREET - ROOM 620
PORTLAND, OREGON 97232
503/230-5400

January 24, 1990 F/NWR5

IWR 70251

Sharon Conyers
Oregon Department of Fish and Wildlife
506 S.W. Mill Street
P.O. Box 59
Portland Or. 97207

Dear Ms. Conyers,

Attached is the functional design for the Harper Dam Fishway on Rock Creek (Enclosed). This is the second fishway of a series of upwards of 6 that is needed to insure safe and efficient adult anadromous fish passage into the upper basin of Rock Creek in the John Day River Basin. It is our understanding that the Oregon Department of Fish and Wildlife (ODFW) plans to construct the Harper Fishway during the summer of 1990 with funds carried over from FY89.

As you recall the National Marine Fisheries Service (NMFS) volunteered to help design the first couple of fishways to expedited the project. The first fishway at Ramsey Dam was designed by NMFS last September and ODFW personnel constructed it in October.

Please have your engineering staff review the enclosed functional design for the Harper Fishway. Detailed structural design is required before construction can begin on this fishway. The NMFS is not prepared to do the structural design for the Harper Dam site so the ODFW will need to either do the structural design or contract it out to a private engineering firm. As nearly $18,000 in engineering related funding was provided to ODFW by NMFS for this project, the design costs should be covered.

Technical comments or questions on the design should be directed to Mr. Randy Lee at 230-5411. Any other comments or questions can be directed to Mr. Mike Delarm of my staff at 230-5412. We look forward to moving ahead with this project.

Sincerely,

Robert Z. Smith
Director, Columbia River
Fisheries Development Program

Harper Dam Fishway
Rock Creek
John Day River Basin

Background

Rock Creek enters the John Day River at river mile 21.6. The Oregon Department of Fish and Wildlife (ODFW) personnel indicated that 75 miles of habitat would be opened by correcting passage problems on Rock Creek. According to ODFW, steelhead is the only species of anadromous fish which utilize the Rock Creek drainage. Steelhead currently utilize the lower 25 miles of the creek.

There are six irrigation dams within a 20 mile creek reach. The dams are located at creek miles 7 (Ramsey Dam), 19.75 (#2), 23.5 (Irby Dam), 25.5 (Harper Dam), 27 (McCoin Dam), and 28 (#6). Steelhead passage is entirely blocked at the Harper damsite, but all the other dams probably delay or block passage during low to moderate flows (possibly during higher flows).

In October of 1989, ODFW constructed a fishway designed by the National Marine Fisheries Service (NMFS) at the Ramsey damsite. In general, the fishway consists of two pools with a vertical slot insert placed between the pools.

The following presents a functional design for providing safe and efficient passage of adult steelhead at Harper Dam.

Harper Dam Fishway
Rock Creek
John Day River Basin

Summary

Location: Approximate creek mile 25.5
T2S, R22E, Sec. 5
Gilliam County, Oregon

Fishway type: Vertical Slot
Floor slope 1 vertical to 8 horizontal
7 vertical slots with one 15-inch entrance
Pool dimensions 6 foot wide by 8 foot long
Vertical slot either can be formed concrete or inserts.

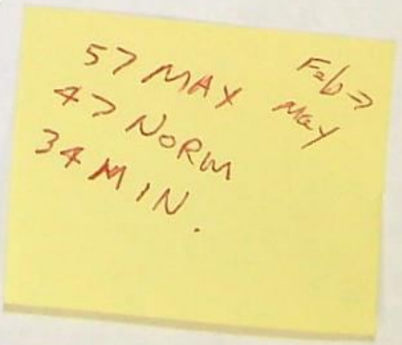
Design Flows: 57 cfs maximum
47 cfs normal
34 cfs minimum

Hydraulic Design

The proposed fishway at the Harper Dam is a vertical slot type with each slot having a width of one foot. Field surveys by ODFW taken May 4, 1988 indicated a head of approximately 8 feet will need to be managed by the fishway. This results in a fishway with 7 vertical slots and one 15-inch wide entrance to satisfactorily manage the 8 foot drop. Due to cost and space limitations, the fishway proposed is to have a slope of 1 vertical to 8 horizontal and have pool dimensions of 6 foot wide by 8 foot long. This is considered to be minimum dimensions for this type of fishway. Vertical slots can be either formed concrete or fabricated metal inserts which may be constructed offsite and installed in the flume when completed.

It is expected that adult steelhead will be present during the months of February through May, therefore, the fishway is designed to accomodate passage during this period. Design flows for the fishway are as follows: 57 cubic feet per second (cfs) maximum, 47 cfs normal and 34 cfs minimum. From high water marks, there appears to be 4 feet of head over the dam crest. Using the standard weir formula, this converts to a streamflow of approximately 1259 cfs. At this streamflow the effectiveness of the fishway entrance flow to attract fish is negligible without auxiliary water, however, at this high streamflow it appears fish may choose to pass over the dam or wait and use the fishway when streamflows subside.

Stoplogs at the entrance are utilized to control the discharge from the fishway. To increase operational flexibility and ease of adjustments, a gate may be considered. Adjustments to the logs or gate will be necessary to insure a hydraulic drop of 1.25 feet across the entrance. This will result in and entrance jet velocity of approximately 9 feet per second. A short flow deflecting wall is constructed between the entrance pool and the first slot upstream from the fishway entrance. The purpose of this wall is to dissipate the energy from the oncoming jet. Additionally, for dewatering purposes, stoplog slots are located at the exit. A coarse trashrack is also located at the exit. To allow passage of fish past the trashrack, the spacing between vertical rack bars are 9 inches and the spacing between horizontal members are 2 feet. To facilitate cleaning of debris from the rack, the rack face is set at a slope or 4 vertical to 1 horizontal. To insure safety, it is recommended the fishway be covered by the use of metal walkway grating.

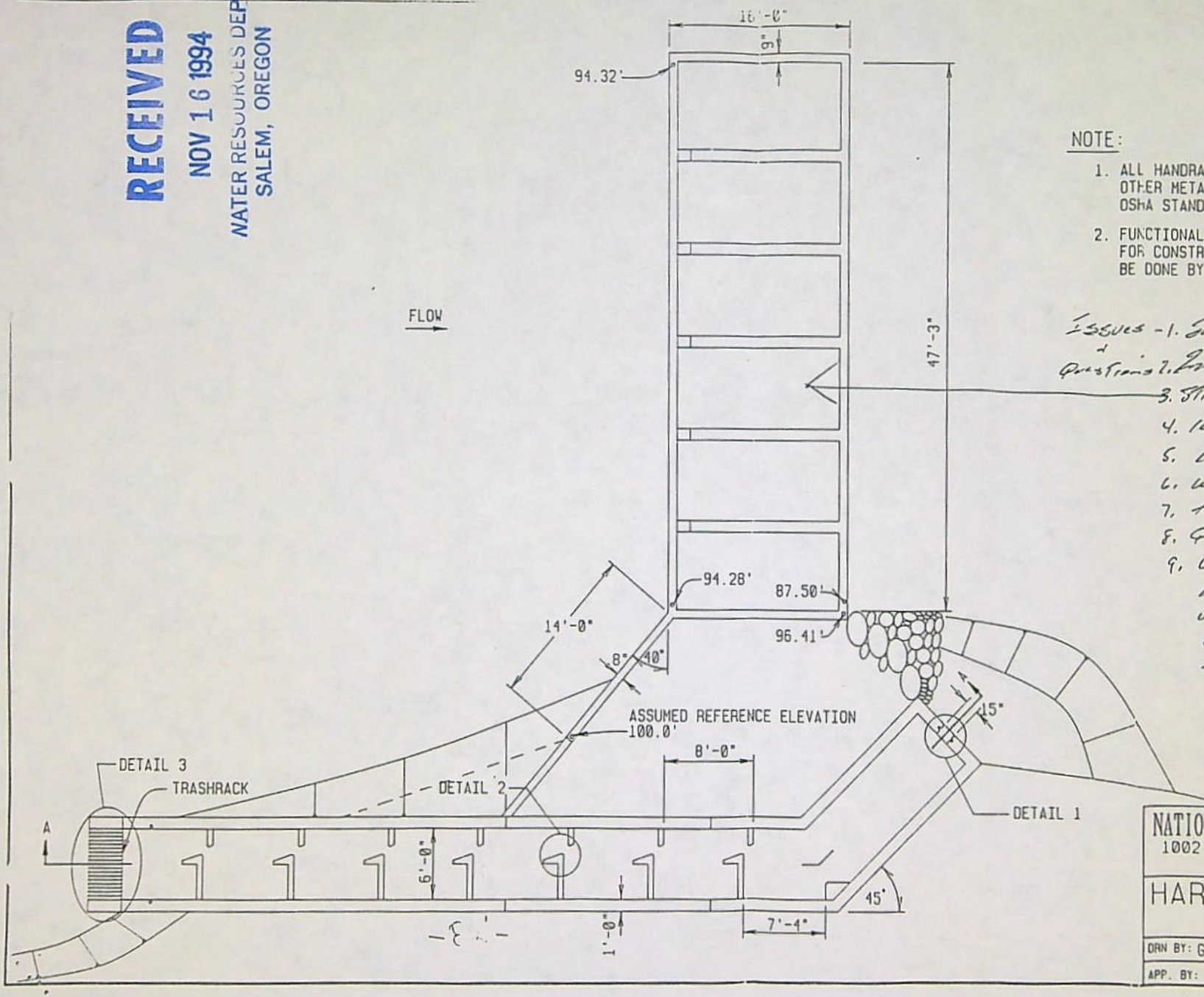


SHEET NO.	TITLE
1	INDEX TO DRAWINGS
2	PLAN
3	SECTION
4	HYDRAULIC PROFILE
5	DETAILS

PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY
INDEX TO DRAWINGS



NOTE:

1. ALL HANDRAILS, GRATING, PLATFORMS AND OTHER METALWORK SHALL CONFORM TO OSHA STANDARDS.
2. FUNCTIONAL DESIGN ONLY, NOT TO BE USED FOR CONSTRUCTION. STRUCTURAL DESIGN TO BE DONE BY OTHERS.

Issues - 1. Safety Grating over ladder
Questions 2. Fishtrake location in relation to apron.
3. Stilling basin entrapment
4. Weir offset
5. Ladder Q
6. Wall HT to prevent flood damage
7. Q based on USGS Records
8. What about passage in low flow years when early irrigation occurs i.e. Passage at flows less than 34 cfs in ladder.

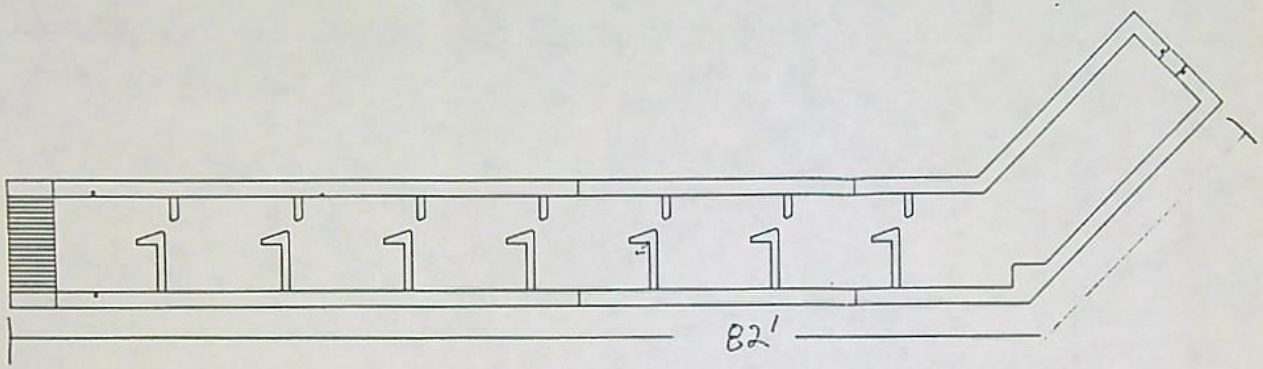
PRELIMINARY FOR REVIEW

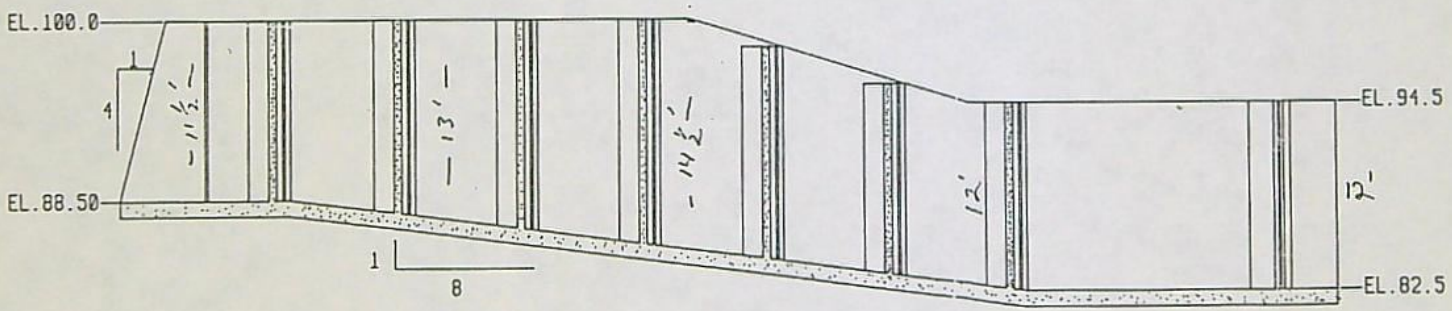
NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY PLAN

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	2

NOTE:





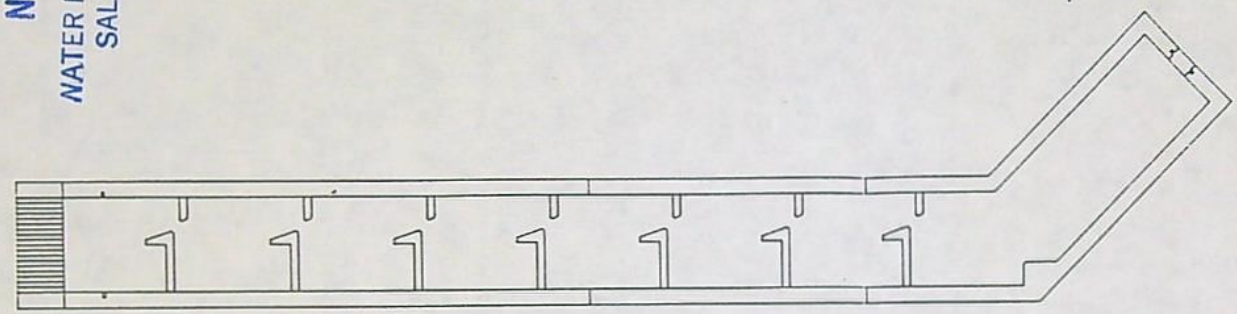
SECTION A - A

PRELIMINARY
FOR REVIEW

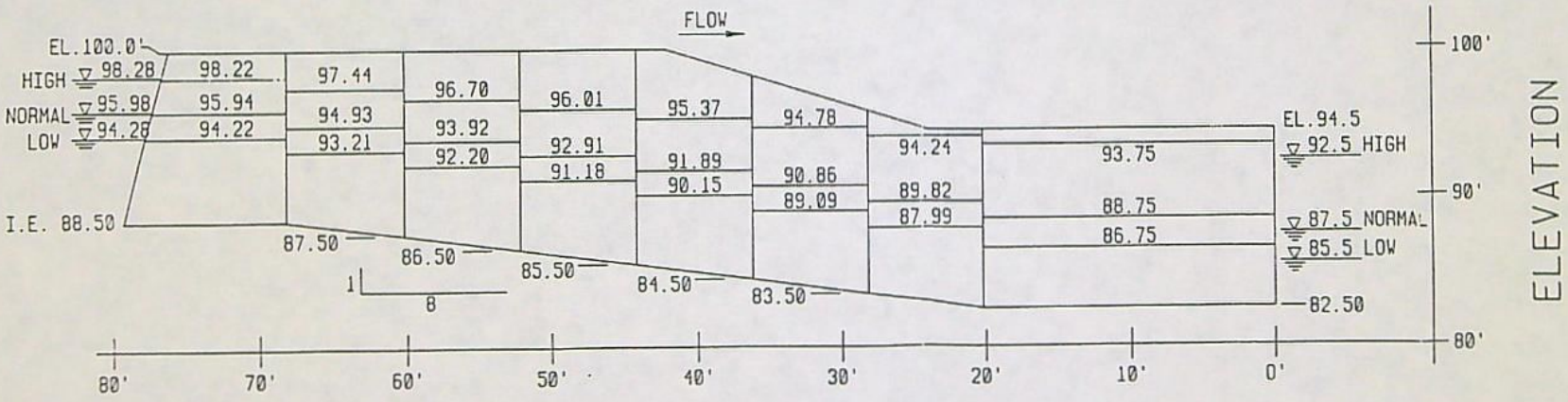
NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY
SECTION

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SH
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	3



NOTE:
1. AT HIGH, NORMAL AND LOW FOREBAY, THE DISCHARGES THROUGH THE FISHWAY, ARE APPROX. 57, 47, AND 34 cfs, RESPECTIVELY.
2. TOP OF WING WALL, RIGHT BANK OF FOREBAY IS ASSUMED TO BE ELEVATION 100.0'

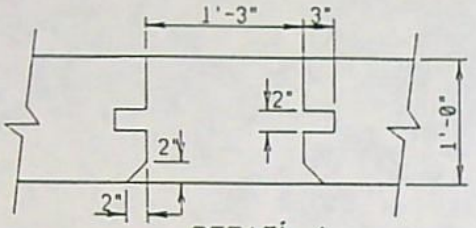


PRELIMINARY
FOR REVIEW

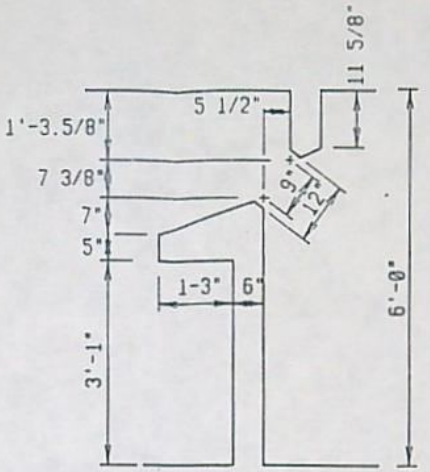
NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY HYDRAULIC PROFILE

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
APP. BY:	SCALE: 1/8"=1'	HARDAMFW	4



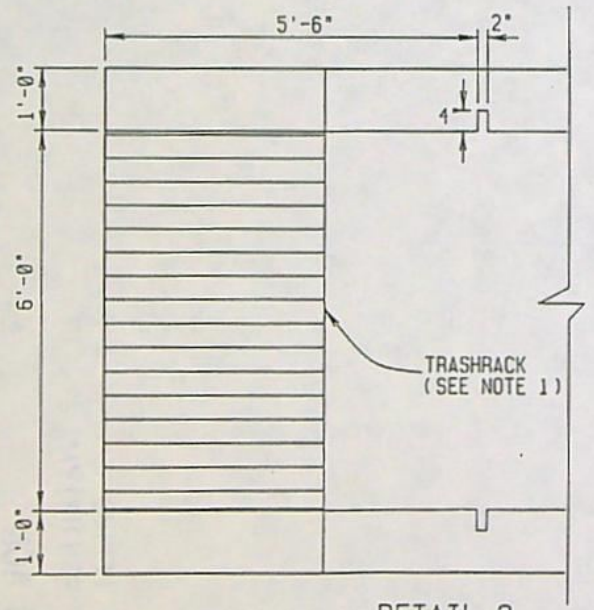
DETAIL 1
FISHWAY ENTRANCE
SCALE: 1" = 1'



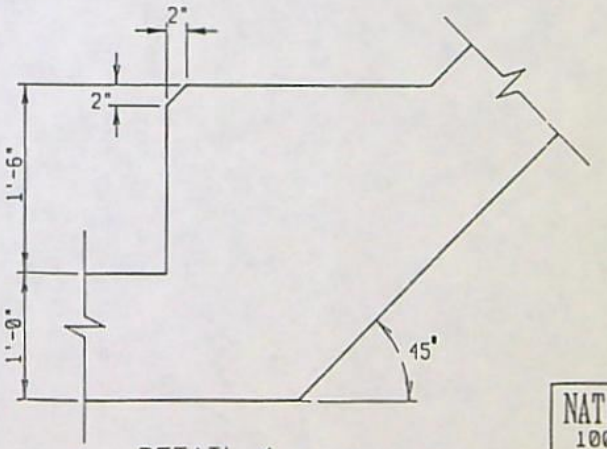
DETAIL 2
VERTICAL SLOT WEIR
SCALE: 1/2" = 1'

NOTE:

1. 9" ± CLEAR SPACE BETWEEN VERTICAL BARS 2'-0" MIN. CLEAR SPACE BETWEEN HORIZONTAL BARS. VERTICAL BARS ON UPSTREAM FACE TO FACILITATE DEBRIS REMOVAL.



DETAIL 3
FISHWAY EXIT
SCALE: 1/2" = 1'



DETAIL 4
FLOW DEFLECTING STUBWALL
SCALE: 1" = 1'

PRELIMINARY
FOR REVIEW

NATIONAL MARINE FISHERIES SERVICE
1002 NE HOLLADAY STREET - RM 620
PORTLAND, OREGON 97232

HARPER DAM FISHWAY DETAILS

DRN BY: G.A.H.	DATE: 11/15/89	CAD FILE NO.	SHT
APP. BY:	SCALE: AS NOTED	HARDAMFW	5

Oregon

WATER
RESOURCES
DEPARTMENT

August 13, 1991

A. David Childs
1806 Thompson St.
The Dalles, Oregon 97058

Re: Instream Water Right Application 70251

Dear Dave,

I have received your letter asking for a review of the Rock Creek instream water right application and have forwarded it, along with a copy of this response, to Lorna Stickel.

At this point we are in agreement that the flows requested by ODFW may be too high during a portion of the year. The certificate for this application will not be issued pending resolution of this flow issue. The stream flow analysis has not yet been shared with ODFW. You will be notified of any modification of the proposal based on this information.

The Department's current course of action on instream water right applications is to attempt to resolve all issues on a basin by basin basis. We are currently focusing on the North Coast Basin. We have not prioritized the rest of the state for subsequent activity. However, there may be good reason to address either the Sandy or Umpqua Basins next.

You will be notified of any proposed resolution of the Rock Creek flow issue prior to final action on the application.

Sincerely,

Michael J. Mattick

MICHAEL J. MATTICK
Water Rights Specialist

MJM:

cc: Lorna Stickel
Laura Pryor, Gilliam County Judge
Al Mirati, ODFW

3850 Portland Rd NE
Salem, OR 97310
(503) 378-3739
FAX (503) 378-8130

A David Childs
1806 Thompson St
July 31, 1991
The Dalles, OR 97058
(503) 298- 1499

Lorna Stickel
Chairman Water Resources Commission
Attn, Mr Mike Mattick
Instream Water Rights
Water Resources Department
3850 Portland Road NE.
Salem, Oregon, 97310

Dear Mike.

I am writing to ask that the instream water right , application No. 70251 on Rock Creek Gilliam county, be reviewed.

George Robison's, hydrologist's model predicts "natural' flows of only three to 10 percent of those asked for,during several months in the application flow and time frame.

1/ The stream-reach described in the Instream Water Right is dry for most of its distance during July, August, September, and October,.

2/ The stream-reach above The Gage Station is also dry for most of its distance during this period. There is no water coming down stream to the gage. There is no water in the watershed. above the gage, during the critical period, other than from convection storms and a few areas of springs and drying trickles in the headwaters.

3./ There is no water during the critical time-frame. Fish are not in the described stream reach other than in areas of spring fed water surfacing from basalt aquifers. Springs have for centuries been the lifesupport system for downstream fish. The upstream dry-up is a last-40-year happening.

4 / The period of summer dry-up with no water for fish and no water for irrigation was only about 30 days annually a century ago. The dry period has lengthened over the years to become five to seven months.

However the O D F W asked for I W R, flows during July through October are not now nor have they ever been available from Rock Creek's watershed, this is not a function of down stream irrigation but a function of upstream watershed condition.

This has also been the historic pattern, however, it has been amplified in the upper watershed by practices that have speeded winter water from the watershed via excessive surface runoff. It has been amplified in the lower watershed by the change from flood irrigation and alluvial recharge to a system with a preponderance of sprinkler irrigation and little alluvial recharge.

The seed-stock for anadromous and resident fish have developed in tune with the nonpassage system of the natural summer dry-up for many centuries it can not be changed by numbers. The numbers were never there.

. Simply building a fish-way designed for 34 cfs for a time-period that has not, by any measure, ran over 2 cfs, will not restore the fishery or the aquatic resource. Rather it will create false hopes and wasteful priority of funding. The enhancement of the stream and restoration of the fishery is possible but this means, setting 34 cfs IWR, will only extend the delay and weaken the chances for recovery. Needed is a responsible diagnosis of the aquatic ills of the stream.

Since Rock Creek Gilliam county has been thoroughly researched by the Water Resources Department, it would seem prudent to use that evaluation in setting the flows for instream water rights. The stream flow data has been published. The recording gages were result of coordination between local people and the Water Resource Department.

I object to the proposed flows. They are not attainable, never were there, and send us down the wrong track to recover this stream.

I'm available should you find it desirable to discuss this further.

I have enclosed a copy of a portion of comments to the Umatilla National Forest dealing with Rock Creek Gilliam and Morrow County.

Thank you for your consideration.

Sincerely,

David Childs

Copy to Laura Pryor, Gilliam County Judge

Enclosures:

1/Description of Rock Creek -Letter to Forest Supervisor

2/ Flow data 1966 - 1989 The gage site was changed in 1976.

3/ Tributary Flow data to Gage for IWR

INTEROFFICE MEMORANDUM
Water Rights Section

TO: Dick Bartley

FROM: Dwight French, x268 DF

DATE: March 26, 1997

RE: Water Availability for ISWR applications/files

You asked about the file copies of Estimated Average Natural Flow (EANF) for ISWR applications.

There is not a printout in each file similar to what you would generally see in an out of stream application file. The EANF information is in either the Technical Review (TR) or Initial Review (IR) as well as the Proposed Final Order (PFO).

During the processing of the ISWR applications, Rick Cooper and/or Ken Stahr would provide us with a electronic copy of the water availability information for a particular group of ISWR applications. We would then cut and paste that information directly into the TR or IR. When preparing the PFO, we would cut and paste from the TR or IR directly into the PFO.

In summary, our EANF numbers are in the TR or IR and the PFO for each particular ISWR application file.

cc: Mike Mattick
All Protested ISWR Files

Instream Applications with Protests
4/2/97

Basin	App Num		
2			
	OK 71556	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 2 :	**1**		
4			
	OK 71793	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	OK 71798	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72076	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72077	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72078	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72079	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72080	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	72081	W	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 4 :	**8**		
5			
	OK 70353	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70354	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	OK 70357	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70358	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70358	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70358	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	OK 70605	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70606	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70606	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70612	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70695	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70695	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	73199	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 5 :	**13**		
6			
	69949	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
Checked out to Dwight	69949	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69951	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69951	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69958	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69958	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69958	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69959	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS

8
9
18
74
2
1
3
9
19
8
12
12

Basin	App Num		
6			
	69959	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69959	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69961	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69961	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69961	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69963	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69963	S	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	69963	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
OK	70251	A	OREGON DEPARTMENT OF FISH & WILDLIFE
OK	70589	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70640	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70640	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70641	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70641	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70642	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70642	S	OREGON DEPARTMENT OF FISH & WILDLIFE
OK	70645	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70645	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70646	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70646	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70651	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70651	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70652	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70652	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70653	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70653	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70654	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70654	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70655	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70655	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 6 :	38		
9			
	70863	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70864	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70870	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72163	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72168	S	OREGON DEPARTMENT OF FISH & WILDLIFE

Basin	App Num		
9			
	72168	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72169	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72169	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	72170	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72173	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72181	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72186	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72187	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72188	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72191	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72194	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 9 :	**16**		
10			
	71450	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71455	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	71455	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 10 :	**3**		
11			
Dwight Done Right!	70020	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
Total for Basin 11 :	**1**		
12			
	71467	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71468	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71472	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 12 :	**3**		
13			
	70486	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70487	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70656	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70657	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70658	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70659	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70662	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70663	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70664	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 13 :	**9**		

Basin	App Num		
14			
DWF	70094	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
DWF	70094	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
DWF	70094	A	OREGON DEPARTMENT OF FISH & WILDLIFE & PARKS
	70798	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70798	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70799	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70799	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70800	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70800	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70801	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70801	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70802	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70802	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70804	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70804	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70807	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70807	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70807	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70808	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70808	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70809	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70809	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70809	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70812	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70812	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70812	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70812	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70813	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70813	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70813	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70813	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70813	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70815	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70815	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70816	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70816	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70821	A	OREGON DEPARTMENT OF FISH & WILDLIFE

Basin	App Num		
14			
	70824	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70826	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70829	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70829	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70829	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70829	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70830	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70830	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70830	S	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 14 :	**46**		
15			
	70982	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70993	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70998	W	OREGON DEPARTMENT OF FISH & WILDLIFE
	71008	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71201	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71614	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71622	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	72843	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 15 :	**8**		
16			
	71172	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71173	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71174	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71181	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71182	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71183	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71184	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71185	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71190	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71192	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71193	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	73350	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 16 :	**12**		
17			
	70228	A	OREGON DEPARTMENT OF FISH & WILDLIFE

Basin	App Num		
17			
	70229	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70230	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70348	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70348	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70448	S	OREGON DEPARTMENT OF FISH & WILDLIFE
	70448	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70574	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70877	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70891	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70895	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70895	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	70915	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	71697	A	OREGON DEPARTMENT OF FISH & WILDLIFE
	80446	A	OREGON DEPARTMENT OF FISH & WILDLIFE
Total for Basin 17 :	**15**		
173			

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1974 TO SEPTEMBER 1975
MEAN VALUES

2.47

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	.44
19	---	---	---	---	---	---	---	---	---	---	---	.40
20	---	---	---	---	---	---	---	---	---	---	---	.40
21	---	---	---	---	---	---	---	---	---	---	---	.40
22	---	---	---	---	---	---	---	---	---	---	---	.40
23	---	---	---	---	---	---	---	---	---	---	---	.40
24	---	---	---	---	---	---	---	---	---	---	---	.38
25	---	---	---	---	---	---	---	---	---	---	---	.33
26	---	---	---	---	---	---	---	---	---	---	---	.33
27	---	---	---	---	---	---	---	---	---	---	---	.37
28	---	---	---	---	---	---	---	---	---	---	---	.40
29	---	---	---	---	---	---	---	---	---	---	---	.40
30	---	---	---	---	---	---	---	---	---	---	---	.40
31	---	---	---	---	---	---	---	---	---	---	---	---
TOTAL	---	---	---	---	---	---	---	---	---	---	---	---
MEAN	---	---	---	---	---	---	---	---	---	---	---	---
MAX	---	---	---	---	---	---	---	---	---	---	---	---
MIN	---	---	---	---	---	---	---	---	---	---	---	---
AC-FT	---	---	---	---	---	---	---	---	---	---	---	---

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1976 TO SEPTEMBER 1977
MEAN VALUES

4.7 309 2.47

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.8	3.8	3.9	3.9	8.3	14	4.1	7.6	.51	.20	.11
2	2.4	2.8	3.9	3.9	4.1	9.0	18	4.3	7.3	.45	.21	.11
3	2.1	2.8	3.9	3.8	3.9	9.0	20	4.6	7.3	.45	.20	.11
4	2.1	2.8	3.8	4.1	3.9	9.0	37	5.0	6.9	.57	.20	.11
5	2.3	2.8	3.8	3.3	4.1	8.3	59	5.0	6.1	.57	.21	.11
6	2.3	2.8	3.6	4.0	4.4	7.9	81	5.3	5.3	.57	5.51	.11
7	2.1	2.9	3.8	4.1	4.4	8.6	71	6.9	4.3	.51	.36	.10
8	2.1	3.0	3.8	4.0	4.4	12	58	7.3	3.8	.40	.18	.10
9	2.1	3.0	4.1	4.0	4.1	16	40	7.3	3.8	.33	.15	.10
10	2.1	3.0	3.9	4.7	4.4	17	31	16	3.5	.33	.14	.10
11	2.1	3.0	4.1	4.5	4.8	16	25	45	3.3	.30	.14	.10
12	2.0	3.0	4.3	5.0	5.3	14	22	45	3.5	.27	.14	.10
13	2.0	3.0	4.6	5.4	5.8	14	19	38	3.2	.27	.12	.10
14	2.0	3.5	4.3	5.6	6.9	13	18	28	3.0	.25	.14	.10
15	1.8	3.6	4.3	5.3	7.6	11	17	24	2.7	.23	.12	.10
16	2.0	3.9	4.3	5.0	7.6	9.8	15	22	2.3	.21	.12	.11
17	2.0	3.9	4.3	5.0	7.6	10	13	21	2.4	.21	.11	.11
18	2.0	4.1	4.1	5.5	7.2	9.4	12	19	2.0	.23	.11	.12
19	2.0	4.3	3.5	5.0	6.9	9.8	11	17	2.0	.23	.11	.12
20	2.1	4.1	3.3	5.5	6.6	9.0	9.8	15	1.8	.20	.10	.14
21	2.1	4.1	3.4	5.3	6.6	9.0	9.4	13	1.7	.20	.11	.14
22	2.1	4.1	3.4	5.0	6.6	9.0	8.3	11	1.3	.20	.10	.14
23	2.1	4.1	3.3	5.0	6.6	9.4	7.3	11	.89	.20	.12	.14
24	2.3	4.6	3.5	5.0	6.3	12	6.3	12	.99	.20	.15	.15
25	2.4	4.6	3.8	5.0	6.3	13	5.8	12	.79	.20	.16	.15
26	2.4	4.3	3.9	4.6	6.1	13	5.0	12	.79	.20	.16	.15
27	2.4	4.1	3.9	4.6	6.1	14	4.8	11	.63	.20	.15	.15
28	2.5	3.6	4.1	3.6	6.6	16	4.3	12	.63	.18	.12	.16
29	2.5	3.6	3.9	3.9	---	16	4.1	11	.57	.20	.11	.18
30	2.5	3.8	3.9	3.8	---	15	3.8	9.4	.57	.20	.12	.16
31	2.7	---	3.9	4.1	---	14	---	8.3	---	.20	.11	---
TOTAL	68.0	106.0	120.5	141.5	159.1	361.5	649.9	462.5	90.96	9.270	9.971	3.680
MEAN	2.19	3.53	3.89	4.56	5.68	11.7	21.7	14.9	3.03	.30	.32	.12
MAX	2.7	4.6	4.6	5.6	7.6	17	81	45	7.6	.57	5.5	.18
MIN	1.8	2.8	3.3	3.3	3.9	7.9	3.8	4.1	.57	.18	.10	.10
AC-FT	135	210	239	281	316	717	1290	917	180	18	20	7.3

CAL YR 1976 TOTAL 11019.12 MEAN 30.1 MAX 305 MIN .23 AC-FT 21860
WTR YR 1977 TOTAL 2182.88 MEAN 5.98 MAX 81 MIN .10 AC-FT 4330

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

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LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1975 TO SEPTEMBER 1976
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	2.2	5.6	21	35	50	87	81	10	1.3	.27	3.0
2	.40	2.2	6.0	23	33	34	83	69	9.8	1.3	.51	2.8
3	.40	2.3	7.6	27	30	30	96	56	9.0	1.1	.51	2.7
4	.45	2.4	8.8	32	21	27	106	50	8.3	.99	.36	2.5
5	.45	2.6	9.2	36	16	24	149	45	7.3	.99	.33	2.3
6	.57	2.9	8.8	32	14	29	231	41	6.3	.79	.71	2.1
7	.63	3.3	10	31	15	30	194	37	6.1	.71	20	1.8
8	.59	3.3	11	129	17	27	194	31	5.3	.89	22	1.8
9	.57	3.3	12	118	21	30	305	28	5.3	.89	13	1.8
10	.57	3.6	11	81	18	36	223	24	5.0	.71	8.3	1.7
11	.58	3.9	10	68	16	40	183	24	4.6	.63	6.3	1.7
12	.56	3.9	9.0	58	20	33	159	22	4.3	.63	4.8	1.5
13	.51	3.9	8.6	44	22	39	180	17	3.8	.57	4.1	1.5
14	.50	3.9	7.6	48	27	40	153	14	3.8	.51	5.0	1.4
15	.50	3.9	7.9	113	29	41	143	13	3.5	.45	6.3	2.4
16	.50	4.0	8.3	236	29	50	129	12	3.5	.45	8.3	3.2
17	.50	4.0	8.3	245	48	96	113	11	3.6	.40	15	2.5
18	.50	4.0	7.6	183	53	191	113	9.8	3.5	.40	9.4	2.3
19	.50	4.0	7.6	121	52	214	101	9.4	3.0	.36	8.3	2.0
20	.50	4.0	6.9	92	39	124	116	10	2.9	.36	7.3	2.1
21	.54	4.0	6.6	69	32	108	146	11	2.7	.40	6.3	2.1
22	.58	4.0	6.6	59	32	106	124	9.0	2.4	.40	5.5	2.5
23	.68	4.0	7.3	59	29	101	129	8.3	2.3	.36	5.3	3.0
24	.79	4.0	11	48	29	113	124	7.6	2.3	.36	5.3	3.2
25	1.0	4.0	12	38	32	143	108	7.3	1.8	.33	5.8	3.2
26	1.5	4.5	14	37	41	103	101	6.9	1.8	.30	6.1	3.0
27	2.4	5.2	53	36	56	94	94	6.3	1.7	.23	5.5	2.9
28	2.6	6.0	43	36	68	89	89	6.6	1.5	.23	5.0	2.8
29	2.3	5.8	39	43	53	77	94	6.6	1.3	.23	4.3	2.7
30	2.1	5.6	61	41	---	79	92	6.9	1.2	.23	3.9	2.5
31	2.0	---	46	37	---	96	---	9.0	---	.23	3.5	---
TOTAL	26.67	114.7	471.3	2241	927	2294	4159	689.7	127.9	17.73	197.29	71.0
MEAN	.86	3.82	15.2	72.3	32.0	74.0	139	22.2	4.26	.57	6.36	2.37
MAX	2.6	6.0	61	245	68	214	305	81	10	1.3	22	3.2
MIN	.40	2.2	5.6	21	14	24	83	6.3	1.2	.23	.27	1.4
AC-FT	53	228	935	4450	1840	4550	8250	1370	254	35	391	141

WTR YR 1976 TOTAL 11337.29 MEAN 31.0 MAX 305 MIN .23 AC-FT 22490

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978
MEAN VALUES

4.7 3.09 2.47

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.18	.57	36	15	69	128	81	61	12	3.6	.71	1.5
2	.18	.63	29	17	69	109	88	53	9.8	5.5	.71	1.4
3	.18	.63	41	29	70	93	72	46	8.6	9.8	.63	1.3
4	.18	.63	34	86	78	93	65	42	7.6	15	.57	1.3
5	.20	.63	27	171	93	90	63	42	6.9	12	.45	1.3
6	.20	.71	23	86	161	103	62	39	6.0	8.6	.45	1.5
7	.21	.71	19	69	268	109	70	34	5.3	6.9	.40	1.5
8	.21	.63	18	70	370	154	63	28	4.6	15	.36	1.8
9	.21	.63	15	126	251	295	54	26	4.1	17	.36	1.8
10	.21	.71	14	185	188	230	48	28	4.3	12	.33	1.7
11	.27	.71	14	149	144	188	43	28	4.8	9.0	.33	1.8
12	.33	.71	13	147	111	166	39	26	5.0	7.6	.40	1.8
13	.36	.89	34	149	107	149	37	24	5.5	6.3	.71	1.8
14	.36	.89	166	179	93	128	35	24	6.6	5.0	.79	2.1
15	.40	.89	310	349	92	113	33	40	6.0	4.1	.99	2.3
16	.40	.99	164	362	73	107	36	42	5.5	3.8	1.3	2.3
17	.40	.99	99	310	77	101	41	32	5.0	3.8	.99	2.4
18	.45	.80	75	230	72	101	38	27	4.1	3.5	.79	2.5
19	.51	.72	57	205	92	95	33	22	3.8	3.2	.71	2.7
20	.45	.66	42	191	128	92	30	19	3.3	2.8	.99	2.7
21	.51	.80	35	164	126	85	28	17	3.0	2.5	1.2	2.7
22	.51	1.2	37	142	119	81	28	18	2.8	2.1	1.4	2.8
23	.57	2.9	36	115	126	81	31	19	2.9	1.8	1.5	2.8
24	.51	3.3	35	92	126	99	30	18	3.8	1.7	1.3	2.8
25	.51	19	34	97	151	83	27	19	4.1	1.4	1.4	2.8
26	.57	73	32	90	164	73	95	18	4.1	1.3	1.3	2.7
27	.57	54	29	77	179	66	171	18	3.6	1.4	1.2	2.5
28	.57	45	29	83	147	61	115	17	3.2	1.2	1.1	2.4
29	.57	39	30	83	---	55	83	15	13	1.1	1.1	2.4
30	.57	41	31	80	---	53	67	14	4.8	.99	1.3	2.4
31	.57	---	32	72	---	53	---	13	---	.79	1.5	---
TOTAL	11.92	293.93	1590	4220	3744	3434	1706	869	164.1	170.78	27.27	63.8
MEAN	.38	9.80	51.3	136	134	111	56.9	28.0	5.47	5.51	.88	2.13
MAX	.57	73	310	362	370	295	171	61	13	17	1.5	2.8
MIN	.18	.57	13	15	69	53	27	13	2.8	.79	.33	1.3
AC-FT	24	583	3150	8370	7430	6810	3380	1720	325	339	54	127

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CAL YR 1977 TOTAL 3784.23 MEAN 10.4 MAX 310 MIN .10 AC-FT 7510
WTR YR 1978 TOTAL 16294.80 MEAN 44.6 MAX 370 MIN .18 AC-FT 32320

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON, OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1978 TO SEPTEMBER 1979
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	2.7	27	7.6	7.1	107	175	192	18	3.9	.94	1.7
2	2.3	2.8	25	9.0	6.8	83	175	175	16	3.9	.94	1.7
3	2.4	2.8	21	10	9.0	85	202	159	14	3.9	.94	2.2
4	2.4	2.8	30	11	30	88	202	137	12	3.9	.94	1.7
5	2.3	2.8	75	8.6	494	346	208	182	12	3.5	.94	1.4
6	2.3	2.8	58	8.6	573	556	224	247	11	3.5	.94	1.4
7	2.3	3.0	37	8.6	716	539	244	208	10	3.5	.94	1.1
8	2.3	3.0	35	7.8	264	401	218	187	9.6	3.9	.94	1.1
9	2.1	3.0	33	7.0	394	306	218	173	9.0	3.9	.94	1.1
10	2.1	3.0	32	9.0	284	295	200	150	9.0	3.9	.94	1.4
11	2.0	2.8	53	11	303	282	190	126	9.0	4.4	.94	1.4
12	2.0	2.7	83	13	367	300	187	113	8.4	4.4	.80	1.1
13	2.0	2.7	63	15	522	282	185	107	7.4	4.4	.80	1.1
14	2.1	2.7	42	14	300	274	166	97	7.4	3.9	.94	1.1
15	2.1	2.5	37	12	197	282	159	90	6.9	3.9	121	1.1
16	2.1	2.8	33	11	155	311	159	85	6.9	3.5	6.0	1.1
17	2.3	2.7	29	9.5	115	282	166	77	8.4	3.5	2.8	.94
18	2.3	2.4	26	8.6	96	259	142	69	9.6	2.8	1.7	.94
19	2.1	2.7	23	8.1	87	244	126	64	9.6	2.2	2.2	.94
20	2.1	3.2	20	8.8	67	224	113	54	8.4	1.7	2.2	.94
21	2.1	3.3	19	13	64	205	107	48	7.4	1.7	36	.94
22	2.1	3.0	19	12	52	182	133	45	6.9	1.4	4.4	.94
23	2.1	3.0	21	11	54	166	195	39	6.0	1.4	2.2	.80
24	2.1	3.0	25	11	50	168	401	48	6.0	1.4	1.7	.80
25	2.1	3.0	54	10	76	178	390	48	5.4	1.4	1.7	.80
26	2.3	3.0	43	10	171	162	274	37	4.8	1.4	1.7	.80
27	2.4	2.8	35	9.2	162	185	256	34	4.8	1.4	1.7	.80
28	2.4	3.6	30	8.6	130	216	256	30	4.8	1.1	1.4	.68
29	2.4	8.6	20	8.0	---	272	241	27	4.8	1.1	1.7	.68
30	2.5	19	14	7.6	---	227	216	24	3.9	1.1	1.7	.68
31	2.5	---	10	7.2	---	195	---	22	---	1.1	1.7	---
TOTAL	69.0	108.2	1072	305.8	5745.9	7702	6128	3094	257.4	87.0	204.68	33.38
MEAN	2.23	3.61	34.6	9.86	205	248	204	99.8	8.58	2.81	6.60	1.11
MAX	2.5	19	83	15	716	556	401	247	18	4.4	121	2.2
MIN	2.0	2.4	10	7.0	6.8	83	107	22	3.9	1.1	.80	.68
AC-FT	137	215	2130	607	11400	15280	12150	6140	511	173	406	66

CAL YR 1978 TOTAL 15648.15 MEAN 42.9 MAX 370 MIN .33 AC-FT 31040
WTR YR 1979 TOTAL 24807.36 MEAN 68.0 MAX 716 MIN .68 AC-FT 49210

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.68	6.0	31	14	35	155	88	28	11	10	1.5	2.1
2	.68	6.0	47	13	52	158	78	26	16	9.4	1.5	2.1
3	.68	6.4	92	14	70	178	74	21	15	9.9	1.5	2.1
4	.58	6.4	135	16	92	172	69	20	13	9.4	1.5	2.1
5	.58	4.4	150	34	74	166	70	30	11	9.4	1.5	2.1
6	.58	2.2	97	64	76	155	80	34	9.9	8.2	1.5	1.8
7	.58	2.2	80	52	78	175	70	30	7.6	6.5	1.5	1.5
8	.48	2.2	67	43	72	169	62	27	11	5.9	1.5	1.5
9	.48	4.4	58	42	62	160	67	24	14	6.5	1.3	1.5
10	.58	9.6	54	38	59	149	72	29	14	5.5	1.3	1.5
11	.68	10	37	48	56	172	64	35	14	5.0	1.3	1.5
12	.68	9.6	39	175	53	149	59	29	14	4.6	1.3	2.1
13	.58	10	36	422	47	138	56	22	14	4.2	1.3	2.4
14	.68	9.0	31	410	40	146	53	25	14	3.4	1.1	2.4
15	.80	9.0	27	283	42	146	51	30	14	3.4	1.1	2.1
16	.80	9.6	26	225	43	119	48	33	28	3.0	1.1	1.8
17	.68	12	24	207	48	119	46	31	29	2.7	1.1	1.8
18	.68	22	24	149	240	117	41	26	17	2.4	1.1	1.8
19	2.8	42	26	117	201	117	39	23	13	2.4	1.3	1.8
20	7.9	43	24	105	188	110	41	19	11	2.4	1.3	1.8
21	13	37	23	107	175	122	44	17	10	2.4	1.1	1.8
22	9.0	36	21	88	160	143	44	14	10	2.4	1.1	2.1
23	7.4	39	15	78	155	181	43	20	13	2.1	1.1	2.1
24	7.4	43	15	76	158	152	39	18	13	2.1	1.1	2.1
25	9.0	56	21	72	163	132	35	14	12	2.1	1.1	2.1
26	9.6	109	15	56	236	124	33	15	15	2.1	1.1	1.8
27	7.4	60	11	27	279	119	31	33	20	1.8	1.1	1.8
28	6.4	30	12	28	221	100	29	44	17	1.8	1.1	1.8
29	6.2	28	13	28	178	96	31	33	13	1.8	1.3	1.8
30	6.2	29	13	28	---	90	31	17	11	1.5	1.5	1.8
31	6.2	---	13	32	---	92	---	17	---	1.5	2.1	---
TOTAL	109.98	693.0	1277	3091	3353	4321	1588	784	424.5	135.8	40.3	57.0
MEAN	3.55	23.1	41.2	99.7	116	139	52.9	25.3	14.1	4.38	1.30	1.90
MAX	13	109	150	422	279	181	88	44	29	10	2.1	2.4
MIN	.48	2.2	11	13	35	90	29	14	7.6	1.5	1.1	1.5
AC-FT	218	1370	2530	6130	6650	8570	3150	1560	842	269	80	113

CAL YR 1979 TOTAL 25638.14 MEAN 70.2 MAX 716 MIN .48 AC-FT 50850
WTR YR 1980 TOTAL 15874.58 MEAN 43.4 MAX 422 MIN .48 AC-FT 31490

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.5	6.5	8.2	22	17	54	143	30	56	9.4	1.1	.69
2	1.8	7.0	8.2	21	15	48	119	27	47	8.2	.93	.69
3	2.1	7.0	9.4	20	21	46	105	25	41	7.6	.93	.69
4	2.1	6.5	13	19	20	44	96	25	35	6.5	.93	.59
5	2.1	6.5	14	18	19	46	85	24	34	5.5	.93	.59
6	2.1	6.5	13	17	17	40	76	23	44	5.9	.93	.59
7	2.1	11	11	17	13	43	69	23	46	7.6	.69	.51
8	2.1	9.4	8.2	15	16	40	65	24	69	7.0	.69	.51
9	1.8	8.9	8.6	15	16	39	64	23	92	6.5	.69	.43
10	2.1	8.9	8.9	15	12	36	64	20	82	5.9	.69	.37
11	2.1	8.2	9.4	14	16	34	56	19	78	5.5	.59	.37
12	2.1	8.2	9.4	13	22	32	62	17	64	5.0	.59	.37
13	2.4	7.0	9.4	12	28	30	69	16	64	4.6	.69	.37
14	2.4	7.0	8.9	11	169	29	57	16	54	4.2	.59	.37
15	3.0	7.0	8.9	11	204	28	51	17	47	3.8	.51	.37
16	3.8	7.0	8.9	11	243	35	46	23	40	3.4	.51	.37
17	3.8	7.0	9.4	11	263	46	40	24	38	3.4	.43	.37
18	3.8	7.0	9.9	11	225	39	38	25	34	3.0	.43	.37
19	3.8	7.0	10	11	279	35	36	65	32	2.7	.43	.37
20	3.8	7.0	9.9	11	211	34	56	82	30	2.4	.59	.43
21	3.8	7.0	9.9	11	155	40	51	64	27	2.1	.59	.43
22	3.8	7.0	36	11	127	94	44	51	23	1.8	.59	.51
23	3.8	7.0	30	13	112	119	39	41	21	1.8	.59	.59
24	3.8	7.0	24	14	98	92	39	38	19	1.8	.59	.59
25	5.0	7.6	41	15	84	94	40	214	17	1.8	.59	.69
26	5.0	8.2	59	15	72	204	38	211	15	1.8	.59	.80
27	5.0	8.2	46	14	64	243	46	127	13	1.5	.59	2.1
28	5.0	8.2	35	14	59	197	46	92	13	1.3	.59	2.1
29	5.0	8.2	30	18	---	152	38	74	12	1.1	.59	1.8
30	5.5	8.2	26	23	---	140	33	69	11	1.1	.59	1.5
31	5.9	---	24	22	---	122	---	67	---	1.1	.69	---
TOTAL	102.4	227.2	557.5	465	2597	2275	1811	1596	1198	125.3	20.46	20.53
MEAN	3.30	7.57	18.0	15.0	92.7	73.4	60.4	51.5	39.9	4.04	.66	.68
MAX	5.9	11	59	23	279	243	143	214	92	9.4	1.1	2.1
MIN	1.5	6.5	8.2	11	12	28	33	16	11	1.1	.43	.37
AC-FT	203	451	1110	922	5150	4510	3590	3170	2380	249	41	41

CAL YR 1980 TOTAL 14681.7 MEAN 40.1 MAX 422 MIN 1.1 AC-FT 29120
WTR YR 1981 TOTAL 10995.39 MEAN 30.1 MAX 279 MIN .37 AC-FT 21810

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1981 TO SEPTEMBER 1982
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.1	6.5	25	55	155	388	133	70	16	9.3	.86	.69
2	.93	6.5	44	60	149	420	124	65	16	8.6	.86	.55
3	.93	6.5	88	64	158	340	124	61	16	9.7	1.1	.55
4	.93	7.0	69	65	85	312	121	64	18	10	1.1	.55
5	.93	7.0	67	51	70	302	115	56	26	8.6	.95	.55
6	.93	7.0	468	28	75	284	110	50	25	7.6	.86	.60
7	1.1	7.0	300	31	75	263	110	48	21	7.2	.86	.60
8	1.3	7.0	175	34	70	253	100	47	18	7.6	.78	.55
9	1.3	7.0	132	36	73	249	98	47	15	7.9	.69	.55
10	1.5	7.0	122	36	80	239	98	58	14	6.9	.69	.78
11	2.1	7.0	98	36	80	242	223	61	12	6.0	.78	.95
12	2.4	7.0	82	39	82	223	263	52	13	5.0	.86	1.1
13	2.4	7.0	74	43	88	214	232	44	26	4.3	.78	1.2
14	2.7	7.0	88	45	225	211	246	39	24	4.3	.78	1.1
15	2.7	7.6	279	50	540	226	223	36	19	4.0	.86	1.1
16	2.7	8.9	263	64	1280	205	199	31	16	4.0	.86	.95
17	3.0	15	207	140	982	187	184	33	14	3.6	.69	1.1
18	3.0	20	204	130	690	178	166	49	13	3.5	.60	1.1
19	3.4	16	809	117	720	151	148	40	11	2.9	.55	1.4
20	3.8	14	525	98	822	151	139	35	9.7	2.4	.55	2.2
21	4.2	13	344	100	786	139	130	30	9.3	2.2	.50	2.7
22	4.6	16	243	82	456	145	124	27	10	2.1	.50	2.9
23	4.6	21	188	130	396	142	124	23	9.0	1.9	.50	2.6
24	5.0	33	163	344	319	142	121	21	8.3	1.8	.45	2.9
25	5.0	33	149	316	288	142	108	19	7.9	1.5	.45	3.3
26	5.0	28	135	352	277	154	103	18	8.3	1.4	.40	5.3
27	5.0	28	117	279	284	157	93	18	8.3	1.3	.40	5.0
28	5.5	26	107	232	277	148	90	20	8.6	1.2	.40	4.5
29	5.9	25	74	194	---	151	83	21	9.0	.95	.45	4.3
30	6.5	25	62	172	---	145	77	19	9.3	.95	.60	4.5
31	6.5	---	55	166	---	136	---	18	---	.86	.69	---
TOTAL	96.95	426.0	5756	3589	9582	6639	4209	1220	430.7	139.56	21.40	56.17
MEAN	3.13	14.2	186	116	342	214	140	39.4	14.4	4.50	.69	1.87
MAX	6.5	33	809	352	1280	420	263	70	26	10	1.1	5.3
MIN	.93	6.5	25	28	70	136	77	18	7.9	.86	.40	.55
AC-FT	192	845	11420	7120	19010	13170	8350	2420	854	277	42	111

CAL YR 1981 TOTAL 16387.24 MEAN 44.9 MAX 809 MIN .37 AC-FT 32500
WTR YR 1982 TOTAL 32165.78 MEAN 88.1 MAX 1280 MIN .40 AC-FT 63800

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1982 TO SEPTEMBER 1983
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	25	37	43	110	376	270	157	39	18	4.9	5.2
2	4.0	22	33	47	105	404	444	166	38	21	6.0	4.6
3	4.0	20	32	47	83	352	348	130	35	21	7.1	4.3
4	4.3	19	52	50	67	816	288	124	32	18	6.0	4.3
5	4.3	18	77	59	62	816	256	1860	30	16	4.9	4.0
6	4.5	18	103	260	62	786	226	1320	29	13	4.0	4.0
7	4.3	18	105	372	65	738	205	834	27	12	3.8	3.8
8	4.3	17	61	340	65	625	184	708	26	12	3.5	3.5
9	4.8	17	61	256	81	655	169	635	32	12	3.5	3.5
10	5.0	16	52	199	95	585	154	495	31	12	3.3	3.5
11	5.3	15	44	166	130	495	145	348	38	11	3.0	3.8
12	5.3	15	44	145	260	515	130	309	35	10	4.0	3.8
13	5.3	15	48	127	298	1070	118	267	30	9.1	4.0	3.8
14	5.3	14	45	105	239	858	108	211	26	8.7	3.8	3.5
15	5.3	13	48	88	235	666	90	184	26	8.3	3.0	3.5
16	5.5	15	139	93	356	530	81	199	24	7.9	2.6	3.5
17	5.3	15	281	93	372	444	77	164	23	8.7	2.6	3.3
18	5.5	16	196	93	684	380	72	140	20	9.1	2.1	3.5
19	5.8	18	151	105	625	323	68	128	19	7.1	1.9	6.0
20	6.3	19	121	118	505	281	72	117	20	6.7	2.1	6.0
21	6.5	18	115	103	465	260	166	104	18	6.0	2.1	6.3
22	6.9	16	178	93	525	246	142	95	18	5.6	2.1	6.0
23	8.3	15	148	90	525	226	110	85	17	5.2	3.0	6.0
24	8.3	15	103	90	485	208	115	78	17	6.0	4.0	6.0
25	9.0	14	81	100	444	193	98	69	15	6.3	4.6	5.6
26	9.0	15	83	118	424	184	81	63	12	7.1	4.6	5.6
27	9.7	15	65	175	352	196	75	59	11	6.7	4.3	5.2
28	10	16	55	169	356	205	68	51	13	6.3	4.0	5.2
29	35	23	45	151	---	193	199	47	14	5.6	4.3	5.2
30	62	41	43	130	---	515	172	43	15	5.2	4.6	6.0
31	33	---	43	118	---	348	---	38	---	4.9	4.3	---
TOTAL	296.1	533	2689	4143	8075	14489	4731	9228	730	306.5	118.0	138.5
MEAN	9.55	17.8	86.7	134	288	467	158	298	24.3	9.89	3.81	4.62
MAX	62	41	281	372	684	1070	444	1860	39	21	7.1	6.3
MIN	4.0	13	32	43	62	184	68	38	11	4.9	1.9	3.3
AC-FT	587	1060	5330	8220	16020	28740	9380	18300	1450	608	234	275

CAL YR 1982 TOTAL 29404.93 MEAN 80.6 MAX 1280 MIN .40 AC-FT 58320
WTR YR 1983 TOTAL 45477.1 MEAN 125 MAX 1860 MIN 1.9 AC-FT 90200

4.7 3.09 2.47

Water years on record

cloud burst 4.30

31 20 30

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1983 TO SEPTEMBER 1984
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	13	26	120	95	184	485	221	48	34	15	9.7
2	6.0	14	25	155	90	344	425	321	46	30	10	9.7
3	6.0	15	25	450	86	273	375	269	43	29	7.0	9.3
4	6.0	15	24	480	77	228	348	249	52	27	5.5	9.0
5	6.0	13	22	390	77	207	449	224	79	24	5.0	8.6
6	6.0	14	24	300	82	194	550	217	130	24	4.7	8.2
7	5.6	16	24	240	82	207	437	194	169	21	4.7	9.0
8	6.0	16	36	200	82	231	628	171	147	20	4.7	9.3
9	8.7	16	91	155	88	294	531	163	116	19	4.7	9.7
10	11	16	256	130	77	420	511	160	112	17	4.7	9.3
11	11	18	164	120	70	449	518	157	107	17	4.7	9.0
12	9.6	20	115	100	74	362	473	147	99	16	4.7	8.6
13	9.1	19	102	80	339	357	415	135	101	15	4.7	8.2
14	8.7	19	143	65	425	583	380	123	152	14	4.5	8.2
15	8.3	19	280	55	273	576	395	121	107	13	4.2	8.2
16	8.3	21	140	46	242	563	390	114	86	11	3.9	8.2
17	7.9	50	106	46	210	622	375	101	72	10	3.9	8.2
18	8.3	50	82	47	169	443	362	95	63	9.7	3.9	8.2
19	8.7	32	69	47	163	390	628	88	56	8.5	3.9	8.2
20	8.7	26	50	48	174	420	511	84	54	7.5	3.7	7.9
21	8.7	24	32	55	197	654	415	77	88	7.0	3.5	7.9
22	8.7	22	27	60	184	589	362	72	114	6.7	3.5	8.2
23	9.6	20	25	80	169	615	312	92	101	6.6	3.5	10
24	9.6	25	25	130	166	524	285	92	79	6.5	3.5	12
25	10	35	26	155	163	437	273	77	64	6.4	3.5	13
26	9.6	31	30	155	135	524	249	84	56	5.6	3.5	13
27	9.1	28	55	140	147	615	224	76	51	5.6	3.8	12
28	9.1	26	60	130	147	635	203	63	45	5.6	4.5	12
29	9.6	30	65	120	163	596	197	57	40	5.7	5.3	12
30	9.6	29	100	110	---	550	184	53	36	5.7	6.2	11
31	11	---	120	100	---	511	---	53	---	8.0	8.6	---
TOTAL	260.5	692	2369	4509	4446	13597	11890	4150	2513	436.1	157.5	285.8
MEAN	8.40	23.1	76.4	145	153	439	396	134	83.8	14.1	5.08	9.53
MAX	11	50	280	480	425	654	628	321	169	34	15	13
MIN	5.6	13	22	46	70	184	184	53	36	5.6	3.5	7.9
AC-FT	517	1370	4700	8940	8820	26970	23580	8230	4980	865	312	567

CAL YR 1983 TOTAL 45280.5 MEAN 124 MAX 1860 MIN 1.9 AC-FT 89810
WTR YR 1984 TOTAL 45305.9 MEAN 124 MAX 654 MIN 3.5 AC-FT 89860

4.7 309 2.47

29 days wet @ Big Rock Flat

31 31 30

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1984 TO SEPTEMBER 1985
MEAN VALUES

3.09 2.41

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	11	16	55	32	32	177	607	66	23	4.0	2.3	2.2
2	11	26	42	30	31	165	663	61	23	3.8	2.3	2.6
3	11	49	40	29	28	134	611	56	21	3.1	2.2	2.9
4	11	35	38	28	28	139	519	55	20	2.9	2.2	2.8
5	11	27	35	27	28	118	489	52	19	2.6	2.2	2.8
6	11	24	28	27	35	110	493	48	21	2.6	2.2	2.9
7	11	22	38	26	49	93	463	43	23	2.6	2.0	3.4
8	11	20	40	27	52	98	411	40	23	2.3	2.0	3.8
9	11	22	36	27	38	98	377	38	22	2.3	2.2	4.2
10	11	24	56	27	34	100	348	37	18	2.2	2.2	6.1
11	12	30	58	27	77	114	384	37	17	2.0	2.3	6.1
12	13	122	74	26	168	127	315	35	15	2.0	2.3	5.5
13	13	130	68	27	107	130	262	31	14	2.0	2.2	5.1
14	13	112	64	27	119	150	235	31	14	2.0	2.2	5.5
15	14	67	62	29	187	191	209	29	14	1.9	2.2	6.7
16	15	55	55	29	157	249	195	26	13	1.9	2.0	8.6
17	15	48	51	29	122	312	171	23	10	1.7	2.0	7.6
18	14	50	48	32	110	411	156	23	9.0	1.7	2.0	7.2
19	14	55	46	33	106	443	155	23	8.2	1.6	2.3	7.1
20	14	51	44	61	104	440	145	22	6.7	1.4	2.3	6.9
21	15	65	43	67	97	466	134	21	5.8	1.3	2.3	6.6
22	15	61	86	63	131	342	133	19	5.8	1.3	2.5	6.5
23	15	57	62	58	179	272	134	18	5.8	1.4	2.5	6.4
24	15	74	53	55	222	432	129	18	5.5	1.4	2.3	6.5
25	15	71	49	51	225	350	123	18	5.5	1.4	2.2	6.8
26	17	63	48	47	176	255	114	17	5.5	1.4	2.2	7.0
27	19	57	46	42	143	220	104	17	4.9	1.3	2.0	7.0
28	19	58	43	44	142	205	90	18	4.7	1.3	1.9	7.1
29	18	65	44	40	---	194	79	23	4.5	1.3	2.0	7.3
30	18	62	42	35	---	191	72	30	4.0	1.4	2.0	7.3
31	17	---	41	33	---	327	---	26	---	2.5	2.0	---
TOTAL	430	1618	1535	1135	2927	7053	8320	1001	385.9	62.6	67.5	168.5
MEAN	13.9	53.9	49.5	36.6	105	228	277	32.3	12.9	2.02	2.18	5.62
MAX	19	130	86	67	225	466	663	66	23	4.0	2.5	8.6
MIN	11	16	28	26	28	93	72	17	4.0	1.3	1.9	2.2
AC-FT	853	3210	3040	2250	5810	13990	16500	1990	765	124	134	334

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CAL YR 1984 TOTAL 45567.4 MEAN 125 MAX 654 MIN 3.5 AC-FT 90380
WTR YR 1985 TOTAL 24703.5 MEAN 67.7 MAX 663 MIN 1.3 AC-FT 49000

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1985 TO SEPTEMBER 1986
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	7.3	13	10	19	369	551	95	36	16	5.1	2.2	2.9
2	7.3	13	14	23	339	430	88	35	17	4.7	2.2	2.5
3	7.3	13	21	24	334	338	80	36	18	4.6	2.1	2.5
4	7.5	13	21	22	228	279	74	37	19	6.0	2.0	2.5
5	7.5	13	25	20	185	275	67	37	20	6.8	2.1	2.4
6	7.7	13	40	38	149	251	63	37	19	6.0	2.1	2.5
7	12	13	69	28	124	366	58	37	18	5.1	2.1	2.7
8	16	14	56	27	94	410	54	36	17	4.9	2.0	2.6
9	13	15	40	73	87	390	52	35	15	4.6	2.0	3.0
10	12	14	35	134	91	352	50	35	14	4.3	1.8	3.1
11	12	12	30	105	82	338	52	35	13	4.7	1.7	3.3
12	12	9.0	35	86	70	299	52	34	12	4.6	1.8	3.3
13	12	10	30	73	70	290	50	32	10	4.4	1.9	3.3
14	11	11	27	69	68	270	47	30	9.4	3.9	1.8	3.4
15	11	11	25	65	70	250	47	28	8.5	3.8	1.7	4.0
16	11	11	23	79	369	230	49	25	8.7	3.7	1.7	4.9
17	11	13	22	186	673	220	51	22	9.0	3.9	1.8	6.3
18	11	15	19	151	618	210	52	20	9.4	3.7	1.7	6.1
19	11	17	17	244	420	190	45	19	9.7	3.5	1.7	5.5
20	11	13	16	188	295	180	40	25	10	3.2	1.7	6.5
21	11	11	16	134	259	160	40	35	8.0	3.0	1.8	7.6
22	12	10	16	121	785	150	40	35	6.0	2.8	1.7	6.8
23	15	8.5	16	141	1760	200	40	29	5.0	2.6	1.7	7.1
24	18	8.0	16	123	1410	210	40	24	4.3	2.5	1.8	8.5
25	17	8.0	16	97	981	175	40	21	3.8	2.4	2.0	8.7
26	15	11	16	90	894	155	41	22	3.9	2.4	1.9	8.5
27	14	13	15	85	644	145	43	19	4.8	2.4	2.0	8.5
28	14	10	14	90	690	135	43	17	7.4	2.5	6.0	8.6
29	13	9.0	13	100	---	125	41	16	6.3	2.3	7.2	9.2
30	13	9.0	14	437	---	115	38	15	6.0	2.3	4.1	9.7
31	13	---	15	434	---	100	---	15	---	2.3	3.4	---
TOTAL	365.6	353.5	742	3506	12158	7789	1572	879	328.2	119.0	71.7	156.5
MEAN	11.8	11.8	23.9	113	434	251	52.4	28.4	10.9	3.84	2.31	5.22
MAX	18	17	69	437	1760	551	95	37	20	6.8	7.2	9.7
MIN	7.3	8.0	10	19	68	100	38	15	3.8	2.3	1.7	2.4
AC-FT	725	701	1470	6950	24120	15450	3120	1740	651	236	142	310

CAL YR 1985 TOTAL 22581.6 MEAN 61.9 MAX 663 MIN 1.3 AC-FT 44790
WTR YR 1986 TOTAL 28040.5 MEAN 76.8 MAX 1760 MIN 1.7 AC-FT 55620

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1986 TO SEPTEMBER 1987
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.5	14	37	16	101	61	117	36				
2	9.4	12	35	19	125	63	125	47	14	2.7	2.6	1.5
3	9.2	11	33	19	113	238	127	40	13	2.7	2.6	1.6
4	9.1	11	31	18	95	543	118	32	11	2.9	2.6	1.7
5	9.0	11	32	15	82	740	112	27	9.8	2.5	2.4	1.7
									9.4	2.7	2.2	1.7
6	9.0	11	37	14	77	781	105	23	9.0	2.5	2.2	1.7
7	8.5	12	37	13	88	525	97	21	7.9	2.5	2.2	1.6
8	8.6	13	30	13	88	424	90	19	7.6	2.4	2.2	1.6
9	8.7	14	20	13	85	428	83	16	7.2	2.2	1.9	1.8
10	8.3	14	18	13	86	352	77	14	7.2	2.3	1.8	1.8
11	8.7	12	17	13	116	302	98	12	6.6	2.1	1.8	1.8
12	9.0	12	17	16	147	478	87	11	5.7	1.8	1.9	1.9
13	9.2	14	18	15	548	875	76	12	5.2	1.7	2.3	2.0
14	9.5	16	19	16	527	549	69	12	4.9	1.6	2.6	2.1
15	9.4	17	17	14	321	578	65	12	5.4	1.5	2.4	2.2
16	9.5	17	17	12	226	560	58	12	6.9	1.5	2.3	2.4
17	9.7	21	17	11	186	534	54	11	7.3	1.9	2.2	2.5
18	9.8	22	16	12	160	556	53	10	6.6	2.6	2.2	2.5
19	9.6	23	16	12	134	420	48	9.0	6.1	4.1	2.1	2.5
20	10	23	16	17	111	340	43	9.4	5.6	3.5	1.9	2.4
21	10	23	16	13	103	289	42	9.4	6.4	3.5	1.9	2.4
22	10	24	16	13	92	243	38	9.4	6.2	3.3	1.9	2.5
23	9.9	23	17	12	88	220	36	9.4	5.6	3.4	1.9	2.4
24	9.4	28	17	14	69	224	34	9.8	5.5	3.5	1.9	2.5
25	9.4	26	17	41	59	199	30	11	4.8	3.3	1.9	2.6
26	9.6	26	17	51	54	178	29	12	4.1	3.0	1.8	2.9
27	12	27	15	65	65	158	26	13	3.5	2.9	1.8	3.1
28	11	53	14	85	65	142	27	14	3.2	2.9	1.8	3.2
29	11	49	14	65	---	125	29	14	3.0	2.6	1.7	3.2
30	14	43	14	56	---	116	26	12	2.8	2.6	1.6	3.3
31	14	---	14	55	---	113	---	14	---	2.6	1.6	---
TOTAL	304.0	622	651	761	4011	11354	2019	513.4	201.5	81.3	64.2	67.1
MEAN	9.81	20.7	21.0	24.5	143	366	67.3	16.6	6.72	2.62	2.07	2.24
MAX	14	53	37	85	548	875	127	47	14	4.1	2.6	3.3
MIN	8.3	11	14	11	54	61	26	9.0	2.8	1.5	1.6	1.5
AC-FT	603	1230	1290	1510	7960	22520	4000	1020	400	161	127	133

CAL YR 1986 TOTAL 28156.4 MEAN 77.1 MAX 1760 MIN 1.7 AC-FT 55850
WTR YR 1987 TOTAL 20649.5 MEAN 56.6 MAX 875 MIN 1.5 AC-FT 40960

UNITED STATES DEPARTMENT OF THE INTERIOR - GEOLOGICAL SURVEY - OREGON OFFICE 12/04/89

STATION NUMBER 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG. STREAM SOURCE AGENCY USGS
LATITUDE 451553 LONGITUDE 1200115 DRAINAGE AREA 297. DATUM 1714.50 STATE 41 COUNTY 021

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1987 TO SEPTEMBER 1988
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	6.0	8.1	8.0	16	41	28	e57	e20	3.3	.60	.60
2	3.0	6.0	11	7.9	13	39	27	e57	20	3.1	.64	.60
3	3.0	6.1	13	e7.5	21	38	28	e57	21	2.9	.71	.63
4	3.2	6.1	12	e7.5	20	36	30	e57	21	3.0	.71	.66
5	3.3	6.4	12	e9.3	18	47	29	e55	21	3.0	.64	.63
6	3.5	6.6	11	9.0	16	51	26	e53	25	2.7	.65	.63
7	3.6	6.7	11	9.0	17	43	24	e49	27	2.5	.68	.63
8	3.7	6.7	10	9.0	18	37	22	e44	28	2.2	.71	.64
9	3.7	7.0	12	9.7	39	41	20	e39	27	2.0	.67	.64
10	3.7	7.0	25	63	75	44	18	e34	24	1.8	.67	.66
11	3.9	6.9	30	46	89	35	17	e30	21	1.7	.58	.73
12	4.1	7.8	21	26	80	31	16	e28	18	1.8	.57	.74
13	4.2	8.9	16	26	71	28	15	e26	16	1.9	.59	.81
14	4.4	8.0	13	164	56	26	14	e25	14	1.8	.64	.81
15	4.3	7.9	e11	156	53	25	14	e25	12	1.5	.64	.78
16	4.3	7.7	e11	71	53	23	12	e23	11	1.4	.69	.79
17	4.4	7.3	e11	43	40	21	21	e22	9.5	1.3	.64	.82
18	4.4	7.2	e10	31	39	20	82	e20	8.8	1.2	.73	.90
19	4.4	7.2	e10	28	33	20	55	e18	7.9	1.1	.77	1.2
20	4.7	7.2	e10	25	31	20	54	e15	7.0	.94	.72	1.3
21	4.9	7.2	11	22	33	19	230	e14	6.3	.88	.71	1.3
22	4.9	7.2	12	20	36	20	615	e13	5.5	.80	.70	1.3
23	4.9	7.4	11	19	32	22	408	e11	5.0	.78	.70	1.2
24	4.8	7.6	e9.5	16	29	24	220	e10	4.7	.81	.68	1.2
25	4.7	7.5	e8.0	16	28	24	161	e10	4.4	.76	.67	1.2
26	4.8	6.9	e8.0	16	28	24	136	e15	4.4	.74	.64	1.2
27	5.0	6.9	e8.0	16	32	28	105	e17	4.0	.72	.63	1.3
28	5.3	6.9	e8.0	16	36	28	96	e20	3.8	.67	.63	1.4
29	5.6	6.9	8.1	20	39	28	e70	e26	3.7	.67	.62	1.4
30	5.7	6.6	8.2	28	---	29	e57	e25	3.4	.67	.60	1.4
31	5.8	---	8.3	28	---	29	---	e21	---	.64	.60	---
TOTAL	133.2	211.8	368.2	972.9	1091	941	2650	916	404.4	49.28	20.43	28.10
MEAN	4.30	7.06	11.9	31.4	37.6	30.4	88.3	29.5	13.5	1.59	.66	.94
MAX	5.8	8.9	30	164	89	51	615	57	28	3.3	.77	1.4
MIN	3.0	6.0	8.0	7.5	13	19	12	10	3.4	.64	.57	.60
AC-FT	264	420	730	1930	2160	1870	5260	1820	802	98	41	56

CAL YR 1987 TOTAL 19785.7 MEAN 54.2 MAX 875 MIN 1.5 AC-FT 39240
WTR YR 1988 TOTAL 7786.31 MEAN 21.3 MAX 615 MIN .57 AC-FT 15440

e Estimated

R.C.

Sept 88
Book 76
Oct 76

start Sept 76

A David Childs
1806 Thompson
The Dalles, OR 97058

HAND DELIVERED
FEB 1 1995

70251
file

Mr. Mike Mattick
Instream Water Rights
Water Resources Department
Commerce Building
158 12th Street NE
Salem, Oregon 97310-0210

While You Were Out

To _____

Date 12/10/90 Time _____

_____ called

of _____

Phone _____

- ☐ Telephoned
- ☐ Please call
- ☑ Will call again
- ☐ In person
- ☐ Wants to see you
- ☐ Returned your call

Message Appl 70251-
David Childs
1806 E Thompson St.
The Dalles 97058

-Copy of application - Sent

Taken by _____

FORM CS 97883

DAVID C. MOON
Attorney at Law

P.O. Box 82 · Eugene, OR 97440 · Phone or FAX: (541) 485-5350

October 4, 1996 Personally Delivered

Oregon Water Resources Department
Water Rights and Adjudications Division
Commerce Building
158 12th Street N.E.
Salem, Oregon 97310-0210

Re: Protest to Proposed Final Order (Application IS 70251)

To Whom It May Concern:

Enclosed please find a Protest to Proposed Final Order for Application IS 70251 on behalf of A. David Childs. Also enclosed is a check for the filing fee of $200 (Check # 1359).

If anything further is required for this Protest, please contact me. Thanks.

Sincerely,

David C. Moon

David C. Moon

cc: Client
ODFW

RD
10/8/96

DRAFT

ODFW COMMENTS AND RECOMMENDATIONS
INSTREAM WATER RIGHT PROPOSED FINAL ORDERS

WRD BASIN: **Miscellaneous Basins**
ODFW FISH DISTRICT: **Micellaneous Districts**

Note: unless otherwise specified, all comments/changes apply to both the Proposed Final Order (PFO) and the draft Certificate.

1) **70251 (John Day Basin)**

The proposed flow for May should be: **32 cfs.**

2) **70569 (Umatilla Basin)**

The proposed flow for August should be: **8.05 cfs.**

3) **70573 (Umpqua Basin)**

Flows to satisfy this instream use in Cow Creek released from store water in Galesville Reservoir and therefore not subject to the exemption of human and livestock as they would be if natural flows were used. The proposed condition number 3. exempting human and livestock consumption from being regulated to satisfy use from stored water should be deleted from this draft Certificate.

4) **71480 (Sandy Basin)**

The stream reach applied for begins in one County and ends in another. The two counties are, from upper to lower: **Clackamas/Multnomah.** If only one county can be listed, ODFW requests that is be the county in which the reach terminates, in this case Multnomah.

Oregon

DEPARTMENT OF
FISH AND
WILDLIFE

January 30, 1995

Water Resources Department
158 12th Street, NE
Salem, OR 97310

RE: Comments; 5 John Day River basin Instream Water Right Technical Reviews; Applications 69960, 70250, 70251, 70263 and 70648.

ODFW has reviewed the subject Technical Reviews and offer the following comments:

General Comments

1. ODFW has previously indicated it does not oppose reducing instream water right flow levels from amounts requested to the estimated average natural flow when this is less than requested flows.
This is consistent with OAR 690-77-045 (3e).

2. According to OAR 690-77-026 (1), WRD "shall undertake a technical review ... and prepare a report." This subsection further lists 8 [(a) through (h)] mandatory criteria which, at a minimum, must be assessed during the technical review. ODFW has concerns with the apparent level of assessment relative to subsection (c):

> *OAR 690-77-026 (1) (c)--Assessing the proposed instream water right with respect to conditions previously imposed on other instream water rights granted for use of water from the same source.*

In the subject John Day River basin reports of technical review, WRD is proposing to condition each application to exempt human and livestock consumption from regulation in favor of these instream rights as follows:

> *This instream right shall not apply to permits for appropriation for domestic or livestock use....*

2501 SW First Avenue
PO Box 59
Portland, OR 97207
(503) 229-5400
TDD (503) 229-5459

OR

This instream right shall not have priority over human or livestock consumption.

Instream water rights certificates in the John Day River basin based on conversion of minimum perennial streamflows generally contain similar conditioning language giving preference to the listed uses.

By rule, WRD's technical review process includes assessing conditions previously imposed on other instream water rights from the same source. If found to be appropriate, WRD may propose that new instream water rights contain the same exemption. There is no requirement that this exemption be automatically included as a proposed condition.

When ODFW reviewed WRD files on some of these applications for documentation of assessments of prior conditions, we found nothing to document that any such assessments had been done. ODFW, therefore, assumes the required assessments were not done, contrary to rule. ODFW also objects to the routine placement of exemptions on any of the subject applications on the grounds that to do so does not give adequate consideration to the public's interest in maintaining fishery resources in John Day River basin streams. OAR 690-11-195 (4dA).

Specific Comments

Application 70251; Rock Creek; RM 40 to 0--In its water availability analysis, WRD staff find that water is not naturally available to meet even ODFW's recommended minimum flows for fish in May through December. For the months of July through November, the water availability analysis indicates that only about 1/3 of the minimum recommended flow is available. When these calculated flows are compared with other measured flow records, it appears that the estimated average natural flow levels for July through December are potentially erroneous.

The estimated average natural flow and instream water right should be calculated and measured at the mouth of Rock Creek, the downstream limit of this application. Records for USGS gage 14047390 (50% exceedance; 1975-87; RM 40) indicate actual flows (after cumulative withdrawals above) are similar to what WRD staff

predict would be naturally available at the mouth of Rock Creek, 40 miles downstream.

	JUL	AUG	SEP	OCT	NOV	DEC
WRD Water Availability (RM 0)	4.7	3.1	2.5	2.7	6.7	21.8
USGS Gage Records (RM 40)	2.9	1.7	2.1	3.7	11.0	30.0
Robison, 1991 (RM 40)	1.8	0.7	2.3	2.6	10.6	31.9

The numbers above listed as "Robison, 1991" were extracted from WRD's 1991 Hydrology Report #1, "Water Availability for Oregon's River and Streams: Appendix B". Again, these are natural flow predictions (50% exceedance) for a gage 40 miles upstream from the mouth of Rock Creek, the point of natural flow measurement for the proposed instream water right.

Based on the observation that natural stream flows generally increase as a stream progresses downstream, it is doubtful that the flows cited above accurately represent the instream flow picture.

During physical stream surveys conducted by ODFW personnel in 1971, stream flows in Rock Creek were measured at 1 mile intervals for the lower 9 miles. During this survey, numerous active water diversions were noted. Despite the loss of flow at 22 diversions, measured instream flows (e.g., 4.8 cfs at RM 2) often exceeded the estimated average natural flow.

Although this comparison can not be considered conclusive, ODFW believes significant evidence exists to cast doubt on the results of the water availability analysis performed for this application and is the basis for our objection to same.

Application 70250; Bridge Creek; RM 19 to 13--WRD's water availability analysis indicates water is not naturally available to meet ODFW's recommended minimum flows 10 months out of 12, May through February. There are no gage records available to us for comparison here. We do, however, have limited instream flow measurements taken in July, 1971, that indicated the estimated average natural flow presented in this technical review underestimate natural flow.

The water availability analysis predicts less than one cfs would be available naturally in Bridge Creek during July. ODFW's measurements during July, 1971, recorded a flow at RM 13 of 7.2 cfs after an observed 7 active diversions. Although not conclusive evidence, these measurements, coupled with anecdotal information obtained from field personnel, leads ODFW to believe sufficient doubt exists as to the accuracy of the water availability analysis completed for Bridge Creek.

Application 70263; Bear Creek; RM 11 to 0

The situation on the lower 11 miles of Bear Creek is similar to that of Bridge Creek to which it is tributary. Although no gage data exists for comparison, flow measurements taken by ODFW in July, 1971, recorded flows between 2.2 and 6.2 cfs in this stream section. ODFW district personnel indicate that these observed levels of flow are not extraordinary.

Thank you for this opportunity to review the subject technical reports. We appreciate WRD's efforts to move forward with these applications and encourage you to proceed to certification as quickly as possible.

Sincerely,

Stephanie Burchfield
Water Resources Program Manager
Habitat Conservation Division

c. Unterwegner, John Day
Lauman/Eddy, La Grande
WaterWatch of Oregon (public information request)

File: WRD/Instream Water Right/Comments

(1)

A David Childs
Star Rt.,
Arlington, OR 97812
(503) 454-2827

FOREST SUPERVISOR
Umatilla National Forest
2517 S. W. Hailey Avenue
Pendleton, Oregon 97801

March 16, 1988

Written comment on Forest Plan

Rock Creek, Gilliam County, flows northwest from the Blue Mountains and the Umatilla National Forest for about 75 miles and outlets to the main stem of the John Day river at McDonald Ferry, approx. 21 miles upstream from the Columbia at I-84. The headwaters, mostly 4000 ft elevation with a small area up to 5000 ft, are in timber and grazing lands.

The stream gauging station is below all of the major tributaries and all of the mountain drainage. Equally significant, the gauging station is above the out-of-stream withdrawals.

Pertinent information.

Years of record 1975 till present

Max annual flow 90,000 acre feet

Min annual flow 4,500 acre feet

Irrigation withdrawals vary from 1500 to 2500 acre feet depending on when the watershed dries up.

Time between summer dry-up and fall flow-through to mouth, varies from 1 to 6 months.

Mean annual flow 1975 - 1985 is 45,500 acre feet/year (USGS EASTERN OREGON 1985)

Correlation with adjoining gauged streams, of the 1905 to 1965 era, predicted the gauged flow would be under 15,000 acre feet/year. (OREGON STATE ENGINEER 1968)

Pioneer settlement on Rock Creek started in the 1860s. Water rights dated after the 1890s are not now filled beyond June. Others only days longer.

Most years during July, August, September there is no usable flow for

any water right or for resident fishery. Former upper rearing areas are intermittently and sparsely puddled with warm water.

During the drought of the 1930s the stream never dried in places that have dried annually the last few years.

Historically, the bottom lands along the stream were irrigated early in the growing season, with water for all users and a surplus for recharge. Irrigators understood that parts of the stream would be dry for as long as a month during August.

The native runs of anadromous fish adapted with this environment many centuries prior. Even through the drought years of the 1930's the timbered slopes nurtured the headwater trickles and seeps, springs and rivulets, and the fry and fingerlings. The headwater tributaries are no longer viable as rearing areas.

Downstream landowners are getting mud and flood with regularity. High-volume, high-velocity runoff events are annually ripping and devastating the riparian areas and the alluvial unprotected zones behind them. Landowners are discouraged by these events. The devastation saps both energy and creativity in focusing only on repair and salvage. We need enhancement.

Transit water is unruly and apparently unavoidable under present watershed management practices.

Sections of streams that have never gone dry before, now become bone dry; yet are receiving the impact of a twenty year runoff event at intervals of only 2 to 5 years.

A stream that historically annually flowed on the order of two to twenty thousand acre-feet is flowing at a volume of 4,500 to 90,000 acre feet.

A flow of 12,000 ac ft, with a reliability of eight years out of ten, now flows at an average of forty five thousand acre feet annually.

Rock Creek once maintained large resident and anadromous fish populations. Currently there are two remnant steelhead spawning areas, both dependent on downstream basalt and gravel aquifers.

Through both luck and error the genes for restocking the watershed are surviving.

The Forest Plan omits Rock Creek tributaries, in Wheeler and

Morrow Counties, entirely from its riparian plan, yet five or six Rock Creek tributaries and former rearing areas are in the Umatilla Forest.

The Forest plan states, runoff is tied directly to annual precipitation. This assumption is questionable. The nature of a forest is to buffer flows and to carry groundwater in a reserve account. The present flows are probably dependent on the excellent water years of the early to mid-eighties.

The streams have excellent potential for restored spawning and rearing areas. The potential for both commercial and recreation fishery benefits is considerable. The multi-use benefits for upstream spawning and rearing and downstream recreation, fishery, and agriculture seem to have merit. Upper stream rearing water is the need of fishery. Reduction of devastating floods and drought is the need of agriculture. It would seem that a joint effort would be synergetic: more trees and grass in the uplands, sustained high quality rearing water, reduction of high flows, and dual purpose water for fish and agriculture.

Agriculture users are generally below the rearing areas. The water, after going through rearing areas, could be used to sustain vegetation in the riparian zone.

Currently, highwater devastation is more of a critical problem than summer drought to agriculture. The downstream area ranchers are looking for protection and are taking a new look at a growing problem.

++ The designation of the headwaters of Rock Creek E 1 seems to discourage future improvement or water enhancement.

++ The downstream land owners are being whipsawed by a Jekyll and Hyde water system (too much in February and March and none after the middle of June) Water once was of great benefit both environmentally and economically.

5.5% – Met 5 out of 91 Months of May June July Aug Sept. Oct. Nov.

158 MO total, MET, MIN FLOW 47 MO

12 Column Work Sheet D-658

PROPOSED INSTREAM WATER RIGHT (2)

	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept
F^3/sec	34	34	34	34	57	57	57	57	34	34	34	34
Mean Flow												
1976/77	2.7	3.53	3.89	4.58	5.68	11.7	21.7	14.9	3.03	30	.32	.12
1977/78	.38	9.8	5.13	1.36	1.34	7.1	56.9	28	5.47	5.51	.88	2.13
1978/79	2.23	3.61	3.46	9.86	2.05	2.48	2.04	99.8	8.58	2.81	6.60	1.11
1979/80	3.55	23.1	4.12	9.97	1.16	1.39	52.9	25.3	14.1	4.38	1.30	1.90
1980/81	3.30	7.57	18.0	15.0	9.27	2.34	60.4	51.5	3.99	4.04	.66	.68
1981/82	3.13	14.2	1.82	1.16	3.42	2.14	1.40	39.4	14.4	4.50	.69	1.87
1982/83	9.55	17.8	8.67	1.34	2.88	4.07	1.58	2.98	24.3	9.89	3.81	4.62
1983/84	8.4	23.1	1.64	1.75	1.53	4.39	3.96	1.34	2.83.8	14.1	5.08	9.53
1984/85	13.9	5.39	4.95	3.66	1.05	2.28	2.77	32.3	12.9	2.02	2.18	5.62
1985/86	11.8	11.8	23.9	1.13	1.34	2.51	52.4	28.4	10.9	3.84	2.31	5.22
1986/87	9.81	20.7	21.0	24.5	1.43	5.66	6.73	16.6	6.72	2.62	2.07	2.24
15												
1987/88	4.3	7.06	11.9	31.4	37.6	30.4	8.83	29.5	13.5	1.59	.66	.94
1987/89	2.16	7.96	15.5	31.5	15.4	3.26	1.37	53.5	7.21	1.29	.74	1.03
15 MET	0	1	7	7	10	10	12	3	2	0	0	0
11 yrs met	0	1	3	7	6	9	9	2	1	0	0	0
total	0	2	10	14	17	20	19	5	3	0	0	0
24 yrs	0%	0.8%	40%	87½%	71%	84%	79%	29%	17%	0%	0%	0%
	13	9	6	2	2	2	2	7	10	11	11	11
1/2 met	13	11	3	3	1	2	1	3	10	13	13	13
	24	20	9	5	3	4	3	10	20	24	24	24
1/5	0	0	Y	Y	Y	Y	Y	N	N	0	0	0

12 Column
Work Sheet
D-658

Water Above Cayuse Canyon Rock Creek

	34 Oct	34 Nov	34 Dec	34 Jan	57 Feb	57 March	57 April	57 May	34 June	34 July	34 August	34 Sept
Mean Monthly												
1965/66	3.48	6.96	6.61	16.3	12.4	111	[illegible]	5.08	2.68	1.90	[illegible]	0.19
1966/67	[illegible]	[illegible]										
1966/67	.88	20.2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	7.33	.70	.06	.06
1967/68	[illegible]											
1967/68	.39	1.16	4.06	15.9	40.1	18.3	6.86	3.41	1.62	.10	.00	.00
1968/69	.64	4.3	31.8	[illegible]	[illegible]	[illegible]	[illegible]	34.1	14.9	3.37	.33	.73
1969/70	1.41	4.28	9.72	[illegible]	[illegible]	[illegible]	58	22.8	6.00	1.23	.26	1.21
1970/71	1.56	6.71	16.2	[illegible]	54.4	[illegible]	[illegible]	25.3	9.10	.92	.03	.47
1971/72	.98	7.3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	24.5	2 day [illegible]	.50	.14	.15
1972/73	.87	3.47	21.9	45.3	24.1	[illegible]	26.9	4.01	.72	← No Flow →		
1973/74	.15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	45.2	5.96	.88	.20	.17
1974/75	.65	2.31	4.93	31.5	[illegible]	[illegible]	[illegible]	[illegible]	6.73	2.67	012	0.12
1975/76	.76	4.11	15.1	[illegible]	32.8	[illegible]	[illegible]	17.6	4.39	.26	5.84	2.73
[illegible] Assisted Flow	00	1	3	7	6	9	9	2	2 days 1 month	0	0	0

3

September 17, 1990

To: A David Childs
Fax 298-4106
From: E. George Robison OWRD
Salem OR.
Concerning: "Natural" flows for three streams in John Day Basin

On this page are the tabulations for the streamflows from the streams you asked for. I did not include the figures to save space.

Rock Cr. at Parkers Mill (Natural Flows

Months	Pred5	Pred2 50% nm
JAN	1.1	3.7
FEB	1.9	6.9
MAR	3.1	9.6
APR	2.5	6.9
MAY	1.7	3.4
JUN	0.6	1.3
JUL	0.1	0.4
AUG	0.0	0.1
SEP	0.0	0.1
OCT	0.1	0.2
NOV	0.2	0.5
DEC	0.5	1.3

6.0 = Basin No.
15.0 = Drainage Area
18.0 = Precipitation
0.0 = WR Index

Rock Cr. at Butter Milk (Natural Flow)

Months	Pred5	Pred2
JAN	13.3	40.8
FEB	23.1	78.4
MAR	37.8	114.4
APR	31.7	79.0
MAY	21.2	34.6
JUN	7.3	13.7
JUL	1.5	3.5
AUG	0.4	1.3
SEP	0.5	1.3
OCT	0.8	1.8
NOV	2.2	5.2
DEC	5.9	14.8

6.0 = Basin No.
166.0 = Drainage Area
17.0 = Precipitation
0.0 = WR Index

Buckhorn Cr. at RM 1.6 (Natural Flow)

Months	Pred5	Pred2
JAN	2.5	8.4
FEB	4.4	16.6
MAR	7.3	23.6
APR	5.7	15.5
MAY	3.4	6.5
JUN	1.1	2.3
JUL	0.2	0.6
AUG	0.1	0.2
SEP	0.1	0.2
OCT	0.1	0.3
NOV	0.4	1.0
DEC	1.1	2.9

6.0 = Basin No.
36.0 = Drainage Area
17.0 = Precipitation

These are the Tributary Flows to the Gage station Requesting 34 cfs in July Aug Sept Oct

7025.1

Gilliam County Soil and Water Conservation District
Courthouse - P.O. Box 106 - Condon, OR 97823 - (503) 384-2671

January 9, 1991

wly Young
Condon
Applegate

William H. Young, Director
Water Resources Department
3850 Portland Road, NE
Salem, Oregon 97310

Dear Mr. Young,

Late in November of 1990, the Oregon Department of Fish and Wildlife requested 35 CFS of water in Rock Creek, a tributary of the John Day River Located in Gilliam and Morrow Counties. We ask you to deny this request.

The Gilliam, Morrow, and Wheeler Soil and Water Conservation Districts (SWCD`s) have actively engaged in writing a Coordinated Resource Management Plan (CRMP) for the Rock Creek Watershed. The CRMP is addressing soil and water problems, as well as conservation and improvements of the resource base including fish habitat.

The CRMP process involves extensive input from all watershed users. We have held several meetings in the counties to receive input from the users, including Fish & Wildlife. It is crucial that we continue to get a cooperative effort from the users. To impose a 35 CFS streamflow regulation at this time could severely damage the cooperative spirit necessary to write the CRMP because it singles out a specific watershed user and makes the local work appear futile.

Gilliam County Soil and Water Conservation District
Courthouse - P.O. Box 106 - Condon, OR 97823 - (503) 384-2671

As mentioned earlier, one of the goals of the CRMP is to protect and improve existing resource bases, including fish habitat. This also appears to be your goal. We ask that in light of our area developing a CRMP, you note that proper timing and cooperation may do more to promote fish habitat and holistic improvement of the watershed than to impose a streamflow quota.

We urge you to let the CRMP process work and thus deny the water right request at this time.

Sincerely yours,

Paul Bates

Paul Bates, Chairman
Gilliam Soil and Water Conservation District

PB/ckr

cc: Water Resources Commission
Morrow SWCD
Wheeler SWCD
Andy Rose, Rock Creek Watershed Planner

MORROW

70251 JEB Borden Applegate

Soil and Water Conservation District

P. O. BOX 127
HEPPNER, OREGON 97836

January 11, 1991

William H. Young, Director
Water Resources Department
3850 Portland Road NE
Salem, Oregon 97310

Dear Mr. Young,

Late in November 1990, the Oregon Department of Fish and Wildlife requested 35 cfs of water in Rock Creek, a tributary of the John Day river, located in Gilliam and Morrow Counties. We ask you to deny this request in conjunction with Gilliam County Soil and Water Conservation District.

The Gilliam,Morrow,and Wheeler Soil and Water Conservation Districts (SWCD's) are actively engaged in writing a Coordinated Resource Management Plan (CRMP) for the Rock Creek Watershed. The CRMP is addressing soil and water problems as well as conservation and improvements of the resource base including fish habitat.

The CRMP process involves extensive input from all watershed user and several meetings have been held to gather input from the users, including ODF&W. To impose a streamflow regulation could severely damage the cooperative spirit necessary to write the CRMP.

The Board of Directors of Morrow SWCD urge you to let the CRMP process proceed and deny the water right request at this time.

Sincerely,

Joe Rietmann, Chairman
Morrow SWCD

dEAN MONTHLY FLOWS FOR ROCK CREEK, TRIB JOHN DAY RIVER
BASED ON BEAVER CREEK NEAR PAULINA, GAGE 14-0780

	MEAN FLOW	a	A	S	St	E
			522.00	57.90	1.42	4.60
OCT	94.47	.00134	93.98	1.00	.61	1.00
NOV	52.81	.00303	214.67	1.00	.85	1.00
DEC	135.64	.00328	241.77	1.00	.90	1.00
JAN	127.54	.11	306.67	1.00	1.00	1.00
FEB	205.71	.928	345.39	1.00	1.00	1.00
MAR	302.56	4.26	188.23	1.00	1.00	.06
APR	816.51	.0202	351.93	1.00	.84	1.00
MAY	681.61	.0195	472.27	2.99	.88	1.00
JUN	1027.88	2.82e-8	408.96	1.00	.77	137.84
JUL	196.37	.00541	61.03	1.00	.77	1.00
AUG	93.70	.00129	67.03	1.00	.60	1.00
SEP	84.73	.000965	88.28	1.00	.57	1.00

Did Not use these #'s for flow.
Do not look realistic.

297sq mls @RM40.8

Report for station 14047390
ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0MEAN DISCHARGE
0Number of years retrieved is 16
1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Statistics on Normal monthly means (All days)

	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept
By rows (Number, Mean, Variance, Standard Deviation, Skewness, Coefficient of Variation, Percentage of Average Value)												
0Number	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
0Mean	5.39	14.88	45.06	71.37	154.23	212.79	132.24	62.34	17.79	4.10	2.40	2.81
0Var	19.07	176.11	2238.22	2563.35	15526.32	21791.44	10665.82	5714.94	451.96	14.24	4.79	6.62
0Std	4.37	13.27	47.31	50.63	124.60	147.62	103.28	75.60	21.26	3.77	2.19	2.57
0Skew	0.75	2.14	2.27	0.22	1.09	0.34	1.49	2.70	2.68	1.74	1.06	1.56
0Cvar	0.81	0.89	1.05	0.71	0.81	0.69	0.78	1.21	1.19	0.92	0.91	0.91
0Pavg	0.74	2.05	6.21	9.84	21.26	29.33	18.23	8.59	2.45	0.57	0.33	0.39

1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Quartiles of Normal monthly means (All days)

	Oct	Nov	Dec	Jan	Feb	March
0			Twenty-Fifth Percentile			
	2.18	6.25	15.4	29.7	58.4	73.8
0			Fiftieth Percentile			
	3.43	10.8	27.2	55.8	124.6	220.9
0			Seventy-Fifth Percentile			
	9.61	21.3	57.5	120.2	230.0	335.8

	April	May	June	July	Aug	Sept
0			Twenty-Fifth Percentile			
	55.8	24.5	6.41	1.51	.683	1.01
0			Fiftieth Percentile			
	112.6	30.9	11.9	3.32	1.68	2.02
0			Seventy-Fifth Percentile			
	169.4	65.1	16.9	4.75	4.13	4.77

1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Quartiles of Normal annual means (All days)

0 Twenty-Fifth Percentile
30.8
0 Fiftieth Percentile
55.3
0 Seventy-Fifth Percentile
79.6

NOTE -- PERCENTILES BASED ON AVAILABLE DATA.
1

Lost Rock at Forest Park 165 sq mls

14 years ave annual 59

RM 40.8

BASIN SUMMARY REPORT

ROCK CR TRIBUTARY OF JOHN DAY R

IWR 70251

Supplemental

#10479

TOTAL DIVERTED

TOTAL CFS:	45.31
TOTAL ACF:	0.00

TOTALS BY USE

	AGRICULTURE	INDUSTRIAL	MUNICIPAL	DOMESTIC	RECREATIONAL	MISCELLANEOUS
(CFS)	45.31	0.00	0.00	0.00	0.00	0.00
(ACF)	0.00	0.00	0.00	0.00	0.00	0.00

BASIN SUMMARY REPORT

ROCK CR TRIBUTARY OF JOHN DAY R

IWR 70251

TOTAL DIVERTED

TOTAL CFS: 37.40
TOTAL ACF: 9.62

Primary
IR 10/79

TOTALS BY USE

	AGRICULTURE	INDUSTRIAL	MUNICIPAL	DOMESTIC	RECREATIONAL	MISCELLANEOUS
(CFS)	37.30	0.00	0.00	0.00	0.00	0.10
(ACF)	5.62	0.00	0.00	0.00	0.00	4.00

BASIN SUMMARY REPORT

ROCK CREEK #10479, TRIBUTARY TO JOHN DAY RIVER PRIMARY

CERTIFICATE		PERMIT	DLC	LOT	1/4	1/4	SECTION	TOWNSHIP	RANGE	RATE	UNITS	P.A.S.	USE	PRIORITY	STREAM NAME	STATUS
										0.0000						
46258	D	25485			NE	SE	24	1N	20E	0.0000		P	IR	12/31/1868	ROCK CR	V
46866	D	25485			NE	NW	24	1N	20E	0.0000		P	IR	12/31/1868	ROCK CR	V
25115	D	25115					0	0	0	0.0000		P	IR	12/31/1869	ROCK CR	V
43564	D	25116			SW	SE	11	1N	19E	0.0000		P	IR	12/31/1869	ROCK CR	V
24941	D	24941					0	0	0	0.0000		P	LV	12/31/1875	ROCK CR	V
24851	D	24851					0	0	0	0.0000		P	LV	12/31/1876	ROCK CR	V
24852	D	24852			SE	SE	33	5D	26E	0.0000		P	I*	12/31/1876	ROCK CR	V
25315	D	25315					0	0	0	0.0000		P	I*	12/31/1879	ROCK CR	V
25036	D	25036					0	0	0	0.0000		P	IL	12/31/1880	ROCK CR	V
39828	D	25839			NE	SE	24	1N	20E	0.0000		P	IR	12/31/1883	ROCK CR	V
24954	D	24954					0	0	0	0.0000		P	IR	12/31/1884	ROCK CR	V
25563	D	25563					0	0	0	0.0000		P	IR	12/31/1884	ROCK CR	V
25825	D	25825					0	0	0	0.0000		P	I*	12/31/1884	ROCK CR	V
46867	D	25839			NE	NW	24	1N	20E	0.0000		P	IR	12/31/1884	ROCK CR	V
25514	D	25514					0	0	0	0.0000		P	IR	12/ 3/1885	ROCK CR	V
25061	D	25061					0	0	0	0.0000		P	IR	12/31/1886	ROCK CR	V
36590	D	25991			SW	SE	32	1N	21E	3.2750	CFS	P	I*	12/31/1886	ROCK CR	V
25778	D	25778					25	1S	21E	0.0000		P	IR	12/31/1887	A SPR	V
25316	D	25316					0	0	0	0.0000		P	I*	12/31/1888	ROCK CR	V
24851	D	24851					0	0	0	0.0000		P	IR	12/31/1890	ROCK CR	V
25214	D	25214					0	0	0	0.0000		P	IR	12/31/1890	ROCK CR	V
25988	D	25988					0	0	0	0.0000		P	I*	12/31/1890	ROCK CR	V
24888	D	24888					0	0	0	0.0000		P	IR	12/31/1892	ROCK CR	V
25192	D	25192					0	0	0	0.0000		P	IR	6/20/1893	ROCK CR	V
25230	D	25230					0	0	0	0.0000		P	IR	12/ 3/1893	ROCK CR	V
25498	D	25498					0	0	0	0.0000		P	I*	12/31/1893	ROCK CR	V
25159	D	25159					0	0	0	0.0000		P	I*	12/31/1894	ROCK CR	V
25895	D	25895					0	0	0	0.0000		P	IR	12/31/1894	ROCK CR	V
46868	D	25989			NE	NW	24	1N	20E	0.0000		P	I*	12/31/1894	ROCK CR	V
25113	D	25113					0	0	0	0.0000		P	IR	12/31/1895	ROCK CR	V
25113	D	25113					14	1S	21E	0.0000		P	IR	12/31/1895	SPRINGS	V
25756	D	25756					0	0	0	0.0000		P	IR	12/31/1895	ROCK CR	V
25779	D	25779					0	0	0	0.0000		P	IR	12/31/1895	ROCK CR	V
25878	D	25878					0	0	0	0.0000		P	I*	12/31/1895	ROCK CR	V
25191	D	25191					0	0	0	0.0000		P	IR	12/31/1896	ROCK CR	V
47603	D	25203			SW	NE	15	1N	20E	0.0000		P	I*	12/31/1896	ROCK CR	V
25630	D	25630					0	0	0	0.4700	CFS	P	IR	12/31/1897	ROCK CR	V
25744	D	25744					0	0	0	0.0000		P	IR	12/31/1899	ROCK CR	V
25673	D	25673					0	0	0	0.0000		P	IR	12/31/1900	ROCK CR	V
40744	D	25044			NE	NW	17	1N	20E	0.0000		P	IL	12/31/1900	ROCK CR	V
43565	D	25117			SW	SE	11	1N	19E	0.0000		P	IR	12/31/1903	ROCK CR	V
24943	D	24943					0	0	0	0.0000		P	IR	12/31/1905	ROCK CR	V
44303	D	25991			SW	SE	30	1N	21E	0.0000		P	I*	12/31/1905	ROCK CR	V
24941	D	24941					0	0	0	0.2200	CFS	P	IR	12/31/1906	ROCK CR	V
25032	D	25032					0	0	0	0.0000		P	CI	12/31/1906	ROCK CR	V
25616	D	25616					0	0	0	0.0000		P	IL	12/31/1906	ROCK CR	V
25056	D	25056					0	0	0	0.0000		P	DS	12/31/1907	ROCK CR	V
										0.0000						

CERTIFICATE		PERMIT	DLC	LOT	1/4	1/4	SECTION	TOWNSHIP	RANGE	RATE	UNITS	P.A.S.	USE	PRIORITY	STREAM NAME	STATUS
25057	D	25057					0	0	0	0.0000		P	DS	12/31/1907	ROCK CR	V
25058	D	25058					0	0	0	0.0000		P	DS	12/31/1907	ROCK CR	V
25213	D	25213					0	0	0	0.0000		P	DS	12/31/1907	ROCK CR	V
24946	D	24946					0	0	0	0.0000		P	IR	12/31/1908	ROCK CR	V
43750	S	331					0	0	0	0.2000	CFS	P	IR	6/22/1910	ROCK CR	V
782	S	720					0	0	0	0.1600	CFS	P	IR	4/22/1911	ROCK CR	V
1402	E	138					0	0	0	0.1250	CFS	P	IR	5/18/1912	ROCK CR	V
2029	S	1826					0	0	0	0.6250	CFS	P	IR	11/17/1913	ROCK CR	V
2830	S	1952					0	0	0	0.2000	CFS	P	IR	3/19/1914	ROCK CR	V
3339	S	2057					0	0	0	2.0000	CFS	P	IR	6/ 9/1914	ROCK CR	V
5325	S	5535					0	0	0	0.4400	CFS	P	IR	6/ 5/1922	ROCK CR	V
6126	S	6408					0	0	0	0.1800	CFS	P	IR	7/ 5/1924	ROCK CR	V
12267	S	12379			NW	NW	24	1S	21E	0.5000	CFS	P	IR	9/22/1936	ROCK CR	V
22203	S	20730			NE	SE	24	1S	21E	0.8600	CFS	C	IR	9/11/1951	ROCK CR	V
29965	S	21310			SE	NE	32	1N	21E	1.5000	CFS	P	IR	9/20/1951	ROCK CR	V
21810	S	21305			SE	SW	3	1S	21E	0.2300	CFS	P	IR	4/15/1952	ROCK CR	V
30166	S	22580			NE	NE	27	2S	22E	2.0000	CFS	P	IR	8/ 3/1953	ROCK CR	V
30080	S	23576			SE	NE	25	1S	21E	0.0100	CFS	P	LV	3/ 7/1955	A SPR	V
30313	S	23963			SW	SW	11	5S	25E	0.2500	CFS	P	IR	3/ 5/1956	ROCK CR	V
38437	S	31948			NW	NW	30	1S	22E	2.0000	CFS	P	IR	10/17/1966	ROCK CR	V
38436	R	4860					30	1S	22E	4.0000	AFT	P	FI	12/ 5/1966	A SPR	V
38437	S	31948			SE	NW	30	1S	22E	0.1000	CFS	P	FI	1/12/1967	A SPR	V
37808	S	32337			NE	SE	14	1S	21E	0.6000	CFS	P	IR	2/ 9/1967	ROCK CR	V
37916	S	32494			SE	NE	4	1S	21E	0.4500	CFS	P	IR	2/24/1967	ROCK CR	V
42183	S	36278			NW	SW	11	1S	21E	0.3800	CFS	P	IR	6/10/1971	ROCK CR	V
56572	S	38739			SE	SW	7	1N	20E	0.5000	CFS	P	IR	10/11/1973	ROCK CR	V
54169	S	39469			NW	SW	11	1S	21E	0.0800	CFS	P	IR	6/ 2/1975	ROCK CR	V
48134	S	39932			NW	SW	4	2S	22E	1.6600	CFS	P	IR	8/28/1975	ROCK CR	V
0	S	39171			SE	NE	5	2S	22E	1.8000	CFS	P	IR	9/25/1975	ROCK CR	V
47505	S	40362			SW	SW	33	1N	21E	0.5100	CFS	P	IR	11/ 5/1975	ROCK CR	V
47602	S	40175			NW	NE	15	1N	20E	0.0900	CFS	P	IR	12/26/1975	A SPR	V
48653	S	40216			NW	NW	30	1S	22E	0.1600	CFS	P	IR	2/ 6/1976	ROCK CR	V
48654	S	40217			NE	SW	3	1S	21E	0.5700	CFS	P	IR	2/ 6/1976	ROCK CR	V
49027	S	40215			SE	SW	3	1S	21E	0.5800	CFS	P	IR	2/ 6/1976	ROCK CR	V
56641	S	40235			NW	NE	10	1S	21E	0.0900	CFS	P	IR	2/19/1976	ROCK CR	V
47702	S	40468			SW	SE	11	1N	19E	0.5500	CFS	P	IR	3/ 1/1976	ROCK CR	V
0	S	40264			NW	NW	24	1S	21E	0.5500	CFS	P	IR	3/ 8/1976	ROCK CR	V
56645	S	40844			NW	SW	11	1S	21E	0.4200	CFS	P	IR	6/28/1976	ROCK CR	V
0	S	40864			SW	NW	32	1S	22E	0.9500	CFS	P	IR	7/ 8/1976	ROCK CR	V
54170	S	41208			NW	SW	11	1S	21E	0.5700	CFS	P	IR	12/ 1/1976	ROCK CR	V
0	S	44677			NW	NE	14	1S	21E	0.2300	CFS	P	IR	6/29/1979	ROCK CR	V
										26.0850	CFS					
										4.0000	AFT					
25573	D	25573					0	2S	22E	0.0000		P	IR	12/31/1902	DRY CR	V

CERTIFICATE		PERMIT	DLC	LOT	1/4	1/4	SECTION	TOWNSHIP	RANGE	RATE	UNITS	P.A.S.	USE	PRIORITY	STREAM NAME	STATUS
25618	D	25618					0	0	0	0.0000		P	LV	12/31/1880	S FK ROCK CR	V
24942	D	24942					0	0	0	0.0000		P	IR	12/31/1890	S FK ROCK CR	V
25917	D	25917					0	0	0	0.0000		P	IR	12/31/1898	S FK ROCK CR	V
										0.0000						
25564	D	25564					0	4S	22E	0.0000		P	LV	12/31/1880	SIXMILE CAN	V
										0.0000						
25357	D	25357					0	0	0	0.0000		P	I*	12/31/1880	LONE ROCK CR	V
25358	D	25358					0	0	0	0.0000		P	I*	12/31/1880	LONE ROCK CR	V
25483	D	25483					0	0	0	0.0000		P	I*	12/31/1887	LONE ROCK CR	V
25483	D	25483			NE	NW	23	5S	23E	0.0000		P	I*	12/31/1887	SPRINGS	V
25483	D	25483			SE	SW	14	5S	23E	0.0000		P	I*	12/31/1887	SPRINGS	V
57697	D	25682			NW	SW	31	5S	24E	0.0000		P	IL	12/31/1897	LONE ROCK CR	V
25617	D	25617					0	0	0	0.0000		P	IL	12/31/1907	LONE ROCK CR	V
37917	S	33691			NE	NW	36	5S	23E	1.3200	CFS	P	IR	6/17/1968	LONE ROCK CR	V
47803	S	36175			SW	NE	5	6S	24E	1.3800	CFS	P	IR	4/21/1971	LONE ROCK CR	V
0	S	41464			NW	SW	31	5S	24E	0.7300	CFS	P	IR	1/31/1977	LONE ROCK CR	V
										3.4300	CFS					
25476	D	25476		2			6	6S	24E	0.0000		P	MU	9/ 5/1908	2 SPRINGS	V
21648	S	17353			NW	NW	9	6S	24E	0.3000	CFS	P	IR	10/ 7/1946	BROWN CR	V
63477	R	9997			SE	NW	6	7S	25E	3.3000	CFS	P	LV	8/30/1982	UNN STR	V
										3.6000	CFS					
24972	D	24972					10	6S	24E	0.0000		P	IR	12/31/1884	BIG DUTCH CAN	V
24973	D	24973					10	6S	24E	0.0000		P	IR	12/31/1884	BIG DUTCH CR	V
61214	R	9046			NW	SW	27	6S	24E	0.0190	AFT	P	LV	8/25/1983	UNN STR	V
63945	S	49154			NW	NW	27	6S	24E	0.0030	CFS	P	LV	8/25/1983	PERRY SPR	V
										0.0030	CFS					
										0.0190	AFT					
0	R	10161		1	NW	NW	35	6S	24E	0.1760	AFT	P	LW	12/ 7/1983	UNN STR/OLD HOSS RES	V
0	R	10161		1	NW	NW	35	6S	24E	0.3000	AFT	P	LW	12/ 7/1983	UNN STR/THUNDERHD RS	V

CERTIFICATE		PERMIT	DLC	LOT	1/4	1/4	SECTION	TOWNSHIP	RANGE	RATE	UNITS	P.A.S.	USE	PRIORITY	STREAM NAME	STATUS
0	R	10161			SE	NW	35	6S	24E	0.1620	AFT	P	LW	12/ 7/1983	UNN STR/BRANDENBRG R	V
0	R	10162			SE	SW	26	6S	24E	0.0510	AFT	P	LW	12/ 7/1983	UNN STR	V
0	R	10163			SW	SE	26	6S	24E	0.0270	AFT	P	LW	12/ 7/1983	UNN STR	V
0	R	10164			SW	SE	27	6S	24E	0.0740	AFT	P	LW	12/ 7/1983	UNN STR	V
										0.7900	AFT					
63464	R	9984			NW	SW	1	7S	24E	0.3600	CFS	P	LV	8/30/1982	UNN STR	V
0	R	10105			NE	NW	2	7S	24E	0.0950	AFT	P	LW	9/30/1982	UNN STR	V
0	R	10107			NE	SW	6	7S	25E	0.0420	AFT	P	LW	9/30/1982	UNN STR	V
61210	R	9042			SE	SE	35	6S	24E	0.1080	AFT	P	LV	8/25/1983	CRAWFORD CR	V
61211	R	9043			NE	NW	7	7S	25E	0.0810	AFT	P	LV	8/25/1983	CRAWFORD CR	V
										0.3600	CFS					
										0.3260	AFT					
61212	R	9044			NW	SW	12	7S	24E	0.0570	AFT	P	LV	8/25/1983	UNN STR	V
61213	R	9045			NE	NW	11	7S	24E	0.0450	AFT	P	LW	8/25/1983	UNN STR	V
										0.1020	AFT					
25357	D	25357					5	6S	24E	0.0000		P	I*	12/31/1880	A SPR	V
25358	D	25358			SW	SW	8	6S	24E	0.0000		P	I*	12/31/1880	A SPR	V
25683	D	25683			NW	SE	14	6S	23E	0.0000		P	DS	12/31/1886	A SPR	V
25683	D	25683			NW	NW	24	6S	23E	0.0000		P	DS	12/31/1886	A SPR	V
0	R	10118			NW	NE	33	6S	24E	0.0200	AFT	P	LW	9/30/1982	UNN STR	V
0	R	10160			SW	SW	27	6S	24E	0.0180	AFT	P	LW	12/ 7/1983	UNN STR/ROCKY RES	V
0	R	10160			NE	SW	28	6S	24E	0.0590	AFT	P	LW	12/ 7/1983	UNN STR/SEDGE RES	V
0	R	10119			NW	SE	28	6S	24E	0.0140	AFT	P	LW	12/19/1983	UNN STR	V
										0.1110	AFT					
61222	R	9055			NW	SW	4	7S	24E	0.3380	AFT	P	LV	8/25/1983	UNN STR/YELLOW J RES	V
61222	R	9055			SE	NE	8	7S	24E	0.0360	AFT	P	LV	8/25/1983	UNN STR/TOWER POND R	V
										0.3740	AFT					
0	R	10103			NE	NE	8	7S	24E	0.0180	AFT	P	LW	9/30/1982	UNN STR	V
										0.0180	AFT					

CERTIFICATE		PERMIT	DLC	LOT	1/4	1/4	SECTION	TOWNSHIP	RANGE	RATE	UNITS	P.A.S.	USE	PRIORITY	STREAM NAME	STATUS
0	R	9057			SW	NW	10	7S	24E	0.0070	AFT	P	LV	8/25/1983	UNN STR/UP STAHL RS	V
0	R	9057			NE	NW	9	7S	24E	0.0150	AFT	P	LV	8/25/1983	UNN STR/W STAHL P RS	V
										0.0220	AFT					
0	R	9056			SW	SW	3	7S	24E	0.0320	AFT	P	LV	8/25/1983	UNN STR/E STAHL POND	V
0	R	9056			SE	NE	4	7S	24E	0.0220	AFT	P	LV	8/25/1983	UNN STR/LWR STAHL RS	V
										0.0540	AFT					
0	R	10104			NE	NW	11	7S	23E	0.0270	AFT	P	LW	9/30/1982	UNN STR	V
0	R	10127			SW	NW	11	7S	23E	0.0080	AFT	P	LW	9/30/1982	UNN STR	V
										0.0350	AFT					
38984	S	33692			SE	NW	16	6S	25E	3.6800	CFS	P	IR	6/17/1968	E FK JUNIPER CR	V
										3.6800	CFS					
38723	R	4645			NW	SW	31	5S	25E	0.0600	AFT	P	LV	8/26/1965	LONG HOL	V
38723	R	4645			NW	SW	31	5S	25E	0.1200	AFT	P	LV	10/26/1965	LONG HOL	V
										0.1800	AFT					
0	R	6209			NE	NW	19	6S	26E	3.5000	AFT	P	LV	8/29/1973	UNN STR	V
63379	R	9605			NW	SE	12	6S	26E	0.2400	CFS	P	LW	10/11/1982	UNN STR	V
										0.2400	CFS					
										3.5000	AFT					
24850	D	24850					0	0	0	0.0000		P	IR	12/31/1890	TUPPER CR	V
61303	R	9365			SW	NW	31	5S	27E	0.0320	AFT	P	LV	6/18/1982	TUPPER CR	V
										0.0320	AFT					
0	R	9090			SW	SW	29	5S	27E	0.0445	AFT	P	LW	1/17/1983	UNN STR	V
										0.0445	AFT					
61206	R	9038			SE	NE	14	6S	26E	0.0150	AFT	P	LV	8/25/1983	WESLER CAN	V

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0.0150 AFT

TOTALS
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TOTAL CFS: 37.3980

TOTAL AFT: 9.6225

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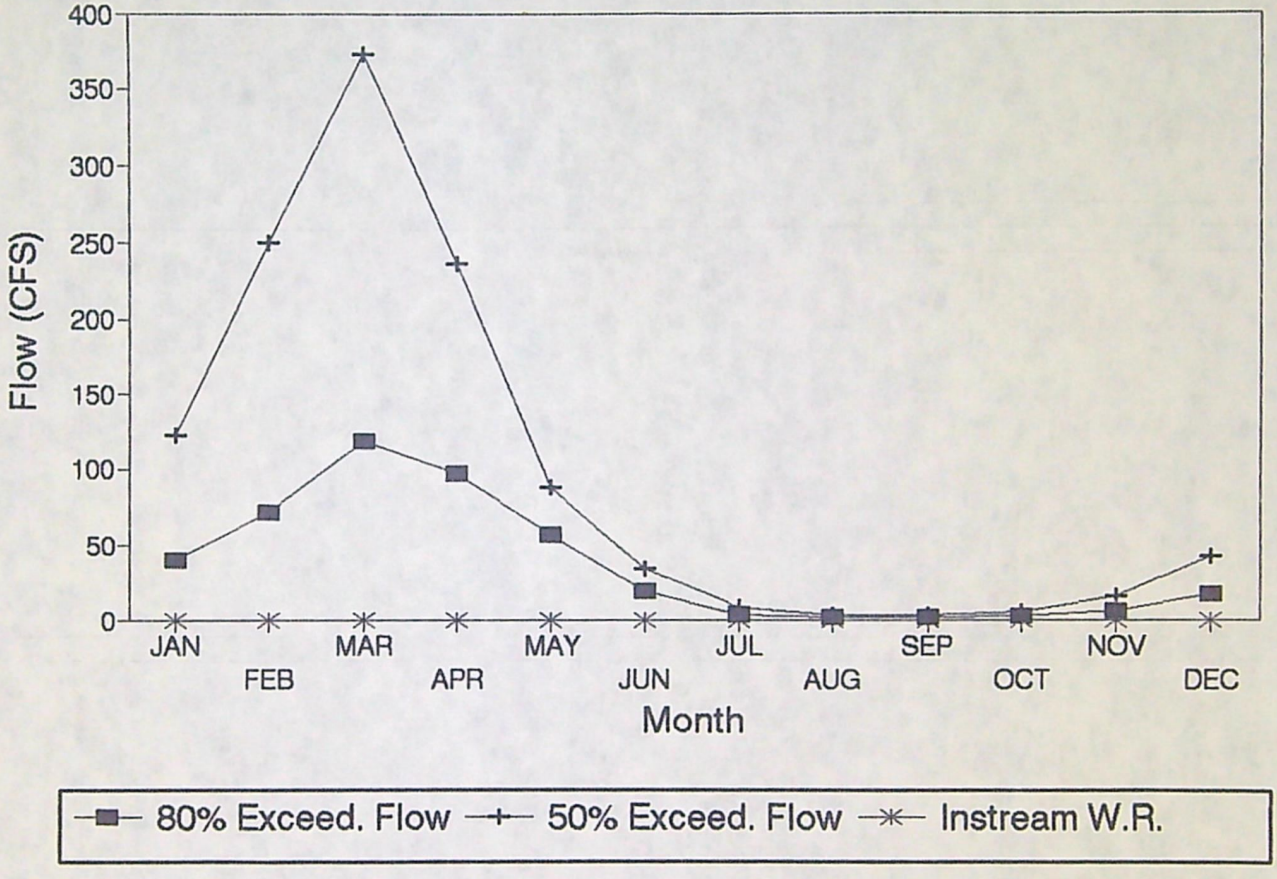
Water Availability Analysis

Rock Cr. at Mouth



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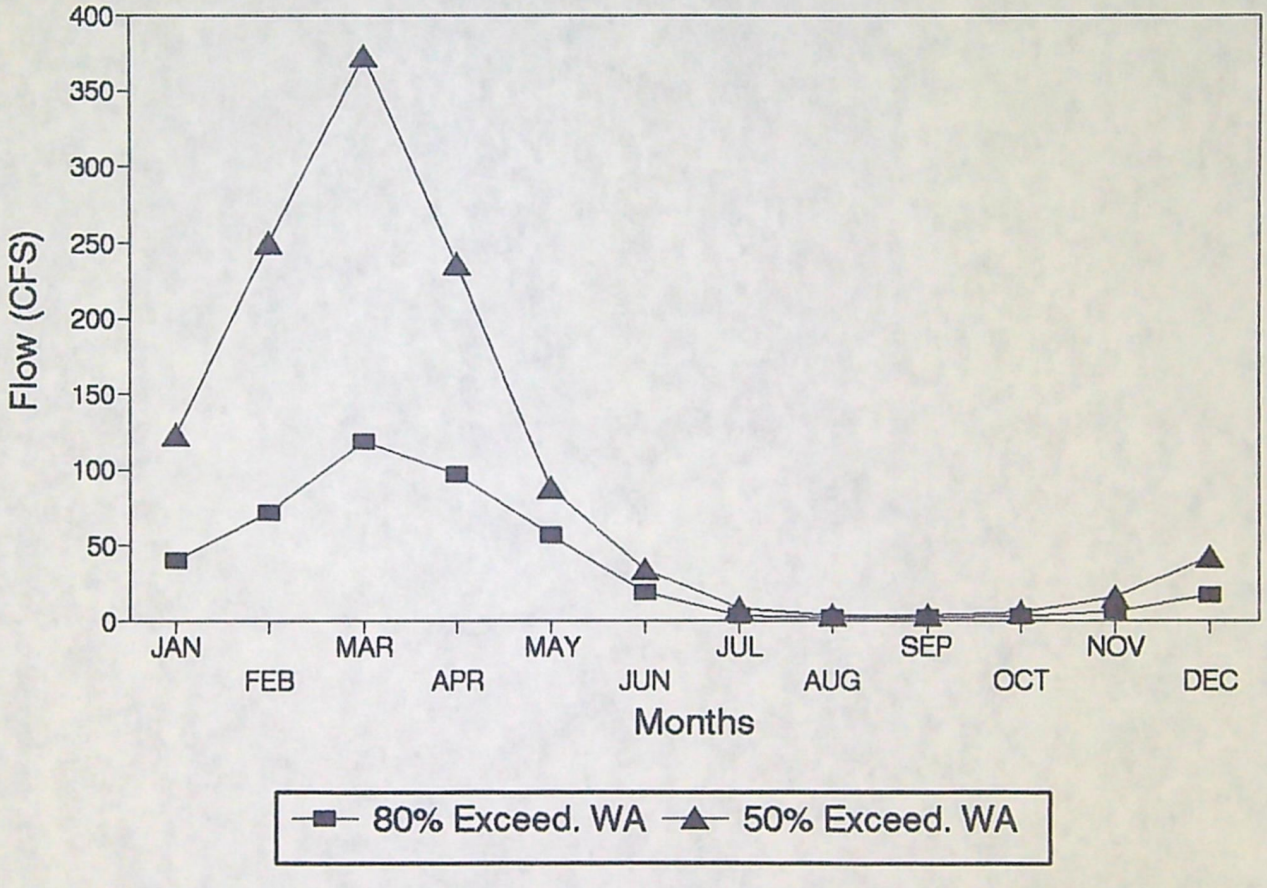
Water Availability
Rock Cr. at Mouth



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WATER AVAILABILITY TABULATION Natural Flow

Rock Cr. at Mouth

Months	Pred5	Pred2	Inswr	WA5	WA2
JAN	40.1	122.6	0.0	40.1	122.6
FEB	71.9	250.2	0.0	71.9	250.2
MAR	118.9	373.0	0.0	118.9	373.0
APR	96.7	235.5	0.0	96.7	235.5
MAY	57.1	88.1	0.0	57.1	88.1
JUN	18.4	33.6	0.0	18.4	33.6
JUL	3.6	8.1	0.0	3.6	8.1
AUG	1.0	3.1	0.0	1.0	3.1
SEP	1.4	3.4	0.0	1.4	3.4
OCT	2.0	4.8	0.0	2.0	4.8
NOV	6.3	14.5	0.0	6.3	14.5
DEC	16.8	42.5	0.0	16.8	42.5

6.0 = Basin No.
522.0 = Drainage Area
16.0 = Precipitation
0.0 = WR Index

dEAN MONTHLY FLOWS FOR ROCK CREEK, TRIB JOHN DAY RIVER
BASED ON BEAVER CREEK NEAR PAULINA, GAGE 14-0780

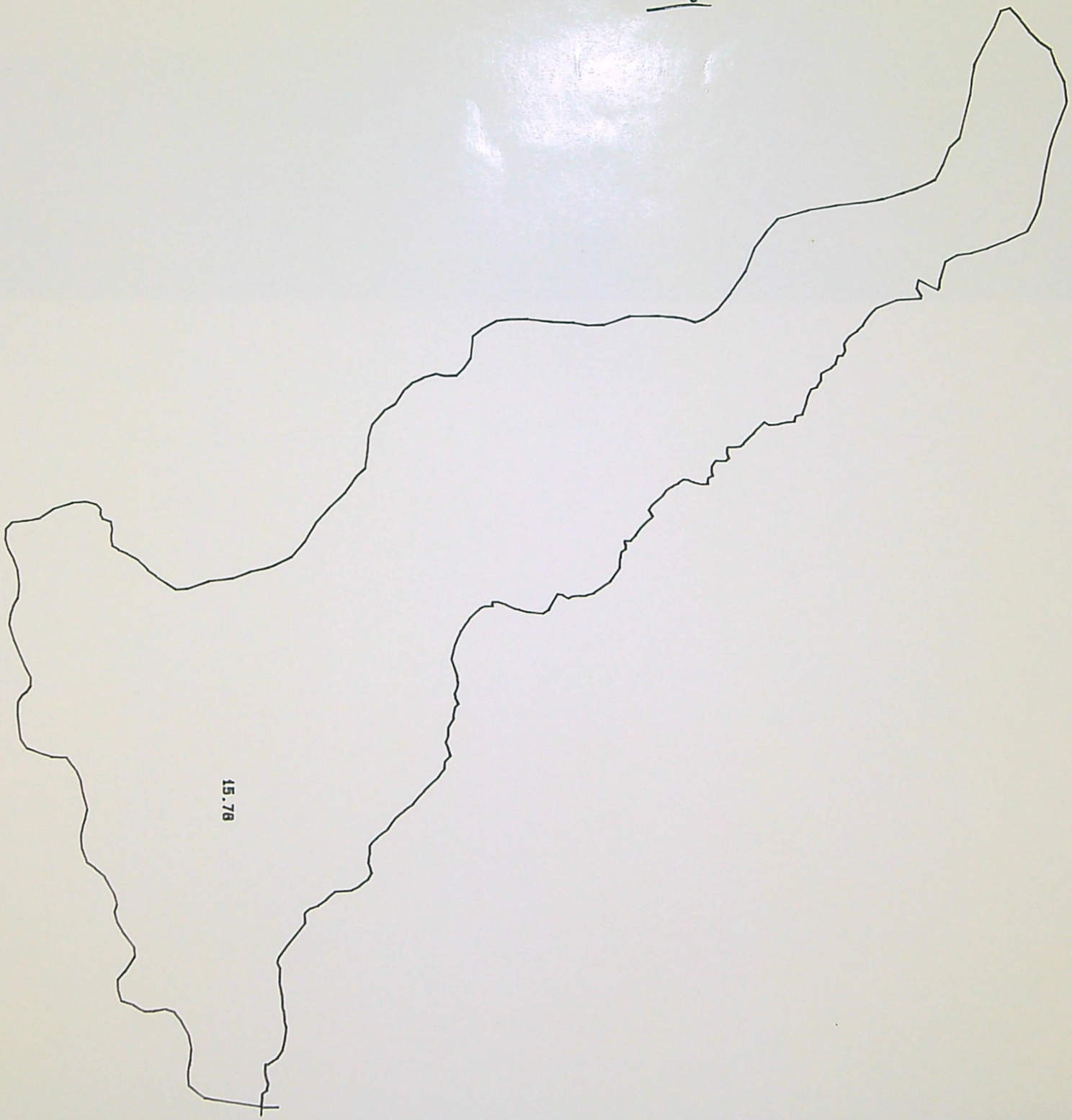
70 251

	MEAN FLOW	a	A	S	St	E
			522.00	57.90	1.42	4.60
OCT	94.47	.00134	93.98	1.00	.61	1.00
NOV	52.81	.00303	214.67	1.00	.85	1.00
DEC	135.64	.00328	241.77	1.00	.90	1.00
JAN	127.54	.11	306.67	1.00	1.00	1.00
FEB	205.71	.928	345.39	1.00	1.00	1.00
MAR	302.56	4.26	188.23	1.00	1.00	.06
APR	816.51	.0202	351.93	1.00	.84	1.00
MAY	681.61	.0195	472.27	2.99	.88	1.00
JUN	1027.88	2.82e-8	408.96	1.00	.77	137.84
JUL	196.37	.00541	61.03	1.00	.77	1.00
AUG	93.70	.00129	67.03	1.00	.60	1.00
SEP	84.73	.000965	88.28	1.00	.57	1.00

Username: MARCOE
Date/Time: 7/12/1990 6:58 AM
Plotfile: DUA1:[FOO.MARCOE.AUTOPLOT]PRELIM

John Day

1501



DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Mar. 11, 1964	NE¼sec.18, T.12 S., R.26 E., 6.5 mi northwest of Dayville		315
Aug. 25, 1964			* 2.8

B6 04
Page 4

STATE PRINTING 58716

Rock Creek Measurements
7025
Show → less flow than measured

BASIN SUMMARY REPORT

ROCK CR TRIBUTARY OF JOHN DAY R

SOURCE > TRIBUTARY	TOTAL DIVERTED	AGRIC.	INDUST.	MUNIC.	DOMEST.	RECREAT.	MISC.	UNKNOWN
ROCK CR > JOHN DAY R	26.08 CFS 4.00 ACF	25.99 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.10 4.00	48
DRY CR > ROCK CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	1
S FK ROCK CR > ROCK CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	3
SIXMILE CAN > ROCK CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	1
LONE ROCK CR > ROCK CR	3.43 CFS 0.00 ACF	3.43 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	7
JOHNSON CR > LONE ROCK CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	1
BROWN CR > LONE ROCK CR	3.60 CFS 0.00 ACF	3.60 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
BIG DUTCH CAN > BROWN CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	2
UNN STR > BROWN CR	0.00 CFS 0.02 ACF	0.00 0.02	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
DRY FK > BROWN CR	0.00 CFS 0.79 ACF	0.00 0.79	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
CRAWFORD CR > BROWN CR	0.36 CFS 0.33 ACF	0.36 0.33	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
UNN STR > CRAWFORD CR	0.00 CFS 0.10 ACF	0.00 0.10	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
BUCKHORN CR > LONE ROCK CR	0.00 CFS 0.00 ACF	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	4
STAHL CAN > BUCKHORN CR	0.00 CFS 0.11 ACF	0.00 0.11	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
UNN STR > WINELAND CAN	0.00 CFS 0.37 ACF	0.00 0.37	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
UNN STR > WINELAND CAN	0.00 CFS 0.02 ACF	0.00 0.02	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
UNN STR > STAHL CAN	0.00 CFS 0.02 ACF	0.00 0.02	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0

BASIN SUMMARY REPORT

ROCK CR TRIBUTARY OF JOHN DAY R

SOURCE > TRIBUTARY	TOTAL DIVERTED	AGRIC.	INDUST.	MUNIC.	DOMEST.	RECREAT.	MISC.	UNKNOWN
UNN STR > STAHL CAN	0.00 CFS 0.05 ACF	0.00 0.05	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
UNN STR > BUCKHORN CR	0.00 CFS 0.04 ACF	0.00 0.04	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
E FK JUNIPER CR > JUNIPER CR	3.68 CFS 0.00 ACF	3.68 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
LONG HOL > M FK ROCK CR	0.00 CFS 0.18 ACF	0.00 0.18	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
INDIAN CR > CHAPIN CR	0.24 CFS 3.50 ACF	0.24 3.50	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
TUPPER CR > ROCK CR	0.00 CFS 0.03 ACF	0.00 0.03	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	1
HOLLYWOOD CR > TUPPER CR	0.00 CFS 0.04 ACF	0.00 0.04	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0
WESLER CAN > ROCK CR	0.00 CFS 0.01 ACF	0.00 0.01	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0

BASIN SUMMARY REPORT

ROCK CR TRIBUTARY OF JOHN DAY R

#70251

TOTAL DIVERTED

TOTAL CFS: 37.40
TOTAL ACF: 9.62

37.40
-37.30
0.10

TOTALS BY USE

	AGRICULTURE	INDUSTRIAL	MUNICIPAL	DOMESTIC	RECREATIONAL	MISCELLANEOUS
(CFS)	37.30	0.00	0.00	0.00	0.00	0.10
(ACF)	5.62	0.00	0.00	0.00	0.00	4.00

70 251

Report for station 14047390
ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0MEAN DISCHARGE
0Number of years retrieved is 16
1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Statistics on Normal monthly means (All days)

RM 40.8
297sq miles
1975 to current

	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	Aug	Sept
By rows (Number, Mean, Variance, Standard Deviation, Skewness, Coefficient of Variation, Percentage of Average Value)												
0Number	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00	14.00
0Mean	5.39	14.88	45.06	71.37	154.23	212.79	132.24	62.34	17.79	4.10	2.40	2.81
0Var	19.07	176.11	2238.22	2563.35	15526.32	21791.44	10665.82	5714.94	451.96	14.24	4.79	6.62
0Std	4.37	13.27	47.31	50.63	124.60	147.62	103.28	75.60	21.26	3.77	2.19	2.57
0Skew	0.75	2.14	2.27	0.22	1.09	0.34	1.49	2.70	2.68	1.74	1.06	1.56
0Cvar	0.81	0.89	1.05	0.71	0.81	0.69	0.78	1.21	1.19	0.92	0.91	0.91
0Pavg	0.74	2.05	6.21	9.84	21.26	29.33	18.23	8.59	2.45	0.57	0.33	0.39

1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Quartiles of Normal monthly means (All days)

	Oct	Nov	Dec	Jan	Feb	March
0			Twenty-Fifth Percentile			
	2.18	6.25	15.4	29.7	58.4	73.8
0			Fiftieth Percentile			
	3.43	10.8	27.2	55.8	124.6	220.9
0			Seventy-Fifth Percentile			
	9.61	21.3	57.5	120.2	230.0	335.8

	April	May	June	July	Aug	Sept
0			Twenty-Fifth Percentile			
	55.8	24.5	6.41	1.51	.683	1.01
0			Fiftieth Percentile			
	112.6	30.9	11.9	3.32	1.68	2.02
0			Seventy-Fifth Percentile			
	169.4	65.1	16.9	4.75	4.13	4.77

1 Station 14047390 ROCK CREEK AB WHYTE PARK NR CONDON,OREG.
0 MEAN DISCHARGE
Quartiles of Normal annual means (All days)

0 Twenty-Fifth Percentile
30.8
0 Fiftieth Percentile
55.3
0 Seventy-Fifth Percentile
79.6

14 years ave annual 59

NOTE -- PERCENTILES BASED ON AVAILABLE DATA.
1

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Mar. 10, 1966	SE¼SW¼ sec.15, T.2 S., R.22 E., above bridge		153
Oct. 25, 1966	Sec.36, T.3 S., R. 22 E., ab bridge Hwy 206		3.47
Oct. 26, 1966	Sec.6, T.4 S., R.23 E., at Murtah Ranch		0.67
Dec. 6, 1966	Sec.26, T.2 S., R.22 E., bl Dry Cr.		51.6
do	Sec.15, T.2 S., R.22 E., 9/10 mile bl Wolf Hollow Br.		50.1
Dec. 3, 1970	SE¼SW¼ sec.15, T.2 S., R.22 E.		14.6
Dec. 3, 1970	NE¼ sec.10, T.1 S., R.21 E.		13.1
Mar.25, 1971	NW¼NE¼ sec.10, T.1 S.,R.21 E.		284
Mar. 25, 1971	SE¼SW¼ sec.15, T.2 S.,R.22 E.		260
Mar 26, 1971	NW¼NE¼ sec.13, T.1 N., R.19 E.		277
Mar.26, 1971	SE¼SW¼ sec.15, T.1 N., R.20 E.		245
May 25, 1971	SE¼SW¼ sec.15, T.2 S., R.22 E.		9.34
do	NW¼NE¼ sec.10, T.1 S., R.21 E.		9.28
Oct. 28, 1975	NW¼NE¼ sec.10, T.1 S., R.21 E. at		0.52
Nov. 25, 1975	Hwy brdg at Olex		0.84

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Card 1 back

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
June 6, 1976	do		0.77
June 22, 1976	do		0.77
Aug. 24, 1976	do		2.21
Oct.28, 1975	SW¼NE¼ sec.24, T.1 N., R.20 E., 6 mi nw of Olex		0.38
Nov. 25, 1975	do		0.30
Dec. 23, 1976	do		0.51
Jan. 27, 1976	do		38.0
Feb. 25, 1976	do		31.5
Mar. 23, 1976	do		107
May 6, 1976	do		20.8
May 24, 1976	do		0.20
June 9, 1976	do		2.0
June 22, 1976	do		1.19
July 27, 1976	do		0.51
Aug. 24, 1976	do		0.43

Card 2 back

SP*23948-119

MISCELLANEOUS MEASUREMENT No. 36 | STREAM Rock Creek | TRIBUTARY TO OR DIVERTING FROM 17070201 John Day River | COUNTY Grant Co

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Sept. 17, 1949	Mouth, 6 mi northwest of Dayville		0
Aug. 31, 1951	Mouth		0.8 Est
Aug.23, 1951	Mouth, in E½ sec.18, T.12 S., R.26		0.36
Aug.4, 1952	do		0.83
July 15, 1953	do		20.4
Sept. 8, 1953	do		2.15
July 27, 1955	do		* 1.5 Est
	Drainage area, 292		
Sept. 18, 1956	0.5 mi abo mouth		* 9.03
July 16, 1957	At mouth		76.0
Aug. 18, 1959	do		3.30
Aug. 12, 1960	NE¼ sec.21, T.12 S., R.25 E.		2.19
July 18, 1961	NE¼ sec.18, T.12 S., R.26 E., 6.5 mi northwest of Dayville(292 sq mi Dr.Ar.)		1.87
Aug. 24, 1962			7.65
July 30, 1963			7.22
Jan. 6, 1964			38.0
Feb. 11, 1964			32.6

Card 4

MISCELLANEOUS MEASUREMENT No. 86 STREAM D4 TRIBUTARY TO OR DIVERTING FROM 17070204 COUNTY 383

Rock Creek — John Day River — G1111am

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Oct. 28, 1975	SW¼NE¼ sec.15, T.1 N., R.20 E., at Hwy Bridge		0.21
Nov. 25, 1975	do		0.27
Dec. 23, 1975	do		0.55
Jan. 27, 1976	do		38.0
Feb. 25, 1976	do		32.8
Mar. 23, 1976	do		107
June 9, 1976	do		0.39
June 22, 1976	do		0.56
July 27, 1976	do		0.56
Aug. 24, 1976	do		0.17

MISCELLANEOUS MEASUREMENT No. 86 STREAM D4 TRIBUTARY TO OR DIVERTING FROM 17070204 COUNTY 283

Rock Creek — John Day River — GILLIAM

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Dec. 23, 1975	NW¼NE¼ sec.10, T.1 S., R.21 E.		6.49
Jan. 27, 1976	do		41.2
Feb. 25, 1976	do		34.7
Mar. 23, 1976	do		114
May 6, 1976	do		33.2
May 26, 1976	do		13.6
June 7, 1976	do		6.22
June 22, 1976	do		2.96
July 27, 1976	do		0.40
Aug. 24, 1976	do		5.09
Dec. 23, 1975	NE¼NE¼ sec.31, T.1 N., R.21 E., 5 mi nw of Olex ab French Charlie Canyon		4.32
Jan. 27, 1976	do		37.6
Feb. 25, 1976	do		31.7
Mar. 23, 1976	do		108
May 6, 1976	do		32.4
May 26, 1976	do		9.65
June 6			

MISCELLANEOUS MEASUREMENT No. 86 STREAM D4 TRIBUTARY TO OR DIVERTING FROM 17070204 COUNTY 283

Rock Creek — John Day River — Gilliam Co.

DATE	LOCATION	GAGE-HEIGHT FEET	DISCHARGE SECOND-FEET
Apr. 28, 1931	At Condon		14.1
May 24, 1934	Bl springs .5 mi ab West's Dam, 2.3 mi ab mouth, nr Klondike		1.1
May 24, 1934	300 yds ab West's dam		1.1
June 1948	At mouth, nr Rock Creek station		* 763
Nov. 10, 1965	SW¼NW¼ sec.32, T.1 S., R.22 E.,		4.33
Mar. 8, 1966	NE¼SW¼ sec.36, T.3 S., R.22 E. ab Heppner Condon Hwy		21.4
Mar. 8, 1966	SE¼SE¼ sec.22, T.2 S., R.22 E., bl Dry Cr., nr Dam site (Condon)		21.5
Mar. 8, 1966	SW¼NE¼ sec.24, T.1 S., R.21 E., nr Condon		19.9
do	SE¼NW¼ sec.32, T.1 N., R.21 E., 300 ft bl barn.		18.2
do	NE¼NW¼ sec.24, T.1 N., R.20 E., ab Rock Cr, 2.5 mi.		17.8
do	SW¼NE¼ sec.15, T.1 N., R.20 E., Rock Creek, 30 ft ab bridge		35.5

WIM#,

Instream Application No. 70251 Certificate No. _____

RECEIVED
AUG 12 1991
WATER RESOURCES DEPT.
SALEM, OREGON

STATE OF OREGON

WATER RESOURCES DEPARTMENT

Application for Instream Water Right by a State Agency

There is no fee required for this application.

A. Applicant: Randy Fisher (Director) for Oregon Dept. of Fish & Wildlife (Agency)

Mailing Address: 2501 S.W. First Ave., P. O. Box 59

Portland (City), OR (State) 97207 (Zip) 229-5400 Ext. 438 (Phone No.)

B. Applicant: _____ (Director) for _____ (Agency)

Mailing Address: _____

_____ (City), _____ (State) _____ (Zip) _____ (Phone No.)

C. Applicant: _____ (Director) for _____ (Agency)

Mailing Address: _____

_____ (City), _____ (State) _____ (Zip) _____ (Phone No.)

1. The name of stream or lake of the proposed instream water right is Rock Creek, a tributary or source (if lake) of John Day River.

2. The public use(s) this instream water right is based upon include:
Upstream passage of adult and juvenile fish including summer steelhead and resident rainbow trout.

Instream Application No. 70251 Certificate No. _____

3. The amount of water needed by month and/or year for each category of public use. If more space is needed, use a separate sheet of paper.

List quantities in either cfs, acre-feet, or lake elevation above Mean Sea Level

Use(s)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Migration of Anadromous fish and resident fish												
	34	57	57	57	57	34	34	34	34	34	34	34

4. The reach of the stream identified for an instream water right is from the:

upstream end at USGS Guaging station @ White Park (Station #14047390)
River Mile (if known) RM 40.0
within the NE 1/4 of the SW 1/4 of
Section 36 Township 3S Range 22E W.M.,
County Gilliam.

downstream end at The mouth
River Mile (if known) 0.0
within the NE 1/4 of the SW 1/4 of
Section 11 Township 1N Range 19E W.M.,
County Gilliam.

Lake identified for an instream water right is
within the _____ 1/4 of the _____ 1/4 of
Section _____ Township _____ Range _____ W.M.,
County _____.

5. Method(s) used to determine the requested amounts:

Flow required to operate proposed fish passage facilities during migration period for adults and juveniles. Required flows are based on engineering determin using USGS data and passage facility design.

Instream Application No. 70251 Certificate No. _____

6. When were the following state agencies notified of the intent to file for the instream water right?

Department of Environmental Quality	Date	2-7-90
Department of Fish and Wildlife	Date	
Parks and Recreation Division	Date	2-7-90

7. If possible, include recommendations for measuring locations or methods:

Measure @ USGS station 14047390 and by staff gauge @ the mouth RM 0.0

8. If possible, include recommendations for assisting the Water Resources Department (WRD) in measuring and monitoring procedures:

Local watermaster will measure w/ periodic assistance from ODFW. Monitoring plan to be developed.

9. If possible, include other recommendations for methods or conditions necessary for managing the water right to protect the public uses (see OAR 690-77-020 (5)(c)):

Monitoring plan to be developed.

Remarks: The Department of Fish and Wildlife is aggressively persuing the completion of a series of passage facilities at eight existing irrigation diversion structures. Once adult steelhead have access to the upper reaches of Rock Creek we expect an annual return of 1000 adults. Upstream passage of juvenile fish will be a critical component of the passage facilities function.

This application must be accompanied by a basin map with the applicable lake or stream reach identified.

An instream water right may be allowed for an instream beneficial use of water subject to existing water rights with an effective date prior to the filing date of this application.

This type of beneficial use is for the benefit of the public and a certificate issued confirming an instream water right shall be held in trust by the Water Resources Department for the people of the State of Oregon, pursuant to ORS 537.341.

3/21/90	Nancy M. MacHugh
Date	Signature
Oregon Dept. of Fish & Wildlife	Assistant Director
Agency	Title

Instream Application No. 70251 Certificate No. _____

This is to certify that I have examined the foregoing application, together with the accompanying maps and data, and return them for:

_____

_____

_____

In order to retain its priority, this application must be returned to the Water Resources Department with corrections on or before _____, 19____.

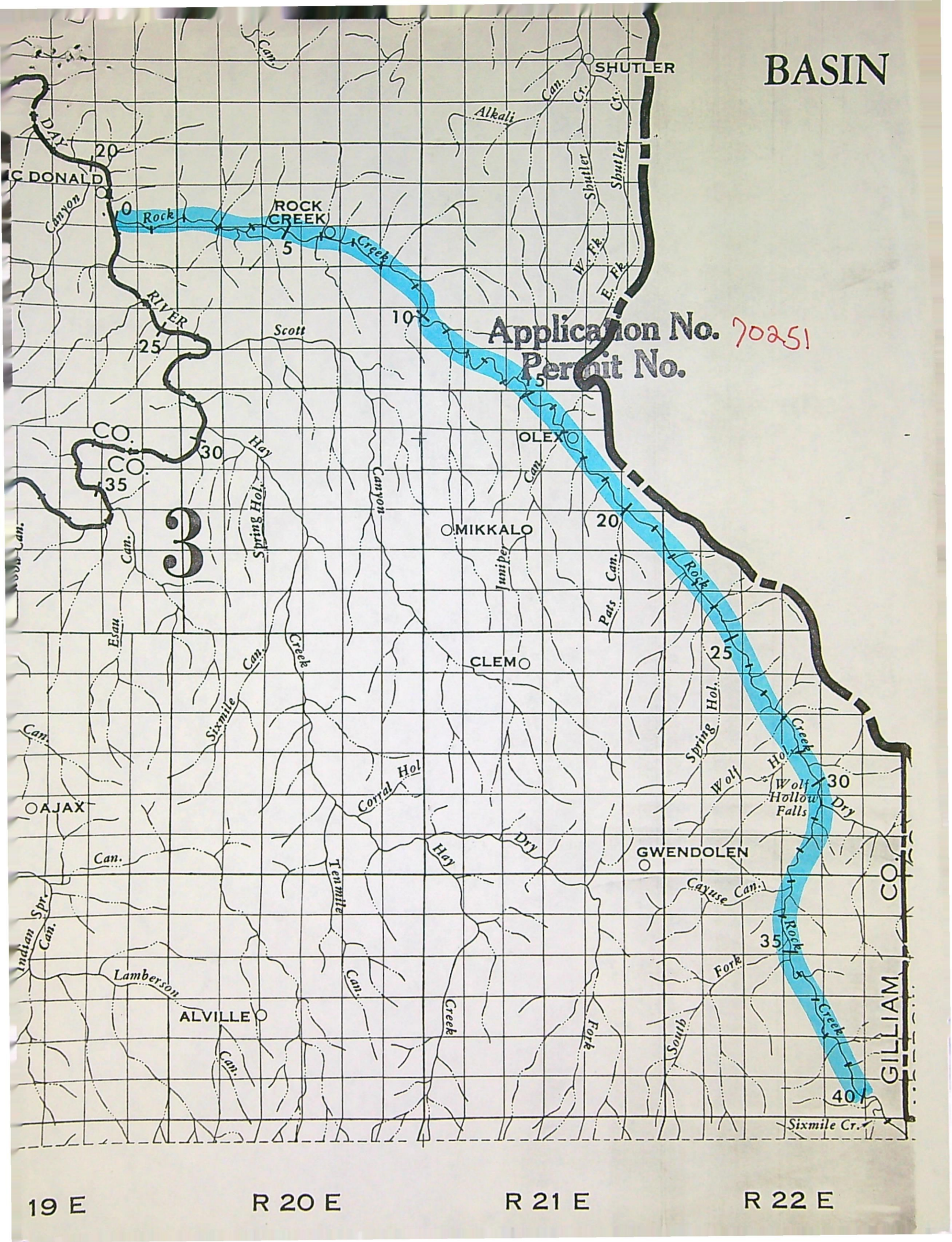
Date: _____, 19____.

_____
Water Resources Department

_____
Title

This document was first received at the Water Resources Department in Salem, Oregon, on the 21st day of March, 19 90, at 2:50 o'clock P. M.

WATER RESOURCES DEPARTMENT
3850 Portland Road NE
SALEM, OREGON 97310


BASIN
Application No. 70251
Permit No.
SHUTLER
C DONALD
ROCK CREEK
OLEX
MIKKALO
CLEM
AJAX
GWENDOLEN
ALVILLE
Wolf Hollow Falls
Sixmile Cr.
GILLIAM CO.
Rock Creek
Canyon
Alkali
Can.
Cr.
Shutler
W. Fk.
E. Fk.
RIVER
Scott
Hay
Spring Hol.
Juniper
Pats
Esau
Sixmile
Corral Hol
Dry
Tenmile
Indian Spr.
Lamberson
Cayuse Can.
Fork
South
Creek
Wolf Hol.
CO.
3
0
5
10
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20
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40
19 E
R 20 E
R 21 E
R 22 E

STATE OF OREGON
WATER RESOURCES DEPARTMENT
158 12TH ST. N.E.
SALEM, OR 97310-0210
378-8455 / 378-8130 (FAX)

RECEIPT # 7176 INVOICE #_____

RECEIVED FROM: Moon Consulting
BY: _____

APPLICATION	70251
PERMIT	
TRANSFER	

CASH: ☐ CHECK: # ☒ 96-7446 OTHER: (IDENTIFY) ☐ _____

TOTAL REC'D $ 200.00

0417 WRD MISC CASH ACCT

	ADJUDICATIONS	$
	PUBLICATIONS / MAPS	$
_____	OTHER: (IDENTIFY) _____	$
_____	OTHER: (IDENTIFY) _____	$

RECEIVED OVER THE COUNTER

REDUCTION OF EXPENSE CASH ACCT. _____ $

PCA AND OBJECT CLASS _____ VOUCHER # _____

0427 WRD OPERATING ACCT

	MISCELLANEOUS				
0407	COPY & TAPE FEES				$
0410	RESEARCH FEES				$
0408	MISC REVENUE: (IDENTIFY) _____				$
TC165	DEPOSIT LIAB. (IDENTIFY) _____				$
	WATER RIGHTS:	**EXAM FEE**			**RECORD FEE**
0201	SURFACE WATER	$	0202		$
0203	GROUND WATER	$	0204		$
0205	TRANSFER	$	0206		$
	WELL CONSTRUCTION	**EXAM FEE**			**LICENSE FEE**
0218	WELL DRILL CONSTRUCTOR	$	0219		$
	LANDOWNER'S PERMIT PCA 77235		0220		$
0223	OTHER (IDENTIFY) protest				$ 200.00

0437 WELL CONST. START FEE

0211	WELL CONST START FEE	$	CARD #	
0210	MONITORING WELLS	$	CARD #	
_____	OTHER (IDENTIFY) _____			

0539 LOTTERY PROCEEDS

1302	LOTTERY PROCEEDS	$

0467 HYDRO ACTIVITY

		LIC NUMBER	
0233	POWER LICENSE FEE (FW/WRD)		$
0231	HYDRO LICENSE FEE (FW/WRD)		$
_____	HRDRO APPLICATION _____		$

RECEIPT # 7176 DATED: 10-4-96 BY: J Green

Distribution-White Copy-Customer, Yellow Copy-Fiscal, Blue Copy-File, Buff Copy-Fiscal

Oregon
DEPARTMENT OF
FISH AND WILDLIFE
2501 SW First Ave., P.O. Box 59
Portland, Oregon 97207

PRESORTED FIRST CLASS

PORTLAND NOV 15 94 OR

U.S. POSTAGE 00.478

H METER 456178

Mike Mattick
Water Resources Dept.
158 12th Street, NE
Salem, OR 97310

08

97310-0703

Application No. INS 70251

Permit No. .....

3-21-90

Name OR Dept. of Fish & Wildlife

Address PO Box 59, Portland, OR 97207

Assigned .....

Address .....

Beginning construction .....

Completion of construction .....

Extended to .....

Complete application of water .....

Extended to .....

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