Stream: Newlin Creek

Executive Summary

Water Division: 2
Water District: 12
CDOW#: 30514
CWCB ID: 08/2/A-005

Segment: Confl. with Unnamed Tributary to Confl. with Unnamed Tributary
Upper Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY AT
(Latitude: 38º 16’ 11.8”N) (Longitude: 105º 14’ 23.17”W)

Lower Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY AT
(Latitude: 38º 15’ 58.67”) Longitude: (105º 11’ 19.55”W)

Watershed: Upper Arkansas (HUC #: 11020002)
Counties: Fremont
Length: 4.0 miles
USGS Quad(s): Rockvale
Flow Recommendation: 1.20 cfs (June 1 – June 30)
0.60 cfs (July 1 – August 15)
0.40 cfs (August 16 – February 29)
0.80 cfs (March 1 – May 31)

Staff Analysis and Recommendation

Summary

The information contained in this report and the associated instream flow file folder forms the basis for staff's instream flow recommendation to be considered by the Board. It is staff's opinion that the information contained in this report is sufficient to support the findings required in Rule 5.40

The State of Colorado's Instream Flow Program (ISFP) was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (See §37-92-102 (3) C.R.S.). The statute vests the Board with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's ISFP, the statute directs the Board to request instream flow recommendations from other state and federal agencies. The CDOW is recommending this segment of Newlin Creek to the Board for inclusion into the ISFP. Newlin Creek is being recommended for inclusion into the ISFP because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right.

The CDOW is forwarding this stream flow recommendation to the Board to meet Colorado's policy "… that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors … and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities" (See §33-1-101 (1) C.R.S.). The CDOW Strategic Plan states "[h]ealthy aquatic environments are essential to maintain healthy and viable fisheries, and critical for self-sustaining populations. The [CDOW] desires to protect and enhance the quality and quantity of aquatic habitats."

Newlin Creek is approximately 15.5 miles long. It begins on the east side of Locke Mountain at an elevation of approximately 9100 feet and terminates at the confluence with Hardscrabble Creek at an elevation of approximately 5300 feet. Of the 4.5 mile segment addressed by this report, approximately 100% of the segment, or 4.0 miles, is located on public lands. Newlin Creek is located within Fremont County. The total drainage area of the creek upstream of the lower terminus of the proposed instream flow reach is approximately 10.32 square miles. Newlin Creek generally flows in an easterly direction.

The subject of this report is a segment of the Newlin Creek beginning at the confluence with an unnamed tributary and extends downstream to the confluence with another unnamed tributary. The proposed segment is located south of the City of Florence. The recommendation for this segment is discussed below.

Instream Flow Recommendation(s)

The CDOW is recommending 1.20 cfs, 6/01 – 6/30; 0.60 cfs, 7/01 – 8/15; 0.40 cfs 8/16 – 2/29 and 0.80 cfs 3/01 – 5/31.

• 1.20 cubic feet per second is recommended is required to maintain the three principal hydraulic criteria of average depth, average velocity and percent wetted perimeter;

• 0.60 cubic feet per second is based on water availability limitations.

• 0.40 cubic feet per second is based on water availability limitations.

• 0.80 cubic feet per second is required to maintain two of the three principal hydraulic criteria.

The modeling results from this survey effort are within the confidence interval produced by the R2CROSS model (see Table 1).

Land Status Review

Upper Terminus	Lower Terminus	Total Length (miles)	Land Ownership	
			% Private	% Public
Unnamed Tributary	Unnamed Tributary	4.0	0%	100%

100% of the public lands are managed by the USFS.

Biological Data

The CDOW, in August of 2006, collected stream cross section information, natural environment data, and other data needed to quantify the instream flow needs for this reach of Newlin Creek. Newlin Creek is classified as a minor stream (between 4 to 9 feet wide) and fishery surveys indicate the stream environment of Newlin Creek supports Greenback cutthroat trout (*Oncorhynchus clarkii stomias*) (See CDOW Fish Survey in Appendix B). Greenback cutthroat trout have been identified by the CDOW and federal agencies as "species of greatest conservation need". CDOW has been involved in developing a Conservation and Management Plan for this species (Greenback Cutthroat Trout Recovery Plan). The intention of this plan is to increase populations and distributions of identified species, thereby assisting in the long-term persistence of each species. The success of this plan could potentially curtail the need for federal listing of these species under the Endangered Species Act (ESA). This species is currently state and federally listed as "Threatened".

Field Survey Data & Biological Flow Quantification

CDOW staff used the R2CROSS methodology to quantify the amount of water required to preserve the natural environment to a reasonable degree. The R2CROSS method requires that stream discharge and channel profile data be collected in a riffle stream habitat type. Riffles are most easily visualized, as the stream habitat types that would dry up first should Streamflow

cease. This type of hydraulic data collection consists of setting up a transect, surveying the stream channel geometry, and measuring the stream discharge.

Board staff relies upon the biological expertise of the cooperating agencies to interpret output from the R2CROSS data collected to develop the initial, biologic instream flow recommendation. This initial recommendation is designed to address the unique biologic requirements of each stream without regard to water availability. Three instream flow hydraulic parameters, average depth, percent wetted perimeter, and average velocity are used to develop biologic instream flow recommendations. The CDOW has determined that maintaining these three hydraulic parameters at adequate levels across riffle habitat types, aquatic habitat in pools and runs will also be maintained for most life stages of fish and aquatic invertebrates (Nehring 1979; Espegren 1996).

For this segment of stream, two data sets were collected with the results shown in Table 1 below. Table 1 shows who collected the data (Party), the date the data was collected, the measured discharge at the time of the survey (Q), the accuracy range of the predicted flows based on Manning's Equation (240% and 40% of Q), the summer flow recommendation based on meeting 3 of 3 hydraulic criteria and the winter flow recommendation based upon 2 of 3 hydraulic criteria.

Table 1: Newlin Creek R2Cross Summary

			Confidence Intervals	**Recommended Flows (cfs)**	
Party	**Date**	**Q (cfs)**	**250% - 40%**	**Summer 3/3**	**Winter 2/3**
USFS	9/29/1997	0.35	0.9 - 0.1	?	0.8
DOW	8/8/2006	0.78	2.0 - 0.3	1.2	1.2

DOW= Division of Wildlife USFS= United States Forest Service ?= Outside range of confidence interval

Hydrologic Data and Analysis

After receiving the cooperating agency's biologic recommendation, the CWCB staff conducted an evaluation of the stream hydrology to determine if water was physically available for an instream flow appropriation. This evaluation was done through a computation that is, in essence, a "water balance". In concept a "water balance" computation can be viewed as an accounting exercise. When done in its most rigorous form, the water balance parses precipitation into all the avenues water pursues after it is deposited as rain, snow, or ice. In other words, given a specified amount of water deposition (input), the balance tries to account for all water depletions (losses) until a selected end point is reached. Water losses include depletions due to evaporation and transpiration, deliveries into ground water storage, temporary surface storage, incorporations into plant and animal tissue and so forth. These losses are individually or collectively subtracted from the input to reveal the net amount of stream runoff as represented by the discharge measured by stream gages. Of course, the measured stream flow need not be the end point of interest; indeed, when looking at issues of water use to extinction stream flow measurements may only describe intermediate steps in the complex accounting process that is a water balance carried out to a net value of zero.

In its analysis, CWCB staff has attempted to use this idea of balancing inputs and losses to determine if water is available for the recommended Instream Flow Appropriation. Of course, this analysis must be a practical exercise rather than a lengthy, and costly, scientific

investigation. As a result, staff has simplified the process by lumping some variables and employing certain rational and scientifically supportable assumptions. The process may be described through the following description of the steps used to complete the evaluation for this particular stream.

The first step required in determining water availability is a determination of the hydrologic regime at the Lower Terminus (LT) of the recommended ISF reach. In the best case this means looking at the data from a gage at the LT. Further, this data, in the best case, has been collected for a long period of time (the longer the better) including wet and dry periods. In the case of **Newlin Creek** no such gage is available at the LT. In fact, there is no gage on Newlin Creek. It is thus necessary to describe the normal flow regime at the Newlin Creek LT through a "representative" gage station. The gage station selected for this was GRAPE CREEK NEAR WESTCLIFFE, CO. (USGS 07095000), a gage with a 79 year period of record (POR) collected between 1925 and 2006. The gage is at an elevation of 7,690 ft above mean sea level (amsl) and has a drainage area of 320 mi^2. The hydrograph (plot of discharge over time) produced by this gage includes the consumptive uses of several upstream diversions. To make the measured data transferable to Newlin Creek the consumptive portions of these upstream diversions were added back to the measured hydrograph. The resulting adjusted hydrograph was then used on Newlin Creek by multiplying the adjusted Grape Creek near Westcliffe, CO discharge values (hydrograph) by the ratio of Newlin Creek basin area (10.32 mi^2 above the LT) to Grape Creek near Westcliffe, CO basin area (320 mi^2). The next step, to make the Newlin Creek hydrograph reflective of existing conditions, is to reduce the predicted flow values by the amount of upstream consumptive use.

The following hydrograph depicts the mean monthly discharge of Newlin Creek (proportioned off Grape Creek near Westcliffe, CO). Included in the hydrograph are the recommended ISF values. The data used in the creation of this hydrograph are displayed in Table #2.

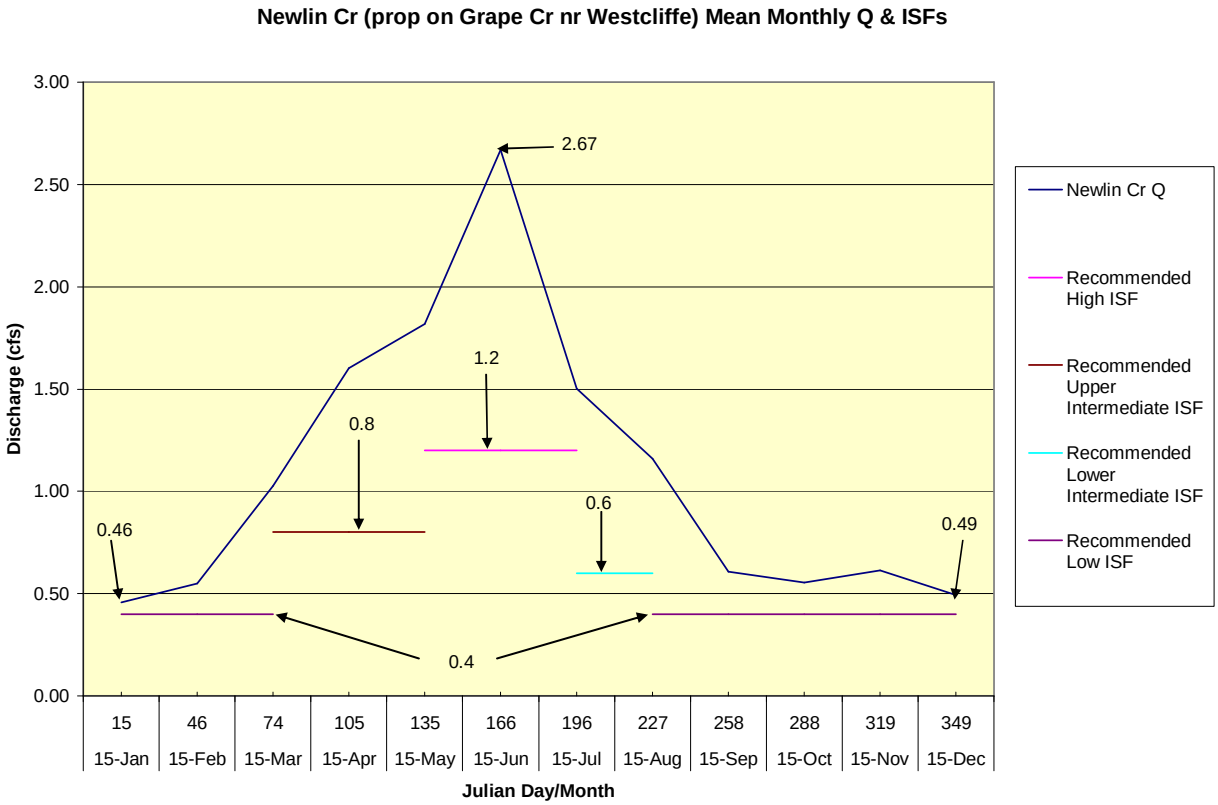
Newlin Cr (prop on Grape Cr nr Westcliffe) Mean Monthly Q & ISFs
Discharge (cfs)
3.00
2.50
2.00
1.50
1.00
0.50
0.00
2.67
1.2
0.8
0.6
0.46
0.49
0.4
15
15-Jan
46
15-Feb
74
15-Mar
105
15-Apr
135
15-May
166
15-Jun
196
15-Jul
227
15-Aug
258
15-Sep
288
15-Oct
319
15-Nov
349
15-Dec
Julian Day/Month
Newlin Cr Q
Recommended High ISF
Recommended Upper Intermediate ISF
Recommended Lower Intermediate ISF
Recommended Low ISF

Table 2 – Mean Monthly Discharge and Recommended Instream Flows – Newlin Creek

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	Julian Day (Leap Year)	Newlin Cr (cfs)	Recommended ISFs (cfs)
15-Jan	15	0.46	0.40
15-Feb	46	0.55	0.40
29-Feb	60	0.55	0.40
1-Mar	61	1.03	0.80
15-Mar	75	1.03	0.80
15-Apr	106	1.60	0.80
30-Apr	121	1.60	0.80
1-May	122	1.82	0.80
15-May	136	1.82	0.80
31-May	152	1.82	0.80
1-Jun	153	2.67	1.20
15-Jun	167	2.67	1.20
30-Jun	182	2.67	1.20
1-Jul	183	1.50	0.60
15-Jul	197	1.50	0.60
15-Aug	228	1.16	0.60
16-Aug	229	1.16	0.40
15-Sep	259	0.61	0.40
15-Oct	289	0.55	0.40
15-Nov	320	0.61	0.40
15-Dec	350	0.49	0.40

Existing Water Right Information

Staff has analyzed the water rights tabulation to identify any potential water availability problems. Records indicate that there are no surface water diversions located within the proposed instream flow reach. However, there are existing diversions upstream and downstream of the proposed reach. Based on this analysis staff has determined that water is available for appropriation on Newlin Creek, from the confluence with Unnamed tributary to the Confluence with Unnamed Tributary, to preserve the natural environment to a reasonable degree without limiting or foreclosing the exercise of valid existing water rights.

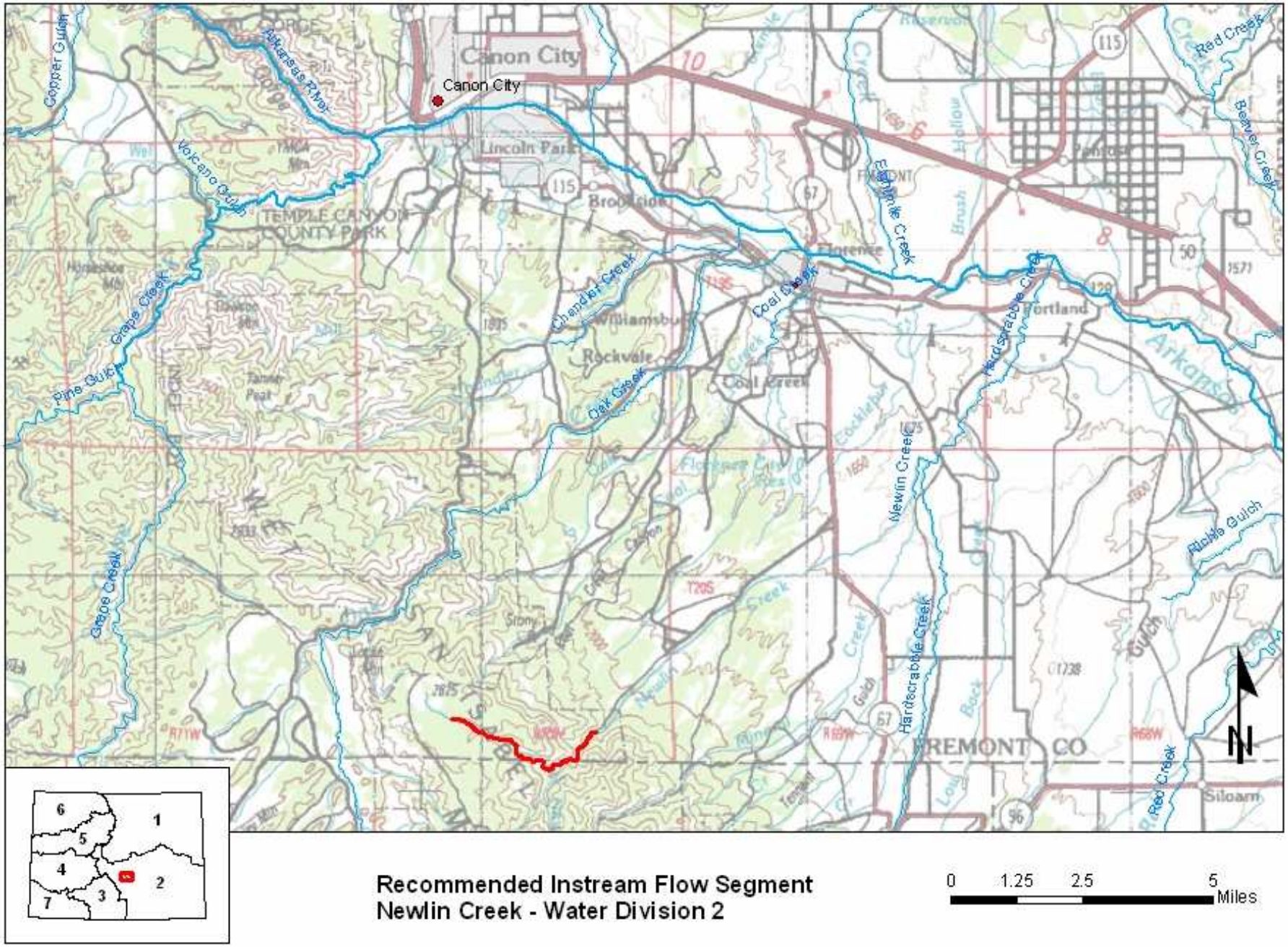
CWCB Staff's Instream Flow Recommendation
Staff recommends the Board form its intent to appropriate on the following stream reach:

Segment: Confl. with Unnamed Tributary to Confl. with Unnamed Tributary
Upper Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY AT
(Latitude: 38º 16' 11.8"N) (Longitude: 105º 14' 23.17"W)
UTM = 4235793.7 N UTM = 479026.3 E
NE NW S32 T20S R70W 6PM
1040' South of the North Section Line; 1970' East of the West Section Line

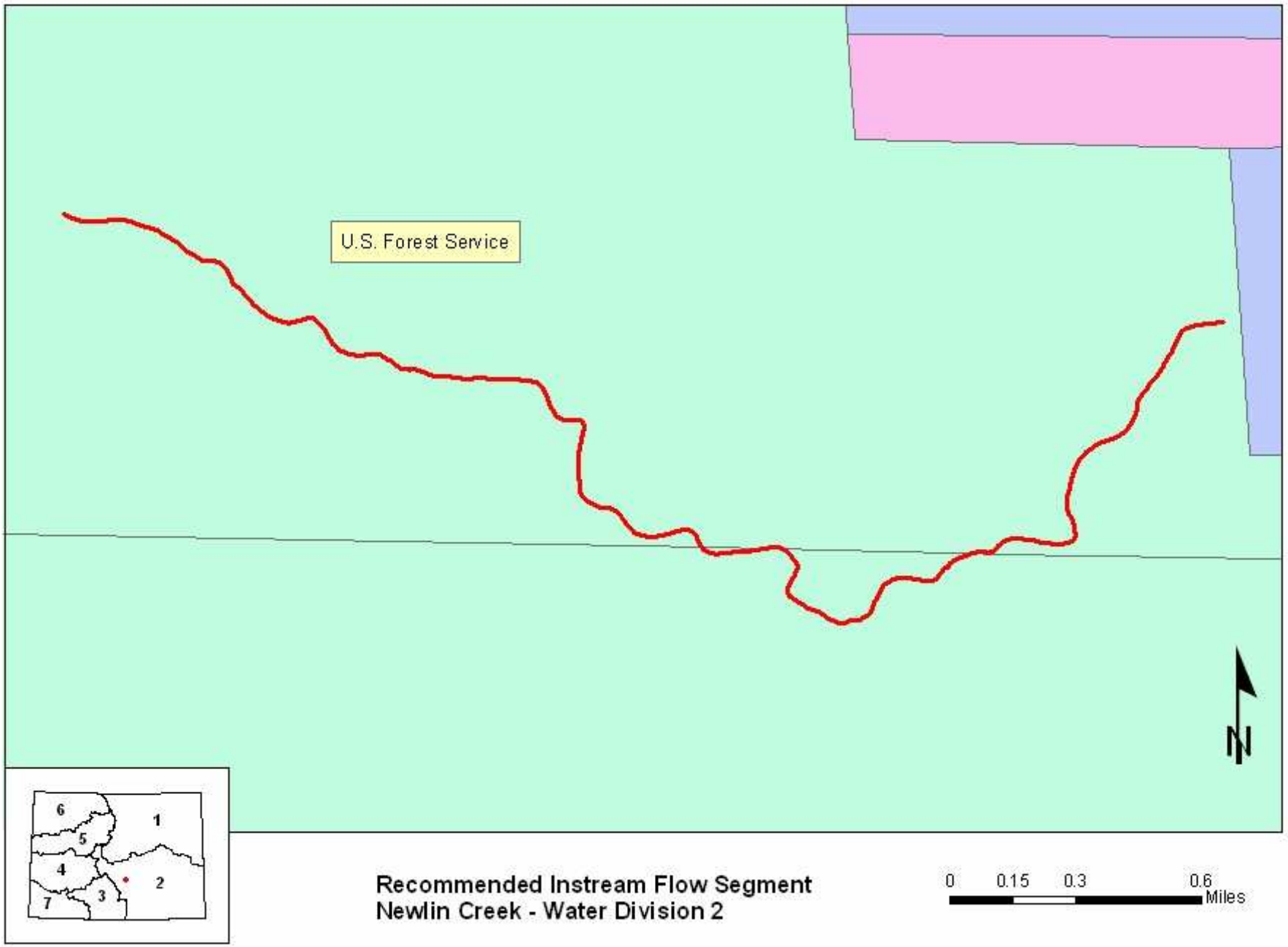
Lower Terminus: CONFLUENCE WITH UNNAMED TRIBUTARY AT
(Latitude: 38º 15' 58.67") Longitude: (105º 11' 19.55"W)
UTM = 4235378.7 N UTM = 483487.0 E
SE NW S35 T20S R70W 6PM
2248' South of the North Section Line; 2100' East of the West Section Line

Watershed: Upper Arkansas (HUC #: 11020002)
Counties: Fremont
Length: 4.0 miles
USGS Quad(s): Rockvale
Flow Recommendation 1.20 cfs (June 1 – June 30)
0.60 cfs (July 1 – August 15)
0.40 cfs (August 16 – February 29)
0.80 cfs (March 1 – May 31)

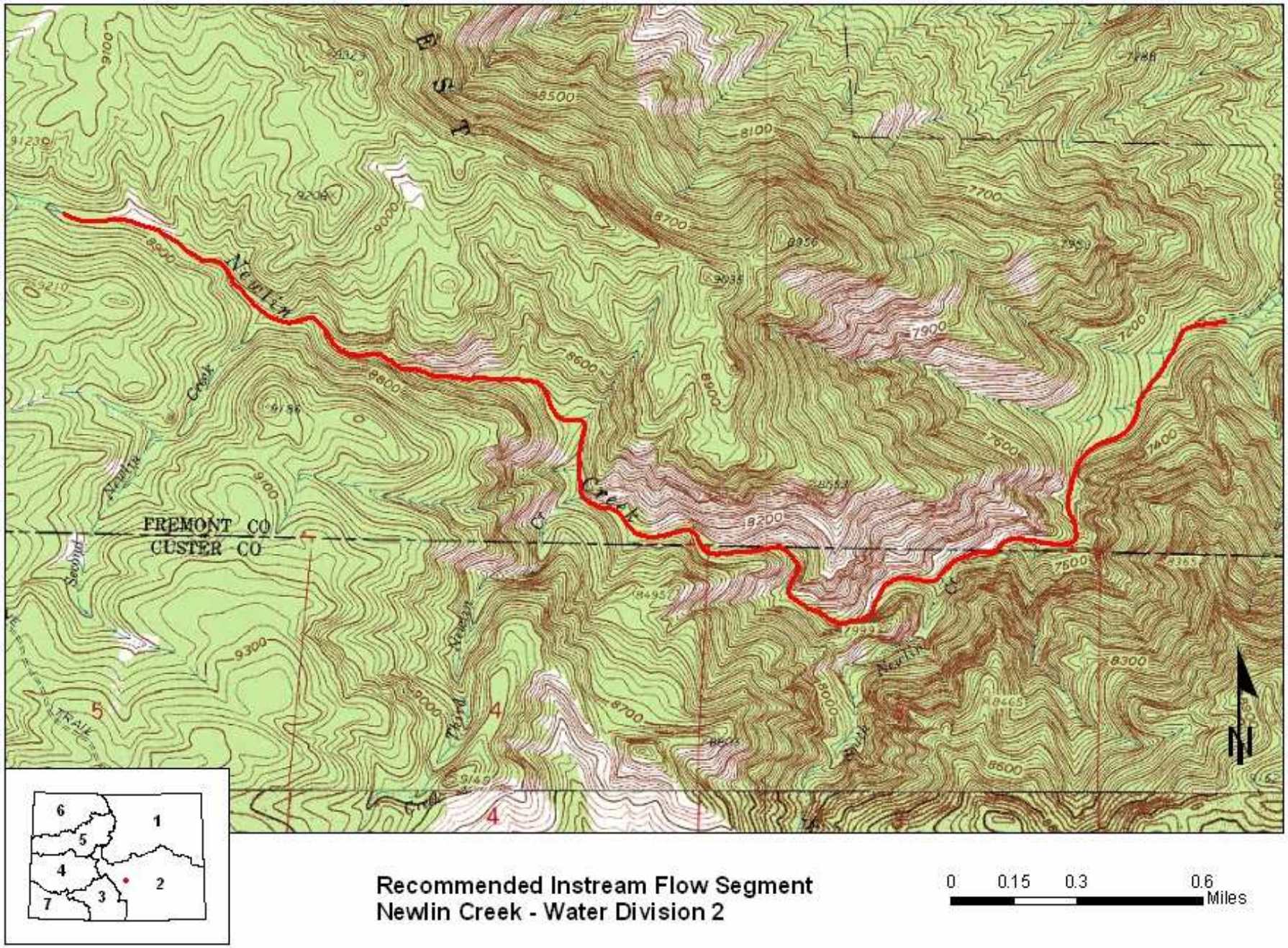
Vicinity Map



Land Use Map


U.S. Forest Service
N
6
1
5
4
2
3
7
Recommended Instream Flow Segment
Newlin Creek - Water Division 2
0
0.15
0.3
0.6
Miles

Topographic & Water Rights Map



STATE OF COLORADO

Bill Ritter, Jr., Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

Bruce McCloskey, Director
6060 Broadway
Denver, Colorado 80216
Telephone: (303) 297-1192
wildlife.state.co.us

For Wildlife-
For People

February 20, 2007

Mr. Jeff Baessler and Mr. Todd Doherty
Colorado Water Conservation Board
Stream and Lake Protection Section
1313 Sherman Street, Room 723
Denver, Colorado 80203

Re: Colorado Division of Wildlife Instream Flow Recommendations for Newlin Creek.

Dear Jeff and Todd,

The purpose of this letter and attached report is to formally transmit the Colorado Division of Wildlife's (CDOW) Instream Flow Recommendations for Newlin Creek. The CDOW has collected data, including stream cross section information and natural environment data, needed to quantify the instream flow requirements for this reach of Newlin Creek identified in the report to preserve the natural environment to a reasonable degree. In addition, CDOW staff has conducted a preliminary evaluation of the stream hydrology to determine if water is physically available for an instream flow appropriation. Newlin Creek should be considered for inclusion into the Instream Flow Program (ISFP) because it has a natural environment that can be preserved to a reasonable degree with an instream flow water right.

The State of Colorado's ISFP was created in 1973 when the Colorado State Legislature recognized "the need to correlate the activities of mankind with some reasonable preservation of the natural environment" (See §37-92-102 (3) C.R.S.). The statute vests the Colorado Water Conservation Board (Board) with the exclusive authority to appropriate and acquire instream flow and natural lake level water rights. In order to encourage other entities to participate in Colorado's ISFP, the statute directs the Board to request instream flow recommendations from other state and federal agencies. The CDOW is recommending this segment of Newlin Creek to the Board for inclusion into the ISFP.

The CDOW is forwarding this instream flow recommendation to the Board to meet Colorado's policy "... that the wildlife and their environment are to be protected, preserved, enhanced, and managed for the use, benefit, and enjoyment of the people of this state and its visitors ... and that, to carry out such program and policy, there shall be a continuous operation of planning, acquisition, and development of wildlife habitats and facilities for wildlife-related opportunities" (See §33-1-101 (1) C.R.S.). The CDOW Strategic Plan states "[h]ealthy aquatic environments are essential to maintain healthy and viable

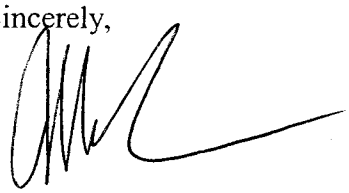
fisheries, and critical for self-sustaining populations. The [CDOW] desires to protect and enhance the quality and quantity of aquatic habitats."

This stream reach is important to the CDOW and Colorado because it supports a naturally reproducing population of Greenback cutthroat trout (*Oncorhynchus clarkii stomias*). Greenback cutthroat trout are currently considered a state and federal "Threatened" species. This species inhabits cold water streams and lakes with adequate stream spawning habitat present in the spring of the year. A Greenback Cutthroat Trout Recovery Plan has been developed by an interagency group of scientists operating under the sponsorship of the U.S. Fish and Wildlife Service. Instream flow maintenance has been identified in the Recovery Plan as an important tool in the recovery of the species.

The information contained in the attached report forms the basis for the instream flow recommendation to be considered by the Board. It is the CDOW staff's opinion that the information is sufficient for the Board's staff to begin the investigations required to support the findings required in Rule 5 (i) of the Instream Flow Rules.

If you have any questions regarding the attached information or the instream flow recommendations, please contact me at (303)-291-7267.

Sincerely,



Mark Uppendahl
Colorado Division of Wildlife
Instream Flow Program Coordinator

Cc: Grady McNeill, CDOW Resource Support Section Manager – w/o attachments
Jay Skinner, CDOW Water Unit Program Manager – w/o attachments
John Tonko, CDOW SE Water Resource Specialist – w/o attachments
Doug Krieger, CDOW Senior Fish Biologist – Southeast Region – w/o attachments
Jim Melby, CDOW Aquatic Biologist – w/o attachments
Jim Aragon, CDOW AWM Area 13 – w/o attachments
Kim Woodruff, CDOW DWM District 265 - w/o attachments

Appendix - B

Field Data

DATE	Q	2.5*0.4	3/3	2/3	FIELD
9/29/97	0.35	0.9-0.1	?	0.75	GBN (PPN)
8/8/06	0.78	2.0 - 0.3	1.15	1.15	
			1.2	.95	10

0.8 cfs (3/15 - 6/30)
0.6 cfs (7/1 - 8/15)
0.3 (8/16 - 3/14)

climate stat
Florence
2955
Wetmore 2 S
8986

COLORADO WATER CONSERVATION BOARD
INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM
STREAM CROSS-SECTION AND FLOW ANALYSIS

LOCATION INFORMATION

STREAM NAME:	Newlin Creek
XS LOCATION:	u/s of USFS Parking lot
XS NUMBER:	1
DATE:	8-Aug-06
OBSERVERS:	Uppendahl
1/4 SEC:	0
SECTION:	0
TWP:	0
RANGE:	0
PM:	0
COUNTY:	0
WATERSHED:	Arkansas River
DIVISION:	2
DOW CODE:	0
USGS MAP:	0
USFS MAP:	0

SUPPLEMENTAL DATA

*** NOTE ***
Leave TAPE WT and TENSION at defaults for data collected with a survey level and rod

TAPE WT:	0.0106
TENSION:	99999

CHANNEL PROFILE DATA

SLOPE:	0.04235294

INPUT DATA CHECKED BY: .....DATE.....

ASSIGNED TO: .....DATE.....

STREAM NAME: Newlin Creek
XS LOCATION: u/s of USFS Parking lot
XS NUMBER: 1

DATA POINTS= 31

VALUES COMPUTED FROM RAW FIELD DATA

	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
	TS	0.00	7.12			0.00		0.00	0.00	0.0%
	BS	0.01	7.72			0.00		0.00	0.00	0.0%
	BF	1.00	7.90			0.00		0.00	0.00	0.0%
		2.00	8.35			0.00		0.00	0.00	0.0%
		3.00	8.50			0.00		0.00	0.00	0.0%
1	GL	4.00	8.63			0.00		0.00	0.00	0.0%
		4.50	8.95			0.00		0.00	0.00	0.0%
		5.00	9.24			0.00		0.00	0.00	0.0%
	WL	5.50	9.42	0.00	0.00	0.00		0.00	0.00	0.0%
		5.90	9.47	0.05	0.39	0.40	0.05	0.02	0.01	1.0%
		6.30	9.52	0.10	0.29	0.40	0.10	0.04	0.01	1.5%
	BR	6.70	9.67	0.25	0.00	0.43	0.25	0.10	0.00	0.0%
		7.10	9.72	0.30	1.91	0.40	0.30	0.12	0.23	29.4%
		7.50	9.67	0.25	1.27	0.40	0.25	0.10	0.13	16.3%
		7.90	9.62	0.20	0.44	0.40	0.20	0.08	0.04	4.5%
		8.30	9.52	0.10	0.63	0.41	0.10	0.04	0.03	3.2%
		8.70	9.52	0.10	0.39	0.40	0.10	0.04	0.02	2.0%
		9.10	9.72	0.30	0.78	0.45	0.30	0.12	0.09	12.0%
		9.50	9.72	0.30	1.42	0.40	0.30	0.12	0.17	21.8%
		9.90	9.47	0.05	0.05	0.47	0.05	0.02	0.00	0.1%
		10.30	9.57	0.15	0.94	0.41	0.15	0.07	0.06	8.1%
	TR	10.80	9.02	0.00	0.00	0.74		0.00	0.00	0.0%
		11.20	9.67	0.25	0.00	0.76	0.25	0.06	0.00	0.0%
	WL	11.30	9.42	0.00	0.00	0.27		0.00	0.00	0.0%
		12.00	9.20			0.00		0.00	0.00	0.0%
		12.50	9.10			0.00		0.00	0.00	0.0%
		13.00	9.11			0.00		0.00	0.00	0.0%
		14.00	9.03			0.00		0.00	0.00	0.0%
1	GL	14.50	8.63			0.00		0.00	0.00	0.0%
	BS	15.15	8.30			0.00		0.00	0.00	0.0%
	TS	15.20	7.58			0.00		0.00	0.00	0.0%
	TOTALS ----------					6.76	0.3 (Max.)	0.93	0.78	100.0%

Manning's n = 0.0971
Hydraulic Radius= 0.137531709

STREAM NAME: Newlin Creek
XS LOCATION: u/s of USFS Parking lot
XS NUMBER: 1

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
	0.93	0.87	-6.2%
9.17	0.93	2.40	158.2%
9.19	0.93	2.26	143.3%
9.21	0.93	2.13	128.7%
9.23	0.93	1.99	114.3%
9.25	0.93	1.86	100.3%
9.27	0.93	1.73	86.5%
9.29	0.93	1.61	73.1%
9.31	0.93	1.49	60.0%
9.33	0.93	1.37	47.2%
9.35	0.93	1.25	34.8%
9.37	0.93	1.14	22.7%
9.38	0.93	1.09	16.7%
9.39	0.93	1.03	10.9%
9.40	0.93	0.98	5.1%
9.41	0.93	0.92	-0.6%
9.42	0.93	0.87	-6.2%
9.43	0.93	0.82	-11.8%
9.44	0.93	0.77	-17.2%
9.45	0.93	0.72	-22.5%
9.46	0.93	0.67	-27.7%
9.47	0.93	0.62	-32.8%
9.49	0.93	0.53	-42.6%
9.51	0.93	0.45	-51.7%
9.53	0.93	0.38	-59.7%
9.55	0.93	0.31	-66.5%
9.57	0.93	0.25	-72.7%
9.59	0.93	0.20	-78.3%
9.61	0.93	0.15	-83.4%
9.63	0.93	0.11	-88.0%
9.65	0.93	0.08	-91.9%
9.67	0.93	0.04	-95.2%

WATERLINE AT ZERO
AREA ERROR = 9.409

STREAM NAME: Newlin Creek
XS LOCATION: u/s of USFS Parking lot
XS NUMBER: 1

Constant Manning's n

GL = lowest Grassline elevation corrected for sag
WL = Waterline corrected for variations in field measured water surface elevations and sag

STAGING TABLE

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	8.63	10.50	0.72	1.09	7.51	11.85	100.0%	0.63	17.43	2.32
	8.66	10.42	0.69	1.06	7.21	11.75	99.2%	0.61	16.37	2.27
	8.71	10.28	0.65	1.01	6.69	11.58	97.7%	0.58	14.60	2.18
	8.76	10.14	0.61	0.96	6.18	11.41	96.2%	0.54	12.92	2.09
	8.81	10.00	0.57	0.91	5.67	11.23	94.8%	0.51	11.33	2.00
	8.86	9.86	0.53	0.86	5.18	11.06	93.3%	0.47	9.83	1.90
	8.91	9.72	0.48	0.81	4.69	10.89	91.9%	0.43	8.42	1.80
	8.96	9.57	0.44	0.76	4.21	10.71	90.4%	0.39	7.10	1.69
	9.01	9.42	0.40	0.71	3.73	10.53	88.9%	0.35	5.88	1.58
	9.06	8.89	0.37	0.66	3.27	9.94	83.9%	0.33	4.91	1.50
	9.11	7.61	0.37	0.61	2.85	8.60	72.5%	0.33	4.29	1.51
	9.16	7.13	0.35	0.56	2.48	8.05	67.9%	0.31	3.56	1.44
	9.21	6.74	0.32	0.51	2.13	7.58	64.0%	0.28	2.88	1.35
	9.26	6.40	0.28	0.46	1.81	7.17	60.5%	0.25	2.27	1.26
	9.31	6.02	0.25	0.41	1.49	6.73	56.8%	0.22	1.73	1.15
	9.36	5.65	0.21	0.36	1.20	6.29	53.1%	0.19	1.26	1.04
WL	9.41	5.27	0.18	0.31	0.93	5.85	49.4%	0.16	0.86	0.92
	9.46	4.80	0.14	0.26	0.68	5.30	44.7%	0.13	0.54	0.80
	9.51	4.09	0.11	0.21	0.45	4.48	37.8%	0.10	0.31	0.68
	9.56	2.89	0.10	0.16	0.28	3.15	26.6%	0.09	0.18	0.63
	9.61	2.27	0.07	0.11	0.16	2.42	20.5%	0.06	0.08	0.51
	9.66	1.55	0.04	0.06	0.06	1.60	13.5%	0.04	0.02	0.35
	9.71	0.62	0.01	0.01	0.01	0.62	5.3%	0.01	0.00	0.14

.37 .40

1 Ft/s = 1.13

A_D = 1.13

WP = .92

STREAM NAME: Newlin Creek
XS LOCATION: u/s of USFS Parking lot
XS NUMBER: 1

SUMMARY SHEET

MEASURED FLOW (Qm)=	0.78	cfs
CALCULATED FLOW (Qc)=	0.86	cfs
(Qm-Qc)/Qm * 100 =	-10.1	%
MEASURED WATERLINE (WLm)=	9.42	ft
CALCULATED WATERLINE (WLc)=	9.41	ft
(WLm-WLc)/WLm * 100 =	0.1	%
MAX MEASURED DEPTH (Dm)=	0.30	ft
MAX CALCULATED DEPTH (Dc)=	0.31	ft
(Dm-Dc)/Dm * 100	-3.7	%
MEAN VELOCITY=	0.92	ft/sec
MANNING'S N=	0.097	
SLOPE=	0.04235294	ft/ft
.4 * Qm =	0.3	cfs
2.5 * Qm=	2.0	cfs

RECOMMENDED INSTREAM FLOW:
==========

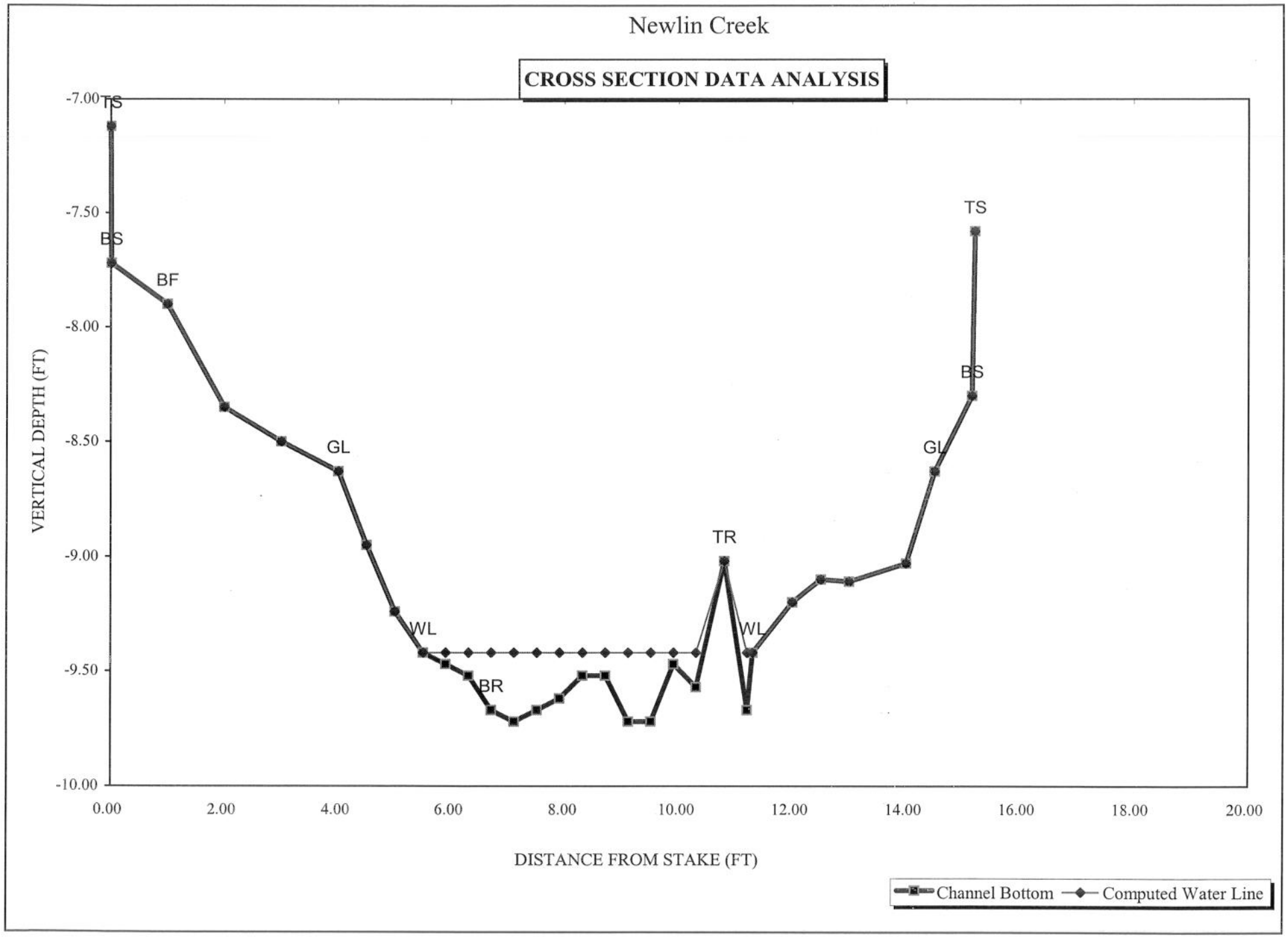
FLOW (CFS)	PERIOD
==========	========
_____	_____
_____	_____
_____	_____
_____	_____

RATIONALE FOR RECOMMENDATION:
==========

RECOMMENDATION BY: ..... AGENCY..... DATE:.....

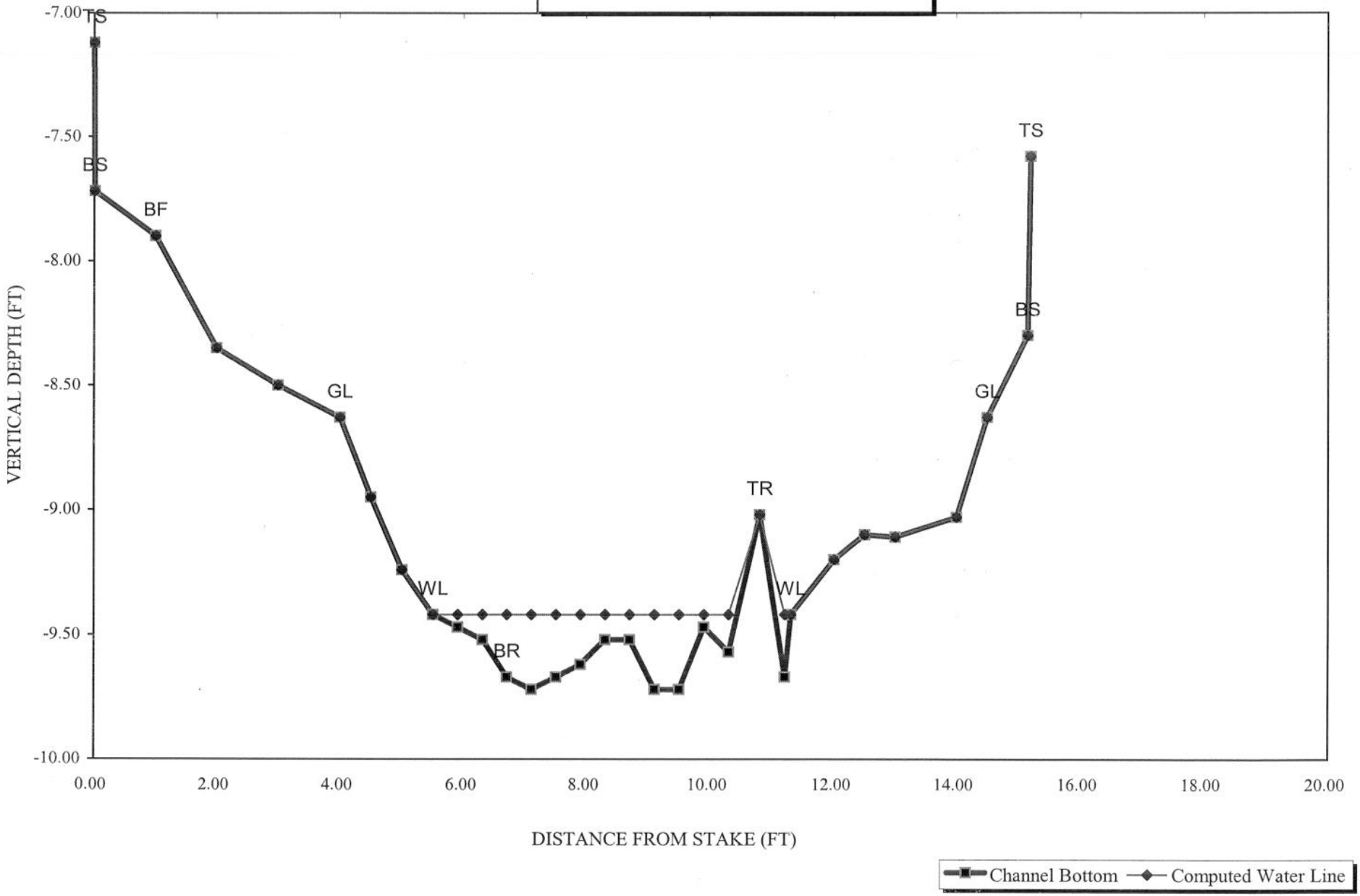
CWCB REVIEW BY: ..... DATE:.....

Newlin Creek



Newlin Creek

CROSS SECTION DATA ANALYSIS



Data Input & Proofing

STREAM NAME:	Newlin Creek
XS LOCATION:	u/s of USFS Parking lot
XS NUMBER:	1
DATE:	8/8/2006
OBSERVERS:	Uppendahl
1/4 SEC:	
SECTION:	
TWP:	
RANGE:	
PM:	
COUNTY:	
WATERSHED:	Arkansas River
DIVISION:	2
DOW CODE:	
USGS MAP:	
USFS MAP:	
	Level and Rod Survey
TAPE WT:	0.0106 lbs / ft
TENSION:	99999 lbs
SLOPE:	0.042352941 ft / ft

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

Total Data Points = 31

GL=1	FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	Tape to Water
	TS	0.00	7.12			0.00	0.00	0.00
	BS	0.01	7.72			0.00	0.00	0.00
	BF	1.00	7.90			0.00	0.00	0.00
		2.00	8.35			0.00	0.00	0.00
		3.00	8.50			0.00	0.00	0.00
1	GL	4.00	8.63			0.00	0.00	0.00
		4.50	8.95			0.00	0.00	0.00
		5.00	9.24			0.00	0.00	0.00
	WL	5.50	9.42	0.00	0.00	0.00	0.00	0.00
		5.90	9.47	0.05	0.39	0.02	0.01	9.42
		6.30	9.52	0.10	0.29	0.04	0.01	9.42
	BR	6.70	9.67	0.25	0.00	0.10	0.00	9.42
		7.10	9.72	0.30	1.91	0.12	0.23	9.42
		7.50	9.67	0.25	1.27	0.10	0.13	9.42
		7.90	9.62	0.20	0.44	0.08	0.04	9.42
		8.30	9.52	0.10	0.63	0.04	0.03	9.42
		8.70	9.52	0.10	0.39	0.04	0.02	9.42
		9.10	9.72	0.30	0.78	0.12	0.09	9.42
		9.50	9.72	0.30	1.42	0.12	0.17	9.42
		9.90	9.47	0.05	0.05	0.02	0.00	9.42
		10.30	9.57	0.15	0.94	0.07	0.06	9.42
	TR	10.80	9.02	0.00	0.00	0.00	0.00	0.00
		11.20	9.67	0.25	0.00	0.06	0.00	9.42
	WL	11.30	9.42	0.00	0.00	0.00	0.00	0.00
		12.00	9.20			0.00	0.00	0.00
		12.50	9.10			0.00	0.00	0.00
		13.00	9.11			0.00	0.00	0.00
		14.00	9.03			0.00	0.00	0.00
1	GL	14.50	8.63			0.00	0.00	0.00
	BS	15.15	8.30			0.00	0.00	0.00
	TS	15.20	7.58			0.00	0.00	0.00
					Totals	0.93	0.78	

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

12:00

LOCATION INFORMATION

STREAM NAME: Newlin Creek					CROSS-SECTION NO.:
CROSS-SECTION LOCATION:					
WP# 32 38 15' 59.4" 105 11 21.6					
DATE: 8/8/06	OBSERVERS: Uppendahl				
LEGAL DESCRIPTION	¼ SECTION:	SECTION:	TOWNSHIP: N/S	RANGE: E/W	PM:
COUNTY:	WATERSHED: Arkansas		WATER DIVISION: 2		DOW WATER CODE:
MAP(S):	USGS:				
	USFS:				

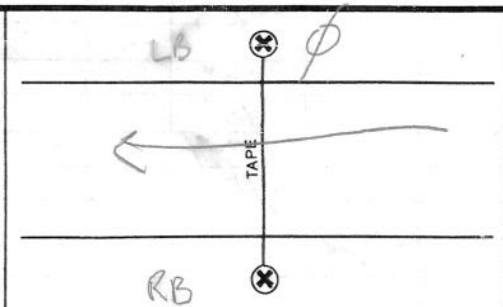
SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES) NO	METER TYPE: FLO-MATE			
METER NUMBER:	DATE RATED:	CALIB/SPIN: _____ sec	TAPE WEIGHT: _____ lbs/foot	TAPE TENSION: _____ lbs
CHANNEL BED MATERIAL SIZE RANGE:		PHOTOGRAPHS TAKEN: (YES)/NO	NUMBER OF PHOTOGRAPHS:	

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)	ROD READING (ft)
⊗ Tape @ Stake LB	0.0	
⊗ Tape @ Stake RB	0.0	
① WS @ Tape LB/RB	0.0	9.42/9.42
② WS Upstream	10.5'	8.96
③ WS Downstream	6.5'	9.68
SLOPE	17.0	

SKETCH



LEGEND:
Stake ⊗
Station ①
Photo ①
Direction of Flow

9.68
8.96
7.72

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/NO	DISTANCE ELECTROFISHED: _____ft	FISH CAUGHT: YES/NO	WATER CHEMISTRY SAMPLED: YES/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

COMMENTS

FORM #ISF FD 1-85

DISCHARGE/CROSS SECTION NOTES

STREAM NAME:	CROSS-SECTION NO.:	DATE: 8/8/06	SHEET ___ OF ___

BEGINNING OF MEASUREMENT	EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE)	LEFT / RIGHT (circle one)	Gage Reading: _____ ft	TIME: 12:00

Features (Stake (S), Grassline (G), Waterline (W), Rock (R))	Distance From Initial Point (ft)	Width (ft)	Total Vertical Depth From Tape/Inst (ft)	Water Depth (ft)	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical	Area (ft^2)	Discharge (cfs)
TS	0		7.12								
BS	0.01		7.72								
WBF	1.0		7.90								
	2.0		8.35								
	3.0		8.50								
GL	4.0		8.63								
	4.5		8.95								
	5.0		9.24								
WL	5.5		9.47	0				0			
	5.9			.05				.39			
	6.3			.10				.29			
BR	6.7			.25				0			
	7.1			.30				1.91			
	7.5			.25				1.27			
	7.9			.20				.44			
	8.3			.10				.63			
	8.7			.10				.39			
	9.1			.30				.78			
	9.5			.30				1.42			
	9.9			.05				.05			
	10.3			.15				.94			
TR	10.8		9.02	0				0			
	11.2			.25				0			
WL	11.3		9.42	0				0			
	12		9.20								
	12.5		9.10								
	13.0		9.11								
	14.0		9.03								
	14.5		8.63								
BS	15.15		8.30								
TS	15.20		7.98								
TOTALS:											.78

End of Measurement	Time:	Gage Reading: _____ ft	CALCULATIONS PERFORMED BY:	CALCULATIONS CHECKED BY:

STREAM NAME: Newlin Creek
XS LOCATION: u/s of USFS Parking lot
XS NUMBER: 1

Thorne-Zevenbergen D84 Correction Applied
Estimated D84 = 0.39

GL = lowest Grassline elevation corrected for sag
WL = Waterline corrected for variations in field measured water surface elevations and sag

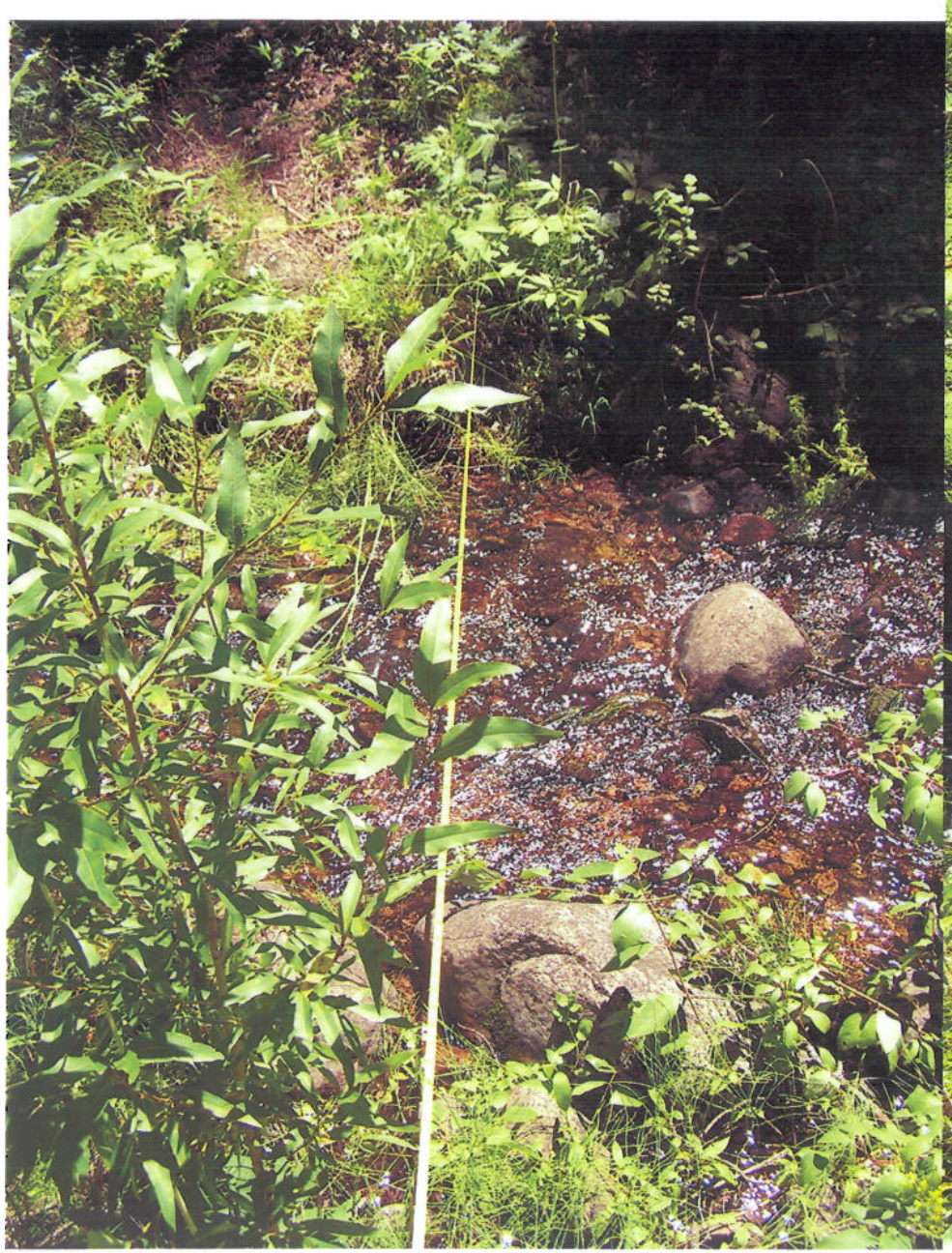
STAGING TABLE

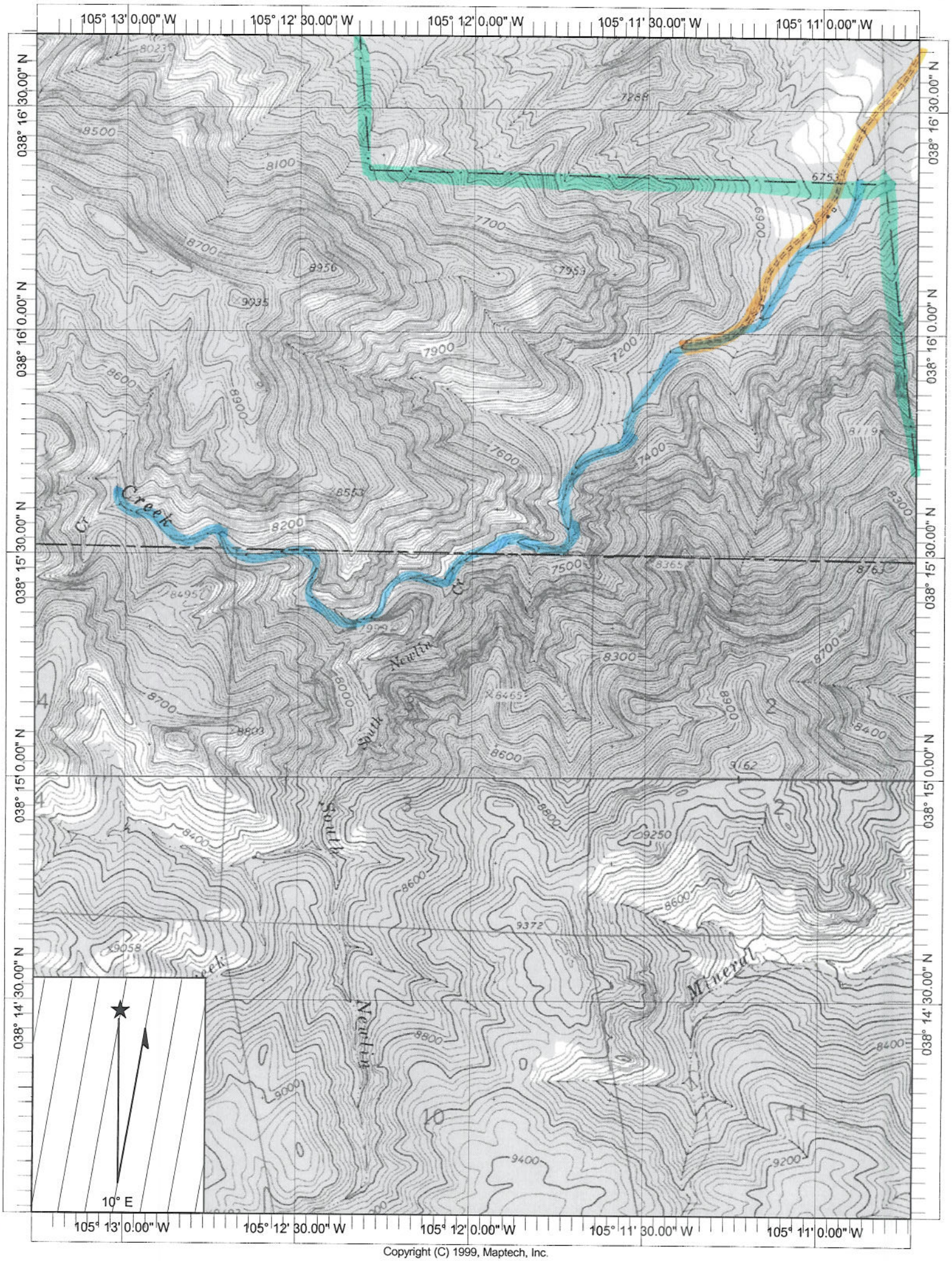
Velocity based on test of R/D84>1

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PERIM (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	8.63	10.50	0.72	1.09	7.51	11.85	100.0%	0.63	34.65	4.61
	8.66	10.42	0.69	1.06	7.21	11.75	99.2%	0.61	32.15	4.46
	8.71	10.28	0.65	1.01	6.69	11.58	97.7%	0.58	28.05	4.19
	8.76	10.14	0.61	0.96	6.18	11.41	96.2%	0.54	24.21	3.92
	8.81	10.00	0.57	0.91	5.67	11.23	94.8%	0.51	20.63	3.64
	8.86	9.86	0.53	0.86	5.18	11.06	93.3%	0.47	17.33	3.35
	8.91	9.72	0.48	0.81	4.69	10.89	91.9%	0.43	14.30	3.05
	8.96	9.57	0.44	0.76	4.21	10.71	90.4%	0.39	15.14	3.60
	9.01	9.42	0.40	0.71	3.73	10.53	88.9%	0.35	11.22	3.01
	9.06	8.89	0.37	0.66	3.27	9.94	83.9%	0.33	8.77	2.68
	9.11	7.61	0.37	0.61	2.85	8.60	72.5%	0.33	8.00	2.81
	9.16	7.13	0.35	0.56	2.48	8.05	67.9%	0.31	6.22	2.51
	9.21	6.74	0.32	0.51	2.13	7.58	64.0%	0.28	4.62	2.16
	9.26	6.40	0.28	0.46	1.81	7.17	60.5%	0.25	3.27	1.81
	9.31	6.02	0.25	0.41	1.49	6.73	56.8%	0.22	2.23	1.49
	9.36	5.65	0.21	0.36	1.20	6.29	53.1%	0.19	1.44	1.20
WL	9.41	5.27	0.18	0.31	0.93	5.85	49.4%	0.16	0.86	0.92
	9.46	4.80	0.14	0.26	0.68	5.30	44.7%	0.13	0.47	0.70
	9.51	4.09	0.11	0.21	0.45	4.48	37.8%	0.10	0.24	0.52
	9.56	2.89	0.10	0.16	0.28	3.15	26.6%	0.09	0.12	0.42
	9.61	2.27	0.07	0.11	0.16	2.42	20.5%	0.06	0.04	0.27
	9.66	1.55	0.04	0.06	0.06	1.60	13.5%	0.04	0.01	0.15
	9.71	0.62	0.01	0.01	0.01	0.62	5.3%	0.01	0.00	0.05

Newlin Creek

u/s of USFS Parking Lot

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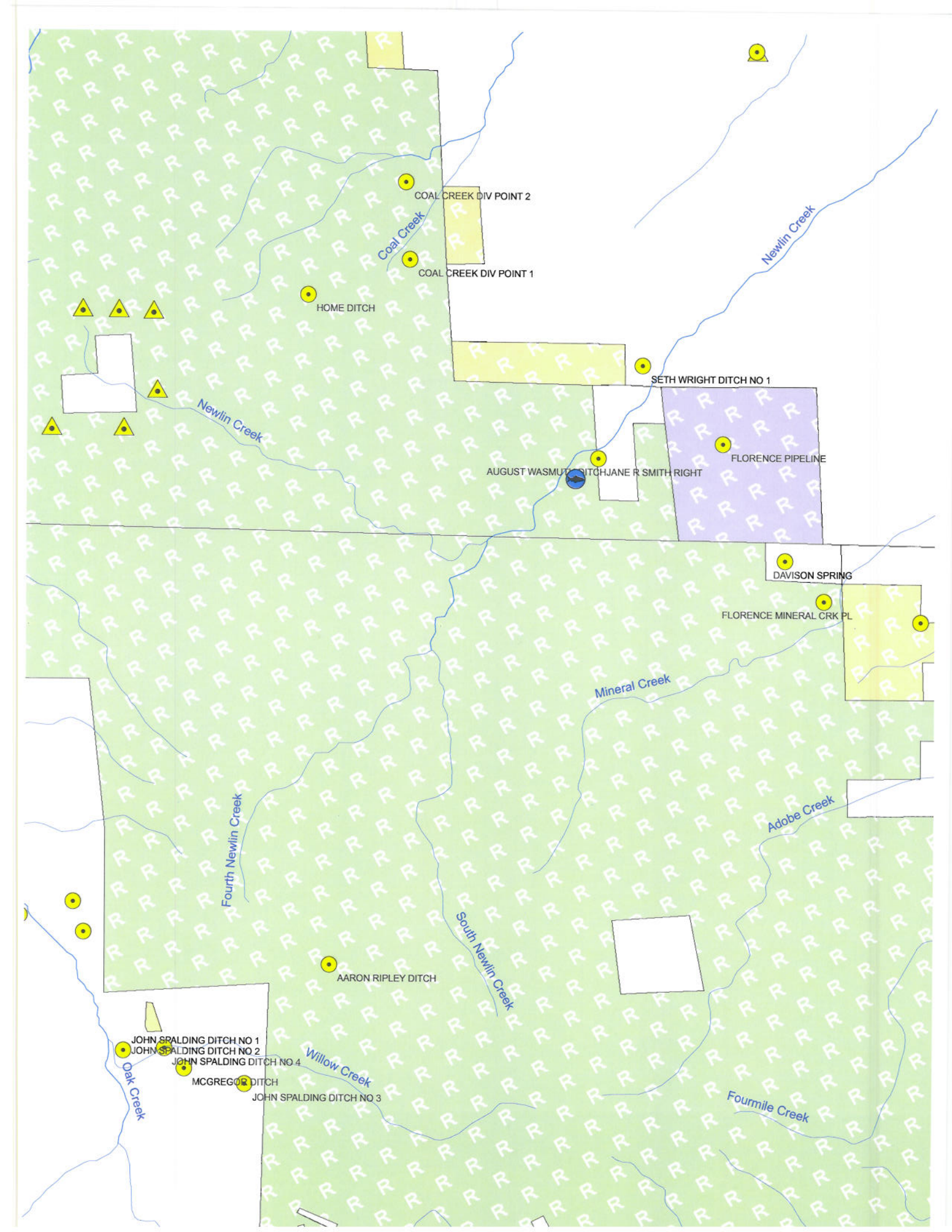
105° 12' 30.00" W
105° 12' 0.00" W
105° 11' 30.00" W
105° 11' 0.00" W
038° 16' 30.00" N
038° 16' 0.00" N
038° 15' 30.00" N
038° 15' 0.00" N
038° 14' 30.00" N
Creek
Cr
Cr
North
South
South
North
Mineral
10° E
Copyright (C) 1999, Maptech, Inc.


COAL CREEK DIV POINT 2
COAL CREEK DIV POINT 1
Coal Creek
Newlin Creek
HOME DITCH
SETH WRIGHT DITCH NO 1
Newlin Creek
FLORENCE PIPELINE
AUGUST WASMUTH DITCHJANE R SMITH RIGHT
DAVISON SPRING
FLORENCE MINERAL CRK PL
Mineral Creek
Fourth Newlin Creek
Adobe Creek
South Newlin Creek
AARON RIPLEY DITCH
JOHN SPALDING DITCH NO 1
JOHN SPALDING DITCH NO 2
JOHN SPALDING DITCH NO 4
MCGREGOR DITCH
JOHN SPALDING DITCH NO 3
Willow Creek
Oak Creek
Fourmile Creek

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*******************************************************
*         COLORADO WATER CONSERVATION BOARD           *
*     INSTREAM FLOW / NATURAL LAKE LEVEL PROGRAM      *
*       STREAM CROSS-SECTION AND FLOW ANALYSIS        *
*******************************************************

LOCATION INFORMATION
====================

STREAM NAME:        NEWLIN CREEK
XS LOCATION:        87B
XS NUMBER:          1

DATE:               9/29/97
OBSERVERS:          GOODALL CHAVEZ PALLEGER

1/4 SEC:            NW
SECTION:            35
TWP:                T20S
RANGE:              R70W
PM:                 6TH

COUNTY:             FREEMONT
WATERSHED:          ARKANSAS
DIVISION:           2
DOW CODE:

USGS MAP:           ROCKVALE
USFS MAP:           SAN ISABEL NF

SUPPLEMENTAL DATA                    *** NOTE ***
=================              Leave TAPE WT and TENSION
                             at defaults for data collected
TAPE WT:              0.0001  with a survey level and rod
TENSION:               99999

CHANNEL PROFILE DATA
====================
SLOPE:                0.0335


INPUT DATA CHECKED BY: .....................................DATE.....................

ASSIGNED TO: ...............................................DATE.....................
```

PROOF SHEET

LOCATION INFORMATION

STREAM NAME: NEWLIN CREEK
XS LOCATION: 87B
XS NUMBER: 1

DATE: 9/29/97
OBSERVERS: GOODALL CHAVEZ PALLEGER

1/4 SEC: NW
SECTION: 35
TWP: T20S
RANGE: R70W
PM: 6TH

COUNTY: FREEMONT
WATERSHED: ARKANSAS
DIVISION: 2
DOW CODE:

USGS MAP: ROCKVALE
USFS MAP: SAN ISABEL NF

SUPPLEMENTAL DATA

TAPE WT: 0.0001
TENSION: 99999

CHANNEL PROFILE DATA

SLOPE: 0.0335

CHECKED BY:.....DATE.....

ASSIGNED TO: .....DATE.....

INPUT DATA # DATA POINTS= 31

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	A	Q	TAPE TO WATER
S	0.00	6.29	0.00	0.00	0.00	0.00	0.00
	1.00	6.75	0.00	0.00	0.00	0.00	0.00
1 BF	1.80	7.02	0.00	0.00	0.00	0.00	0.00
	2.20	7.31	0.00	0.00	0.00	0.00	0.00
	3.00	7.37	0.00	0.00	0.00	0.00	0.00
WL	3.20	7.75	0.00	0.00	0.00	0.00	0.00
	3.30	7.91	0.15	0.00	0.03	0.00	7.76
	3.60	8.01	0.05	0.40	0.02	0.01	7.96
	3.90	8.04	0.20	0.22	0.06	0.01	7.84
	4.20	8.13	0.30	0.30	0.09	0.03	7.83
	4.50	8.13	0.30	0.10	0.09	0.01	7.83
	4.80	8.16	0.40	0.50	0.10	0.05	7.76
	5.00	8.16	0.35	0.95	0.07	0.07	7.81
	5.20	8.07	0.30	0.50	0.06	0.03	7.77
	5.40	8.12	0.30	0.40	0.06	0.02	7.82
	5.60	8.09	0.30	1.10	0.06	0.07	7.79
	5.80	8.04	0.30	0.90	0.06	0.05	7.74
	6.00	8.12	0.35	0.07	0.07	0.00	7.77
	6.20	8.13	0.30	0.00	0.09	0.00	7.83
	6.60	8.12	0.30	0.00	0.11	0.00	7.82
	6.90	7.61	0.00	0.00	0.00	0.00	0.00
	7.40	7.58	0.00	0.00	0.00	0.00	0.00
WL	8.00	7.70	0.00	0.00	0.00	0.00	0.00
	8.40	7.51	0.00	0.00	0.00	0.00	0.00
	9.00	7.35	0.00	0.00	0.00	0.00	0.00
	9.60	7.30	0.00	0.00	0.00	0.00	0.00
1 BF	10.00	7.02	0.00	0.00	0.00	0.00	0.00
	10.20	6.89	0.00	0.00	0.00	0.00	0.00
	11.00	6.78	0.00	0.00	0.00	0.00	0.00
	12.00	6.84	0.00	0.00	0.00	0.00	0.00
S	13.00	6.50	0.00	0.00	0.00	0.00	0.00
TOTALS					0.96	0.35	

STREAM NAME: NEWLIN CREEK
XS LOCATION: 87B
XS NUMBER: 1

INPUT DATA # DATA POINTS= 31

VALUES COMPUTED FROM RAW FIELD DATA

FEATURE	DIST	VERT DEPTH	WATER DEPTH	VEL	WETTED PERIM.	WATER DEPTH	AREA (Am)	Q (Qm)	% Q CELL
S	0.00	6.29	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	1.00	6.75	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
1 BF	1.80	7.02	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	2.20	7.31	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	3.00	7.37	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
WL	3.20	7.75	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	3.30	7.91	0.15	0.00	0.19	0.15	0.03	0.00	0.0%
	3.60	8.01	0.05	0.40	0.32	0.05	0.02	0.01	1.7%
	3.90	8.04	0.20	0.22	0.30	0.20	0.06	0.01	3.8%
	4.20	8.13	0.30	0.30	0.31	0.30	0.09	0.03	7.7%
	4.50	8.13	0.30	0.10	0.30	0.30	0.09	0.01	2.6%
	4.80	8.16	0.40	0.50	0.30	0.40	0.10	0.05	14.3%
	5.00	8.16	0.35	0.95	0.20	0.35	0.07	0.07	19.0%
	5.20	8.07	0.30	0.50	0.22	0.30	0.06	0.03	8.6%
	5.40	8.12	0.30	0.40	0.21	0.30	0.06	0.02	6.8%
	5.60	8.09	0.30	1.10	0.20	0.30	0.06	0.07	18.8%
	5.80	8.04	0.30	0.90	0.21	0.30	0.06	0.05	15.4%
	6.00	8.12	0.35	0.07	0.22	0.35	0.07	0.00	1.4%
	6.20	8.13	0.30	0.00	0.20	0.30	0.09	0.00	0.0%
	6.60	8.12	0.30	0.00	0.40	0.30	0.11	0.00	0.0%
	6.90	7.61	0.00	0.00	0.59	0.00	0.00	0.00	0.0%
	7.40	7.58	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
WL	8.00	7.70	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	8.40	7.51	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	9.00	7.35	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	9.60	7.30	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
1 BF	10.00	7.02	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	10.20	6.89	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	11.00	6.78	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
	12.00	6.84	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
S	13.00	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.0%
TOTALS ----------------------					4.16	0.4 (Max.)	0.96	0.35	100.0%

Manning's n = 0.2801

STREAM NAME: NEWLIN CREEK
XS LOCATION: 87B
XS NUMBER: 1

WATER LINE COMPARISON TABLE

WATER LINE	MEAS AREA	COMP AREA	AREA ERROR
7.43	0.96	2.67	178.3%
7.45	0.96	2.56	166.6%
7.47	0.96	2.45	155.0%
7.49	0.96	2.34	143.6%
7.51	0.96	2.23	132.5%
7.53	0.96	2.13	121.4%
7.55	0.96	2.02	110.5%
7.57	0.96	1.92	99.7%
7.59	0.96	1.82	89.1%
7.61	0.96	1.72	79.4%
7.63	0.96	1.64	70.3%
7.64	0.96	1.59	66.0%
7.65	0.96	1.55	61.7%
7.66	0.96	1.51	57.5%
7.67	0.96	1.47	53.3%
7.68	0.96	1.43	49.3%
7.69	0.96	1.40	45.3%
7.70	0.96	1.36	41.5%
7.71	0.96	1.32	37.6%
7.72	0.96	1.28	33.8%
7.73	0.96	1.25	30.0%
7.75	0.96	1.18	22.5%
7.77	0.96	1.10	15.0%
7.79	0.96	1.03	7.5%
7.81	0.96	0.96	0.1%
7.83	0.96	0.89	-7.3%
7.85	0.96	0.82	-14.6%
7.87	0.96	0.75	-21.8%
7.89	0.96	0.68	-29.0%
7.91	0.96	0.61	-36.2%
7.93	0.96	0.54	-43.3%

WATERLINE AT ZERO
AREA ERROR = 7.810

STREAM NAME: NEWLIN CREEK
XS LOCATION: 87B
XS NUMBER: 1

STAGING TABLE

GL = lowest Grassline elevation corrected for sag
WL = Waterline corrected for variations in field measured water surface elevations and sag

	DIST TO WATER (FT)	TOP WIDTH (FT)	AVG. DEPTH (FT)	MAX. DEPTH (FT)	AREA (SQ FT)	WETTED PERIM. (FT)	PERCENT WET PER (%)	HYDR RADIUS (FT)	FLOW (CFS)	AVG. VELOCITY (FT/SEC)
GL	7.02	8.20	0.69	1.14	5.67	9.16	100.0%	0.62	4.00	0.71
	7.06	8.09	0.66	1.10	5.34	9.02	98.5%	0.59	3.66	0.69
	7.11	7.95	0.62	1.05	4.94	8.84	96.6%	0.56	3.26	0.66
	7.16	7.81	0.58	1.00	4.55	8.67	94.7%	0.52	2.87	0.63
	7.21	7.67	0.54	0.95	4.16	8.50	92.8%	0.49	2.51	0.60
	7.26	7.53	0.50	0.90	3.78	8.33	91.0%	0.45	2.17	0.57
	7.31	7.27	0.47	0.85	3.41	8.05	87.9%	0.42	1.87	0.55
	7.36	6.09	0.51	0.80	3.08	6.86	74.9%	0.45	1.75	0.57
	7.41	5.75	0.48	0.75	2.78	6.49	70.9%	0.43	1.54	0.55
	7.46	5.54	0.45	0.70	2.50	6.24	68.1%	0.40	1.32	0.53
	7.51	5.33	0.42	0.65	2.23	5.99	65.4%	0.37	1.12	0.50
	7.56	5.19	0.38	0.60	1.97	5.82	63.5%	0.34	0.93	0.47
	7.61	4.41	0.39	0.55	1.72	4.99	54.5%	0.35	0.82	0.48
	7.66	4.00	0.38	0.50	1.51	4.50	49.2%	0.34	0.71	0.47
	7.71	3.66	0.36	0.45	1.32	4.09	44.7%	0.32	0.60	0.46
	7.76	3.61	0.32	0.40	1.14	3.98	43.4%	0.29	0.48	0.42
WL	7.81	3.54	0.27	0.35	0.96	3.86	42.2%	0.25	0.37	0.38
	7.86	3.48	0.23	0.30	0.78	3.74	40.9%	0.21	0.27	0.34
	7.91	3.42	0.18	0.25	0.61	3.62	39.6%	0.17	0.18	0.30
	7.96	3.24	0.14	0.20	0.44	3.41	37.2%	0.13	0.11	0.25
	8.01	3.06	0.09	0.15	0.29	3.19	34.9%	0.09	0.06	0.20
	8.06	2.54	0.06	0.10	0.15	2.63	28.7%	0.06	0.02	0.14
	8.11	1.71	0.02	0.05	0.04	1.74	19.0%	0.02	0.00	0.08

1.75

0.75

D = 0.22
V = X
% WP = 0.73

STREAM NAME: NEWLIN CREEK
XS LOCATION: 87B
XS NUMBER: 1

SUMMARY SHEET

MEASURED FLOW (Qm)=	0.35 cfs	RECOMMENDED INSTREAM FLOW:
CALCULATED FLOW (Qc)=	0.37 cfs	==========
(Qm-Qc)/Qm * 100 =	-5.2 %	
		FLOW (CFS) PERIOD
MEASURED WATERLINE (WLm)=	7.68 ft	========== ======
CALCULATED WATERLINE (WLc)=	7.81 ft	
(WLm-WLc)/WLm * 100 =	-1.7 %	_____ _____
MAX MEASURED DEPTH (Dm)=	0.40 ft	_____ _____
MAX CALCULATED DEPTH (Dc)=	0.35 ft	
(Dm-Dc)/Dm * 100	12.6 %	_____ _____
MEAN VELOCITY=	0.38 ft/sec	_____ _____
MANNING'S N=	0.280	
SLOPE=	0.0335 ft/ft	
.4 * Qm =	0.1 cfs	
2.5 * Qm=	0.9 cfs	

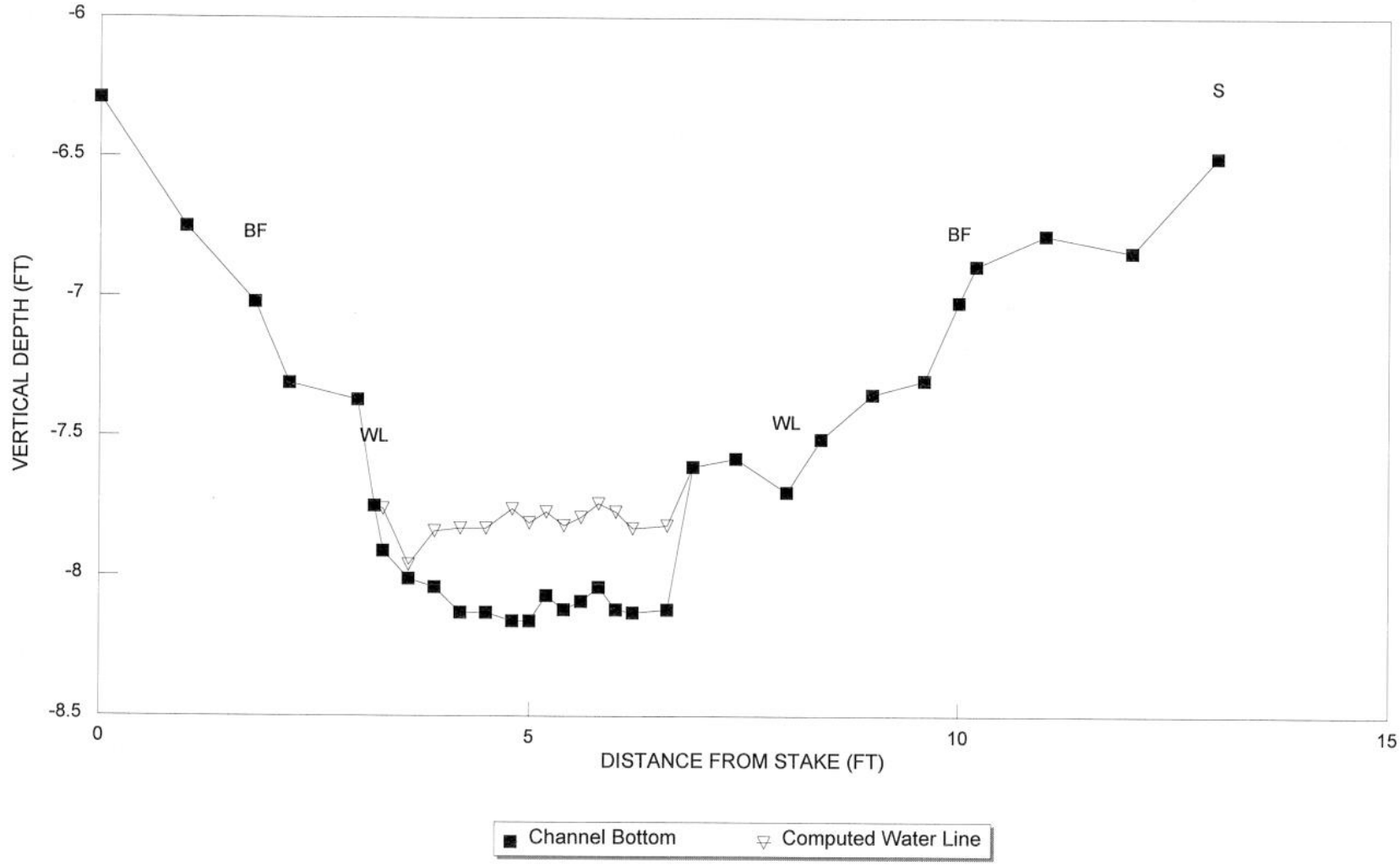
RATIONALE FOR RECOMMENDATION:
==========

RECOMMENDATION BY: ..... AGENCY..... DATE:.....

CWCB REVIEW BY: ..... DATE:.....

NEWLIN CREEK

CROSS SECTION DATA ANALYSIS



Jay
We measured Newlin Cr. earlier this summer but could not find data. Measured it again 9/29.
Here's a copy of the R2 cross form. Hopefully the FAX made it & was legible.
call if you have questions
LEE CHAVEZ 719-545-8737

Lee

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

PT2 B1

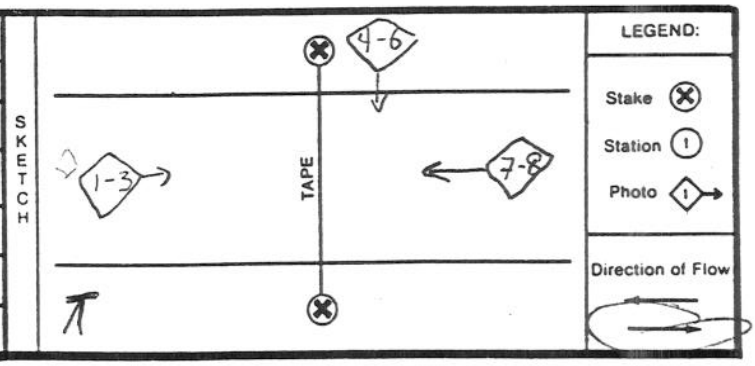
STREAM NAME: Newlin Creek						CROSS-SECTION NO.:	
CROSS-SECTION LOCATION: approx. 200' upstream of pond for Florence water intake @ trail xing to Florence Mtn. Park							
DATE: 9-29-97	OBSERVERS: L. CHAVEZ, P. Gallagher, H. Goodall						
LEGAL DESCRIPTION	¼ SECTION: NW	SECTION: 35	TOWNSHIP: 20 N(S)	RANGE: 70 E(W)	PM: 6th		
COUNTY: Fremont	WATERSHED: Newlin Cr.	WATER DIVISION: Arkansas	DOW WATER CODE: 30514				
MAP(S): USGS: Rockvale	USFS:						

SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES)/NO	METER TYPE: Marsh McBirney				
METER NUMBER:	DATE RATED:	CALIB/SPIN: 9.88 sec	TAPE WEIGHT: N/A lbs/foot	TAPE TENSION: N/A lbs	
CHANNEL BED MATERIAL SIZE RANGE: Some boulders Gravel, Cobble, Deep bedrock Pools	PHOTOGRAPHS TAKEN (YES)/NO	NUMBER OF PHOTOGRAPHS: 8			

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)		ROD READING (ft)		
⊗ Tape @ Stake LB	0.0				
⊗ Tape @ Stake RB	0.0				
① WS @ Tape LB/RB	0.0				
② WS Upstream	22.5'	BF	Thal 7.34	WS 6.97	BF 6.25
③ WS Downstream	5.0'		Thal 8.14	WS 7.89	BF 7.08
SLOPE	WS Slope .92/27.5 = 0.0335				



AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/NO	DISTANCE ELECTROFISHED: ____ft	FISH CAUGHT: YES/NO	WATER CHEMISTRY SAMPLED: YES/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL
Note: Potential greenback reintroduction site																	

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

COMMENTS

Distances

Upstream	Downstream	2x Bank Full	stations
WS	WS	Thal: 8.16	Left : Right
Thalweg	Thalweg	BF = 7.02 / 1.14	: 7/8.0
Bank Full	Bank Full	2xBF = 5.98	:

DISCHARGE/CROSS SECTION NOTES

STREAM NAME:	CROSS-SECTION NO.:	DATE:	SHEET
Newlin Creek	1	9-29-97	1 OF 1

BEGINNING OF MEASUREMENT | EDGE OF WATER LOOKING DOWNSTREAM: (0.0 AT STAKE) (LEFT) / RIGHT | Gage Reading: NA ft | TIME: 1322

Features: Stake (S) Grassline (G) Waterline (W) Rock (R) LEW, REW LBF, RBF	Distance From Initial Point (ft) ✓	Width (ft)	Total Vertical Depth From Tape/Inst (ft) Rods	Water Depth (ft) ✓	Depth of Obser-vation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical ✓	Area (ft^2)	Discharge (cfs)
					.6						
	0-6.0		5.14								
Left Bank	0.0		6.29								
	1.0		6.75								
LBF	1.8		7.02								
	2.2		7.31								
	3.0		7.37								
LEW	3.3	.15	7.91	.15	.6				0	0.02	0
	3.6	.30	8.01	.05	|				.4	.02	.01
	3.9	.30	8.04	.2	|				0.22	.06	.01
	4.2	.30	8.13	.3	|				0.3	.09	.03
	4.5	.30	8.13	.3	|				0.1	.09	.01
	4.8	.25	8.16	.4	|				0.5	.10	.05
	5.0	.20	8.16	.35	|				0.95	.07	.07
	5.2	.20	8.07	.3	|				0.5	.06	.03
	5.4	.20	8.12	.3	|				0.4	.06	.02
	5.6	.20	8.09	.3	|				1.1	.06	.07
	5.8	.20	8.04	.3	|				0.9	.06	.05
	6.0	.20	8.12	.35	|				0.07	.07	.005
	6.2	.30	8.13	.3	|				0.0	.09	0
	6.6	.35	8.12	.3	|				0.0	.11	0
Rock	6.9	.40	7.61	0	|						
Rock	7.4	.55	7.58	0	|						
REW	8.0	.30	7.70	0	▽						
	8.4		7.51								
	9.0		7.35								
	9.6		7.30								
RBF	10.0		7.02								
	10.2		6.89								
	11.0		6.78								
	12.0		6.84								
	13.0		6.50								
(S) Top Pin Right	14.2		6.18								
	22.0		4.83								
		4.70									
LEFT SIDE OF CHANNEL 6' BEHIND 0.0											
TOTALS:	14.2	4.7								.96	.35

End of Measurement Time: 1430 | NA | CALCULATIONS PERFORMED BY: | CALCULATIONS CHECKED BY

COLORADO WATER CONSERVATION BOARD

FIELD DATA FOR INSTREAM FLOW DETERMINATIONS

COLORADO DIVISION OF WILDLIFE

LOCATION INFORMATION

P72 B1

STREAM NAME: Newlin Creek						CROSS-SECTION NO:
CROSS-SECTION LOCATION: approx. 200' upstream of pond for Florissant water intake @ trail xing to Florissant Mtn. Park						
DATE: 9-29-97	OBSERVERS: L. CHAVEZ, P. Gallagher, H. Goodall					
LEGAL DESCRIPTION	% SECTION: NW	SECTION: 35	TOWNSHIP: 20 N(S)	RANGE: 70 E(W)	PM: 6th	
COUNTY: Fremont	WATERSHED: Newlin Cr. ←	WATER DIVISION: Arkansas 2		DOW WATER CODE: 30514		
MAP(S): USGS: Rockvale						
USFS:						

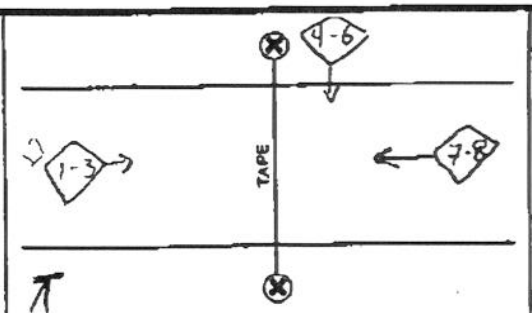
SUPPLEMENTAL DATA

SAG TAPE SECTION SAME AS DISCHARGE SECTION: (YES) NO	METER TYPE: Marsh McBirney			
METER NUMBER:	DATE RATED:	CALIB/SPIN: 9.88 sec	TAPE WEIGHT: NA lbs/foot	TAPE TENSION: NA lbs
CHANNEL BED MATERIAL SIZE RANGE: Gravel, Cobble, Deep bedrock Pools	PHOTOGRAPHS TAKEN: (YES)/NO	NUMBER OF PHOTOGRAPHS: 8		

CHANNEL PROFILE DATA

STATION	DISTANCE FROM TAPE (ft)		ROD READING (ft)		
⊗ Tape @ Stake LB	0.0				
⊗ Tape @ Stake RB	0.0				
① WS @ Tape LB/RB	0.0				
② WS Upstream	22.5'	DI	Thal 7.34	WS 6.97	BF 6.25
③ WS Downstream	5.0'		Thal 8.18	WS 7.89	BF 7.08
SLOPE	WS slope .92/27.5 = 0.0335				

SKETCH



LEGEND:
- Stake ⊗
- Station ①
- Photo ①→
- Direction of Flow

AQUATIC SAMPLING SUMMARY

STREAM ELECTROFISHED: YES/NO	DISTANCE ELECTROFISHED: ____ ft	FISH CAUGHT: YES/NO	WATER CHEMISTRY SAMPLED: YES/NO

LENGTH - FREQUENCY DISTRIBUTION BY ONE-INCH SIZE GROUPS (1.0-1.9, 2.0-2.9, ETC.)

SPECIES (FILL IN)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15	TOTAL
Note: Potential greenback reintroduction site																	

AQUATIC INSECTS IN STREAM SECTION BY COMMON OR SCIENTIFIC ORDER NAME:

COMMENTS

Distances

Upstream	Downstream	2x Bank Full	stations
WS	WS	Thal: 8.16	Left / right
Thalweg	Thalweg	BF = 7.04 / 7.14	/ 3/8.0
Bank Full	Bank Full	2xBF = 5.98	

42 1/31

DISCHARGE/CROSS SECTION NOTES

STREAM NAME: New Jin Creek	CROSS-SECTION NO.: 1	DATE: 9-29-97	SHEET 1 OF 1
BEGINNING OF MEASUREMENT	EDGE OF WATER LOOKING DOWNSTREAM: (LEFT) / RIGHT (0.0 AT STAKE)	Gage Reading: NA ft	TIME: 1322

Features (Stake (S), Grassline (G), Waterline (W), Rock (R))	Distance From Initial Point (ft) ✓	Width (ft)	Total Vertical Depth From Tape/Inst (ft) (Rod)	Water Depth (ft) ✓	Depth of Observation (ft)	Revolutions	Time (sec)	Velocity (ft/sec) At Point	Velocity (ft/sec) Mean in Vertical ✓	Area (ft^2)	Discharge (cfs)
LEW, REW LBF, RBF					.6						
	0.60		5.14								
Left Bank	0.0		6.29								
	1.0		6.75								
LBF	1.8		7.02								
	2.2		7.31								
	3.0		7.37								
LEW	3.3	.15	7.91	.15	.6				0	0.02	0
	3.6	.30	8.01	.05					.4	.02	.01
	3.9	.30	8.04	.2					0.22	.06	.01
	4.2	.30	8.13	.3					0.3	.09	.03
	4.5	.30	8.13	.3					0.1	.09	.01
	4.8	.25	8.16	.4					0.5	.10	.05
	5.0	.20	8.16	.35					0.95	.07	.07
	5.2	.20	8.07	.3					0.5	.06	.03
	5.4	.20	8.12	.3					0.4	.06	.02
	5.6	.20	8.09	.3					1.1	.06	.07
	5.8	.20	8.09	.3					0.9	.06	.05
	6.0	.20	8.12	.35					0.07	.07	.005
	6.2	.30	8.13	.3					0.0	.09	0
	6.6	.35	8.12	.3					0.0	.11	0
Rock	6.9	.40	7.61	0							
Rock	7.4	.55	7.58	0							
REW	8.0	.30	7.70	0							
	8.4		7.51								
	9.0		7.35								
	9.6		7.30								
RBF	10.0		7.02								
	10.2		6.89								
	11.0		6.78								
	12.0		6.84								
	13.0		6.50								
(S) Top Pin Right	14.2		6.18								
	22.0		4.83								
		4.70									
LEFT BANK UP CHANNEL 6' BEHIND 0.0											
TOTALS:	14.2	4.7								.96	.35

End of Measurement	Time: 1420	Gage Reading: NA ft	CALCULATIONS PERFORMED BY: L. CHAVEZ	CALCULATIONS CHECKED BY

Pike and San Isabel National Forests
Cimarron and Comanche
National Grasslands
Supervisor's Office

Pike & San Isabel National Forests
Cimarron & Comanche National Grasslands
Supervisor's Office
1920 Valley Drive
Pueblo, CO 81008
Voice #: (719) 545-8737
FAX #: (719) 543-8926

DATE: 9/30/97

TIME: 0930

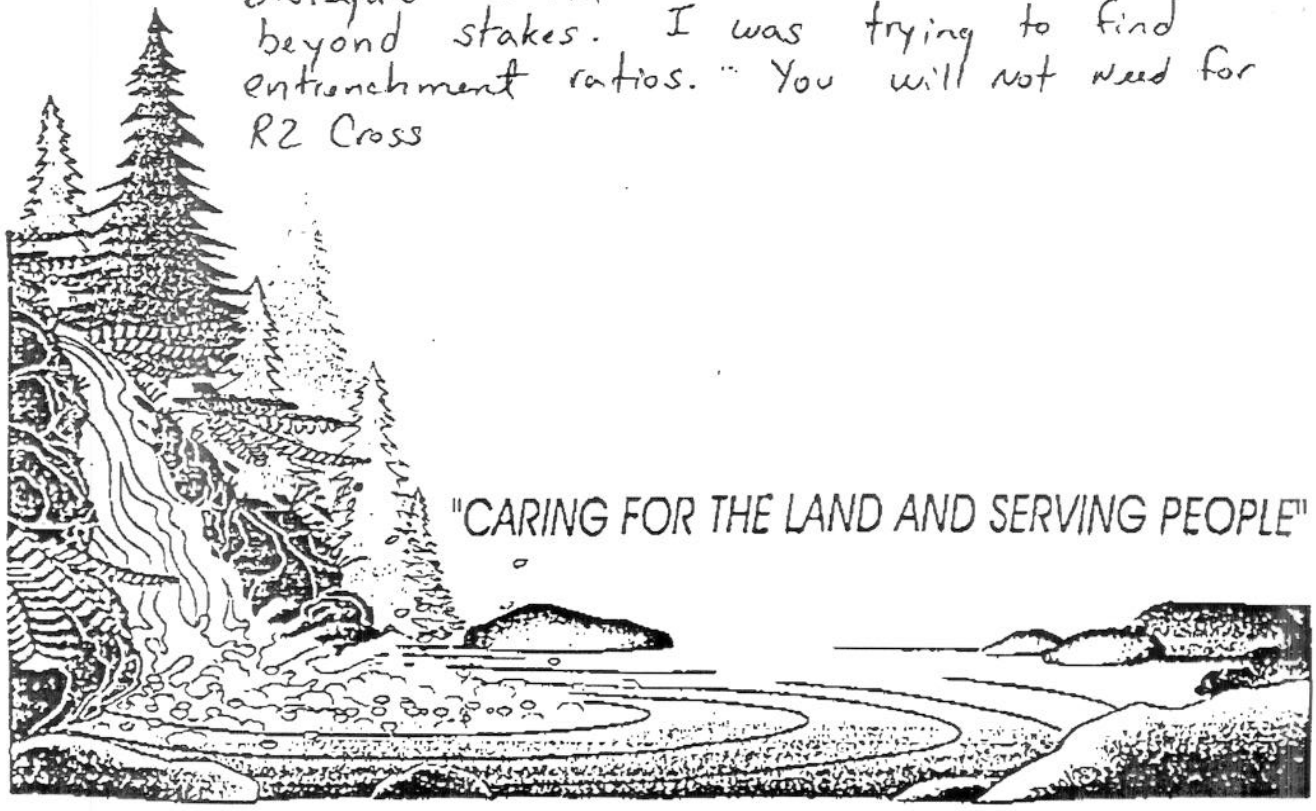
NUMBER OF PAGES: 3
(Including Cover Page)

TO: Jay Skinner FAX#: 303-291-7456

ATTENTION:

MESSAGE / SPECIAL INSTRUCTIONS:

Newlin Creek R2 Cross Form
Photos will be sent when processed
Disregard 2 extra distances and elevations beyond stakes. I was trying to find entrenchment ratios. You will not need for R2 Cross



Appendix - C

Water Availability Analysis

Monthly Climatic Data for FLORENCE for years 1931 - 1950
Station - 52955 Latitude - 3823 Longitude - 10508 Elevation - 5190

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1931	M	M	M	M	M	28	12	22	85	106	91	T	
1932	35	T	42	68	15	142	216	283	96	94	17	46	10.54
1933	T	20	35	284	213	164	420	299	110	T	15	121	16.81
1934	T	88	18	46	51	116	52	174	19	0	63	37	6.64
1935	5	10	4	89	384	39	148	294	220	120	4	0	13.17
1936	23	0	3	27	211	45	232	261	163	90	11	12	10.78
1937	13	103	70	29	110	M	M	M	M	M	M	M	
1939	132	63	108	79	167	18	72	127	50	1	25	16	8.58
1940	M	M	M	119	232	90	128	222	259	26	60	65	
1941	17	41	159	155	195	68	239	204	124	260	10	43	15.15
1942	66	55	125	758	105	197	66	302	M	M	M	M	
1947	M	M	M	139	359	255	328	190	36	98	48	47	
1948	M	M	M	M	M	M	M	273	19	12	20	38	
1949	44	51	124	94	402	476	197	98	24	146	18	0	16.74
1950	35	23	27	36	89	141	186	13	M	M	M	M	
Ave	0.34	0.41	0.65	1.48	1.95	1.37	1.77	1.97	1.00	0.79	0.32	0.35	12.30
Max	1.32	1.03	1.59	7.58	4.02	4.76	4.20	3.02	2.59	2.60	0.91	1.21	16.81
Year	1939	1937	1941	1942	1949	1949	1933	1942	1940	1941	1931	1933	1933
Min	0.00	0.00	0.03	0.27	0.15	0.18	0.12	0.13	0.19	0.00	0.04	0.00	6.64
Year	1934+	1936+	1936	1936	1932	1939	1931	1950	1948+	1934+	1935	1949+	1934
Count	11	11	11	13	13	13	13	14	12	12	12	12	8

Monthly Climatic Data for WESTCREEK for years 1948 - 1951
Station - 58939 Latitude - 3908 Longitude - 10505 Elevation - 7800

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total monthly precipitation.													
1948	M	M	M	M	M	M	M	97	63	6	37	19	
1949	36	30	146	177	283	241	457	129	67	54	13	4	16.37
1950	37	49	34	179	168	150	331	145	44	9	54	5	12.05
1951	50	50	106	163	99	134	247	154	36	M	M	M	
Ave	0.41	0.43	0.95	1.73	1.83	1.75	3.45	1.31	0.53	0.23	0.35	0.09	14.21
Max	0.50	0.50	1.46	1.79	2.83	2.41	4.57	1.54	0.67	0.54	0.54	0.19	16.37
Year	1951	1951	1949	1950	1949	1949	1949	1951	1949	1949	1950	1948	1949
Min	0.36	0.30	0.34	1.63	0.99	1.34	2.47	0.97	0.36	0.06	0.13	0.04	12.05
Year	1949	1949	1950	1951	1951	1951	1951	1948	1951	1948	1949	1949	1950
Count	3	3	3	3	3	3	3	4	4	3	3	3	2

Monthly Climatic Data for WETMORE 9S for years 1968 - 1976
Station - 58990 Latitude - 3808 Longitude - 10505 Elevation - 7360

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Total monthly precipitation.													
1968	M	M	M	M	M	M	M	M	260	82	97	79	
1969	3	50	226	118	412	372	493	154	198	368	63	181	26.38
1970	59	48	304	176	210	287	142	179	312	298	180	0	21.95
1971	67	116	93	219	185	31	525	144	233	35	86	64	17.98
1972	83	37	158	138	210	197	117	169	195	202	188	83	17.77
1973	56	4	277	270	254	70	181	M	M	77	48	336	
1974	129	126	79	74	10	53	576	M	194	144	M	M	
1976	M	10I	M	M	M	M	M	M	M	M	M	M	
Ave	0.66	0.56	1.90	1.66	2.14	1.68	3.39	1.61	2.32	1.72	1.10	1.24	21.02
Max	1.29	1.26	3.04	2.70	4.12	3.72	5.76	1.79	3.12	3.68	1.88	3.36	26.38
Year	1974	1974	1970	1973	1969	1969	1974	1970	1970	1969	1972	1973	1969
Min	0.03	0.04	0.79	0.74	0.10	0.31	1.17	1.44	1.94	0.35	0.48	0.00	17.77
Year	1969	1973	1974	1974	1974	1971	1972	1971	1974	1971	1973	1970	1972
Count	6	7	6	6	6	6	6	4	6	7	6	6	4

Monthly Climatic Data for WETMORE 8SW for years 1949 - 1953
Station - 58988 Latitude - 3808 Longitude - 10512 Elevation - 7600

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1949	M	M	M	M	M	M	M	M	M	M	3	3	
1950	46	60	3	80	114	161	802	65	11	27	41	1	14.11
1951	98	58	241	304	172	74	148	274	44	168	153	98	18.32
1952	11	101	189	386	404	8	246	254	75	0	166	90	19.30
1953	15	8	222	246	350	35	M	M	M	M	M	M	
Ave	0.42	0.57	1.64	2.54	2.60	0.70	3.99	1.98	0.43	0.65	0.91	0.48	17.24
Max	0.98	1.01	2.41	3.86	4.04	1.61	8.02	2.74	0.75	1.68	1.66	0.98	19.30
Year	1951	1952	1951	1952	1952	1950	1950	1951	1952	1951	1952	1951	1952
Min	0.11	0.08	0.03	0.80	1.14	0.08	1.48	0.65	0.11	0.00	0.03	0.01	14.11
Year	1952	1953	1950	1950	1950	1952	1951	1950	1950	1952	1949	1950	1950
Count	4	4	4	4	4	4	3	3	3	3	4	4	3

Monthly Climatic Data for WETMORE 5S for years 1948 - 1968
Station - 58986 Latitude - 3810 Longitude - 10505 Elevation - 5300

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	M	M	M	M	M	M	M	98	43	0	0	0I	
1949	0	0	0	0	0	0	0	0	0	33	22	7	0.62
1950	24	46	38	76	89	194	512	42I	0	0	0	10	10.31
1951	72	44	116	154	263	163	131I	756	41	199	214	69	22.22
1952	0	49	140	363	0	0	121	249	46	0	143	62	11.73
1953	27	18	161	244	279	111	269	120	13	86	108	155	15.91
1954	43	38	95	59	189	49	108	104	66	69	55	204	10.79
1955	24	107	82	57	745	31	206	195	93	2	96	17	16.55
1956	126	99	219	357	527	17	326	131	3	9I	171	70	20.55
1957	57	47	147	855	727	192	357	221	85	145	258	0	30.91
1958	63	46	303	174	407	162	165	284	64	171	69	97	20.05
1959	198	102	122I	322	196	124	143	219	311	396	54	54	22.41
1960	136	179	162	94	165	77	374	75	129	438	61	126I	20.16
1961	20	215	186	97	284	277	274	567	244	66	163	193	25.86
1962	53	64	109	228	0	53	313	41	103	81	102	54	12.01
1963	93	64	123	0	33	382	181	417	156	103	12	62	16.26
1964	38	146	242	173	354	63	284	269	120	4	117	60	18.70
1965	20	177	304	401	54	254	397	523	242	68	4	39	24.83
1966	32	106	0	213	121	159	204	396	140	39	23	95	15.28
1967	54	172	156	157	317	246	314	270	75	287	84	291	24.23
1968	46	149	227	242	M	M	M	M	M	M	M	M	
Ave	0.56	0.93	1.47	2.13	2.50	1.34	2.46	2.49	0.99	1.10	0.88	0.83	17.86
Max	1.98	2.15	3.04	8.55	7.45	3.82	5.12	7.56	3.11	4.38	2.58	2.91	30.91
Year	1959	1961	1965	1957	1955	1963	1950	1951	1959	1960	1957	1967	1957
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Year	1952+	1949	1966+	1963+	1962+	1952+	1949	1949	1950+	1952+	1950+	1957+	1949
Count	20	20	20	20	19	19	19	20	20	20	20	20	19

Monthly Climatic Data for CANON CITY 2SE for years 1931 - 1999
Station - 51294 Latitude - 3826 Longitude - 10516 Elevation - 5340

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1931	9	98	99	104	286	141	44	42	49	67	181	6	11.26
1932	15	12	45	84	56	135	111	398	T	50	22	38	9.66
1933	0	5	2	201	162	71	61	428	161	T	51	100	12.42
1934	7	100	70	148	71	31	109	391	47	2	52	61	10.89
1935	5	18	T	72	423	32	192	152	250	78	6	T	12.28
1936	21	21	10	67	159	80	197	391	139	124	23	13	12.45
1937	27	92	86	51	96	67	123	172	139	57	1	67	9.78
1938	34	63	163	132	227	106	105	120	284	53	76	13	13.76
1939	48	40	112	109	70	21	100	31	6	2	36	21	5.96
1940	114	104	30	162	211	36	160	40	255	20	111	66	13.09
1941	18	40	142	175	226	168	221	189	173	285	12	46	16.95
1942	64	45	103	651	82	308	70	165	116	121	21	59	18.05
1943	62	64	85	171	223	199	192	137	15	11	89	61	13.09
1944	49	14	155	351	186	52	102	47	26	32	T	30	10.44
1945	37	30	T	232	110	28	470	224	11	4	T	4	11.50
1946	100	60	20	169	156	10	150	193	T	79	426	16	13.79
1947	29	46	76	148	330	262	190	84	36	84	64	115	14.64
1948	M	M	M	M	M	M	M	130	12	20	11	70	
1949	64	22	140	106	396	464	96	53	26	136	8	0	15.11
1950	23	23	28	97	130	155	102	60	101	31	26	3	7.79
1951	56	39	92	87	178	54	38	229	33	131	86	48	10.71
1952	0	0	108	275	155	0	108	208	41	0	71	38	10.04
1953	0	10	38	172	166	70	182	204	0	117	86	50	10.95
1954	15	0	52	18	108	28	157	121	61	27	31	41	6.59
1955	0	72	32	24	417	76	183	282	102	3	52	0I	12.43
1956	0	23	88	348	113	97	283	204	0	31	120	74	13.81
1957	51	36	38	560	573	194	292	223	27	90	230	0	23.14
1958	73	3	137	90	302	166	64	220	63	108	30	12	12.68
1959	91	61	147	171	175	104	72	150	315	309	5	10	16.10
1960	110	80	144	56	92	111	205	17	200	229	6	35	12.85
1961	2	131	127	46	114	189	327	328	187	122	27	47	16.47
1962	20	25	28	117	0	37	43	40	34	54	94	19	5.11
1963	47	33	68	0	11	166	20	192	44	61	3	34	6.79
1964	6	79	135	48	209	144	173	19	25	0	139	23	10.00
1965	4	64	97	242	24	211	430	475	147	48	0	12	17.54
1966	4	21	0	64	73	72	227	272	12	10	18	42	8.15
1967	18	141	25	56	257	216	333	222	106	121	21	127	16.43
1968	9	71	117	80	7	0	246	225	95	18	121	43	10.32
1969	6	19	55	67	242	172	197	184	76	388	30	165	16.01
1970	30	6	201	111	45	174	232	216	153	199	34	0	14.01
1971	35	60	50	169	115	75	112	135	202	59	39	81	11.32

1972	96	9	160	34	170	68	157	198	94	173	70	128	13.57
1973	17	6	121	156	219	40	296	127	38	70	86	32	12.08
1974	81	10	54	57	57	90	178	31	229	105	54	107	10.53
1975	35	45	51	48	M	121	241	52	37	35	111	12	
1976	8	20	56	75	128	122	79	M	M	M	M	M	
1977	M	M	M	382	12	102	342	151	150	0	64	0	
1978	40	M	5	197	221	465	76	49	106	M	M	M	
1979	20I	0	119	10	113I	140	94	228	164	44	M	M	
1980	M	M	M	0I	657	0	19	99	165	6	103I	0	
1981	1	10	99	0	113	58	345	319	43	74	10	38	11.10
1982	350	M	M	M	351	236	196	166	254	31	65	20	
1983	6	12	183	69	209	195	136	432	18	3	152	87	15.02
1984	20	15	165	288	5	123	178	417	M	M	M	24	
1985	47	74	190	213	236	0	208	55	223	62	200	99	16.07
1986	6	42	69	61	63	176	141	150	166	109	113	56	11.52
1987	94	145	M	M	213I	188	44	211	61	30	47	60	
1988	48	46	68	59	110	237	59	66	70	6	30	69	8.68
1989	57	96	18	58	104	104	119	135	180	23	2	113	10.09
1990	43	70	134	234	217	3	384	169	175	212	92	38	17.71
1991	5	1	16	41	58	136	254	324	57	77	187	28	11.84
1992	4	1I	176	106	68	118	158	482	4	12	120	21	12.70
1993	15	23	105	78	227	147	53	194	124	68	91	23	11.48
1994	63	6	110	196	M	M	M	M	M	M	M	M	
1995	M	M	M	M	M	M	M	M	M	M	25	6	
1996	61	18	69I	96	139	106	231	410	202	111	77	39	15.59
1997	60	182I	80	306	60I	159	316I	444	131	139	87	22I	19.86
1998	0	69	235	197	14	27I	246	177	58	137	66	50	12.76
1999	9	1	16	644	290	87	395	264	67	106	54	34	19.67
Ave	0.38	0.44	0.86	1.48	1.70	1.21	1.77	1.96	1.01	0.78	0.68	0.43	12.71
Max	3.50	1.82	2.35	6.51	6.57	4.65	4.70	4.82	3.15	3.88	4.26	1.65	23.14
Year	1982	1997	1998	1942	1980	1978	1945	1992	1959	1969	1946	1969	1957
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.17	0.00	0.00	0.00	0.00	5.11
Year	1998+	1979+	1966+	1981+	1962	1985+	1980	1960	1956+	1977+	1965+	1980+	1962
Count	65	63	63	65	65	66	66	66	65	64	64	65	57

Monthly Climatic Data for FLORENCE for years 1931 - 1950
Station - 52955 Latitude - 3823 Longitude - 10508 Elevation - 5190

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1931	M	M	M	M	M	28	12	22	85	106	91	T	
1932	35	T	42	68	15	142	216	283	96	94	17	46	10.54
1933	T	20	35	284	213	164	420	299	110	T	15	121	16.81
1934	T	88	18	46	51	116	52	174	19	0	63	37	6.64
1935	5	10	4	89	384	39	148	294	220	120	4	0	13.17
1936	23	0	3	27	211	45	232	261	163	90	11	12	10.78
1937	13	103	70	29	110	M	M	M	M	M	M	M	
1939	132	63	108	79	167	18	72	127	50	1	25	16	8.58
1940	M	M	M	119	232	90	128	222	259	26	60	65	
1941	17	41	159	155	195	68	239	204	124	260	10	43	15.15
1942	66	55	125	758	105	197	66	302	M	M	M	M	
1947	M	M	M	139	359	255	328	190	36	98	48	47	
1948	M	M	M	M	M	M	M	273	19	12	20	38	
1949	44	51	124	94	402	476	197	98	24	146	18	0	16.74
1950	35	23	27	36	89	141	186	13	M	M	M	M	
Ave	0.34	0.41	0.65	1.48	1.95	1.37	1.77	1.97	1.00	0.79	0.32	0.35	12.30
Max	1.32	1.03	1.59	7.58	4.02	4.76	4.20	3.02	2.59	2.60	0.91	1.21	16.81
Year	1939	1937	1941	1942	1949	1949	1933	1942	1940	1941	1931	1933	1933
Min	0.00	0.00	0.03	0.27	0.15	0.18	0.12	0.13	0.19	0.00	0.04	0.00	6.64
Year	1934+	1936+	1936	1936	1932	1939	1931	1950	1948+	1934+	1935	1949+	1934
Count	11	11	11	13	13	13	13	14	12	12	12	12	8

Monthly Climatic Data for WETMORE 5S for years 1948 - 1968
Station - 58986 Latitude - 3810 Longitude - 10505 Elevation - 5300

Total monthly precipitation.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1948	M	M	M	M	M	M	M	98	43	0	0	0I	
1949	0	0	0	0	0	0	0	0	0	33	22	7	0.62
1950	24	46	38	76	89	194	512	42I	0	0	0	10	10.31
1951	72	44	116	154	263	163	131I	756	41	199	214	69	22.22
1952	0	49	140	363	0	0	121	249	46	0	143	62	11.73
1953	27	18	161	244	279	111	269	120	13	86	108	155	15.91
1954	43	38	95	59	189	49	108	104	66	69	55	204	10.79
1955	24	107	82	57	745	31	206	195	93	2	96	17	16.55
1956	126	99	219	357	527	17	326	131	3	9I	171	70	20.55
1957	57	47	147	855	727	192	357	221	85	145	258	0	30.91
1958	63	46	303	174	407	162	165	284	64	171	69	97	20.05
1959	198	102	122I	322	196	124	143	219	311	396	54	54	22.41
1960	136	179	162	94	165	77	374	75	129	438	61	126I	20.16
1961	20	215	186	97	284	277	274	567	244	66	163	193	25.86
1962	53	64	109	228	0	53	313	41	103	81	102	54	12.01
1963	93	64	123	0	33	382	181	417	156	103	12	62	16.26
1964	38	146	242	173	354	63	284	269	120	4	117	60	18.70
1965	20	177	304	401	54	254	397	523	242	68	4	39	24.83
1966	32	106	0	213	121	159	204	396	140	39	23	95	15.28
1967	54	172	156	157	317	246	314	270	75	287	84	291	24.23
1968	46	149	227	242	M	M	M	M	M	M	M	M	
Ave	0.56	0.93	1.47	2.13	2.50	1.34	2.46	2.49	0.99	1.10	0.88	0.83	17.86
Max	1.98	2.15	3.04	8.55	7.45	3.82	5.12	7.56	3.11	4.38	2.58	2.91	30.91
Year	1959	1961	1965	1957	1955	1963	1950	1951	1959	1960	1957	1967	1957
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.62
Year	1952+	1949	1966+	1963+	1962+	1952+	1949	1949	1950+	1952+	1950+	1957+	1949
Count	20	20	20	20	19	19	19	20	20	20	20	20	19

Appendix - D

Diversion Records

WD	ID	STRUCTURE NAME	LOCATION	WATER SOURCE	OWNER	STRUCTURE TYPE	CURRENTLY IN USE	DECREED RATE ABS (CFS)
12	981	AUGUST WASMUTH DITCH	S 20S 70W 35	NEWLAND CREEK	CITY OF FLORENCE	Headgate	H	0
12	12016012	DAM C	S 20S 69W 30 NE	NEWLAND CREEK		Non-Jurisdictional Dam		
12	788	FLORENCE NEWLIN CREEK PL	S	NEWLAND CREEK	CITY OF FLORENCE	Headgate	A	2
12	1102	FLORENCE PIPELINE	S 20S 70W 36 NW SE	NEWLAND CREEK	CITY OF FLORENCE	Headgate	A	6
12	3319	FLORENCE RESERVIOR NO 1	S 20S 69W 4 NW	NEWLAND CREEK	CITY OF FLORENCE	Reservoir	U	0
12	3320	FLORENCE RESERVIOR NO 2	S 20S 69W 4 NW	NEWLAND CREEK	CITY OF FLORENCE	Reservoir	U	0
12	3321	FLORENCE RESERVIOR NO 3	S 20S 69W 4 NW	NEWLAND CREEK	CITY OF FLORENCE	Reservoir	U	0
12	988	JANE R SMITH RIGHT	S 20S 70W 35	NEWLAND CREEK	CITY OF FLORENCE	Headgate	H	0
12	3597	NEWLIN PIT TANK NO 1	S 20S 70W 30 SE NE	NEWLAND CREEK	USFS	Reservoir	U	0
12	3598	NEWLIN PIT TANK NO 2	S 20S 70W 29 SW NW	NEWLAND CREEK	USFS	Reservoir	U	0
12	3580	NEWLIN PIT TANK NO 3	S 20S 70W 29 SW NE	NEWLAND CREEK	USFS	Reservoir	U	0
12	3581	NEWLIN PIT TANK NO 4	S 20S 70W 32 NW SW	NEWLAND CREEK	USFS	Reservoir	U	0
12	3582	NEWLIN PIT TANK NO 5	S 20S 70W 31 NE SW	NEWLAND CREEK	USFS	Reservoir	U	0
12	3583	NEWLIN PIT TANK NO 6	S 20S 70W 32 NW NE	NEWLAND CREEK	USFS	Reservoir	U	0
12	900	SETH WRIGHT DITCH NO 1	S 20S 70W 26 SE SE	NEWLAND CREEK	CITY OF FLORENCE	Headgate	H	0
12	899	SETH WRIGHT DITCH NO 2		NEWLAND CREEK	CITY OF FLORENCE	Headgate	H	0

483577.5
4235289.5

105 11 16
38 15 59
LT

UT
38 16 38
105 14 57

STRUCTURE SUMMARY FOR: FLORENCE NEWLIN CREEK PL

WATER DISTRICT: 12
ID NUMBER: 788
WATER SOURCE: NEWLAND CREEK AT STREAM MILE: 0.00
LOCATION: IN FREMONT COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Active Structure with contemporary diversion records
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS): 2.0000 CFS
MEASURING DEVICE/RECORDER: 30 IN CIP/NONE
CONTACT: CITY OF FLORENCE (OWNER)
ADDRESS 1: 300 W MAIN
CITY/STATE/ZIP: FLORENCE CO 81226

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJ TYPE	STATUS	USES	COMMENT
8520.00000	1894-02-03	1873-04-29	2/3/1894	0.00		O	A	MUN	ENTIRE FLOW TO THE EXTENT OF 5.00 CFS
8520.00000	1894-02-03	1873-04-29	80CW0093	0.50		O	A	MUN	TF FLORENCE PIPELINE ID 1102 (SETH WRIGHT D
8553.00000	1894-02-03	1873-06-01	80CW0093	0.50		O	A	MUN	TF FLORENCE PIPELINE ID 1102 (SETH WRIGHT D
12143.00000	1894-02-03	1883-03-31	80CW0093	0.00		O	A	MUN	TF FLORENCE PIPELINE ID 1102 (SETH WRIGHT D
23755.07477	1915-11-24	1870-06-21	80CW0093	1.00		S	A	MUN	TF FLORENCE PIPELINE ID 1102 (JANE R SMITH
23755.10034	1915-11-24	1877-06-21	80CW0093	0.00		S	A	MUN	TF FLORENCE PIPELINE ID 1102 (AUGUST WASMUT

WATER RIGHTS NET AMOUNT INFORMATION

ADMIN NO	ADJ DATE	PADJ DATE	APRO DATE	ORDER NO	PRIOR CASE NO	ADJ TYPE	RATE ABS (CFS)	VOL ABS (AF)	RATE COND (CFS)	VOL COND (AF)	RATE APEX (CFS)	VOL APEX (AF)	USE TYPE
8520.00000	1894-02-03		1873-04-29	0	23	O	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	MUN
8553.00000	1894-02-03		1873-06-01	0	25	O	0.5000	0.0000	0.0000	0.0000	0.0000	0.0000	MUN
23755.07477	1915-11-24	1915-01-15	1870-06-21	0	1	S	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000	MUN

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):		Reported:
Diversion Comments Total (Acres):	381.0	Reported: 1964
Structure Total (Acres):	0.0	Reported: 2000

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

No GIS irrigated acres records to display

DIVERSION SUMMARY IN ACRE FEET - TOTAL THROUGH STRUCTURE

YEAR	FDU	LDU	DWC	MAXQ	& DAY	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	TOTAL
1927	11/01	10/31	365	4.00	04/01	17.9	18.4	18.4	50.0	92.2	238	246	179	154	154	149	122	1438
1928	11/01	10/31	366	2.60	05/01	41.1	44.3	35.7	36.8	99.0	55.3	160	59.5	46.1	46.1	44.6	27.7	696
1929	11/01	10/31	365	2.40	08/01	46.4	38.1	24.6	22.2	46.1	78.0	117	89.3	92.2	148	89.3	76.9	868
1930	11/01	10/31	365	1.68	04/01	59.5	61.5	36.9	55.5	49.2	100.0	84.2	89.3	92.2	78.1	38.7	30.7	776
1930*								0.60										0.60
1931*						0.50	0.50	7.20	33.6	43.4	198	77.5	60.0	31.0	31.0	30.0	4.80	518
1932	05/01	10/31	184	1.00	05/01	0	0	0	0	0	0	61.5	59.5	61.5	61.5	59.5	51.2	355
1933	11/01	10/31	365	1.00	11/01	59.5	61.5	61.5	55.5	61.5	59.5	61.5	59.5	61.5	61.5	47.6	49.2	700
1934	11/01	10/31	365	1.00	05/20	53.6	55.3	55.3	50.0	55.3	53.6	57.7	59.5	61.5	55.3	59.5	52.8	669
1935	11/01	10/31	365	1.00	11/01	59.5	61.5	61.5	35.7	30.7	44.6	49.2	59.5	61.5	61.5	47.6	49.2	622
1936	11/01	10/31	366	1.00	11/01	59.5	61.5	61.5	57.5	61.5	59.5	61.5	59.5	61.5	61.5	59.5	61.5	726
1937	11/01	10/31	365	0.80	11/01	47.6	49.2	49.2	44.4	49.2	47.6	49.2	47.6	49.2	49.2	47.6	49.2	579
1938	11/01	10/31	365	1.80		59.5	52.0	49.2	44.4	49.2	47.6	105	107	111	111	107	111	953
1939*						0.80	0.80	0.80	0.80	1.00							1.00	5.20
1940	11/01	10/31	366	1.00	11/01	59.5	61.5	61.5	57.5	61.5	55.1	49.2	59.1	51.2	49.2	39.9	36.9	642
1941	11/01	10/31	365	1.00	11/01	59.5	61.5	61.5	55.5	61.5	59.5	61.5	59.5	61.5	61.5	59.5	61.5	724
1942	11/01	10/31	365	1.00	11/01	59.5	61.5	61.5	55.5	61.5	59.5	61.5	59.5	61.5	61.5	59.5	61.5	724
1943*																		724
1944	11/01	10/31	366	1.00	11/01	59.5	61.5	61.5	57.5	61.5	59.5	61.5	59.5	61.5	61.5	59.5	61.5	726
1947*						59.5	61.5	61.5	55.5	61.5	159	130	121	166	108	54.1	63.3	1101
1948*						50.6	43.0	43.0	44.3	56.6	229	234	181	57.8	25.8	4.76	7.38	978
1949*						17.9	10.5	17.7	21.7	33.1	78.2	103	101	126	37.9	12.8	22.6	583
1950*						10.4	4.04	2.15	2.88	13.0	39.1	22.4	19.3	9.05	5.55	2.04	2.71	133
1951*						3.30	3.50	1.50	1.40	3.20	27.6	48.7	20.6	3.80	5.60	1.10	1.30	122
1952*						4.20	3.90	4.50	5.80	26.3	76.0	146	52.7	1.50	20.2	6.90	0	348
1953*						6.77	3.43	2.79	2.00	1.63	33.2	89.4	40.0	25.0	11.6	4.40	1.29	222
1954*						3.60	3.70	3.00	13.9	25.4	6.40	29.3	1.70	0.20				87.2
1955*						2.00		12.0	13.8	24.3	30.9	70.3	92.8	24.5	29.2	22.1	7.30	329
1956*						15.1	18.9	20.8	19.1	32.5	83.4	151	68.9	19.1	13.7	4.50	0.30	448
1957*						1.80	3.10	3.00	2.60	4.00	63.6	120	50.6	31.4	39.0	14.9	0	334
1958*						19.7	16.6	13.1	16.7	19.9	35.8	28.8	17.9	4.60	3.40	3.80	6.40	187
1959*						11.1	9.90	9.70	8.90	15.1	39.6	83.7	42.5	6.80	2.30	2.20		232
1960*						18.4	13.1	9.78	11.9	20.8	70.9	13.9	29.2	14.6	6.90	2.42	8.71	221
1961*						13.3	13.0	12.7	8.98	18.8	65.5	66.0	52.7	32.3	26.0	25.8	16.8	352
1962*						14.6	13.3	14.1	11.9	12.8	49.4	42.8	13.9	2.47	0	0.21	1.26	177
1963*						4.65	5.58	11.9	10.9	12.5	16.1	4.23	0.98	0	7.02	2.36	0.70	77.0
1964*						4.96	2.79	2.37	3.10	3.74	30.5	12.9	10.8	1.31	2.32	2.03	0.70	77.6
1965*						5.83	7.38	5.53	5.39	9.10	66.3	152	54.1	11.3	29.5	13.7	17.4	378
1966*						8.69	6.64	4.18	2.11	14.1	35.2	33.8	18.3		9.53	1.84	0.12	135
1967*						3.75	0.31		2.44	14.1	25.1	20.0	51.1	12.1	0.74			130
1968*						2.56	1.35	4.12	7.31	20.2	80.5	157	40.8	14.8	53.1	22.6	7.93	412
1969*						10.5	5.41	3.81	2.78	2.46	33.2	120	95.9	69.5	19.1	9.82	44.6	417
1970*						28.8	19.7	11.1	12.0	11.1	99.3	117	143	87.7	33.4	12.2	45.6	621
1971	04/01	10/31	214	21.8	05/11	0	0	0	0	0	155	613	219	41.5	13.5	24.0	23.6	1089
1972	11/01	10/31	289	1.80	05/07	19.8	24.6	3.57	11.7	30.9	43.6	34.7	3.77	7.14	11.1	43.0	15.1	249

1973	03/25	10/31	147	2.90	05/09	0	0	0	0	1.39	37.5	165	53.0	2.68	0	10.3	115	385
1974	11/01	10/31	244	0.99	04/26	5.49	14.7	17.5	17.9	28.5	28.5	15.6	3.47	0	0	0.67	4.36	137
1975	11/01	10/02	278	2.54	04/26	9.26	11.2	14.6	10.4	20.3	63.8	62.6	43.7	12.2	0	9.42	1.37	259
1976	03/08	10/31	173	2.80	09/27	0	0	0	0	8.01	20.4	47.7	14.5	1.35	8.79	24.3	42.5	168
1977	11/01	10/31	270	2.07	04/22	37.3	21.6	3.67	0	17.9	87.5	96.7	47.3	7.50	9.84	6.78	3.77	340
1978	11/01	07/31	256	1.68	05/12	13.0	15.1	11.0	15.0	29.7	50.6	45.1	10.7	2.72	0	0	0	193
1979	04/20	09/24	126	2.07	04/20	0	0	0	0	0	40.5	95.3	62.7	13.3	4.76	3.77	0	220
1980	11/01	10/31	182	1.70	06/07	10.7	0	0	0	0	0	51.0	83.5	33.1	3.17	4.98	6.68	193
1981	11/01	10/31	291	1.50	04/17	34.1	36.6	30.5	16.4	28.2	56.9	47.2	12.7	2.58	7.54	2.38	8.73	284
1982	11/01	10/31	286	8.40	09/30	11.6	7.06	0	0	16.1	38.7	68.1	66.6	37.9	67.4	107	57.7	478
1983	11/01	11/11	11	0.60	11/01	11.1	0	0	0	0	0	0	0	0	0	0	0	11.1
1986	08/26	10/31	67	1.14	08/27	0	0	0	0	0	0	0	0	0	10.3	32.7	16.9	59.9
1987	03/25	10/31	221	10.4	03/25	0	0	0	0	137	532	546	292	51.8	33.5	18.4	76.0	1686
1988	11/01	10/31	296	9.39	06/21	286	92.7	47.1	291	24.5	96.9	96.6	398	346	242	203	204	2327
1990	01/25	10/31	197	1.31	05/09	0	0	7.08	28.4	30.9	57.2	31.3	0	0	15.4	13.1	28.9	212
1991	11/01	10/31	356	1.31	08/07	13.8	18.0	17.1	13.7	19.4	29.4	40.7	17.5	6.42	43.8	19.9	6.86	247
1992	11/01	10/31	347	2.07	05/15	15.5	15.2	11.8	13.2	10.9	21.3	74.8	51.9	38.7	84.0	37.7	40.0	415
1993	11/01	10/31	362	1.74	04/16	29.2	35.9	39.1	38.8	45.0	77.9	103	76.4	36.1	23.3	27.2	31.5	564
1994	11/01	10/31	365	1.80	04/04	38.1	40.3	49.1	45.8	60.9	87.9	70.9	54.6	42.9	36.9	32.5	38.9	599
1995	11/01	10/31	365	2.63	08/16	40.2	69.9	68.0	51.4	57.4	78.0	107	118	111	89.3	71.0	54.7	915
1996	11/07	10/31	353	1.74	04/10	36.4	33.0	40.2	49.4	39.9	85.3	69.8	36.4	27.1	13.4	12.2	8.75	452
1997	11/06	10/31	360	8.12		11.7	8.63	9.22	8.33	9.22	70.2	322	245	143	153	129	129	1240
1998	11/01	10/31	354	6.23	06/01	14.5	19.3	15.4	14.5	59.0	190	201	162	30.0	37.6	17.7	16.2	777
1999	11/01	10/31	364	5.99	05/18	24.6	21.5	22.4	20.3	25.8	51.0	205	109	40.0	59.2	25.2	24.7	628
2000	11/05	10/31	362	4.38	04/11	20.1	28.1	26.2	27.2	30.9	181	109	36.5	18.7	7.54	5.53	6.59	497
2001	11/01	10/31	365	4.38	05/10	7.22	11.6	10.9	12.6	22.1	32.5	134	33.4	13.0	14.8	6.23	5.06	303
2002	11/01	06/12	224	0.67	04/12	7.14	9.22	7.84	8.33	11.4	22.4	12.6	2.95	0	0	0	0	81.8
2003	11/16	09/21	228	2.50	04/12	1.07	0.63	0.10	0.87	34.8	130	131	60.5	5.12	0.60	2.54	0	367
2004	12/17	10/31	320	2.17	04/11	0	2.08	6.70	10.5	23.9	82.1	102	62.2	35.5	15.0	4.78	7.16	352
						N	O	J	F	M	A	M	J	J	A	S	O	
AVE:	09/28	10/24	295	3.07	06/15	24.5	21.9	20.3	23.7	30.1	72.3	99.4	68.5	42.1	37.8	30.7	31.0	497
74 years with diversion records						,41	,36	,33	,43	,49	1.21	1.62	1.15	,68	.61	.52	.80	

Average Flow = 0.85 CFS

Notes: The average considers all years with diversion records, even if no water is diverted.
The above summary lists total monthly diversions.
* = Infrequent data. All other values are derived from daily records.
Average values include infrequent data if infrequent data are the only data for the year.

DIVERSION COMMENTS

YEAR	COMMENTS
1951	
	MONTHLY TOTALS
1974	
	DOMESTIC DOMESTIC
1976	
	SAME AS #788(NEWLIN)
1977	
	DUPLICATE OF #788
1978	
	DOMESTIC USE \CITY OF FLORENCE'

1981
DOMESTIC
1982
DOMESTIC

Note: Diversion comments and reservoir comments may be shown for a structure, if both are available.

STRUCTURE SUMMARY FOR: JANE R SMITH RIGHT

WATER DISTRICT: 12
ID NUMBER: 988
WATER SOURCE: NEWLAND CREEK AT STREAM MILE: 0.00
LOCATION: 20S 70W 35 IN FREMONT COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Historical structure only - no longer exists or has records, but has historical data
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS):
MEASURING DEVICE/RECORDER:
CONTACT: CITY OF FLORENCE (OWNER)
ADDRESS 1: 300 W MAIN FLORENCE CO 81226

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJ TYPE	STATUS	USES	COMMENT
23755.07477	1915-11-24	1870-06-21	CA2637	1.00		S	A	IRR	TT FLORENCE PIPELINE ID 1102
23755.07477	1915-11-24	1870-06-21		1.00		S	A	IRR	

No water right net amounts records to display

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):		Reported:	
Diversion Comments Total (Acres):		Reported:	
Structure Total (Acres):	0.0	Reported:	2000

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

No GIS irrigated acres records to display

No annual amount records to display for diversions

STRUCTURE SUMMARY FOR: AUGUST WASMUTH DITCH

WATER DISTRICT: 12
ID NUMBER: 981
WATER SOURCE: NEWLAND CREEK AT STREAM MILE: 0.00
LOCATION: 20S 70W 35 IN FREMONT COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Historical structure only - no longer exists or has records, but has historical data
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS):
MEASURING DEVICE/RECORDER:
CONTACT: CITY OF FLORENCE (OWNER)
ADDRESS 1: 300 W MAIN FLORENCE CO 81226

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJ TYPE	STATUS	USES	COMMENT
23755.10034	1915-11-24	1877-06-21		0.00		S	A	IRR	NO AMT DECREED
23755.10034	1915-11-24	1877-06-21	CA2637	0.00		S	A	IRR	TT FLORENCE PIPELINE ID 1102

No water right net amounts records to display

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):		Reported:	
Diversion Comments Total (Acres):		Reported:	
Structure Total (Acres):	0.0	Reported:	2000

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

No GIS irrigated acres records to display

No annual amount records to display for diversions

STRUCTURE SUMMARY FOR: AUGUST WASMUTH DITCH

WATER DISTRICT: 12
ID NUMBER: 981
WATER SOURCE: NEWLAND CREEK AT STREAM MILE: 0.00
LOCATION: 20S 70W 35 IN FREMONT COUNTY
TOTAL IRRIGATED ACRES: See irrigated acres summary.
STRUCTURE TYPE: Headgate
CIU (CURRENTLY IN USE): Historical structure only - no longer exists or has records, but has historical data
IS TRANSBASIN:
ESTIMATED CAPACITY:
DECREED CAPACITY (SUM OF ABSOLUTE NET AMOUNT RIGHTS):
MEASURING DEVICE/RECORDER:
CONTACT: CITY OF FLORENCE (OWNER)
ADDRESS 1: 300 W MAIN FLORENCE CO 81226

WATER RIGHTS TRANSACTION INFORMATION

ADMIN NO	ADJ DATE	APPRO DATE	COURT NO	DECREED RATE (CFS)	DECREED VOL. (AF)	ADJ TYPE	STATUS	USES	COMMENT
23755.10034	1915-11-24	1877-06-21		0.00		S	A	IRR	NO AMT DECREED
23755.10034	1915-11-24	1877-06-21	CA2637	0.00		S	A	IRR	TT FLORENCE PIPELINE ID 1102

No water right net amounts records to display

IRRIGATED ACRES SUMMARY -- TOTALS FROM VARIOUS SOURCES

GIS Total (Acres):		Reported:	
Diversion Comments Total (Acres):		Reported:	
Structure Total (Acres):	0.0	Reported:	2000

IRRIGATED ACRES FROM GIS DATA -- BY CROP, YEAR, AND IRRIGATION METHOD

No GIS irrigated acres records to display

No annual amount records to display for diversions