DIVISION 6

ANNUAL SUMMARY 2012



Erin Light, P.E.

Division Engineer

May 20, 2013

ANNAUL SUMMARY

Table of Contents

Water Year 2012

Introduction	1
Basin Hydrology	1
Snow Pack	1
Stream Flows	2
Precipitation	4
Water Administration	4
Ground Water and Well Permitting	11
Compacts and Inter-State Agreements	11
Upper Colorado River Compact	11
Nebraska v. Wyoming	11
Pot Creek MOU	12
Division Highlights	12
Lysimeter Project	12
Abandonment Process	14
Important Court Cases	15
Involvement in Water User Community	17
Organizational Chart	18

Introduction

The following report summarizes the activities of the Division 6 office of the Colorado Division of Water Resources in 2012, presents an overview of the administration activities that took place during both the calendar and irrigation year 2012 and provides statistical data for both the water and irrigation year 2012.

Year 2012

Basin Hydrology

Snow Pack

Table 1 below shows the snow water equivalent for the period October 2011 through May 2012. As one can see, for each month, the snow water equivalent was well below average.

TABLE 1

End of Month Snow Water Equivalent as Percent of Average
Water Year 2012

Drainage	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Laramie/North Platte River	72	87	70	68	80	61	36	7
Yampa/White River	59	89	64	64	78	54	32	7

Given the fact that the snow pack in 2012 was as low if not lower at times than in 2002, there was cause for a great deal of concern about how much water would be available for beneficial use within the basins.

Stream Flows

As one can imagine given the well below average snowpack, the streamflows also ended up well below average. Table 2, below, shows the January 1st, March 1st and May 1st runoff forecasts developed by the NRCS in comparison to the actual runoff between April 1 and July 31 as measured at the selected USGS gauging stations.

TABLE 2

2012 Runoff Forecast in 1000's of Acre-Feet

Station Name	<u>1-Jan</u>		<u>1-Mar</u>		1-May		<u>Actual</u>	
	Runoff	% Avg	Runoff	% Avg	Runoff	% Avg	Runoff	% Avg
North Platte nr Northgate (Apr-Jul)	150	61	158	64	30	15	66.5	28
White River nr Meeker (Apr-Jul)	220	76	210	72	137	47	110.6	39
Little Snake River nr Lily (Apr-Jul)	260	71	280	77	141	39	105.3	30
Yampa River nr Maybell (Apr-Jul)	700	71	715	72	400	40	343.8	36

Provided in Table 3 below are the annual runoff values for the water year for these stations as well as the minimum flow at each station.

Table 3
Annual Runoff

Station Name	Historic Lowest Flow (AF)	Total Flow 2012 (AF)	Average (AF)	% of Average
North Platte River near Northgate	~66,240	139,000	311,000	45
White River below Boise Creek	~198,400	292,800	449,400	65
Little Snake River at Lily	~79,600	184,800	415,000	45
Yampa River near Maybell	~345,300	541,900	1,129,000	48

Lowest Daily Mean

Station Name	Minimum on Record (cfs)	Minimum in 2012 (cfs)	Date of Occurrence
North Platte River near Northgate	15	27	Sept. 21, 2012
White River below Boise Creek	78	127	Sept. 15, 2012
Little Snake River at Lily	0.0	0.46	Sept. 29, 2012
Yampa River near Maybell	1.8	38	July 2, 2012

As one can see from the two tables above, the 2012 annual flows and minimum daily mean flows did not drop below the historic minimums.

Precipitation

Table 3 below shows the monthly precipitation data for the towns of Walden, Meeker and Steamboat Springs.

Table 4

Monthly Precipitation Data for Selected Sites
Water Year 2012

Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Walden (inches)	1.02	0.70	0.11	0.26	0.49	0.07	0.73	0.68	0.23	2.38	0.76	0.64	8.07
% Avg	115	84	19	42	80	9	68	45	22	186	72	53	70
Meeker (inches)	1.44	1.11	0.18	0.64		0.45	1.28	0.63	0.00	1.14	0.42	0.00	
% Avg	87	101	20	80		33	91	42	0	88	34	0	
Steamboat (inches)		1.24	0.25	0.87	2.93	0.22	1.54	0.75	0.18	3.23	0.58	1.05	
% Avg		53	11	34	136	11	67	32	13	221	40	61	

Monthly Precipitation Data for Selected Sites Calendar Year 2012

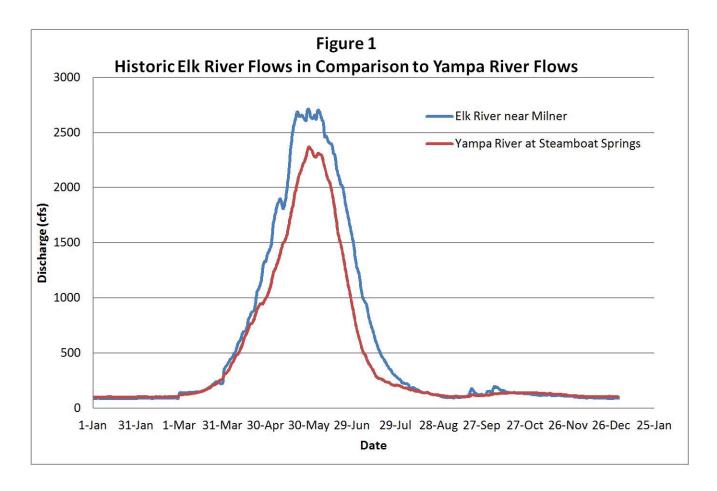
Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Walden (inches)	0.26	0.49	0.07	0.73	0.68	0.23	2.38	0.76	0.64	0.78	0.21	0.94	8.17
% Avg	42	80	9	68	45	22	186	72	53	88	25	159	71
Meeker (inches)	0.64		0.45	1.28	0.63	0.00	1.14	0.42	0.00	0.97	0.44	1.96	
% Avg	80	 :	33	91	42	0	88	34	0	59	40	218	()
Steamboat (inches)	0.87	2.93	0.22	1.54	0.75	0.18	3.23	0.58	1.05	1.56	0.71	3.52	17.14
% Avg	34	136	11	67	32	13	221	40	61	81	30	149	71

Water Administration

Water administration in water year 2012 was greater than what Division 6 typically experiences during normal to even slightly below normal precipitation years. In the North Platte River basin this included administration on the Michigan River including its largest tributary, the Illinois River, and several other tributaries of the North Platte River. In the Yampa River basin administration included, but was not limited to, our normal calls on Bear River, the Hunt Creek systems, Morapos Creek, Little Bear Creek as well as a call on the Elk River which extended for a much longer period of time than normal. In the Green River basin, administration was limited to Talamantes Creek. Finally, in the White River basin, administration was limited to Piceance Creek though one of the water commissioners did have to work with water users on the White River upstream of the town of Meeker to reduce their excessive

diversions to a reasonable amount so that a call was not placed. A complete list of the calls that occurred within Division 6 can be found on the CDSS website.

Of particular note was the administration on the Elk River in 2012. The Elk River is a very large tributary of the Yampa River that enters the Yampa River approximately 7 miles downstream of the City of Steamboat Springs. The graph below shows the historic daily average flows at the Elk River near Milner gauge station in comparison to the Yampa River flows at the Steamboat Springs gauge station. Between the Steamboat Springs gauge station and the Elk River confluence there is only one tributary of note, Soda Creek, which enters into the Yampa River. Soda Creek flows however are very small in comparison to the Elk River flows. As one can see, the Elk River flows are greater than the Yampa River flows for a good portion of the year.



There are two instream flow water rights on the Elk River in two different reaches; however, only one of these reaches (the lower one) is equipped with a gauging station (Elk River near Milner) to measure the flows of the river. Both these water rights are decreed in the amount of 65 cfs. In 2012, the flows in the Elk River at the Milner gauging station began to dip very low and thus on August 16, 2012 the DWR honored a call by CWCB for their water right in the lower reach. Despite a great deal

of effort by the water commissioner to administer the call, the flows continued to remain well below 65 cfs for a good portion of the summer. Many structures and water rights were administered within the entire Elk River basin; some of which were administered due to the fact that they were not equipped with adequate water control or measurement structures and some of which because their water rights were simply junior to the instream flow water right. During this administration process it was determined that upwards of 150 structures were not equipped with adequate headgates or measurement devices, including staff gages on ponds. Efforts are currently being made to assure that the owners of these structures come into compliance with §§37-84-112 and 37-84-117 of the Colorado Revised Statutes, which require the owner of a ditch or any other structure used to divert water from a stream, to erect and maintain in good repair suitable and proper measurement devices.

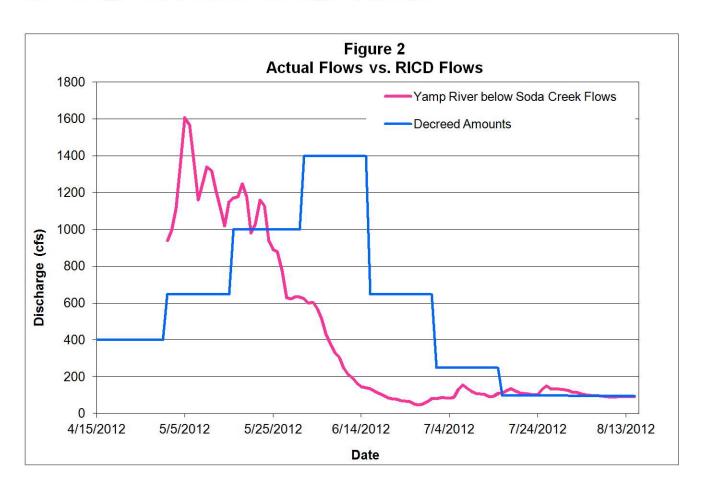


Examples of inoperable flumes found within the Elk River basin.



Picture of a newly installed wooden flume after ditch was shut off during Elk River administration due to not having a measuring device

Though the Yampa River has never been subject to administration as a result of a call for water by the City of Steamboat Springs for their Recreational In-Channel Diversion (RICD) water right, it is always valuable for this office to track the flows through the diversion in the event the potential for a call ever arises. The decreed amounts for the RICD are: 400 cfs from April 15 to April 30, 650 cfs from May 1 to May 15, 1000 cfs from May 16 to May 31, 1400 cfs from June 1 to June 15, 650 cfs from June 16 to June 30, 250 cfs from July 1 to July 15, 100 cfs from July 16 to July 31 and 95 cfs from August 1 to August 15. Figure 1 below shows the average daily flows at the Yampa River below Soda Creek gauge station in comparison to the decreed flows. Take note however that reservoir releases from Stagecoach Reservoir, which are further described below, began on June 28 and ran through September 11 at a rate of approximately 26 cfs with the exception of a short time period in August (August 17 through 23) when a larger amount of water was released from the reservoir for use by Tri-State Generation and Transmission (Tri-State). As one can see, the flows in the Yampa River dropped below the RICD water right amount on May 20 and remained below the decreed amount until July 16. Absent the reservoir water introduced into the stream system, the flows in the River would have been right at or below the RICD water right beyond July 16.



In addition to administrative calls, releases from several reservoirs had to be protected. With the exception of the normal reservoir releases for irrigation purposes from Walden and Meadow Creek Reservoirs in the North Platte River basin and Stillwater, Yamcolo and Allen Basin Reservoirs that had to be administered and delivered, releases were also made from Stagecoach Reservoir, Elkhead Creek Reservoir, Steamboat Lake and Lake Avery that had to be protected. Releases made from these reservoirs were all, for the most part, for the purpose of sustaining environmental flows as more fully described below:

Stagecoach Reservoir Releases

In the spring of 2012, Upper Yampa Water Conservancy District, the owner and operator of Stagecoach Reservoir, and the Colorado Water Trust (CWT) entered into a contract for 4,000 acrefeet of water to be delivered to the Colorado Water Conservation Board (CWCB) instream flow reach located just downstream of Stagecoach Reservoir. This temporary loan for water was approved pursuant to Section 37-83-105, C.R.S. Because this instream flow reach consists of only a six mile stretch of the Yampa River between Stagecoach Reservoir and Lake Catamount and CWT's desire to try to keep as much of the 4,000 acre-feet of water in the River as possible, they (CWT) also entered into a contract with Tri-State. Tri-State owns a power plant located just downstream of the City of Craig on the Yampa River and is the furthest most downstream water user within the Upper Yampa Water Conservancy District's boundary.

Despite the fact that the loan for water was not approved by DWR until July 11, 2012, reservoir releases under this contract began on June 28 at a rate of 26 cfs, due to the low water conditions on the Yampa River. This release of water at a rate of 26 cfs continued through September 11. However throughout most of this time frame, DWR did not protect the reservoir water down to Tri-State. The reason for this was because Tri-State owns several direct flow water rights from the Yampa River which are not only senior to water rights decreed to Stagecoach Reservoir but that were also available and in priority for their diversion. Releases from the Stagecoach Reservoir under the CWT contract with Tri-State were only protected between August 31 and September 11 when the Yampa River flows at Tri-State had dropped considerably low.

The division engineer participated in weekly conference calls to first discuss and come to an agreement on when it would be appropriate for DWR to protect these flows and to also discuss the conditions of the river. It was ultimately decided that when the amount of natural flow in the Yampa River at the Craig gauging station was near or below 50 cfs that DWR would begin the protection of the water released under the CWT contract. Water in the Yampa River at the Craig gauging station

consisted of natural flow and reservoir water released from Elkhead Creek Reservoir, and thus to determine the natural flow in the River at this site, the reservoir water had to be subtracted. This 50 cfs was based on the average diversions occurring downstream of Tri-State under water rights senior to Tri-State's water rights. The intent was to try to minimize the potential of a downstream call that would result in Tri-State's water rights being out of priority, resulting in them not being able to divert water until such time that we were able to get reservoir water down to their power plant. Because the use of water for cooling is vital in the operation of the plant, it is critical that Tri-State be able to divert and use water daily.

Elkhead Creek Reservoir

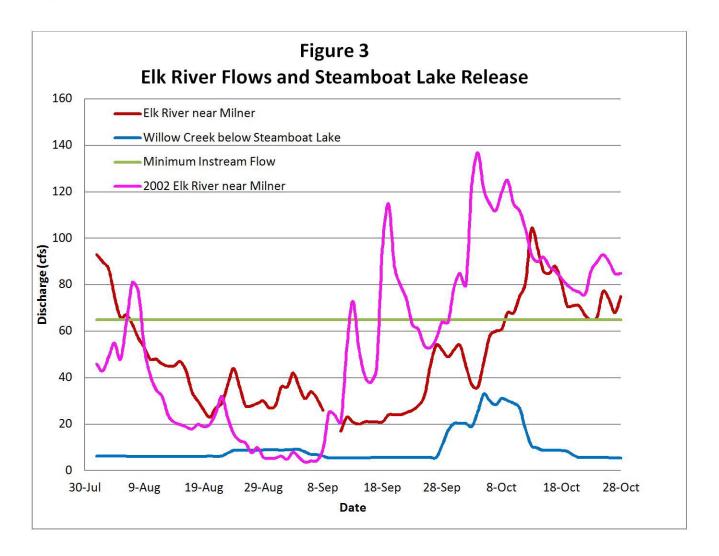
Releases were made from Elkhead Creek Reservoir between July 2, 2012 and October 9, 2012. A total of 6,580 acre-feet of water was released during this time for the purpose of in-river fish habitat and river flow maintenance and enhancement under the Upper Colorado River Endangered Fish Recovery Implementation Program (Recovery Program). The Recovery Program typically requests that releases from the endangered fish pool in Elkhead Creek Reservoir be made when flows in the Yampa River at the Maybell gauging station fall to within 93–134 cfs, which typically can occur between August and October. However on July 2, 2012, the daily average flow in the Yampa River at Maybell dropped to 38 cfs and thus releases began earlier than normal.

As in the past, the reservoir water was protected by this office to and through the Critical Habitat Reach. The water commissioner visited all structures diverting water prior to the release being made in order to lower their headgates, where applicable, and take note of the amount of water being diverted. These structures were then visited once per week for every week the reservoir releases were being made. The division engineer also participated in weekly conference calls between Recovery Program staff and all other interested stakeholders to discuss the river conditions and determine whether an adjustment to the release was needed.

Steamboat Lake

Steamboat Lake is located on Willow Creek of the Elk River, both of which have instream flow water rights decreed to them. The Willow Creek instream flow water right located directly below Steamboat Lake is decreed in the amount of 5.0 cfs. For a couple years now, Colorado Parks and Wildlife (CPW), the owner and operator of Steamboat Lake has voluntarily released 5.0 cfs from the Lake, regardless of the inflows into the reservoir, so as to avoid a call from CWCB for their instream flow water right.

As mentioned above, there is also two instream flow water rights on the Elk River decreed in the amount of 65 cfs. Also as mentioned above, the flows in the Elk River at the Milner gauging station were well below 65 cfs for a good portion of the summer, and as a result of this, in the fall of 2012 when Mountain Whitefish, which are native only to the Yampa and White Rivers in the State of Colorado, began to migrate up the Elk River to spawn, there was a concern that the fish could not get up through the reaches of the Elk River. Figure 3 below depicts just how low the Elk River flows dropped.



It was ultimately determined by CPW that the minimum flows necessary to connect pools and allow fish to migrate upstream was 65 cfs. Because there is over 3,000 acre-feet of water decreed to Steamboat Lake for instream flow purposes, releases from the Lake began on September 28 at a rate of approximately 20 cfs, which was later increased to 30 cfs before being slowly reduced back to the minimum 5.0 cfs, which occurred when there was some precipitation in the basin that resulted in the

Elk River rising well above 65 cfs. Releases were made between September 28 and October 20 for a total of approximately 600 acre-feet.



Mountain Whitefish found in Elk River

Ultimately a total of approximately 11,100 acre-feet of water was released for these environmental purposes in the Yampa River basin in 2012. By way of comparison, approximately 12,600 acre-feet was released for irrigation purposes in the Yampa River basin.

Groundwater and Well Permitting

There were no unusual groundwater administrative or well permitting issues in 2012.

Compacts and Inter-State Agreements

Following is a description of the interstate compacts and agreements administered by Division 6.

Upper Colorado River Compact

Under Article XIII (a) of the Upper Colorado River Compact, the State of Colorado will not cause the flow of the Yampa River at the Maybell gauge to be depleted below an aggregate amount of 5,000,000 acre-feet for any period of ten consecutive years. The annual runoff for water year 2012 at this gauge was 541,900 acre-feet and the ten year (2003 to 2012) aggregate flow was 11,493,700 acre-feet; obviously well above that required under Article XIII (a).

The Little Snake River is administered jointly with the State of Wyoming during times of shortage pursuant to Article XI of the Upper Colorado River Compact. Though there was much interest by two Colorado water users on the lower part of the Little Snake River to place a call for water, no call was ever made in water year 2012. Had water not been available from High Savory Reservoir located in Wyoming however, the likelihood of a call would have been high.

Nebraska v. Wyoming, U.S. Supreme Court Decree

Under the North Platte River Decree, Colorado is limited to a total of 145,000 acres of irrigation, no more than 17,000 acre-feet per year of storage for irrigation purposes and no more than 60,000 acre-feet of transmountain diversions in any period of ten consecutive years from the North Platte drainage of Colorado. In water year 2012, a total of 81,922 acres were irrigated and 7,753 acre-feet were stored for irrigation purposes. Transmountain diversions out of the basin totaled 1,549 acre-feet. The ten-year total transmountain diversions out of the basin were 42,667 acre-feet. None of the limitations of the Supreme Court Decree were exceeded in 2012. A Division 6 representative was able to attend the North Platte Decree Committee meetings held in Scottsbluff, Nebraska in April 2012 and Torrington, Wyoming in October 2012.

Last year a substantial amount of effort was put forth to establish a consistent manner in which to determine the number of acres irrigated each year within the North Platte River basin of Colorado. In the past, the number of acres irrigated each year was determined by adjusting what the water commissioners knew to be a base number of acres irrigated under each ditch to what they believed to be occurring in the field that year. After a joint effort with the CWCB, master irrigated acres maps were developed based on 2010 aerial photography. These maps were then given to the water commissioners to review and provide comments. Once the water commissioners' comments were incorporated into the maps, the 2010 maps were used as a base for determining the number of acres irrigated in 2011 and again in 2012. The irrigated acreage for each of these years was developed by overlaying the 2010 irrigated acres map over several different sets of satellite imagery taken at various times during the summer to determine any changes in irrigation. This methodology is believed to be much more accurate and will continue to be used in future years.

Pot Creek MOU

Pot Creek is a small tributary of the Green River; the headwaters of which are in Utah and enter the Green River in Colorado. Pot Creek water is apportioned among the users of Utah and Colorado under a Memorandum of Understanding (MOU) last updated and signed by the State Engineers of Utah and Colorado on March 1, 2005. There was no administration of the waters of Pot Creek in 2012.

Division Highlights

Lysimeter Project

In September of 2010, a grant through the Yampa/White Roundtable process was awarded to the DWR and Colorado Climate Center in the amount of approximately \$20,000 to install new lysimeter

plots and a weather station. This office discontinued the operation and maintenance of the CYCC lysimeter site prior to the spring of 2011 with the thought that the new lysimeter plots, located on the Carpenter Ranch near Hayden, Colorado, would be installed and operational by late spring. It was not until November 2011 however before DWR and the Colorado Climate Center were able to move forward with the installation of the weather station and construction of the lysimeter plots. In April 2012, the final touches of the installation of weather station were completed by the Colorado Climate Center and construction of lysimeter plots and buckets were completed by DWR.

Four plots were constructed at the lysimeter site; two of which were completed with sod from the surrounding grass meadow and the other two seeded with a hardy strain of orchard grass. In the summer of 2012, these plots were then watered and weighed one to two times per week. Unfortunately due to several mistakes made in the operation and maintenance of the plots, equipment malfunction and other unfortunate happenings such as cows getting into the plot area and eating the grass, no reasonable data was obtained and 2012 had to be chalked up as a learning year. With better equipment and a better understanding of how to maintain the plots, we look toward collecting some good data in 2013. Following are some pictures of the plots taken in 2012.







Abandonment Process

The Division Engineer's 2010 Abandonment List (List) included a total of 218 water rights. After objections were received and responded to after a great deal of investigation, the Revised Abandonment List was prepared and filed with the Water Court on December 21, 2011, which was assigned Case No. 11CW37. In total, 201 water rights were included on the Revised Abandonment List either in whole or in part. Any person then wishing to protest the inclusion of a water right on the Revised Abandonment List was to file a written protest with the Water Court by June 30, 2012. In total, 29 protests were filed with the Court, each of which was assigned a separate case number. Between these 29 protests, a total of 40 water rights were protested. The division engineer and Attorney General's Office continue to work with the Protestants to resolve their cases and as of May 2013, 19 of the 29 cases had been resolved. Table 5, below, shows the number of water rights on the Revised Abandonment List in each water district and the number of water rights protested.

<u>Table 5</u>

Number of Water Rights on Revised Abandonment List

Versus Number of Water Rights Protested

Water District	Number of Water	Number of Water	% of Total
	Rights on List	Rights Protested	Protested
43	13	2	15%
44	15	1	7%
47	70	26	37%
54	6	0	0%
55	2	0	0%
56	5	0	0%
57	37	5	14%
58	53	6	11%
Total	201	40	20%

In the resolution of the protest cases, in most instances, the amount of water included on the abandonment list is being reduced, although there have been some cases where a water right was removed from the list altogether as well as some cases where the protest was withdrawn, in which case no changes to the abandonment list have been made.

Important Court Cases

Water Court Case No. 08CW89

In Division 6 Water Court Case No. 08CW89, Raftopoulos Brothers requested the Court award three new conditional surface water rights, two new conditional water storage rights and various changes of water rights. Vermillion Ranch opposed the case and the case ultimately went to trial on June 7, 2010. After the decree was entered by the Court, Vermillion Ranch then appealed the decisions by the Water Court; such appeal was assigned Case No. 11SA86. A hearing before the Supreme Court was held on January 24, 2012. The issues raised on appeal by Vermillion Ranch were whether the trial court properly interpreted the water decrees that were at issue in the water court proceeding; whether the trail court properly concluded that a beneficial use not used for a period of more than thirty years was not abandoned; whether the term "and other beneficial purposes" in the water decrees that were at issue in the water court proceeding is ambiguous on its face; whether the trial court properly interpreted the term "and all other beneficial purposes" by including an enumerated use; and whether an applicant in a water court proceeding for a change of water right has the burden

to quantify the historic consumptive use for all decreed uses. As of May 2013, no decision has been rendered by the Supreme Court. The State and Division Engineers were not opposers in Case No. 08CW89 and thus did not participate in the hearing before the Supreme Court.

Water Court Case Nos. 09CW48 and 09CW50

The Yellow Jacket Water Conservancy District (YJWCD) has been a long time holder of several conditional water rights within the Yampa and White River basins and given the fact that they appeared to have no plan what-so-ever to develop these rights, when they came up for diligence in 2008 and 2009, several parties filed statements of opposition including the State and Division Engineers. More specifically, YJWCD owned multiple conditional surface water rights totaling 2,275 cfs and multiple conditional water storage rights totaling 278,340 acre-feet; all of which were adjudicated between 1966 and 1981. There were four diligence applications filed with the Court each with different water rights involved and two of these cases have come to a conclusion with the cancellation of the water rights. Specifically, all of the water rights located in the Yampa River basin and two water rights located in the White River basin have been cancelled; now leaving the YJWCD with 1,200 cfs and 141,533 acre-feet of conditional water rights remaining in the White River basin. These water rights are the subject of Case Nos. 09CW48 and 09CW50.

In these two cases all of the opposers, with the exception of the State and Division Engineers, jointly filed a motion for summary judgment with the Water Court in April 2011 arguing that YJWCD lacked the legally required quorum to conduct District business in 2009 before the diligence applications were filed; YJWCD's secretary/attorney did not have the authority to file the diligence applications; the YJWCD board of directors lacked the intent to maintain the conditional water rights which are the subject of Case Nos. 09CW48 and 09CW50; and as such the water rights should be cancelled. Ultimately, the Court agreed with these arguments and cancelled the conditional water rights. YJWCD later appealed this decision to the Supreme Court which was assigned Case No. 11SA306. The Supreme Court heard oral arguments on the matter on November 7, 2012. As of May 2013, no decision by the Supreme Court has been rendered.

The State and Division Engineer have not been actively involved in the case since the motion was filed. However if the Supreme Court overturns the lower court's decision, they will become active again as YJWCD has yet to overcome their burden of proof that these water rights can and will be developed and that the water rights have not become speculative over time.

Involvement in the Water User Community

The Division 6 staff continues to assist the public in preparing Water Court and well permit applications, by providing water right and diversion record information, by providing information on proper selection and installation of water measuring devices, and by providing assistance to dam owners with completing Notices of Intent to Construct Non-Jurisdictional Dams, Livestock Water Tank Permits and Emergency Action Plans. The Division 6 field office in Craig continues to be a vital aspect of our public relations.

Following is a list of meetings attended by Division 6 staff in 2012. This list is not meant to be all inclusive, but rather provide an idea of the types of meetings attended.

- North Platte Decree Committee meeting in Scottsbluff, NE
- North Platte Decree Committee meeting in Torrington, WY
- Annual meeting of the Pot Creek Distribution System in Vernal, UT
- All board meetings held by the Upper Yampa Water Conservancy District
- Two board meetings held by the Yellow Jacket Water Conservancy District
- The Little Snake River Water Conservancy District's annual meeting
- Bear River Irrigators annual meeting
- Stillwater Ditch Company annual meeting
- Michigan River Water Conservancy District's annual meeting
- Walden Reservoir Company's annual meeting
- Routt County Cattleman's Association annual meeting
- All Roundtable meetings for the Yampa/White River and North Platte River
- Four employees attended the CWOA annual conference in South Fork

In addition to the above, Division 6 staff held two public meetings to discuss water administration and the requirement of control structures and measurement devices. One of these meetings was a huge success with well over 50 people attending.

