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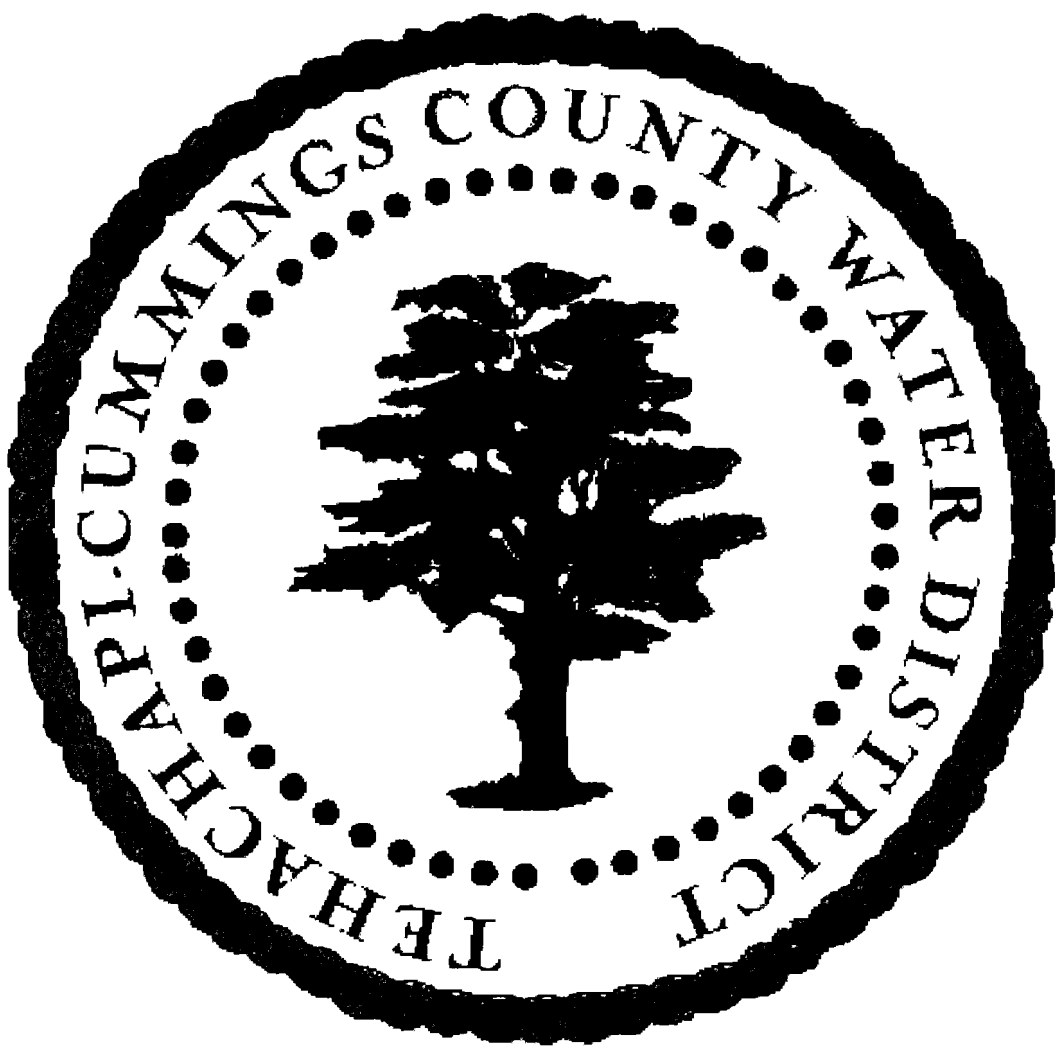
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TERRY WOODS, CLERK
KERN COUNTY CALIFORNIA

BY: _____ DEPUTY

**REPORT OF TEHACHAPI-
CUMMINGS COUNTY WATER
DISTRICT AS WATERMASTER FOR
CALENDAR YEAR 2011**



**THIRTY-SEVENTH ANNUAL
WATERMASTER REPORT
FOR CUMMINGS BASIN**

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF KERN

TEHACHAPI-CUMMINGS COUNTY)
WATER DISTRICT, a Body)
corporate and politic,)

Plaintiff)

vs.)

FRANK M. ARMSTRONG, et. al.,)

Defendants.)

No. 97209

REPORT OF TEHACHAPI-CUMMINGS
COUNTY WATER DISTRICT AS
WATERMASTER FOR CALENDAR
YEAR 2011

Cummings Basin
Thirty-Seventh Report

I. PRELIMINARY STATEMENT

The case of "Tehachapi-Cummings County Water District, a body corporate and politic, Plaintiff, vs. Frank M. Armstrong, et al., Defendants", Kern County Superior Court No. 97209, went to trial in December of 1970. The case was duly and regularly continued further for trial to March 1, 1971. The matter was further continued for the remainder of trial to June 14, 1971. Trial continued through June 22, 1971. A Judgment was filed on March 6, 1972, whereupon defendant, State of California and its subsidiary departments and agencies appealed. A partial reversal followed by the Court of Appeal, 49 Ca. App. 3rd, 992 (1975), as modified in 50 Cal. App. 3rd, 528 A (1975), and has been remanded back to the trial court. Further hearing before the trial court was held on April 9, 1976. The April 9 hearing was continued to allow the parties time to review data and make further preparation.

Under the provisions of said Judgment, which appointed the Tehachapi-Cummings County Water District as Watermaster for the Cummings Basin, it is uncertain when the Watermaster Report is due with the Court. The Findings of Fact indicate that the period of administration and enforcement of the Judgment should be on a water year (October 1 through September 30). This report is therefore, submitted in order to bring the history of Cummings Basin up to date as nearly as practicable.

Due to the method of collection of available data, a calendar year appeared to be a more desirable time period for administration and enforcement of the Judgment. The Watermaster asked the Court to amend this provision of the Findings of Fact to place administration on a calendar year basis.

II. THE CUMMINGS BASIN

DESCRIPTION OF THE CUMMINGS GROUNDWATER BASIN

The Cummings groundwater basin surface is generally the Cummings Valley floor, bordered on the south by the Tehachapi Mountains, on the north by the Sierra Nevada, with low lying ridges connecting these two ranges on the east and west sides of the basin. The Cummings Basin is generally elongated in a northeasterly manner, approximately 6 miles at the longest point and 4 miles at the widest point.

Inflow of surface and subsurface water from the surrounding watershed including Cummings Creek replenishes the basin. Surface inflow from Chanac Creek draining a portion of the Brite Valley also flows into the Cummings Basin. Surface outflow is by Chanac Creek to the west. Subsurface outflow from the basin does not occur to any appreciable extent due to the rock outcroppings in the channel of Chanac Creek.

The Cummings groundwater basin may be pictured as a bowl, the bottom and sides of which are composed of impervious materials. The bowl is filled with heterogeneous pervious alluvium deposited through geological time by the streams carrying eroded materials from the surrounding watershed areas.

Groundwater is stored within the alluvium of the basin. The average annual safe yield of the groundwater within the basin was established in the Judgment of the Cummings Basin to be 4,090-acre feet as of the time of trial. Exhibit A is a map of the Cummings Basin as defined in said Judgment as originally entered.

HISTORY OF WATER MANAGEMENT PROGRAM

The Tehachapi-Cummings Water Conservation District was formed in 1961 to carry out basin groundwater and watershed studies. This was a continuation of the Tehachapi Soil Conservation District's efforts in seeking solutions to water shortages within the area.

The Tehachapi-Cummings County Water District was formed February 16, 1965, by popular vote within the district, replacing the Tehachapi-Cummings Water Conservation District. A Citizens Advisory Committee composed of a cross section of community residents was established. This committee worked for more than a year on the basic solution to groundwater overdraft within the three major groundwater basins of the district.

On May 16, 1966, the Citizens Advisory Committee recommended to the Board of Directors of the Tehachapi-Cummings County Water District that three separate adjudication actions be filed on the Tehachapi, the Cummings and the Brite Valley groundwater basins. The purpose of these actions was to establish groundwater rights of all parties and to establish a physical solution and a groundwater management program in each basin when necessary to prevent further damage to the basin and also to allow the integration of imported supplemental water with local groundwater supplies. Plaintiff, Tehachapi-Cummings County Water District filed these actions in the Superior Court, on October 3, 1966.

On December 16, 1966, the Tehachapi-Cummings County Water District Board of Directors signed two contracts with the Kern County Water Agency for entitlement to State project water. One contract for an annual entitlement of 5,000 acre feet of agricultural water and the other for an annual entitlement of 15,000 acre feet of municipal and industrial water.

On June 8, 1971, a special district election was held with 65% of the eligible voters casting ballots. A federal loan under Public Law 984, in the amount of \$6.5 million, and a general obligation bond totaling \$2.5 million were approved by a 91% majority. The purpose of this financing was to construct an imported water system to convey State water to the Tehachapi-Cummings County Water District.

Construction on the water project began in May 1972. On November 4, 1973, the first imported water was pumped from the State Aqueduct near the A. D. Edmonston Pumping Plant through Cummings Valley and into the Tehachapi area. Project water has been delivered within the Cummings Basin during each season since water first arrived within the Tehachapi-Cummings County Water District.

III. CLAIM BY TEHACHAPI-CUMMINGS COUNTY WATER DISTRICT TO RETURN FLOW FROM IMPORTED WATER

At an adjourned regular meeting on June 13, 1973, the Board of Directors of the Tehachapi-Cummings County Water District adopted its Resolution No. 8-73 entitled "A Resolution of the Board of Directors of Tehachapi-Cummings County Water District Establishing Rates for Water Delivered by said District, Establishing other Charges and Rules and Regulations."

Said Part K of said Resolution remains in full force and effect, and said District's claim reflected in said Part K was affirmed and restated as Part K of the Tehachapi-Cummings County Water District's Resolutions No. 15-76. Part K was amended by Resolution 3-96 and later affirmed and restated as Part K of Resolution 13-09.

Part K of Resolution 13-09 provides in full as follows:

DISTRICT'S RIGHT IN WASTE, SEEPAGE AND RETURN FLOW. District has and claims all right, title and interest in and to all return flow into any ground water basin within District's boundaries resulting from water imported by District, along with the right to later recapture or otherwise utilize the same, provided, however, the District does not claim title to return flow from imported water purchased by a public entity from the District which is intentionally spread for storage in a groundwater basin by such public entity pursuant to rules and regulations promulgated therefore by the District acting as Watermaster of any such basin. The District's claim extends to all return flow from water imported by the District, whether from spreading operations by the District, from waste or seepage before any delivery of water by the District, from waste or seepage thereafter, and from percolation after or as a result of use or re-use of imported waters by any water user or other person, except imported water purchased from the District by a public entity which is intentionally spread for storage in a groundwater basin by such public entity pursuant to rules and regulations promulgated by the District acting as Watermaster of any such basin. District hereby expresses its intention to later recapture or otherwise utilize such return flow. Nothing herein shall prevent any person from engaging in drainage or other activities to protect his land or the use thereof from return flow which otherwise would injure or would threaten injury to the enjoyment or utilization of such land.

IV. EXTRACTION BY TEHACHAPI-CUMMINGS
COUNTY WATER DISTRICT OF
RETURN FLOWS FROM IMPORTED WATER

Pursuant to Part K of Resolution 8-73, the District has exercised its right to extract from the Cummings Basin return flows from State Water Project water imported by the District. As noted in the April, 1991 Watermaster Report, the District extracted approximately 436 acre feet between May 1, 1988 and May 1, 1990 by means of Well #T32S R32E S31 B1, leaving approximately 1,779 acre feet of return flows from imported SWP water in storage in Cummings Basin as of December 31, 1990.

By Resolution No. 14-92, adopted by the Board of Directors of Tehachapi-Cummings County Water District on December 22, 1992, a new Section 3 was added to Part C of Resolution No. 15-76, which was affirmed and restated in Resolution 13-09, Part C, Section 3 and provides as follows:

Section 3. Amendment of Term M&I Agreements to Provide for Substitution of Return Flows (Including Intentionally Recharged Water) for Surface Deliveries. The Board of the District hereby find and determine that substantial savings in treating imported water can be realized by retail purveyors of water purchased pursuant to Term M&I Agreements from the District if the District allows such purveyors to pump return flows from imported water which heretofore has percolated into the groundwater basins within the District, whether from seepage before or after use or reuse or whether from intentional spreading by the District in recharge facilities. Provided that sufficient District return flows are in storage and pumping of same by retail purveyors will not adversely affect other pumpers of groundwater exercising valid rights, the District in its discretion may allow such purveyors to pump District return flows in lieu of imported water provided that such purveyors and the District execute an amendment to their Term M&I Agreement substantially in the form attached hereto as Appendix 2.

As provided in Part C Section 3 of Resolution No. 13-09, the District and Bear Valley Community Services District (BVCS D), the California Correctional Institution (CCI) and Stallion Springs Community Services District (SSCS D) have amended their respective Term M&I Agreements. Each agency began purchasing return flow and/or artificially recharged SWP water (conjunctive use). Table 5 summarizes the storage and extraction of return flows from imported water.

**TABLE 1. IRRIGATED CROP SURVEY FOR CUMMINGS BASIN
DURING THE PERIOD OF 2007 THROUGH 2011 (IN ACRES)**

<u>IRRIGATED CROPS</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Alfalfa Hay	0	255	445	445	0
Apples	46	68	68	68	68
Broccoli	362	236	241	286	273
Mixed Lettuce	0	0	0	311	283
Carrots	550	47	0	22	20
Cauliflower	0	0	0	0	0
Celery	0	0	0	0	0
Oats	0	0	0	0	67
Grain Hay	0	0	0	0	0
Home Gardens	26	6	3	3	3
Home Orchards	0	6	5	5	5
Lilacs	3	19	19	19	19
Lettuce	326	284	165	0	0
Non-bearing Apples	0	0	0	0	0
Sudan	0	0	0	0	140
Onions	0	231	0	0	0
Peaches	4	0	0	0	0
Potatoes	10	0	63	87	38
Raspberries	0	0	0	0	0
Potato Seed	0	0	0	11	0
Table Grapes	5	9	22	22	22
Turf Sod	1,108	430	140	100	100
Mixed Vegetables	471	471	401	363	380
TOTALS	2,911	2,062	1,572	1,718	1,418

**TABLE 2. IMPORTED WATER DELIVERIES WITHIN
CUMMINGS BASIN DURING 2007 THROUGH 2011 (IN ACRE FEET)**

<u>YEAR</u>	<u>AGRICULTURE</u>	<u>MUNICIPAL/ INDUSTRIAL</u>	<u>CONJUNCTIVE USE</u>	<u>TOTAL</u>
2007	3,861	245	1,843	5,949
2008	2,985	254	1,367	4,606
2009	1,523	250	1,137	2,910
2010	1,574	198	1,080	2,852
2011	876	196	1,073	2,145

**TABLE 3. ESTIMATED PUMPING FROM CUMMINGS BASIN
DURING THE PERIOD OF 2007 THROUGH 2011**

<u>TYPE OF USE</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
Agriculture	2,673	3,022	3,495	2749	1,944
State of California	565	565	565	565	565
Other	319	321	346	336	366
TOTALS	3,557	3,908	4,406	3,650	2,875

**TABLE 4. ANNUAL RAINFALL IN CUMMINGS BASIN
FOR YEAR 2007 THROUGH 2011 (IN INCHES)**

<u>MONTH</u>	<u>2007</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
January	1.73	1.80	.95	2.45	.71
February	2.32	3.01	.90	3.00	3.05
March	.98	.46	.60	.05	4.90
April	1.74	.61	.30	3.00	.21
May	0	.25	.10	.55	1.28
June	0	0	1.35	0	.01
July	0	.03	0	0	1.22
August	0	0	.02	0	0
September	.45	0	0	.05	.02
October	.33	.20	0	2.71	1.22
November	.15	2.32	1.05	1.65	.66
December	1.25	1.72	2.90	3.91	.0
TOTALS	8.95	10.40	8.17	17.37	13.28

RAIN GAUGE LOCATION: NEAR THE MOST SOUTHERLY SOUTHWEST
CORNER OF THE CUMMINGS ORCHARD

TABLE 5. RETURN FLOWS STORED, ARTIFICIAL REPLENISHMENT AND EXTRACTIIONS

YEAR	RETURN FLOWS & ARTIFICIAL REPLENISHMENT		IMPORTED WATER ARTIFICIALLY REPLENISHED	TOTAL RETURN FLOWS & ARTIFICIAL REPLENISHMENT (15% OF COL 2 + 100% OF COL. 3)		RETURN FLOWS AND ARTIFICIAL REPLENISHMENT EXTRACTIIONS				TOTAL	RETURN FLOWS & ARTIFICIAL REPLENISHMENT IN STORAGE AS OF 31-Dec
	IN STORAGE AS OF JANUARY 1	IMPORTED WATER DELIVERED		BY SSCSD	BY BVCSO	BY CCI	BY DISTRICT				
1989	1,504	1,846	-	277	-	-	-	238	238	1,543	
1990	1,543	1,964	-	295	-	-	-	59	59	1,779	
1991	1,779	2,051	-	308	-	-	-	-	-	2,087	
1992	2,087	2,202	-	330	-	-	-	-	-	2,417	
1993	2,417	2,030	-	305	75	-	-	-	75	2,647	
1994	2,647	2,126	-	319	102	-	-	-	102	2,864	
1995	2,864	2,080	72	384	26	-	-	16	42	3,206	
1996	3,206	2,988	41	489	138	-	-	-	138	3,557	
1997	3,557	3,193	41	520	120	158	-	-	278	3,799	
1998	3,799	2,477	333	705	47	55	-	-	102	4,402	
1999	4,402	4,058	108	717	90	221	-	-	311	4,808	
2000	4,808	4,036	81	686	122	415	-	-	537	4,957	
2001	4,957	2,659	701	1,100	123	549	316	-	988	5,069	
2002	5,069	4,164	760	1,385	139	723	318	-	1,180	5,274	
2003	5,274	4,389	812	1,470	124	558	460	-	1,142	5,602	
2004	5,602	4,601	1,090	1,780	194	660	535	-	1,389	5,993	
2005	5,993	3,964	945	1,540	196	652	657	-	1,505	6,028	
2006	6,028	3,810	1,653	2,225	191	699	595	-	1,485	6,768	
2007	6,768	4,106	1,270	1,886	190	776	877	-	1,843	6,811	
2008	6,811	3,239	1,004	1,490	216	723	428	-	1,367	6,934	
2009	6,934	1,523	1,615	1,843	219	550	368	-	1,137	7,640	
2010	7,640	1,574	2,031	2,267	226	421	433	71	1,151	8,756	
2011	8,756	876	992	1,123	305	316	452	44	1,117	8,762	

V. CUMMINGS BASIN KEY WELLS

In an attempt to monitor the groundwater level in Cummings Basin in such a manner that it could be observed when groundwater should in the future spill from the basin via Chanac Creek, a key well for monitoring purposes is being considered by the District and the State of California. This well will be known as the Cummings Basin Key Well, State Well No. 35N1. A copy of an updated hydrograph on this well is included herein as Exhibit B.

VI. CUMMINGS BASIN CONJUNCTIVE USE PROJECT

In 1996, the Tehachapi-Cummings County Water District adopted Resolution No. 3-96 adding a new Part C Section 4 of Resolution No. 15-76, authorizing the pumping of recharged imported water in lieu of surface delivery of imported water. On June 17, 2009, the Board of Directors adopted Resolution No. 13-09, which affirmed and restated Part C, Section 4 of Resolution No. 15-76 and it provides as follows:

Section 3. Amendment of Term M&I Agreements to Provide for Substitution of Return Flows (Including Intentionally Recharged Water) for Surface Deliveries.

The Board of the District hereby find and determine that substantial savings in treating imported water can be realized by retail purveyors of water purchased pursuant to Term M&I Agreements from the District if the District allows such purveyors to pump return flows from imported water which heretofore has percolated into the groundwater basins within the District, whether from seepage before or after use or reuse or whether from intentional spreading by the District in recharge facilities. Provided that sufficient District return flows are in storage and pumping of same by retail purveyors will not adversely affect other pumpers of groundwater exercising valid rights, the District in its discretion may allow such purveyors to pump District return flows in lieu of imported water provided that such purveyors and the District execute an amendment to their Term M&I Agreement substantially in the form attached hereto as Appendix 2.

The Tehachapi-Cummings County Water District constructed groundwater recharge facilities, which enable the District to store imported State Water Project water in the Tehachapi and Cummings groundwater basins for subsequent extraction and beneficial use. This banking program has significantly improved both water supply and quality in the Cummings Basin and has helped ensure adequate local water supplies during drought years. The District began recharge operations during 1995.

The Bear Valley Community Services District (BVCS D) constructed new wells in the Cummings Basin and installed a transmission pipeline to convey recovered State Water Project water for delivery within the BVCS D water service area. The BVCS D began its Cummings Basin extraction of imported water in June 1997. The groundwater extracted from the Cummings Basin under this recharge/recovery arrangement is imported State Water Project water and is not a portion of the native safe yield.

In 2004, the District's new lateral extending north from its Mainline was fully operational. SWP water deliveries to the northern end of Cummings Valley helped correct a localized cone of depression which had formed in this area. In addition, the District assisted Bear Valley CSD, CCI, Grimmway Farms and Tehachapi Turf to enter into an In Lieu Agreement whereby the farmers agreed to use SWP water delivered through the District's new lateral in lieu of groundwater; and CCI and BVCSD agreed to pay the farmers the differential in costs. This program was successful, but is no longer being used.

The District acquired all of the right of way needed for the Cummings Valley Lateral Modifications Project, a new 3.8 mile pipeline connecting the District's Mainline in Brite Valley with the District's new lateral in Cummings Valley, thereby eliminating the need for an additional pump plant. A turnout will be installed where the new line crosses Chanac Creek to enable the District to increase the amount of SWP water discharged into Chanac Creek for recharge of the Cummings Basin. The first phase of this project, from Bailey Road to the Chanac Creek recharge site was completed in 2011.

Resolution 20-11 was adopted by the Board of Directors on December 21, 2011. This resolution amended the rules and regulations for the sale, use and distribution of water by adopting a new form of Term M&I Agreement for recharge water customers. The four new elements of this Term M&I Agreement include: A 10-year term with an evergreen provision, which provides a water supply assurance to the water purveyors so they are able to approve development projects and water supply assessments. The contract will have an ultimate termination date of December 31, 2039, concurrent with the expiration of the State Water Project contract; Establishes banked water reserve accounts. Water purveyors are being asked to put a five-year water supply in the ground, which would be equal to a five-year imported water requirement. This can be accumulated over a 10-year period; This agreement also limits the amount of imported water that the District is committed to furnish, by the amounts shown in the Tehachapi Regional Urban Water Management Plan for 2040; and This agreement also reiterates the District's policy to meet the present and future needs of its Term M&I Agreement customers from the District's State Water Project water supply. The rules and regulations for the sale, use and distribution of water, is attached at Exhibit C to this report.

VII. GROUNDWATER BASIN OPERATIONS

The District has continued to monitor the California Department of Corrections' response to remediation orders of the California Regional Water Quality Control Board, Central Valley Region, with respect to the MTBE contamination at CCI, Tehachapi. To date, CCI has put a removal system in place and contaminant levels have been dropping.

The District's consultants, Fugro West, Inc. and Etic Engineering, completed their draft Groundwater Modeling Study for the Cummings Basin as part of the Watermaster's ongoing program to better understand the geohydrology of the Cummings Basin. Fugro's computer model was based on a 21-year history (1981-2001). They estimated the safe yield of the basin to be 3,444 acre feet per year (AFY), consisting of 2,934 AFY of groundwater pumpage, plus 510 AFY of groundwater storage increase over the 21-year period. Their estimate is 15% less than the adjudicated safe yield of 4,090 AFY.

Subsequent to the publication of the Fugro Report, the District began to detect lowering groundwater elevations in three of its four key wells, with the exception being Well 32S/32E-20M1; which is

Subsequent to the publication of the Fugro Report, the District began to detect lowering groundwater elevations in three of its four key wells, with the exception being Well 32S/32E-20M1; which is located approximately ¼ mile from the District's recharge ponds. Key wells in the middle of the basin showed a steady decline from 2002 through 2009, with 2010 indicating a leveling pattern and 2011 showing some recovery.

In 2010, groundwater pumping was considerably less than it has been in recent years. In addition, the Board adopted a spreading loss surcharge in 2010, whereby the District spreads 6% more water than the conjunctive use customers extract.

In 2004, the District completed construction of additional recharge basins on 20 acres in the Chanac Creek fan immediately west of State Highway 202 acquired by the District in 2003. These additional recharge facilities, together with the District's recharge area along Chanac Creek upstream of State Highway 202 and recharge area on the Cummings Creek Fan in the southeast corner of the Basin now provide the District with ample capability to recharge far more water than required by the District's recharged SWP water customers, namely Stallion Springs CSD, Bear Valley CSD and CCI, Tehachapi.

In 2008, the Term M&I Agreement with the California Department of Corrections and Rehabilitation (CDC&R) was amended to reflect the fact that CCI, Tehachapi is pumping return flows of SWP water either directly or indirectly recharged back into the Basin, in lieu of surface deliveries of SWP water, which CCI no longer can receive since CCI's water treatment plant is inoperable.

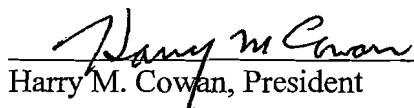
In December 2006, the District and the CDC&R executed an agreement whereby Corrections agreed to sell to the District, and the District agreed to purchase from Corrections, all tertiary treated disinfected effluent produced from CCI, Tehachapi's upgraded waste water treatment plant, for a term of 25 years from completion of the new plant. The District also adopted Rules and Regulations Governing the Use of Recycled Water.

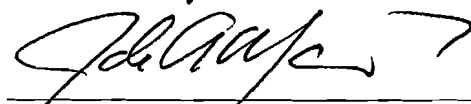
In 2010, the District installed an 8" purple pipe to convey recycled water from CCI to the Horsethief Country Club Golf Course, four miles away. CCI's Waste Discharge Order was issued in 2010 and the District's Master Reclamation Order was issued in 2011. The golf course will use about one-third of the recycled water produced by CCI.

This Thirty-Seventh annual report is submitted for the Tehachapi-Cummings County Water District as Watermaster for the Cummings Basin.

DATE: April 11, 2012

By:


 Harry M. Cowan, President


 John A. Martin, General Manager

12
10

Beaumont Valley

ALLUVIUM BOUNDARY

CALIFORNIA
CORRECTIONAL INSTITUTION

M.D.M.
T.32S.
R.12N.
S.B.M.

CUMMINGS BASIN WATERMASTER

- BASIN BOUNDARY
- ACTIVE WELLS
- INACTIVE WELLS

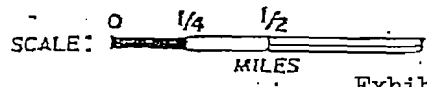


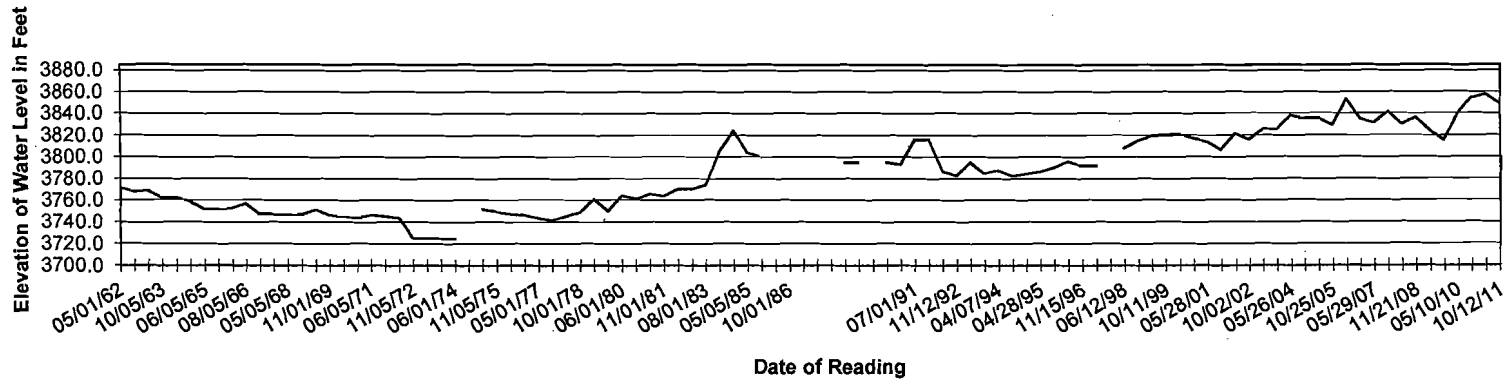
Exhibit A

UNITED SURVEYING & ENGINEERING

H. 16 W.

Hydrograph of Well 32S/32E-20M1

Ground Surface Elevation 3885.5 ft.



Hydrograph of Well 32S/32E-30K1 (CCI)

Ground Surface Elevation 3856.5 ft.

