

Southwest Water Consultants, Inc.

P.O. Box 6050 • Santa Fe, N. M. 87502 • (505) 820-6824

April 30, 2015

Mr. Joshua Ray
Aztec City Manager
201 West Chaco
Aztec, New Mexico 87410

Dear Mr. Ray:

This letter report will summarize Aztec Water Utility operations for calendar year 2014, including water diversion, treatment, sales, wastewater flows, water rights, and other pertinent water related information. Financial information will coincide with the fiscal year ending June 30, 2014. The state of the water utility during the first months of 2015 and the status of ongoing projects will also be discussed.

Water Diversion - The City of Aztec metered water diversions of 1,790.4 acre-feet from the Animas River in calendar 2014. All water came through three points of diversion. The Animas River Pump Station diverted 1,065.1 acre-feet from the Animas River during 2014. Water pumped from the Animas River via the Animas River Pump Station can be pre-settled in Reservoirs #1-3 before entering the water treatment plant. Water diverted from the Aztec Ditch is conveyed through an irrigation ditch and flows directly into Reservoir #1. Subsequently, Aztec Ditch water is pumped to Reservoir #3 for additional settlement time, incurring additional pumping costs. The Aztec Ditch was used to divert 621.6 acre-feet in 2014. The third point of diversion is also an irrigation ditch, the Lower Animas Ditch. A pump station located on that ditch diverted 103.7 acre-feet in 2014. The Lower Animas Ditch Pump Station pumps water through the same pipeline used to deliver water from the Animas River Pump Station. This diversion is unique to one of Aztec's water rights in that it cannot be diverted at either of the other two points of diversion. The diversion amounts and sources are as follows:

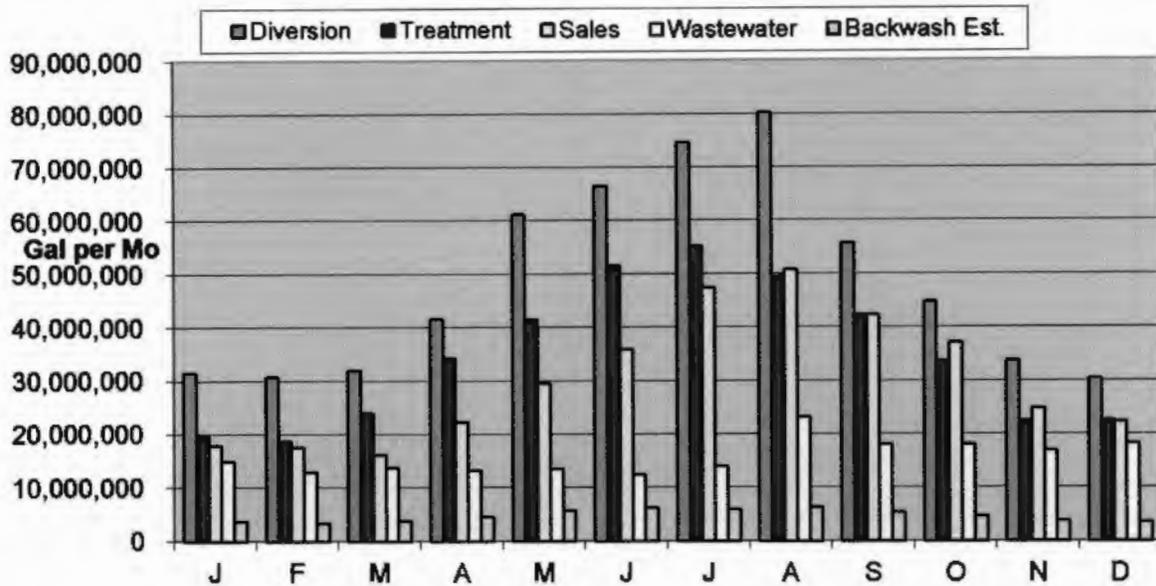
	Diversion Amount in Acre-Feet
<u>Source</u>	<u>2014</u>
Animas River Pump Station	1,065.1
Aztec Ditch	621.6
Lower Animas Ditch Pump Station	<u>103.7</u>
Total	1790.4

Water Treatment - The Aztec Water Treatment Plant (WTP) produced 1,274.9 acre-feet of potable water during 2014. This indicates that approximately 28.8% of the water diverted pursuant to the water rights of the City of Aztec was not metered into its distribution system. Losses amounted to approximately 515.5 acre-feet of water in 2014, measured from diversion of water at the Aztec Ditch or pump stations through the treatment process. The losses are partially attributable to evaporation from raw water storage reservoirs, meter error and backwash water at the WTP. Water used for flushing and backwashing at the WTP is included in the diversion amounts, but is not currently realized as a return flow credit. The average system demand for treated water in 2014 was 1.14 MGD. Peak day demand for water was 2.34 MGD in 2014. The nominal water treatment capacity at the end of 2014 was about 4.0 MGD from the newest WTP, and 2.5 MGD standby from the older units.

Fiscal 2013-2014 Water Sales - The City had water sales of 326,335,000 gallons (1,001.5 acre-feet) during fiscal 2013-2014, and derived therefrom \$1,886,288 in gross revenues. Sales to City customers during fiscal 2014 were augmented by bulk water sales of 28,560,000 gallons (\$136,382), including 5,962,800 gallons (\$59,110) to Bulk Commercial and Residential users, 21,082,000 gallons (\$73,787) to Southside Water Users and 1,515,000 gallons (\$3,484) to Flora Vista. The difference between water treated (397,102,000 gallons) and water sales (326,335,000 gallons) during fiscal 2013-2014 indicates that about 17.8% of the produced water was not metered to end-use customers. Unmetered water uses for fire protection or water main flushing and system losses through leaks and meter error amounted to approximately 70.8 million gallons in fiscal 2013-2014.

Wastewater Flows - Wastewater treatment plant flows were measured to be 189,595,000 gallons during calendar 2014. This amounts to 32.5% of the annual diversion in 2014. It also constitutes 45.6% of the annual amount of potable water produced in 2014. Wastewater flows are equated to return flows for water right purposes in Aztec's Metering Plan. Year 2014 had below-average precipitation for the year. Average consumption of water by Aztec was slightly less in 2014 (67.5%) than during 2013 (69.2%). Monthly diversions, treated quantities, water sales, measured wastewater volumes and estimated WTP backwash and flushing are shown on Figure 1 for 2014.

Figure 1
City of Aztec Water Use
2014



Water sales shown on Figure 1 are derived from customer meters read monthly. Water sales necessarily lag water diversion and treatment by up to 30 days and may cause discontinuities in individual month comparisons. Precipitation at Aztec Ruins National Monument (#290692) was about 7.4 inches in 2014, compared to a 30-year normal of 10.89 inches. Wastewater generated in the water treatment process is only partially metered, although that portion not metered is estimated by WTP operators on a daily basis. During 2014, the combined metered and estimated WTP wastewater discharge was 56,957,880 gallons (174.8 acre-feet).

Water Rights - At the end of 2014, the City of Aztec owned or had the right to divert about 5,200 acre-feet per annum of water from the Animas River. Of this amount, about 4,870 acre-feet were approved by the New Mexico State Engineer for diversion at the water treatment plant. Table 1 lists the water rights available to the City of Aztec from its own water rights, the Animas-La Plata contract rights and rights of the Southside Water Users Association. Some water rights listed on Table 1 are owned by the Southside Water Users Association but diverted, treated and delivered by Aztec to Southside.

Table 1
2014 Aztec Water Rights

Permit No.	Ditch Source	Priority	Maximum Diversion In AFY	Consumption (CU) in AFY	% CU	% CU in 2014	Diversion Allowed 2014	Accum AF
AZTEC								
01901	Lower Animas	1877	99.99	49.25	49.7	67.5	72.96	72.96
02170	Lower Animas	1877	1.422	0.777	54.6	67.5	1.15	74.11
02170	Lower Animas	1877	62.4	34.1	54.6	67.5	50.52	124.63
Admin	Lower Animas	1877	454.5 ¹	143.2	31.5	67.5	103.73 ¹	228.36
02170	Lower Animas	1877	22.41	12.3	54.9	67.5	18.22	246.58
02525	Eledge Mill	1878	10	5.46	54.6	67.5	8.09	254.67
0390	Halford	1891	1.23	0.66	53.6	67.5	0.98	255.65
01902	Farmers	1892	73.7	37.11	50.4	67.5	54.98	310.63
01951	Farmers	1892	77.693	41.7	53.7	67.5	61.78	372.41
01951	Farmers	1892	60.8	33.26	54.7	67.5	49.27	421.68
01951	Farmers	1892	24	13.2	54.7	67.5	19.56	441.24
01951	Farmers	1892	27.7 ²	15.3	52.4	67.5	22.67	463.90
028	Echo	1896	15.25	8.2	53.8	67.5	12.15	476.05
028	Echo	1896	17.5 ²	9.4	53.7	67.5	13.93	489.98
02033	Aztec Ext	1903	17.4	10	57.4	67.5	14.81	504.79
2801	Aztec Permit	12/18/1953	671.6 ⁴			67.5	671.6	1176.39
4487	Aztec ALP	5/1/1956	2026 ³	1013	50.0	100.0 ¹²	547.49 ⁶	1723.88
4498	SJWC ALP	5/1/1956	974 ³	487	50.0	100.0 ¹²	0.00 ⁶	1723.88
Subtotal			4637.595					
SOUTHSIDE								
2170	Lower Animas	1877	22.44	12.26	54.6	90.15 ⁷	13.6	13.6
2525	Eledge Mill	1878	9.66	5.25	54.3	90.21 ⁷	5.82	19.42
2525	Eledge Mill	1878	12.80	11.50	54.6	90.14 ⁷	12.80	32.22
2350	Kello-Blancett	1880	2.48	1.36	54.8	90.07 ⁷	1.51	33.73
390	Halford	1891	7.65	4.1	53.6	90.11 ⁷	4.55	38.28
1951	Farmington	1892	20.01	10.93	54.6	90.11 ⁷	12.13	50.41
028	Echo	1896	3.99	2.11	52.9	90.17 ⁷	2.34	52.75
028	Echo	1896	34.6	18.5	53.5	90.16 ⁷	12.37	65.12
2533	N. Farmington	1897	24.8	13.28	53.5	90.16 ⁷	1.40 ⁸	66.52
4499	Southside ALP	5/1/1956	62.73 ³	62.73	50	100.0 ¹²	0.00 ⁶	66.52
4498	SJWC ALP	5/1/1956	30.06 ³	30.06	50	100.0 ¹²	0.00 ⁶	66.52
Subtotal			231.22					
AZTEC, PENDING								
4495	N Heights ALP	5/1/1956	30.18 ^{3,9}	15.09	50	100.0 ¹²	15.09	15.09
02170	Lower Animas	1877	107.076 ⁹	58.53	54.6	67.5	86.71	101.80
01951	Farmers	1892	88.39 ¹⁰	44.5	52.4	67.5	65.93	167.73
	Varies		138.8 ¹¹	75.0	54.0	67.5	111.11	278.84
Subtotal			364.446					
Total			5233.261					

¹Must be diverted at Lower Animas Ditch point of diversion, limited in 2014 by actual diversion

²Permit approved by OSE on May 24, 2013

³Permit approved by OSE on February 9, 2012

⁴No consumption specified

⁵Reflects Animas-La Plata depletion adjustments, SJWC permittee under 4498, others beneficial user

⁶Demand limited

⁷Return Flow Plan Allowance

⁸Change of Ownership executed on March 8, 2004

⁹Permit filed with OSE on September 7, 1999

¹⁰Permit filed with OSE on October 8, 2009

¹¹Evidence of title exists, but quantity of valid water rights likely overstated

¹²OSE has not specifically approved a Return Flow Plan for ALP water

Animas-La Plata (ALP) Project water rights and diversions in Table 1 reflect downsized diversions and depletions available to that project. The City of Aztec is a co-permittee with the San Juan Water Commission (SJWC) on Office of the State Engineer (OSE) Permit 4487, as Southside is a co-permittee with the SJWC on OSE Permit 4499. The SJWC is the sole permittee on OSE Permit 4498, but beneficial use of this water will likely be by the members of the SJWC (Aztec had 9.74% of the original allocation). Aztec will be required by the OSE to request Permit 4498 water from the SJWC, but 9.74% of the 10,000 acre feet diversion is a realistic Aztec allocation.

Water was appropriated in OSE File 2883 in excess of the amount dedicated to the downsized ALP Project and was subject of a dispute between the SJWC and the OSE. In February 2013, the OSE and SJWC settled their dispute with the OSE requesting that the US assign the underlying New Mexico water right (OSE File No. 2883-B, priority May 1, 1956) to the SJWC, including ALP permits 4487, 4499 and 4498. Further, the OSE was to request that the US assign to the SJWC additional diversion and depletion of non-ALP water (OSE File No. 2883-C, administered priority May 2, 1956). Permit 2883-C was assigned a priority junior to the ALP priority, is not backed by ALP storage and would allow diversions of 10,000 acre feet per year and depletions of 6,300 acre feet per year. The SJWC will be required to file with the OSE for points of diversion for Permit 2883-C which may include those described by Permits 4487-4501. Currently, Aztec can divert Animas-La Plata water under Permit 4487, Southside can provide raw water to Aztec under Permit 4499 and both entities are listed as beneficial users of water under SJWC Permit 4498.

During 2014, Aztec diverted about 547 acre-feet of its Animas-La Plata entitlement. As indicated on Table 1, Aztec did not divert any of Southside's Animas-La Plata entitlement to meet the total Southside demand. Aztec also executed a Change of Ownership for 44.70 acre-feet of water (30.18 acre-feet in a downsized project) from the North Heights Animas-La Plata Permit 4495 on March 8, 2004. This amount is Aztec's share of the Animas-La Plata water designated for areas now served by Bloomfield and Aztec. A permit application to the State Engineer for change in point of diversion and place of use is likely required before these rights can be diverted by Aztec.

Even though the USBR Animas-La Plata Project is operational and New Mexico deliveries are backed by about 3,025 acre-feet of project storage, in the driest of years the junior Animas-La Plata rights may still be out-of-priority for a part of the year. If ALP water rights were not in priority and storage insufficient, Aztec would need to rely on its more senior water rights. As shown in Table 1, senior water rights currently divertible at Aztec's Water Treatment Plant met 2014 demand except for diversion of about 547 acre feet of Animas-La Plata rights. If the Hartman and Townsend water rights had been transferred in 2014, an additional 153 acre-feet of water may have been diverted, and reliance on the Animas-La Plata water might have been reduced to about 394 acre feet for 2014. Additional water could be diverted if a return flow credit for water treatment process water was achieved. Acquiring additional senior water rights as they become available and transferring them to the water treatment plant continues to be prudent.

Up to 454.5 acre-feet of the "604" water right was approved for diversion by Aztec pursuant to a May 7, 1997 "administrative concurrence" by the New Mexico State Engineer. However, this right can only be diverted from the Lower Animas Ditch and consumption is limited to 143.2 acre-feet per year. The Lower Animas Ditch Pump Station was renovated during 2000 and 103.7 acre feet of water were diverted through it in 2014, all attributed to the "604" water right.

Southside's water rights listed above are not covered by Aztec's Return Flow Plan (Southside's wastewater is not treated at Aztec's wastewater plant), but the OSE has recently granted Southside some return flow credit because of recognition of wastewater returns to the river system through septic systems. Southside's transferred irrigation water rights provided Aztec with 66.52 acre-feet of diversion during 2014. None of Southside's Animas-La Plata water was required during 2014. In addition to the above-described water use determinations, the City of Aztec has pending applications for transfer of certain Hartman water rights under the Lower Animas Ditch and Townsend property water rights under the Farmers Ditch. Further, applications to store water in Aztec's Reservoir #3 are also pending. Status of each of the pending transfers is discussed below.

Hartman – Southwest assisted the City in filing an *Application for Permit to Change Point of Diversion and Place and/or Purpose of Use of Surface Waters* for transfer of certain Hartman Subdivision water rights to the water treatment plant points of diversion. The application included copies of the first deed from Hartman for all lots which are move-from areas in this

application, water right acreage by lot, street and alley, a listing of excluded lots, and all deeds from adjudicated owners. The Office of State Engineer (OSE) further requested the preparation of *Change of Ownership of Water Rights* on all Lower Animas Ditch water rights sought to be transferred by this application. The application to transfer 107.076 acre-feet of water rights was filed on September 7, 1999, and *Change of Ownership* forms on nine water right parcels were filed November 24, 1998. The transfer application listed 5.618 acres of water rights owned by Aztec, but left appurtenant to 32 lots whose owners requested continuance of irrigation on the lots. This application is pending with the OSE.

Townsend – Southwest filed for transfer of about 88.39 acre feet of diversion water rights under the Farmers Ditch (44.5 acre feet of consumptive water rights). The City purchased about 43 acres of land with appurtenant water rights adjacent to the existing wastewater treatment plant and sought to transfer the water rights from the land to the water treatment plant, less three acre feet for irrigation use on the land. Historic use of the water right and the location of irrigated lands in a larger parcel to which water rights were adjudicated are issues for this transfer. Lands associated with the adjacent Aztec wastewater treatment plant site were included in this transfer application although no water rights were identified thereon. OSE modifications to mapping format have been accomplished and maps re-submitted. Application is pending the permission, or proof of non-reply, of the move-to ditch per statutory requirements.

Aztec Reservoir #3 – Aztec constructed a new raw water reservoir in 2009 providing up to 193.9 acre feet of storage for additional settlement time for water quality purposes and additional storage for drought purposes. On July 31, 2009 Aztec received approval from the OSE for storage in Reservoir #3 of 1,569.985 acre feet of its senior water rights. Because of concerns for construction delay, the Animas-La Plata (ALP) and Southside rights were not included in this initial application. Pursuant to a request by the SJWC that ALP water rights not be included with other rights, Southwest prepared two additional applications for water storage in Reservoir #3. A second storage application was prepared for Southside's water rights and after Notice was protested by the Lower Animas Community Ditch (LACD). The LACD is opposed to Southside water in its ditch. Although the LACD protest was subsequently withdrawn, this application is pending with the OSE. A third application for storage of the ALP water in Reservoir #3 has recently been executed by all parties and is ready to file. LACD's objection to Southside's water in their ditch will likely also apply to this application and Aztec should seek to resolve the issue before publishing notice, if possible.

Financial – The latest financial information available to determine the Aztec Water Utility’s Revenue Requirements is associated with fiscal 2013-2014, ending June 30, 2014. Table 2 indicates the City’s investment in its water system.

Table 2
City of Aztec
Water System Investment as of 6/30/2014

<u>Water Utility Assets</u>	<u>6/30/2013</u>	<u>6/30/2014</u>	<u>% Change</u>
1. Water System Original Cost	\$ 17,254,364	\$18,407,423	+6.7%
Contributions to Construction			
Accumulated Depreciation	(<u>\$ 7,569,576</u>)	(<u>\$ 8,205,467</u>)	+8.4%
Net Water System Plant	\$ 9,684,788	\$10,201,956	+5.3%
2. Common Plant Allocated to Water			
Original Cost	\$ 481,156	\$ 501,551	+4.2%
Accumulated Depreciation	(<u>\$ 419,966</u>)	(<u>\$ 440,825</u>)	+5.0%
Net Common Plant (Water)	\$ 61,190	\$60,726	-0.8%
3. Water Rights Original Cost	\$536,307	\$536,307	0.0%
Accumulated Depreciation	<u>0</u>	<u>0</u>	0.0%
Net Water Rights	\$536,307	\$536,307	0.0%
4. Construction in Progress Original Cost	\$1,243,189	\$170,650	-86.3%
Accumulated Depreciation	<u>0</u>	<u>0</u>	0.0%
Net Construction in Progress	\$1,243,189	\$170,650	-86.3%
Total Net Water Utility Assets	\$11,525,474	\$ 10,969,639	-4.8%

The net water system plant increased 5.3% between the end of fiscal 2013 and 2014; indicating new investment in plant is more than annual depreciation. With the addition of Common Plant Allocated to Water, Water Rights and Construction in Progress, the Total Net Water Utility Assets decreased by 4.8%. Table 3 presents a comparison of income and expenses for the water utility for fiscal year 2014.

Table 3
City of Aztec Water Utility Revenue Requirements
Fiscal Year 2014¹

	<u>2012-2013</u>	<u>2013-2014</u>	<u>% Change</u>
<u>Income and Expenses</u>			
System Revenues			
Sale of Water	\$ 1,728,839	\$ 1,599,807	-7.5%
Bulk Water Sales	249,299	245,966	-1.3%
Property Taxes dedicated to WTP loan	0	0	
Interest on Funds	3,067	657	-78.6%
Other Fees and Income	<u>95,678</u>	<u>136,198</u>	+42.4%
Total Revenue	\$ 2,076,883	\$ 1,982,628	-4.5%
System Expenses			
Salaries and Fringe Benefits	\$ 413,005	\$ 348,300	-15.7%
Purchased Power, Fuel & Chemicals	145,623	203,905	+40.0%
Other Operating Costs	484,586	483,505	-0.2%
Administrative Fee	146,920	169,128	+15.1%
Depreciation on Water Assets	610,203	681,032	+11.6%
Depreciation on Common Assets (Water Share)	18,890	13,577	-28.1%
Payment in Lieu of Taxes	99,272	92,446	-6.9%
Interest on Loans	<u>0</u>	<u>0</u>	
Total Expenses	\$ 1,918,499	\$ 1,991,893	+3.8%
Revenue Requirements	\$ 1,918,499	\$ 1,991,893	
Revenue in Excess of Requirements	\$ 158,384	\$ -9,265	

Notes: ¹Source of Data: FY14 Annual Financial Report Water Utility

The Water Utility had annual revenues of \$1,982,628 during fiscal 2013-2014. The Water Utility revenues covered operating costs, except a small amount of depreciation (a non-cash expense), with an overall shortfall of \$9,265. Because depreciation is a non-cash expense, it is instructive to review the financial condition of the utility on a cash basis. Ignoring depreciation in Table 3 above, the total cash income of the utility in fiscal 2014 was \$1,982,628 while the total cash expenditure (including capital expenses of \$827,277) was \$2,124,561. The water utility had a net cash income of -\$141,933 during fiscal 2014, and \$170,650 in construction in progress was identified for the year.

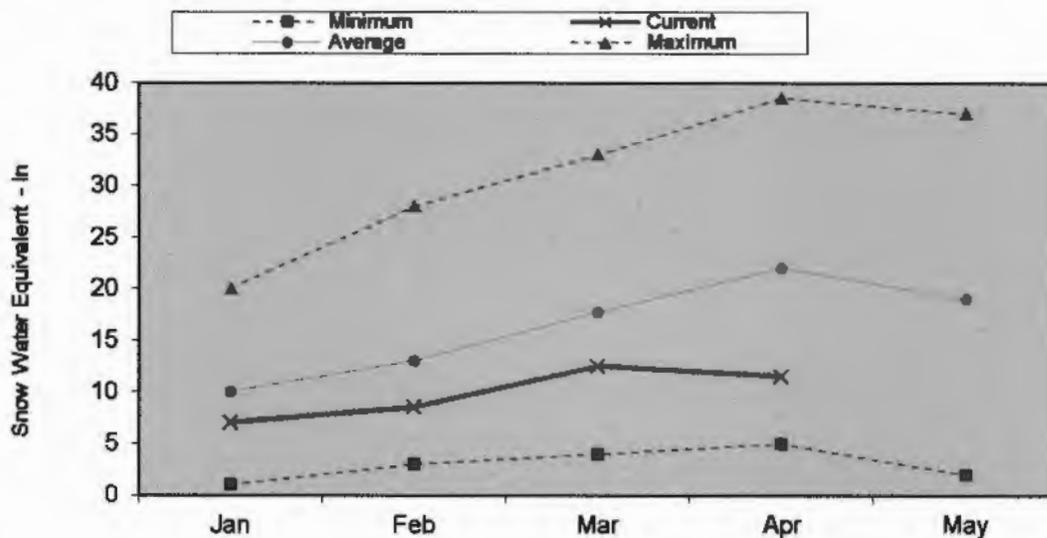
City of Aztec Code Section 16-201 identifies water rates for residential, multi-unit residential, commercial, industrial, institutional, and other classes' water consumption, including the base/system charge and a water use charge. The water use charge to Aztec residential customers is \$3.00/1000 gallons for the first increment of consumption. Thereafter, the rate increases as water consumption increases until the water use charge reaches \$5.50/1000 gallons in

some instances. Water customers also pay monthly base/system charges which vary with the class of customer. Residential customers pay \$17.20 per month as a base/system charge.

Code Section 16-202 assesses a Water Right Rate to all new water customers according to the size of their meter and the status of return flows from use of the water. A new 5/8-inch meter is charged \$600 (\$900 without return flow). The balance of funds derived from the Water Rights Rates was \$336,135 as of 6/30/2014.

Water Supply Status – The winter of 2014- 2015 has less than normal snowpack, averaging 54% of median in the San Juan River Basin as of April 1, 2015. The streamflow forecast for the Animas River at Durango as of April 1, is 245,000 acre-feet for the period April-July, 2015 which is 59% of average. Figure 2 indicates an accumulation of snowpack in the San Juan Basin for the winter of 2014-2015.

Figure 2
Water Supply Outlook Report
San Juan River Basin as of April 1, 2015
Mountain Snowpack (inches)

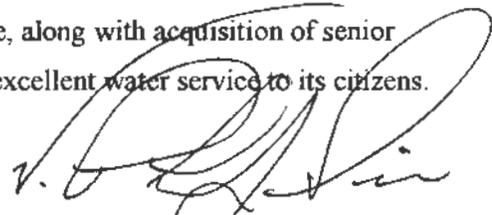


Water Projects – Aztec conducted planning, design and construction for about \$170,650 of water projects in 2014. This construction in progress encompasses a permanent diversion dam at the Animas River Pump Station, additional piping at the WTP to allow delivery of water from Reservoir #3 directly to the WTP and a SCADA upgrade to include tanks and pump stations.

Plans for a permanent diversion dam at the Animas River Pump Station coupled with an additional pump will provide Aztec with a more dependable and functional method of effecting diversions from the Animas River at times of low flows. This project has not been bid, nor has it received a Corps of Engineer 404 permit. A remote monitoring system to include tanks and pump stations will enhance water operations in the system and is ready for bid. Lastly, a new 16-inch pipeline at the WTP will allow water to be delivered directly from Reservoir #3 to the WTP without first passing through Reservoir #2.

An area of continued improvement involves obtaining a return flow credit or reuse of water generated by backwashing and flushing in the normal operation of the water treatment plants. Currently the backwash is metered in the plant and staff estimates the total amount of WTP flushing on a daily basis. Aztec reports backwash and flushing amounts according to terms of its NPDES permit. Daily estimates of the volume of process water during calendar 2014 indicate annual amounts of about 56,957,880 gallons per year (174.8 acre feet) are discharged to the Lower Animas Ditch. During the last five years, WTP wastewater flows have averaged 162.2 acre feet, ranging from 151.6 acre feet to 174.8 acre feet. If these water volumes can be documented as returning to surface water supplies, then Aztec may be able to claim a larger return flow credit and increase its diversion accordingly. Water quality constraints imposed by EPA may limit these discharges in the future. Alternatively, this amount of WTP wastewater may be used to satisfy golf course irrigation water supplies for the Aztec Heights Development. Rather than using only ALP water supplies for the golf course, it appears feasible to allow the WTP wastewater to be piped to the golf course site for use in irrigation. Because the WTP wastewater is a product of the diversion and use of all of Aztec's water rights, it is not limited to ALP supplies. The wastewater is derived from all water rights diverted by Aztec. Amended agreements with Aztec Heights Development for the use of WTP wastewater were approved by the Commission on September 16, 2009.

In sum, maximizing return flow credits or reuse of waste streams, monitoring the accuracy of water system meters, reinvesting in infrastructure, along with acquisition of senior water rights should position the City of Aztec for continued excellent water service to its citizens.



V. Phillip Sojce
President