

**TOWN OF PAYSON
WATER RESOURCES MANAGEMENT**

2014 Status Report



APRIL 3, 2014

Prepared By:
Town of Payson Water Department

2014 PAYSON WATER RESOURCES STATUS SUMMARY

The Town of Payson desires to maintain water usage below what is replaced on a long-term average basis by rain and snowfall within the watersheds that recharge or re-fill the aquifer upon which it relies. Maintaining groundwater usage below this amount is considered “Safe Yield”. The amount of groundwater available to the Town of Payson within a Safe Yield state is estimated at up to 2,681ac-ft/y. This value is considered Payson’s maximum available annual groundwater supply.

It is the policy of the Town of Payson local government that the Town will make attempts to manage its water supply and take efforts relating to water development and water conservation to achieve and/or maintain a “Safe Yield” condition of its groundwater supplies each year. Currently, Payson’s water consumption remains below the long-term state of “Safe Yield”. In 2013, Payson residents consumed local groundwater resources in an amount equal to 58% of “Safe Yield”. The net per person usage of water for 2013 was 74 gpcd.

Drought conditions have persisted and below normal annual precipitation has been observed during 2013 and; and yet groundwater resource levels have remained relatively stable over the last few years (due to low demand). Therefore, the **Town of Payson will implement Water Conservation Level I** water wise use levels for the period of April 2014 to May 2015. Water conservation and demand management continue to positively influence both the short and long-term water supply status of the Town of Payson.

C.C. Cragin (Blue Ridge) surface water and related water resources projects have been moving forward with great success. Five of the eight in-town treated waterlines are now complete. This year, we constructed Lines G & H which run along Tyler Parkway and Houston Mesa Road to the future treatment plant location near the Mesa Del Caballo Subdivision. Lines G & H consisted of 10,979 feet of 18” treated water ductile iron pipe (DIP). In addition, approximately 18,312 feet of 8” high density polyethylene (HDPE) raw water pipe was constructed along Tyler Parkway and Houston Mesa Road. The remaining three in-town treated waterlines that need to be completed are Line A, Line C, and Line F. Line A extends along north Highway 87 from Zurich Drive to Tyler Parkway and connects Line G and Line B which have already been constructed. Line C will cross Highway 260 at Mudsprings Road and will connect existing waterlines to deliver Line B water to the southeast portion of Payson. Lastly, Line F will connect the completed Line B to the water storage tank near the Highway 260 and Tyler Parkway intersection. Completion of the in-town portion of the C.C. Cragin project will enable the distribution of the additional 3,000 acre feet of water available from the future treatment plant and penstock connection to C.C. Cragin Reservoir. As you can see, Payson continues to move along on the road to achieving a rare condition, water resources sustainability in the desert southwest.

2014 WATER RESOURCES STATUS GROUNDWATER LEVELS

Groundwater levels in the Payson area are ever changing, not only from year to year but also from day to day. It is important to note that changes in groundwater levels either up or down are normal, within the context of a particular area's history. Because the Town of Payson currently obtains all of its potable water supplies from a fractured aquifer groundwater source, highly variable groundwater levels are expected.

Groundwater level changes are related to many factors. Recharge or re-filling of the aquifer occurs in times of precipitation (rainfall and snowmelt). This results in groundwater level rise. In an opposite way, groundwater levels will drop in response to periods of no recharge or drought. Groundwater levels will also drop and rise in response to well(s) pumping or not pumping. The topic becomes more complicated by virtue of the type of aquifer on which the Town and communities in the region depend. The Payson regional aquifer is in fact a complex system of interconnected cracks and sections of porous (sponge like) earth that yield water to wells. Nearly all of the earthen material beneath Payson and its surrounding area consist of the "Payson Granite". Some areas in the granite have more cracks and porous earth (decomposed granite) than others and some of the cracks or "fractures" are more interconnected than others. Therefore, interpreting changes in depth to groundwater can be complicated.

Groundwater levels are measured quarterly from all wells in the Town of Payson's observation network. This network consists of nearly 100 wells in the Payson area. Monthly measurements are collected at all active production wells and also at key observation wells. The water level data is maintained in a database by Water Department staff.

From 2010 to 2013, groundwater levels remain relatively stable and even higher in some areas. The resilience of groundwater levels, in spite of lackluster precipitation in 2013, is indicative of an aquifer in "recovery" condition. In other words, water levels are rising or stable because the aquifer is not being pumped more than it is naturally replenished over the long-term. The Town's groundwater supply clearly remains in a "Safe Yield" condition. The following graphs are examples of groundwater levels in the each of the four quadrants of the Town that illustrate this trend.

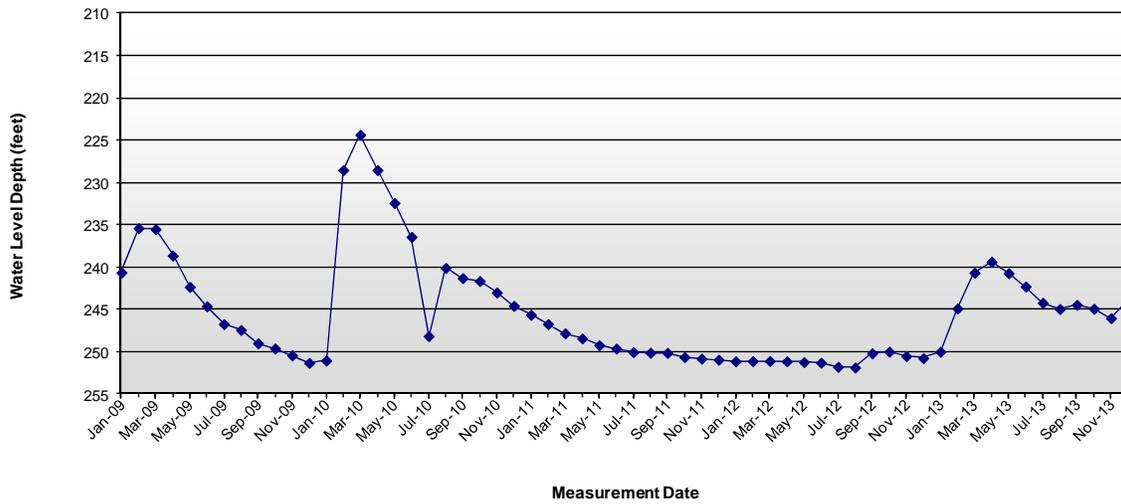


303A North Beeline Highway
Payson, Arizona 85541
928-474-5242

WATER LEVELS

Airpark No 1

For Period: 1/1/2009 through 12/31/2013 - Monthly Averages

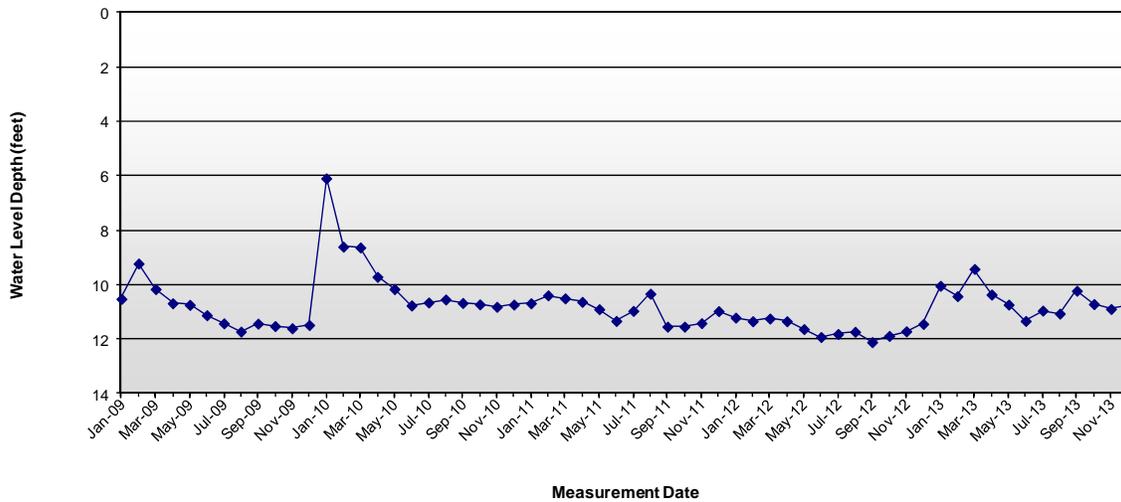


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WATER LEVELS

CPN-14

For Period: 1/1/2009 through 12/31/2013 - Monthly Averages



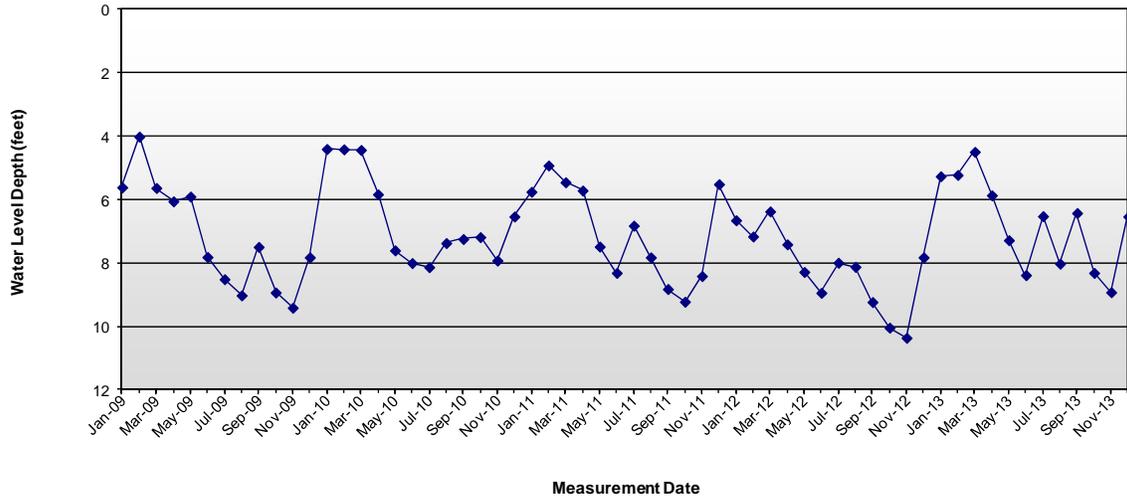


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WATER LEVELS

PE-11

For Period: 1/1/2009 through 12/31/2013 - Monthly Averages

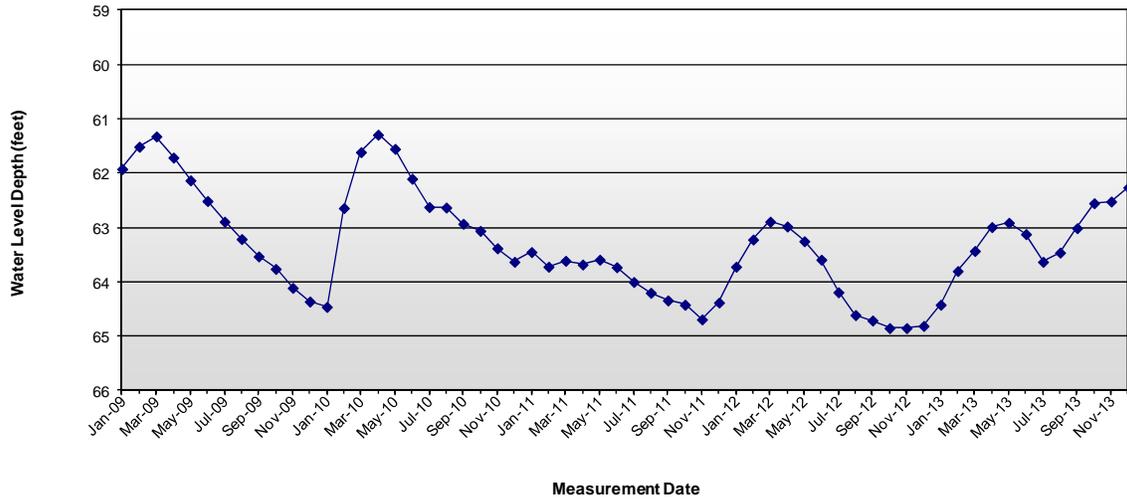


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WATER LEVELS

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For Period: 1/1/2009 through 12/31/2013 - Monthly Averages



2014 WATER RESOURCES STATUS CONSERVATION

Conservation Programs

With the ongoing support of the Town Council, rebate programs continued during 2013. These programs include a residential toilet rebate, a commercial plumbing retro-fit rebate, and two low income assistance programs. Qualifying rebates for both homeowners and businesses have decreased over the years indicating the success of the program. Overall, nineteen toilets, eleven faucets and 2 high efficiency urinal rebates were provided during 2013. We, also, continue to provide low-flow shower heads and faucet aerators at no cost to homeowners.

The Water Department held its 7th “Project Wet” Water Festival in October, 2013. Project Wet is a multi agency sponsored education program designed for interaction with and the education of 4th grade students. Through this festival future water customers are educated about the water cycle, the watershed, groundwater and aquifers and, of course, water conservation. 179 students from seven 4th grade classes participated. This year we were pleased to have 18 students from the Pine/Strawberry Elementary School join in the water education process. 46 volunteers participated, which included science students from the high school, town employees from the Water Department, Parks & Rec, Streets, and Community Development; as well as, employees from APS, SRP, the Payson Roundup, Gila County, the Sanitary District and several dedicated community members.

In April, 2013 the Department co-sponsored our 4th annual E-Cycling Event with ADEQ, Gila County, the Tonto Apache Tribe and the Sanitary District. We also co-sponsored a Latex Paint Collection Day and the first Household Hazardous Waste Collection in seven years.



Latex Paint Collection Day
March, 2013

2014 WATER RESOURCES STATUS

CONSERVATION Continued.....

Conservation Level

Water conservation requirements pursuant to Resolution No. 1742 anticipate that Water Conservation Level requirements be enacted according to the deficit or surplus of precipitation that occurred in the twelve month period immediately preceding the annual water report. Additional, resource factors are also considered when setting the Water Conservation Level requirements for any given year. Precipitation for Payson's water year of 2013-14 (April-March) was 19.69 inches. This amount is below the long-term average of ~22 inches per year, as referenced in conservation ordinances. Precipitation received in early March helped to improve the annual outlook after 56 days without any appreciable rainfall making for an unimpressive winter season. Long-term precipitation trends continue to indicate the current drought cycle may not bottom out in the foreseeable future (see chart on page 8).

With Payson's current low per person (per capita) water use, it is determined that **Water Conservation Level I remains the appropriate measure to implement upon Council acceptance of this report in April, 2014.** It is anticipated that implementation of Level I water use limitations will continue to promote responsible water use, maintain annual water demand below the targeted 89gpcd (per-person) level, and reserve adequate water supply capacity for fire protection.

Town of Payson Total Annual Precipitation Since 1950

