

**From:** [Walker, Cassondra M](#)  
**To:** [Kundargi, Darrell](#)  
**Cc:** [Baca, Joaquin](#); [Harden, Tasha](#); [Mcdaniel, Monty K](#)  
**Subject:** Re: Weekly well data  
**Date:** Monday, January 13, 2020 7:13:25 PM  
**Importance:** High

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[Well\\_Bucket\\_13Jan20.zip](#)

Darrell,

Here are the bucket flow tests from today. We were not able to do mitigation as the valve could not be opened today. I have the videos for each well. Twin does not have a meter that measures flow, but it does have a "trip" odometer that we reset and measured for a minute, which was also recorded...all are in the zipped folder.

	Time (s)	flow (calc)	flow (meter)
Hay Hollow	18.0	16.67	13.22
13-Jan-20	18.6	16.13	13.22
	18.0	16.67	13.17
	17.4	17.24	13.12
	18.5	16.22	13.00
	18.3	16.39	12.90
Bunting	6.2	48.39	47.41
13-Jan-20	4.9	61.22	47.41
	5.6	53.57	47.41
	5.3	56.60	47.41
	5.3	56.60	47.41
Twin	2.7	111.11	104.00
13-Jan-20	2.8	107.14	104.00
	2.7	111.11	104.00
	2.6	115.38	104.00
	2.7	111.11	104.00

On Mon, Jan 13, 2020 at 10:07 AM Cassondra Walker <[cassondra\\_walker@fws.gov](mailto:cassondra_walker@fws.gov)> wrote:  
Hey Darrell,

Both Mitigation and Twin wells have pretty high flows...as it is, using a 5 gallon bucket and trying to hit the "line" is difficult as the pressure coming out is makes the water slosh around. Secondly, no wells are close enough to shut off the water while doing the test, additionally it takes 30 sec to a minute to shut off water. Right now the person filling the bucket says stop when it appears the water has hit the 5 gallon line. Again, very difficult to be more accurate with amount of water coming out. So to answer your question, I don't think this calibrated bucket will work very well.

Cassandra Walker, PhD  
US Fish and Wildlife Service  
Refuge Biologist  
San Bernardino and Leslie Canyon NWR

PO Box 3509  
7628 N Hwy 191  
Douglas, AZ 85608

Cell: 520-368-6010

On Jan 13, 2020, at 9:46 AM, Kundargi, Darrell <[darrell\\_kundargi@fws.gov](mailto:darrell_kundargi@fws.gov)> wrote:

Hi All,

Thanks for the data, Cass. Below I have some thoughts on the check measurements, a response to Tasha, and a question for Monty.

Regarding the check measurements for flow, I think it would be best if we used this <https://www.gpimeters.com/Calibration-Contained-5-gallon-Prodview.html> because it's 1) much more accurate, 2) 3rd party and 3) calibrated to 0.01 inches.

When using this calibration bucket you don't have to try and hit the 5 gallon mark exactly, you just have to get the water level up to the calibrated section, then shut off the valve at the same time you hit stop on your stopwatch. Record the fill time and the fill level and we calculate gpm from that.

My question is: will this bucket work for your site conditions? My concern is that the opening for the bucket isn't large enough for the flow coming out of your pipe. Let me know if you think this will work and I'll order one.

Regarding your email last week, Tasha. We don't have an intern we can detail at the Refuge. He's still a student and classes started this week. I tried to convince him to miss the first month of classes but he didn't think that would be good for his GPA.

Monty, the drawing you gave me of the Hay Hollow Well pipe info was perfect. When you get back from training can you please get me that info for Twin, Bunting, and Mitigation as soon as your schedule allows? This is instrumental to calculate how much flow we lose as artesian pressure drops.

Best,

Darrell

\On Mon, Jan 13, 2020 at 8:01 AM Walker, Cassandra  
<[cassandra\\_walker@fws.gov](mailto:cassandra_walker@fws.gov)> wrote:  
| Here is last weeks well data....

Pressure and Depth for:

Hay Hollow Ponds(HHP), Hay Hollow Upstream (HHU), and Hay Hollow Downstream (HHD)

Pressure data for:

Hay Hollow, Mitigation, Twin, and Bunting

Cass

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Cassondra Walker, PhD

US Fish and Wildlife Service

Refuge Biologist

San Bernardino and Leslie Canyon NWR

PO Box 3509

7628 N Hwy 191

Douglas AZ 85608

Office:520-364-2104x105

Cell: 520-368-6010

Fax: 520-364-2130

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Darrell Kundargi

Hydrologist

Branch of Water Resources

U.S. Fish and Wildlife Service

500 Gold Street SW

Albuquerque, NM 87102

Ph: (505) 248-6430

Cell: (505) 362-3075

[www.facebook.com/USFWS Water Resources](http://www.facebook.com/USFWSWaterResources)

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Cassondra Walker, PhD

US Fish and Wildlife Service

Refuge Biologist

San Bernardino and Leslie Canyon NWR

PO Box 3509

7628 N Hwy 191  
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Fax: 520-364-2130