

State of Idaho
Department of Water Resources

CORRECTED Water Right License CORRECTED

WATER RIGHT NO. 95-08687

Priority: March 21, 1991

Maximum Diversion Rate: 1.31 CFS

It is hereby certified that AVONDALE IRRIGATION DISTRICT
PO BOX 81
HAYDEN LAKE ID 83835 has complied with the terms and conditions of the
permit, issued pursuant to Application for Permit dated March 21, 1991; and has submitted Proof of
Beneficial Use on February 08, 1993. An examination confirms water is diverted from:

SOURCE

GROUND WATER

and a water right has been established as follows:

BENEFICIAL USE

MUNICIPAL

PERIOD OF USE

01/01 to 12/31

DIVERSION RATE

1.31 CFS

LOCATION OF POINT(S) OF DIVERSION:

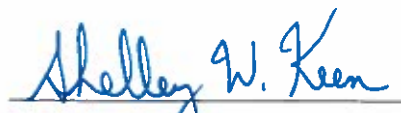
GROUND WATER	NW1/4SE1/4	Sec. 14, Twp 51N, Rge 04W, B.M.	KOOTENAI County
GROUND WATER	NW1/4SE1/4	Sec. 14, Twp 51N, Rge 04W, B.M.	KOOTENAI County
GROUND WATER	NW1/4SE1/4	Sec. 14, Twp 51N, Rge 04W, B.M.	KOOTENAI County
GROUND WATER	NE1/4SW1/4	Sec. 15, Twp 51N, Rge 04W, B.M.	KOOTENAI County
GROUND WATER	NE1/4SW1/4	Sec. 15, Twp 51N, Rge 04W, B.M.	KOOTENAI County
GROUND WATER	SW1/4SW1/4	Sec. 24, Twp 51N, Rge 04W, B.M.	KOOTENAI County

CONDITIONS OF APPROVAL

1. Place of Use may include lands outside the boundary of the Avondale Irrigation District pursuant to Section 43-1901, Idaho Code.
2. Place of Use is within the service area boundary of Avondale Irrigation District (PWS Number 1280008) pursuant to Section 43-323, Idaho Code.
3. A map depicting the place of use boundary for this water right at the time of this approval is attached to this document for illustration purposes.
4. Rights 95-7558, 95-8144, 95-8321, 95-8687, 95-8774, 95-8867 and 95-8909 when combined shall not exceed a total diversion rate of 18.05 CFS.
5. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
6. This right does not grant any right-of-way or easement across the land of another.
7. Subject to all prior water rights.

This license is issued pursuant to the provisions of Section 42-219, Idaho Code. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed this 2nd day of July, 2015.

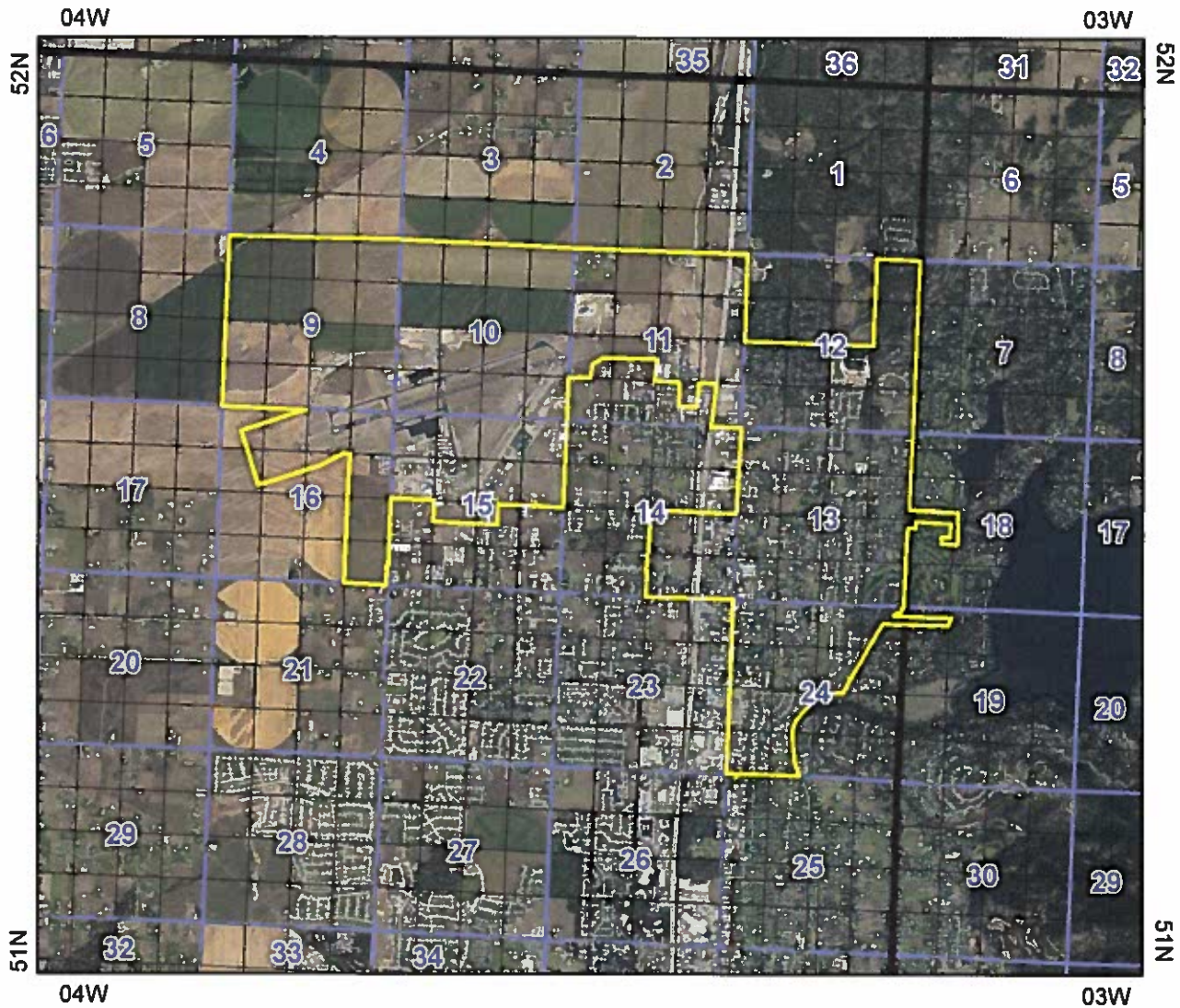

for GARY SPACKMAN
Director

Avondale Irrigation District

Attachment To Water Right License

95-8687

This map depicts the MUNICIPAL place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



-  Water Service Area Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

0 0.5 1 2 Miles



BEFORE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

IN THE MATTER OF PETITION TO	)	
CORRECT LICENSE NOS. 95-8687,	)	PRELIMINARY ORDER
95-8774, 95-8867, AND 95-8909	)	CORRECTING LICENSES
IN THE NAME OF AVONDALE	)	
IRRIGATION DISTRICT	)	
_____	)	

This matter having come before the Department of Water Resources (Department) as a result of a petition to correct water right license nos. 95-8687, 95-8774, 95-8867, and 95-8909, the Department finds, concludes and orders as follows:

FINDINGS OF FACT

1. On March 12, 2009, the Department approved water right licenses 95-8687, 95-8774, 95-8867, and 95-8909 (licenses) pursuant to the provisions of Idaho Code § 42-219.
2. On October 30, 2014, the Department received a letter from Avondale Irrigation District (District) seeking a correction to the combined diversion rate and volume limits stated on the licenses for the District's diversion system of six (6) ground water wells.
3. On December 8, 2014, the Department responded to the District's letter, noting that the District's Petition for Reconsideration was untimely, and the field examination reports associated with the licenses do not exhibit a specific procedural or clerical error.
4. On January 12, 2015, the Department received a second letter from Avondale Irrigation District (District), which again petitioned for a correction to the combined diversion rate and volume limits for the District's diversion system of six (6) groundwater wells. This letter points to the Department's previous correction of a clerical error on a license issued in Basin 98.
5. On February 3, 2015, the Department responded to the District's letter, noting that conclusive evidence of production records from the authorized development period for the licensed rights would be required to confirm beneficial use consistent with the requested correction. This letter noted the following:

If Avondale can submit conclusive evidence in the form of actual production records for its ground water pumping system that will confirm a higher total system flow rate during or close to the development period, the Department will consider reopening the licenses for correction of the combined flow rate limitation.

6. On March 20, 2015, the Department received a cover letter and report from the District. The report used actual pumping records to summarize the pumping capacity of the District's Miles pumping station composed of three (3) wells.

7. On April 1, 2015, the Department responded to the District's report, noting that production records for the entire ground water pumping system were needed to confirm a higher total system flow rate during or close to the development period.
8. On June 4, 2015, the Department received the District's system diversion records for the days during the development period with the greatest diversion volume across the system. The data confirmed the pumping capacity of the wells within the District's pumping facilities to be 18.05 cfs at that time.
9. On June 9, 2015, the Department requested further clarification from the District regarding how the District's system is operated to meet peak demands.
10. On June 9, 2015, the Department received the necessary clarification from the District to confirm that additional wells turn on in sequence and run simultaneously to meet peak demands.
11. In accordance with the Growing Communities Doctrine, the Department has not historically limited water rights for municipalities and most municipal providers by annual volume. The volume limits currently on licenses 95-8687, 95-8774, 95-8867, and 95-8909 are not meaningful because they represent the volume that could be produced if the authorized diversion rate were pumped continuously for one year. The Department can achieve the same effect by eliminating the volume limits on licenses 95-8687, 95-8774, 95-8867, and 95-8909.

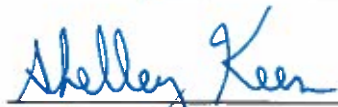
CONCLUSIONS OF LAW

1. Pursuant to Idaho Code § 42-219, licenses should accurately describe the beneficial use of water established in accordance with permits to appropriate water.
2. Licenses 95-8687, 95-8774, 95-8867, and 95-8909 incorrectly show a combined diversion rate of 13.94 cfs. The combined use limit conditions on rights 95-8687, 95-8774, 95-8867, and 95-8909 should be licensed for a diversion rate of 18.05 cfs.
3. The annual diversion volume limit should be removed from each of licenses 95-8687, 95-8774, 95-8867, and 95-8909.
4. The Department should re-issue the licenses to show the correct combined diversion rate.

ORDER

IT IS FURTHER HEREBY ORDERED that new water right license documents shall be issued on this date in connection with this order, for rights 95-8687, 95-8774, 95-8867, and 95-8909.

Dated this 2nd day of July, 2015.



Shelley Keen
Manager, Water Rights Section



State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

July 7, 2015

AVONDALE IRRIGATION DISTRICT
PO BOX 81
HAYDEN LAKE ID 83835

RE: License Nos. 95-8687, 95-8774, 95-8867 & 95-8909

Issuance of Corrected Licenses

Dear Water Right Holder(s):

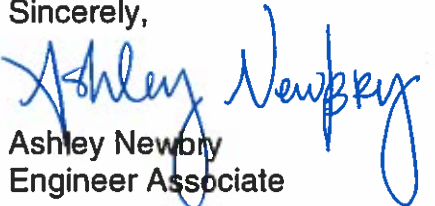
The Department of Water Resources has issued the enclosed Order Correcting Licenses along with the Corrected Water Right Licenses. Please be sure to thoroughly review the conditions of approval and remarks listed on your licenses.

The orders are PRELIMINARY ORDERS issued by the Department pursuant to rule 730 of the Department's Rules of Procedure (IDAPA 37.01.01). They can and will become final orders without further action by the Department unless a party petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-287-4846.

Sincerely,



Ashley Newberry
Engineer Associate

Enclosure(s)

CERTIFICATE OF SERVICE

I hereby certify that on July 8, 2015, I mailed true and correct copies, postage prepaid, of the foregoing PRELIMINARY ORDERS (**Order Correcting Licenses**) & (**Corrected Licenses**) to the person(s) listed below:

RE: WATER RIGHT NOS.

95-8687, 95-8774, 95-8867 & 95-8909

**AVONDALE IRRIGATION DISTRICT
PO BOX 81
HAYDEN LAKE ID 83835**



**Darla Block
Technical Records Specialist**

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

Newbry, Ashley

From: Bob Chandler [bobchandlercda@gmail.com]
Sent: Tuesday, June 09, 2015 2:09 PM
To: Newbry, Ashley
Subject: Avondale Irrigation District
Attachments: Water Demand Explained.docx

Ashley,

Please see the attached doc and let me know your thoughts.

Thanks,
B.

Bob Chandler
District Manager



Avondale Irrigation District
PO Box 81, Hayden ID 83835
Office (208) 772-5657
Mobile (208) 691-3428

Avondale Irrigation District

Explanation of Pumping during Examination Period 1991 – 2000

Water Demand

Avondale Irrigation District operates as an irrigation district originally formed to provide irrigation water for crops and also domestic water. The Bureau of Reclamation rebuilt the district under the same principles, in fact irrigated tracts were given water allotments based on the growing of alfalfa. Typically the districts summer water consumption is about 10 times the amount of winter consumption.

Summer consumption consists of irrigated crops, domestic use, irrigated lawns and commercial use. Most irrigators like to water early to avoid high evaporation, as do homeowners. This is a proven water conservation tactic used worldwide. That said, our peak demand is early to mid-morning and then again in the evening. Domestic use is also higher in the morning and again in the evenings.

Pumping Principals

Now that the districts system is controlled by SCADA, changes are easily made at a computer or even a phone to individual pump operations and reservoir levels. Prior to SCADA however, during the examination period the district operated its pumps from phone lines and probes that hung the tank.

Each pump had its own start probe, but not all pumps had their own stop probe. Starting at the highest elevation in the tank or the level at which the first pump was to turn on is where the first probe hung. Below that was a series of hanging probes that each started an additional pump. As the water level continued to drop during high demand, pumps continued to turn on until the demand was met. The reservoir only had three stop probes. One for the Miles pump station, one for the Airport well field and one for Finucane.

Because the probes were pre-set in the tank, it made changing pump order difficult. You either had to climb the tank and raise or lower the probes, or you could try changing the phone lines at the bottom of the tank, which was just as troublesome.

Because Finucane was the smallest pump, it was always just turned on hand during the summer months and left alone.

In the hotter part of the summer, an airport pump was usually turned on hand as well. This was done due to the fact that stop probes turned off more than one pump and in high demand situations if more than one pump shut off at a time the system noticed both pressure loss and water fluctuation or surge. It also helped with pump efficiency and electrical costs. From year to year the district tried to alternate which airport pump was running and put one of the pumps lower on the list for starting under demand. This ordering could actually be changed at the phone pedestal at the airport well field.

Miles #1 and #3 are the larger pumps, so one of them was typically put on as the third pump and one as the last pump. Miles #2 fell somewhere in the middle.

The chart below depicts the individual hours of each pump for days of data previously submitted. Knowing how the pumps operate and having an idea of the order, it is fairly easy to conclude which pumps ran together and for how long.

Pumping Date	Finucane Hours	Miles #1 Hours	Miles #2 Hours	Miles #3 Hours	Airport #1 Hours	Airport #2 Hours
7/26/1998	25	0	25	20	0	23.4
8/4/1999	23.8	18.3	5.6	3.1	24	0
8/8/2000	23.9	4.1	4.2	21.7	24.2	0
7/28/1999	24.2	20.9	8.8	2.5	0	24
8/5/1998	23.7	0	9.3	23.5	0	20.1

Let's break them down.

7/26/1998

Finucane and Miles #2 ran for the entire day. Airport #2 ran 23.4 hours of the day, so we now know that Finucane, Miles #2 and Airport #2 all ran for at least 23.4 hours. Miles #3 ran for 20 hours. Therefore, Finucane, Miles #2, Airport #3 and Miles #3 ran at the same time for 20 hours of the day. This is a total of 4,900 gpm at peak demand.

8/4/1999

Finucane and Airport #1 ran for the entire day. Miles #1 ran for 18.3 hours. In all Finucane, Miles #1, Miles #2, Miles #3 and Airport #1 all ran for at least 3.1 hours of the day. A total of 6,900 gpm at peak demand.

8/8/2000

5 of six pumps ran at the same time for at least 4.1 hours. A total of 6,900 gallons per minute at peak demand.

7/28/1999

5 of the six pumps ran this day at the same time for at least 2.5 hours. A total of 6,900 gallons per minute at peak demand.

8/5/1998

4 of six pumps ran for at least 9.3 hours. A total of 4,900 gpm at peak demand.

That said, it is important to remember that our water rights are based on what our pumps can pump at peak demand. Our peak demand is irrigating with fire flow demand. Hopefully we will never have the opportunity to need the added fire flow demand, but the State does make us keep that amount of pumping capacity on hand. It is important that our water rights cover what our pumps can produce simultaneously.

Newbry, Ashley

From: Newbry, Ashley
Sent: Tuesday, June 09, 2015 8:46 AM
To: 'Bob Chandler'
Subject: Avondale Diversions
Attachments: Copy of Avondale Demand (3).xls

Bob,

Yesterday afternoon, I sent the attached spreadsheet to Jeff Peppersack, and asked him to also review your numbers. We feel that that, conceptually, the comparison of the "Calculated Gallonage" versus "Total Gallonage" makes sense, but it doesn't quite get to the "instantaneous diversion rates" that we had been searching for. He has asked me to have you prepare a narrative which answers the following about your system:

1. Provide a narrative with background information about how your system works. Why is there such a difference between Average and Peak flow rate? Please explain the type of users on your system and the reason for much greater peaks than average. *(This could occur in situations where the provider supplies irrigation and in-house use. In-house use is well-known for peaks and lows at different times within a 24-hour cycle. This could also occur where irrigators are typically only running during specific hours in a 24-hour period (ie heavy day use/low night use)).*
2. Confirm that the measurements recorded on 7/26/1998, 8/4/1999, 8/8/2000, 7/28/1999, 8/5/1998 were taken when all pumps shown were operating concurrently, not just within the same 24 hour period.

Thank you,

Ashley Newbry
Associate Engineer
Water Rights Permits Section
Idaho Dept. of Water Resources
State Office
322 E. Front Street
PO Box 83720
Boise, ID 83720-0098
(208) 287-4800 X 4846



AVONDALE WATER DEMAND

TABLE FROM REPORT, PAGE 6

Miles Wells 1, 2, 3

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
8/2/1989	1,488	7	2,860,000	1,2,3	1,922	2,864,466	0%
8/7/1990	2,562	13	4,550,000	1,2,3	1,776	4,550,862	0%
8/27/1992	744	6	840,000	2	1,129	840,720	0%
8/4/1995	1,332	8	2,550,000	1,3	1,914	2,601,630	-2%
8/5/1995	1,074	7	2,050,000	3	1,909	2,096,448	-2%
7/28/2009	1,080	11	1,910,000	1,2,3	1,769	1,969,482	-3%
Total	8280	52	14,760,000		1,736	14,923,608	-1%

Pump 1 1981 gpm
Pump 2 1130 gpm
Pump 3 1952 gpm
1687.7

EXAMPLE

All Wells (Airport #1 & #2, Finucane, Miles #1, #2, #3)

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
1/1/1992	1,500	7	3,900,000	A1, A2, F, M1, M2, M3	2,600	3,918,000	0%
1/1/1994	2,500	13	5,800,000	A1, A2, F, M1, M2, M4	2,320	5,817,000	0%
1/1/1996	750	6	2,900,000	A1, A2, F, M1, M2, M5	3,867	2,946,000	-2%
1/1/1998	1,300	8	4,100,000	A1, A2, F, M1, M2, M6	3,154	4,194,000	-2%
1/1/2000	1,100	7	3,900,000	A1, A2, F, M1, M2, M7	3,545	3,976,500	-2%
Total	7,150	41	20,600,000		3,097	20,851,500	-1%

Pump A1 1000 gpm
Pump A 2 1300 gpm
Pump F 450 gpm
Pump M1 2000 gpm
Pump M2 1500 gpm
Pump M3 2000 gpm

System Capable of:

13,308.41 Acre-Ft

18.38 CFS

Attachment
to Ashley's
6/9/15 email
pg 1

ACTUAL RECORDS FROM AVONDALE

All Wells (Airport #1 & #2, Finucane, Miles #1, #2, #3)

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Calculated Gallonage	% Actual	Avg GPM	Avg CFS
7/26/1998	5,604	9	6,785,700	A2, F, M2, M3	6,634,800	2%	4,712.29	10.50
8/4/1999	4,122	44	5,468,100	A1, F, M1, M2, M3	5,413,200	1%	3,797.29	8.46
8/6/2000	4,686	11	5,889,800	A1, F, M1, M2, M3	5,857,800	1%	4,090.14	9.11
7/28/1999	4,824	31	5,939,500	A2, F, M1, M2, M3	5,895,600	1%	4,124.65	9.19
8/5/1998	4,596	8	5,658,800	A2, F, M2, M3	5,647,800	0%	3,929.72	8.76

Total 23,832 103 29,741,900 1%

System capable of

13,066.44 Acre-Ft

18.05 CFS

Pump A1	1200	gpm	Airport 1	2.67 CFS
Pump A 2	1200	gpm	Airport 2	2.67 CFS
Pump F	500	gpm	Finucane	1.11 CFS
Pump M1	2000	gpm	Miles 1	4.46 CFS
Pump M2	1200	gpm	Miles 2	2.67 CFS
Pump M3	2000	gpm	Miles 3	4.46 CFS

What does this data show?

The *total gallonage* (from flow meter counter) vs. *calculated gallonage* (from run time x flow rate) demonstrates that the pump production rates shown in the table are accurate, or very close. (Pump M1 and M3 are actually rated to be 2050 gpm from the manufacturer.)

If necessary, a peaking factor could be applied to show that peak hour demand (instantaneous diversion rate) will commonly exceed average demand (average diversion rate in a 24-hr period, shown in the table).

Because the rights in question are of Municipal use, the diversion rate is multiplied by 365, a year-round season-of-use.

Attachment
to Ashley's
6/9/15
email.
pg 2

Newbry, Ashley

From: Bob Chandler [bobchandlercda@gmail.com]
Sent: Thursday, June 04, 2015 3:05 PM
To: Newbry, Ashley
Subject: Avondale Irrigation District
Attachments: Avondale Demand.xls

Ashley,

Hopefully you received my voicemail regarding the attached spreadsheet.

I looked through our years of pumping and sent you 5 examples. The examples come from the later part of the examination period, but only because all of the pumps were not functional until then. As far as pumping values for calculated amounts, I used the amounts that the pumps were originally recorded at and what we have always used as a baseline. I input my data into the spreadsheet you created, you will notice it as the third chart on the page.

Please let me know if any additional information is needed. I have the original pumping docs as backup if you need to see them.

Thanks again and I look forward to hearing from you soon.

Sincerely,
Bob Chandler

Bob Chandler
District Manager



Avondale Irrigation District
PO Box 81, Hayden ID 83835
Office (208) 772-5657
Mobile (208) 691-3428

TABLE FROM REPORT, PAGE 6

Miles Wells 1, 2, 3

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
8/2/1989	1,488	7	2,860,000	1,2,3	1,922	2,864,466	0%
8/7/1990	2,562	13	4,550,000	1,2,3	1,776	4,550,862	0%
8/27/1992	744	6	840,000	2	1,129	840,720	0%
8/4/1995	1,332	8	2,550,000	1,3	1,914	2,601,630	-2%
8/5/1995	1,074	7	2,050,000	3	1,909	2,096,448	-2%
7/28/2009	1,080	11	1,910,000	1,2,3	1,769	1,969,482	-3%
Total	8280	52	14,760,000		1,736	14,923,608	-1%

Pump 1
1981 gpm

Pump 2
1130 gpm

Pump 3
1952 gpm

1687.7

EXAMPLE

All Wells (Airport #1 & #2, Finucane, Miles #1, #2, #3)

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
1/1/1992	1,500	7	3,900,000	A1, A2, F, M1, M2, M3	2,600	3,918,000	0%
1/1/1994	2,500	13	5,800,000	A1, A2, F, M1, M2, M4	2,320	5,817,000	0%
1/1/1996	750	6	2,900,000	A1, A2, F, M1, M2, M5	3,867	2,946,000	-2%
1/1/1998	1,300	8	4,100,000	A1, A2, F, M1, M2, M6	3,154	4,194,000	-2%
1/1/2000	1,100	7	3,900,000	A1, A2, F, M1, M2, M7	3,545	3,976,500	-2%
Total	7,150	41	20,600,000		3,097	20,851,500	-1%

Pump A1
1000 gpm

Pump A 2
1300 gpm

Pump F
450 gpm

Pump M1
2000 gpm

Pump M2
1500 gpm

Pump M3
2000 gpm

13,308.41 Acre-Ft

18.38 CFS

Attachment to
Bob's 6/4/15 email
pg 1

All Wells (Airport #1 & #2, Finucane, Miles #1, #2, #3)

Pumping Date	Total Minutes	Total Starts	Total Gallonage	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
7/26/1998	5,604	9	6,785,700	A2, F, M2, M3	4,712.29	6,634,800	2%
8/4/1999	4,122	44	5,468,100	A1, F, M1, M2, M3	3,797	5,413,200	1%
8/8/2000	4,686	11	5,889,800	A1, F, M1, M2, M3	4,090.14	5,857,800	1%
7/28/1999	4,824	31	5,939,500	A2, F, M1, M2, M3	4,124.65	5,895,600	1%
8/5/1998	4,596	8	5,658,800	A2, F, M2, M3	3,929.72	5,647,800	0%
Total	23,832	103	29,741,900		4,131	29,449,200	1%

Pump A1
1200 gpm

Pump A 2
1200 gpm

Pump F
500 gpm

Pump M1
2000 gpm

Pump M2
1200 gpm

Pump M3
2000 gpm

13,066.44 Acre-Ft

18.05 CFS

Pumping Date	Finucane Hours	Miles #1 Hours	Miles #2 Hours	Miles #3 Hours	Airport #1 Hours	Airport #2 Hours
7/26/1998	25	0	25	20	0	23.4
8/4/1999	23.8	18.3	5.6	3.1	24	0
8/8/2000	23.9	4.1	4.2	21.7	24.2	0
7/28/1999	24.2	20.9	8.8	2.5	0	24
8/5/1998	23.7	0	9.3	23.5	0	20.1

Attachment to
Bob's 6/4/15
email. pg 2

Newbry, Ashley

From: Newbry, Ashley
Sent: Thursday, May 14, 2015 3:16 PM
To: 'Bob Chandler'
Subject: RE: Avondale Combined Limits

Bob,

The next best way to prove a greater diversion rate than the one licensed would require another records search. Regardless of the number of pumps running, look for your greatest diversion rate obtained from your system at a given time during the development period (1991 to 2000).

Sincerely,

Ashley

From: Bob Chandler [<mailto:bobchandlercda@gmail.com>]
Sent: Thursday, May 14, 2015 8:58 AM
To: Newbry, Ashley
Subject: Re: Avondale Combined Limits

Ashley,

I will do my best to find this information, but I am going to tell you up front that it is not typical for all of our pumps to run at once and even if they did, it would more than likely be in short duration's.

I will start researching this and get back to you.

Thanks for your help,
B.

Bob Chandler
District Manager



Avondale Irrigation District
PO Box 81, Hayden ID 83835
Office (208) 772-5657
Mobile (208) 691-3428

On Fri, May 8, 2015 at 3:50 PM, Newbry, Ashley <Ashley.Newbry@idwr.idaho.gov> wrote:

Good Afternoon Bob,

Here is the follow up email to our discussion yesterday morning.

In the previous report, you provided some good data on your Miles wells. Though you are only looking to refute a portion of the wells measured in the field exam, we are not able to simply replace a portion of the data. If we were to mix-and-match the data, it would introduce errors such as: age of the pumps and system, operating conditions, operating demand, measurement instruments, etc. The combined limit condition, which you are looking to revise, is written in regard to *all* of your points of diversion, not just the Miles wells.

The next best way I can describe what we need is by referencing your table on page 6 of your report. I have re-created it in the attached spreadsheet. On page 6, you have created a table with various measurement records. Some of those records have any number of pumps operating. The records which show pumps 1,2, & 3 operating are of interest because these give an indication of the maximum capacity of the "Miles System."

In order to verify the capacity of Avondale's "Whole System" we need similar data about the whole system. We need data which would correspond to dates with *all* pumps running (airport #1 and #2, Finucane, and Miles #1, #2, and #3).

You do not need to supply us with an additional report with a narrative. You will need to look through your records from 1991 to 2000 (the development period of the "Whole System") and look for dates in which all 6 pumps were operating. Create a table similar to the one on page 6 of your report. Your "calculated gallonage" and "average GPM" on days when all pumps are running will reflect the maximum capacity of the "Whole System."

Maximum "Calculated Gallonage" will be converted to Maximum Diversion Volume (AF), and Maximum "GPM" will be converted to Total Diversion Rate (CFS).

Please call me with any further questions.

Thank you,

Ashley Newbry

Associate Engineer

Water Rights Permits Section

Idaho Dept. of Water Resources

State Office

322 E. Front Street

PO Box 83720

Boise, ID 83720-0098

[\(208\) 287-4800 X 4846](tel:(208)287-4800X4846)



Ashley Newbry

Associate Engineer

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State of Idaho

DEPARTMENT OF WATER RESOURCES

322 East Front Street • P.O. Box 83720 • Boise, Idaho 83720-0098

Phone: (208) 287-4800 • Fax: (208) 287-6700 • Web Site: www.idwr.idaho.gov

GARY SPACKMAN
Director

C.L. "BUTCH" OTTER
Governor

April 1, 2015

BOB CHANDLER
AVONDALE IRRIGATION DISTRICT
PO BOX 81
HAYDEN ID 83835

Re: Water Right License Nos. 95-8687, 95-8774, 95-8867, and 95-8909

Dear Mr. Chandler:

Thank you for the recent submittal of your report "Avondale Irrigation District Water Right Pumping Capacity Supporting Information." The report provides data history supporting the maximum output of your three Miles well pumps during the requested period. Thus far, the Department approves of the production records provided for the Miles Pump Station wells, but additional records for other diversions on the system are needed.

You have requested the revision of a condition on each of the above licenses, which reads:

Rights 95-7558, 95-8144, 95-8321, 95-8687, 95-8774, 95-8867 and 95-8909 when combined shall not exceed a total diversion rate of 13.94 CFS and a total annual maximum diversion volume of 10092.2 AF at the field headgate.

This condition was intended to represent the increment of increased beneficial use for the entire Avondale municipal ground water system established in connection with the four licenses during their authorized development periods. In other words, to what extent did the development of new points of diversion correspond to an increase in production to meet newly realized demand, as compared to shifting production from the existing points of diversion to the new points of diversion? Production records for the entire ground water pumping system are needed to confirm a higher total system flow rate during or close to the development period. If Avondale can submit conclusive evidence of this scope, the Department will consider reopening the licenses for correction of the combined flow rate limitation.

I hope this letter provides sufficient explanation to address your concern. Please feel free to contact me if you have additional questions.

Sincerely,

Ashley Newberry
Associate Engineer

AVONDALE IRRIGATION DISTRICT

Providing Exceptional Drinking Water & Service Since 1908

RECEIVED

MAR 20 2015

DEPARTMENT OF
WATER RESOURCES

March 16, 2015

Gary Spackman, Director
Idaho Department of Water Resources
322 East Front Street
PO Box 83720
Boise ID 83720-0098

Re: Water Right Licenses 95-8687, 95-8774, 95-8867 & 95-8909

Dear Director Spackman:

Included with this letter, please find pumping data history supporting the capacity of our Miles Pump Station pumps. I am hopeful you will have no problems understanding the data or the way in which it has been presented, however if you do, please feel free to contact me so I can clear up any questions.

Thank you for your consideration in this matter.

Sincerely,



Bob Chandler
District Manager

Cc: Keith Franklin, IDWR Coeur d'Alene, Office
File: Water Rights

Reference
Material in
file: 95-8687

RECEIVED

MAR 20 2015

**DEPARTMENT OF
WATER RESOURCES**

2015

Avondale Irrigation District

WATER RIGHT PUMPING CAPACITY SUPPORTING INFORMATION

BOB CHANDLER, DISTRICT MANAGER

MARCH 10, 2015

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EXECUTIVE SUMMARY

The purpose of this report is to provide supporting information based on actual flow records to the Idaho Department of Water Resources (IDWR). It has come to the attention of Avondale Irrigation District (AID) that water right beneficial use flow data was stated incorrectly during field examinations. The error has caused the district to lose in excess of four (4) cubic feet per second (cfs) on priority dates that date back as far as twenty-three years.

GENERAL INFORMATION

History

The Miles pump station was constructed in 1976-1977, and consists of three wells and a main pump station facility. The three pumps direct water to a common pump station located on the center of the property. At the time of construction, one 20" flow meter was installed to record the overall production of the wells, and is still in use today. In 2012, along with new SCADA telemetry, individual flow meters were installed to help increase efficiency and provide individual pump accuracy. The 20" flow meter still records overall flow of all production leaving the facility.

Extent of the Pumping System

The existing Miles pump station system has not changed since it was put in to use in 1977. The #2 motor has been changed out twice due to lightning strikes, however the pumping components themselves are original. As typical of deep well turbine pumping systems, water is exhausted into a concrete flushing basin when the pumps come on and go off line. This procedure is accomplished with the use of cla-valves and is typical for reducing water hammer in the distribution system.

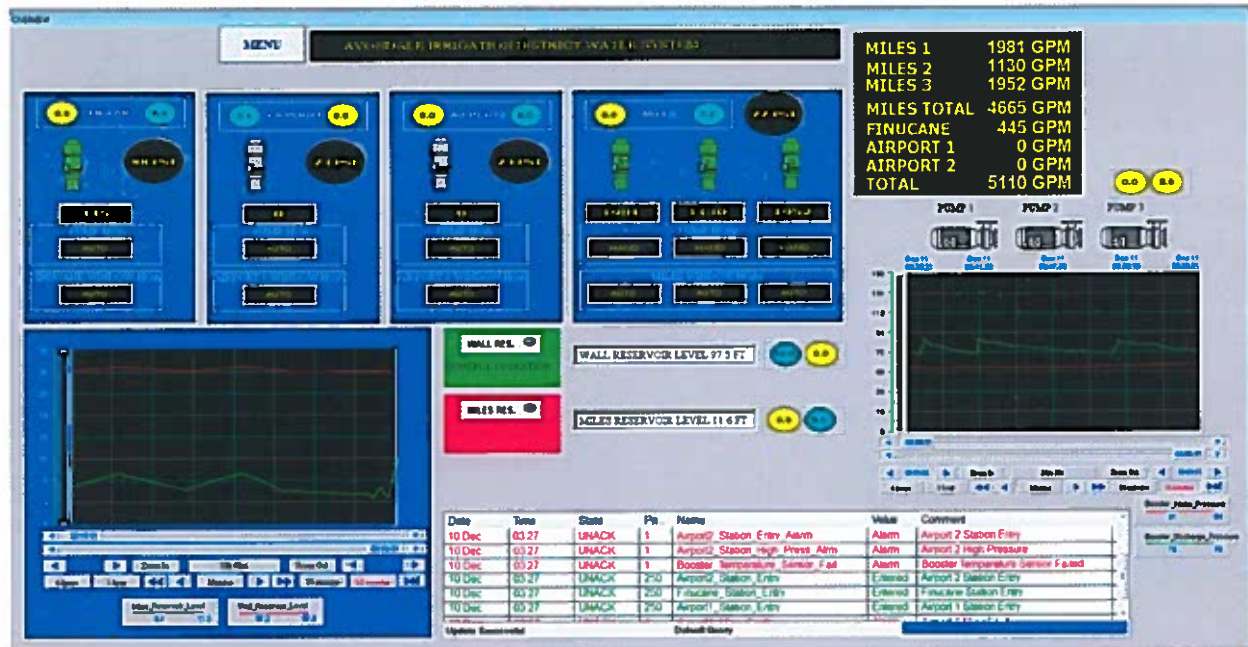
NAME	CASING SIZE	CAPACITY	HORSE POWER	DEPTH	YEAR ADDED
Miles #1	20"	2000 GPM	350	340'	March 1977
Miles #2	16"	1200 GPM	200	417'	January 1977
Miles #3	20"	2000 GPM	350	340'	January 1977

The flows used in the above and below charts are based on original test flow data.

Miles #1	<u>Static Water Level:</u> 293'	<u>Pump Rating:</u>	2000 gpm @ 509 TDH
Miles #2	<u>Static Water Level:</u> 292'	<u>Pump Rating:</u>	1200 gpm @ 499 TDH
Miles #3	<u>Static Water Level:</u> 293'	<u>Pump Rating:</u>	2000 gpm @ 509 TDH

Although todays pumping rates are not under scrutiny per the examination license amounts, it is important to recognize what they are. The installation of SCADA in 2012 added individual meters to the wells giving us electronic data for each well individually. No modifications have been made to any of wells or pumping components since the examination, so it can be assumed that pumping capacity has remained the same or possibly even diminished. For the pumps to have become more efficient is not reasonable. The below picture depicts all three of our Miles pumps operating simultaneously, which should give us the most resistance and lowest flow rates. It is important to note that the combined rate

shown for the Miles pump station indicates the reading of the original twenty-inch flow meter and not the mathematically combined rate of the three individual pumps. It is also important to note that our tank is within two-feet of the shut off point, giving us our highest total diversified head (tdh).



Water Rights

A review of AID's existing water right licenses has led to a discrepancy that AID feels is shorting them in excess of 4 cfs. During license review for water rights 95-8687, 95-8774, 95-8909, and 95-8867, well production values for the Miles pump station were misinterpreted. All three wells were credited with that value of 1,000 gpm per well, or a total of 3,000 gpm (6.69 cfs) for the facility. In reality, the facility pumps closer to 5,200 gpm (11.6 cfs) as was credited under water rights 95-7558, 95-8144, and 95-8321 in 1983 and 1989. The chart below depicts AID's current water right status.

Location	Water Right Number	Point of Diversion	Diversion Rate	Use	Status	Priority Date	Licensed Date
Miles	95-7558	NW1/4SE14 Sec14 Twp51N R04W	8.2 cfs	Irrigation	Active	9/29/1975	7/5/1983
			2.0 cfs	Domestic	Active	09/29/0975	7/5/1983
Miles	95-8144	NW1/4SE1/4 Sec 14 TWP 51N R04W	2.0 cfs	Municipal	Active	12/2/1981	3/24/1989
All	95-8321	NW1/4SE1/4 Sec 14 TWP 51N R04W	0.18 cfs	Irrigation	Active	5/31/1983	2/17/1989
			0.02 cfs	Stockwater	Active	5/31/1983	2/17/1989
			0.04 cfs	Domestic	Active	5/31/1983	2/17/1989
		Combined to produce no more than	11.81				
All	95-8687	NW1/4SW1/4 Sec 24 Twp 51N R04W	1.31 cfs	Municipal	Active	3/21/1991	3/12/2009
All	95-8774	NE1/4NE1/4SE1/4 Sec 15 TWP 51N R04W	3.0 cfs	Municipal	Active	10/20/1992	3/12/2009
All	95-8909	SW1/4NW1/4 Sec 15 TWP 51N R04W	3.0 cfs	Municipal	Active	3/8/1995	3/12/2009
All	95-8867	NW1/4SW1/4 Sec 24 Twp 51N R04W	2.0 cfs	Municipal	Active	5/13/1994	3/12/2009
		Total	9.31				
		ALL RIGHTS NOT TO EXCEED	13.94				

WATER USE DATA

Avondale Irrigation District has pumping data that extends back to when the pumps were installed. In an attempt to provide accurate beneficial use production rates, the district has researched existing pumping data from the time of and throughout the examination periods. It is important to realize when reviewing the data that there are multiple variables that all dictate the pumping figures.

Pumping Variables

Actual on-site pumping data differs from historic pumping records due to variables that do not have to be accounted for when you are on-site. An on-site visit allows the examiner to physically watch the flow meter while also verifying that only one pump at a time is running, which is much easier than trying to depict the same information from historic pumping records.

Pump Starts

Each and every time a pump cycles or starts and then stops, a series of events must take place. Initially the distribution system recognizes the need for water so the pump is called to start. When the pump starts, the cycle counter turns over showing the pump has cycled and the pump hour meter begins.

Now that the motor has been energized, water must climb from the pumping bowl level, up the casing, across the pump yard to the main pumping station, and then exit to the outside concrete flushing structure. Once water has made its way to the flushing structure, the cla-valve in the pumping station can begin to close. Depending on the size of the incoming pipe, size of the cla-valve, amount of water, and amount of pressure, the time of this process can vary. Slowly, the cla-valve closes, which in turn begins to increase pressure on the back of the check valve, slowly building as the cla-valve continues to close. Eventually, the cla-valve closes completely and all water from the pump is now being diverted into the distribution system. This is the classic scenario for avoiding water hammer in the distribution system and is used on most deep turbine pumps. Because of the piping schematics of the pump station, water does not pass through the flow meter until the cla-valve has closed and the check has opened. The important aspect of this is that thousands of gallons of water are being pumped into the flushing basin and never pass through the flow meter, and this process happens at the start and end of each pumping cycle. So one pump cycle equates to two instances where water is exhausted to the flushing basin without passing through the flow meter.

Pumping Hours

When reviewing the pumping hours, you need to realize a couple of important facts. The first fact is that the pumping hour meter is designed to operate in tenths, which means that it only turns over every six minutes. The second fact to remember is that the hour meter starts when the motor starts and does not recognize whether water is being exhausted to the flushing basin, or if it is flowing into the distribution system, only that the motor is running.

System Variable Conclusion

The realization is this: Each and every time a pump cycles, the hour meter is running, however all of the water being pumped is not passing through the flow meter. The larger the pump, the more gallons per minute that is exhausted outside. The more cycles you have in a day, the more water you have exhausted to the flushing basin that never reach the flow meter and cannot be accounted for, however the hour meter does not indicate that. So, the equation of water pumped divided by minutes ran is not completely accurate if you are reviewing pumping records, because all water is not metered and the hour meter only turns over in tenths. A pump that is capable of pumping 2,000 gpm can pump 12,000 gallons per one hour meter click and if this is happening on both ends of the cycle it is easy to recognize the amount of pumped water that is not accounted for on the flow meter due to the hour meter increments. When you add the hour meter inaccuracy to the cla-valve flushing of the pump you get a scenario that makes it difficult to accurately gauge pump efficiency based solely on pumping records. When you are calculating flow while on-site however, the cycles and starts do not necessarily matter because you can physically watch the meter which clearly indicates the amount of gallons per minute that flow to distribution.

The reason this is important, is because IDWR has asked for pumping data from the time of the examination to show flow rates during those periods. It is impossible to indicate exact flow rates due to the variables, however data can show that much more cfs was pumped than ever accounted for and if the pumping variables are recognized, the original cfs estimates make much more sense.

Historic Data

In the chart below, you will see an overview of historic summarized data collected from hand written records days that span over twenty years, with an explanation of the charts values. Each day represented is individually detailed in the Appendix.

Pumping Date	Total Minutes	Total Starts	Total Gallongae	Pumps Operating	Average GPM	Calculated Gallonage	% Actual
8/2/1989	1,488	7	2,860,000	1, 2, 3	1,922	2,864,466	0%
8/7/1990	2,562	13	4,550,000	1, 2, 3	1,776	4,550,862	0%
8/27/1992	744	6	840,000	2	1,129	840,720	-1%
8/4/1995	1,332	8	2,550,000	1, 3	1,914	2,601,630	-2%
8/5/1995	1,074	7	2,050,000	3	1,909	2,096,448	-2%
7/28/2009	1,080	11	1,910,000	1, 2, 3	1,769	1,969,482	-3%
Total	8,280	52	14,760,000		1,783	14,923,608	-1%

(Calculated Gallonage is derived from current SCADA data usage of individual pumps. #1=1,981 gpm, #2=1,130 gpm, #3=1,952 gpm)

The chart above is a clear representation of actual days of pumping from periods during the examination periods. The chart also indicates capacities both before and after examination periods to show consistency throughout the history of the pumps. Calculated amounts are shown to be within +/- 3 percent, which is as accurate as the tolerance of most distribution meters, however licensed capacities are only at 44% of actual pumping rates.

Pumping Date

The date of the pumping event

Total Minutes

Total combined minutes that pumps operated for this day. It is not limited to a single pump and is clarified in the "Pumps Operating" column.

Total Starts

Total number of combined starts by all pumps operating for this day.

Total Gallonage

Total amount of combined gallons pumped by all pumps operating on this day.

Pumps Operating

Defines which pump/pumps operated on this day.

Average GPM

Average combined gallons per minute pumped for this day. Averages vary depending on the pump/pumps that ran, hours pumped and pump cycles.

Calculated Gallonage

Calculated Gallonage is equal to what the pump is expected to pump. Values for pumping capacity were taken directly off current SCADA totals as depicted in the screenshot above. This is meant to show that the pumps are pumping the same now as when the examinations took place. Calculated Gallonage does not account for gallons lost during pump cycling. Calculated gpm used is Miles #1 = 1,981, Miles #2 = 1,130, and Miles #3 = 1,952.

% Actual

Percentage difference between actual and calculated.

Summary

To summarize, pumping values from 1990 to 2009 (all pre SCADA) have been submitted to show actual pumping amounts on examination period dates, to support possible cfs misinterpretation of the Miles pump station pumps. Pumping cycle and hour meter variables have been identified and explained in an effort to account for pumping station discrepancies.

Final Conclusion

The data presented both above and in the Appendix indicate that pumping rates based a wide range of data appear consistent with calculated known pumping capacities. When actual pumping capacities are compared with licensed capacities, it is clear that an error was made during the examination. Avondale Irrigation District respectfully requests licenses 95-8867, 95-8687, 958774, and 95-8909 be amended per data submitted or per a reexamination process.

APPENDIX

August 2, 1989

Miles Pump Station						
Date	08/02/89	08/03/89		Actual	Calculated	Licensed
#1 Starts	1730	1733	TOTAL #1 STARTS	3		
#1 Hours	13275.3	13297.6	TOTAL #1 HOURS	22.3	2,650,578	1,338,000
#2 Starts	32042	32044	TOTAL #2 STARTS	2		
#2 Hours	32680.5	32682.1	TOTAL #2 HOURS	1.6	108,480	96,000
#3 Starts	5648	5650	TOTAL #3 STARTS	2		
#3 Hours	12150.1	12151.0	TOTAL #3 HOURS	0.9	105,408	54,000
Meter Read (X 10K)	15319	15605	TOTAL USAGE	2,860,000	2,864,466	1,488,000
			PERCENTAGE DIFFERENCE IN PUMPING		0%	48%
			OPERATING PUMPS	ALL		
			COMBINED TOTAL MINUTES	1488		
			TOTAL STARTS	7		
			COMBINED TOTAL USAGE	2,860,000		
			COMBINED TOTAL GPM AVERAGE	1,922		
Pump Info	HP	Static Lvl	Estimated GPM			
#1	350	293'	1,981			
#2	200	292'	1,130			
#3	350	293'	1,952			

August 7, 1990

Miles Pump Station						
Date	08/07/90	08/08/90		Actual	Calculated	Licensed
#1 Starts	2080	2080	TOTAL #1 STARTS	0		
#1 Hours	14125.6	14147.5	TOTAL #1 HOURS	21.9	2,603,034	1,314,000
#2 Starts	35642	35647	TOTAL #2 STARTS	5		
#2 Hours	35891.3	35901.2	TOTAL #2 HOURS	9.9	671,220	594,000
#3 Starts	5991	5999	TOTAL #3 STARTS	8		
#3 Hours	12743.9	12754.8	TOTAL #3 HOURS	10.9	1,276,608	654,000
Meter Read (X 10K)	53595	54050	TOTAL USAGE	4,550,000	4,550,862	2,562,000
PERCENTAGE DIFFERENCE IN PUMPING					0%	44%
OPERATING PUMPS				ALL		
COMBINED TOTAL MINUTES				2562		
TOTAL STARTS				13		
COMBINED TOTAL USAGE				4,550,000		
COMBINED TOTAL GPM AVERAGE				1,776		
Pump Info	HP	Static Lvl	Estimated GPM			
#1	350	293'	1,981			
#2	200	292'	1,130			
#3	350	293'	1,952			

August 27, 1992

Miles Pump Station						
Date	08/27/92	08/28/92		Actual	Calculated	Licensed
#1 Starts	41	41	TOTAL #1 STARTS	0		
#1 Hours	16061.9	16061.9	TOTAL #1 HOURS	0.0	0	0
#2 Starts	38451	38457	TOTAL #2 STARTS	6		
#2 Hours	41962.6	41975.0	TOTAL #2 HOURS	12.4	840,720	744,000
#3 Starts	6613	6613	TOTAL #3 STARTS	0		
#3 Hours	13481.9	13481.9	TOTAL#3 HOURS	0.0	0	0
Meter Read (X 10K)	638428	638512	TOTAL USAGE	840,000	840,720	744,000
			PERCENTAGE DIFFERENCE IN PUMPING		0%	12%
			OPERATING PUMPS	#2		
			COMBINED TOTAL MINUTES	744		
			TOTAL STARTS	6		
			COMBINED TOTAL USAGE	840,000		
			COMBINED TOTAL GPM AVERAGE	1,129		
Pump Info	HP	Static lvl	Estimated GPM			
#1	350	293'	1,981			
#2	200	292'	1,130			
#3	350	293'	1,952			

August 4, 1995

Miles Pump Station						
Date	08/04/95	08/05/95		Actual	Calculated	Licensed
#1 Starts	337	338	TOTAL #1 STARTS	1		
#1 Hours	16454.4	16455.3	TOTAL #1 HOURS	0.9	106,974	54,000
#2 Starts	40420	40420	TOTAL #2 STARTS	0		
#2 Hours	47044.3	47044.3	TOTAL #2 HOURS	0	0	0
#3 Starts	7063	7070	TOTAL #3 STARTS	7		
#3 Hours	14262.4	14283.7	TOTAL #3 HOURS	21.3	2,494,656	1,278,000
Meter Read (X 10K)	685759	686014	TOTAL USAGE	2,550,000	2,601,630	1,332,000
PERCENTAGE DIFFERENCE IN PUMPING				-2%	49%	
OPERATING PUMPS				#1 & #3		
COMBINED TOTAL MINUTES				1332		
TOTAL STARTS				8		
COMBINED TOTAL USAGE				2,550,000		
COMBINED TOTAL GPM AVERAGE				1,914		
Pump Info	HP	Static Lvl	Estimated GPM			
#1	350	293'	1,981			
#2	200	292'	1,130			
#3	350	293'	1,952			

August 5, 1995

Miles Pump Station							
Date	08/05/95	08/06/95		Actual	Calculated	Licensed	
#1 Starts	338	338	TOTAL #1 STARTS	0			
#1 Hours	16455.3	16455.3	TOTAL #1 HOURS	0.0	0	0	
#2 Starts	40420	40420	TOTAL #2 STARTS	0			
#2 Hours	47044.3	47044.3	TOTAL #2 HOURS	0	0	0	
#3 Starts	7070	7077	TOTAL #3 STARTS	7			
#3 Hours	14283.7	14301.6	TOTAL#3 HOURS	17.9	2,096,448	1,074,000	
Meter Read (X 10K)	686014	686219	TOTAL USAGE	2,050,000	2,096,448	1,074,000	
			PERCENTAGE DIFFERENCE IN PUMPING		-2%	49%	
			OPERATING PUMPS	#3			
			COMBINED TOTAL MINUTES	1074			
			TOTAL STARTS	7			
			COMBINED TOTAL USAGE	2,050,000			
			COMBINED TOTAL GPM AVERAGE	1,909			
Pump Info				HP	Static Lvl	Estimated GPM	
#1				350	293'	1,981	
#2				200	292'	1,130	
#3				350	293'	1,952	

July 28, 2009

Miles Pump Station							
Date	07/28/09	07/29/09		Actual	Calculated		Licensed
#1 Starts	482	483	TOTAL #1 STARTS	1			
#1 Hours	19774.5	19777.0	TOTAL #1 HOURS	2.5	297,150		150,000
#2 Starts	45485	45486	TOTAL #2 STARTS	1			
#2 Hours	68972.1	68975.0	TOTAL #2 HOURS	2.9	196,620		174,000
#3 Starts	10000	10009	TOTAL #3 STARTS	9			
#3 Hours	19591.9	19604.5	TOTAL#3 HOURS	12.6	1,475,712		756,000
Meter Read (X 10K)	931321	931512	TOTAL USAGE	1,910,000	1,969,482		1,080,000
			PERCENTAGE DIFFERENCE IN PUMPING		-3%		45%
			OPERATING PUMPS	ALL			
			COMBINED TOTAL MINUTES	1080			
			TOTAL STARTS	11			
			COMBINED TOTAL USAGE	1,910,000			
			COMBINED TOTAL GPM AVERAGE	1,769			
Pump Info	HP	Static Lvl	Estimated GPM				
#1	350	293'	1,981				
#2	200	292'	1,130				
#3	350	293'	1,952				