RECEIVED
Jan 04, 2023
DEPARTMENT OF
WATER RESOURCES

Thomas J. Budge (ISB# 7465)
Elisheva M. Patterson (ISB# 11746)
RACINE OLSON, PLLP
201 E. Center St. / P.O. Box 1391
Pocatello, Idaho 83204
(208) 232-6101 – phone
tj@racineolson.com
elisheva@racineolson.com

Attorneys for Idaho Ground Water Appropriators, Inc. (IGWA)

STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF THE DISTRIBUTION OF WATER TO VARIOUS WATER RIGHTS HELD BY AND FOR THE BENEFIT OF A&B IRRIGATION DISTRICT, AMERICAN FALLS RESERVOIR DISTRICT #2, BURLEY IRRIGATION DISTRICT, MILNER IRRIGATION DISTRICT, MINIDOKA IRRIGATION DISTRICT, NORTH SIDE CANAL COMPANY, AND TWIN FALLS CANAL COMPANY	Docket No. CM-DC-2010-001 Docket No. CM-MP-2016-001
IN THE MATTER OF IGWA'S SETTLEMENT AGREEMENT MITIGATION PLAN	**First Declaration of Jaxon Higgs**

Jaxon Higgs, being duly sworn, deposes and declares:

1. I am over the age of 18 and competent to testify. If called upon to testify, I could testify to the following, all of which are within my own personal knowledge or based upon my professional judgment.

2. I am a licensed professional Geologist in the State of Idaho. I have a bachelor's degree in Geology from Brigham Young University Idaho and a master's degree in Hydrology from the University of Idaho.

3. I am the principal owner and operator of Water Well Consultants ("WWC"), an Idaho corporation with its principal address at 355 W. 500 S., Burley, Idaho 83318. WWC provides a

variety of hydrogeologic services in southern Idaho related to aquifer management and water conservation.

4. I am a consultant for Idaho Ground Water Appropriators, Inc. ("IGWA"). In that capacity I attend IGWA board meetings and provide technical assistance on a variety of matters, including the settlement agreement entered into between IGWA and the Surface Water Coalition ("SWC") in 2015 (the "Settlement Agreement"). Among other things, I prepare the spreadsheet showing groundwater diversion and recharge data that IGWA submits to the SWC and IDWR under section 2.a of the Second Addendum to the Settlement Agreement.

5. I am also a consultant for five of IGWA's member ground water districts: North Snake Ground Water District, Magic Valley Ground Water District, Southwest Irrigation District, American Falls-Aberdeen Ground Water District, and Bonneville-Jefferson Ground Water District. I provided input on the development of, and am familiar with, each of these districts' programs for conserving groundwater under the Settlement Agreement (Southwest Irrigation District conserves water under a separate settlement agreement with the SWC).

6. Section 3.a of the Settlement Agreement calls for 240,000 acre-feet of groundwater conservation, and states: "Each Ground Water District and Irrigation District with members pumping from the ESPA shall be responsible for reducing their proportionate share of the total annual ground water reduction or in conducting an equivalent private recharge activity."

7. The Settlement Agreement does not name the ground water districts and irrigation districts with members that pump groundwater from the ESPA. At the time the Settlement Agreement was entered, the following 13 districts had members that pump groundwater from the ESPA: North Snake Ground Water District, Magic Valley Ground Water District, Carey Valley Ground Water District, Southwest Irrigation District, A&B Irrigation District, Raft River Ground Water District, Falls Irrigation District, American Falls-Aberdeen Ground Water District, Bingham Ground Water District, Bonneville-Jefferson Ground Water District, Jefferson-Clark Ground Water District, Madison Ground Water District, and Fremont-Madison Irrigation District.

8. Of the above-named districts, ten were members of IGWA: North Snake Ground North Snake Ground Water District, Magic Valley Ground Water District, Carey Valley Ground Water District, Southwest Irrigation District, American Falls-Aberdeen Ground Water District, Bingham Ground Water District, Bonneville-Jefferson Ground Water District, Jefferson-Clark

Ground Water District, Madison Ground Water District, and Fremont-Madison Irrigation District. Of these, all signed the Settlement Agreement except for Southwest Irrigation District, which has a separate settlement agreement with the SWC.

9. The majority of Madison Ground Water District is located outside the ESPA as defined by rule 50 of the Rules for Conjunctive Management of Surface and Ground Water Resources.

10. The members of Fremont-Madison Irrigation District and other surrounding water users that pump groundwater from the ESPA have since formed Henry's Fork Ground Water District which has assumed the obligations of Fremont-Madison Irrigation District under the Settlement Agreement.

11. In addition to Southwest Irrigation District, A&B Irrigation District, Raft River Ground Water District, Falls Irrigation District did not sign the Settlement Agreement. There were also a large number of groundwater users who pump water from the ESPA but do not belong to any of the districts cited above.

12. The Settlement Agreement does not explain how to allocate the 240,000 acre-feet among the ground water districts and irrigation districts. This was left up to IGWA to figure out. Various meetings were held with IDWR staff to discuss the available data and options for establishing a baseline and allocating the obligation. This is when the IGWA board asked me to attend their meetings and discuss options. There were several possible ways to allocate the obligation. It could have been allocated based on water right acres, acres historically irrigated, water right cfs, cfs historically diverted, water right acre-feet, acre-feet historically diverted, evapotranspiration data, or a combination thereof. After considering various options, the IGWA board decided to use the volume of water historically diverted within each district for the purpose of determining each district's groundwater conservation obligation under the Settlement Agreement. This was the simplest method and it allowed districts to begin crafting individual plans to meet their obligation without delay.

13. Because the Settlement Agreement required a reduction in pumping, IGWA had to figure out a baseline for the purpose of identifying historic diversions. The Settlement Agreement does not prescribe how this would be done, and there are several ways of doing it. Some of those options include using a single year of diversions as the baseline, using average diversions over a period of multiple years, and comparing analog years of similar precipitation and temperature. Attached hereto as Exhibit A is an example table comparing different baseline

diversion volumes that would result from a single year of diversions, a three-year average, and a five-year average.

14. I recommended, and IGWA selected, a five-year average from 2010-2014 to use as the baseline for the purpose of determining each district's groundwater conservation obligation under the Settlement Agreement. As shown on Exhibit A, this resulted in a lower baseline than would have occurred under a three-year average or a single year of peak diversions based on the data available at the time. I recommended a five-year average from 2010-2014 because it was the most recent, and most complete, data available, and it included both wet and dry years. Those five years covered a long enough stretch of time to fairly represent average groundwater use within each district. Averaging over five years also helped address the data gaps in individual wells often referred to as "null" values in the IDWR Water Measurement Information System database (years when water was diverted from a particular well but no usage was reported in the IDWR database for varying reasons).

15. Determining historic diversions was not as easy as one might suspect. Prior to the Settlement Agreement, groundwater diversion data had not been used for any important purpose other than individual compliance with water right elements. Because it was not widely used, complete and accurate diversion data was not a priority in some areas. With the help of the IGWA districts and IDWR staff, I compiled the most complete set of data possible at the time with the understanding that we would refine this dataset as implementation progressed.

16. IGWA also had to determine whether to allocate water to groundwater irrigation diversions that were not patrons of any district. Attached hereto as Exhibit B is a map that I shared with the IGWA board to show the locations of these diversions as well as the large number of groundwater diversions located outside IGWA's member districts.

17. It took more than a year after the Settlement Agreement was signed to finalize the allocation of 240,000 acre-feet among the districts. Attached hereto as Exhibit C is the slide deck from my initial presentation to the IGWA board in August of 2015 addressing alternatives for allocating the 240,000. Attached hereto as Exhibit D is the slide deck from a presentation I gave to the IGWA board in September of 2015 that explains different alternatives for allocating the 240,000 and includes my recommendation of a five-year average baseline. Attached as Exhibit E is the slide deck from a presentation I gave to the IGWA board in November of 2015 that further explains how a five-year average would work and provides an updated allocation based on

usage. Attached hereto as Exhibit F is the final allocation approved by the IGWA board in November 2016.

18. The gross diversion volumes shown in Exhibits C, D, E and F differ due to ongoing refinement of usage volumes and determination of participating water rights and diversions for each district.

19. Exhibits C, D, E and F take into account groundwater diversions from A&B Irrigation District, Southwest Irrigation District, and Raft River Ground Water District for the purpose of determining each district's proportionate share of 240,000 acre-feet. Diversions within districts that did not sign the Settlement Agreement were taken into account because presentations given by IDWR staff to groundwater irrigators in the meetings I attended in 2015 included statements that the 240,000 acre-feet obligation was based on the average annual aquifer-wide water budget deficit. The water budget deficit was attributable to all pumping from the ESPA, not just diversions by the districts that signed the Settlement Agreement.

20. IDWR staff participated in discussions of how each district's proportionate share of 240,000 acre-feet would be calculated. Attached hereto as Exhibit G is the agenda from a workshop held by IDWR on September 23, 2015, in Burley to discuss issues related to implementation of the Settlement Agreement. It is clear from this agenda that neither the method for calculating the baseline nor the method for determining the signatory districts' proportionate groundwater conservation obligations had been determined, and that various options were under consideration. Agenda item #4 was "Discussion of Establishing Baseline, 240,000 AF Proportionment, & Annual Performance Review," with the following sub-items: "a. Consider methods for determining baseline – Mat Weaver," and "b. Consider methods for proportioning 240,000 AF reduction amongst GWDs – Mat Weaver." The Agenda's Objective #7 states: "Determine the data and methods that will be used to proportionately split the 240,000 acre foot obligation up amongst all the parties (i.e., GWDs, A&B, SWID, and others)." Considering all data presented by IDWR, the IGWA board decided to include diversions from Southwest Irrigation District and A&B Irrigation District in allocating of 240,000 acre-feet because those districts were expected to contribute toward reversing the water budget deficit under their separate mitigation plans with the SWC.

21. Each of the ground water districts that I provide consulting services have developed programs for reducing groundwater diversions within their district in order to achieve their

proportionate groundwater conservation obligations. All of these plans assign volumetric diversion limits to each district patron based on the priority date of the patron's water rights. Some districts have also made adjustments based on baseline pumping. For purposes of compliance, each district allows its patrons to pool their water rights, which results in each patron receiving a lump sum volume of water they can divert from their wells collectively. Most of these districts employ some form of averaging for purpose of compliance with its diversion limit. Averaging is important to accommodate crop rotations, particularly for patrons with relatively small farms. It also allows farmers to respond to unforeseen periods of severe heat or drought by making up for the shortfall in prior or subsequent years. A rolling average provides some flexibility but limits the ability for users to get so far out of compliance that they cannot recover.

22. I am familiar with the *Final Order Regarding Compliance With Approved Mitigation Plan* ("Compliance Order") entered in this matter on September 8, 2022. Among other things, the Compliance Order ruled that IGWA is not allowed to utilize averaging for purpose of compliance with the Settlement Agreement. I anticipate that this will compel IGWA to change how it measures compliance with the proportionate allocation of the 240,000 acre-feet and how it allocates that volume to each district. When considering compliance issues, it makes sense to use averaging, especially if comparing against an average. Districts moved forward with their conservation plans with the expectation that averaging would be used for compliance purposes.

23. The Compliance Order finds that certain IGWA members breached the Settlement Agreement in 2021. However, this ruling is based on the five-year average diversion baseline and the allocation method that IGWA developed in good faith with the expectation that averaging would be allowed for purposes of compliance. This method is not written into the Settlement Agreement. If averaging is not allowed, IGWA may reconsider how groundwater conservation obligations are determined and how compliance is measured.

24. I declare under the penalty of perjury pursuant to the law of the State of Idaho that the foregoing is true and correct.

DATED this 4th day of January 2023.

Jaxon Higgs

JAXON HIGGS

Exhibits:

A – Table comparing single-year, 3-year average & 5-year average baseline
B – Map showing wells not represented by IGWA districts
C – Slide deck August 2015
D – Slide deck September 2015
E – Slide deck November 2015
F – Final allocation
G – IDWR workshop agenda September 2015

EXHIBIT A

Table comparing single-year, 3-year average & 5-year average baseline

IGWA Baseline Determination Example:

Year	Total Pumping (AF)	5 year Average	3 Year Average	Peak Diversions
2010	1,739,793			
2011	1,710,914			
2012	2,093,331	1,900,511		2,093,331
2013	2,070,287		2,017,282	
2014	1,888,227			

*includes entities currently listed on IGWA annual report

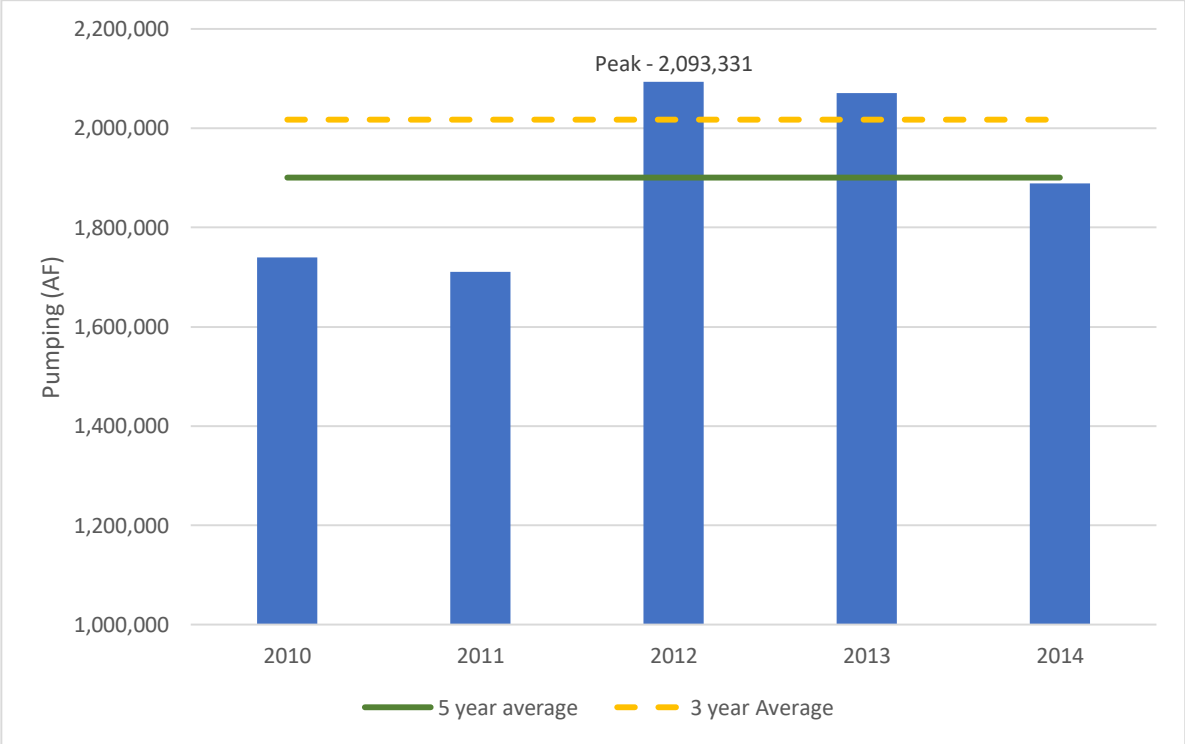


EXHIBIT B

Map showing wells not represented by IGWA districts

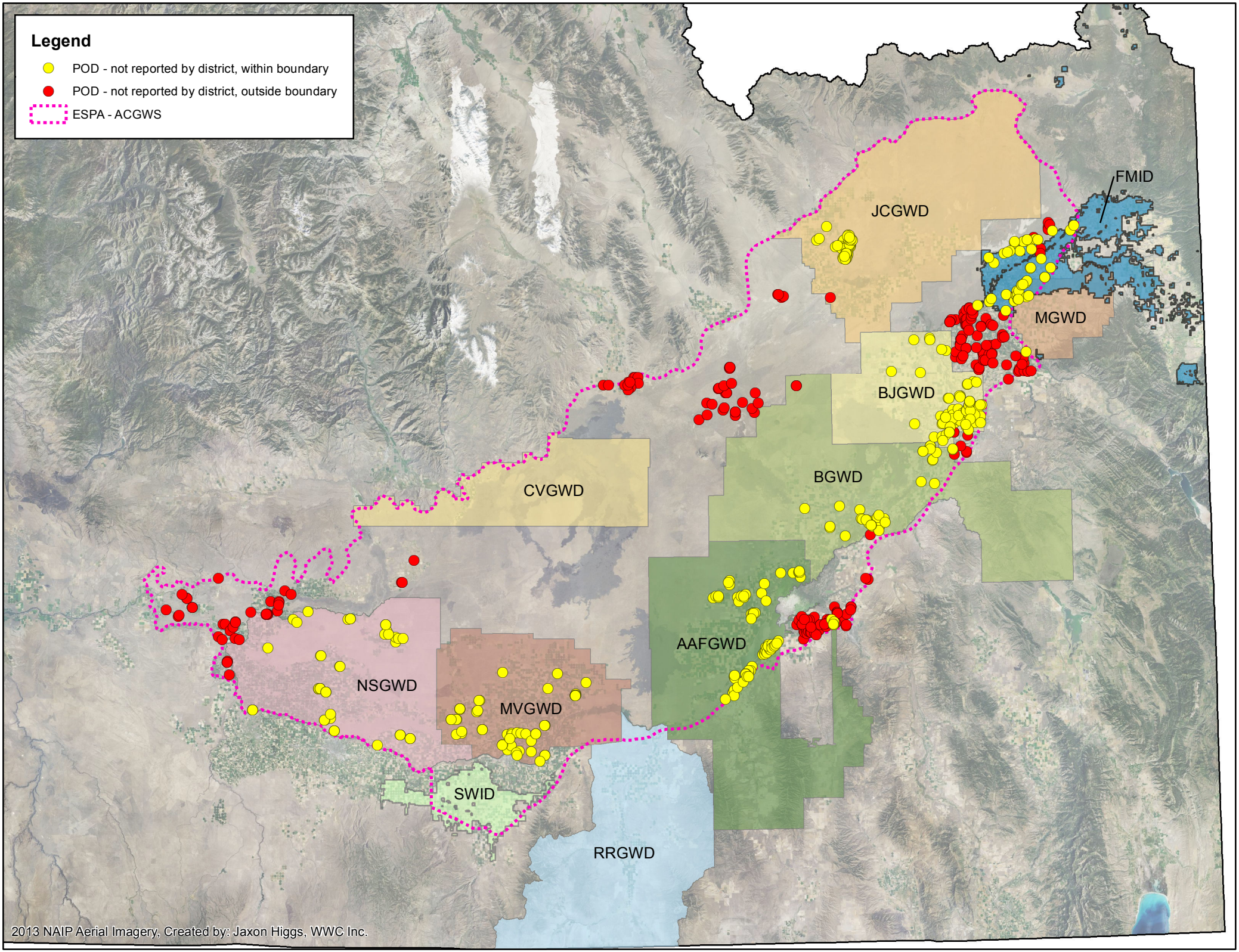

Legend
POD - not reported by district, within boundary
POD - not reported by district, outside boundary
ESPA - ACGWS
JCGWD
FMID
MGWD
BJGWD
BGWD
CVGWD
AAFGWD
NSGWD
MVGWD
SWID
RRGWD
2013 NAIP Aerial Imagery, Created by: Jaxon Higgs, WWC Inc.

EXHIBIT C

Slide deck August 2015

Surface Water Coalition Agreement

District Reduction Apportionment

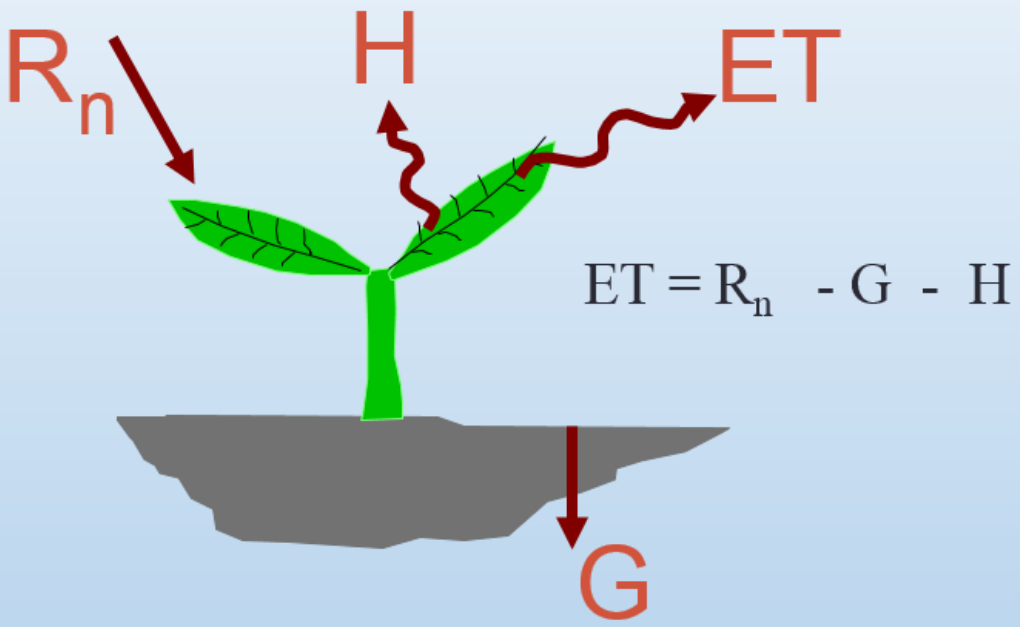
240kAF REDUCTION ALLOCATED BY DISTRICT

7/20/2015

District	Current			% Share of 240kAF	Reduction			Benefit (ac-ft)
	CIR (ac-ft/acre)*	Acres*	Total AF		% Reduction	CIR Cap (ac-ft/acre)	Total AF	
A&B ID	2.6	66,686	173,384	7.7%	10.7%	2.32	154,796	18,588
Aberdeen-American Falls GWD	2.1	144,539	303,532	13.6%	10.7%	1.87	270,991	32,541
Bingham GWD	2.3	203,975	469,143	21.0%	10.7%	2.05	418,847	50,296
Bonneville-Jefferson GWD	1.9	62,000	117,800	5.3%	10.7%	1.70	105,171	12,629
Carey Valley GWD	2.2	3,634	7,995	0.4%	10.7%	1.96	7,138	857
Fremont-Madison ID	1.7	8,000	13,600	0.6%	10.7%	1.52	12,142	1,458
Jefferson-Clark GWD	1.9	175,509	333,467	14.9%	10.7%	1.70	297,717	35,750
Madison GWD	1.7	50,852	86,448	3.9%	10.7%	1.52	77,180	9,268
Magic Valley GWD	2.6	127,818	332,327	14.8%	10.7%	2.32	296,699	35,628
North Snake GWD	2.4	87,399	209,758	9.4%	10.7%	2.14	187,270	22,488
Raft River GWD	1.8	11	20	0.0%	10.7%	1.61	18	2
Southwest ID	2.4	79,655	191,172	8.5%	10.7%	2.14	170,677	20,495
TOTALS		**1,010,078**	**2,238,645**	**100%**			**1,998,645**	**240,000**

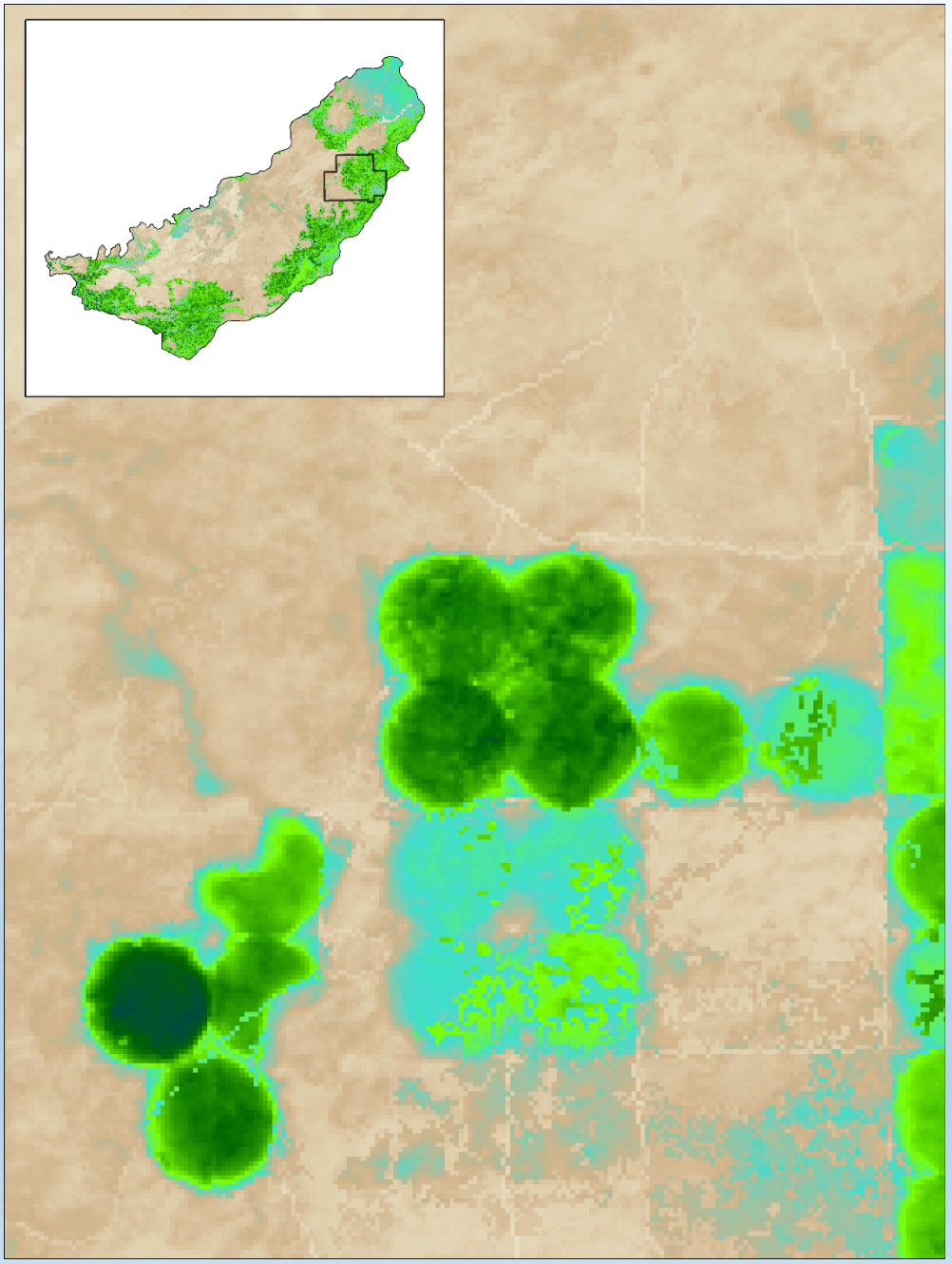
CIR – Crop Irrigation Requirement

- LANDSAT
  - Near-Infrared
  - Frequent images
  - 30 meter resolution
- Calculate Evapo-Transpiration
  - Energy balance equation
  - Calibrated with ground stations



CIR – continued

- Determine GW irrigated acres
  - Aerial imagery (infrared)
  - IDWR SW/GW polygon
- Usage
  - ET = usage rate
  - GW irrigated acres X usage rate = Total usage
- District Usage for Agreement
  - Average usage on land within district
  - Acres reported by district
  - AF usage

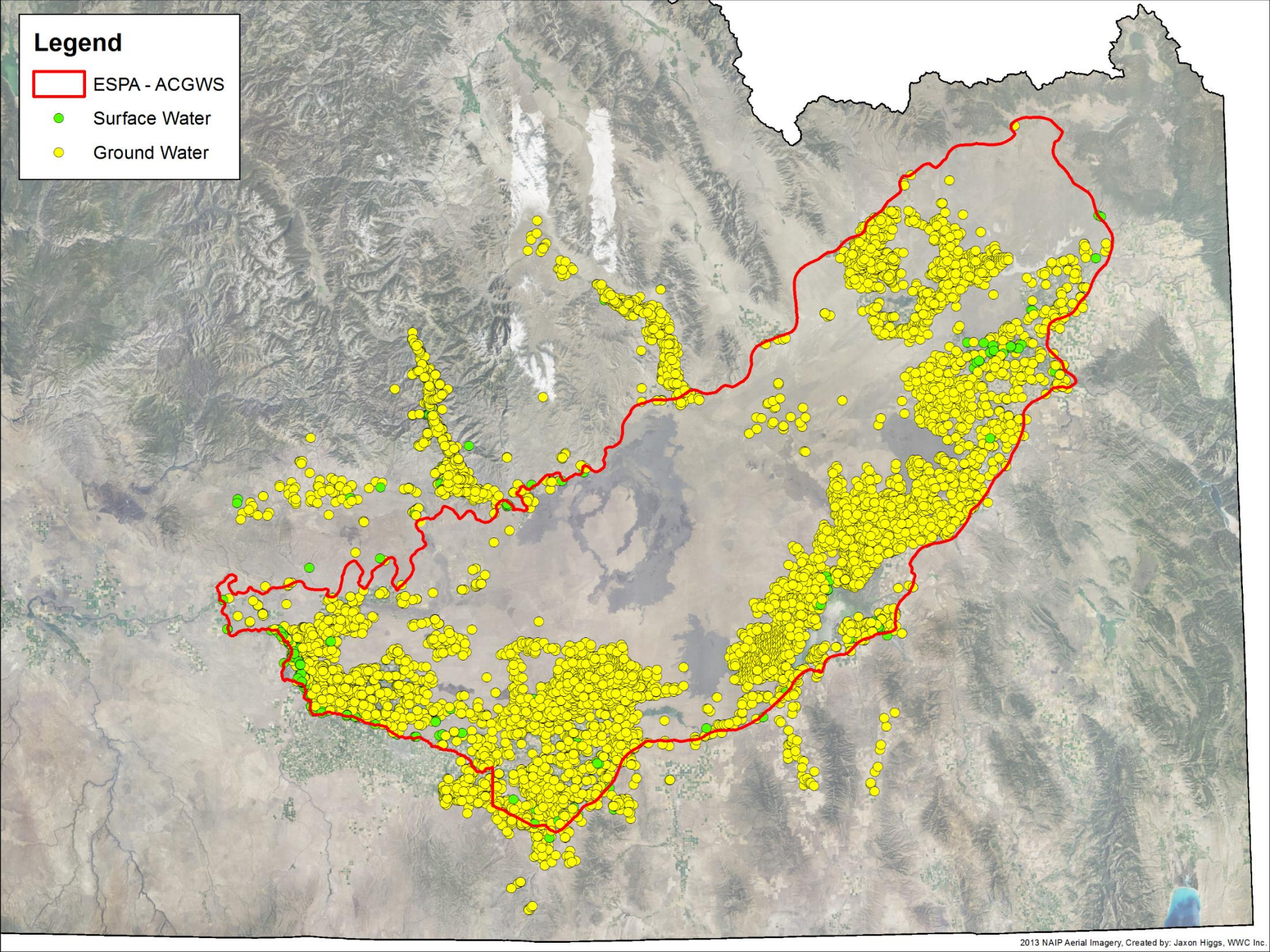


Issues with CIR

- (-)Snapshots
  - Averaged over year/season
- (-) Measurement error
- (-) Few ground stations for calibration
- (-) SW/GW mixed areas
- (-) Does not account for soft conversions
- (-) Does not account for non-irrigation uses
- (-) Physical reduction not based on CIR
- (+) Incudes small users not required to measure
- (+) Quick

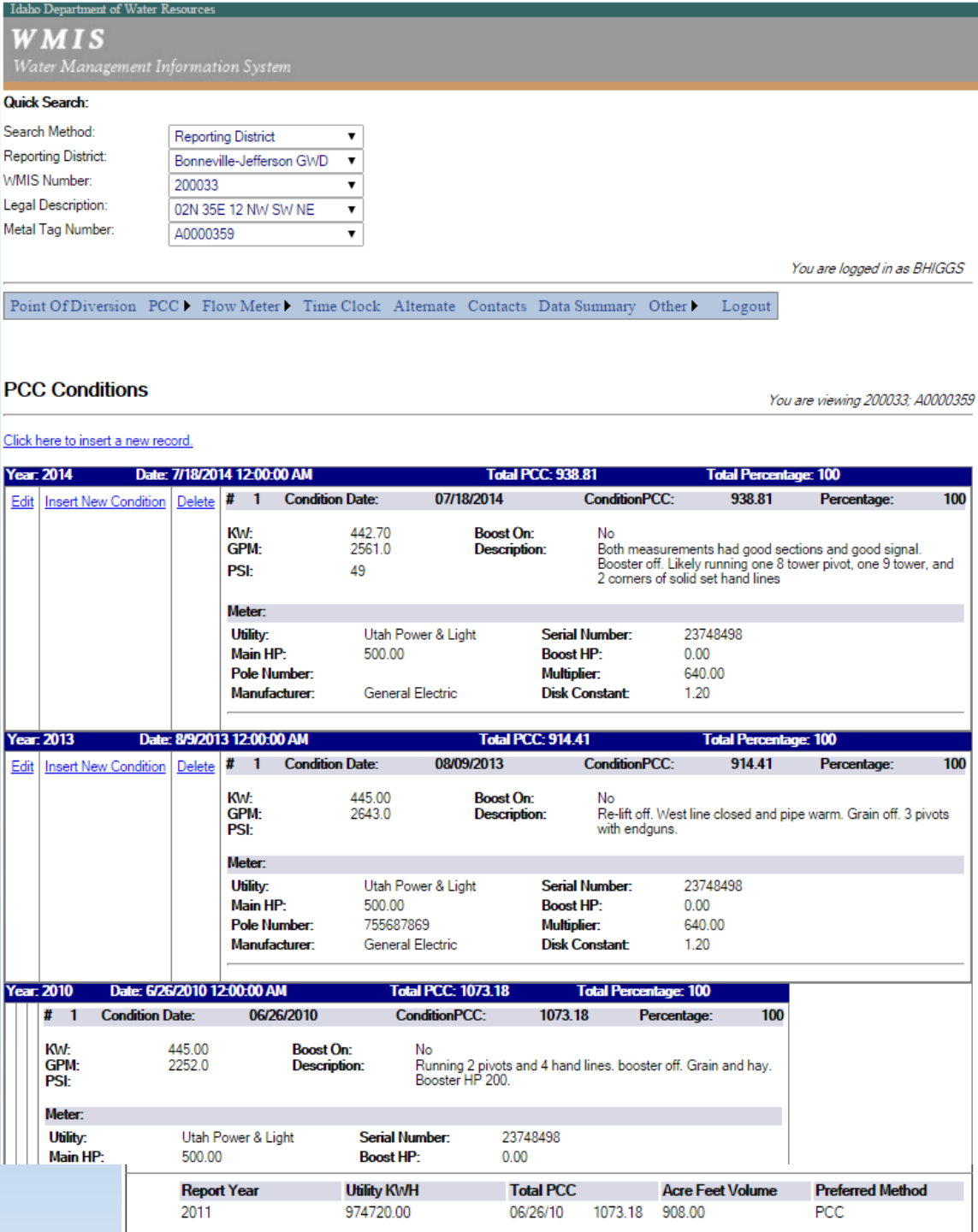
WMIS – Water Measurement Information System

- Database
  - Accessible online to general public
  - Editable by field techs, watermasters, and department staff
  - Contains field notes and measurements
  - Linked to water rights
- Used to calculate usage
  - Water rights >= 5 acres or 0.24 cfs
- 9,927 points of diversion in ESPA & Tributaries
  - **5,706** ground water PODs in ESPA


Legend
ESPA - ACGWS
Surface Water
Ground Water
2013 NAIP Aerial Imagery, Created by: Jaxon Higgs, WWC Inc.

Example:

- WMIS Organization
  - WMIS #
  - Reporting District
- Well in BJ GWD
  - PCC Option
  - Calculated usage back to 1997
  - Measured 12 times since 1997



Idaho Department of Water Resources

WMIS
Water Management Information System

Quick Search:

Search Method: Reporting District
Reporting District: Bonneville-Jefferson GWD
WMIS Number: 200033
Legal Description: 02N 35E 12 NW SW NE
Metal Tag Number: A0000359

You are logged in as BHIGGS

Point Of Diversion | PCC | Flow Meter | Time Clock | Alternate | Contacts | Data Summary | Other | Logout

PCC Conditions

You are viewing 200033; A0000359

Click here to insert a new record.

Year: 2014 Date: 7/18/2014 12:00:00 AM Total PCC: 938.81 Total Percentage: 100

Edit | Insert New Condition | Delete

1 Condition Date: 07/18/2014 ConditionPCC: 938.81 Percentage: 100

KW: 442.70
GPM: 2561.0
PSI: 49

Boost On: No
Description: Both measurements had good sections and good signal. Booster off. Likely running one 8 tower pivot, one 9 tower, and 2 corners of solid set hand lines

Meter:

Utility: Utah Power & Light
Main HP: 500.00
Pole Number:
Manufacturer: General Electric
Serial Number: 23748498
Boost HP: 0.00
Multiplier: 640.00
Disk Constant: 1.20

Year: 2013 Date: 8/9/2013 12:00:00 AM Total PCC: 914.41 Total Percentage: 100

Edit | Insert New Condition | Delete

1 Condition Date: 08/09/2013 ConditionPCC: 914.41 Percentage: 100

KW: 445.00
GPM: 2643.0
PSI:

Boost On: No
Description: Re-lift off. West line closed and pipe warm. Grain off. 3 pivots with endguns.

Meter:

Utility: Utah Power & Light
Main HP: 500.00
Pole Number: 755687869
Manufacturer: General Electric
Serial Number: 23748498
Boost HP: 0.00
Multiplier: 640.00
Disk Constant: 1.20

Year: 2010 Date: 6/26/2010 12:00:00 AM Total PCC: 1073.18 Total Percentage: 100

1 Condition Date: 06/26/2010 ConditionPCC: 1073.18 Percentage: 100

KW: 445.00
GPM: 2252.0
PSI:

Boost On: No
Description: Running 2 pivots and 4 hand lines. booster off. Grain and hay. Booster HP 200.

Meter:

Utility: Utah Power & Light
Main HP: 500.00
Serial Number: 23748498
Boost HP: 0.00

Report Year	Utility KWH	Total PCC		Acre Feet Volume	Preferred Method
2011	974720.00	06/26/10	1073.18	908.00	PCC

Issues with Water Measurement

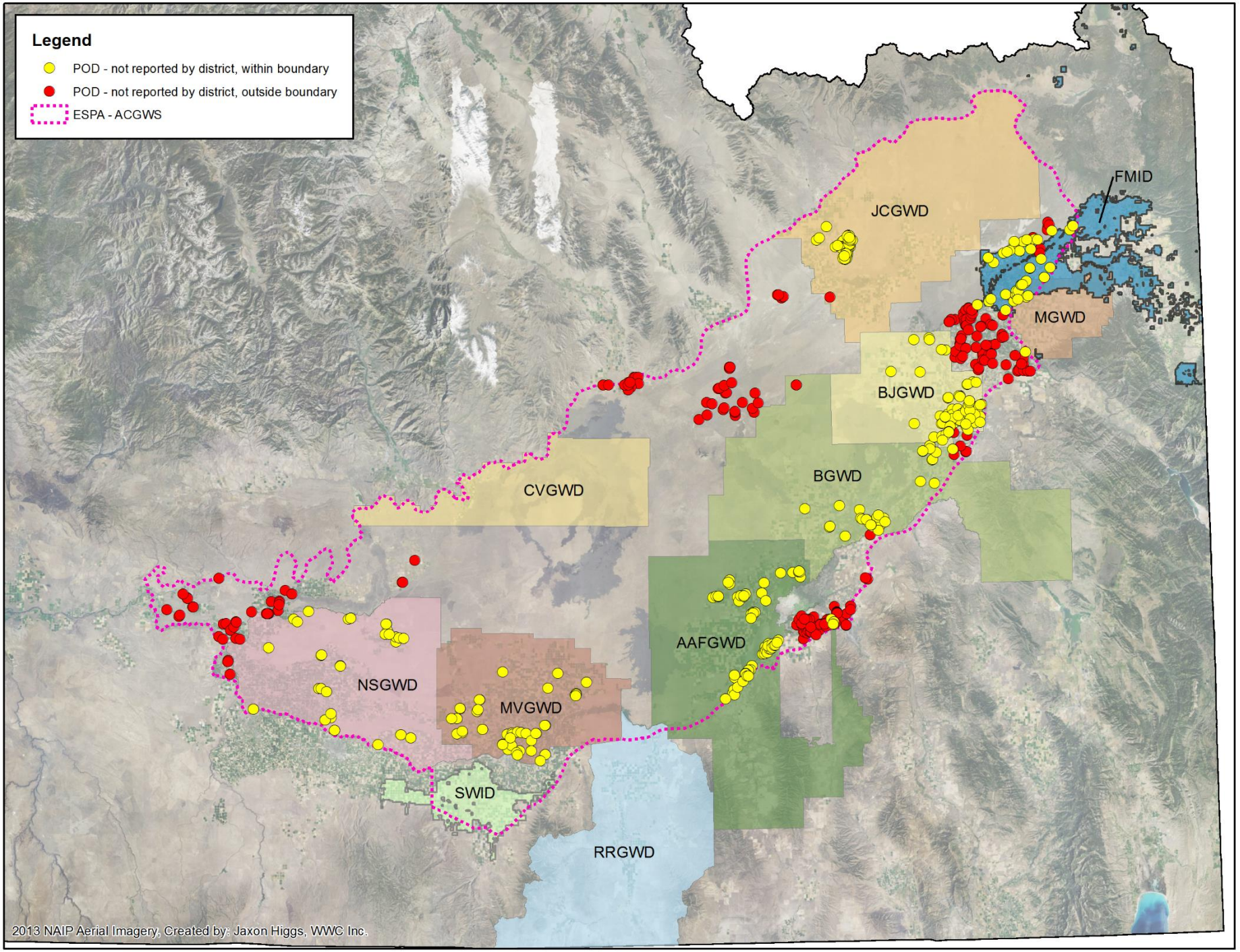
- (-) PCC
  - PCC not valid for some scenarios
  - Data good where PCC is valid
- (-) Missing measurements
  - Mostly small users or wells used infrequently
  - <5 acres not required to measure
- (-) No data in some areas outside ACGWS
- (+) Accounts for supplemental & GW/SW mix
- (+) Accounts for soft conversions
- (+) Accounts for non-irrigation use
- (+) Good records for previous 5+ years
- (+) Reduction will be calculated using measured usage

Preliminary Analysis - Reduction by Usage*

	Current				Applied				Difference	
	AF/Yr	District % Total	AF Reduction	% Reduction	AF/Yr	District % Total	AF Reduction	% Reduction	AF/Yr	AF Reduction
American Falls	254,777	12.5%	30,111	11.8%	289,023	14.2%	34,158	11.8%	34,246	4047
Bingham	379,429	18.7%	44,843	11.8%	385,001	19.0%	45,502	11.8%	5,572	659
Bonneville	144,925	7.1%	17,128	11.8%	184,557	9.1%	21,812	11.8%	39,632	4684
Carey	2,166	0.1%	256	11.8%	2,166	0.1%	256	11.8%	0	0
Jefferson Clark	311,293	15.3%	36,790	11.8%	373,943	18.4%	44,195	11.8%	62,650	7404
Fremont-Madison**	8,651	0.4%	1,022	11.8%	8,651	0.4%	1,022	11.8%	0	0
Madison	6,530	0.3%	772	11.8%	9,589	0.5%	1,133	11.8%	3,059	362
Magic Valley	253,858	12.5%	30,002	11.8%	257,691	12.7%	30,455	11.8%	3,833	453
A&B	174,399	8.6%	20,611	11.8%	174,399	8.6%	20,611	11.8%	0	0
North Snake	179,846	8.9%	21,255	11.8%	191,460	9.4%	22,628	11.8%	11,614	1373
Raft River	651	0.0%	77	11.8%	651	0.0%	77	11.8%	0	0
Southwest	108,044	5.3%	12,769	11.8%	108,044	5.3%	12,769	11.8%	0	0
In district, not reported by Dist.	160,606	7.9%	18,981	11.8%	-	0.0%	-	0.0%	-160,606	-18981
Out of District	45,529	2.2%	5,381	11.8%	45,529	2.2%	5,381	11.8%	0	0
Total:	**2,030,704**	100.0%	240,000	11.8%	**2,030,704**	100.0%	240,000	11.8%	0	0

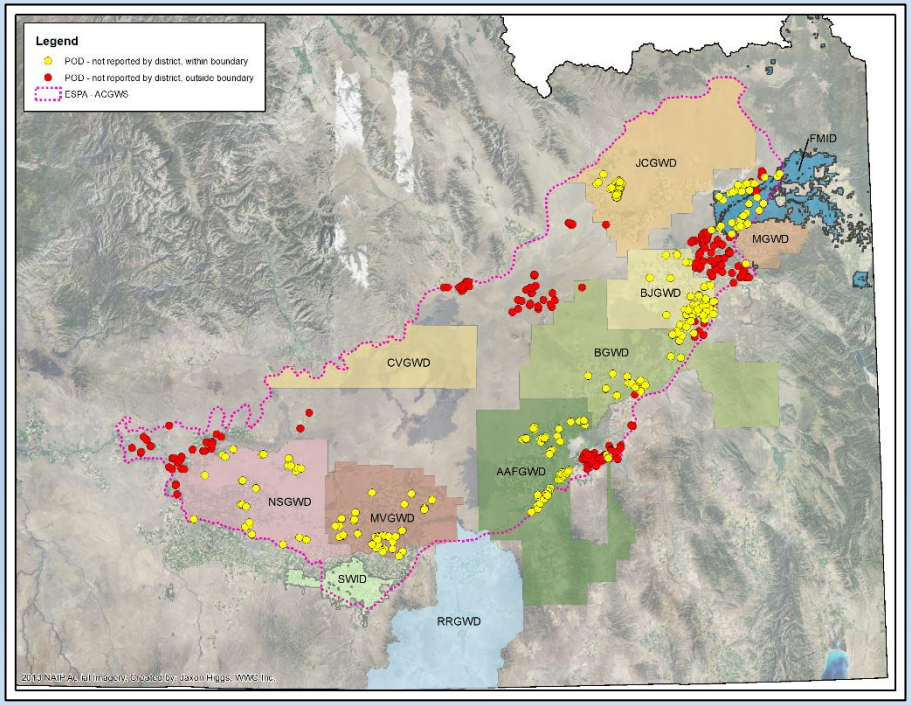
*ESPA only, includes commercial/stock/multiple use domestic.

**Assumed all wells within boundary are part of district.


Legend
POD - not reported by district, within boundary
POD - not reported by district, outside boundary
ESPA - ACGWS
JCGWD
FMID
MGWD
BJGWD
BGWD
CVGWD
AAFGWD
NSGWD
MVGWD
SWID
RRGWD
2013 NAIP Aerial Imagery, Created by: Jaxon Higgs, WWC Inc.

What's next?

- All water rights accounted for
- All wells associated with water rights accounted for
- Meeting w/IDWR technical staff
- Recommendation
  - Usage where available, CIR where not available



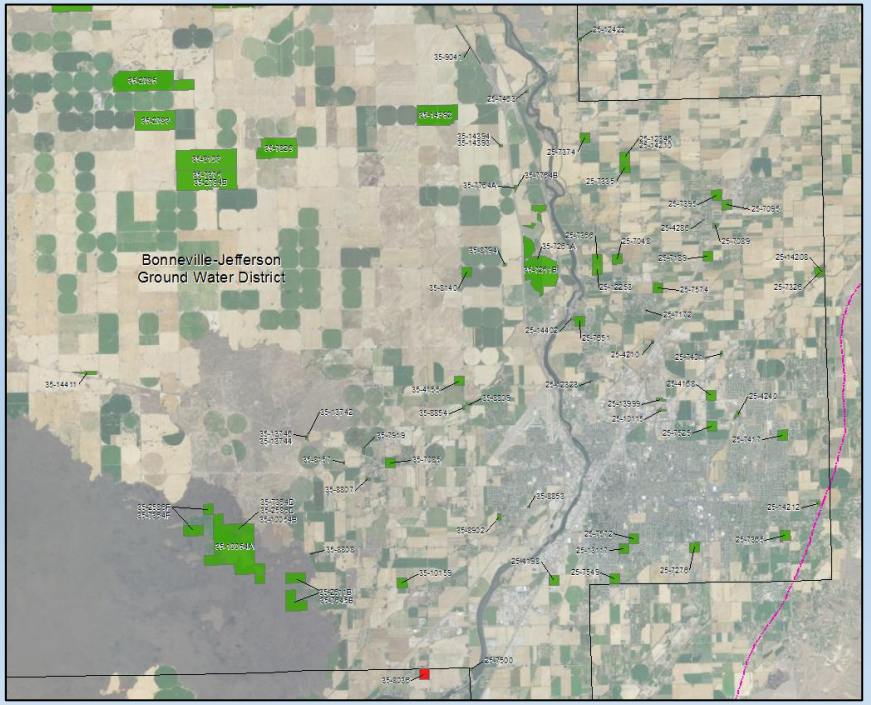


EXHIBIT D

Slide deck September 2015

IGWA - SWC Agreement

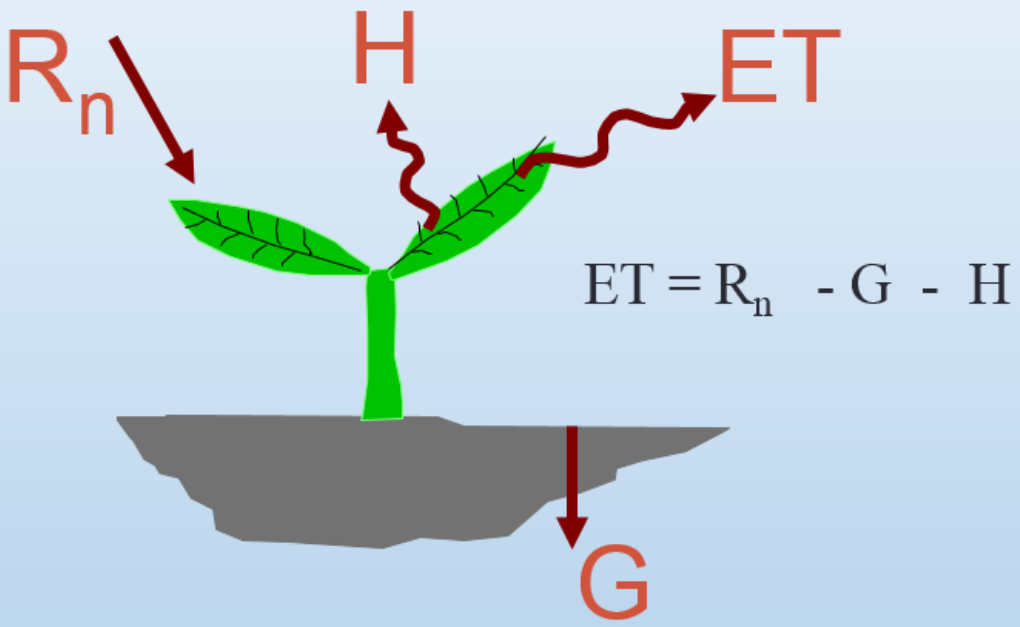
District Reduction Apportionment

Issues to Address

- Allocation of 240,000 af to districts
  - Baseline years
  - Method
    - Usage, CIR, or combination
  - **Today's discussion**
- District plans for reduction
  - What the individual owes
  - Determined by districts
- Verification of reduction
  - Usage, CIR, combination
  - Today's discussion?

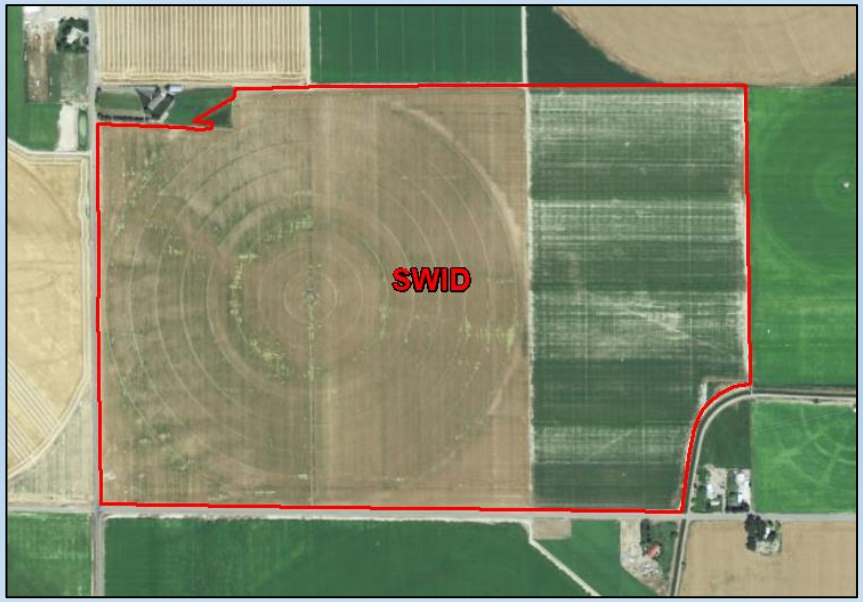
CIR – Crop Irrigation Requirement

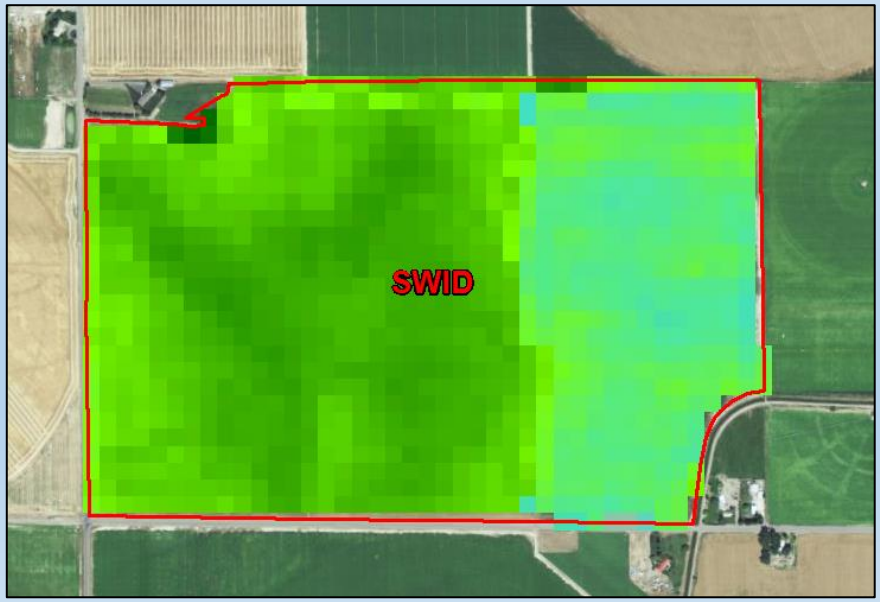
- LANDSAT
  - Near-Infrared
  - Frequent images
  - 30 meter resolution
- Calculate Evapo-Transpiration
  - Energy balance equation
  - Calibrated with ground stations



CIR – Small Scale Examples

Area	Acres	Type	Volume	ft/acre	ET (ft)	Precip (ft)	ft/acre	ET af	% Difference
SWID	220.6	FM	322	1.46	2.52	0.81	1.71	376	16.9%
BJGWD	470.3	PCC	872	1.85	2.70	0.83	1.87	880	0.9%
MVGWD	658.2	PCC	1,392	2.11	2.30	0.72	1.58	1041	-25.2%





Issues with CIR

- (-) Not processed every year
  - Unusable images
- (-) Limited ground stations for calibration
- (-) SW/GW mixed areas
- (-) Does not account for soft conversions
- (-) Does not account for non-irrigation uses
- (-) Actual reduction not likely to be based on CIR
  - Flowmeter installation stipulation
- (+) Incudes small users not required to measure

WMIS – Water Measurement Information System

- Database
  - Accessible online to general public
  - Editable by field techs, watermasters, and department staff
  - Contains field notes and measurements
  - Linked to water rights
- Used to calculate usage
  - Water rights >= 5 acres or 0.24 cfs
  - Based on field measurements
- 9,927 points of diversion in ESPA & Tributaries
  - **5,706** ground water PODs in ESPA

Issues with Water Measurement

- (-) PCC
  - PCC not valid for some scenarios
- (-) Missing measurements
  - Mostly small users or wells used infrequently
  - <5 acres not required to measure
- (-) No data in some areas outside ACGWS
- (+) Accounts for supplemental & GW/SW mix
- (+) Accounts for soft conversions
- (+) Accounts for non-irrigation use
- (+) Good records for previous 5+ years
- (+) Reduction will be calculated using flowmeters

Note:

- Best scenario for GW users
  - CIR baseline
  - Measured reduction
  - CIR generally higher than measured
- Best scenario for Aquifer
  - Usage baseline – Usage Reduction
  - CIR baseline – CIR reduction

Recommendation:

- 5 year average baseline from WMIS usage
  - Choose between 2005-2014
- CIR for non reporting users and where WMIS data is not complete/valid

- Use 3-5 year rolling average WMIS data for verification of reduction
  - Flowmeters ASAP
- Possible secondary verification using CIR

Preliminary Analysis - Reduction by Usage*

	AF/Yr	District % Total	AF Reduction	% Reduction
American Falls	289,023	14.2%	34,158	11.8%
Bingham	385,001	19.0%	45,502	11.8%
Bonneville	184,557	9.1%	21,812	11.8%
Carey	2,166	0.1%	256	11.8%
Jefferson Clark	373,943	18.4%	44,195	11.8%
Fremont-Madison**	8,651	0.4%	1,022	11.8%
Madison	9,589	0.5%	1,133	11.8%
Magic Valley	257,691	12.7%	30,455	11.8%
A&B	174,399	8.6%	20,611	11.8%
North Snake	191,460	9.4%	22,628	11.8%
Raft River	651	0.0%	77	11.8%
Southwest	108,044	5.3%	12,769	11.8%
Out of District	45,529	2.2%	5,381	11.8%
Total:	**2,030,704**	100.0%	**240,000**	11.8%

*ESPA only, includes commercial/stock/multiple use domestic.

**Assumed all wells within boundary are part of district.

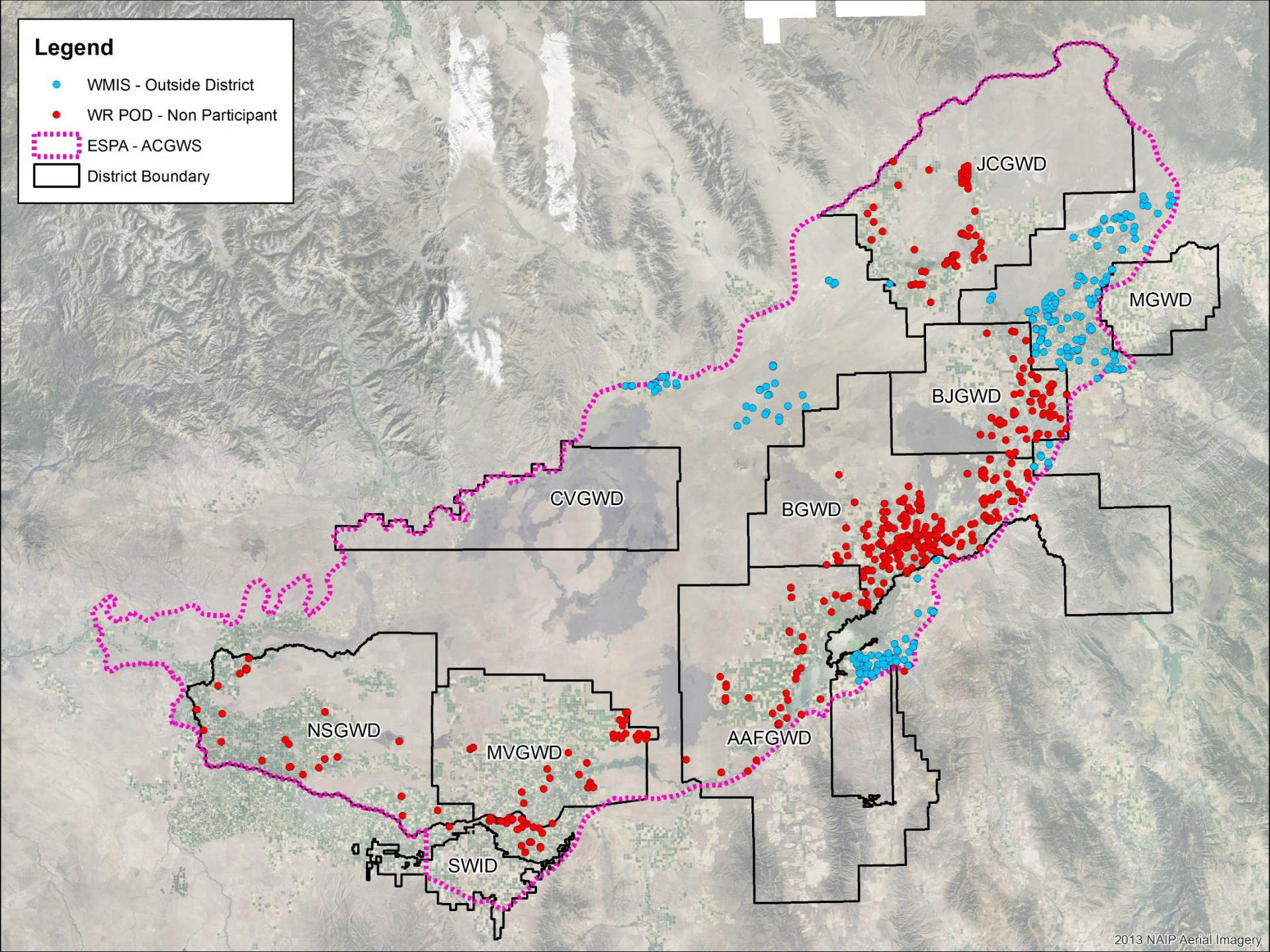
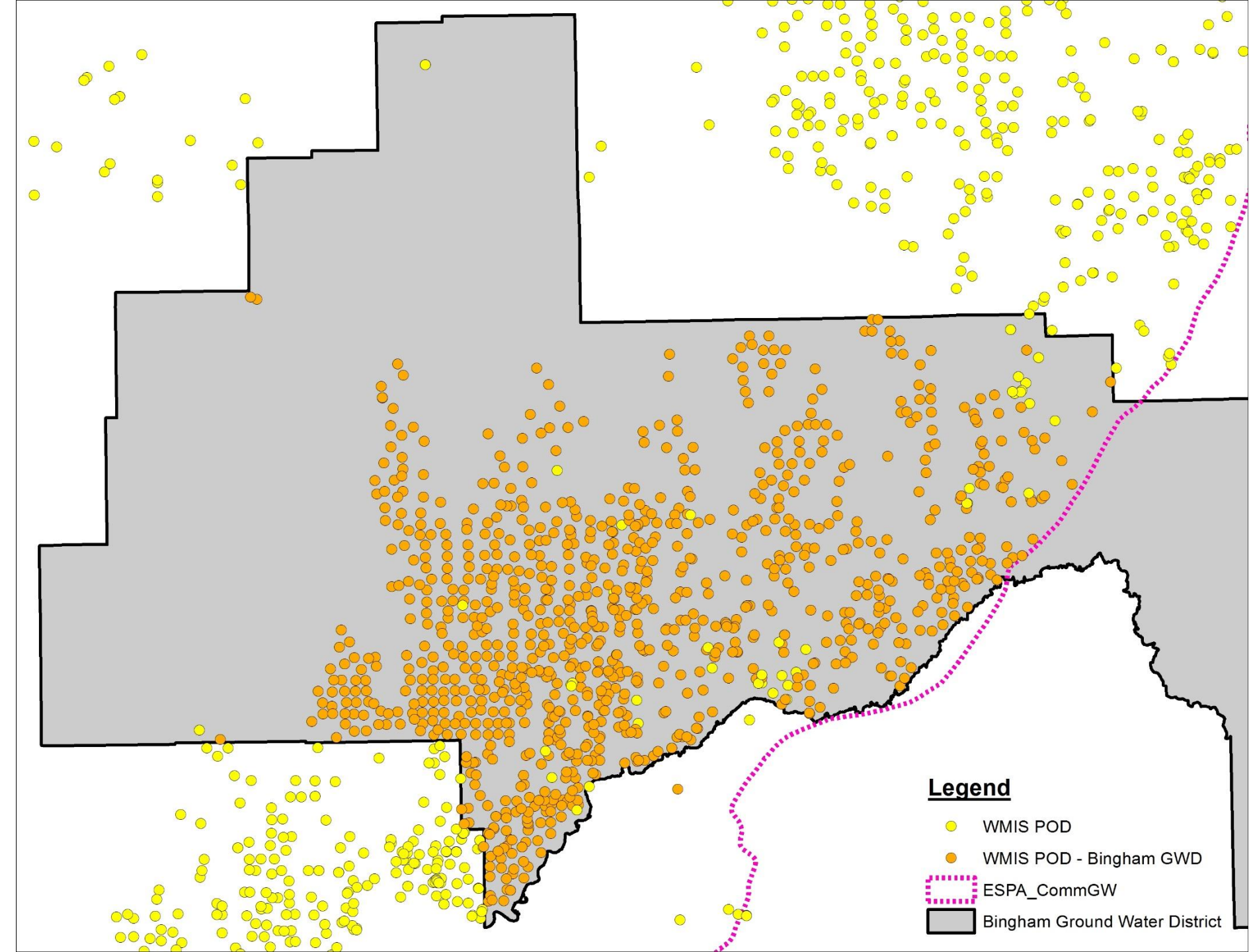

Legend
WMIS - Outside District
WR POD - Non Participant
ESPA - ACGWS
District Boundary
JCGWD
MGWD
BJGWD
BGWD
CVGWD
AAFGWD
NSGWD
MVGWD
SWID
2013 NAIP Aerial Imagery

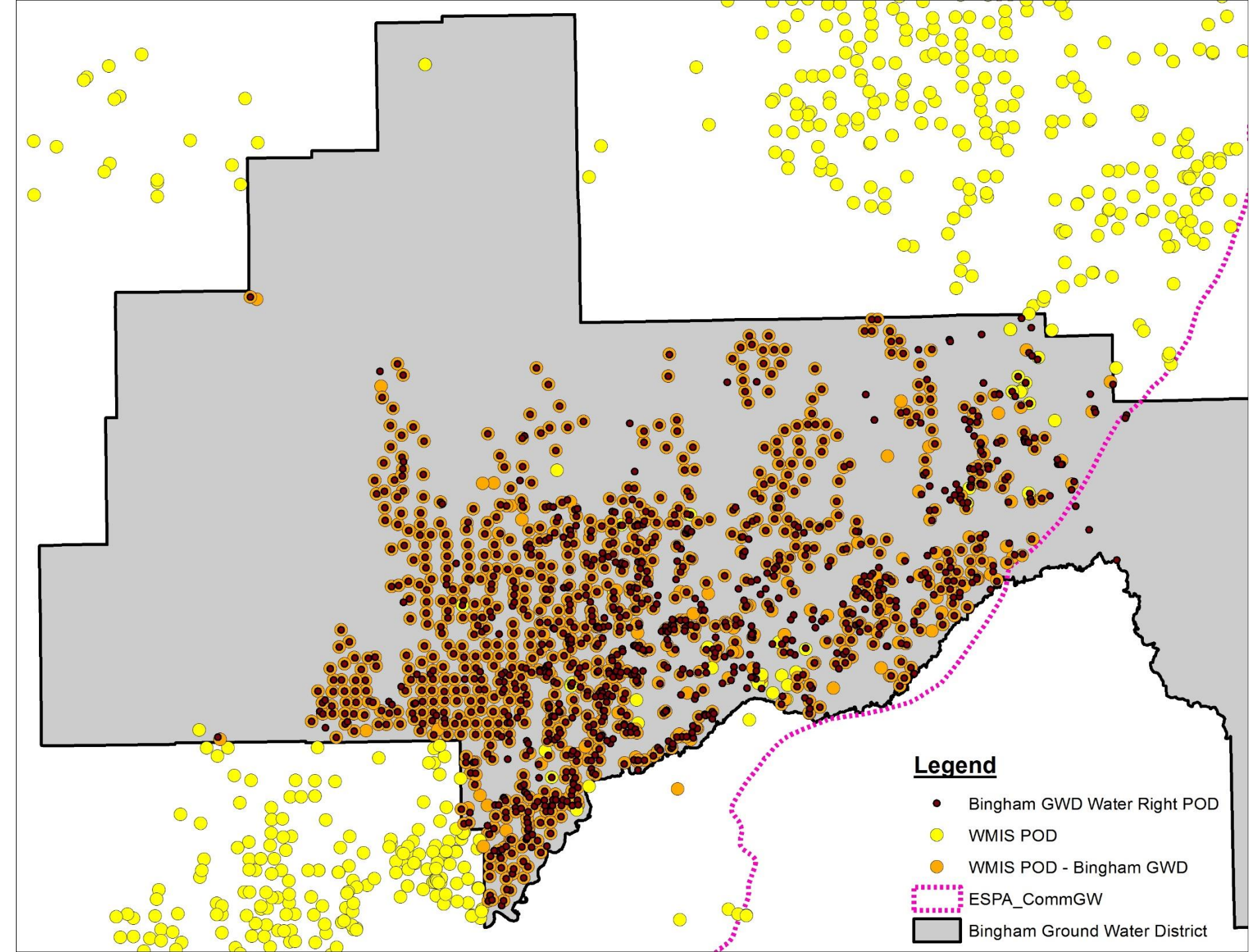
EXHIBIT E

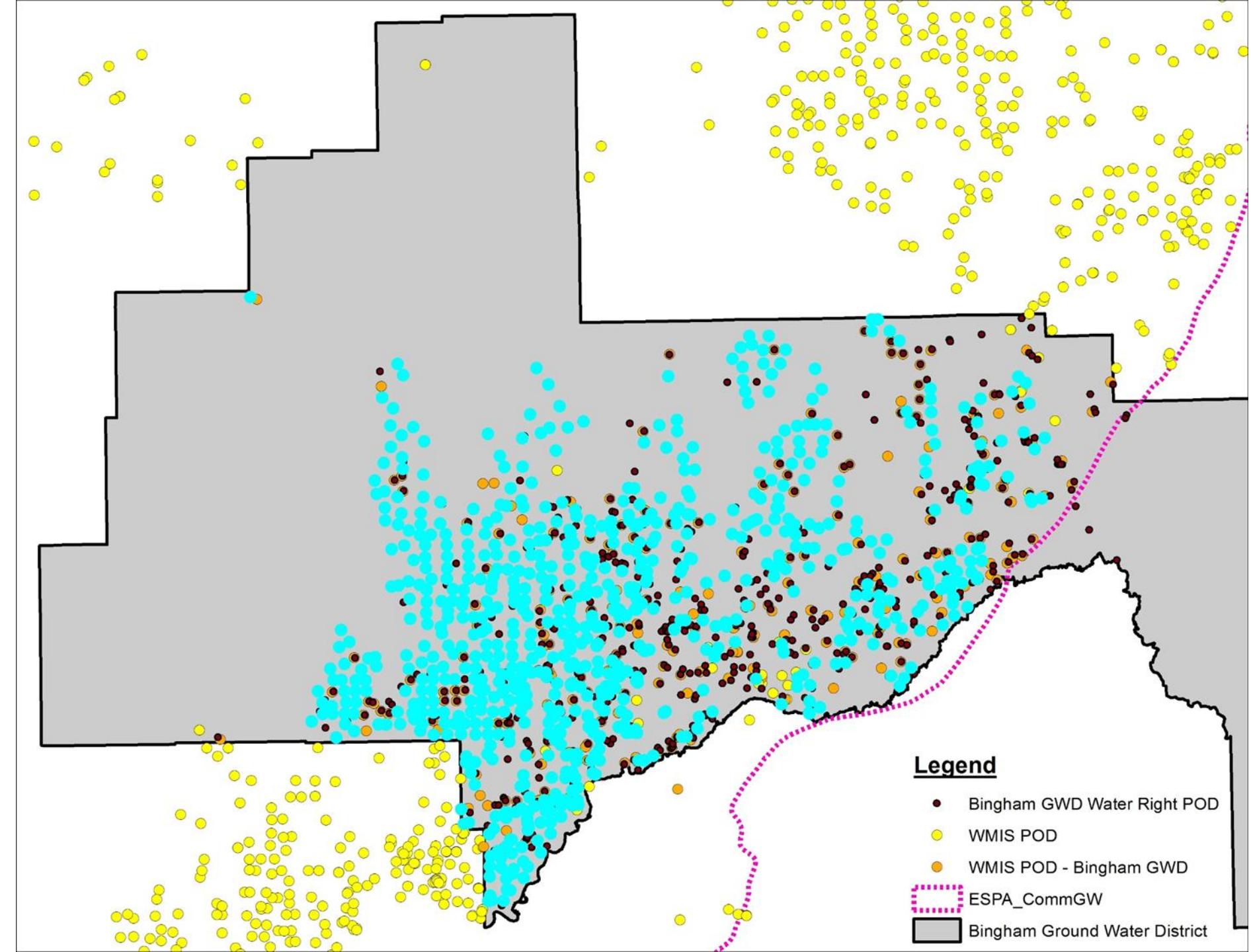
Slide deck November 2015

Revised 240,000 acre-feet Allocation and Baseline

- Process
  - Water right lists from GWDs
  - Well lists from WMIS
  - Correlate spatially
  - Reconcile
  - Create Average by district


Legend
WMIS POD
WMIS POD - Bingham GWD
ESPA_CommGW
Bingham Ground Water District


Legend
Bingham GWD Water Right POD
WMIS POD
WMIS POD - Bingham GWD
ESPA_CommGW
Bingham Ground Water District


Legend
Bingham GWD Water Right POD
WMIS POD
WMIS POD - Bingham GWD
ESPA_CommGW
Bingham Ground Water District

District Usage List

Ownername	Reporting District	WMISNumber	DiversionName	Meas Option	MetalTag Number	2010 AF	2010 Code	2011 AF	2011 Code	2012 AF	2012 Code	2013 AF	2013 Code	2014 AF	2014 Code	Average
ALAN WOODLAND	MVG	100243	HOME 103 NORTH	Flowmeter (1)	A0004147	578.0	7	495.4	7	617.2	Q	808.2	NM	591.5	NM	618.1
ALAN WOODLAND	MVG	100028	LARGE	Timeclock (7)	A0004017	640.5	5	514.0	5	711.4	5	636.6	5	657.2	5	631.9
ALAN WOODLAND	MVG	100242	HOME 102 SOUTH	Flowmeter (1)	A0004146	416.8	NM	615.0	7	658.4	Q	894.7	NM	662.6	NM	649.5
ALAN WOODLAND	MVG	100703	SUCHAN	Flowmeter (1)	A0003354	614.5	MR	561.8	NM	816.8	2	830.9	2	869.8	2	738.8
ALYCE B & VERN W KING	MVG	100315	Little Well	PCC (2)	A0003444	14.0	2	45.0	2	26.8	1	20.2	1	16.8	8	24.6
AMALGAMATED SUGAR CO	130	400988	WELL 2	Unused (6)	A0000448	0.0	Z									0.0
AMALGAMATED SUGAR CO	130	400987	WELL 4	Timeclock (7)	A0000449	17.7	NM	6.0	MR	22.4	NM	6.1	NM	2.6	NM	11.0
AMALGAMATED SUGAR CO	130	400985	WELL 5	Unused (6)												
AMALGAMATED SUGAR CO	130	400986	WELL 3	Unused (6)												
AND SHERRY K BROUGH	MVG	1000487	unused	Unused (6)												
ANDERLAND LLC	140	401648	KEARL WELL	PCC (2)	A0002774	526.0	3	566.0	5	610.7	5	522.3	5			556.2
ARDEL W & JUDY M WICKEL	140	401605	TURBINE WELL	PCC (2)	A0017504	239.0	1	255.0	5	145.9	2	166.3	2			201.5
ARDEL W & JUDY M WICKEL	140	1001345	NEW WELL 2011	Flowmeter (1)	D0057162							646.8	NM	383.8	NM	515.3
ARDEL W & JUDY M WICKEL	140	401809	IRRIGATION WELL	PCC (2)	A0016691	586.0	2	605.0	5	826.7	4	1001.2	4	1101.9	4	824.1
ARDEL W & JUDY M WICKEL	140	1001807		Flowmeter (1)	D0066829											
ARDEL W & JUDY M WICKEL	140	1001815		Flowmeter (1)	D0066880											
ARNOLD PATTERSON	MVG	100944		Unused (6)	A0003471	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0
ARNOLD PATTERSON	MVG	100493	NEW WELL	PCC (2)	A0017797	293.0		174.0	5	865.2	1	732.2	1	563.8	3	525.6
ARROWHEADPOTATO COMPANY	MVG	100335		Unused (4)	A0003702	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0
B & H FARMS AND B&H FARMING	MVG	100280	Taylor	Flowmeter (1)	A0003522	460.0	FE	484.9	FE	556.1	MR	477.4	8	646.2	8	524.9
B & H FARMS AND B&H FARMING	MVG	100305	Commons.	Flowmeter (1)	A0005428	708.0	5	783.0	3	1094.6	FE	1076.5	8	925.9	8	917.6
B&H FARMING	MVG	100316	NORLAND	Flowmeter (1)	A0004160	368.7	MR	347.4	NM	338.9	EM		EM		EM	351.7
B&H FARMING	MVG	1000535	NORLAND, MOLLER -	Flowmeter (1)	A0004160	601.8	MR	648.7	NM				NM		NM	625.2
B&H FARMING	MVG	100707	Monson	Flowmeter (1)	A0003386	400.0	MR	867.6	NM	911.2	MR	911.4	5	701.5	2	758.3
BAKER FAMILY TRUST	MVG	100276	3D (1550N 125E)	PCC (2)	A0005419	526.0	2	339.0	2	545.3	2	419.8	2	444.9	2	455.0
BB DAIRY LLC	MVG	100241	Wards, POLE 107	PCC (2)	A0005403	569.0	2	297.0	2	571.0	2	704.1	2	697.1	2	567.6
BLINCOE FARMS INC	MVG	100262	STA 195	Unused (4)	A0005380	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0	Z	0.0

Usage Averaging Method

IDWR Method:

	Usage (AF)						
Well	**2010**	**2011**	**2012**	**2013**	**2014**		
A	150	125		175	150		
B	500	475	600	0	550		
C			700	725	700		
D	0	0	0	500	500		
							Average
Total:	650	600	1300	1400	1900		1,170.0

IGWA Method:

	Usage (AF)						
Well	**2010**	**2011**	**2012**	**2013**	**2014**		**Average**
A	150	125		175	150		150
B	500	475	600	0	550		425
C			700	725	700		708.3
D	0	0	0	500	500		200
						Total:	1,483.3

Usage Averaging Method

WMIS #	Meas Option	MetalTag Number	2010 AF	2011 AF	2012 AF	2013 AF	2014 AF	Average
400042	Flowmeter (1)	A0002817		344.0	131.3	213.7	218.8	226.9
400043	Flowmeter (1)	A0002818		2531.5	822.2	494.6		1282.8
400044	Flowmeter (1)	A0002819						0.0
900152	Flowmeter (1)	A0006858	797.0	561.0	854.6	1176.8	893.4	856.6
900153	Flowmeter (1)	A0006856	238.0	91.4	192.6	35.2	104.6	132.4
900154	Unused (6)	D0050184						0.0
900156	Flowmeter (1)	A0006863	848.0	40.1	1077.7	816.4	915.5	739.5
900197	Flowmeter (1)	A0006857	486.0	297.0	502.8	427.2	430.0	428.6
900198	Flowmeter (1)	A0006853	470.0	292.0	379.4	712.8	523.6	475.5
900202	Flowmeter (1)	A0006745	298.4	279.6	414.1	443.9	291.5	345.5
900203	PCC (2)	A0006743			453.4			453.4
900204	PCC (2)	A0006741	619.0	352.0				485.5
900206	PCC (2)	A0013380	409.0	39.0	448.8	444.0	466.4	361.4
900207	PCC (2)	A0006729	0.0	0.0	0.0	0.0	0.0	0.0
900208	Flowmeter (1)	A0006742	335.4	345.6	543.5	713.5	388.6	465.3
900317	Flowmeter (1)	A0018786	119.0	55.4	207.7	171.0	119.9	134.6
900328	Unused (6)	A0006854	0.0		0.0	0.0	0.0	0.0
900331	Flowmeter (1)	A0006855	11.0	9.7	18.2	18.2	1.0	11.6
1000396	Flowmeter (1)	D0050971			529.3	827.2	507.3	621.3
		Total:	4630.8	5238.2	6575.6	6494.5	4860.3	
				Average:	**5,559.9**			**Total:** **7020.9**

Current Allocation Table

Preliminary Analysis 4- Reduction by Usage				
	AF/Yr	District % Total	AF Reduction	% Reduction
Aberdeen - American Falls	262,102	13.7%	32,865	12.5%
Bingham	270,975	14.2%	33,978	12.5%
Bonneville - Jefferson	143,880	7.5%	18,041	12.5%
Carey Valley	5,439	0.3%	682	12.5%
Jefferson - Clark	349,371	18.3%	43,808	12.5%
Fremont-Madison	27,196	1.4%	3,410	12.5%
WD100*	12,193	0.6%	1,529	12.5%
Madison	4,102	0.2%	514	12.5%
Magic Valley	261,853	13.7%	32,834	12.5%
A&B	174,735	9.1%	21,910	12.5%
North Snake	185,196	9.7%	23,222	12.5%
Southwest	104,417	5.5%	13,093	12.5%
Non-Participant	112,540	5.9%	14,112	12.5%
Total:	**1,913,999**	100.0%	240,000	12.5%
*Usage will be Mitigated by Fremont-Madison ID or Madison GWD				

Usage - Notes

- 5 year average data sent to each district
- Non-participants can be easily added to a district if needed
- Working Document
  - Minor changes when districts review individual's usage
  - Final 5 year average complete before start of irrigation 2016

Application to Cities

- Usage
  - 67,170 af
    - 45,044 af currently participating w/GWD
    - 22,126 af not participating w/GWD
- Mitigation
  - Recharge
  - Conversions
  - Monetary

EXHIBIT F

Final allocation

Final SWC-IGWA Settlement Allocation 2016 11/3/2016

	AF/Yr	District % Total	AF Reduction	% Reduction
Aberdeen - American Falls GWD	271,989	14.0%	33,595	12.4%
Bingham GWD	282,476	14.5%	34,890	12.4%
Bonneville - Jefferson GWD	147,337	7.6%	18,198	12.4%
Carey Valley GWD	5,671	0.3%	700	12.4%
Jefferson - Clark GWD[1]	438,634	22.6%	54,178	12.4%
Fremont-Madison ID[2]	43,491	2.2%	5,372	12.4%
Magic Valley GWD	261,877	13.5%	32,346	12.4%
A&B ID	174,735	9.0%	21,582	12.4%
North Snake GWD[3]	205,501	10.6%	25,382	12.4%
Southwest ID	104,417	5.4%	12,897	12.4%
Falls ID	6,968	0.4%	861	12.4%
Total:	**1,943,096**	100.0%	**240,000**	12.4%
Non-Participants	98,051	4.8%	-	-
Total ESPA:	**2,041,147**			

1. WD31 has 89,884 af that have no WMIS records, but included in Jefferson-Clark GWD total.
2. Includes Madison Irrigation District and WD100. Instread of diversion reduction FMID providing direct delivery of 1,500 af of storage to IGWA and 3,000 af annual recharge.
3. North Snake GWD 5 year average delivery of water to conversions in WD130 is 21,305 af.
4. Total wells for all disticts estimated to be 4,750

EXHIBIT G

IDWR workshop agenda September 2015

SWC-IGWA Term Sheet Implementation - Technical Work Shop
September 23, 2015 (10:00 AM – 3:00 PM)
Best Western (800 N. Overland Avenue Burley, ID 83318)

Agenda

1. **Introduction – Mat Weaver & Randy Budge**
    a. Review of agenda and objectives
    b. Discuss process and future workshops
    c. What information do GWDs need
2. **Review of Department Water Right Data, Consumptive Use Basics, METRIC, NDVI**
    a. Department Irrigated Land Use Data and Water Right Records – Linda Davis
    b. Review of Consumptive Use Basics – Matt Anders
    c. Method for Computing ET – Bill Kramber
3. **Review of Diversion Data (i.e. WMIS database records)**
    a. Review of WMIS Data Base and Records – Cindy Yenter
    b. Review 2015 WMIS QA Effort – Cindy Yenter
    c. Review PCC Methods and Data – Corbin Knowles
    d. Analysis and Comparison of Metric vs. PCC Data – Corbin Knowles
4. **Discussion of Establishing Baseline, 240,000 AF Proportionment, & Annual Performance Review**
    a. Consider methods for determining baseline – Mat Weaver
    b. Consider methods for proportioning 240,000 AF reduction amongst GWDs – Mat Weaver
    c. Consider methods for annual performance review – Mat Weaver
5. **Discuss Next Steps**
    a. Prepare list of what outstanding information is still needed – IGWA/GWD
    b. Schedule next meeting
    c. Make work assignments
6. **As Time Allows - Discussion of alternative practices to reduction in consumptive use**
    a. Discussion of necessary technical evaluation and metrics associated with recharge as an alternative practice
        i. Answer the question, "Does my recharge activity have an equivalent effect on the aquifer to a reduction in consumptive use?"
    b. Does 1 AF of recharge or other demand reduction always equal 1 AF of credit?
        i. Answer to question, "Does my activity have an equivalent effect on the aquifer to a reduction in consumptive use?"

Objectives

1. Discuss and reconcile the inconsistent usage of "diversion reduction", "consumptive reduction", and "demand reduction" language by the term sheet.

2. Develop a clear understanding of the Department's ground water diversion data set (i.e. WMIS database).

3. Develop a clear understanding of the challenges associated with relying on a power consumption coefficient (PCC) method of measuring diversions.

4. Develop a Clear understanding of the Department's consumptive use analysis, the analysis input variables, and the completeness and accuracy of the input variables.

5. Identify any missing data necessary for implementation of the term sheet (e.g. field scale data set of ground water irrigated lands).

6. Determine whether "diversion reduction" or "consumptive reduction" will be the standard used by the GWDs in implementing their collective practices to achieve the term sheet's benchmarks and goal.

7. Determine the data and methods that will be used to proportionately split the 240,000 acre foot obligation up amongst all of the parties (i.e. GWDs, A&B, SWID, and others).

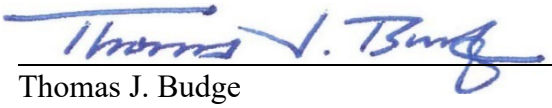
8. Determine the data and methods that will be used to establish the "baseline condition".

9. Determine the data and methods that will be used to measure the year-to-year performance of the GWDs in achieving the term sheet's benchmarks and goal.

10. Discuss sideboards for acceptable recharge and other demand reduction practices and how to equate these practices to a diversion/consumptive use reduction.

CERTIFICATE OF SERVICE

I hereby certify that on this 4th day of January, 2023, the foregoing document was served on the persons below via email as indicated:



Thomas J. Budge

Gary Spackman, Director Garrick Baxter, Deputy Attorney General IDAHO DEPT. OF WATER RESOURCES P.O. Box 83720 Boise, Idaho 83720-0098	file@idwr.idaho.gov gary.spackman@idwr.idaho.gov garrick.baxter@idwr.idaho.gov
John K. Simpson Travis L. Thompson Michael A. Short BARKER ROSHOLT & SIMPSON, LLP P. 0. Box 63 Twin Falls, ID 83303-0063	jks@idahowaters.com tlt@idahowaters.com nls@idahowaters.com mas@idahowaters.com
W. Kent Fletcher FLETCHER LAW OFFICE P.O. Box 248 Burley, ID 83318	wkf@pmt.org
Kathleen Marion Carr US DEPT. INTERIOR 960 Broadway Ste 400 Boise, ID 83706	kathleenmarion.carr@sol.doi.gov
David W. Gehlert Natural Resources Section Environment and Natural Resources Division U.S. DEPARTMENT OF JUSTICE 999 18th St., South Terrace, Suite 370 Denver, CO 80202	david.gehlert@usdoj.gov
Matt Howard US BUREAU OF RECLAMATION 1150 N Curtis Road Boise, ID 83706-1234	mhoward@usbr.gov

Sarah A Klahn SOMACH SIMMONS & DUNN 2033 11th Street, Ste 5 Boulder, Co 80302	sklahn@somachlaw.com dthompson@somachlaw.com
Rich Diehl CITY OF POCATELLO P.O. Box 4169 Pocatello, ID 83205	rdiehl@pocatello.us
Candice McHugh Chris Bromley MCHUGH BROMLEY, PLLC 380 South 4th Street, Suite 103 Boise, ID 83 702	cbromley@mchughbromley.com cmchugh@mchughbromley.com
Robert E. Williams WILLIAMS, MESERVY, & LOTHSPEICH, LLP P.O. Box 168 Jerome, ID 83338	rewilliams@wmlattys.com
Robert L. Harris HOLDEN, KIDWELL, HAHN & CRAPO, PLLC P.O. Box 50130 Idaho Falls, ID 83405	rharris@holdenlegal.com
Randall D. Fife City Attorney CITY OF IDAHO FALLS P.O. Box 50220 Idaho Falls, ID 83405	rfife@idahofallsidaho.gov
William A. Parsons PARSONS SMITH & STONE P.O. Box 910 Burley, ID 83318	wparsons@pmt.org