STATE OF IDAHO
WATER DISTRICT 130
C/O IDAHO DEPARTMENT OF WATER RESOURCES
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IDWR DIRECTOR
DAVID R TUTHILL, JR

WATERMASTER
CINDY YENTER
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June 11, 2008

NORTH SNAKE GROUND WATER DISTRICT
152 E MAIN ST
JEROME ID 83338

RE: Insufficiencies in Measurement and Reporting for Non-Irrigation Diversions within NSGWD

Dear Board Members:

Measurement and reporting for non-irrigation diversions within North Snake GWD (NSG) is presently not meeting IDWR standards. The Board's prompt attention to this issue will be necessary if NSG is to continue measurement and reporting for these diversions.

From the time non-irrigation diversions, primarily commercial dairies, began petitioning to join NSG in 2002, Water District 130 (WD130) has struggled to obtain consistent and accurate data for these diversions. Quality of commercial, industrial and municipal data has improved somewhat since 2004, but remaining insufficiencies relating specifically to collection and entry of flow meter data, have raised serious concerns about the adequacy of NSG's resources to measure and report for this group of water users.

To better identify and quantify data insufficiencies, I asked Michelle Richman (IDWR) to complete an analysis of 2006 NSG non-irrigation flow meter data, using WMIS database records captured before and after WD130 completed quality assurance checks in those records (analysis attached). The results of the data analysis indicate that WD130 staff corrected, completed or modified 33% of 270 NSG records[1] for 2006 which contain non-irrigation flow meter data (measurement option 8). About 20 of the corrected records initially contained no data at all due to non-reporting by the water user. The above data were collected by NSG and data entered into WMIS by hydrographer Brian Higgs or employees of Water Well Consulting (WWC).

Data entry errors varied, but corrections made by WD130 include:

- Non-sequenced totalizer data – end totalizer reading from previous year did not match start totalizer from current year, resulting in data gaps or data overlaps.
- Data entered in the wrong record – either totalizer data or flow meter calibration data entered for an incorrect diversion. Some reported totalizer data are habitually switched by the user or by the data collector (this is usually obvious if totalizer data are properly sequenced). This must be noted and corrected at the time of data entry.
- Records not completed – Associated records for diversions with shared flow meters not filled out to cross-reference data stored in another record.
- Missing or erroneous volume multipliers and flow units – incorrect units and/or multipliers entered, so resulting annual volumes are incorrect. Sometimes totalizer entries are altered to compensate (typically by the addition of zeros or decimals).
- Missing calibration factors –standard meter units (a required field) are not entered in flow meter calibration record, which results in calibration factor to not calculate. All diversion records subsequent to this calibration record are not properly adjusted.
- Non-reported data – user did not report. No apparent attempt made by NSG to physically collect data. Diversion data either missing for current year or noted that "report not received".

[1] Primary data records only. Records which represent a second well sharing a common flow meter (qualifier = OW) are not included in this number.

This level of ongoing error is not acceptable, and immediate action is required by NSG. The following criteria must be met for non-irrigation flow meter data which are collected and reported by NSG for years 2007 and later:

- All identified data entry standards for the WMIS database must be adhered to. The WMIS help document, including all data definitions, is available as a download through the WMIS.net platform, or may be requested from IDWR.
- At least 95% of active non-irrigation flow meter annual diversion records must be populated with valid totalizer data (no more than 5% incomplete or showing no data). This criterion will be calculated on primary data records only and will not include records for shared meters.
- No more than 5% of active non-irrigation flow meter annual diversion records must require correction after data entry. This criterion will apply to all records, including associated records for shared flow meters and for flow meter calibrations.

IDWR has been notified by WWC that data entry has been completed for 2007. WD130 quality assurance checks will begin on 2007 NSG non-irrigation flow meter data after August 1, 2008. I encourage NSG to use the time between now and August 1 to conduct a thorough review of the 2007 data which have been entered by WWC on your behalf. **If 2007 non-irrigation data reported by NSG are found to be unacceptable and/or are not in accordance with the above criteria, WD130 will assume measurement and reporting responsibilities for all NSG non-irrigation diversions beginning in 2009.**

A similar analysis has not yet been completed for flow meters or hour meters on irrigation diversions in the NSG. However, there is a known similar problem with this data set. Based on the NSG conversion well data only, 23% of conversion wells using hour or flow meters to measure diversions (7 of 30 wells) are still missing 2007 reported data. Accordingly, Water District 130 will also conduct an initial analysis on 2007 irrigation data collected from all NSG irrigation flow meters and hour meters. This analysis will also occur after August 1, 2008, using the above criteria. Based on the results, notice of insufficiency may also be given regarding irrigation diversions.

WD130 is responsible for accurate and complete diversion data. The Watermaster and IDWR staff must be able to confirm and attest to the credibility of the public record which is created by these data. Consequently, ground water districts that serve as sub-districts within Water District 130 for measurement and reporting purposes must be accountable to WD130 for all data they collect and report.

Correcting deficiencies in 2007 reporting and data entry must be a priority issue for NSG during 2008. The Board's immediate consideration of solutions and timely implementation of changes will be necessary to avoid intervention by IDWR and WD130. Any changes or additions to 2007 reported data prior to August 1, 2008 will be accepted as timely by WD130.

Please be advised that I am willing to cooperate and work with the NSG Board, the NSG Office Manager, Brian Higgs and the WWC staff to devise acceptable solutions and provide necessary WMIS training. However, NSG must be responsible for its measurement and reporting plan, and must ensure that contract hydrographers are performing work at satisfactory levels.

Regards,

Cindy Yenter

Cindy Yenter, Watermaster
Water District 130

cc: Tim Luke, IDWR
Brian Higgs, Water Well Consulting
Magic Valley Ground Water District

Summary:

Count of Changes:

180 records of 270 have no change
90 records of 270 changed (33%)

33% of the reported volumes in WMIS were corrected by IDWR. Some volumes were under-reported and some were over-reported.

Actual Change in AcFt:

-8450.7 AF

Corrections by IDWR resulted in a decrease of 8451 AF for the total volume reported. In other words, the volume was over-reported by 8451 AF.

Percent Change in AcFt:

-28.10 %

Corrections by IDWR resulted in a 28.1% drop in the volume reported in WMIS.

Under-reported FM Usage:

63 records, errors totaling 2597 AF, with the largest error at 268 AF

Of the 63 under-reported records, the largest single error resulted in an under-reporting of 268 AF.

Over-reported FM Usage:

27 records, errors totaling 11048 AF, with the largest error resulting in an over-reporting of 5325 AF.

Of the 27 over-reported records, the largest single error resulted in an over-reporting of 5325 AF. The two largest errors resulted in a total over-reporting of 8796 AF.

Data prepared by: Michelle Richman, IDWR
Date: Feb 25, 2008

All data provided by Water District 130 . Annual reported user data are subject to ongoing review and verification.

Reporting District ID	WMIS Number	Report Year	Measure-ment OptionID	PreQA AdjustedAcreFeet	Post QA AdjustedAcreFeet	Diff in AF	
15	401205	2006	8	29.47	297.73	268.26	under-reported
15	400095	2006	8	5.84	227.29	221.45	under-reported
15	401189	2006	8	0	197.81	197.81	under-reported
15	401493	2006	8		148.63	148.63	under-reported
15	401934	2006	8	44.67	160	115.33	under-reported
15	401832	2006	8	14.64	124.72	110.08	under-reported
15	401529	2006	8	0	94.21	94.21	under-reported
15	401204	2006	8	10.4	103.8	93.40	under-reported
15	400119	2006	8		87.34	87.34	under-reported
15	400449	2006	8		87.04	87.04	under-reported
15	401542	2006	8	0	69.53	69.53	under-reported
15	401890	2006	8		68.16	68.16	under-reported
15	400547	2006	8		63.73	63.73	under-reported
15	400605	2006	8	6.82	68.16	61.34	under-reported
15	400093	2006	8	13.98	72.62	58.64	under-reported
15	401198	2006	8	0.01	53.35	53.34	under-reported
15	401854	2006	8	25.8	74.08	48.28	under-reported
15	400040	2006	8	590.91	636.73	45.82	under-reported
15	401145	2006	8		42.56	42.56	under-reported
15	400840	2006	8		39	39.00	under-reported
15	401539	2006	8		36.54	36.54	under-reported
15	400049	2006	8	187.61	222.34	34.73	under-reported
15	401897	2006	8	26	60.69	34.69	under-reported
15	400048	2006	8	142.77	174.97	32.20	under-reported
15	400063	2006	8	65.37	97.27	31.90	under-reported
15	401902	2006	8	35	66.03	31.03	under-reported
15	400038	2006	8	650.89	681.11	30.22	under-reported
15	400436	2006	8	11.9	41.12	29.22	under-reported
15	401160	2006	8	50.85	79.09	28.24	under-reported
15	400841	2006	8	3.05	30.56	27.51	under-reported
15	401163	2006	8		26.86	26.86	under-reported
15	400195	2006	8	6.61	31.76	25.15	under-reported
15	400219	2006	8		23.55	23.55	under-reported
15	401138	2006	8	252.23	274.93	22.70	under-reported
15	400078	2006	8	10.4	32.8	22.40	under-reported
15	401833	2006	8	113.59	133.35	19.76	under-reported
15	401519	2006	8	27.26	45.87	18.61	under-reported
15	400091	2006	8	0.02	16.08	16.06	under-reported
15	400066	2006	8	316.99	333	16.01	under-reported
15	400105	2006	8		15.4	15.40	under-reported
15	401191	2006	8	72.71	87.73	15.02	under-reported
15	400071	2006	8	15.62	30.23	14.61	under-reported
15	400096	2006	8		9.91	9.91	under-reported
15	100573	2006	8	59.48	68.4	8.92	under-reported
15	100601	2006	8	0.01	5.94	5.93	under-reported
15	400083	2006	8	0.06	5.88	5.82	under-reported
15	401834	2006	8	0.3	5.2	4.90	under-reported
15	401151	2006	8	241.54	246.38	4.84	under-reported

Reporting District ID	WMIS Number	Report Year	Measure-ment OptionID	PreQA AdjustedAcreFeet	Post QA AdjustedAcreFeet	Diff in AF	
15	400082	2006	8		4.82	4.82	under-reported
15	400108	2006	8	0.02	4.78	4.76	under-reported
15	400187	2006	8		3.62	3.62	under-reported
15	400838	2006	8		3.46	3.46	under-reported
15	100597	2006	8	20.39	23.67	3.28	under-reported
15	401898	2006	8	30.21	32.85	2.64	under-reported
15	401931	2006	8	17.65	19.54	1.89	under-reported
15	400109	2006	8	35.69	37.12	1.43	under-reported
15	401202	2006	8	48.32	49.7	1.38	under-reported
15	400102	2006	8	1.99	2.95	0.96	under-reported
15	400846	2006	8	9.37	10.12	0.75	under-reported
15	401155	2006	8	0.07	0.72	0.65	under-reported
15	400100	2006	8	0	0.53	0.53	under-reported
15	401837	2006	8	8.9	8.97	0.07	under-reported
15	401696	2006	8	6.2	6.26	0.06	under-reported
15	401935	2006	8	2.46	2.26	-0.20	over-reported
15	400123	2006	8	55.3	55	-0.30	over-reported
15	401503	2006	8	17.22	16.53	-0.69	over-reported
15	400101	2006	8	2.87	1.93	-0.94	over-reported
15	400135	2006	8	179.58	177.38	-2.20	over-reported
15	400115	2006	8	228.29	226.01	-2.28	over-reported
15	401502	2006	8	233.88	231.2	-2.68	over-reported
15	400062	2006	8	297.7	294.72	-2.98	over-reported
15	401823	2006	8	45.32	41.7	-3.62	over-reported
15	401153	2006	8	33.4	29.73	-3.67	over-reported
15	100616	2006	8	86.83	82.91	-3.92	over-reported
15	400117	2006	8	222.61	218.52	-4.09	over-reported
15	400116	2006	8	271.31	264.29	-7.02	over-reported
15	400166	2006	8	49.25	24.17	-25.08	over-reported
15	400079	2006	8	72.6	34.97	-37.63	over-reported
15	401843	2006	8	63.82	19.95	-43.87	over-reported
15	401520	2006	8	124	79.39	-44.61	over-reported
15	401161	2006	8	106.6	24	-82.60	over-reported
15	400159	2006	8	181.04	73.97	-107.07	over-reported
15	400174	2006	8	121.6	12.52	-109.08	over-reported
15	400493	2006	8	201.81	58.93	-142.88	over-reported
15	400045	2006	8	173.67	29.41	-144.26	over-reported
15	401844	2006	8	232.5	21.32	-211.18	over-reported
15	401936	2006	8	630.04	0	-630.04	over-reported
15	400858	2006	8	639.69	1.24	-638.45	over-reported
15	401206	2006	8	3575.87	104.08	-3471.79	over-reported
15	400198	2006	8	5330	5.47	-5324.53	over-reported
			TOTALS	**30085.27**	**21634.59**	**-8450.68**	