



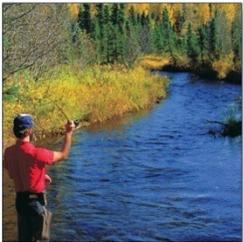
North Ada Technical Working Group

August 10th, 2010



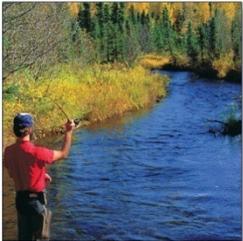
Meeting Overview

- Introductions
- North Ada County Project Updates
- East Ada County Project Updates

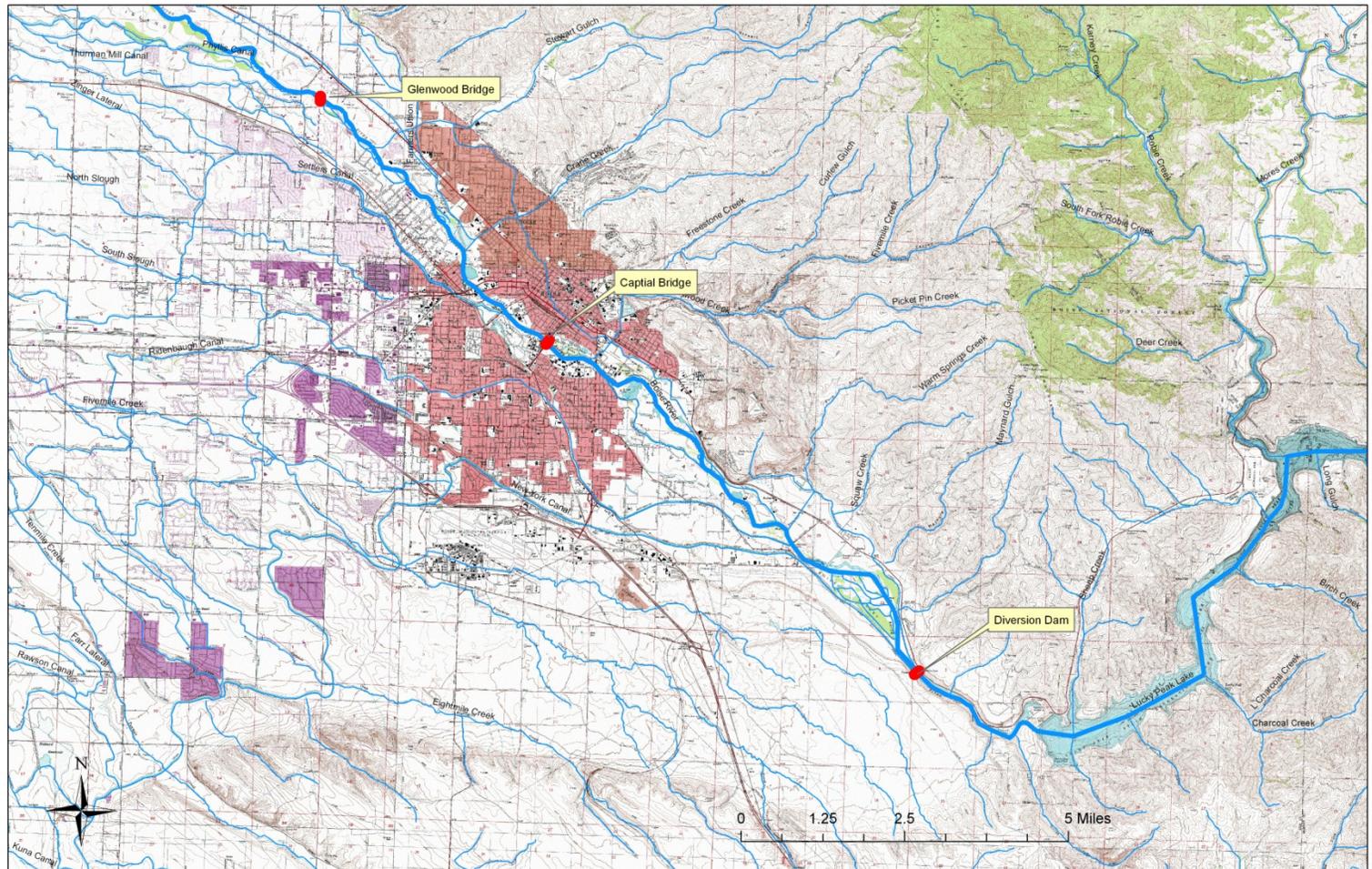
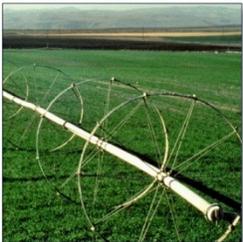
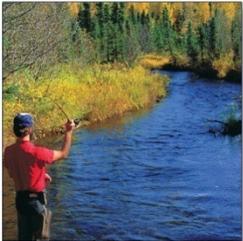


USGS Contract Work

- Boise River Seepage Runs
 - All four seepage runs have been conducted (November 5, 2009, February 8, 2010, May 25, 2010 and August 3, 2010).
 - Most piezometer measurements showed higher ground water levels than river levels.
 - Net gain indicated in first two runs.
 - Data is currently being reviewed and prepared for final report.



- Boise River Seepage
 - 11 measurements collected from the Diversion Dam to Glenwood Bridge during each run.



Boise River Seepage

- Results will be presented in final report and presentation of results and final report at upcoming Technical Working Group meeting.
- Preliminary results from first two runs indicated a net gain throughout the reach of investigation.
 - Gains match previous USGS measurements (Thomas and Dion, 1974 and Berenbrock, 1999), but disagree with IDWR calculations (TVHP water budget reports).

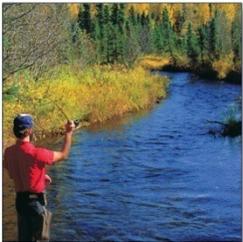


Table 2. Summary of surface-water flow (ground-water discharge) in the Boise River valley, November 18-19, 1971.

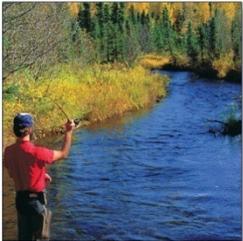
Section	River mileage	Measured discharge (ft ³ /s)	Increase in discharge (ft ³ /s)		
			From major drainage channels	From seeps or very short drains	Total
near Boise (13202000)	63.8	0.99		4.94	4.94
below Barber Dam (13203700)	58.8	5.93	1.0	0.96	1.96
near Olson City	56.3	7.89	0	5.8	5.8
at Broadway Ave. bridge	53.7	13.7	3.0	1.0	4.0
at Capital Blvd. (13205500)	52.8	17.7	0	5.7	5.7
at Fairview Ave. bridge	51.5	23.4	6.60	26.5	33.1
at E. 47th St. in Garden City	49.4	56.5	9.5	9.0	18.5
at Strawberry Glenn bridge	47.1	74.8	24.0	8.2	32.2
at Eagle Road	42.8	107	5.5	23.7	29.0
at Linder Road	39.1	136	14.9	20.1	35.0
at Star Road	33.9	171		0	126
at Middleton Road	26.7	297	126		129
at Highway 20-26 near Caldwell	21.1	442	129	16.0	145

Site No.	Site name	Station ID	County	Distance (mi)	Measurement date	Latitude	Longitude	Discharge (ft ³ /s)	Inflow to or outflow (-) from subreaches (ft ³ /s)	Measured gain or loss (-) along subreaches (ft ³ /s) (ft ³ /mi)
Reach 1										
1	Boise River near Boise	13202000	Ada	0	12	43°31'41"	116°03'36"	229		
2	Boise River below Barber Dam near Boise	13203700	Ada	4.35	12	43°33'37"	116°07'14"	229		0 0
3	Boise River at Loggens Creek	13204100	Ada	6.5	12	43°34'55"	116°09'31"	243		14.00 6.51
9	Boise River at Broadway Bridge at Boise	13204510	Ada	8.85	12	43°36'12"	116°11'30"	217	-35.12	9.12 3.88
10	Boise River at Ann Morrison Park	13205500	Ada	9.45	12	43°36'31"	116°12'26"	221		4.00 6.67
12	Boise River at Fairview Avenue	13205605	Ada	10.45	12	43°37'11"	116°13'42"	238	.31	16.69 16.69
14	Boise River at East 47th Street	13205645	Ada	12.45	12	43°38'37"	116°15'07"	242	-.17	4.17 2.09
83	Boise River at Glenwood Bridge near Boise	13206000	Ada	14.25	12	43°39'39"	116°16'41"	246		4.00 2.22

Net gain or loss (-) = 51.98

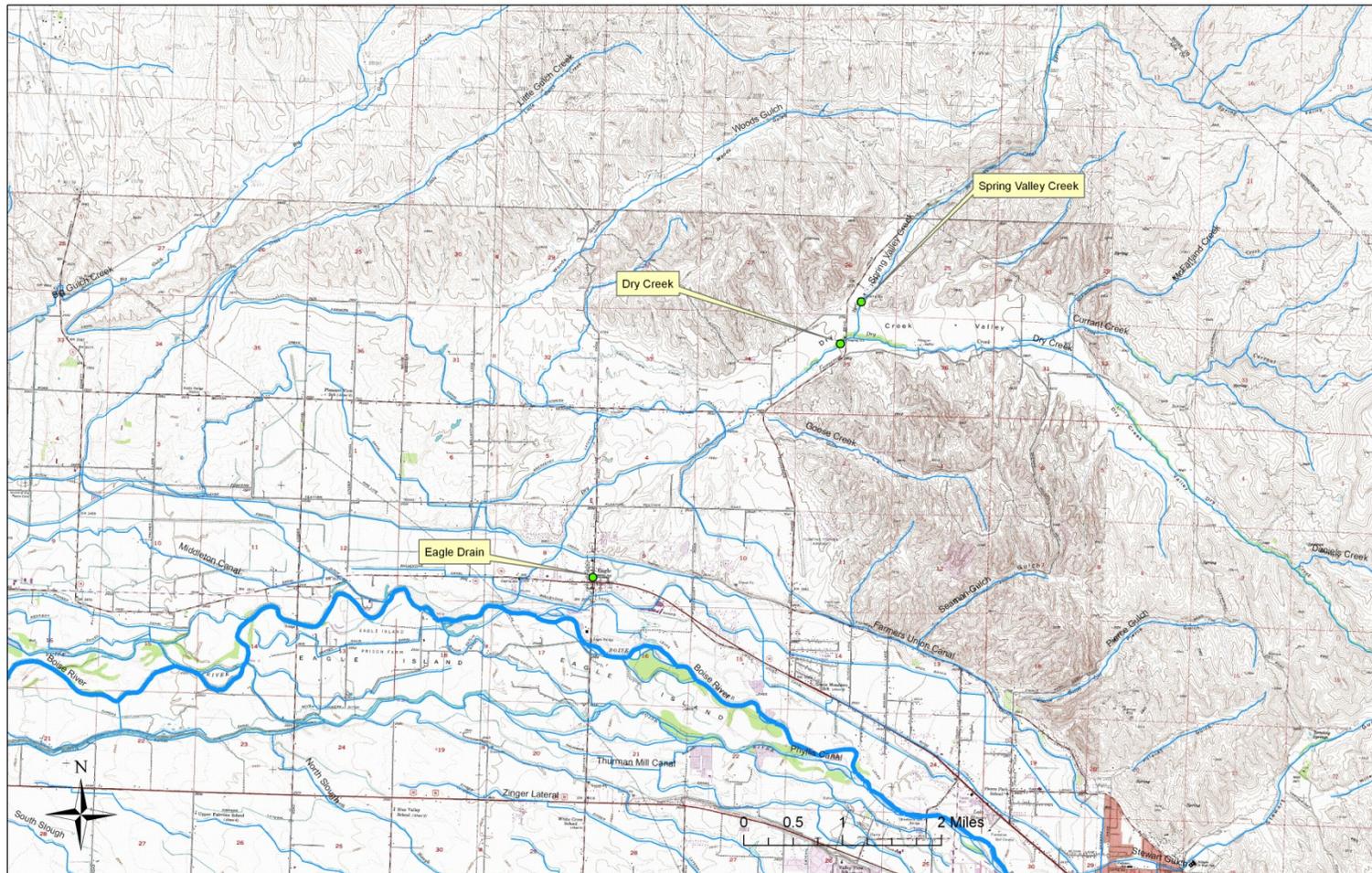
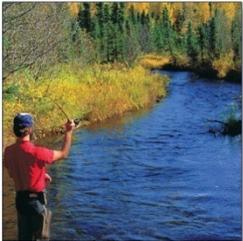
USGS Geochemistry Work

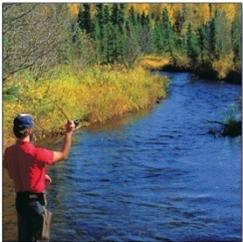
- Final report is complete and available at <http://pubs.usgs.gov/sir/2010/5144/>
 - Major conclusions:
 - CFCs detected in every sample
 - Nutrients not a significant indicator
 - Recommendations
 - Future Work -- discussion



USGS Gage Installation Contract

- All three gages are installed and running.



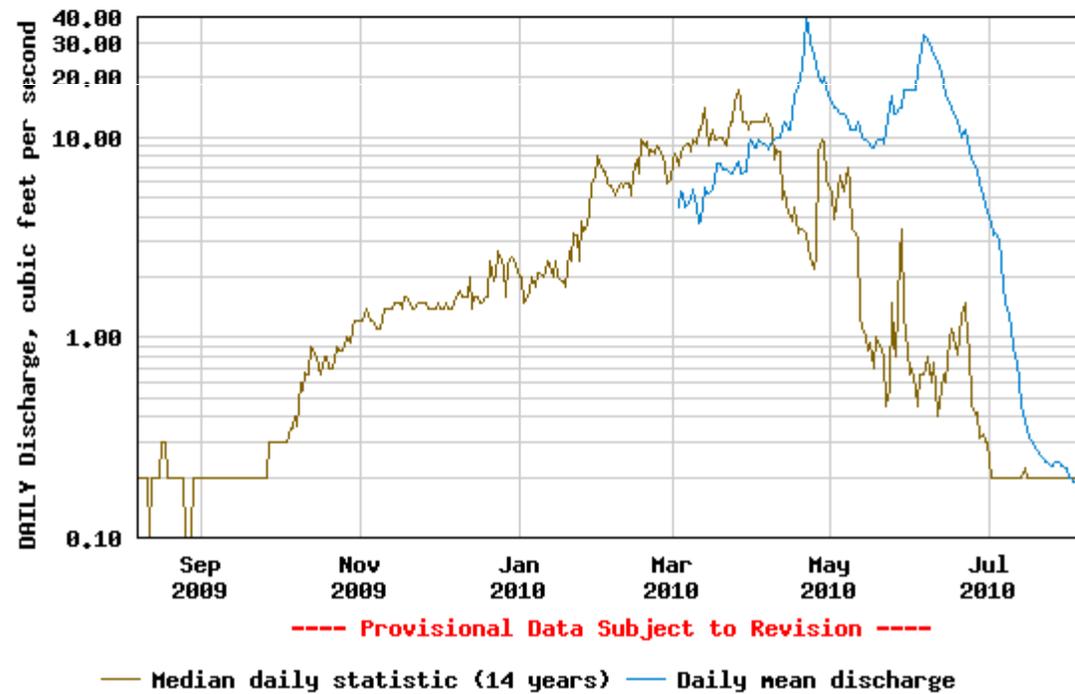


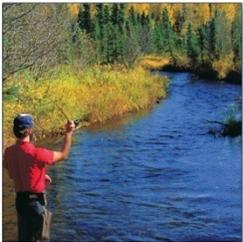
• USGS Stream Gage Contract

- Data collected can be viewed/downloaded at <http://waterdata.usgs.gov/id/nwis/current/?type=flow>

• Discharge, cubic feet per second

USGS 13207500 DRY CREEK NEAR EAGLE ID





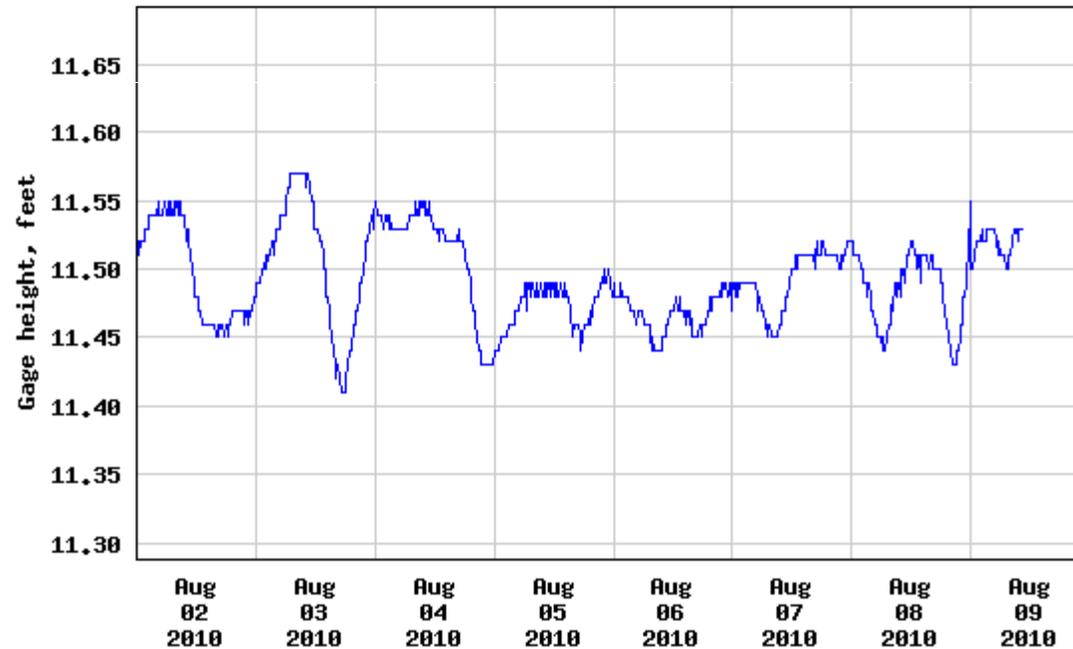
USGS Stream Gage Contract

- Eagle Drain does not have a rating curve developed at this time.

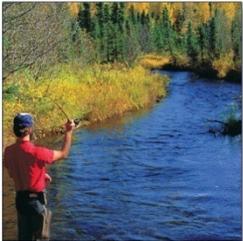
Gage height, feet

Most recent instantaneous value: 11.53 08-09-2010 10:30 MDT

USGS 13206400 EAGLE DRAIN AT EAGLE ID



----- Provisional Data Subject to Revision -----

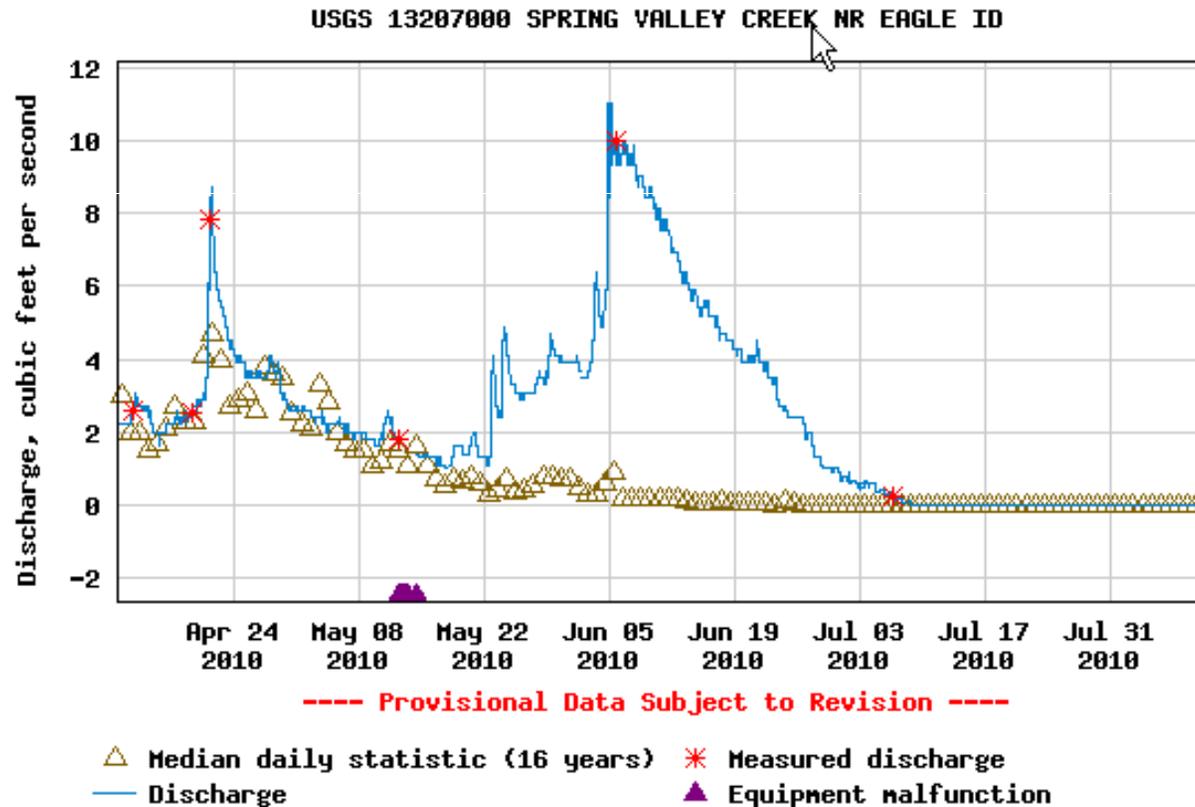


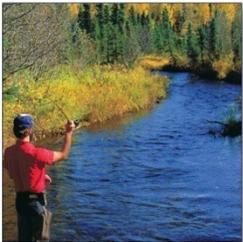
USGS Stream Gage Contract

- Spring Valley is currently dry.

Discharge, cubic feet per second

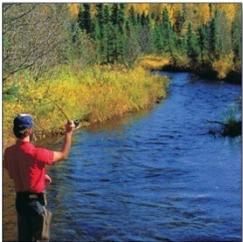
- Most recent instantaneous value: 0.00 08-09-2010 10:15 MDT





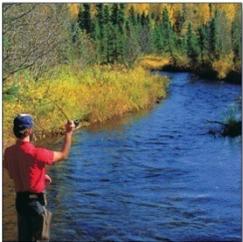
- Stream gage investigation
 - Recommendations for additional sites?



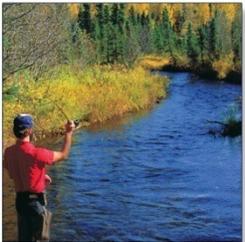
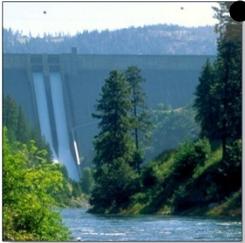


- Monitoring well installation
 - First set of monitoring wells is complete.
 - One shallow, one deep, adjacent to one another.
 - Both 4" PVC completions.





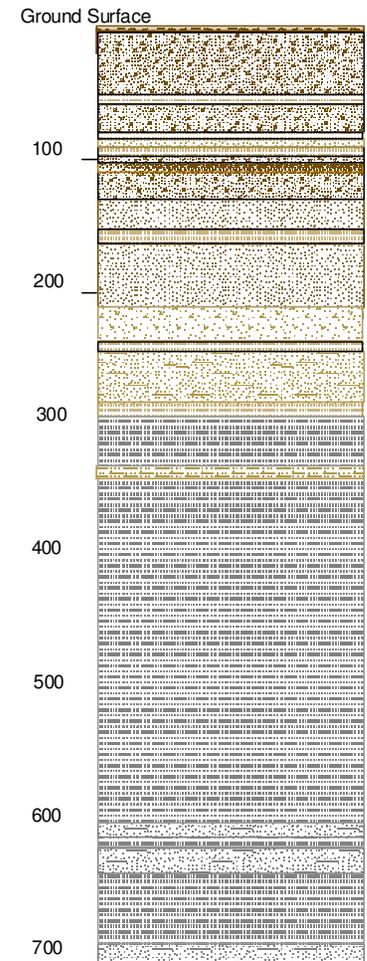
- Monitoring well installation
 - Lithologic Results:
 - Drill cuttings indicate primary aquifer material exists in upper 300 feet in this area.
 - Dark grey (“blue clay”) encountered at 293’ bgs. Very little water producing units discovered below this horizon.
 - Upper 250’ of borehole was composed of sands and gravels (high permeability).

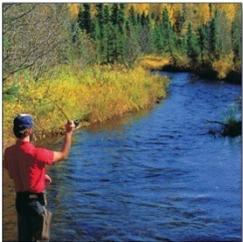


Monitoring well installation

– Lithologic Results (Deep well):

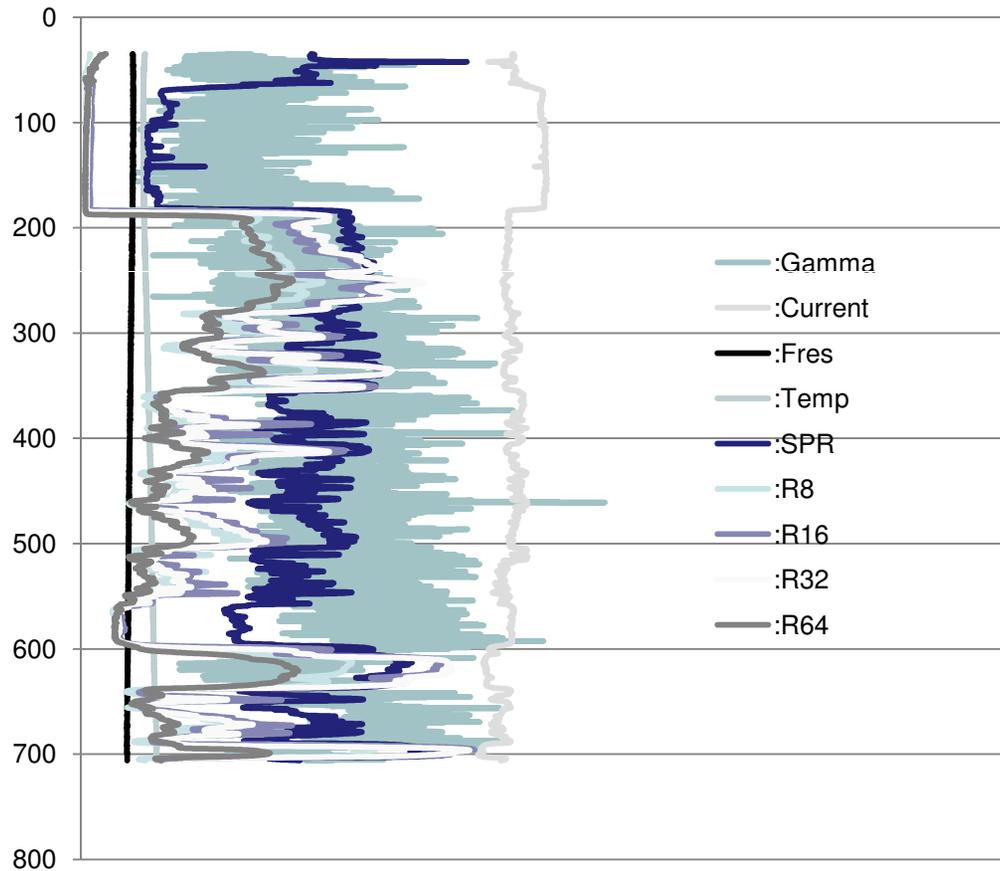
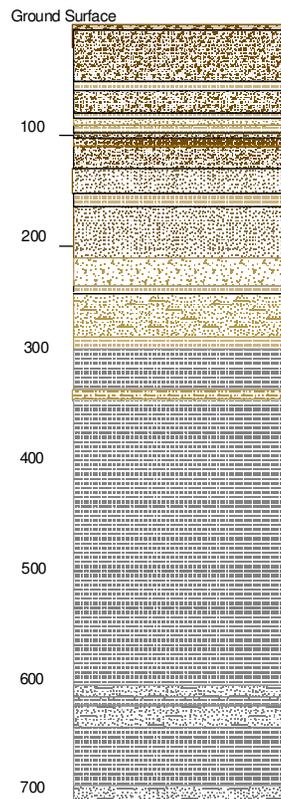
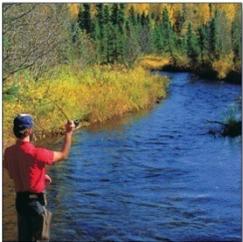
- Significant features:
 - Color change at 294'
 - Mudstone below 294'
 - Gravel and sands above 153'
 - Sand sequences between 164 – 215'
 - Water level at 52'
 - Two sand zones (618-637' and 705') in the mudstone.



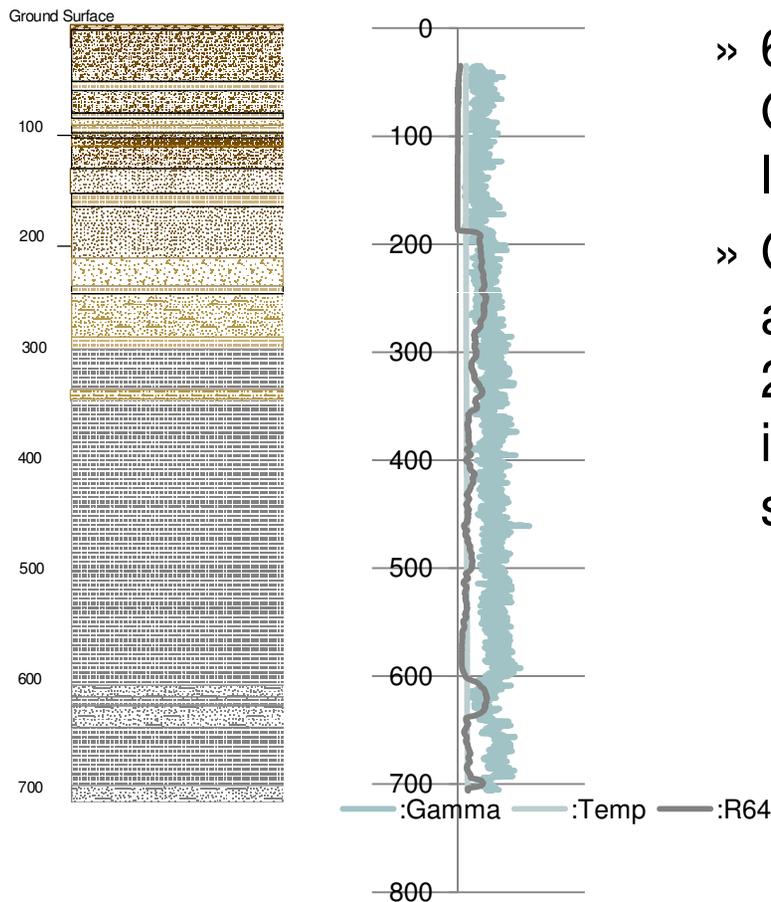
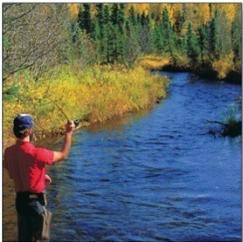


- Monitoring well installation
 - E-line Results (Deep Well):
 - Borehole geophysics data obtained:
 - Gamma
 - SP
 - Current
 - Fres
 - Temp
 - SPR
 - Resistivity (8", 16", 32", and 64")
 - Processed and interpreted internally

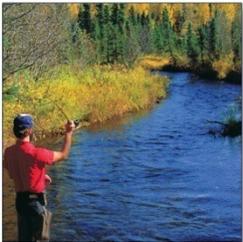
- Monitoring well installation
 - E-line Results:



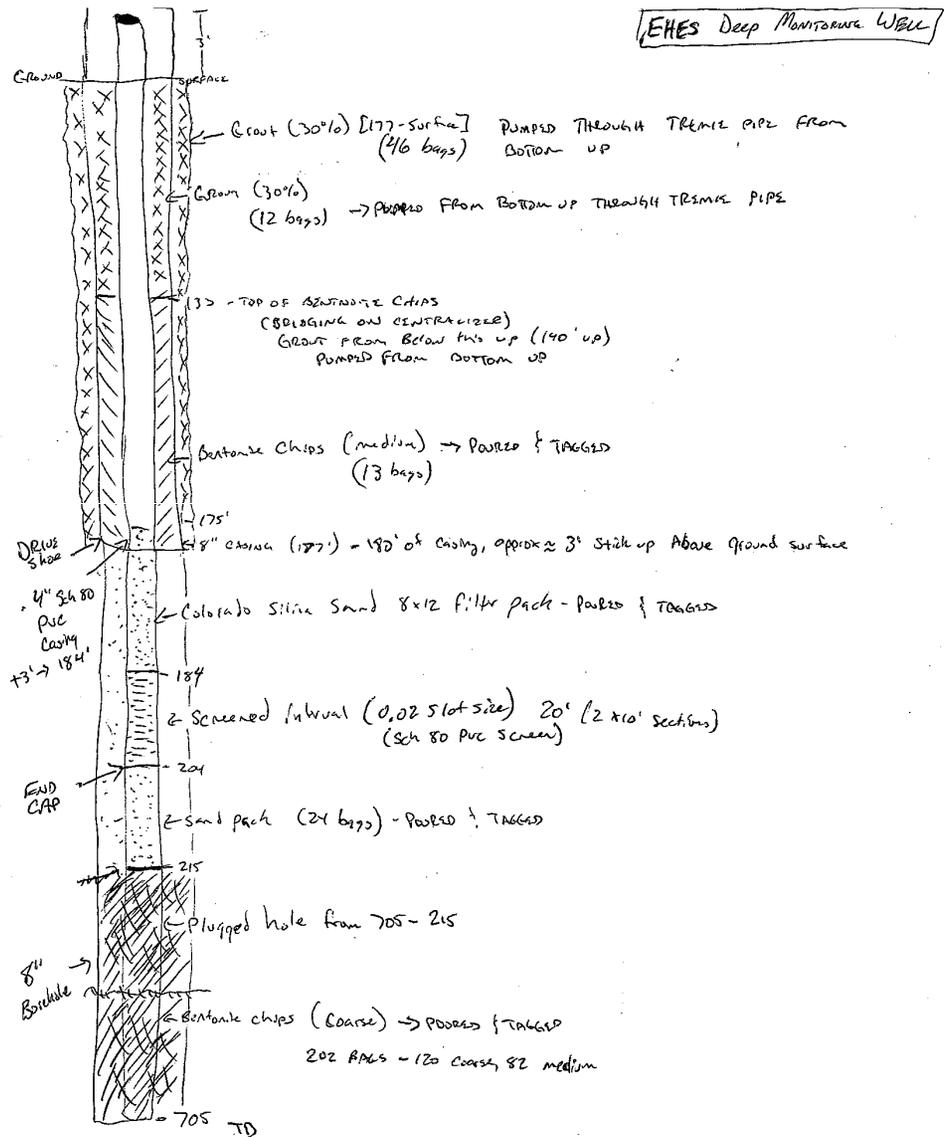
- Monitoring well installation
 - E-line Results:

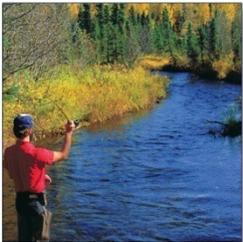


- » 64" Resistivity and Gamma plots with lithology
- » Changes in Gamma at approximately 295 and 205 indicate major grain size changes.

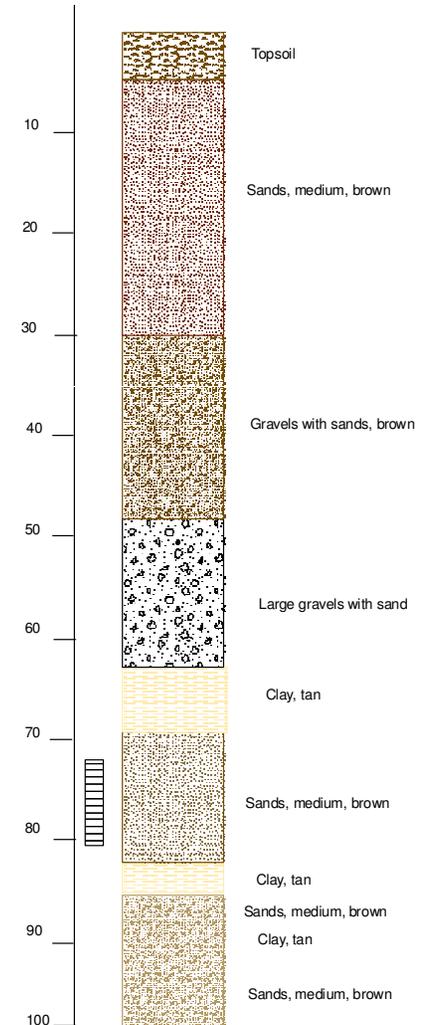


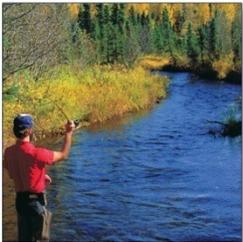
- Monitoring well installation
 - Construction Details (Deep)





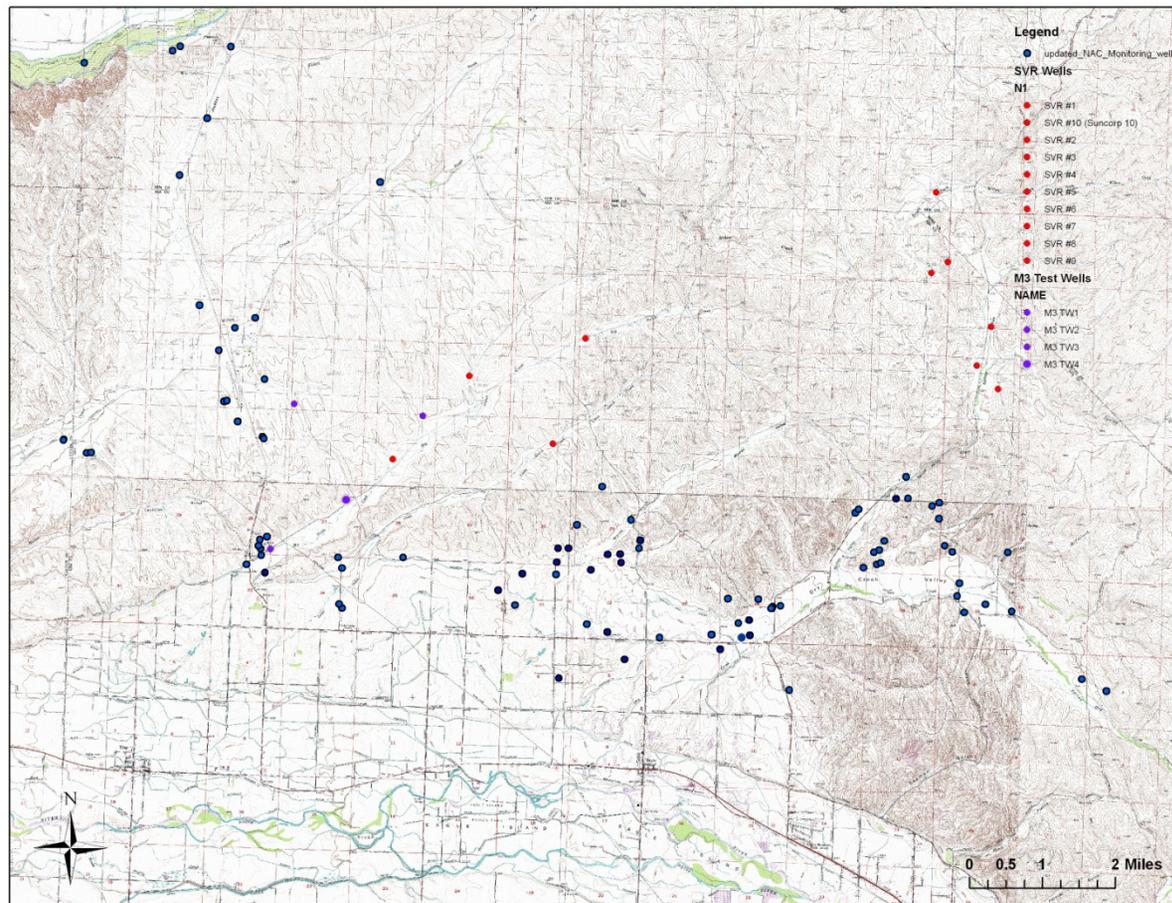
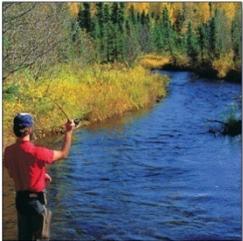
- Monitoring well installation
 - Shallow Well
 - Sand and gravel to 62'
 - Completed from 82-72'
 - TD was 101'
 - No borehole geophysics



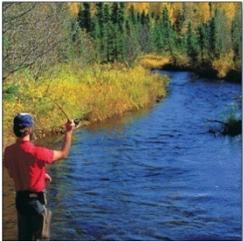


- Monitoring well installation
 - Future sites
 - Access agreement drafted by ITD was signed by IDWR. Awaiting final approval from ITD.
 - Private land owners. One parcel of interest has been identified and land owner has been contacted. Awaiting final approval and access agreement.
 - BLM land. Endangered species are an issue along Eagle foothills.

- Monitoring well installation
 - Future sites – recommendations?



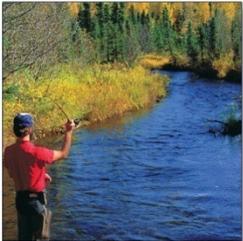
Ground Water Modeling



- Cosgrove report is final and available at http://www.idwr.idaho.gov/WaterInformation/Projects/nac/consultant_reports/Cosgrove-Final.pdf
- **Major conclusions include:**
 - Variety of models exist for the Treasure Valley that all serve different purposes.
 - TVHP model is most defensible due to committee formed decisions.
 - Conceptual model must be developed and agreed upon through a committee process.
 - Sub-regional models are needed and should be based on regional conceptual model.
- **Major recommendations include:**
 - Transient version of the TVHP should be developed.
 - Boundaries should be enlarged to include northwest and eastern areas of interest.
 - Additional data collection is needed for calibration.
 - Additional data collection is needed to test and analyze water budgets.

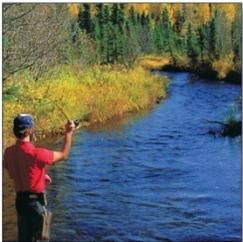
Ground Water Modeling

- Bureau of Reclamation (J. Johnson and RD Schmidt) are in the process of developing a transient version of the TVHP model.
 - Model is populated
 - Calibration is currently underway
 - Awaiting datasets from IDWR on model boundary expansion (Payette River valley and East Ada area).



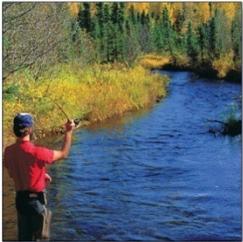
Ground Water Modeling

- Future ideas for transient model development.
 - **Allow BOR to complete and calibrate the modeling efforts currently underway.**
 - **Develop a Technical Working Group focusing on modeling of the Treasure Valley.**
 - **Modify the BOR transient model based on input from modeling committee to better serve the purpose and roles needed at IDWR.**
 - **Use the modified transient model in CAMP 50 year water prediction scenarios.**
 - **Sub-regional models?**



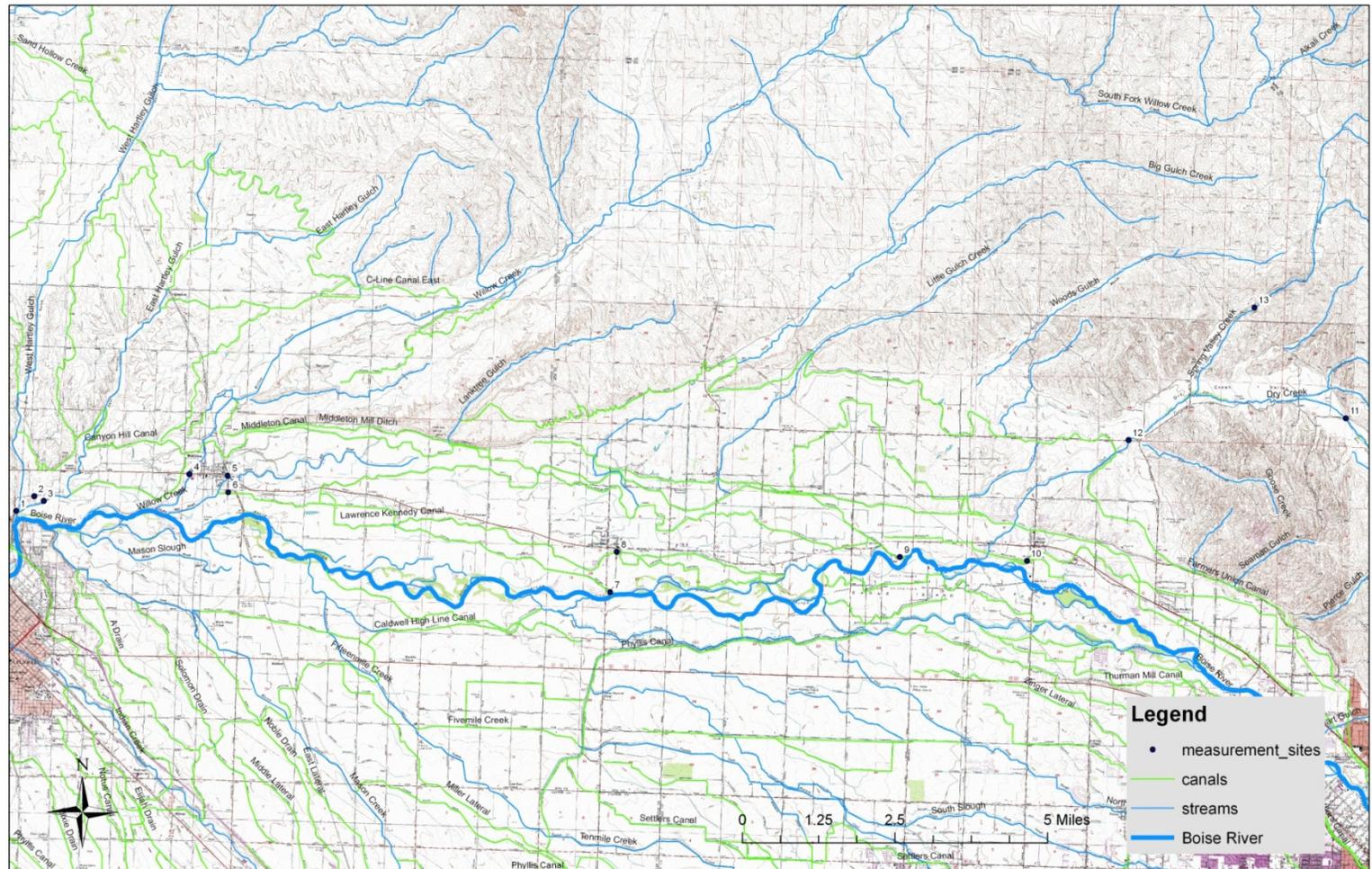
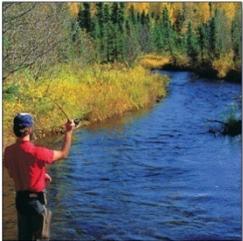
Surface Water Investigations

- Drain Measurements
 - In addition to the three USGS stream gages, a drain measurement network has been developed.
 - 13 sites measured bi-weekly
 - Measurements as close to river as possible to capture cumulative flows.



Surface Water Studies

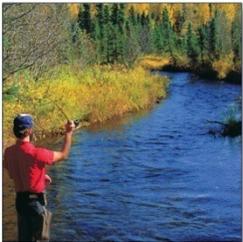
- Drain Return Measurements



Surface Water Investigations

- Drain Return Measurements

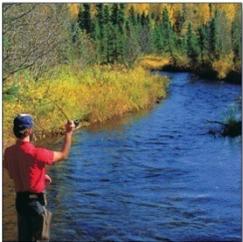
- Flows in cfs



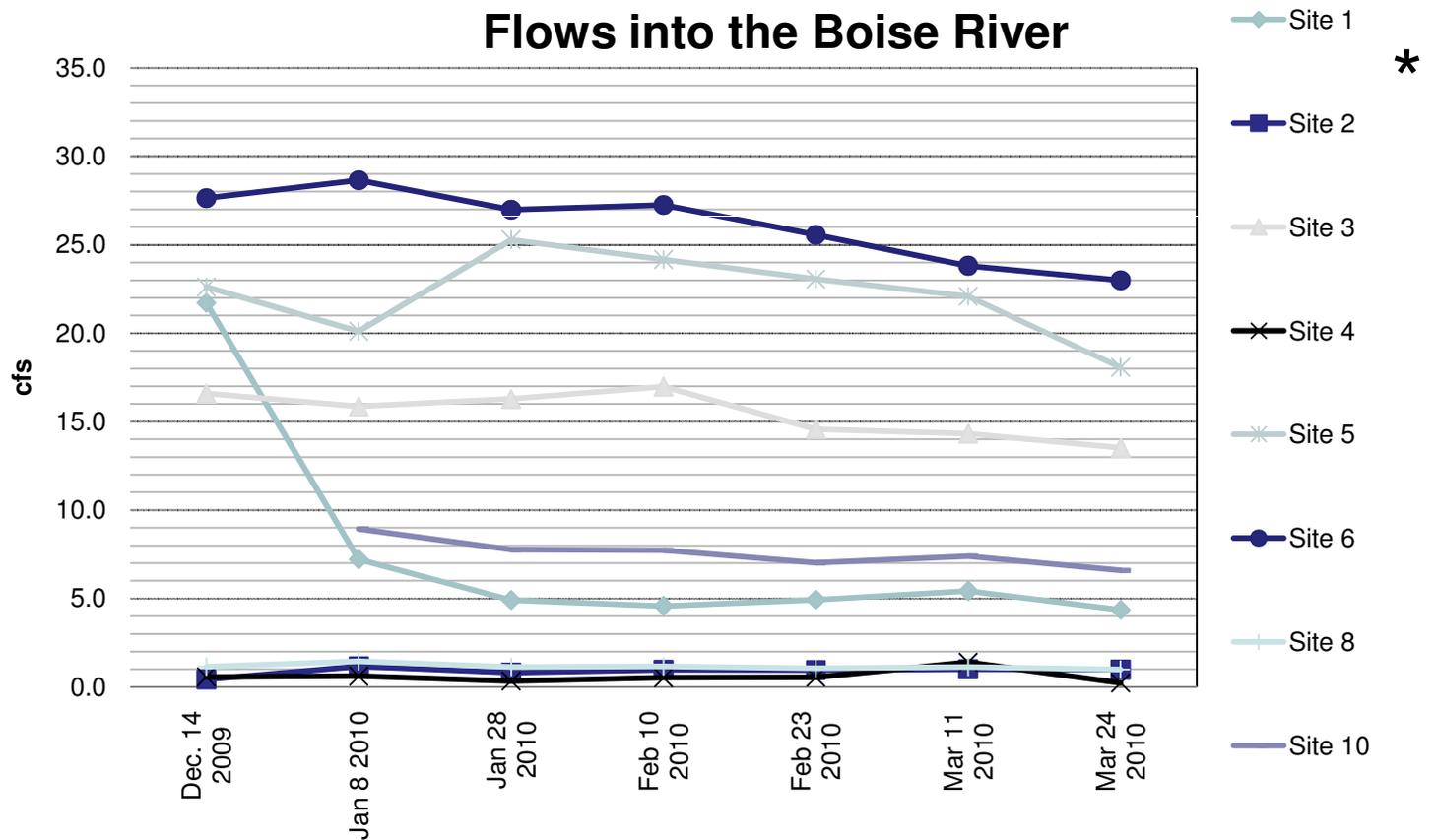
Site	Dec. 14 2009	Jan 8 2010	Jan 28 2010	Feb 10 2010	Feb 23 2010	Mar 11 2010	Mar 24 2010
1	21.7	7.2	4.9	4.6	4.9	5.4	4.4
2	0.4	1.2	0.8	1.0	1.0	1.0	1.0
3	16.6	15.9	16.3	17.0	14.6	14.3	13.5
4	0.6	0.6	0.3	0.5	0.5	1.4	0.2
5*	22.6	20.1	25.3	24.2	23.1	22.1	18.1
6*	27.6	28.7	27.0	27.2	25.6	23.8	23.0
7	0.4	0.5	1.0	0.9	1.1	1.1	1.0
8	1.2	1.5	1.1	1.2	1.1	1.1	1.0
9	0.2	0.7	0.3	1.4	0.4	0.3	0.3
10**		8.9	7.8	7.7	7.0	7.4	6.6
11	0.2	0.6	2.2	3.1	2.5	5.0	6.3
12	0.4	0.3	3.1	3.0	3.6	3.7	5.5
13						1.9	2.0
	Dec. 14 2009	Jan 8 2010	Jan 28 2010	Feb 10 2010	Feb 23 2010	March 11 2010	March 24 2010
Outflows	90.7	84.0	83.5	83.4	77.7	76.6	66.7

Surface Water Studies

- Drain Return Measurements

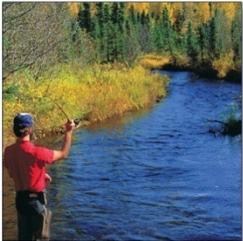


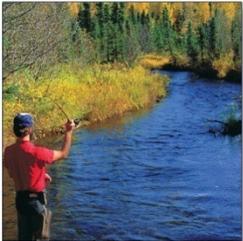
**Drain Flow Rates
Flows into the Boise River**



Surface Water Studies

- Drain Return Measurements
 - Fall/Winter 2010 Plan
 - Develop a team to collect bi-weekly drain measurements beginning near the end of September.
 - Collect measurements throughout the winter
 - Install shallow (<30') piezometers at measurement sites.
 - Survey drain elevations.
 - Include south side of the river???

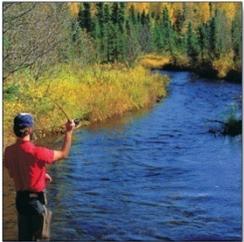




• Future Drain Return Measurements

- South side, Mason Creek where it enters Boise River 35,324 acres
-
- South side, Indian Creek where it enters Boise River 21,054 acres
-
- South side, Fifteen Mile Creek where it enters Boise River 22,403 acres
-
- South side, Ten Mile Creek and Cottonwood (also called Five Mile) Creek where they drain into Fifteen mile Creek.
-
- South side, Eight Mile Creek where it drains into Cottonwood Creek
-
- South side, Lower Five Mile drain just before it enters Noble drain
-
- South side, Noble drain just before it enters Boise River
-
- South side, North Slough where it enters Boise River 10,446 acres
-
- South side, Phyllis Drain where it enters Boise River 1,658 acres
-
- South side, Thurman Drain
-
- North and South sides, (unnamed) drains on the western end of Dixie Slough where they enter the Boise River 8,486 acres
-
- North side, Mill slough where it enters Boise river(Middleton drain 7,756 acres
-
- North side, Parma Drain (Sand Hollow Creek) where it enters Boise river 24,224 acres
-
- North side, West Hartley Gulch where it enters Boise River 16,716 acres
-
- North side, Willow Creek where it enters Boise River
-
- North side, Jensen Wasteway 5,153 acres
-
- North side, Conway Gulch where it drains into Boise River 6,641 acres
-
- North side, Eagle Drain 2,011 acres

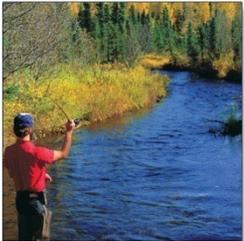
CGISS Geophysics Contract



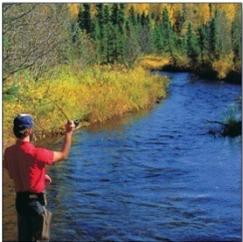
- Lee Liberty's presentation is available at http://www.idwr.idaho.gov/WaterInformation/Projects/nac/PDF/20100408/04-08-2010_Geophysics.pdf
- Major conclusions:
 - Deep sedimentary basin
 - Potential faults/water table offset in Farmer's Canal profile
 - Horizontal layering with dip increasing with depth.

CGISS Geophysics Contract

- Extended contract to collect additional data through August 2010.
 - Data collection includes
 - Seismic profile further south of Lanewood section
 - Collect additional magnetic and gravity data.
 - Any additional recommendations/suggestions?

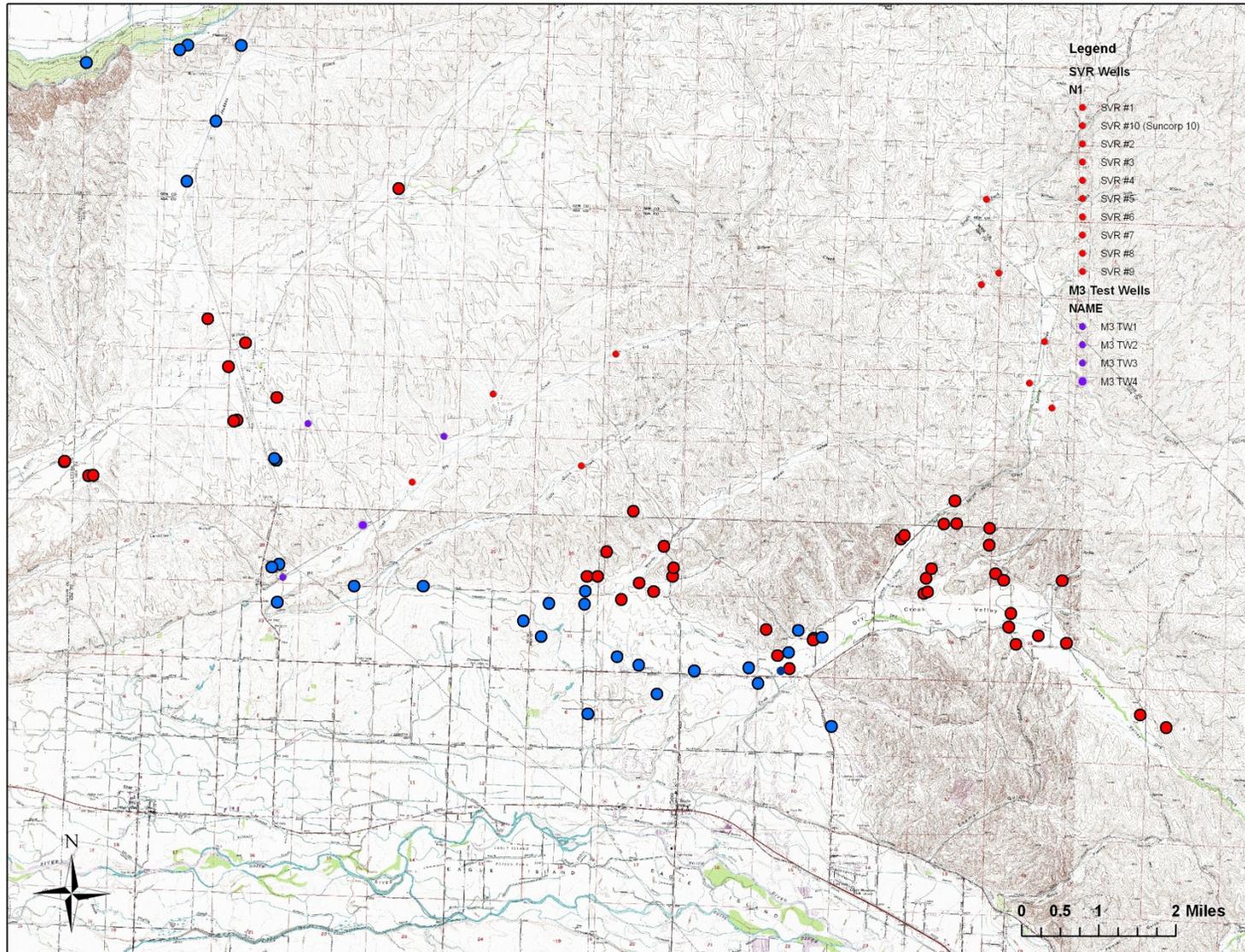
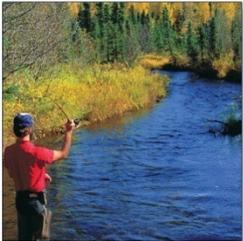


Monitoring Well Results



- 81 wells were measured the last week of June.
- Many wells were pumping or recovering during June measurements.
- Patterns are developing with respect to the timing of high/low water levels.

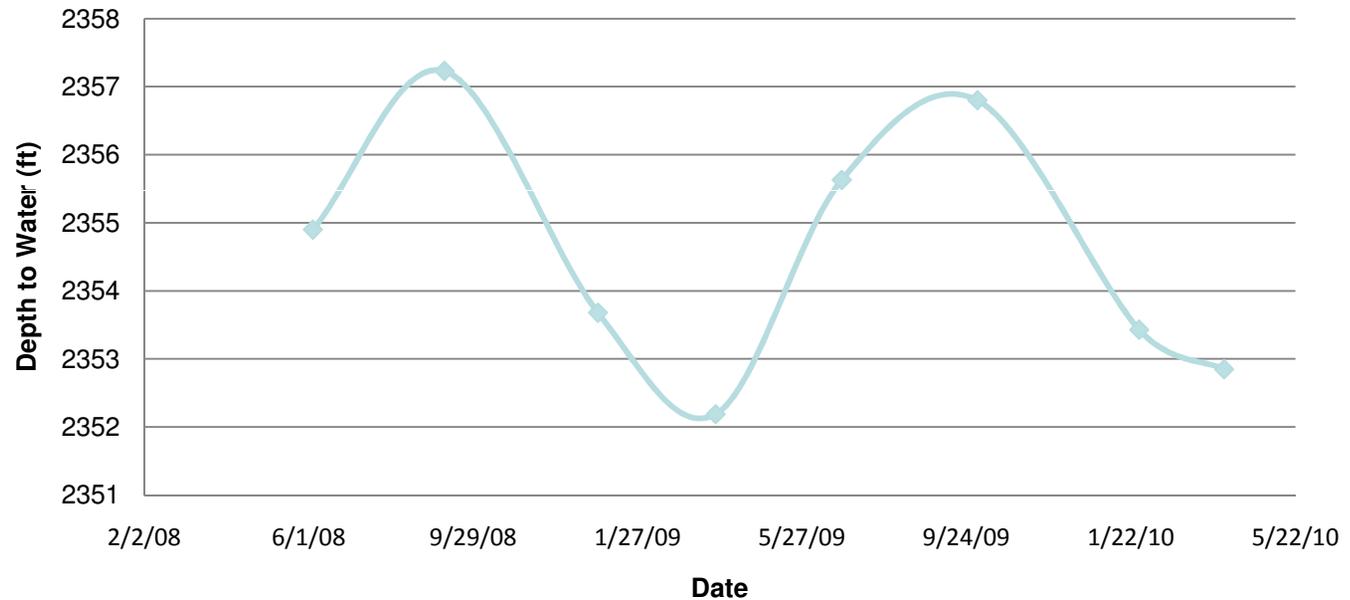
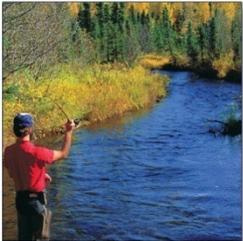
Monitoring Well Results – Seasonal Fluctuations



Monitoring Well Results

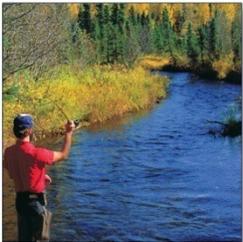
06N01W29BBA1

Hovda

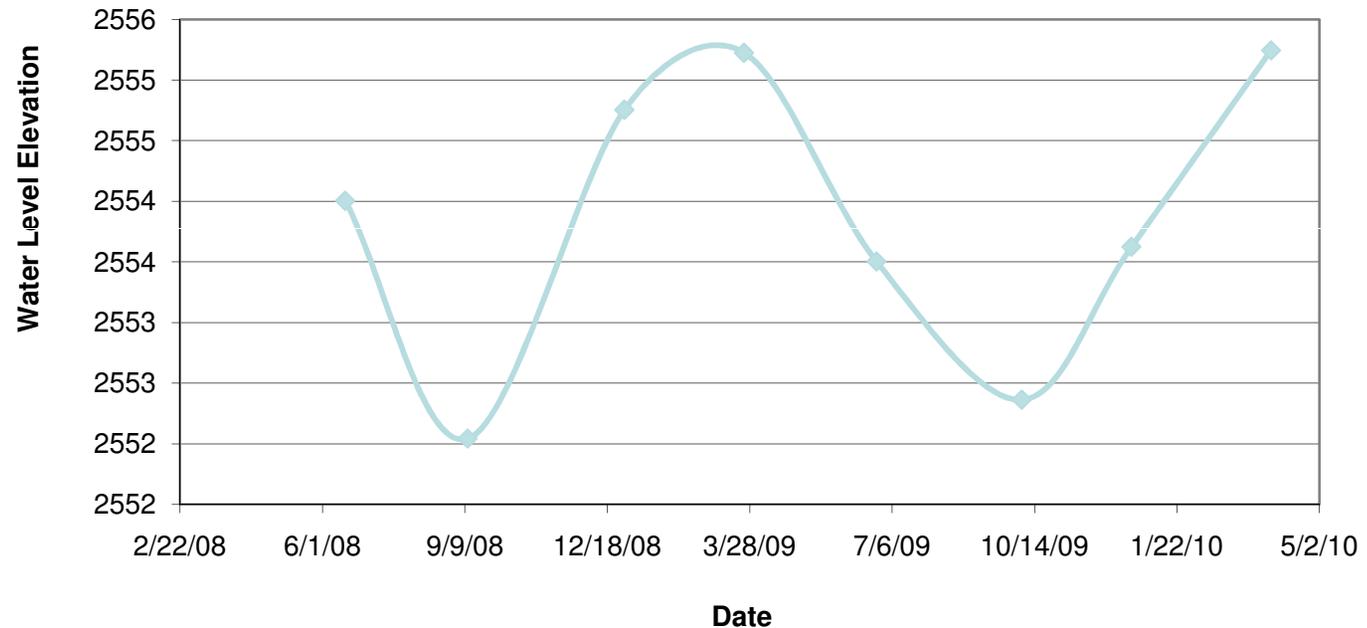


Well is 386 feet deep, along the Freeze Out Grade into Emmett
High water level in the fall, low in the spring

Monitoring Well Results



05N01E29BCC1 – 500 Feet Deep

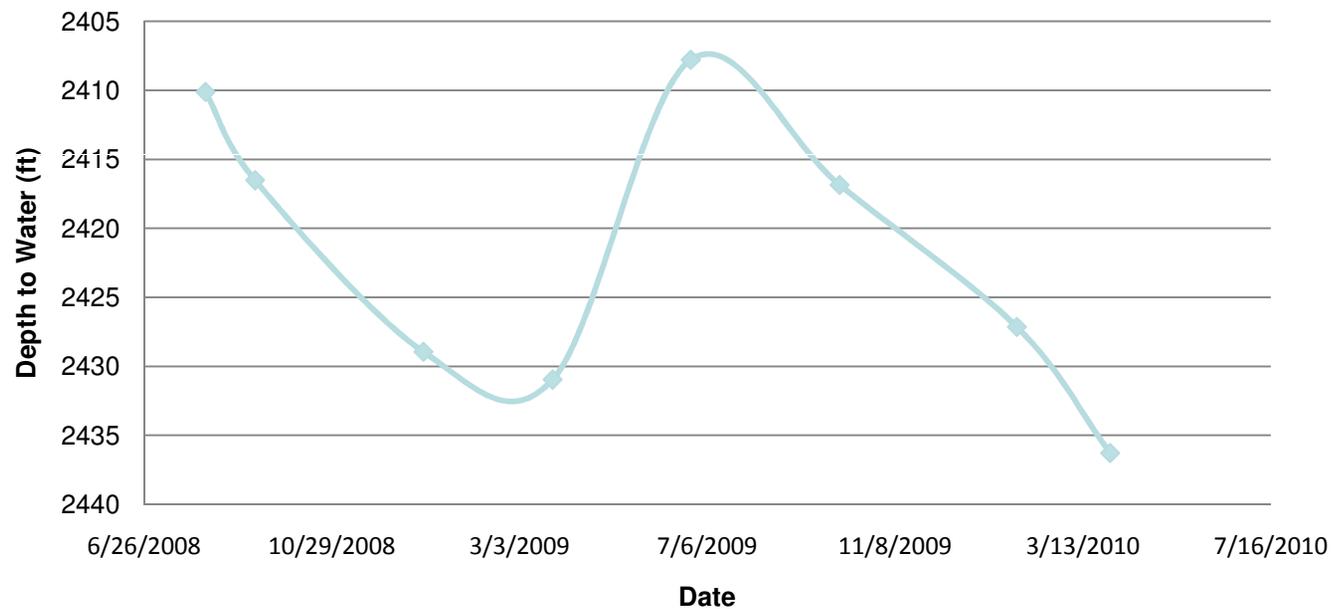
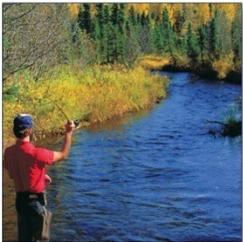


Well is 500 feet deep, in the foothills north of Eagle
High water level in the spring, low in the fall

Monitoring Well Results

05N01W19CBD2

Little Stock

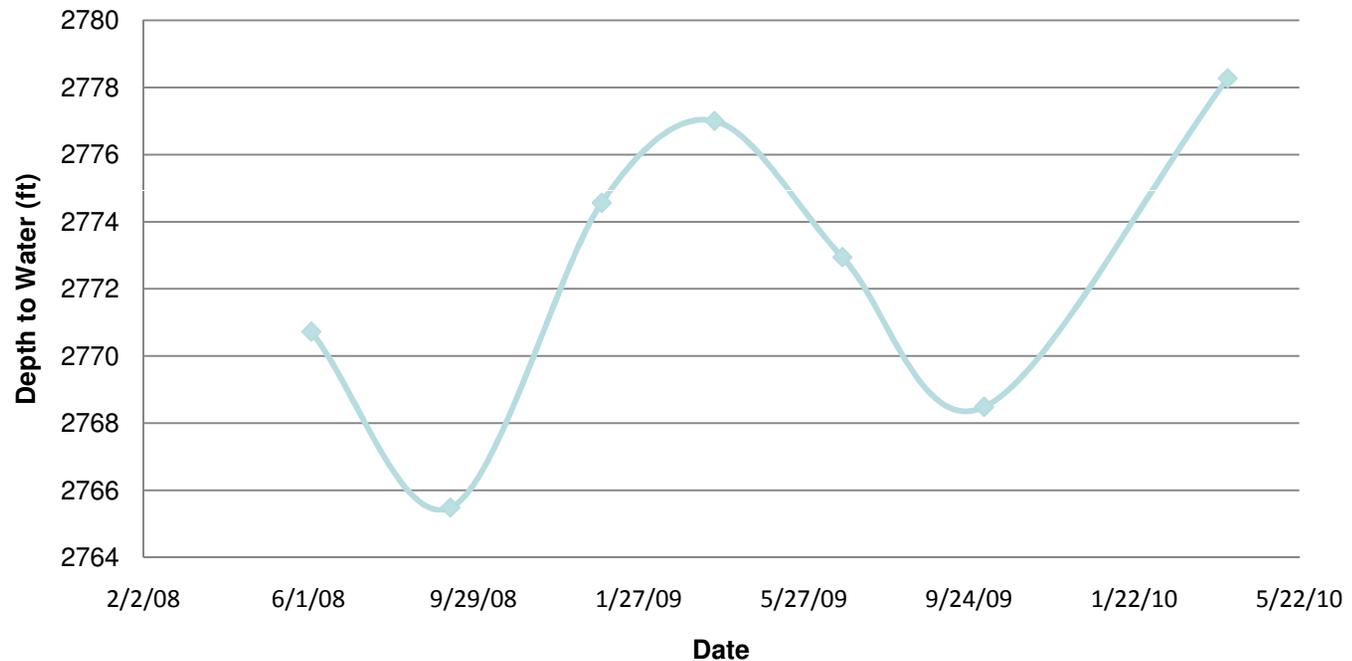
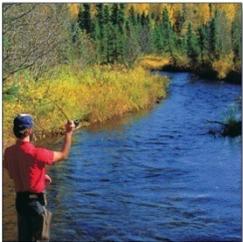


Well is 605 feet deep, west of Hwy 16
High water level in the fall, low in the spring

Monitoring Well Results

05N02E31ADD1

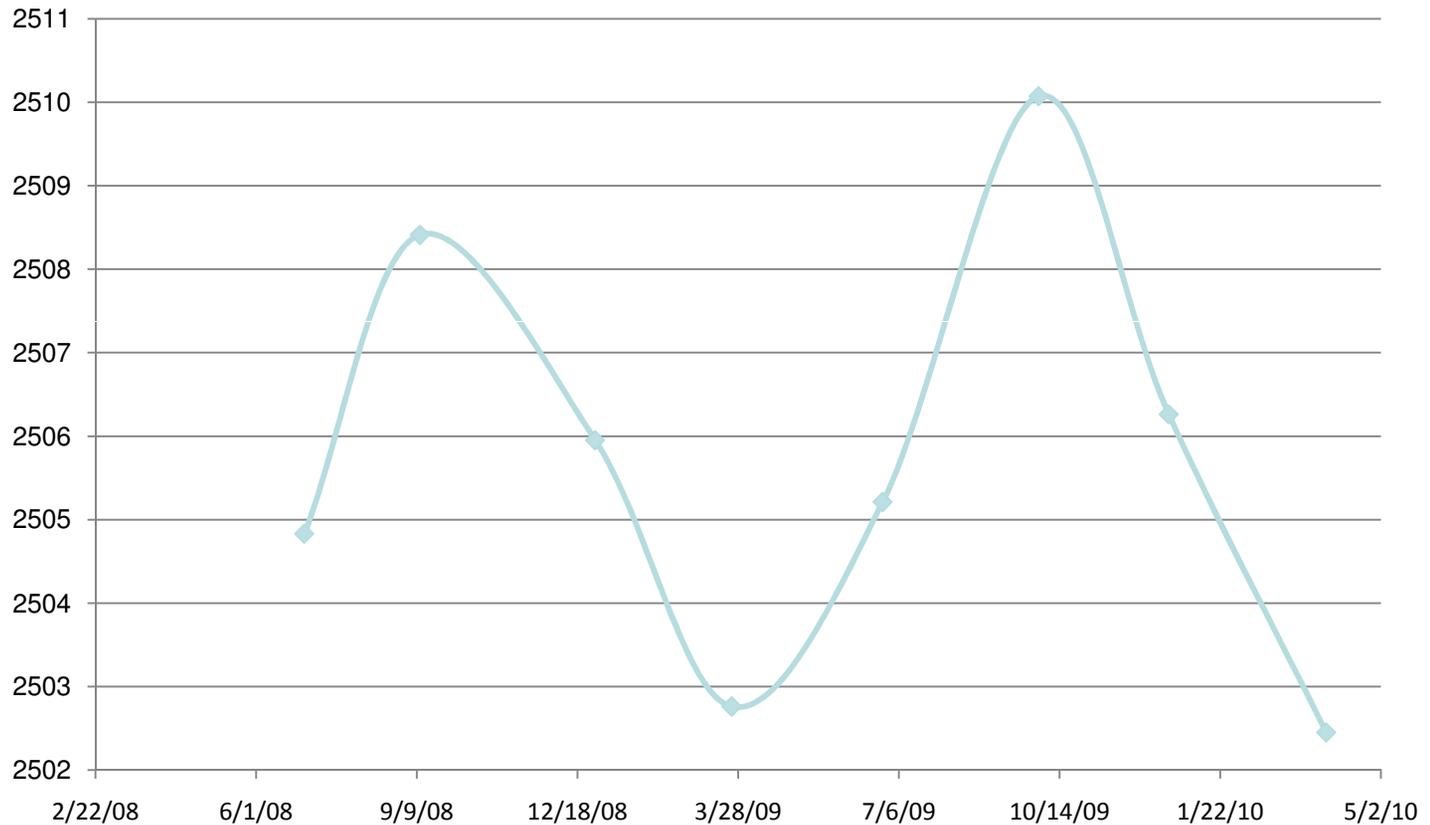
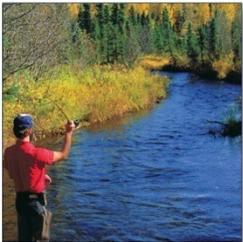
Gillis



Well is 291 feet deep, in Dry Creek
High water level in the spring, low in the fall

Monitoring Well Results

05N01E31CBA1 – 123 Feet Deep



Well is 123 feet deep, in north Eagle
High water level in the fall, low in the spring

Misc. Items

- East Ada Technical Updates
- Draft reports submitted.
- Online data access.

>> *

