

RECEIVED

JUL 23 2013

Department of Water Resources
Eastern Region

Parkinson Farms
Ralph S. Parkinson
Scot K. Parkinson
2253 N 3100 W
Arco, ID 83213
Telephone (208) 527-3161

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF APPLICATION)
FOR TRANSFER NO. 77610 IN THE)
NAME OF PARKINSON FARMS)
)
Parkinson Farms, Applicant.)

**LIST OF POTENTIAL WITNESSES
FOR SUPPLEMENTAL HEARING**

Parkinson Farms submits the following list of witnesses.

1. Dr. Tom Wood
2. Dennis Owsley, Idaho Department of Water Resources
3. Any of the other Protestants
4. Ralph S. Parkinson
5. Scot K. Parkinson

Dated this 22 day of July, 2013.

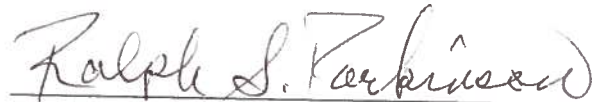
Parkinson Farms
Ralph S. Parkinson
Scot K. Parkinson

By

Ralph S. Parkinson
Ralph S. Parkinson

CERTIFICATE OF MAILING

I hereby certify that on 22 day of July 2013, I mailed a true and correct copy of the foregoing LIST OF POTENTIAL WITNESSES to the persons listed below.



Parkinson Farms
Ralph S. Parkinson

US MAIL

James Cefalo
Department of Water Recourses
900 North Skyline Drive, Suite A
Idaho Falls, Idaho 83402-1728

Kirby A. Jensen
2781 North 3375 West
Moore, Idaho 83255

James P. Speck
Speck and Aanestad
PO Box 987
Ketchum, Idaho 83340

Darrell L. McDonald
PO Box 246
Arco, Idaho 83213

Parkinson Farms Exhibits

- 9A IX. Surface water rights example
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- 15 XV. Comparison of Transfers
- 16 XVI. Comparison of Hydrologic conditions
- 17 XVII. Well logs
- 18 XVIII. Maps
- 19 XIX. Response to Brockway report by Dr. Tom Wood
- 20 XX. Dr. Tom Woods response to staff memo prepared by Dennis Owsley – Tom
will send
- 21 XXI. Summary of directors questions with comments by Dr. Tom Wood – Tom will
send
- 22 XXII. Statement from Independent Drilling – Tom will send

RECEIVED

JUL 18 2013

Department of Water Resources
Eastern Region

CERTIFICATE OF MAILING

I hereby certify that on 17 day of July 2013, I mailed a true and correct copy of the Parkinson Farms Exhibits to the persons(s) listed below:

Ralph S. Parkinson
Parkinson Farms
Ralph S. Parkinson

US MAIL

James Cefalo
Department of Water Resources
900 North Skyline Drive, Suite A
Idaho Falls, Idaho 83402-1728

Kirby A. Jensen
2781 North 3375 West
Moore, ID 83255

James P. Speck
Speck and Aanestad
PO Box 987
Ketchum, ID 83340

Darrell L. McDonald
PO Box 246
Arco, ID 83213

Exhibit IX Surface water rights Example

Parkinson Farms, Ralph

Account: 1206OD

Canal: Munsey

District: 3

Decree Date	Inches	Total Inches	Storage
8/1/1896	100	100	0
4/15/1976	220	320	0

Total Storage: 0

Pearson, Kevin

Account: 164A

Canal: Island

District: 3

Decree Date	Inches	Total Inches	Storage
6/30/1886	71	71	1,458
11/11/1912	16	87	760

Total Storage: 2,218

Perez, Felix J.

Account: 40A

Canal: McLaughlin

District: 3

Decree Date	Inches	Total Inches	Storage
10/2/1885	15	15	673

Total Storage: 673

Pope, Carol

Account: 25E

Canal: Arco

District: 3

Decree Date	Inches	Total Inches	Storage
9/1/1898	6	6	88

Total Storage: 88

Monday, May 02, 2011



Exhibit X Example of Reservoir and decrees current status

Big Lost River Irrigation District
RESERVOIR UPDATE

As of June 10, 2013

Reservoir Contents 35,850 A.F.
Release 564 C.F.S.
Inflow 635 C.F.S.
Howell Gauge 1,210 C.F.S.

Reservoir is currently at 82% capacity.

Decree: 3/1/1902

Big Lost River Irrigation District
RESERVOIR UPDATE

As of June 25, 2013

Reservoir Contents 32,4300 A.F.
Release 529 C.F.S.
Inflow 337 C.F.S.
Howell Gauge 397 C.F.S.

Reservoir is currently at 74% capacity.

Decree: 6/1/1885

Big Lost River Irrigation District
RESERVOIR UPDATE

As of July 1, 2013

Reservoir Contents 30,570 A.F.
Release 546 C.F.S.
Inflow 365 C.F.S.
Howell Gauge

Reservoir is currently at 70% capacity.

Decree: 10/2/1885





Exhibit XI Parkinson Farms

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

May 2, 2013

PARKINSON FARMS
2253 N 3100 W
ARCO ID 83213

Re: Mitigation for Groundwater Use Pursuant to IDAPA 37.03.12.050

Dear Ground Water User:

You have received this notice because our records show that either you are the owner of a ground water right diverted within Water District 34, or Water District 34 records show you are an operator assessed by the water district for ground water use. If you are no longer the owner or operator of a ground water right diverted within Water District 34, please disregard this notice.

The purpose of this letter is to inform you that water users with senior surface water rights diverted from the Big Lost River have filed requests for mitigation with Water District 34, pursuant to IDAPA 37.03.12.050 (Rule 50). The water rights for which flow augmentation has been requested pursuant to Rule 50 are listed in the attached Table 1. The Idaho Department of Water Resources (IDWR) received a copy of this mitigation request on April 19, 2013 and has determined that these water rights are eligible to receive mitigation from junior ground water users pursuant to this rule.

As a ground water user, you are subject to conjunctive administration and are obligated to provide mitigation to the above-mentioned surface water rights unless all of your ground water rights meet one of the following exceptions.

1. Your ground water rights contain a remark specifically stating that the right will be administered as separate from the Big Lost River and its tributaries.
2. Your ground water rights are small domestic and/or stock water rights.

The attached Table 2 sums the mitigation requests by priority and canal. The purpose of the flow augmentation request is to supply an amount of water to those users calling for augmentation that would have been present absent pumping by junior groundwater users. The actual amount of natural flow that would have been available is unknown, so we rely on the amount established in Rule 50.

The required mitigation may be fulfilled by the water district, an organization of ground water users, or a combination thereof. IDWR will issue a notice to ground water users informing them of their obligations and options pursuant to this rule.

Rule 50 provides two options for fulfilling the request for mitigation when formulating a mitigation plan, either by the district or by a group of groundwater users.

1. **Augment the natural flow available to the rights calling for mitigation during the period when those rights are not otherwise deliverable, but would have had a full supply absent pumping by junior groundwater pumpers.** While the actual amount that would have been available is unknown, Rule 50 establishes upper bounds on the amount and



timing of natural flow augmentation. Rule 50.04(c) establishes a river depletion of 6,110 AF²⁹⁵ and Rule 50.04(c).i establishes the timing that the depletion occurs. In other words, these rules establish the otherwise unknown amount of water that would have been available absent pumping by junior groundwater users. However, Rule 50.04(c).ii clarifies that the amount of augmentation to be provided to those users that have called for augmentation is limited to the extent of their water right, to the extent that their water right can be filled by augmentation of natural flow within the amount and timing outlined in 50.04(c) and 50.04(c).i.

Rule 50.04(c).iii provides that the natural flow augmentation can be provided by recharge efforts, or by adding water to the Big Lost River anywhere between Mackay Dam and the Arco Diversion in an amount adequate to provide the required mitigation at the user's point of diversion, or by adding water directly to canals or laterals that can be used to deliver water to the applicable places of use. Flow will need to be augmented each day during the 2013 irrigation season that water delivery is called for and the natural flow is not otherwise available to fulfill the water rights calling for mitigation. However, not all rights calling for mitigation will receive augmentation throughout the season, as the upper limit of flow augmentation established in Rules 50.04(c) and 50.04(c).i may be exceeded by the demand for mitigation water. Additionally, water added to augment the flow of the river may be subject to appropriate conveyance losses between the point of injection to the river and the canal heading. Such losses may reduce the amount of water available at a canal heading for mitigation purposes. Furthermore, delivery of mitigation water to water right holders on a canal operated by the Big Lost River Irrigation District is subject to conveyance losses through the canal as determined by the Big Lost River Irrigation District.

2. **Submit an alternative mitigation plan(s) (Rule 50.04.e), which identifies actions and measures to prevent or compensate for impacts to diversions by junior ground water users, to the director for consideration pursuant to IDAPA 37.03.11.043.** Alternative mitigation plans could include monetary compensation, partial fulfillment of the flow augmentation requirements combined with a partial reduction in ground water use, non-use of wells, or other combinations of actions that prevent or compensate for the impacts.

Per Rule 50.04.d, Water District 34 is authorized to acquire water supplies, on behalf of the ground water users, to augment natural flow for mitigation purposes. The water district is authorized to add the cost of acquiring mitigation water to the annual assessment of ground water users who do not provide separate augmentation or a separate mitigation plan. This method of acquiring and providing mitigation is preferred by the Department, given the limited resources of the Department and the water district to review and enforce many individual or alternative plans. However, in the event the water district does not acquire water for mitigation, or if junior ground water right holders propose to provide alternative mitigation plans, those users must file a written mitigation plan with Water District 34 and IDWR by May 17, 2013. Mitigation plans submitted to IDWR should be

²⁹⁵ Water District 34 assessments over the past 5 years show ground water use in the water district has been significantly higher than the 47,000 AF cited in rule 50.04(c). The average annual volume assessed between 2009 and 2013 (reflecting diversions made in 2008 through 2012), is approximately 68,000 AF. This is an increase of about 45% from the annual volume estimated in Rule 50.04.c. Despite the increase in groundwater usage, calls for mitigation have not been made in recent years and the procedure for modifying the annual diversion volume specified in Rule 50.04.c has not been pursued. The 47,000 AF estimate of ground water withdrawal and the 13% estimated annual depletion described in Rule 50.04.c will thus remain in effect for this year.

May 2, 2013

Page 3

addressed to IDWR at the address shown on this letterhead. Holders of junior ground water rights who do not divert or use ground water in 2013 will not be subject to mitigation costs.

If the mitigation requirements under IDAPA 37.03.12.050 are not fulfilled by the junior ground water users, either as participants in a plan operated and funded by Water District 34, or an alternate plan, the water users calling for mitigation can seek regulatory relief by filing a petition with the director of IDWR requesting curtailment of junior ground water users pursuant to Rule 40 of the "Rules for Conjunctive Management of Surface and Ground Water Resources," IDAPA 37.03.11.

If you have any questions regarding this letter please contact me at 208-287-4956 or Tim Luke at 208-287-4959.

Respectfully,

Nick Miller
Water Distribution Section

cc: Roger Totten, Watermaster, Water District 34
IDWR Eastern Region

Enclosure: Rule 50, Water Distribution Rules – Water District 34 (IDAPA 37.03.12.50)

M:\Water Districts by Basin\Basin 34\WD 34\Correspondence\2013\05022013_WUMit.docx

Table 1. Rights calling for mitigation sorted by owner

Owner	Right No.	Rate MI	Rate cfs	Priority Date	Diversion
Kenneth Bell	34-418B	80	1.6	5/1/1892	MUNSEY/MILLER
	34-518	320	6.4	6/30/1890	MUNSEY/MILLER
Marc Hansen and Bruce Jacobs *	34-14316	52	1.04	9/24/1900	MCLAUGHLIN
	34-14318	37.5	0.75	10/2/1885	MCLAUGHLIN
	34-33	40	0.8	10/2/1885	MCLAUGHLIN
James Rindfleisch*	34-14299	8	0.16	6/1/1880	ARCO
	34-14301	97	1.94	10/2/1885	ARCO
Mark Roberts***	34-394C	30	0.6	6/1/1890	ARCO
Josephine Spraker***	34-106	11	0.22	6/1/1887	ARCO
	34-108	80	1.6	7/1/1887	ARCO
	34-109	23	0.46	8/1/1888	ARCO
	34-179	65	1.3	7/1/1887	ARCO
	34-302	106	2.12	4/22/1889	EASTSIDE
	34-487	65	1.3	10/20/1901	ARCO
	34-521	115	2.3	6/1/1887	ARCO
	34-904	60	1.2	5/1/1886	MOORE
Harvey Walker	34-10476	37	0.74	5/1/1885	ARCO
	34-10478	80	1.6	5/1/1892	ARCO
	34-10479	180	3.6	10/2/1885	ARCO
	34-3B	70	1.4	6/1/1887	ARCO
Reva Walker	34-789	155	3.1	5/1/1892	EASTSIDE

* Marc Hansen and Bruce Jacobs (North 40 partners) called for augmentation of 40 miner's inches for water right 34-14318. However, that right has an authorized diversion rate of 0.75 cfs, or 37.5 miner's inches.

**James Rindfleisch called for mitigation of water rights 34-234B and 34-244D. The numbers listed in this table reflect recent renumbering of his rights due to ownership splits.

***Josephine Spraker also requested mitigation of water right 34-394, her portion of which right was conveyed to Mark Roberts as 34-394C. Mr. Roberts also called for mitigation under water right 34-394.

Table 2. Rights calling for mitigation totaled by priority and diversion

Priority Date	ALL DIVs.		EASTSIDE		MOORE		ARCO		MUNSEY	
	Total	Cum.	Total	Cum.	Total	Cum.	Total	Cum.	Total	Cum.
10/20/1901	1.3	1.3	-	-	-	-	1.3	1.3	-	-
9/24/1900	1.04	2.34	-	-	-	-	-	1.3	1.04	1.04
5/1/1892	6.3	8.64	3.1	3.1	-	-	1.6	2.9	1.6	2.64
6/30/1890	6.4	15.04	-	3.1	-	-	-	2.9	6.4	9.04
6/1/1890	0.6	15.64	-	3.1	-	-	0.6	3.5	-	9.04
4/22/1889	2.12	17.76	2.12	5.22	-	-	-	3.5	-	9.04
8/1/1888	0.46	18.22	-	5.22	-	-	0.46	3.96	-	9.04
7/1/1887	2.9	21.12	-	5.22	-	-	2.9	6.86	-	9.04
6/1/1887	3.92	25.04	-	5.22	-	-	3.92	10.78	-	9.04
5/1/1886	1.2	26.24	-	5.22	1.2	1.2	-	10.78	-	9.04
10/2/1885	7.09	33.33	-	5.22	-	1.2	5.54	16.32	1.55	10.59
5/1/1885	0.74	34.07	-	5.22	-	1.2	0.74	17.06	-	10.59
6/1/1880	0.16	34.23	-	5.22	-	1.2	0.16	17.22	-	10.59

07. Mackay Dam Minimum By-Pass. Mackay Dam and Reservoir shall be operated to maintain a minimum flow of fifty (50) CFS at the 2-B gage. (10-26-94)

08. Canal or Lateral Delivery. In the event a water user feels inappropriate delivery of natural flow water is occurring on any lateral or canal, the water user can request the watermaster to investigate. In the event the watermaster determines that delivery of natural flow water rights within a lateral or canal is being improperly conducted he shall: (10-26-94)

a. Notify the ditch rider and the water delivery entity of the results of his investigation and coordinate efforts to make proper delivery of the natural flow. (10-26-94)

b. If the situation has not been sufficiently resolved within twenty-four (24) hours the watermaster will notify the director who may take all actions authorized by law to remedy the situation. (10-26-94)

041. -- 044. (RESERVED)

045. ADMINISTRATION OF GROUND WATER RIGHTS (RULE 45). Administration of ground water rights is based upon the list of water rights approved for interim administration by the court or as subsequently decreed by the court in the SRBA. Should curtailment of ground water rights become necessary to protect a senior ground water right(s), administration will be based upon reasonable pumping levels and the prior appropriation doctrine as required by law. (10-26-94)

046. -- 049. (RESERVED)

050. CONJUNCTIVE ADMINISTRATION OF GROUND AND SURFACE WATER RIGHTS (RULE 50).

01. Conjunctive Administration -- Exceptions. All ground water rights shall be administered conjunctively as part of the Big Lost River and tributaries unless the ground water user can show to the satisfaction of the director, that due to well construction or location, the diversion of ground water from a particular point of diversion does not reduce the flow of the Big Lost River above the last (most downstream) diversion from the Big Lost River. An exception to conjunctive administration in Water District 34 exists for those ground water rights in the list of water rights containing a remark noting that the right will be administered as separate from the Big Lost River and its tributaries. (10-26-94)

02. Water Rights Not Subject to Administration. Small domestic and stock water rights from ground water are not subject to administration at this time; however, these rights may be made subject to administration in the future to provide water to senior water rights from the water system. (10-26-94)

03. General Rule. Data currently available to IDWR shows ground water rights that are to be administered conjunctively with surface water deplete the flows of the Big Lost River downstream from Mackay Dam. Surface water users with water rights from the Big Lost River with points of diversion downstream from Mackay Dam are not required to seek curtailment of or mitigation by junior ground water rights and may develop water rights to supplement their Big Lost River water rights as provided by law. (10-26-94)

04. Mitigation/Augmentation. Water users with water rights whose source is Big Lost River with their point of diversion downstream from Mackay Dam who seek to have the water supply for their water right augmented to provide for their water right the water supply that would have been available for diversion absent the diversion of ground water under junior water rights shall request mitigation pursuant to this rule. Water users who seek such mitigation from ground water users must notify the watermaster at the time those water users make their initial request to the watermaster for delivery of their water right of their desire for mitigation. Mitigation of the effects of ground water diversion, when requested, will occur as more fully described below. (10-26-94)

a. Mitigation will not occur prior to May 1 or after October 15 of any year. (10-26-94)

b. Mitigation will be available to water rights with 1905 and earlier priority dates. (10-26-94)

c. Water rights will be eligible to receive mitigation through augmented natural flow water supply based upon a river depletion due to ground water diversions currently estimated to be thirteen percent (13%) of the average annual diversion from wells subject to conjunctive administration currently estimated to be forty-seven thousand (47,000) AFY or a depletion of six thousand one hundred ten (6,110) AFY. The estimated percentage of depletion and annual volume of diversion from wells will be reviewed annually by the director and modified as data becomes available to refine these estimates. Any revised estimate of depletion or annual diversion shall be presented to the water users at the annual meeting of Water District 34 prior to adoption of the values by order of the director.
(10-26-94)

i. Natural flow will be assumed to be augmented by one-third (1/3) of the depletion during the first one-half (1/2) of the period of time that any 1905 or earlier water right being called for can not be filled by the natural flow through October 15 of each year. Natural flow will be assumed to be augmented by two-thirds (2/3) of the depletion during the second one half (1/2) of this period each year.
(10-26-94)

ii. Water users who have requested mitigation and who have water rights being called for that could be filled by augmentation described in Rule Subsection 050.04.c.i shall be provided with water by augmenting the natural flow to the extent of their water right or the amount of water described in Rule Subsection 050.04.c.i., whichever is less.
(10-26-94)

iii. Augmentation of natural flow for purposes of mitigation may be accomplished by making additional water available for diversion from the Big Lost River, including increased river flows resulting from recharge efforts approved by the director, or by adding water to canals or laterals.
(10-26-94)

iv. In any year in which the ground water users believe the annual diversion from ground water for the year will be significantly less than the estimated annual diversion from ground water described above, the ground water users may present their evidence of the anticipated diversions to the director by May 1 of the year along with a request to modify the estimated annual diversion for the year. Upon a determination by the director, based upon the information presented by the ground water users, that the annual diversion from ground water for the year being considered will be less than the annual average, the director will set an estimated ground water diversion for the year to be used for conjunctive administration as described in this rule.
(10-26-94)

d. Water District 34 is authorized to acquire, through the watermaster, water supplies necessary to augment natural flow for mitigation purposes as described in this rule. The watermaster will add the cost of acquiring the mitigation water to the annual assessment of ground water users subject to conjunctive administration, who do not provide separate augmentation pursuant to Rule Subsection 050.04.c.iii. or separate mitigation pursuant to a plan approved as provided by Rule Subsection 050.04.e., in the same proportion as each ground water user is assessed for the costs of the water district relative to all other ground water users. Ground water users who fail to pay the assessed costs for acquiring mitigation water shall be penalized in the same manner as any other water user failing to pay any water district assessment.
(10-26-94)

e. Junior ground water users may submit an alternative mitigation plan(s), which identifies actions and measures to prevent or compensate for impacts of diversions by the junior ground water users, to the director for consideration pursuant to Rule 43 of the "Rules for Conjunctive Management of Surface and Ground Water Resources," IDAPA 37, Title 03, Chapter 11.
(10-26-94)

05. **Direct Interference.** This rule does not prevent a senior surface water user from seeking curtailment and/or damages from a junior ground water user when the senior surface water user can show direct identifiable impact on the water supply for the senior water right as a result of the diversion of water pursuant to the junior ground water right.
(10-26-94)

051. -- 054. (RESERVED)

055. **WATER USAGE (RULE 55).**

01. **Firefighting Purposes.**

(10-26-94)

a. Firefighting purposes is an alternate use to which any water right may be put, and firefighting is

WaterUserName	Total 2012 GW	Cost
Total Billed Well Usage		
6X Ranch LLC	809	1,645.55
Adema, Henry	0	35.00
Ahrendt, Jeri K.	0	35.00
Aikele, Eric	1252	2,546.64
Albert, Ivis	0	35.00
Alvarez, Ingrid	0	35.00
Andersen, Dean	47	95.60
Andersen, Jason	231	469.87
Andersen, Jay A.	0	35.00
Andersen, Joel	405	823.79
Andersen, Travis	66	134.25
Anderson, Brian	0	35.00
Anderson, Kim	0	35.00
Anderson, Maurice H.	291	591.91
Anderson, Shawn	328	667.17
Arco, City of	0	35.00
Ashley, Lois	0	35.00
Babcock, Harold Reuben	146	296.97
Babneau, Ronald E.	0	35.00
Bailey / Higgins Arlene	0	35.00
Baldwin, Kim	19	38.65
Beal, Seth	55	111.87
Beck, Lori / Will	0	35.00
Bell - Smith LLC / Contrary Limited Partn	450	915.33
Bell, Preston	161	327.48
Beverland Ranch, Clyde S.	0	35.00
Big Lost River / Gates, Mark	0	35.00
Big Lost River Cemetery	19	38.65
Bingham, Max	0	35.00
Bird, Stephen	161	327.48
Bjornard, Renee	0	35.00
Blackmer, Bruce	63	128.15
Bleak, David Bruce	0	35.00
BLM	0	35.00
Blue Spruce Ranch, LP / Lusardi, Waren	444	903.12
Bohne, Blaine	0	35.00
Bowden, Joseph V.	0	35.00
Bragg, Jonanthan	0	35.00
Broadie, Moj	73	148.49
Broussard, Adam	0	35.00
Brown, Duane	0	35.00
Brown, Ron	0	35.00
Browne, Jerry	436	886.85
Buckwalter, Ken	0	35.00

WaterUserName	Total 2012 GW	Cost
Buckwalter, Travis	225	457.66
Burnett, Boyd	0	35.00
Burtenshaw, Craig	0	35.00
Burwell, Kim	0	35.00
Butte, County	0	35.00
Buxton, Brooks	31	63.06
Carpenter, Nathan	0.4	35.00
Cherian, Alex	0	35.00
Churndasher Ranch	153	311.21
Coburn, Laverne	26	52.89
Coburn, Marty	58	117.98
Cole, Richard	98	199.34
Collins, Floyd Jr.	60	122.04
Colson, F. Scott	0	35.00
Custer County Fair Board	0	35.00
Crawford, Harry J.	67	136.28
Crump, Bob	329	669.20
Dains, Randy	0	35.00
Damiana, Randall G.	0	35.00
Davies, Phillip J.	0	35.00
Davis, James	688.00	1,399.43
Dickerson, Waneta	21	42.72
Dickey Livestock / Fulton, Gordon	90	183.07
Donahue, Carol	143	290.87
Dotzenrod, Mike	142	288.84
Duncan, Larry	84	170.86
Eaton Isabel	0	35.00
Edwards, Joshua	0	35.00
Ehardt, Shelia	0	35.00
Ellwein, Melvin	13	35.00
Erdman, Gene I.	0	35.00
Esser, Gregory John	0	35.00
Felton Farms	214	435.29
Folkman, Leon	478.36	973.01
Forbush, William	0	35.00
Fowers, Alvin	0	35.00
Freeman, Richard T.	0	35.00
Fullmer, Barbara / Fullmer, Denise	10	35.00
Fullmer, Raymond	0	35.00
Gamett, Brett	0	35.00
Gamett, Frank L.	0	35.00
Garner, Sunshine	0	35.00
Gilbert, George A.	0	35.00
Gilbert, Robert E.	0	35.00
Goodson, Patsy	41	83.40
Granite Trust Organization	40	81.36

WaterUserName	Total 2012 GW	Cost
Gregory, Jim	111	225.78
Gustin, Clay	0	35.00
Guthrie, Fern	0	35.00
Hamm, Eric	0	35.00
Haney, Lon / Hannah	27	54.92
Haney, Maurice Duane	223	453.59
Hansen, Marc	0	35.00
Hardin, Simone	26	52.89
Hardy, Bill	0	35.00
Harp, Jared	8	35.00
Harry, Richard	0	35.00
Harwood, Jackie LLC,	125	254.26
Hawker, Katherine	0	35.00
Hawkins, Penny	33	67.12
Henderson, Steve	42	85.43
Hendricks, Doug	0	35.00
Herbst, George	0	35.00
Higbee, Bridget	0	35.00
Higbee, Otto	0	35.00
Hintze Farms	0	35.00
Hintze, Melvin Marx	137	278.67
Holbrook, Doug	407	827.86
Hollowwa, Charlie	0	35.00
Howald, Chris	0	35.00
Huffaker, Dale	0	35.00
Huggins, Charles	0	35.00
Hunt, Dale Marie	0	35.00
Inc, Jr-N-CC / Culbertson, Jr.	299	608.18
Ippolito, James	0	35.00
JAM Exploration	0	35.00
Jensen, Darlene	0	35.00
Jensen, Jack	6	35.00
Jensen, Jay Vaughn	403.4	820.54
Jensen, Larry	97	197.30
Jensen, Marshall / Harney, Karen Estate	0	35.00
Jensen, Steve	0	35.00
Johnson, Anna	0	35.00
Johnson, Joan / Hatmaker, Diane	0	35.00
Jorgenson, Laura	0	35.00
Kangas, John & Rae	94	191.20
Keister, Arlie	0	35.00
Keller, Roudy	0	35.00
Keller, Steve	0	35.00
Kelley, Marcus	148	301.04
Kimball, Gary L.	463	941.77

WaterUserName	Total 2012 GW	Cost
Kimball, Kolton	15	35.00
King, Stephen B.	263	534.96
King, Stephen K.	146	296.97
Kitsos, Constantine	480	976.35
KIVI Land & Livestock, LLC	0	35.00
Kubiak, Vernon Robert	0	35.00
L & S Partners, Aslett	97	197.30
Lambert, Harold	0	35.00
Lambert, Marilyn	0	35.00
Lambson, Kathy	23	46.78
Last Ranch	771	1,568.26
Lemmon, Melvin	0	35.00
Lenroot, Ross	0	35.00
Lewis, Keith	1367	2,780.56
Loftus, Shane & Stacey	273	555.30
Logsdon, Bruce	0	35.00
Long, Tim	0	35.00
Lord, Chris	75	152.55
Lord, Donald R.	285	579.71
Lord, Grant	0	35.00
Lost River Farms	0	35.00
Mackay Springs Ranch / Lezamiz, John	576	1,171.62
Mackay, City of	0	35.00
Magee Family Trust	578	1,175.68
Marinac, Steve	29	58.99
Marz, Arnold E.	0	35.00
Mathews, Ervin	0	35.00
Maynard, Cleo	0	35.00
McAfee, John	0	35.00
McAfee, Ryan G.	189	384.44
McAfee, Scott	132	268.50
McBurney, Ted	0	35.00
McCaslin, Nancy	107	217.64
McCray, John	70	142.38
McDonald, Darrell Lee	76	154.59
McKelvey, James D.	46	93.57
McNeely, Charleyn	0	35.00
Merrill, Jones, Phyllis / L.Bar	0	35.00
Metcalf, Lynn	1163	2,365.61
Mitchell, Greg	0	35.00
Moncur, Dean	0	35.00
Monson, Terry	122	248.15
Moore, Ron	0	35.00
Moore City of	0	35.00
Mort, Ronald	0	35.00
Moss, Dennis	60	122.04

WaterUserName	Total 2012 GW	Cost
Moss, Robert	72	146.45
Mountain Springs Ranch	760	1,545.88
Mozes, Bob	0	35.00
Mullenix, Paul	124	252.22
Neighbor, Doug	0	35.00
Nelson Trust / Heather	136	276.63
Nelson, Robert	0	35.00
No Tell 'Em Creek Ranch/ Scheu	1055	2,145.93
Notch Butte Farms LLC	238	484.11
Nuttall, Griff	145	294.94
Park, T.J	0	35.00
Parkinson Farms	1237.07	2,516.27
Parsons, Earl	17	35.00
Pearson, Jay	268	545.13
Pehrson, Byron	232	471.90
Pehrson, Byron & Loy	1333	2,711.40
Pehrson, Josh	196	398.68
Pehrson, Loy	131	266.46
Pehrson, Randy	201	408.85
Pehrson, Travis	124	252.22
Perkes, M. Todd	705.9	1,435.84
Pettet, Terry	0	35.00
Platt, Austin	0	35.00
Pope, Carol C.	0	35.00
Poulter, James	0	35.00
Powers, John	173	351.89
Pritchett, Steve	4	35.00
PU Ranch	704	1,431.98
Purser, Randy	1345	2,735.81
Quist, Larry	0	35.00
Ramshorn Grazing Assoc.	0	35.00
Rasmussen, Larry	16.96	35.00
Reading, Jason	0	35.00
Reno, Lynn D.	0	35.00
Reynolds, Richard	0	35.00
Rindfleisch, James	38	77.29
Rish, Ron	30	61.02
Roberts, Mark	0	35.00
Rogers, Gary	679.66	1,382.47
Rosenkrance, Douglas	0	35.00
Rosenkrance, Howard	0	35.00
Rosenkrance, Lance	0	35.00
Rosenkrance, Lester	7	35.00
Rosenkrance, Shane	0	35.00
Sayer, Bill	85	172.89
Sayer, Evan	66	134.25

WaterUserName	Total 2012 GW	Cost
Sayer, Roger	0	35.00
Sayer, Loren	0	35.00
Schmuck, Greg	0	35.00
School District #111	0	35.00
School District #182	12	35.00
Schureman, Doug	485.48	987.49
Scott, Phillip	0	35.00
Scouten, Jim	0	35.00
Seefried, William	244	496.31
Shelton, Thomas	66	134.25
Siddoway, Dean	0	35.00
Simmons, Dwight	158	321.38
Simpson, Jeff	0	35.00
Smith LLC, Jennie Marie	637.22	1,296.14
Smith, Dale	306	622.42
Smith, Pat	0	35.00
Smith, Rulla	56	113.91
Smith, Sandie	68	138.32
Smith, Terry	519	1,055.68
Sorensen, Mitchell	1534.6	3,121.46
Sowards, Norm	135	274.60
Spengler, Donald	422	858.37
Spraker, Josephine	144	292.90
Staley, Scott	0	35.00
Standlee Family Limited Partnership	3970.975	8,077.19
Stav, Andrew	0	35.00
Stein, Harold	0	35.00
Stevens Trust, Willard & Ethel	861	1,751.32
Stevens Willam	539.86	1,098.11
Stewart, Bruce	0	35.00
Stewart, G. Craig	59	120.01
Stoecklein, David R.	207	421.05
Sunset Trust Oranganization	61	124.08
Taylor, Viva & Don	5	35.00
Tea, Randy	0	35.00
Telford Lands	5028.78	10,228.82
Telford, Mark	0	35.00
Tew, Wendell	0	35.00
Thomas, William	0	35.00
Tracy, Lucas	0	35.00
Valley Vist Care Center	0	35.00
Van Eps, Lenard	93	189.17
Van Etten, Chris	160	325.45
Waddoups, D. Keith	0	35.00
Waddoups, Danny	189	384.44
Waddoups, Robert D.	33	67.12

WaterUserName	Total 2012 GW	Cost
Waddoups, Wade	171	347.82
Walker, Harvey Young	0	35.00
Walker, Reva	0	35.00
Wanstrom, David E.	35	71.19
Wanstrom, Kurt	0	35.00
Warm Springs / Mark Gates	151	307.14
Watson, Wesley	0	35.00
Weaver, Diane	0	35.00
Webb Basin Real Estate, LLC	722	1,468.59
Wheeler, G. Alvin	84	170.86
Whipple, Duane	0	35.00
Wight Properties, LLC	161	327.48
Wilburn, Darrell G.	0	35.00
Williams, Leon & Brett	642	1,305.86
Williams, Logan	168	341.72
Williams, Terry	0	35.00
Woodbury, Randy	0	35.00
Woodbury, Vernon L.	0	35.00
York, James	0	35.00
Youngstrom, Estate of Jeneane	7	35.00
Zollinger, Bret L.	177	360.03

46496.67

Minimum	\$	35.00	
Need to Collect	\$	100,000.00	
cost factor		2.0340566	\$/cfs
Total GW Deliveries		46,496.67	cfs
Total Billed	\$	100,000.00	
Difference	\$	0.00	

EXHIBIT XII - Rule 30

IDAMO ADMINISTRATIVE CODE
Department of Water Resources

IDAPA 37.03.12 - Department of Water Resources
Water Distribution Rules - Water District 34

Range 26 East, B.M.

(10-26-94)

f. Moore diversion to Arco diversion located in the NW1/4NW1/4NW1/4, Section 26, Township 4 North, Range 26 East, B.M.

(10-26-94)

g. Below Arco diversion to the Arco Gage.

(10-26-94)

02. **River Reach Computations.** For each reach of the river the natural flow will be computed as the natural flow entering the reach plus gains entering the reach minus losses from the reach. The natural flow thus calculated will be allocated as described in Rule 40.

(10-26-94)

03. **Gage Station or Other Flow Measuring Facility.** A gage station or other flow measuring facility, as approved by the director, shall be located at the Howell Gage, Chilly Bridge, 2-B Gage, Leslie Gage, Moore diversion, Arco diversion and Arco Gage. The Howell, 2-B and Arco gages shall be maintained as part of the USGS Cooperative Program, or equivalent measurement program, and operated continuously. Water District 34 shall continue to contribute to the maintenance and operation of these gage sites in the same proportion as is currently contributed. All other gages shall be operated when water diversions, other than solely storage in Mackay Reservoir, are being made from the river. The cost of installation, operation and maintenance of these other measuring facilities is the responsibility of Water District 34.

(10-26-94)

026. -- 029. (RESERVED).

030. **NATURAL FLOWS (RULE 30).**

Natural flow shall be delivered through the natural river channel to the point of diversion of record except as provided in these rules.

(10-26-94)

01. **Eastside Canal.** The watermaster, with the approval of the director and after consultation with the Big Lost River Irrigation District, may elect to deliver the natural flow of the river through the Eastside Canal when the following conditions are met:

(10-26-94)

a. The full flow of the river, including impounded water, to be delivered downstream of the Moore diversion is not greater than the capacity of the Eastside Canal.

(10-26-94)

b. More natural flow water can be delivered to calls for natural flow than could be delivered by using the natural river channel.

(10-26-94)

c. No water right is injured.

(10-26-94)

d. Measuring devices of a type acceptable to the director are installed and maintained where the flow leaves the river channel and where it returns to the river channel.

(10-26-94)

e. When used for the delivery of natural flow to the Arco diversion, the Eastside Canal is considered to be the river channel for water delivery accounting purposes and the watermaster shall protect the natural flow for delivery to prior water rights. Water rights diverting water from the river channel downstream from the point the Eastside Canal returns to the river channel shall be measured at their point of diversion from the river downstream from the Eastside Canal return.

(10-26-94)

f. Conveyance losses in the Eastside Canal, when considered to be the river channel, shall be proportioned between the river flow, the diversions from the Eastside and pumps that inject ground water into the Eastside Canal. The proportioning will be based upon the ratio of total Eastside diversions and injected ground water to the total inflow to the canal.

(10-26-94)

02. **Alternate Point of Diversion.** The watermaster may elect, with the approval of the director, to deliver natural flow water rights to the alternate point of diversion described in Rule Subsection 030.02.a. below when conditions in Rule Subsections 030.02.b. through 030.02.f. below are met:

(10-26-94)

a. This rule may be used to deliver water rights through the Munsey diversion located in the NW1/

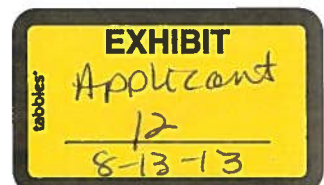


Exhibit XIII Surface Water Rights Information

Additional factual development and consideration

- I. Surface water rights as follows:
 - A. Those measured at the Mackay reservoir.
 1. See examples of decree and storage rights Exhibit IX .
 2. See weekly reservoir update from the Arco advertiser weekly paper showing amount of water in the reservoir and decrees that are available for use. Exhibit X.
 - a. Availability of decrees is determined by the amount of water running into the reservoir at any given time. The decrees are measured as measurements are needed to determine who has surface water available for use at any given time. This is determined by the date of the decree.
 - b. Storage water is already in the reservoir so those that have storage rights can call to have their storage water delivered when they have a need for it.
 - B. Rising waters:
 1. Definition- See Memo Page 8.
 2. Source- See Memo Page 8.
 3. Current status- See Memo Page 9.
 - a. Example- Low to non existent for approximately the past 30 years.
 4. Mitigation for: See Exhibit XI.
 5. Those that have rising water rights that are not available from the Big Lost River, because they have been "low to non-existent for approximately the past 30 years," are delivered as called for. See A above under Roman numeral I.



Exhibit XIV

Additional factual development and consideration

Legal Inquiries Page 6 of the Remand

- I. Will the proposed diversion injure other water rights by causing a reduction in rising waters in the Big Lost River.

Answer: See Memo Page 9.

"low to non existent for approximately the past 30 years".

Also see Exhibit XII Rule 30 of water District 34.

East Side Canal used in place of the Big Lost River.

Also Exhibit XIII on rising water.

- II. Is approval of and diversion from the additional point of diversion in the public interest.

See Exhibit XVI #1 for example of public interest.

- A. Is ground water unavailable at the location of the existing points of diversion?

1. We have already invested a lot of money in the proposed point of diversion by deepening the well and doing maintenance work. We were delighted with the results as they were beyond our fondest dreams, an abundance of water. The well yielded 620 Inches. We don't want to invest a lot more money if we don't have to.
2. Same aquifer: "See Response to the Brockway Report---" Page 2
 - a. See well logs Exhibit XVII
 - b. See map Exhibit XVIII
3. We want to follow the law used to evaluate transfer applications: Idaho code 42-222 and 42-202B. We are in the process at the present time.

- B. Is it in the local public interest to increase diversions of ground water in an area where existing pumping caused ground water level declines that may have:

- a. Dried up portions of the big lost river.
- b. Decreased the quantity of water available to senior water right holders.

See Exhibit XIII on rising waters.

- C. Is it in the local public interest to allow additional pumping in an area where recent ground water levels have been rising, perhaps because of local efforts to recharge the aquifer, and frustrate attempts to restore the historical hydraulic connection between the ground water and surface water in the Big Lost River?

See Exhibit XIII on rising waters.

- D. Is it in local public interest to increase the risk to junior water users of a delivery call that could result in curtailment?

1. See Exhibit XVI # 10 for ground water user's curtailment.
2. See Exhibit XIII for surface water user's curtailment.
 - a. See also Dr. Wood's answers to Memo questions 4, 5, and 6.



- III. Should a prior decision by the department denying an almost identical application for transfer filed by Parkinson, after a hearing and issuance of a final order, affect whether this application for transfer should be approved?
Answer: See exhibit XV and XVI.

Exhibit XV Comparison of Applications for Transfer

On page four of the remand the following statement is made, "There is a question about whether Parkinson should be allowed to pursue a second application for transfer identical to the original, denied application for transfer."

Therefore, we will show that the two transfers are not identical through comparison:

Transfer No. 4573
Date: 1995 - 1996

1. A new well was to be drilled within a half mile from the existing well.
2. Amount of the transfer was 5.32 CFS
3. Four water rights were involved in transfer.
4. 17 people protested the transfer.
5. The hearing officer prepared a recommended order.
6. No petition for reconsideration was made.
7. No remand was made by the director.
8. A final order was made by the hearing officer and the transfer was denied.
9. Parkinson represented Parkinson Farms very poorly because of his ignorance of the situation in 1995 and 1996.
Parkinson was overwhelmed when he walked in and faced 17 protestants besides their lawyer.

Transfer No. 77610
Date: 2011-2013

1. Deepened the existing well and did maintenance work at the proposed transfer site.
2. Amount of the transfer was 4.00 CFS
3. Three water rights were involved in transfer.
4. Of the original 17 protesters to transfer No. 4573 none protested to No. 77610
5. The hearing officer prepared and approved a preliminary order.
6. Petitions for reconsideration were made by the protesters, and the petitions were denied by the hearing officer.
7. A remand was made by the director for additional factual development and consideration.
8. The additional factual development and consideration are in process.
9. Thanks to Kirby Jensen, attention was brought to the 14th Amendment of the constitution of the USA, and as a result Parkinson has a greater understanding of due process. A just and fair hearing is taking place.
Everyone is entitled to the same privilege if they have a problem in which due process is needed.



Exhibit XVI Comparison of Hydrologic Conditions

On page five of the remand the following statement is made by the director, "For example, if Parkinson could show that hydrologic conditions are significantly different than the conditions existing in 1996, these different conditions may justify consideration of another transfer application." Therefore we will show the differences in hydrologic conditions by comparison.

Hydrologic Conditions 1995-1996

1. From the Final Order of 1995-1996 under Findings of Fact No. 24, the following statement is made, "Witnesses testified that maintenance of stream flows in the Big Lost River and tributary streams is in the public interest."

Hydrologic Conditions 2011-2013

1. It apparently is not in the local public interest currently because the East Side Canal is used in place of the river currently. Local public interest is defined as "the interests that the people in the area directly affected by a proposed water use have in the effects of such use on the public water resource." (Idaho Code § 42-202B)

To understand what is meant by the word "interests," the following statement helps: Having a colony of disgruntled Latter-day Saints sailing to Mexican California was seen by some as running counter to the interests of the USA. In other words they might join the Mexicans which would not be in the best interest of the USA.

The public water resource would be a) surface water rights and b) groundwater rights.

In the proposed Parkinson transfer the public would be those that have ground water rights close by (namely Telford, the two McDonalds and Sowards) because they would be the ones directly affected. To see how they were affected, see number 10 under Comparison of Hydrologic Conditions.

Also in the proposed Parkinson Transfer, the public would be those that have surface water rights south of the Moore diversion. Their water rights have been delivered through the East Side Canal and other canals. Therefore pumping from the proposed Parkinson diversion would not have any effect on the surface water rights. See also number 15 under Comparisons of Hydrologic Conditions. See also Exhibit XIII.

Also those that have surface and ground water rights in the area or vicinity of the proposed Parkinson diversion that use the canals for their delivery system will be benefited. The reason they will be benefited is because the amount of individual shrink on their water being delivered in the canals will be less. It would be less because the more water in the canal the less individual shrink there will be.

The ground water and the surface water in the canals enhance and supplement each other.



2. From the Final Order of 1995-1996 under Findings of Fact No. 17 it states that, "Ground water in the vicinity of the proposed well site is tributary to the Big Lost River."

3. From Final Order of 1995-1996 under Findings of Fact No. 17 it states that, "Consumptive use of ground water in the Moore area...reduce[s] flows in the Big Lost River."

4. From Final Order of 1995-1996 under Findings of Fact No. 17 it states that, "The Big Lost River has dried up below the Moore diversion and return flows from ground water have not replenished the stream."

5. From Final Order of 1995-1996 under Findings of Fact No. 17 it states that, "Water rights normally satisfied in the lower portions of the Big Lost River have not been delivered."

2. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore." Therefore, ground water in the vicinity of the proposed point of diversion is not tributary to the Big Lost River currently.

3. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43 it states, "A completely perched river is now generally the normal condition below Moore." Therefore, normally there are no flows in the Big Lost River to reduce.

4. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore: 'A completely perched river is now generally the normal condition below Moore.'"

5. Water rights in the Lower Portions of the Big Lost River have been delivered and are currently being delivered through the east side canal and other canals involved according to rule number 30 of Water District 34. Also see Exhibit XIII.

6. Findings of Fact No. 18 from Final Order of 1996 states that, "wells located in the vicinity of the proposed well site...divert water tributary to the Big Lost River.

7. From the Final Order of 1995-1996 under Findings of Fact No. 18 it states that, "The Department has determined that wells located in the vicinity of the proposed well site and wells located in the vicinity of the old wells divert water tributary to the Big Lost River. The old wells are located in the south boundary line of tributary ground water, however, and withdrawals from a well at the location of the old wells will not impact river flows as significantly as withdrawals from a well located at the proposed well site."

8. In 1995-1996, the Parkinson well was 160ft deep.

9. From Final Order of 1995-1996 under Findings of Fact No. 23 it states that, "injury to surface water users caused by a reduction in flows to the Big Lost River...at the location of the proposed point of diversion were not addressed by Parkinsons."

6. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore." Therefore in the vicinity of the proposed point of diversion, there is no ground water tributary to the Big Lost River currently.

7. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore: 'A completely perched river is now generally the normal condition below Moore.'" Therefore normally, there are no river flows in the Big Lost River to impact in either location.

8. In 2010, Parkinson well was deepened to 239ft.

9. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore: 'A completely perched river is now generally the normal condition below Moore.'" Currently surface water rights are being delivered and have been for some time and are not injured by a reduction in flows in the Big Lost River as there are no flows normally in the river to reduce. Following rule 30 of district 34 the East Side Canal and other canals are used in place of the Big Lost River. Also see Exhibit XIII to see how water rights are satisfied.

(Hydrologic Conditions 1995 - 1996)

10. From Final Order of 1995-1996 under Findings of Fact No. 23 it states that, "...injury to ground water users caused by ground water withdrawals at the location of the proposed point of diversion were not addressed by Parkinsons."

(Hydrologic Conditions 2011 - 2013)

10. From No. 4 under Injury to Other Water Users on page 8 of the Preliminary Order it states that, "Parkinson sufficiently demonstrated that the proposed transfer will not injure other water rights." See also No. 9 as follows, "Dr. Brockway and Dr. Wood predict the drawdown caused by the diversion of an additional 4.00 cfs from the Parkinson Well could be as much as 4 feet at the McDonald well (Located 1/4 mile to the east of the Parkinson Well). The actual drawdown at the McDonald Well will be less than 4 feet given the factors described above (shorter pumping season, recharge from surrounding canals and flood irrigation, and recharge from the rocks surrounding the basin). The amount of additional drawdown occurring at neighborhoring wells as a result of this transfer is reasonable because it will not have a significant impact on pumping from the neighboring wells."

Also, under Findings of Fact of the Preliminary Order No. 35, "Dr. Wood's drawdown estimate is conservative. Parkinson Farms is unlikely to divert the additional cfs for 6 months (214 days). WMIS records suggest the maximum number of days per year the Parkinson Well has been used is about 150 days. (See Findings of Fact 18) Some amount of water will be added to the aquifer through canal seepage and recharge from flood irrigation. There will also be some amount of recharge or contribution from the mountain rock formations on the east and west sides of the valley." Also see injury to others analysis page 2 "Response to the Brockway Report ---"

Also according to the preliminary order under Findings of Fact Nos. 37 & 38 as follows, "Durring the 2011 irrigation season, Parkinson asked Roger Totten, the watermaster for water District 34 to conduct periodic measurements of the Parkinson Well and the Telford wells to see if pumping from the Parkinson Well had an effect on the production at the Telford wells."

"Mr. Totten's record shows that even though the Parkinson Well diverted over 570 inches (11.4 cfs) between July 30 and August 27, 2011, the discharge from the Telford wells was not reduced during that time period."

Therefore an important fact to recognize is that one of the Telford wells is 220 ft. north or up gradient from the Parkinson proposed point of diversion and the other Telford well is almost 1/2 mile south and down gradient from the Parkinson proposed point of diversion.

As stated in findings of fact No. 38 above the discharge from the Telford wells was not reduced during the time period of July 30 and August 27, 2011. It was not reduced up gradient or down gradient from the Parkinson point of proposed diversion in either of the Telford wells.

11. In 1995-1996, Parkinson was pumping from the well at the depth of 160ft.

11. From the deepened Parkinson well, we can bring up water from down deep that would otherwise go on to the Snake River Aquifer. Also in 2011 pumping from 239ft in the deepened Parkinson well, proved that in that vicinity there was an abundance of water. 620 inches was pumped from the well. Also bringing up water from down deeper will have some seepage into the upper aquifer where it will benefit the shallow aquifer water users.

12. In 1995-1996, Parkinson did not conduct well tests to determine injury to adjacent wells.

12. In 2011-2013, well tests were conducted. See number 10 above.

13. In the middle of page two in the Remand Order it states as follows, "Prior to the advent of significant ground water pumping, ground water in the area of the proposed point of diversion and surface water in the Big Lost River were hydraulically connected."

13. From the Preliminary Order Approving Application for transfer under Findings of Fact No. 43, "Ground water does not currently contribute to flows in the Big Lost River in the area of the Parkinson Well. (Wood Report, page 5) Dr. Brockway confirms that there are no gains to the Big Lost River from ground water occurring below Moore." Therefore, currently there is no hydraulic connection between ground water and surface water in the area of the proposed point of diversion. Also it is very unlikely that there will be any in the future because of the changed conditions which include the use of the east side canal in place of the river and fewer and fewer flood irrigators.

14. At the bottom of the Remand Order on page two it states as follows, "In recent years, the Big Lost River has flowed near Arco, Idaho, even though the river might be dry upstream. These flows are locally known as "rising waters," and have historically been the source of water to satisfy senior surface water rights."

14. Conditions have changed and rising waters are no longer used to satisfy senior water rights.

15. It is inferred or suggested from the above that the river was used to deliver surface water rights.

The reasons are that the rising waters are not dependable, there is not enough of them and it is not conservative to use them because of the great amount of shrink that would result. See also Exhibit XIII.

16. In 1995 -1996, Parkinson did not use well logs to establish water levels in wells at the proposed site or in the site of the old wells.

15. The east side canal has been used for several years and is being used currently to deliver surface water rights below the Moore diversion in compliance with rule number 30 of the Water Distribution Rules - Water District 34.

16. Well logs are available to help understand the water levels in the Big Lost River aquifer below Moore. See Well Logs Exhibit XVII.

The Ruland Burke well log is not the correct log for right # 34-2490, The correct one is the Wilse Neilson log.

17. In 1995-1996, recharge was not practiced to the extent that it is currently.

17. See # 7 Page 16 of Memo State of Idaho
Department of Water Resources.
April 30, 2013

Exhibit XVII Parkinson Farms

REPORT OF WELL DRILLER State of Idaho

OCT 10 1967

State law requires that this report shall be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

Rivland Burke Metal and Iron

WELL OWNER:

Name Rivland Burke
Address Blackfoot, Idaho

Owner's Permit No. 33113

NATURE OF WORK (check): Replacement well ☐
New well ☒ Deepened ☐ Abandoned ☐

Water is to be used for: irrigation

METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
Dug ☐ Other ☐

(explain)
CASING SCHEDULE: Threaded ☐ Welded ☐

20 "Diam. from 0 ft. to 24 ft.

"Diam. from ft. to ft.

"Diam. from ft. to ft.

"Diam. from ft. to ft.

Thickness of casing: 0.25 Material:

Steel ☒ concrete ☐ wood ☐ other ☐

(explain)
PERFORATED? Yes ☐ No ☒ Type of perforator used:

Size of perforations: " by "
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

WAS SCREEN INSTALLED? Yes ☐ No ☐

Manufacturer's name

Type Model No.

Diam. Slot size Set from ft. to ft.

Diam. Slot size Set from ft. to ft.

CONSTRUCTION: Well gravel packed? Yes ☐

No. ☐ size of gravel 10/20 Gravel

placed from ft. to ft. Surface seal

provided? Yes ☐ No ☐ To what depth?

 ft. Material used in seal:

Did any strata contain unusable water? Yes ☐

No. ☐ Type of water:

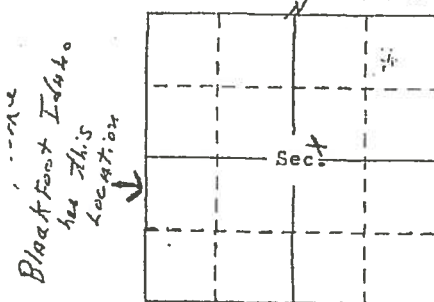
Depth of strata ft. Method of sealing

strata off:

Surface casing used? Yes ☒ No. ☐

Cemented in place? Yes ☒ No ☐

Locate well in section



LOCATION OF WELL: County Blaine
NW 1/4 Sec. 15 T. 1 N. R. 23 E/W

Use other side for additional remarks

Size of drilled hole: 30" Total
depth of well: 360 Standing water
level below ground: 290 Temp.
Fahr. Test delivery: gpm
or cfs Pump? ☐ Bail ☐
Size of pump and motor used to make test:

Length of time of test: Hrs. Min.
Drawdown: ft. Artesian pressure: ft.
above land surface Give flow cfs
or gpm. Shutoff pressure:
Controlled by: Valve ☐ Cap ☐ Plug ☐
No control ☐ Does well leak around casing?
Yes ☐ No ☐

DEPTH FROM TO FEET FEET	MATERIAL	WATER YES OR NO
0	6	CLAY
6	45	BLACK LAVA
45	15	GRAY LAVA
15	85	hard gray Red LAVA
85	100	gray Basalt
100	110	Red + gray LAVA
110	120	hard gray LAVA
120	123	SOFT RED LAVA
123	128	CLAY
128	140	GRAY BASALT
140	145	gray LAVA
145	150	gray + Red LAVA
150	170	hard gray LAVA with concrete
170	173	SOFT RED LAVA
173	175	CLAY
175	180	gray LAVA
180	205	Red + gray LAVA
205	215	gray Basalt
215	225	Red + gray LAVA
225	237	CLAY
237	245	Red + gray LAVA
245	260	gray LAVA
260	265	Red LAVA
265	280	Red + Gray LAVA
280	295	GRAY LAVA
295	310	FIRST WHATEVER
310	320	gray LAVA
320	325	hard Red LAVA
325	330	hard Gray LAVA
330	340	Red LAVA
340	340	LAVA + concrete Red
340	360	hard Gray LAVA

Work started: Sept 21 1966
Work finished: November 9 1966
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: Gaul Frandon
Address: Blackfoot Idaho
Signed by: Gaul Frandon
License No. 362 Date: May 8

EXHIBIT
Applicant's
17
8-13-13

Cefalo, James

From: Cefalo, James
Sent: Tuesday, August 07, 2012 3:52 PM
To: 'kirbyj@ida.net'; 'Jim Speck'; 'Tom Wood'; 'charles.g.brockway@brockwayeng.com'
Cc: Cox, Sharla
Subject: Additional Well Log for Parkinson Farms Transfer Application 77610
Attachments: Well Drillers Report (Permit G33113).pdf

Dear Parties:

There was a fair amount of discussion at the hearing relating to the transition zone between the Big Lost River aquifer and the Snake River Plain aquifer. Some of Mr. Parkinson's wells are located within this zone. Dr. Wood and Dr. Brockway were unable to find well logs for Parkinson's south wells (those located at the irrigated place of use). I recently found a Well Drillers Report for the well (point of diversion) listed in water right 34-2490. This well log was located in the IDWR water right file for 34-2490. Therefore, I believe the document is already included in the record under the broader statement of official notice given at the hearing. However, I feel it is important to provide the parties an official copy of the document. It has been marked as Exhibit IDWR9.

Please note, the legal description listed on the Well Drillers Report appears to be in error. There are no water right points of diversion or ground water wells located within the legal description shown on the report. The Permit No. listed on the report (G33113) was filed by Ruland Burke for the Parkinson Farms place of use in the mid-1960s. Permit G33113 became licensed right 34-2490. Therefore, I believe the well log is in fact the correct log for Parkinson's 34-2490 ground water well.

A copy of this email and the exhibit has been mailed to Parkinson Farms and Darrell L. McDonald.

James Cefalo
Water Resources Program Manager
IDWR - Eastern Region
(208) 525-7161

Location Corrected by IDWR To:
T03N R26E Sec. 14 SESENE
By: mciscell 2012-12-27

WELL LOG AND REPORT OF THE
STATE RECLAMATION ENGINEER OF IDAHO

Department of Reclamation

17040218
Permit No. 21077 Well No. 2 County Butte
Owner Wilse Nielson
Address Arco, Idaho
Driller Bill Findley - Drilling Contractor
Address 200 Parsons, Blackfoot, Idaho
Well location N 1/4 SE 1/4 Sec. 14, T. 3 N. R. 26 E. W.
Size of drilled hole 20 in.

035036

Locate well in section

NW 1/4	NE 1/4 X
SW 1/4	SE 1/4

Total depth of well 200 ft

Give depth to standing water from the ground 64 ft Water temp. _____ °Fahr.

On "Pumping Test" delivery was 137 g.p.m. or _____ c.f.s. Drawdown was 14 feet.

Size of pump and motor used to make test 10 in. pump - 500 hp. engine

Length of time of test 3 hours 30 minutes.

If flowing well, give flow _____ c.f.s. or _____ g.p.m. and of shut off pressure _____

If flowing well, described control works _____

(TYPE AND SIZE OF VALVE, ETC.)

Water will be used for Irrigation Weight of casing per lineal foot _____

Thickness of casing 5/16 - 1/4 Casing material steel
(STEEL, CONCRETE, WOOD, ETC.)

Diameter, length and location of casing _____

(CASING 12" IN DIAMETER OR LESS, GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER, GIVE OUTSIDE DIAMETER)

CASING RECORD

Diam. Casing	From Feet	To Feet	Length	Remarks—seals, grouting, etc.
20"	0	54	54	
18"	70	60	40	
16"	65	105	40	
14"	87	125	38	
12"	125	200	75	

Number and size of perforations 25 1/4" by 3" located 65 feet to 80 feet from ground

Date of commencement of well 10-1-62 Date of completion of well 11-1-62

N 1/4 SE 1/4 3N 26E

2914

WELL LOG

From Feet	To Feet	Type of Material	Water-bearing Formation Ass. Yes or No	Casing Perforated Ass. Yes or No
0	54	top soil, gravel and clay		
54	62	gray lava		
62	64	black cinders		
64	67	gray lava	yes	
67	80	orange clay - large broken lava rock	yes	
80	82	orange sand	yes	
82	90	clay, sand		
90	105	hard clay		
105	110	black lava		
110	133	red lava		
133	200	hard gray clay		

If more space is required use Sheet No. 2

WELL DRILLER'S STATEMENT

This well was drilled under my supervision and the above information is true and correct to the best of my knowledge and belief.

Signed Bill Fendly

By _____

Dated _____, 19____.

License No. _____

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTUSE TYPEWRITER OR
BALLPOINT PENState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion of abandonment of the well.

RECEIVED

1. WELL OWNER Name <u>Willard Bell</u> Address <u>Arco Idaho</u> Owner's Permit No. <u>34-91-Z-001</u>		7. WATER LEVEL Static water level <u>510'</u> feet below land surface Flowing? ☐ Yes ☒ No Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality _____																																																																																																		
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☐ Pump ☐ Bailer ☐ Air ☐ Other _____ Discharge G.P.M. _____ Pumping Level _____ Hours Pumped _____																																																																																																		
3. PROPOSED USE ☐ Domestic ☐ Irrigation ☒ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type) _____		9. LITHOLOGIC LOG <table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th rowspan="2">Water Yes No</th></tr><tr><th>From</th><th>To</th></tr></thead><tbody><tr><td>24"</td><td>0</td><td>30'</td><td>SANDY GRAVEL</td><td>✓</td></tr><tr><td>20"</td><td>30'</td><td>35'</td><td>GRAVEL</td><td>✓</td></tr><tr><td></td><td>35'</td><td>50'</td><td>CLAY</td><td>✓</td></tr><tr><td></td><td>50'</td><td>110'</td><td>BROWN CLAY</td><td>✓</td></tr><tr><td></td><td>110'</td><td>165'</td><td>LIGHT CLAY</td><td>✓</td></tr><tr><td>20"</td><td>165'</td><td>195'</td><td>BROWN CLAY</td><td>✓</td></tr><tr><td>18"</td><td>195'</td><td>205'</td><td>LIGHT CLAY</td><td>✓</td></tr><tr><td></td><td>205'</td><td>220'</td><td>Cinders</td><td>✓</td></tr><tr><td></td><td>220'</td><td>230'</td><td>Light clay</td><td>✓</td></tr><tr><td></td><td>230'</td><td>240'</td><td>Cinders</td><td>✓</td></tr><tr><td></td><td>240'</td><td>245'</td><td>Light clay</td><td>✓</td></tr><tr><td></td><td>245'</td><td>285'</td><td>Lava - cinders</td><td>✓</td></tr><tr><td></td><td>285'</td><td>290'</td><td>Lava cinder bed</td><td>✓</td></tr><tr><td></td><td>290'</td><td>300'</td><td>Cinders</td><td>✓</td></tr><tr><td></td><td>300'</td><td>505'</td><td>LAVA</td><td>✓</td></tr><tr><td></td><td>505'</td><td>510'</td><td>Broken lava</td><td>✓</td></tr><tr><td></td><td>510'</td><td>580'</td><td>Broken lava</td><td>✓</td></tr><tr><td>18"</td><td>580'</td><td>585'</td><td>Cinders</td><td>✓</td></tr></tbody></table>		Hole Diam.	Depth		Material	Water Yes No	From	To	24"	0	30'	SANDY GRAVEL	✓	20"	30'	35'	GRAVEL	✓		35'	50'	CLAY	✓		50'	110'	BROWN CLAY	✓		110'	165'	LIGHT CLAY	✓	20"	165'	195'	BROWN CLAY	✓	18"	195'	205'	LIGHT CLAY	✓		205'	220'	Cinders	✓		220'	230'	Light clay	✓		230'	240'	Cinders	✓		240'	245'	Light clay	✓		245'	285'	Lava - cinders	✓		285'	290'	Lava cinder bed	✓		290'	300'	Cinders	✓		300'	505'	LAVA	✓		505'	510'	Broken lava	✓		510'	580'	Broken lava	✓	18"	580'	585'	Cinders	✓
Hole Diam.	Depth		Material		Water Yes No																																																																																															
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4. METHOD DRILLED ☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☒ Cable ☐ Dug ☐ Other _____		10. Work started <u>04-15-91</u> finished <u>09/10/91</u>																																																																																																		
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ Thickness _____ inches Diameter _____ inches From _____ feet To _____ feet Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches Number _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>30'</u> Material used in seal: ☐ Cement grout ☒ Puddling clay ☐ Well cuttings Sealing procedure used: ☐ Slurry pit ☒ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld Describe access port <u>2" ACCESS</u>		11. DRILLERS CERTIFICATION I/we certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Edgeman Well Drilling</u> Firm No. <u>383</u> Address <u>407 REUSTAL ST</u> Date <u>10/15/91</u> Signed by (Firm Official) <u>Edgeman</u> and <u>Elgin Simonson</u> (Operator)																																																																																																		
6. LOCATION OF WELL Sketch map location must agree with written location. Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Butte</u> SE 1/4 SW 1/4 Sec. 1, T. 3, N. 26 E. 10																																																																																																				

Well Log for Ralph S. Parkinson Arco
 Turnished By Cape Drilling & Pump Co.

Driller Jerry Sharpe Helper Jack Lemons.
 Reverse Rotary

28" hole
16" casing

6/17/66 0-3 Clay
 3-15 med gravel + coarse sand
 15-25 Med. Brown sand
 25-34 Coarse sand + small gravel
 34-49 Brown sticky clay
 49-51 Fine Brown sand Hit some water
 51-55 White caliche (Hard)
 55-64 Pea gravel + coarse sand Hit water
 64-75 Brown clay
 75-90 Coarse sand + a little small
 gravel with water
 90-93 Fine Brown sand
 93-95 Hard sandstone (Hard drilling)
 95-105 Brown clay

(Copy from Log furnished
 ASC office for ditch
 assistance)

Water stand at 30 ft
~~Gravel packed~~
 Installed 16" casing from
 -3 ft. to 102 ft.
 On seal used 3 ft of large
 gravel from 102-105 ft
 Perforated casing from 42-102 ft
 Two rows of perforations from
 19 to 42 ft
 Gravel packed with 3/4" sand

ARKINSON FARMS WK PLACE OF USE



Legend

- Irrigated Acres
- Sections
- Quarter Quarters

*Section XVIII
Parkinson
Farm*

2009 NAIP Photo



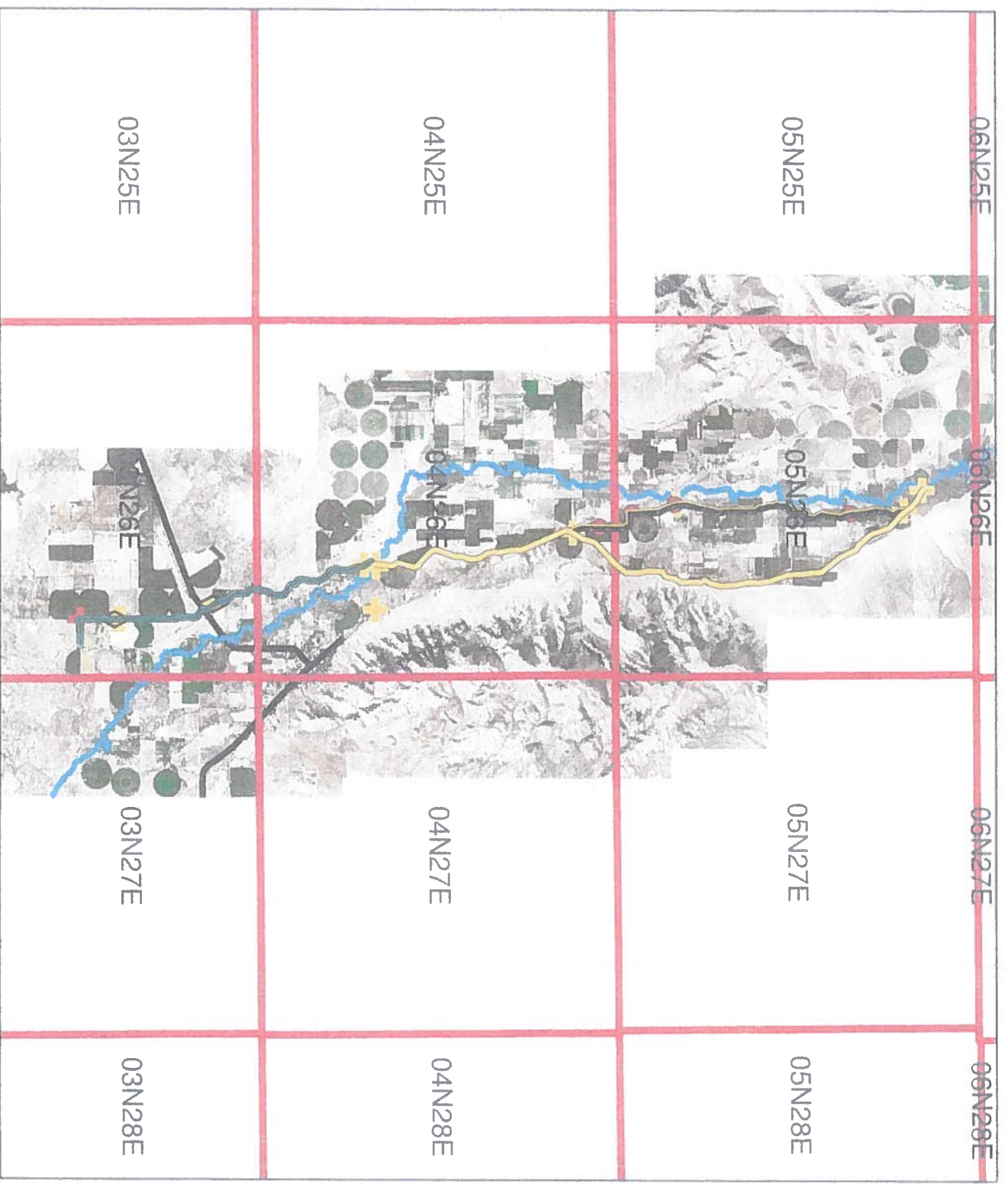
EXHIBIT
Applicants
18
8-13-13

EASTSIDE-ISLAND-MUNSEY CANAL SYSTEM



Legend

- Eastside_Canal
- Island_Canal
- Munsey_Canal
- Wells
- Munsey_Tail_Measurement
- Isom_Folkman_Diversions
- BLRID_Measurement_Devices
- Jensen_Pond
- Isom_Pond
- gcdb_tr
- MajorRivers
- MajorRoads





RECEIVE

AUG 02 2013

Department of Water Resources
Eastern Region

Parkinson Farms
Ralph S. Parkinson
Scot K. Parkinson
2253 N 3100 W
Arco, ID 83213
Telephone (208) 527-3161

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF APPLICATION) LIST OF EXHIBITS FOR REBUTTAL
FOR TRANSFER NO. 77610 IN THE) WHICH WERE TO BE PREPARED
NAME OF PARKINSON FARMS) AND PROVIDED TO ALL PARTIES
) AND THE HEARING OFFICER
) ON OR BEFORE AUG 12, 2013.
)
Parkinson Farms, Applicant.)

Parkinson Farms submits the following list of Exhibits:

- Exhibit XVIII Revised 7/18/13. Response to the Brockway Report Evaluation of Hydrologic Impacts of Additional Pumping from a Well in the Lower Big Lost River Valley. Prepared by Tom Wood, PhD, PG.
- Exhibit XXIII. Dr. Tom Wood's response to Exhibits presented by Speck and Jensen.
- Exhibit XXIV. Parkinson Farms statement on the water cycle by Ralph S.

Parkinson.

Dated this 1st ^{august} day of ~~July~~, 2013.

Parkinson Farms
Ralph S. Parkinson
Scot K. Parkinson

By Ralph S. Parkinson
Ralph S. Parkinson



CERTIFICATE OF MAILING

I hereby certify that on 1st day of August 2013, I mailed a true and correct copy of the foregoing LIST OF EXHIBITS to the persons listed below.



Parkinson Farms

Ralph S. Parkinson

US MAIL

James Cefalo
Department of Water Recourses
900 North Skyline Drive, Suite A
Idaho Falls, Idaho 83402-1728

Kirby A. Jensen
2781 North 3375 West
Moore, Idaho 83255

James P. Speck
Speck and Aanestad
PO Box 987
Ketchum, Idaho 83340

Darrell L. McDonald
PO Box 246
Arco, Idaho 83213

Response to the Brockway Report Evaluation of Hydrologic Impacts of Additional Pumping from a Well in the Lower Big Lost River Valley

**Prepared by
Tom Wood, PhD, PG**

*Ground-water pumping is only one component of a combination of factors that are impacting ground-water levels and the depletion of surface water supplies. **The greatest impact results from variation in precipitation.** In addition to climatic variability, the widespread conversion from flood irrigation to sprinklers, and the associated expansion of irrigated acreage, have diminished ground-water recharge and increased discharge.*

Ground-water Pumping Impacts on Surface Water
Irrigation Diversions from Big Lost River (Johnson,
et al., 1991, page 2)



The Brockway report presents theoretical and technical arguments for mechanisms by which pumping may alter the water supply either in the aquifer or in surface streams. The following mechanisms are discussed in the Brockway Report:

- 1) Localized drawdown induced by pumping (well interference).
- 2) Impacts on the water balance of the aquifer.
- 3) Depletion of surface water flow due to hydraulic connection between the aquifer and river system.

As will be described below the approaches taken and analyses provided are based upon limited data necessitating the use of over simplistic assumptions. These simplifications are then used to extrapolate future impacts of this transfer, often in an over zealous manner. In places, the approaches taken are flawed or at least questionable and need to have brackets showing the high level of uncertainty associated with the presented solutions.

Basically, injury assessment of this proposed transfer must consider 1) whether the transfer is from the same aquifer to another position in the same aquifer and 2) whether the transfer will result in injury to other nearby water right holders. I will present arguments here that easily demonstrate that the transfer is within the same aquifer and is not a new appropriation as stated by Brockway (page 27). I will also show that the impacts to nearby users will occur but will be minimal and will not result in injury.

Same Aquifer Evaluation

The current place of use is situated about 8 miles south of the POD in a straight line and 8.75 miles via the conveyance route in surface canals (Figure 1). Brockway maintains that the existing Parkinson Wells are situated over the Eastern Snake River Plain Aquifer (page 17). This suggests that the Parkinson wells draw water from the Snake River Plain Aquifer, which is clearly not the case.

The locations of the wells are shown in Figure 1. The elevation at land surface of the western point of diversion is 5320 ft msl. The well has a bottom elevation of 5095 with a depth to static water of 67 feet. This places the top of the water table at about 5253 feet, which is consistent with the water table map of Bassick and Jones, 1992 (Figure 2) that shows the elevation at about 5265 ft. The Snake River Plain Aquifer is considerably deeper, if it exists at all in this location. It is clear that the water rights being transferred are within the Big Lost Aquifer and that this is not a new appropriation.

Injury to others analysis

Calculations of long term drawdown caused from increased pumping from the Parkinson well by 1800 gpm are consistent between Wood and Brockway because the results of the Parkinson Well pumping test performed by Wood in 2011 were employed. In the previous test a transmissivity of 35,000 ft²/day was measured. On May 4, 2012 a 3 day pumping test was started in the adjacent Telford Well (222 ft North). The type curve plot

for the pumping test is provided in Figure 3. The results of this test indicate that the transmissivity of the aquifer in this area is 280,000 ft²/day and the specific yield is 0.0009. However, data analysis suggests that the pumping rate and duration of the test were insufficient to observe late time gravity drainage, which would have resulted in a larger storage coefficient typical for the area. Bassick and Jones, 1992 found storage coefficients to range from 0.00001 to 0.02 with 0.001 being the most probable. The transmissivity calculated here is considerably higher than that measured in the Parkinson Well, but it is still consistent with other studies in the Big Lost River Valley. For instance, Bassick and Jones (1992) measured transmissivity that ranged from 61,000 to 330,000 ft²/day. Brockway calculated transmissivities based on specific capacities from 5,000 to 243,000 ft²/day.

The explanation for this large difference between the two tests is the heterogeneous nature of the aquifer. The Parkinson Well is located in an area of the aquifer with low hydraulic conductivity. This explains why Parkinson found it necessary to deepen the well to obtain water sufficient to fill their water right. Because access could not be obtained to the Telford Well last summer there was no way to determine that the Parkinson Well was tapping an aquifer zone with restricted transmissivity.

The new data from the Telford test were used to recalculate the injury assessment for nearby groundwater users. This is exactly the same method employed by Wood previously. The results are presented in Figure 4. As can be seen the predicted drawdown for nearby groundwater users is a little over 2 ft for the 24/7 pumping for 6 months scenario.

Response to Injury Assessment Points by Brockway

Brockway's Section D Significance of drawdown Effects on Well Pumping Rates

The McDonald irrigation well has a depth of 180 ft and is fully cased with perforations from 20 to 170 ft. Brockway reports that Agricultural Services, Inc. set the pump intake at a depth of 105 ft and measured the static water level at 68 ft. With pumping the submergence is only 10 ft and a minimum typical submergence is typically considered to be 20 ft. It is not clear why the pump was not set deeper in the well to avoid vortexing and intake of air into the pump. This approach would solve some of the potential problems mentioned in this section and the well construction allows for this approach to be taken.

An estimate of reduction in flow rate due to the lowering of the water table is provided. The basis of this theoretical calculation is the specific capacity of the well as determined by a pumping test conducted by the well driller in 1979. No new data or pumping information with modern equipment is mentioned. The specific capacity of the McDonald (Toone) well is 99 gpm/ft, which is below the average for the region as determined by Brockway (134 gpm/ft). By comparison the Parkinson well has a specific capacity of 135 gpm per ft and it is known to be in a portion of the aquifer that has poor transmissivity. The Telford well has a specific capacity of 762 gpm/ft. It seems

plausible that there may be construction issues with the McDonald well that are causing the well to be highly inefficient and creating excessive drawdown. Because we now know that this area is much more productive over a large areal extent, the calculations presented in Brockway's section need to be adjusted accordingly.

Brockway's Section E Predicted Impact on Pre-1978 Domestic Wells

In this section, the estimated radius where drawdown exceeds one foot is presented. There is no reason given for the selection of one foot. It seems unlikely that the approach taken will have an uncertainty range of less than 1 foot, particularly when no consideration was taken for 1) recharge from snow melt and canal and stream leakage and 2) considering whether or not the wells tap the same hydraulic zone. Probably the greatest short coming of the approach is that it doesn't account for the recharge from canal leakage that will be provided by pumping an additional 1800 gpm from the Parkinson well. Considering 50% shrink, about 900 gpm will recharge the shallow aquifer over the course of the 8.75 miles to the Parkinson's Farm. 300 gpm will recharge the aquifer in transecting the 3 miles or so depicted in Brockway's Figure 5. This will be a significant advantage to shallow groundwater users in the area. Another short coming of the Brockway approach is that it does not take into account the deformation of the cone of depression caused by the groundwater flow. The cone will be more compressed in the upstream direction and elongated in the down stream direction, thus allowing for more seepage into the cone of depression beneath the canal. The radius in Brockway's report will have to be re-calculated based on the new pumping test data.

Brockway's Section E Aquifer Conditions and Depletion from Pumping

This section is highly theoretical and speculative. Some extrapolations are made that are inaccurate. A significant shortcoming of the Brockway analysis is that the relationship between cool, wet weather and streamflow is not considered. It is just as likely that melting snow and less evapotranspiration (thus more stream flow) occurs during the years when there is high stream flow.

A focus of this section is Figure 15, which is a scatter plot of groundwater levels at a point in the aquifer (Well 05N26E23CDA1) plotted against the integrated pumping across the basin. This well is located about 2 miles northeast of the Parkinson Well. To be statistically and conceptually representative of the system, multiple wells distributed across the basin need to be compared to the volume pumped in the basin. Otherwise assumptions of homogeneity and isotropic conditions must be assumed which we know is not the case as a variation of 8X in aquifer transmissivity was measured in the Telford Well and the Parkinson well, which are only 222 ft apart. Brockway sums up the results of the lengthy statistical analysis on page 25 "...in a statistical sense: with higher streamflow, groundwater levels tend to be higher, and with higher pumping, groundwater levels tend to be lower." Besides being obvious, this statement has the problem of being based on a number of simplifying assumptions that are simply not true. The statistical approach has another shortcoming of employing some "conveniences" that may introduce a bias into the analysis. For instance, the use of a 3 year backward moving average in the

stream flow and pumping data is not fully evaluated. What about 2 years? Five years? How was the determined? It seems intuitive that the BMA should be longer the further from the river and shorter closer to the river but this is not discussed. The use of a beta coefficient for predictor variables is often criticized because there is no reason why a change of one standard deviation in one predictor should be equivalent to a change of one standard deviation in another predictor. The use of beta coefficients in this context presupposes the relationship between pumping and stream flow, which might make sense where the aquifer and aquifer and Big Lost are in direct communication. However, where the hydraulic connection is broken or where the river channel is underlain by fine grain sediments the relationship is not clear.

Brockway's Section F. Long-Term effects of additional depletion from proposed pumping.

This section is based on the notion that the cross-section flow through the uppermost aquifer is known with certainty. On the basis of the pumping test of the Parkinson Well, Brockway calculates an aquifer hydraulic conductivity of 175 ft/day. Using the data from the recent Telford test the same calculation yields a hydraulic conductivity of 1450 ft/day. The most probable transmissivities found by Bassick and Jones were 130,000 to 200,000 ft²/day, which are hydraulic conductivities of 650 and 1000 ft/day, respectively. Using the 1000 ft/day value and the same approach taken by Brockway the cross-sectional flow near Moore is approximately 200 cfs, which compares to 35 cfs calculated by Brockway. Crosthwaite (1970) estimated the total discharge through the entire profile of sediments and basalts to be 325 cfs. The modified calculation presented here is more in line with other scientific studies.

Table 5 suggests that 6.6% of the aquifer flow on an annual basis will be pumped by the Parkinson well in 215 days at a pumping rate of 1800 gpm. This appears to be too high. Using a hydraulic conductivity of 1000 ft/day the flow at Moore is approximately 146,050 ac-ft/year. Using a net return of 25% due to canal leakage (per Brockway) the percent of flow use by Parkinson at 4 cfs will be 0.9%. Assuming all the shrink makes it into the ground (i.e. very small percentage is lost to evaporation), the percentage of the aquifer flow drops to 0.6%. These calculations demonstrate the high level of uncertainty contained therein.



Figure 1 Location of proposed new POD and the two existing water wells near Parkinson Farms. The location of the East well is actually about a mile south and west of where it is plotted here.

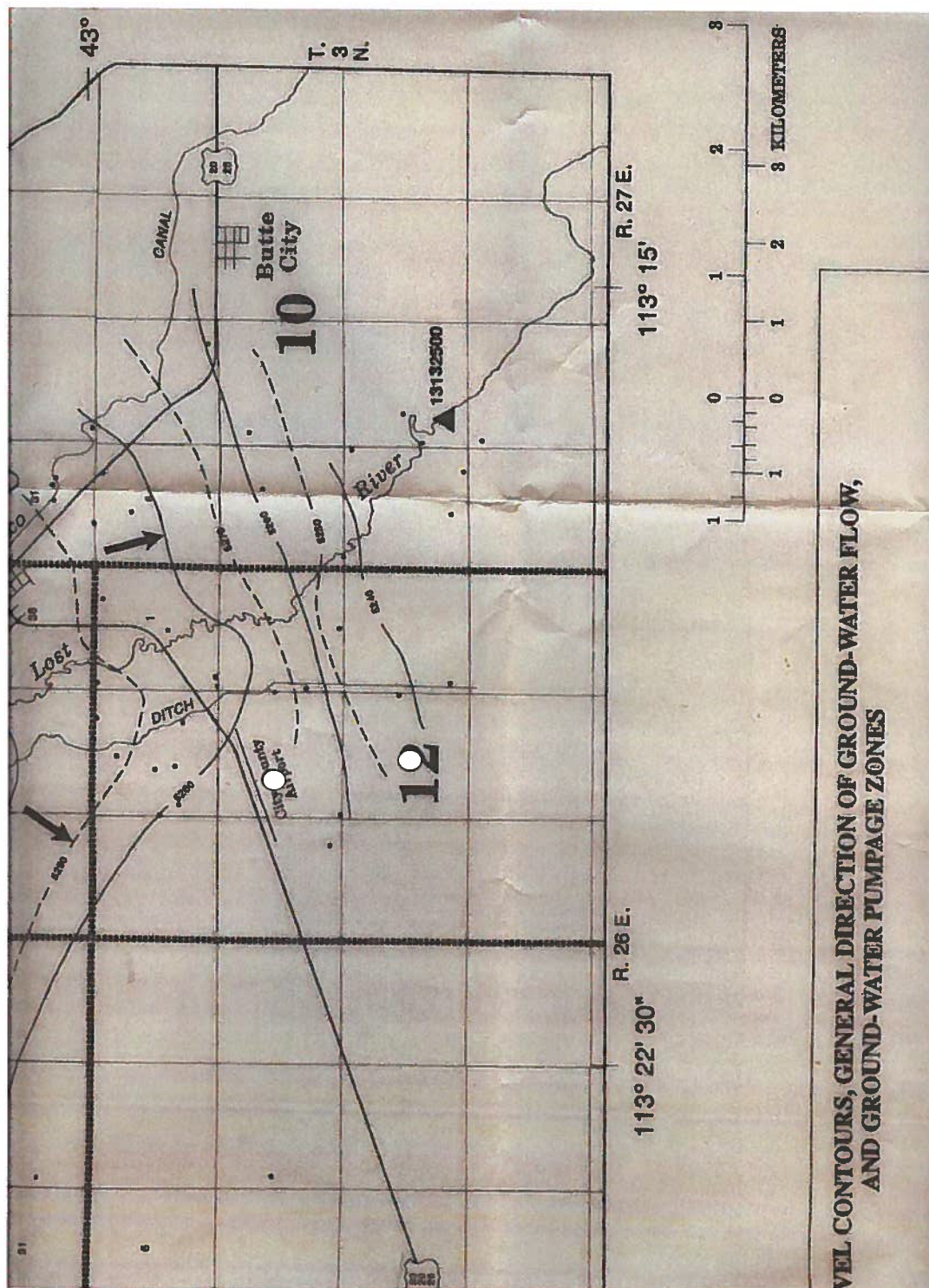


Figure 2 Groundwater map from Bassick and Jones, 1992 and location of the two Parkinson Wells.

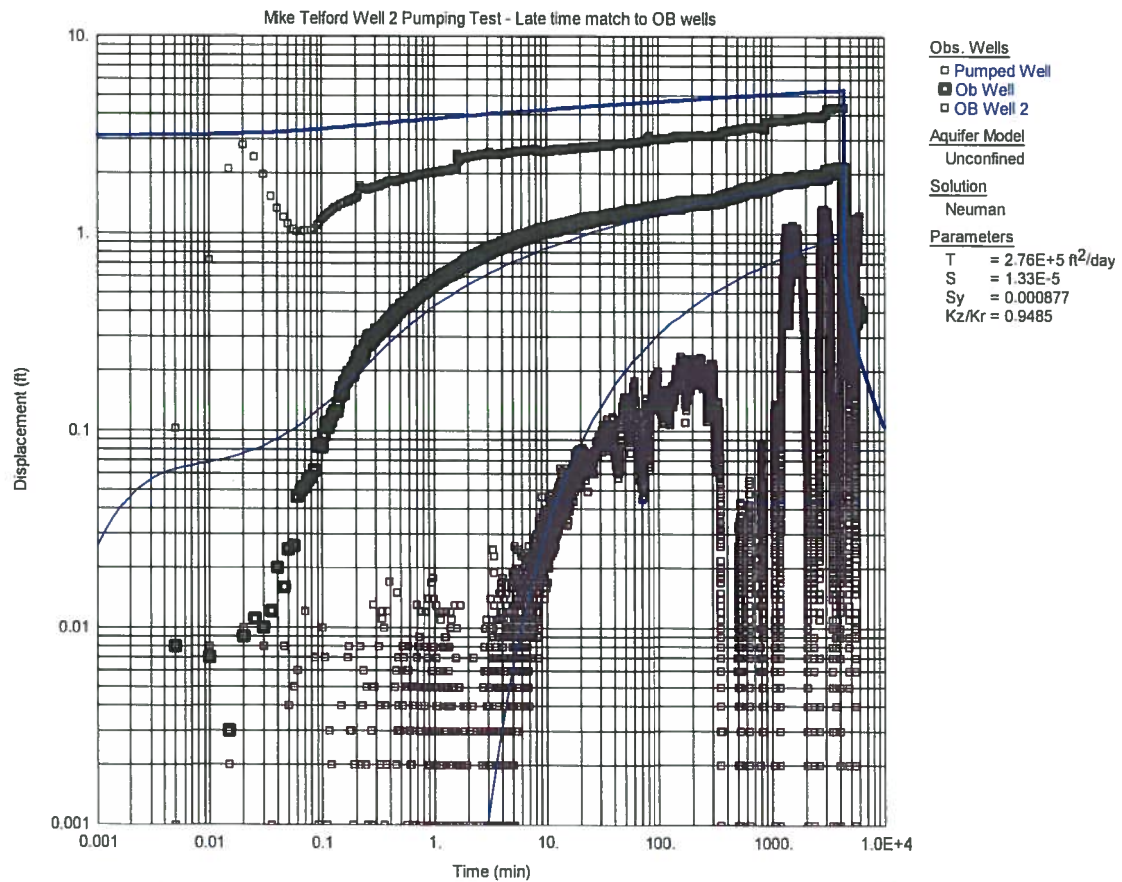


Figure 3 Type curve plot from the pumping test of the Telford Well. The Parkinson well (Ob Well) is located 222 ft from the pumped Telford Well. OB Well 2 is located 3175 feet from the Telford Well. The top, middle and bottom curves are the Telford, Parkinson and OB 2 well respectively.

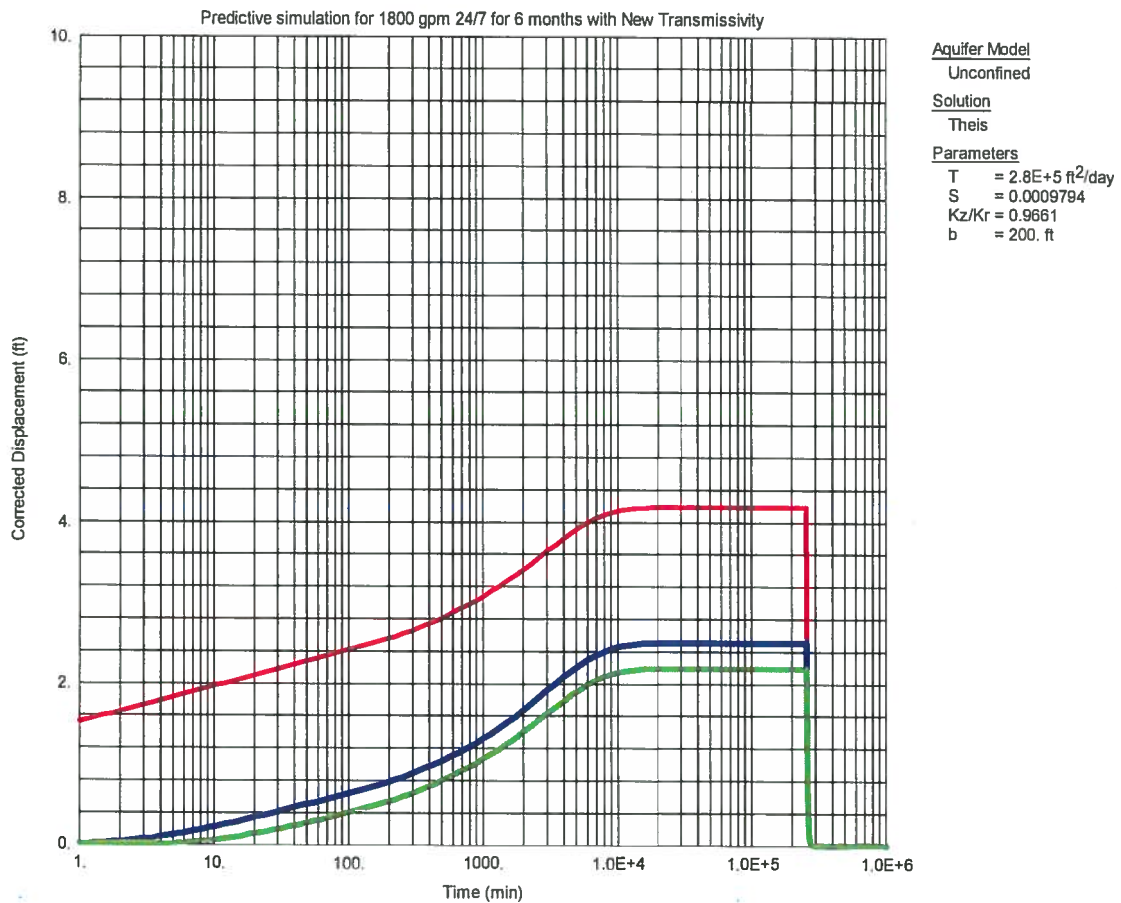


Figure 4 Recalculation of predictive drawdown using data from the Telford Well test conducted May4 to 10, 2012. Predictive plot of drawdown at 1800 gpm for the full period of use 180 days. The red line is for the water level in the Parkinson Well, blue line is the water level predicted in a well ¼ mile north (Felton Well), and the green line is the water level in a well ¼ mile to the east and 250 ft south of the Parkinson Well (Toone Well).

Key to line colors

Green Imaginary well ¼ mile east of the Parkinson Well
 Blue Imaginary well ¼ mile north of the Parkinson Well
 Red Parkinson Well



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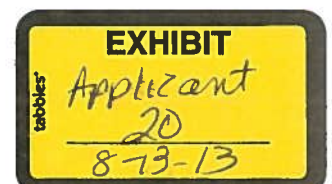
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JUL 19 2013

Department of Water Resources
Eastern Region

Technical Response to the IDWR Director Remand and the Owlsley Report “Application for Transfer No. 77610 in the Name of Parkinson Farms”

**Prepared by
Tom Wood, PhD, PG
July 18, 2013**





Mr. Parkinson has contracted Clearwater Geosciences, LLP to respond technically to the issues raised in the Order Remanding Contested Case to the Hearing Officer for the subject water right transfer and to review the Owsley Report. This report presents information and data to help address technical issues raised by the Director and in the Owsley Report. However, some of the Director's questions are on the scale of the Big Lost River Basin and exceed the scope typically addressed in an injury analysis for a transfer application. However, Mr. Parkinson has made a good faith effort in considering the potential injury that this transfer might cause to senior water rights. This has included conducting two long term pumping tests; one in the proposed point of diversion (POD) well and a second test in the nearby Telford Well. The first pumping test is described in the Clearwater Geosciences report prepared for the original hearing. The results of the second pumping test are described in the Clearwater Geosciences "Response to the Brockway Report Evaluation of Hydrologic Impacts of Additional Pumping from a Well in the Lower Big Lost River Valley" (Parkinson Farms Exhibit XVIII). Using the updated pumping test data, the impacts to the aquifer at the proposed POD will be negligible; about 4 ft at the pumped well and 2 feet at a well ¼ mile away.

More recently the Director has wondered if the transfer would have a negative impact on senior surface water right holders. This was addressed in the first report but the evaluation needs to be expanded to provide a broader context for evaluating this transfer application. The abbreviated answer to whether there is an impact to senior surface water users from this transfer is "no". The channel of the Big Lost River has been elevated above aquifer below Moore for the past 30 years. When the river and aquifer are disconnected water can only flow from the river to the aquifer, thus, surface water cannot be formed from seepage from the aquifer to the river. It is a certainty that a meaningful connection of the aquifer with the river channel will not occur until pre-1985 climate conditions return causing significant river flow below Mackey Reservoir. This is true whether this transfer is approved or not. The details supporting this answer are provided in the following sections of this report responding to the Owsley Report.

The technical issues raised in the Remand are also indirectly addressed in the following sections responding to the Owsley Report.

The Owsley Report

Mr. Dennis Owsley of the Hydrology Section of the State Office of the Idaho Department of Water Resources (IDWR) prepared a memo to address seven specific questions raised by Gary Spackman, the IDWR Director, regarding the Application for Transfer No. 77610 (Parkinson Farms).

This report is organized in sections to address each of the Directors questions sequentially. The Director's questions are italicized followed by text addressing the questions and points made in the Owsley's for the same question.

1. What is the hydrogeology of the Big Lost River aquifer and any aquifer subunits from approximately Moore, Idaho, downstream to a location south of Arco, Idaho, where the



gradient of the aquifer suddenly steepens, and becomes part of the larger Snake River Plain Aquifer?

Owsley discusses at length low permeability zones (clay layers) and how these layers are extensive and strongly influence the lateral movement of ground water. His discussion is apparently presented to establish the fact that the aquifer consists of "sub-units" as inferred by the Director's question. Owsley makes the case that the clay layers formed behind basalt that dammed the Valley episodically in the past. Crosthwaite et. al, (1970) also describe different zones in the aquifer but he envisioned a less continuous sequence sub-units as quoted below.

"Regardless of the source of the basalt flows, they have intermittently dammed the drainage from the valley resulting in a complex interbedded sequence of basalt, clay sand and gravel. What is assumed to be the main water table at Moore is at an elevation of 5,460 ft above sea level whereas in the Snake River Plain 12 miles south of Arco the water table is at an elevation of about 4,385 feet, a difference of little more than 1,000 feet. The less permeable parts of the sedimentary and basalt sequence have a sufficiently large areal extent to strongly influence the lateral movement of ground water out of the basin and thus cause water levels to be at several different elevations. It would require a very large number of deep test wells to define the stratigraphic details and the water-yielding potential of this part of the basin." (Crosthwaite et. al, 1970, pages 72 and 75).

The area near of Arco is situated on the outwash plain of the Big Lost River. During waning periods of the Pleistocene Ice Ages the area was subject to much higher river flows creating a complex subsurface geologic environment of interbedded sands, gravels and clays. There have been periods of river damming that caused sedimentation of clay, which has subsequently been reworked by the Big Lost River. Reworking of the clay layers is more probable near the center of the basin where the Big Lost River has been more active and energetic. Less reworking and more fine grained sediments are likely to occur near the sides of the basin. However, this is not always the case as several high permeability areas are known to exist near the margins of the valley.

Crosthwaite found groundwater in three different zones near Arco. More recent data has shown a deeper zone beneath these. Assuming the land surface elevation near Arco is about 5330, the depth to water for the zones defined by Crosthwaite can be estimated as 1) near land surface to 30 ft, 2) 58 to 205 ft, and 3) 255 to 455 ft. The City of Arco Water Street Well has a static depth to water of 515 ft (Well Drillers report dated 3-3-1992). It is not known how far up-valley the separation of the different water-bearing zones extends (Crosthwaite, et. al, 1970, p. 72).

The correlation of a thick clay layer in Owsley's Figure 2 over a distance of 5 miles through the center of the basin based only on two wells is difficult to justify without further data. Even if the clay layer penetrated by the two wells is the same unit, it may have been cut by the Big Lost River. Crosthwaite, et. al, 1970 when preparing cross sections of the Valley did not have sufficient confidence to correlate clay units, although he had geophysical data for correlating geologic units between wells (Crosthwaite, et. al,



1970, Figures 13 to 16). The Owsley cross-sections are one possible interpretation of a large number of possible interpretations based upon the available data. It seems more likely that in a braided stream/cut and fill river environment that layers of fine grained, easily eroded sediment layers do not extend continuously over long distance as he indicates. This will become more important in discussing "rising water".

In Question 1, the Director makes the assumption that the groundwater contours of the Big Lost Valley Aquifer eventually steepen and merge with the contours of the Eastern Snake River Plain Aquifer. Owsley concurs with this interpretation stating on page 3 that *"the Big Lost River Aquifer merges with the larger Eastern Snake River Plain Aquifer (ESPA) few miles south of Arco. In this transition area, the depth to water increases significantly, resulting in a relatively steeper hydraulic gradient as shown on Figure 1."*

The significant steeping of the hydraulic gradient is not apparent in Owsley's water table map (Figure 1). It should be shown by tightly spaced contour lines beginning a few miles south of Arco to be consistent with his description in the text. Evenly spaced contour lines are also shown in the water table map of Bassick and Jones, 1992. The Bassick and Jones, 1992, water table map is based on the first encountered water in March of 1991. It shows more or less evenly spaced contours that terminate to the south of Arco as the upper water layer percolates into the subsurface. Deeper zones within the aquifer would extend further south and will also terminate as the water in the zone percolates into the subsurface. The conventional description of the terminus of the Big Lost River Aquifer is that of ground water cascade. As described by Crosthwaite et al., 1970, page 72.

"Sparse data indicate that the upper zones become thinner in a southerly direction from the mouth of the valley, are not continuous, especially at some distance southwest of Arco, and finally disappear as the water percolates downward to the regional water table underlying the Snake River Plain."

The conventional conceptual model of the terminus of the Big Lost River Valley Aquifer is that the water table contours simply end. They do not become steeper and merge with the ESPA. The data are limited but this conventional understanding allows for the occurrence of the Big Lost River Aquifer over the Eastern Snake River Plain Aquifer. The difference between the conceptual model of Owsley/IDWR Director and the conceptual model of other scientists is very important. In the IDWR conceptual model a line can be drawn between the two aquifers and in the conceptual model shared by the U.S. Geological Survey and many others, there exists a transition zone where the Big Lost River Valley Aquifer and the ESPA overlap. This distinction is very important for this transfer application.

Owsley discusses that an increase in hydraulic gradient is also caused by a reduction in aquifer transmissivity due to lacustrine (lake) clay deposits. This concept is not fully described and there is no supporting evidence presented to support this transition. It is not indicated in Owsley's figure 2. Conceptually, it seems as though a reduction in transmissivity should cause a damming in the aquifer causing a flattening of the water table



in an upgradient direction and then a steepening of the water table gradient through the zone with low transmissivity. It is clear that Owsley *does* recognize that the hydrogeologic setting is complex and that changes in hydraulic gradient can be caused by many factors.

In summary, an answer to the Director's question is given as follow. The Big Lost River Valley Aquifer consists of a complex sequence of sands, gravels, silts and clays that were deposited in a braided stream/cut and fill environment during epoch's of wetter climates (ice ages). This environment created a very prolific sequence of water bearing layers. Some evidence suggests that episodic eruptions of volcanic lava blocked or restricted outflow from the valley causing ponding of water. During these periods clay and silt layers were deposited. Subsequently, erosion by the ancestral Big Lost River may have cut the layers of silt and clay. The data are sparse and correlation of the geologic units over distances is not possible. Nevertheless, all investigators agree that there are several (at least four) aquifer sub-units near the mouth of the valley. These sub-units merge into a single unit up-valley but the location is not known and probably varies with the climatic variations. The terminus of the Big Lost River Valley Aquifer can best be described as a groundwater cascade where the individual aquifer subunits become perched and dwindle as water percolates downward to the ESPA. The deeper sub-units extend further out into the Eastern Snake River Plain as they are sustained by percolating waters from above. Eventually, all waters are lost in cascades of unsaturated groundwater that finds it way to the underlying ESPA. Based on sparse data the interpretation inferred by the Director's question of a steepening water table merging with the ESPA is probably not valid.

Mr. Owsley discusses the impact of ground water development on aquifer water levels on page 6 and presents Figure 3 to support several of his conclusions. He states that in water short years, aquifer levels decline in response to additional pumping and incidental recharge from irrigation. He further states that overall reduction in the water table appears to coincide with the development of groundwater, expansion of irrigated lands in the area, and more efficient irrigation practices. It is difficult to support these statements based on an analysis of his Figure 3 where the cumulative maximum diversion rate is plotted on the same chart as the water level elevation. If the decline of water levels in the aquifer was solely related to the diversion rate, there should be a linear decline in aquifer water levels coincident with the onset of increased diversion beginning in the 1960's. This is not the case. Aquifer water level decline is associated with drought conditions even as far back as the 1950's (see drought period A). The recent drought periods of the 1980s, 1990s and 2000s (C, D and E) directly overlay declines in water levels. His Figure 4 depicts how drought years have been more common since 1985 than average water years. This is coincident with his previously mentioned "pre-1985" conditions. Using Owsley's own data it is easy to demonstrate that simply stating that ground water pumping has caused aquifer declines is not correct. As early as the 1950's (drought period "A") a decline in aquifer levels was measured. This was before the onset of increased ground water diversion in the following decades. A more accurate and correct interpretation of the Owsley data is that the aquifer water levels are closely related to flow in the Big Lost River. Simply stated; during periods of below average flow in the Big Lost River aquifer water levels decline and during periods of above average flow



water levels increase to historic levels. What is important to note is that even during wet cycles of above average flow water levels do not continually rise. They rise to a certain level and then stop. This indicates that water levels reach equilibrium or maximum storage for the basin. When the system is satiated the excess water is lost to the basin. From a management perspective it may be wise to keep the basin below the satiated aquifer levels to enhance recharge during periods of high flow. This is a complex issue requiring much study including collection of field data and numerical modeling to resolve. Obviously, determining the best management approach for the Big Lost River Valley Aquifer is not something that should be or can be addressed in this water right transfer application. It is sufficient to point out that Mr. Owsley's statement that ground water pumping is responsible for aquifer decline is an over simplification and probably largely inaccurate without considering the dominating role of flow in the Big Lost River.

The Owsley report describes the strong connection between the Big Lost River and the aquifer. He correctly states that when the river channel is above the level of the aquifer water seeps from the river to the aquifer (losing reach). At some point in the past water levels in the aquifer were above the level of the river and water seeped from the aquifer to the river (gaining reach). Since the 1990's the aquifer and river have been disconnected below Moore. This is consistent with the onset of mostly drought conditions beginning in the mid-1980's and most importantly the implementation of "Rule 30". Mr. Owsley does not discuss "Rule 30", but it is an important reason for the separation of the river and aquifer below Moore and the disappearance of "rising waters". IDAPA Rule 30 describes how the water master may elect, with the approval of the Director, to deliver water through the Eastside Canal. The rule was established to reduce the excessive "shrink" (river seepage to the aquifer), which occurs through the natural river channel. The Eastside Canal flows along the east side of the valley. Sediments near the sides of the valley have lower permeability due to the deposition of alluvial fans, the deposition of clay and silt from flood over bank deposits, and less high energy river erosion. Thus, the water masters' found that more water could be delivered downstream through the Eastside Canal than the channel of the Big Lost River. Preferential use of the Eastside Canal over the River was occurring informally for years prior to the formal decree of "Rule 30" and accounts for the many old and relic head gates observed along the channel of the Big Lost River between Moore and Arco. An important side effect of "Rule 30" has been the decrease in aquifer recharge via seepage from the Big Lost River. It is unreasonable to expect that aquifer levels will rebound to "pre-1985" levels by curtailing ground water pumping. Consideration must be given to allowing water to flow in the natural channel of the Big Lost River (this is an option under Rule 30).

The Owsley report discusses the importance of the width of the valley in controlling which parts of the river are gaining or losing. Based on vegetation mapping from 1960's topographic maps, it is surmised that narrow parts of the valley are gaining reaches of the river. This is speculated on the conservation of mass and assumes that the basalt flow blocking the valley has a lower hydraulic conductivity relative to sediments of the aquifer. It is important to note that 1) the lava flows were extruded onto the plain and probably do not extend to depth, thus the conservation of mass (i.e. narrowing of hydraulic flow tubes) may not be a valid argument, 2) in many instances, rubblized and



fractured basalt can have higher hydraulic conductivity than sediment, in this case ground water would preferentially flow into basalt (see the water table map of Bassick and Jones, 1992) and 3) basalt is resistant to surface water erosion and it can force streams into narrow channels of fast flowing water, in these areas the erosion is dominant and deposition that occurs will be of coarse grained material generating sediments with high hydraulic conductivity.

Question 2: Is the water in the sub-aquifers of the Big Lost River Aquifer the source of the "rising waters" in the Arco area, if not, what is the source of the rising waters?

Owsley provides an acceptable definition of the term "rising water" as water emerging in the Big Lost River Channel and springs in the reach from the Arco Diversion to the Arco Gage (his figure 6). As defined, "rising water" can only occur when the ground water levels intersect land surface. The ground water can either be shallow perched water or deeper water from the main portion of the aquifer. Historically, under wetter conditions, and prior to the diversion of water under Rule 30, "rising water" was prevalent. The valley has been largely devoid of rising water for the past 30 years, however, it can re-occur under the right conditions. In 2011 "rising water" occurred at the Arco Gage and in the Ferris Slough (District 34 Annual Watermaster Report for 2011) when levels in the aquifer rose due to several years of near average flows in the Big Lost River from 2009 to 2011 (Owsley Figure 4).

The source of the "rising water" and the fact that it has been absent for three decades is not a mystery. As a matter of record, the Conjunctive Administration of Ground and Surface Water Rights (Rule 50 in IDAPA 37.03.12) defines how IDWR manages and how mitigation will be made by junior water users to senior water users. Parkinson Farms received a letter from IDWR on May 2, 2013 (Exhibit XI) listing the cost for mitigation of \$2516.27. By all accounts, IDWR knows the connection between surface water and ground water in the valley and has established a vehicle for mitigation to senior users. What is a mystery is why the director is asking about the source of "rising water" in this transfer application?

In response to the Director's question, Owsley cites two possible sources; 1) an elevated regional aquifer level, and 2) perched water. He presents two bulleted lists of observations. One list is of observations supporting the deep aquifer subunit contributions. A second list is of observations supporting the uppermost aquifer subunit contributions to rising waters. It is clear that the amount of water contributing to the rising water from the regional aquifer versus the uppermost perched aquifer cannot be quantified with currently available data. Owsley concludes by stating the obvious that 1) if regional aquifer levels were elevated to a point where the upper most aquifer subunit became saturated "rising water" would occur and 2) if regional aquifer levels increased to the point that the aquifer and river became reconnected near Moore, this reconnection would provide additional flow in the Big Lost River and increase the source of rising water. One final conclusion that Owsley should have made was that if flow below Mackay Reservoir increased to pre-1985 historical levels this would increase the source of rising water.



What is disconcerting with Owsley's response to the Director's question is the bias introduced with respect to inferring that ground water levels, and by inference ground water pumpers, are the reason "rising water" no longer occur in the valley. The short answer to the Director's question is that precipitation and runoff from the mountains surrounding the Big Lost Valley are the source of the rising waters. Obviously other factors come into play, but when there is minimal river flow below Mackay Reservoir everyone suffers and these conditions have prevailed for nearly 30 years. Ground water pumping and IDWR's Rule 30 also have effects, but the dominating issue is low flow in the river below the reservoir.

Question 3. Is the water in the various sub-aquifer units commingling in the deepened Parkinson Well because of decreasing gradient with depth.

Technically this question doesn't make sense. The Director must have meant to ask if a decreasing head with depth caused commingling. This is the way that Owsley responded to the question. His first sentence emphatically states that the various aquifer subunits are commingled in the Parkinson Well due to its construction and depth. Again, the question comes up, why is this part of the transfer hearing? Why not prosecute Mr. Parkinson and the Well Driller under a different venue? IDWR has drilling rules and regulations and commingling is not allowed. The reason is that there is sufficient evidence to draw this conclusion.

Owsley cites the known existence of a downward gradient from the test well 04N26E-21ABB1 approximately 3.5 miles south of the proposed POD. This well was used in the Crosthwaite et. al, 1970 study. The well log is provided in Figure 25 of that report and the description of the vertical head distribution is found on page 72. Crosthwaite et. al, 1970 found the depth to the top of each of four aquifer zones to be 10, 255, 325, 425, and 575 ft. The total depth of the deepened Parkinson Well is 249 ft and it was plugged back to 239 ft. Thus we see that the entire open interval of the well is within the upper most aquifer subunit defined by Crosthwaite et. al, 1970. Further, the well log in Figure 25 shows two rather thick layers of brown clay in the upper zone and notes in the remarks that there is good water-bearing formation to 235 feet. Even though the clay layers are relatively thick they can be classified as minor clay layers because they do not act as confining layers separating aquifer sub-units. The Crosthwaite clay layers are similar to the "minor" clay layers penetrated by the Parkinson Well. Clearly, Owsley is wrong in his assessment of the commingling in the Parkinson well. His mistake as is the Director's is to assume that every clay layer is a "major" clay layer acting as a confining layer providing hydraulic separation in the aquifer. It is possible to penetrate a clay layer in a well and still be in the same water bearing unit. This is well known in alluvial aquifers and not restricted to Big Lost River Valley.

The large differences in water levels over time that Owsley identifies can easily be caused by changes in water levels in the aquifer. Fluctuations in well water levels are common in this aquifer as evidenced by the Watermaster Report (Owsley page 9).



Question 5. What is the impact of pumping from the proposed point of diversion on rising water in the Big Lost River?

The Owsley response to this question again shows a bias against groundwater pumpers. He begins by stating that the impact from pumping at the proposed point of diversion on rising water is indirect but important. However, he fails to present evidence showing how this particular transfer will actually impact rising waters. In his discussion in response to Question 2 regarding the source of "rising water" Owsley is uncertain to the source and presents evidence for two possible sources but does not identify with certainty the source. Without further data, calculations or information the assertion by Owsley that is transfer will have an important impact on "rising water" is unsustainable as demonstrated by the following discussion.

When the connection between the channel of the Big Lost River Channel and the aquifer is broken, lowering the aquifer level has not effect on the "rising waters". By definition, the cause of rising water is the intersection of ground water with land surface. Referring to Owsley's Figure 8 we see in this location the separation between the channel of the Big Lost River and the water level in the well is more that 40 feet dating back to the late 1940's. At the Parkinson Well the separation between the channel of the Big Lost and the aquifer ranges between 20 and 40 ft (Owsley Figure 9). It is established that the connection between the aquifer and the Big Lost River has been broken above Moore for 30 years. Approval of this transfer will have no measurable impact on "rising waters".

Owsley cites previous Clearwater Geosciences, LLP impact calculations on aquifer levels for a very conservative pumping scenario (i.e. pumping the full rate 24/7 for the full time of the water right). New data from a pumping test of the Telford well 222 ft from the Parkinson well indicates that the impact to the aquifer from the approved transfer will be less than 4 ft at the pumped well and 2 feet $\frac{1}{4}$ mile away from the proposed POD. This new information even further diminishes the impact on the aquifer from the proposed transfer.

Question 6. What would be the impact on rising waters of pumping Parkinson's water right from the existing points of diversion?

The fact that the Director is asking this question is a bit puzzling as IDWR has admitted that the amount of natural flow in the Big Lost River that would have been available absent ground water pumping by junior users is unknown. Rule 50 has been created to establish the upper bounds on the amount and timing of natural flow augmentation. Rule 50.04(c) establishes a river depletion of 6,110 AF and Rule 50.04(c) establishes the timing that depletion occurs. In other words, these rules establish the otherwise unknown amount of water that would have been available absent pumping by junior ground water users. Under Rule 50 Parkinson Farms is subject to the same financial obligation for mitigation whether the ground water pumping occurs at the existing or proposed PODs. Under the law, the impact to rising water from ground water pumping is equal in all locations. If by these series of questions, the Director is trying to establish that pumping in some locations is more detrimental to rising waters than others, the mitigation schedule



established under Rule 50 needs to be modified to reflect the proper proportion of impact based on the location of a POD and probably the depth as well.

Modification of Rule 50 and adjustment of the mitigation payment schedule for surface water augmentation will affect over 100 ground water users. This water right transfer and the limited technical analysis by IDWR is not the place or venue for modifying Rule 50. Actually, by all accounts the current form of Rule 50 is appropriate based on the well established separation of the channel of the Big Lost River and the aquifer. In this case, all ground water pumpers will more or less equally impact levels in the aquifer in proportion to the volume of water they pump, independent of location.

In summary, over the past 30 years the climate has changed significantly reducing the amount of water released to the Big Lost River below Mackey Reservoir. Less water in the valley is the major factor for reducing surface water flows to supply senior users. It is unknown if and when the climate will return to pre-1985 conditions. Surface water discharge or "rising waters" have also been reduced by decreased aquifer recharge by the diversion of water to the Eastside Canal under Rule 30 and ground water pumping, which has lowered the water table. Even with rescinding Rule 30 and shutting down most ground water pumping the data suggest that it would be unlikely that a reliable connection could be re-established between the Big Lost River and the aquifer to restore "rising water". Further, it seems unlikely that these actions would be in the local public best interest. IDWR has established under Rule 50 a means for augmenting and mitigating injury to senior users by junior users. Under the current hydrogeologic conditions and under the existing IDWR Rules it makes no difference if water is pumped at the existing POD or the proposed POD.

Question 7. Over the last 20 years, what are the quantities of water diverted by Water District 34 and delivered for ground water recharge?

Although interesting and important work; this question is not germane to this water transfer application. It is answered in the Owsley Report.

Response to the Owsley conclusions

It appears that the Director and Mr. Owsley are interested in re-establishing the hydraulic connection between the Big Lost River and the aquifer down to Arco. Without a return to the pre-1985 climate and corresponding flow in the Big Lost River it is probably not possible. Water management in the valley has evolved over the past several decades to support the separation of the channel of the Big Lost River from the aquifer. This has been in response to climate change, actions by individuals and IDWR rules. From a management perspective this minimizes losses from the aquifer to lower zones due to percolation, reduces canal "shrink" and decreases losses to evapotranspiration. It also maximizes recharge to the aquifer when flow does occur below Mackey Reservoir. The downside is that several senior water users have lost access to surface water. However, IDWR has established Rule 50 to mitigate for losses to senior users.

Exhibit XXIII



Clearwater Geosciences, LLP
Ground Water Development and Exploration

July 31, 2013

Mr. Ralph Parkinson
2253 North 3100 West
Arco, ID 83213

RE: RESPONSE TO EXHIBITS PRESENTED BY SPECK AND JENSEN

Dear Mr. Parkinson,

This letter was prepared to provide response and comments to the exhibits presented by Mr. James Speck and Mr. Kirby Jensen on the Application for Transfer No. 77610 / Parkinson Farms.

I will focus primarily on the Brockway memo dated July 19, 2013 as it covers the technical content important to this transfer. I will touch briefly on Mr. Jensen's exhibit but it appears that many of his issues are legal ones that are better addressed elsewhere.

In several areas, Dr. Brockway agrees with conclusions I presented in my previous report submitted in preparation for the hearing. I will focus on areas of difference with the Brockway Memo following a question by question format.

Question 1

I agree that there does not appear to be a valley wide perched aquifer and I discuss the concept of a braided stream / cut and fill depositional environment in my previous report that limited the development of a widespread perching layer. Dr. Brockway cites similarities in well hydrographs completed at different depths as evidence that communication between geologic strata is prevalent. He mentions that the aquifer behaves as a single unit although locally it may appear semi-confined. He also mentions that he believes that vertical flow in poorly sealed wells is fairly insignificant compared to the overall aquifer discharge. His conceptual model of the aquifer is very similar to mine.

Brockway mentions the statistical analysis that he performed in his report for the first hearing. I have concerns about his statistical analysis and will repeat a discussion here for the record. On page 24 of the original Brockway report he presents a greatly simplified equation for two plots, 1) water levels in a well versus a 3-year backward moving average of streamflow at Mackay, and 2) water levels in a well versus ground water pumping. When you think about it, water flowing in the Big Lost River does not directly affect ground water levels; water seeping from the river channel to the level of the aquifer does. This is a subtle but important difference. Seepage depends of the permeability of the river channel, the length of the wetted perimeter, the length of the stream, the duration of wetting and several other factors. All these factors are lumped into a single measure of the annual volume of flow at a gauge station below Mackay. There is no information on whether the flow was slow and continuous allowing much time for seepage or a rapid pulse that moved through the river channel quickly allowing less time for seepage. Water levels in wells are also affected by other factors, for instance groundwater flowing into and out





of the basin, infiltration from precipitation, evapo-transpiration, etc. These factors are also lumped into the streamflow term as can be seen by looking at the Brockway equation:

$$GW\ Level = -0.0987 \times Streamflow + 0.777 \times Pumping$$

His statistical analysis compares how well these two terms match ground water levels in a well. It is obvious that the ground water pumping term will have a more direct relationship to ground water levels than the basket of factors that are lumped into the streamflow term.

A more complete hydrologic equation for aquifer levels would include more terms:

$$GW\ Level = +/- (valley\ under\ flow) - (ground\ water\ pumping) +/- (river\ gain/loss) + (canal\ leakage) + (infiltration\ of\ precipitation) - (transpiration).$$

In Brockway's statistical approach he includes contributions from at least four terms into the single "streamflow" term, and then he used a 3-year backward moving average to develop a number to match to an average annual groundwater level. The use of a 3-year backward moving average intuitively makes sense but it could just as easily be 2 years or 5 years depending on the location of the well relative to the host of possible sources of recharge. Groundwater pumping on the other hand directly affects water levels in wells depending on the rate and duration of pumping and the location of pumping relative to the well. In theory a confined aquifer will respond very quickly to pumping, on the order of the speed of sound. Even unconfined aquifers will respond in weeks or months to pumping, certainly quickly enough to be captured within the year time period being considered. It is no wonder Brockway found a stronger correlation for groundwater pumping than streamflow. The streamflow term is a basket of parameters with long response times, which are very difficult to measure directly and have a tortuous relationship to the tangible measured parameter (streamflow). The results of the statistical analysis over emphasizes the importance ground water pumping because of the way the problem is set up.

To illustrate how important river seepage is to ground water levels I made a simple stock and flow model for the aquifer from approximately 4 miles north of Moore to 6 miles south of Moore. The aquifer is a rectangular box 200 ft thick and 4 miles wide where water can enter the box via valley under flow (25,700 ac-ft/year from Brockway) and through river seepage which is a percentage of annual flow in the Big Lost River (NWIS data base). Water can leave only by groundwater pumping or by flowing out of the model when the volume is filled. The results are plotted in Figure 1. River seepage is varied in Figure 1 between 5% and 20 % of streamflow. As can be seen, at 10% and above there is significant flow out of the model (i.e. above the green line the excess water leaves the model). At 5 % seepage the aquifer storage really never fills the aquifer, even during periods of high flow. At the highest seepage rates the model fills more quickly after a period of wet years. This model greatly simplifies the actual basin hydraulics but it does point to the fact that drops in water levels are extremely sensitive to river seepage. Changes to water management and agricultural practices compounded by climate change also have a great effect on aquifer water levels. Diversion to the East Side Canal and water conservation efforts through the conversion to sprinklers has greatly reduced infiltration. The drop in aquifer water levels is complicated. Dr. Brockway's assertion that groundwater pumping is the largest factor affecting groundwater levels cannot be supported on the basis of his



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statistical argument. Other investigators have pointed to variations in precipitation as being the single most important factor affecting water levels. Approval of this transfer will not have a significant impact on aquifer water levels as I demonstrated in my initial report.

Management of water resources in the Big Lost River Valley would greatly benefit from a calibrated ground water model.

Question 2

I have no comment on Dr. Brockway's response to this question and I refer you to my previous response to Question 2. I will point out that the connection between the aquifer and the channel of the Big Lost River has been broken to above Moore for several decades and approval of this transfer will have no measurable impact on moving this point down stream.

Question 3

This collaborates by earlier assessment that the well is open only to the upper aquifer zone. Since the connection between the aquifer and river is broken at the proposed POD, the slight decline in the aquifer water levels I have calculated will have no impact on rising waters.

Question 4

I have no comment on Brockway's response. I would point out that since he did his prior work, we conducted a pumping test on the Telford well and his calculations should be adjusted accordingly. He will find that the aquifer impacts will be less than previously calculated.

Question 5

Brockway's response to this question essentially agrees with the Owsley Report and then he goes on to add that pumping from this transfer might adversely impact the river/aquifer connection near Moore. The area Dr. Brockway is concerned with is considerably north of the area of rising waters as defined in Owsley's Figure 6. As pointed out in the preceding question, Dr. Brockway needs to recalculate the cone of depression based on new pumping test data and recontour his Figure 5. Undoubtedly, the contours will not extend as far as currently drawn. I will also point out that his calculations are based on the worse case pumping scenario for the water right (i.e. 24/7 pumping of the full transfer). A more realistic scenario would show less impact. Nevertheless, even taking Brockway's Figure 5 at face value, we see that only the 1-foot contour line extends to Moore. For the reasons cite previously, the actual drawdown will be less. It is unlikely that the reestablishment of the hydraulic connection will be delayed significantly and certainly not prevented by the proposed pumping as stated by Brockway. He correctly points to the need for an extended period of wet years among other things as being needed to reestablish the connection.

Question 6

An incorrect well log was used by Dr. Brockway in responding to this question. This well log is for Ruland Burke and it is near Blackfoot. Obviously it is within the Eastern Snake River Plain Aquifer. The correct well log that Dr. Brockway should have evaluated was the Wilse Nielson well log (Parkinson's Exhibit XVII). This well was drilled to 200 ft and the depth to water is 64 ft. The strata consists of sediment and thin basalt layers, which is consistent with the matrix of the Big Lost River Aquifer in this area. The well is open to the aquifer from 65 to 80 ft and



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terminates in thick sequence (133 to 200 ft) of hard gray clay, which is almost certainly a perching layer. Drilling deeper through this clay layer would be of no benefit as water would cascade from the upper zone to a lower zone, probably to the Snake River Plain Aquifer.

As I described in my previous report, I believe that all Parkinson wells tap the Big Lost River Aquifer and that the Eastern Snake River Plain Aquifer also exists at depth beneath the Parkinson Farms site. I present the Willard Bell Well to support his assertion. It is a 585 ft deep well drilled in T3N, R26E, Section 1, SE SW or about 2 miles north-northeast of Parkinson Farms. The well encountered some shallow water in sandy gravel to 35 ft. Below this was a sequence of clays to a depth of 205 ft where a sequence of mostly volcanic rocks with a few sedimentary layers was penetrated. Static water in the well is at 510 ft and the well has a total depth of 585 ft and is completed in broken basalt and cinders. It is extremely likely that the Willard Bell well is an Eastern Snake River Plain Aquifer Well.

Given the well logs that are now available for the Parkinson Wells, including the hand written notes on the 105 ft deep well drilled in 1966 by Cape Drilling and Pump Co., it is clear that the Parkinson wells are completed in the Big Lost River Aquifer. They are not completed in the Eastern Snake River Plain Aquifer. Therefore, this is a transfer and not a new appropriation.

Surface Water Rights in the Moore-Arco Reach

Brockway performed a review of the IDWR database for surface water rights with points of diversion in the subject area. From this list, he selected a subset that he considers to be likely fed exclusively by rising water. There is no rationale provided on the criteria used to make the short list. There is no attempt to show a technical argument that any of these POD's are hydraulically connected to the Parkinson's proposed POD (i.e. the main part of the Big Lost River Valley Aquifer). The definition, location, duration and other critical factors are missing for rising waters in the Moore-Arco Reach. Many of these claims may be associated with leakage from shallow perched zones, perhaps even fed by leaking canals or agricultural fields. Dr. Brockway developed the list using unknown criteria probably to support his argument that numerous water rights rely on rising water. The fact is that the rising water we are talking about, where the main part of the aquifer contacts the river channel, sloughs or springs to form a source of water has not occurred below Moore for decades. There has been some water formed probably associated with shallow seepage along near surface low permeability layers. However, this transfer will not affect these sources of rising water.

Conclusions

Dr. Brockway more or less accepts Mr. Owsley's report at face value. It is my opinion that Dr. Brockway does not present any significant new information or calculations. Due to a case of mistaken well log identity he classified the existing Parkinson POD as a Snake River Plain Aquifer well, which it is not. The correct well logs have been found and it is clear that the existing Parkinson POD wells are in the Big Lost River Aquifer. I think that all parties will have to agree to this when they review the correct well logs. The current and proposed POD are both in the same aquifer, thus, this is a transfer and not a new appropriation. Dr. Brockway provides a list of surface water rights with their POD's in the area of concern that he believes are exclusively fed by rising waters. The rationale for this selection is unclear and there is no evidence presented showing how the proposed transfer would create injury to these rising waters.



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Further, the list is not entirely consistent with the list of water right holders affected by Rule 50. The cause and location of rising water is so nebulous that it defies a proper scientific evaluation. It would take a great deal of study and computer modeling to make much advancement in our concept of rising water. There will always be a high level of uncertainty associated with rising waters. It is my understanding that through Rule 50, the IDWR and the local residents have a path forward for mitigating damages to surface water users from groundwater pumping.

I present a stock and flow model, which shows that slight variations in river channel seepage can have a significant impact on aquifer water levels. Seepage from a river channel is very hard to define accurately and can introduce significant uncertainty into calculations. This counters Dr. Brockway's statistical argument that ground water pumping has the greatest effect on aquifer water levels. I think he has over simplified a very complex problem. All other scientists that I know of after working on water in the Big Lost River Valley have attributed the variation in aquifer levels to changes in precipitation. Obviously, ground water pumping plays an important role, but it is not the most significant factor.

This recent interest in rising water by the IDWR Director has led the Protestants and even IDWR to search for the culprit that stole the rising water. Groundwater pumpers get all the blame when actually good old Mother Nature is the real cause. What is missing is a management approach that maximizes beneficial use of water in the basin.

In closing I will discuss a graph presented by Mr. Kirby Jensen. It is a graph showing flow in the Big Lost River from north to south. As water flows down river the flow decreases. This is the opposite of most rivers; which get larger downstream. The pioneers recognized this and named the river the Big Lost River. This has important implications for water management, because both the river and the aquifer are constantly losing water whether it is used by man or not. It is not known how long water resides in the aquifer. Dr. Brockway used a backward 3 year moving average and got a reasonable match to a well hydrograph. Within a few years, water in the aquifer leaks away. This aquifer is not like other aquifers where a base level can be established and it will remain there for some period of time with minimal amounts of water added. Restoring rising waters by curtailing groundwater pumping will come at a terrible cost to the residents of the Valley. An elevated water table will lead to much water being wasted to the Eastern Snake River Plain Aquifer, which would greatly benefit down gradient water users but not the local residents.

In my opinion, the proposed transfer will not have a significant adverse impact on nearby water users nor will it measurably impact the occurrence of rising waters.

Respectfully,

A handwritten signature in black ink, appearing to read "Thomas R. Wood".

Thomas R. Wood, PhD, PG





Sensitivity to River Seepage Term
Valley Underflow = Constant, GW Pumping = Actual,
Seepage percentage of Big Lost River Annual Flow as Shown

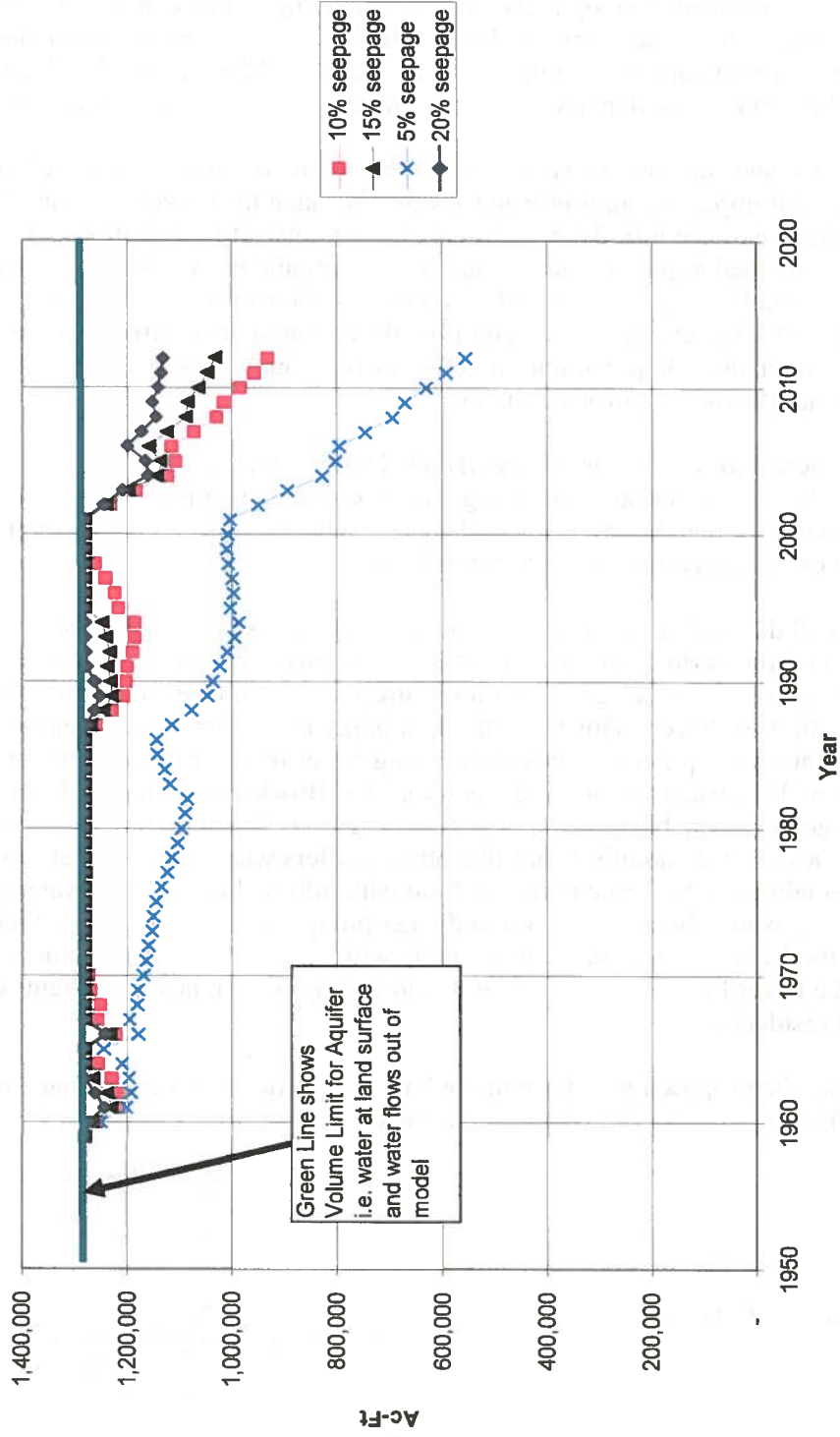


Figure 1. Plot of Acre – Feet in Aquifer Storage for a simple stock and flow model of Big Lost River Aquifer. Small changes in seepage factor through river channel make large differences in long term volumes of water in aquifer storage.

EXHIBIT XXIV

Parkinson Farms Statement by Ralph S. Parkinson.

The ultimate source of all surface water, including rising waters, and all ground water in the Big Lost River area is the miracle of the yearly water cycle which is organized and controlled by God. He gives us wet years and dry years perhaps to get our attention and help us recognize our dependence on Him.

In this case may the true facts prevail!