

**BROCKWAY**  
ENGINEERING  
P.L.L.C.

Hydraulics

Hydrology

Water Resources

April 8, 2004

Holden, Kidwell, Hahn & Crapo  
Attn.: Kent Foster  
P.O. Box 50130  
Idaho Falls, ID 83405

RECEIVED

JUN 16 2004

Department of Water Resources  
Eastern Region

RE: Hydrologic Impact Analysis-Howard Taylor Transfer

Dear Kent:

I have finally completed the impact analysis in support of the proposed transfer by Howard Taylor & Sons Inc. My understanding is that a ground water right from the Shenton property in Section 31 T11N R35E would be transferred south to Section 5 T9N R35E. The irrigated area would be approximately ~~134~~<sup>238</sup> acres, and I assumed that the transfer would include water right 32-2135 which has a priority of 8/15/1956 and that pumping under that right likely began in 1957.

The Shenton property (FROM cell) is located in ground water model cell 42,48 which is a boundary node of the model area. The proposed new place of use (TO cell) is in ground water model cell 40,48 which is not a boundary cell.

The U of I Transfer Spreadsheet was utilized with a trimester pumping rate of 100/af so that the simulated impact at each Snake River reach is equivalent to the percentage impact.

When the spreadsheet is run with the simulated transfer of 12 miles directly south between the center of the two cells, the simulated increased impact is over 35%. This is obviously an error. When the spreadsheet is utilized assuming a transfer between cells 41,48 and 39, 48 which is a distance of 12 miles but one cell south of the actual points of diversion, the predicted increase in impact is a maximum of 2.5 %.

Similarly, when the analysis is performed using other combinations two cells apart north to south, the simulated impact is a maximum of 2.5%. The best estimate of potential impact is achieved using a transfer between cells 41, 48 and 39, 48.

CHARLES E.  
BROCKWAY,  
PH.D., P.E.

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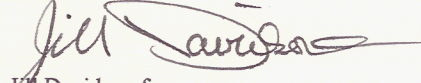


I have enclosed the printout of the Transfer Spreadsheet graphs and data input, which show the impact in each reach of the Snake River and the net change in depletion for each reach. Note that the maximum increase in depletion occurs about 22 to 25 years after the inception of pumping at the new site at about 2.4 percent.

The Transfer Guidelines do not require mitigation if the calculated change in net depletion is below 5 percent. Based on this analysis, no mitigation should be required for this proposed transfer. IDWR may and should be concerned about the discrepancy in calculated net depletion when the boundary cell is used.

Please feel free to call should you have any questions or comments.

Sincerely,



Jill Davidson for  
Charles E. Brockway

CEB/jjd

Enclosures: ESRP Model Nodes  
Aerial Photo  
Transfer Spreadsheet Output

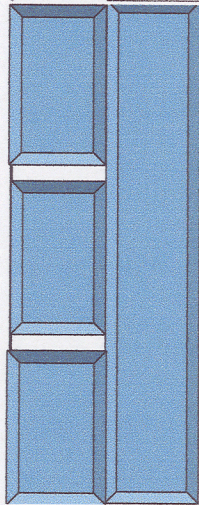


# GROUND-WATER RIGHTS TRANSFER SPREADSHEET

UNIVERSITY OF IDAHO - IDAHO WATER RESOURCES RESEARCH INSTITUTE

IDAHO DEPARTMENT OF WATER RESOURCES

Cells this color are set up for user entries



ENTER STARTING DATE FOR SIMULATION. THEN PUSH "UPDATE DATES" BUTTON

YEAR 1957

SEASON Spring

Transfer #1: Pending

Transfer #2: Howard Taylor

Shenton

'FROM1' CELL 41

'FROM2' CELL 48

'FROM3' CELL

ENTER CELL Taylor

LOCATION 'TO' CELL 39

ROW 48

COLUMN

| REDUCED PUMPIN<br>Transferred Vol. | Trans #   | Pending | %Pumped | REDUCED PUMPIN<br>Transferred Vol. | Trans #   | %Pumped |
|------------------------------------|-----------|---------|---------|------------------------------------|-----------|---------|
| AFTRI 100                          | 2007      | 1.00    | 0       | AFTRI 0                            | 2007      | 0       |
| AFVIR 300                          | 2012      | 1.00    | 0       | AFVIR 0                            | 2012      | 0       |
| 2004 to                            | 2013      | 1.00    | 0       | 2003 to                            | 2013      | 0       |
| 2008                               | 2018      | 1.00    | 0       | 2008                               | 2018      | 0       |
| 2012                               | 2022      | 1.00    | 0       | 2012                               | 2022      | 0       |
| 2013                               | 2031      | 1.00    | 0       | 2013                               | 2031      | 0       |
| 2017                               | 2032      | 1.00    | 0       | 2017                               | 2032      | 0       |
| 2022                               | 2042      | 1.00    | 0       | 2022                               | 2042      | 0       |
| 2031                               | 2043      | 1.00    | 0       | 2031                               | 2043      | 0       |
| 2032                               | 2052      | 1.00    | 0       | 2032                               | 2052      | 0       |
| 2042                               | 2072      | 1.00    | 0       | 2042                               | 2072      | 0       |
| 2043                               | 2073 >>>> | 1.00    | 0       | 2043                               | 2073 >>>> | 0       |
| 2052                               |           |         |         | 2052                               |           |         |
| 2053                               |           |         |         | 2053                               |           |         |
| 2072                               |           |         |         | 2072                               |           |         |
| 2073 >>>>                          |           |         |         | 2073 >>>>                          |           |         |

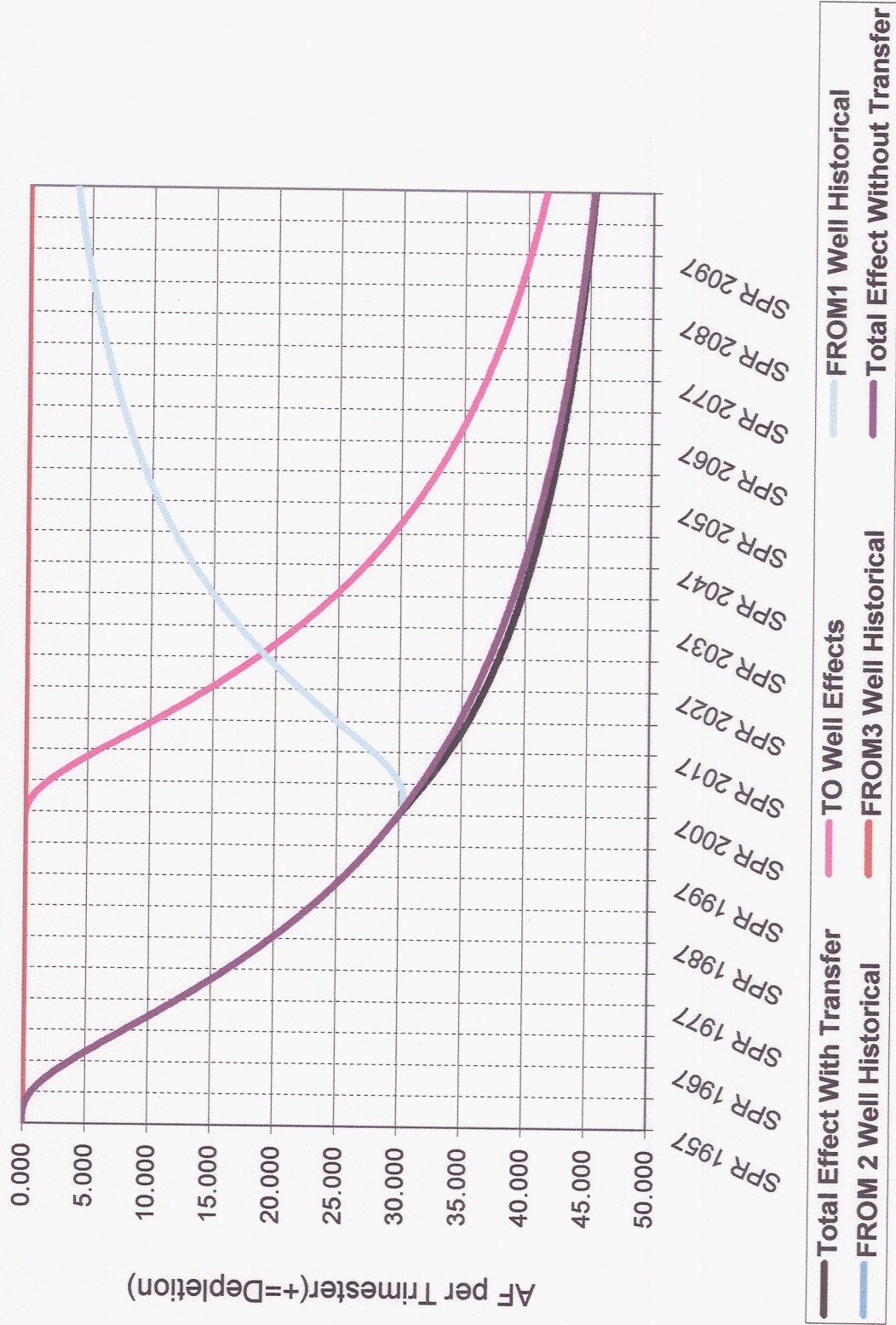
| TRIMESTER     | TO WELL       | FROM1 WELL       | FROM2 WELL    | FROM3 WELL       |
|---------------|---------------|------------------|---------------|------------------|
| Protected Use | With Transfer | Without Transfer | With Transfer | Without Transfer |
| AF/TRIMESTER  | AF/TRIMESTER  | AF/TRIMESTER     | AF/TRIMESTER  | AF/TRIMESTER     |
| SPR 1957      | 0.00          | 100.00           | 0.00          | 0.00             |
| SUM 1957      | 0.00          | 100.00           | 0.00          | 0.00             |
| WIN 1957      | 0.00          | 100.00           | 0.00          | 0.00             |
| SPR 1958      | 0.00          | 100.00           | 0.00          | 0.00             |
| SUM 1958      | 0.00          | 100.00           | 0.00          | 0.00             |
| WIN 1958      | 0.00          | 100.00           | 0.00          | 0.00             |
| SPR 1959      | 0.00          | 100.00           | 0.00          | 0.00             |

Spring  
Summer  
Fall



# Hydrologic Response--Heise/Ashton to Lewisville

Transfer No: Pending    Applicant: Howard Taylor



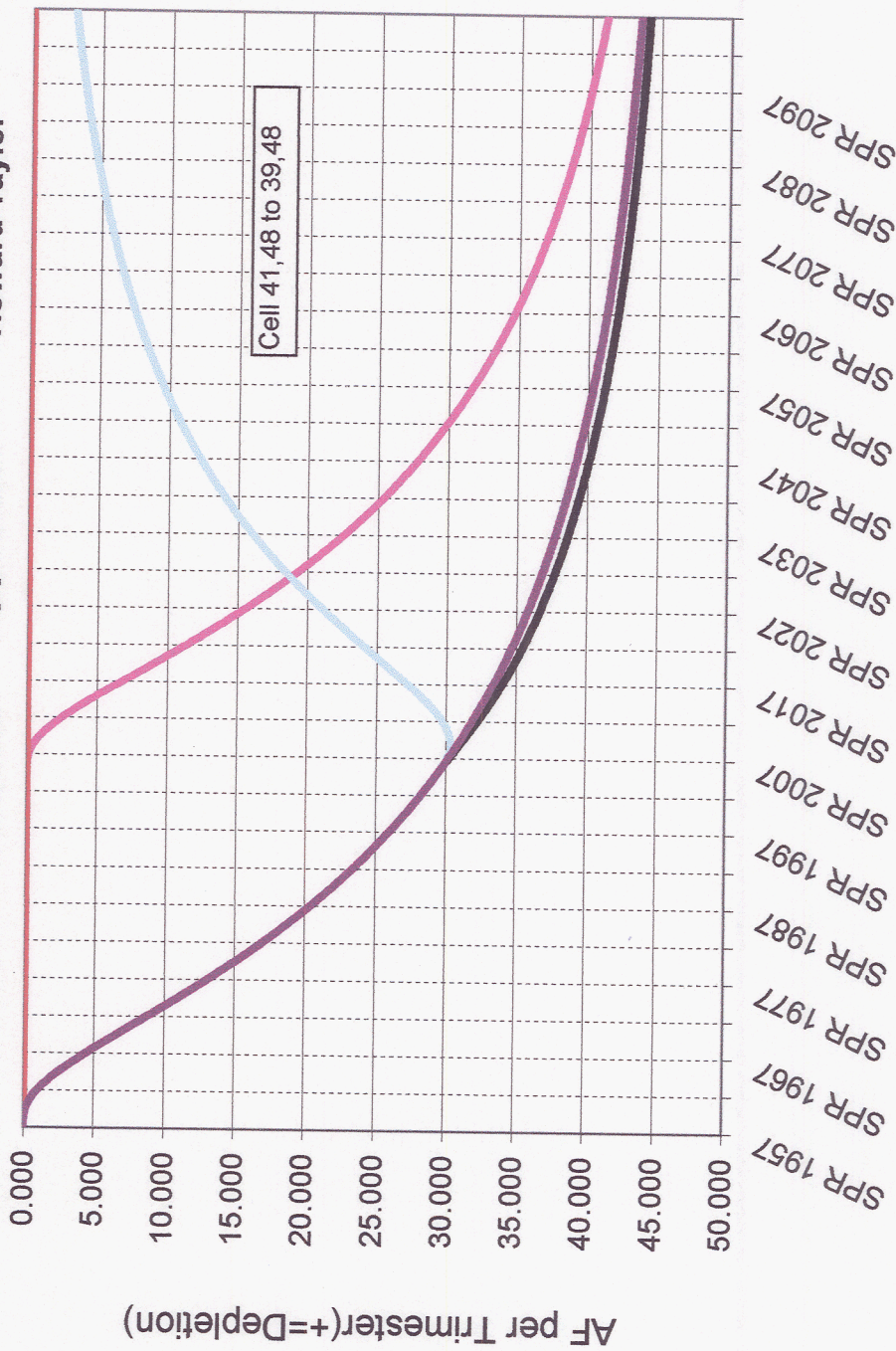


# Hydrologic Response--Near Shelley to Neeley Reach

Transfer No Pending

Applicant:

Howard Taylor

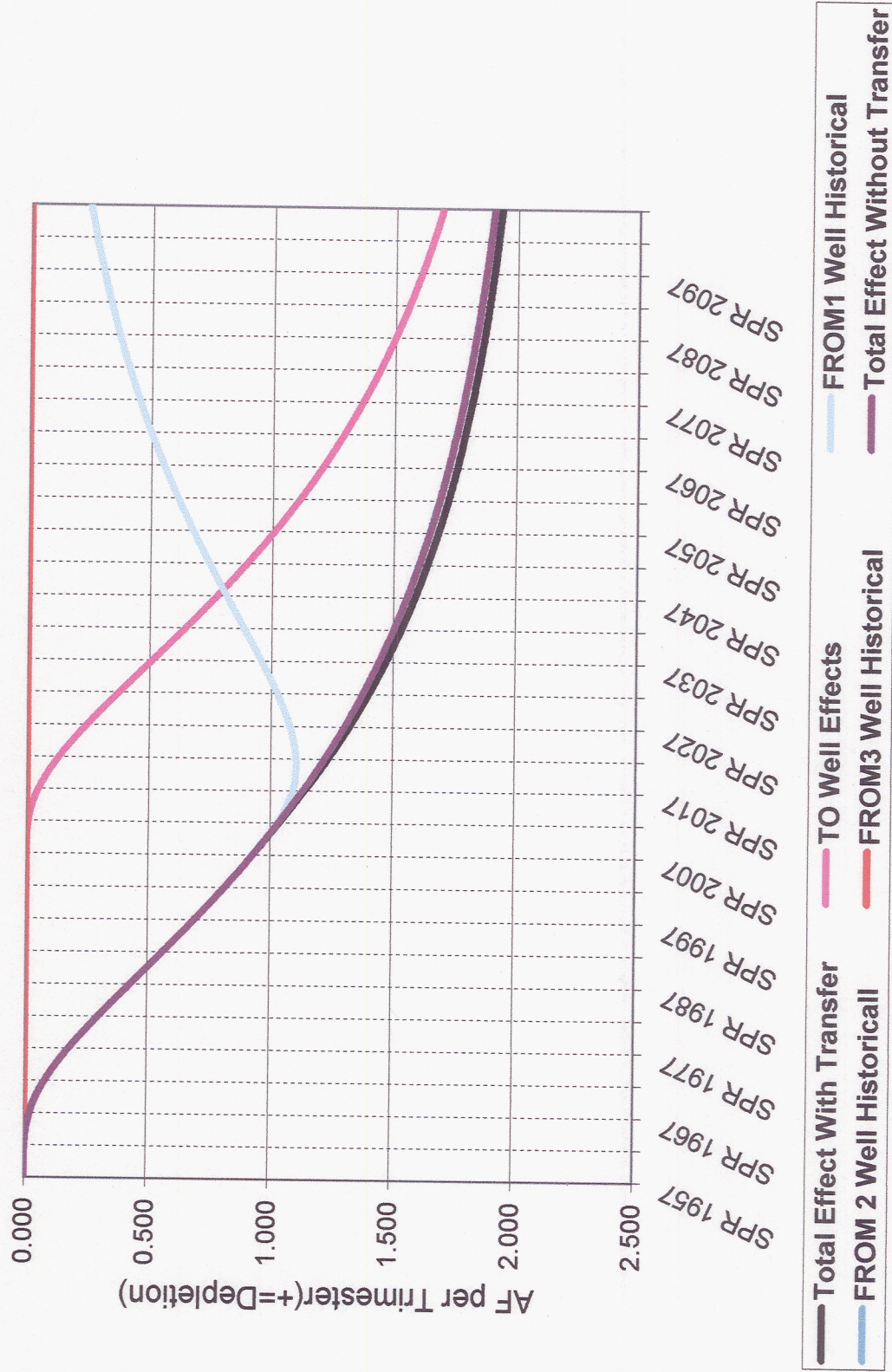


- Total Effect With Transfer
- FROM 2 Well Historical
- TO Well Effects
- FROM 3 Well Historical
- FROM 1 Well Historical
- Total Effect Without Transfer



# Hydrologic Response--Neeley to Minidoka

Transfer No: PendingApplicant: Howard Taylor

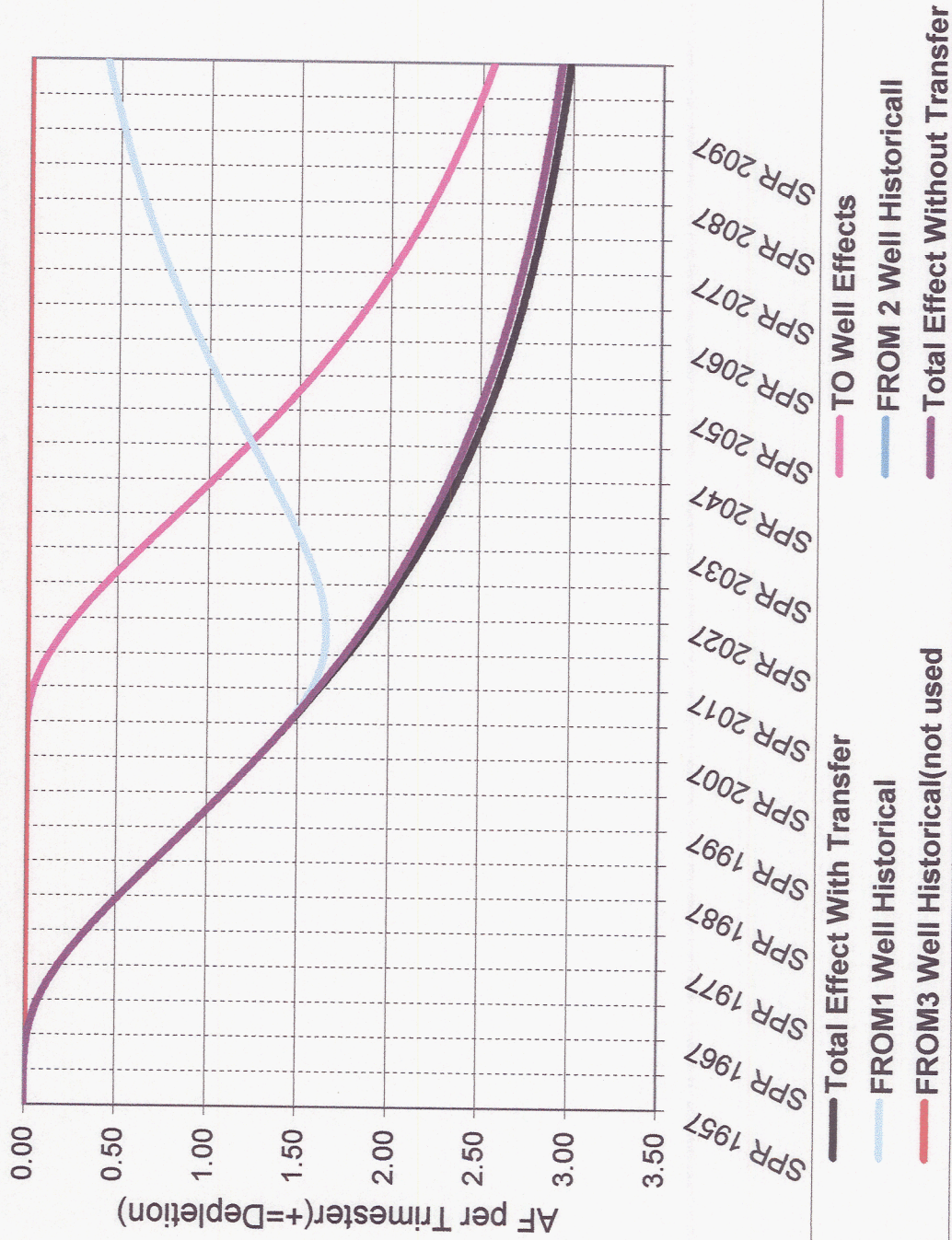




# Hydrologic Response-- Milner to King Hill Reach

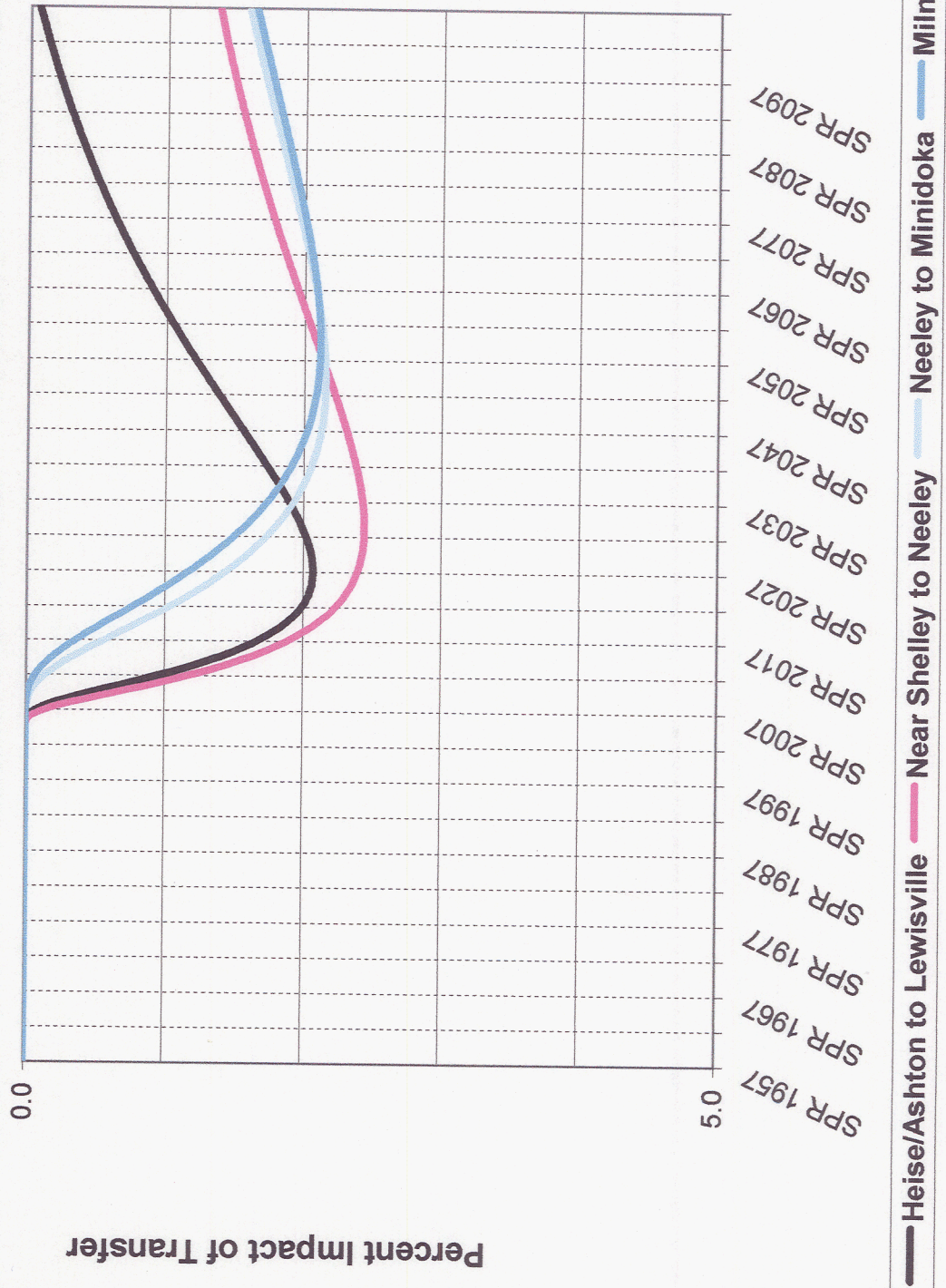
Transfer No Pending

Applicant: Howard Taylor





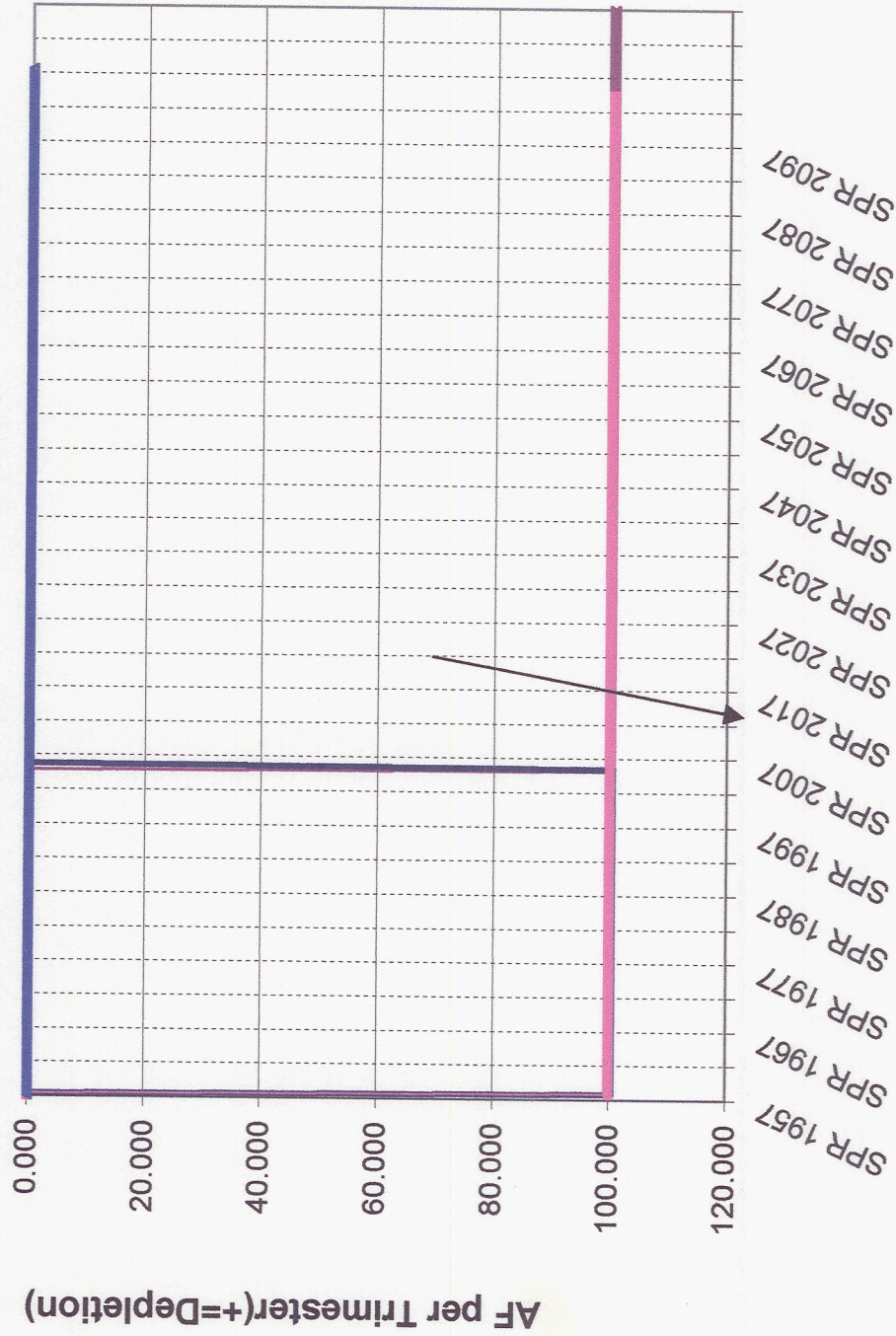
Net Percent Transfer Impact  
Transfer No: Pending      Applicant: Howard Taylor





# Pumping and Mitigation Schedule

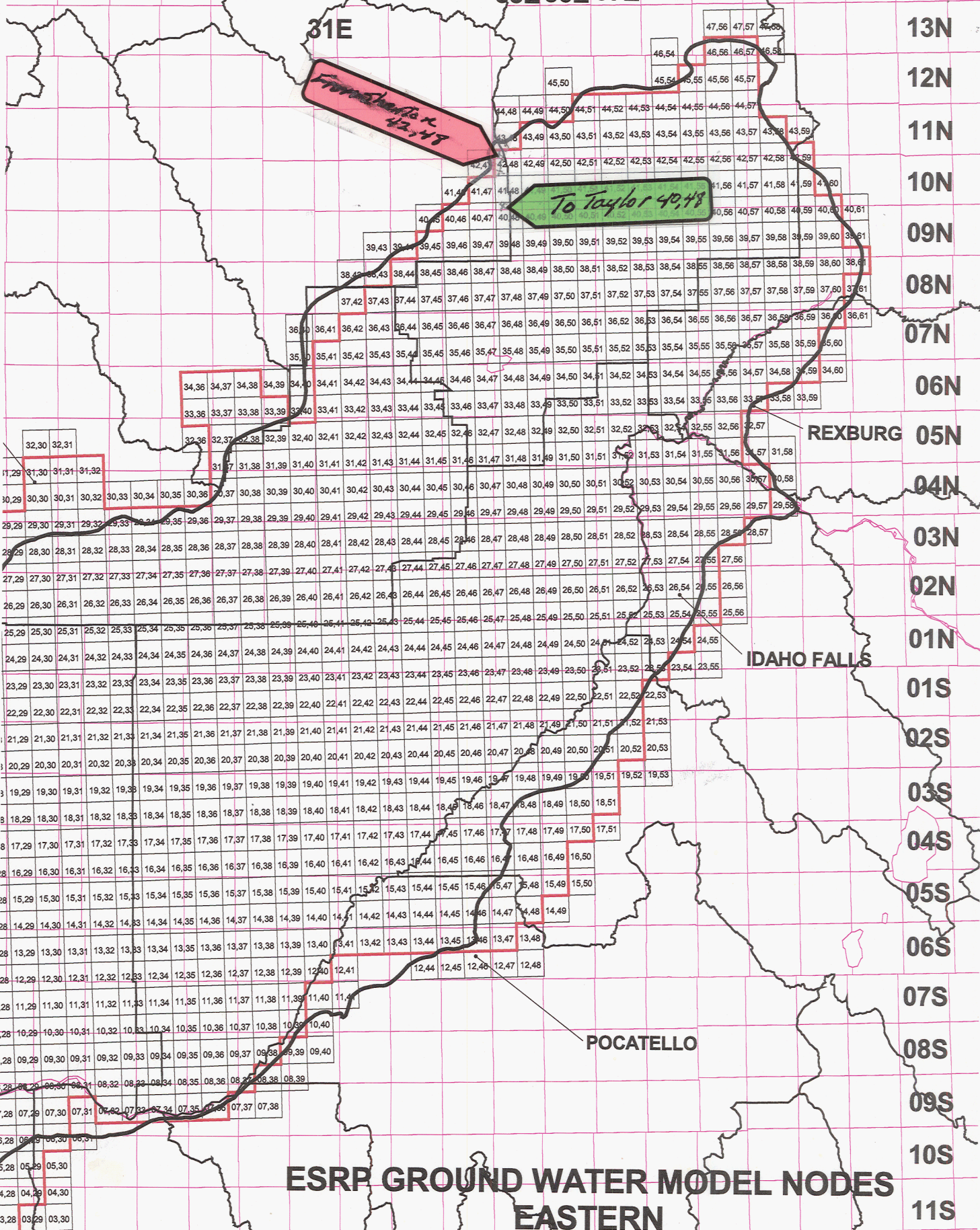
Transfer No. ending      Applicant: Howard Taylor



TO Well    From 1 Well w/ Transfer    From 2 Well (Mitigation)



25E 26E 27E 28E 29E 30E 31E 32E 33E 34E 35E 36E 37E 38E 39E 40E 41E 42E



**ESRR GROUND WATER MODEL NODES  
EASTERN**

25E 26E 27E 28E 29E 30E 31E 32E 33E 34E 35E 36E 37E 38E 39E 40E 41E 42E 43E



Howard Taylor & Sons

From  
To

W.D. 120

Blackfoot

Pocatello

Magic Valley G.W.D.

N. Snake G.W.D.

Shoshone

Bliss

Twin Falls

Burley

