



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720 -(208) 327-7900

Hydrology

CECIL D. ANDRUS

GOVERNOR

R. KEITH HIGGINSON

DIRECTOR

August 24, 1990

William A. Seefried
Box 176
Mackay, ID 83251

#138182
CERTIFIED MAIL

Dear Mr. Seefried:

As you know, in mid-July of 1990, the department conducted some tests to determine the hydrologic effect, if any, of the pumping of your well located in the NENE Sec. 3, Twp. 6N, Rge. 24E, B.M. upon the outflow of Kent Spring which is used by Hugh Dorst and Donald Cain Sr.

The tests do show that as your well is pumped, less flow is available from Kent Springs. The investigation of this matter also shows there are several sources of water for Kent Spring including losses from the Big Lost River, underflow from Cliff Creek to the west of the spring, seepage from the Darlington Canal and from irrigation north and west of the spring.

As you know, the department has been intensively involved in the review of the administration of surface and ground water in the basin. The department's involvement in this activity has been substantial during the last two (2) years and included systematic meetings with community leaders and the water users in general concerning the matter.

As specific relationships between ground water users and surface water users ^{are} ~~is~~ identified, the department will issue administrative orders to provide for equitable distribution of water.

As a result of the study conducted by the department, it is hereby ORDERED that effective immediately, use of water from your well in the NENE Sec. 3, Twp. 6N, Rge. 24E, B.M. is subject to the following conditions:

1. Use of water from the well is subject to the control of the watermaster of State Water District No. 34, Big Lost River. (This was and is a condition of approval of the transfer which allowed construction and use of the well).

August 24, 1990

2. Diversion of water from your well shall be shut off or reduced in rate of flow if the flow from Kent Springs under water right no. 34-0414 is less than 1.9 cfs (80 miner's inches) provided:

- a) You may propose mitigation reasonably acceptable to the owner of water right no. 34-0414 to allow continued use of your well; or
- b) You may make other proposals acceptable to the department and the owner of water right No. 34-0414 to allow the continued diversion and use of water from the well or from other wells.

3. The department reserves jurisdiction in this matter to require water right administration relative to other surface and ground water rights in the Big Lost River drainage.

By copy of this letter, the department is instructing the watermaster of the water district, Doug Rosenkrance, to shut off the diversion from your well if the conditions described above which allow continued use of the well are not complied with within ten (10) days of receipt of this letter.

Section 42-1701A(3), Idaho Code, provides that any person aggrieved by a decision of the director may request a hearing within fifteen (15) days of receipt of the decision. A request for hearing must be written and must state the grounds for requesting a hearing.

Please feel free to contact the department if you have questions.

Sincerely,


NORMAN C. YOUNG
Administrator

c: IDWR - E. Region
IDWR - Hydrology Sec.
Hugh Dorst and Donald Cain, Sr.
Doug Rosenkrance

Encl: 1

Effect Of Pumping Seefried Well On Flow Of Kent Spring

by

John E. Lindgren

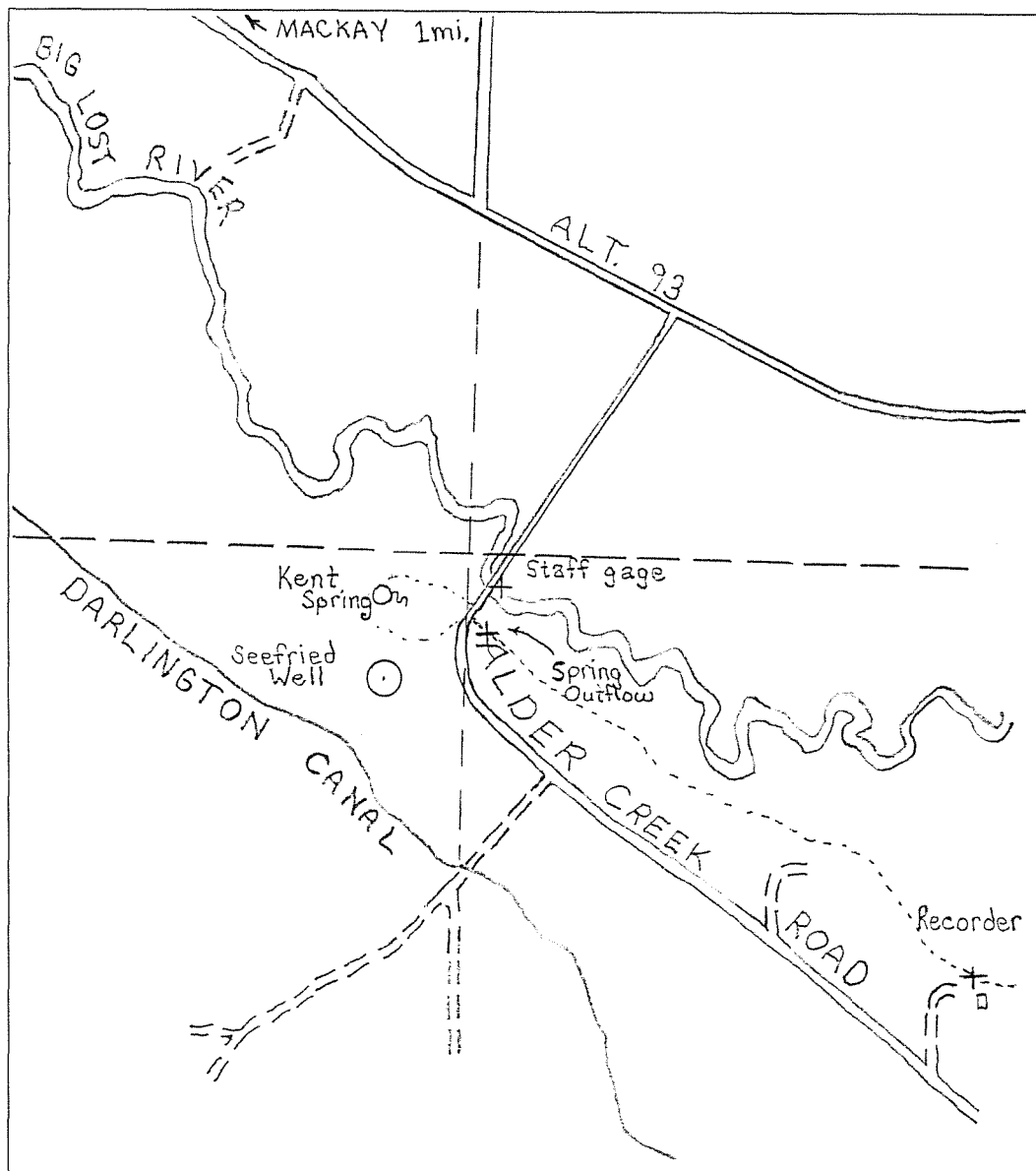
Introduction

This report is to describe the collection of data on the hydrologic effects of pumping the Seefried well in the NE1/NE1/4 Section 3, T6N, R24E. The data collected and additional observations provide the basis for the evaluation of the impact of pumping the Seefried well on the outflow of Kent spring.

Location

Kent spring is located two and a half miles southeast of Mackay, Idaho above Alder Creek Road at the NE NE corner of section 3 Township 6N Range 24E. Figure 1. shows the relative location of Kent spring to the Big Lost River, to the Seefried well and the Darlington canal. The spring rises in old flood channel of the Big Lost River originating in reworked sediments of the river and Cliff creek. The spring outflow concentrates to a single channel just below Alder Creek road 300 feet west of the Big Lost river. The Seefried well is located approximately 250 feet southwest of this site. The Darlington canal is an additional 200 feet

Figure 1.
Location Map, Area of Kent Spring
near Mackay, Idaho



Seefried pump evaluation

southwest of the well site.

There are four sources of water for Kent spring. The natural sources are losses from the Big Lost river and from underflow from Cliff creek to the west of the spring. The additional sources are seepage from the Darlington canal and from irrigation north and west of the spring.

During the time observations were made the Seefried well was pumped between 1700 and 1600 gallons per minute. A portion of this water was applied by sprinkler to lands southwest of the Darlington canal, and the surplus was dumped into the Darlington canal.

Procedures

Department of Water Resources staff installed a rectangular weir and a Stevens type A recorder with staff gage on Kent spring outflow channel near the Dorst diversion about one mile below the culvert under Alder Creek road. The stream section was rated using a pygmy type current meter by department personnel, and the recorder was started on June 14, 1990. Dennis Dunn of the Department of Water Resources Eastern Region office installed a staff gage on the collection channel of the spring and established a rating section 50 feet below Alder Creek road on July 13. The section was rated using a pygmy type current meter over the period July 13 through July 16. On July 14 a staff gage was also established on the right embankment of the Big Lost river just below the bridge on Alder Creek road in order to monitor any changes in head of the river during the pumping period.

The elevation of the groundwater surface in the Seefried well was measured before and during the pumping period using a steel tape. The rate of pumping was monitored during the test period as well. No pumping had taken place for two weeks previously.

An engineers level was used to establish the relative elevations of the staff gage on the Big Lost River, the gage on the spring outflow rating section and the land surface at the Seefried well.

The Big Lost River Irrigation District was asked to maintain a constant flow in the Big Lost river and in the Darlington canal for the duration of the study. Data supplied by their office show small variations in flow and the river staff gage installed at the bridge on Alder Creek road showed very little fluctuation. The Darlington canal increased its flow from 30 to 36 cubic feet per second during the period July 12 to July 16. Both the river and the canal were operating at similar levels for five days preceding the beginning of pumping.

Observations and Results

Pumping began in the Seefried well at 8:25 am on July 14. The depth to water in the well was 6.34 feet below the bottom of the pump housing, and the pumping rate was 1700 gallons per minute. The spring outflow was measured at 1.42 cfs and the water surface at the spring outflow rating section was 4.5 feet below the water level in the well and .62 feet above the level of the river at the installed staff gage. At the recorder site the staff gage read .31 feet corresponding to a flow of 1.1 cfs. Figure 2 shows the response of the Kent spring outflow during the study period. The flow data from the recorder near the

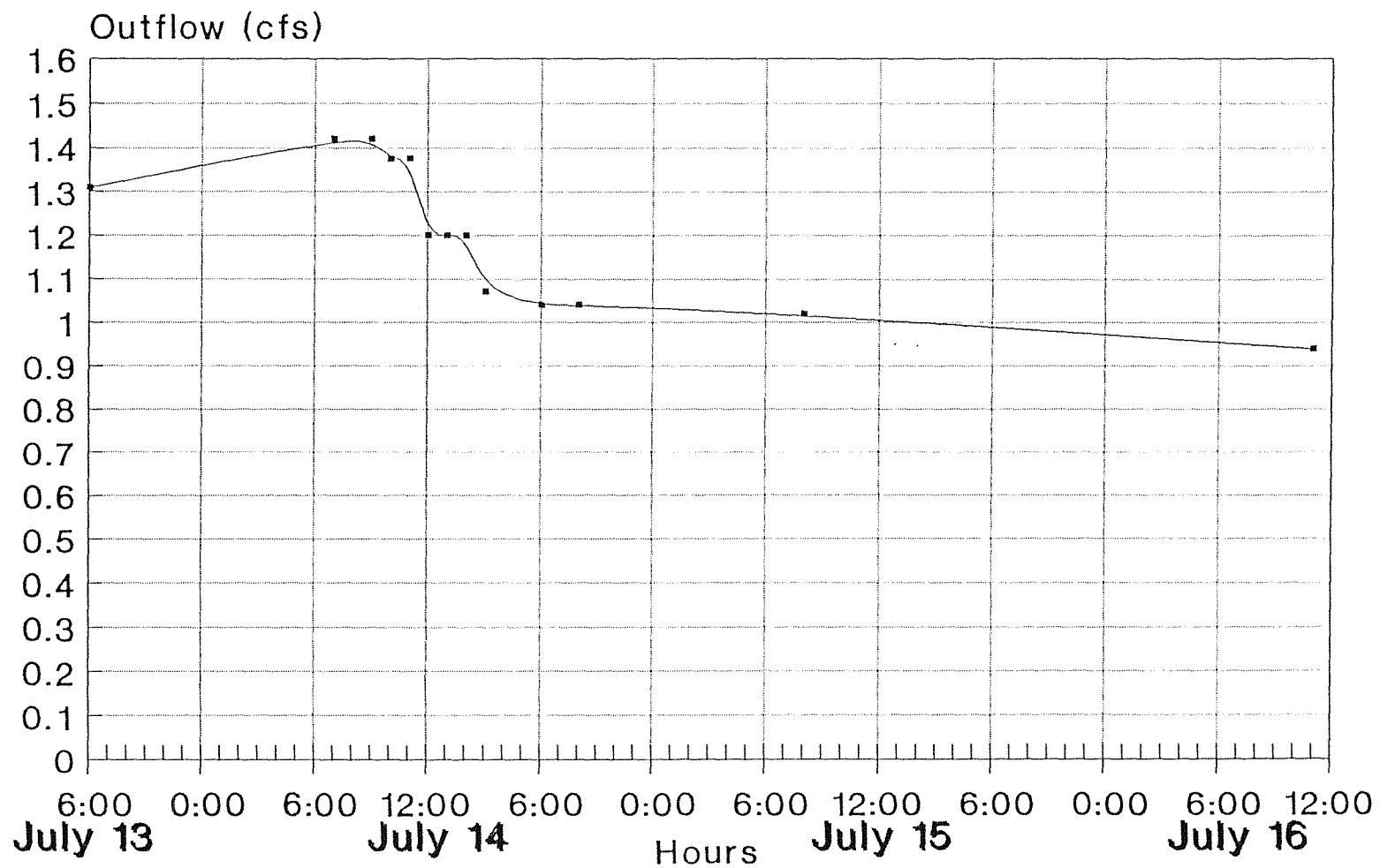
Dorst diversion for July 12 through July 19 is shown in Figure 3.

After one hour of pumping there was no change at spring rating section and the depth to water in the well had increased to 15.4 feet which is 4.6 feet lower than the water surface in the spring outflow section. The water level in the well declined further to a maximum of 15.88 feet below the bottom of the pump housing on July 15. The pumping rate continued at 1700 gallons per minute.

At 10:30 am July 14 the staff gage at the spring outflow section showed a decline and by 12:30 pm the gage reading was reduced by .015 feet , .20 cfs. At 6:00 pm the flow had been reduced a total of .38 cfs, and at 8:30 am on July 15 the flow was down .40 cfs.

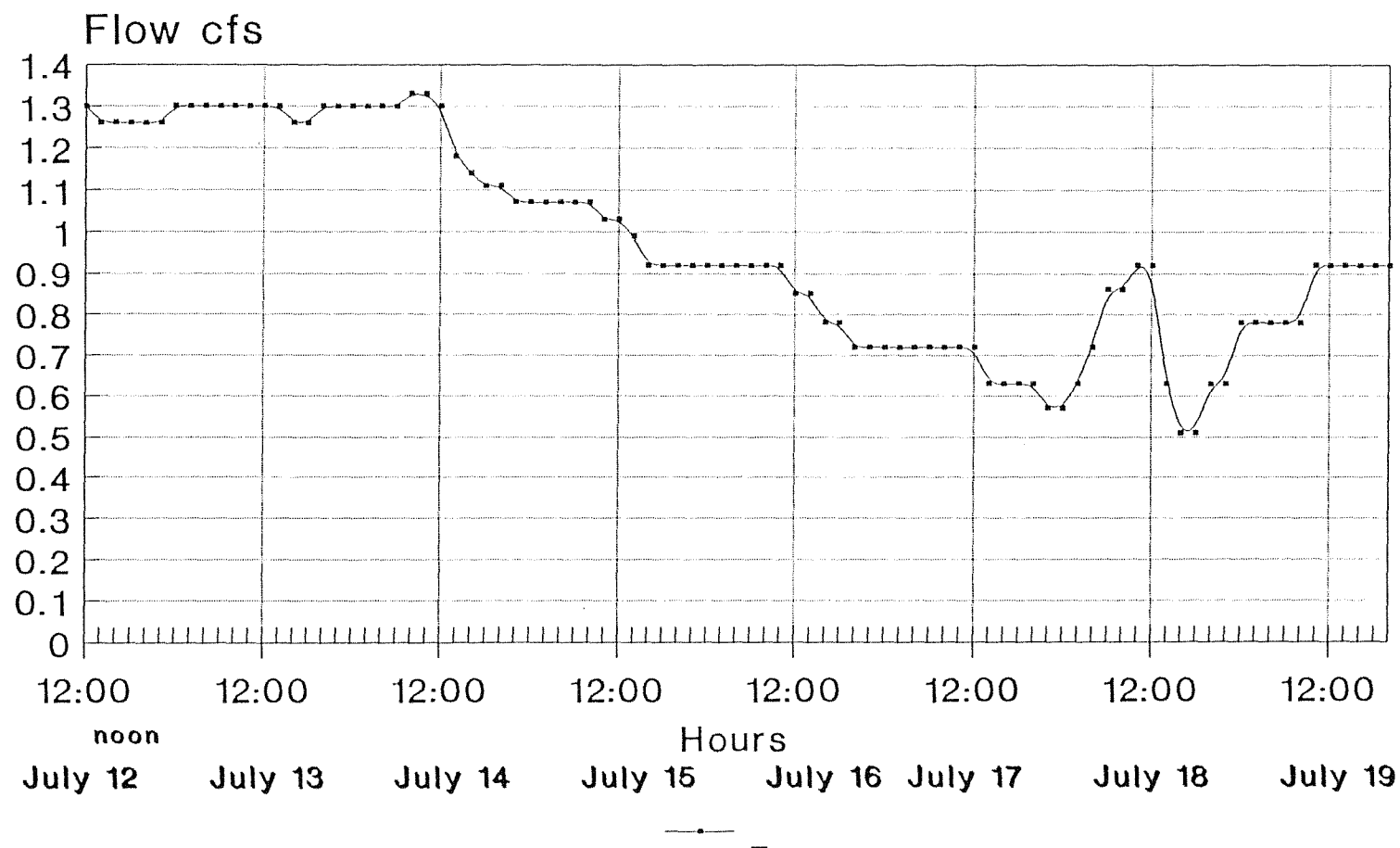
Recorder data near the Dorst diversion showed a diurnal fluctuation of .02 cfs for several days preceding pumping, Figure

Figure 2
Kent Spring Outflow



Seefried pump evaluation

Figure 3
Kent Spring Recorder

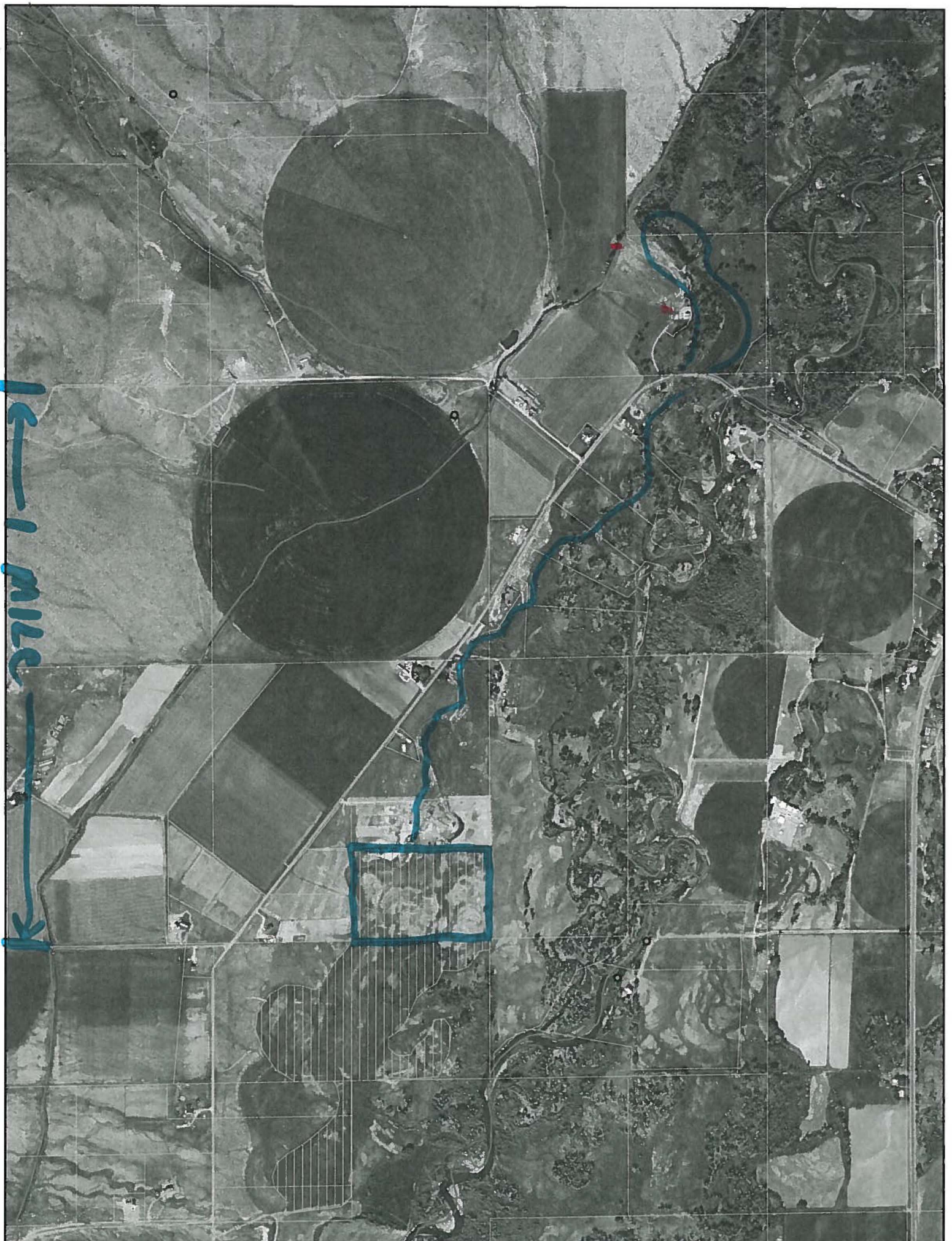


Seefried pump evaluation

3. The flow when pumping started at 8:30 am on July 14 showed 1.32 cfs, within four hours the flow showed a decline and by 6:00 pm the flow was reduced to 1.07 cfs. Flow had declined to .58 cfs by 6:00 pm on July 17.

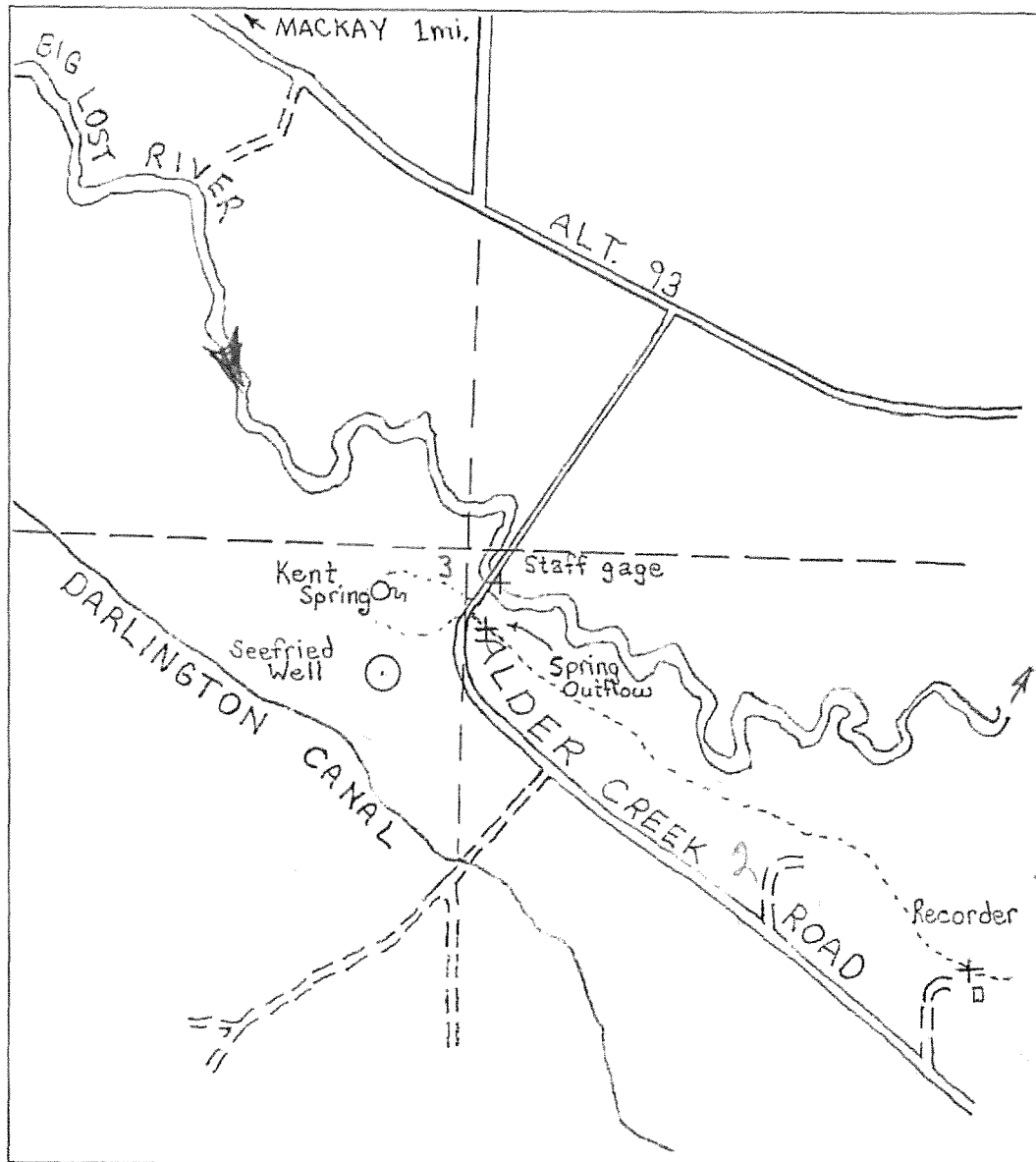
Conclusions

The decline in measured flow from Kent spring during the pumping of the Seefried well indicates that the pumping by the Seefried well does impact the outflow of the spring. The other possible sources of water for the spring were constant during the evaluation. The measured head in the pumping well and the changes in water surface at the spring and the river are consistent with pumping being the cause of the decline in spring outflow. Based on the measured spring outflow data by July 16 at 11:00 am pumping had reduced the Kent spring outflow by at least .46 cfs or by 32 percent of the flow before pumping began.



← 1 mile →

Figure 1.
Location Map, Area of Kent Spring
near Mackay, Idaho



Seefried pump evaluation

UNRECORDED

DEC 09 1991

Water Right Report 34-7171

WATER RIGHT NUMBER: 34-7171

Current Owner WILLIAM A SEEFRIED
4399 HOUSTON RD
MACKAY, ID 83251
(208)588-3330

Status: Active

GROUND WATER

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
IRRIGATION	4/01 to 11/01	3.780 CFS	661.50 AF
	Total Diversion:	3.780 CFS	661.50 AF

GROUND WATER SE1/4NE1/4NE1/4 Sec. 3, Twp 06N, Rge 24E, B.M.
CUSTER County

IRRIGATION

Twp	Rge	Sec	<u>NE</u>				<u>NW</u>				<u>SW</u>				<u>SE</u>				<u>Totals</u>
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
06N	24E	2						1.0 L 4	11.0										12.0
06N	24E	3	1.0 L 1		35.0	35.0									39.0	39.0	14.0	14.0	177.0

Total Acres: 189

1. C05 RIGHT INCLUDES ACCOMPLISHED CHANGE IN PLACE OF USE PURSUANT TO SECTION 42-1425, IDAHO CODE.

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 34-7171

2. THE WELL AT THE POINT OF DIVERSION DESCRIBED ABOVE SHALL BE CONSTRUCTED AND MAINTAINED SUCH THAT THE UNPERFORATED CASING AND SEAL EXTENDS A MINIMUM OF 50 FEET BELOW LAND SURFACE OR TO THE FIRST CONFINING LAYER, WHICHEVER IS ENCOUNTERED FIRST.
THE APPROPRIATOR IS REQUIRED TO CEASE DIVERSION FROM THIS WELL AT ANY AND ALL TIMES THAT THE FLOW FROM KENT SPRING IS DETERMINED BY THE WATERMASTER OF WATER DISTRICT NO. 34 TO BE LESS THAN 1.80 CFS OR THE RATE OF FLOW DEMANDED UNDER RIGHT 34-00414, WHICHEVER IS LESS, UNTIL SUCH TIME AS THE APPROPRIATOR HAS SUBMITTED AND RECEIVED APPROVAL FROM THE DIRECTOR OF THE DEPARTMENT FOR A PLAN TO MITIGATE THE EFFECT OF PUMPING OF THE WELL ON RIGHT 34-00414. THE PLAN MAY INCLUDE A PROCEDURE FOR DETERMINING THE "NATURAL DISCHARGE" OF KENT SPRINGS WHICH DOES NOT NEED TO BE AUGMENTED OR ENLARGED BY THE APPROPRIATOR. THE "NATURAL DISCHARGE" FROM THE SPRINGS IS INTENDED TO MEAN THE RATE OF FLOW WHICH WOULD OCCUR WITHOUT THE EFFECT OF PUMPING THE APPROPRIATOR'S WELL.
THE AMOUNT OF WATER FLOW FROM KENT SPRINGS AVAILABLE TO PROVIDE WATER FOR RIGHT 34-00414 SHALL BE MEASURED NEAR THE ROAD WHERE FLOW FROM THE SPRINGS CONCENTRATES INTO A SINGLE CHANNEL AND PASSES UNDER THE ROAD. THIS LOCATION IS FURTHER DESCRIBED AS BEING WITHIN THE NWNW, SECTION 2, T06N, R24E, BM.
USE OF WATER FROM APPROPRIATOR'S WELL IS UNDER THE CONTROL OF THE WATERMASTER OF WATER DISTRICT NO. 34, BIG LOST RIVER AND TRIBUTARIES.
3. USE OF THIS RIGHT WITH RIGHT NOS. 34-00393 AND 34-00964 IS LIMITED TO THE IRRIGATION OF A COMBINED TOTAL OF 189 ACRES IN A SINGLE IRRIGATION SEASON.
4. USE OF THIS RIGHT WITH RIGHT NOS. 34-00393 AND 34-00964 IS LIMITED TO A TOTAL COMBINED DIVERSION RATE OF 5.40 CFS.
5. C18 THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE. SECTION 42-1412(6), IDAHO CODE.
6. M01 A MEASURING DEVICE OF A TYPE APPROVED BY IDWR SHALL BE MAINTAINED AS A PART OF THE DIVERTING WORKS.

Remarks:

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 34-7171

Comments:

1. MEYER 9/5/1991 COPIED FROM REMARKS

Comment: PRIOR TO DIVERSION & USE OF WATER UNDER THIS TRANS., A MEAS. DEVICE OF A TYPE APPROVED BY THE DEPT. SHALL BE PERMANENTLY INSTALLED & MAINTAINED AS A PART OF THE DIVERTING WORKS. A DRILLING PERMIT MUST BE OBTAINED IN COMPLIANCE WITH SECTION 42-235, I.C., BEFORE THE WELL IS CONSTRUCTED. THE WELL SHALL BE CONSTRUCTED SUCH THAT UNPERFORATED CASING & THE SEAL EXTENDS A MINIMUM OF 50 FT. BELOW LAND SURFACE OR TO THE FIRST CONFINING LAYER, WHICHEVER IS ENCOUNTERED FIRST. THE ORIG. WELL SHALL BE ABANDONED ACCORDING TO THE ADOPTED WELL CONSTRUCTION STANDARDS RULES & REGULATIONS PRIOR TO DIVERSION OF WATER FROM THE NEW WELL TO BE CONSTRUCTED. TRANS. 3454. CORRECTION OF P/U ERROR IN LICENSING EXAMINATION THE P/U HAS BEEN CHANGED FROM THE ORIGINAL LICENSING EXAMINATION TO CORRECT AN ERROR IN THE LOCATION OF THE PIVOT CENTER. THE 2 ACRES LOCATED WITHIN THE NESW, 3-6N-24E WERE NEVER IRRIGATED. THESE ACRES HAVE BEEN MOVED TO THEIR PROPER LOCATION IN THE E1/2 SE1/4 3-6N-24E.

2. SHAW 1/15/1992 COPIED FROM REMARKS

Comment: THE WELL SHALL BE MAINTAINED SUCH THAT THE UNPERFORATED CASING AND SEAL EXTEND A MINIMUM OF 50 FEET BELOW LAND SURFACE, OR TO THE FIRST CONFINING LAYER, WHICHEVER IS ENCOUNTERED FIRST. THE OWNER OF THIS RIGHT IS REQUIRED TO CEASE DIVERSION FROM THIS WELL AT ANY AND ALL TIMES WHEN THE FLOW FROM KENT SPRINGS IS DETERMINED BY THE WATERMASTER OF WATER DISTRICT NO. 34 TO BE LESS THAN 1.80 CFS OR THE RATE OF FLOW DEMANDED UNDER RIGHT 34-00414, WHICHEVER IS LESS, UNTIL SUCH TIME AS THE OWNER OF THIS RIGHT HAS SUBMITTED AND RECEIVED APPROVAL FROM THE DIRECTOR OF THE DEPARTMENT, A PLAN TO MITIGATE THE EFFECT OF PUMPING OF THE WELL ON RIGHT 34-00414. THE PLAN MAY INCLUDE A PROCEDURE FOR DETERMINING THE "NATURAL DISCHARGE" OF KENT SPRINGS WHICH DOES NOT NEED TO BE SUBSIDIZED OR ENLARGED OVER THE "NATURAL DISCHARGE" BY THE OWNER OF THIS RIGHT. THE "NATURAL DISCHARGE" FROM THE SPRINGS IS INTENDED TO MEAN THE RATE OF FLOW WHICH WOULD OCCUR WITHOUT THE EFFECT OF PUMPING THIS WELL. THE DEPARTMENT RESERVES JURISDICTION OF THIS MATTER TO REFINE THESE CONDITIONS AS ADDITIONAL OR DIFFERENT DATA MAY BECOME AVAILABLE, AND TO ADMINISTER WATER RIGHT NOS. 34-00414 AND 34-007171 RELATIVE TO THE OTHER SURFACE AND GROUND WATER RIGHTS IN THE BIG LOST RIVER DRAINAGE.

3. AJTEMP 5/9/1992 ADDED CONDITION M01

Comment: ADDED REMARKS CONSISTENT WITH TRANSFER

4. FRITSCHL 5/11/1992 NOTICE OF ERROR FLAG

Comment: NOTICE OF ERROR FLAG CHANGED FROM 'A' TO 'C'. VERIFIED DATE SET.

5. CFRITSCH 10/8/1996 REFORMATTING

Comment: REFORMATTING WAS STARTED ON THIS DATE. THE GENERAL REMARK MAY NEED TO BE MODIFIED FOR CLARITY.

6. JHOAGLAN 7/11/1997 ADDRESS CHANGE

Comment: *CHANGED ADDRESS PER REQUEST/NCAP TO COURT*

7. AJU10-DS 6/9/2000 AJU10 CONDITION UPDATE

Comment: CONDITION CODE(S) C18 ADDED IF NOT ALREADY PART OF RECORD THRU AJU10.

8. nmiller 1/6/2009 12:49:31 PM POD

Comment: PODID 422142 correlated from SpatialDataID 205047 to SpatialDataID 396775

IDAHO DEPARTMENT OF WATER RESOURCES

Water Right Report 34-7171

Dates and Other Information:

Licensed Date:
 Decreed Date: 6/27/2002
 Enlargement Use Priority Date:
 Enlargement Statute Priority Date:
 State or Federal: S
 Owner Name Connector: AND
 Water District Number: 34
 Generic Max Rate Per Acre:
 Generic Max Volume Per Acre:
 Decree Defendant:
 Decree Plaintiff:
 Civil Case Number: 39576
 Judicial District: FIFTH
 Swan Falls Trust or Nontrust:
 Swan Falls Dismissed:
 DLE Act Number:
 Carey Act Number:
 Mitigation Plan: False

Combined Use Limits:

<u>Rate</u>	<u>Volume</u>	<u>Acres</u>
5.4		189

Combined Water Rights: 34-7171 , 34-393 , 34-964

Element Reviewed/Verified Dates:

<u>Element</u>	<u>Last Reviewed Date</u>	<u>Reviewer</u>	<u>Last Verified Date</u>	<u>Verifier</u>	<u>Status</u>
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Verification Log:

<u>Element</u>	<u>Date Time Stamp</u>	<u>Reviewer</u>	<u>Log text</u>
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Water Supply Bank:

07-05 0=15700 *1
+ E 25PH

OUTER DIAMETER
10.0000 IN

PIPE MATERIAL
? CS.35

WALL THICKNESS
0.1240 IN

INNER LINING
? NO LING.

KIND OF FLUID
? WATER

SENSOR MOUNTING
? U

TYPE OF SENSOR
? SMALL

DATA CHANGE
? NO

SPACING
7.547 IN U

00-00 00:0100
+002.00 % AI2

0364.7 MMSEC
100.11 % T0

10:25+ 1.404E 3GPM 00R
+00000 *10 G 00R
-00000 *10 G 00R

10:26+ 1.417E 3GPM 00R
+00139 *10 G 00R
-00000 *10 G 00R

10:27+ 1.400E 3GPM 00R
+00279 *10 G 00R
-00000 *10 G 00R

10:28+ 1.401E 3GPM 00H
+00420 *10 G 00R
-00000 *10 G 00R

10:29+ 1.379E 3GPM 00R
+00560 *10 G 00R
-00000 *10 G 00R

10:30+ 1.400E 3GPM 00R
+00700 *10 G 00R
-00000 *10 G 00R

10:31+ 1.406E 3GPM 00R
+00840 *10 G 00R
-00000 *10 G 00R

10:32+ 1.390E 3GPM 00R
+00981 *10 G 00R
-00000 *10 G 00R

10:33+ 1.399E 3GPM 00R
+01122 *10 G 00R
-00000 *10 G 00R

10:34+ 1.394E 3GPM 00R
+01261 *10 G 00R
-00000 *10 G 00R

10:35+ 1.434E 3GPM 00R
+01402 *10 G 00R
-00000 *10 G 00R

10:36+ 1.345E 3GPM 00R
+01541 *10 G 00R
-00000 *10 G 00R

10:37+ 1.375E 3GPM 00R
+01681 *10 G 00H
-00000 *10 G 00H

10:38+ 1.394E 3GPM 00R
+01820 *10 G 00R
-00000 *10 G 00R

10:39+ 1.396E 3GPM 00R
+01959 *10 G 00R
-00000 *10 G 00R

IDAHO DEPARTMENT OF WATER RESOURCES
Water Measurement Program

WATER MEASURING DEVICE CERTIFICATION

(Revised 7/2002)

District 34

Diversion Name Seifried well

Inventory Date 7/8/11

Inventory Examiner NRM

PCC o.k.? ☒ Yes ☐ No

Test Date 7/8/11

Person performing test NRM

Exam complete? ☐ Yes ☐ No

Name: _____
Water Right No.: _____
Legal Description: T _____ R _____ Sec. _____ $\frac{1}{4}$ _____ $\frac{1}{4}$ _____ $\frac{1}{4}$ _____
Site Tag No.: _____
Diversion Name: _____

Current Owner

Name _____

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

Operator (if leased or operated by person other than owner)

Name _____

Phone _____

Address _____

Cell _____

City _____ St _____ Zip _____

E-mail _____

SECTION 1 – Well Site Identification

Global Positioning System Data:

Data Collection Filename _____ Offset _____

IDWR Site Tag Identification No. 10018646

Site Tag Location description: on Pole ~ 5' N of well

PLS/USGS LOCATOR _____

For Department/District Use Only

Received by _____ Date _____

Reviewed by _____ Date _____

Data Entry By _____ Date _____

SECTION II – Installed Meter Information

METER AND MOUNTING PIPE INFORMATION			
Motor HP	60 hp	Volume units	Acre-Feet _____ Other (specify) _____
Meter Install Date	?	Volume multiplier	0.001
Manufacturer	McCrank	Installation location	☒ Excel ☐ Fair ☒ Good ☐ Poor
Meter Type	Propeller	Pipe material	Steel
Meter Model		Outside diameter	10.0"
Serial Number		Wall thickness	0.125"
Size (nominal)	10" insert	Inside diameter	9.750"
Measure Flow Rate?	☒ Yes ☐ No <i>broken</i>	Amount of straight pipe upstream from meter	<u>72</u> Inches <u>25</u> Pipe Lengths
Measurement Units	☐ CFS ☒ GPM Other (specify) _____	Amount of straight pipe downstream from meter	<u>00</u> (<u>55</u>) Inches <u>00</u> (<u>55</u>) Pipe Lengths
Flow Rate Multiplier	/	Standard Meter Type	☒ Sonic ☐ Pyg ☐ Collins ☐ Hall ☐ Anub ☐ Dye/chem ☐ Other _____
Measure Cumulative Volume?	☒ Yes ☐ No	Standard Meter Confidence	☒ Excellent 2% ☐ Good 5% ☐ Fair 10% ☐ Poor > 10%

Multiple Flowmeters

Are multiple flowmeters used to measure diversions from this well? ☐ Yes ☒ No

If yes, how many? _____

(Attach separate form for each meter checked and/or calibrated.)

Multiple Wells

If this meter measures diversions from multiple wells, list names and locations of other wells:

SECTION III – Certification for Calibration of a Water Measurement Meter

Measurement No. 1 (M_1) is the measured rate of flow from the permanently installed flow meter.

Measurement No. 2 (M_2) is the measured rate of flow from the measuring device being used to check the flow for the calibration. This method or device must be accurate to within $\pm 5\%$ error. Describe below the method and equipment used to perform this measurement.

$$\text{Percent Difference} = (M_1 - M_2) \div M_2 \times 100 = \pm \% \quad (\text{Acceptable is within } \pm 10\%) \quad (\text{equation 1})$$

$$\text{Calibration Multiplier} = M_2 \div M_1 \quad (\text{equation 2})$$

Is flowmeter installed according to manufacturer's specifications? ☐ Yes ☐ No ☐ Unsure

Describe any apparent problems with installation or operation _____

*meter is not functioning, totalizer stopped, FR needle missing
installed 40 Dia O.S. for Bend*

Flowmeter accuracy prior to any adjustments: _____ Totalizer reading _____

Flowmeter accuracy after final adjustment: _____ Totalizer reading _____

Flowmeter calibration multiplier: _____

FLOWMETER ACCURACY CALIBRATION TABLE							
Installed meter (totalizer reading)	Time	Total Gallons	Average Flow Rate GPM (M_1)	Standard total gallons	Average Flow Rate GPM (M_2)	% diff. ($\pm$)	Comments and adjustments

Notes – Comments – Calculations: _____

WATER LEVEL DATA	
Does the well have access to measure water levels? ~ Yes ~ No (<i>check one</i>)	
Is this well part of USGS, IDWR, or another network of water level monitoring wells? ~ Yes ~ No (<i>check one</i>)	
Static Water Level _____ ft Date _____	Pumping Water Level _____ ft (at condition _____) Date _____

Sketch and/or photograph of installation:

I certify that the above information is true and correct to the best of my knowledge and ability and the measurements taken and recorded are in accordance with the standards and specifications of the equipment used.

Signature _____ Date _____
 (person performing measurements)

IDAHO DEPARTMENT OF WATER RESOURCES
Water Measurement Program**POWER CONSUMPTION COEFFICIENT WORKSHEET**

(Revised 7/2002)

District _____

Diversion Name _____

Inventory Date _____ Test Date _____

Inventory Examiner _____ Person performing test _____

PCC o.k.? ☐ Yes ☐ No Exam complete? ☐ Yes ☐ No

Name:	_____
Water Right No.:	_____
Legal Description:	T_____ R_____ Sec._____ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$
Site Tag No.:	_____
Diversion Name:	_____

Current Owner

Name _____ Phone _____

Address _____ Cell _____

City _____ St _____ Zip _____ E-mail _____

Operator (if leased or operated by person other than owner)

Name _____ Phone _____

Address _____ Cell _____

City _____ St _____ Zip _____ E-mail _____

Global Positioning System Data:

Data Collection Filename _____ Offset _____

IDWR Site Tag Identification No. _____

Site Tag Location description: _____

PLS/USGS LOCATOR _____

For Department/District Use Only

Received by _____ Date _____

Reviewed by _____ Date _____

Data Entry By _____ Date _____

Well Pump and Motor Information

Pump Data		Motor Data	
Manufacturer		Manufacturer	
Serial Number		Serial Number	
Model Number		Rated Horsepower	
Type		Rated Amps	
Impeller Diameter		Rated Volts	
Rated Speed		Rated Speed	
Rated Discharge		Phase	
Rated Head		Service Factor	

Booster Pump and Motor Information

Pump Data		Motor Data	
Manufacturer		Manufacturer	
Serial Number		Serial Number	
Model Number		Rated Horsepower	
Type		Rated Amps	
Impeller Diameter		Rated Volts	
Rated Speed		Rated Speed	
Rated Discharge		Phase	
Rated Head		Service Factor	

Power and Water Metering Information

Kilowatt-Hour Meter		Water Measurement Equipment and Pipe Information	
Utility		Std. Meter Manufacturer	
Pole Number		Std. Meter Model No.	
Meter Manufacturer		Std. Meter Type (circle one)	Sonic Pyg Collins Hall Anub Dye/chem. Other
Meter Serial No.		Std. Meter Confidence (circle one)	Excl 2% Good 5% Fair 10% Poor >10%
Disc Constant (Kh)		PSI gauge ID location $\approx$ discharge head	District / Owner _____ Yes / No
Rated Voltage		Pipe Material	
Demand		Pipe Outside Diameter	
Multiplier (Mult)		Pipe Inside Diameter	
CTR (Current) PTR (Voltage)		Distance of straight pipe upstream and down	Upstream _____ Downstream _____

Determination of Power Consumption Coefficient

Kilowatts of Energy Consumed

$$KW = 3.6 \times Kh \times \text{Multiplier} \times \text{No. of revolutions (N)} \div \text{Time (T) in seconds per N}$$

Cond.#1 N = _____ (No. of Disc Rev) Time (sec) = (____) + (____) + (____) / 3 = _____ Ave

$$3.6 \times \text{_____ (Kh)} \times \text{_____ (Mult)} \times \text{_____ (N)} \div \text{_____ (T)} = * \text{_____ KW}$$

Cond.#2 N = _____ (No. of Disc Rev) Time (sec) = (____) + (____) + (____) / 3 = _____ Ave

$$3.6 \times \text{_____ (Kh)} \times \text{_____ (Mult)} \times \text{_____ (N)} \div \text{_____ (T)} = * \text{_____ KW}$$

Cond.#3 N = _____ (No. of Disc Rev) Time (sec) = (____) + (____) + (____) / 3 = _____ Ave

$$3.6 \times \text{_____ (Kh)} \times \text{_____ (Mult)} \times \text{_____ (N)} \div \text{_____ (T)} = * \text{_____ KW}$$

Measured Flow Rate and Discharge Pressure – Enter flow rate as determined by the "standard" water measurement meter in GPM, and discharge pressure measured in PSI. Attach documentation to support data such as notes, printout tapes, etc.

GPM Cond. #1 * _____ #2 * _____ #3 * _____

PSI Cond. #1 * _____ #2 * _____ #3 * _____

Power Consumption Coefficient (PCC) = KW × 5431 ÷ GPM

PCC Cond #1 = * _____ (KW) × 5431 ÷ * _____ (gpm) = _____ (kWh/ac.ft)

Percent of seasonal use * _____ Description * _____

PCC Cond #2 = * _____ (KW) × 5431 ÷ * _____ (gpm) = _____ (kWh/ac.ft)

Percent of seasonal use * _____ Description * _____

PCC Cond #3 = * _____ (KW) × 5431 ÷ * _____ (gpm) = _____ (kWh/ac.ft)

Percent of seasonal use * _____ Description * _____

Is the system operator required to track and report changes in system operation? ~ Yes ~ No (check one)

System Type (circle all that apply): Pivot, linear / Wheel In / Hand In / Gated pipe, flood / Drip / Open Discharge

	Crop Type	Number of Acres
1		
2		
3		
4		
Total Acres =		

WATER LEVEL DATA

Does the well have access to measure water levels? ~ Yes ~ No (check one)

Is this well part of USGS, IDWR, or another network of water level monitoring wells? ~ Yes ~ No
~ Uncertain

Static Water Level _____ ft
Date _____

Pumping Water Level _____ ft at condition # _____)
Date _____

1318 @ 37:40
1307 @ 10:24:3
1717 @ 12:10

Sketch of pumping plan layout or photograph of pumping plant and piping:

Notes – Comments – Calculations:

I certify that the above information is true and correct to the best of my knowledge and ability and the measurements taken and recorded are in accordance with the standards and specifications of the equipment used.

Signature _____ Date _____
(person performing measurements)



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720 -(208) 327-7900

CECIL D. ANDRUS

GOVERNOR

R. KEITH HIGGINSON

DIRECTOR

April 26, 1990

Hugh Dorst
Mackay, ID 83251

RE: KENT SPRING - SEEFRIED WELL

Dear Mr. Dorst:

As you know from my recent telephone conversation with Don Cain, the department has been attempting to make arrangements to conduct tests in connection with potential interference between a well owned by William Seefried and Kent Spring which is used by you and Don Cain.

In my attempt last week to set up the test, the Seefried's advised that their pump had "burned up" and was not functional. The test can only be conducted if there is a pump in the Seefried well to turn off and on in order to monitor any effects on the flow of Kent Spring.

By copy of this letter, I am requesting the Seefrieds to notify the department if a pump is installed on their well for use in 1990. Use of water from the Seefried well is subject to the control of the watermaster of Water District 34.

If you have questions, please feel free to contact the department.

Sincerely,

L. GLEN SAXTON, Chief
Water Allocation Bureau

c: Wm. Seefried
IDWR - E. Region
Hydrology Section

Alan -

This looks ok - Final it
and I'll sign & give copy
to Glenn Sexton.

April 17, 1990

W. Haas

TO: Norm Young

FROM: Wayne T. Haas

SUBJECT: Work Request - Kent Springs/Big Lost

This is a follow up to our discussion on April 16 clarifying the assistance we will provide relative to your original work request for a pump test. It is my understanding that what is needed is a determination of whether the pumping of the Seefried well causes a decline in flow of Kent Spring.

In that context I see our role as participating in the collection of the necessary data and a review of it to draw a conclusion with respect to the effect of pumping. The data collected will not provide information on aquifer characteristics. We will rely on staff from your division to make all arrangements with Mr. Seefried for access and authority to control the pumping sequence.

The weir below Kent Spring will have to be re-set and a recorder installed and started before the well is pumped. This should be done by your staff next week so that the pumping test could begin the following week. One person from your division and one from Hydrology should be involved in collecting the data, probably during the week of May 1.

IDAHO DEPARTMENT OF WATER RESOURCES

MEMO-REPLY

Date 2/16/90

To Glen

From H21

☐ Take Appropriate Action

☐ Draft A Reply

☐ Action Required By _____

☐ See Me

☐ Call Me

☐ Return To Me

☐ For Your Information

☐ For Your Approval

☐ For Your Comments

☐ As You Requested

☐ Copy (____ Copies)

☐ File

Comments

Glen please note the Memo From Wayne to me on the Kent Springs pump test. The problem as we see it is that there is interference. It's not clear what a pump

Reply

Test is required for? Are you establishing a precedent to test every well in the Big Lost?

Signed



Date

MEMORANDUM

TO: Wayne Haas
FROM: Norm *NCY*
RE: Requested Pump Test - Big Lost River Basin
DATE: 3/10/90

I have reviewed the responses to the request for a pump test to assist in managing the particular well and water rights from Kent Springs. Hydrology is correct that the department has accepted the concept of a general relationship between ground water and surface water in the basin, and we are working to quantify this relationship relative to managing ground water diversions in the basin as a whole. This basin-wide management will not occur without a study to quantify and develop a management procedure and must await the filing of a director's report in the SRBA.

This does not mean that we must wait until the whole basin is subject to ground water management to address specific complaints of direct, immediate interference between particular wells and surface rights from nearby springs. A pump test to establish this direct relationship will allow timely administration this summer to help resolve a specific situation.

Local water users and IDWR are seeking a USGS study to quantify the effect of pumping (calibrate the USGS model). I don't view the present request as being any part of that study and I don't believe that it will either confuse the issue or raise expectations of similar tests for all other complaints. Rather, it should assist in establishing an improved IDWR presence in the basin to reduce the idea that no one is doing anything about the problems in the area.

Alan raises an appropriate observation as to the watermaster control of the surface water right. This will be brought to the watermaster's attention, but is not a reason to suggest that the junior ground water right cannot at times need to be controlled to protect the surface rights from the springs and the river.

Water Management division staff will work with your staff to arrange and conduct the test. Please let me know when the test can be conducted so that the test can be arranged with the well owner.

TO: Hal Anderson
FROM: Wayne T. Haas *WTH*
DATE: February 16, 1990
SUBJECT: Work Request - Kent Springs/Big Lost

=====

I have reviewed the material you provided concerning the November 28, 1989, work request asking us to conduct the necessary investigations and/or tests to guide the department's actions relative to the Seefried well. Alan concluded the well did interfere with the flow of Kent Springs. He further concluded it was not necessary to conduct a pump test to "support administrative action".

Glen Saxton believes a pump test is needed to support administrative action and has asked that we advise him if a test can be conducted.

I see little value in conducting a pump test to show the obvious; that ground water pumping affects the flow in Kent Springs. The concern that without a pump test the department would be applying this finding to all wells in the area is somewhat confusing. The department has and is doing just that.

If a pump test is required before administrative action can or will be taken, future work requests should simply call for a pump test. There is no need to conduct an investigation if the conclusions are ignored. Funding to conduct such a test should also be provided.

TO: Hal Anderson
FROM: Wayne T. Haas *WH*
DATE: February 16, 1990
SUBJECT: Work Request - Kent Springs/Big Lost

=====

I have reviewed the material you provided concerning the November 28, 1989, work request asking us to conduct the necessary investigations and/or tests to guide the department's actions relative to the Seefried well. Alan concluded the well did interfere with the flow of Kent Springs. He further concluded it was not necessary to conduct a pump test to "support administrative action".

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If a pump test is required before administrative action can or will be taken, future work requests should simply call for a pump test. There is no need to conduct an investigation if the conclusions are ignored. Funding to conduct such a test should also be provided.

*Alan -
note Wayne's Memo
I have sent the
package back to Glen
with this memo.
[Signature]*

February 12, 1990

TO: Glen Saxton
THRU: Hal Anderson, Wayne Haas
FROM: Alan Robertson

SUBJECT: Kent Spring/Big Lost

We have reviewed available information on Kent Spring and Mr. Seefried's well, including items supplied by Dennis Dunn. Dennis revisited the spring and took pictures [attached]. Spring flows enter the receiving channel from both sides; from the areas marked "marshy" [photo No. 1] and "springs" [3, 4, 5] on the map. The springs and marshy area are in an old river channel.

Kent Spring is downslope from the Darlington Canal, which is about 1/4 mile to the southwest. It also appears to be at the toe of the fan of Cliff Creek which enters the Big Lost Valley from the southwest. Kent Spring probably receives its flow from a combination of underflow from these sources. It is also possible that it is partially supplied from upstream river losses.

In the various studies which are available to the department it is generally recognized that withdrawal of groundwater below Mackay Dam affects surface water users. We believe that both the original Seefried well and the new well [no matter how constructed] affected surface water users. The Kent Spring question is merely another, more obvious, case of groundwater users affecting surface water rights. Since IDWR has generally accepted the concept that groundwater withdrawal adversely affects older surface water rights, it does not appear necessary to do a pump test to support administrative action.

It should also be observed that Cain and Dorst should be regulated by the watermaster. Prior watermaster reports (1970 and earlier) indicate that 1885 rights get cut in drier than normal years. In 1961 the June 1, 1885 priority was off from April 20 to May 29 and from June 22 to the end of the season. In 1989 it appears to have been off all season except for a period of about three weeks beginning

on June 7.

Alan,

Here are the photos and air photo of Kent Springs. You know as much as I do now.

The springs rise in an old channel of the river. The channel is blocked at the upper end of the springs by a farm road. The channel may be a few feet higher than the current channel that is being used by the river, I don't know.

The springs probably get water from 4 sources; the river, the canal, the drainage above the alluvial fan, and whatever water may follow the old channel as snow melt or rainwater.

The springs are lower now than they were in the summer of 1989.

If I can do anything else or if any one has questions please call.

Good Luck
Dennis

(Dennis Dunn)

RECEIVED
FEB 12 1990

Department of Water Resources

MEMORANDUM

To: Hal Anderson
From: L. Glen Saxton *LS*
RE: WORK REQUEST - INVESTIGATION TO DETERMINE ALLEGED WELL AND
SPRING INTERFERENCE
Date: February 13, 1990

I have reviewed Alan Robertson's memorandum dated February 12, 1990 in response to my work request dated November 28, 1989.

Alan's response that groundwater diversions generally affect surface water flows is not sufficient to justify administrative action of instructing the watermaster to shut off the Seefried well if flow from the Kent Spring diminishes.

The department is working on a general solution to the groundwater-surface water relationship in the Big Lost River drainage, but until a general solution is in place, we can not apply Alan's general response to a specific well without applying it to all wells.

I think a pump test is needed to determine whether a direct immediate connection exists between the Seefried well and the spring in question since a general solution to the groundwater-surface water question will not be in place in time to apply to this matter.

Please advise me if a site specific test can not be conducted.

c: Norman C. Young

1,20
1,44

February 12, 1990

TO: Glen Saxton
THRU: Hal Anderson, Wayne Haas
FROM: Alan Robertson

SUBJECT: Kent Spring/Big Lost

We have reviewed available information on Kent Spring and Mr. Seefried's well, including items supplied by Dennis Dunn. Dennis revisited the spring and took pictures [attached]. Spring flows enter the receiving channel from both sides; from the areas marked "marshy" [photo No. 1] and "springs" [3, 4, 5] on the map. The springs and marshy area are in an old river channel.

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It should also be observed that Cain and Dorst should be regulated by the watermaster. Prior watermaster reports (1970 and earlier) indicate that 1885 rights get cut in drier than normal years. In 1961 the June 1, 1885 priority was off from April 20 to May 29 and from June 22 to the end of the season. In 1989 it appears to have been off all season except for a period of about three weeks beginning on June 7.

Star Route
Mackay, Idaho 83251
January 29, 1990

L. Glen Saxton
Department of Water Resources
1301 North Orchard Street
Statehouse Mail
Boise, Idaho 83720

RECEIVED
FEB 1 1990

Department of Water Resources

RE: License 34-7171 - Kent Springs (34-0414) Controversy

Dear Mr. Saxton,

This letter is in answer to a letter written to us on November 28, 1989 from the office of Mr. R. Keith Higginson. We are in accord with waiting until just prior to the irrigating season to test the Seefried well and the stream flow from Kent Springs. It would be our suggestion that they be tested by your office at about May 10, 1990. You might want to check with Mr. Seefried to see if this meets with his approval.

Sincerely,

Hugh Dorst
Hugh Dorst

Donald Cain Sr.
Donald Cain Sr.

Alan R.

*When you
respond to
this letter,
plg copy me
and file
34-7171.*

Shir
2-2-90



State of Idaho

DEPARTMENT OF WATER RESOURCES

1301 North Orchard Street, Statehouse Mail, Boise, Idaho 83720 -(208) 327-7900

CECIL D. ANDRUS

GOVERNOR

R. KEITH HIGGINSON

DIRECTOR

November 28, 1989

Hugh Dorst
Star Route
Mackay, ID 83251

RE: LICENSE 34-7171 - KENT SPRINGS (34-0414) CONTROVERSY

Dear Mr. Dorst:

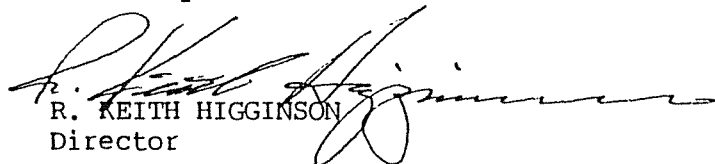
Department staff have reviewed the water measurements which you submitted with your letter of November 16, 1989. In an attempt to analyse the data, my staff have discussed the data with you once on November 21, 1989 and with Mr. Donald Cain on two occasions on November 22, 1989. Plots of the data you have provided do not conclusively show interconnection between the William Seefried well located in the NE1/4NE1/4 Section 3, T6N, R24E and the flow of water from Kent Springs from which you obtain your water supply. While the data is helpful, there are numerous other factors which could influence changes in surface water flow discharges.

Since the supply of water is of utmost importance to both you and Mr. Seefried, it is important that the department be reasonably sure that interference does exist before directing that diversion of water from the Seefried well be curtailed or shut off. To accomplish this end, I have assigned department staff to further investigate or to conduct tests if appropriate to determine any relationship between the well and the spring. Any tests which are needed will be conducted at or just prior to the beginning of the next irrigation season when the Seefried well can be operated without making special provisions for turning on the well during the non-irrigation season.

By copy of this letter, the department is advising Mr. Seefried of the investigation and/or planned tests and requests his cooperation in the matter.

If you have questions, please feel free to contact L. Glen Saxton at 327-7955 in Boise.

Sincerely,


R. KEITH HIGGINSON
Director

c: IDWR - E. Region
William Seefried
Donald Cain, Sr.

MEMORANDUM

To: Hal Anderson *HSA*
From: L. Glen Saxton *LS*
RE: WORK REQUEST - INVESTIGATION TO DETERMINE ALLEGED WELL
AND SPRING INTERCONNECTION
Date: November 28, 1989

The purpose of this memo is to request that staff from Hydrology Section investigate and/or conduct tests to determine potential interference between a well and a spring in the Mackay, Idaho area. If tests are needed, the tests should be conducted near the beginning of the irrigation season in 1990, perhaps in March or April.

More specifically, owners of decreed right 34-0414 who divert 1.8 cfs from a spring commonly known as Kent Springs allege that a well drilled by William Seefried in 1989 in the NENE Section 3, T6N, R24E, BM reduces the flow of water from Kent Springs. The users of Kent Springs installed weirs and have made some measurements, but there perhaps are other factors which influence the flows measured that is is difficult to draw any definite conclusions using the measurements provided. Steve McCormick and Dennis Dunn of our Idaho Falls office also have visited the site last summer and suspect that there is interference but did not conduct any tests.

The department has been involved in numerous water delivery controversies in the Big Lost River drainage this last year, most of which involved similar allegations between surface and ground water users. Please advise if your staff can conduct the necessary investigations and/or tests in order to provide data and recommendations to guide the department's administrative actions.

I do have the measurements taken this last summer of spring flows relative to diversion of water from the well and can provide them if needed.

draft

11-22-89

lgs

MEMORANDUM

To: Hal Anderson
From: L. Glen Saxton
RE: WORK REQUEST - TEST TO DETERMINE WELL AND SPRING
INTERCONNECTION

Date:

The purpose of this memo is to request that staff from Hydrology Section conduct a field examination and/or tests to determine potential interference between a well and a spring in the Mackay, Idaho area. The test should be conducted near the beginning of the irrigation season in 1990, perhaps in March or April.

More specifically, owners of decreed right 34-0414 who divert 1.8 cfs from a spring commonly known as Kent Springs allege that a well drilled by William Seefried in 1989 in the NENE Section 3, T6N, R24E, BM reduces the flow of water from the springs. The users of Kent Springs installed weirs and have made some measurements, but there are so many other factors which could influence the flows measured that it is difficult to draw any definite conclusions. Steve McCormick and Dennis Dunn of our Idaho Falls office also have visited the site last summer and suspect that there is interference but did not conduct any tests.

The department has been up to its elbows with problems in the Big Lost River drainage this last year, most of which involved similar allegations between surface and ground water users. Please advise if your staff can conduct the necessary tests and/or investigation in order to provide data and recommendations to guide the department's administrative actions.

Start

May 15	6/1/1884
16	10/12/1884
17	10/12/1884
18	2/18/1885
19	2/18/1885
20	2/18/1885
21	10/12/1884
22	7/15/1884
23	7/15/1884
24	6/1/1884
25	10/12/1884
26	10/12/1884
27	2/18/1885
28	10/12/1884
29	10/12/1884
30	8/31/1884
31	10/12/1884
June 1	5/20/1884
2	10/12/1884
3	2/18/1885
4	2/18/1885
5	2/18/1885
6	2/18/1885
7	7/17/1886
8	3/2/1887
9	3/2/1887
10	6/1/1889
11	6/1/1889
12	8/31/1887
13	8/31/1887
14	8/1/1887
15	5/31/1889
16	5/31/1889
17	7./3/1896
18	6/30/1891
19	6/30/1891
20	3/23/1893
21	6/1/1890
22	7/17/1886
23	7/17/1886
24	7/17/1886
25	7/17/1886
26	6/1/1886
27	10/2/1885
28	6/1/1885
29	6/1/1885
30	5/31/1885
July 1	5/31/1885
2	6/1/1885
3	6/1/1885
4	6/1/1885
5	6/1/1885
6	5/1/1885
7	2/18/1885
8	2/18/1885
9	2/18/1885
10	2/18/1885
11	2/18/1885

July 12	2/18/1885
13	10/12/1884
14	2/18/1885
15	2/18/1885
16	10/12/1884
17	10/12/1884
18	10/12/1884
19	7/31/1884
20	7/15/1884
21	7/15/1884
22	7/15/1884
23	7/15/1884
24	7/15/1884
25	6/1/1884
26	5/31/1884
27	5/31/1884
28	5/31/1884
29	5/20/1884
30	5/20/1884
31	5/20/1884
Aug. 1	5/20/1884
2	7/15/1884
3	7/15/1884
4	7/15/1884
5	7/15/1884
6	7/15/1884
7	7/15/1884
8	7/15/1884
9	6/1/1884
10	6/1/1884
11	6/1/1884
12	6/1/1884
13	6/1/1884
14	6/1/1884
15	6/1/1884
16	5/20/1884
17	4/30/1884 to end of season

RECEIVED

FEB 9 1990

Department of Water Resources



33 34

4 3

A-192
W.F. SEEFRIED
192A

34 35

3 2

A-150
W. GARRETT

A-190
M. ANDERSON

15.8

1317

43.0

Old
River
Channel

Springs
Bench
Marshy

Pond

Road

Trig. Sta. 1

10.0

15.7

1.9

1.9

1.9

1.9

1.9

1.9

1.9

1.9

1.9

1.9

1.9

Well: 06N-25E-03AAA1 TD 91.7'
05N-26E-23CDA1 TD 197.6'
04N-26E-26DCD1 TD 143.0'

New foot of water - alluvial (only right)
1885 priority date of springs (crested)
and about springs @ $\frac{1}{4}$ m)

Sigfried
Haley Sigfried (well near Big Loss)

Transfer of Water Rights abandon well & drill new well

Fall 1988 was well drilled

Steve McCormick - witness

July of 1989 measurement started

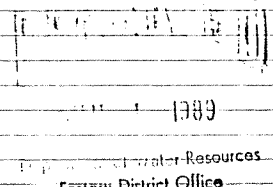
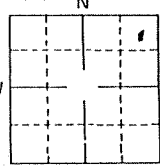
900' of pipe transfer from point of use to injured party

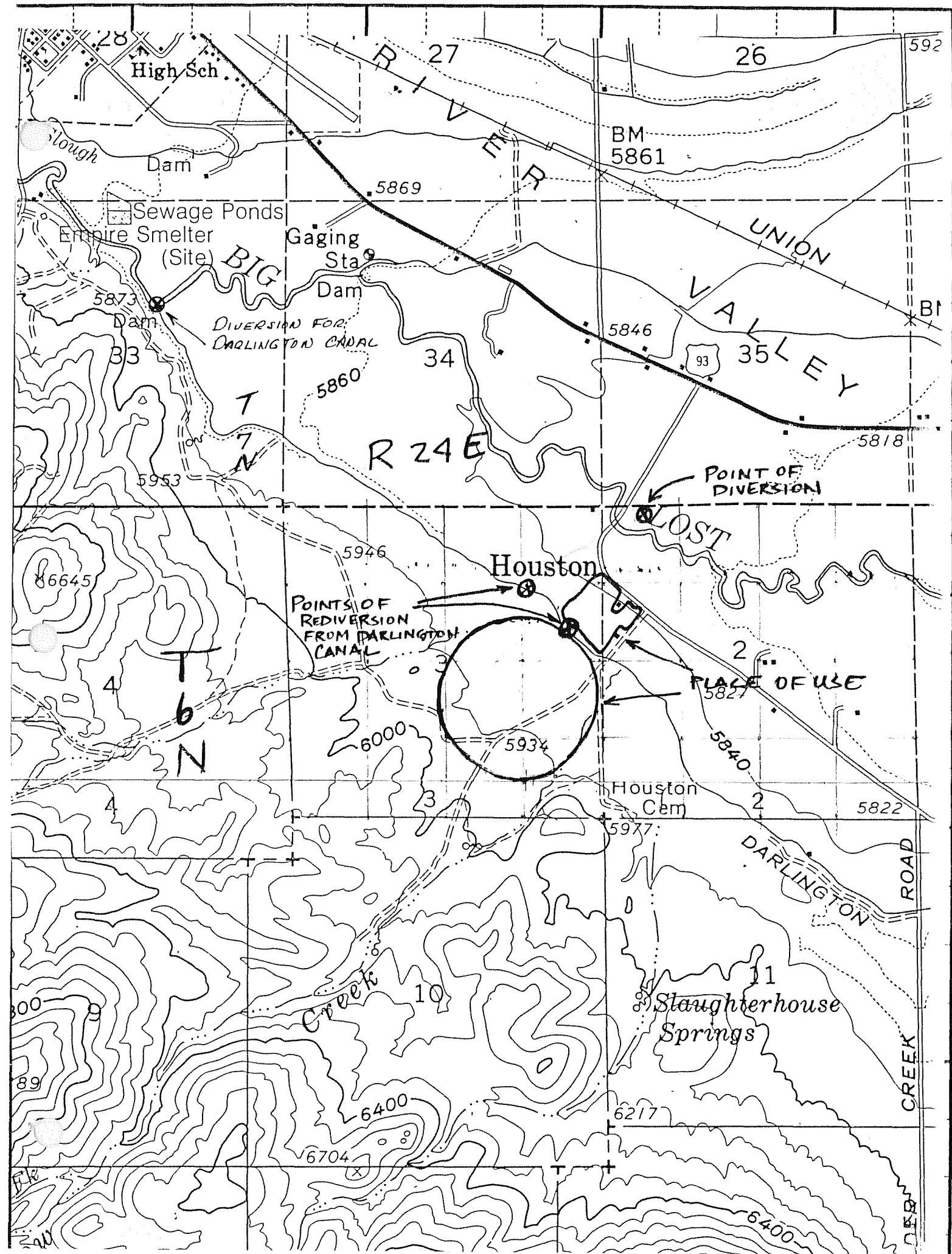
Cons. to confining layer 3' clay & sand = small go layer
TD 110' 18' - 110' perforations

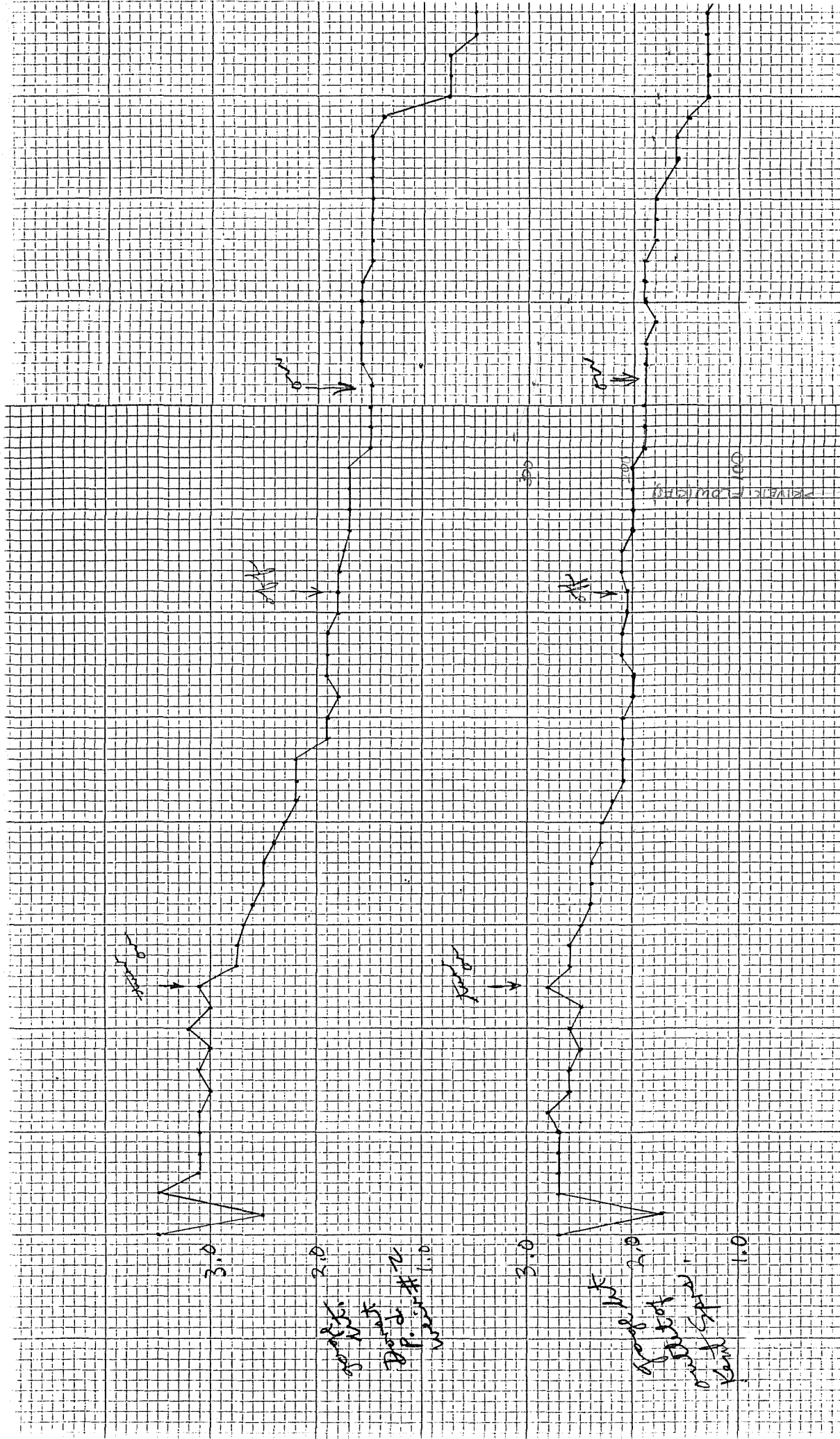
Transfer one ^{to be} inspected prior to approval

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>W. A. Siefried</u> Address <u>MacKay IO</u> Owner's Permit No. <u>Transfer # 3454</u>	7. WATER LEVEL Static water level <u>10'</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ °F. Quality <u>Good</u> <i>Describe artesian or temperature zones below</i>																																
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)	8. WELL TEST DATA ☐ Pump ☐ Bailer ☐ Air ☒ Other _____																																
3. PROPOSED USE ☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 33%;">Discharge G.P.M.</th> <th style="width: 33%;">Pumping Level</th> <th style="width: 33%;">Hours Pumped</th> </tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped																													
Discharge G.P.M.	Pumping Level	Hours Pumped																															
4. METHOD DRILLED ☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☒ Cable ☐ Dug ☐ Other _____	9. LITHOLOGIC LOG <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Bore 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>0</td> <td>2</td> <td></td> <td>Topsoil</td> <td></td> </tr> <tr> <td>2</td> <td>13</td> <td></td> <td>Sand Gravel</td> <td></td> </tr> <tr> <td>18</td> <td>21</td> <td></td> <td>Sand & Clay</td> <td></td> </tr> <tr> <td>21</td> <td>90</td> <td></td> <td>Gravel</td> <td>X</td> </tr> <tr> <td>90</td> <td>-</td> <td></td> <td>Basalt Rock</td> <td></td> </tr> </tbody> </table>	Bore Diam.	Depth		Material	Water Yes No	From	To	0	2		Topsoil		2	13		Sand Gravel		18	21		Sand & Clay		21	90		Gravel	X	90	-		Basalt Rock	
Bore Diam.	Depth		Material	Water Yes No																													
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2	13		Sand Gravel																														
18	21		Sand & Clay																														
21	90		Gravel	X																													
90	-		Basalt Rock																														
5. WELL CONSTRUCTION Casing schedule: ☐ Steel ☐ Concrete ☐ Other _____ <table style="width: 100%;"> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> <tr> <td>250 inches</td> <td>16" inches</td> <td>1 feet</td> <td>90 feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table> 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 <u>3/8</u> inches by <u>18"</u> inches <table style="width: 100%;"> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> <tr> <td>165' perforations</td> <td>24' feet</td> <td>90' feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table> 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 _____ Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ _____ Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port <u>1 1/2 pipe</u>	Thickness	Diameter	From	To	250 inches	16" inches	1 feet	90 feet													Number	From	To	165' perforations	24' feet	90' feet							
Thickness	Diameter	From	To																														
250 inches	16" inches	1 feet	90 feet																														
Number	From	To																															
165' perforations	24' feet	90' feet																															
6. LOCATION OF WELL Sketch map location <u>must</u> agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Custer</u> <u>NE 1/4 NE 1/4 Sec. 3 T. 6 N. 1/2 R. 24 E. 1/2</u>	10. Work started <u>5-25-89</u> finished <u>6-2-89</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>Findley Drilling</u> Firm No. <u>062</u> Address <u>285 PARSON BLVD</u> Date _____ Signed by (Firm Official) <u>Bill Findley</u> and (Operator) <u>Bill Findley</u>																																





DISCHARGE IN CUBIC FEET PER SECOND

8-11

RELATIVE FLOW (FHS)

100

50

0

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

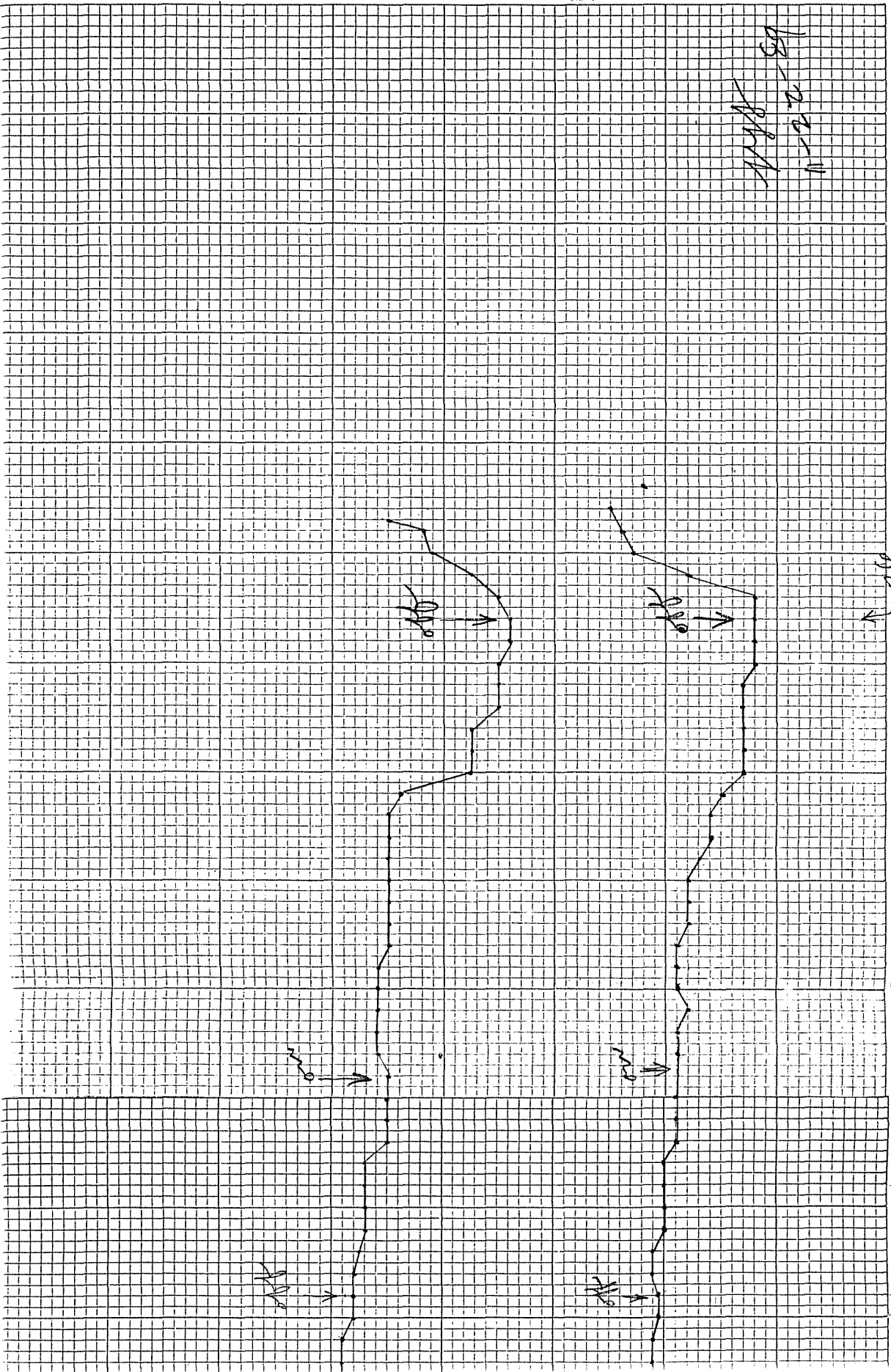
P. & M. Co.

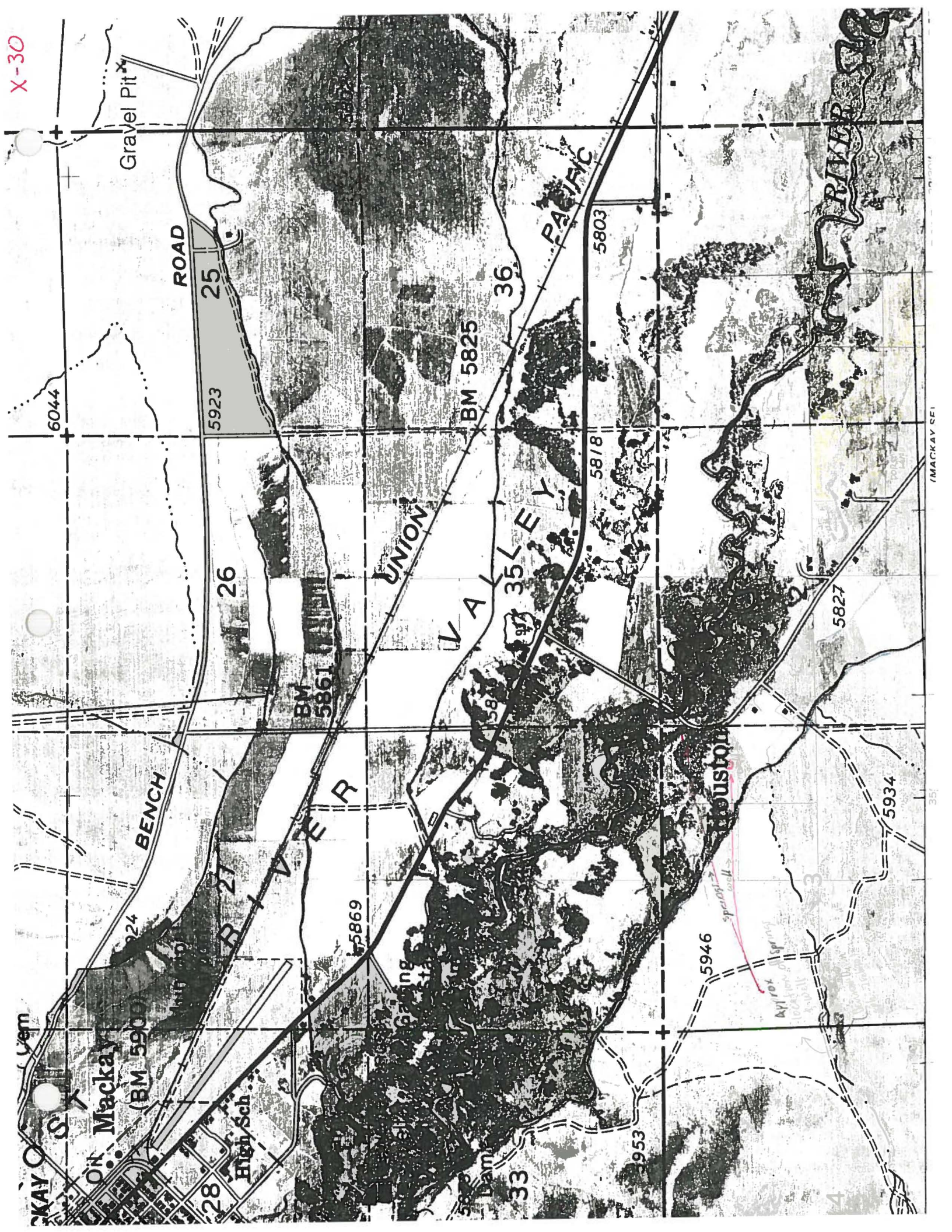
DISCH

GAGE HEIGHT IN FEET

13-22-11
PMT

DISCHARGE IN CUBIC FEET PER SECOND





X-30

Gravel Pit

ROAD

25

5923

26

BM 5861

UNION

VALLEY

BM 5825

36

PACIFIC

5803

5818

5827

5934

Mackay

BENCH

5924

27

RIVER

5869

Gauging station

33

5953

5946

spout well

Approx. spring

3

4

(MACKAY S.E.)

21" wide rectangular

5' x 12' 6"

Date of print of dir

Seefried

Al: h105	I	A	II	B	II	C	II	D	II	E	II	F	II	G	II
1															
2															
3	JULY 25, 1989														
4															
5	MORNING					2.7		3.5	YES	NO		NO		NO	
6	EVENING					1.7		2.5	YES	NO		NO		NO	
7	JULY 26, 1989														
8	MORNING					2.7		3.5	YES	NO		NO		NO	
9	EVENING					2.7		3.1	yes	no		no		no	
10	JULY 27, 1989														
11	MORNING					2.7		3.1	YES	NO		NO		NO	
12	EVENING					2.7		3.1	YES	NO		NO		NO	
13	JULY 28, 1989														
14	MORNING					2.8		3.1	YES	NO		NO		NBO	
15	EVENING					2.6		3	yes	no		NO		NO	
16	JULY 29, 1989														
17	MORNING					2.6		3.1	YES	NO		NO		NO	
18	EVENING					2.5		3	YES	NO		NO		NO	
19	JULY 30, 1989					0									
20	MORNING					2.6		3.2	YES	NO		NO		NO	
21	EVENING					2.5		3	YES	NO		NO		NO	
22	JULY 31, 1989														
23	MORNING					2.8		3.1	yes	no		no		no	
24	EVENING					2.6		2.75	yes	no		no		no	
25	aug. 1, 1989														
26	morning					2.6		2.75	yes	yes		yes		no	
27	evening					2.5		2.7	YES	YES		YES		NO	
28	AUGUST 2, 1989														
29	MORNING					2.4		2.6	YES	YES		YES		NO	
30	EVENING					2.4		2.5	yes	yes		yes		no	
31	aug 4, 1989														
32	morning					2.4		2.5	yes	yes		yes		no	

	I	A	II	B	II	C	II	D	II	E	II	F	II	G	II	H	I
33	evening					2.3		2.4	yes	yes		yes		yes		yes	
34	AUG 5, 1989																
35	MORNING					2.3		2.3	YES	YES		YES		YES		YES	
36	EVENING					2.2		2.2	YES	YES		YES		YES		YES	
37	AUG 6, 1989					2.1		2.2	YES	YES		YES		YES		YES	
38	MORNING					2.1		2.2	YES	YES		YES		YES		YES	
39	EVENING																
40	AUG 7, 1989																
41	MORNING					2.1		1.9	YES	YES		YES		YES		YES	
42	EVENING					2.1		1.9	YES	YES		YES		YES		YES	
43	AUG 8, 1989																
44	MORNING					2		1.8	yes	yes		yes		yes		yes	
45	EVENING					2		1.9	yes	yes		yes		yes		yes	
46	aug 9, 1989																
47	morning					2.1		1.9	yes	yes		yes		yes		yes	
48	evening					2.1		1.9	yes	yes		yes		yes		yes	
49	aug 10, 1989																
50	morning					2.05		1.8	yes	yes		yes		yes		yes	
51	evening					2.05		1.8	yes	yes		yes		yes		yes	
52	AUG 11, 1989																
53	MORNING					2.1		1.8	YES	NO		NO		NO		NO	
54	EVENING					2.1		1.75	YES	NO		NO		NO		NO	
55	AUG. 12, 1989																
56	MORNING					2		1.7	YES	NO		NO		NO		NO	
57	EVENING					2		1.7	YES	NO		NO		NO		NO	
58	AUG 13, 1989																
59	MORNING					2		1.7	YES	NO		NO		NO		NO	
60	EVENING					2		1.7	YES	NO		NO		NO		NO	
61	AUG. 14, 1-																
62	MORNING					1.9		1.5	YES	NO		NO		NO		NO	
63	EVENING					1.9		1.5	YES	NO		NO		NO		NO	
64	AUG. 15, 1989					1.9		1.5	yes	yes		yes		no			
65	morning																
66	evening					1.9		1.5	yes	yes		yes		no			
67	AUG 16, 1989																
68	MORNING					1.9		1.6	YES	YES		YES		NO			
69	EVENING					1.8		1.6	YES	YES		YES		YES			
70	AUG. 17, 1989					1.9		1.6	YES	YES		YES		NO			
71	MORNING																
72	EVENING					1.9		1.6	YES	YES		YES		NO			

73	AUG 18, 1989							
74	MORNING	1.9	1.5YES	YES	YES	NO		
75	EVENING	1.8	1.5YES	YES	YES	NO		
76	AUG 19, 1989							
77	MORNING	1.8	1.5YES	YES	YES	NO		
78	EVENING	1.8	1.5YES	YES	YES	NO		
79	AUG. 20, 1989	0	0-	-	-	-		
80	MORNING	1.7	1.5YES	YES	YES	NO		
81	EVENING	1.6	1.5YES	YES	YES	NO		
82	AUG 21, 1989							
83	MORNING	1.6	1.5YES	YES	NO	NO		
84	EVENING	1.5	1.4YES	YES	NO	NO		
85	AUG 22, 1989		YES					
86	MORNING	1.3	.75YES	YES	YES	NO		
87	EVENING	1.3	.75YES	YES	YES	NO		
88	AUG 23, 1989							
89	MORNING	1.3	.75YES	YES	YES	YES		
90	EVENING	1.3	.5YES	YES	YES	YES		
91	AUG 24, 1989	0	0	0	0	0	0	
92	MORNING	1.3	.5YES	YES	YES	YES		
93	EVENING	1.2	.5YES	YES	YES	YES		

	I	A	II	B	II	C	II	D	II	E	II	F	II	G	II	H	I
94	AUG 25, 1989					0		0			0		0		0		0
95	MORNING					1.2		.4YES		YES		YES		YES		YES	
96	EVENING					1.2		.4YES		YES		YES		YES		YES	
97	AUG 26, 1989																
98	MORNING					1.2		.5NO		NO		NO		NO		NO	
99	EVENING					1.8		.75NO		NO		NO		NO		NO	
100	AUG 27, 1989																
101	MORNING					2.3		1.1NO		NO		NO		NO		NO	
102	EVENING					2.4		1.2NO		NO		NO		NO		NO	
103	AUG 28, 1989																
104	MORNING					2.5		1.5NO		NO		NO		NO		NO	
105	EVENING					2.2-		YES		YES		YES		YES		NO	

1989 - well drilled

June 14, 1990 - IDWR study conducted

Aug, 1990 - Norm CTR

if NO MIT. PLAN Then:

if flow @ weir < 1.8 cfs Then

if Demand @ 414 $>$ flow @ Weir Then

no Pumping

else can Pump

end if

else CAN Pump

end if

else 'HAVE MIT PLAN

follow MIT PLAN

end if

MIT PLAN:

if flow @ weir > 1.8 or $\geq$ Demand @ 414 Then

max Pump

else ' flow @ weir $<$ Demand @ 414

or Provide water @ weir to provide Demand

Cease Pumping

or Determine natural discharge & mitigate to that amt.

• Demand flow

• Actual flow