

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO,
IN AND FOR THE COUNTY OF TWIN FALLS

IN RE THE GENERAL ADJUDICATION
OF RIGHTS TO THE USE OF WATER FROM
THE SNAKE RIVER BASIN WATER SYSTEM

CIVIL CASE NUMBER: 39576

Ident. Number 43-2446
Date Received: 6/1/89
Receipt No:
Received By:

**NOTICE OF CLAIM TO A WATER RIGHT
ACQUIRED UNDER STATE LAW**

1. Name of Claimant(s)

SHARYL L TRACY Phone: (208)645-2425
VERNON L (BUD) TRACY Phone: (208)645-2425
149 W 1ST N
MALTA ID USA 83342

2. Date of Priority: 07/13/1956

3. Source: GROUND WATER Trib. to:

4. Point of Diversion:

Township	Range	Section	1/4 of 1/4 of 1/4 Lot	County
13S	26E	1	NE NW 3	CASSIA

5. Description of diverting works:

16"X200' WELL, ELECTRIC PUMP, SPRINKLERS

6. Water is used for the following purposes:

Purpose	From	To	C.F.S.	(or) A.F.A
IRRIGATION	3/15	11/15	1.39	

7. Total Quantity Appropriated is:
1.39 C.F.S.

8. Total consumptive use:

9. Non-irrigation uses:

10. Place of use:

Township	Range	Section	1/4 of 1/4	Lot	Use	Acres
13S	26E	1	NE NW		IRRIGATION	40
			NW NE	2	IRRIGATION	40
Section Acres						80

Total Acres 80

11. Place of use in counties: CASSIA

12. Do you own the property listed above as place of use? Yes

13. Other Water Rights Used:

14. Remarks:

I changed the SWNE to NENW as shown on the original claim. The SWNE was a data entry error..kkc

15. Basis of Claim: License

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE STATE OF IDAHO,
IN AND FOR THE COUNTY OF TWIN FALLS

IN RE THE GENERAL ADJUDICATION
OF RIGHTS TO THE USE OF WATER FROM
THE SNAKE RIVER BASIN WATER SYSTEM.

CIVIL CASE NUMBER: 39576

Ident. Number: A43-02446
Date Received: 6/01/1989
Receipt No: SQ07451
Received By:

NOTICE OF CLAIM TO A WATER RIGHT
ACQUIRED UNDER STATE LAW

1. Name: VERNON L. (BUD) TRACY 208-645-2425
Address: 149 W 1ST N
MALTA, ID 83342
AND/OR
Name: SHARYL L. TRACY 208-645-2425
Address: 149 W 1ST N
MALTA, ID 83342

2. Date of Priority: JUL 13, 1956

3. Source: GROUNDWATER Trib. to:

4. Point of Diversion:

Township	Range	Section	1/4 of	1/4 of	1/4	Lot	County
13S	26E	1	NE	NW		3	CASSIA

5. Description of diverting works:
16"X200' WELL, ELECTRIC PUMP, SPRINKLERS

6. Water is used for the following purposes:

Purpose	From	To	C.F.S	(or)	A.F.A.
IRRIGATION	03/15	11/15	1.390		

7. Total Quantity Appropriated is:
1.390 C.F.S. (and/or) A.F.A.

8. Total consumptive use is Acre Feet Per Annum.

9. Non-irrigation uses:

A43-02446

Page 1

Date: 06/01/89

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MAR 03 1993

10. Place of Use:

Township	Range	Section	1/4 of	1/4	Lot	Use	Acres
13S	26E	1	NW	NE	2	IRR	40.0
			SW	NE		IRR	40.0
						Section Acres	80.0
						Total Acres	80.0

11. Place of use in counties: CASSIA

12. Do you own the property listed above as place of use? YES

13. Other Water Rights Used:
A43-02549

14. Remarks:

15. Basis of Claim: LICENSE
Water Right Number: 26441

16. Signature(s)

(a.) By signing below, I/We acknowledge that I/We have received, read and understand the form entitled "How you will receive notice in the Snake River Basin Adjudication." (b.) I/We do _____ do not _____ wish to receive and pay a small annual fee for monthly copies of the docket sheet.

Number of attachments: _____

For Individuals:

I/We do solemnly swear or affirm that the statements contained in the foregoing document are true and correct.

Signature of Claimant(s): _____ Date: _____
_____ Date: _____

State of Idaho)
County of _____) SS.

Subscribed and sworn (or affirmed) before me this _____ day
of _____ 19 _____

Notary Public

Seal

Residing at _____
My Commission Expires _____

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

IN RE THE GENERAL ADJUDICATION
OF RIGHTS TO THE USE OF WATER FROM
THE SNAKE RIVER BASIN WATER SYSTEM

CIVIL CASE NUMBER: 39576

Ident. Number

443-02446

Date Received

Receipt Number

NOTICE OF CLAIM
TO A
WATER RIGHT
ACQUIRED UNDER STATE LAW

Please type or print clearly

1. Name of Claimant (s) ^(Pud) VERNON L. TRACY OR SHARYL L. TRACY Phone (208) 645-2425

Mailing Address 149 WEST 1ST NORTH - MALTA, IDAHO Zip 83342

2. Date of Priority (Only one (1) per claim) 7-13-1956

3. Source of water supply (a) GROUND WATER
which is tributary to (b) _____

4. a. Location of existing point of diversion is: Township 13S Range 26E Section 1,
NE 1/4 of NW 1/4 of _____ 1/4, Govt. Lot, 3 B.M., County of CASSIA

Additional points of diversion if any: _____

b. If instream flow, beginning point of claimed instream flow is:

Township _____ Range _____ Section _____, _____ 1/4 of _____ 1/4 of _____ 1/4,

Govt. Lot _____ B.M., County of _____

ending point is: Township _____ Range _____ Section _____, _____ 1/4 of _____ 1/4 of _____ 1/4,

Govt. Lot _____ B.M., County of _____

5. Description of existing diversion works (Dams, Reservoirs, Ditches, Wells, Pumps, Pipelines, Headgates, Etc),
including the dates of any changes or enlargements in use, the dimensions of the diversion works as
constructed and as enlarged and the depth of each well. 1-16" WELL, 200' DEEP
WITH ELECTRIC MOTOR PUMPING INTO SPRINKLER SYSTEM.

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Township 13S
Range 26E

Section
#1

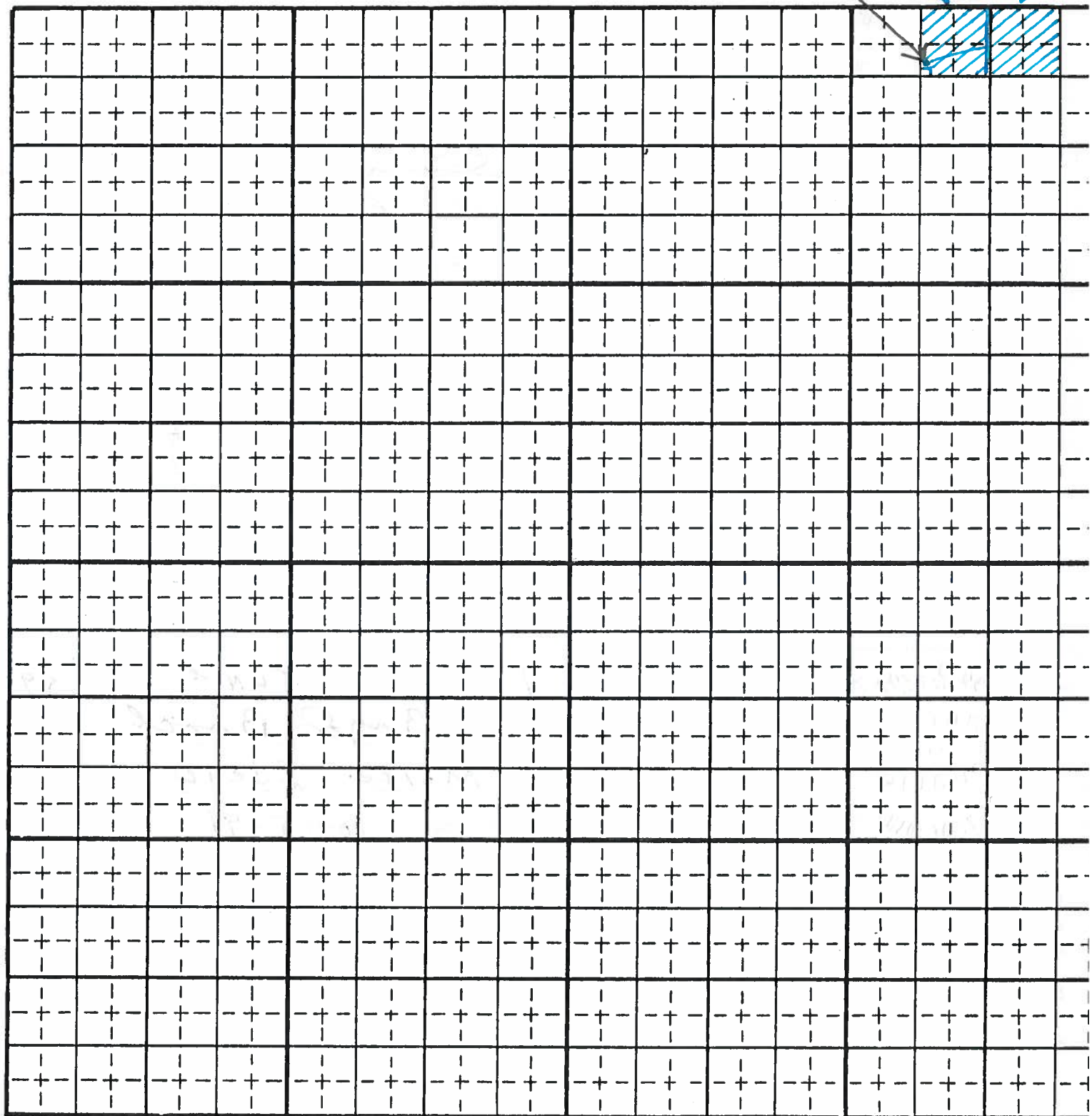
Map of Project: show clearly the point of diversion, place of use, section number, township, and range number.

Scale: 2 inches equals 1 mile

POINT OF
DIVERSION

LOT 3

LOT 2



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MAR 03 1993

Last Name TRACY Ident No. LA

Copies: White-Stat Yellow-Clk

Water Right Number - 43-02446 Adj. Flag Translation: Standard Water Right Number Old (D) Number - 26441

*** C - CURRENT OWNER ***
TAYLOR
Last Name -
First Name -
Address -
P.O. BOX 25
City- MALTA
State- ID Zip- 83347

*** O - ORIGINAL OWNER ***
HARPER
R. J.
1 -
2 -
3 -
City-
State- Zip-
Phone -

Priority Date - 07/13/1956
Region - 17
Stage - L - LICENSE
Status -

Source -
Tributary -

Town Rng Sec Tract Lot RFlg County Point of Diversion
13S 26E 1 NE NW 3 (31) CASSIA
13S 26E 1 NW SE (31) CASSIA
Stream Index (Blank if no Index Code)

Code Description Period From Period To Water Use Diversion Rate Diversion Volume
01 - IRRIGATION
04 - STOCKWATER
1.390

Total Div. Rate - 1.390
Total Div. Volume -
Total Div. Capacity -
Total Consumptive Use -
KW Usage -

Town	Rng	Sec	Tract	Lot	Acres	Place of Use	Description	County
13S	26E	1	NW NE	2	40.0	01 IRRIGATION		(31) CASSIA
13S	26E	1	SW NE		40.0	01 IRRIGATION		(31) CASSIA

Total Acres: 80.0

Diversion Means -
Non-Irrigation Use -
Other Rights for Same Use -

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Water right number - 43-02446

Adj. flag translation: Standard Water Right Number

Remarks -
No Remarks found.

Conditions of Approval -
No Conditions of Approval found.

Decree Defendant -

Decree Date -
00/00/0000

Microfilm Rolls -

Audit Fields - 03/12/85

05/28/88 CONVERT

Water Rights Dates and Flags Area

Proof Due Date	- 00/00/0000	Field Exam Made	- 00/00/0000	Field Exam Fee	-
Approved/Denied	- 00/00/0000	Protested Date	- 00/00/0000	Swan Falls	-
Proof Made Date	- 00/00/0000	Hearing Date	- 00/00/0000	Temporary Right	- P
Start Work Date	- 00/00/0000	Verified Date	- 03/12/1985	DLE/Carey Act	-
Order Show Cause	- 00/00/0000	Receipt Number	-	Water District	-
Licensed Date	- 06/28/1979	Appl Received	- 00/00/0000	Transfer/Amended	-
Decree Date	- 00/00/0000				

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MAR 03 1993



State of Idaho

DEPARTMENT OF WATER RESOURCES

Southern Region, 2148 4th Ave. East, Twin Falls, Idaho 83301 (208) 734-3578

CECIL D. ANDRUS
Governor

R. KEITH HIGGINSON
Director

July 19, 1989

J.L. Tracy

Malta Id 83342

Re: A43-00239B
A43-10315
A43-00240B
A43-10316
A43-02446 ✓
A43-02549
A43-10314

Dear Claimant(s):

Please find enclosed your receipt and a copy of a computer generated claim(s) based on the information from your original claim(s) which has been entered in our computer records.

Please review the computer generated claim(s) for accuracy. In a few instances clarifications may have been added by the Department at the time of data entry. If you have any questions or objections regarding the computer record of your claim(s), please contact this office.

Yours truly,

Judy Givens
Office Secretary

/jg

Enclosure(s):

MICROFILMED
MAR 03 1993



State of Idaho

DEPARTMENT OF WATER RESOURCES

1341 Fillmore Street, Suite 200, Twin Falls, ID 83301-3380

Phone: (208) 736-3033 FAX: (208) 736-3037 DEPT INTERNET WEB SITE: [www/idwr.state.id.us](http://www.idwr.state.id.us)

SOUTHERN REGION

DIRK KEMPTHORNE
GOVERNOR

KARL J. DREHER
DIRECTOR

January 24, 2002

Attn BUD TRACY
RAFT RIVER RURAL ELECTRIC
BOX 617
MALTA ID 83342

RE: OBJECTIONS AND RECOMMENDATIONS FOR BASIN 43 RIGHTS

Dear Bud

I have enclosed 6 claims in your name, 2 claims in Fontella's name, and 3 claims in Pearl's name, all for irrigation.

I have also enclosed 4 objection forms for your use. An instruction sheet on how to complete the forms is attached to one of the objection forms. You may duplicate the forms if you need additional forms. Please remember that the deadline for filing objections is February 8, 2002.

If you have any questions please call or come in to this office and I will assist you.

Sincerely

Kelly K Christensen
Sr Water Resource Agent
E-mail address: kchrste@idwr.state.id.us
enclosures

01/10/2001

IDAHO DEPARTMENT OF WATER RESOURCES
PRELIMINARY RECOMMENDATION OF WATER RIGHTS ACQUIRED UNDER STATE LAW

RIGHT NUMBER: 43-2446

NAME AND ADDRESS: SHARYL L TRACY
VERNON L (BUD) TRACY
149 W 1ST N
MALTA, ID 83342

SOURCE: GROUND WATER

VERIFIED BY: KRC

QUANTITY: 0.69 CFS

USE OF THE RIGHTS LISTED BELOW IS LIMITED TO A TOTAL
COMBINED ANNUAL DIVERSION VOLUME OF 312 AF. COMBINED RIGHT
NOS.: 43-2446 and 43-2549.

PRIORITY DATE: 07/13/1956

POINT OF DIVERSION: T13S R26E S1 LOT 3 SWNENW Within CASSIA County

PURPOSE AND
PERIOD OF USE:

PURPOSE OF USE	PERIOD OF USE	QUANTITY
IRRIGATION	03-15 11-15	0.69 CFS 160.00 AFY

PLACE OF USE:

IRRIGATION Within CASSIA County
T13S R26E S1 LOT 2 NWNE 40 T13S R26E S1 LOT 3 NENW 38

78 ACRES TOTAL

USE OF THE RIGHTS LISTED BELOW IS LIMITED TO THE IRRIGATION
OF A COMBINED TOTAL OF 78 ACRES IN A SINGLE IRRIGATION SEASON.
COMBINED RIGHT NOS. 43-2446 and 43-2549

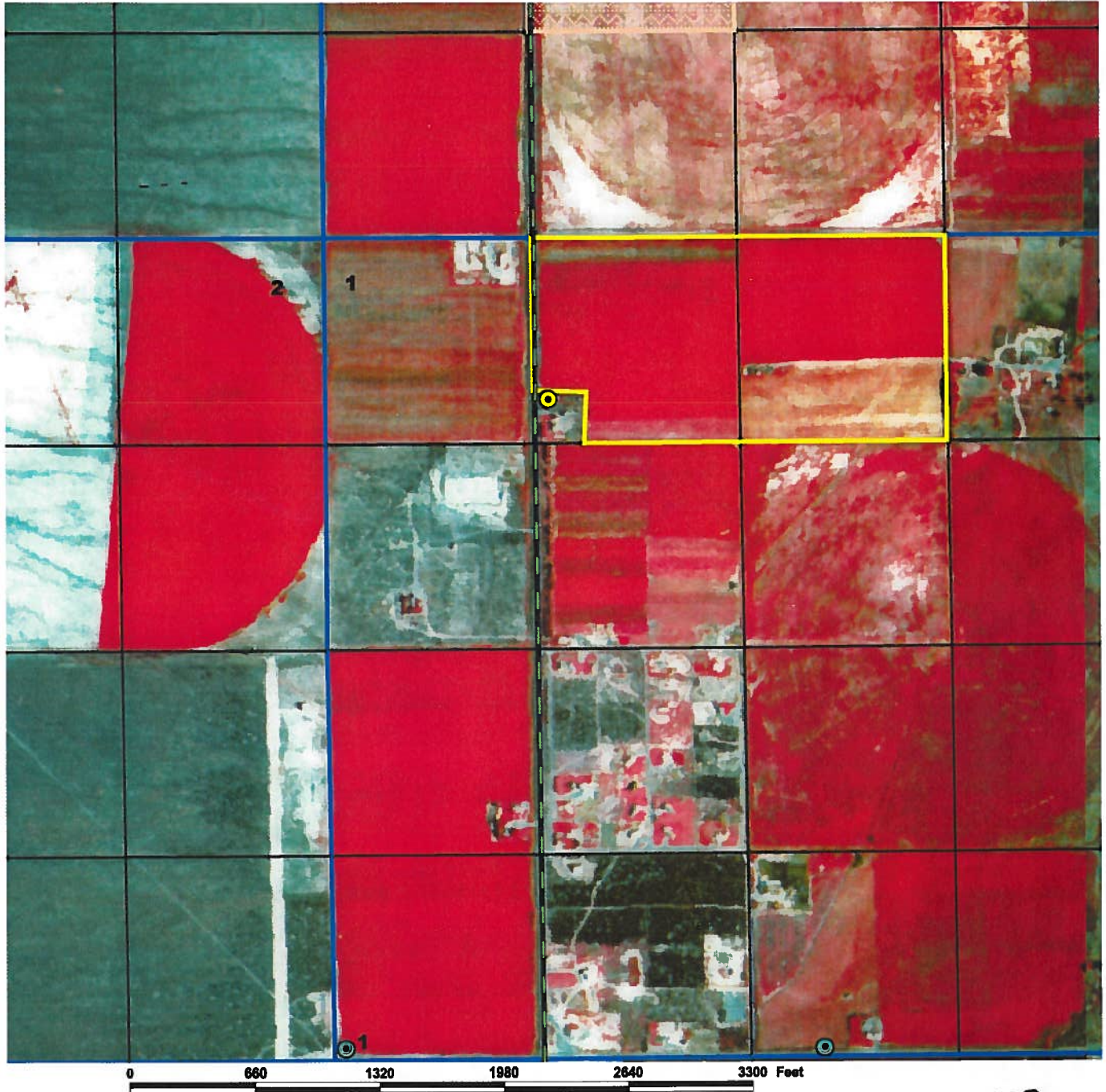
THIS RIGHT IS LIMITED TO THE IRRIGATION OF 40 ACRES WITHIN
THE PLACE OF USE DESCRIBED ABOVE IN A SINGLE IRRIGATION
SEASON.

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

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.

EXPLANATORY MATERIAL: BASIS OF CLAIM - License

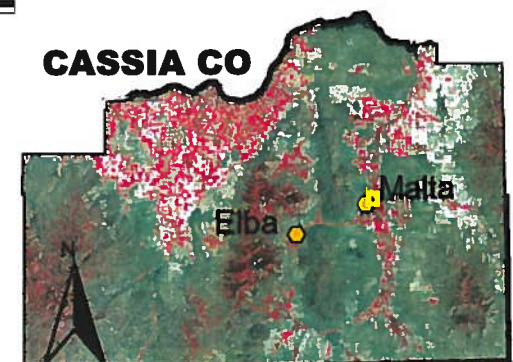
RECOMMENDED PLACE OF USE FOR 43-2446, AND 43-2549



PLACE OF USE
TWP 13S, RNG 26E, SEC 1
Data entry on January 9, 2001

GIS PLACE OF USE PRESENTATION
1987/1988 NAPP AERIAL PHOTOGRAPHY
DATA ENTRY BY KELLY K CHRISTENSEN

-  RECOMMENDED POINT OF DIVERSION
-  RECOMMENDED PLACE OF USE
-  SECTION LINES
-  QUARTER/QUARTER LINES



Idaho Dept of Water Resources

Date: 1-5-2001

File: 43-02446 02459 tracy taylor conflict

Prepared by Kelly K Christensen

Claims review notes and narrative

43-02446 & 43-02549

SYSTEM ANALYSIS

43-02446 was licensed for the irrigation of the W½NE¼ of Sec 1; 13S, 26E from two points of diversion, one in the NENW (lot 3) and the other in NWSE. Eventually the property was split with the NWNE now owned by Tracy and the SWNE now owned by Taylor. The point of diversion in the NENW quarter was also licensed under 43-02446.

The license was for 1.39 cfs for 80 acres or 0.695 cfs per forty-acre tract. ~~Both claimants have claimed that tract.~~ (After reviewing the claim file I found that the claimant submitted a paper claim that listed the NENW AND THE NWNE of Sec 1. The receiving agent data entered 43-2446 as it was licensed, therefore a data entry error). However, only Tracy has claimed the licensed right and the point of diversion in the NENW. Taylor has claimed the ground under various decreed rights and statutory claims. Taylor has claimed the point of diversion in the NENW quarter under A43-04050 and A43-04051.

43-02549 was licensed for the NE¼NW¼ of Sec 1; 13S, 26E. Tracy currently owns this ground. This right was licensed for 0.76 cfs and 38 acres from the point of diversion in NENW. He is the only claimant for that ground, that point of diversion, and that right.

HISTORICAL DATA

Field examinations for both rights were conducted in July of 1967 and the recommendations appear to have been concurrently developed. For an indeterminate period of time the two wells were operated as a system for the irrigation of the three forty acre tracts. This appears to be the status as of the 1967 field examination date. There is no indication that any other ground was being irrigated (Taylor property) from the well in the SWNE.

Point of Diversion	July 1967 Measurement	recognized rate under	
		43-02446	43-02549
SWNE	1.09 cfs	1.09 cfs	0
NENW	1.06 cfs	0.30	0.76
Total	2.15 cfs	1.39 cfs	0.76 cfs

CURRENT SYSTEM

Tracy is irrigating 38 acres in the NENW and 40 acres in the NWNE from the point of diversion in the NENW for a total place of use of 78 acres. ~~He is not irrigating the SWNE quarter.~~

In 1991 Robin Wells did a system analysis and redesigned the irrigation system. Upon completion of the system overhaul, he measured the diversion capacity for the well in the NENW. He found 541 gpm or ≈ 1.21 cfs. This is less than the combined proportionate rate appurtenant to the 78 acres being irrigated by Tracy.

I am recognizing full the 0.76 cfs licensed under 43-02549 as it is appurtenant to the NENW quarter currently owned by Tracy.

The place of use for right 43-02446 has been split with Tracy owning 40 acres and Taylor owning 40 acres. Based upon the information currently available I am recognizing a 50% proportionate share for Tracy. This equates to 0.685 cfs for the 40 acres in the NWNE. The balance of this right is recognized as appurtenant to the 40 acres in the NWSE.

RECOMMENDATION SUMMARY

A43-02549	38 acres within a	78 acre PPU at	0.76 cfs
A43-02446	40 acres within a	78 acre PPU at	<u>0.685 cfs</u>
		Total	1.445 cfs

ONE INCH PER ACRE LIMITATION FOR THE FOUND PLACE OF USE 78 ac * 0.02 cfs = 1.56 cfs

As the combined licensed diversion rate is within 0.23 cfs of the measured rate in 1991 I am recommending the licensed rate as the ground water levels fluctuate considerably in this area and could therefore produce the combined licensed rate under different circumstances using the existing system.

8

43-2446 7-13-56

~~claimed as licensed~~

(date entered as licensed
claimed on part of different
P/U. KKC 1-10-57)

licensed for 1.39 CFS on 80Ac or 0.0174 CFS/Ac
needs split

43-02549 6-18-62

licensed for .76 CFS on 38ac or 0.02 CFS/Ac

system measured @ 1.20 CFS By Robin Wells
~~and~~ for final on system design testing and shown
in his "May 28, 1991 Post pumped & irr sup. analysis
Results" Report.

Possible Split of

43-02446 ✓

A
TRACY
40Ac

.69 CFS

B
TAYLOR
40Ac

.69 CFS

.69 CFS +

.76 CFS

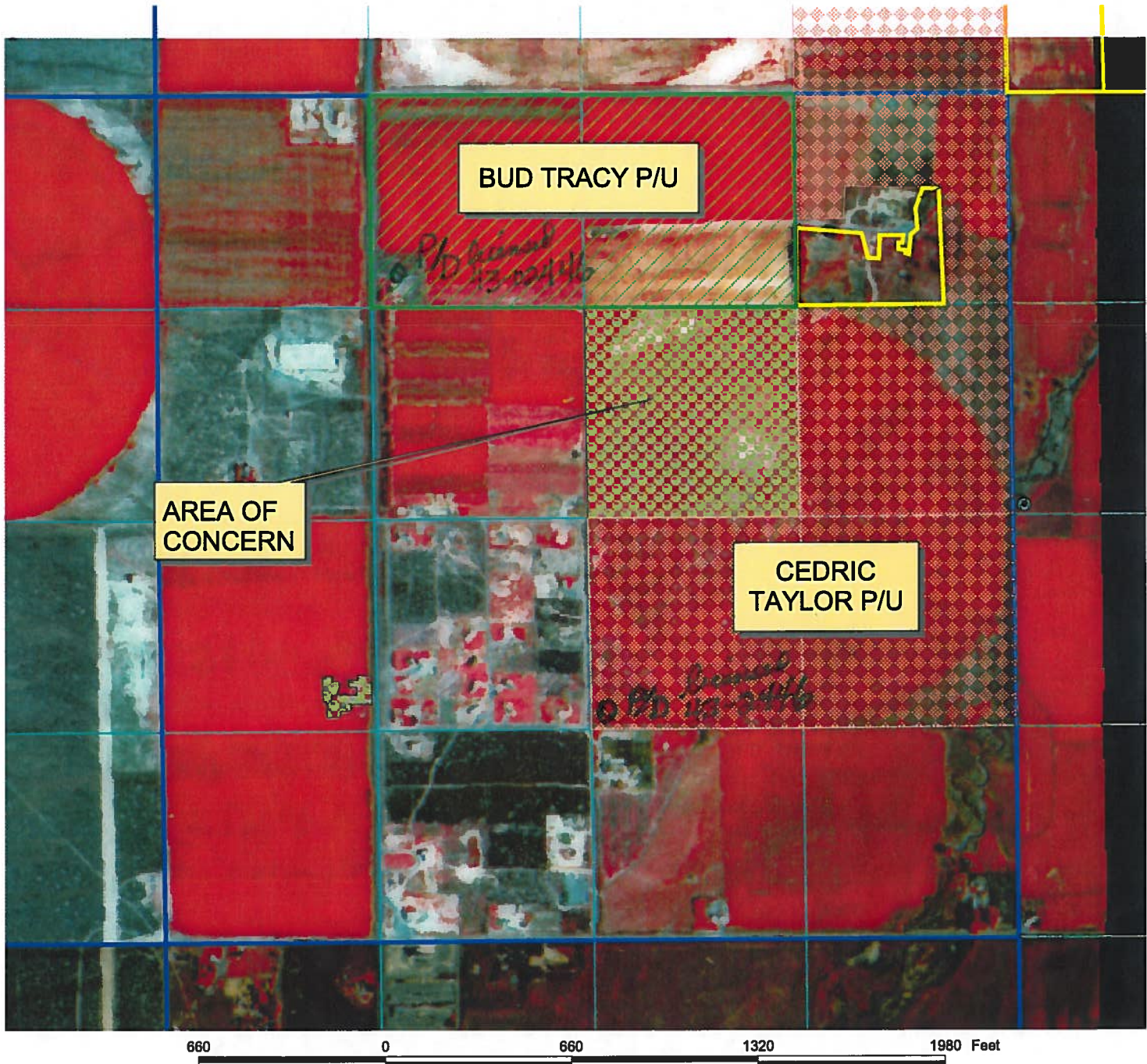
1.45 CFS on 78ac

or 0.018 CFS/Ac



IDAHO DEPARTMENT OF WATER RESOURCES

**P/U CONFLICT BETWEEN
BUD TRACY AND CEDRIC TAYLOR
13S, 26E, SEC 1, SWNE**

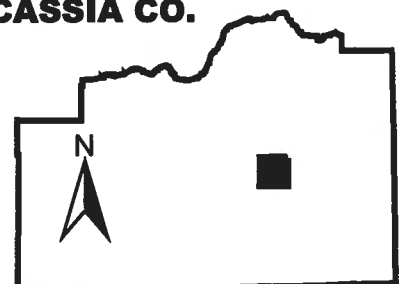


PLACE OF USE
TWP 13S RNG 26E, SEC 1
data entry on: March 24, 2000

GIS PLACE OF USE PRESENTATION
1987 AND/OR 1988 NAPP PHOTOGRAPHY
DATA ENTRY BY KELLY K CHRISTENSEN

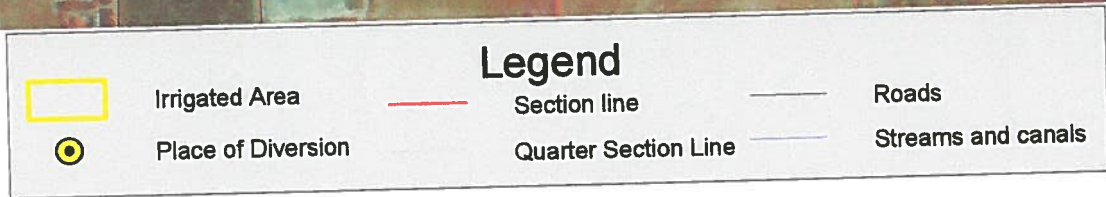
- POINT OF DIVERSION
- PLACE OF USE
- SECTION LINES
- QUARTER/QUARTER LINES

CASSIA CO.



Water Right Claim Number A43-02549

Township , 13S26E



400 0 400 800 1200 1600 Feet



POST PUMP TEST
AND
IRRIGATION SYSTEM ANALYSIS RESULTS
FOR
Bud Tracy

A WELL SUPPLIED WHEEL LINE SYSTEM
(LVL3, STG 2)

RESULTS OF A SYSTEM EVALUATION PAID FOR AND SPONSORED

by

BONNEVILLE POWER ADMINISTRATION

and

RAFT RIVER ELECTRIC

This is The Correct one

Submitted to the Sponsoring Utility

by

Robin D. Wells, P.E.

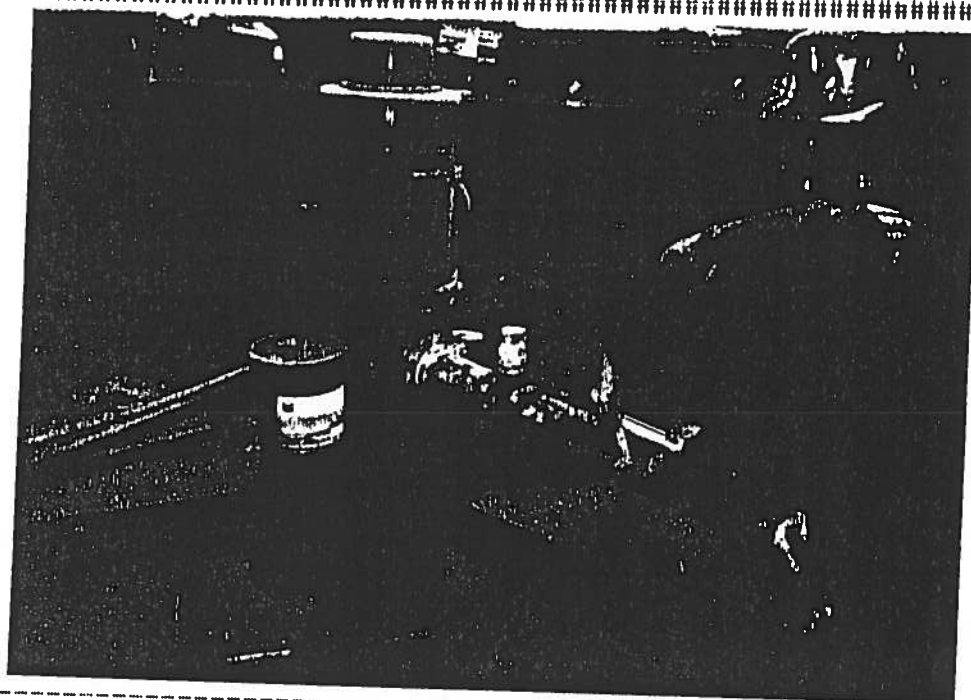
May 28, 1991

PUMP TEST PHOTOGRAPHS

Page X3

Inspection Number: RKE219pt

THE B. TRACY HOME SYSTEM PUMP
#####



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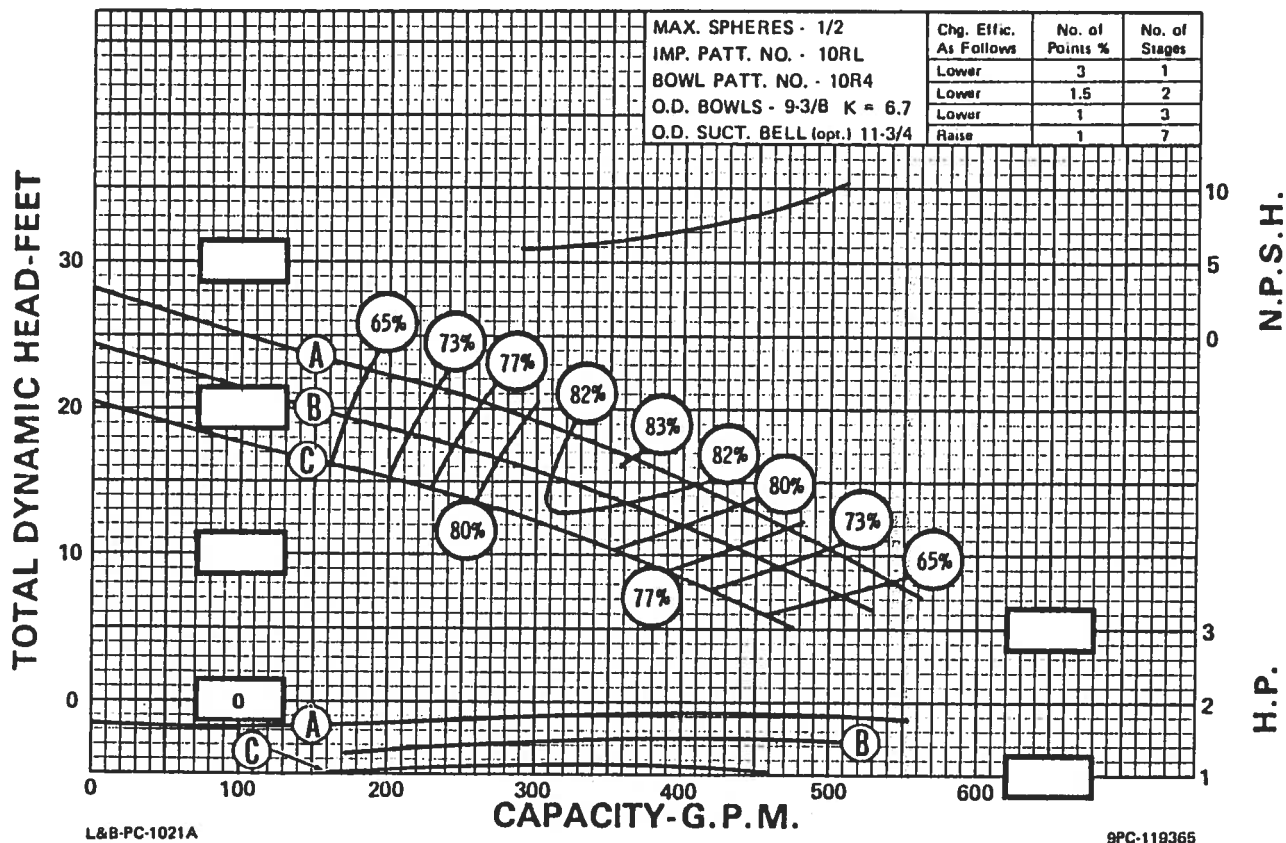
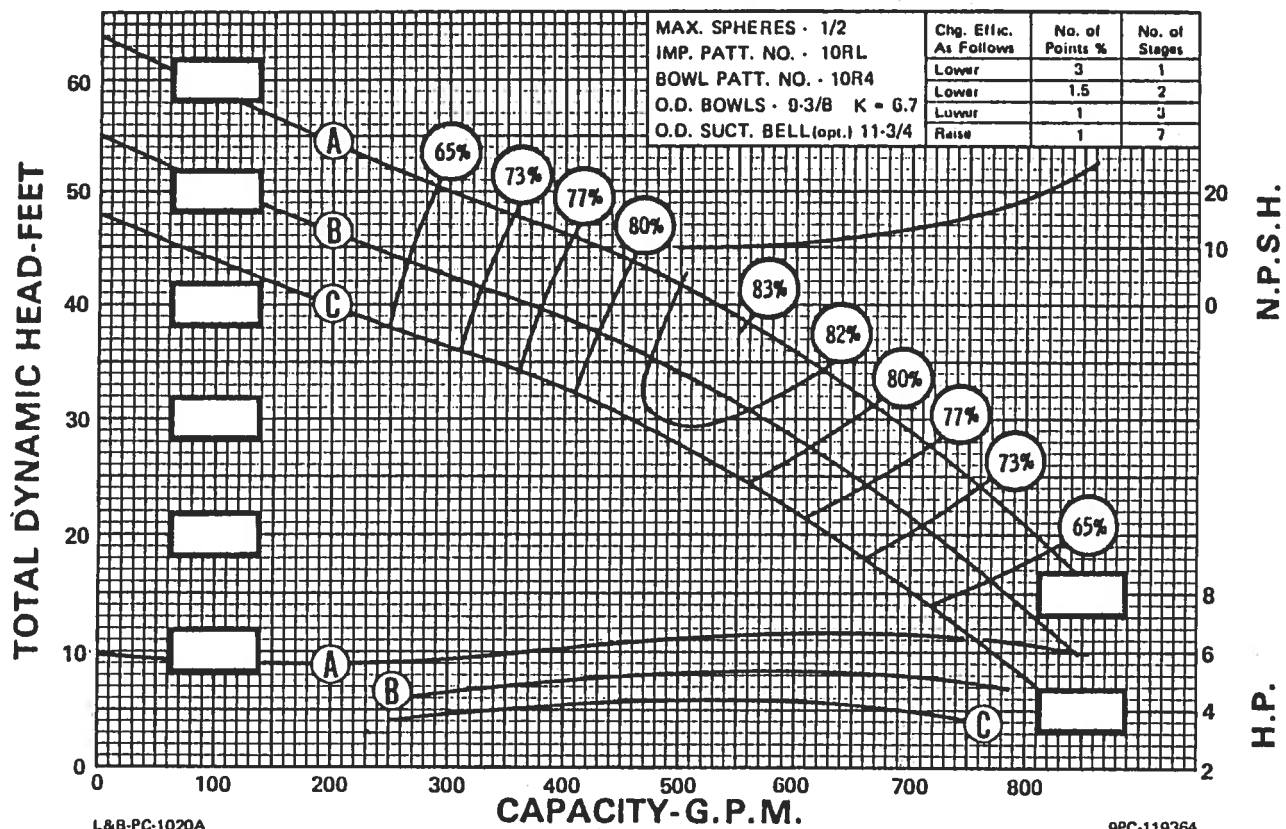
10RL SERIES 1110

Verli-Line PUMP

SECTION 1110 PAGE 5

DATED DECEMBER 1

SUPERSEDES PAGE 533
DATED FEBRUARY 1973



AURORA PUMP

A UNIT OF GENERAL SIGNAL

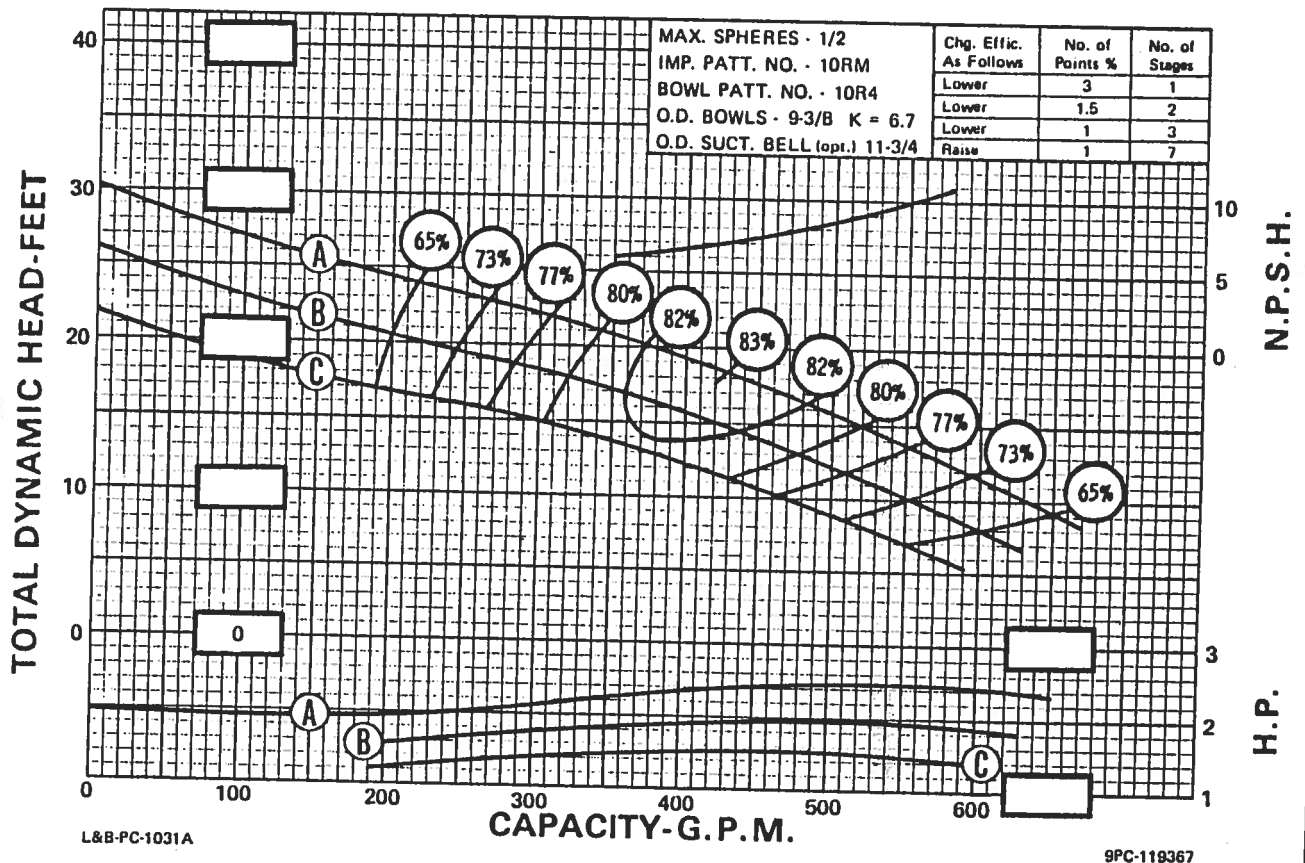
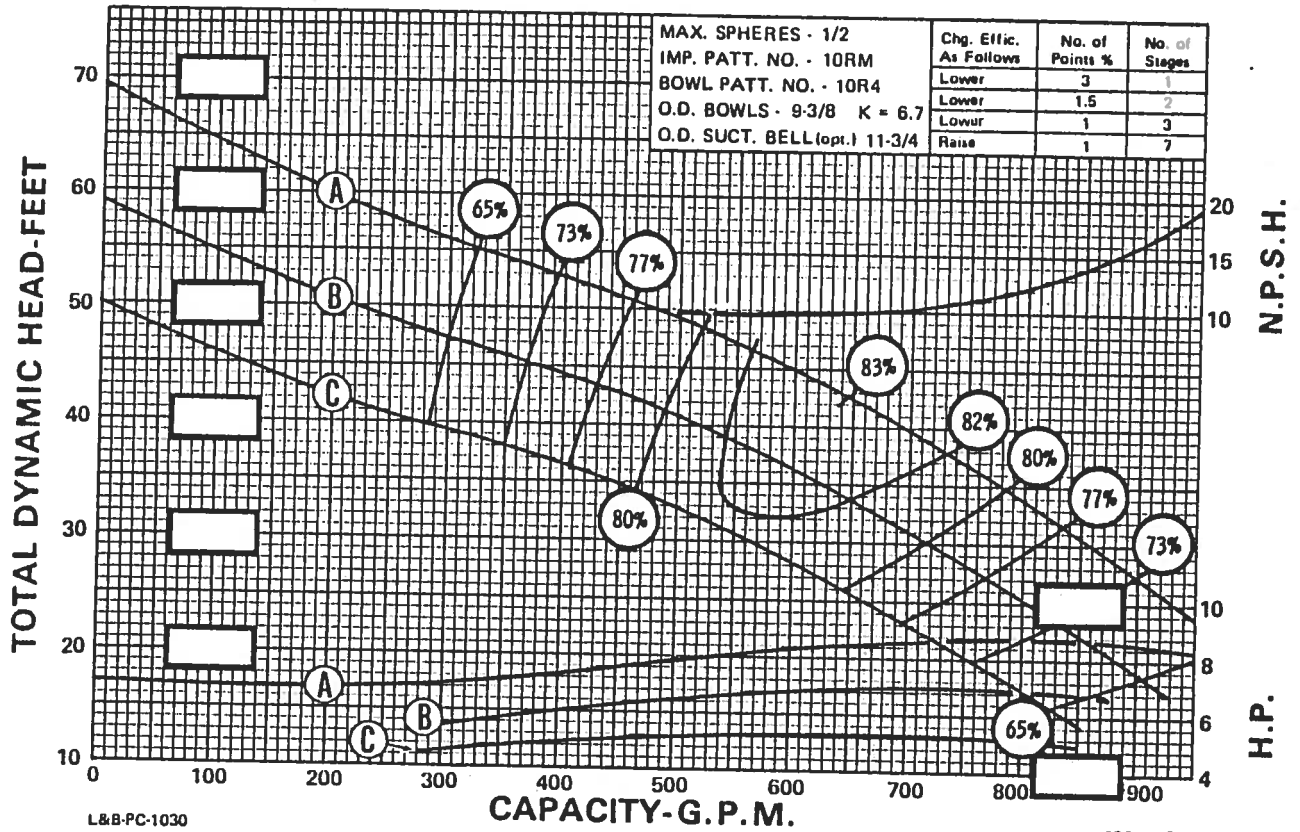
P. O. BOX 1300 • CITY OF INDUSTRY, CA • 91749

A = 7.750
 B = 7.375
 C = 7.000

NUMBER OF STAGES REQUIRED FOR APPLICATION.
 STANDARD CURVE ILLUSTRATES SINGLE STAGE PERFORMANCE ONLY.

10RM SERIES 1110

Verli-Line PUMP



NUMBER OF STAGES REQUIRED FOR APPLICATION
 STANDARD CURVE
 ILLUSTRATES SINGLE STAGE PERFORMANCE ONLY.

(A) = 7.750
 (B) = 7.375
 (C) = 7.000

AURORA PUMP
 A UNIT OF GENERAL SIGNAL
 P.O. BOX 1300 • CITY OF INDUSTRY, CA • 91749

-Irrigator Name: Bud Tracy
-Analysis Date.: 10/17/91: ori=06/04/91
-Irrig Acres....: 73 State > ID
A. # of Pumps in System 1

Inspection #...: RRE219pt
Inspection Date: 05/28/91
Old Inspection#: RRE193
Pump # 1

MAIN <Well BOOSTER _____ SERIES _____ PARALLEL _____

>---(See other pumps as indicated.)---<

B. NAMEPLATE MOTOR DATA

1. Make.....: General Electric
2. Frame #.....: 505VY
3. Rated HP....: 50
4. Rated Volts.: 440
5. Rated Amps.: 60
6. RPM.....: 1765
7. Meter #.....: 180163
8. U/T Frame?..: U (replacement)

C. PUMP AND WATER SUPPLY DATA
(Redesigned after Stg 1.)

1. Make.....: FB Morris Head
a Centrifugal:
b Turbine-Sub: Vertiline (new)
2. Model #.....: 10RML
3. Hd./Serial#: 7338
4. Rated Head.: 267 ft.
5. Rated Flow.: 594 gpm
6. Implr Dia...:
7. Intake Dia.: in.
8. Column Len.: 100+20 ft.
9. # of Stages: 6
10. Col.Tub.Sft: 8x1.5x1.0
11. Well Depth.: 131 ft.
12. Casing Dia.: 12 in.
13. Disch.Dia...: 6 in.
14. Records....: GJ Vertiline

D. ELECTRICAL POWER INPUT DATA

(one motor)

1. Disc Revolutions....: 5.0 rev
2. Meter Constant Kh...: 57.6 w.sec/r
3. CTR.....: 1.0 X
4. PTR/Multiplier.....: 1.0 X
5. Time.....: 28.34 sec
kW Metered= 36.6 kWe (Utility Meter)

	1-2	1-3	2-3	Average
6. Line Voltage.....	471.0	471.0	474.0	472.0 Volts
7. Amperage.....	53.4	51.5	53.6	52.8 Amps
8. Power Factor..(%)...	86.0	86.0	87.0	86.3 % Lag

kW Measured= 37.3 kWe (Pump Panel)

COMMENTS

E. MEASURED FLOW AND PRESSURE DATA

1. Measurement Device.: Collins 2 pt
2. Pipe Inside Diam....: 5.80 in.
3. Average Velocity....: 6.56 fps
4. Flow Reading.....: 541 gpm
5. Discharge Pressure.: 63.0 psi

Average Supply Voltage .. OK
Motor Current Within Rating
Voltage Balance In Tolerance
Current Balance In Tolerance
Power Factor Balance is . OK
Power Factor Level is ... OK
Est. Full Load Motor Eff 89.2%
Est. Pump (w/o motor) Eff 80.9%
Est. of Full BHP Load is 89.2%

F. WATER LEVEL AND FRICTION LOSSES

1. Pumping Lift.....: 114.0
2. Suction Head.....: ft.
3. Static Water.....: 60.0 ft.
4. Water Level Fluct...: ? ft.
5. Misc Frict Losses...: 1.1 ft.

NOTES
> 50 MI = One CFS, in ID
> (Motor Shaft OUTPUT is SHP) <
> (Pump Shaft INPUT is BHP) <
> (Pump Water OUTPUT is WHP) <
> (Isolated Eff. is Curve Eff) <
> (Motor Load = System Load) <
Static on 4/91 = 60 feet.

G. TESTED PUMPING PLANT CONDITIONS

1. Total Dynamic Head.: 260.6 ft.
2. Flow... MI= 60 541 gpm
3. Water Horsepower....: 35.6 WHP
4. Input Horsepower....: 50.0 EHP
5. Est. Motor Brake HP.: 44.6 SHP
6. Pumping Plant Eff...: 71.2 %

Reconditioned Motor replacement.
New Pump.
Retrofit Suction at 126 feet!!
Panel Power reference, Stg 1 & 2.
Does Mtr kW = Tot. Load? YES
Total Sys. EHP Demand = 50.0
SHP - (Sft. Loss) = BHP = 44.0
Est. Total Sft HP Loss = 0.6

kWH Average Fm: RRE193 76093 kWH/Yr. Inspection #....:RRE219pt
(correction 10/17/91, was 65520) See Stage 1 #....:RRE193

H. ACTIONS TAKEN Stage 2 Test Dt.:05/28/91

1. Replace Suction Fittings	YES X	NO
2. Replace Discharge Fittings	YES	NO X
3. Low Pressure or Reduced Pressure Spkrs ..	YES	NO X
4. Retrofit Mainline	YES	NO X
5. Pumping Plant Efficiency Improvements ...	YES X	NO
6. Remove Booster Pump	YES	NO X
7. Is there a Runoff Problem Now?	YES	NO X

I. FINAL PUMPING PLANT(S) PERFORMANCE SUMMARY

Pump #	TDH	GPM	WHP	Pmp.EHP(+sys)	SHP	EFF
1	260.6	541	35.6	50.0	44.6	71.2
2	0.0	0	0.0	0.0	0.0	0.0
3	0.0	0	0.0	0.0	0.0	0.0
4	0.0	0	0.0	0.0	0.0	0.0
5	0.0	0	0.0	0.0	0.0	0.0
6	0.0	0	0.0	0.0	0.0	0.0
7	0.0	0	0.0	0.0	0.0	0.0
8	0.0	0	0.0	0.0 (sys)	0.0	0.0
TOTAL >>	260.4	541	35.6	50.0 0.0	44.6	71.2%<Sys

(See Pumping Eff.Below)

J. BEFORE AND AFTER PUMPING PLANT COMPARISONS

	a. INITIAL	b. PROPOSED	c. FINAL
1. Total Head (TDH) =	192.4 FT	248.4 FT	260.4 FT
2. Flow (GPM) =	315.0 GPM	594.0 GPM	541 GPM
3. Pumping Plant Efficiency =	45.1 %	69.0 %	71.2 %
4. Input Kilowatts (kW) =	25.3 kW	40.3 kW	37.3 kW
5. Input Horsepower (EHP) =	33.9 EHP	54.0 EHP	50.0 EHP
6. ESTIMATED Brake HP (BHP) =	30.5 BHP	48.6 BHP	44.6 BHP

K. ENERGY SAVINGS AND COST SHARING POTENTIAL

- Average Retrofit Pumping Efficiency = (WHPe/EHPe %) = 71.2 %
- Target Stage 1 Retrofit System Efficiency (proposed) = 69.0 %
- Energy Savings Based on Actual Horsepower Reduction = -36057. kWh
- Energy Savings Based on Reduced System kW/GPM ratio = 10793 kWh
- Minimum Guarantee from Stage 1 Analysis \$= 600 min.
- Calc'd Average Cost per kWh from Stage 1 (RRE193) = 0.039 /kWh
- Energy Cost per Ac.Ft. of Retrofit System (aprox.) = 14.55 /AF.
- Energy Cost per Ac.Ft. of Original System (average) = 16.96 /AF.
- Approx. Pumping Capacity Compared to Peak Irrig. Req. = 102.0 %
- Expected (approx.) increase in Annual Power Costs \$=1399

>-The Performance of this System Qualifies for BPA Cost Sharing!-<

>Comments:

> Discharge pipe should eventually be replaced.
> Pump design modified after stage 1 evaluation due to "non-replaceme
> of the mainline from pump to riser "O" at m1 "T". Expected results
> shall have been "reduced improvement" in kw/gpm ratio.
> On review, indicated correction of KWH history made 10/17/91.

Before After

PUMP TEST CALCULATION FORM:

Standing water level (to ground level)

60 ft.

Pumping water level (to ground level)

114 ft.

Draw down = pumping level - standing level 54 ft.

FRICTION LOSSES:

Pump column loss:

1.1 ft.

Operating press: 6.3 psi X 2.31 =

145.5 ft.

TOTAL DYNAMIC HEAD:

260.6 ft.

INPUT HORSEPOWER:

KW = 5 revolutions X 57.6 Kh X 1 CTR X 3.6 ÷ 28.34 seconds = 36.6 KW

Hp = 36.6 KW X 1.34 = 49 Hp.

OUTPUT HORSEPOWER

Lf _____

Rf _____

Lr _____

Rr _____

Average: 6.56 FPS

Collins meter: 82.47 (*) X 6.56 ft./sec. = 541 GPM

Hp = 541 gpm X 260.6 TDH ÷ 3960 = 35.6 Hp

EFFICIENCY:

35.6 Hp (output) ÷ 49 Hp (input) X 100 = 72.6 % eff.

OTHER:

Acre-feet/day = 541 gpm X .00442 = 2.39 acre-feet/day.

KWH/acre-foot = (36.6 Kw X 24) ÷ 2.39 acre-feet/day = 367.5 KWH A

(*) Use factor number in the Collins Meter instructions

Ed Tracy Before

PUMP TEST CALCULATION FORM:

Standing water level (to ground level) _____ ft.

Pumping water level (to ground level) 95.5 ft.

Draw down = pumping level - standing level _____ ft.

FRICITION LOSSES:

Pump column loss: 2.2 ft.

Operating press: 41 psi X 2.31 = 94.7 ft.

TOTAL DYNAMIC HEAD: 192.4 ft.

INPUT HORSEPOWER:

KW = 5 revolutions X 57.6 Kh X 1 CTR X 3.6 ÷ 43.34 seconds = 23.9 KW

Hp = 23.9 KW X 1.34 = 32. Hp.

OUTPUT HORSEPOWER

Lf _____

Rf _____

Lr _____

Rr _____

Average: _____ FPS

Collins meter: 82.24 (*) X 3.83 ft./sec. = 315 GPM

Hp = 315 gpm X 192.4 TDH ÷ 3960 = 15.31 Hp

EFFICIENCY:

15.31 Hp (output) ÷ 32 Hp (input) X 100 = 47.8 % eff.

OTHER:

Acre-feet/day = 315 gpm X .00442 = 1.39 acre-feet/day.

KWH/acre-foot = (23.9 Kw X 24) ÷ 1.39 acre-feet/day = 412.64 KWH

(*) Use factor number in the Collins Meter instructions

PUMP TEST
AND
IRRIGATION SYSTEM ANALYSIS RESULTS
FOR
BUD TRACY
A 40 HP HAND LINE SYSTEM

(A well supplied system.)

RESULTS OF A SYSTEM EVALUATION PAID FOR AND SPONSORED

by

BONNEVILLE POWER ADMINISTRATION

and

RAFT RIVER ELECTRIC

Submitted to the Sponsoring Utility

by

Robin D. Wells, P.E.

September, 13 1990

PUMP TEST PHOTOGRAPHS

Inspection Number: RRE193

-----|-----
THE TRACY WELL PUMP
#####

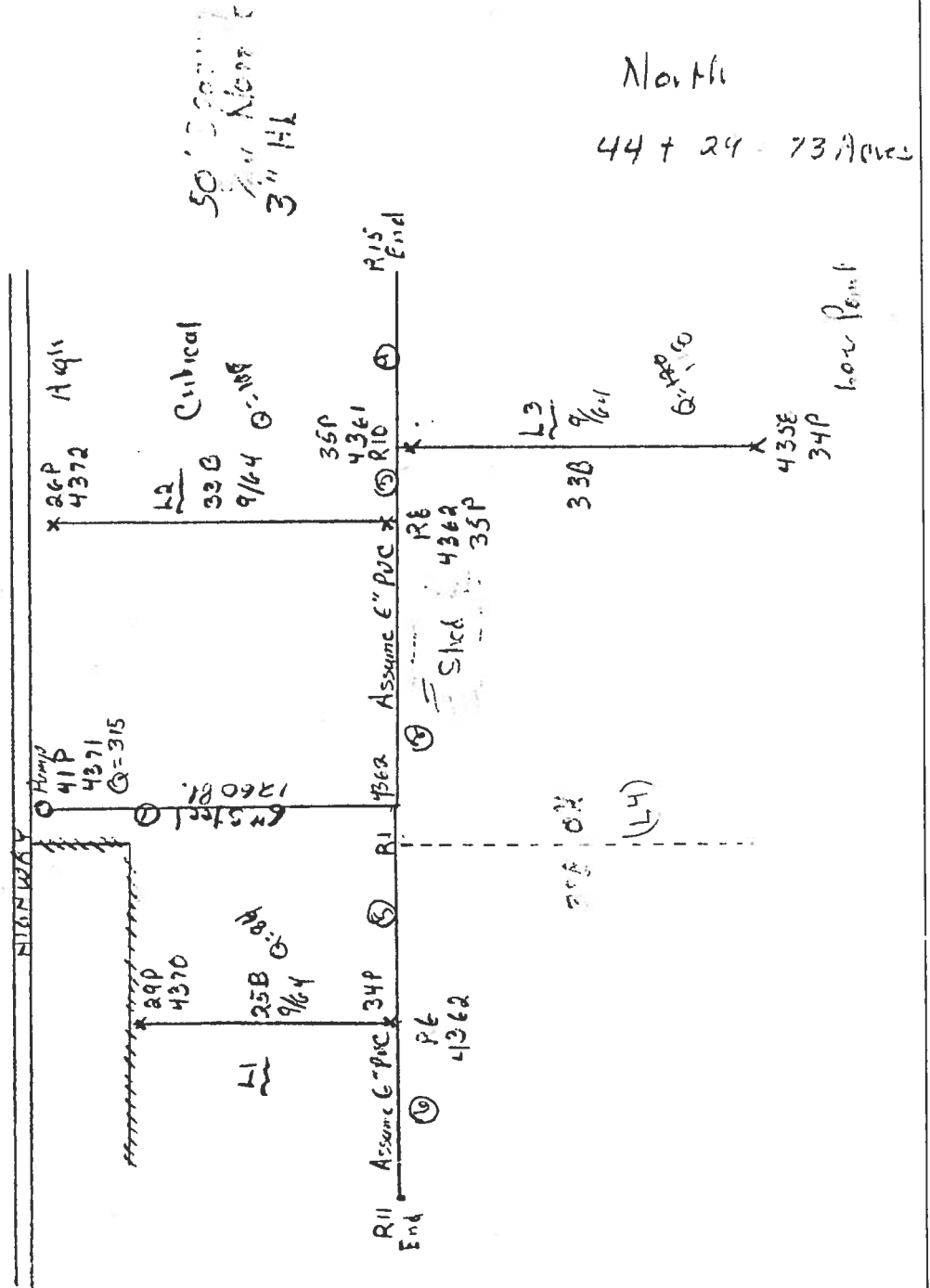
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#####

Buck Tracey

Handline System

AE 193

9/13/16



Burl Tracey

Recompute Design

11.4

3/5

Design for worst case IR
50' spacing
26 Risers

Gross IR by Area

$$73 \times \frac{.26}{.65} \frac{449}{1.98} \frac{1}{12} = 552 \text{ gpm} = 61.5 \text{ MI}$$

Return Time IR

$$\frac{40 \times 30}{4360} \times \frac{.26}{.65} \times \frac{26}{4} \times \frac{24}{11.5} \times \frac{449}{1.98} \frac{1}{12} = 4.71 \text{ gpm/noz}$$

Maximum Return Nozzle $4.71 \times .87 = 4.09$

Select 4.5 FC Nozzles

→ High Friction in 3" laterals = 14 psi/lateral

Design Q and TWT for well

L2 and L3 at R15 (North)

L4 and L1 at R2

$$\text{Req L2} = 45 + .75(14 \text{ psi})^{10.5} + (22-61)/\left(\frac{1.59}{2} \times 2.31\right) = 37.01$$

$$\text{Frict. R2 to R15} \quad H_f = (13 \times 50, 150, 80, 66 \times 4.5)^{.594} = 3.97 \quad V=3.4$$

$$\text{Req L1} = 37.01 + (3.97 - 1)/2.31 = 58.30 \text{ psi}$$

$$\text{Frict R2 to R0} \quad H_f = (100, 150, 6, 297+297)^{.594} = 2.21 \text{ ft.} \quad V=6.7$$

$$\text{Frict R0 to Pump: } H_f = (1260, 150, 5.8, 594)^{.594} = 69.56 \text{ ft.} \quad V=7.2 \quad \leftarrow \text{WOL}$$

Redesign Steel Mainline from Pump

$$\text{Try 8" PVC Frict R0 to Pump } H_f = (1260, 150, 8, 594)^{.594} = 6.86 \text{ ft.} \quad V=3.79$$

Req. at Pump Disch.

$$\text{Pump} = 58.30 + (2.21 + 6.86 - 9)/2.31 = 58.33 \text{ psi} = 160.7 \text{ ft.} \quad V=32.8$$

$$\text{Col Frict } f(6 \times 2 \times \frac{120}{100}) = 6 \times 1.2 = 7.2 \text{ ft.}$$

New h₁ = 11 + 95.5 Estimated

$$\text{New Pump TDH} = 134.7 + 7.2 + 11 + 95.5 = 248.4$$

8" PVC

$$160.7 + 7.2 + 11 + 95.5 = 274.4$$

IRRIGATION SYSTEM INSPECTION DELIVERY CHECKLIST

I have received the BPA handout material on runoff control and am aware that conversion from high pressure to low pressure sprinklers may result in increased runoff unless I implement control strategies. _____

I am aware of which efficiency improvement measures (low pressure, mainline, fittings and pumping plant modifications) are eligible for reimbursement under the BPA program. _____

I am aware of the eligible components for each eligible measure. _____

I am aware of the estimated payback period for each recommended measure. _____

I am aware that the pumping plant has to be changed to a lower horsepower or the kilowatt to gpm ratio has to be reduced in order for me to receive any reimbursement and that this is based on pump testing by the utility or its contractor before and after measure installation. _____

I am aware that the Stage I inspection results may not be detailed enough to be used by the equipment installer (of my choice) for the final redesign of my system. _____

s/ Bud Tracy

Date

Name.....: Bud Tracy	Inspection #...: RRE193
Address.....:	Inspection Date: 09/13/90
City, State, ZIP.: Malta, Idaho 83342	BPA Area/Dist...: IDAHO FALLS
Utility.....: Raft River Electric	# Irrig Acres...: 73
Account #.....: 180163	Crop Type(s)...: alf.spgr
Inspector(s)...: R. WELLS	No. of Laterals: 4
Pumps in System: 1	Analysis Update: 04/23/91

>This System IS ELIGIBLE for BPA Cost Sharing under the KW/GPM option.

NOTE!! This form is intended to determine which retrofit conservation measures are eligible under Bonneville Power Administration's Cost Share Program. This report may not provide the redesign information that meets the expectations of the all irrigators. Each cooperating owner / operator has the final responsibility for verifying the analysis of the field data in this report.

NOTES ON SYSTEM LAYOUT AS TESTED:

This system was originally under designed for a four lateral system. The existing pump and steel mainline cannot supply the peak irrigation requirement. The system limitation has been intensified by the drought and increased pumping lift required. Shorting the pasture and concentrating on the alfalfa has reduced the impact of the deficits, but there remains a considerable lack of capacity to raise an unstressed crop here.

I have assumed that there are approximately 73 producing acres under this system and the irrigation return time is 6.5 days. This would require 4.7 gpm per nozzle discharge to meet the peak irrigation requirement. (The existing 9/64 nozzles would require an average of 65 psi for a 4.7 gpm discharge.) With this nozzle discharge along a 3 inch lateral, there would be in excess of 14 psi friction loss (without elevation losses) which will degrade the irrigation uniformity.

An increase in flow from the pump will cause an excessive friction problem in the steel mainline leading from the pump. A 1260 foot, 8" pvc replacement has been recommended. At the time of this analysis, the depth of the well and the bowl setting is not known; however, an increase of at least 11 ft pumping lift is expected with the recommended pump discharge.

I have recommended a 45 psi average pressure on the critical lateral so that elevation and friction will not reduce the end nozzle pressure below 38 psi. There is considerable friction to deal with in the 3 inch laterals.

There is enough eligibility to cost share part of the pump, but not the mainline, even though there is a severe friction problem with the increased flow. (Eligibility under the KW/GPM option.)

Note the attached calculations. The suggested alternate TDH for the pump includes increased friction for the 6X2 tube and column, increased lift, friction through an 8"x 1260 ML; and flow for 4, 33 bird x 4.5 flow control system.

-- RDW 3/5/91

>This system is a Stage 1, Level three under the BPA 1990 contract.

UPDATED 04/23/91 Bonneville Power Administration
INITIAL PUMP TEST FORM

Page 2A

Inspection #....:RRE193
Bud Tracy

A. # of Pumps in System 1 Pump # 1

MAIN_<<<< BOOSTER_____ SERIES_____ PARALLEL_____

B. NAMEPLATE MOTOR DATA

1. Make.....:U.S. Motors
2. Frame #.....:324TP WPI
3. Rated HP....: 40
4. Rated Volts: 460
5. Rated Amps.: 51.0
6. RPM.....: 1770
7. Meter #.....: 180163
8. U/T Frame?..: T

C. PUMP AND WATER SUPPLY DATA

1. Make.....:Pamona Pump
a Centrifugal:
b Turbine-Sub:FB Morris
2. Model #.....: ?
3. Hd/Serial#.:PF7338
4. Rated Head.: ? ft.
5. Rated Flow.: ? gpm
6. Implr Dia...: ? in.
7. Intake Dia.: ? in.
8. Column Len.:est 100 ft.
9. # of Stages: ? #
10. Col.Tub.Sft:06x2.0x1-3/16
11. Well Depth.: ? ft.
12. Casing Dia.: 18 in.
13. Disch.Dia...: 6 in.
14. Records....: ?

D. ELECTRICAL POWER INPUT DATA

(One Motor)
1. Disc Revolutions....: 5 rev
2. Meter Constant Kh...: 57.6 w.sec/r
3. CTR.....: 1 X
4. PTR/Multiplier.....: 1 X
5. Time.....: 43.34 sec
kW Metered= 23.9 kWe (Utility Meter)

	1-2	1-3	3-2	Average
6. Line Voltage.....:	463	464	461 LV AVE.=	462.7
7. Amperage.....:	36.6	36.3	36.4 LA AVE.=	36.4
8. Power Factor..(%):	85.0	87.0	88.0 PF AVE.=	86.7

kW Measured= 25.3 kWe (Pump Panel)

COMMENTS

E. MEASURED FLOW AND PRESSURE

1. Measurement Device.:Collins 2 pt
2. Pipe Inside Diam...: 5.8 in.
3. Average Velocity...: 3.83 fps
4. Flow Reading.....: 315 gpm
5. Discharge Pressure.: 41.0 psi

Motor Supply Voltage OK
Motor Current Within Rating
Power Factor Level is ... OK
Voltage Balance In Tolerance
Current Balance In Tolerance
Power Factor Balance is . OK
Est. Full-Load Motor Eff 89.5%
Est.Isolated Pump Eff is 51.6%
Est. of Full SHP Load is 75.9%

F. WATER LEVEL AND FRICTION LOSSES

1. Pumping Lift.....: 95.5
2. Suction Head.....: 0.0 ft.
3. Static Water: ? ft.
4. Water Level Fluct...: 11.0 ft.
5. Misc Frict Losses...: 2.2 ft.

NOTES

> (8.978 gpm / ID.Minor's In) <
> (Motor Shaft OUTPUT is SHP) <
> (Pump Shaft INPUT is BHP) <
> (Pump Water OUTPUT is WHP) <
> (Isolated Eff.is Curve Eff) <
Lvl Flux = (594-315)/25 = 11
Recommended sys.design Q = 594
Motor needs dip and bake.
Col-Tub-Sft is estimated.

G. TESTED PUMPING PLANT CONDITIONS

1. Total Dynamic Head.: 192.4 ft.
2. Flow... MI= 35 315 gpm
3. Water Horsepower...: 15.3 WHP
4. Panel Horsepower...: 33.9 EHP
5. Est. Motor HP.....: 30.4 SHP
6. Pumping Plant Eff...: 45.1 %

Review bowl setting!
SHP -(Sft Loss)= BHP = 29.6
Est.Total Sft HP Loss = 0.7

UPDATED 04/23/91 Bonneville Power Administration
LOW PRESSURE RETROFIT OPTIONS
FOR SET SYSTEMS OR PIVOTS

Page 3

SET SYSTEM_ ? ac|HL #_ ? Inspection #...:RRE193
CENTER PIVOT_ ? ac|WL #_ ? Bud Tracy

H. CONTROL FIELD ELEVATIONS AND RUNOFF ASSESMENT -- (See Sketch)

1. Highest Irrigated Field Elevation Under System.....: 4372 ft.
2. Lowest Irrigated Field Elevation Under System.....: 4358 ft.
3. Elevation of critical sprinkler as tested.....: 4372 ft.
4. Potential critical sprinkler elevation.....: 4372 ft.
5. Is Any Flow or Pressure Control Recommended? Yes, 3" hl @ 4.5
6. Does significant runoff occur now? NO, Unlikely
7. After retrofit, will runoff be a problem? NO, Not Expected
8. Can Management Practices Decrease Runoff? YES, See Comments

I. RECOMMENDED MINIMUM PRESSURE AT CRITICAL POINT -- @ Lat.# L-2

1. Low Pressure Sprinkler Recommendation.....: 40 psi, at nozzle
2. Flow or Pressure control loss (2-5psi).....: 5 psi, at device
3. Required Operating Pressure on Critical Lateral: 45 psi

J. SYSTEM LATERAL DATA and CRITICAL LATERAL ACCESSMENT - (From Page 4B)

1. System Noz. Discharge Assuming No Wear and Uniform Nozzles: 292
2. Total System Leak and Nozzle Wear Losses.....(gpm)..: 23
3. System Leaks as a Percentage of Pump Discharge.....(%): 7%
4. Total Acreage of Effective Coverage AFTER RETROFIT..(acres): 73
5. Pivot Discharge not in Set System Leak Analysis.....(gpm): 0
6. Average Gross Pivot Application Capacity.....(in./day)..: 0.00

K. CRITICAL SPRINKLER PRESSURES

1. First Sprinkler Pressure.....: 35.0 psi<@Lat L-2
2. Last Sprinkler Pressure.....: 26.0 psi
3. LOWEST/AVERAGE/OTHER PRESSURE.....: 28.3 psi
4. Mainline Pressure Adjustment.....: ? psi<(Page 4A)
5. Elevation Adjustment.....: 0.0 psi<(Sketch)
6. ADJUSTED CRITICAL PRESSURE.....: 28.3 psi

L. POTENTIAL HEAD SAVINGS BEFORE MODIFICATIONS -- (See Page 4A)

- | | psi | feet |
|---|-------|-------|
| 1. ADJUSTED CRITICAL PRESSURE.....: | 28.3 | 65.4 |
| 2. REQUIRED OPERATING PRESSURE.....: | 45.0 | 104.0 |
| ---(NOTE! Negative number indicates increased pressure suggested.)--- | | |
| 3. POTENTIAL TOTAL HEAD SAVINGS.....: | -16.7 | -38.6 |

TABLE of VARIABLE NOZZLE APPLICATION RATES on SYSTEM LATERALS (in./hr):

	--L1--	--L2--	--L3--	--L4--	--L5--	--L6--	--L7--	--L8--
Beg.Noiz:	0.162	0.164	0.164					
End.Noiz:	0.149	0.141	0.162					
	--L9--	--L10--	--L11--	--L12--	--L13--	--L14--	--L15--	--L16--
Beg.Noiz:								
End.Noiz:								
	--L17--	--L18--	--L19--	--L20--	-----			
Beg.Noiz:					! Set System Delivery Capacity			
End.Noiz:					! in Inches/da.=*****<(q-noz)			

Bonneville Power Administration
MAINLINE RETROFIT OPTIONS
UPDATED 04/23/91

Page 4A

Inspection #...:RRE193
Bud Tracy

M. MAINLINE CALCULATION PROCEDURES:

1. Calculate the velocity in each mainline section with laterals positioned for maximum head conditions.
2. Calculate friction loss in each mainline section.
3. Resize (or size for parallel pipeline) all mainline sections with a velocity greater than 7 fps to reduce velocity to less than 5 fps.
4. Calculate the effect these changes will have on total head.
5. Use the PROPOSED flow for the retrofit condition to determine eligibility.
6. Check calculations with independent analysis especially involving parallel, branching, or loop pipe systems (see HELP).

----- (In Critical Path? = X) -----									
Mainline Section Number	V Length (ft)	Inside Dia (in)	C* Value	Flow (gpm)	Velocity (fps)	Hf/100 (ft)	Frictn (ft)	Head Redctn (ft)	
1. Current>X	1260	5.80	150	315	3.83	0.80	10.13		
Retrofit!	1260	5.80	150	594	7.21	2.60	32.79	-22.7	
-----V (See #10 below for proposed Q and retrofit of ML #1.)									
2. Current>?	400	6.00	150	235	2.67	0.40	1.58		
Retrofit!								0.0	
3. Current>?	100	6.00	150	118	1.34	0.11	0.11		
Retrofit!								0.0	
4. Current>?	250	6.00	150	0	0.00	0.00	0.00		
Retrofit!								0.0	
5. Current>?	350	6.00	150	84	0.95	0.06	0.21		
Retrofit!								0.0	
6. Current>?	250	6.00	150	0	0.00	0.00	0.00		
Retrofit!								0.0	
7. Current>?									
Retrofit!								0.0	
8. Current>?									
Retrofit!								0.0	
9. Current>?									
Retrofit!								0.0	
-----V (See page 5 for increased fric. w/ orig. steel pipe.)									
10. Current>?	1260	5.80	150	594	7.21	2.60	32.79		
Retrofit!	1260	7.80	150	594	3.99	0.62	7.76	25.0	

11. POTENTIAL CRITICAL PATH HEAD REDUCTION (marked with "X"). | -22.7
 *Steel.: C=100 *CTE Steel.: C=090
 *Alum.: C=120 >> $Hf/100 = 1054 * (gpm^{1.852}) / (C^{1.852} * dia^{4.8655})$ <<
 *PVC...: C=150 *Brushed Zn: C=130
 *Other.: See hydraulic handbook

Bonneville Power Administration
LATERAL FLOW CALCULATIONS AND ADJUSTMENTS
UPDATED 04/23/91

Page 4B

Nozzle Spacing: 40 * 50 : Inspection #.: RRE193

This page proportions set system flow based on nozzle size and pressure.
Insert observed lateral leaks; residuals are proportioned by no. of noz.
Irrig. set time: 11.5 hrs. - Return Time: 6.5 days - Req. Qnoz: 4.71

-(Flow Control="F"; Brass="B")-----									
Lateral Number #	V Size (in)	Nozzle Number #	Beg. Press (psi)	End Press (psi)	Large Leaks (gpm)	Nozzle Disch. q=gpm	Lateral Disch. Q=gpm	Adj. Lat. Q (gpm)	
1. Lateral	B9/64	25	34 *	29	0 *	3.18 *	79	84	
2. Lateral	B9/64	33	35 *	26	0 *	3.07 *	101	107	
3. Lateral	B9/64	33	35 *	34	0 *	3.38 *	112	118	
4. Lateral	B9/64	33	0 *	0	0	0.00	0	6	
5. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
6. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
7. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
8. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
9. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
10. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
11. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
12. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
13. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
14. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
15. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
16. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
17. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
18. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
19. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
20. Lateral	B0/64	0	0 *	0	0	0.00	0	0	
TOTALS.....		124	---	----	0	----	292	315	

Set System Discharge= 315 gpm !Correction per Nozzle = 0.183 gpm

Bud Tracy

Inspection #...:RRE193

N. POTENTIAL PUMPING HEAD REDUCTION (by item) HEAD SAVINGS

1. Install low pressure sprinklers or nozzles = -38.6 ft. .
2. Retrofit high energy loss pipe & fittings .: .
 - a. Mainline Friction Loss Savings = -22.7 ft. .
 - b. Fittings Loss Saving (show work)= ? ft.
 - c. Partially Closed Valve Savings = ? ft.
 - d. TOTAL (a+b+c) ----> = -22.7 ft. .
3. Potential System Head Requirement Reduction (1+2d) = -61.2 ft.

O. PUMPING PLANT TESTED AND PROPOSED PERFORMANCE SUMMARY

1. Existing

Pump #	TDH	GPM	WHP	EHP	SHP	EFF	(notes)
1	192.4	315	15.3	33.9	30.4	45.1	
2	0.0	0	0.0	0.0	0.0	0.0	
3	0.0	0	0.0	0.0	0.0	0.0	
4	0.0	0	0.0	0.0	0.0	0.0	
5	0.0	0	0.0	0.0	0.0	0.0	
6	0.0	0	0.0	0.0	0.0	0.0	
7	0.0	0	0.0	0.0	0.0	0.0	
8	0.0	0	0.0	0.0	0.0	0.0	
TOTAL	192.4	315	15.3	33.9	30.4	45.1%	<< System
		315 gal/min=			35 Idaho Miner's Inches		

2. Proposed

			E S T I M A T E D				EFF	(notes)
Pump #	TDH	GPM	WHP	EHP	SHP			
1	264.6	558	37.3	54.0	48.6	69.0		
2	0.0	0	0.0	0.0	0.0	0.0		
3	0.0	0	0.0	0.0	0.0	0.0		
4	0.0	0	0.0	0.0	0.0	0.0		
5	0.0	0	0.0	0.0	0.0	0.0		
6	0.0	0	0.0	0.0	0.0	0.0		
7	0.0	0	0.0	0.0	0.0	0.0		
8	0.0	0	0.0	0.0	0.0	0.0		

TOTAL 274.4 558 38.7 56.0 50.4 69.0% << System
see calc 274.4 << Alternate System TDH when system changes dictate.
579 << Prop. Req'd Flow For Manageable Stress at Peak I.R.

P. SYSTEM INFORMATION

1. Total System Pumping Efficiency(existing)=(WHPe/EHPe)*100 = 45.1%
2. Total System Pumping Efficiency(proposed)=(WHPp/EHPp)*100 = 69.0%
3. Variations in existing (measured) application rates on Pg.3 and 4b.
4. Ave. Operating Hours per Year (based on kWh usage)= 3007 Av.Hrs/Yr
5. Average Pumped In.per AcreYear (based on kWh use) = 28.7 Acre Ins.
6. Resulting Increase in Annual pwer bill(fixed kWh) =\$ 1810 /Yr.
7. Calc'd Energy Cost per Acre Ft. of Tested System =\$ 15.92 /Acre Ft.
8. Estimated Energy Cost per Acre Ft. of New System =\$ 14.87 /Acre Ft.
9. Total (Ave) Energy Cost per Acre of Tested System =\$ 38.03 /Acre
10. Estimated Ave. Energy Cost per Acre of New System =\$ 62.83 /Acre

Bud Tracy

Inspection #.....:RRE193

Q. RECENT HISTORICAL kWh USAGE AND RATE DATA

1. Annual Metered kWh usage				2. Rate Data	
N/A	Year	kWh	kW		
a.	1990	84575	28	a.	HP Charge/month.....: 3.72 dollars
b.	1989	90643	28	b.	kWh/hp @ no Charge.: 0.00
c.	1988	93959	28	c.	Fixed Cost/kWh.....: 2.20 cents
d.	1987	62927	28	d.	HP Charge/yr.....: 8.95 dollars
e.	1986	48363	28	e.	Total Nameplate HP.: 40 hp/meter
f.	Average	76093 kWh/Yr		f.	Average cost/kWh....: 3.65 cents

R. TESTED PUMPING PLANT PERFORMANCE COMPARISON TO PROPOSED

	a. Existing	b. Proposed
1. Total Head (O1 and O2)	192.4 FTe	274.4 FTp
2. Flow (O1 and O2)	315 GPM _e	558 GPM _p
3. Pumping Plant Efficiency	45.1 % _e	69.0 % _p
4. Input Kilowatts	25.3 kW _e	41.8 kW _p
5. Input Horsepower (O1 and O2)	33.9 EHP _e	56.0 EHP _p
6. MOTOR SHAFT HORSEPOWER	30.4 SHP _e	50.4 SHP _p

S. ENERGY SAVINGS, ENERGY CAP AND MINIMUM GUARANTEE

1. Estimated kWh Saved Annually and Estimated Energy Cap:

>Estimated Real Energy! >Savings Compared to >Recent Annual kWh Use!	ESTIMATED Measure kWh Savings	Eligible Cost Share? (Y/N)	Energy Cap
a. Low Pressure Savings (N1/R1a)*Avg kWh/Yr =	0	No	\$0
b. Mainline Savings (N2a/R1a)*Avg kWh/Yr=	0	No	\$0
c. Fittings Savings (N2b/R1a)*Avg kWh/Yr=	0	No	\$0
d. Flow Savings (Flow diff)*kWh/GPM _e =	0	No	\$0
e. Efficiency Savings (Eff diff)*kWh/EFF _p =	0	No	\$0
f. TOTAL POTENTIAL kWh	0	SAVED (kWh Cap)	\$0 <<same as "g."
g. Net kWh savings (using kW option)	=	0 kWh	or -65.2 %
h. Alternate savings (kW/GPM option)	=	5124 kWh	or 6.7 %

2. MINIMUM GUARANTEE = \$15 * (Installed Nameplate HP) =
= \$15 * (40) = 600 dollars
-(To be ELIGIBLE, cost share potential must be greater than GUARANTEE.)-
NOTE:Annual variations in pumping requirments will alter actual savings.
Also note that other operating, machinery costs, or change in potential.
-- Crop value is not included here in these "energy cost estimates". --
>The 5 year present worth of proposed energy savings(at 10%) is:(\$6,863)
>This System IS ELIGIBLE for BPA Cost Sharing under the KW/GPM option.

Christensen, Kelly

Subject: ownership of 13s 26e s 1 swne
Entry Type: Phone call
Contact: Cassia Co assessor

Start: Thu 3/23/00 2:05 PM
End: Thu 3/23/00 2:05 PM
Duration: 0 hours

I called to determine the ownership of this forty tract.

She stated that Cedric Taylor owns that quarter quarter as far as their records go.

Christensen, Kelly

Subject: 43-02446, 02549, 00239B, & 00240B
Entry Type: Phone call
Contact: BUD TRACY

Start: Fri 3/17/00 10:42 AM
End: Fri 3/17/00 10:42 AM
Duration: 0 hours

Categories: amendment, B43

I called him and discussed the two systems. For the licensed claims we discussed the delivery system. He indicated that the system has been changed and that Robin Wells was the consultant that helped design the system. He stated that I could obtain that information from Robin.

For the Elba property, I explained that the claims only listed one P/D but that it appeared that two different P/Ds and delivery systems existed for his property. He concured. We decided that I would generate amended claims and send them to him for his signature. No change in the place of use was discussed.



State of Idaho

DEPARTMENT OF WATER RESOURCES

1341 Fillmore Street, Suite 200, Twin Falls, ID 83301-3380

Phone: (208) 736-3033 FAX: (208) 736-3037

SOUTHERN REGION

**DIRK KEMPTHORNI
GOVERNOR**

**KARL J. DREHER
DIRECTOR**

March 17, 2000

**VERNON TRACY
149 W 1ST N
MALTA ID 83342**

RE: AMENDMENTS TO A43-00239B AND A43-00240B

Dear Bud

Enclosed are two copies of each claim showing the amended point of diversion. If this is acceptable, please sign and have the claims notarized.

Once the department has received the notarized claims they will be valid and I can base my recommendation on those claims. I noted that the address on the claims only list Malta Id. If you would write in the correct address and initial the changes, then I will update those also when the claim comes back.

If you have any questions please give me a call.

Sincerely

Kelly K Christensen

enclosures

Log for claim A43-02446

Spatial Dynamics LRR

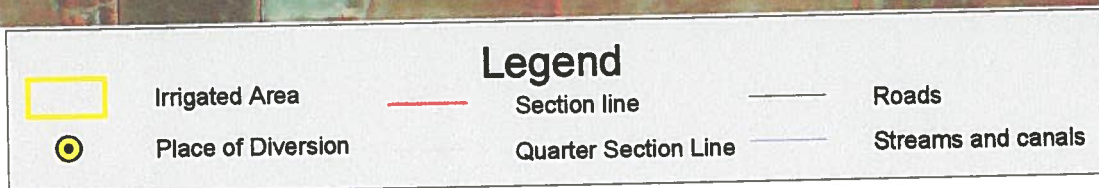
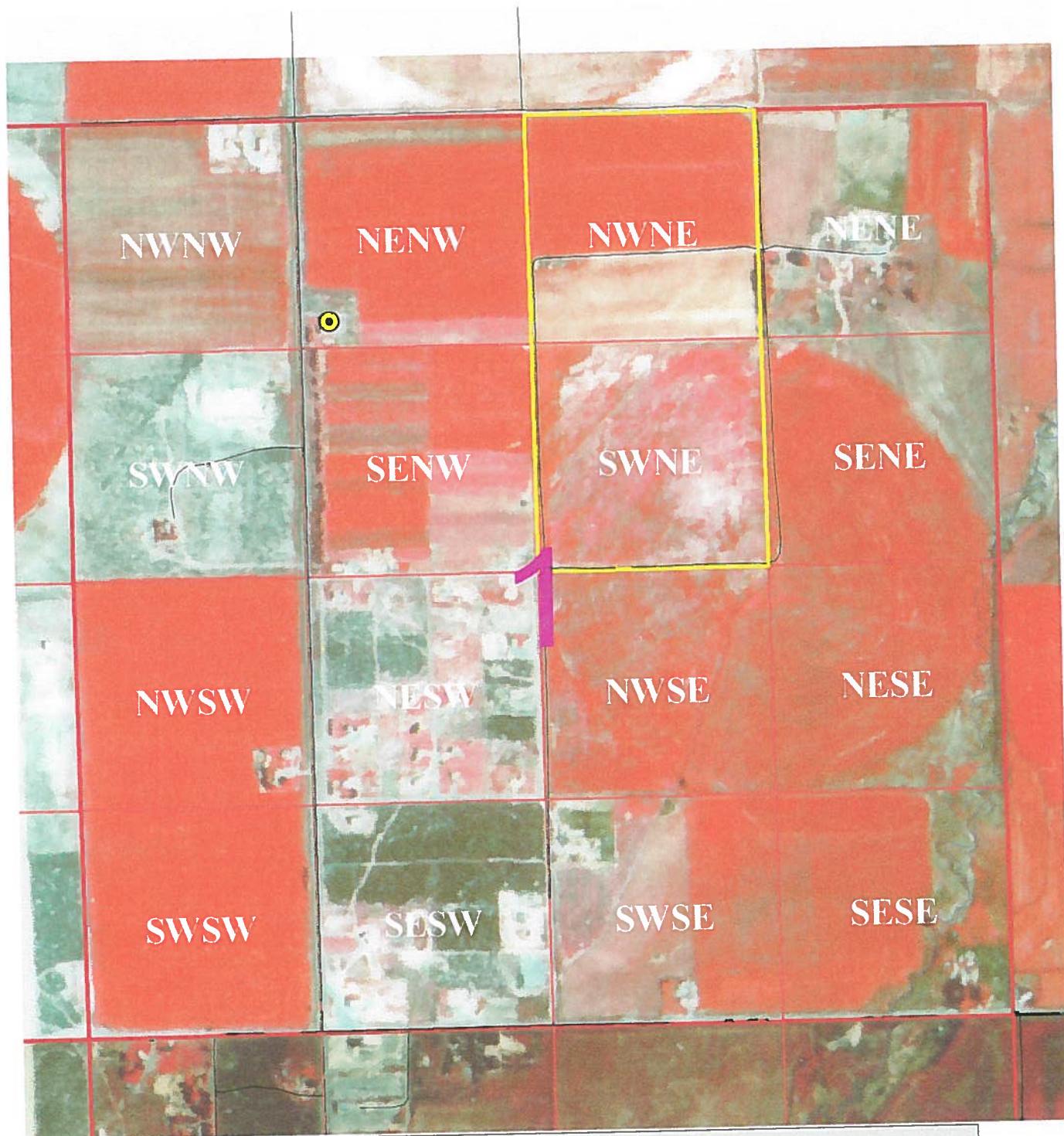
1/31/00

T	R	SEC	QQ	Acres Claimed	Acres Found	COMMENT
13	26	1	NWNE	40	40	
13	26	1	SWNE	40	40	
Totals:				80	80	

Wednesday, February 02, 2000

Water Right Claim Number A43-02446

Township , 13S26E



400 0 400 800 1200 1600 Feet



Water Right Claim Number A43-02446

Township , 13S26E





Irrigated Area



Place of Diversion

Legend



Section line



Quarter Section Line



Roads



Streams and canals



2446

RECEIVED

STATE OF IDAHO
DEPARTMENT OF WATER ADMINISTRATION
ASSIGNMENT OF LICENSE

I, R. J. HARPER, of Malta, Idaho, hereby grant,
convey and assign all of my right, title and interest in and
to Water License No. 432446 for 1.3 cubic feet per second
to Mr. Tell Taylor of P. O. Box 25, Malta, Idaho 83342.

I hereby bind my heirs, personal representatives,
successors and assigns.

Dated: 1-30, 1973

R. J. Harper
R. J. Harper

STATE OF IDAHO)
County of Cassia) ss.

On this 30th day of January, 1973, before me,
the undersigned, a notary public in and for said State, person-
ally appeared R. J. HARPER, known to me to be the person whose
name is subscribed to the foregoing instrument, and acknowledged
to me that he executed the same.

Gene Baxter
Notary Public for Idaho
Residing at: Malta, Idaho

13 2446

STATE OF IDAHO
DEPARTMENT OF RECLAMATION
BOISE, IDAHO
REPORT OF EXAMINER

Permit No. G-26441

This proof is for Comp. of Works & Beneficial Use In Water District No. _____

1. Name of applicant R. J. Harper

2. Source of water supply: subterranean

3. Location of point of diversion: Is in the Lot 3, NW1/4SE1/4 of Section 1
T. 13 S R. 26 E County of Cassia

4. Describe works as they exist, giving dimensions and capacities of same: _____

30 HP G.E. motor #RSJ 410312
model # SK 4326 x 62
LAYNE C. BOWLER # 26236 8" DISCHARGE
THROUGH EARTH DITCHES

5. Water is used for: irrigation and stock water

6. State whether or not water has been turned into works of diversion: Yes

7. List legal subdivisions of lands to be irrigated. If proof is for beneficial use, give exact number of acres under cultivation in each forty-acre tract. (Describe manner and place of use if other than irrigation):

W1/2NE1/4, Sec. 1, T. 13 S, R. 26 E, B.M. (80 acres)

(Submit map on attached plat, showing location and details of above description.)

8. What large stream would the water here appropriated finally reach? _____

Remarks: _____

1 D. 8" 3 1/8" FREE BOARD

SPARKING METER USED 1 RPM 90.5 FC
1 " 91 "
1 " 92 "

COORDINATE METHOD USED 10" (2) 5"
(457) (217) (factor 1 1/8" or .53) = 1.04

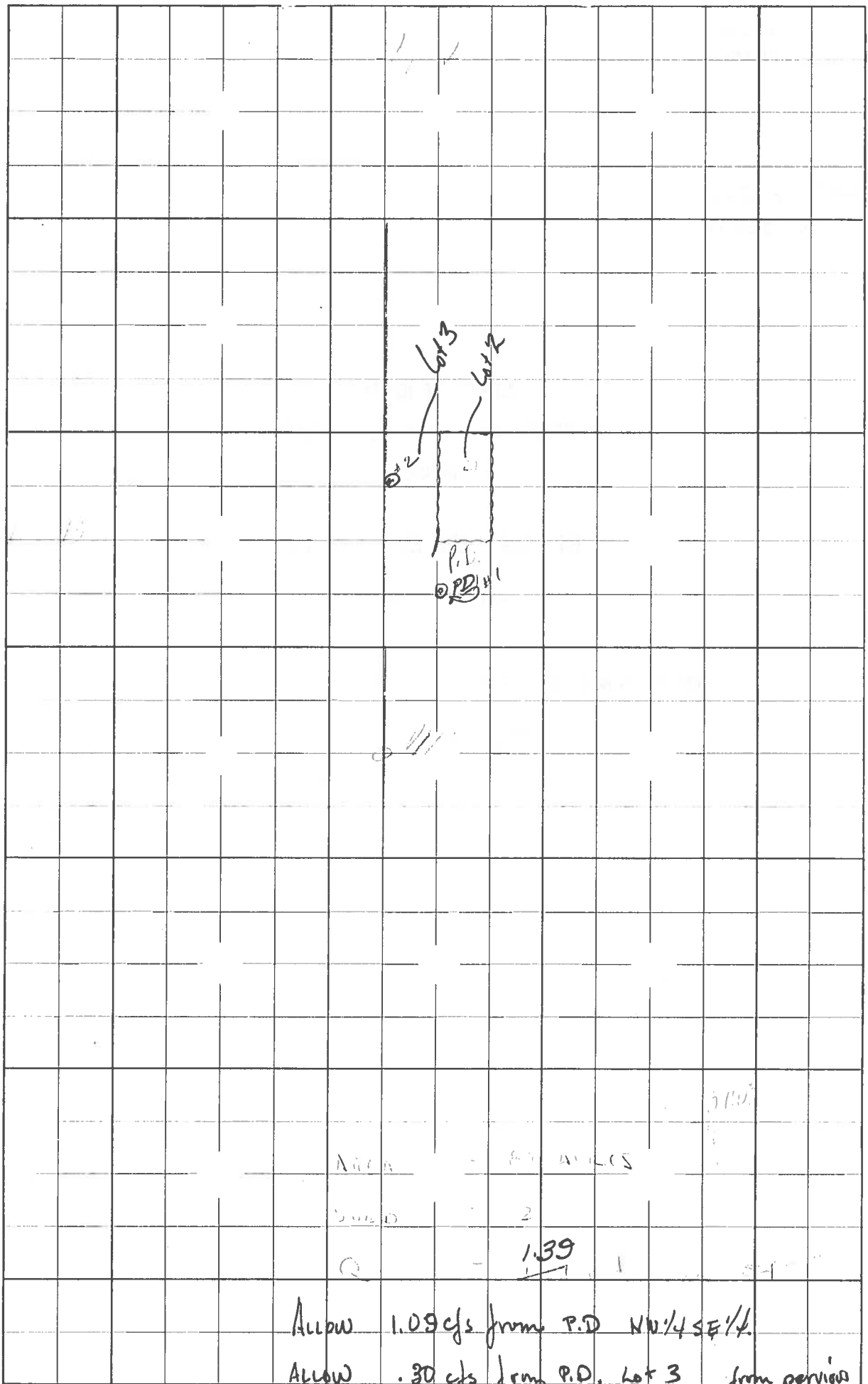
This examination was made on the _____ day of _____, 19____

(Signed) _____

Examiner.

B-6441

Plat



Scale: 2 Inches Equals 1 Mile. Draw Map In Ink.

1/26/11