

Big Sky Partnership Beneficial Use Exam

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SEP 26 2005

WATER RESOURCES
WESTERN REGION

**BENEFICIAL USE FIELD REPORT NARRATIVE
PERMIT NOS. 63-8067, 9672, 10272, 11513, 11514
– BIG SKY PARTNERSHIP**

C. E. Brockway, P.E., Certified Water Rights Examiner
Brockway Engineering, PLLC
September 23, 2005

Permit Nos. 63-8067, 9672, 10272, 11513 and 11514 were granted to Robert Rhead for irrigation beginning in 1975. The permits are appurtenant to the Little Camas Ranch in Elmore County, above Anderson Ranch Reservoir located in T. 1 S., R. 9 E., Sections 3, 4, 5, 8 & 9 and T. 1 N., R. 9E., Sections 27, 28, 32, 33 & 34 (see the attached vicinity map).

An initial exam was performed by Steve Lester of IDWR, accompanied by Daryl Rhead. Mr. Rhead was the agent for the property at the time. The farm has been cultivated to the extent that water was available via 4 wells during the 1991 exam, and during a flurry of activity during 1996 5 additional wells were constructed. Throughout the development of the ground water supply system, stable dependable water supply has been a continuing challenge due to the low hydraulic conductivity apparent on much of the property.

System description

Irrigation water is supplied primarily through the ground water supply, however some surface water is diverted into the storage reservoir and subsequently pumped into the irrigation distribution system which can also be fed by each of the 9 wells. At the time of this review, well #'s 2, 8 & 9 are unused due to decreasing aquifer water levels, however they were utilized at the time proof was filed. Crops are irrigated through handline and wheelline sprinklers, and more recently, center pivot systems.

Rhead Ranch Reservoir is currently estimated to contain 380 acre-ft of water at maximum water level.

Capacity of the ground water irrigation system

Proof of beneficial use was submitted for permits 63-11513 and 63-11514 during the fall of 1996, and since that time some wells have become unproductive. This examination will seek to determine system capacity at the time proof was filed primarily based on well pump and motor specifications. In general, total system diversion capacity appears undersized for the project irrigated acreage, however rotation of irrigated acreage appears to have been and will likely continue to be characteristic for the farm.

Exact well development is uncertain due to difficulty in proper identification of drilling logs and the apparent unavailability of the drilling log for Well #4. Exhaustive analysis of the available logs with field examination has hopefully provided a reasonably accurate correlation between the actual wells and their associated drilling logs. It is helpful that several of the recorded logs show permit #63-11514 specifically.

Permit conditions

These permits require that a suitable measuring device be installed (or that the power-consumption method be pursued with IDWR).

Other rights

Permits 63-8067, 9672, 10272, 11513 and 11514 are all appurtenant to the property and are used in combination to provide irrigation water throughout the farm.

Recommended licensing amendments

1. The entire distribution system (wells, reservoir & surface water) is interconnected and serves the entire property. All applicable water rights should be appurtenant to the entire property.
2. Irrigation season for all water rights should be adjusted to reflect the standard season for this area (April 1st – October 31st)

Total ground water diversion recommendation

1. Total ground water diversion capacity has been estimated from system characteristics and is not a determination of historical beneficial use.

Total annual volume recommendation

1. Total authorized diversion volume was calculated based on continuous diversion at system capacity throughout the irrigation season of 213 days with the addition of the 380 acre-ft of storage water impounded in Rhead Ranch Reservoir.

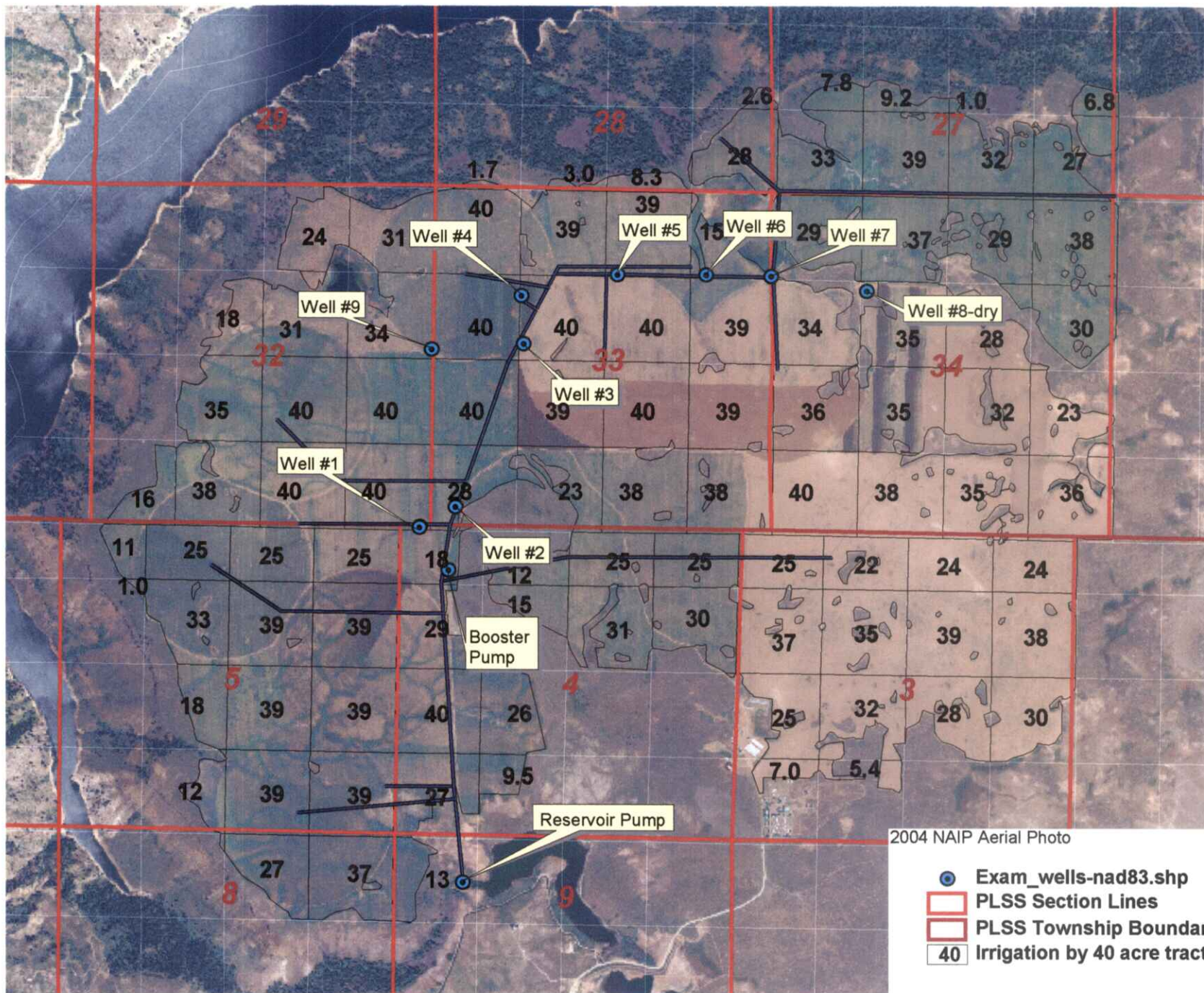
Total acreage recommendation

1. Total cultivated acreage has been determined from site visits and review of aerial photo information.

Little Camas Water Rights												
RIGHT	Source	PRIORITY	Permitted Diversion IRRIGATION	Permitted Diversion TO STORAGE	Permitted Diversion FROM STORAGE	Irrigation Diversion Limit	Diversion Limits	Permitted Acres	Acre Limits	POU Acres	Volume Limit	Volume Limit
63-8067	GW	1/6/1975	6.00 cfs			6.00 cfs		320 Ac.	320 Ac.		1280.0 afa	2363.0 afa
63-9672	GW	10/4/1985		5.70 cfs			15.37 cfs	570 Ac.	570 Ac.	2816.6 Ac.	2280.0 afa	
63-11513	GW	3/14/1991	4.48 cfs	4.48 cfs		4.48 cfs		1178 Ac.	1178 Ac.		4712.0 afa	1892.7 afa
63-11514	GW	5/10/1991	4.89 cfs			4.89 cfs		1111 Ac.	1111 Ac.		4444.0 afa	2066.0 afa
63-10272	Little Camas Crk	10/28/1984							570.	570		

Township	Range	Sec	QQ	LOT #	IRR Acres	
01N	09E	27	NESW	0	9.2	
01N	09E	27	NWSW	0	7.8	
01N	09E	27	SWSW	0	33	
01N	09E	27	SESW	0	39	
01N	09E	27	NESE	0	6.8	
01N	09E	27	NWSE	0	0.8	
01N	09E	27	SWSE	0	32	
01N	09E	27	SESE	0	27	
						155.6
01N	09E	28	SWSW	0	1.7	
01N	09E	28	SESW	0	3	
01N	09E	28	NESE	0	2.6	
01N	09E	28	SWSE	0	8.3	
01N	09E	28	SESE	0	28	
						43.6
01N	09E	32	NENE	0	31	
01N	09E	32	NWNE	0	24	
01N	09E	32	SWNE	0	31	
01N	09E	32	SENE	0	34	
01N	09E	32	SENE	0	18	
01N	09E	32	NESW	0	35	
01N	09E	32	SWSW	0	16	
01N	09E	32	SESW	0	38	
01N	09E	32	NESE	0	40	
01N	09E	32	NWSE	0	40	
01N	09E	32	SWSE	0	40	
01N	09E	32	SESE	0	40	
						387
01N	09E	33	NENE	0	15	
01N	09E	33	NWNE	0	39	
01N	09E	33	SWNE	0	40	
01N	09E	33	SENE	0	39	
01N	09E	33	NENW	0	37	
01N	09E	33	NWNW	0	40	
01N	09E	33	SWNW	0	40	
01N	09E	33	SENE	0	40	
01N	09E	33	NESW	0	39	
01N	09E	33	NWSW	0	40	
01N	09E	33	SWSW	0	28	
01N	09E	33	SESW	0	23	
01N	09E	33	NESE	0	39	
01N	09E	33	NWSE	0	40	
01N	09E	33	SWSE	0	38	
01N	09E	33	SESE	0	38	
						575
01N	09E	34	NENE	0	38	
01N	09E	34	NWNE	0	29	
01N	09E	34	SWNE	0	28	
01N	09E	34	SENE	0	30	
01N	09E	34	NENW	0	37	
01N	09E	34	NWNW	0	29	
01N	09E	34	SWNW	0	34	
01N	09E	34	SENE	0	35	
01N	09E	34	NESW	0	35	
01N	09E	34	NWSW	0	36	
01N	09E	34	SWSW	0	40	
01N	09E	34	SESW	0	38	

01N	09E	34	NESE	0	23	
01N	09E	34	NWSE	0	32	
01N	09E	34	SWSE	0	35	
01N	09E	34	SESE	0	36	
						535
01S	09E	3	NENE	1	24	
01S	09E	3	NWNE	2	24	
01S	09E	3	SWNE	0	39	
01S	09E	3	SENE	0	38	
01S	09E	3	NENW	3	22	
01S	09E	3	NWNW	4	25	
01S	09E	3	SWNW	0	37	
01S	09E	3	SENW	0	35	
01S	09E	3	NESW	0	32	
01S	09E	3	NWSW	0	25	
01S	09E	3	SWSW	0	7	
01S	09E	3	SESW	0	5.4	
01S	09E	3	NESE	0	30	
01S	09E	3	NWSE	0	28	
						371.4
01S	09E	4	NENE	1	25	
01S	09E	4	NWNE	2	25	
01S	09E	4	SWNE	0	31	
01S	09E	4	SENE	0	30	
01S	09E	4	NENW	3	12	
01S	09E	4	NWNW	4	18	
01S	09E	4	SWNW	0	29	
01S	09E	4	SENW	0	15	
01S	09E	4	NESW	0	26	
01S	09E	4	NWSW	0	40	
01S	09E	4	SWSW	0	27	
01S	09E	4	SESW	0	9.5	
01S	09E	4	NESE	0	0.1	
						287.6
01S	09E	5	NENE	1	25	
01S	09E	5	NWNE	2	25	
01S	09E	5	SWNE	0	39	
01S	09E	5	SENE	0	39	
01S	09E	5	NENW	3	25	
01S	09E	5	NWNW	4	11	
01S	09E	5	SWNW	0	1	
01S	09E	5	SENW	0	33	
01S	09E	5	NESW	0	18	
01S	09E	5	SESW	0	12	
01S	09E	5	NESE	0	39	
01S	09E	5	NWSE	0	39	
01S	09E	5	SWSE	0	39	
01S	09E	5	SESE	0	39	
						384
01S	09E	8	NENE	0	37	
01S	09E	8	NWNE	0	27	
01S	09E	8	NENW	0	0.4	
						64.4
01S	09E	9	NWNW	0	13	
01S	09E	9	SWNW	0	0	
						13
						2816.6



0.25 0 0.25 0.5 0.75 1 Miles

Big Sky Partnership
 Little Camas Ranch
 (T. 1N, R. 9E & T. 1S, R. 9E)

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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

WATER RESOURCES
WESTERN REGION

A. GENERAL INFORMATION

1. Owner: BIG SKY PARTNERSHIP C/O D MC FARLAND & T BULLERS

Permit No.: 63-8067

Phone No.: (208)825-5258

Current Address: PO BOX 268 EDEN, ID 83325-0268

2. Accompanied by: _____

Exam Date: 6/23/2005

Address: _____

Phone No.: _____

Relationship to Permit Holder: _____

3. Source: GROUND WATER tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 63-9672, 63-10272, 63-11513, 63-11514

2. Other water rights with the same point of diversion: 63-9672, 63-10272, 63-11513, 63-11514

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion:

Ident No	Gov't Lot	1/4	1/4	1/4	Sec.	Twp.	Rge.	County	Method of Determination / Remarks
1		SE	SE	SE	32	1N	9E	Elmore	Well #1
2		SW	SW	SW	33	1N	9E	Elmore	Well #2
3		SW	SE	NW	33	1N	9E	Elmore	Well #3
4		NW	SE	NW	33	1N	9E	Elmore	Well #4

2. Place(s) of Use: _____ Indicate Method of Determination: NAIP Aerial Photo

TWP	RNG	SEC	NE				NW				SW				SE				TOTALS
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
1N	9E	27									9.2	7.8	33	39	6.8	0.8	32	27	155.6
		28											1.7	3	2.6		8.3	28	43.6
		32	31	24	31	34				18	35		16	38	40	40	40	40	387
		33	15	39	40	39	37	40	40	40	39	40	28	23	39	40	38	38	575
		34	38	29	28	30	37	29	34	35	35	36	40	38	23	32	35	36	535
1S	9E	3	Lot 1 24	Lot 2 24	39	38	Lot 3 22	Lot 4 25	37	35	32	25	7	5.4	30	28			371.4
		4	Lot 1 25	Lot 2 25	31	30	Lot 3 12	Lot 4 18	29	15	26	40	27	9.5	0.1				287.6
		5	Lot 1 25	Lot 2 25	39	39	Lot 3 25	Lot 4 11	1	33	18			12	39	39	39	39	384
		8	37	27			0.4												64.4
		9							13										13

Total number of acres irrigated: 2816.6

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ ditch size/ pipe i.d. as applicable.

See Attached Map sheet

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required).
☒ Aerial photo attached (required for irrigation of 10+ acres).
☒ Photo of diversion and system attached.

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well #1	GE	75	EMJS12416	Layne-10RKHC	8" – 12 stages Serial # 45817
Well #2	U.S. Electric	150	C2688-01-498	Unk. sim. To Well #1	14" – 10 stages
Well #3	U.S. Electric	100	R9983-04-122	Layne – 11BH	8" – 8 stages Serial # T81103
Well #4	U.S. Electric	150	R6375-04-882	Layne – 11BEH	8" – 8 stages Serial # T81102

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration
Polysonic flowmeter				150231		

2. Measurements: _____
 1) Well #4 measured by Steve Lester @ 1.68 cfs into 75 psi system

E. NARRATIVE / REMARKS / COMMENTS

- 1) Total diversion based on pumping from bowl setting depth determined from G. J. Vertiline and discharge into 50 psi system at efficiency determined from attached pump curves. See attached calculation sheet.
 2) 4 wells in operation during 1991 preliminary B.U. exam.

Have conditions of permit approval been met? ☒ Yes ☐ No

F. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Diversion estimated from Pump HP, listed efficiency and maximum lift into 50 psi distribution system

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{(320 \text{ ac.}) \times (4.0 \text{ af/ac}) = 1,280 \text{ afa}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \underline{(6.0 \text{ cfs}) \times (213 \text{ days}) \times 1.9835 = 2,535 \text{ afa}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = \underline{1,280 \text{ afa}}$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
<u>Irrigation</u>	<u>4/1</u>	<u>10/31</u>	<u>6.00</u>	<u>1,280</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
TOTALS:			<u>6.00 cfs</u>	<u>1,280</u>

2. Recommended Amendments

- ☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None
☒ Change P.U. as reflected above ☒ Add P.U. as reflected above ☐ Other

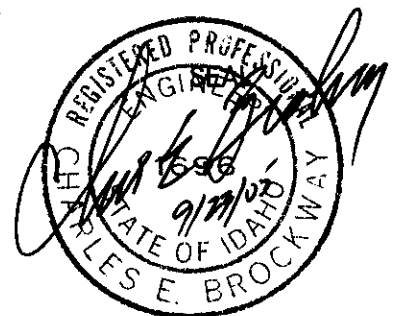
I. AUTHENTICATION

Field Examiner's Name: C.F. Brockway

Date: 9/29/05

Reviewer: _____

Date: _____



STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

USE TYPEWRITER OR
BALLPOINT PEN

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 Bob Rhead

Address Little Camas

Owner's Permit No. _____

7. WATER LEVEL

Static water level 344' feet below land surface.

Flowing? ☐ Yes ☒ No G.P. flow _____

Artesian closed-in pressure _____ p.s.i.

Controlled by: ☐ Valve ☐ Cap ☐ Plug

Temperature _____ OF. Quality _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning) _____

8. WELL TEST DATA

☒ Pump ☐ Bailor ☐ Air ☐ Other _____

Discharge G.P.M. _____ Pumping Level _____ Hours Pumped _____

200 400 1

637 400

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Municipal

☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

☐ Other _____ (specify type)

9. LITHOLOGIC LOG

Hole Diam.	Depth		Material	Water Yes No
	From	To		
14	0	12	CLAY	
12	12	25	GRAY LAVA	
12	25	40	BROWN LAVA	
12	40	55	GRAY LAVA	
12	55	75	BROWN (P. HOLE)	
12	75	100	GRAY LAVA	
12	100	110	BROWN LAVA	
12	110	125	GRAY LAVA	
12	125	150	BROWN LAVA	
12	150	175	BROWN (P. HOLE)	
12	175	250	SILT & RETINA	
12	250	300	GRANULAR SILT & LAVA	X
12	300	350	GRANULAR SANDS	X
12	350	400	BROWN SANDS	X
12	400	500	BROWN LAVA & SANDS	X

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary

☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness _____ inches Diameter _____ inches From _____ feet To _____ feet

Was casing drive shoe used? ☐ Yes ☒ No

Was a pecker or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation _____ inches by _____ inch

Number _____ From _____ feet To _____ feet

perforations _____ feet

perforations _____ feet

perforations _____ feet

Well screen installed? ☐ Yes ☒ No

Manufacturer's name _____

Type _____ Model No. _____

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____

Placed from _____ feet to _____ feet

Surface seal depth 18' Material used in seal: ☐ Cement grout

☒ Puddling clay ☒ Well cuttings

Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing

☒ Overbore to seal depth

Method of joining casing: ☐ Threaded ☐ Welded ☐ Solvent

☐ Cemented between struts

Describe access port _____

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Department of Water Resources
Water and Irrigation Div.

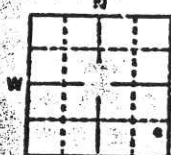
SEP 6 1980

SEP 2 1980

Department of Water Resources

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County EMERY

SE 1/4 SE 1/4 Sec. 32 T. 1 N. 2 R. 9 E. 2

10.

Work started 7/2/80 finished 7/10/80

11. DRILLERS CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name Huddleston Drilling Firm No. 35

Address mta Home Date 7/10/80

Signed by (Firm Official) Ray

and

(Operator) Mike Huddleston

USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Water Resources

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 Robert C. Mhead
Address Star Rt B, Box 20, Mtn Home 83647
Owner's Permit No. Owner applying

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Test ☐ Other (specify type)
☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 20 inches Total depth 440 feet
Casing schedule: ☒ Steel ☐ Concrete
Thickness Diameter From To
0.375 inches 26 inches 0 feet 33 feet
0.250 inches 16 inches plus 1.1 feet 440 feet
inches inches feet feet
inches inches feet feet
inches inches feet feet
inches inches feet feet
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☒ Yes ☐ No
How perforated? ☒ Factory ☐ Knife ☒ Torch
Size of perforation 3/16 inches by 3 inches
Number From To
117 torch perforations 433 feet 420 feet
6,400 perforations 420 feet 320 feet
perforations feet feet

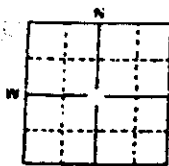
Well screen installed? ☐ Yes ☒ No
Manufacturer's name _____
Type _____ Model No. _____
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet

Gravel packed? ☐ Yes ☒ No Size of gravel _____
Packed from _____ feet to _____ feet

Surface seal depth 33 Material used in seal ☐ Cement grout
☒ Pudding clay ☐ Well cuttings
Sealing procedure used ☐ Shurry pit ☐ Temporary surface casing
☒ Overbars to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____

Lot No. _____ Block No. _____

County Elmore

SW 1/4 Sec 33 T. 1N. R. 9E - E-W

7. WATER LEVEL

Static water level 327 feet below land surface
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Temperature 54 °F. Quality Good
Artesian closed-in pressure _____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailor ☐ Other
Discharge G.P.M. _____ Draw Down _____ Hours Pumped _____

9. LITHOLOGIC LOG

Hole Diam.	Depth From	To	Material	Water Yes/No
30"	0	33		
24"	33	185		
20"	185	440		
	0	20	Soil, Subsoil	
	20	30	Boulders, 1st and	
	30	40	Pinhole Lava	
	40	60	Cinders, Boulders	
	60	80	Pinhole Lava, Broken B Jack	
	80	95	Pinhole Lava	
	95	115	Gray Lava	
	115	145	Big Block Lava Boulders	
	145	185	Hard Lava	
	185	415	Sand, Gravel, & Clay (Water at 332)	
	415	440	Layers pinhole Lava	

10.

Work started Sept 17, 1974 finished Nov 29, 1974

11. DRILLERS CERTIFICATION

Firm Name Mountain Home Well Drilling Co. No. 89

Address PO Box 112, Harrett 83636 Date Dec 1, 1974

Signed by (Firm Official) W. H. Boudreau

and (Operator) Clifford R. Schultz

Thugh Handberg

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

rm 2387

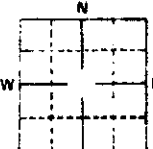
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STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

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.

Department of Water Resources

WELL OWNER Name <u>ROBERT G. RHEAD</u> <u>STAR RT. 8, BOX 20</u> Address <u>MOUNTAIN HOME, IDAHO 83647</u> Owner's Permit No. _____		7. WATER LEVEL Western Regional Office Static water level <u>1456</u> feet below <u>surface</u> Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ OF. Quality <u>GOOD</u>																																																																																																																																																																																					
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SE & NE Sec. 4, T. 16, N. 3, R. 2E, E.W.

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCESTYPEWRITTEN OR
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WELL DRILLER'S REPORT

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RECEIVED

Rhead
cont

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_____ inches	_____ inches	_____ feet	_____ feet																																																																	
_____ inches	_____ inches	_____ feet	_____ feet																																																																	
_____ inches	_____ inches	_____ feet	_____ feet																																																																	
Number	From	To																																																																		
_____ perforations	_____ feet	_____ feet																																																																		
_____ perforations	_____ feet	_____ feet																																																																		
_____ perforations	_____ feet	_____ feet																																																																		
LOCATION OF WELL Sketch map location must agree with written location. Subdivision Name _____ Lot No. _____ Block No. _____ County _____ SW 33 1N 9E E/W % Sec. T N/S, R. E/W ELMORE	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>ARTESIAN CO.</u> Firm No. <u>318</u> <u>7425 W. 35TH E.</u> Address <u>MOUNTAIN HOME, IDAHO</u> Date <u>OCT 8, 1980</u> Signed by (Firm Official) <u>Hugh Harden</u> and (Operator) <u>Hugh Harden</u>																																																																			

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT
Use Typewriter or Ballpoint Pen

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: _____ Long: _____

1. DRILLING PERMIT NO. 63 - 96 - W - 0540 - 000
Other IDWR No. _____

2. OWNER:

Name **BIG SKY PARTNERSHIP**
Address **350 FALLS AVE**
City **TWIN FALLS** State ID Zip **83301**

3. LOCATION OF WELL by legal description:

Sketch map location: must agree with written location.

Twp. 1 North ☒ or South ☐
 Rge. 9 East ☒ or West ☐
 Sec. 33 SE $\frac{1}{4}$ NW $\frac{1}{4}$ 1/4
 Gov't Lot _____
 County ELMORE
 Lat: _____ Long: _____

Address of Well Site _____
City _____

Lt. _____ Blk _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRAIL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other_____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
BENTONITE	0	19	8 lbs	OVERBORE

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

B. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Uner	Welder	Threaded
12	+1	19	250	STEEL	X	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method _____
Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

253 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices _____

11. WELL TESTS:

☐ Pump ☐ Sailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
5.00		430	6 HRS

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

RECEIVED

~~OCT 02 1996~~

**WATER RESOURCES
WESTERN REGION**

Completed Depth 480' (Measurable)
Date Started 9-03-96 Completed 9-10-96

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name HIDDLESTON & SON, INC. Firm No. 35

Firm Official Ken Koak Date 7-20-16

and *V V* 9-26-9

(Signature of Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
1/4 _____	1/4 _____	1/4 _____	
Lot _____	Loop _____		

N

Lt. _____ Plk. _____ Sub. Name _____

7. SEALING PROCEDURES

2. CASING/LINER:

2. PERFORATIONS/SCREENS

- ☐ Perforations Method _____
- ☐ Screens Screen Type _____

10. STATIC WATER LEVEL OR ARTESIAN

PRESSURE:

137 below ground
Depth flow encountered
1.

Artesian Pressure _____ lb
Describe access port or control _____

11. WELL TESTS:

- ☐ Pump ☐ Boiler ☐ Air ☐ Flowing Artesian

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments:

Depth first Water Encountered

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

13. DRILLER'S CERTIFICATION

13. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name HIDDLESTON & SON INC

Firm No. 35

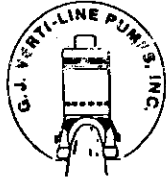
Firm Official

Date 8/2/13

Supervisor or Operator

DATE _____

(Sign once if Firm Official & Operator)

**G.J. VERTI-LINE PUMPS, INC.**

1970 Highland Ave. East - P.O. Box 892
Twin Falls, Idaho 83303
Fax (208) 733-5009
Phone (208) 733-4278

RECEIVED

SEP 26 2005

WATER RESOURCES
WESTERN REGION

09/25/2002

9/29/04

Don McFarland
731-6530

The following is the information on your pumps at Little Camas:

#7

200 HP Layne

Plate under head - no access to well

Design: 1100 GPM at 522 ft. head 10/10/03 10' Extension

Setting: 410 ft. of 8 x 2 1/2 x 1 11/16 420' setting

Bowls: 9 stage 12 RM

Static water level: 328 ft. - 1998

Well Depth: 443 ft.

200 HP Verti-line # 97-74192

Pumping Level? 382 ft. steady reading

Amp Load 150-220 surging

#6

Design: 1350 GPM at 515 ft. head 10/4/03 20' Extension

Setting: 400 ft. of 8 x 2 1/2 x 1 11/16 420' setting

Bowls: 9 stage 12 RH-M

Static water level: 247 ft. - 2000

Well Depth: 527 ft.

100 HP Aurora #97-74200

Static water level: 337 ft. - 9-2002

#5

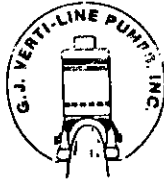
Design: 600 GPM at 500 ft. head 420' setting

Setting: 400 ft. of 8 x 2 1/2 x 1 1/2

Bowls: 12 stages 10 RM-L

Static water level: 279 ft. - 1997

Well Depth: 472 ft.



G.J. VERTI-LINE PUMPS, INC.

1970 Highland Ave. East - P.O. Box 892

Twin Falls, Idaho 83303

Fax (208) 733-5009

Phone (208) 733-4278

Little Camas Pumps

Page 2

150 HP Layne #T81102

Unable to get sounder past 272 ft.

Design: 900 GPM at 488 ft. head

Setting: 340 ft. 8 x 2 1/2 x 1 1/2

Bowls: 11 BEH 8 stage

Static water level: 300 ft. in 1981

Well Depth: 460 ft. ~

100 HP Layne #T81103

Pump is surging

Design: 700 GPM at 494 ft. head

Setting: 360 ft. 8 x 2 1/2 x 1 1/2

Bowls: 11 BH 8 stage

Static water level: 210 ft. in 1981

Well Depth: 480 ft.

Abandoned well East of house and pond

Static water level: 316 ft. - 12" hole

75 HP Layne #45817

Pulling 90 amps then dropping off to 70.

Its not surging as badly as the other two pumps

Design: 400 GPM at 568 ft. head

Setting: 300 ft. of 8 x 2 1/2 x 1 1/2

Bowls: 10 BKH 12 stage

Static water level: 252 ft. - 1976

Well Depth: 440 ft.

CURVE NO.
18-071
6-1-77

No. Stages	Eff. Change	MATERIAL	Eff. Change
1	-3	IMP.—C.I.	-2
2	-2	IMP.—NI-RI	-1
3	-1	BOWL—BRZ.	-1
4	0	BOWL—NI-R.	-1

10 RKHC

1760 R.P.M.

SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 4 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 4 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.

ONE (12)
STAGE STAGES

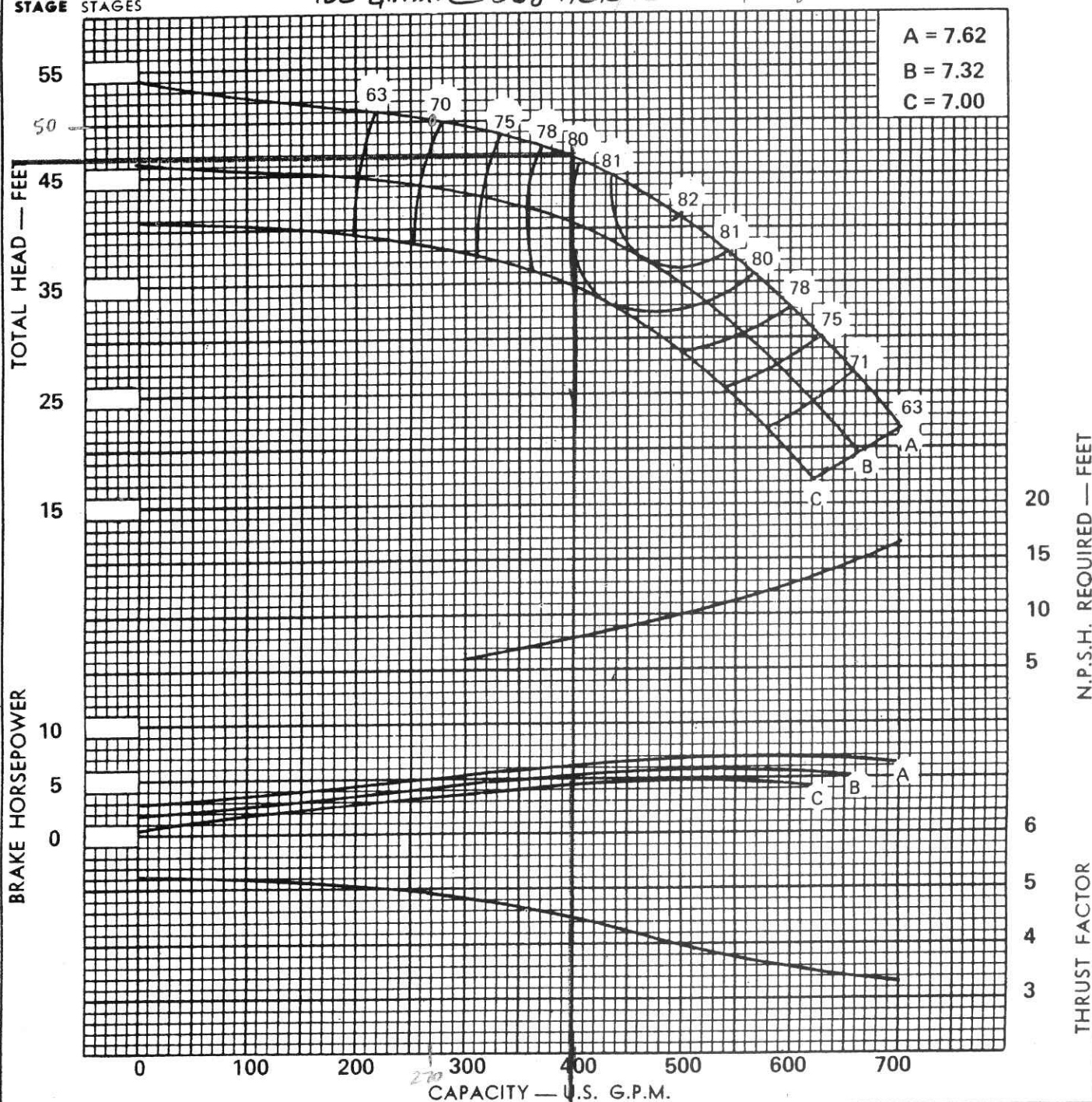
75 H.P. Layne #45817

400 G.P.M. @ 568' HEAD

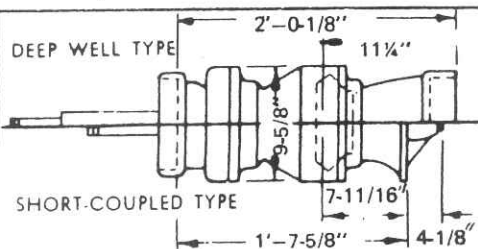
596/12 = 50'/stage

270 GPM @ 596'

TDH



EYE AREA — SQ. IN.	= 11.63	IMPELLER WT.-LBS.	= 9.8
WR ² PER IMPELLER	= 0.432 LB.-FT. ²	ONE STAGE WT.-LBS.	= 185
MAX. SPHERE SIZE	= 0.625 in.	ADD'L STAGE WT.-LBS.	= 67
MAX. NO. STD. STAGES	= 29	IMPELLER NUMBER	= 5RK171
MAX. OPERATING P.S.I.	= 700	DISCH. SIZES	= 6, 8
STD. LATERAL	= 0.86 in.	SUCTION SIZES	= 6
STD. SHAFT DIA.	= 1.500 in.	MAX. LATERAL	= — in.
MAX. SHAFT DIA.	= 1.687 in.	BOWL CONN.	THREADED-COLLET
MIN. SUBMERGENCE	= 18 in.	ADD 7-7/16"	PER ADDITIONAL STAGE.



CURVE NO.
18-083
5-1-79

No. Stages	Eff. Change	MATERIAL	Eff. Change
1	-4	IMP.—C.I.	-2
2	-2	IMP.—NI-RI	-1
3	-1	BOWL—BRZ.	-1
4	0	BOWL—NI-R.	-1

11 BHC

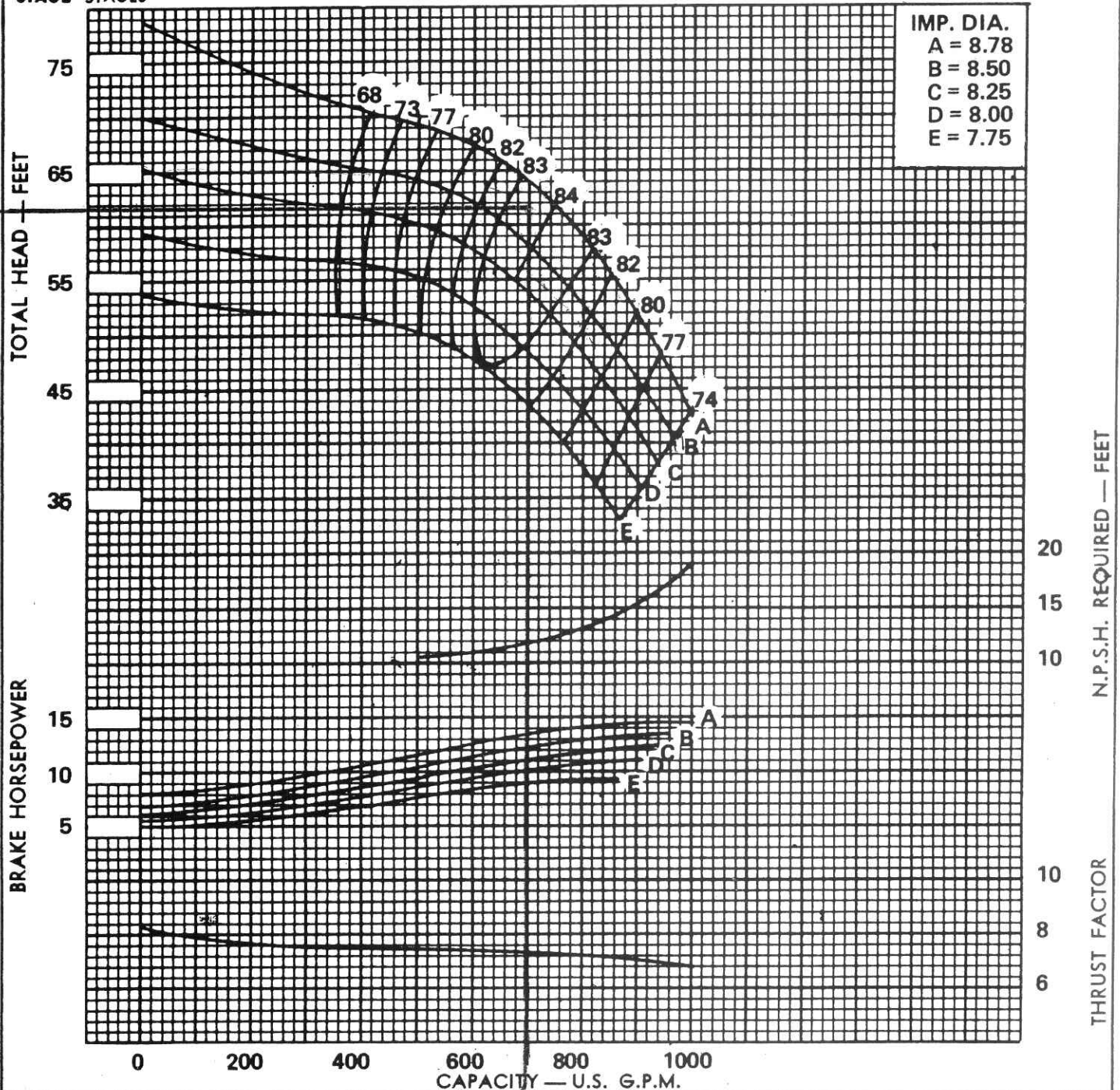
1770 R.P.M.

SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 4 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 4 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.

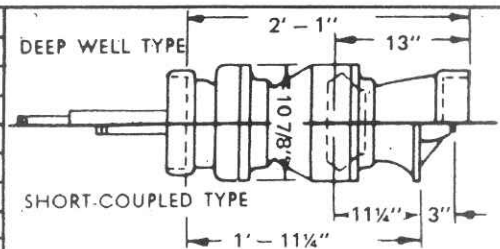
ONE (8)
STAGE STAGES

100 H.P. LAYNE T81103
700 G.P.M. @ 494' Head / 8 = 61.8'

522' / 8 = 65.3' / stage
600 G.P.M. @ 522' TDH



EYE AREA — SQ. IN.	= 14.71	IMPELLER WT.—LBS.	= 12.7
WR ² PER IMPELLER	= 0.74 LB.-FT. ²	ONE STAGE WT.—LBS.	= 188
MAX. SPHERE SIZE	= 0.82 in.	ADD'L STAGE WT.—LBS.	= 74
MAX. NO. STD. STAGES	= 13	IMPELLER NUMBER	= 55B17
MAX. OPERATING P.S.I.	= 430	DISCH. SIZES	= 8, 6
STD. LATERAL	= 0.62 in.	SUCTION SIZES	= 8
STD. SHAFT DIA.	= 1.500 in.	MAX. LATERAL	= — in.
MAX. SHAFT DIA.	= 1.687 in.	BOWL CONN.	FLANGED—COLLET
MIN. SUBMERGENCE	= 22 in.	ADD 9% " PER ADDITIONAL STAGE.	



CURVE NO.
18-105
3-15-78

No. Stages	Eff. Change	MATERIAL	Eff. Change
1	-4	IMP.—C.I.	-2
2	-2	IMP.—NI-RI	-1
3	-1	BOWL—BRZ.	-1
4	0	BOWL—NI-R.	-1

11 BEH

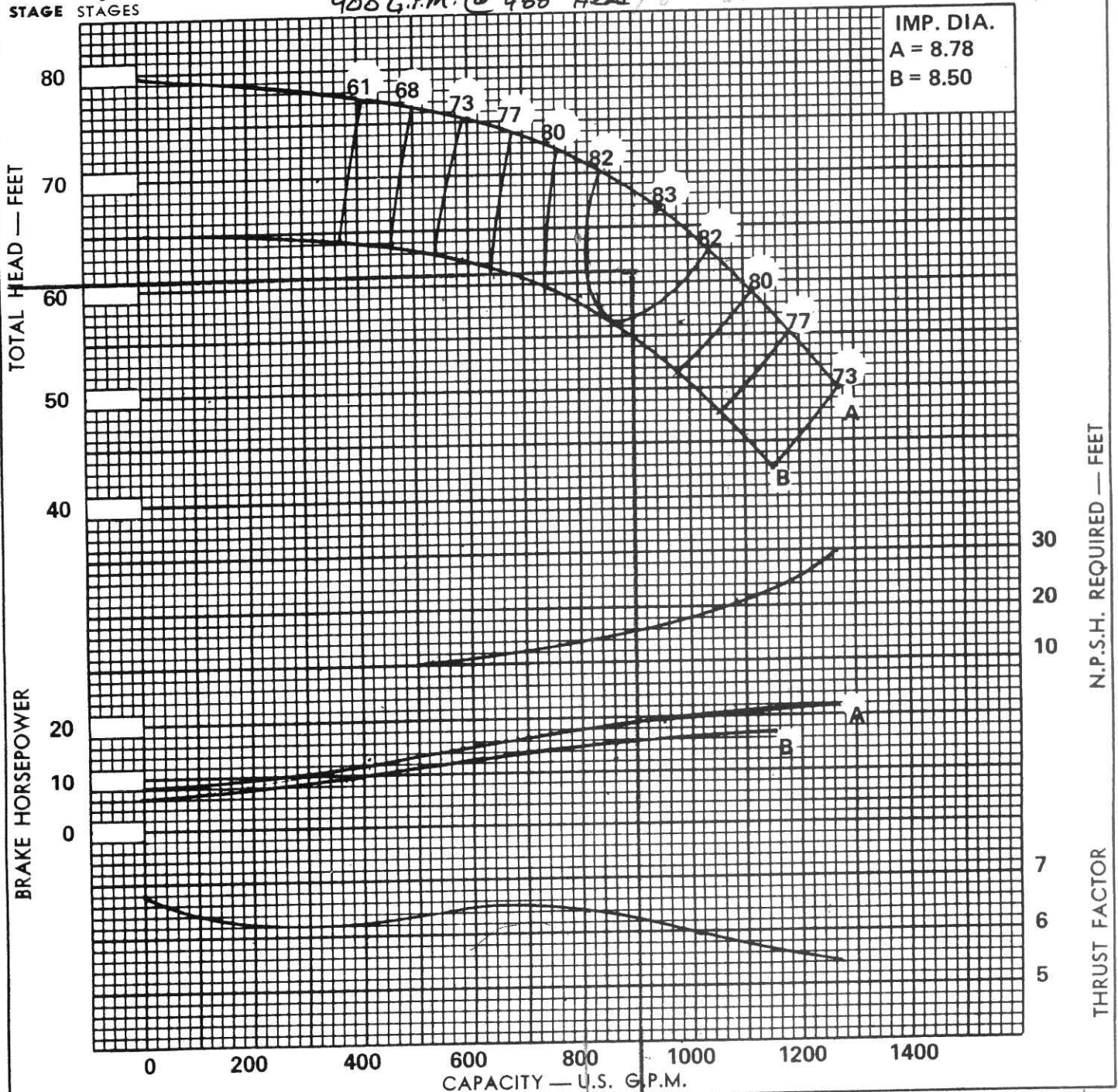
1770 R.P.M.

SINGLE STAGE LAB PERFORMANCE WITH STANDARD MATERIALS. EFFICIENCY SHOWN FOR 4 OR MORE STAGES. HORSE POWER SHOWN FOR ONE STAGE BASED ON 4 STAGE EFFICIENCY. CORRECTIONS SHOULD BE MADE FOR STAGES AND MATERIAL.

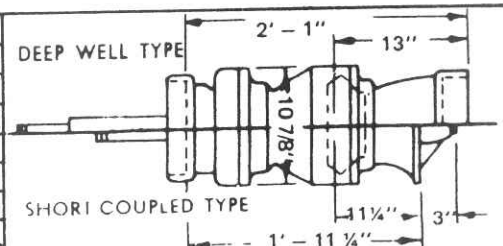
ONE (8)
STAGE STAGES

150 H.P. LAYNE #T81102
900 G.P.M. @ 488' Head / 8 = 61'

516' / 8 = 64.5'
800 GPM @ 516' TDH



EYE AREA — SQ. IN. = 15.11	IMPELLER WT.-LBS. = 12.7
WR ² PER IMPELLER = 0.74 LB.-FT. ²	ONE STAGE WT.-LBS. = 186
MAX. SPHERE SIZE = 0.62 in.	ADD'L STAGE WT.-LBS. = 74
MAX. NO. STD. STAGES = 10	IMPELLER NUMBER = 55B19
MAX. OPERATING P.S.I. = 430	DISCH. SIZES = 8
STD. LATERAL = 0.56 in.	SUCTION SIZES = 8
STD. SHAFT DIA. = 1.500 in.	MAX. LATERAL = — in.
MAX. SHAFT DIA. = 1.687 in.	BOWL CONN. FLANGED—COLLET
MIN. SUBMERGENCE = 25 in.	ADD 9% " PER ADDITIONAL STAGE



10RM SERIES 1110

Verli-Line PUMP

100 H.P. ANDORA # 97-74200 600 G.P.M. @ 500

8248 = 380

528'

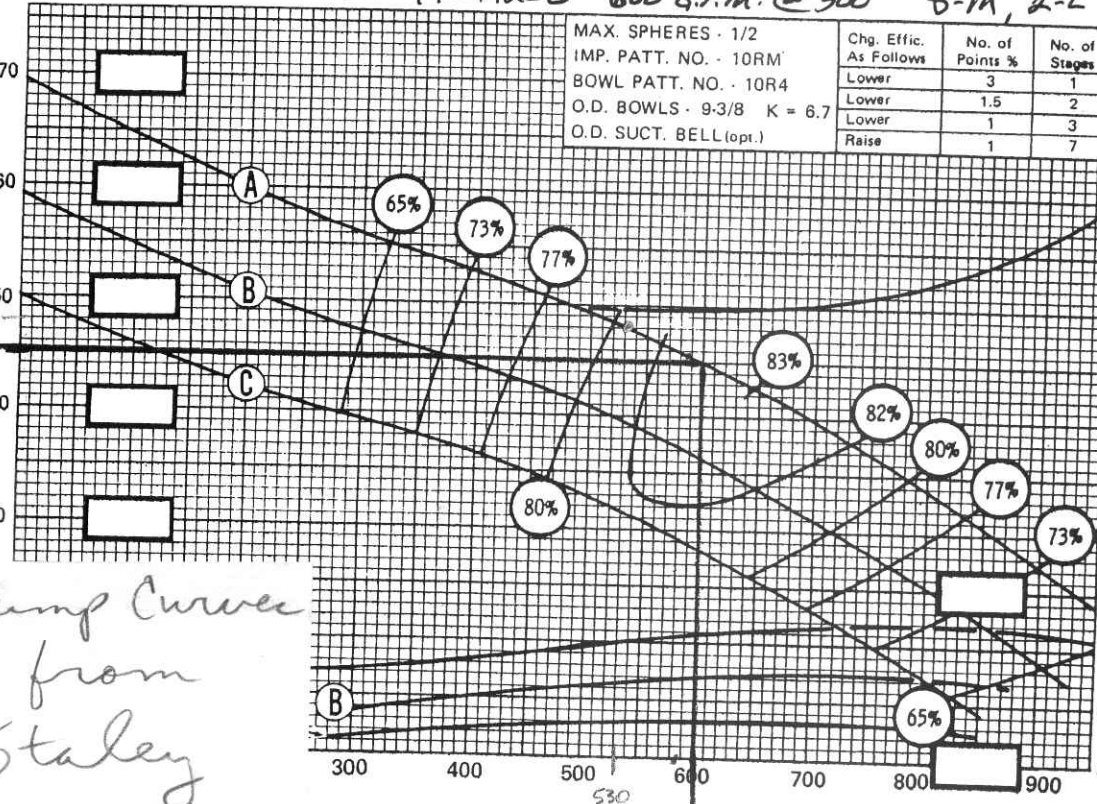
8245 = 360

8-M, 2-L Full Diameter

8-RM

1770 R.P.M.

TOTAL DYNAMIC HEAD-FEET



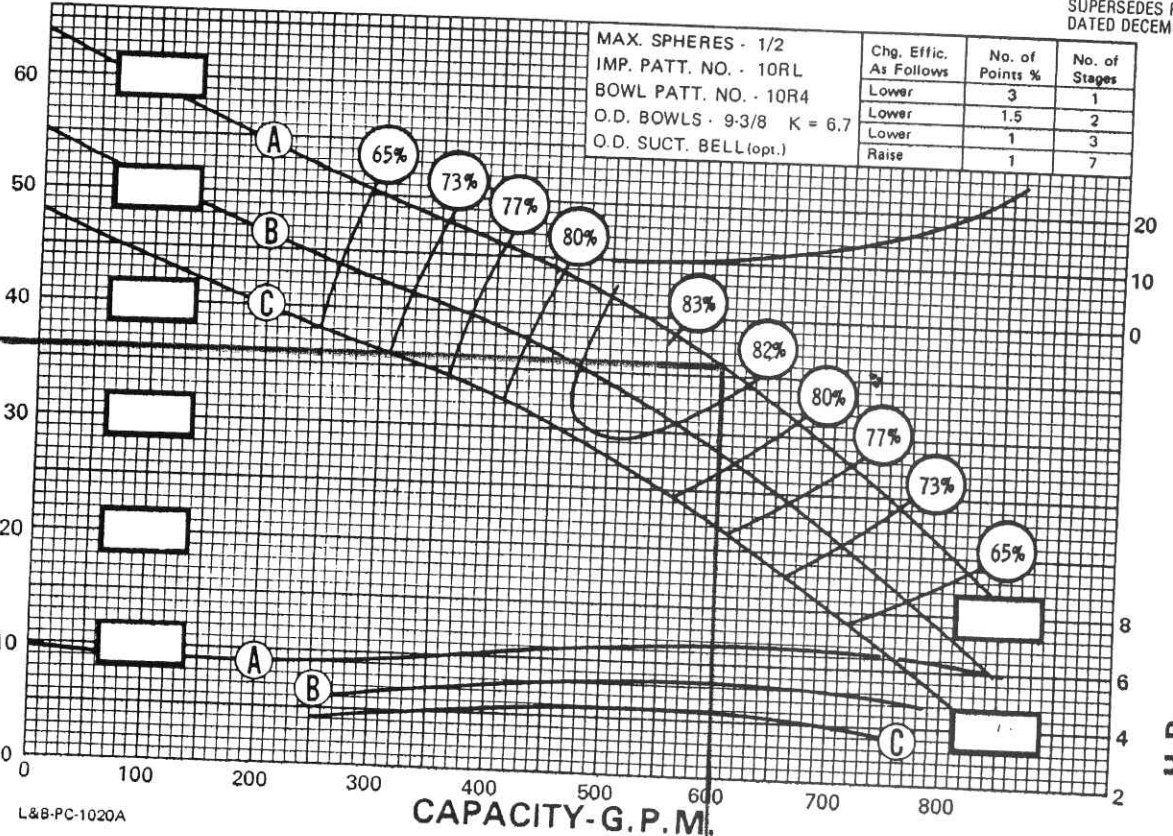
10RL SERIES 1110

Verli-Line PUMP

4237 = 148
 4235 = 140

4-RL

TOTAL DYNAMIC HEAD-FEET



L&B-PC-1020A

CAPACITY-G.P.M.

9PC-119364



Surging: 380 + 148 = 528
 G. J. VERTI-LINE PUMPS, INC.
 1970 HIGHLAND AVE E.

(A) = 7.750
 (B) = 7.375

1770 R.P.M.

DATED MARCH 1988

SUPERSEDES PAGE 564
DATED DECEMBER 1981

12RH SERIES 1110

Verli-Line PUMP

200 H.P. L&B # 97-74192

135D GPM @ 515'

7 @ 65' = 456

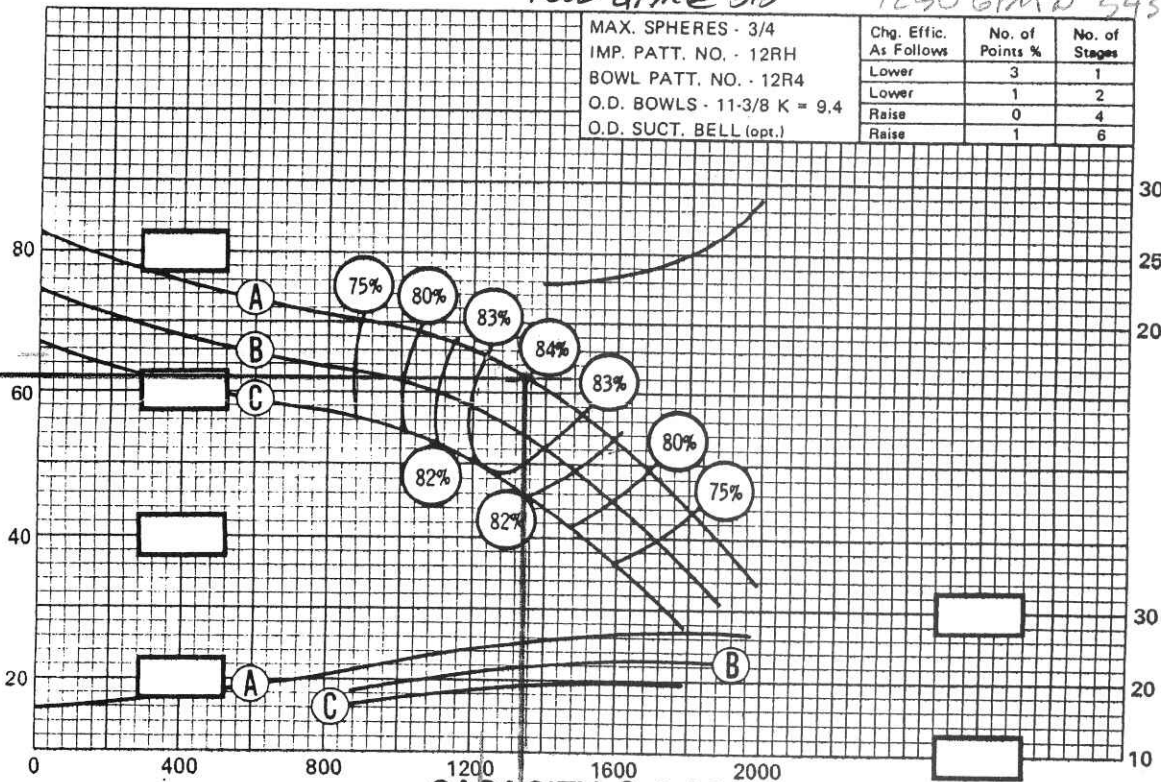
7 @ 62' = 434

1250 GPM @ 543'

7-4

1770
R.P.M.

TOTAL DYNAMIC HEAD-Feet



N.P.S.H.

H.P.

2 @ 435 = 87

2 @ 40.5 = 81

12RM SERIES 1110

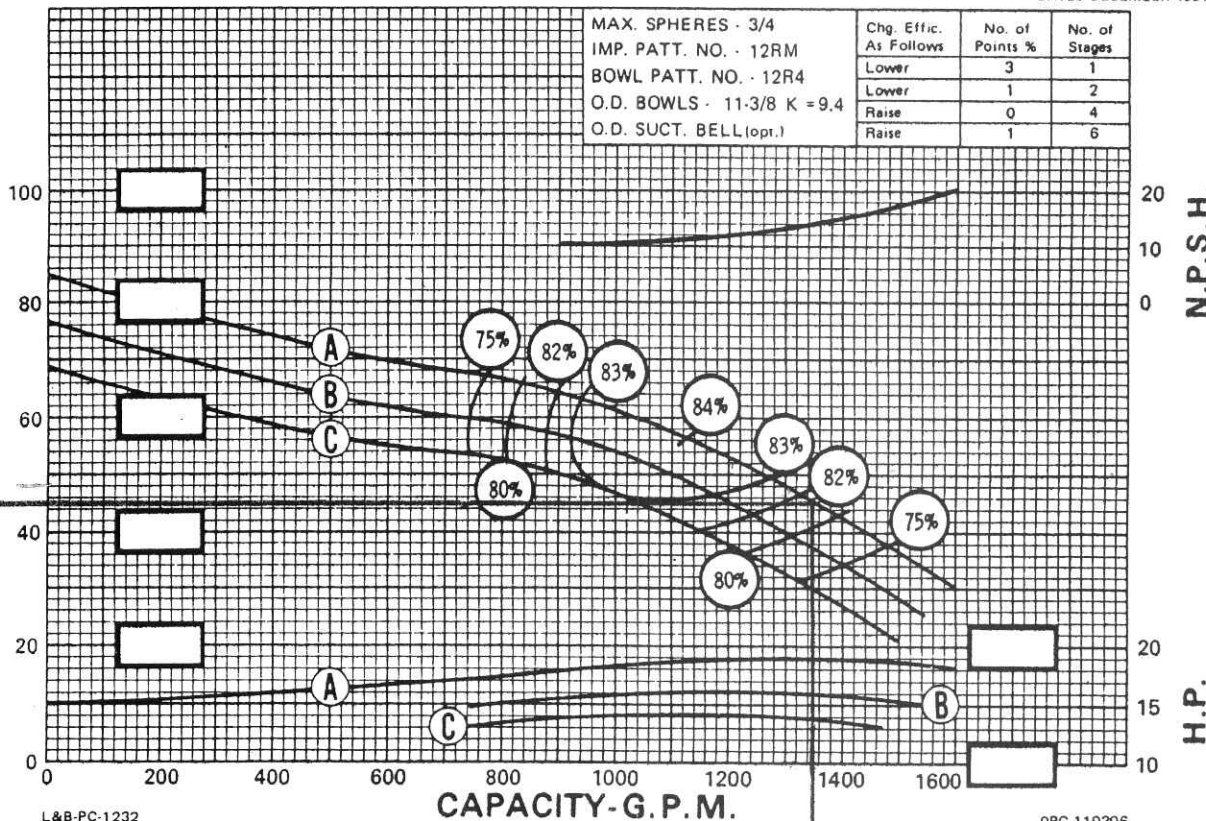
Verli-Line PUMP

DATED MARCH 1988

SUPERSEDES PAGE 563
DATED DECEMBER 1981

2-M

TOTAL DYNAMIC HEAD-Feet



N.P.S.H.

H.P.

1770
R.P.M.

L&B-PC-1232

9PC-119396

9PC-119397

456 + 87 = 543

434 + 81 = 515

(A) = 9.188
(B) = 9.750

12RM SERIES 1110

Verli-Line PUMP

200 H.P. LAYNE No #

1100 G.P.M. @ 522' Head / 9 = 58

SECTION 1110

1000 GPM @ 550' TDH

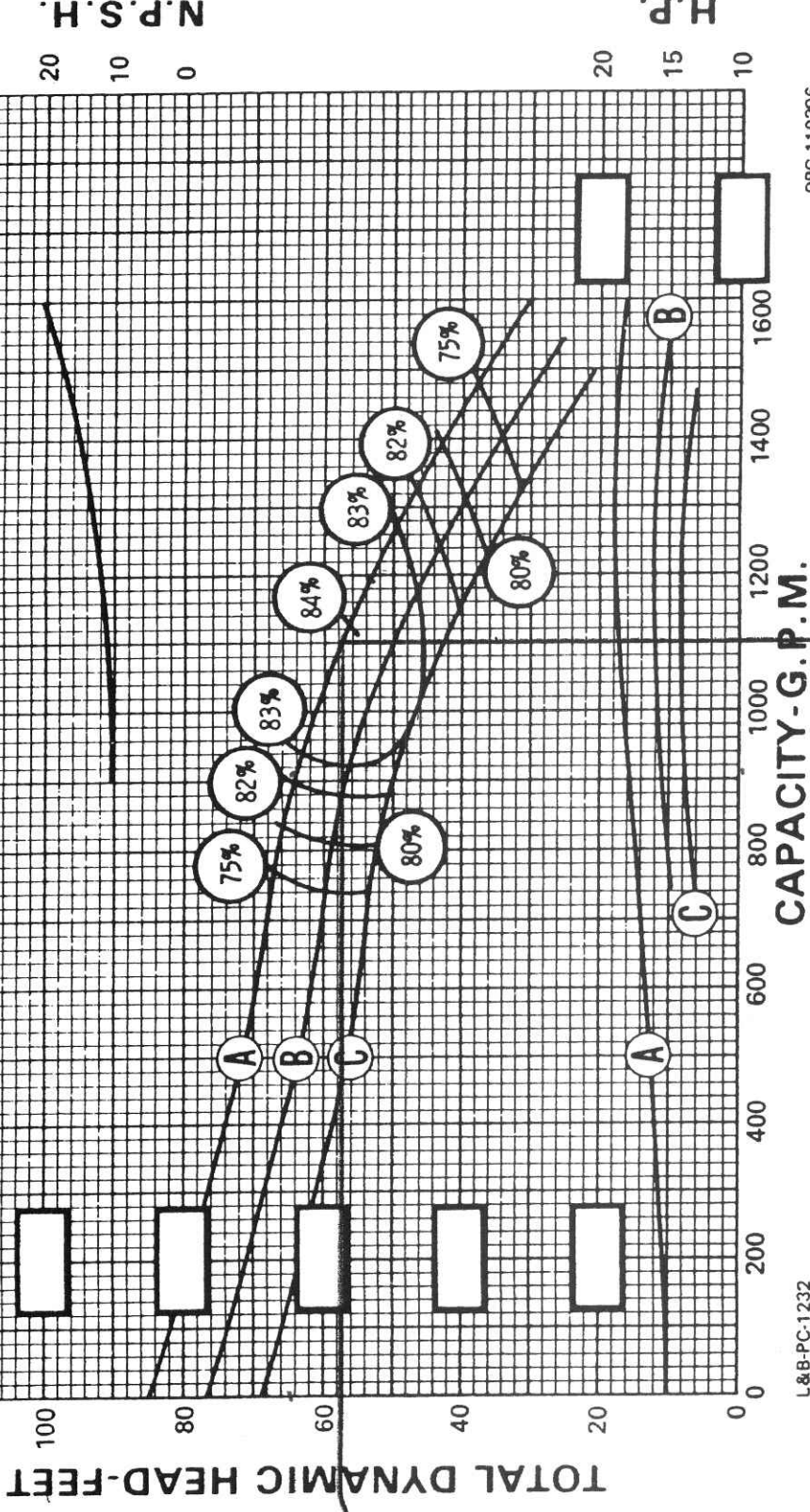
DATED MARCH 1988

PAGE 445

DATED MARCH 1988

SUPERSEDES PAGE 563
DATED DECEMBER 1981

MAX. SPHERES - 3/4	Chg. Effic. As Follows	No. of Points %	No. of Stages
IMP. PATT. NO. - 12RM	Lower	3	1
BOWL PATT. NO. - 12R4	Lower	1	2
O.D. BOWLS - 11-3/8 K = 9.4	Raise	0	4
O.D. SUCT. BELL (opt.)	Raise	1	6



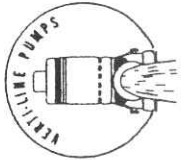
A = 9.188
B = 8.750
C = 8.375

G. J. VERTI-LINE PUMPS, INC.

1970 HIGHLAND AVE E.

P.O. BOX 892

TWIN FALLS, ID 83301



Don McFarlane Sites for wells.

PUMPS

DISCRIPTION	GPS COORDINATE	ELEVATION	
EAST SIDE PIVOT #2 BY ROAD TO LAGOON	N 43° 21.796' } X = 387068.440 W 115° 23.976' } Y = 251743.463	4924	DRY
BOOSTER	N 43° 22.119' 387078.4344 W 115° 23.981' 252389.1696	4971	
<i>being used</i> PUMP #1 <i>old well</i>	N 43° 22.230' 386948.6716 W 115° 24.080' 252596.1214	4993	JULY 15, 1980 ON PAD
SOUTH OF PUMP #1 30' ~~POLE~~ POLE 01N 09E 32 20	N 43° 22.225' 386947.1712 W 115° 24.081' 252586.9226	4946	DRY 
HINES ~~POLE~~ NOW DRY (I DRILLED) POLE 01N 09E 32 10 #2 1976	N 43° 22.685' 387063.6646 W 115° 24.055' 253433.5768	4946	NOW DRY 
HINES DOMESTIC	N 43° 22.875' 386729.2115 W 115° 24.258' 253789.7133	4901	NOT USED Pump Pulled 
— PUMP #3 SMALLER (SOUTH) POLE 01N 09E 33 40 <i>old</i>	N 43° 22.700' 387431.3859 W 115° 23.732' 253455.0862	4994	
— PUMP #4 LARGER (NORTH) POLE 01N 09E 33 41 <i>old</i>	N 43° 22.825' 387417.7555 W 115° 23.745' 253685.9147	4992	
— PUMP #5 ~~POOR PRODUCER~~ POLE 01N 09E 33 12 1996	N 43° 22.885' 387871.5929 W 115° 23.409' 253789.0230	4991	POOR PRODUCER
— PUMP #6 POLE 01N 09E 33 11 1996	N 43° 22.883' 388293.9229 W 115° 23.095' 253778.3572	4970	
— PUMP #7 1996 POLE 01N 09E 33 10	N 43° 22.884' 388599.3129 W 115° 22.868' 253775.0877	4960	
NORTH HOUSE DOMESTIC	N 43° 23.039' 388550.2444 W 115° 22.908' 254061.8435	4961	

EAST OF #7 ⁸
~~(DEEP)~~---I DRILLED) 1996

N 43° 22.878' 388583.9531 4984
W 115° 22.581' 254314.0072

DRY

ON TOP OF HILL
"HOLLER" WELL

N 43° 22.182' 387470.2790
W 115° 22.580' 253043.2406 5128
23.390

DRY ?

EAST (IN HOLE)

N 43° 22.234' 388669.5968 4995
W 115° 22.503' 253119.6410

DRY ?

No 107

DOMESTIC
(HEADQUARTERS)

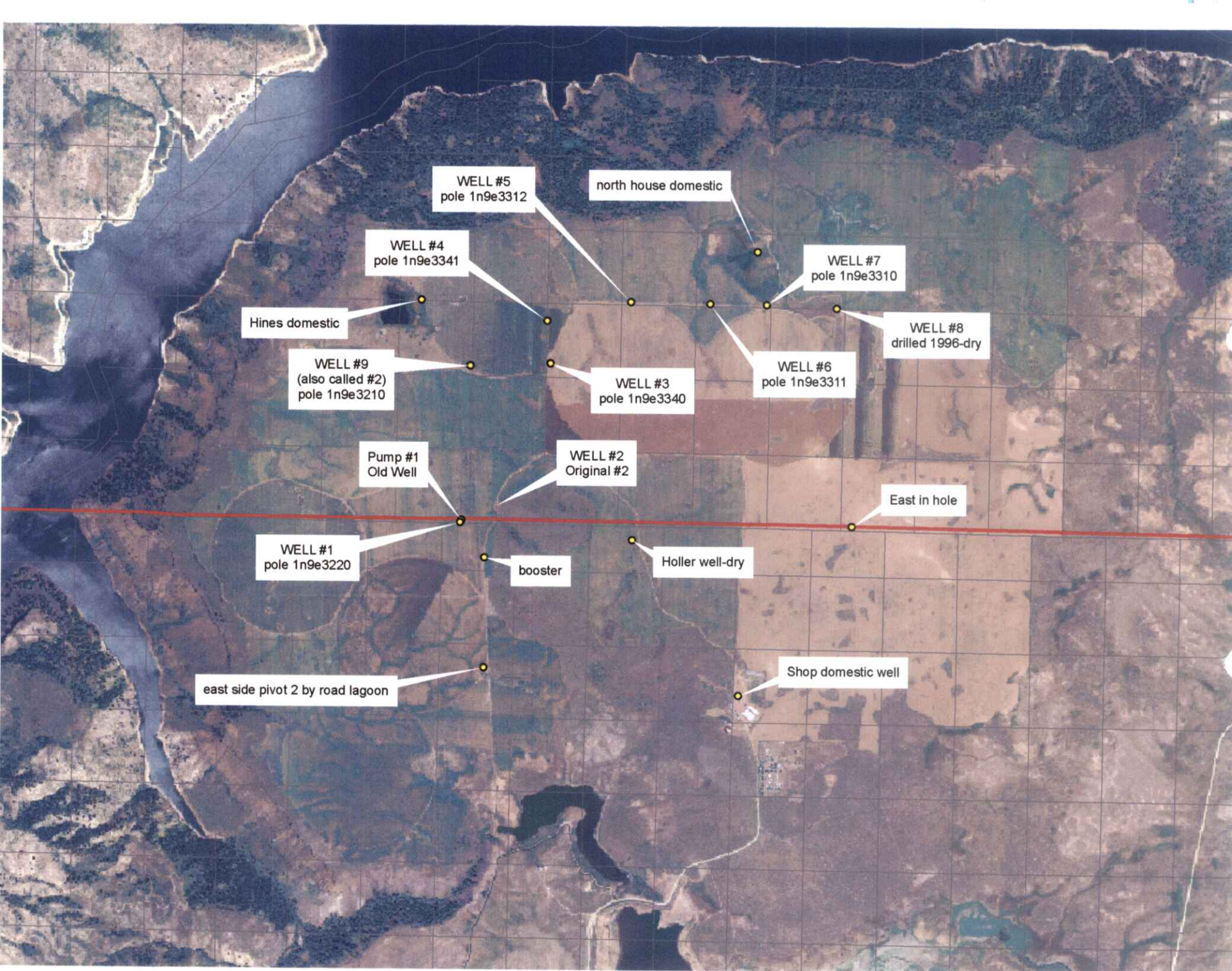
N 43° 21.733 388017.9452 5046
W 115° 22.952 252202.3370

FORT RUNNUNG BEAR

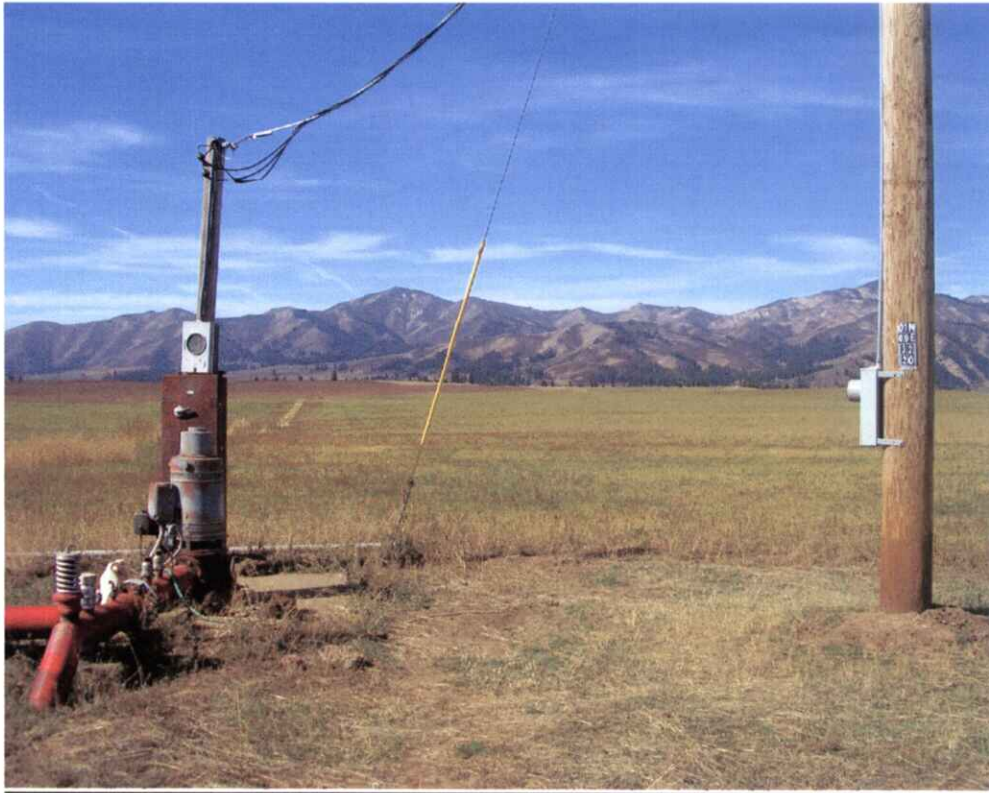
N 43°
W 115°

?

Have 2
Logs



Well #1 – Pole 01N, 09E, 32-20 (Looking W / NW)



Well #2 – Pole 01N, 09E, 32-10 (Looking NW - Pump removed at time of photo)



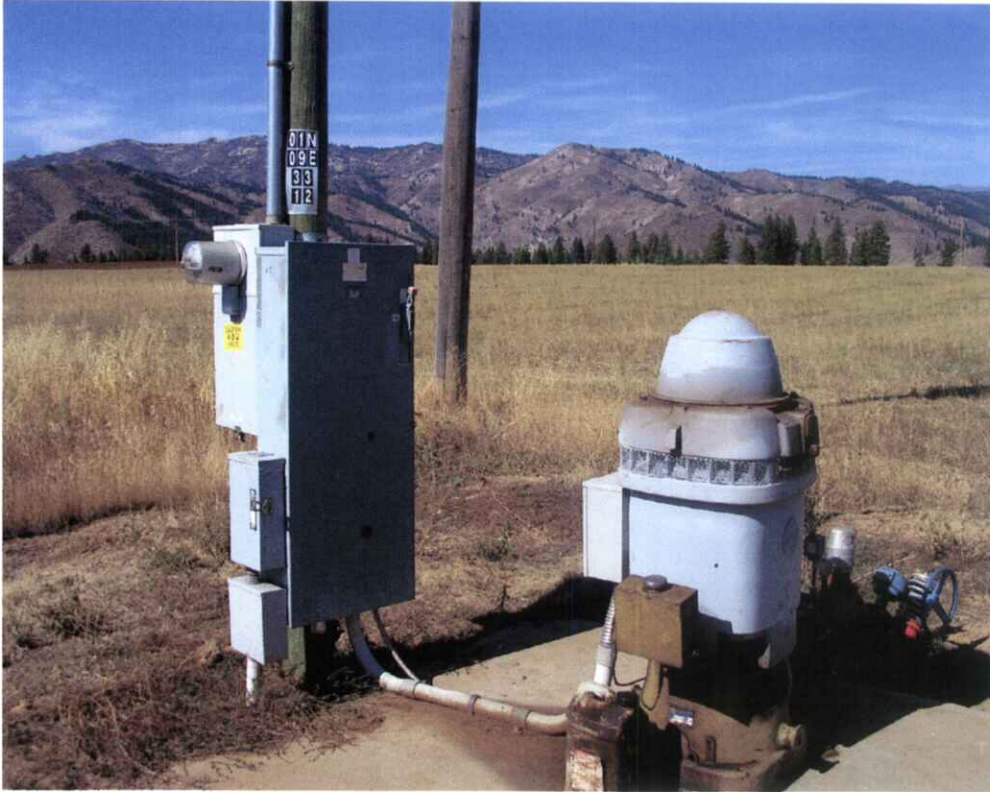
Well #3 – Pole 01N, 09E, 33-40 (Looking NW. Well #4 shown background right)



Well #4 – Pole 01N, 09E, 33-41 (Looking NW)



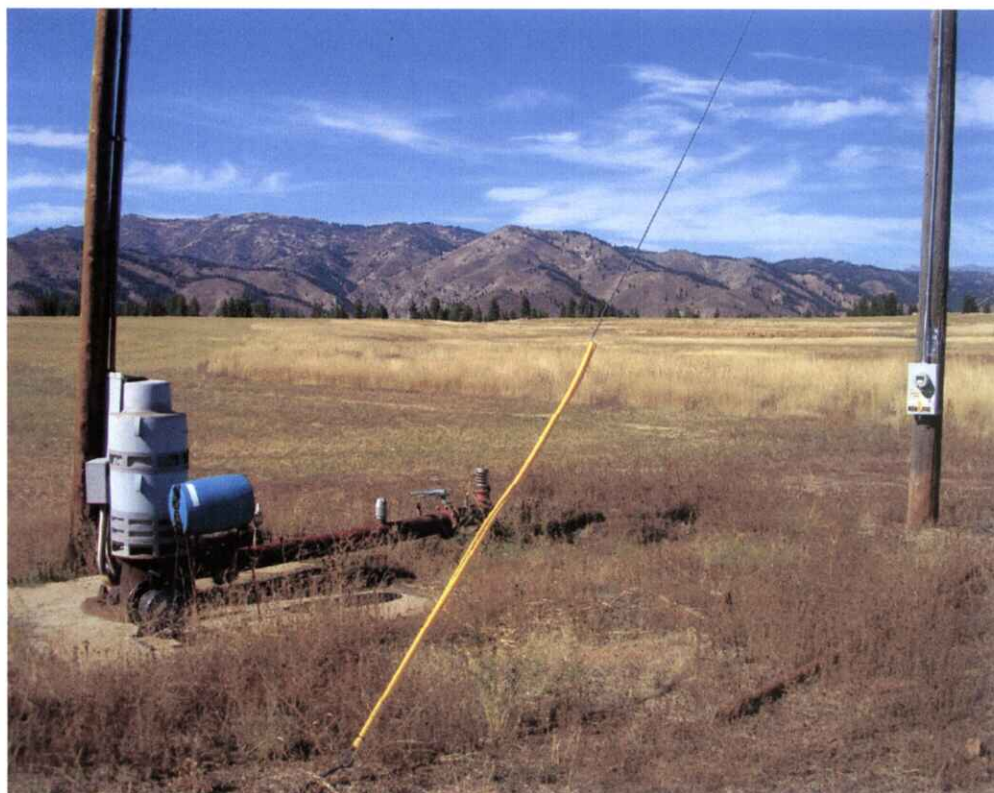
Well #5 – Pole 01N, 09E, 33-12 (Looking NW)



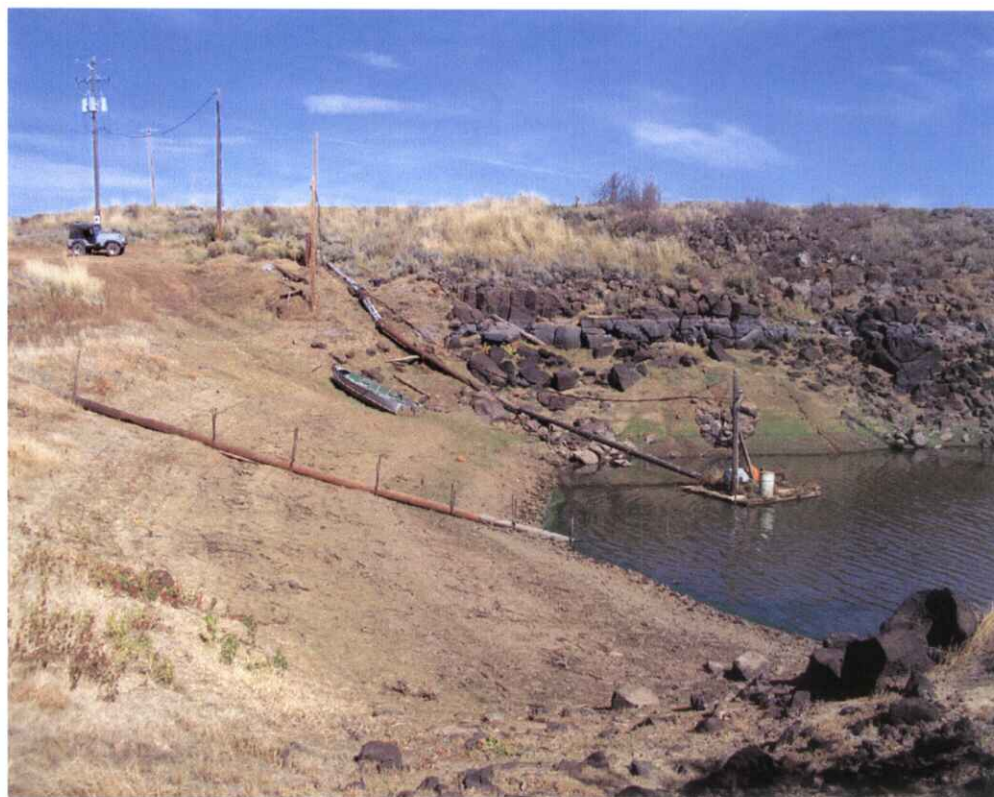
Well #6 – Pole 01N, 09E, 33-11 (Looking NW)



Well #7 – Pole 01N, 09E, 33-10 (Looking NW)



Rhead Reservoir Pumping Plant (Looking N / NE)



Booster Pump – Pole 01S, 09E, 04-40 (Looking East)

