

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 94-7395

Exam Date: 6-30-2010

1. Current Owner: FRANK B FRUTCHEY
14246 S TAMARACK RIDGE RD
CATALDO ID 83810
(208)682-2077
2. Accompanied by: Owner
Phone No: Same
Address: Same
Relationship to Permit Holder:

3. SOURCE

COEUR D ALENE RIVER

TRIBUTARY

COEUR D ALENE LAKE

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
2. Other water rights with the same point of diversion:

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

COEUR D ALENE RIVER	L8 SE1/4NE1/4	Sec. 1,	Twp 48N,	Rge 01W, B.M.
KOOTENAI County				
COEUR D ALENE RIVER	L3 NE1/4NW1/4	Sec. 1,	Twp 48N,	Rge 01W, B.M.
KOOTENAI County				
COEUR D ALENE RIVER	L2 NW1/4NE1/4	Sec. 1,	Twp 48N,	Rge 01W, B.M.
KOOTENAI County				
COEUR D ALENE RIVER	L6 SW1/4NW1/4	Sec. 6,	Twp 48N,	Rge 01E, B.M.
KOOTENAI County				

Method of Determination: GPS at all four points of diversion.

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
48N	01E	6					5.0	25.0	36.5	5.0									71.5
							L 4	L 5	L 6	L 7									
48N	01W	1	36.5	30.0		30.0	25.0												121.5
			L 1	L 2		L 8	L 3												
49N	01W	36									3.0	10.0							13.0
											L 1								

Total Acres: 206

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<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>	
48N	01E	6					X L 4	X L 5	X L 6	X L 7									
48N	01W	1	X L 1	X L 2		X L 8	X L 3												
49N	01W	36										X L 1	X						

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
<u>ID No.*</u>					
Tractor	Kubota M 8200	73 hp at PTO		Berkeley B4J	

Tractor Case Farmall 95. 95 hp

Berkeley B4J

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>

2. Measurements:

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method:

Performance data chart for a 200 series Big Gun 1.9" connection taper bore nozzle at 90 PSI = 1005 GPM = 2.23 CFS

Pump Curves is the data for 1410 GPM at 2400RPM.s

F. VOLUME CALCULATIONS**1. Volume Calculations for Irrigation:**

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 206 \times 3 \text{ AF} = 618 \text{ AF}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 2.23 \times 231 \times 1.9835 = 1021.7 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 618 \text{ AF}$$

2. Volume Calculations for Other Uses: Used charts and pump curves.

G. NARRATIVE/REMARKS/COMMENTS: 50 Head of cattle and 206 ac of irrigation. The pump capacity can produce 1410 GPM at 2400 rpm's and the nelson big gun performance sprinkler runs 1005 GPM at 90 PIS per performance data chart. Frank Frutchey said he runs the big gun at 90 PIS. The sprinkler output at 90 PIS is the limiting factor to the volume for this water right at the flow rate of 2.23 CFS.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/15 to 10/31	2.230 CFS	618.00 AF
STOCKWATER	01/01 to 12/31	0.040 CFS	2.00 AF
<u>Totals:</u>		2.270 CFS	620.00 AF

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

Date

Reviewer

Date

7-19-2010

1/12/11



Part Circle: SR200

Full Circle: F200

Trajectories: 27°, 24°, 21°

200R includes body, cap, & seven rings

200T includes choice of 9 sizes

Connection options include:

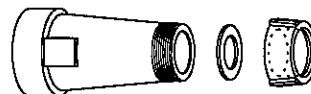
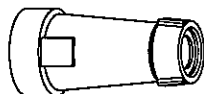
- 3.5" FNPT or FBSP
- 4" FNPT
- Standard Metric
- Metric Flange
- UFI Flange

200 RING NOZZLE — 27° TRAJECTORY — **200R** — U.S. UNITS

200R – Specify size when ordering

COMPONENTS:

Body #6025 Ring #6027-??? Cap #6026



1.29"
6027-129

1.46"
6027-146

1.56"
6027-156

1.66"
6027-166

1.74"
6027-174

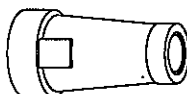
1.83"
6027-183

1.93"
6027-193

PSI	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.
50	230	325	300	355	350	370	410	390	470	405	535	420	640	435
60	250	340	330	370	385	390	445	410	515	425	585	440	695	455
70	270	355	355	385	415	405	480	425	555	440	630	455	755	475
80	290	370	380	400	445	420	515	440	590	455	675	470	805	490
90	310	380	405	415	475	435	545	455	625	470	715	485	855	505
100	325	390	425	425	500	445	575	465	660	480	755	500	900	520
110	340	400	445	435	525	455	605	475	695	490	790	510	945	535
120	355	410	465	445	545	465	630	485	725	500	825	520	985	545
130	370	415	485	450	565	470	655	490	755	505	860	525	1025	550

200 TAPER BORE NOZZLE — 27° TRAJECTORY — **200T** — U.S. UNITS

200T – Specify size when ordering



1.05"
9323-105

1.1"
9323-110

1.2"
9323-120

1.3"
9323-130

1.4"
9323-140

1.5"
9323-150

1.6"
9323-160

1.75"
9323-175

1.9"
9323-190

PSI	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.	GPM	DIA. FT.
60	250	345	285	355	330	375	385	390	445	410	515	430	585	445	695	470
70	270	360	310	380	355	395	415	410	480	430	555	450	630	465	755	495
80	290	375	330	395	380	410	445	430	515	450	590	470	675	485	805	515
90	310	390	350	410	405	425	475	445	545	465	625	485	715	505	855	535
100	325	400	370	420	425	440	500	460	575	480	660	500	755	520	900	550
110	340	410	390	430	445	450	525	470	605	495	695	515	790	535	945	565
120	355	420	405	440	465	460	545	480	630	505	725	530	825	550	985	580
130	370	425	425	445	485	465	565	485	655	515	755	540	860	560	1025	590

Diameters are based on 27° trajectory. Big Gun® performance data has been obtained under ideal test conditions and may be adversely affected by wind, poor hydraulic entrance conditions or other factors. Nelson Irrigation Corporation makes no representation regarding droplet condition, uniformity, or application rates.

ATTN: ERIC DAVIS

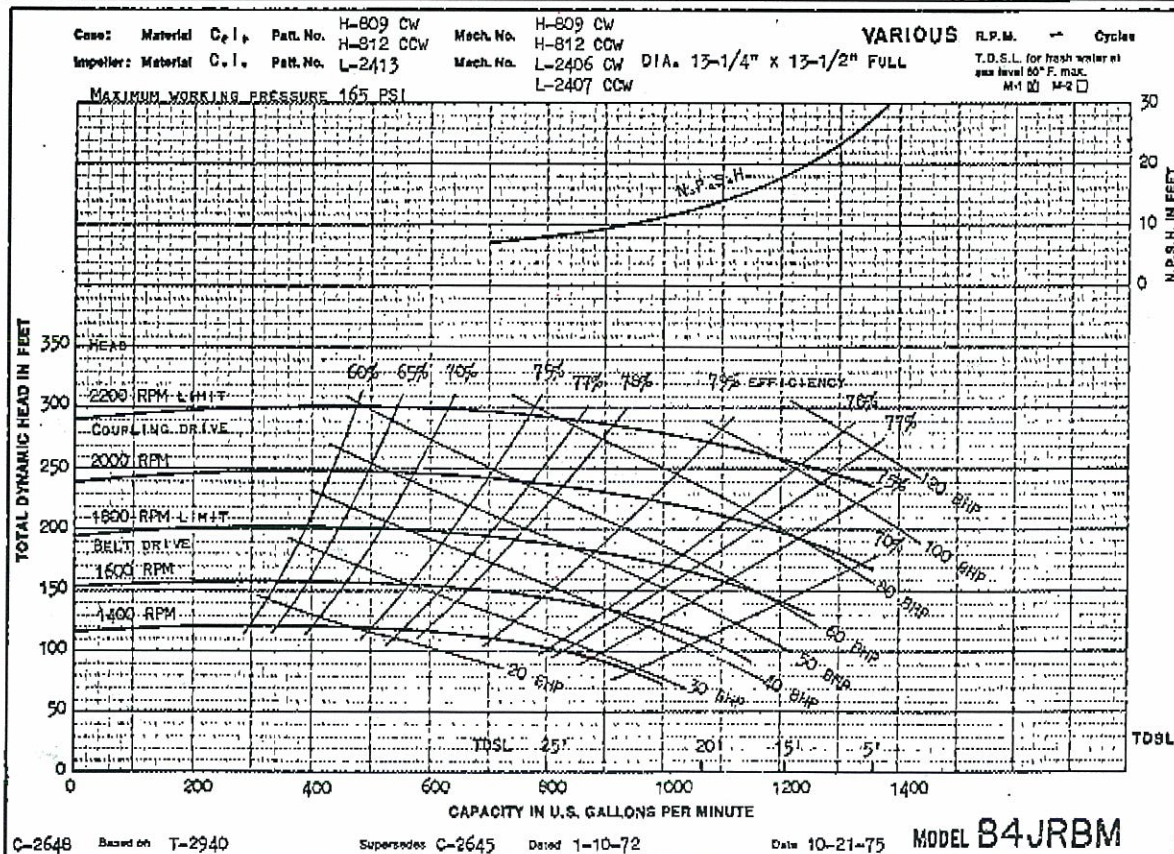
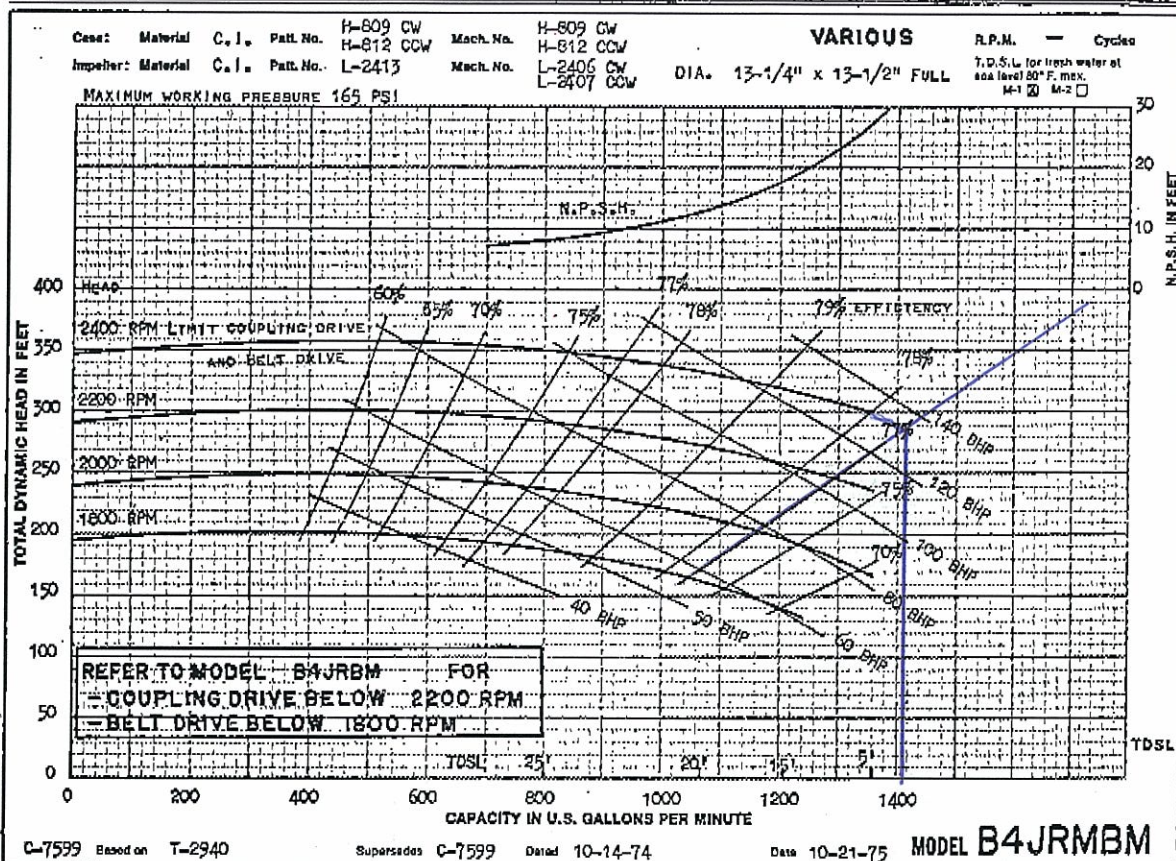
BERKELEY PUMP COMPANY



TYPE "B" RATING CURVES

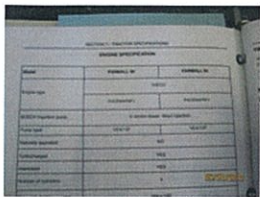
BELT OR COUPLING DRIVE

CURVE	4165
DATE	6-1-76
PAGE	10.01
SUPERSEDES	
Curve 4165	Page 10.01
Dated 3-24-75	





DATA 1.jpg



DATA 2.jpg



DATA 3.jpg



POU.jpg



POD 1.jpg



POD 3.jpg



POD 2.jpg



KUBATA M82000.jpg



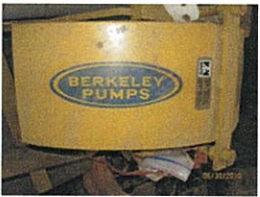
POU 1.jpg



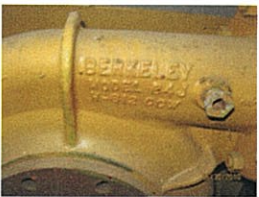
CASE-FARMALL.jpg



PUMP.jpg



PUMP NAME.jpg



PUMP DATA.jpg



LINE .jpg



PIPE.jpg



POD 4.jpg

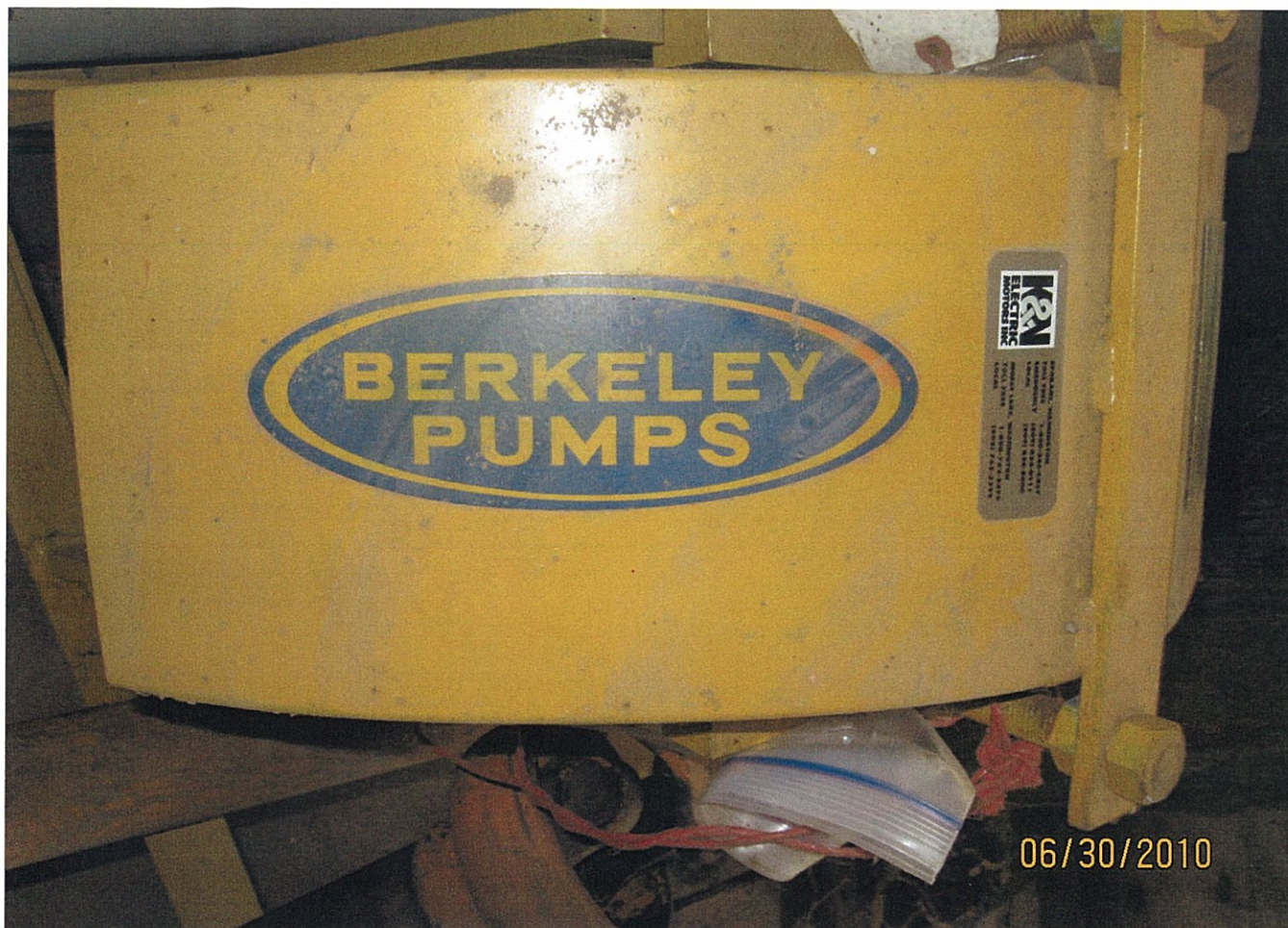


BIG GUN.JPG











11

M6800-M8200-M9000

Model			M6800		M8200		M9000		
			2WD	4WD	2WD	4WD	2WD	4WD	
Engine	Model		V3300-E		V3300-TE		V3300-TIE		
	Type		Vertical, water-cooled 4 cycle diesel engine						
	Number of cylinders		4						
	Total displacement	cm ³ (cu.in.)	3318 (202.5)						
	Bore and stroke	mm(in.)	98×110 (3.9×4.3)						
	Net power	kW(HP)	50.8 (68)*		61.2 (82)*		67.2 (90)*		
	PTO power	kW(HP)/min ⁻¹ (rpm)	46.3 (62) */ 2600		54.5 (73) */ 2600		59.7 (80)* / 2600		
	(factory observed)								
	Maximum torque	N·m(ft·lbs)/min ⁻¹ (rpm)	235 (173.3) / 1300 to 1500		285 (210.2) / 1300 to 1500		311 (229.4) / 1400 to 1600		
	Battery capacity		12V, CCA1000A						
Fuel		Diesel fuel No.1 (below -10°C (14°F)), Diesel fuel No.2 (above -10°C (14°F))							
Fuel tank capacity	L(U.S.gals.)	65 (17.2)		90 (23.8)					
Engine oil capacity	L(U.S.qts.)	10.7 (11.3)							
Coolant capacity	L(U.S.qts.)	8.5 (9.0)		9.0 (9.5)					
Dimensions	Overall length	mm(in.)	3560 (140.2)	3525 (138.8)	3875 (152.6)	3805 (149.8)	3875 (152.6)	3845 (151.4)	
	Overall width (minimum tread)	mm(in.)	1860 (73.2)		1980 (78.0)				
	Overall height (with ROPS)	mm(in.)	2450 (96.5)		2475 (97.4)		2500 (98.4)		
	Wheel base	mm(in.)	2050 (80.7)		2250 (88.6)				
	Tread	Front	mm(in.)	1420 (55.9) to 1820 (71.7)	1420 (55.9) to 1520 (59.8)	1440 (56.7) to 2040 (80.3)	1420 (55.9) to 1520 (59.8)	1440 (56.7) to 2040 (80.3)	1520 (59.8) to 1620 (63.8)
		Rear	mm(in.)	1420 (55.9) to 1720 (67.7)		1520 (59.8) to 1920 (75.6)			
	Minimum ground clearance	mm(in.)	430 (COVER TANK)		430 (BRACKET DRAWBAR)		450 (B)		
	Weight (With ROPS)	kg (lbs.)	2030 (4475)	2090 (4608)	2270 (5004)	2470 (5445)	2310 (5093)	2530 (5578)	
Standard	Front tires		7.5-16	9.5-24	7.5-18	11.2-24	7.5-18	12.4-24	

06/30/2010

06/30/2010

SECTION 7 - TRACTOR SPECIFICATIONS

ENGINE SPECIFICATION

Model	FARMALL 90	FARMALL 95
Engine type	IVECO	
	F4CE9487M*J	F4CE9487N*J
BOSCH Injection pump	4-stroke diesel, direct injection	
Pump type:	VE4/12F	VE4/12F
Naturally aspirated	NO	
Turbocharged	YES	
Intercooler	YES	
Number of cylinders	4	

06/30/2010

Pump type:	VE4/12F	VE4/12F
Naturally aspirated	NO	
Turbocharged	YES	
Intercooler	YES	
Number of cylinders	4	
Bore and stroke mm (in)	104 x 132 (4.1 x 5.2)	
Total displacement . cm ³ (cubic in)	4485 273.69	
Compression ratio	17.5±0.5:1	
Engine max.ISO 14396-ECE R120 Power kW/rev/min HP(CV)/rev/min	65/2500 88/2500	70/2500 95/2500
Maximum torque Nm / rev/min	375 / 1300	390 / 1300

06/30/2010





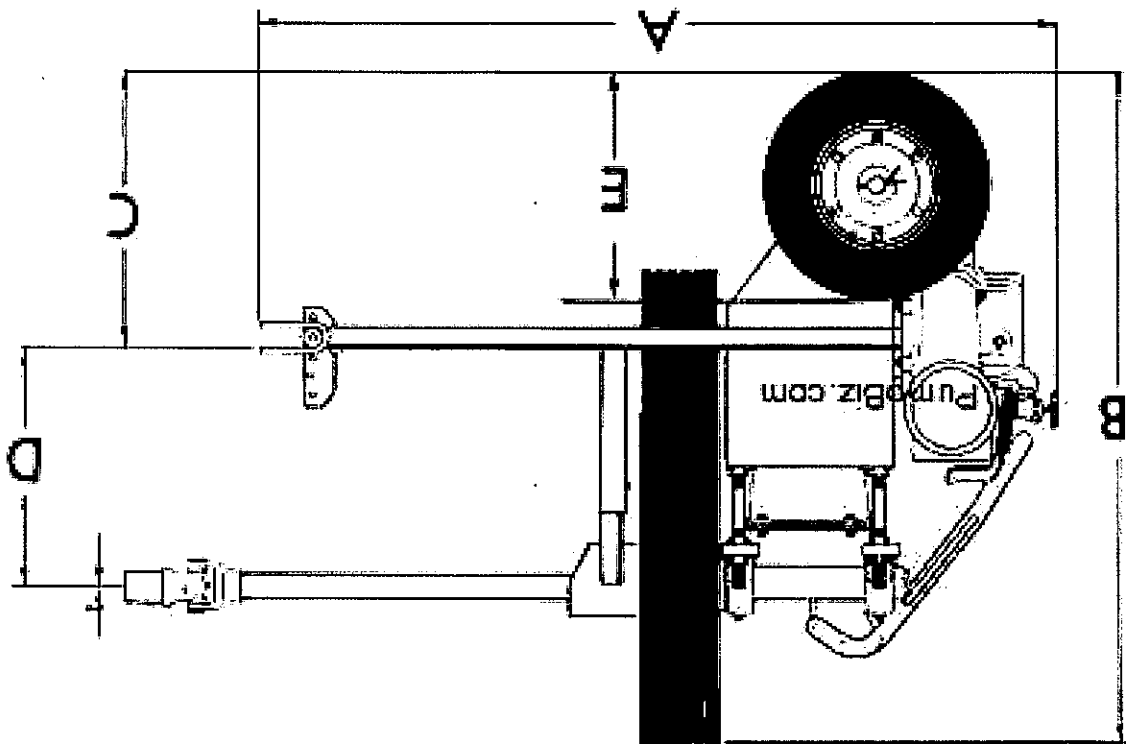


PUMP EQUATIONS					
WATER RIGHT No.			94-7395		
	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = $HP \cdot 8.8 \cdot \text{Eff} / H$	85	155.6462585	0.7	40	50
Q = 3.37 cfs 1512.3 gpm					

OUTLINE DIMENSIONS (IN.)

MODEL						A	B	C	D	E
T1	B2ERHH	56	37	14	13	14				
	B3ZRM	56	37	14	13	14				
	B6ZRM	57	37	14	13	14				
T2	B3ERBL	65	43	22	14	16				
	B3JRMBM	71	43	22	14	16				
	B4JRMBH	71	43	22	14	16				
	B6JRMBM	72	43	22	14	16				
	B8GRMBM	88	43	22	14	16				
	B3ERBL	65	43	22	14	16				
T2A	B4ERBM	65	43	22	14	16				
	B4JRMBH	65	43	22	14	16				
	B4EYRMBM	65	43	22	14	16				
	B6JRMBM	66	43	22	14	16				
	B8GRMBM	68	43	22	14	16				
	B8GRMBM	68	43	22	14	16				

Maximum overall width: 40"



Product Name: **Tracto-Rain PTO water pump**

Model Number: **T2-B4JRMBH**

Manufacturer: [Berkeley Pumps](#)

The Tracto-Rain and Tracto-Flood models are complete trailer mounted pumping units. Pump speed may be varied to meet exact pumping conditions. Tracto-Rain is primarily used for sprinkler irrigation and Tracto-Flood is primarily used for flood irrigation.

PTO 540RPM, 5.2" pump pulley pitch diameter. Quick disconnect female splined hub to accommodate a 1-3/8" diameter, 6-tooth spline for the 540RPM PTO.

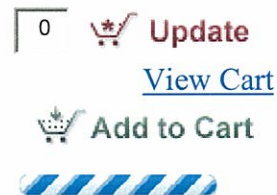
[RFQ](#)

[ASK CHARLIE](#)

[SEND TO A FRIEND](#)

Rating: ★ ★ ★ ★ ★

Usual Ship Time: Call Pumpbiz



Your Price: \$6,999.00 EA

- **Product Specifications**
- **Images/Other**
- **Related Accessories**

Maximum Flow	1200 gallons/min
TDH (Head) Maximum @ 0GPM	77.92 PSI
Head (TDH) Maximum @ 0GPM	180 FT
HP Required	56 HP
Watts	0 W
Inlet Connection Type	Flange
Inlet	5 "
Outlet Connection Type	Flange
Outlet	4 "
Wetted Materials	CI-Brass
Elastomers	Buna-Nitrile
Speed	600 RPM
Viscosity	Water 1.00 cp 31.00 ssu
Max. Particle Hardness	5 MOH
Max. Volume of Suspended Solids	0 %
Mechanical Seal Face	Carbon-ceramic
Mechanical Seal Type	Single

Impeller Size	13
Warranty	1 Year/s
Applications	Dewatering Flooded Suction Irrigation
PH High	7 pH
Other	Does not include 3 point hitch, discharge valve or hand primer. Order separately.
Weight	705 lbs

Pump Data Berkeley B4J PTO

Maximum Flow	1200 gallons/min
TDH (Head) Maximum @ 0GPM	77.92 PSI
Head (TDH) Maximum @ 0GPM	180 FT
HP Required	56 HP
Watts	0 W
Inlet Connection Type	Flange
Inlet	5 "
Outlet Connection Type	Flange
Outlet	4 "
Wetted Materials	CI-Brass
Elastomers	Buna-Nitrile
Speed	600 RPM
Viscosity	Water 1.00 cp 31.00 ssu
Max. Particle Hardness	5 MOH
Max. Volume of Suspended Solids	0 %
Mechanical Seal Face	Carbon-ceramic
Mechanical Seal Type	Single
Impeller Size	13
Warranty	1 Year/s
Applications	Dewatering Flooded Suction Irrigation
PH High	7 pH
Other	Does not include 3 point hitch, discharge valve or hand primer. Order separately.
Weight	705 lbs

ATTN: ERIC DAVIS

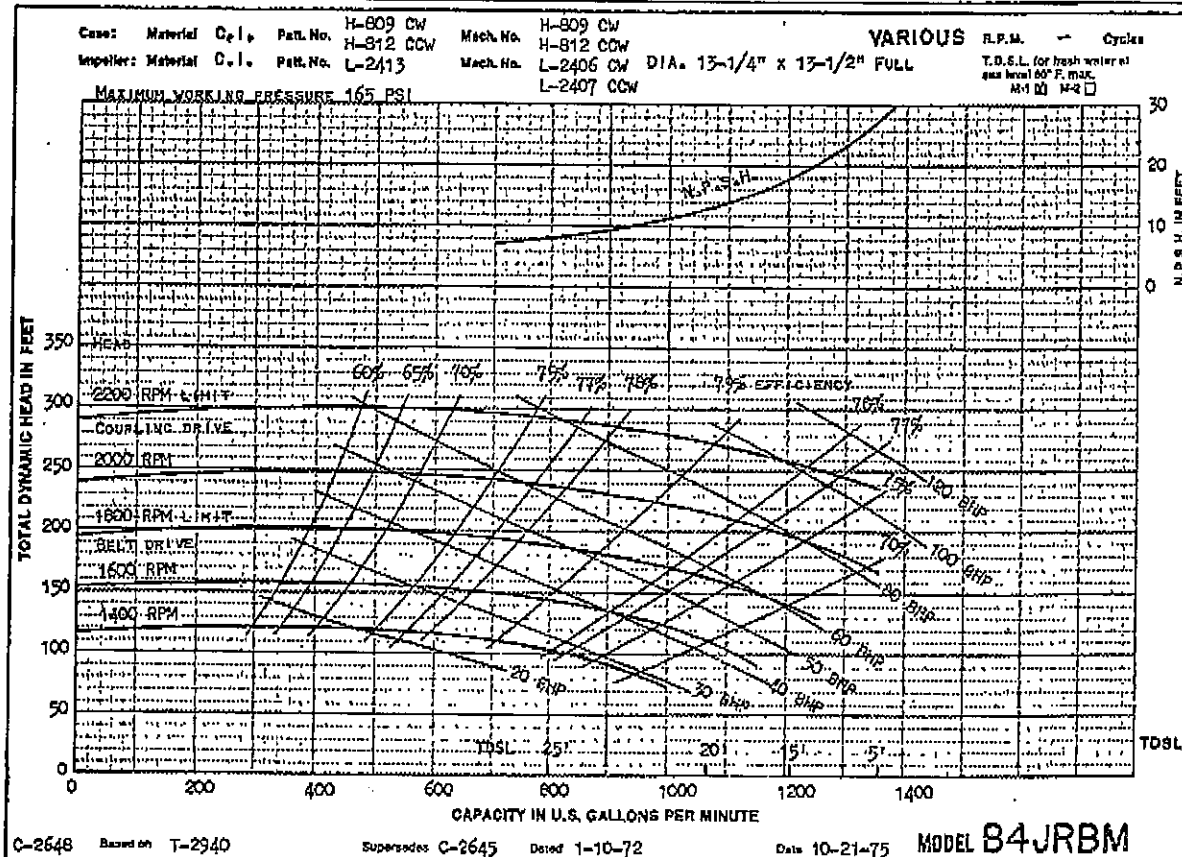
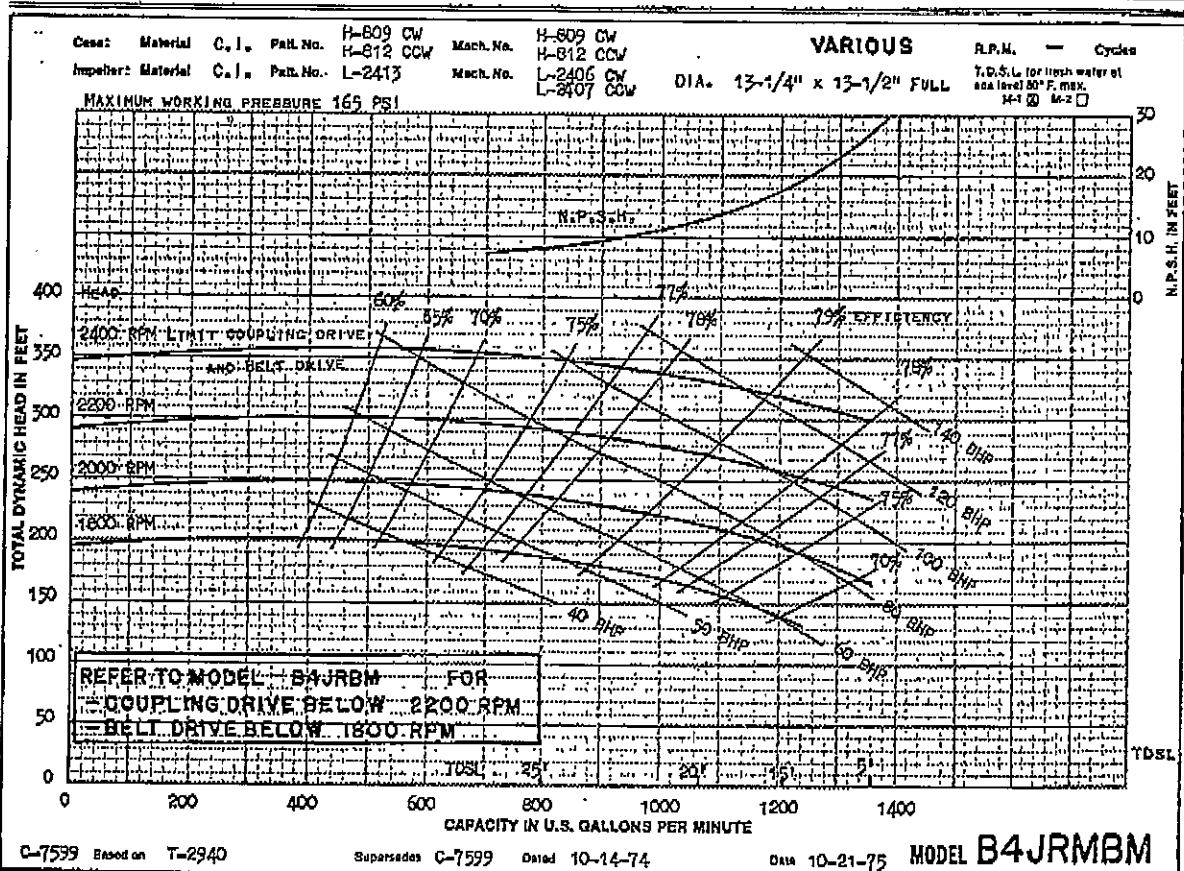
BERKELEY PUMP COMPANY



TYPE "B" RATING CURVES

BELT OR COUPLING DRIVE

CURVE	4165
DATE	6-1-76
PAGE	10.01
SUPERSEDES	
Curve 4165	Page 10.01
Dated 3-24-75	



PTO PUMPS



Product	Description	Part Number	Weight	List Price
PTO IRRIGATION PUMPS				

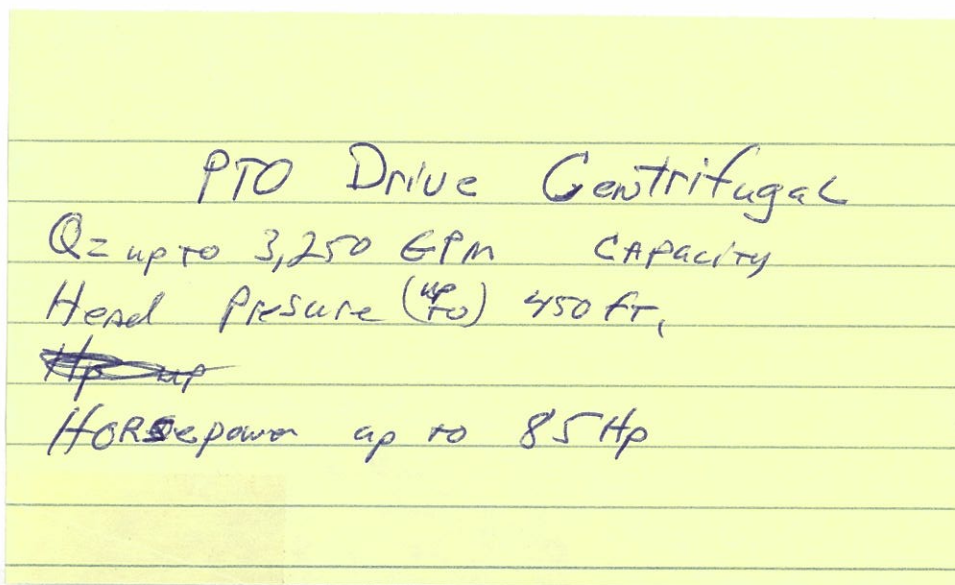
CAPRARI



Gear Driven



D2/40	540	2"x2"	50-150	146-133	8-0221	200.0
D2/50	540	2"x3"	50-250	135-121	8-0222	215.0
D3/50	540	2"x3"	70-300	170-133	8-0223	230.0
D2/65	540	4"x4"	100-450	107-97	8-0224	360.0
D3/65	540	4"x4"	150-500	161-136	8-0225	270.0
D2/80	540	5"x4"	200-700	110-99	8-0227	275.0
DO4/80	540	5"x4"	200-700	167-143	8-0228	380.0
DMR80 3/2	540	5"x4"	200-800	192-140	8-0230	400.0
D03/100	540	4"x6"	400-1000	116-103	8-0232	365.0
D01/125	540	8"x5"	500-1400	37-21	8-0234	430.0



Make Schumacher Irrigation your;
 irrigation and liquid handling
 solutions provider with our quality
Custom Built fittings.

M6800-M8200-M9000

Model		M6800		M8200		M9000	
Model		2WD	4WD	2WD	4WD	2WD	4WD
Type		V3300-E		V3300-TE		V3300-TIE	
Number of cylinders		Vertical, water-cooled 4 cycle diesel engine					
Total displacement	cm ³ (cu.in.)	4					
Bore and stroke	mm(in.)	3318 (202.5)					
Net power	kW(HP)	50.8 (68)*		61.2 (82)*	HP	67.2 (90)*	
PTO power (factory observed)	kW(HP)/min ⁻¹ (rpm)	46.3 (62) */ 2600		54.5 (73) */ 2600	HP @ PTO	59.7 (80)* / 2600	
Maximum torque	N·m(ft·lbs)/min ⁻¹ (rpm)	235 (173.3) / 1300 to 1500		285 (210.2) / 1300 to 1500		311 (229.4) / 1400 to 1600	
Battery capacity		12V, CCA1000A					
Fuel		Diesel fuel No.1 (below -10°C (14°F)), Diesel fuel No.2 (above -10°C (14°F))					
Fuel tank capacity	L(U.S.gals.)	65 (17.2)		90 (23.8)			
Engine oil capacity	L(U.S.qts.)	10.7 (11.3)					
Coolant capacity	L(U.S.qts.)	8.5 (9.0)		9.0 (9.5)			
Overall length	mm(in.)	3560 (140.2)	3525 (138.8)	3875 (152.6)	3805 (149.8)	3875 (152.6)	3845 (151.4)
Overall width (minimum tread)	mm(in.)	1860 (73.2)		1980 (78.0)			
Overall height (with ROPS)	mm(in.)	2450 (96.5)		2475 (97.4)		2500 (98.4)	
Wheel base	mm(in.)	2050 (80.7)		2250 (88.6)			
Tread	Front	1420 (55.9) to 1820 (71.7)	1420 (55.9) to 1520 (59.8)	1440 (56.7) to 2040 (80.3)	1420 (55.9) to 1520 (59.8)	1440 (56.7) to 2040 (80.3)	1520 (59.8) to 1620 (63.8)
	Rear	1420 (55.9) to 1720 (67.7)		1520 (59.8) to 1920 (75.6)			
Minimum ground clearance	mm(in.)	430 (COVER TANK)		430 (BRACKET DRAWBAR)		450 (06/30/2010)	
Weight (With ROPS)	kg (lbs.)	2030 (4475)	2090 (4608)	2270 (5004)	2470 (5445)	2310 (5093)	2530 (5578)
Standard tire size	Front tires	7.5-16	9.5-24	7.5-18	11.2-24	7.5-18	12.4-24
						18.4-30	

Engine

Dimensions

BOSCH Injection pump			4-stroke diesel, direct injection	
Pump type:	VE4/12F	VE4/12F	VE4/12F	VE4/12F
Naturally aspirated			NO	
Turbocharged			YES	
Intercooler			YES	
Number of cylinders			4	
Bore and stroke mm (in)			104 x 132 (4.1 x 5.2)	
Total displacement : cm ³ (cubic in)			4485 273.69	
Compression ratio			17.5±0.5:1	
Engine max ISO 14396-ECE R120 Power kW/rev/min HP(CV)/rev/min	65/2500 88/2500			70/2500 95/2500 = 95 hp
Maximum torque Nm / rev/min	375 / 1300			390 / 1300

06/30/2010

SECTION 7 - TRACTOR SPECIFICATIONS

ENGINE SPECIFICATION

CASE FARMALL 95

Model	FARMALL 90	FARMALL 95
Engine type	IVECO	
	F4CE9487M*J	F4CE9487N*J
BOSCH Injection pump	4-stroke diesel, direct injection	
Pump type:	VE4/12F	VE4/12F
Naturally aspirated	NO	
Turbocharged	YES	
Intercooler	YES	
Number of cylinders	4	
	104 x 132	

06/30/2010