S01 (Prairie Ridge Well 1) Well Log

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name ROBERT DROHMAN Address P.O. BOX H

(2) LOCATION OF WELL: County THURSTON — SE ¼ NW ¼ Sec. 34 T. 19 N., R. 1W W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 8" inches.
Drilled 173' 2¼" ft. Depth of completed well 174' 7½" ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 8" Diam. from 0 ft. to 163' 7" ft.
Threaded [ ] ..." Diam. from ... ft. to ... ft.
Welded [ ] ..." Diam. from ... ft. to ... ft.

Perforations: Yes [ ] No [X]
Type of perforator used .....
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

Screens: Yes [X] No [ ] Manufacturer's Name JOHNSON
Type ... Model No. ...
Diam. 8 Slot size 30 from TOP ft. to 45' ft.
Diam. ... Slot size 30 from BOTT. ft. to 5' ft.

Gravel packed: Yes [ ] No [X] Size of gravel: ...
Gravel placed from ... ft. to ... ft.

Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? ... Depth of strata ...
Method of sealing strata off ...

(7) PUMP: Manufacturer's Name ...
Type: ... H.P. ...

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 133' 7" ft. below top of well Date ...
Artesian pressure ... lbs. per square inch Date ...
Artesian water is controlled by ... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? ...
Yield: ... gal./min. with ... ft. drawdown after ... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
		N/A			

Date of test ...
Baller test ... gal./min. with ... ft. drawdown after ... hrs.
Artesian flow ... g.p.m. Date ...
Temperature of water ... Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
BROWN TOP SOIL, SANDY CLAY	0	3
BROWN CLAY, BOUND GRAVEL	3	22
GREY CEMENTED GRAVEL	22	45
" " "	45	69
BROWN CLAY BOUND GRAVEL	69	72
GRAY HARD PAN	72	80
GRAY HARD PAN, BOULDERS	80	105
GRAY SAND-GRAVEL, TR. WATER	105	108
GRAY HARD PAN	108	130
BROWN CEMENTED SAND, COB.	130	142
GRAY CEMENTED GRAVEL	142	149
BROWN HARD PAN	149	153
BOT. OUT, BROWN HARD PAN	153	173

RECEIVED
SEP 23 1980
DEPARTMENT OF ECOLOGY
SOUTHWEST REGIONAL OFFICE

Work started ..., 19... Completed ..., 19...

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME KINCY HARDWARE, INC.
(Person, firm, or corporation) (Type or print)

Address 2643 MOTTMAN RD. S.W.

[Signed] Roy McCall
(Well Driller)

License No. C165 Date July 28, 1980

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

WASHINGTON STATE DEPARTMENT OF ECOLOGY

Well Tagging Form

PWS ID #: 02356 Source #: S01

Unique Well Tag No: AKY 156

RECORD VERIFICATION (check ✓ one)

- [X] Well Report available *(please attach this form to the well report and submit it to the Ecology Regional Office near you)*
- [ ] Verification inconclusive
- [ ] Well Report not available

RECEIVED
JAN 15 2009
DEPARTMENT OF ECOLOGY

PUBLIC WATER SYSTEM INFORMATION

Water System Name: Prairie Ridge c/o Robert Drahman

Street Address: 4326 Legacy Drive NE

City: Olympia State: WA 98516

LOCATION OF WELL, IF DIFFERENT FROM WELL REPORT

Well Address: 7045 44th Ave NE

City: Olympia WA County: Thurston

T. _____ N. R. _____ _____ W.M. Sec. _____ _____ 1/4 of the _____

FOR AGENCY USE ONLY

Latitude _____ ' _____ " [ ] GPS [ ] Topographic Map [ ] Survey [ ] Computer generated

Longitude _____ ' _____ "

Elevation at land surface _____ feet/meters *(circle one)* [ ] Digital Altimeter [ ] Topographic Map [ ] Other _____

Additional information, if available:

- [ ] Location marked on topographic map *(please attach)*
- [X] Location marked on air photo *(please attach)*

FOR AGENCY USE ONLY

WELL CHARACTERISTICS

Physical Description of well (size of casing, type of well, housing, etc.)

8" casing 173' deep

Location of Well identification Tag:

banded on well discharge pipe

Was supplemental tag needed for ease of identifying well? ☐ Yes ☒ No

If yes, where was tag placed? _____

D	C	B	A
E	F	G	H
M	L	K	J
N	P	Q	R

Scale 1:24,000 (1"=2,000')

Indicate the location of the well within the Section by drawing a dot at that point.

SECTION 34 F

COMMENTS:

FOR ECOLOGY WATER RESOURCES PROGRAM ONLY

Water Right # _____ Date Issued _____

Circle One: Application Permit Certificate Claim Exempt

S01 (Prairie Ridge Well 1) Pump Curve

SUBMERSIBLE PUMPS

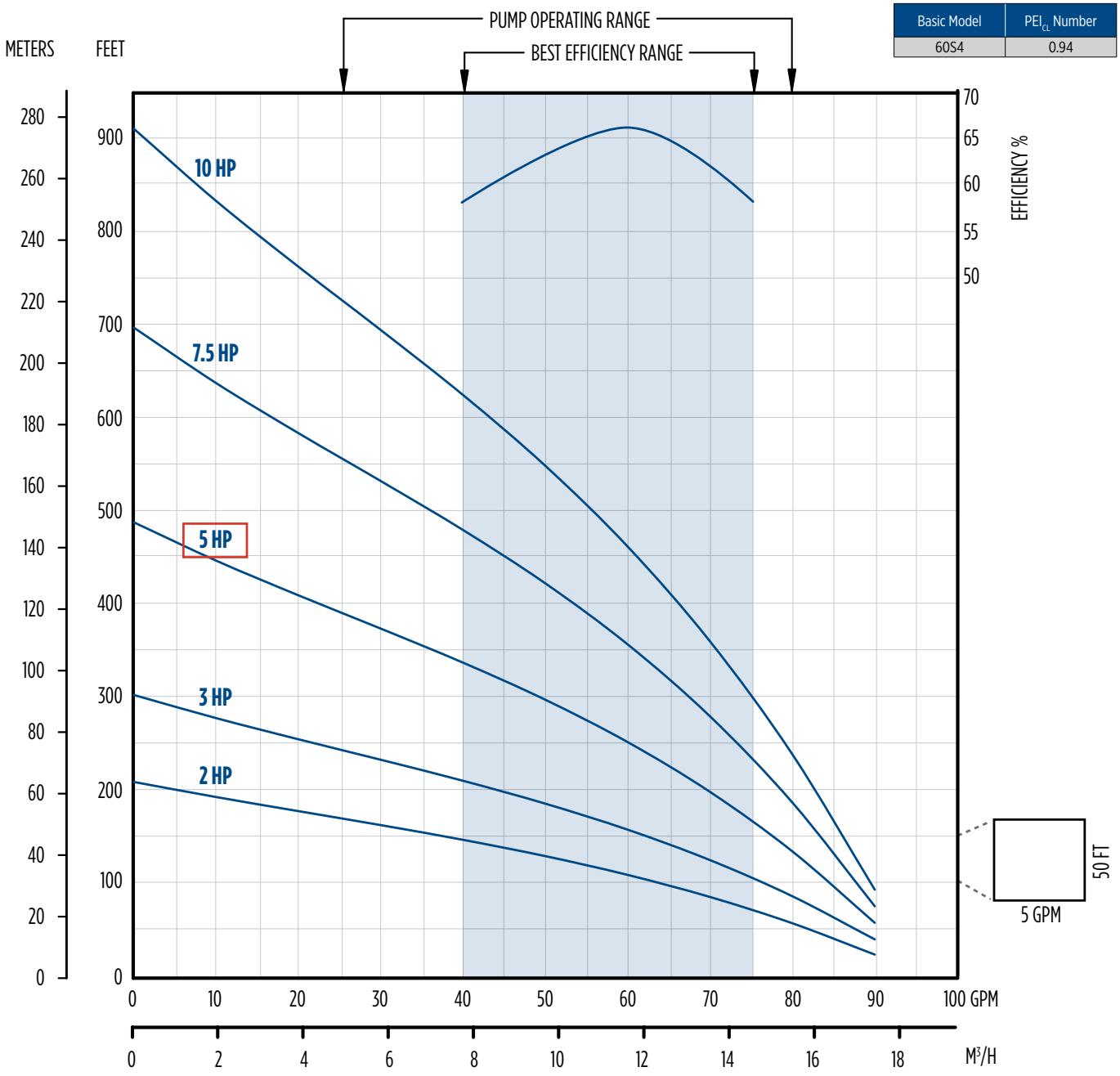
4" TRI-SEAL HIGH CAPACITY PUMPS

Franklin Electric

PERFORMANCE

60 GPM

Basic Model	PEI_{CL} Number
60S4	0.94



S02 (Prairie Ridge Well 2) well log

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. WX/16340

Water Right Permit No. AAE 334 98376

(1) OWNER: Name BOB DROHMAN Address 4411 MARVIN RD NE OLYMPIA WA

(2) LOCATION OF WELL: County THURSTON NE ¼ NE ¼ Sec 34 T 19 N., R 1W W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) 4411 MARVIN RD NE 98516

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [X] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) 2
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [X] Driven [ ] Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 8 inches. Drilled 181 feet. Depth of completed well 180 9⅛ ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 8 " Diam. from GRD ft. to 170 3⅛ ft.
Welded [X] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [X] No [ ]
Manufacturer's Name HOWARD SMITH
Type STAINLESS Model No.
Diam. 8 Slot size .040 from 170 3⅛ ft. to 180 9⅛ ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes [ ] No [X]
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name UNKNOWN
Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 350 ? ft.
Static level 140 ft. below top of well Date 1-22-95
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min. with 0 ft. drawdown after 2 hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water COLD Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
COMPACT BROWN SILTS GRAVEL	0	130
LOOSE GRAVEL	130	134
COMPACT SILTS AND GRAVEL.	134	144
SAND AND GRAVEL	144	181
	STOP	
NOT END OF FORMATION		

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95 JAN 31 P2:46
STATE OF WASHINGTON

Work started 11-25-94, 19. Completed 1-22-95, 19.

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME KEITH KINCY WELL DRILLING (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 921 RUBY ST TUMWATER WA

(Signed) Keith Kincy (WELL DRILLER) License No. 0242

Contractor's Registration No. KEITHKW093KB Date JAN-23, 95

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 18

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

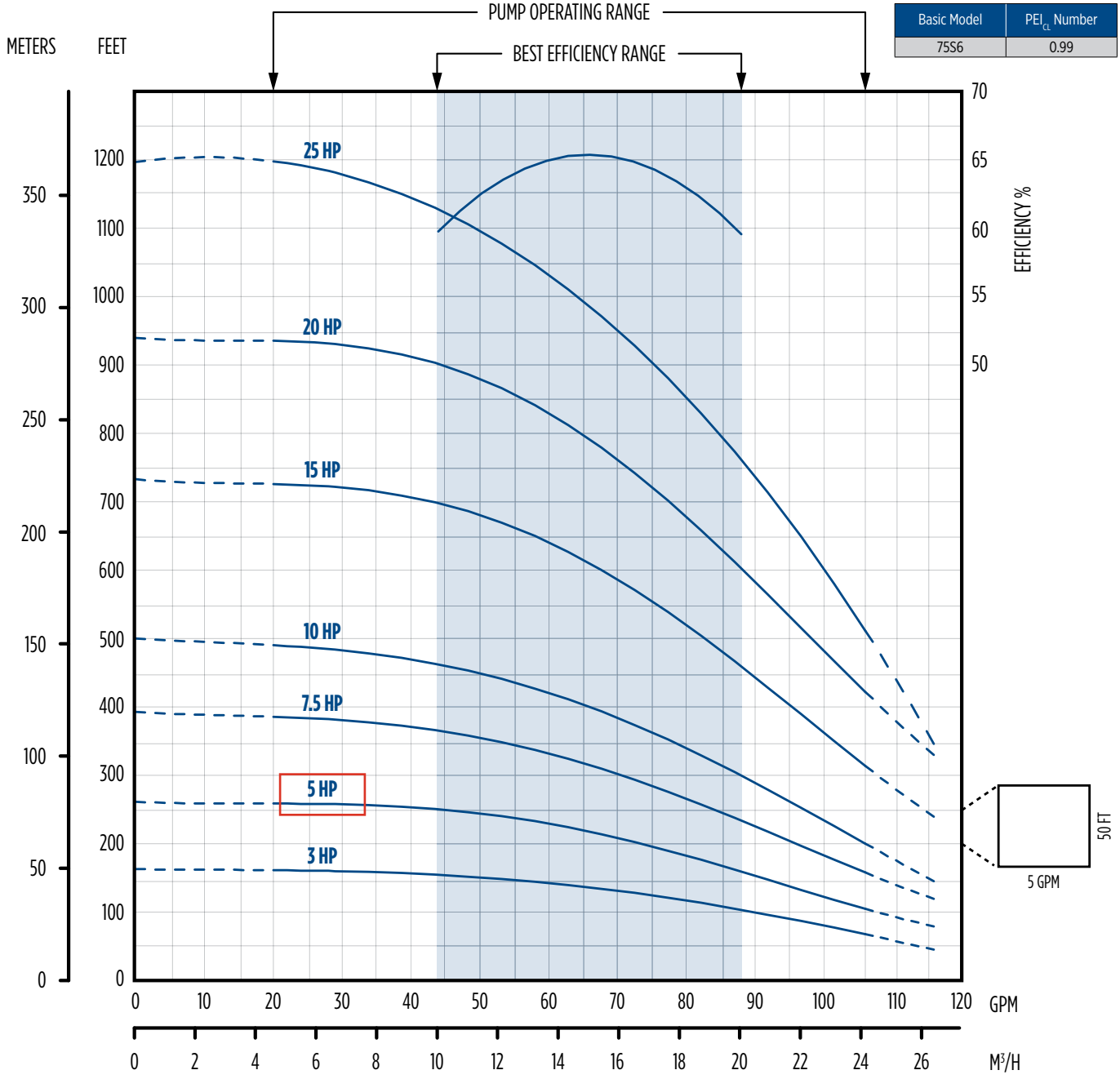
S02 (Prairie Ridge Well 2) Pump Curve

SUBMERSIBLE PUMPS

6" TRI-SEAL HIGH CAPACITY

PERFORMANCE — 75 GPM

Basic Model	PEI_{CL} Number
75S6	0.99



S04 (Hawk Acres Well 1) Well Log

Appl. 10423

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
DIVISION OF WATER RESOURCES

WELL LOG

Record by Driller

Source Driller's record

Location: State of WASHINGTON

County Thurston

Area

Map

SW ¼ SE ¼ sec. 34 T. 19N., R. 1 W. E. W.

Diagram of Section

Drilling Co. Patterson Drilling Co.

Address 2513 E 4th, Olympia, Washington

Method of Drilling Cable Date , 19

Owner John D. Swift (Marvin Road Water Co.)

Address 6455 Martin Way, Olympia, Washington

Land surface, datum ft. above / below

SWL: 112 Date 10-17-69, ~~19~~ Dims.:

19/1W-34Q
File number

Correlation	Material	From (feet)	To (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Domestic supply	0	3
	topsoil gravel	3	8
	gravel, clay	8	60
	cemented, gravel	60	77
	gravel, clay	77	96
	cemented, gravel	96	112
	sand, clay, gravel	112	120
	gravel, sand, clay	120	130
	gravel, sand, water bearing	130	144
	sand	144	148
	gravel, sand	148	157
	blue, clay, gravel	157	172
	fine, sand, silt	172	180
	blue, clay		
	Casing: 6" from 0' to 174'		cont.
	Perforation: mills knife		

Sheet ..... of ..... sheets

Turn up

WELL LOG.—Continued No...../.....-.....

CORRELATION	MATERIAL	From (feet)	To (feet)
	Depth forward	———	
	Perforations cont:		
	40 1/8 x 1 from 145' to 149'		
	80 1/8 x 1 from 120' to 130'		
	Pump test: 104 gpm with 6' dd after 4 hrs.		
	Recovery data: 0 + 5 min - 103		
	0 + 10 min - 104		
	Temperature: 50°		
	Pump: Byron Jackson, submersible 10 hp		

S. F. No. 7449—OS—12-65.

S04 (Hawk AcresWell 1) Pump Curve

SUBMERSIBLE PUMPS

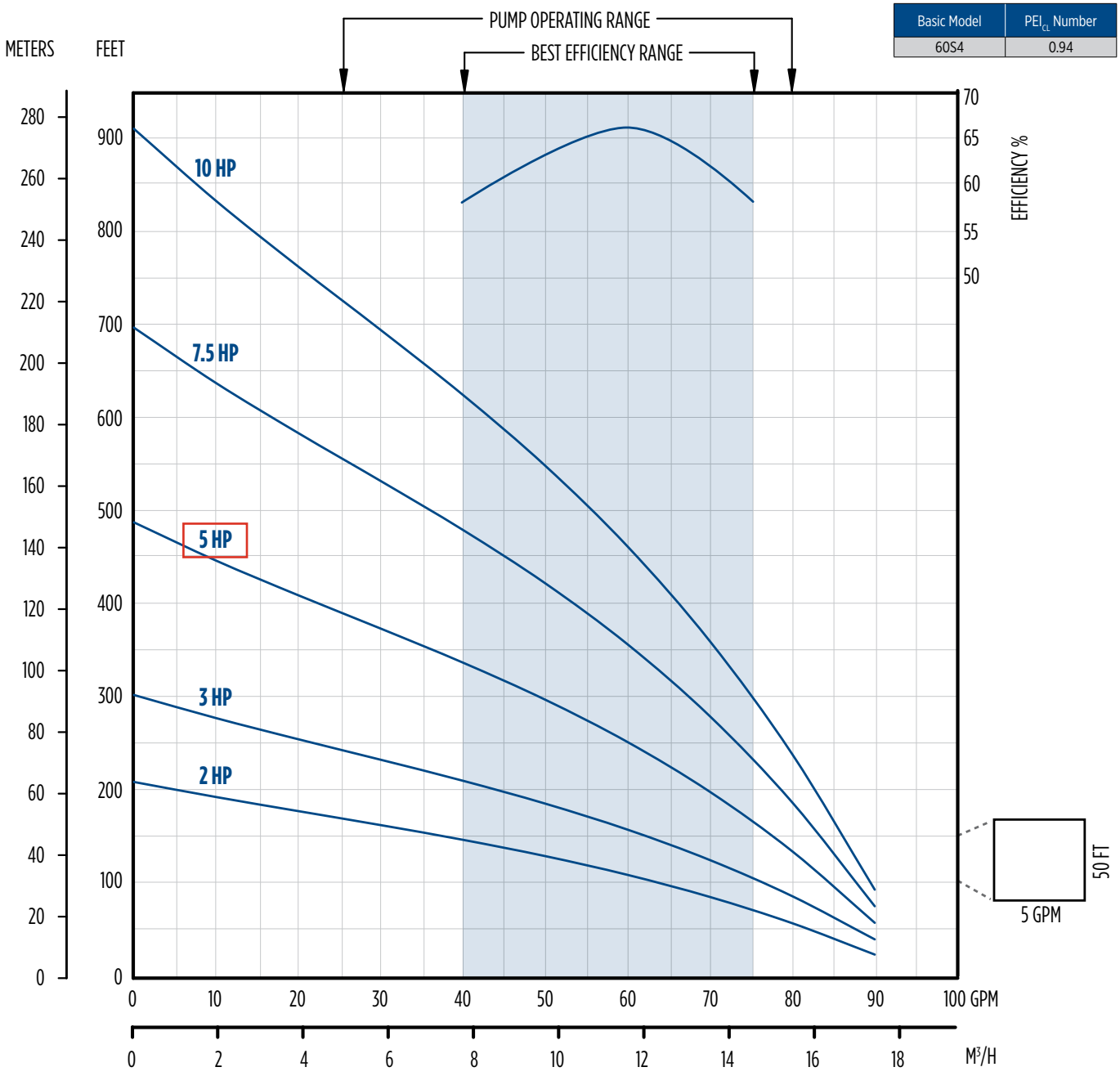
4" TRI-SEAL HIGH CAPACITY PUMPS

Franklin Electric

PERFORMANCE

60 GPM

Basic Model	PEI_{CL} Number
60S4	0.94



S05 (Hawk Acres Well 1) Well Log

Hawk Acres
Well #2 ALG212

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☑ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 184441

PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

TYPE OF WORK: Owner's number of well (if more than one)

☑ New well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☑ Cable ☐ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 8 inches, drilled 160 ft.
Depth of completed well 151 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 8 " Diam. from +1.5 ft. to 144 ft.
☐ Liner installed " Diam. from ft. to ft.
☐ Threaded " Diam. from ft. to ft.

Perforations: ☐ Yes ☑ No
Type of perforator used
SIZE of perfs in. by in. and no. of perfs from ft. to ft.

Screens: ☑ Yes ☐ No ☑ K-Pac Location 14
Manufacturer's Name JOHNSON
Type SLOTTED Model No.
Diam. 7 Slot size .030 from 144 ft. to 149 ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand
Materials placed from ft. to ft

Surface Seal: ☑ Yes ☐ No To what depth? 35 ft.
Material used in seal BENTONITE CHIPS
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? Depth of strata
Method of sealing strata off

PUMP: Manufacturer's Name
Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 112 ft. below top of well Date 10/12/05
Artesian pressure lbs per square inch Date
Artesian water is controlled by (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☑ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min. with -0- ft. drawdown after 6 hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? ☐ Yes ☑ No

CURRENT
Notice of Intent No. W192383
Unique Ecology Well ID Tag No. ALG212
Water Right Permit No. EXEMPT WELL
Property Owner Name SWIFT ASSET MANAGEMENT
Well Street Address EASEMENT ROAD / HAWKS PRAIRIE
City LACEY County THURSTON
Location SE 1/4-1/4 SE 1/4 Sec 34 Twn 19N R 1W EWM or WWM ☐ circle ☑ one
Lat/Long (s, t, r Still **REQUIRED**) Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Tax Parcel No. 11934430100

CONSTRUCTION OR DECOMMISSION PROCEDURE

Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
DARK BROWN SILT BOUND, GRAVEL,	0	
COBBLES		5
GRAY SILTY COBBLES	5	22
BROWN SILT BOUND SAND AND GRAVEL,	22	
CEMENTED		42
GRAY SILT BOUND SAND AND GRAVEL	42	64
LIGHT BROWN SILT BOUND SAND AND	64	
GRAVEL, CEMENTED		72
TAN COLORED SILT BOUND SAND AND	72	
GRAVEL, CEMENTED		96
BRIGHT BROWN SILT BOUND SAND, GRAVEL	96	128
RED / BROWN SILTY SAND AND GRAVEL	128	140
BROWN SILT BOUND GRAY SAND, CEMENTED	140	141
BRIGHT BROWN SILTY SAND AND GRAVEL,	141	
WATER		149
DARK GRAY CLAY	149	151
BLACK ORGANIC / WOOD	151	155
DARK GRAY MEDIUM SAND, SILT	155	160

Start Date 9/27/05 Completed Date 10/12/05

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NOV 16 2005
Washington State Department of Ecology

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☐ Trainee Name (Print) MARK H. NELSON
Driller/Engineer/Trainee Signature Mark H. Nelson
Driller or trainee License No. 1992

If TRAINEE,
Driller's Licensed No.
Driller's Signature

Drilling Company ARCADIA DRILLING INC.
Address PO BOX 1790
City, State, Zip SHELTON WA 98584
Contractor's Registration No. ARCADDI098K1 Date 10/17/05

Ecology is an Equal Opportunity Employer.

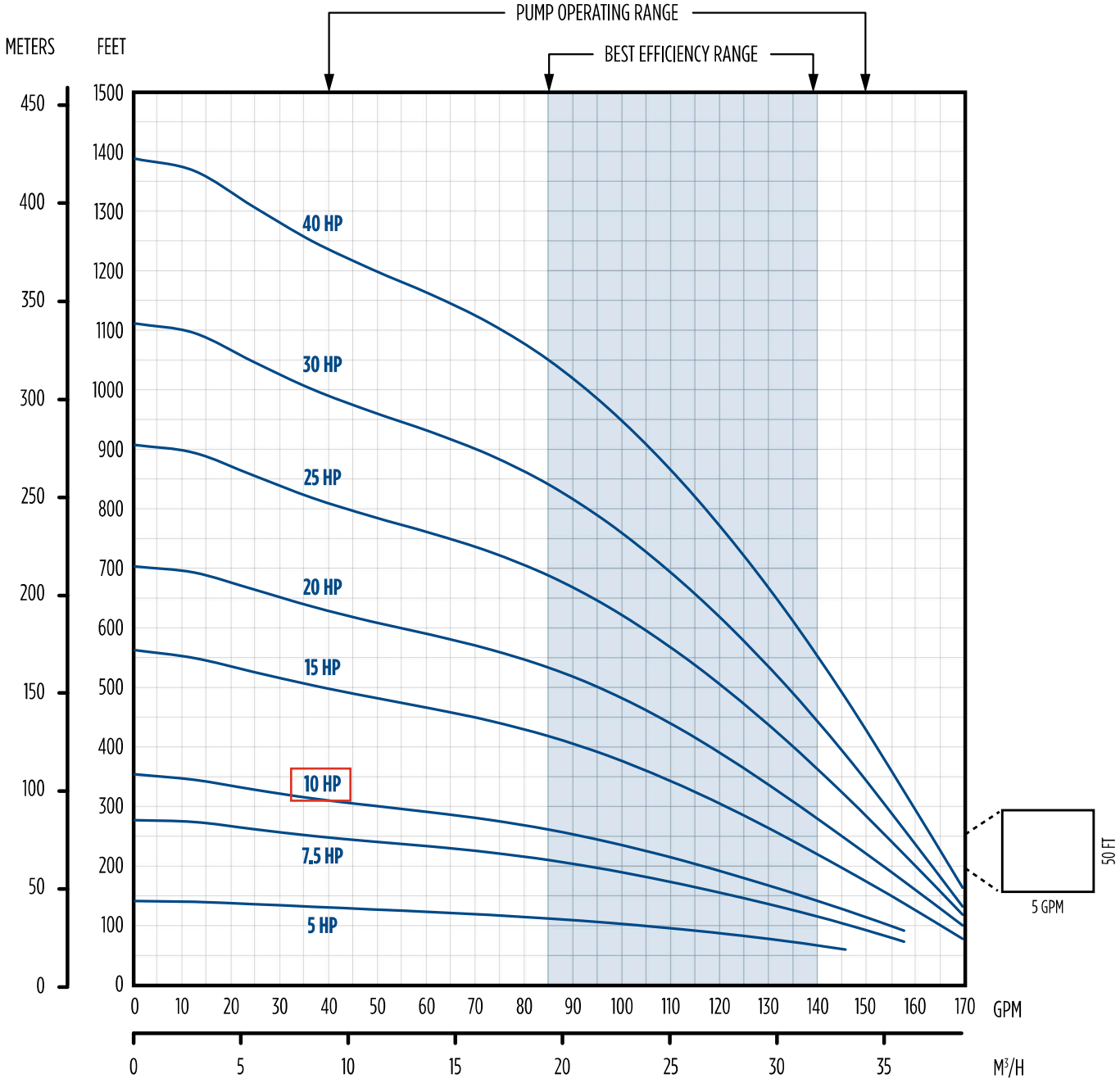
ECY 050-1-20 (Rev 3/05) **The Department of Ecology does NOT warranty the Data and/or Information on this Well Report.**

S05 (Hawk Acres well 2) pump curve

SUBMERSIBLE PUMPS

6" TRI-SEAL HIGH CAPACITY

PERFORMANCE — 125 GPM



File #2635

ROBISCHON ENGINEERS
6800 MERIDIAN ROAD S.E.
OLYMPIA, WA 98503
456-6800

TEST PUMP NOTES

SYSTEM NAME Hawk Acres

WELL No. 1

DATE OF TEST October 9-10, 2001

CLIENT Marvin Road Water Co.
Swift Asset Management
PO Box 8850
Lacey, Wa. 98509
PHONE 491-1920

PUMP(S) USED:
1 ea Mfgr Red Jacket MODEL 5HA6 10 H.P.
__ ea Mfgr _____ MODEL _____

PUMP SUCTION DEPTH (HIGHEST):
TOTAL RISER PIPE _____
BOWL ASSY LENGTH =======
DEPTH TO SUCTION _____

AIR LINE INSTALLED? [X]YES []NO (Temporary installation for test)
DEPTH TO END OF AIR LINE 131' ±

TEST PUMP DRIVEN BY []ENGINE []GENERATOR [X]ELEC SERVICE
STATIC WATER LEVEL: 113'10" PROBED 17' + AIR LINE READING

TEST PERFORMED BY:
Paul Robischon 360 491-3760
Washington Water Service Co.
6800 Meridian Rd. S.E.
Olx Wa. 98513

WATER LEVELS READ WITH:
ELEC PROBE? X
PRESS GAUGE? 0- 50 FEET RANGE WITH HAND PUMP or COMPRESSOR
PRESS RECORDER? 0- 50 FEET RANGE

PUMPING RATE MEASURED WITH:
[X]TOTALIZING METER
[X]INDICATING METER
[]ORIFICE DIFFERENTIAL: ORIFICE ___in. PIPE ID ___ in.
[]PITOT: PIPE ID ___ in.
[] ___ GALLON BUCKET

testpump.wp

ROBISCHON ENGINEERS TEST PUMP NOTES

SYSTEM Hawk Acres WELL No. 1 DATE Oct. 9/10 2001

MINIMUM TEST DURATION= _____ Hr @ _____ GPM FOR _____ GALLONS

TIME OF START 9:45 (AM)/PM TOP OF SCREEN N/A
STATIC WATER 113' 10"
AVAIL DRAWDOWN (50' ±)

	TIME	DISCH PRESS psi	PWL Ft	AIRLINE READING Ft WC	PUMPING RATE Mtr Rdg ( )	VOL gal	TIME m/s	gpm	COMMENT
10-9-01	:				21700			52	
	10:00	40	115'9"	16'	23 00			52	
	10:15	40	115'9"	15'6"	23500			52	
	10:30	40	115'9"	15'6"	24400			52	
	10:45	40	115'9"	15'6"	25200			52	
	11:00	40	115'9"	15'6"	25900			52	
	11:15	40	115'9"	15'6"	26700			52	
	11:30	40	115'9"	15'6"	27400			52	
	11:45	40	115'9"	15'6"	28200			52	
	12:00	40	115'9"	15'6"	28900			52	
	12:15	40	115'9"	15'6"	29700			52	
	12:30	40	115'9"	15'6"	30400			52	
	12:45	40	115'9"	15'6"	31200			52	
	1:00	40	115'9"	15'6"	31900			52	
	:								
10-10-01	10:45 AM	40	115'9"	15'6"	99700				
	11:00				100500				Bermad Valve Closed
	:								
	:								

115' 9" PWL – 113' 10" SWL = 1' 11" DD @ 52 GPM

TIME OFF AND RECOVERY DATA ON FOLLOWING PAGE

...SCHON ENGINEERS

TEST PUMP NOTES

SYSTEM Hawk Acres WELL No. 1 DATE Oct. 10, 2001

BACTERIOLOGICAL SAMPLE TAKEN? ☐YES ☒NO

CHEMICAL SAMPLE TAKEN? ☐YES ☒NO

TOTAL VOL PUMPED: 78800 GALLONS

RECOVERY DATA:

TIME	MINS	WATER LEVEL	Pressure gauge reading ~~AIR LINE READING~~
11 : 00		115'9" PWL	OFF
11 : 02	2	115'6"	60 psi
11 : 03	1	115'4"	65 psi
11 : 04	1	115'3"	67 psi
11 : 05	1		pump off
11 : 06	1	113' 10"	
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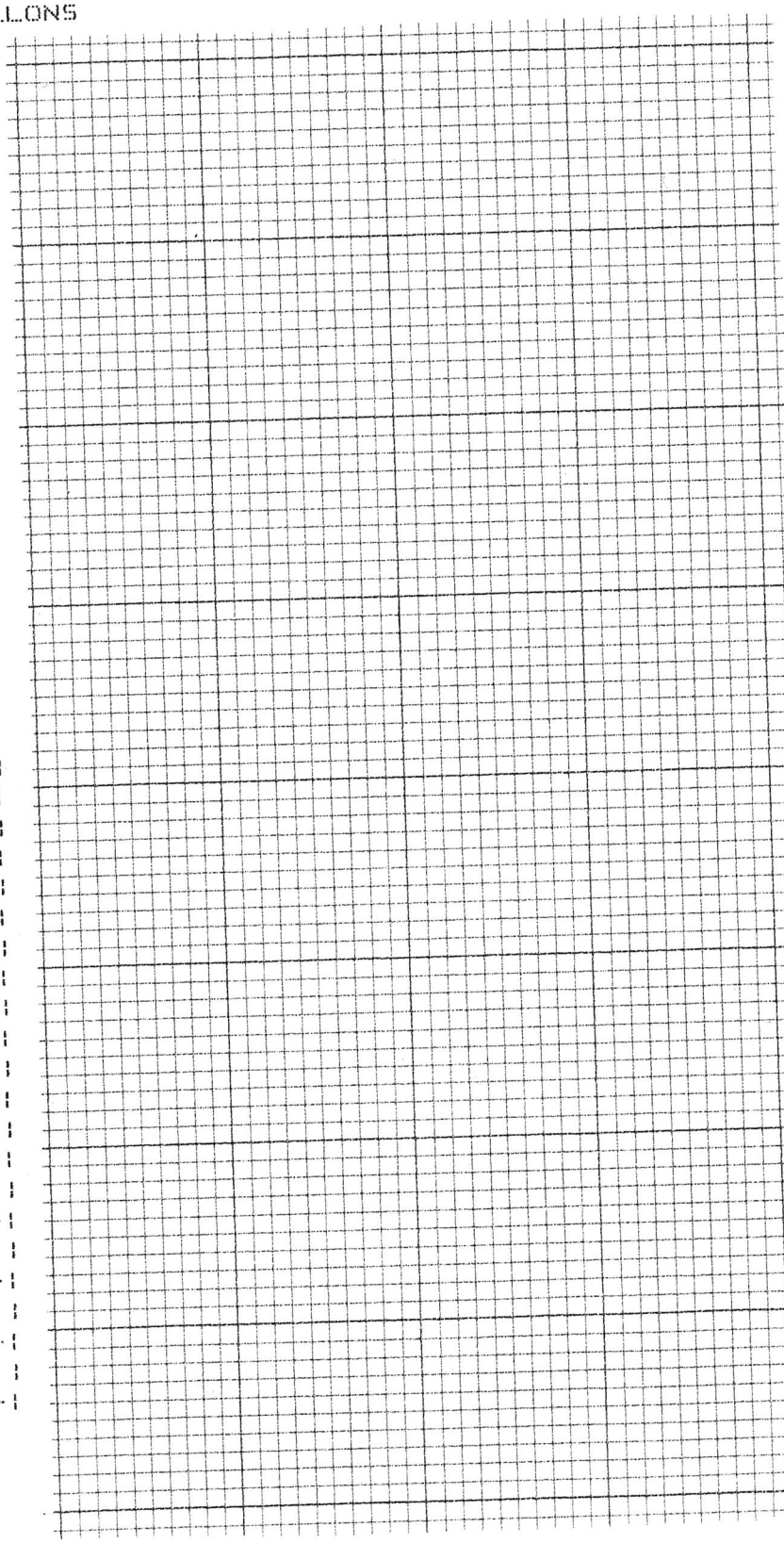

Mark Toy, EIT
WSDOH Drinking Water Operations
2411 Pacific Avenue
PO Box 47823
Olympia, WA 98504-7823

Re: Marvin Road Water Company – Hawk Acres ID# 31845T,
Well No. 1, 24-Hour Pump Test Results
RBE No. 00043

Dear Mark:

Washington Water Service performed the 24-hour pump test on Well No. 1 of the Hawk Acres water system. The results of that pump test resulted in a maximum of 52 gallon per minute rate with 1-foot 11-inches of draw down. Based on the pump test data it appears that the existing pump, which is rated at 110 gallons per minute, is not producing up to its design capacity. The good news is that there is abundant source capacity in this aquifer which the current pump system is not taking advantage of.

Therefore our proposal is to proceed with the installation of the new well for Hawk Acres and at that time replace the well pump in the existing well once the new well is up and running. Because of the adequate source production of the aquifer we would still like to proceed with the BCA agreement necessary to allow additional hookups to the water system. Even with the source pump deficiencies, there have been no low pressure complaints for the system.

As we move in to the winter months, water use will be declining and the additional hookups should have no adverse impact on the system. By combining the improvements of the new well with replacement of the existing well pump will provide a more efficient process and economical solution to improving the Hawk Acres water system. A copy of Washington Water Services test results is included for your review. If you have any questions please call me at (360) 740-8919.

Sincerely,

Robert W. Balmelli PE
President

Cc: Steve Swift
Paul Robischon - Washington Water Service Company

Enclosure: Pump Test Results – Washington Water Service

04040

71

Arcadia Drilling Inc.
P.O. Box 1790
Shelton, WA. 98584

Customer : Marvin Road Water Company

Contact :

Well Site Address : Hawks Acres Well # 2

Water System : Step 1 / 30GPM

Date of Test : 4/14/2006

Well Tag # : ALG212

Depth : 151ft

Static : 113.6ft

TIME	GPM	LEVEL	PPM
1 Min	30	115.3ft	
2 Min	30	116.2ft	
3 Min	30	116.9ft	
4 Min	30	117.4ft	
5 Min	30	117.8ft	
6 Min	30	118.1ft	
7 Min	30	118.4ft	
8 Min	30	118.6ft	
9 Min	30	118.7ft	
10 Min	30	118.8ft	
15 Min	30	118.9ft	
20 Min	30	118.9ft	
25 Min	30	118.9ft	
30 Min	30	118.9ft	
35 Min	30	118.9ft	
40 Min	30	118.9ft	
45 Min	30	118.9ft	
50 Min	30	118.9ft	
55 Min	30	118.9ft	
1 Hr	30	118.9ft	
1Hr 10Min			
1Hr 20Min			
1Hr 30Min			
1Hr 40Min			
1Hr 50Min			
2 Hr			
2Hr 10Min			
2Hr 20Min			
2Hr 30Min			
2Hr 40Min			
2Hr 50Min			
3 Hr			
3Hr 10Min			
3Hr 20Min			
3Hr 30Min			
3Hr 40Min			
3Hr 50Min			
4Hr			

TIME	GPM	LEVEL	PPM
4Hr 30Min			
5Hr			
5Hr 30Min			
6Hr			
6Hr 30Min			
7Hr			
7Hr 30Min			
8Hr			

RECOVERY			
TIME	LEVEL	TIME	LEVEL
1 Min		2Hr 20Min	
2 Min		2Hr 30Min	
3 Min		2Hr 40Min	
4 Min		2Hr 50Min	
5 Min		3 Hr	
6 Min		3Hr 10Min	
7 Min		3Hr 20Min	
8 Min		3Hr 30Min	
9 Min		3Hr 40Min	
10Min		3Hr 50Min	
15 Min		4 Hr	
20 Min		4Hr 10Min	
25 Min		4Hr 20Min	
30 Min		4Hr 30Min	
35 Min		4Hr 40Min	
40 Min		4Hr 50Min	
45 Min		5 Hr	
50 Min		5Hr 10Min	
55 Min		5Hr 20Min	
1 Hr		5Hr 30Min	
1Hr 10Min		5Hr 40Min	
1Hr 20Min		5Hr 50Min	
1Hr 30Min		6 Hr	
1Hr 40Min		6Hr 30Min	
1Hr 50Min		7 Hr	
2 Hr		7Hr 30Min	
2Hr 10Min		8 Hr	

Arcadia Drilling Inc.
P.O. Box 1790
Shelton, WA. 98584

Customer : Marvin Road Water Company

Contact :

Well Site Address : Hawks Acres Well # 2

Water System : Step 2 / 60GPM

Date of Test : 4/14/2006

Well Tag # : ALG212

Depth : 151ft

Static : 113.6ft

TIME	GPM	LEVEL	PPM
1 Min	60	121.3ft	
2 Min	60	123.4ft	
3 Min	60	124.9ft	
4 Min	60	126ft	
5 Min	60	126.9ft	
6 Min	60	127.6ft	
7 Min	60	127.9ft	
8 Min	60	128ft	
9 Min	60	128.1ft	
10 Min	60	128.1ft	
15 Min	60	128.1ft	
20 Min	60	128.1ft	
25 Min	60	128.1ft	
30 Min	60	128.1ft	
35 Min	60	128.1ft	
40 Min	60	128.1ft	
45 Min	60	128.1ft	
50 Min	60	128.1ft	
55 Min	60	128.1ft	
1 Hr	60	128.1ft	
1Hr 10Min			
1Hr 20Min			
1Hr 30Min			
1Hr 40Min			
1Hr 50Min			
2 Hr			
2Hr 10Min			
2Hr 20Min			
2Hr 30Min			
2Hr 40Min			
2Hr 50Min			
3 Hr			
3Hr 10Min			
3Hr 20Min			
3Hr 30Min			
3Hr 40Min			
3Hr 50Min			
4Hr			

TIME	GPM	LEVEL	PPM
4Hr 30Min			
5Hr			
5Hr 30Min			
6Hr			
6Hr 30Min			
7Hr			
7Hr 30Min			
8Hr			

RECOVERY			
TIME	LEVEL	TIME	LEVEL
1 Min		2Hr 20Min	
2 Min		2Hr 30Min	
3 Min		2Hr 40Min	
4 Min		2Hr 50Min	
5 Min		3 Hr	
6 Min		3Hr 10Min	
7 Min		3Hr 20Min	
8 Min		3Hr 30Min	
9 Min		3Hr 40Min	
10Min		3Hr 50Min	
15 Min		4 Hr	
20 Min		4Hr 10Min	
25 Min		4Hr 20Min	
30 Min		4Hr 30Min	
35 Min		4Hr 40Min	
40 Min		4Hr 50Min	
45 Min		5 Hr	
50 Min		5Hr 10Min	
55 Min		5Hr 20Min	
1 Hr		5Hr 30Min	
1Hr 10Min		5Hr 40Min	
1Hr 20Min		5Hr 50Min	
1Hr 30Min		6 Hr	
1Hr 40Min		6Hr 30Min	
1Hr 50Min		7 Hr	
2 Hr		7Hr 30Min	
2Hr 10Min		8 Hr	

Arcadia Drilling Inc.
P.O. Box 1790
Shelton, WA. 98584

Customer : Marvin Road Water Company

Contact :

Well Site Address : Hawks Acres Well # 2

Water System : Step 3 / 90 GPM

Date of Test : 4/14/2006

Well Tag # : ALG212

Depth : 151ft

Static : 113.6ft

TIME	GPM	LEVEL	PPM
1 Min	90	130.4ft	
2 Min	90	131.8ft	
3 Min	90	132.9ft	
4 Min	90	133.6ft	
5 Min	90	134.1ft	
6 Min	90	134.5ft	
7 Min	90	134.8ft	
8 Min	90	135ft	
9 Min	90	135.2ft	
10 Min	90	135.3ft	
15 Min	90	135.4ft	
20 Min	90	135.4ft	
25 Min	90	135.4ft	
30 Min	90	135.4ft	
35 Min	90	135.4ft	
40 Min	90	135.4ft	
45 Min	90	135.4ft	
50 Min	90	135.4ft	
55 Min	90	135.4ft	
1 Hr	90	135.4ft	
1Hr 10Min			
1Hr 20Min			
1Hr 30Min			
1Hr 40Min			
1Hr 50Min			
2 Hr			
2Hr 10Min			
2Hr 20Min			
2Hr 30Min			
2Hr 40Min			
2Hr 50Min			
3 Hr			
3Hr 10Min			
3Hr 20Min			
3Hr 30Min			
3Hr 40Min			
3Hr 50Min			
4Hr			

TIME	GPM	LEVEL	PPM
4Hr 30Min			
5Hr			
5Hr 30Min			
6Hr			
6Hr 30Min			
7Hr			
7Hr 30Min			
8Hr			

RECOVERY			
TIME	LEVEL	TIME	LEVEL
1 Min		2Hr 20Min	
2 Min		2Hr 30Min	
3 Min		2Hr 40Min	
4 Min		2Hr 50Min	
5 Min		3 Hr	
6 Min		3Hr 10Min	
7 Min		3Hr 20Min	
8 Min		3Hr 30Min	
9 Min		3Hr 40Min	
10Min		3Hr 50Min	
15 Min		4 Hr	
20 Min		4Hr 10Min	
25 Min		4Hr 20Min	
30 Min		4Hr 30Min	
35 Min		4Hr 40Min	
40 Min		4Hr 50Min	
45 Min		5 Hr	
50 Min		5Hr 10Min	
55 Min		5Hr 20Min	
1 Hr		5Hr 30Min	
1Hr 10Min		5Hr 40Min	
1Hr 20Min		5Hr 50Min	
1Hr 30Min		6 Hr	
1Hr 40Min		6Hr 30Min	
1Hr 50Min		7 Hr	
2 Hr		7Hr 30Min	
2Hr 10Min		8 Hr	

Arcadia Drilling Inc.
P.O. Box 1790
Shelton, WA. 98584

Customer : Marvin Road Water Company

Contact :

Well Site Address : Hawks Acres Well # 2

Water System : Step 4 / 110GPM

Date of Test : 4/14/2006

Well Tag # : ALG212

Depth : 151ft

Static : 113.6ft

TIME	GPM	LEVEL	PPM
1 Min	110	137.6ft	
2 Min	110	139.2ft	
3 Min	110	140.3ft	
4 Min	110	141.1ft	
5 Min	110	141.7ft	
6 Min	110	142ft	
7 Min	110	142.2ft	
8 Min	110	142.4ft	
9 Min	110	142.5ft	
10 Min	110	142.5ft	
15 Min	110	142.5ft	
20 Min	110	142.5ft	
25 Min	110	142.5ft	
30 Min	110	142.5ft	
35 Min	110	142.5ft	
40 Min	110	142.5ft	
45 Min	110	142.5ft	
50 Min	110	142.5ft	
55 Min	110	142.5ft	
1 Hr	110	142.5ft	
1Hr 10Min			
1Hr 20Min			
1Hr 30Min			
1Hr 40Min			
1Hr 50Min			
2 Hr			
2Hr 10Min			
2Hr 20Min			
2Hr 30Min			
2Hr 40Min			
2Hr 50Min			
3 Hr			
3Hr 10Min			
3Hr 20Min			
3Hr 30Min			
3Hr 40Min			
3Hr 50Min			
4Hr			

TIME	GPM	LEVEL	PPM
4Hr 30Min			
5Hr			
5Hr 30Min			
6Hr			
6Hr 30Min			
7Hr			
7Hr 30Min			
8Hr			

RECOVERY			
TIME	LEVEL	TIME	LEVEL
1 Min	119.2ft	2Hr 20Min	
2 Min	114.5ft	2Hr 30Min	
3 Min	113.6ft	2Hr 40Min	
4 Min		2Hr 50Min	
5 Min		3 Hr	
6 Min		3Hr 10Min	
7 Min		3Hr 20Min	
8 Min		3Hr 30Min	
9 Min		3Hr 40Min	
10Min		3Hr 50Min	
15 Min		4 Hr	
20 Min		4Hr 10Min	
25 Min		4Hr 20Min	
30 Min		4Hr 30Min	
35 Min		4Hr 40Min	
40 Min		4Hr 50Min	
45 Min		5 Hr	
50 Min		5Hr 10Min	
55 Min		5Hr 20Min	
1 Hr		5Hr 30Min	
1Hr 10Min		5Hr 40Min	
1Hr 20Min		5Hr 50Min	
1Hr 30Min		6 Hr	
1Hr 40Min		6Hr 30Min	
1Hr 50Min		7 Hr	
2 Hr		7Hr 30Min	
2Hr 10Min		8 Hr	

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ent of Ecology
Copy — Owner's Copy
opy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

S06 (Tolmie Park well 1) WELL LOG

OWNER: Name ..... Address .....

LOCATION OF WELL: County ..... — ¼ ¼ Sec. T. N., R. W.M.

ring and distance from section or subdivision corner

(2) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well ☑ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☑ Jetted ☐

(5) DIMENSIONS: Diameter of well 8" inches.
Drilled 280 ft. Depth of completed well 280 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 8" Diam. from 1 ft. to 275 ft.
Threaded ☐ ..." Diam. from ... ft. to ... ft.
Welded ☑ ..." Diam. from ... ft. to ... ft.

Perforations: Yes ☐ No ☑
Type of perforator used .....
SIZE of perforations ... in. by ... in.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.
... perforations from ... ft. to ... ft.

Screens: Yes ☑ No ☐
Manufacturer's Name Johnson
Type Stainless Steel Model No .....
Diam. 8" Slot size 25 from 275 ft. to 280 ft.
Diam. ... Slot size ... from ... ft. to ... ft.

Gravel packed: Yes ☐ No ☑ Size of gravel: .....
Gravel placed from ... ft. to ... ft.

Surface seal: Yes ☑ No ☐ To what depth? 18' ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? ... Depth of strata ...
Method of sealing strata off .....

(7) PUMP: Manufacturer's Name .....
Type: ... H.P. ...

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 210 ft. below top of well Date 4-21-79
Artesian pressure ... lbs. per square inch Date ...
Artesian water is controlled by ... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom? .....
Yield: 80 gal./min. with 35 ft. drawdown after 4 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test ... gal./min. with ... ft. drawdown after ... hrs.
Artesian flow ... g.p.m. Date ...
Temperature of water ... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
GR. Clay Cobbles	1	10
" " "	10	20
GR Clay Sand	20	40
" " "	40	60
GR Sand	60	80
" "	80	100
" "	100	120
Clay Sand Cobbles	120	130
" " "	130	170
" " "	170	200
Sand Clay	200	210
" "	210	220
" " Cobbles	220	240
GR Sand	240	260
" " water	260	270
" " water	270	280

Work started 4-17 19 79 Completed 4-21 19 79

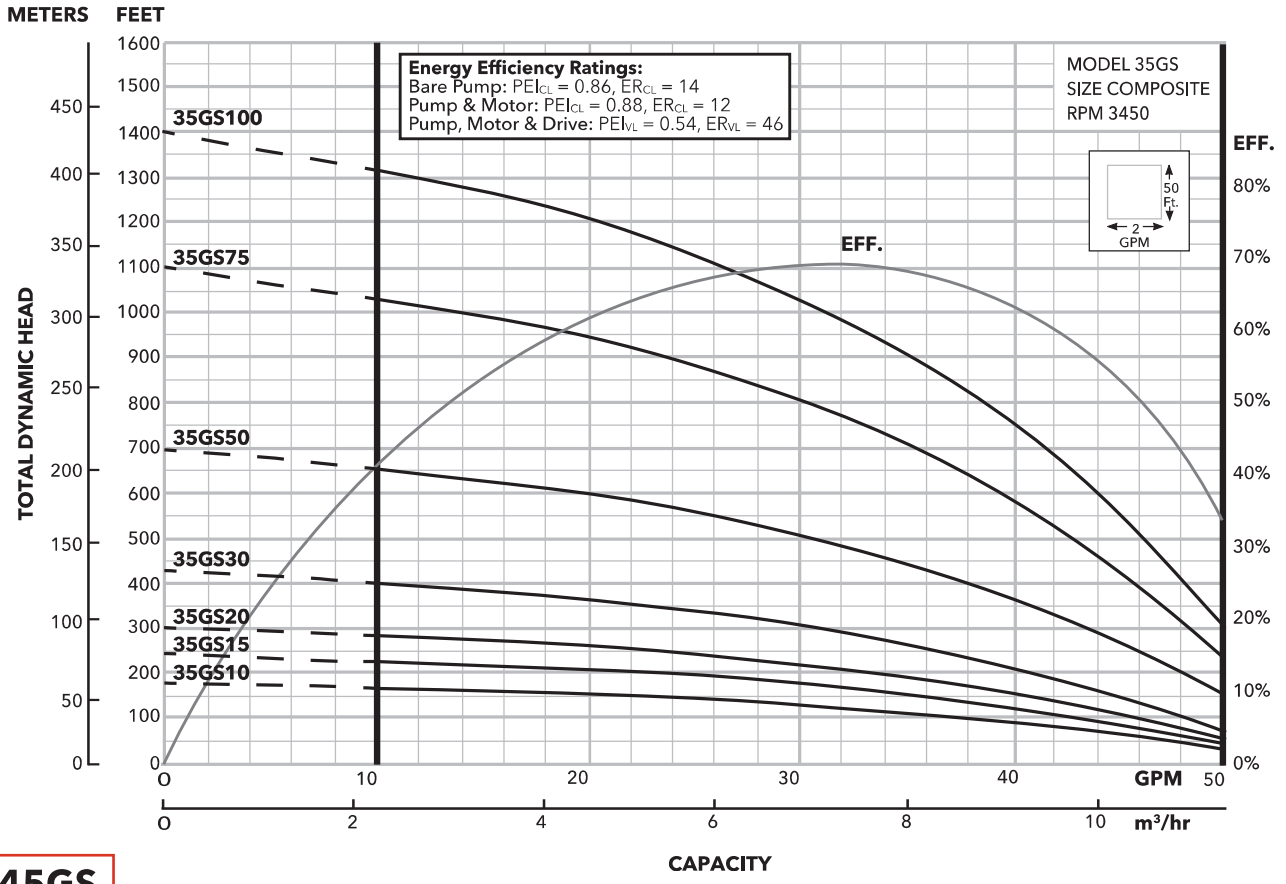
WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

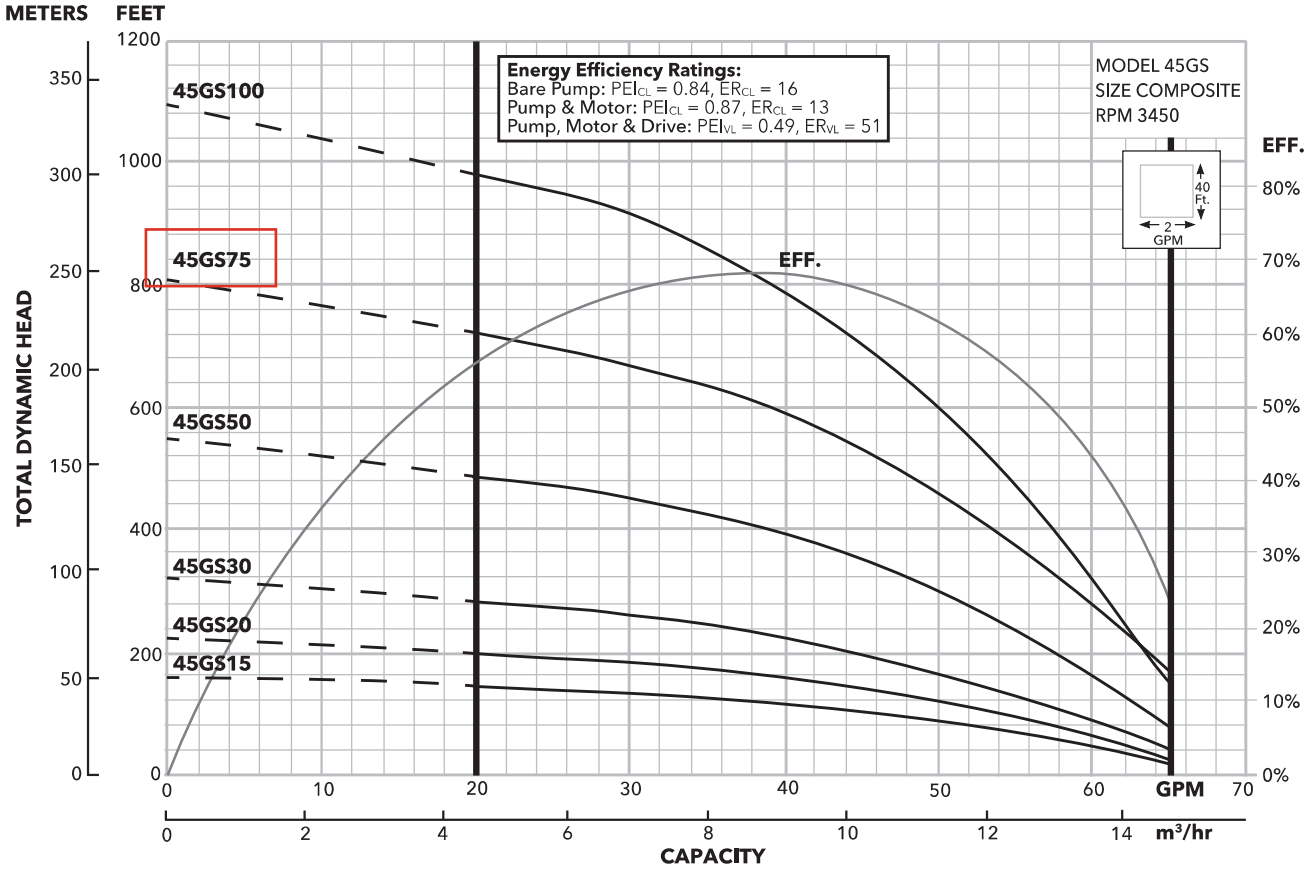
NAME Russell Drilling Co.
(Person, firm, or corporation) (Type or print)
Address P.O. Box 433 Shelton Wash
[Signed] Bill Russell
(Well Driller)
License No. 0446 Date 4-23 19 79

(USE ADDITIONAL SHEETS IF NECESSARY)

Model 35GS



Model 45GS



CENTRIFUGAL PUMPS

FW0176
1020
Supersedes
1219

High Performance for Industrial Demands

- The C22000 Series is a rugged pump built for extra performance.
- Nationally known NEMA JM motors.
- Electronically balanced brass impellers.
- Capacities to 8,580 gallons per hour.
- Pressures to 85 PSI
- 3" Suction

MADE IN THE USA

C22000 SERIES

3 thru 7-1/2 HP

Single Phase or Three Phase

Two Stage

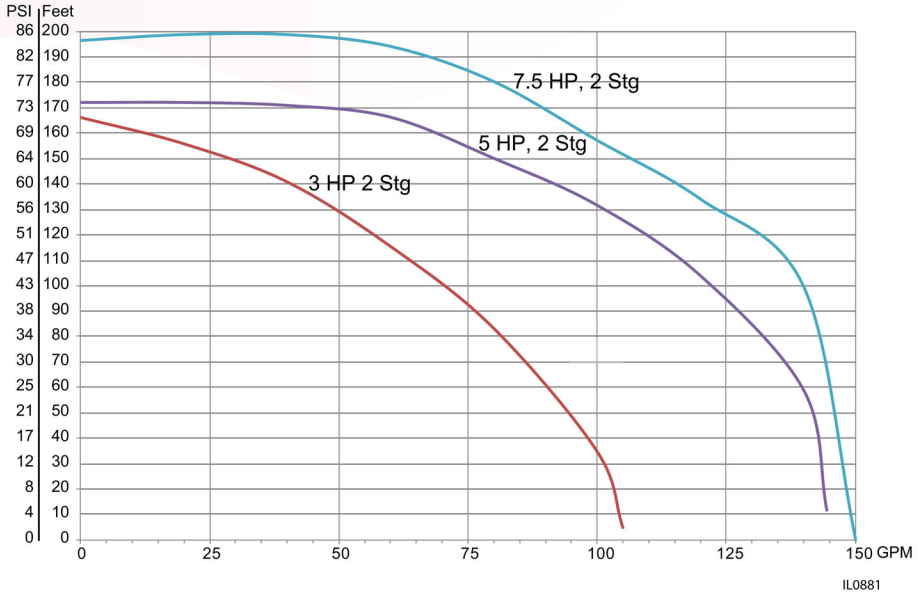
F&W FLINT & WALLING

C22000 Series Centrifugal Pumps

PERFORMANCE

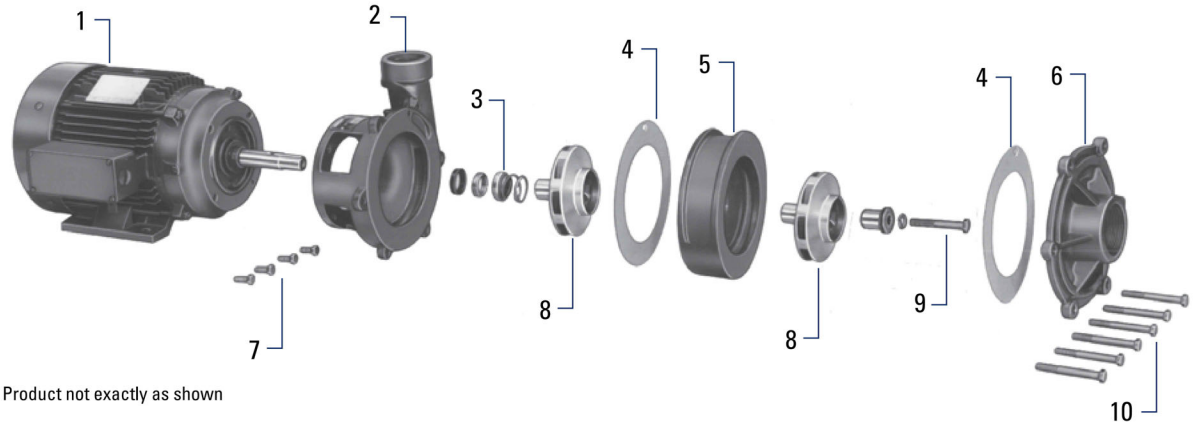
MODEL NUMBER		HP	STAGES	DISCHARGE PRESSURES (PSI)							MAX SUCTION LIFT (FT)	SUCT PIPE TAP (NPT)	DISCH PIPE TAP (NPT)
1 PHASE	3 PHASE			20	30	40	50	60	70	80			
				CAPACITY - U.S. GALLONS PER MINUTE (0 LIFT)									
C22231	C22233	3	2	95	86	75	60	40	12		20	3	2
C22251	C22253	5	2	143	137	124	111	91	65		20	3	2
--	C22273	7 1/2	2	145	140	138	135	121	95	75	20	3	2

MOTOR VOLTAGE: 3HP 1 Phase 208-230V 60 Hz, 5HP 1 Phase 208-230V 60Hz, 3, 5 & 7.5HP 3 Phase 208-230/460V 60Hz.
120 PSI Maximum Case Pressure



Ref No.	Description
1	Heavy-duty NEMA JM motor 3, 5, 7-1/2 HP
2	Heavy duty cast iron mounting ring
3	1-1/4" Rotary seal
4	Gasket
5	Heavy duty cast iron Intermediate stage

Ref No.	Description
6	Heavy duty cast iron body
7	Motor mounting bolts
8	Electronically balanced brass impellers
9	Brass impeller retainer and stainless steel lockscrew
10	Pump through bolts



Product not exactly as shown

FLINT & WALLING