

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
AUG 12 2015
Department of Water Resources
Eastern Region

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 25-140711. Owner 3D Water Association, Inc.Phone No. (208) 524-2121Current address c/o Darrell Patterson, 2323 E. Berggren Lane, Idaho Falls, ID 834012. Examiner's name Jason C. Helms, P.E.EXAM DATE 03/10/20153. Accompanied by Ryan Loftus (Aspen Engineering)Email ryan@aspeneng.netAddress 10727 N Yellowstone Hwy, Idaho Falls, ID 83401Relationship to permit holder nonePhone No. (208) 542-19114. Source Ground Watertributary to Eastern Snake River Plain Aquifer**B. OVERLAP REVIEW**1. Other water rights with the same place of use none2. Other water rights with the same source and point of diversion 25-13984, 25-14194, 25-14198**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

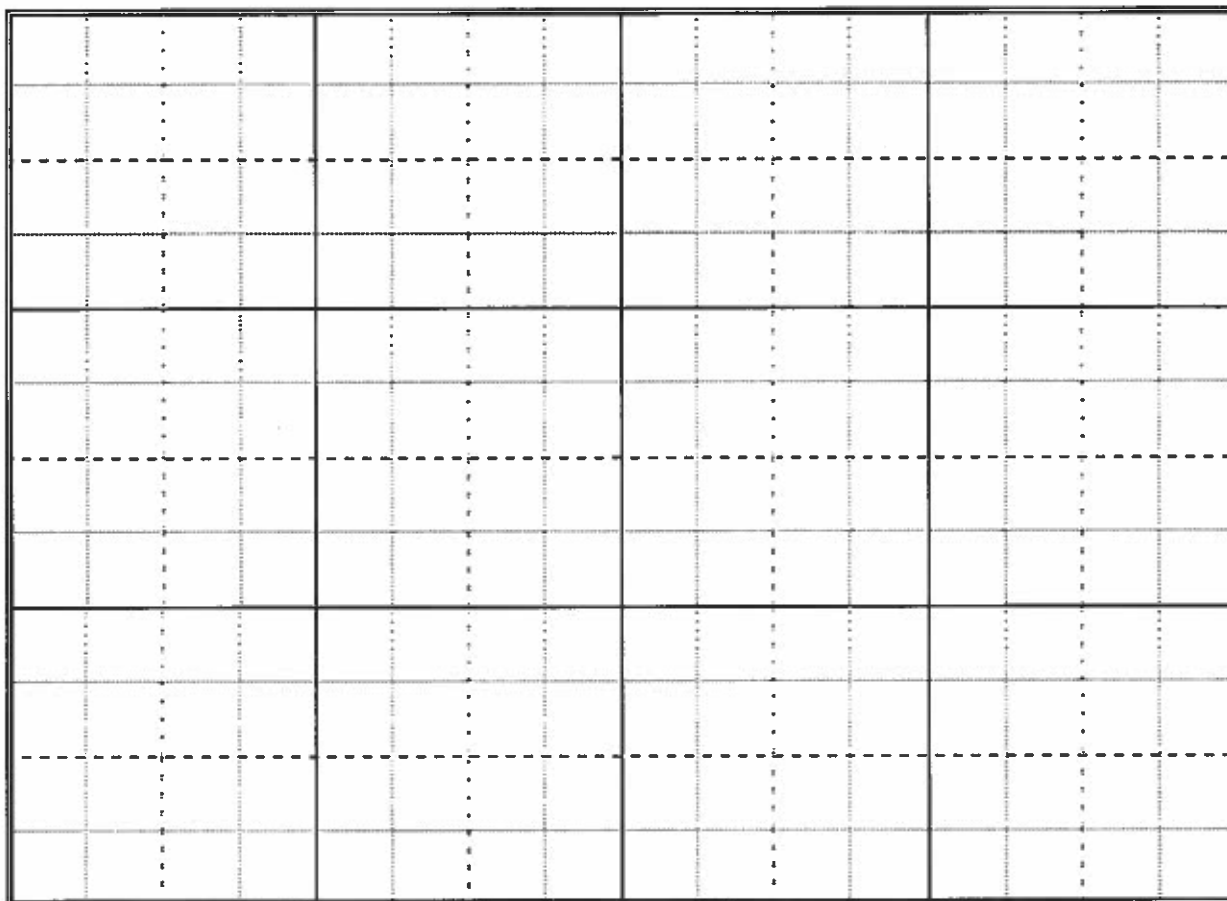
Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
Well #1			NE	NE	21	03N	38E	Bonneville	8" well near well house (GPS)
Well #2			NE	NE	21	03N	38E	Bonneville	12" well west of well house (GPS)
Well #3			SE	SE	16	03N	38E	Bonneville	16" well west of well house (GPS)

2. Place(s) of Use:

Method of determination Timberline development dwgs

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	38E	21			D	D													D

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

- ☒ 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	Goulds	25 hp	Unknown	Goulds	7CLC-3 (3 stage, 6" disch.)
Well #2	Goulds	30 hp	Unknown	Goulds	7WALC-3 (3 stage 6" disch.)
Well #3	Goulds	60 hp	Unknown	American pump	9RCLC (2 stage 8" disch.)

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

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
McCrometer meter on Well #1	propellor	McCromet		03-09728-3	3"	unk.
Fuji Ultrasonic meter	Fuji					ref. IDWR

2. **Measurements:** _____

IDWR's Fuji ultrasonic meter operated by agent Blake Jordan attached to well #3, well #1 then well #2 with peak flow measurements observed. Well #1 and Well #3 McCrometer meter compared were in general agreement while well #2 McCrometer meter appeared non-functional.

E. NARRATIVE/REMARKS/COMMENTS

- 1) Recommend approval of permit 25-14071 to include 0.76 cfs diversion for in-house use and residential irrigation within division 1 of Timberline Estates subdivision. Water supply delivered from Fairview Estates well #1 and well #2 and this permit should be amended to include well #3 connection from Sweet Country Estates.
- 2) Remainder of Timberline development recommended for approval under pending permit 25-14194 which also utilizes the Sweet Country well.
- 3) Land was previously irrigated from surface water and Timberline Estates subdivision is a member in the Bonneville-Jefferson ground water district which will provide mitigation for these uses as necessary to prevent injury to senior water rights.
- 4) Application for permit requested in-house use and 1/2 acre of irrigation per each of 44 homes. Permit remarks restrict use as follows: "The irrigation occurring under this domestic use shall not exceed 1/2 acre within each platted subdivision lot upon which a home has been constructed. This right does not provide for irrigation of common areas or for irrigation of lots upon which homes have not been constructed". Total subdivision area developed under this permit includes service connections to 44 lots within the development at the time proof was due.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

Fuji ultrasonic flow meter operated by IDWR attached to well discharge piping within well house. Refer to Sweet Country Estates and Fairview Estates beneficial use examinations 25-13984 & 25-14198.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 22.0 [\text{acres}] \times 4.0 [\text{acre-ft/acre}] = 88.0 \text{ acre-ft}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.76 [\text{cfs}] \times 214 [\text{days}] \times 1.9835 = 322.6 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 88.0 \text{ acre-ft}$$

2. Volume Calculations for Other Uses:

Maximum allowable in-house use of 0.6 acre-ft (535 gpd) per residential lot.

$$535 [\text{gpd}] \times 44 [\text{service connections}] \times 365.24 [\text{days/yr}] / (7.48 [\text{gal/ft}^3] \times 43560 [\text{ft}^2] \text{ per acre}) = 26.4 \text{ acre-ft}$$

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Domestic	1/1	12/31	0.76 cfs	114.4 afa
Totals:			0.76 cfs	114.4 afa

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☒ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

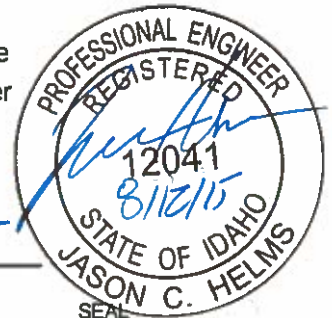
Field Examiner's Signature

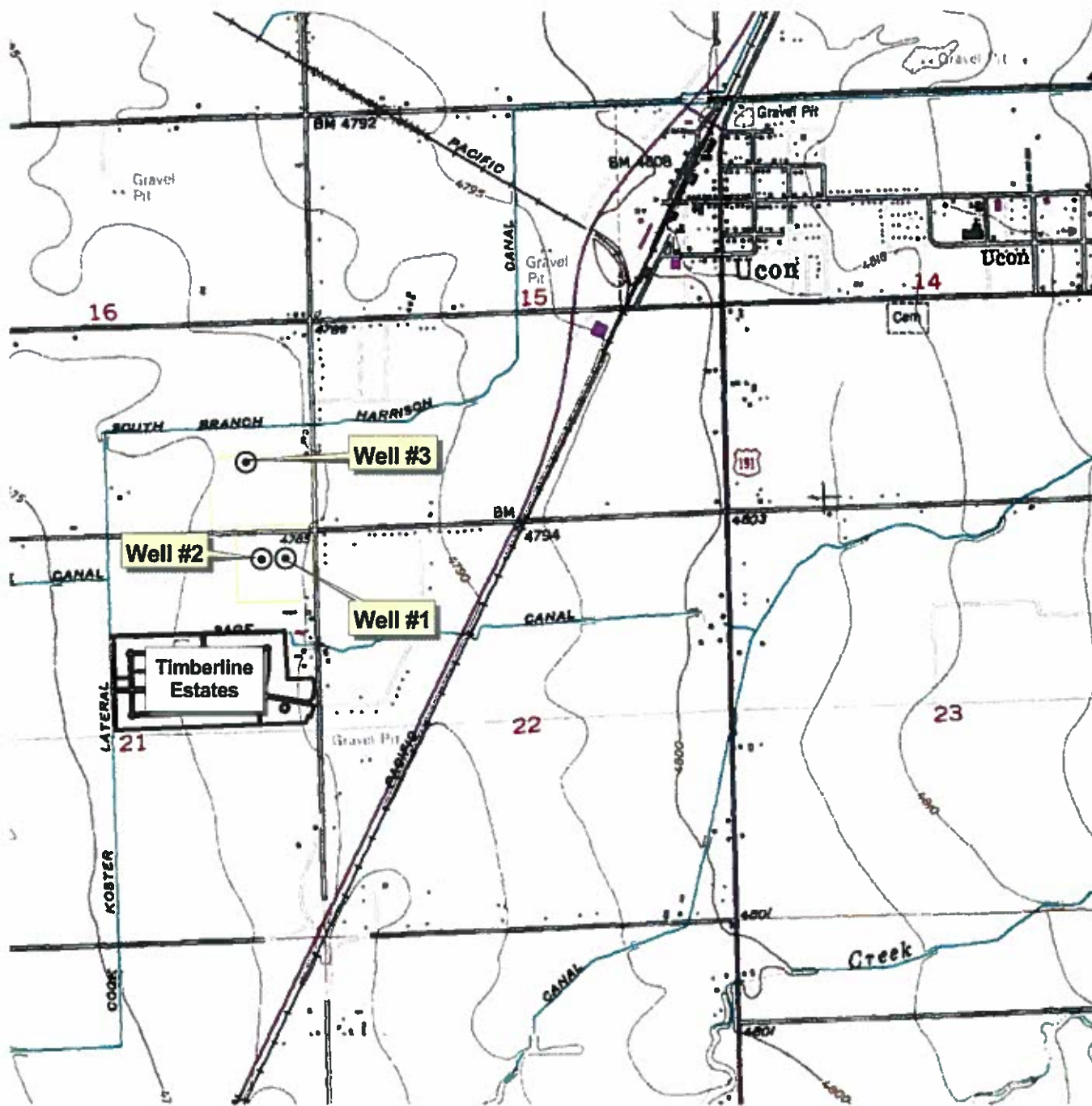
Date

8/12/2015

Reviewer

Date





JCH - 6/20/2015

USGS 1:24k Topographic Map

0.25 0 0.25 0.5 0.75 1 Miles



○ Points of Diversion
 □ Place of Use



**25-14071, 25-14194: Points of Diversion & Place of Use
 (Within TWP. 3N, RNG. 38E, Sections 16 & 21)**

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Office Use Only			
Well ID No.			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat:	:	Long:	:

1. WELL TAG NO. D 0032093
DRILLING PERMIT NO. 25
Water Right or Injection Well No. _____

2. OWNER: Fairview Estates Water Assoc
Name Fairview Estates Water Assoc
Address 21603 E. Euclid St.
City Idaho Falls State ID Zip 83401

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 3 North ☒ or South ☐
Rge. 38 East ☒ or West ☐
Sec. 21 1/4 NE 1/4 NE 1/4
Gov't Lot _____
Lat: _____ Long: _____
Address of Well Site Garden Grove Dr
City Idaho Falls

(Give at least name of road + Distance to Road or Landmark)
Lt. 13 Blk. 2 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. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Concrete	0'	180'		10" casing to 70' pulled back

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) as placement
Was drive shoe seal tested? ☐ Y ☒ N How? was installed

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8"	+1	180'		322 steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____
Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____
Screen Type & Method of Installation _____

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

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
10"	0'	4'	Clay			X
	4'	51'	Clay gravel			X
	51'	53'	Sand clay some gravel			X
	53'	76'	Clay			X
	76'	120'	Solid Black Lava			X
	120'	140'	Broken w/ some water		X	
	140'	160'	lots of water large crevices		X	
	160'	170'	Broken Black Rock		r	
	170'	175'	Solid Black Rock			X
8"	175'	220'	Black rock w/ few fractures		X	
	220'	230'	Black rock large fractures		X	
	230'	240'	Solid Black Rock			X

Completed Depth 240' (Measurable)

Date: Started 11/15/03 Completed 11/26/03

14. DRILLER'S CERTIFICATION

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

Company Name Dennis Well Drilling Firm No. 518

Principal Driller [Signature] Date 12-10-03

and Driller or Operator II [Signature] Date 12/1/03

Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: : : Long: : :

1. WELL TAG NO. D 0032159
DRILLING PERMIT NO. 25-13984
Water Right or Injection Well No. 25

2. OWNER:
Name Fairview Estates Water Association
Address 2603 E. Everon St.
City Idaho Falls State ID Zip 83401

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 3 North ☒ or South ☐
Rge. 38 East ☒ or West ☐
Sec. 21 1/4 NE 1/4 NE 1/4
Gov't Lot _____
County Bonneville
Lat: : : Long: : :
Address of Well Site _____

City _____
Lt. 13 Blk. 3 Sub. Name Fairview Estates

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. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>2 1/2" graded Portland Cement</u>	<u>0</u>	<u>76</u>		<u>down Annulus</u>

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

Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>10" +2</u>	<u>201</u>	<u>280</u>			☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type & Method of Installation _____

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

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. WELL TESTS:

☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>14</u>	<u>0</u>	<u>5</u>	<u>Top soil</u>		
<u>14</u>	<u>5</u>	<u>68</u>	<u>Gravel</u>		
<u>14</u>	<u>68</u>	<u>76</u>	<u>Basalt, hard, gray</u>		
<u>10</u>	<u>76</u>	<u>96</u>	<u>Basalt, hard, gray</u>		
<u>10</u>	<u>96</u>	<u>105</u>	<u>Basalt, fractured, gray</u>		
<u>10</u>	<u>105</u>	<u>115</u>	<u>Basalt, firm, gray</u>		
<u>10</u>	<u>115</u>	<u>130</u>	<u>Basalt, fractured, gray</u>	☒	
<u>10</u>	<u>130</u>	<u>140</u>	<u>Basalt, firm, gray</u>		
<u>10</u>	<u>140</u>	<u>152</u>	<u>Basalt, fractured, + trc clay</u>	☒	
<u>10</u>	<u>152</u>	<u>156</u>	<u>Basalt, firm, gray</u>		
<u>10</u>	<u>156</u>	<u>175</u>	<u>Basalt, frac. w/ trc clay</u>	☒	
<u>10</u>	<u>175</u>	<u>190</u>	<u>Basalt, firm, gray</u>		
<u>10</u>	<u>190</u>	<u>235</u>	<u>Basalt, frac. w/ trc clay</u>	☒	
<u>10</u>	<u>235</u>	<u>242</u>	<u>Basalt, firm, gray</u>		

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JAN 14 2004

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Eastern Region

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JAN 07 2004

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Eastern Region

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JAN 07 2004

Department of Water Resources
Eastern Region

Completed Depth 242 (Measurable)

Date: Started 12/09/03 Completed 12/15/03

14. DRILLER'S CERTIFICATION

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

Company Name Independent Drilling Firm No. 343

Principal Driller Robert [Signature] Date 12-19-03

and Driller or Operator II _____ Date _____

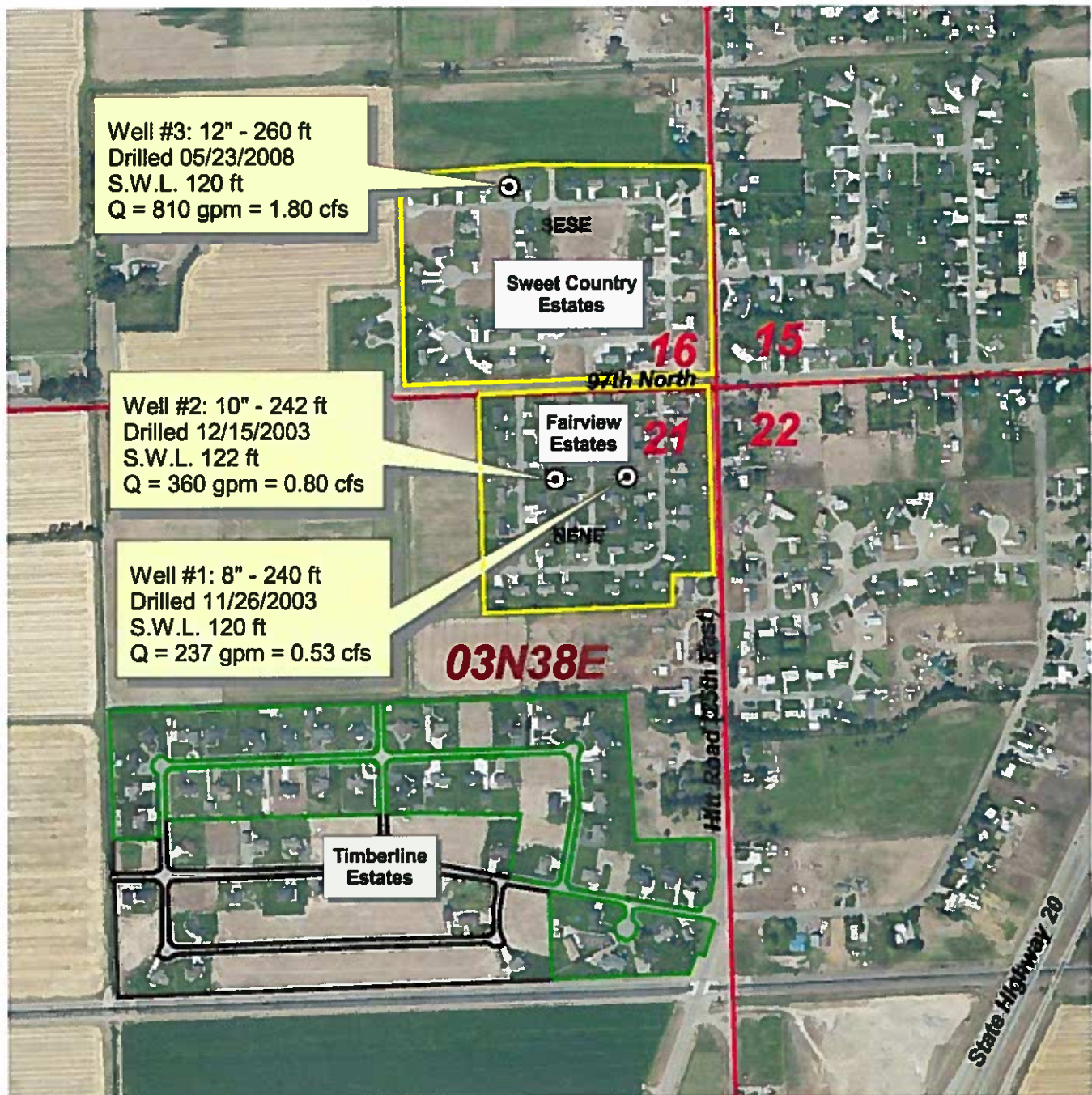
Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

25

Department of Water Resources
Eastern Region



JCH - 6/20/2015

2013 NAIP Aerial Photo

0.25 0 0.25 Miles

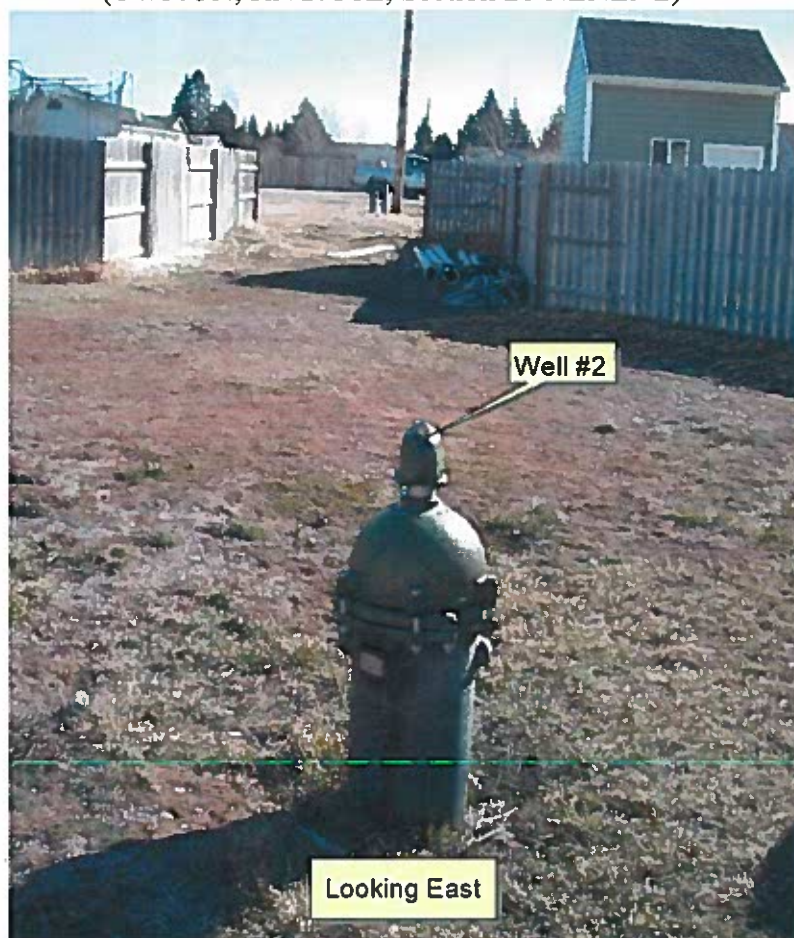
- 25-14071 Place of Use
- 25-14194 Place of Use
- 25-14071, 14194 Points of Diversion
- Township & Range
- Sections
- 40's
- Sweet Country Estates & Fairview Estates
Share Points of Diversion (ref. 25-13984, 25-14198)



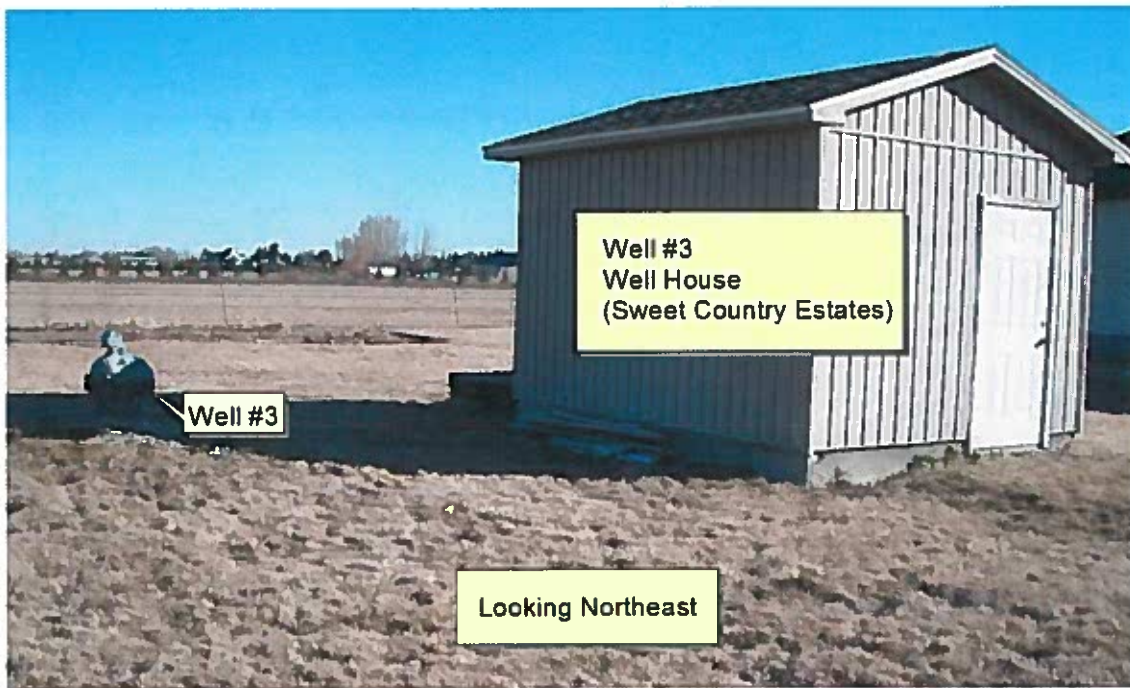
25-14071, 14194: Points of Diversion & Place of Use



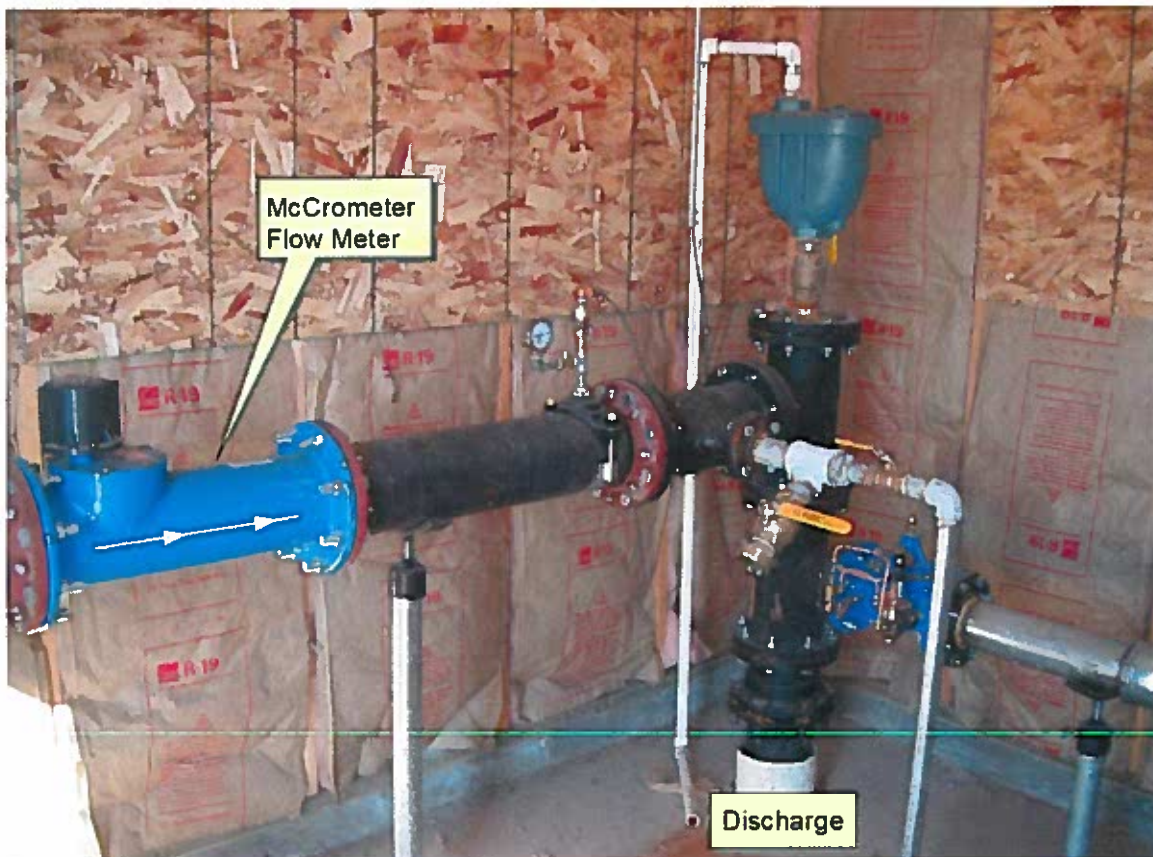
Well #1 & Well House (25-13984, 25-14071, 25-14194, 25-14198)
(TWP. 3N, RNG. 38E, Section 21 NENENE)



Well #2 (25-13984, 25-14071, 25-14194, 25-14198)
(TWP. 3N, RNG. 38E, Section 21 NWNENE)

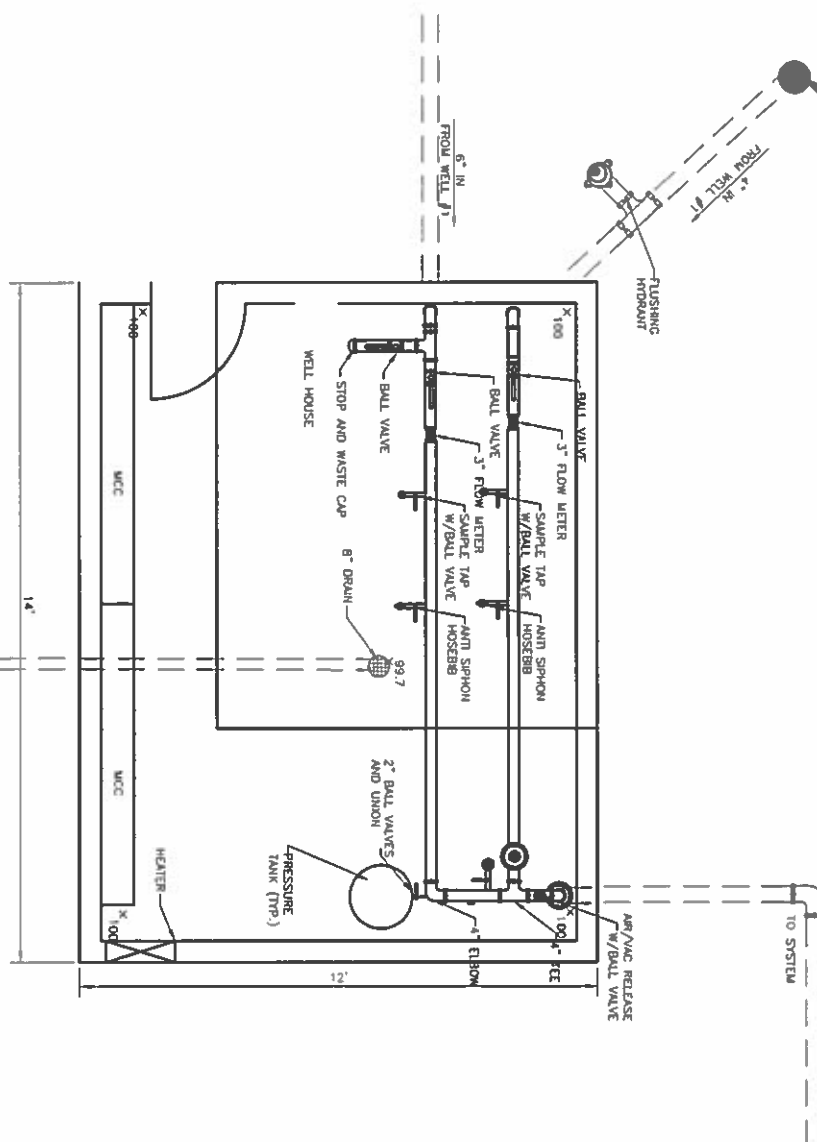


Well #3 & Well House (25-14194, 25-14198)
(TWP. 3N, RNG. 38E, Section 16 NWSESE)



Well #3 Well House Piping & Measurement Device
(Wells #1 & #2 Similar)

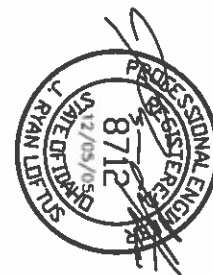
WELL #1 42



MECHANICAL/FLOOR PLAN

LEGEND:
X 99.9 PROPOSED ELEVATIONS

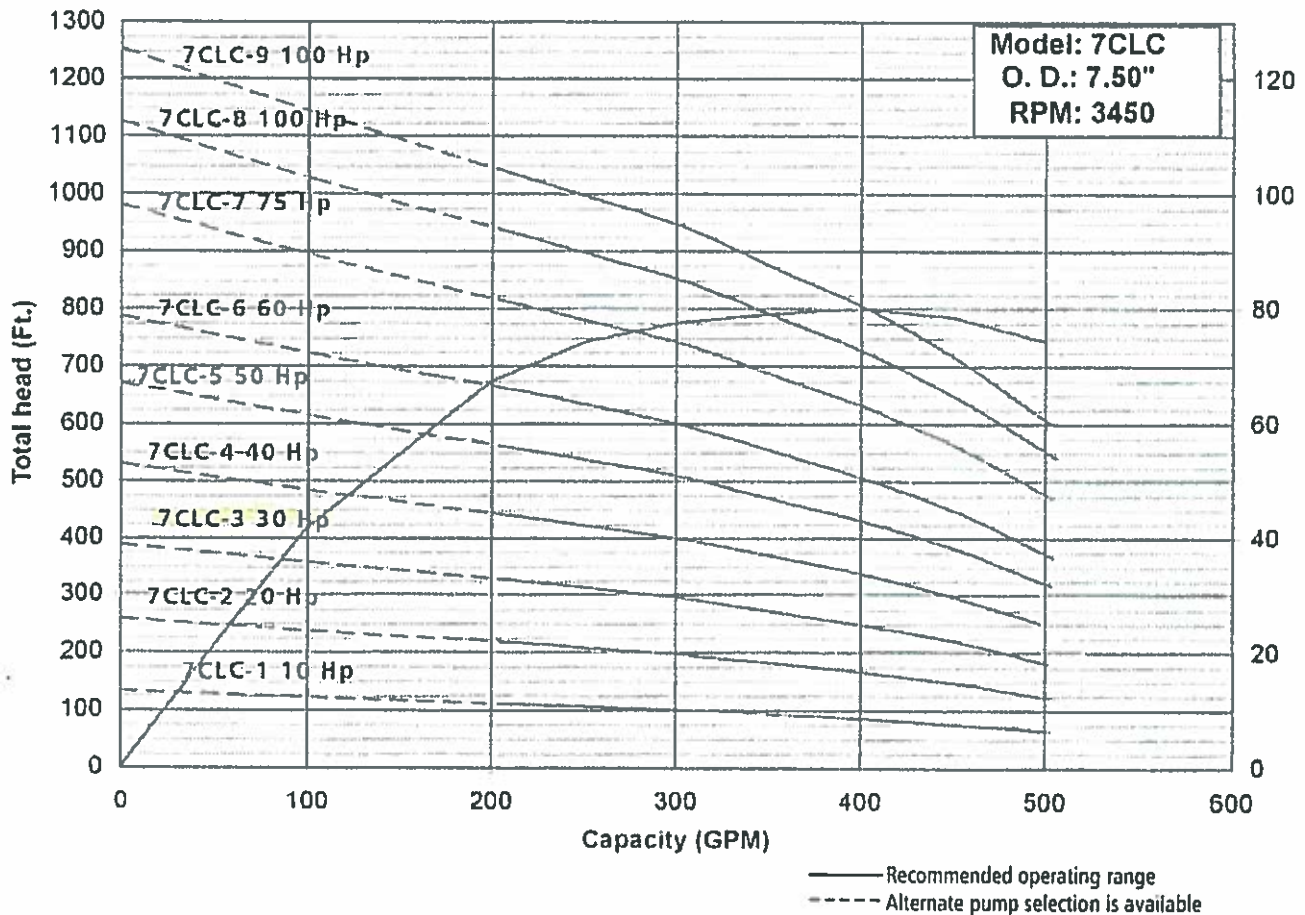
REVISED
AS-BUILT
DRAWINGS
DEC 2008



Fairview

GOULDS PUMPS Turbine

Model 7CLC 400 GPM



DIMENSIONS AND WEIGHTS

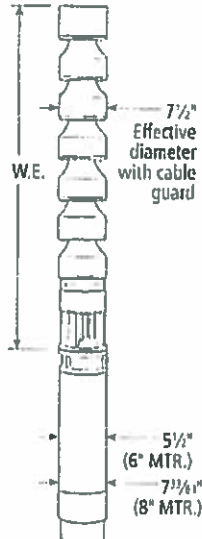
HP	Stages	W.E. Order Number	W.E. Length	W.E. Wt. (lbs.)
10	1	C07CLC010A66B	22.9	75
20	2	C07CLC020A66B	29.3	103
30	3	C07CLC030A66B	35.6	131
40	4	C07CLC040A66B	42.0	159
50	5	C07CLC050A86B	48.4	187
60	6	C07CLC060A86B	54.8	215
75	7	C07CLC075A86B	62.8	255
100	8	C07CLC100A86B	70.8	283
100	9	C07CLC100B86B	75.8	311

(All dimensions in inches and weights in lbs. Do not use for construction purposes.)

NOTES:

1. All dimensions in inches and weights in lbs.
2. Solid line is recommended operating range.
3. For intermediate horsepower pumps consult factory.
4. Please specify all options changes in W.E. order number.
5. 50 hp performance curve based on using 8" motor with 6" flange. Consult factory if you want 6" motor.

6" NPT DISCHARGE CONNECTION



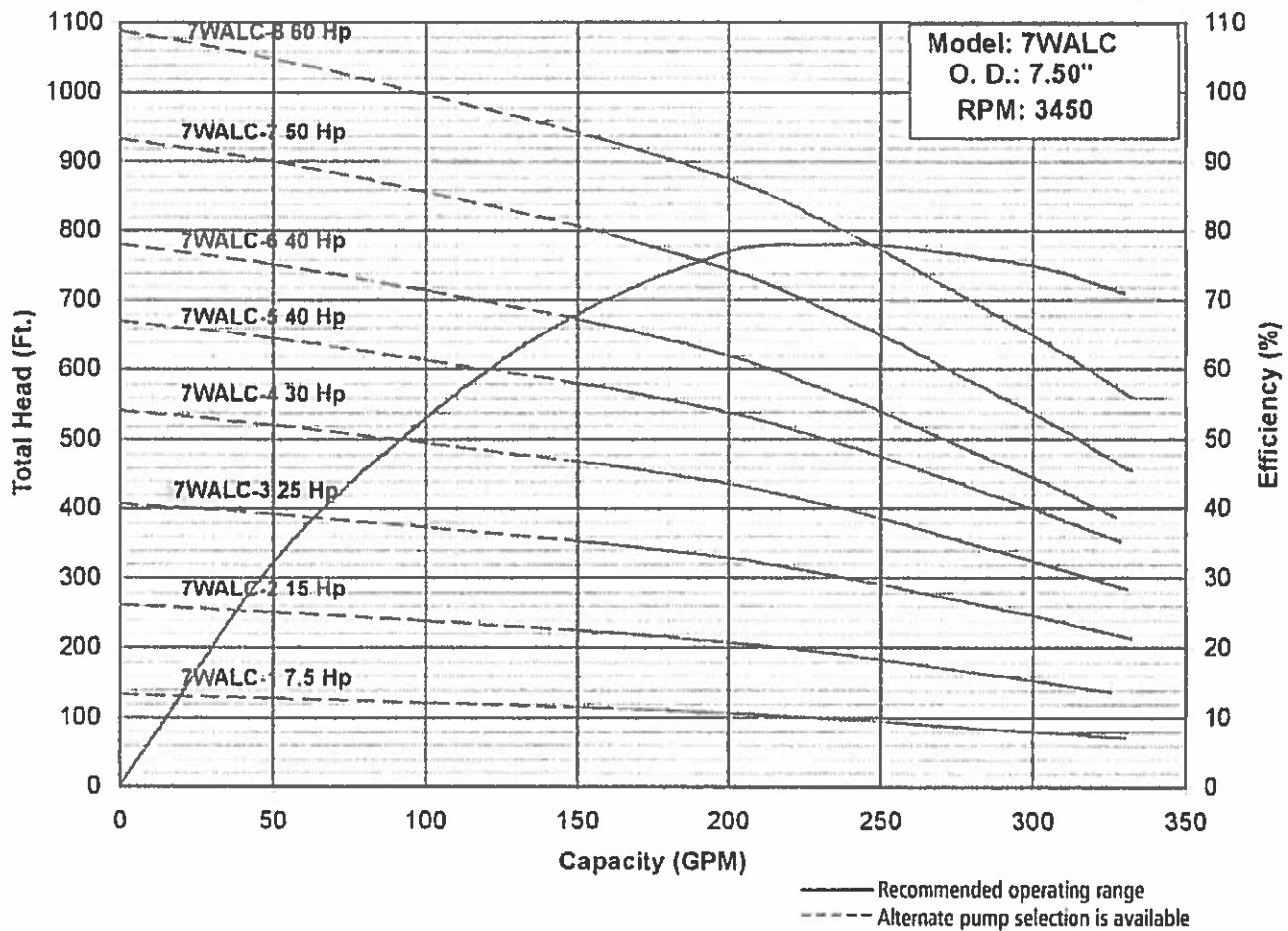
MATERIALS OF CONSTRUCTION

Part Name	Material
Shaft	ASTM A582 S41600
Coupling	ASTM A582 S41600
Suction Adapter	ASTM A536 Gr. 60-40-18
Suction Bearing	ASTM B584 C89835
Impeller	ASTM A744 CF8M
Taperlock	ASTM A108 Gr. 1018
Intermediate Bowl	ASTM A49 Cl. 30B
Intermediate Bowl Bearing	ASTM B584 C89835 (Std.)
Intermediate Bowl Bearing	Rubber (optional)
Upthrust Collar	Polyethylene
Discharge Bowl	ASTM A48 Cl. 30B
Discharge Bowl Bearing	ASTM B584 C89835
Fasteners	SAE J429 Gr. 8
Cable Guard	ASTM A240 S30400
Suction Strainer	ASTM A240 S30400

Fairview

GOULDS PUMPS Turbine

Model 7WALC 240 GPM



DIMENSIONS AND WEIGHTS

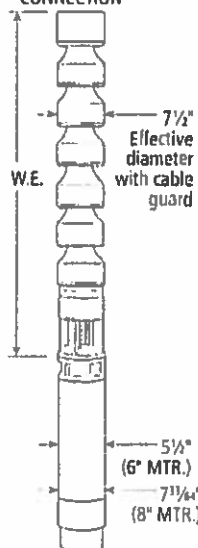
HP	Stages	W.E. Order Number	W.E. Length	W.E. Wt. (lbs.)
7.5	1	C07WAL007A66B	22.0	68
15	2	C07WAL015A66B	27.5	98
25	3	C07WAL025A66B	33.0	128
30	4	C07WAL030A66B	38.5	158
40	5	C07WAL040A66B	44.0	188
40	6	C07WAL040B66B	49.5	218
50	7	C07WAL050A86B	55.0	248
60	8	C07WAL060A86B	60.5	278

(All dimensions in inches and weights in lbs. Do not use for construction purposes.)

NOTES:

1. All dimensions in inches and weights in lbs.
2. Solid line is recommended operating range.
3. For intermediate horsepower pumps consult factory.
4. Please specify all options changes in W.E. order number.

6\"/>



MATERIALS OF CONSTRUCTION

Part Name	Material
Shaft	ASTM A582 S41600
Coupling	ASTM A582 S41600
Suction Adapter	ASTM A536 Gr. 60-40-18
Suction Bearing	ASTM B584 C89835
Impeller	ASTM A744 CF8M
Taperlock	ASTM A108 Gr. 1018
Intermediate Bowl	ASTM A49 Cl. 30B
Intermediate Bowl Bearing	ASTM B584 C89835 (Std.)
Intermediate Bowl Bearing	Rubber (Optional)
Upthrust Collar	Polycethylene
Discharge Bowl	ASTM A48 Cl. 30B
Discharge Bowl Bearing	ASTM B584 C89835
Fasteners	SAE J429 Gr. 8
Cable Guard	ASTM A240 S30400
Suction Strainer	ASTM A240 S30400

Company: AMERICAN PUMP COMPANY Customer:
Name:
Date: 07/17/09 Order No:

Sweet water



Pump:
Size: 9RCLC (2 stages)
Type: Submersible
Synch speed: 3600 rpm
Curve: E6209CFPC1
Specific Speeds: Ns: 2290
Pump Notes for Standard Sizes:
 Discharge Sizes-5",6",8"
Vertical Turbine: Bowl size: 9.25 in
 Max lateral: 0.88 in
 Thrust K factor: 4.9 lb/ft

Search Criteria:
Flow: 800 US gpm Head: 250 ft
Fluid:
Water
Density: 62.25 lb/ft³
Viscosity: 1.105 cP
NPSHa: --- ft
Motor:
Standard: NEMA
Size: *60 HP*
Speed: 3600

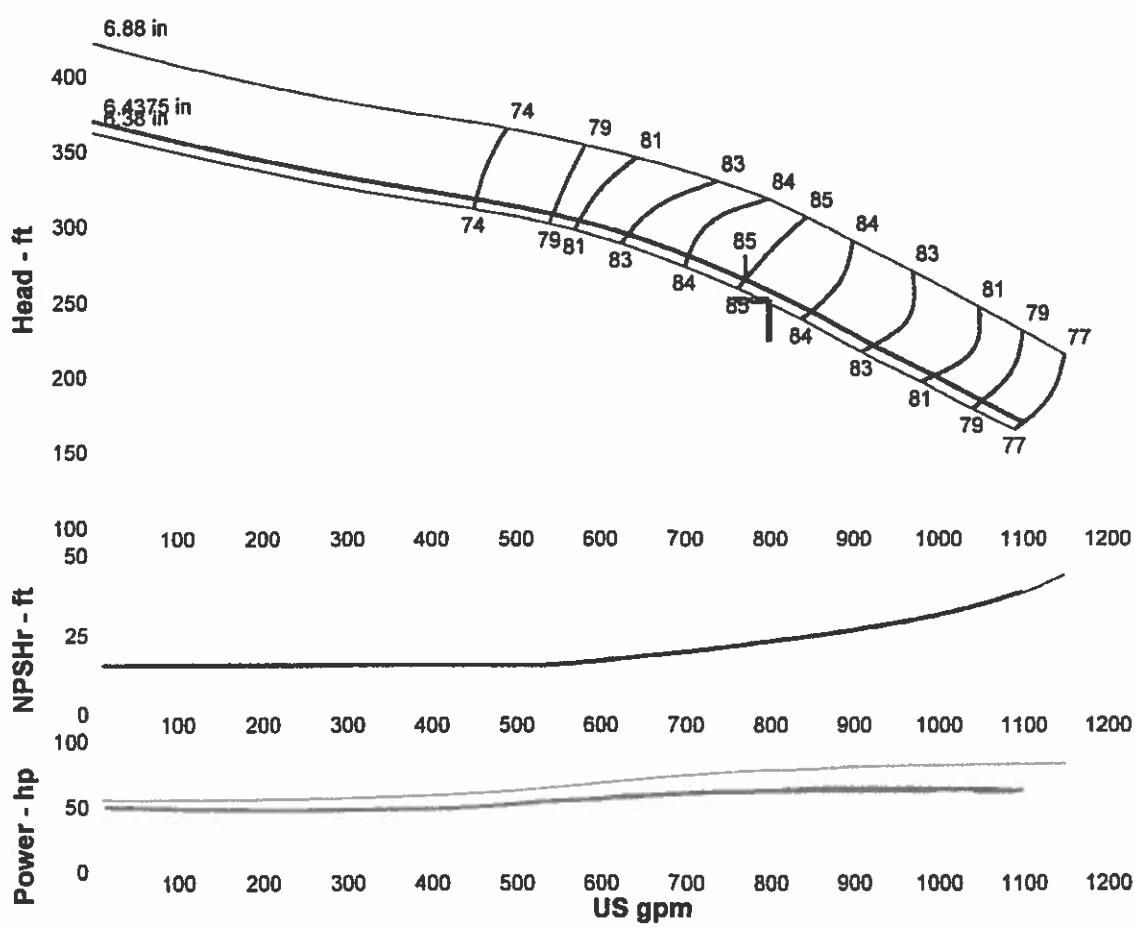
Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 14.7 psi a

Pump Limits for Standard Construction:
Temperature: 120 °F Pressure: 400 psi g
Sphere size: 0.56 in Sizing criteria: Max Power on Design Curve

— Data Point —
Flow: 800 US gpm
Head: 256 ft
Eff: 84.6%
Power: 61 hp
NPSHr: 22.3 ft

— Design Curve —
Shutoff Head: 370 ft
Shutoff dP: 160 psi
Min Flow: — US gpm
BEP: 85% eff
 @ 771 US gpm
NOL Pwr: 62.1 hp
 @ 996 US gpm

— Max Curve —
Max Pwr: 80.8 hp
 @ 1100 US gpm



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
960	3450	210	82	62	28.7
800	3450	256	84.6	61	22.3
640	3450	292	83.1	56.8	17.5
480	3450	314	75.5	50.3	15.2
320	3450	330	56.4	47.1	15.2

Sweet Candy