SKOOKUM
WATER ASSOCIATES INC

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1st PARTIAL PERFECTION CLAIM OF BENEFICIAL USE

APPLICATION G-15243
PERMIT G-16148

Springfield Utility Board

August 6, 2021

Project 10169.002

Skookum Water Associates Inc.
1626 Victorian Way Eugene, OR 97401
(503) 319-8926

CLAIM OF BENEFICIAL USE for Groundwater Permits claiming more than 0.1 cfs

OREGON WATER RESOURCES DEPARTMENT
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900
www.oregon.gov/OWRD

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A fee of $230 must accompany this form for permits with priority dates of July 9, 1987, or later.

A separate form shall be completed for each permit.

In cases where a permit has been amended through the permit amendment process, a separate claim for the permit amendment is not required. Incorporate the permit amendment into the claim for the permit.

This form is subject to revision. **Begin each new claim** by checking for a new version of this form at: https://www.oregon.gov/OWRD/Forms/Pages/default.aspx
The completion of this form is required by OAR 690-014-0100(1) and 690-014-0110(4).

Please type or print in dark ink. If this form is found to contain errors or omissions, it may be returned to you. **Every item must have a response.** If any requested information does not apply to the claim, insert "NA." **Do not delete or alter any section of this form unless directed by the form.** The Department may require the submittal of additional information from any water user or authorized agent.

"Section 8" of this form is intended to aid in the completion of this form and should not be submitted.

A claim of beneficial use includes both this report and a map. If the map is being mailed separately from this form, please include a note with this form indicating such.

If you have questions regarding the completion of this form, please call 503-986-0900 and ask for the Certificate Section.

The Department has a program that allows it to enter into a voluntary agreement with an applicant for expedited services. Under such an agreement, the applicant pays the cost to hire additional staff that would not otherwise be available. This program means a certificate may be issued in about a month. For more information on this program see https://www.oregon.gov/OWRD/programs/WaterRights/RA/Pages/default.aspx

SECTION 1

GENERAL INFORMATION

1. File Information:

APPLICATION #	PERMIT # (IF APPLICABLE)	PERMIT AMENDMENT # (IF APPLICABLE)
G-15243	G-16148	T- NA

2. Property Owner (current owner information):

Applicant/Business Name		Phone No.	Additional Contact No.
Springfield Utility Board Attn: Amy Chinitz		**(541) 726-2396**	**(541) 744-3745**
Address **202 South 18th Street**			
City **Springfield**	State **Or**	Zip **97477**	E-Mail **amyc@subutil.com**

If the current property owner is not the permit holder of record, it is recommended that an assignment be filed with the Department. ***Each*** *permit holder of record must sign this form.*

3. Permit holder of record (this may, or may not, be the current property owner):

Permit Holder of Record		
Springfield Utility Board		
Address **202 South 18th Street**		
City **Springfield**	State **OR**	Zip **97477**

Additional Permit Holder of Record		
NA - municipal use		
Address		
City	State	Zip

4. Date of Site Inspection:

April 1, 2021

5. Person(s) interviewed and description of their association with the project:

Name	Date	Association with the Project
Jay McElhose	**April 1, 2021**	**SUB Water Production Foreman**

6. County:

Lane

7. If any property described in the place of use of the permit is excluded from this report, identify the owner of record for that property (ORS 537.230(5)):

Owner of Record		
NA – municipal use		
Address		
City	State	Zip

Add additional tables for owners of record as needed

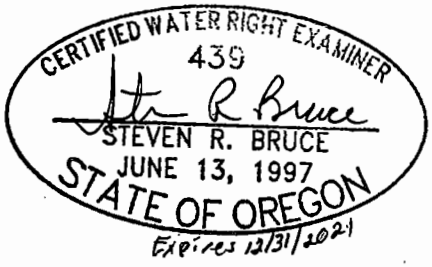
SECTION 2

SIGNATURES

CWRE Statement, Seal and Signature

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge.

Seal and Signature



CWRE Name		Phone No.	Additional Contact No.
Steven R. Bruce Skookum Water Associates Inc.		**(503) 319-8926**	
Address **1626 Victorian Way**			
City **Eugene**	State **OR**	Zip **97401**	E-Mail **steve@skookumwater.com**

Permit Holder of Record Signature or Acknowledgement

Each *permit holder of record must sign this form in the space provided below.*

The facts contained in this Claim of Beneficial Use are true and correct to the best of my knowledge. I request that the Department issue a water right certificate.

Signature	Print or Type Name	Title	Date
Greg Miller	**Greg Miller**	**Water Division Director**	Aug. 9th, 2021

SECTION 3

CLAIM DESCRIPTION

1. **Point of appropriation name or number:**

POINT OF APPROPRIATION (POA) NAME OR NUMBER (CORRESPOND TO MAP)	WELL LOG ID # FOR ALL WORK PERFORMED ON THE WELL (IF APPLICABLE)	WELL TAG # (IF APPLICABLE)
Well 5	LANE 57185	L-22540
Well 6	LANE 59176	L-9340
Well 7	LANE 58447	The tag number affixed to the well is L-38902, but should be L-38903 according to the Water Supply Well Report. SUB has corresponded with the Department separately to correct the physical well tag affixed to this well.
Well 10	To Be Constructed in the Future	--

Attach each well log available for the well (include the log for the original well and any subsequent alterations, reconstructions, or deepenings)

2. **Point of appropriation source, if indicated on permit:**

POA NAME OR NUMBER	SOURCE BASIN LOCATED WITHIN	TRIBUTARY
Well 5	Cedar Creek Basin	McKenzie River
Well 6	Cedar Creek Basin	McKenzie River
Well 7	Cedar Creek Basin	McKenzie River
Well 10	Cedar Creek Basin	McKenzie River

3. **Developed use(s), period of use, and rate for each use:**

POA NAME OR NUMBER	USES	IF IRRIGATION, LIST CROP TYPE	SEASON OR MONTHS WHEN WATER WAS USED	ACTUAL RATE OR VOLUME USED (CFS, GPM, OR AF)
Well 5	Municipal	NA	Year-Round	1.35 cfs (authorized for 1.34 cfs)
Well 6	Municipal	NA	Year-Round	1.20 cfs (authorized for 1.34 cfs)
Well 7	Municipal	NA	Year-Round	0.92 cfs (authorized for 0.89 cfs)
Well 10	Municipal	NA	--	--
Total Quantity of Water Used				Totals 3.47 cfs, but 3.43 cfs is being claimed for this partial perfection because Wells 5 and 7 pumped a total of 0.4 cfs above the related well-specific authorized rates during the 4+ hour-long demonstration period.

4. **Provide a general narrative description of the distribution works.** This description must trace the water system from each point of appropriation to the place of use:

Wells 5, 6 and 7 are located in the Thurston Wellfield operated by SUB. A buried mainline connected to all three wells forwards the pumped water to treatment system equipment located in two buildings before the water discharges to three storage tanks. The treatment systems are reported to have design capacities of 13.4 cfs. A flowmeter located inside one of the treatment-system building measures the total volume and rates of water pumped from any combination of Wells 5, 6 and 7 in addition to six other wells located within the wellfield. The following sections provide more detail.

Well 5

Groundwater is pumped from Well 5 using a 50-hp turbine pump. The water is forwarded through a buried mainline to two nearby water-treatment buildings for corrosion control and disinfection before being discharged to three storage tanks located approximately at least a mile south of the wellfield. The flowmeter, which is connected to the SCADA system, is located on the western wall of the building that houses the disinfection equipment.

The SCADA system controls which storage tanks receive the water pumped from Wells 5. Two of the three storage tanks have 1.5-million-gallon (1.5 MG) capacities; the third storage tank can store 1 MG.

Water from the storage tanks enters the distribution system. The distribution system, which has four pressure zones, includes over 60 booster and forwarding pumps ranging in size from ½ hp to 250 hp. The system also includes another 8.65 MG of storage in four other storage tanks. Water pressures in the system range from 30 psi to 110 psi, depending on the zone.

The distribution system piping ranges from 2 inches to 60 inches in diameter and is approximately 275 miles in length. The piping for services, fire lines and flush points within the distribution system ranges from ¾ inch to 6 inches in diameter and totals approximately 100 miles.

The SUB service area, approximately 15.7 square miles in area, is located largely within the City of Springfield city limits, although service is provided to the entire City of Springfield service area, which includes areas outside the city limits as authorized by Permit G-16148. The system includes 20,083 connections.

Well 6

Well 6 has a 40-hp submersible pump that delivers water to the 16-inch-diameter pipeline connected to the treatment system and three storage tanks described above. The water is delivered to the places of use by the distribution system described for Well 5.

Well 7

Well 7 is pumped using a 30-hp turbine pump. The water is forwarded via the buried mainline to the treatment, storage and distribution systems as described for Well 5.

Reminder: The map associated with this claim must identify the location of the point(s) of diversion, Donation Land Claims (DLC), Government Lots (GLot), and Quarter-Quarters (QQ).

5. Variations:

Was the use developed differently from what was authorized by the permit, permit amendment final order, or extension final order? If yes, describe below. **YES**

(e.g. *"The permit allowed three points of appropriation. The water user only developed one of the points."* or *"The permit allowed 40.0 acres of irrigation. The water user only developed 10.0 acres."*)

This Claim of Beneficial Use is for the partial-perfection of 3.43 cfs out of the authorized 4.91 cfs. The rates authorized for Wells 5 and 7 have been fully perfected. The unperfected portion of Well 6 is 0.14 cfs. Well 10, authorized for 1.34 cfs, has not yet been constructed. SUB intends to construct Well 10 and fully develop the remaining unperfected amount of Permit G-16148 in the future in accordance with the permit conditions.

6. Claim Summary:

POA NAME OR #	MAXIMUM RATE AUTHORIZED	CALCULATED THEORETICAL RATE BASED ON SYSTEM	AMOUNT OF WATER MEASURED	USE	# OF ACRES ALLOWED	# OF ACRES DEVELOPED
Well 5	1.34 cfs	1.78 cfs	1.35 cfs	Municipal	--	--
Well 6	1.34 cfs	1.41 cfs	1.2 cfs	Municipal	--	--
Well 7	0.89 cfs	1.10 cfs	0.92 cfs	Municipal	--	--

This Claim of Beneficial Use is intended for the partial-perfection of 3.43 cfs under the permit as allowed by Oregon Revised Statute (ORS) 537.260(4), being 1.34 cfs for Well 5, 1.20 cfs for Well 6 and 0.89 cfs for Well 7.

SECTION 4

SYSTEM DESCRIPTION

Are there multiple POAs? **YES**

If *"YES"* you will need to copy and complete a separate Section 4 for each POA.

POA Name or Number this section describes (only needed if there is more than one):

Well 5

A. Place of Use

1. Is the right for municipal use? **YES**

If "YES" the table below may be deleted.

B. Groundwater Source Information (Well)

1. Is the appropriation from a well? **YES**

If "NO", items 2 through 4 relating to this section may be deleted.

2. Describe the access port (type and location) or other means to measure the water level in the well:

There is a 2-inch-diameter angled pipe at the north side of the well casing.

3. If well logs are not available, provide as much of the following information as possible:

Casing Diameter	Casing Depth	Total Depth	Completion Date of Original Well	Completion Dates of Alterations	Who the well was drilled for	Well drilled by
See LANE 57185						

4. In addition to the information requested in item "3" above, provide any other information which may help the Department locate any well logs associated with this appropriation.

See LANE 57185

C. Groundwater Source Information (Sump)

1. Is the appropriation from a dug well (sump)? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

D. Diversion and Delivery System Information

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport and apply the water from the point of appropriation to the place of use.

1. Is a pump used? **YES**

If "NO" items 2 through item 6 may be deleted.

Well 5 (continued)

2. Pump Information:

Manufacturer	Model	Serial Number	Type (centrifugal, turbine or submersible)	Intake size	Discharge size
American Turbine	ST10H600	None found	Turbine	6 inch	6 inch

3. Motor Information:

Manufacturer	Horsepower
Somakis	50

4. Theoretical Pump Capacity:

Horsepower	Operating PSI	Lift from Source to Pump *If a well, the water level during pumping	Lift from Pump to Place of Use	Total Pump Output (in CFS)
50	70	20.0 feet	125 feet, but this lift is included in the operating psi	1.78

5. Provide pump calculations:

Well 5 Pump

Q Pump = $\frac{\text{(horsepower)(pump efficiency)}}{\text{(total head in feet)}} = \frac{(50)7.04}{177.8+20.0} = \frac{352.0}{197.8}$ = 1.78 cfs (approx. 799 gpm)

Where:

hp = 50

pump efficiency = = 7.04 $ft^4/sec/hp$

total head = 177.8 feet (conversion of 70 psi based on CBU form) + 20.0 feet = 197.8 feet

6. Measured Pump Capacity (using meter if meter was present and system was operating):

Initial Meter Reading	Ending Meter Reading	Duration of Time Observed	Total Pump Output (in CFS)
0 gallons	160,081 gallons	265 minutes	1.35 cfs (604 gpm)

The measurements were collected using a temporary ultrasonic flowmeter with the totalizer set to 0 at the start of the 4+ hour-long demonstration period.

Reminder: For pump calculations use the reference information at the end of this document.

7. Is the distribution system piped? **YES**

If "NO" items 8 through item 13 may be deleted.

Well 5 (continued)

8. Mainline Information:

Mainline Size	Length	Type of Pipe	Buried or Above Ground
60 inch	1,841 feet	CCP	Buried
48 inch	642 feet	PCCP	Buried
42 inch	1,031 feet	CC	Buried
36 inch	292 feet	DI	Buried
24 inch	66,725 feet	Various	Buried
20 inch	22,701 feet	CU	Buried
18 inch	1,200 feet	CI & DI	Buried
16 inch	136,151 feet	Various	Buried
14 inch	4,216 feet	CI	Buried
12 inch	232,208 feet	Various	Buried
10 inch	64,822 feet	Various	Buried
8 inch	303,549 feet	Various	Buried
6 inch	390,225 feet	Various	Buried
4 inch	64,327 feet	Various	Buried
2 inch	166,339 feet	Various	Buried

9. Lateral or Handline Information:

Lateral or Handline Size	Length	Type of Pipe	Buried or Above Ground
NA			

10. Sprinkler Information:

Size	Operating PSI	Sprinkler Output (GPM)	Total Number of Sprinklers	Maximum Number Used	Total Sprinkler Output (CFS)
NA					

Reminder: For sprinkler output determination use the reference information at the end of this document.

11. Drip Emitter Information:

Size	Operating PSI	Emitter Output (GPM)	Total Number of Emitters	Maximum Number Used	Total Emitter Output (CFS)
NA					

12. Drip Tape Information:

Dripper Spacing in Inches	GPM per 100 Feet	Total Length of Tape	Maximum Length of Tape Used	Total Tape Output (CFS)	Additional Information
NA					

Well 5 (continued)

13. Pivot Information:

Manufacturer	Maximum Wetted Radius	Operating PSI	Total Pivot Output (GPM)	Total Pivot Output (CFS)
NA				

E. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)? **YES**

If "NO", item 2 and 3 relating to this section may be deleted.

If "YES" is it a: Storage Tank **YES**

Bulge in System / Reservoir **NO**

Complete appropriate table(s), unused table may be deleted.

2. Storage Tank:

Material (concrete, fiberglass, metal, etc.)	Capacity (in gallons)	Above Ground or Buried
Steel	150,000	Above Ground
Steel	1,000,000	Above Ground
Steel	1,000,000	Above Ground
Concrete	1,500,000	Above Ground
Steel	1,500,000	Above Ground
Steel	2,000,000	Above Ground
Concrete	4,000,000	Above Ground

F. Gravity Flow Pipe

(The Department typically uses the Hazen-William's formula for a gravity flow pipe system)

1. Does the system involve a gravity flow pipe? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

G. Gravity Flow Canal or Ditch

(The Department typically uses Manning's formula for canals and ditches)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

H. Additional notes or comments related to the system:

SECTION 4

SYSTEM DESCRIPTION

Are there multiple POAs? **YES**

If *"YES"* you will need to copy and complete a separate Section 4 for each POA.

POA Name or Number this section describes (only needed if there is more than one):

Well 6

A. Place of Use

1. Is the right for municipal use? **YES**

If "YES" the table below may be deleted.

B. Groundwater Source Information (Well)

1. Is the appropriation from a well? **YES**

If "NO", items 2 through 4 relating to this section may be deleted.

2. Describe the access port (type and location) or other means to measure the water level in the well:

There is a 1¼ -inch-diameter access port on top of the south side of the casing.

3. If well logs are not available, provide as much of the following information as possible:

Casing Diameter	Casing Depth	Total Depth	Completion Date of Original Well	Completion Dates of Alterations	Who the well was drilled for	Well drilled by
See LANE 59176						

4. In addition to the information requested in item "3" above, provide any other information which may help the Department locate any well logs associated with this appropriation.

See LANE 59176

C. Groundwater Source Information (Sump)

1. Is the appropriation from a dug well (sump)? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

D. Diversion and Delivery System Information

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport and apply the water from the point of appropriation to the place of use.

1. Is a pump used? **YES**

If "NO" items 2 through item 6 may be deleted.

Well 6 (continued)

2. Pump Information:

Manufacturer	Model	Serial Number	Type (centrifugal, turbine or submersible)	Intake size	Discharge size
Franklin Electric	2366178125	Unknown	Submersible	Unknown	6 inch

3. Motor Information:

Manufacturer	Horsepower
Franklin Electric	40

4. Theoretical Pump Capacity:

Horsepower	Operating PSI	Lift from Source to Pump *If a well, the water level during pumping	Lift from Pump to Place of Use	Total Pump Output (in cfs)
40	70	22.3 feet	125 feet, but this lift is included in the operating psi	1.41

5. Provide pump calculations:

Well 6 Pump

Q Pump = (horsepower)(pump efficiency) / (total head in feet) = (40)7.04 / 177.8 + 22.3 = 281.6 / 200.1 = 1.41 cfs (approx. 633 gpm)

Where:

hp = 40

pump efficiency = = 7.04 ft^4/sec/hp

total head = 177.8 feet (conversion of 70 psi based on CBU form table) + 22.3 feet = 200.1

6. Measured Pump Capacity (using meter if meter was present and system was operating):

Initial Meter Reading	Ending Meter Reading	Duration of Time Observed	Total Pump Output (in cfs)
123,907,000 gallons on SCADA System (measured combined pumping rate from Wells 5, 6 and 7)	124,320,000 gallons on SCADA System (measured combined pumping rate from Wells 5, 6 and 7)	265 minutes	1.20 inferred (see below)

The above SCADA system measurements show a total of 413,000 gallons were pumped over 265 minutes, yielding an average rate of 1,558.5 gpm (3.47 cfs) from Wells 5, 6 and 7. Subtracting 1.35 cfs for Well 5 and 0.92 cfs for Well 7 from 3.47 cfs indicates Well 6 was pumping 1.20 cfs.

7. Is the distribution system piped? **YES**

If "NO" items 8 through item 13 may be deleted.

Well 6 (continued)

8. Mainline Information:

Mainline Size	Length	Type of Pipe	Buried or Above Ground
60 inch	1,841 feet	CCP	Buried
48 inch	642 feet	PCCP	Buried
42 inch	1,031 feet	CC	Buried
36 inch	292 feet	DI	Buried
24 inch	66,725 feet	Various	Buried
20 inch	22,701 feet	CU	Buried
18 inch	1,200 feet	CI & DI	Buried
16 inch	136,151 feet	Various	Buried
14 inch	4,216 feet	CI	Buried
12 inch	232,208 feet	Various	Buried
10 inch	64,822 feet	Various	Buried
8 inch	303,549 feet	Various	Buried
6 inch	390,225 feet	Various	Buried
4 inch	64,327 feet	Various	Buried
2 inch	166,339 feet	Various	Buried

9. Lateral or Handline Information:

Lateral or Handline Size	Length	Type of Pipe	Buried or Above Ground
NA			

10. Sprinkler Information:

Size	Operating PSI	Sprinkler Output (GPM)	Total Number of Sprinklers	Maximum Number Used	Total Sprinkler Output (CFS)
NA					

Reminder: For sprinkler output determination use the reference information at the end of this document.

11. Drip Emitter Information:

Size	Operating PSI	Emitter Output (GPM)	Total Number of Emitters	Maximum Number Used	Total Emitter Output (CFS)
NA					

12. Drip Tape Information:

Dripper Spacing in Inches	GPM per 100 Feet	Total Length of Tape	Maximum Length of Tape Used	Total Tape Output (CFS)	Additional Information
NA					

13. Pivot Information:

Manufacturer	Maximum Wetted Radius	Operating PSI	Total Pivot Output (GPM)	Total Pivot Output (CFS)
NA				

Well 6 (continued)

E. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)? **YES**

If "NO", item 2 and 3 relating to this section may be deleted.

If "YES" is it a: Storage Tank **YES**

Bulge in System / Reservoir **NO**

Complete appropriate table(s), unused table may be deleted.

2. Storage Tank:

MATERIAL (CONCRETE, FIBERGLASS, METAL, ETC.)	CAPACITY (IN GALLONS)	ABOVE GROUND OR BURIED
Steel	150,000	Above Ground
Steel	1,000,000	Above Ground
Steel	1,000,000	Above Ground
Concrete	1,500,000	Above Ground
Steel	1,500,000	Above Ground
Steel	2,000,000	Above Ground
Concrete	4,000,000	Above Ground

F. Gravity Flow Pipe

(THE DEPARTMENT TYPICALLY USES THE HAZEN-WILLIAM'S FORMULA FOR A GRAVITY FLOW PIPE SYSTEM)

1. Does the system involve a gravity flow pipe? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

Well 6 (continued)

G. Gravity Flow Canal or Ditch

(THE DEPARTMENT TYPICALLY USES MANNING'S FORMULA FOR CANALS AND DITCHES)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

H. Additional notes or comments related to the system:

SECTION 4

SYSTEM DESCRIPTION

Are there multiple POAs? **YES**

If *"YES"* you will need to copy and complete a separate Section 4 for each POA.

POA Name or Number this section describes (only needed if there is more than one):

Well 7

A. Place of Use

1. Is the right for municipal use? **YES**

If "YES" the table below may be deleted.

B. Groundwater Source Information (Well)

1. Is the appropriation from a well? **YES**

If "NO", items 2 through 4 relating to this section may be deleted.

2. Describe the access port (type and location) or other means to measure the water level in the well:

There is a 2-inch-diameter angled pipe at the northwest side of the casing.

3. If well logs are not available, provide as much of the following information as possible:

Casing Diameter	Casing Depth	Total Depth	Completion Date of Original Well	Completion Dates of Alterations	Who the well was drilled for	Well drilled by
See LANE 58446						

4. In addition to the information requested in item "3" above, provide any other information which may help the Department locate any well logs associated with this appropriation.

See LANE 58446

C. Groundwater Source Information (Sump)

1. Is the appropriation from a dug well (sump)? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

D. Diversion and Delivery System Information

Provide the following information concerning the diversion and delivery system. Information provided must describe the equipment used to transport and apply the water from the point of appropriation to the place of use.

1. Is a pump used? **YES**

If "NO" items 2 through item 6 may be deleted.

Well 7 (continued)

2. Pump Information:

Manufacturer	Model	Serial Number	Type (centrifugal, turbine or submersible)	Intake size	Discharge size
Ingersall-Dresser	10L30	0102CGC743 2-1	Turbine	6 inch	6 inch

3. Motor Information:

Manufacturer	Horsepower
General Electric	30

4. Theoretical Pump Capacity:

Horsepower	Operating PSI	Lift from Source to Pump *If a well, the water level during pumping	Lift from Pump to Place of Use	Total Pump Output (in CFS)
30	70	14.5 feet	125 feet, but this lift is included in the operating psi	1.10

5. Provide pump calculations:

Well 7 Pump

Q Pump = $\frac{\text{(horsepower)(pump efficiency)}}{\text{(total head in feet)}} = \frac{(30)7.04}{177.8+14.5} = \frac{211.2}{192.3}$ = 1.10 cfs (approx. 494 gpm)

Where:

hp = 30

pump efficiency = = 7.04 $ft^4/sec/hp$

total head = 177.8 feet (conversion of 70 psi based on CBU form table) + 14.5 feet = 192.3 feet

6. Measured Pump Capacity (using meter if meter was present and system was operating):

Initial Meter Reading	Ending Meter Reading	Duration of Time Observed	Total Pump Output (in CFS)
0 gallons	107,800 gallons	260 minutes	0.92 cfs (415 gpm)

The measurements were collected using a temporary ultrasonic flowmeter with the totalizer set to 0 at the start of the 4+ hour-long demonstration period.

Reminder: For pump calculations use the reference information at the end of this document.

7. Is the distribution system piped? **YES**

If "NO" items 8 through item 13 may be deleted.

Well 7 (continued)

8. Mainline Information:

Mainline Size	Length	Type of Pipe	Buried or Above Ground
60 inch	1,841 feet	CCP	Buried
48 inch	642 feet	PCCP	Buried
42 inch	1,031 feet	CC	Buried
36 inch	292 feet	DI	Buried
24 inch	66,725 feet	Various	Buried
20 inch	22,701 feet	CU	Buried
18 inch	1,200 feet	CI & DI	Buried
16 inch	136,151 feet	Various	Buried
14 inch	4,216 feet	CI	Buried
12 inch	232,208 feet	Various	Buried
10 inch	64,822 feet	Various	Buried
8 inch	303,549 feet	Various	Buried
6 inch	390,225 feet	Various	Buried
4 inch	64,327 feet	Various	Buried
2 inch	166,339 feet	Various	Buried

9. Lateral or Handline Information:

Lateral or Handline Size	Length	Type of Pipe	Buried or Above Ground
NA			

10. Sprinkler Information:

Size	Operating PSI	Sprinkler Output (GPM)	Total Number of Sprinklers	Maximum Number Used	Total Sprinkler Output (CFS)
NA					

Reminder: For sprinkler output determination use the reference information at the end of this document.

11. Drip Emitter Information:

Size	Operating PSI	Emitter Output (GPM)	Total Number of Emitters	Maximum Number Used	Total Emitter Output (CFS)
NA					

12. Drip Tape Information:

Dripper Spacing in Inches	GPM per 100 Feet	Total Length of Tape	Maximum Length of Tape Used	Total Tape Output (CFS)	Additional Information
NA					

13. Pivot Information:

Manufacturer	Maximum Wetted Radius	Operating PSI	Total Pivot Output (GPM)	Total Pivot Output (GFS)
NA				

Well 7 (continued)

E. Storage

1. Does the distribution system include in-system storage (e.g. storage tank, bulge in system / reservoir)? **YES**

If "NO", item 2 and 3 relating to this section may be deleted.

If "YES" is it a: Storage Tank **YES**
Bulge in System / Reservoir **NO**

Complete appropriate table(s), unused table may be deleted.

2. Storage Tank:

Material (concrete, fiberglass, metal, etc.)	Capacity (in gallons)	Above Ground or Buried
Steel	150,000	Above Ground
Steel	1,000,000	Above Ground
Steel	1,000,000	Above Ground
Concrete	1,500,000	Above Ground
Steel	1,500,000	Above Ground
Steel	2,000,000	Above Ground
Concrete	4,000,000	Above Ground

F. Gravity Flow Pipe

(The Department typically uses the Hazen-William's formula for a gravity flow pipe system)

1. Does the system involve a gravity flow pipe? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

G. Gravity Flow Canal or Ditch

(The Department typically uses Manning's formula for canals and ditches)

1. Is a gravity flow canal or ditch used to convey the water as part of the distribution system? **NO**

If "NO", items 2 through 4 relating to this section may be deleted.

H. Additional notes or comments related to the system:

SECTION 5

CONDITIONS

All conditions contained in the permit, permit amendment, or any extension final order shall be addressed. Reports that do not address all performance related conditions will be returned.

1. Time Limits:

Permits and extension final orders contain any or all of the following dates: the date when the actual construction work was to begin, the date when the construction was to be completed, and the date when the complete application of water to the proposed use was to be completed. These dates may be referred to as ABC dates. Describe how the water user has complied with each of the development timelines established in the permit or permit extension order:

	Date from Permit	Date Accomplished*	Description of Actions Taken by Water User to Comply with the Time Limits
Issuance Date:	January 2, 2007		
Begin Construction (A):	NA	--	--
Complete Construction (B)	January 2, 2027	January 2, 2007	The application was filed on December 11, 2000; however, resolving ODFW recommendations for mitigation delayed issuance of the permit until January 2, 2007. The wells and water system connections were constructed during that time.
Complete Application of Water (C)	January 2, 2027	April 1, 2021	Pumped 3.43 cfs into the municipal water system using Wells 5, 6 and 7 during the 4+ hour-long demonstration period. All of the water pumped went to beneficial use.

* MUST BE WITHIN PERIOD BETWEEN PERMIT, OR ANY EXTENSION FINAL ORDER ISSUANCE AND THE DATE TO COMPLETELY APPLY WATER

2. Is there an extension final order(s)? **NO**

If "NO", items a and b relating to this section may be deleted.

3. Initial Water Level Measurements:

a. Was the water user required to submit an initial static water level measurement? **YES**

If "NO", items b through d relating to this section may be deleted.

b. What month was the initial measurement to be taken in?

March

c. Was the measurement submitted to the Department? **YES**

d. If the initial measurement was not submitted, provide that measurement now, if available:

DATE OF MEASUREMENT	MEASUREMENT MADE BY	METHOD	MEASUREMENT

4. Annual Static Water Level Measurements:

a. Was the water user required to submit annual static water level measurements? **YES**

If "NO", items b through e relating to this section may be deleted.

b. Provide the month, or months, the static water level measurement(s) were to be made:

March

c. Were the static water level measurements taken in the month(s) required? **YES**

d. If "YES", were those measurements submitted to the Department? **YES**

e. If the annual measurements were not submitted, provide the measurements now:

DATE OF MEASUREMENT	MEASUREMENT MADE BY	METHOD	MEASUREMENT

5. Pump Test:

a. Did the permit require the submittal of a pump test? **YES**

Ground water permits with priority dates on or after **December 20, 1988**, require the submittal of a pump test prior to issuance of a certificate. In some cases, the permit holder may qualify for a multiple well exemption or an unreasonable burden exemption.

For additional information regarding pump tests see:
https://www.oregon.gov/OWRD/programs/GWWL/GW/Pages/PumpTestProgram.aspx

If "NO", items b through e relating to this section may be deleted.

b. Has the pump test been previously submitted to the Department? **NO**

c. Is the pump test attached to this claim? **YES**

d. Has the pump test been approved by the Department? **NO**

e. Has a pump test exemption been approved by the Department? **NO –**
A request for an exemption is included with this CBU.

**** Claims will not be reviewed until a pump test or exemption has been approved by the Department**

6. Measurement Conditions:

a. Does the permit, permit amendment, or any extension final order require the installation of a meter or approved measuring device? **YES**

If "NO", items b through f relating to this section may be deleted.
Reminder: If a meter or approved measuring device was required, the COBU map must indicate the location of the device in relation to the point of diversion or appropriation.

b. Has a meter been installed? **YES**

c. Meter Information

POD/POA Name or #	Manufacturer	Serial #	Condition (working or not)	Current Meter Reading	Date Installed
See note below. The SCADA system uses one meter to measure the rate from the well field, regardless of the number of pumps operating.	**ABB**	**Not Found**	**Working**	**6713212 x 1,000**	**November 2011**

The above meter that measures the combined discharge from Wells 5, 6 and 7 has been installed. The meter also records pumping volumes from other wells in the wellfield. The conditions in PermitG-16148 (Application G-15243) condition did not specify that individual meters were required for Wells 5, 6 and 7, only that a meter approved by the Department was required.

If a meter has been installed, items d through f relating to this section may be deleted.

7. Recording and reporting conditions:

a. Is the water user required to report the water use to the Department? **YES**

If "NO", item b relating to this section may be deleted.

b. Have the reports been submitted? **YES**

If the reports have not been submitted, attach a copy of the reports if available.

8. Other conditions required by permit, permit amendment final order, or extension final order:

a. Were there special well construction standards? **NO**

b. Was submittal of a ground water monitoring plan required? **YES – the plan was approved in a September 28, 2011 letter from Michael Zwart (WRD).**

c. Was submittal of a water management and conservation plan required? **NO**

d. Was a Well Identification Number (Well ID tag) assigned and attached to the well? **Not required as a condition, but tags have been attached to Wells 5 and 7. The tag for Well 6 (L-09340) was not found at the time of the site inspection.**

Well ID #	Date Attached To Well
Well 5	**June 1999 based on the Water Supply Well Report**
Well 6	**The Water Supply Well Report indicates a tag number was assigned in February 1997**
Well 7	**June 2000 based on the Water Supply Well Report**

e. Other conditions? **YES**

If "YES" to any of the above, identify the condition and describe the water user's actions to comply with the condition(s):

The wells are required to have usable access ports. The three wells have usable access ports on the casings.

SECTION 6

ATTACHMENTS

Provide a list of any additional documents you are attaching to this report:

ATTACHMENT NAME	DESCRIPTION
Figure 1	August 3, 2021 Skookum Water Associates Inc. Claim of Beneficial Use Map for Application G-15243, Permit G-16148
Figure 2	Springfield Utility Board Water Division Transmission System and Facilities Map
Exhibit A	April 9, 2021 Email from Gerry Clark (Oregon Water Resources Department) Approving a Mapping and System Quantification Waiver Request
Exhibit B	Well 5- Water Supply Well Report LANE 57185
Exhibit C	Well 6 - Water Supply Well Report LANE 59176
Exhibit D	Well 7 - Water Supply Well Report LANE 58447
Exhibit E	July 30, 2021 Skookum Water Associates Inc. Description of 4+ Hour-Long Pumping Demonstration Period Procedures
Exhibit F	April 1, 2021 Springfield Utility Board 4+ Hour Pumping Demonstration Period Plot for Wells 5, 6 and 7
Separate Document	Pump Test Form Cover Sheet and Data Sheet for Well 7
Separate Document	Pump Test Multiple Well Exemption Request Form

SECTION 7

CLAIM OF BENEFICIAL USE MAP

The Claim of Beneficial Use Map must be submitted with this claim. Claims submitted without the Claim of Beneficial Use map will be returned. The map shall be submitted on poly film at a scale of 1" = 1320 feet, 1" = 400 feet, or the original full-size scale of the county assessor map for the location.

Provide a general description of the survey method used to prepare the map. Examples of possible methods include, but are not limited to, a traverse survey, GPS, or the use of aerial photos. If the basis of the survey is an aerial photo, provide the source, date, series and the aerial photo identification number.

The map was tied using a Garmin Oregon 750t GPS and USDA-FSA-APFO aerial images collected June 26, 2016 (m_4412257_sw_10_1_20160919.tif) and July 8, 2020 (m_4412257_se_10_060_20200708).

Map Checklist

Please be sure that the map you submit includes ALL the items listed below.
(Reminder: Incomplete maps and/or claims may be returned.)

- ☒ Map on polyester film
- ☒ Appropriate scale (1" = 400 feet, 1" = 1320 feet, or the original full-size scale of the county assessor map)
- ☒ Township, Range, Section, Donation Land Claims, and Government Lots
- ☐ NA If irrigation, number of acres irrigated within each projected Donation Land Claims, Government Lots, Quarter-Quarters
- ☐ NA Locations of fish screens and/or fish by-pass devices in relationship to point of diversion
- ☒ Locations of meters and/or measuring devices in relationship to point of diversion or appropriation
- ☒ Conveyance structures illustrated (pumps, reservoirs, pipelines, ditches, etc.)
- ☒ Point(s) of diversion or appropriation (illustrated and coordinates)
- ☐ NA – municipal use Tax lot boundaries and numbers
- ☐ NA Source illustrated if surface water
- ☒ Disclaimer ("This map is not intended to provide legal dimensions or locations of property ownership lines")
- ☒ Application and permit number or transfer number
- ☒ North arrow
- ☒ Legend
- ☒ CWRE stamp and signature

EXHIBIT A

steve skookumwater.com

From: CLARK Gerald E * WRD <Gerald.E.Clark@oregon.gov>
Sent: Friday, April 9, 2021 12:59 PM
To: steve skookumwater.com
Cc: CHINITZ Amy C.
Subject: RE: Requests for Claim of Beneficial Use Waivers - Permit G-16148 (Application G-15243)

Steve,

Your request for a waiver is approved as requested.

Please let me know if you have any additional questions related to the Claim Report or Map.

Have a great afternoon and weekend!

Gerry

Gerry Clark
He/Him/His
Oregon Water Resources Department
Program Analyst, Certificate Section, Water Right Services Division
725 Summer Street NE, Suite A Salem, OR 97301 | Phone 503-986-0811

From: steve skookumwater.com <steve@skookumwater.com>
Sent: Friday, April 9, 2021 12:27 PM
To: CLARK Gerald E * WRD <Gerald.E.Clark@oregon.gov>
Cc: CHINITZ Amy C. <AmyC@subutil.com>
Subject: Requests for Claim of Beneficial Use Waivers - Permit G-16148 (Application G-15243)

Hi Gerry,
As we discussed, I am assisting the Springfield Utility Board (SUB) in preparing a partial-perfection Claim of Beneficial Use (CBU) for Permit G-16148 (Application G-15243). This permit authorizes four wells, which are located within the Thurston Wellfield operated by SUB. Wells 5, 6 and 7 have been constructed and are to be included in the partial-perfection CBU; the fourth well (Well 10) has not been drilled.

I am requesting the Department's approval for the following waiver requests for mapping and quantifying the water appropriation and distribution system.

Mapping Request
As allowed by Oregon Administrative Rule (OAR) 690-014-0170(7), I request the Department's authorization to provide a map separate from the CBU map that shows the location of the mainlines, primary pumping stations and storage tanks. Providing a separate water-system map is intended to make the CBU map easier to read by limiting the amount of information shown.

Quantification of Water System Request
Pumps in Wells 5, 6 and 7 forward water through treatment system equipment to three reservoirs capable of storing 4 million gallons. The distribution system connected to these reservoirs includes over 60 booster and forwarding pumps ranging from 1/2 hp to 250 hp. In addition, the water system includes four other large-capacity reservoirs.

Based on my experience and in accordance with OAR 690-014-0100(16), I am requesting the Department's approval to quantify only the capacity of the pumps for Wells 5, 6 and 7, given that the water is forwarded to large-capacity reservoirs and can then be moved and distributed using the numerous pumps. The capacity of the water-treatment systems at the wellfield is reported to be 13.4 cfs, which is nearly four times the pumping rate proposed for partial perfection, so it is not a limiting factor for the wells.

Please call or email me if you have any questions about these requests.
Thank you,
Steve

SKOOKUM
WATER ASSOCIATES INC

Steven R. Bruce, RG, LHg, CWRE
1626 Victorian Way
Eugene, OR 97401
(503) 319-8926
www.skookumwater.com

LANE
57185

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

WELL I.D. # L 22540
START CARD # 99710

(1) OWNER: Well Number Thurston #5
Name Springfield Utility Board
Address 202 S. 18th
City Springfield State OR Zip 97477

(2) TYPE OF WORK
[X] New Well [ ] Deepening [ ] Alteration (repair/recondition) [ ] Abandonment

(3) DRILL METHOD:
[ ] Rotary Air [ ] Rotary Mud [X] Cable [ ] Auger
[ ] Other

(4) PROPOSED USE:
[ ] Domestic [X] Community [ ] Industrial [ ] Irrigation
[ ] Thermal [ ] Injection [ ] Livestock [ ] Other

(5) BORE HOLE CONSTRUCTION:
Special Construction approval [ ] Yes [X] No Depth of Completed Well 64 ft.
Explosives used [ ] Yes [X] No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
20"	0	20'	Bentonite	0	20'	94
16"	20'	65'				

How was seal placed: Method [ ] A [ ] B [ ] C [ ] D [ ] E
[X] Other as per OAR 690-210-340
Backfill placed from _____ ft. to _____ ft. Material _____
Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	16"	+2'	24	.375	[X]	[ ]	[X]	[ ]
	14"	+.5	25	.375	[X]	[ ]	[X]	[ ]
	14"	60	64	.375	[X]	[ ]	[X]	[ ]
					[ ]	[ ]	[ ]	[ ]
Liner:					[ ]	[ ]	[ ]	[ ]
					[ ]	[ ]	[ ]	[ ]

Final location of shoe(s) 65'

(7) PERFORATIONS/SCREENS:
[ ] Perforations Method _____
[X] Screens Type V Wire Material Stainless

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
25	60	.070		16"	tele	[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]
						[ ]	[ ]

(8) WELL TESTS: Minimum testing time is 1 hour
well output may fluctuate
[X] Pump [ ] Bailer [ ] Air [ ] Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
800			1 hr.
800	12.3'		30 DAYS

Temperature of water 50° Depth Artesian Flow Found _____
Was a water analysis done? [ ] Yes By whom _____
Did any strata contain water not suitable for intended use? [ ] Too little
[ ] Salty [ ] Muddy [ ] Odor [ ] Colored [ ] Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Lane Latitude _____ Longitude _____
Township 17 S N or S Range 2 W E or W. WM.
Section 27 NW 1/4 SW 1/4
Tax Lot 400 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 1351 N. 66th Springfield, OR

(10) STATIC WATER LEVEL:
11.9 ft. below land surface. Date 5/21/99
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 21'

From	To	Estimated Flow Rate	SWL
21'	60'	800'	

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
Topsoil	0	6	
Gravel, Sand + silt	6	14	
Gravel, Sand cemented	14	21	
Gravel, coarse sand	21	36	12.1'
Gravel, Sand	36	48	12.1'
Gravel, Sand Tight	48	60	12.1'
Gravel, Sand, cemented	60	65	12.1'

RECEIVED
JUL 13 1999
WATER RESOURCES DEPT
SALEM, OREGON

Date started 12/10/98 Completed 6/16/99

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 6316
Signed Paul Christensen Date 7/11/99

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER
Christensen Well Drilling Co.

EXHIBIT B WELL 5

EXHIBIT C

LANE 58175

L09340

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

JAN 1 2 2001

WATER RESOURCES DEPT.
SALEM, OREGON

(START CARD) # 96778

Instructions for completing this report are on the last page of this form

(1) OWNER: Well Number #3 and #1

Name Springfield Utility Board

Address 202 S. 18th

City Springfield State OR Zip 97477

(2) TYPE OF WORK

☒ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

(3) DRILL METHOD:

☒ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger

☐ Other

(4) PROPOSED USE:

☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation

☐ Thermal ☐ Injection ☐ Livestock ☒ Other test well

(5) BORE HOLE CONSTRUCTION:

Special Construction approval ☒ Yes ☐ No Depth of Completed Well 97 ft.

Explosives used ☐ Yes ☒ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
12"	0	20	bentonite	0	20	22
8"	20	56				
6"	56	97				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E

☒ Other as per OAR-690-210-340

Backfill placed from _____ ft. to _____ ft. Material _____

Gravel placed from _____ ft. to _____ ft. Size of gravel _____

(6) CASING/LINER:

	Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
Casing:	8"	+2.5'	58	.250	☒	☐	☒	☐
	6"	50	96	.250	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐
Liner:					☐	☐	☐	☐

Final location of shoe(s)

(7) PERFORATIONS/SCREENS:

☒ Perforations Method Star

☐ Screens Type _____ Material _____

From	To	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
21	49	1/4 x 1	378		pipe	☒	☐
60	77	1/4 x 1	218		pipe	☒	☐
						☐	☐
						☐	☐
						☐	☐

(8) WELL TESTS: Minimum testing time is 1 hour

well output may fluctuate

☒ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
400	5	—	1 hr.

Temperature of water 51° Depth Artesian Flow Found _____

Was a water analysis done? ☐ Yes By whom _____

Did any strata contain water not suitable for intended use? ☐ Too little

☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other _____

Depth of strata: _____

(9) LOCATION OF WELL by legal description:

County Lane Latitude _____ Longitude _____

Township 17 S N or S Range 2 W E or W. WM.

Section 27 NW 1/4 SW 1/4

Tax Lot 400 Lot _____ Block _____ Subdivision _____

Street Address of Well (or nearest address) 1351 N. 66th Springfield OR

(10) STATIC WATER LEVEL:

11.5 ft. below land surface. Date 2/18/97

Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:

Depth at which water was first found 21

From	To	Estimated Flow Rate	SWL
21	37	340	
45	49	+ 150	11.5
69	74	+ 30	11.5

(12) WELL LOG:

Ground Elevation _____

Material	From	To	SWL
Topsoil	0	3	
Silt + Sand	3	9	
Gravel cemented, Sand	9	21	
Gravel, Sand, med to fine	21	29	
Cobbles, gravel, Sand	29	39	@11.5
Gravel small, Sand cemented	39	45	@11.5
Gravel med, small Sand	45	53	@11.5
Boulders, large	53	58	@11.5
Gravel, Sand clay	58	74	@11.5
Gravel, small, Sand	74	92	@11.5
Clay, gravel small, Sand	92	97	@11.5

Date started 1/20/97 Completed 2/18/97

(unbonded) Water Well Constructor Certification:

I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.

WWC Number _____

Signed _____ Date _____

(bonded) Water Well Constructor Certification:

I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.

WWC Number 636

Signed Gail Christensen V-Pres Date 3/17/97

ORIGINAL & FIRST COPY-WATER RESOURCES DEPARTMENT SECOND COPY-CONSTRUCTOR THIRD COPY-CUSTOMER

Christensen Well Drilling Co.

EXHIBIT C WELL 6

WELL I.D.# L 38903

(START CARD) # 85436

STATE OF OREGON
WATER SUPPLY WELL REPORT
(as required by ORS 537.765)

Instructions for completing this report are on the last page of this form.

OWNER: Well Number WELL #7
Spring field Utility Board
Address 4202 S. 18th
Spring field State Ore Zip 97477

TYPE OF WORK
New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment

DRILL METHOD:
Rotary Air ☐ Rotary Mud ☑ Cable ☐ Auger
Other

PROPOSED USE:
Domestic ☐ Community ☐ Industrial ☐ Irrigation
Thermal ☐ Injection ☐ Livestock ☑ Other Municipal

BORE HOLE CONSTRUCTION:
Special Construction approval ☐ Yes ☐ No Depth of Completed Well 65 ft.
Explosives used ☐ Yes ☑ No Type _____ Amount _____

HOLE Diameter	From	To	SEAL Material	From	To	Sacks or pounds
24"	0'	21'	Bentonite	0'	21'	
16"	21'	61'				

How was seal placed: Method ☐ A ☐ B ☐ C ☐ D ☐ E
Other poured-pushed as 20" pipe removed
Backfill placed from _____ ft. to _____ ft. Material _____
Filter pack placed from _____ ft. to _____ ft. Size of gravel _____

CASING/LINER:

Diameter	From	To	Gauge	Steel	Plastic	Welded	Threaded
16"	+3'	21'	.375	☑	☐	☑	☐
				☐	☐	☐	☐
				☐	☐	☐	☐
14"	61	65.5	.250	☑	☐	☑	☐
14"	18.5'	25'	.156"	☐	☐	☐	☐
14" Louvre	19.5'	20'		☑	☐	☑	☐

Elevation of shoe(s) 24'

PERFORATIONS/SCREENS:
Perforations Method
Screens Type V-Slot Material 304 S.S.

Top	Bottom	Slot size	Number	Diameter	Tele/pipe size	Casing	Liner
29'	51'	35		14"	05	☐	☐
51'	61'	32		14"	05	☐	☐
						☐	☐
						☐	☐

WELL TESTS: Minimum testing time is 1 hour

Pump ☑ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Drill stem at	Time
2500 gpm	41'		1 hr.

Was a water analysis done? ☐ Yes By whom _____
Did any strata contain water not suitable for intended use? ☐ Too little
☐ Muddy ☐ Odor ☐ Colored ☐ Other _____
Depth of strata: _____

(9) LOCATION OF WELL by legal description:
County Lane Latitude _____ Longitude _____
Township 17S N or S Range 2W E or W. WM
Section 27 NW 1/4 SW 1/4
Tax Lot 400 Lot _____ Block _____ Subdivision _____
Street Address of Well (or nearest address) 1351 N. 66th Spring field, Ore.

(10) STATIC WATER LEVEL:
7.0 ft. below land surface. Date 6-23-00
Artesian pressure _____ lb. per square inch. Date _____

(11) WATER BEARING ZONES:
Depth at which water was first found 20'

From	To	Estimated Flow Rate	SWL
25'	61'	65+ gpm	7.0

(12) WELL LOG:
Ground Elevation _____

Material	From	To	SWL
- Road rock	0'	1'	
- Brown clay	1'	6'	
- Fine - coarse brown sand & small-large gravel	6'	13'	
- Small gravel-Olivesand	13'	26.5'	
- Light gravel w/brown clay	26.5'	34'	7.0'
- Small - large gravel, sand & brown clay & loose	34'	38'	
- Gravel w/clay - water	38'	47'	7.0'
- Loose brown sand-gravel	47'	56'	
- Gravel, sand w/some clay	56'	61'	7.0'
- Gravel, sand w/greater ratio of clay to gravel	61'	66'	

Date started April 13, '00 Completed June 23, '00

(unbonded) Water Well Constructor Certification:
I certify that the work I performed on the construction, alteration, or abandonment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best of my knowledge and belief.
WWC Number _____
Signed _____ Date _____

(bonded) Water Well Constructor Certification:
I accept responsibility for the construction, alteration, or abandonment work performed on this well during the construction dates reported above. All work performed during this time is in compliance with Oregon water supply well construction standards. This report is true to the best of my knowledge and belief.
WWC Number 633
Signed Michael Waldron Date 7-21-00

EXHIBIT D WELL 7

SKOOKUM
WATER ASSOCIATES INC

July 30, 2021
Project 10169.002

EXHIBIT E

Oregon Water Resources Department
725 Summer Street N.E., Suite A
Salem, Oregon 97301-1266

Attn: Certificate Section

Description of a 265-Minute-Long Demonstration Period to Support a Partial-Perfection Claim of Beneficial Use
Application G-15243, Permit G-16148 in the name of Springfield Utility Board
Lane County, Oregon

To Whom It May Concern,

This Skookum Water Associates Inc. letter describes the procedure used by the Springfield Utility Board (SUB) to complete a 265-minute demonstration period in support of a partial-perfection Claim of Beneficial Use (CBU). The demonstration was intended to satisfy the Department's requirement for municipal water providers to pump the rate(s) being claimed for not less than 4 hours in an 8-hour period as part of perfecting part or all of a water-use permit.

On April 1, 2021 we witnessed SUB's demonstration, which involved pumping Wells 5, 6 and 7 non-stop between 0905 hours and 1330 hours.[1] As indicated on the attached table (Exhibit F) prepared by SUB, the total pumping rate remained stable for more than 4 hours. All of the pumped water was forwarded to the water distribution system for beneficial use.

Pumping rate measurements from the three wells were recorded approximately every 20 minutes during the demonstration period. The measurements for Wells 5 and 7 were recorded from digital readouts on portable flowmeters that had both totalizing and instantaneous capabilities. These flowmeters were temporarily installed on the discharge lines for the demonstration. A portable flowmeter was not available for Well 6. As a result, the Well 6 rate was inferred by subtracting the Well 5 and Well 7 instantaneous rates from the total instantaneous pumping rate recorded by a flowmeter connected to the SCADA system.

It should be noted that the pumping rates displayed on the digital readouts on all three flowmeters constantly fluctuated approximately 5 to 10 gpm before and during the demonstration period. This condition is common in our experience.

According to SCADA data, the total volume of water pumped from the three wells was 413,000 gallons during the 265 minutes, for an average pumping rate of 1,558.5 gpm or 3.47 cfs. This rate is not being claimed because, as indicated in the table below, Wells 5 and 7 exceeded the authorized pumping rates by a total of 0.04 cfs. The following table summarizes the pumping rate data.

[1] Well 10 authorized by the permit has not been drilled.

Pumping Rate Summary for 265-Minute Demonstration Period

	Well 5	Well 6	Well 7
Average Pumping Rate (gpm)	608	541	411
Average Pumping Rate (cfs)	1.35	1.20	0.92
Authorized Pumping Rate (cfs)	1.34	1.34	0.89
Difference Between Average Rate and Authorized Rate (cfs)	0.01	-0.14	0.03

In summary, our observations, the above table and the data in Exhibit F of this CBU confirm SUB was able to pump 3.43 cubic feet per second (cfs) of groundwater from Wells 5, 6 and 7 for more than the required 4 hours. This rate is further apportioned as 1.34 cfs, 1.20 cfs and 0.89 cfs of groundwater for Wells 5, 6 and 7, respectively. Based on this information, the undeveloped portion of the permit now consists of a remaining 0.14 cfs of groundwater from Well 6 and 1.34 cfs of groundwater from the as yet undrilled Well 10.

Please call or email me if you have any questions about the demonstration.

Sincerely,

SKOOKUM WATER ASSOCIATES INC.

Steven R. Bruce, RG, CWRE
Principal

EXHIBIT E

EXHIBIT F

EXHIBIT F: April 1, 2021 4+ Hour Pumping Demonstration Period for Wells 5, 6 and & 7