\$100.00 133146

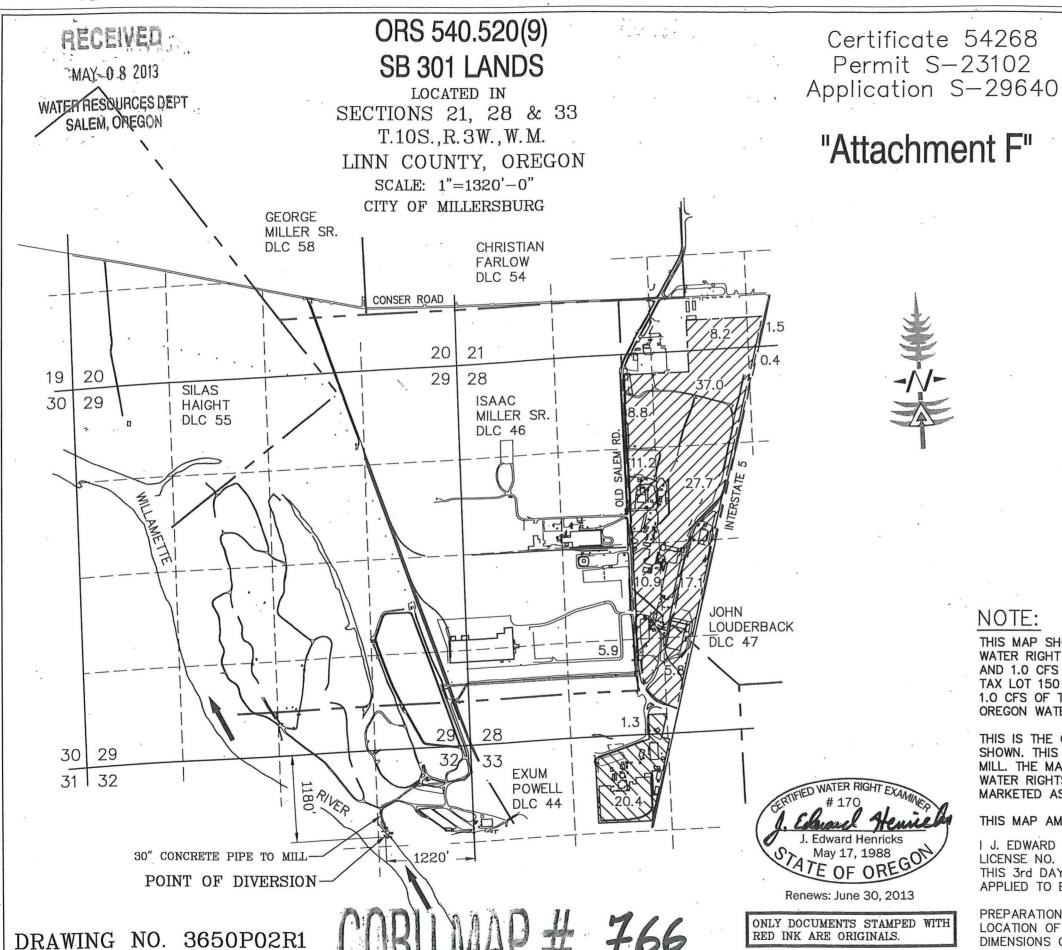
Receipt #

FEES REFUNDED

Amount

FEES PAID
Amount
3,780.00

Name International Caper Compar Terry Thomas, Manager, Surplus facility Address 6400 Poplar 16504 County Road Memphis TN 38197	DESCRIPTION OF WATER RIGHT(s) Name of Stream Willamette B.		
Change in POU, USE, POD, SW/GW Date Filed_11-20-17 Initial notice date_ DPD issued date_	Use Industrial / Manu facturing Quantity of water (CFS) Name of ditch	CountyNo. of Acres	um 2
PD issued date 7-19.2019 PD notice date 7-23-2019 Date of FO Vol 114 Page 40-400 C-Date 000 2050 COBU due date 000 2050 COBU Received date Certificate issued	App#	Cert # 54268 Cert # Cer	PR Date 1954 PR Date PR Date PR Date PR Date PR Date
	7. Independence, OR. 97351	4	
Agent GST Water Solutions 1600 SW Western Blvd. Ste. 240 CWRE CC's list City of Independence - P		77351	



ACREAGE SUMMARY

CERTIFICATE 54268 - PERMIT S-23102 17.0 CFS PLACE OF USE

SE 1/4, SE 1/4 SW 1/4, SE 1/4 SECTION 21 1.5 ACRES DLC 54 8.2 ACRES DLC 54 0.4 ACRES DLC 47 SECTION 28 NW 1/4, NE 1/4 NE 1/4, NW 1/4 37.0 ACRES DLC 47 8.8 ACRES DLC 47 27.7 ACRES DLC 47 SW 1/4, NE 1/4 SE 1/4, NW 1/4 11.2 ACRES DLC 47 NW 1/4, SE 1/4 16.0 ACRES DLC 47 1.0 ACRES DLC 44 NE 1/4, SW 1/4 6.9 ACRES DLC 47 4.0 ACRES DLC 44 5.8 ACRES DLC 44 SW 1/4, SE 1/4 SE 1/4, SW 1/4 5.9 ACRES DLC 44

CERTIFICATE 54268 - PERMIT S-23102 1.0 CFS PLACE OF USE

SE 1/4, SW 1/4 1.3 ACRES DLC 44 SECTION 28 SECTION 33 NE 1/4, NW 1/4 20.4 ACRES DLC 44

21.7 · ACRES

134.5 ACRES

LEGEND:

= DONATION LAND CLAIM LINES = APPROXIMATE PROPERTY LINE 30" CONCRETE PIPE TO MILL

> = PLACE OF USE UNDER ORS 540.520(9) FOR 17.0 CFS. SALE #3 LAND.

= PLACE OF USE UNDER ORS 540.520(9) FOR 1.0 CFS. SOLD 2007 TO FLAKEBOARD AMERICA

NOTE:

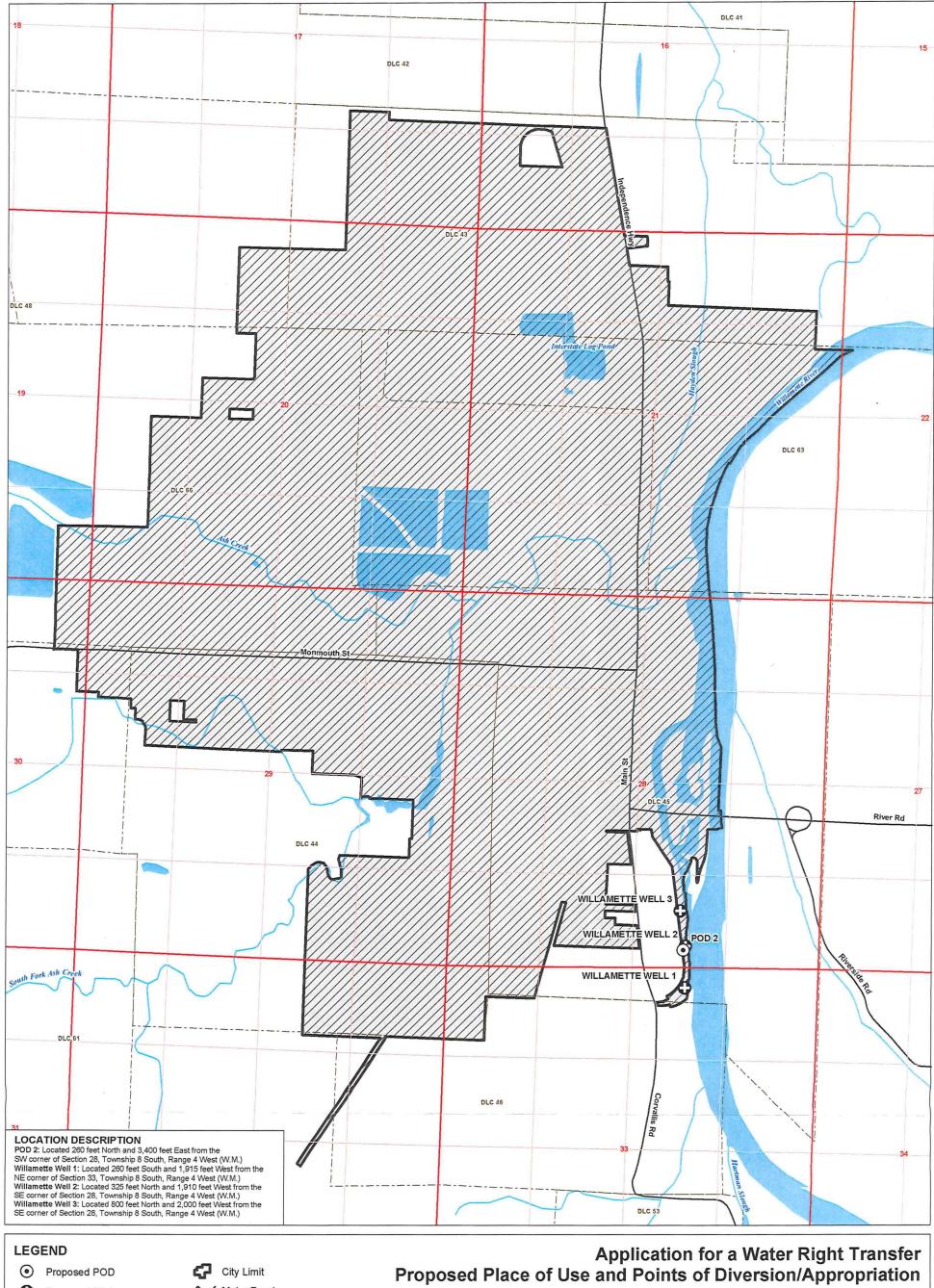
THIS MAP SHOWS THE PLACE OF USE UNDER 1999 SB 301 ORS 540.520(9) FOR WATER RIGHT CERTIFICATE 54268. THE RATE IS SPLIT 17.0 CFS TO TAX LOT 400 AND 1.0 CFS TO TAX LOT 151 AS NOTED IN THE ACREAGE SUMMARY. IN 2007 TAX LOT 150 WAS SOLD TO FLAKEBOARD AMERICA AND IN THE SALE AGREEMENT 1.0 CFS OF THE 18.0 CFS WAS SPLIT OUT AND A LETTER WITH MAP SENT TO OREGON WATER RESOURCES DEPARTMENT AND INSERTED IN THE WATER RIGHT FILE.

THIS IS THE ONLY WATER RIGHT DEDICATED / PERTINENT TO THE MAPPED LANDS SHOWN. THIS RE-MAP WAS CREATED AS PART OF THE CLOSURE OF THE PAPER MILL. THE MAP WAS PREPARED FOR INTERNATIONAL PAPER TO CLARIFY WHAT WATER RIGHTS GO WITH THE LAND AS IT IS SOLD. THE PROPERTY IS BEING MARKETED AS THREE PARCELS. SALE #3 LANDS ARE SHOWN.

THIS MAP AMENDS / REPLACES THE PLACE OF USE MAP FOR CERTIFICATE 54268.

I J. EDWARD HENRICKS, BEING DULY SWORN AS A WATER RIGHT EXAMINER LICENSE NO. 170, HAVE PREPARED THIS MAP FOR INTERNATIONAL PAPER ON THIS 3rd DAY OF APRIL, 2013. THE AREAS HATCHURED REPRESENT THE AREAS APPLIED TO BENEFICIAL USE.

PREPARATION OF THIS MAP IS FOR THE PURPOSE OF IDENTIFYING THE LOCATION OF THE WATER RIGHT ONLY AND HAS NO INTENT TO PROVIDE DIMENSIONS OR LOCATION OF PROPERTY OWNERSHIP LINES.





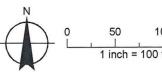


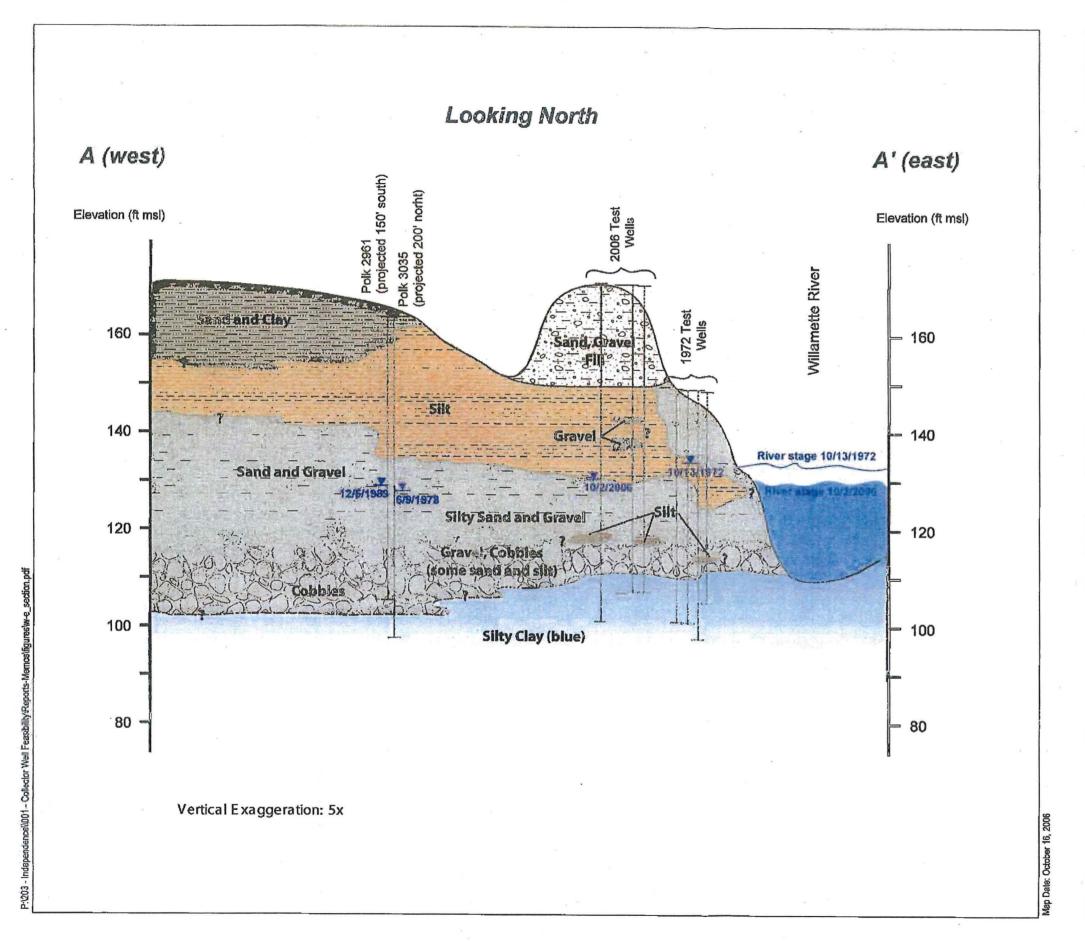


RECEIVED

SEP 1 9 2018

OWRD





LEGEND Geologic Units Gravel Silty Sand and Gravel Sand and Clay Static water leve! Polk 4053 Well ID RECEIVED SEP 1 9 2018 **OWRD Horizontal Scale** Feet Figure 7 **Geologic Cross Section A-A'** Collector Well Feasibility Study
Cities of Independence and Monmouth Groundwater Solutions Inc.

EXPIRES: 12:31-2018

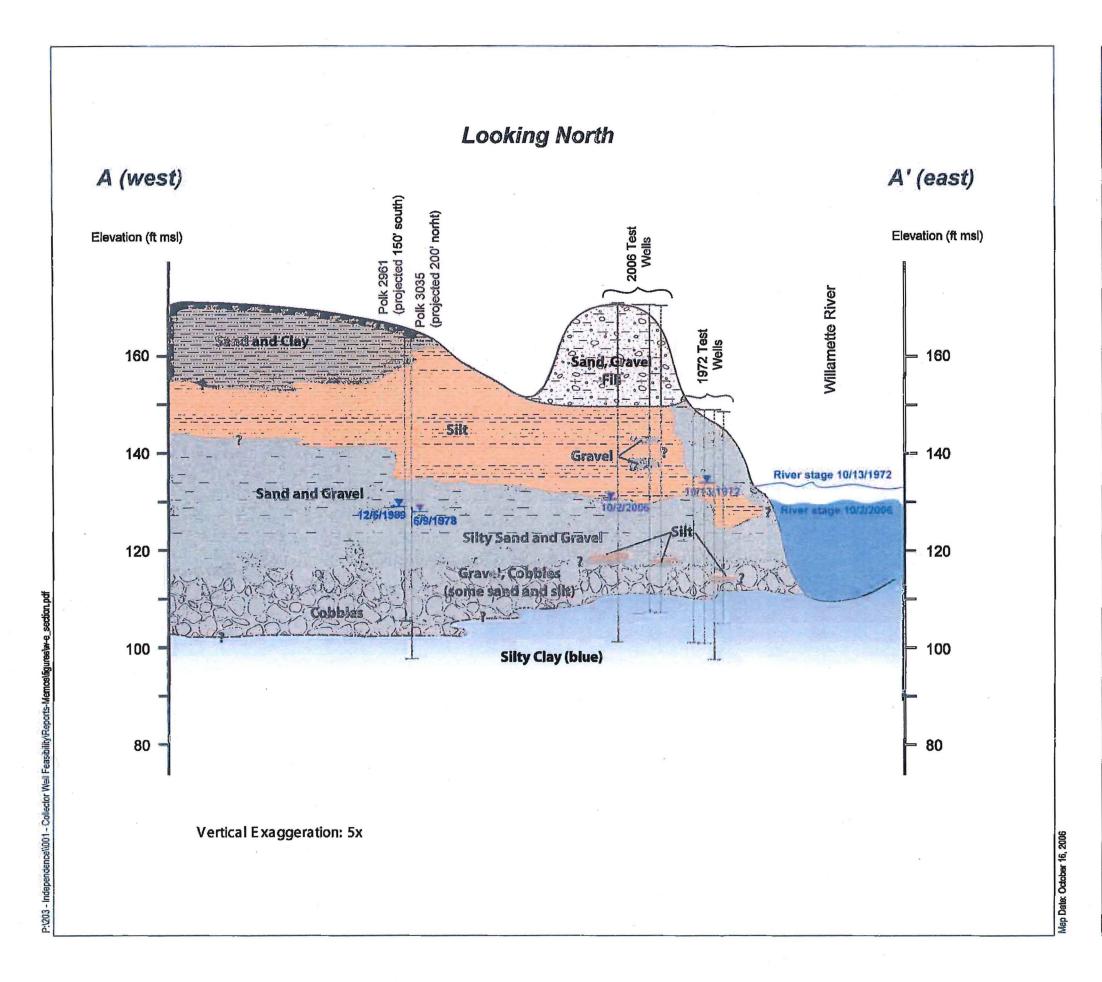
1 inch = 1,320 feet

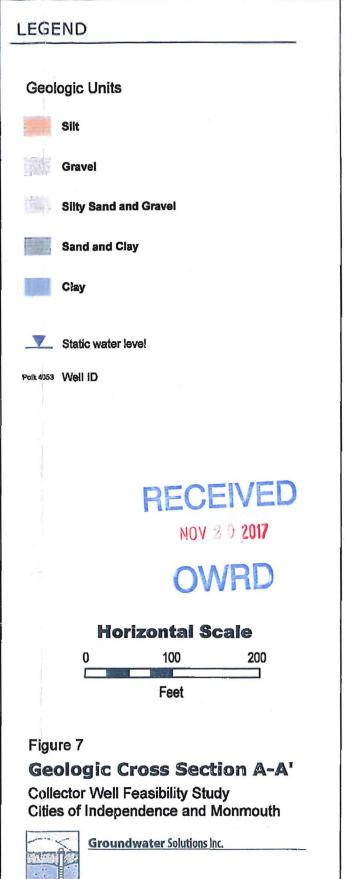
Water Solutions, Inc.

MAP NOTES

Date: November 16, 2017 Data Sources: BLM, OWRD, ESRI, Linn Co., USGS

Document Path. P. Portland 1602-Independence 1001-WR Due Ditigence Project_GIS Project_mxdstCert54268_TransferAp_Proposed.mxd





Document Path: P:\Portland\602-Independence\001-WR Due Diligence\Project_GIS\Project_mxds\Cert54268_TransferAp_Proposed.mxd

Water Solutions, Inc.

DLC 42

STATE OF OREGON

WATER RESOURCES DEPARTMENT

RECEIPT # 133146 725 Summer St. N.E. Ste. A SALEM, OR 97301-4172

1-4172 INVOICE #

(503) 986-0900 / (503) 986-0904 (fax)									
REC	EIVED FROM	1: First	merican	Title	APPLICATIO	ON .			
BY:		Insuran	e Com	many	PERMIT				
			7058		TRANSFER	1-12773			
CAS	H: CH	ECK#	THER: (IDENTIFY)			1 1 1 2			
		1091020			TOTAL REC'D	\$ 100.00			
	1083	TREASURY	4170 WRD M	ISC CASH A	CCT				
	1003	INEASUNT	4170 WID W	IISC CASH A	CCI				
	0407	COPIES				\$			
		OTHER: (II	DENTIFY)			\$			
	0243 I/S Lea	ase 0244	Muni Water Mgmt. Pla	an 024	45 Cons. Water _				
	(0.00)		4270 WRD O	PERATING	ACCT				
		MISCELLANEOUS		46111					
	0407	COPY & TAPE FEE	S	70111		\$			
	0410	RESEARCH FEES				\$			
	0408	MISC REVENUE:	(IDENTIFY)	<i>j</i>		\$			
	TC162	DEPOSIT LIAB. (ID	ENTIFY)			\$			
	0240	EXTENSION OF TH	ME			\$			
		WATER RIGHTS:		EXAM FEE		RECORD FEE			
	0201	SURFACE WATER		\$	0202	\$			
	0203	GROUND WATER		\$	0204	\$			
	0205	TRANSFER		\$					
		WELL CONSTRUCT	TION	EXAM FEE		LICENSE FEE			
	0218	WELL DRILL CONS		\$	0219	\$			
		LANDOWNER'S PE	RMIT /	1	0220	\$			
	0250	OTHER	(IDENTIFY)	Assia	oment	\$100.00			
		OTTEN	(IDENTIII 1)	1					
	0536	TREASURY	0437 WELL (CONST. STA	RT FEE				
	0211	WELL CONST STAF	RT FEE	\$	CARL	0#			
	0210	MONITORING WEL	LS	\$	CAR	0#			
		OTHER	(IDENTIFY)						
	0007			ACTIVITY	LIC NUMBER				
	\$10 may 10 miles	TREASURY	0467 HYDRO	ACTIVITY	LIC NOWIDER	\$			
	0233	POWER LICENSE				\$			
	0231	HYDRO LICENSE F	-EE (FW/WHD)	_					
		HYDRO APPLICATI	ION			\$			
		TREASURY	OTHER	/RDX	THE RESERVE OF THE STREET				
	ELIND		TITLE						
				WWW.					
	10000		VENDOR #			\$			
	DESCRIPTI	ON			-	9			
					11)				

Distribution - White Copy - Customer Vallow Copy - Fiscal Blue Copy - File Buff Copy - Fiscal

RECEIPT:

DATED: 7-27-2084



Water Resources Department

North Mall Office Building 725 Summer St NE, Ste A Salem, OR 97301 Phone: 503-986-0900

Phone: 503-986-0900 Fax: 503-986-0904 www.Oregon.gov/OWRD

July 31, 2020

First American Title Insurance Company 755 NE Evans Street McMinnville, OR 97128

Reference: Transfer T-12773

The assignment from International Paper Company to the City of Independence has been recorded in the records of the Water Resources Department.

The Departments records will now show the City of Independence as the transfer holder of record.

Our records have been changed accordingly and the original request is enclosed. Receipt number 133146 covering the recording fee is also enclosed.

A transfer is not a perfected water right, and has conditions and timelines that must be satisfied prior to a Certificate of Water Right being issued. Please review the transfer to be familiar with the conditions and timelines contained in the transfer.

Sincerely,

Mary F. Bjork

Water Rights Program Analyst Water Right Services Division

Enclosure: Original Request and Receipt #133146

cc: Watermaster #16

International Paper Company – 6400 Poplar Ave., Memphis, TN 38197 City of Independence – PO Box 7, Independence, OR 97351 Data Center, OWRD (cover letter & request) File

WED

O regon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301 (503) 986-0900 www.wrd.state.or.us

Request for Assignment

If the Department determines that the application is incomplete, fees have not been paid, or the required documents are not acceptable, the application and all fees submitted will be returned to the applicant.

If for multiple rights, a separate formand fee for each right will be required.

Clayton R. Ellis, Senior Vice President, Intern	ational Paper Comp	any		
Name of Current Holder of Record) 6400 Poplar Ave.	Memphis	TN	38197	901-419-4961
Mailing Address)	(City)		(Zip)	(Phone#)
hereby assign <u>all my interest</u> in and to <u>the</u> (example, sold all the land authorized und	der the right)			
hereby assign <u>all my interest</u> in and to <u>a po</u> statement; (<u>You must include a map</u> showi license/groundwater statement to be assign	ing the portion of the a	pplicati	on/permit/ti	ransfer order/limited
hereby assign <u>a portion of my interest</u> in a statement; (example, adding an additional	nd to <u>the entire</u> applic person)	ation/pe	rmit/transfe	er/limited license/groundwater
Application#;	Permit#	;T	ransfer# <u>T</u>	T-12773 (2.0 cfs);
	; Groundwate	r Statem	ent#	
City of Independence				
s filed in the office of the Water Resources Directly of Independence Name of New Owner) PO Box 7	ctor, to:		OR 9735	1 503-838-1212 (Phone #)
s filed in the office of the Water Resources Directity of Independence Name of New Owner)	Independent (City) described in the application of a list of all other own of your first and last number owners of the project of this Request of Asset	cation, peers' name ames at to	ermit, trans es and mail the spot ind cribed in th	(Phone #) fer order, limited license, or ing addresses and attach it to licated below N/A.

This certifies assignment and record change at Oregon Water Resources Department effective 8:00 a.m. on date of receipt at Salem, Oregon. Fee receipt #_/33146

For Director by Mary F. Bjork. Program Analyst in Water Rights Division.

The completed "Request for Assignment" form *must* be submitted to the Department along with the recording fee of \$100.

Assisn-Approve UBB 5-4-2020

CHECK NO. 3915237058

DATE: 7/22/2020

FILE NO.1031-3399171

SETTLEMENT DATE:

SELLER:

CHECK AMOUNT: \$100.00

BUYER: The City of Independence

Property Address: TBD, Albany, OR 97321

Funds Due

Charge Details: Recording Fee:

100.00

Re: Permit 23102 / Transfer T-12773

International Paper Company

RECEIVED

JUL 27 2020

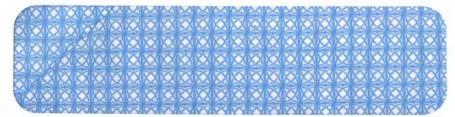
OWRD



775 NE Evans Street McMinnville, OR 97128 FORTLAND OR 972

24 JUL 2020 FM 3 L





STARNES Patrick K * WRD

From:

Terry R. Thomas <Terry.Thomas@ipaper.com>

Sent:

Thursday, January 23, 2020 11:23 AM

To:

STARNES Patrick K * WRD

Subject:

Correspondence with International Paper regarding Dan Davis retirement--Water

Rights/Albany, Oregon

Follow Up Flag:

Follow up

Flag Status:

Flagged

Good day Patrick,

I received a letter in the mail today from Julie Baustian, Water Right Support, Water Resources Department, State of Oregon regarding a water rights issue associated with our Albany, Oregon site----Reference T-12773.

This letter was sent to Dan Davis with International Paper in our Memphis office. Dan has retired and I have assumed his responsibilities. Can you see that this change/correction is noted in your files for all forthcoming correspondence? If there is someone else I need to speak with, please advise. Your name and email was included in the letter. Thank you kindly

Terry Thomas Manager, Surplus Facilities International Paper Company 16504 County Road 150 Courtland, AL 35618

C: 256.762.7207

T 12773



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

December 31, 2019

INTERNATIONAL PAPER COMPANY
-DAN DAVIS
-6400 POPLAR AVE
MEMPHIS, TN 38197

Terry Thomas Manages, Surphis Facilities 16504 County Road 150 Countland AL 35618

1/24/2020

Reference: T-12773 Correcting Final Order

Enclosed is a correcting final order recorded in Special Order Vol. 114, Page 618, issued to correct a scrivener's error in the order recorded in Special Order Vol. 114, Page 401-406. The enclosed final order has been amended to reflect the scrivener's error. Please keep this document with the final order in Special Order Vol. 114, Page 401 as additional information.

If you have any questions please contact your caseworker, Kelly Starnes, by telephone at (503) 986-0886 or by e-mail at Patrick.K.Starnes@oregon.gov.

Sincerely,

Julie C. Baustian Water Right Support

Transfers and Conservation Section

cc:

Watermaster Dist. #2 (via email)

GSI Water Solutions City of Independence Linn County Planning

Enclosures

BEFORE THE WATER RESOURCES DEPARTMENT

OF THE

STATE OF OREGON

)	ORDER CORRECTING A
)	SCRIVENOR'S ERROR IN
)	REMAINING RIGHT
)	CERTIFICATE 94271
)	
))))

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS TN 38197

Findings of Fact

- On November 21, 2019, the Department issued an order approving Transfer Application T-12773. The order was recorded at Special Order Volume 114, Page 401. A remaining right certificate was also issued as evidenced by Certificate 94271.
- 2. Remaining right Certificate 94271 contains a scrivener's error in the authorized rate of diversion. The Certificate erroneously lists the rate of diversion as being 13.0 cubic feet per second.
- The correct authorized rate of diversion is 16.0 cubic feet per second.

Now, therefore, it is ORDERED:

- 1. Water right Certificate 94271 is cancelled.
- 2. Water right Certificate 94208 is issued to supersede Certificate 94271 and to correctly describe the authorized rate of diversion as being 16.0 cubic feet per second.

3. All other provisions of Special Order Volume 114, page 401 remain in effect.

REC 3 1 2019 Dated in Salem Oregon on

. Jaran(illo, Transfer and Conservation Section Manager, for

THOMAS M BYLER, DIRECTOR Oregon Water Resources Department

Mailing Date:

JAN 0 3 2020

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-080 and OAR 690-01-005 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

STATE OF OREGON

COUNTY OF LINN

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WE I THE

WILLAMETTE INDUSTRIES INC. ALBANY PAPER MILL PO BOX 339 ALBANY, OR 97321

confirms the right to use the waters of the WILLAMETTE RIVER, a tributary of COLUMBIA RIVER for the purpose of manufacturing.

This right was perfected under Permit S-23102. The date of priority is DECEMBER 23, 1954. The amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 16.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the stream.

The point of diversion is located as follows:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

A description of the place of use to which this right is appurtenant is as follows:

		A CANTETT	A OTT ID	DIOTERRALE	SCAR X :
		MANUF	ACTUR	ING WILL	4 7 7 3
Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SENW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	NESW	47
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE *	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

This certificate is issued to correct a scrivener's error in the authorized rate of diversion in the certificate recorded at page 94271, State Record of Water Right Certificates, which described that portion of the water right previously confirmed by Certificate 54268 NOT modified by the provisions of an order of the Water Resources Director entered November 21, 2019, approving Transfer Application T-12773. This certificate supersedes Certificate 94271.

The issuance of this superseding certificate does not confirm the status of the water right in regard to the provisions of ORS 540.610 pertaining to forfeiture or abandonment.

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described and is subject to minimum flows established by the Water Resources Commission with an effective date prior to this right.

WITNESS the signature of the Water Resources Director, affixed

DEC 3 1 2019

Lisa J. Jaramillo, Transfer and Conservation Section Manager, for

THOMAS M. BYLER, DIRECTOR

Oregon Water Resources Department

Water Right Transfer Cover Sheet

41	
M	
1	

5W/6W

Transfer T-12773	Transfer Specialist:							
Transfer Type: Regular				00//				
Applicant Name/Address: INTERNATIONAL PAPER COMPANY 6400 POPLAR MEMPHIS, TN 38197	SUITE 240 CORVALL	SSMAN VESTERN BLVD IS, OR 97333	Rec Landowner Name/Address: 16504 County Rend 150 Countland, AL 35618					
CWRE Name/Number: Commentors: Name/Address:	Irr. District Na	ame/Address:	Affected Gov'ts Name/A City Of Independent Current Landowner Nam	ce				
Water Rights Affected				Carr				
Records Records App File No. Marked Copied Name	2	mit No. Certificat		RR/CR Nos. RR 94802				
□ □ S-29640 □ □ □	S-23	3102 54268	Yes No Yes No Yes No	9 1800				
Rec'd: November 20, 2017			IVERSION; PLACE C FACE WATER TO GI					
Fees Pd: 3780.00	WM District: 2	,	ODFW District:					
Initial Notice: November 28, 2017	WM Review se	ent: 11/27/17	ODFW Review sent: 11/27/17					
Acknowledgement Letter Sent 🛛			GW Review sent: 11	/27/17				
Processing Dates & Actions Deficiency Contacts: DPD Mailed: ODFW contact sheet sent with D WM measurement contact sheet: PD Signed: 1/9/19 PD Weekly Notice: 1/23/19		not requir Request for n News \$ recei	ews \$ sent:	10/10				
DPD Review (Optional) Reviewer:	Reviewer: Date: Coordinator: _ Date:	eview (Salem)	Final Order Review (Salem) Reviewer: Date: Coordinator: Date: Date:					
Comments/Special Issues: GW-W / O PUJ, OUSE, O PUD 1PD Sent 2/11/19 — Respond deute 3/12/2019 News Letter Sent 2/14/20 Special Order Volume: Vol 11 Pages 401-400 Final Order Signature Date: 11/21/2019 Notice of FO email'd to processors 11/22/2019 Correction Special Order Vol. 114, Pages 12/31/2019 F. O. Signature Date 12/31/2019								

STATE OF OREGON

COUNTY OF LINN

CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO

WILLAMETTE INDUSTRIES INC. ALBANY PAPER MILL PO BOX 339 ALBANY, OR 97321

confirms the right to use the waters of the WILLAMETTE RIVER, a tributary of COLUMBIA RIVER for the purpose of manufacturing.

This right was perfected under Permit S-23102. The date of priority is DECEMBER 23, 1954. The amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 13.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the stream.

The point of diversion is located as follows:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

A description of the place of use to which this right is appurtenant is as follows:

		MANUFA	ACTUR	ING
Twp	Rng	Mer	Sec	Q-Q DLC
10 S	3 W	WM	28	SW NE 47
10 S	3 W	WM	28	SE NW 47
10 S	3 W	WM	28	NE SW 44
10 S	3 W	WM	28	NE SW 47
10 S	3 W	WM	28	SE SW 44
10 S	3 W	WM	28	NW SE 44
10 S	3 W	WM	28	NW SE 47
10 S	3 W	WM	28	SW SE * 44
10 S	3 W	WM	33	NW NE 44
10 S	3 W	WM	33	NE NW 44

Per tabletion

Per tabletion

The stream

This certificate describes that portion of water right Certificate 54268, State Record of Water Right Certificates, NOT prodified by the provisions of an order of the Water Resources Director entered_____, approving Transfer Application T-12773.

The issuance of this superseding certificate does not confirm the status of the water right in regard to the provisions of ORS 540.610 pertaining to forfeiture or abandonment.

The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described and is subject to minimum flows established by the Water Resources Commission with an effective date prior to this right.

WITNESS the signature of the Water Resources Director, affixed

NOV **2 1** 2019

Lisa J Jaramillo, Cansfer and Conservation Section Manager, for

THOMAS M. BYLER, DIRECTOR

Oregon Water Resources Department

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

)	FINAL ORDER
)	APPROVING A CHANGE FROM A
)	SURFACE WATER POINT OF
)	DIVERSION TO GROUNDWATER
)	POINTS OF APPROPRIATION, A
)	CHANGE IN POINT OF DIVERSION, A
)	CHANGE IN PLACE OF USE, AND A
)	CHANGE IN CHARACTER OF USE
)))))))

Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE,OR 97351

Findings of Fact

- 1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and to change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- 2. The City of Independence, PO Box 7, Independence, OR 97351 is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 4. On May 9, 2013, the Department received a notice for specific to general industrial use change under Certificate 54268 per ORS 540.520(9). The authorized place of use resulting from this notice is described in Finding No. 10.

This final order is subject to judicial review by the Court of Appeals under ORS 183.482. Any petition for judicial review must be filed within the 60-day time period specified by ORS 183.482(1). Pursuant to ORS 536.075 and OAR 137-003-0675, you may petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

- 5. On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells.
- 6. On September 17, 2014, the applicant filed Instream Lease IL-1434. On December 5, 2014, the Department issued a final order recorded at Special Order Volume 93, Pages 900-906, that approved the lease for a 15.0 cubic foot per second (cfs) portion of Certificate 54268.
- 7. On March 13, 2019, the applicant filed an application to renew Instream Lease IL-1434. On March 29, 2019, the Department issued a final order recorded at Special Order Volume 112, pages 839-844, that approved the renewal of Instream Lease IL-1434.
- 8. On November 4, 2019, Instream Lease IL-1434 was partially terminated to remove 2.0 cubic feet per second (cfs) portion of Certificate 54268 from the instream lease by request of the applicant. The termination order was recorded at Special Order Volume 114, Page 326.
- 9. On February 11, 2019, the Department sent a copy of the draft Preliminary Determination proposing to approve Transfer Application T-12773 to the applicant. The draft Preliminary Determination cover letter set forth a deadline of March 12, 2019, for the applicant to respond.
- 10. On March 5, 2019, the applicant's agent requested that the Department amend the draft Preliminary Determination. The applicant requested clarification of the description of previous transfer application amendments, correction of the instream lease number, modifying the draft Preliminary Determination to reflect International Paper's specific to general industrial use notice authorized under ORS 540.520(9), and to correctly describe the applicant's proposed transfer completion date.
- 11. On March 26, 2019, the Department sent a copy of the revised draft Preliminary Determination to approve Transfer Application T-12773 to the applicant. The revised draft Preliminary Determination cover letter set forth a deadline of April 25, 2019 for the application to respond. The applicant provided the necessary information to demonstrate that the applicant is authorized to pursue the transfer and requested that the Department proceed with issuance of a Preliminary Determination.
- 12. On July 19, 2019, the Department issued a Preliminary Determination proposing to approve Transfer T-12773 and mailed a copy to the applicant. Additionally, notice of the Preliminary Determination for the transfer application was published on the Department's weekly notice on July 23, 2019 and in the Polk County Itemizer-Observer newspaper on July 24 and 31, 2019, pursuant to ORS 540.520 and OAR 690-380-4020. No protests were filed in response to the notice.

13. The portion of the right to be transferred is as follows:

Certificate: 54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use: INDUSTRIAL/MANUFACTURING

Priority Date: DECEMBER 23, 1954

Rate:

2.0 CUBIC FEET PER SECOND

Source:

WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	1 1/1	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	INDUST	RIAL/N	MANUF	ACTURING	3
Twp	Rng	Mer	Sec	DLC	Q-Q
10 S	3 W	WM	21	47	SW SE
10 S	3 W	WM	21	47	SE SE
10 S	3 W	WM	28	47	NE NE
10 S	3 W	WM	28	47	NW NE
10 S	3 W	WM	28	47	SW NE
10 S	3 W	WM	28	47	NE NW
10 S	3 W	WM	28	47	SE NW
10 S	3 W	WM	28	44	NE SW
10 S	3 W	WM	28	47	NE SW
10 S	3 W	WM	28	44	SE SW
10 S	3 W	WM	28	47	NE SW
10 S	3 W	WM	28	44	NW SE
10 S	3 W	WM	28	47	NW SE
10 S	3 W	WM	28	44	SW SE
10 S	3 W	WM	28	47	SW SE

14. Transfer Application T-12773 proposes to change the point of diversion approximately 13.5 miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET NORTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

15. Transfer Application T-12773 proposes to change from a surface water point of diversion to groundwater points of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 2000 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

- 16. Transfer Application T-12773 proposes to change the character of use to municipal.
- 17. Transfer Application T-12773 proposes to change the place of use of the right to:

MUNICIPAL
WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDENCE

18. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new surface water point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 19. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 20. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- 21. The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 22. The proposed changes would not result in enlargement of the right.
- 23. The proposed changes would not result in injury to other water rights.
- 24. All other application requirements are met.

Conclusions of Law

The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 is consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000.

Now, therefore, it is ORDERED:

- The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 are approved.
- 2. Except as provided in ORS 540.510(3), the right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion (POD 2), and new points of appropriation (Willamette Wells 1, 2, and 3), shall not exceed the quantity of water lawfully available at the original point of diversion (POD 1).
- The wells from which the water is taken under this right shall be constructed so that the use of the wells will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed wells.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed wells shall be subordinate to any existing right injured by the transferred water right.

- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the proposed surface water point of diversion (POD-2) consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.
- 11. The transferred portion of Certificate 54268 (2.0 cfs) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before **October 1, 2050**. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.
- 13. After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

Dated in Salem, Qregon on

Jaramillo, Transfer and Conservation Section Manager, for

NOV 2 1 2019

THOMAS MAYLER, DIRECTOR Oregon Water Resources Department

Mailing Date NOV 2 2 2019



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

July 17, 2019

VIA E-MAIL

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVENUE MEMPHIS TN 38197 e-mail Jim.Kirkpatrick@IPAPER.com

Receiving Landowner

CITY OF INDEPENDENCE PO BOX 7 INDEPENDENCE OR 97351

SUBJECT: Water Right Transfer Application T-12773

Please find enclosed the Preliminary Determination indicating that, based on the information available, the Department intends to approve application T-12773. This document is an intermediate step in the approval process; water may not be used legally as proposed in the transfer application until a Final Order has been issued by the Department. Please read this entire letter carefully to determine your responsibility for additional action.

A public notice is being published in the Department's weekly publication and in the Polk County Itemizer Observer newspaper, simultaneously with issuance of the Preliminary Determination. The notice initiates a period in which any person may file either a protest opposing the decision proposed by the Department in the Preliminary Determination or a standing statement supporting the Department's decision. The protest period will end 30 days after the last date of newspaper publication.

If no protest is filed, the Department will issue a Final Order consistent with the Preliminary Determination. You should receive a copy of the Final Order about 30 days after the close of the protest period.

If a protest is filed, the application may be referred to a contested case proceeding. A contested case provides an opportunity for the proponents and opponents of the decision proposed in the Preliminary Determination to present information and arguments supporting their position in a quasi-judicial proceeding.

Please do not hesitate to contact me at 503-986-0886 or <u>Patrick.K.Starnes@oregon.gov</u> if I may be of assistance.

Sincerely,

Kelly Starnes

Transfer Program Analyst

Transfer and Conservation Section

cc:

Transfer Application file T-12773

Lanaya Blakely, District 2 Watermaster (via e-mail)

Joel Plahn, District 16 Watermaster (via e-mail)

Adam Sussman, GSI Water Solutions, Agent for the receiving landowner (via e-mail)

Theodore R. Ressler, GSI Water Solutions, CWRE #78815 (via e-mail)

encs

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Transfer Application T-12773, Linn and Polk Counties		PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE FROM A SURFACE WATER POINT OF DIVERSION TO GROUNDWATER POINTS OF APPROPRIATION, A CHANGE IN POINT OF DIVERSION, A CHANGE IN PLACE OF USE, AND A CHANGE IN CHARACTER OF USE
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Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR 97351

Findings of Fact

- 1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and to change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- 2. The City of Independence, PO Box 7, Independence, OR 97351 is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 4. On May 9, 2013, the Department received a notice for specific to general industrial use change under Certificate 54268 per ORS 540.520(9). The authorized place of use resulting from this notice is described in Finding No. 10.
- 5. On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells.

Pursuant to OAR 690-380-4030, any person may file a protest or standing statement within 30 days after the last date of publication of notice of this preliminary determination.

- 6. On September 17, 2014, the applicant filed Instream Lease IL-1434. On December 5, 2014, the Department issued a final order recorded at Special Order Volume 93, Pages 900-906, that approved the lease for a 15.0 cubic foot per second (cfs) portion of Certificate 54268.
- 7. On March 13, 2019, the applicant filed an application to renew Instream Lease IL-1434. On March 29, 2019, the Department issued a final order recorded at Special Order Volume 112, pages 839-844, that approved the renewal of Instream Lease IL-1434.
- 8. On _______, 2019, Instream Lease IL-1434 was partially terminated to remove 2.0 cubic feet per second (cfs) portion of Certificate 54268 from the instream lease by request of the applicant. The termination order was recorded at Special Order Volume _____, Page _____.
- 9. On February 11, 2019, the Department sent a copy of the draft Preliminary Determination proposing to approve Transfer Application T-12773 to the applicant. The draft Preliminary Determination cover letter set forth a deadline of March 12, 2019, for the applicant to respond.
- 10. On March 5, 2019, the applicant's agent requested that the Department amend the draft Preliminary Determination. The applicant requested clarification of the description of previous transfer application amendments, correction of the instream lease number, modifying the draft Preliminary Determination to reflect International Paper's specific to general industrial use notice authorized under ORS 540.520(9), and to correctly describe the applicant's proposed transfer completion date.
- 11. On March 26, 2019, the Department sent a copy of the revised draft Preliminary Determination to approve Transfer Application T-12773 to the applicant. The revised draft Preliminary Determination cover letter set forth a deadline of April 25, 2019 for the application to respond. The applicant provided the necessary information to demonstrate that the applicant is authorized to pursue the transfer and requested that the Department proceed with issuance of a Preliminary Determination.

12. The portion of the right to be transferred is as follows:

Certificate: 54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use: INDUSTRIAL/MANUFACTURING

Priority Date: DECEMBER 23, 1954

Rate: 2.0 CUBIC FEET PER SECOND

Source: WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	INDUST	RIAL/N	MANUE	ACTURING	G
Twp	Rng	Mer	Sec	DLC	Q-Q
10 S	3 W	WM	21	47	SW SE
10 S	3 W	WM	21	47	SE SE
10 S	3 W	WM	28	47	NE NE
10 S	3 W	WM	28	47	NW NE
10 S	3 W	WM	28	47	SW NE
10 S	3 W	WM	28	47	NE NW
10 S	3 W	WM	28	47	SE NW
10 S	3 W	WM	28	44	NE SW
10 S	3 W	WM	28	47	NE SW
10 S	3 W	WM	28	44	SE SW
10 S	3 W	WM	28	47	NE SW
10 S	3 W	WM	28	44	NW SE
10 S	3 W	WM	28	47	NW SE
10 S	3 W	WM	28	· 44	SW SE
10 S	3 W	WM	28	47	SW SE

13. Transfer Application T-12773 proposes to change the point of diversion approximately 13.5 miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET NORTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

14. Transfer Application T-12773 proposes to change from a surface water point of diversion to groundwater points of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 2000 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

- 15. Transfer Application T-12773 proposes to change the character of use to municipal.
- 16. Transfer Application T-12773 proposes to change the place of use of the right to:

	MUNICIPAL
WITHIN THE SERVI	E BOUNDARY OF THE CITY OF INDEPENDENCE

17. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new surface water point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 18. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 21. The proposed changes would not result in enlargement of the right.
- 22. The proposed changes would not result in injury to other water rights.
- 23. All other application requirements are met.

Determination and Proposed Action

The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

- 1. The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 are approved.
- 2. Except as provided in ORS 540.510(3), the right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion (POD 2), and new points of appropriation (Willamette Wells 1, 2, and 3), shall not exceed the quantity of water lawfully available at the original point of diversion (POD 1).
- 5. The wells from which the water is taken under this right shall be constructed so that the use of the wells will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed wells.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed wells shall be subordinate to any existing right injured by the transferred water right.

- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the proposed surface water point of diversion (POD-2) consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.
- 11. The transferred portion of Certificate 54268 (2.0 cfs) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before **October 1, 2049**. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.
- 13. After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

Dated in Salem, Oregon on JUL 19 2019

Lisa J. Jaramillo Transfer and Conservation Section Manager, for

THOMAS M'BYLER, DIRECTOR Oregon Water Resources Department

This Preliminary Determination was prepared by Kelly Starnes. If you have questions about the information in this document, you may reach me at 503-986-0886 or Patrick.K.Starnes@oregon.gov.

Protests should be addressed to the attention of Water Rights Services Division, Water Resources Department, 725 Summer St. NE, Suite A, Salem, OR 97301-1266.

Regarding Service Members: Active duty servicemembers have a right to stay these proceedings under the federal Servicemembers Civil Relief Act. For more information contact the Oregon State Bar at 800-452-8260, the Oregon Military Department at 503-584-3571, or the nearest United States Armed Forces Legal Assistance Office through http://legalassistance.law.af.mil. The Oregon Military Department does not have a toll free number.





Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

Thank You

November 4, 2019

International Paper Vaughn Pieschl 14232 Clearwater La Pine, Oregon 97739 vaughn.pieschl@ipaper.com

Thank you for participating in the Short-Term Instream Leasing Program. I want to express appreciation for your cooperation in helping to improve stream flows for fish and aquatic life.

Enclosed is a copy of the partial termination and superseding final order approving the instream lease IL-1434.

If you have any questions, please call me at (503) 986-0884.

Sincerely,

Sarah Henderson

Flow Restoration Coordinator

Transfer and Conservation Section

cc:

for

Lanaya Blakely, Watermaster District 2 (via e-mail)

Kelly Starnes, Lead Transfer Caseworker

File IL-1434

Enclosure

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Instream Lease Application)	PARIAL TERMINATION ORDER
IL-1434, Linn County)	AND SUPERSEDING FINAL ORDER
•)	APPROVING AN INSTREAM LEASE

Authority

ORS 537.348 establishes the process in which a water right holder may submit a request to lease an existing water right for instream purposes. OAR Chapter 690, Division 077 implements the statutes and provides the Department's procedures and criteria for evaluating instream lease applications.

Lessor

International Paper Vaughn Pieschl 14232 Clearwater La Pine, Oregon 97739 vaughn.pieschl@ipaper.com

Findings of Fact

- On March 13, 2019, International Paper filed an application to renew instream lease IL-1434, involving a portion of Certificates 54268 and 85736 and the entirety of Certificates 89606 and 89604.
- 2. Certificate 91193 was issued on January 29, 2016 to supersede Certificate 85736.
- 3. The lease application requested to protect water instream for five years, terminating on December 31, 2023. A final order approving this lease was issued by the Department on March 29, 2019, as evidenced by Special Order Volume 112, Pages 839-844.
- 4. The final order contained a condition allowing the Lessor to terminate the lease in any year of the lease, prior to the lease being exercised that season, with written notification to the Department.
- 5. On October 14, 2019, the Department received a request from Terry Thomas, of International Paper to terminate 2.0 cfs of Certificate 54268 prior to the 2020 instream use period.
- This order is being issued to remove 2.0 cfs of Certificate 54268 at the end of the 2019 season, and identify the remaining instream use being protected during the 2020-2023 seasons.

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

7. The portion of the first right to be leased is as follows:

Certificate: 54268 in the name of Willamette Industries, Inc. (perfected under Permit

S-23102)

Use: Manufacturing Use Priority Date: December 23, 1954

Quantity: Rate: 15.0 Cubic Foot per Second (CFS)

Source: Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28 .	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

8. The second right to be leased is as follows:

Certificate: 91193 in the name of International Paper Company (perfected under

Permit S-47184)

Use: Industrial/Manufacturing Use

Priority Date: October 29, 1982 Quantity: Rate: 4.25 CFS

Source: Willamette River, tributary to the Columbia River

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	SW NE	46
10 S	3 W	WM	29	NE NW	46
10 S	3 W	WM	29	NE NW	55
10 S	3 W	WM	29	NW NW	55
105	3 M	MAM	29	SWIM	46
10 S	3 W	WM	29	SW NW	55
108	3₩	WW	29	SE NW	46
10 S	3 W	WM	29	SENW	55

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	29	NE SW	46
10 S	3 W	WM	29	SE SW	46

9. The third right to be leased is as follows:

Certificate:

89604 in the name of International Paper Co. (perfected under Permit

S-20469)

Use:

Industrial Uses

Priority Date:

June 11, 1943

Quantity:

Rate: 2.0 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original points of

diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source
21 S	1 W	WM	31	NE SE	Culp Creek
21 S	1 W	WM	32	NW SW	Row River

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S 1/2 NE 1/4	46
10 S	3 W	WM	29	E ½ NW ¼	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E 1/2 SW 1/4	46
10 S	3 W	WM	29	E 1/2 SW 1/4	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE 1/4	46
10 S	3 W	WM	29	S 1/2 SE 1/4	44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N 1/2 NE 1/4	44
10 S	3 W	WM	32	NW NE	
10 S	3 W	WM	32	SE NE	44
10 S	3 W	WM	32	SE NE	
10 S	3 W	WM	33	W ½ NW ¼	44

10. Certificate 89604 identifies the source for diversion as the Willamette River and identifies the actual source of water as Culp Creek and Row River. Culp Creek is tributary to the Row River and the Row River is tributary to the Coast Fork Willamette River. The Coast Fork

Willamette River is tributary to the Willamette River. Water is conveyed from the original points of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89604 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from Culp Creek and Row River.

11. The fourth right to be leased is as follows:

Certificate:

89606 in the name of International Paper Company (perfected under

Permit S-14106)

Use:

Industrial Use

Priority Date: Ouantity:

November 2, 1939

Rate: 1.93 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original point of

diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source	Measured Distances
21 S	1 W	WM	30	NW SW	Row River	30 FEET SOUTH AND 30 FEET WEST FROM THE SW CORNER OF LOT 3 (SE NW), SECTION 30

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD) on the Willamette River:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SWNW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S 1/2 NE 1/4	46
10 S	3 W	WM	29	E ½ NW ¼	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E ½ SW ¼	46
10 S	3 W	WM	29	E 1/2 SW 1/4	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE 1/4	46
10 S	3 W	WM	29	S 1/2 SE 1/4	44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N ½ NE ¼	44
10 S	3 W	WM	32	NW NE	
10 S	3 W	WM	32	' SE NE	44
10 S	3 W	WM	32 SE NE		
10 S	3 W	WM	33	W ½ NW ¼	44

- 12. Certificate 89606 identifies the source for diversion as the Willamette River and identifies the actual source of water as the Row River. Row River is tributary to the Coast Fork Willamette River and the Coast Fork Willamette River is tributary to the Willamette River. Water is conveyed from the original point of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89606 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from the Row River.
- 13. Certificates 54268, 91193, 89604, and 89606 do not specify an authorized period of use. However, the use is for manufacturing and/or industrial, which are considered year round uses unless otherwise specified in the Certificate.
- 14. The lease application includes the information required under OAR 690-077-0076(3). The Department provided notice of the lease application pursuant to OAR 690-077-0077(1). No comments were received.

15. The instream use for the remainder of the 2019 season is as follows:

Willamette River, tributary to the Columbia River

Instream Reach: At the POD (as described in Finding of Fact No. 7)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream
54268	12/23/1954	15.00	10859.50	January 1 – December 31

Instream Reach: At the POD (as described in Findings of Fact No. 8, 9 and 11)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream			
91193	10/29/1982	4.25	3076.86				
89604	6/11/1943	2.00	1447.93	I D 1 21			
89606	11/2/1939	1.93	1397.26	January 1 – December 31			
	Totals	8.18	5922.05				

16. The instream use for the 2020, 2021, 2022, and 2023 seasons are as follows:

Willamette River, tributary to the Columbia River

Instream Reach: At the POD (as described in Finding of Fact No. 7)

		Instream Rate	Instream	
Certificate	Priority Date	(cfs)	Volume (AF)	Period Protected Instream
54268	12/23/1954	13.00	9411.57	January 1 – December 31

Instream Reach: At the POD (as described in Findings of Fact No. 8, 9 and 11)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream
91193	10/29/1982	4.25	3076.86	
89604	6/11/1943	2.00	1447.93	1 0 1 01
89606	11/2/1939	1.93	1397.26	January 1 – December 31
	Totals	8.18	5922.05	

- 17. The amount and timing of the proposed instream flow is allowable within the limits and use of the original water rights.
- 18. The protection of flows at the authorized points of diversion is appropriate, considering:
 - a. The instream water use is located at the recorded points of diversion;
 - b. The location of confluences with other streams downstream of the points of diversion.
 - c. There are no known areas of natural loss of streamflow to the river bed downstream from the points of diversion; and
 - d. Any return flows resulting from the exercise of the existing water right would re-enter the river downstream of the points of the instream water right.
- 19. The total monthly quantities of water to be protected under existing and proposed instream rights at the points will provide for a beneficial purpose.
- 20. The total monthly quantities of water to be protected instream under existing and proposed instream rights at the points do not exceed the estimated average natural flow.
- 21. If approved, this instream lease is not reasonably expected to significantly affect land use as prescribed by ORS 197.180, OAR Chapter 660, Divisions 30 and 31, and OAR Chapter 690, Division 5.
- 22. Based upon review of the application, information provided by the Department's Watermaster, and other available information, the Department finds that the lease will not result in injury or enlargement. The order approving this instream lease may be modified or revoked under OAR 690-077-0077 if the Department later finds that the lease is causing injury to any existing water right or enlargement of the original right.
- 23. If a right which has been leased is later proposed to be leased again, transferred and/or reviewed for an allocation of conserved water, a new injury review shall be required. For example, instream transfers will be subject to a full and complete review to determine consistency with the requirements of OAR Chapter 690, Division 380 and Division 077. Approval of this lease does not establish a precedent for approval of any future transactions.
- 24. The Lessor requested that the lease terminate on December 31, 2023. The lease may commence upon the date this final order is signed.
- 25. The Lessor has requested the option of terminating the lease early with written notice to the Department.

Conclusions of Law

The Department concludes that the lease will not result in injury or enlargement, OAR 690-077-0077. The lease conforms to the applicable provisions of OAR 690-077-0015.

Now, therefore it is ORDERED:

- 1. The Lease as described herein is APPROVED.
- 2. During each year of the term of the lease, the former place of use will no longer receive water as part of these rights, any supplemental rights, or any other layered irrigation water rights, including ground water registrations and permits.
- 3. Special Order Volume 112, Pages 839-844 is now superseded and no longer valid.
- 4. The term of the lease will commence upon approval of the instream lease and terminate on December 31, 2023. For multiyear leases, the lessor *shall* have the option of terminating the lease any time each year with written notice to the Department. However, if the termination request is received less than 30-days prior to the instream use period (January 1 through December 31) or after the water rights' original period of allowed use has begun, the Department may issue an order terminating the lease but use of water may not be allowed until the following calendar year, unless the Director determines that enlargement would not occur.

Dated at Salem, Oregon this day NOV 0 4 2019

Lisa J. Jaramillo Transfer and Conservation Section Manager, for

THOMAS M BYLER, DIRECTOR, Oregon Water Resources Department

Mailing date: NOV 0 5 2019

This document was prepared by Sarah Henderson. If you have any questions, please call 503-986-0884.



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

November 21, 2019

WILLAMETTE INDUSTRIES INC. PO BOX 339 ALBANY, OR 97321

REFERENCE: Transfer Application T-12773

Enclosed is a copy of the final order approving your water right transfer application.

The time allowed to complete the transfer is specified in the final order. YOU SHOULD GIVE PARTICULAR ATTENTION TO THE TIME LIMIT. The water right for any portion of the authorized change in character of use or change in place of use NOT carried out within the time allowed will be lost.

An extension of the time limit can be allowed only upon a showing that diligent effort has been made to complete the actual change(s) within the time allowed.

You are required to hire a Certified Water Rights Examiner (CWRE) to complete a Claim of Beneficial Use report and map which must be submitted to this Department within one year of the date you complete the change(s) or within one year of the completion date authorized in the transfer final order, whichever occurs first.

If you have any questions related to the approval of this transfer, you may contact your caseworker, Kelly Starnes, by telephone at (503) 986-0886 or by e-mail at Patrick.K.Starnes@oregon.gov.

Sincerely,

Julie C. Baustian

Water Right Services Support

Transfers and Conservation Section

CC:

Joel M. Plahn, Watermaster Dist. #16 (via email)

Gsi Water Solutions Inc., Agent

Linn County Planning Department

City of Independence

Enclosure

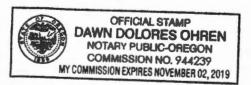
Affidavit Of Publication

STATE OF Oregon

County of Polk

147 SE Court St, Dallas, OR 97338

SS.



Notice of Preliminary Determination for Water Right Transfer T-12773

T-12773 filed by International Paper Company, 6400 Poplar Ave., Memphis, TN 38197, proposes a change in point of diversion, a change in place of use, a change in character of use, and a change from a surface water point of diversion to groundwater point of appropriation under Certificate 54268. The right allows the use of 2.0 cubic feet per second from the Willamette River in Sec. 32, T10S, R3W, WM for manufacturing in Sects. 21, 28 and 33, T10S, R3W, WM. The applicant proposes to move the point of diversion to within Sec. 28, T8S, R4W, WM, to move the surface water point of diversion to groundwater points of appropriation in Sects. 28 and 33, T8S, R4W, WM, to change the place of use to within the service boundary of the City of Independence, and to change the character of use to municipal. The Water Resources Department proposes to approve the transfer, based on the requirements of ORS Chapter 540 and OAR 690-380-5000. Any person may file, jointly or severally, a protest or standing statement within 30 days after the last date of newspaper publication of this notice, 07/31/2019. Call (503) 986-0815 to obtain additional information. If no protests are filed, the Department will issue a final order consistent with the preliminary determination.

(July 24, 31, 2019)

Notice of Preliminary Determination for Water Right Transfer T-12773

T-12773 filed by International Paper Company, 6400 Poplar Ave., Memphis, TN 38197, proposes a change in point of diversion, a change in place of use, a change in character of use, and a change from a surface water point of diversion to groundwater point of appropriation under Certificate 54268. The right allows the use of 2.0 cubic feet per second from the Willamette River in Sec. 32, T10S, R3W, WM for manufacturing in Sects. 21, 28 and 33, T10S, R3W, WM. The applicant proposes to move the point of diversion to within Sec. 28, T8S, R4W, WM, to move the surface water point of diversion to groundwater points of appropriation in Sects. 28 and 33, T8S, R4W, WM, to change the place of use to within the service boundary of the City of Independence, and to change the character of use to municipal. The Water Resources Department proposes to approve the transfer, based on the requirements of ORS Chapter 540 and OAR 690-380-5000.

Any person may file, jointly or severally, a protest or standing statement within 30 days after the last date of newspaper publication of this notice, MM/DD/YEAR. Call (503) 986-0815 to obtain additional information. If no protests are filed, the Department will issue a final order consistent with the preliminary determination.

STARNES Patrick K * WRD

From:

Kim Grigsby <kgrigsby@gsiws.com>

Sent:

Monday, May 20, 2019 9:47 AM

To:

STARNES Patrick K * WRD

Subject:

RE: Report of Land Ownership for Water Right Transfer T-12773

Attachments:

Attachments.pdf

Follow Up Flag:

Follow up

Flag Status:

Flagged

Kelly,

One of the documents was missing from the attachment that I just sent in my previous message. Please review the attached instead.

Kim

Kimberly Grigsby

Principal Water Resources Consultant direct: 541.257.9004 | mobile: 503.351.1912

1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333

GSI Water Solutions, Inc. | www.gsiws.com

From: Kim Grigsby

Sent: Monday, May 20, 2019 9:39 AM

To: STARNES Patrick K * WRD < Patrick.K.Starnes@oregon.gov>

Cc: Adam Sussman <asussman@gsiws.com>

Subject: Report of Land Ownership for Water Right Transfer T-12773

Kelly,

Enclosed are ownership reports required for Transfer T-12773. Also attached are a cover letter and associated attachments that provide further information about the relationship of these land owners to International Paper Company (the applicant). Please let us know if you have any questions or need additional information.

We are also sending you hard copies of these documents in the mail today.

Thank you,

Kim

Kimberly Grigsby

Principal Water Resources Consultant direct: 541.257.9004 | mobile: 503.351.1912 1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333 GSI Water Solutions, Inc. | www.gsiws.com



900 S.W. Fifth Avenue, Sulte 2600 Partland, Oregon 97204 main 503.224,3380 fax 503.220.2480 www.stoci.com

October 12, 2015

DAVID E. FILIPPI Direct (503) 294-9529 david.filippi@stoel.com

VIA ELECTRONIC MAIL patrick.k.starnes@state.or.us

Mr. Kelly Starnes Oregon Water Resources Department 725 Summer St NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for T-12065

Dear Mr. Starnes:

We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

Per recent discussions involving Dwight French and Adam Sussman, the primary concern for IPC is that the FROM lands as described in the Draft Preliminary Determination ("DPD") do not reflect the recent changes to Certificate 85736 as a result of IPC's specific-to-general industrial use changes. As a result, IPC does not agree with the description of the FROM lands in the DPD, and as such, IPC does not agree that the land ownership report requested in your letter includes the appropriate FROM lands.

As background, in May 2013, CWRE Ed Henricks assisted IPC with a specific-to-general industrial use change pursuant to SB 301 (ORS 540.520(9)) for Certificate 85736. Following much discussion with OWRD, including with Tom Paul and Dwight French, Mr. Henricks sent a formal notice regarding the change, including a new POU map, to the Department. The mapping for this change was done in conjunction with the re-mapping of several other water rights (also pursuant to SB 301), so as to align the various IPC water rights with the various IPC parcels, which IPC was intending to sell. A copy of the SB 301 map is included with this letter, and it shows the POU as including 322.5 acres, located east of and along the Willamette River. In particular, note that under the "NOTE" section on the map in the lower right corner, the second sentence reads: "This map amends / replaces the place of use map for certificate 85736."



Mr. Kelly Starnes October 12, 2015 Page 2

Thus, in regard to transfer application T-12065, instead of including the SB 301 map described above, the application mistakenly included a copy of the final proof survey map dated Sept. 19, 1997, which shows the POU as being 65.6 acres, located on the far eastern edge of the IPC property. Pursuant to its prior discussions with OWRD, IPC maintains that the SB 301 map accurately depicts the current POU for Certificate 85736, and the current location of the FROM lands for purposes of the transfer application. This issue is important given how all the water rights have been re-mapped on the various IP parcels, which again, are being marketed separately with distinct water rights. In particular, it is also important that the 4.25 cfs under Certificate 85736 that is not subject to the pending transfer remain appurtenant to the 322.5 acres (and not the 65.6 acres).

All that said, IPC is providing land ownership reports from AmeriTitle that include both the original 65.6 acres, as well as the new 322.5 acres. In particular, we would note the following items:

- 1) The ownership reports identify the landowner as IP Eat Three LLC for all tax lots except for 151, which shows Flakeboard America Limited ("Flakeboard") as the landowner.
- 2) Pursuant to the enclosed documentation, IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution.
- 3) With respect to the Flakeboard landownership, this is included in the original 65.6 acres. At the same time, the sale agreement to Flakeboard specifically excluded any interest in Certificate 85736, as evidenced in the enclosed documentation.
- 4) With respect to the sale to Millersburg Power LLC ("Millersburg), prior to the closing of the sale to Millersburg, IPC re-mapped various water rights so that a portion of T-7526 (1.2 cfs) and Permit S-54030 were appurtenant to the land being sold to Millersburg. As such, these rights were included in the sale, while no rights under Certificate 85736 were included.
- 5) Please note that even though tax lots 100 and 200 are actually in section 32, T10S R3W, Linn County puts those tax lots on the section 33 map. This helps to explain why AmeriTitle provided two separate reports to describe these locations.

Pursuant to communications with Mr. French, we understand that the Preliminary Determination will be revised to reflect the POU change that resulted from the specific-to-general industrial use



Mr. Kelly Starnes October 12, 2015 Page 3

change, and in particular, the PD will be revised so that the remaining right issued for that portion of Certificate 85736 that is not subject to transfer will reflect the 322.5 acres as the authorized POU, and not the former POU located on the original 65.6 acres.

In short, IPC believes the FROM land for purposes of T-12065 should be the 322.5 acres and not the 65.6 acres, and accordingly, that the land ownership report requested from the title company should be for the 322.5 acres described in the SB 301 map, and not the 65.6 acres described in the 1997 final proof survey map. At the same time, reports for both acreages were requested and are being provided to the Department with this letter.

Otherwise, IPC does not have any further comments regarding the DPD. Please do not hesitate to contact me if you have any questions regarding this comment letter.

Very truly yours,

David E. Filippi

DEF:dew Enclosures

cc:

Client

Adam Sussman Kim Grigsby

ASSISTANT SECRETARY'S CERTIFICATE INTERNATIONAL PAPER COMPANY

I, M.J.A. "Jekka" Pinckney, do hereby certify that I am an appointed Assistant Secretary of International Paper Company, a corporation organized and existing under the laws of the State of New York, and further certify as follows:

- 1. That IP EAT Three LLC, a Delaware limited liability company, was a wholly-owned subsidiary of International Paper Company.
- 2. That IP EAT Three LLC was dissolved in its jurisdiction of formation effective December 31, 2008, as evidenced by the Certificate of Cancellation attached hereto as "Exhibit A."
- 3. That International Paper Company, as the sole Member of IP EAT Three LLC, acquired all of the assets of IP EAT Three LLC upon its dissolution, as evidenced by the Instrument of Consent of the Sole Member to Action for Voluntary Dissolution, dated November 17, 2008, and attached hereto as "Exhibit B."

IN WITNESS WHEREOF, I have set my hand on and affixed the corporate seal of International Paper Company, this 21st day of April, 2009.

SEAL 1941

Mo.A. "Jekka" Pinckney, Assistant Secretary

STATE OF TENNESSEE)) SS. COUNTY OF SHELBY)

On the 21st day of April, 2009, before me, the undersigned, a Notary Public in and for said County and State, M.J.A. "Jekka" Pinckney, Assistant Secretary of International Paper Company, personally known to me, or proved to me on the basis of satisfactory evidence, to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public

TENNESSEE NOTARY PUBLIC

Expires Ju

EXHIBIT A

CERTIFICATE OF CANCELLATION OF IP EAT THREE LLC

Delaware

PAGE 1

The First State

I, HARRIET SMITH WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF CANCELLATION OF "IP EAT THREE LLC", FILED IN THIS OFFICE ON THE TWENTY-FIFTH DAY OF NOVEMBER, A.D. 2008, AT 4:29 O'CLOCK P.M.

AND I DO HEREBY FURTHER CERTIFY THAT THE EFFECTIVE DATE OF THE AFORESAID CERTIFICATE OF CANCELLATION IS THE THIRTY-FIRST DAY OF DECEMBER, A.D. 2008, AT 11:59 O'CLOCK P.M.

4574796 8100

081146108

Harriet Smith Windson Secretary of State

AUTHENTICATION: 5992494

DATE: 12-01-08

You may verify this certificate on line at corp. delaware. got/authver. shtml

State of Delaware Secretary of State Division of Corporations Delivered 04:28 PM 11/25/2008 FILED 04:29 PM 11/25/2008 SRV 081146108 - 4574796 FILE

STATE OF DELAWARE

CERTIFICATE OF CANCELLATION

OF

IP EAT THREE LLC

The name of the limited liability company is IP EAT THREE LLC.

in his

- The Certificate of Formation of IP EAT THREE LLC was filed on July 14, 2008.
- The date the cancellation of IP EAT THREE LLC was authorized is November 17, 2008, and is to be effective as of December 31, 2008, at 11:59 p.m.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Cancellation this 25th day of November 2008.

/s/ Michelle R. King Michelle R. King, Authorized Person

EXHIBIT B

INSTRUMENT OF CONSENT OF THE SOLE MEMBER
TO ACTION FOR VOLUNTARY DISSOLUTION
OF IP EAT THREE LLC

IP EAT THREE LLC

Instrument of Consent of the Sole Member To Action for Voluntary Dissolution

The undersigned, being the sole member of **IP EAT Three LLC**, a limited liability company organized and existing under the laws of the State of Delaware (the "Company"), does hereby waive its entitlement to notice of meeting and does hereby consent and agree, in accordance with the Delaware Limited Liability Company Act, to the following actions:

WHEREAS, it is deemed advisable and for the benefit of the Company that it be liquidated and dissolved,

NOW, THEREFORE, BE IT

RESOLVED, that the plan of liquidation pursuant to the applicable provisions of the Internal Revenue Code hereby is formulated to effect such liquidation and dissolution of the Company in accordance with the following resolutions; and further

RESOLVED, that Michelle R. King is hereby authorized and directed to file a Certificate of Cancellation, in accordance with Delaware law, with the Secretary of State of Delaware; and further

RESOLVED, that all of the property and assets of the Company, subject to its indebtedness, obligations and liabilities, be distributed to and vest in International Paper Company, a New York corporation (the "Parent Company"), as a liquidating distribution in complete cancellation of all of the outstanding indebtedness, obligations and liabilities, such distribution to be effective no later than December 31,2008 at 11:59 PM; and further

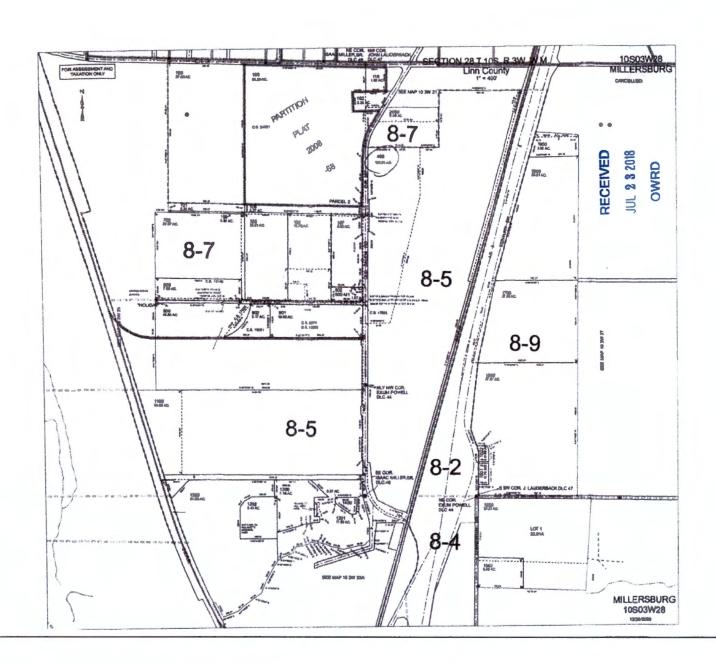
RESOLVED, that the officers of the sole member of the Company hereby are authorized and directed to pay all such fees and taxes and to do or cause to be done such further acts and things including, without limitation, the execution of deeds, bills of sale, and other documents of transfer, as they may deem necessary or proper in order to carry out the liquidation and dissolution of the Company and fully to effectuate the purposes of the foregoing resolutions.

Dated as of November 17, 2008

International Paper Company

End Isi

Errol Harris. Vice President and Treasurer





State of Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1266 (503) 986-0900

Application for Instream Lease

Part 1 of 4 - Minimum Requirements Checklist

	I through 4 and include the required attachments or check boxes as indicated. (N/A= Not Applicable)	Fee-
	Pursuant to ORS 537.348(2) and OAR 690-077	7
Check all items	included with this application. ($N/A = Not Applicable$)	
⊠Yes	Part 1 - Completed Minimum Requirements Checklist	and Application Fee
	Fees S520.00 for a lease involving four or more landowners or four or more water rights	
	☐ Check enclosed or ☐ Fee Charged to customer account (a	ccount name)
⊠ Yes	Part 2 - Completed Instream Lease Application Map Cl	necklist.
⊠ Yes	Part 3 – Completed Water Right and Instream Use Infor Include a separate Part 3 for each water right	
⊠ Yes	Part 4 - Completed Instream Lease Provisions and Sign	atures
⊠ Yes t No. S-23102 -	How many water rights are leased? 1 List them here Application No. S-29640 - IL 1434	:Certificate No. 54268 -
	Include a separate Part 3 for each water right.	
Yes N/A	Other Water Rights, if any, appurtenant to the lands in application and not proposed to be leased instream? List those other water rights here:	volved in the lease
☐ Yes ⊠ No	Conservation Reserve Enhancement Program (CREP). to be leased part of CREP or another Federal program (li	
Attachments:		
⊠Yes □ N/A	Map: Instream Lease map requirements (see Part 2 of the	is application)
⊠Yes □ N/A	Tax Lot Map: If a portion of the water right not included to lands owned by others, a tax lot map must be included. The tax lot map should clearly show the property involved.	with the lease application.
☐Yes ⊠ N/A	Supporting documentation describing why a right (or port subject to forfeiture even though the right has not been exconsecutive years. This information only needs to be probeen checked to identify that the water right has not been and is not subject to forfeiture (See Part 4 of 4).	ercised for five or more vided if the checkbox has
□Yes ⊠ N/A	 If the Lessor (water right holder) is not the deeded landow following. A notarized statement from the landowner consenting the recorded deed; or. A water right conveyance agreement and a copy of the landowner at the time the water right was conveyed; 	g to the lease and a copy of the recorded deed for the

 Other documentation which provides authority to pursue the lease absent consen of the landowner.
RECEIVED

OWRD

Part 2 of 4 - Instream Lease Application Map Checklist

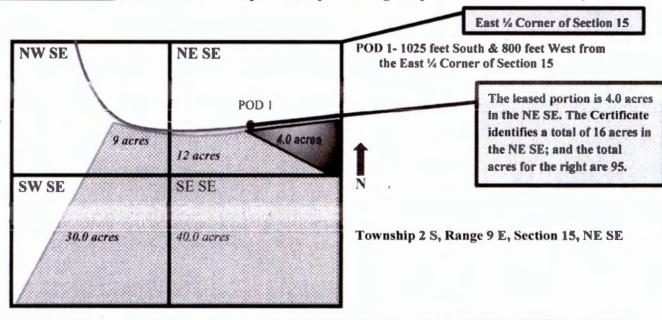
A Map is generally required for each water right not leased in its entirety

The application map (if required) should include all the items listed below and match the existing water right(s) of record. Check all boxes that apply.

This should be a <u>simple</u> map. (See example below). A copy of a final proof survey map with the portion to be leased shaded or hachured in will also suffice.

- N/A A map is required for each water right not leased in its entirety. More than one QQ and property may be included on each map. A map is not required, if leasing the entire right or if the right to be leased is for municipal or quasi-municipal water use.
- The map should be of sufficient quality to be reproducible. Please do not use highlighters to mark items on the map as highlighters do not always copy.
- A North arrow and map scale (no smaller than 1'' = 1320').
- Township, Range, Section, quarter quarter (QQ), and a clearly labeled survey corner.
- For irrigation or other similar use, the number of acres to be leased in each quarterquarter clearly labeled and hatchured to differentiate between the acres being leased and any remaining. If the place of use is broken down by more than one priority date, or source stream, and/or point of diversion you must identify each with separate hachuring and clearly label.
- If available, identify the existing point(s) of diversion.

EXAMPLE MAP (the darker shaded portion representing the portion leased instream)



RECEIVED

JUL 2 3 2018

OWRD

Part 3 of 4 - Water Right and Instream Use Information

Use a separate Part 3 for each water right to be leased instream

Water Right Information

Water right # Certificate

No. 54268 - Permit No. S-23102 - Application No. S-29640 - IL 143

Table 1

Water Right Information: Provide a description of the originating water right to be leased. Also include your tax lot number(s). Fill in all applicable information. For example, if your water right has multiple points of diversion (POD) but they're not numbered, you do not need to include a number. If not enough room below, you may add additional rows (see instructions) or attach spreadsheet (matching Table 1). Please clearly label any attachments.

If only lea complete T	Entirety - If the entire water right is to be leased, skip to Table 3.									
Priority Date	POD#	Twp	Rng	Sec	Q-Q	Tax Lot	Gov't Lot/DLC	Acres	USE	Previous Lease # (if any)
			and the	100		NAMPLE	Acceptance			
12/2/1901	3	2-5	9-E	15	NE SE	100	47	4.0	IR	IL-1100
12/23/1954	1	10-S	3-W	21	SE-SE	400	54	1.5	MANUFA CTURIN G	1434
	1	10-S	3-W	21	SW-SE	400	54	8.2		1434
	1	10-S	3-W	28	NE-NE	400	47	0.4		1434
	1	10-S	3-W	28	NW-NE	400	47	37.0		1434
	1	10-S	3-W	28	NE-NW	400	47	8.8		1434
	1	10-S	3-W	28	SW-NE	400	47	27.7		1434
	1	10-S	3-W	28	SE-NW	400	47	11.2		1434
	1	10-S	3-W	28	NW-SE	400	47	16.0		1434
	1	10-S	3-W	28	NW-SE	400	44	1.0		1434
	1	10-S	3-W	28	NE-SW	400	47	8.9		1434
	1	10-S	3-W	28	NE-SW	400	44	4.0		1434
	-1	10-S	3-W	28	SW-SE	400	44	5.8		1434
	1	10-S	3-W	28	SE-SW	400	44	5.9		1434

Total Acres: 134.5 SEE ATTACHMENT "F" (ORS

540.520(9) SB 301 LANDS) & "A"

Table 2

	o illustra	te the to	tals for	the water right proposed to be lea	sed instream	
Total rate and v leased. If not en	volume by nough roo	priority m below	date, Po	DD, use and acreage as appropriate cay add additional rows (see instruction attachments. (cfs = cubic feet per	onsidering the	e right to be spreadsheet
Priority Date	POD#	Use	Total Acres	Other Information (such as conditions/limitations on the right)	Total Rate (cfs)	Total Volume (af)
12/23/1954	1	MAN	134.5	MANUFACTURING	17	NA
Total af from sto	rage, if app	licable: _	AF	or 🔀 N/A	RE	CEIVED
Any additional in	formation	about the	right: 15	5.0 CFS OF THIS RIGHT ARE PART O		

Table 3

Point of Diversion (POD) description: If the POD is not described on the certificate or if there is more
than one POD listed on the certificate, then the specific POD(s) involved in the lease must be described.
If not enough room below, you may add additional rows (see instructions) or attach spreadsheet
(matching Table 3). Please clearly label any attachments.

POD#	Twp	Rng	Sec	Q-Q	DLC/ Gov't let	Measured Distances, latitude/longitude coordinates, or river mile (if unknown you may indicate "unknown")
1	10-3	3-W	32	NE-NE		1220' WEST & 1180' SOUTH OF NE Corner of Sec. 32
	-			-		

Please check this box if you don't know the location of the POD(s) and want the Department to identify the location of the POD(s) for the purpose of the instream lease.

Part 3 of 4 cont. - Water Right and Instream Use Information

Instream Use Information

Table 4

River/ Stream	Name: \	Willamet	te, tributa	ary to Columbia	River Basi	n: Willamette
	nore than				e, volume and instre creage as appropriate	am period by priority considering the
If not enough re	oom belo				e instructions) or atta	ach a spreadsheet
Priority date	POD#	Use	Acres	Proposed Instrea		Total instream volume (af)
SAME	1	SAME	ALL	YEAR ROUND		NA
Certifica irrigation OR Please As part of its re	te if leasing season of check this eview process.	ng the en or the author s box if y cess, the	tire right horized p you are no Departm t(s) being	The proposed in period of allowed to sure of the propent will identify the leased and instre	oosed rate, volume ar ne appropriate instrea	e no longer than the
				Instream Reach		
	pically b	egins at		int of diversion ce stream: From	Or Proposed Instr	
within a reach l	below the	POD, if	possible.	(If no reach is ide	osed reach and want entified or the above may be processed to	
	RELIEF TO		Addition	al Instream Info	rmation	
Yes N/A	Conditio	ns to av	oid enlar	rgement or injur	to other water rig	hts, if any, or other
Instream Lease Ar						Pa

limitations: list here
Note: The Department may identify additional conditions to prevent injury and/or enlargement.
Any additional information about the proposed instream use: This right is for 18.0 cfs. International Paper (IP) the current owner uses 17 of the 18 cfs. Earlier by Instream Lease 1434 IP leased 15.0 cfs instream. 2.0 cfs was kept active for demolition activities on site. Those activities are complete and the 2.0 cfs are not to be leased instream. 1.0 cfs of the right is dedicated to Arauco (previously Flakeboard Company) as noted on "Attachement A" ORS 540.520(9) SB 301 lands

Part 4 of 4 – Lease Provisions and Party Signatures

Term of the Lease (may be from 1 year up to 5 years): The lease is requested to begin in: month April year 2018 and end: month April year 2023 Note: The begin month is generally the first month of the irrigation season and the end month is the last month	
	1
Note: The begin month is generally the first month of the irrigation season and the end month is the last month	١
in the irrigation season. If not an irrigation right, this would be the first and last month of your authorized	- 1
period of allowed use.	
Public use: Check the public use(s) this lease will serve Termination provision (for multiyear leases):	
(as defined by ORS 537.332): The parties to the lease request (choose one):	
X Conservation, maintenance and enhancement of X a. The option of terminating the lease prior to	
aquatic, fish and wildlife, fish and wildlife habitat and expiration of the full term with written notic	e to
any other ecological values. the Department by the Lessor(s) and/or Less	ee.
X Recreation	
X Recreation Description of terminating the lease prior to expiration of the full term, with consent by a parties to the lease.	11
Navigation parties to the lease.	
C. The parties would not like to include a	
Termination Provision.	
(See instructions for limitations to this provision)	
Additive/Replacing Relationship to other instream water rights: Instream leases are generally additive to	
other existing instream water rights created as a result of instream leases, transfers and/or allocations of	
conserved water. Since instream leases are also generally senior to other instream rights created through a star	e
agency process or conversion of minimum flows, they generally replace a portion of these junior instream	
rights.	
If you would like this lease to relate to other instream water rights differently, please check this box.	
And attach an explanation of your intent.	
Validity of the Right(s) to be leased (check the appropriate box):	
X The water right(s) to be leased have been used under the terms and conditions of the right(s) during the last	
five years or have been leased instream; or	
The water right(s) have not been used for the last five years according to the terms and conditions of the	
right(s). However, the water right(s) is not subject to forfeiture under ORS 540.610(2). Documentation	
describing why the water right(s) is not subject to forfeiture is provided.	

Precedent: If a right which has been leased is later proposed to be leased again or later transferred or become part of an allocation of conserved water project, a new injury review shall be required. An instream lease shall not set a precedent on a future transaction.

The undersigned declare:

- 1. The Lessor(s) agree during the term of this lease, to suspend use of water allowed under the subject water right(s) and under any appurtenant primary or supplemental water right(s) not involved in the lease application; and
- 2. The Lessor(s) certify that I/we are the water right holder(s) of the right(s representation this instream lease application. If not the deeded landowner, I/we have provided documentation with the lease

JUL 2 3 2018

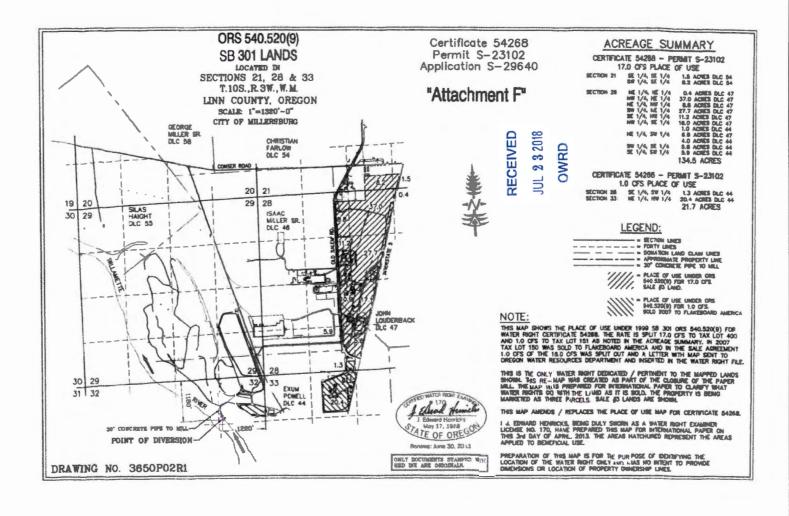
application that I/we have authorization to pursue the lease application and/or have obtained consent from the deeded landowner; and
3. All parties affirm that information provided in this lease application is true and accurate. Date: 7/10/18 Signature of Lessor
Printed name (and title): <u>Dan M. Davis, Manager Surplus Properties</u> International Paper Mailing Address (with state and zip): 6400 Poplar Ave. Memphis, TN 38197 Phone number (include area code): 901-419-4270 **E-mail address: <u>Dan.Davis@ipaper.com</u>
Signature of Co-Lessor Printed name (and title): Business/organization name: Mailing Address (with state and zip): Phone number (include area code): **E-mail address:
Signature of Lessee Printed name (and title): Business/organization name: Mailing Address (with state and zip):
Mailing Address (with state and zip): **E-mail address:

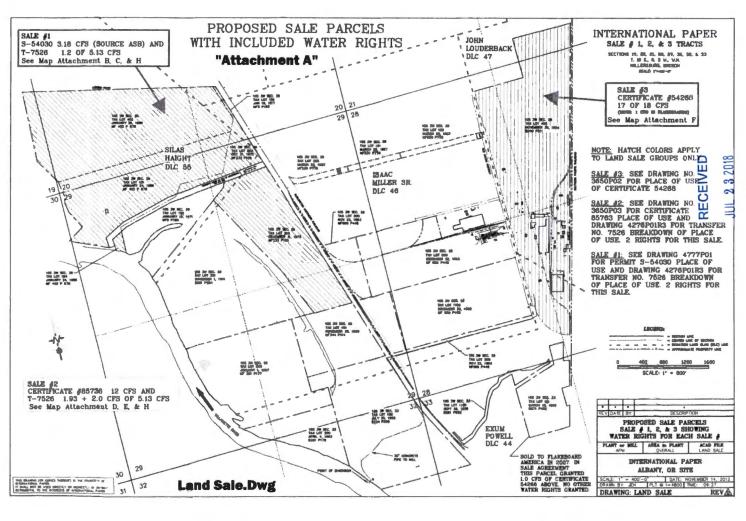
** BY PROVIDING AN E-MAIL ADDRESS, CONSENT IS GIVEN TO RECEIVE ALL CORRESPONDENCE FROM THE DEPARTMENT ELECTRONICALLY. COPIES OF THE FINAL ORDER DOCUMENTS WILL ALSO BE MAILED TO THE LESSOR.

RECEIVED

JUL 2 3 2018

OWRD









2730 Pacific 8hd., S.E. Albany, OR 97322 Albany Office Phone (541)-926-7771 Albany Fox (541)-928-1988 Albany Direct Line (541)-924-5340 Cell Phone (541)-979-8652

January 11, 2007

Tom Paul, Deputy Director
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Re: Sale of business and site service agreement of water rights involved with the property.

We have recently completed the sale of our Duraflake particle board plant in Albany, Oregon to Flakeboard America Limited. Weyerhaeuser still owns and operates a papermill facility, Trus Joist laminated veneer lumber facility, and trucking operation on lands adjoining the parcel sold to Flakeboard America Limited. Most of these facilities, when owned by Weyerhaeuser, were and still are supplied with water from the Willamette River by three water rights.

In the site service agreement enclosed on page A-1 under 1. Water a. Site Service commitment. Paragraph two states "Weyerhaeuser will complete the work necessary with the Oregon Water Resources Department (WRD) to record and clarify the separate usage of water for the purpose of manufacturing at Buyer's Duraflake PB site. One cubic foot per second (cfs) of water will be used and dedicated from Water Right Permit # 23102, Certificate # 54268. Water Right # T 7526 and Application # 64514 {Permit # S 47184} are excluded from this Agreement and no water as evidenced there under will be supplied to Buyer's Duraflake PB site." Paragraph 4 provides an easement to Flakeboard America Limited for the delivery system.

As per our earlier conversation this sale to Flakeboard America Limited does not require a water right transfer. None of the key elements of a water right transfer have changed; The place of use, type of use, rate, source of water, and point of diversion have not changed for Certificate # 54268.

The place of use for T 7526 and Application # 64514 {Permit # S 47184} no longer includes the Duraflake property, Tax lot 151 assessors map 10S03W33A, Linn County, OR and further described in the attached SPECIAL WARRANTY DEED. Claim of Beneficial Use (CBU) reports have been submitted for these two water rights excluded in the sale. I am enclosing amended maps for each CBU. The CBU for permit S-47184 was submitted on September 15, 1997 under the name Willamette Industries, Inc. I have enclosed a Request for Assignment and five pages of the Articles of Merger filed June 14, 2002 with the Oregon Secretary of State showing the present owner as Weyerhaeuser Company. The CBU for T- 7526 was submitted on November 8, 2002 under the name of Willamette Industries, Inc. I have enclosed a Request for Assignment to Weyerhaeuser Company without the Articles of Merger as they were included in the original CBU report.

This letter is to inform the WRD of the afore mentioned site service agreement. Please insert a copy of this letter, with attachments, into each water right folder at the department for future reference, clarification, and use. Also please insert the amended maps and assignments in the corresponding CBU files.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely,

J. Edward Henricks, CWRE Surveyor / Project Manager WEYERHAEUSER COMPANY

CC:

Jud Jackson Senior Legal Counsel Weyerhaeuser Company PO Box 9777

A. Edward Henrich

Federal Way, WA 98063

Gordon Yutzy Flakeboard 2250 Old Salem Road Albany, OR 97321

enclosures:

- 1) Special Warranty Deed
- 3) 2 amended maps
- 5) 2 Request for Assignment forms

Dick Leedy

Senior Project Engineer Weyerhaeuser company 3251 Old Salem Road Albany, OR 97321

2) Transition Site Services Agreement for Duraflake PB

4) Articles of Merger



TRANSITION SITE SERVICES AGREEMENT FOR DURAFLAKE PB

This Transition Site Services Agreement (this "Agreement") is made as of July 28, 2006 by and between Weyerhaeuser Company, a Washington corporation ("Weyerhaeuser"), and Flakeboard America Limited, a Delaware corporation ("Buyer").

RECITALS

- A. Flakeboard Company Limited ("FB") and Weyerhaeuser entered into an Asset Purchase and Sale Agreement dated as of May 31, 2006 (the "Purchase Agreement") pursuant to which FB agreed to acquire, among other things, the Assets located at the Site (as defined in Article 1 below). Capitalized terms used but not defined in this Agreement shall have the meanings given such terms in the Purchase Agreement.
- B. FB assigned the Purchase Agreement in whole to Buyer.
- C. As of the Closing Date under the Purchase Agreement, Buyer does not have in place the facilities and infrastructure to independently provide certain services at the Sites.
- Buyer desires to obtain from Weyerhaeuser and Weyerhaeuser desires to provide to Buyer certain site services at the Sites.

AGREEMENT

Now, Therefore, the parties hereto agree as follows:

ARTICLE 1. AGREEMENT TO PROVIDE SITE SERVICES. Upon the terms and subject to the conditions set forth in this Agreement, Weyerhaeuser agrees to provide to Buyer through Weyerhaeuser's existing facilities the services set forth on Exhibit A hereto (the "Site Services"), and Buyer agrees to take from and to pay Weyerhaeuser for such Site Services. The Site Services shall be provided at the Duraflake PB facility (the "Site"), as more fully described on Exhibit A hereto

ARTICLE 2. TERM.

- (A) The term of this Agreement shall commence on the Closing Date under the Purchase Agreement and shall continue until the three-year anniversary of the Closing Date. Thereafter, this Agreement will automatically renew for additional three-year renewal periods, unless Weyerhaeuser notifies Buyer of its intent to terminate one or more of the Site Services and/or this Agreement as provided in paragraph (B) below.
- (B) At any time after the one-year anniversary of the Closing Date, Weyerhaeuser may provide notice of its intent to terminate any one or more of the Site Services and/or this Agreement; provided, that Weyerhaeuser will be obligated to continue providing such Site Service(s) for a period of up to two years after the date of such notice to allow Buyer time to

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TRANSITION SITE SERVICES AGREEMENT - DURAFLAKE PB CONFIDENTIAL

PAGE !

replace such Site Service(s); and provided, further, that prior to any such termination of the water Site Service (Item 1 on Exhibit A), Weyerhaeuser will provide Buyer with perpetual easement 16 feet in width for the erection, construction, maintenance, operation, and repair of one or more pipe lines for said Site Service (the "Water Easement").

- ARTICLE 3. PRICE. Buyer shall pay Weyerhaeuser for the Site Services provided under this Agreement in the amounts set forth on Exhibit A hereto.
- ARTICLE 4. PAYMENT. Unless the parties otherwise agree, Weyerhaeuser shall bill Buyer for the Site Services on a monthly basis and Buyer shall pay each bill within ten days.
- ARTICLE 5. TERMINATION. This Agreement and the parties' obligations hereunder shall terminate as set forth in this Article 5:
- (A) TERMINATION BY COMPLETION OF TERM. This Agreement shall terminate upon the expiration of the term and on the conditions set forth in Article 2 hereof. This Agreement shall terminate as to each Site Service upon the expiration of the commitment term for such Site Service set forth on Exhibit A hereto.
- (B) TERMINATION BY COMPLETION OF TRANSITION. This Agreement shall terminate as to each Site Service on the date that Buyer has completed its transition and no longer reasonably needs such Site Service under this Agreement.
- (C) TERMINATION FOR BREACH, FINANCIAL CONDITION. Without prejudice to its other lawful rights and remedies, either party shall have the right to terminate this Agreement at any time upon the occurrence of any of the following events:
 - (1) The other party breaches or is in default of any material term, condition or obligation under this Agreement, which breach or default is (a) not waived in writing by the non-breaching party or (b) not cured to the non-breaching party's reasonable satisfaction within 15 days after the breaching party's receipt of written notice thereof (or, if not reasonably capable of being cured within such 15-day period, the breaching party fails to commence such cure within such 15-day period and thereafter diligently pursue such cure). Failure of Buyer to make payment for the Site Services when due shall be a material breach of this Agreement.
 - (2) Any proceeding in bankruptcy, reorganization or for the appointment of a receiver or trustee, or any other proceeding under any law for the relief of debtors, shall be instituted by the other party, or brought involuntarily against the other party and not dismissed within a period of 60 days from the date filed, or if the other party shall make an assignment for the benefit of creditors.
- (D) TERMINATION DUE TO CHANGED CIRCUMSTANCES. This Agreement may be terminated by Weyerhaeuser in accordance with Article 11(A)(3) hereof.
- (E) TERMINATION BY MUTUAL AGREEMENT. This Agreement may be terminated in whole or in part at any time by the mutual written agreement of the parties hereto.

ARTICLE 6 DIRECT ACQUISITION OF SERVICES BY BUYER. Except for Site Services that the parties mutually agree in writing to continue, Buyer shall use commercially reasonable efforts to as promptly as practicable independently provide its own services, enter into long-term arrangements for the provision of such services or procure such services from a third party, at which time this Agreement shall terminate with respect to such Site Services in accordance with Article 5(B) hereof. Buyer shall be solely responsible for all costs and expenses associated with such direct acquisition of services.

ARTICLE 7 COMPLIANCE WITH LAW AND POLICIES.

- (A) COMPLIANCE WITH LAW. Each party shall, in the performance of this Agreement, comply with each statute, law, ordinance, code, rule, regulation, order, license, permit, judgment, decree or directive of any federal, state, county, municipal or local government (including any subdivision or agency thereof) applicable to the carrying on of its business and the performance of its obligations hereunder, including applicable Environmental Laws.
- (B) COMPLIANCE WITH POLICIES; ACCESS TO PREMISES. When a party's employees, contractors or representatives are on the premises of the other party, such party shall cause such persons to observe the working hours, working rules and safety and security policies and procedures established by the other party. Weyerhaeuser shall have such access to Buyer's premises as Weyerhaeuser determines is necessary to perform its obligations under this Agreement, including monitoring, maintenance and repair related to the Site Services.

ARTICLE 8 WARRANTY; LIMITATION OF LIABILITY.

- (A) WARRANTY. Weyerhaeuser represents and warrants to Buyer that it shall use commercially reasonable efforts to provide the Site Services in accordance with the terms of this Agreement. WEYERHAEUSER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES, WHETHER OF MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, FOR SAID SITE SERVICES.
- (B) LIMITATION OF LIABILITY. Notwithstanding anything in this Agreement to the contrary, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LOSS OF PROFITS, LOSS OF USE, DOWNTIME, OR LOSS OF SALES, FOR ANY BREACH OF OR FAILURE TO PERFORM THIS AGREEMENT, REGARDLESS OF WHETHER ANY SUCH DAMAGES WERE FORESEEABLE AND REGARDLESS OF WHETHER THE CLAIM SOUNDS IN CONTRACT, TORT OR ANY OTHER THEORY.

ARTICLE 9 COVENANTS OF BUYER.

- (A) Buyer shall maintain in good repair all property, fixtures, equipment, materials and systems located on Buyer's site used in connection with providing the Site Services, and shall promptly repair any damage or loss thereto. All maintenance, repairs and modifications thereto shall be performed in compliance with applicable laws, codes and standards using first quality materials fit for their intended purpose.
- (B) Buyer shall promptly notify Weyerhaeuser if it becomes aware of any impairment to any property, fixture, equipment, material or system related to the Site Services, or if it becomes aware of any required maintenance or repair thereto, or if it makes any modifications thereto. Any work on Weyerhaeuser's property, fixtures, equipment, materials or systems shall require the prior approval of Weyerhaeuser.
- (C) Buyer shall notify Weyerhaeuser, reasonably in advance of its transfer, of any change to the substance or quantity of materials or substances sent to Weyerhaeuser's facility or property for treatment or processing, including any unsanitary, hazardous or toxic materials or substances. Buyer agrees that Weyerhaeuser shall not be responsible for or have any liability for dangerous, unsanitary, hazardous or toxic materials or substances on or from Buyer's site.
 - (D) Buyer shall obtain and maintain the following insurance coverages:
 - (1) Commercial General Liability insurance with a limit of not less than \$1,000,000 per occurrence and \$1,000,000 annual aggregates, providing coverage for bodily injury, personal injury and property damage; contractual liability; and product and completed operations liability (and "Weyerhaeuser Company" shall be named as an Additional Insured).
 - (2) Comprehensive Automobile Liability insurance (including owned, non-owned, and hired vehicles) with a combined single limit of not less than \$1,000,000, providing coverage for bodily injury, personal injury and property damage.
 - (3) Workers' Compensation or Industrial Accident insurance with not less than statutory limits.
 - (4) Employer's or Stop-Gap Liability insurance with a limit of not less than \$1,000,000.
 - (5) Umbrella Liability insurance with limits of not less than \$5,000,000 each occurrence and in the aggregate.
 - (6) Service Interruption insurance with limits and in form and substance reasonably satisfactory to Weyerhaeuser.

Such insurance of Buyer shall (a) contain a severability of interest clause, (b) provide a Waiver of Subrogation and/or Waiver of Recovery on behalf of Weyerhaeuser (with the exception of Workers' Compensation insurance), and (c) be primary, and Weyerhaeuser's insurance and/or self-insurance shall be excess over any and all other available coverage and/or self-insurance. Buyer shall furnish Weyerhaeuser with a Certificate of Insurance evidencing the above coverage and shall require its insurance carrier(s) to give at least 30 days written notice prior to cancellation of said coverage, either in whole or in part. The failure of Buyer's insurance carrier

to give said notice as required shall be considered a default on Buyer's part. Buyer's insurance carrier(s) shall have a Best's rating of no less than B+ VII. Buyer shall ensure that its contractors and subcontractors performing work at Buyer's Site and/or Weyerhaeuser's facility have insurance coverages and endorsements consistent with the above, with the exception of policy limits.

- (E) Buyer shall designate a responsible individual at Buyer's site whose duty shall be to coordinate the Site Services and the performance of this Agreement with Weyerhaeuser.
- (F) To the fullest extent permitted by law, Buyer shall indemnify and hold harmless Weyerhaeuser from all claims, demands, liabilities, losses, damages, expenses (including penalties and interest, reasonable fees and disbursements of counsel, and court costs), proceedings, judgments, settlements, actions or causes of action or government inquiries of any kind (including emotional distress, sickness, personal or bodily injury or death to any person (including employees or contractors of Buyer), or damage or destruction to, or loss of use of, tangible property) arising out of or relating to Buyer's breach or failure to perform the covenants in this Article 9.

ARTICLE 10 DISPUTE RESOLUTION. If a dispute arises out of or relates to this Agreement, or the breach hereof, prior to instituting any legal proceeding, representatives of each party having authority to resolve the dispute shall meet to discuss and attempt to resolve the dispute. If the representatives of the parties are not able to resolve the dispute, either party may elect to have the matter resolved by mediation administered by the American Arbitration Association ("AAA") under its Commercial Mediation Procedures before a neutral, independent mediator mutually acceptable to the parties. If the parties are unable to agree on a mediator, the parties will request the AAA to supply a list of five mediators and the mediator will be selected by the parties by alternately striking names from that list, with the party initiating the mediation striking the first name. The mediation will be held at the offices of the AAA in Seattle, Washington, unless the parties agree to a different location. The costs of mediation will be shared equally by the parties. All negotiation and mediation meetings and proceedings will be confidential and will be treated as compromise and settlement negotiations for purposes of all rules of evidence. If the parties are not able to resolve the dispute by mediation, any legal proceeding shall be brought in any state or federal court within the State of Washington, and the parties hereby agree to submit to the exclusive jurisdiction of such courts in respect of any proceeding arising out of this Agreement.

ARTICLE 11. GENERAL MATTERS.

- (A) SITE SERVICE LIMITATIONS AND CONDITIONS.
 - (1) All Site Services provided by Weyerhaeuser under this Agreement are conditioned upon the parties' ability to lawfully provide and receive such Site Services, including the parties' obtaining and maintaining in effect all required permits, licenses, approvals, orders, registrations and authorizations of applicable Governmental Entities (including those required under applicable Environmental Laws). If Weyerhaeuser may not lawfully provide any Site Services, Weyerhaeuser shall not be obligated to provide and shall not be liable for failure

- to supply such Site Services to Buyer, provided that, in such event, Weyerhaeuser will reasonably cooperate with Buyer to lawfully provide such Site Services in an alternate manner or in arranging to procure substitute services from another source at Buyer's cost.
- (2) Buyer acknowledges that the Site Services are procured by Weyerhaeuser primarily for its own facilities' operations and that Weyerhaeuser may operate its facilities as it sees fit in its sole discretion, notwithstanding that such operation may affect the availability of any one or more of the Site Services provided to Buyer (e.g., in the case of facility downtime or maintenance); provided, however, that in the event Weyerhaeuser does not have available sufficient quantity of one or more Site Services to satisfy Weyerhaeuser's own needs and to provide the quantity to Buyer contemplated hereunder, Weyerhaeuser will treat Buyer no less favorably than units of Weyerhaeuser's own operations using similar quantities when allocating available quantity. In such event, Weyerhaeuser will notify Buyer as far in advance as possible. So long as Weyerhaeuser treats Buyer accordingly, Weyerhaeuser shall not be liable for failure to supply any such Site Services.
- (3) If Weyerhaeuser closes or otherwise ceases to operate its Albany Paper Mill facility, other than as a result of the sale of such facility (or all or substantially all of the assets of such facility), Weyerhaeuser will notify Buyer as far in advance as possible and will cooperate with Buyer in arranging to procure substitute services from another source at Buyer's cost. Upon the occurrence of such event, provided that Weyerhaeuser has already provided Buyer with the Water Easement, Weyerhaeuser's obligations to provide the Site Services under this Agreement shall terminate.
- (4) If Weyerhaeuser is unable to provide Buyer with any one or more of the Site Services as provided herein after commercially reasonable efforts to attempt to continue to do so, Weyerhaeuser will notify Buyer as far in advance as possible and will cooperate with Buyer in arranging to procure substitute services from another source at Buyer's cost, including providing the Water Easement.
- (5) Buyer acknowledges that each Site Service provided by Weyerhaeuser under this Agreement is an accommodation to Buyer resulting from Buyer's purchase of the Assets at the Sites pursuant to the Purchase Agreement and that, absent such transaction, the Site Services would not be provided. Accordingly, unless expressly stated otherwise herein, all Site Services provided by Weyerhaeuser under this Agreement shall be limited to the quality, quantity and/or magnitude of such Site Services at the Closing Date, plus or minus ten percent. Buyer acknowledges that the prices for the Site Services set forth on Exhibit A are based on such quantities and, should the actual quantity of a Site Service provided hereunder be substantially different, the parties will negotiate a mutually agreeable adjustment to the price to equitably reflect such different quantity.
- (B) CONFIDENTIAL INFORMATION. In the course of this Agreement, a party may have access to confidential and/or proprietary information of the other party. The party receiving such confidential or proprietary information shall disclose such information only to such employees, agents and consultants of the receiving party who have a need to know such information in

connection with the performance of this Agreement and shall cause such information to be used only for purposes directly related to the performance of this Agreement, unless the disclosing party otherwise agrees in advance in writing.

- (C) COOPERATION. The parties shall cooperate fully with each other to effectuate the purposes of this Agreement, including, but not limited to, execution and delivery of such consents, notices, filings, applications and other documents and instruments as may be required to perform their respective obligations hereunder or as reasonably requested by the other party. The parties acknowledge that the Sites and the existing Weyerhaeuser facilities have heretofore been under common ownership and that in order for the Sites and the existing Weyerhaeuser facilities to no longer be interdependent each party must take reasonable steps to independently provide its own services as provided in this Agreement. While the Sites and the existing Weyerhaeuser facilities remain interdependent, each party will to the extent possible reasonably cooperate and consult with the other on matters which affect the operations and facilities of the other party (e.g., coordinating maintenance or downtime).
- (D) NOTICES. All notices or other communications under this Agreement shall be in writing and either personally delivered, sent by certified or registered mail (return receipt requested, postage prepaid); sent by reputable overnight delivery service, or sent by facsimile with telephone verification of receipt, to the respective addresses set forth below (or to such other addresses as a party may designate by notice given as aforesaid).

If to Weyerhaeuser:

Weyerhaeuser Company 33663 Weyerhaeuser Way South Federal Way, WA 98003 USA Attn: Scott Marshall Facsimile: (253) 924-2402

with a copy to:

Weyerhaeuser Company 33663 Weyerhaeuser Way South Federal Way, WA 98003 USA Attn: Law Department Facsimile: (253) 924-5204 If to Buyer

Flakeboard America Limited 100 Kingsley Park Drive Fort Mill, SC 29715 Attn: President Facsimile: (803) 835-1331

Ms. Karyn L. Bradley
Gowling Lafleur Henderson LLP
1 First Canadian Place
Suite 1600 100 King Street West
Toronto, Ontario M5X 1G5 CANADA
Facsimile: (416) 863-3430

All notices shall be deemed given (i) if personally delivered, upon receipt; (ii) if sent by certified or registered mail, on the third Business Day after mailing; (iii) if sent by reputable overnight delivery service, on the first Business Day after timely delivery to the courier; and (iv) if sent by facsimile, on the date the sender obtains telephone verification of receipt.

(E) ASSIGNMENT. No assignment of any right or interest in or delegation of any duty or obligation under this Agreement shall be made, in whole or in part, by either party without the

prior written consent of the other party; provided, however, that either party may assign this Agreement and its rights and obligations hereunder (i) to any Affiliate (as defined in the Purchase Agreement) of such party or (ii) to the surviving controlling entity in the event of a merger or acquisition of such party or purchase of all or substantially all of the assets of such party. This Agreement shall be assigned to, and shall be a binding obligation of, any entity acquiring the facility or facilities (or all or substantially all of the assets thereof) providing the Site Services. In addition, Weyerhaeuser may delegate its obligations under this Agreement in whole or in part to a third party, provided that any such delegation shall not relieve Weyerhaeuser of liability for such obligations.

- (F) FORCE MAJEURE. Each party's performance of this Agreement shall be excused without liability to the extent and for the period of time necessitated by the occurrence of an event outside of a party's reasonable control (a "force majeure event"), including an Act of God, war, terrorism, sabotage, civil unrest, riot, strike, labor dispute, explosion, accident, fire, flood, earthquake, storm or other natural disaster, regulation, rule, act or intervention of any Governmental Entity, or other similar event beyond the reasonable control of a party. The imposition by any Governmental Entity or subdivision or agency thereof of any statute, law, ordinance, code, rule, regulation, order, judgment, decree or directive that makes unlawful a party's ability to provide or receive any one or more of the Site Services shall be a force majeure event with respect to the affected Site Services.
- (G) WAIVER. No delay or failure to exercise any right or remedy under this Agreement by a party shall impair such right or remedy or be construed as a waiver thereof. A party's consent to or approval of any act or failure to act by the other party requiring approval or consent hereunder shall not be deemed to waive or render unnecessary the requirement of approval or consent of any subsequent act by the other party. A party's waiver of any breach or failure to enforce any term or condition of this Agreement at any time shall not in any way affect, limit or waive such party's right thereafter to enforce and compel strict compliance with every term and condition hereof.
- (H) GOVERNING LAW. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Washington applicable to contracts made and performed entirely within such state, without regard to its conflict of law rules.
- (I) ATTORNEYS' FEES. Should any legal action or proceeding be commenced by either party in order to enforce this Agreement or any provision hereof, or in connection with any alleged dispute, breach or default related hereto, the prevailing party (the party entitled to recover costs at such time as all appeals have been exhausted or expired) shall be entitled to recover reasonable attorneys' fees and costs incurred by it in connection with such action or proceeding, in addition to such other relief as may be granted.
- (J) INTEGRATED AGREEMENT; MODIFICATION. This Agreement constitutes the entire agreement and understanding of the parties with respect to the subject matter hereof and supersedes all prior discussions, negotiations, understandings and agreements. It is intended by the parties as a complete and exclusive statement of the terms of their agreement with respect to the subject matter hereof. This is a fully integrated agreement. Each party acknowledges that the

other has made no representation or warranty, and that it has relied on no representation or warranty, other than those specifically set forth in this Agreement. This Agreement may not be modified except in a writing signed by the parties.

- (K) INTERPRETATION. Each party acknowledges that it and its legal counsel have reviewed this Agreement. The parties agree that the terms and conditions of this Agreement shall not be construed against any party on the basis of such party's drafting of such terms and conditions. The words "herein", "hereto" and other similar words shall mean this Agreement as a whole, including the exhibits hereto, as the same may be amended, modified or supplemented from time to time.
- (L) NO AGENCY. The parties agree that no agency, partnership or joint venture of any kind shall be or is intended to be created by or under this Agreement.
- (M) EXHIBITS. All exhibits referred to herein are deemed to be incorporated in this Agreement in their entirety.
- (N) HEADINGS. The headings in this Agreement are for convenience only and are not intended and will not be construed to affect the scope or meaning of any provisions hereof.
- (O) COUNTERPARTS. This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

WEYERHAEUSER COMPANY	FLAKEBOARD AMERICA LIMITED
X Mange 6	della
By Con Villand	By 7) States
Fitle:	Title:

EXHIBIT A DESCRIPTION OF SITE SERVICES

DURAFLAKE PB FACILITY

1. Water.

Site. Service commitment. Weyerhaeuser shall: (a) allow Buyer to use the existing manufacturing water supply system that services both Weyerhaeuser's Albany Paper Mill facility and Buyer's Duraflake PB site in order to deliver manufacturing water to Buyer's Duraflake PB site; and (b) bill Buyer for such service on a quarterly basis as provided in this Agreement.

Weyerhaeuser will complete the work necessary with the Oregon Water Resources Department (WRD) to record and clarify the separate usage of water for the purpose of manufacturing at Buyer's Duraflake PB site. One cubic foot per second (cfs) of water will be used and dedicated from Water Right Permit # 23102, Certificate # 54268. Water Right # T7526 and Application # 64514 [Permit # S47184] are excluded from this Agreement and no water as evidenced thereunder will be supplied to Buyer's Duraflake PB site.

The Duraflake PB facility will continue to use the Albany Paper Mill delivery system after the WRD is notified. This water right notification is for existing uses at one cfs. Any water usage above one cfs will be negotiated by the parties separately from this Agreement.

wy in store

Weyerhaeuser shall provide Buyer with a perpetual easement 16 feet in width for the erection, construction, maintenance, operation, and repair of one of more pipe lines for the delivery of water through the Albany Paper Mill delivery system or at another location and on terms and conditions to be agreed upon by the Parties.

Term of commitment. This Site Service shall be provided for a transition period, until the existing water rights for both Weyerhaeuser's Albany Paper Mill facility and Buyer's Duraflake PB site are split as described in paragraph "a" above; provided that Weyerhaeuser's obligation to provide delivery through the Albany Paper Mill delivery system shall continue until Weyerhaeuser has granted the easement described in subsection a. above.

c. Cost. Weyerhaeuser will pay the associated costs of clarifying the water rights for manufacturing water at Buyer's Duraflake PB site from the Albany Paper Mill facility. All costs for delivery of water to Buyer's Duraflake PB site will be paid by Buyer at the rate of 1/35 of the actual cost incurred by Albany Paper Mill plus a 7% administration fee. Weyerhaeuser will bill Buyer on a quarterly basis.

Buyer will be responsible for the repair and maintenance costs of the incoming water line from the Albany Paper Mill mainline connection to the Duraflake PB site.

2. Process Waste Water and Stormwater.

- a. <u>Site Service commitment</u>. Weyerhaeuser shall: (a) allow Buyer to use the existing process waste water system and stormwater system that services both Weyerhaeuser's Albany Paper Mill facility and Buyer's Duraflake PB site in order for the Albany Paper Mill facility to accept process waste water and stormwater from Buyer's Duraflake PB site; (b) route such process waste water and stormwater to the Albany Paper Mill facility; and (c) bill Buyer for such services on a quarterly basis as provided in this Agreement. Buyer will measure process water and stormwater volume and solids on a daily basis and provide data to Albany Paper Mill. Albany Paper Mill has the right to audit and verify the accuracy of all data.
- b. Term of commitment. This Site Service shall continue for a transition period until the earlier of (i) the date of termination of the Transition Site Services Agreement between Weyerhaeuser and Buyer to which this Exhibit A is attached and (ii) the fifth anniversary of the Closing Date. On or prior to such date, Buyer shall have either entered into a mutually agreeable arrangement with the Albany Paper Mill facility for ongoing processing of process waste water and stormwater or made arrangements with a third party for handling process waste water and stormwater from Buyer's Duraflake PB site. Notwithstanding anything contained herein, this Site Service shall continue only for so long as the Albany Paper Mill facility is capable of processing the volume of process waste water and stormwater from Buyer's Duraflake PB site.
- c. <u>Cost</u>. Buyer shall pay Weyerhaeuser's actual costs related to the acceptance and treatment of process waste water and stormwater from Buyer's Duraflake PB site, plus a 7% administration fee. The costs will be determined from an annual review of the prior year's costs and pro rated on a solids removed basis. Weyerhaeuser will bill Buyer on a quarterly basis. Buyer will be responsible for the repair and maintenance costs of the process water and storm water lines from the Duraflake PB site to Albany Paper Mill.

International	paper						
Lease #	cert	cfs	af	periods leased	หe-assigned Lease#	period leased	
IL-716	80656	19.65 1.85 7.65		2006-2010 2011-2015 2016-2020			
IL-717	80657		11,595	2006-2010	IL-1094	2011-2015	2016-denied
IL-718	80658		13,105	2006-2010	IL-1095	2011-2015	2016-denied
IL-1434	54268 85736 89604 89606	15 4.25 2 1.93		2014-2018 (2cfs being changed in T-12773)			
IL-1435	85736	7.75		2014-2018 terminated 2016 (being moved by T-12065)			
IL-1507	55864 67770 72382	0.87 4.9 5.63		2016-2020			
IL-1704	54268	2		2019-2023			
IL-1708	87427	30		2019-2023			
T-12065	85736	7.75	perm	anent change to muni rr cert 91193 (4.25cfs)			
T-12773	54268	2		permanent change - pending (2cfs from IL-1434)			

active lease

same cfs - non active lease · permanenet change to muni T-12065



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

March 26, 2019

VIA E-MAIL

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVENUE MEMPHIS TN 38197 e-mail Jim.Kirkpatrick@JPAPER.com

Receiving Landowner

CITY OF INDEPENDENCE PO BOX 7 INDEPENDENCE OR 97351

SUBJECT: Water Right Transfer Application T-12773

Your water right transfer is in one of three phases of processing. Enclosed is a revised draft of our Preliminary Determination regarding Transfer Application T-12773. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

- 1. Please review the revised draft carefully to see if it accurately reflects the changes you intend to make, and to become familiar with all proposed conditions. You will need to respond in writing by the deadline provided below, whether you agree with the proposed action and conditions. Also, we appreciate you letting us know if there are typographical errors that need to be corrected.
- 2. A report of landownership for the lands to which the water right are appurtenant (the FROM lands) is required. The report must be prepared by a title company and meet the criteria below. (Reports may be called by various names, such as Customer Service Report, Property Analysis Report (PAR), List Pack, Lot Book Report, etc.)
 - a) The title company's report must either be:
 - i) Prepared within 3 months of this revised draft Preliminary Determination showing current ownership; or
 - ii) Prepared within 3 months of recording of a water right-conveyance agreement, or
 - iii) Prepared at any time, but showing ownership at the time a water right conveyance agreement was recorded.
 - b) The ownership report shall include:
 - i) Date the ownership report was generated or prepared by the title company; and
 - ii) List of owners at that time; and
 - iii) Legal description of the property where the water right to be transferred is currently located.
 - c) You will need to submit a notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable.

Conditions to your water right...

This transfer will require installation of a fish screen at the new surface water diversion point prior to diversion of water. You may not divert water prior to installation and approval of the fish screen by the Oregon Department of Fish and Wildlife (ODFW). You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2049. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the Preliminary Determination will occur shortly after we receive:

- 1. Your written response to the conditions and proposed action in the revised draft Preliminary Determination (e-mail is acceptable).
- 2. Report of Ownership, and affidavits of consent from any landowners shown in the ownership report who have not signed the transfer application.

If we do not receive the items listed above by April 25, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0886 or <u>Patrick.K.Starnes@oregon.gov</u> if I may be of assistance if I may be of assistance.

Sincerely,

Kelly Starnes

Transfer Program Analyst

Transfer and Conservation Section

cc: Transfer Application file T-12773

Lanaya Blakely, District 2 Watermaster (via e-mail)

Joel Plahn, District 16 Watermaster (via e-mail)

Adam Sussman, GSI Water Solutions, Agent for the receiving landowner (via e-mail)

Theodore R. Ressler, GSI Water Solutions, CWRE #78185 (via e-mail)

encs

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Transfer Application T-12773, Linn and Polk Counties

Revised DRAFT

PRELIMINARY DETERMINATION
PROPOSING APPROVAL OF A
CHANGE FROM A SURFACE WATER
POINT OF DIVERSION TO
GROUNDWATER POINTS OF
APPROPRIATION, A CHANGE IN
POINT OF DIVERSION, A CHANGE IN
PLACE OF USE, AND A CHANGE IN
CHARACTER OF USE

Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR 97351

Findings of Fact

- 1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and to change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- 2. The City of Independence, PO Box 7, Independence, OR 97351 is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 4. On May 9, 2013, the Department received a notice for specific to general industrial use change under Certificate 54268 per ORS 540.520(9). The authorized place of use resulting from this notice is described in Finding No. 10.

- 5. On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells.
- 6. On September 17, 2014, Instream Lease IL-1434, recorded at Special Order Volume 93, Pages 900-906, the order was approved for a 2.0 Cubic Feet Per Second (CFS) portion of Certificate 54268.

On ______, 2019, Instream Lease II -1434 was terminated by request of the applicant. The termination order was recorded at Special Order Volume _____, Page _____.

- On February 11, 2019, the Department sent a copy of the draft Preliminary Determination proposing to approve Transfer Application T-12773 to the applicant. The draft Preliminary Determination cover letter set forth a deadline of March 12, 2019, for the applicant to respond.
- 9. On March 5, 2019, the applicant's agent requested that the Department amend the draft Preliminary Determination. The applicant requested clarification of the description of previous transfer application amendments, correction of the instream lease number, modifying the draft Preliminary Determination to reflect International Paper's specific to general industrial use notice authorized under ORS 540.520(9), and to correctly describe the applicant's proposed transfer completion date.
- 10. The portion of the right to be transferred is as follows:

Certificate: 54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use: INDUSTRIAL/MANUFACTURING

Priority Date: DECEMBER 23, 1954

Rate: 2.0 CUBIC FEET PER SECOND

Source: WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	INDUSTRIAL/MANUFACTURING										
Twp	Rng	Mer	Sec	DLC	Q-Q						
10 S	3 W	WM	21	47	SW SE						
10 S	3 W	WM	21	47	SE SE						
10 S	3 W	WM	28	47	NE NE						
10 S	3 W	WM	28	47	NW NE						
10 S	3 W	WM	28	47	SW NE						
10 S	3 W	WM	28	47	NE NW						
10 S	3 W	WM	28	47	SE NW						
10 S	3 W	WM	28	47	NE SW	Ī					
10 S	3 W	WM [·]	28 -	47)	SE SW						
10 S	3 W	WM	28	2+2+	NE SW	1					
10 S	3 W	WM	28	47	NE SW						

	INDUS	TRIAL/N	MANUF.	ACTURIN	G
Twp	Rng	Mer	Sec	DLC	Q-Q
10 S	3 W	WM	28	44	NW SE
10 S	3 W	WM	28	47	NW SE
10 S	3 W	WM	28	44	SW SE
10 S	3 W	WM	28	47	SW SE

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11. Transfer Application T-12773 proposes to change the point of diversion approximately 13.5 miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET NORTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

12. Transfer Application T-12773 proposes to change from a surface water point of diversion to groundwater points of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 2000 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

- 13. Transfer Application T-12773 proposes to change the character of use to municipal.
- 14. Transfer Application T-12773 proposes to change the place of use of the right to:

MUNICIPAL	
WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDEN	CE

15. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new surface water point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

16. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.

- 17. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- 18. The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 19. The proposed changes would not result in enlargement of the right.
- 20. The proposed changes would not result in injury to other water rights.
- 21. All other application requirements are met.

Determination and Proposed Action

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The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

- 1. The change in point of diversion, change from a surface water point of diversion to groundwater points of appropriation, change in place of use, and change in character of use proposed in Transfer Application T-12773 are approved.
- 2. Except as provided in ORS 540.510(3), the right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion (POD 2), and new points of appropriation (Willamette Wells 1, 2, and 3), shall not exceed the quantity of water lawfully available at the original point of diversion (POD 1).
- 5. The wells from which the water is taken under this right shall be constructed so that the use of the wells will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer

- application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed wells.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed wells shall be subordinate to any existing right injured by the transferred water right.
- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the proposed surface water point of diversion (POD-2) consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.
- 11. The transferred portion of Certificate 54268 (2.0 cfs) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2049. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.
- 13. After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

Dated	at	Sal	em.	Oregon	this		
			,				/

DRAFT

Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

This revised draft Preliminary Determination was prepared by Kelly Starnes. If you have questions about the information in this document, you may reach me at 503-986-0886 or Patrick.K.Starnes@oregon.gov.

1. Pep 2. Date Prepared

STARNES Patrick K * WRD

From:

Kim Grigsby <kgrigsby@gsiws.com> Tuesday, April 16, 2019 1:20 PM

Sent: To:

STARNES Patrick K * WRD

Subject:

Transfer T-12773

Hi Kelly,

Thank you for calling me back. As we discussed, I think there are words missing from finding of fact 6 in the revised DPD for Transfer T-12773. Below is how I suspect the finding of fact was intended to read:

On September 17, 2014, the applicant filed Instream Lease IL-1434. On December 5, 2014, the Department issued a final order recorded at Special Order Volume 93, Pages 900-906, that approved the lease for a 2.0 Cubic Feet Per Second (CFS) portion of Certificate 54268.

I hope this helps. I will look forward to getting your email confirming final wording for this finding of fact, and your determination about the authorized POU (specifically the DLC in the SE SW of 10S 3W Sec. 28).

Thank you, Kim

Kimberly Grigsby

Supervising Water Resources Consultant direct: 541.257.9004 | mobile: 503.351.1912 1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333 GSI Water Solutions, Inc. | www.gsiws.com

From: Molly Monroe

Sent: Tuesday, April 16, 2019 12:11 PM
To: Kim Grigsby < kgrigsby@gsiws.com
Subject: Transfer application edits

Molly Monroe

Administrative Assistant
office: 541.257.9002
1600 SW Western Boulevard, Suite 240, Corvallis, OR 97333
GSI Water Solutions, Inc. | www.gsiws.com



May 16, 2019

Kelly Starnes Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Report of Land Ownership for Transfer Application T-12773

Dear Mr. Starnes;

On September 14, 2018, GSI Water Solutions (GSI) filed water right transfer application T-12773 on behalf of International Paper Company (IPC). Transfer T-12773 requests changes to the point of diversion, place of use and character of use for a 2.0 cfs portion of Certificate 54268. I received your letter dated March 26, 2019, which required submission of a report of land ownership for the "from lands" for this transfer. I am submitting the enclosed report of land ownership on behalf of International Paper.

As you will see, the land ownership report shows that the "from lands" for Certificate 54268 are owned by Flakeboard America Limited (tax lot 151) and IP Eat Three LLC (tax lot 400). Previous communications with the Department have described the relationship between these entities and IPC, and IPC's ability to transfer water rights appurtenant to lands held by Flakeboard America Limited and IP Eat Three LLC.

The enclosed October 12, 2015 letter from David Filippi, which related to Transfer T-12065, states that "IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution." (See item 2 on page 2 of Mr. Filippi's letter, and the associated attachment.)

In the Application for Instream Lease IL-1704, IPC explained that it is the current owner of Certificate 54268 and uses a 17 cfs portion of the water right. (The 2 cfs included in Transfer T-12773 are part of IPC's 17 cfs.) The lease application also explains that Flakeboard uses the remaining 1 cfs under this right. (See page 5 of the enclosed lease application for IL-1704 and the maps labeled Attachment A and Attachment F. Also see

the enclosed letter from Edward Henricks and associated attachment dated January 11, 2007.)

Please contact me if you have any questions. My telephone number is 541-257-9001.

Sincerely,

RECEIVED

MAY 2 2 2019

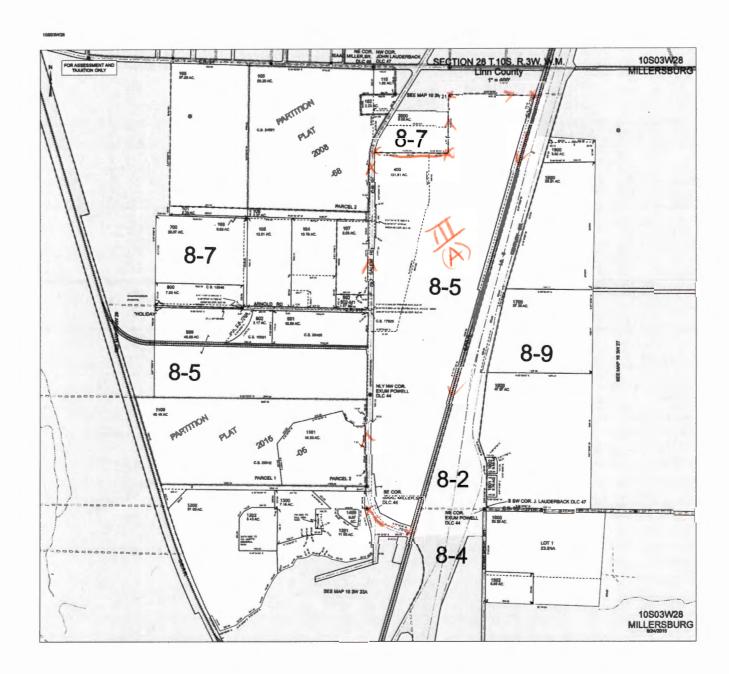
OWRD

Adam Sussman
Principal Water Resources Consultant

Enclosures

Cc: Terry Thomas, International Paper

Vaughn Pieschl, International paper Kie Cottam, City of Independence





RECEIVED MAY 2 2 2019 **OWRD**

Property Detail Report

Property Address:

3435 NE Old Salem Rd 4/29/19 Amerititle assumes no liablity for the accuracy of this report.

Prepared For:

Ip Eat Three LLC

Thank you for the opportunity to assist you! **Chad Cripe**

> **Customer Service** 503.581.1431 valleycs@amerititle.com

Mid-Willamette Valley Locations

Salem

320 Church St. NE 503.581.1431

South Salem

3240 Commercial St. SE, Ste. 140 971.701.2591

Corvallis

525 NW 2nd St. Ste. 2

541.752.3415

Lebanon

1475 S Main St 541.259.3736

Silverton 215 E Main St 503.873.7200

Albany 1393 Clay St. SE

541.928.3368

Monmouth 283 N Pacific Hwy 503.838.2259



RECEIVED MAY 2 2 2019

OWRD

Linn County Parcel Detail

Site Address:

3435 NE Old Salem Rd

Albany OR 97321

Parcel ID:

0046462

Tax Lot:

10S03W2800400

Owner:

Ip Eat Three LLC

Owner2:

Owner Address:

PO Box 2118

Memphis TN 38101

Parcel Size:

131.91 Acres (5,746,000 SqFt)

Neighborhood: Subdivision:

Lot / Block:

Twn/Range/Section:

10S / 03W / 28

Legal

Assessment and Taxes

Market Land Value:

\$3,822,600.00

Levy Code Area:

00805

Annual Tax History

Market Improved Value:

\$550,000.00

Levy Rate:

15.7381

2018: \$76,442.67

Market Total Value: Assessed Value:

\$4,372,600.00

Tax Year:

2018

2017: \$65,750.47

\$4,372,600.00

Exemption Desc:

2016: \$60,290.82

Land Information

Land Use:

301 - COUNTY RESP INDUSTRIAL, LAND & B

School District:

8JZ5 - Greater Albany

Building Use:

Recreation:

Zoning:

Waterfront: Longitude:

-123.059835

Millersburg-HI - Heavy Industrial

Latitude:

44.674046

Improvement Details

Year Built:

0

Bed:

Garage:

Stories:

Baths:

Exterior Walls:

Bldg SqFt:

Bsmt SqFt:

Roof Cover:

Finished SqFt:

Attic SqFt:

Heat:

Bldg Type:

801 - County Industrial

Fir 1/ Fir 2 SqFt:

A/C:

Transfer Information

Rec. Date:

7/1/2008

Sale Price:

\$20,224,890.00

Doc Num:

0000015425

Doc Type:

Grant Deed

Owner:

IP EAT THREE LLC

Grantor: Title Co:

OWNER NAME UNAVAILABLE

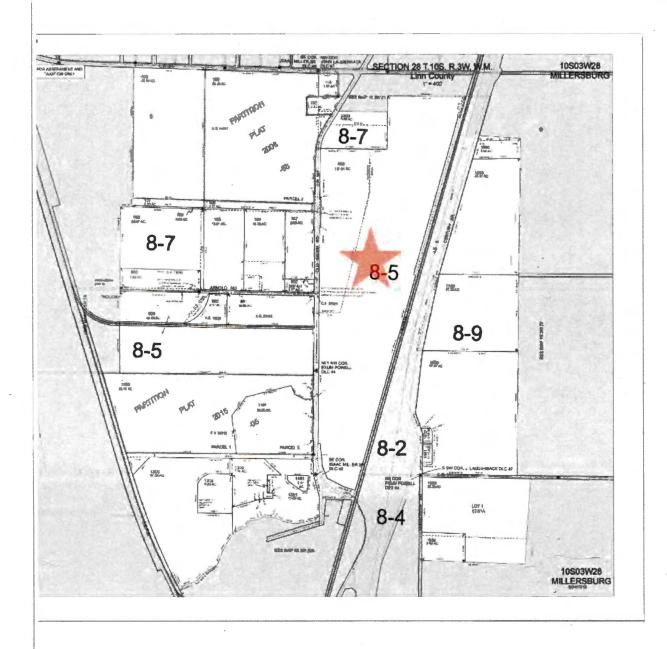
Orig. Loan Amt: **Finance Type:**

Loan Type:

Lender:

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

MAY 2 2 2019 OWRD





Parcel ID: 0046462

Site Address: 3435 NE Old Salem Rd

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.





conditions, e

Parcel ID: 0046462

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

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Parcel ID: 0046462

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

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After recording return to:
First American Title Insurance
Company
2101 Fourth Avenue, Suite 800
Seattle, WA 98121
Attn: Donna Koerber/T2007-439
Until a change is requested all tax statements shall be sent to the following address:
IP EAT Three LLC
c/o International Paper Company
PO Box 2118
Memphis, TN 38101

File No.: 309302 CP7 (dk)

LINN COUNTY, OREGON
D-BS
Cnt=1 Stn=1 COUNTER
\$130.00 \$11.00 \$10.00 \$151.00

00088688200800154250260266
I. Steve Druckenmiller. County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.

Steve Druckenmiller - County Clerk

THIS SPACE RESERVED FOR RECORDER'S USE

STATUTORY BARGAIN AND SALE DEED

Weyerhaeuser Company, a Washington corporation, successor by merger to Willamette Industries, Inc., an Oregon corporation, as to Parcels I, II, III, IV, VI, VII, XI, XII and XV and Weyerhaeuser Company, a Washington corporation, successor by merger to Willamette Industries, Inc., an Oregon corporation, successor by merger to Western Kraft Corporation, an Oregon corporation, as to Parcels V, VIII, IX, X, XIII, XIV and XVI, GRANTOR, conveys to IP EAT Three LLC, a Delaware limited liability company, GRANTEE, the following described real property: See Exhibit "A"

TOGETHER WITH all the tenements, hereditaments and appurtenances belonging or in any way appertaining to the Property.

TO HAVE AND TO HOLD the same in fee simple forever.

This conveyance is made subject only to those matters set forth in **Exhibit "B"**, attached hereto and incorporated herein by this reference (the "Permitted Exceptions").

And GRANTOR hereby covenants with GRANTEE that GRANTOR is lawfully seized of the Property in fee simple; that GRANTOR has good right and lawful authority to sell and convey the Property; and that GRANTOR does hereby fully warrant the title to the Property and will defend the same against lawful claims of all persons claiming by, through or under GRANTOR, but against none other.

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The true consideration for this conveyance is \$20,224,890 . (Here comply with requirements of ORS 93.030)

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195-336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930 AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195-336 AND SECTIONS 5 TO 11, OF CHAPTER 424, OREGON LAWS 2007.

Dated this day of July, 2008, but effective August 4, 2008, the effective date.

MAY 2 2 2019 OWRD

GRANTOR:

WEYERHAEUSER COMPANY, a Washington corporation, successor by merger to Willamette Industries, Inc., an Oregon corporation, and Weyerhaeuser Company, a Washington corporation, successor by merger to Willamette Industries, Inc., an Oregon corporation, successor by merger to Western Kraft Corporation, an Oregon corporation Name: Assistant Secretary STATE OF Washington County of King This instrument was acknowledged before me on this By Scott Marshall as Vice President and by G.W. of Weyerhaeuser Company, a Washington corporation as Assistant Secretary

> Notary Public for Oregon WASHING for My commission expires: 7-18-05

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Exhibit "A"

Legal Description - CP7

Real property in the City of Albany & Millersburg, County of Linn, State of Oregon, described as follows:

PARCEL I:

BEGINNING ON THE EAST LINE OF AND SOUTH 0°16' WEST, 34.20 CHAINS FROM THE NORTHEAST CORNER OF THE SARAH FARLOW DONATION LAND CLAIM NO. 59, IN TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON; AND RUNNING THENCE NORTH 89°51' WEST 562.11 FEET TO A 1/2 INCH IRON ROD:

THENCE NORTH 0°16' EAST, PARALLEL TO THE EAST LINE OF SAID CLAIM, 581.22 FEET TO A 1/2 INCH IRON ROD.

THENCE SOUTH 89°51' EAST 562.11 FEET TO A 1/2 INCH IRON ROD ON THE EAST LINE OF SAID DONATION LAND CLAIM NO. 59,

THENCE SOUTH 0°16' WEST 581.22 FEET TO THE POINT OF BEGINNING.

PARCEL II:

A 100-FOOT-WIDE STRIP OF LAND DESCRIBED IN VOLUME 135, PAGE 0687, LINN COUNTY, OREGON DEED RECORDS, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 5/8" IRON ROD ON THE EASTERLY LINE OF THAT TRACT DESCRIBED IN LINN COUNTY DEED RECORDS, MF 135-687, SAID ROD BEING S1°08'13"E 1,856.44 FEET, S88°51'17"W 30.04 FEET AND N89°53'15"W 1,488.97 FEET FROM THE NORTHEAST CORNER OF THE ISAAC MILLER D.L.C. NO. 46 IN T10S, R3W, W.M., LINN COUNTY, OREGON.

THENCE N89°53'15"W 956.065 FEET TO A 5/8" IRON ROD ON THE MOST EASTERLY LINE OF THAT TRACT DESCRIBED IN LINN COUNTY DEED RECORDS MF 379-278;

THENCE ALONG SAID EASTERLY LINE, N1°07'49"W 100.03 FEET TO A 5/8" IRON ROD;

THENCE S89°53'15"E 956.06 FEET TO A 5/8" IRON ROD;

THENCE S1°08'14"E 100.02 FEET TO THE POINT OF BEGINNING.

PARCEL III:

TRACT A:

BEGINNING AT A POINT SOUTH 1° 09' EAST 318.12 FEET FROM THE SOUTHEAST CORNER OF THE CHRISTIAN FARLOW DONATION LAND CLAIM NO. 54, TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, LINN COUNTY, OREGON;

THENCE NORTH 88° 50' EAST 1051.53 FEET TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF THE SOUTHERN PACIFIC RAILROAD;

THENCE SOUTH 14° 15' WEST ALONG THE SAID WESTERLY RIGHT OF WAY LINE 5082.80 FEET TO ITS INTERSECTION WITH THE SOUTHERLY RIGHT OF WAY LINE OF COUNTY ROAD NO. 308;

THENCE NORTH 74° 55' WEST ALONG SAID SOUTHERLY RIGHT OF WAY LINE 37.84 FEET;

THENCE SOUTH 88° 51' WEST 416.17 FEET;

THENCE NORTH 17° 20' WEST 344.52 FEET TO THE SOUTHEAST CORNER OF THE ISAAC MILLER SR., DONATION LAND CLAIM NO. 46 IN SAID TOWNSHIP AND RANGE:

THENCE NORTH 1° 09' WEST ALONG THE EAST LINE OF SAID CLAIM NO. 46, 4329.72 FEET;

THENCE NORTH 88° 50' EAST 926.0 FEET TO A 3/4 INCH PIPE;

THENCE NORTH 1° 09' WEST 710.16 FEET TO THE POINT OF BEGINNING.

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Legal Description - CP7 - Continued

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED TRACT OF LAND LYING WITHIN THE BOUNDARIES OF PUBLIC ROADS AND HIGHWAYS.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO THE STATE OF OREGON, BY AND THROUGH ITS STATE HIGHWAY COMMISSION, FOR ROADWAY PURPOSES, RECORDED JANUARY 17, 1945, IN VOLUME 167, PAGE 113, DEED RECORDS FOR LINN COUNTY, OREGON.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO THE STATE OF OREGON, BY AND THROUGH ITS STATE HIGHWAY COMMISSION, FOR ROADWAY PURPOSES, RECORDED OCTOBER 30, 1956, BOOK 251, PAGE 434, DEED RECORDS FOR LINN COUNTY, OREGON.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO SOUTHERN PACIFIC COMPANY, RECORDED MARCH 11, 1964, BOOK 300, PAGE 447, DEED RECORDS FOR LINN COUNTY, OREGON.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO LINN COUNTY, FOR ROADWAY PURPOSES, RECORDED APRIL 18, 1977, VOLUME 162, PAGE 971, MICROFILM RECORDS FOR LINN COUNTY, OREGON.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO LINN COUNTY, FOR ROADWAY PURPOSES, RECORDED DECEMBER 2, 1998, VOLUME 992, PAGE 457, MICROFILM RECORDS FOR LINN COUNTY, OREGON.

TRACT B:

BEGINNING AT A POINT ON THE EAST LINE OF THE ISAAC MILLER, SR. DONATION LAND CLAIM NO. 46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, LINN COUNTY, OREGON, NORTH 1° 09' WEST 204.0 FEET FROM THE SOUTHEAST CORNER OF SAID CLAIM; THENCE NORTH 1° 09' WEST ALONG SAID EAST LINE 60.00 FEET; THENCE SOUTH 88° 54' WEST PARALLEL WITH THE SOUTH LINE OF SAID CLAIM 2524.16 FEET MORE OR LESS, TO A POINT ON THE EASTERLY LINE OF THE RIGHT OF WAY OF THE OREGON ELECTRIC RAILROAD; THENCE SOUTH 18° 19' EAST ALONG SAID EASTERLY LINE 62 FEET MORE OR LESS, TO A POINT WHICH BEARS SOUTH 88° 54' WEST FROM THE POINT OF BEGINNING; THENCE NORTH 88° 54' EAST TO THE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY CONVEYED TO LINN COUNTY, OREGON FOR ROADWAY PURPOSES, RECORDED APRIL 18, 1977, IN VOLUME 162, PAGE 971, MICROFILM RECORDS FOR LINN COUNTY, OREGON.

TRACT C:

BEGINNING AT THE SOUTHEAST CORNER OF THE ISAAC MILLER DONATION LAND CLAIM NO. 46; THENCE NORTH 1° 11' 47" WEST 262.63 FEET;

THENCE SOUTH 88° 54' WEST 2226.47 FEET TO THE TRUE POINT OF BEGINNING;

THENCE SOUTH 88° 54' WEST 300.31 FEET;

THENCE SOUTH 18° 19' EAST 249.94 FEET;

THENCE NORTH 42° 22' 18" EAST 328.97 FEET TO THE POINT OF BEGINNING.

Legal Description - CP7 - Continued

PARCEL IV:

PART OF THE ISAAC MILLER SR. DONATION LAND CLAIM NO. 46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, OREGON, DESCRIBED AS FOLLOWS:

BEGINNING AT A POINT ON THE EAST LINE OF THE ISAAC MILLER SR. DONATION LAND CLAIM NO. 46 IN SECTION 28, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, SAID POINT BEING NORTH 1°15' WEST 2389.86 FEET FROM THE SOUTHEAST CORNER OF SAID CLAIM NO. 46; THENCE SOUTH 89°20' WEST 1200 FEET:

THENCE SOUTH 0°40' EAST 418.5 FEET;

THENCE NORTH 89°20' EAST 1204.2 FEET TO THE EAST LINE OF SAID CLAIM NO. 46; THENCE NORTH 1°15' WEST ALONG SAID EAST LINE 418.52 FEET TO THE POINT OF BEGINNING.

SAVE AND EXCEPT: A STRIP OF LAND 5.00 FEET IN WIDTH LYING SOUTH OF AND COTERMINOUS WITH THE FULL LENGTH OF THE NORTH LINE OF THAT PARCEL OF LAND DESCRIBED IN VOLUME 324, PAGE 308, LINN COUNTY, OREGON DEED RECORDS. SAID NORTH LINE ALSO BEING THE SOUTH LINE OF ARNOLD ROAD AND LYING 40.00 FEET SOUTH OF THE NORTH LINE OF ARNOLD ROAD.

SAVE AND EXCEPT THEREFROM THAT PORTION WHICH WAS CONVEYED TO LINN COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF OREGON BY INSTRUMENT, INCLUDING THE TERMS AND PROVISIONS THEREOF, RECORDED DECEMBER 2, 1998 IN VOLUME 992, PAGE 453, LINN COUNTY RECORDS.

PARCEL V:

BEGINNING AT A STONE ON THE SOUTHEASTERLY BOUNDARY LINE OF THE D.L.C. OF SILAS HAIGHT, ET UX, CLAIM NO. 55 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, LINN COUNTY, OREGON, SAID STONE BEING SOUTH 52°50' WEST 897.60 FEET DISTANT FROM THE MOST EASTERLY CORNER OF SAID CLAIM NO. 55 AND FROM

THENCE RUNNING SOUTH 52°50' WEST 1777.60 FEET TO THE WILLAMETTE RIVER;

THENCE DOWN SAID WILLAMETTE RIVER THE FOLLOWING COURSES AND DISTANCES, TO-WIT: NORTH 41°06' WEST 542.66 FEET;

THENCE NORTH 61°42' WEST 132 FEET;

THENCE NORTH 79°06' WEST 57.58 FEET TO A POINT SOUTH 1°9' WEST OF A 1+1/2 INCH PIPE, SAID PIPE BEING WEST 2660.50 FEET AND SOUTH 1093.81 FEET DISTANT FROM THE SAID MOST EASTERLY CORNER OF SAID D.L.C. NO. 55;

THENCE NORTH 1°09' EAST 40 FEET, MORE OR LESS, TO SAID FIRST ABOVE MENTIONED 1+1/2 INCH PIPE;

THENCE NORTH 1°09' EAST 332.55 FEET TO A 5/8 INCH BOLT;

THENCE NORTH 75°29' EAST 1119.77 FEET TO A 5/8 INCH BOLT;

THENCE NORTH 34°30' EAST 232.36 FEET TO A 1 INCH BY 40 INCH PIPE;

THENCE SOUTH 89°46' EAST 771.83 FEET TO A 5/8 IRON BOLT;

THENCE NORTH 25°00' EAST 973.54 FEET TO A 1 INCH x 50 INCH PIPE;

THENCE NORTH 18°28' WEST 671.68 FEET TO A 3/4 INCH PIPE,

THENCE SOUTH 77°33' EAST 46.62 FEET,

THENCE SOUTH 18°28' EAST 677.33 FEET TO A 1 INCH x 50 INCH PIPE,

THENCE SOUTH 24°27' WEST 1227.10 FEET TO THE PLACE OF BEGINNING.

EXCEPT THAT PORTION CONVEYED TO THE CITY OF MILLERSBURG BY INSTRUMENT RECORDED MAY 8, 1990, MF VOLUME 530, PAGE 769, LINN COUNTY RECORDS.

Legal Description - CP7 - Continued

PARCEL VI:

PART OF SECTIONS 19, 20, 29 AND 30 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, LINN COUNTY, OREGON AND DESCRIBED AS FOLLOWS:

BEGINNING IN THE CENTERLINE OF LINN COUNTY MARKET ROAD NO. 34 AT A POINT SOUTH 89°55' EAST 137.08 FEET, SOUTH 889.89 FEET AND SOUTH 77°32' EAST 1001.67 FEET FROM THE MOST WESTERLY SOUTHWEST CORNER OF THE GEORGE MILLER SR. DONATION LAND CLAIM NO. 58 IN SECTION 19, TOWNSHIP 10 SOUTH, RANGE 3 WEST, SAID DONATION LAND CLAIM CORNER BEING ON THE NORTHWESTERLY LINE OF THE SILAS HAIGHT DONATION LAND CLAIM #55; AND RUNNING THENCE SOUTH 1°18' WEST ALONG THE CENTER LINE OF A DITCH 1319.24 FEET TO THE INTERSECTION OF SAID DITCH WITH A SECOND DITCH;

THENCE SOUTHERLY ALONG THE CENTERLINE OF THE LAST MENTIONED DITCH FOLLOWING THE MEANDERS THEREOF, APPROXIMATELY 1750 FEET TO THE RIGHT BANK OF THE WILLAMETTE RIVER; THENCE FOLLOWING THE MEANDERS OF SAID RIGHT BANK EASTERLY UP STREAM APPROXIMATELY 1150 FEET TO A POINT SOUTH 1°09' WEST OF A 1 1/2" IRON PIPE, SAID PIPE BEING WEST 2660.50 FEET AND SOUTH 1093.81 FEET FROM THE MOST EASTERLY CORNER OF SAID SILAS HAIGHT DONATION LAND CLAIM #55;

THENCE NORTH 1°09' EAST 40 FEET, MORE OR LESS, TO SAID 1 1/2" IRON PIPE;

THENCE CONTINUING NORTH 1°09" EAST 322.55 FEET TO A 5/8" IRON BOLT;

THENCE NORTH 75°29' EAST 1119.77 FEET TO A 5/8" IRON BOLT;

THENCE NORTH 34°30' EAST 232.36 FEET TO A 1" IRON PIPE;

THENCE SOUTH 89°46' EAST 771.83 FEET TO A 5/8" IRON BOLT;

THENCE NORTH 25°00' EAST 973.54 FEET TO A 1" IRON PIPE:

THENCE NORTH 18°28' WEST 706.65 FEET TO THE CENTERLINE OF THE AFOREMENTIONED LINN COUNTY MARKET ROAD NO. 34:

THENCE NORTH 77°32' WEST ALONG SAID CENTERLINE, TO THE POINT OF BEGINNING.

SAVE AND EXCEPT THEREFROM THAT PORTION DESCRIBED IN INSTRUMENT INCLUDING THE TERMS AND PROVISIONS THEREOF, RECORDED MAY 8, 1990 IN VOLUME 530, PAGE 769, LINN COUNTY RECORDS.

PARCEL VII:

ALL THAT PART OF THE FOLLOWING DESCRIBED TRACT LYING SOUTHWESTERLY OF AND ADJACENT TO THE SOUTHWESTERLY RIGHT OF WAY OF THE OREGON ELECTRIC RAILROAD:

BEGINNING AT THE SOUTHEAST CORNER OF THE GEORGE MILLER SR. DONATION LAND CLAIM NO. 58 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, LINN COUNTY, OREGON; AND RUNNING THENCE EAST 14.79 CHAINS TO A POINT ON THE NORTH LINE OF AND WEST 37.50 CHAINS FROM THE NORTHEAST CORNER OF THE ISAAC MILLER SR., DONATION LAND CLAIM NO. 46; THENCE SOUTH 1°15' EAST, 28.56 CHAINS;

THENCE WEST 2.50 CHAINS;

THENCE SOUTH 1°15' EAST 16.71 CHAINS, MORE OR LESS, TO A POINT NORTH 1°15' WEST 2402.9 FEET FROM THE SOUTH LINE OF THE SAID ISAAC MILLER SR., DONATION LAND CLAIM NO. 46; THENCE WESTERLY, PARALLEL TO SAID SOUTH LINE, 570.65 FEET TO THE EASTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILROAD;

THENCE SOUTH 18°28' EAST, ALONG SAID RIGHT OF WAY, 1138.3 FEET TO A POINT NORTH 1°15' WEST 1320.0 FEET FROM THE SOUTH LINE OF THE ISAAC MILLER SR. DONATION LAND CLAIM NO. 46; THENCE WESTERLY, PARALLEL TO SAID SOUTH LINE 846.91 FEET TO THE SOUTHEAST CORNER OF THAT PARCEL CONVEYED TO WESTERN KRAFT CORPORATION AND RECORDED IN VOLUME 281, PAGE 254, LINN COUNTY DEED RECORDS;

THENCE NORTH 24°13' WEST 936.69 FEET TO A 1/2" IRON ROD AT AN ANGLE POINT IN THE EASTERLY LINE OF SAID WESTERLY KRAFT CORPORATION PARCEL;

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Legal Description - CP7 - Continued

THENCE NORTH 30°00' WEST 1721.5 FEET TO A 1/2" IRON ROD AT THE NORTHEAST CORNER OF SAID PARCEL, SAID 1/2" ROD BEING ON THE NORTHERLY LINE OF SAID ISAAC MILLER SR. DONATION LAND CLAIM NO. 46;

THENCE NORTH 52°50' EAST, ALONG SAID NORTHERLY LINE, 279.47 FEET TO A STONE WHICH BEARS SOUTH 52°50' WEST, 897.60 FEET FROM THE MOST EASTERLY CORNER OF THE SILAS HAIGHT DONATION LAND CLAIM NO. 55;

THENCE NORTH 24°27' EAST (CALLED NORTH 23° EAST IN OLD DEEDS) 1705.3 FEET TO THE SOUTHERLY LINE OF THE AFOREMENTIONED GEORGE MILLER SR. DONATION LAND CLAIM NO. 58; THENCE SOUTH 77°33' EAST, ALONG SAID CLAIM LINE, 414.60 FEET TO A POINT OF BEGINNING.

EXCEPTING THEREFROM THAT PART LYING WITHIN THE RIGHT OF WAY OF THE OREGON ELECTRIC RAILROAD AS RECORDED IN VOLUME 98, PAGES 136 AND 311 AND VOLUME 344, PAGE 316, DEED RECORDS.

ALSO SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED TRACT OF LAND LYING WITHIN THE BOUNDARIES OF PUBLIC ROADS AND HIGHWAYS.

ALSO SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY DEEDED TO THE CITY OF MILLERSBURG AS RECORDED IN VOLUME 530, PAGE 769, MARCH 8, 1990, LINN COUNTY DEED RECORDS.

PARCEL VIII:

BEGINNING AT A 5/8 INCH IRON ROD AT THE SOUTHEAST CORNER OF THAT PARCEL DESCRIBED IN THE 3RD PARAGRAPH OF DESCRIPTIONS OF THAT DEED RECORDED IN BOOK 235, PAGE 491, LINN COUNTY DEED RECORDS WHICH POINT IS 1108.80 FEET NORTH 88°38'30" EAST ALONG THE CLAIM LINE AS MONUMENTED FROM THE SOUTHWEST CORNER OF THE ISAAC MILLER SR., D.L.C. 46, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON; THENCE NORTH 1°13'30" WEST ALONG THE EAST LINE OF SAID PARCEL AND THE EAST LINE OF THAT PARCEL DESCRIBED IN THE FIRST PARAGRAPH OF THE DESCRIPTIONS OF SAID DEED 1320 FEET TO A 1 1/4 INCH SHAFT AT THE NORTHEAST CORNER OF SAID PARCEL;

THENCE ALONG THE NORTH LINE OF THE SAID LAST MENTIONED PARCEL SOUTH 88°38'30" WEST 1975.20 FEET TO A LOW WATER LINE OF THE WILLAMETTE RIVER FROM WHICH POINT A 5/8 INCH IRON ROD BEARS NORTH 88°38'30" EAST 136.3 FEET;

THENCE ALONG SAID LOW WATER LINE SOUTH 6°59' WEST 226.90 FEET SOUTH 21°49' EAST 273.57 FEET, SOUTH 14°46' EAST 269.05 FEET, SOUTH 21°23' EAST 192.52 FEET, SOUTH 37°19' EAST 309.5 FEET, SOUTH 51°02' EAST 301.86 FEET, SOUTH 78°40' EAST 106.23 FEET, SOUTH 53°30' EAST 101.80 FEET, SOUTH 66°11' EAST 152.74 FEET, SOUTH 74°23' WEST 61.78 FEET, NORTH 76°42' WEST 135.30 FEET, NORTH 84°09' WEST 149.40 FEET, SOUTH 56°10' WEST 103.18 FEET, SOUTH 17°12' EAST 66.93 FEET, AND SOUTH 47°02' EAST 39.0 FEET TO THE SOUTH LINE OF THAT PARCEL DESCRIBED IN THE SECOND PARAGRAPH OF DESCRIPTIONS OF THAT DEED RECORDED IN BOOK 235, PAGE 491, SAID DEED RECORDS;

THENCE NORTH 88°38'30" EAST ALONG THE SOUTH LINE THEREOF 1734.46 FEET TO THE EAST LINE OF THE NORTH PROJECTION OF THAT PARCEL DESCRIBED IN DEED RECORDED IN BOOK 284, PAGE 703, SAID DEED RECORDS;

THENCE NORTH 1°31' WEST ALONG SAID LAST MENTIONED LINE 308.88 FEET TO 1 1/2 INCH IRON PIPE ON THE SOUTH LINE OF SAID MONUMENTED CLAIM LINE;

THENCE SOUTH 88°38'30" WEST 307.10 FEET TO THE POINT OF BEGINNING.

Legal Description - CP7 - Continued

MAY 2 2 2019 OWRD

PARCEL IX:

BEGINNING AT A 1/2 INCH IRON ROD SOUTH 88°54' WEST PARALLEL TO THE SOUTH LINE OF THE ISAAC MILLER SR. D.L.C. #46, A DISTANCE OF 62.50 CHAINS FROM A POINT ON THE EAST LINE OF AND NORTH 1°09' WEST 4.00 CHAINS FROM THE SOUTHEAST CORNER OF SAID D.L.C. #46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON AND RUNNING THENCE NORTH 1°09' WEST PARALLEL TO THE EAST LINE OF SAID CLAIM; 16.0 CHAINS;

THENCE NORTH 88°54' EAST PARALLEL TO THE SOUTH LINE OF SAID CLAIM 1150.95 FEET TO THE WESTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILROAD;

THENCE SOUTH 18°19' EAST ALONG SAID RIGHT OF WAY 1105.63 FEET TO A 1/2 INCH IRON ROD WHICH IS NORTH 1°09' WEST 264.0 FEET FROM THE SOUTH LINE OF SAID D.L.C. 46; THENCE SOUTH 88°54' WEST PARALLEL TO THE SOUTH LINE OF SAID CLAIM 1477.59 FEET TO THE POINT OF BEGINNING.

EXCEPT A STRIP 50 FEET WIDE OFF THE EASTERLY END OF THE ABOVE DESCRIBED TRACT.

PARCEL X:

TRACT I:

ALL OF THE FOLLOWING DESCRIBED TRACT OF LAND LYING WESTERLY OF THE WEST LINE OF THE OREGON ELECTRIC RAILROAD:

A PORTION OF THE ISAAC MILLER SR. D.L.C. #46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2 INCH IRON ROD ON THE SOUTH LINE OF AND SOUTH 88°54' WEST 4125.0 FEET FROM THE SOUTHEAST CORNER OF SAID D.L.C. #46; AND RUNNING THENCE NORTH 1°09' WEST, PARALLEL WITH THE EAST LINE OF SAID D.L.C. #46, A DISTANCE OF 264.0 FEET TO A 1/2 INCH IRON ROD:

THENCE NORTH 88°54' EAST, PARALLEL WITH THE SOUTH LINE OF SAID D.L.C. #46, A DISTANCE OF 4125.0 FEET TO THE EAST LINE OF SAID CLAIM;

THENCE SOUTH 1°09' EAST ALONG SAID EAST LINE 60.0 FEET;

THENCE SOUTH 88°54' WEST PARALLEL WITH THE SOUTH LINE OF SAID D.L.C. #46, A DISTANCE OF 2628.85 FEET TO THE WESTERLY RIGHT OF WAY LINE OF THE O.E. RAILROAD;

THENCE SOUTH 18°19' EAST ALONG SAID WESTERLY RIGHT OF WAY LINE 213.57 FEET TO A 1/2 INCH IRON ROD ON THE SOUTH LINE OF SAID D.L.C. #46;

THENCE SOUTH 88°54' WEST ALONG THE SOUTH LINE OF SAID D.L.C. #46, A DISTANCE OF 1559.15 FEET TO THE POINT OF BEGINNING.

ALSO A PORTION OF THE ISAAC MILLER SR. D.L.C. #46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2 INCH IRON ROD ON THE SOUTH LINE OF AND SOUTH 88°54' WEST 3823.24 FEET FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER SR. D.L.C. #46 IN SAID TOWNSHIP AND RANGE; SAID BEGINNING POINT BEING ALSO NORTH 88°54' EAST 1415.04 FEET FROM THE NORTHWEST CORNER OF SAID EXUM POWELL D.L.C. #44; AND RUNNING THENCE SOUTH 1°30' EAST 1254.0 FEET TO A 1/2 INCH IRON ROD SET AT THE SOUTHWEST CORNER OF THAT TRACT OF LAND CONVEYED TO FLOYD E. FISHER BY DEED RECORDED IN VOLUME 147, PAGE 31, DEED RECORDS FOR LINN COUNTY, OREGON;

THENCE NORTH 88°54' EAST, ALONG THE SOUTHERLY LINE OF SAID FISHER TRACT AND PARALLEL TO

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THE NORTH LINE OF SAID D.L.C. #44, A DISTANCE OF 377.79 FEET TO THE CENTER LINE OF MURDER CREEK:

THENCE EASTERLY UP THE CENTER LINE OF SAID MURDER CREEK TO A POINT ON THE WESTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILROAD, SAID POINT BEING SOUTH 1°30' EAST 1336.09 FEET FROM A POINT ON THE SOUTH LINE OF AND SOUTH 88°54' WEST 2042.37 FEET FROM THE SOUTHEAST CORNER OF SAID ISAAC MILLER SR. D.L.C. #46;

THENCE NORTHWESTERLY ALONG THE WESTERLY RIGHT OF WAY LINE OF SAID RAILROAD TO A 1/2" IRON ROD ON THE NORTH LINE OF SAID D.L.C. #44;

THENCE SOUTH 88°54' WEST ALONG SAID NORTH LINE 1257.39 FEET TO THE POINT OF BEGINNING.

SAVE AND EXCEPT THEREFROM, THE FOLLOWING DESCRIBED PROPERTY:

BEGINNING ON THE WESTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILROAD AT A POINT NORTHWESTERLY 276.38 FEET FROM THE INTERSECTION OF SAID RIGHT OF WAY WITH THE SOUTH LINE OF THE ISAAC MILLER SR. D.L.C. #46, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON, SAID BEGINNING POINT BEING ON THE NORTH LINE OF THAT CERTAIN TRACT I CONVEYED TO WESTERN KRAFT CORPORATION BY DEED RECORDED IN BOOK 244, PAGE 558, OF THE DEED RECORDS AND RUNNING THENCE SOUTHEASTERLY ALONG SAID WESTERLY RIGHT OF WAY LINE 1640 FEET, MORE OR LESS, TO THE NORTH LINE OF THAT CERTAIN SLOPE EASEMENT GRANTED TO THE SAID OREGON ELECTRIC RAILROAD AND DESCRIBED IN BOOK 215, PAGE 678, DEED RECORDS;

THENCE WESTERLY, AT RIGHT ANGLES TO SAID RAILROAD, 50 FEET TO A POINT, 100 FEET FROM (MEASURED AT RIGHT ANGLES TO) THE CENTERLINE OF SAID RAILROAD;

THENCE NORTHWESTERLY, PARALLEL TO THE CENTERLINE OF SAID RAILROAD TO THE NORTH LINE OF THE AFOREMENTIONED TRACT I;

THENCE EASTERLY ALONG SAID NORTH LINE TO THE POINT OF BEGINNING.

TRACT II:

A PORTION OF THE EXUM POWELL D.L.C. #44 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 1/2 INCH IRON ROD SOUTH 1°30' EAST 1785.3 FEET FROM A POINT ON THE SOUTH LINE OF AND SOUTH 88°54' WEST 3445.46 FEET FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER SR., D.L.C. #46 IN SAID TOWNSHIP AND RANGE; AND RUNNING

THENCE NORTH 1°30' WEST 531.30 FEET TO A POINT ON THE SOUTHERLY LINE OF THAT TRACT OF LAND CONVEYED TO FLOYD E. FISHER BY DEED RECORDED IN VOLUME 147, PAGE 31, DEED RECORDS FOR LINN COUNTY, OREGON, SAID POINT BEING SOUTH 1°30' EAST 1254.0 FEET FROM THE SOUTH LINE OF SAID D.L.C. #46:

THENCE SOUTH 88°54' WEST ALONG THE SOUTHERLY LINE OF SAID FISHER TRACT AND PARALLEL TO THE SOUTH LINE OF SAID D.L.C. #46 588 FEET, MORE OR LESS, TO THE EASTERLY BANK OF THE WILLAMETTE RIVER:

THENCE SOUTHEASTERLY ALONG THE BANK OF SAID RIVER TO A POINT SOUTH 88°54' WEST OF THE POINT OF BEGINNING;

THENCE NORTH 88°54' EAST TO THE POINT OF BEGINNING.

ALSO, BEGINNING AT A 1/2" IRON ROD SOUTH 1°30' EAST, 1785.30 FEET FROM A POINT ON THE SOUTH LINE OF AND SOUTH 88°54' WEST 3445.46 FEET FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER SR. D.L.C. #46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON, AND RUNNING

THENCE NORTH 88°54' EAST PARALLEL TO THE SOUTH LINE OF THE D.L.C. #46, A DISTANCE OF 1631.51 FEET TO A 1/2" IRON ROAD ON THE WESTERLY RIGHT-OF-WAY LINE OF THE O.E.R.; THENCE NORTH 28°21' WEST, ALONG SAID RIGHT OF WAY 496.58 FEET TO THE CENTER LINE OF

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MURDER CREEK;

THENCE DOWN THE CENTER LINE OF MURDER CREEK AS FOLLOWS: SOUTH 83°15' WEST 44.83 FEET, NORTH 55°15' WEST 75.0 FEET; NORTH 70°45' WEST, 220.0 FEET, NORTH 73°00' WEST 118.0 FEET, SOUTH 79°45' WEST 100.0 FEET, SOUTH 67°45' WEST 80.0 FEET, SOUTH 47°50' WEST 130.0 FEET, SOUTH 77°30' WEST 200.0 FEET, NORTH 87°00' WEST 55.0 FEET, NORTH 79°20' WEST 80.0 FEET, NORTH 68°15' WEST 165.0 FEET, SOUTH 79°30' WEST 85.0 FEET; NORTH 80°30' WEST 60.0 FEET AND NORTH 75°11' WEST 92.09 FEET TO A POINT WHICH BEARS NORTH 1°30' WEST 531.3 FEET FROM THE PLACE OF BEGINNING;

THENCE SOUTH 1°30' EAST 531.3 FEET TO THE PLACE OF BEGINNING.

PARCEL XI:

BEGINNING AT A 5/8 INCH IRON ROD ON THE MOST EASTERLY LINE OF THAT TRACT DESCRIBED IN LINN COUNTY DEED RECORDS, MF VOLUME 379, PAGE 278, SAID ROD BEING SOUTH 1°08'13" EAST, 1,856.44 FEET, SOUTH 88°51'17" WEST, 30.04 FEET AND NORTH 89°53'15" WEST, 2,445.035 FEET FROM THE NORTHEAST CORNER OF THE ISAAC MILLER DONATION LAND CLAIM NO. 46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON.

THENCE NORTH 89°53'15" WEST, 810.68 FEET TO A 5/8 INCH IRON ROD;

THENCE ALONG A 528.339 FOOT RADIUS CURVE TO THE RIGHT, THE LONG CHORD OF WHICH BEARS NORTH 79°28'04" WEST, 191.12 FEET, TO A 5/8 INCH IRON ROD ON THE EASTERLY RIGHT OF WAY LINE OF THE BURLINGTON NORTHERN RAILROAD;

THENCE ALONG SAID RIGHT OF WAY LINE, NORTH 18°19'24" WEST, 141.40 FEET TO A 5/8 INCH IRON ROD;

THENCE ALONG A 428.339 FOOT RADIUS CURVE TO THE LEFT, THE LONG CHORD OF WHICH BEARS SOUTH 73°26'07" EAST, 242.62 FEET TO A 5/8 INCH IRON ROD;

THENCE SOUTH 89°53'15" EAST 808.50 FEET TO A 5/8 INCH IRON ROD;

THENCE SOUTH 1°07'49" EAST, 100.03 FEET TO THE POINT OF BEGINNING. ALL OF THE AFORESAID PROPERTY IS LOCATED IN SECTION 29, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON.

PARCEL XII:

BEGINNING AT A 5/8 INCH IRON ROD ON THE WESTERLY RIGHT-OF-WAY LINE OF LINN COUNTY ROAD NUMBER 367, SAID ROD BEING SOUTH 1°08'13" EAST, 1,856.44 FEET AND SOUTH 88°51'17" WEST, 30.04 FEET FROM THE NORTHEAST CORNER OF THE ISAAC MILLER DONATION LAND CLAIM NO. 46 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON. THENCE NORTH 89°53'15" WEST, 1,488.97 FEET TO A 5/8 INCH IRON ROD ON THE WESTERLY LINE OF THAT TRACT DESCRIBED IN LINN COUNTY DEED RECORDS MF VOLUME 455, PAGE 459, THENCE ALONG SAID WESTERLY LINE, NORTH 1°08'14" WEST, 100.02 FEET TO A 5/8 INCH IRON ROD; THENCE SOUTH 89°53'15" EAST, 1,488.955 FEET TO A 5/8 INCH ROD ON THE WESTERLY RIGHT OF WAY LINE OF LINN COUNTY ROAD NUMBER 308;

THENCE ALONG SAID WESTERLY LINE, SOUTH 1°08'43" EAST, 100.025 FEET TO THE POINT OF BEGINNING. ALL OF THE AFORESAID DESCRIBED PROPERTY IS LOCATED IN SECTION 28, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON.

EXCEPTING THEREFROM THAT PORTION OF SAID LAND CONVEYED TO LINN COUNTY FOR ROAD PURPOSES IN DEED RECORDED DECEMBER 02, 1998, IN VOLUME 992, PAGE 0459, MICROFILM RECORDS.

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PARCEL XIII

BEGINNING AT THE NORTHWEST CORNER OF THE ISSAC MILLER, SENIOR, D.L.C. #46 ON THE MEANDER LINE OF THE WILLAMETTE RIVER, SAID CORNER ALSO BEING THE SOUTHWEST CORNER OF THE SILAS HAIGHT D.L.C. #55 IN SECTION 29, TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON;

THENCE NORTH 52° 50' EAST 1,565.89 FEET TO A ½" ROD ON THE SOUTH LINE OF AND SOUTH 52° 50' WEST 1,177.07 FEET FROM THE SOUTHEAST CORNER OF THE SILAS HAIGHT D.L.C. #55; THENCE SOUTH 30° 00' EAST 1,721.52 FEET TO A ½" ROD;

THENCE SOUTH 24° 13' EAST 936.69 FEET TO THE SOUTH LINE OF THE FIRST TRACT DESCRIBED IN WARRANTY DEED FROM MARTHA E. MARSH TO MADELYN NELSON RECORDED DECEMBER 30, 1950 IN BOOK 218, PAGE 819, DEED RECORDS;

THENCE SOUTH 88° 54' WEST (SOUTH 88° 37' WEST BY OLD DEEDS) ALONG THE SOUTH LINE OF SAID D.L.C. #46, 1,837.63 FEET TO THE RIGHT BANK OF THE WILLAMETTE RIVER; THENCE NORTHERLY FOLLOWING THE EASTERLY MEANDERS OF SAID RIVER DOWNSTREAM 1,561.56 FEET, MORE OR LESS, TO THE POINT OF BEGINNING.

PARCEL XIV

BEGINNING AT A POINT ON THE EAST LINE OF THE NORTHERLY PROJECTION OF THAT PARCEL DESCRIBED IN DEED RECORDED IN BOOK 284, PAGE 703, LINN COUNTY DEED RECORDS WHICH POINT IS 1415.90 FEET NORTH 88° 38' 30" EAST AND 308.88 FEET SOUTH 1° 31' EAST OF THE NORTHWEST CORNER OF THE EXUM POWELL D.L.C. #44, TOWNSHIP 10 SOUTH, RANGE 3 WEST, WILLAMETTE MERIDIAN, LINN COUNTY, OREGON, SAID BEGINNING POINT ALSO BEING THE SOUTHEAST CORNER OF THE PARCEL DESCRIBED IN THE SECOND PARAGRAPH OF DESCRIPTIONS OF THAT DEED RECORDED IN BOOK 235, PAGE 491, LINN COUNTY DEED RECORDS; THENCE SOUTH 1° 31' EAST ALONG THE EAST LINE OF SAID FIRST MENTIONED PARCEL 942.47 FEET TO A ½ INCH IRON ROD ON THE NORTH LINE OF THAT PARCEL DESCRIBED IN DEED RECORDED IN BOOK 244, PAGE 321, SAID DEED RECORDS:

THENCE SOUTH 88° 54' WEST ALONG THE NORTH LINE THEREOF 302.0 FEET TO THE LOW WATER LINE OF THE WILLAMETTE RIVER;

THENCE ALONG SAID LOW WATER LINE NORTH 47° 24' WEST 272.87 FEET, NORTH 57° 02' WEST 284.28 FEET; NORTH 62° 07' WEST 281.66 FEET, NORTH 60° 37' WEST 287.30 FEET, NORTH 65° 59' WEST 267.09 FEET, NORTH 64° 04' WEST 173.56 FEET AND NORTH 47° 02' WEST 161.60 FEET TO THE SOUTH LINE OF THE PARCEL DESCRIBED IN THE SECOND PARAGRAPH OF DESCRIPTIONS OF THAT DEED RECORDED IN BOOK 235, PAGE 491, SAID DEED RECORDS; THENCE NORTH 88° 38' 30" EAST 1734.46 FEET TO THE POINT OF BEGINNING.

PARCEL XV

A TRACT OF LAND SITUATED IN THE CITY OF MILLERSBURG, COUNTY OF LINN AND STATE OF OREGON, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A 5/8 IN IRON ROD ON THE WESTERLY RIGHT-OF-WAY LINE OF COUNTY ROAD NO. 367, SAID IRON

ROD BEING 264.00 FEET NORTH 1° 11' 50" WEST AND 30.00 FEET SOUTH 88° 50' 53" WEST FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER SR. DONATION LAND CLAIM NO. 46 IN SECTION 28, TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON; RUNNING THENCE SOUTH 88° 54' 00" WEST 2513.26 FEET TO A ½ INCH IRON ROD; THENCE NORTH 18° 22' 20" WEST ALONG THE EASTERLY RIGHT-OF-WAY LINE OF THE OREGON ELECTRIC RAILWAY 2255.86 FEET TO A 2 INCH ANGLE IRON; THENCE NORTH 89° 24' 02" EAST, 1650.80 FEET;

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THENCE SOUTH 0° 55' 50" EAST 5.87 FEET;

THENCE NORTH 89° 38' 35" EAST, 117.62 FEET;

THENCE ALONG A 474.28 FOOT RADIUS CURVE RIGHT 573.72 FEET (LONG CHORD WHICH BEARS SOUTH 38° 23' 23" WEST, 539.38 FEET) TO A ¾ INCH IRON PIPE;

THENCE SOUTH 89° 20' 15" EAST, 580.34 FEET TO A 5/8 INCH IRON ROD;

THENCE NORTH 89° 24' 39" EAST 1174.08 FEET TO A ¾ INCH BOLT ON THE WESTERLY RIGHT-OF-WAY LINE OF COUNTY ROAD NO. 367;

THENCE SOUTH 01° 11' 47" EAST, ALONG SAID WESTERLY RIGHT-OF-WAY LINE 1708.39 FEET TO THE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PORTION OF THE ABOVE DESCRIBED PROPERTY DEEDED TO LINN COUNTY IN VOLUME 992, PAGE 455, DECEMBER 2, 1998, LINN COUNTY DEED RECORDS;

AND EXCEPT THAT PORTION BEGINNING AT A 5/8 INCH IRON ROD ON THE WESTERLY RIGHT OF WAY LINE OF COUNTY ROAD NO. 367, SAID ROD BEING 264.00 FEET NORTH 01°11'50" WEST AND 30.00 FEET SOUTH 88°50'53" WEST FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER, SR. DONATION LAND CLAIM NO. 46 IN SECTION 28, TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN IN LINN COUNTY, OREGON;

RUNNING THENCE NORTH 01°11'50" WEST ALONG THE WESTERLY RIGHT OF WAY LINE OF COUNTY ROAD NO. 367 AND PARALLEL TO THE EAST LINE OF SAID DONATION LAND CLAIM NO. 46 A DISTANCE OF 1056.00 FEET TO A POINT 0.22 FEET NORTH 01°11'50" WEST FROM A 3/4 INCH IRON BOLT:

THENCE SOUTH 88°50'53" WEST 2839.34 FEET TO A 5/8 INCH IRON ROD ON THE EASTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILWAY;

THENCE SOUTH 18°22'23" EAST ALONG THE EASTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILWAY 1105.56 FEET TO A 5/8 INCH IRON ROD, SAID IRON ROD BEING 264.00 FEET NORTH 01°11'50" WEST FROM THE SOUTH LINE OF SAID DONATION LAND CLAIM NO. 46; THENCE NORTH 88°50'53" EAST AND PARALLEL TO THE SOUTH LINE OF SAID DONATION LAND CLAIM NO. 46 A DISTANCE OF 2512.87 FEET TO THE POINT OF BEGINNING.

PARCEL XVI

A PORTION OF THE EXUM POWELL D.L.C. #44 IN TOWNSHIP 10 SOUTH, RANGE 3 WEST OF THE WILLAMETTE MERIDIAN, IN LINN COUNTY, OREGON, AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A ½" IRON ROD SOUTH 17° 20' EAST 344.52 FEET AND SOUTH 0° 21' WEST 344.74 FEET FROM THE SOUTHEAST CORNER OF THE ISAAC MILLER SR. D.L.C. #46 IN SAID TOWNSHIP AND RANGE; AND RUNNING THENCE SOUTH 71° 33' WEST 1232.40 FEET TO A ½" IRON ROD;

THENCE SOUTH 33° 12' WEST 500 FEET TO A 1/2" IRON ROD;

THENCE SOUTH 68° 46' WEST 405.18 FEET;

THENCE SOUTH 61° 39' WEST 32.0 FEET TO THE EASTERLY RIGHT OF WAY LINE OF THE OREGON ELECTRIC RAILROAD;

THENCE NORTH 28° 21' WEST ALONG THE SAID RIGHT OF WAY 311.25 FEET TO THE CENTER LINE OF MURDER CREEK;

THENCE UP THE CENTER LINE OF MURDER CREEK AS FOLLOW: NORTH 83° 15' EAST 27.62 FEET, SOUTH 29° 30' EAST 210.0 FEET, NORTH 68° 45' EAST 205.0 FEET, NORTH 47° 40' EAST 157.0 FEET, NORTH 53° 20' EAST 227.0 FEET, NORTH 19° 00' EAST 162.0 FEET, NORTH 26° 10' EAST 165.0 FEET, NORTH 32° 25' EAST 125.0 FEET, NORTH 51° 55' EAST 68.0 FEET, NORTH 65° 40' EAST 140 FEET, NORTH 27° 25' EAST 95.0 FEET, NORTH 82° 50' EAST 85.0 FEET, NORTH 69°50' EAST 75.0 FEET, NORTH 49°30' EAST 33.0 FEET, SOUTH 78°55' EAST 85.0 FEET, NORTH 76° 10' EAST 35.0 FEET, SOUTH 79° 40' EAST, 80.0 FEET, SOUTH 61° 10' EAST, 55 FEET, SOUTH 80° 00' EAST 185.0 FEET, NORTH 76°

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10' EAST 180.0 FEET, NORTH 79° 35' EAST 85 FEET, NORTH 45° 55' EAST 80.0 FEET AND NORTH 52° 45' EAST 47.54 FEET TO A POINT WHICH BEARS NORTH 0° 21' EAST 149.85 FEET FROM THE POINT OF BEGINNING;

THENCE LEAVING SAID CREEK AND RUNNING SOUTH 0° 21' WEST 149.85 FEET TO THE POINT OF BEGINNING.

SAVE AND EXCEPT THAT PORTION AS DESCRIBED IN WARRANTY DEED RECORDED OCTOBER 27, IN BOOK 343, PAGE 859.

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Exhibit "B" Permitted Exceptions - Site T2007-310/CP7

- Taxes or assessments for the year 2008, a lien not yet due and payable.
- 2. City liens, if any, for the city of Millersburg, a lien not yet due or payable.
- These premises are within the boundaries of the Grand Prairie Water District and are subject to the levies and assessments thereof, none due and payable.

The Following Exceptions affects Parcel I

4. Rights of the public in and to that portion of the land lying within the limits of Old Salem Road.

Easement, including terms and provisions contained therein:

Recording Information:

July 31, 1937 in Book 146, Page 0342, Deed Records

In Favor of:

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

For:

pole and anchors

- The terms and provisions contained in the document entitled "Agreement for Use and Maintenance on Drainage Pipe" recorded January 16, 1967 in Book 321, Page 0368, Deed Records.
- 7. Easement, including terms and provisions contained therein:

Recording Information:

April 08, 1999 in Volume 1025, Page 0415, Microfilm Records

In Favor of:

Linn County

For:

Roadway

The Following Exceptions affects Parcel II

8. Easement, including terms and provisions contained therein:

Recording Information:

August 26, 1982 in Volume 318, Page 0873, Microfilm Records

In Favor of:

For:

City of Millersburg sewer pipeline

- Legal consequences of the fact that the Environmental Protection Agency has designated this
 property as a hazardous waste site by placing it on their National Priorities List as disclosed by
 the Federal Register, Volume 54, No. 61, and as set forth in Warranty Deed recorded May 08,
 1990 in Volume 530, Page 766, Microfilm Records.
- Easement, including terms and provisions contained therein:

Recording Information:

May 08, 1990 in Volume 530, Page 0779, Microfilm Records

In Favor of: Teledyne Industries, Inc., a California corporation

For:

A 50 foot wide tract to install, maintain, replace and/or remove underground piping for electrical, conduit, piping and pump activities further reserving the right to maintain the use of a 20 foot wide road right of way

11. Covenants, conditions and restrictions contained in a deed recorded April 18, 1991 as document in Volume 560, Page 0267, Microfilm Records relating to, among other things: Restrictive covenants regarding construction and maintenance or use of any wells for drinking or irrigation.

The Following Exceptions affects Parcel III

- 12. Rights of the public in and to that portion of the land lying within the limits of Old Salem Road.
- 13. Limited access provisions contained in Deed to the State of Oregon, by and through its State Highway Commission recorded January 17, 1945 in Volume 167, Page 0113, Deed Records, which provides that no right of easement or right of access to, from or across the State Highway other than expressly therein provided for shall attach to the abutting property.
- 14. Covenants, conditions and restrictions as contained in deed recorded January 17, 1945 in Volume 167, Page 0113, Deed Records, as follows:

No part of the abutting private property of the grantors within a distance of five hundred (500) feet from the above described land shall ever be used for the placing and/or maintenance of advertising signs, bills or posters; provided, however, that these grantors reserve the right to use any part of said private property for the advertising of farm names or for the sale, renting or leasing of said property of for the sale of livestock or commodities or products produced or raised thereon. These burdens and covenants shall run with the land and shall forever bind the grantors and their successors in interest.

15. An easement for Electric power and signal-transmission line and incidental purposes, recorded October 16, 1946 in Book 185, Page 0631, Deed Records .

In Favor of:

Mountain States Power Company

Affects:

Tract A and Tract B of Parcel III

16. The terms and provisions of easement maintenance contained in the Warranty Deed recorded December 02, 1954 in Book 240, Page 0507, Deed Records .

(Affects Tract B)

- 17. The terms and provisions of easement maintenance contained in the Warranty Deed recorded December 02, 1954 in Book 240, Page 0511, Deed Records .
- 18. Easement, including terms and provisions contained therein:

Recording Information:

June 25, 1969 in Book 340, Page 0533, Deed Records

In Favor of:

Pacific Power and Light Company

For:

electrical, telephone, transmission and distribution lines

19.	An easement for electric transmission and distribution lines and incidental purposes,
	recorded July 12, 1971 in Volume 19, Page 0617, Microfilm Records .

In Favor of:

Pacific Power and Light Company, a corporation, its successors

and assigns

Affects:

Tract A

20. An easement for electric transmission and distribution lines and incidental purposes,

recorded July 31, 1972 in Volume 44, Page 0229, Microfilm Records .

In Favor of:

Pacific Power and Light Company, a corporation, its successors

and assigns

Affects:

Tract A

 An easement for electrical transmission and communication lines and incidental purposes, recorded September 08, 1975 in Volume 115, Page 0908, Microfilm Records.

In Favor of:

Pacific Power and Light Company

Affects:

Tract C

22. An easement for electric transmission and distribution lines and incidental purposes, recorded June 08, 1976 in Volume 136, Page 0249, Microfilm Records .

In Favor of:

Pacific Power and Light Company, a corporation, its successors

and assigns

Affects:

Tracts A and B

23. An easement for sewer pipelines and incidental purposes, recorded August 02, 1979 in Volume 239, Page 0987, Microfilm Records .

In Favor of:

City of Millersburg

Affects:

Tract C

 An easement for sewer pipeline and incidental purposes, recorded April 20, 1987 in Volume 440, Page 0015, Microfilm Records .

In Favor of:

City of Millersburg, Linn County, Oregon, a municipal corporation

Affects:

Tract A

 An easement for sewer pipeline and incidental purposes, recorded April 20, 1987 in Volume 440, Page 0025, Microfilm Records .

In Favor of:

City of Millersburg, Linn County, Oregon, a municipal corporation

Affects:

Tract C

26. The terms and provisions contained in the document entitled Agreement for Easement, executed by and between Willamette Memorial Park, an Oregon non-profit corporation, formerly known as Linn-Benton Memorial Park Association and Willamette Industries, Inc., an Oregon corporation, recorded February 27, 1996, in Volume 789, Page 0600, Microfilm Records.

27. The terms and provisions contained in the document entitled Charitable Donation Agreement, executed by and between Dan Desler, Troy Cummins, and Willamette Industries, Inc. and Western States Family Foundation, a component fund of the American Foundation for Charitable Support, Inc., a qualified 501(c)(3) National Charitable Fund and Ben L. Schaub, president, recorded December 05, 2001, in Volume 1241, Page 0725, Microfilm Records.

(Agreement does not contain a legal description)

28. Easement, including terms and provisions contained therein:

Recording Information:

February 05, 2007 as Fee No. 2007-002967 in Microfilm Records

In Favor of:

TDY Industries, Inc., a California corporation dba Wah Chang

For:

Gas

The Following Exceptions affects Parcel IV

29. Rights of the public in and to that portion of the land lying within the limits of Arnold Road.

30. Easement, including terms and provisions contained therein:

Recording Information:

December 29, 1987, in Volume 461, Page 0432, Microfilm

Records

In Favor of:

The City of Millersburg, Oregon

For:

For:

underground waterline

31. Easement, including terms and provisions contained therein:

Recording Information:

October 10, 1996, in Volume 830, Page 0628, Microfilm Records

In Favor of:

Pacificorp, an Oregon corporation, its successors and assigns

electric transmission lines, distribution lines, and communication

lines

The Following Exceptions affects Parcel V

- 32. Rights of the public and governmental bodies in and to that portion of the premises herein described lying below the high water mark of Willamette River and the ownership of the State of Oregon in and to that portion lying below the high water mark thereof.
- 33. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of Conser lake .
- 34. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Willamette River or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.
- 35. Some portion of said land has not been continuously within the boundaries of the County of Linn.

36. Easement, including terms and provisions contained therein:

Recording Information:

June 08, 1976, in Volume 136, Page 0249, Microfilm Records Pacific Power and Light Company, a corporation, its successors

and assigns

For:

electric Transmission and distribution lines

37. Easement, including terms and provisions contained therein:

Recording Information:

May 19, 1987, in Volume 442, Page 0738, Microfilm Records

In Favor of:

In Favor of:

City of Millersburg

For:

water pipeline

The Following Exceptions affects Parcel VI

38. The assessment roll and the tax roll disclose that the within described premises were specially zoned or classified for Farm use. If the land has become or becomes disqualified for such use under the statute, an additional tax or penalty may be imposed.

- 39. Rights of the public and governmental bodies in and to that portion of the premises herein described lying below the high water mark of Willamette River and the ownership of the State of Oregon in and to that portion lying below the high water mark thereof.
- 40. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Willamette River or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.
- 41. Rights of the public in and to that portion of the land lying within the limits of Conser Road.

42. Easement, including terms and provisions contained therein:

Recording Information:

February 05, 1937, in Book 145, Page 0403, Deed Records

1-1

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

For:

Anchors, wires and fixtures

43. Easement, including terms and provisions contained therein:

Recording Information:

October 03, 1947, in Book 196, Page 0196, Deed Records

In Favor of:

In Favor of:

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

For:

poles and anchors

44. Memorandum of oil, gas and Mineral lease executed by Paul E. Nofziger and Betty M. Nofziger as lessor and Mobil Oil Corporation, a New York Corporation as lessee, recorded October 01, 1975 in Volume 118, Page 0221, Microfilm Records.

The Lessee's interest under the lease has been assigned to American Quasar Petroleum Company of New Mexico by assignment recorded March 02, 1983 in Volume 329, Page 0828, Microfilm Records .

45. Easement, including terms and provisions contained therein:

Recording Information:

May 19, 1987, in Volume 442, Page 0738, Microfilm Records

In Favor of:

The City of Millersburg

For:

water pipelines and construction

The Following Exceptions affects Parcel VII

46. Easement, including terms and provisions contained therein:

Recording Information:

January 12, 1962, in Book 281, Page 0254, Deed Records water pipelines, pumping station, electrical power transmission

lines and telephone lines

47. Easement, including terms and provisions contained therein:

Recording Information:

August 25, 1982, in Volume 318, Page 0792, Microfilm Records

In Favor of:

City of Millersburg

For:

For:

sewer pipe line

48. Easement, including terms and provisions contained therein:

Recording Information:

May 19, 1987, in Volume 442, Page 0738, Microfilm Records

In Favor of:

City of Millersburg

For:

water pipeline and construction

The Following Exceptions affects Parcel VIII

- 49. Rights of the public and governmental bodies in and to that portion of the premises herein described lying below the high water mark of Willamette River and the ownership of the State of Oregon in and to that portion lying below the high water mark thereof.
- 50. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of Conser lake .
- 51. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Willamette River or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.

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Exhibit "B (Continued)" Permitted Exceptions - Site T2007-310/CP7

- 52. Some portion of said land has not been continuously within the boundaries of the County of Linn.
- 53. Rights of way of ditches, canals and reservoir sites for irrigation purposes as disclosed by Deed recorded August 13, 1953, in Book 235, Page 0491, Linn County Records.

The Following Exceptions affects Parcel IX

- 54. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of Murder Creek.
- 55. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Murder Creek or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.
- 56. Easement, including terms and provisions contained therein:

Recording Information:

October 31, 1969, in Book 344, Page 0114, Deed Records

In Favor of:

Wah Change Albany Corporation, a corporation

For:

Roadway

The Following Exceptions affects Parcel X

- 57. Rights of the public and governmental bodies in and to that portion of the premises herein described lying below the high water mark of Willamette River and the ownership of the State of Oregon in and to that portion lying below the high water mark thereof.
- 58. Rights of the public and of governmental bodies in and to that portion of the premises herein described lying below the high water mark of Murder Creek .
- 59. Any adverse claim based upon the assertion that some portion of said land has been removed from or brought within the boundaries thereof by an avulsive movement of the Murder Creek or has been formed by the process of accretion or reliction or has been created by artificial means or has accreted to such portion so created.
- 60. Easement, including terms and provisions contained therein:

Recording Information:

April 22, 1929, in Book 136, Page 0429, Deed Records

In Favor of:

In Favor of:

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

transmission and distribution line

61. Easement, including terms and provisions contained therein:

Recording Information:

October 16, 1946, in Book 185, Page 0631, Deed Records Mountain States Power Company, a Delaware Corporation, its

successors and assigns

For:

electric power and signal transmission lines

62. Easement, including terms and provisions contained therein:

Recording Information:

June 23, 1950, in Book 215, Page 0675, Deed Records

In Favor of:

Oregon Electric Railway Co.

For:

Slope

63. Easement, including terms and provisions contained therein:

Recording Information:

June 23, 1950, in Book 215, Page 0678, Deed Records

In Favor of:

Oregon Electric Railway Co.

For:

Slope

64. Easement, including terms and provisions contained therein:

Recording Information:

July 09, 1953, in Book 233, Page 0388, Deed Records

In Favor of:

Oregon Electric Railway Co.

For:

Slope

65. Easement, including terms and provisions contained therein:

Recording Information:

December 02, 1954, in Book 240, Page 0507, Deed Records

In Favor of:

Oregon Electric Railway Co.

For:

water pipelines

66. Easement, including terms and provisions contained therein:

Recording Information:

December 02, 1954, in Book 240, Page 0511, Deed Records

For:

water pipelines

67. Easement, including terms and provisions contained therein:

Recording Information:

July 25, 1955, in Book 244, Page 0321, Deed Records

For:

16 foot wide driveway

68. Easement, including terms and provisions contained therein:

Recording Information:

October 27, 1969, in Book 343, Page 0858, Deed Records

For:

water pipelines

The Following Exceptions affects Parcel XI and XII

69. Rights of the public in and to that portion of the land lying within the limits of Old Salem Road.

70. An easement for anchor, wires and fixtures and incidental purposes, recorded March 02, 1937 in Book 145, Page 0470, Deed Records .

In Favor of:

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

Affects:

Parcel XI

 An easement for sewer pipeline and incidental purposes, recorded August 25, 1982 in Volume 318, Page 0792, Microfilm Records

In Favor of:

City of Millersburg

Affects:

Parcel XI

72. An easement for utility purposes and road right-of-way and incidental purposes, recorded May 08, 1990 in Volume 530, Page 0775, Microfilm Records .

In Favor of:

City of Millersburg, a municipal corporation

Affects:

50 feet wide on Parcel XI and 100 feet wide on Parcel XII

73. An easement for transmission and distribution lines and incidental purposes, recorded October 10, 1996 in Volume 830, Page 0628, Microfilm Records .

In Favor of:

PacifiCorp, a Oregon corporation

Affects:

Parcel XII

The Following Affects Parcel XIII

74. Any adverse claim based upon the assertion that:

- a). Said land, or any part thereof, is now or at any time has been below the ordinary high water mark of the Willamette River and Conser Lake including any ownership rights which may be claimed by the State of Oregon now or at any time lying below the ordinary high water mark.
- b). Some portion of said land has been created by artificial means or has accreted to such portion so created.
- c). Some portion of said land has been brought within or removed from the boundaries thereof by a change in the location of the Willamette River and Conser Lake.
- 75. Such rights and easements for navigation, commerce, recreation and fishery which may exist over that portion of said land lying beneath the waters of Willamette River
- 76. Any adverse claim based upon the assertion that some portion of said land lies below the ordinary high water mark of Conser Lake.
- 77. Some portion of said land has not been continuously within the boundaries of the County of Linn.

78. Easement, including terms and provisions contained therein:

Recording Information:

January 12, 1962 in Book 281, Page 254, Deed Records

In Favor of:

Western Kraft corporation, an Oregon corporation

For:

Pipelines

79. Easement, including terms and provisions contained therein:

Recording Information:

January 12, 1962 in Book 281, Page 254, Deed Records

In Favor of:

Western Kraft corporation, an Oregon Corporation

For:

Pumping Station Site #B

80. Easement, including terms and provisions contained therein:

Recording Information:

January 12, 1962 in Book 281, Page 254, Deed Records

In Favor of:

Western Kraft corporation, an Oregon Corporation

For:

Electric power transmission lines and one or more telephone

lines

The Following Affects Parcel XIV

81. Any adverse claim based upon the assertion that:

- a). Said land, or any part thereof, is now or at any time has been below the ordinary high water mark of the Willamette River including any ownership rights which may be claimed by the State of Oregon now or at any time lying below the ordinary high water mark.
- b). Some portion of said land has been created by artificial means or has accreted to such portion so created.
- c). Some portion of said land has been brought within or removed from the boundaries thereof by a change in the location of the Willamette River.
- d). Some portion of said land has not been continuously within the boundaries of the County of Willamette River.
- 82. Rights of the public, riparian owners and of governmental bodies in that portion of the above described property lying below the high water mark of unnamed creek to the use of the waters and the natural flow thereof.

The Following Affects Parcel XV

83. Easement, including terms and provisions contained therein:

Recording Information:

May 29, 1969 in Book 339, Page 793, Deed Records

In Favor of:

Pacific Power and Light Company, a corporation, its successors

and assigns

For:

Electrical and telephone transmission and distribution lines

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Exhibit "B (Continued)" Permitted Exceptions - Site T2007-310/CP7

84. The terms and provisions contained in the document entitled "Restrictive Covenant" recorded December 17, 1986 as Volume 429, Page 927, Microfilm Records.

85. Easement, including terms and provisions contained therein:

Recording Information:

April 03, 1987 in Volume 438, Page 764, Microfilm Records

In Favor of:

City of Millersburg

For:

Sewer pipeline systems

86. Easement, including terms and provisions contained therein:

Recording Information:

March 17, 1987 in Volume 495, Page 753, Microfilm Records

In Favor of:

City of Millersburg

For:

Utilities

87. Easement, including terms and provisions contained therein:

Recording Information:

October 10, 1996 in Volume 830, Page 628, Microfilm Records

In Favor of:

PacifiCorp, an Oregon Corporation

For:

Right of Way

The Following Affects Parcel XVI

88. Sewer line as disclosed by Survey C.S. 10400, Survey Records of Linn County, Oregon.

89. Any adverse claims based upon the assertion that:

a) Some portion of said land has been created by artificial means or has accreted to such portion so created.

b) Some portion of said land has been brought within the boundaries thereof by a change in the location of Murder Creek.

90. The rights of the public in and to that portion of the herein described property lying within the limits of public roads, streets or highways.

91. Easement, including terms and provisions contained therein:

Recording Information:

April 20, 1933 in Book 136, Page 429, Deed Records

In Favor of:

Mountain States Power Company, a Delaware Corporation, its

successors and assigns

For:

Electrical distribution line

92. Easement, including terms and provisions contained therein:

Recording Information:

November 30, 1954 in Book 240, Page 507, Deed Records

In Favor of:

Western Kraft Corporation

For:

Pipelines, Pumping station, common use rights, roadway and

telephone lines

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Exhibit "B (Continued)" Permitted Exceptions - Site T2007-310/CP7

93. Easement, including terms and provisions contained therein:

Recording Information:

June 10, 1970 in Book 350, Page 217, Deed Records

In Favor of:

Willamette Industries, Inc.

For:

Pipelines

94. Easement, including terms and provisions contained therein:

Recording Information:

August 22, 1979 in Volume 241, Page 894, Microfilm Records

In Favor of:

City of Millersburg

For:

Sewer pipeline system

95. Easement, including terms and provisions contained therein:

Recording Information:

April 20, 1987 in Volume 440, Page 17, Microfilm Records

In Favor of:

City of Millersburg

For:

Sewer pipeline system

96. Easement, including terms and provisions contained therein:

Recording Information:

April 20, 1987 in Volume 440, Page 21, Microfilm Records

In Favor of:

City of Millersburg

For:

Sewer pipeline system

97. An easement for electric power transmission, distribution, communication lines and incidental

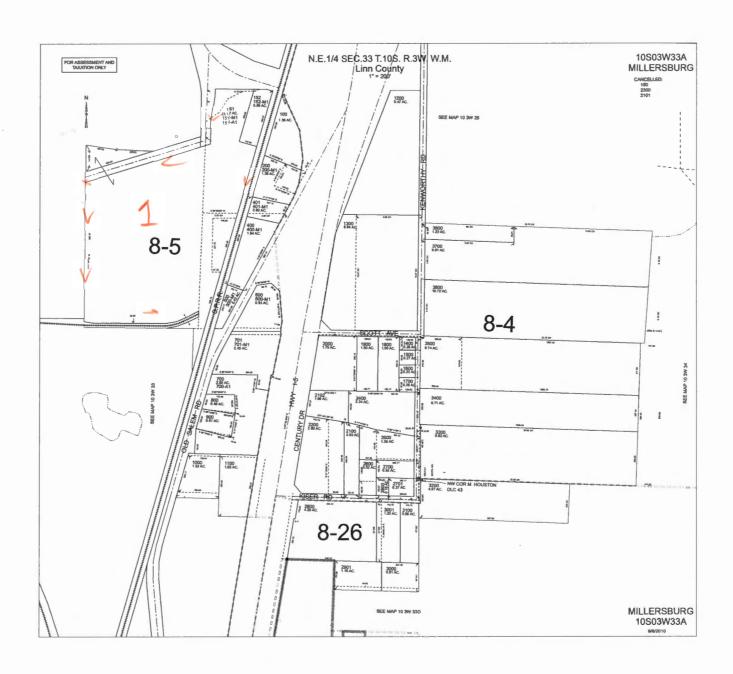
purposes, recorded June 18, 2008 as Document No. 2008-12264.

In Favor of:

PacifiCorp, an Oregon corporation

Affects:

Parcel III





MAY 2 2 2019 OWRD

Property Detail Report

Property Address:

2570 NE Old Salem Rd Albany OR 97321

Prepared For:

Flakeboard America Limited

Thank you for the opportunity to assist you!

4/29/19 Amerititle claims no liability in accuracy of these reports.

Customer Service 503.581.1431

valleycs@amerititle.com

Mid-Willamette Valley Locations

Salem

320 Church St. NE 503.581.1431 South Salem

3240 Commercial St. SE, Ste. 140 971.701.2591 **Silverton** 215 E Main St 503.873.7200

Albany 1393 Clay St. SE: 541,928,3368 Corvallis 525 NW 2nd St. Ste. 2 541.752.3415 **Lebanon** 1475 S Main St 541.259.3736 Monmouth 283 N Pacific Hwy 503.838.2259



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Linn County Parcel Detail

Site Address:

2570 NE Old Salem Rd

Albany OR 97321

Parcel ID:

0046884

Tax Lot:

10S03W33A00151

Owner:

Flakeboard America Limited

Owner2:

Owner Address:

515 Rivercrossing Dr Ste 110

Fort Mill SC 29715

Parcel Size:

23.17 Acres (1,009,285 SqFt)

Neighborhood: Subdivision:

Lot / Block:

Twn/Range/Section:

10S / 03W / 33 / NE

Legal

Assessment and Taxes

Market Land Value:

\$1,438,800.00

Levy Code Area:

00805

Annual Tax History

Market Improved Value:

\$1,860,040.00

Levy Rate:

15,7381 2018

2018: \$57,670.98

Market Total Value: Assessed Value:

\$3,298,840.00 \$3,298,840.00 Tax Year: **Exemption Desc:** 2017: \$56,324.99 2016: \$49,573.45

Land Information

Land Use:

303 - STATE RESP INDUSTRIAL, LAND & BL

School District:

8JZ5 - Greater Albany

Building Use:

Waterfront: Longitude:

Murder Crk -123.062885

Zoning:

Millersburg-HI - Heavy Industrial

Latitude:

44.663180

Recreation:

Improvement Details

Year Built:

Bed:

Garage:

Stories:

Baths: **Bsmt SqFt:** **Exterior Walls:**

Bldg SqFt:

Roof Cover:

Finished SqFt:

Attic SqFt:

Heat:

Bldg Type:

803 - Mach. & Equip. State Fir 1/ Fir 2 SqFt:

A/C:

Transfer Information

Loan Date:

7/30/2008

Loan Amt:

Doc Num:

0000015108

Doc Type:

Doc Type:

Loan Type:

Variable

Finance Type:

Lender:

ROYAL BANK OF CANADA

Rec. Date:

7/28/2006

Sale Price:

\$1,060,000.00

0000018397

Grant Deed

Owner:

Doc Num:

Orig. Loan Amt:

FLAKEBOARD AMERICA LIMITED

Grantor: Title Co: WEYERHAEUSER

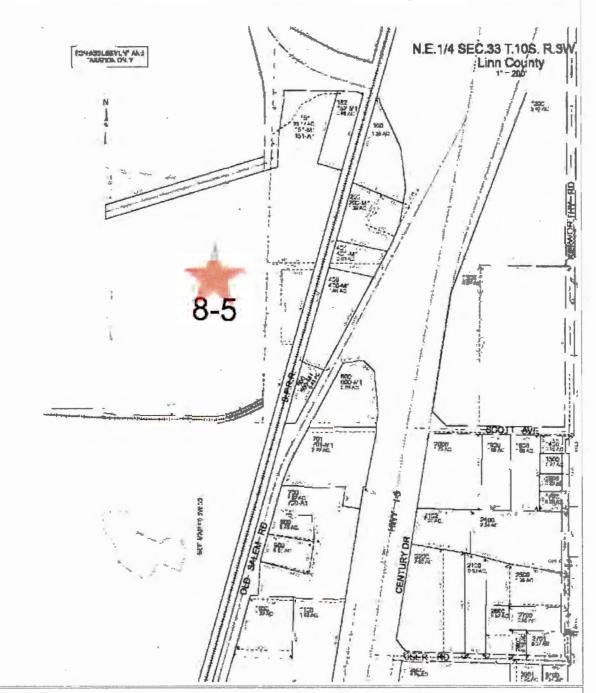
Finance Type:

Loan Type:

Lender:

AMERITITLE

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.





Parcel ID: 0046884

Site Address: 2570 NE Old Sialem Rd

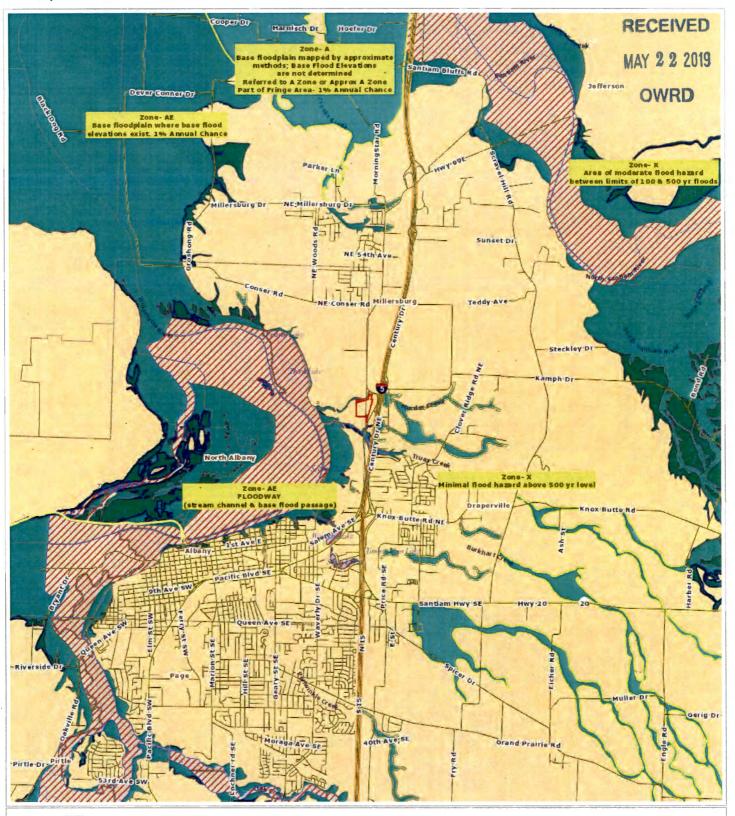
Sentry Dynamics, Int. and its customers make no representations, warranties or conditions, express ϵ_{Γ} implied, as to the accuracy or completeness of information contained in this report.





Parcel ID: 0046884

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.





Parcel ID: 0046884

Sentry Dynamics, Inc. and its customers make no representations, warranties or conditions, express or implied, as to the accuracy or completeness of information contained in this report.

7451580

After Recording Return To:

LINN COUNTY, OREGON

2006-18397

D-WD

Cnt=1 Stn=1 COUNTER 07

07/28/2006 11:23:12 AM

\$66.00



i, Steve Druckenmiller, County Clerk for Linn County, Oregon, certify that the instrument identified herein was recorded in the Clerk records.

Steve Druckenmiller - County Clerk



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Map / Tax Lot No. 10-3W-33A 151

When recorded, return to: FLAKEBOARD AMERICA LIMITED

100 KINGSLEY PARK DR Fort Mill SC 29715-6476

Send Tax Statements to: FLAKEBOARD AMERICA LIMITED 100 KINGSLEY PARK DR

Fort Mill SC 29715-6476

10-3W-33A 151 10-3W-33A 151A01 Account No.

046884 866446 Code:

08-05 08-05 MAY 2 2 2019

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SPECIAL WARRANTY DEED

The Grantor, WEYERHAEUSER COMPANY, a Washington corporation, as successor by merger to WILLAMETTE INDUSTRIES, INC., an Oregon corporation, for valuable consideration, receipt of which is hereby acknowledged, conveys and specially warrants to FLAKEBOARD AMERICA LIMITED, a Delaware corporation, Grantee, the real estate situated in LINN COUNTY, OREGON, described on EXHIBIT A attached hereto and by this reference made a part hereof, free of encumbrances creaated or suffered by Grantor except as specifically set forth herein and subject to reservation of Grantor as set forth on said Exhibit A.

The true and actual consideration for this transfer is: \$ 1,060,000.00.

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 197.352. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY APPROVED USES, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES AS DEFINED IN ORS 30.930 AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 197.352.

Dated the 3 btd day of July, 2006



WEYERHAEUSER COMPANY

Title:

Senior Vice President

A 44 ---

Clave S. Grace

Secretary

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STATE OF WASHINGTON)
) ss
COUNTY OF KING .)

Personally appeared before me, the undersigned authority in and for said county and state, on this <u>Joth</u> day of July, 2006, within my jurisdiction, the within named Sandy D McDade and Claire Grace, who acknowledged that they are a Senior Vice President and Secretary, respectively, of WEYERHAEUSER COMPANY, a Washington corporation, and that for and on behalf of the said corporation, and as its act and deed they executed the above and foregoing instrument, after first having been duly authorized by said corporation so to do.

Warry A Going
Notary Public

My appointment expires: April 1, 2009

DAVID A. YOUNG
Notary Public
STATE OF WASHINGTON
My Commission Expires 04/01/09

Exhibit A

IN LINN COUNTY OREGON:

Parcel 1:

All that piece or parcel of land situated, lying and being in the Southwest ¼ of Section 28 and the Northwest ¼ of Section 33, Township 10 South, Range 3 West, Willamette Meridian in Linn County, Oregon; and more particularly described as follows:

Commencing at a point in the center line of a County Road distant South 17°20'00" East, 344.52 feet from the Southeast corner of the Isaac Miller Donation Land Claim No. 46; thence South 0°21'00" West, along said center line of County Road, 344.74 feet to the Southeasterly comer of the land described in Warranty Deed dated September 26, 1958 from Oscar Nygren to Western Kraft Corporation, recorded September 29, 1958 in Book 261, Page 652, Deed Records of Linn County, Oregon and the actual point of beginning of the parcel of land to be described; thence South 0°21'00" West, continuing along said center line, 1110.40 feet; thence South 88°54'00" West, 700.00 feet; thence North 1°06'00" West, 882.57 feet to a point in the Southerly line of said land described in Warranty Deed dated September 26, 1958; thence North 71°33' East, along said Southerly line, 762.80 feet to the actual point of beginning.

Parcel 2:

A parcel of land situate in the South half of Section 28 and the North half of Section 33, Township 10 South, Range 3 West of the Willamette Meridian, in Linn County, Oregon, described as follows:

Beginning at a point in the center line of a County Road distant South 17°20' East, 344.52 feet from the Southeast corner of the Isaac Miller Donation Land Claim No. 46, and also distant North 0°21' East, measured along said center line, 344.74 feet from the Southeasterly corner of the land described in Warranty Deed dated September 26, 1958 from Oscar Nygren to Western Kraft Corporation, recorded September 29, 1958 in Book 261, Page 652, Deed Records of Linn County; thence South 0°21' West along said center line of County Road, 1456.46 feet to a point in the Southerly line of the land described in Warranty Deed dated November 20, 1959 from Oscar Nygren and Persis H. Nygren to Southern Pacific Company, recorded December 10, 1959 in Volume 268, Page 633, Deed Records of Linn County; thence North 88°51' East, along said Southerly line, 37.37 feet to a line that is parallel with an distant 30 feet Northwesterly measured at right angles from the original located center line of the main track of the Southern Pacific Company, thence North 14°15' East, along said parallel line, 368.78 feet; thence South 88°51' West 57.78 feet; thence North 1°09' West, 327.53 feet; thence North 88°51' East, 148.00 feet to a line that is parallel with and distant 30 feet Northwesterly measured at right angles from said original located center line; thence North 14°15' East, along last said parallel line, 790.71 feet to the Northeasterly line of the land described in Warranty Deed dated November 20, 1959 from Oscar Nygren and Persis H. Nygren to Southern Pacific Company recorded December 10, 1959

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in Volume 268, Page 630, Deed Records of Linn County; thence North 74°55' West, along said Northeasterly line, 37.83 feet to the Northerly line of said land described in last said deed dated November 20, 1959; thence South 88°51' West, along said Northerly line, 361.05 feet to the point of beginning.

EXCEPTING THEREFROM that portion of said property lying below a depth of 500 feet measured vertically from the contour of the surface thereof.

ALSO, SAVE AND EXCEPT the following:

A parcel of land situate in the South half of Section 28 and the North half of Section 33, Township 10 South, Range 3 West, Willamette Base and Meridian, County of Linn, State of Oregon, described as follows:

Beginning at a point in the center line of a County Road distant South 17°20' East, 344.52 feet from the Southeast corner of the Isaac Miller Donation Land Claim No. 46, and also distant North 0°21' East, measured along said center line, 344.74 feet from the Southeasterly corner of the land described in Warranty Deed dated September 26, 1958 from Oscar Nygren to Western Kraft Corporation, recorded September 29, 1958 in Book 261, Page 652, Deed Records of Linn County; thence North 88°51' East 284.34 feet to the true point of beginning of this description. thence along the Northerly line of the land described in Warranty Deed dated November 20, 1959 from Oscar Nygren and Persia H. Nygren to Southern Pacific Company recorded December 10, 1959 in Volume 268, Page 630, Deed Records for Linn County, Oregon, North 88°51' East 76.92 feet to a 1/2 inch iron rod; thence along the Northeasterly line of said land described in last said deed, dated November 20, 1959, South 74°55' East 37.84 feet to a 1/2 inch iron rod on the Westerly edge of the Southern Pacific Company railroad right of way; thence along said Westerly right of way line, South 14°15' West 349.57 feet to a 1/2 x 30" iron rod; thence North 75°45' West 112.00 feet to a 1/2 x 30" iron rod; thence North 14°15' East 329.69 feet to the true point of beginning.

Parcel 3:

A parcel on land situate in the South half of Section 28 and the North half of Section 33, Township 10 South, Range 3 West, Willamette Meridian, County of Linn, State of Oregon, described as follows: Commencing at a point in the center line of a County Road distant South 17°20' East, 344.52 feet form the Southeast corner of the Isaac Miller Donation Land Claim No. 46, and also distant North 0°21' East, measured along said center line 344.74 feet from the Southeasterly corner of the land described in Warranty Deed dated September 26, 1958 from Oscar Nygren to Western Kraft Corporation, recorded September 29, 1958 in Book 261, Page 652, Deed Records of Linn County; thence South 0°21' West, along said center line of County Road, 1456.46 feet to a point in the Southerly line of the land described in Warranty Deed dated November 20, 1959 from Oscar Nygren and Persis H. Nygren to Southern Pacific Company, recorded December 10, 1959 in Volume 268, Page 633, Deed Records of Linn County and thence North 88°51' East along said Southerly line 37.37 feet to a line parallel with and distance 30 feet Northwesterly measured at right angles from the original located center line of the main

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track of the Southern Pacific Company; thence North 14°15' East, along said parallel line 368.78 feet to the point of beginning; thence South 88°51' West 57.78 feet; thence North 1°09' West 327.53 feet; thence North 88°51' East, 148.00 feet to a line that is parallel with and distant 30 feet Northwest measured at right angles from said original located center line; thence South 14°15' West, along last said parallel line, 339,72 feet more or less to the point of beginning.

Parcel 4:

A portion of that Weyerhaeuser Tract previously known as the Western Kraft Corporation Tract described by deed recorded in Book 261, Page 656 in the Linn County Oregon Deed Records on September 29, 1958 which portion being more particularly described as follows:

Commencing at the southeast corner of the Issac Miller Sr. Donation land Claim Number 46 in Township 10 South, Range 3 West, Willamette Meridian, in Linn County, Oregon; thence South 17°20' East 344.52 feet; thence South 00°21' West 344.74 feet; thence South 71°34'40" West 763.55 feet; thence North 01°10'00" West 222.54 feet to a 5/8 inch iron rod on the boundary line of said Weyerhaeuser Tract at the TRUE POINT OF BEGINNING, said 5/8 inch rod being South 01°10'00" East 45.01 feet of a ½ inch rod set in County Survey Number 10400 filed in the office of the Linn County Surveyor; thence South 84°20'47" East 187.06 feet to a 5/8 inch rod; thence South 89°00'32" East 229.29 feet to a 5/8 inch rod on the north right of way line of Nygren Road; thence South 71°34'40" West, along said north right of way line, 434.41 feet to a point on the boundary line of said Weyerhaeuser Tract; thence North 01°10'00" West 159.71 feet to the Point of Beginning.

TOGETHER WITH easements including, but not limited to easements for access (pedestrian, vehicular, railroad, etc.); utilities (water, sanitary & storm sewer, electrical energy, gas, steam, etc.); surface flowage / drainage (stormwater, process water, etc.), in, on, under, over, along, across and through Grantor's retained adjoining property, described on Exhibit C, attached, for all purposes necessary to occupy, use, operate and maintain the herein conveyed real property and improvements as existing on the date hereof as a forest products manufacturing facility and in the manner in which it has heretofore been utilized by Grantor during the 12 month period immediately preceding the date of this Deed. Such easement rights include the rights of ingress to and from the easement area using all existing and future streets, roads and other rights of way and the right to occupy the easement area for use, operation, maintenance, repair, replacement and removal of said easement elements. Said easements shall continue until no longer used by Grantee for a period of 24 consecutive months. Grantee agrees to indemnify and hold the Grantor harmless from and against any and all claims, damages, costs and liabilities including personal injury or property damage claims arising out of Grantee's use of the easements granted above.

RESERVING TO Grantor non-exclusive easements for access (pedestrian, vehicular, railroad); utilities (water, sanitary & storm sewer, electrical energy, gas, steam, etc.); surface flowage / drainage (stormwater, process water, etc.) to continue providing, as existing on the date hereof, such services to Grantor's retained real property, described on Exhibit C, attached, for the

purposes and in the manner in which it has been used by Grantor during the immediately preceding 12 month period. Said reserved easements shall continue until no longer used by Grantor for a period of 24 consecutive months. The reserved rights include the rights of ingress to and from the easement area for maintenance, repair, replacement of any easement improvements located therein; provided, however, that such rights of ingress, egress and use shall be exercised only upon reasonable prior notice and in a manner so as to minimize interference with the ongoing business operations of Grantee then being conducted therein, and, so long as the easement is for the sole benefit of Grantor, removal of the easement improvements from the easement area at Grantor's sole cost and expense, so long as Grantor repairs any damage caused by such removal and restores the easement area to substantially the condition it existed as of the date of this Deed, except as may be otherwise agreed in advance in writing by Grantee. Grantor agrees to indemnify and hold the Grantee harmless from and against any and all claims, damages, costs and liabilities including personal injury or property damage claims arising out of Grantor's use of the reserved easements.

SUBJECT TO:

- Rights of the public, riparian owners and of governmental bodies in that portion of the 1. above described property lying below the high water mark of Murder Creek to the use of the waters and the natural flow thereof.
- 2. The rights of the public in and to that portion of the herein described property lying within the limits of public roads, streets or highways.
- 3. An easement created by instrument, including the terms and provisions thereof,

Dated

January 16, 1929

Recorded

April 22, 1929

Deed Book: 136

Page: 429

In Favor Of

Mountain States Power Company

For

Electrical distribution line

4. An easement created by instrument, including the terms and provisions thereof,

Dated

November 30, 1954

Recorded

December 2, 1954

Book: 240

Book: 240

Page: 507

Page: 635

In Favor Of

Western Kraft Corporation

For

Pipelines, pumping station, common use rights, private roadway and

electric transmission and telephone lines

An easement created by instrument, including the terms and provisions thereof, 5.

Dated

December 10, 1954

Recorded

In Favor Of

December 13, 1954

Western Kraft Corporation

For

Pipelines

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6. An easement created by instrument, including the terms and provisions thereof,

Dated : April 12, 1955 June 9, 1955

Recorded : June 10, 1955 Also Recorded : June 10 1955 Deed Book: 243 Page: 578 Deed Book: 243 Page: 579

In Favor Of : Mountain States Power Company

For : Maintain, operate, communication facilities, also to trim trees, along

said facilities

7. An easement created by instrument, including the terms and provisions thereof,

Dated: December 26, 1956 and December 31, 1956

Recorded: December 31, 1956 Book: 252 Pages: 337 and 340

In Favor Of : Pacific Power and Light Company
For : Electric power and/or telephone lines

An easement created by instrument, including the terms and provisions thereof,

Dated: November 20, 1959

Recorded: December 10 1959 Book: 268 Page: 633

In Favor Of : Oscar Nygren, et al.

For : Roadway

9. An easement created by instrument, including the terms and provisions thereof,

Dated : March 18, 1960

Recorded : May 27, 1960 Book: 271 Page: 402

In Favor Of : Southern Pacific Company

For : Railroad purposes

An easement created by instrument, including the terms and provisions thereof,

Dated: October 6, 1969

Recorded: December 5, 1969 Book: 345 Page: 32

In Favor Of : Southern Pacific Company

For : Railroad and transportation purposes and access roadway

11. An easement created by instrument, including the terms and provisions thereof,

Dated: February 23, 1970

Recorded: March 11, 1970 Book: 347 Page: 42

In Favor Of : Northwest Natural Gas Company

For : Gas pipeline

12. An easement created by instrument, including the terms and provisions thereof,

Recorded: August 18, 1971 MF Volume: 21 Page: 999

In Favor Of : Pacific Power and Light Company, a corporation

For : Electric transmission and distribution lines

13. An easement created by instrument, including the terms and provisions thereof,

Dated

August 3, 1973

Recorded

August 13, 1973

MF Volume: 69

Page: 164

In Favor Of

Georgia-Pacific Corporation

For

Roadway

Over

As described in document

An easement created by instrument, including the terms and provisions thereof, 14.

Recorded

August 22, 1979

MF Volume: 241

Page: 894

In Favor Of

City of Millersburg Sewer pipeline system

For Over

As described and delineated in document

An easement created by instrument, including the terms and provisions thereof, 15.

Dated

April 30, 1999

Recorded

May 7, 1999 MF Volume: 1033

Page: 11

In Favor of

Teledyne Industries, Inc., dba Oremet-Wah Chang

For

Pipeline, pipeline interconnection facilities and other pipelines

Over

As described in document

An easement created by instrument, including the terms and provisions thereof, 16.

Dated

May 21, 2001

Recorded

December 27, 2001

MF Volume: 1249

Page: 20

In Favor Of

TDY Industries, Inc., an Oregon Corporation dba Wah Chang

For

Fiber optic cable

Over

Same location as Exception No. 4

An easement created by instrument, including the terms and provisions thereof, 17.

Dated

For

May 18, 2004

Recorded

May 28, 2004

MF Volume: 1586

Page: 307

In Favor Of

Union Pacific Railroad Company, a Delaware corporation Existing electrical power lines and appurtenances facilities

End of Exceptions

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EXHIBIT C

IN LINN COUNTY OREGON:

Weyerhaeuser Company tract previously known as that Western Kraft Corporation Tract described by deed recorded in Book 261, Page 656, Linn County Oregon Deed Records on September 29, 1958.





900 S.W. Fifth Avenue, Suite 2600 Pariland, Oregon 97204 main 503.224,3380 fax 503.220.2480 www.sloct.com

October 12, 2015

DAVID E. FILIPPI Direct (503) 294-9529 david.filippi@stoel.com

VIA ELECTRONIC MAIL patrick.k.starnes@state.or.us

Mr. Kelly Starnes Oregon Water Resources Department 725 Summer St NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for T-12065

Dear Mr. Starnes:

We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

Per recent discussions involving Dwight French and Adam Sussman, the primary concern for IPC is that the FROM lands as described in the Draft Preliminary Determination ("DPD") do not reflect the recent changes to Certificate 85736 as a result of IPC's specific-to-general industrial use changes. As a result, IPC does not agree with the description of the FROM lands in the DPD, and as such, IPC does not agree that the land ownership report requested in your letter includes the appropriate FROM lands.

As background, in May 2013, CWRE Ed Henricks assisted IPC with a specific-to-general industrial use change pursuant to SB 301 (ORS 540.520(9)) for Certificate 85736. Following much discussion with OWRD, including with Tom Paul and Dwight French, Mr. Henricks sent a formal notice regarding the change, including a new POU map, to the Department. The mapping for this change was done in conjunction with the re-mapping of several other water rights (also pursuant to SB 301), so as to align the various IPC water rights with the various IPC parcels, which IPC was intending to sell. A copy of the SB 301 map is included with this letter, and it shows the POU as including 322.5 acres, located east of and along the Willamette River. In particular, note that under the "NOTE" section on the map in the lower right corner, the second sentence reads: "This map amends / replaces the place of use map for certificate 85736."



Mr. Kelly Starnes October 12, 2015 Page 2

Thus, in regard to transfer application T-12065, instead of including the SB 301 map described above, the application mistakenly included a copy of the final proof survey map dated Sept. 19, 1997, which shows the POU as being 65.6 acres, located on the far eastern edge of the IPC property. Pursuant to its prior discussions with OWRD, IPC maintains that the SB 301 map accurately depicts the current POU for Certificate 85736, and the current location of the FROM lands for purposes of the transfer application. This issue is important given how all the water rights have been re-mapped on the various IP parcels, which again, are being marketed separately with distinct water rights. In particular, it is also important that the 4.25 cfs under Certificate 85736 that is not subject to the pending transfer remain appurtenant to the 322.5 acres (and not the 65.6 acres).

All that said, IPC is providing land ownership reports from AmeriTitle that include both the original 65.6 acres, as well as the new 322.5 acres. In particular, we would note the following items:

- 1) The ownership reports identify the landowner as IP Eat Three LLC for all tax lots except for 151, which shows Flakeboard America Limited ("Flakeboard") as the landowner.
- 2) Pursuant to the enclosed documentation, IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution.
- 3) With respect to the Flakeboard landownership, this is included in the original 65.6 acres. At the same time, the sale agreement to Flakeboard specifically excluded any interest in Certificate 85736, as evidenced in the enclosed documentation.
- 4) With respect to the sale to Millersburg Power LLC ("Millersburg), prior to the closing of the sale to Millersburg, IPC re-mapped various water rights so that a portion of T-7526 (1.2 cfs) and Permit S-54030 were appurtenant to the land being sold to Millersburg. As such, these rights were included in the sale, while no rights under Certificate 85736 were included.
- 5) Please note that even though tax lots 100 and 200 are actually in section 32, T10S R3W, Linn County puts those tax lots on the section 33 map. This helps to explain why AmeriTitle provided two separate reports to describe these locations.

Pursuant to communications with Mr. French, we understand that the Preliminary Determination will be revised to reflect the POU change that resulted from the specific-to-general industrial use



Mr. Kelly Starnes October 12, 2015 Page 3

change, and in particular, the PD will be revised so that the remaining right issued for that portion of Certificate 85736 that is not subject to transfer will reflect the 322.5 acres as the authorized POU, and not the former POU located on the original 65.6 acres.

In short, IPC believes the FROM land for purposes of T-12065 should be the 322.5 acres and not the 65.6 acres, and accordingly, that the land ownership report requested from the title company should be for the 322.5 acres described in the SB 301 map, and not the 65.6 acres described in the 1997 final proof survey map. At the same time, reports for both acreages were requested and are being provided to the Department with this letter.

Otherwise, IPC does not have any further comments regarding the DPD. Please do not hesitate to contact me if you have any questions regarding this comment letter.

Very truly yours,

David E. Filippi

DEF:dew Enclosures

cc: Client

Adam Sussman Kim Grigsby

ASSISTANT SECRETARY'S CERTIFICATE INTERNATIONAL PAPER COMPANY

I, M.J.A. "Jekka" Pinckney, do hereby certify that I am an appointed Assistant Secretary of International Paper Company, a corporation organized and existing under the laws of the State of New York, and further certify as follows:

- 1. That IP EAT Three LLC, a Delaware limited liability company, was a wholly-owned subsidiary of International Paper Company.
- That IP EAT Three LLC was dissolved in its jurisdiction of formation effective December 31, 2008, as evidenced by the Certificate of Cancellation attached hereto as "Exhibit A."
- 3. That International Paper Company, as the sole Member of IP EAT Three LLC, acquired all of the assets of IP EAT Three LLC upon its dissolution, as evidenced by the Instrument of Consent of the Sole Member to Action for Voluntary Dissolution, dated November 17, 2008, and attached hereto as "Exhibit B."

IN WITNESS WHEREOF, I have set my hand on and affixed the corporate seal of International Paper Company, this 21st day of April, 2009.

SEAL 1941

M.V.A. "Jekka" Pinckney, Assistant Secretary

STATE OF TENNESSEE)
) SS
COUNTY OF SHELBY)

On the 21st day of April, 2009, before me, the undersigned, a Notary Public in and for said County and State, M.J.A. "Jekka" Pinckney, Assistant Secretary of International Paper Company, personally known to me, or proved to me on the basis of satisfactory evidence, to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

WITNESS my hand and official seal.

Notary Public

ISEAN TENNESSEE NOTARY PUBLIC

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EXHIBIT A

The state of the state of the

CERTIFICATE OF CANCELLATION OF IP EAT THREE LLC

Delaware

PAGE 1

The First State

I, HARRIET SMITE WINDSOR, SECRETARY OF STATE OF THE STATE OF DELAMARE, DO HERESY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CHATIFICATE OF CANCELLATION OF "IF EAT THREE LLC", FILED IN THIS OFFICE ON THE THENTY-FIFTE DAY OF NOVEMBER, A.D. 2008, AF 4:29 O'CLOCK F.M.

AND I DO HEART FORTHER CERTIFY THAT THE REFECTIVE DATE OF THE AFORESAID CERTIFICATE OF CANCELLATION IS THE THIRTY-PIRST DAY OF DECEMBER, A.D. 2008, AT 11:59 O'CLOCK P.M.

一种感情的特殊 第二十分

4574796 8106

001146100 You may wastly this qualificate calling at corp. milester for/indired. shall Name Smile France

DATE: 12-01-08

State of Dalamare Secretary of State Daylains of Compositions Dalivered 04:28 Mg 11/25/2008 STATUS 04:28 Mg 11/25/2008 STATUS 04:28 Mg 11/25/2008 STATUS 04:2108 - 4574756 FTLE

STATE OF DELAWARE CERTIFICATE OF CANCELLATION

OF

IP EAT THREE LLC

1. The name of the limited flability company is IP EAT THREE LLC.

- 2. The Certificate of Formation of IP EAT THREE LLC was filed on July 14, 2008.
- The date the cancellation of UP EAT THREE LLC was authorized to November 17, 2006, and is to be effective as of December 31, 2006, at 11:50 p.m.

IN WITNESS WHEREOF, the undersigned has executed this Certificate of Cancellation this 25th day of November 2008.

/e/ Michaile R. King Michaile R. King, Authorized Person

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EXHIBIT B

INSTRUMENT OF CONSENT OF THE SOLE MEMBER
TO ACTION FOR VOLUNTARY DISSOLUTION
OF IP EAT THREE LLC

IP EAT THREE LLC

Instrument of Consent of the Sole Member To Action for Voluntary Dissolution

The undersigned, being the sole member of IP EAT Three LLC, a limited liability company organized and existing under the laws of the State of Delaware (the "Company"), does hereby waive its entitlement to notice of meeting and does hereby consent and agree, in accordance with the Delaware Limited Liability Company Act, to the following actions:

WHEREAS, it is deemed advisable and for the benefit of the Company that it be liquidated and dissolved,

NOW, THEREFORE, BE IT

RESOLVED, that the plan of liquidation pursuant to the applicable provisions of the Internal Revenue Code hereby is formulated to effect such liquidation and dissolution of the Company in accordance with the following resolutions; and further

RESOLVED, that Michelle R. King is hereby authorized and directed to file a Certificate of Cancellation, in accordance with Delaware law, with the Secretary of State of Delaware; and further

RESOLVED, that all of the property and assets of the Company, subject to its indebtedness, obligations and liabilities, be distributed to and vest in international Paper Company, a New York corporation (the "Parent Company"), as a liquidating distribution in complete cancellation of all of the outstanding indebtedness, obligations and liabilities, such distribution to be effective no later than December 31, 2008 at 11:59 PM; and further

RESOLVED, that the officers of the sole member of the Company hereby are authorized and directed to pay all such fees and taxes and to do or cause to be done such further acts and things including, without limitation, the execution of deeds, bills of sale, and other documents of transfer, as they may deem necessary or proper in order to carry out the liquidation and dissolution of the Company and fully to effectuate the purposes of the foregoing resolutions.

Dated as of November 17, 2008.

International Paper Company

Errol Harris, Vice President and Treasurer



State of Oregon
Water Resources Department
725 Summer Street NE, Suite A
Salem, Oregon 97301-1266
(503) 986-0900

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Application for Instream Lease

Part 1 of 4 - Minimum Requirements Checklist

ACCURATION COMMISSIONS THE RESIDENCE TO SOME	r check boxes as indicated. (N/A= Not Applicable) Fee-
	Pursuant to ORS 537.348(2) and OAR 690-077
Check all items	included with this application. (N/A = Not Applicable)
⊠Yes	Part 1 - Completed Minimum Requirements Checklist and Application Fee
	Fees 520.00 for a lease involving four or more landowners or four or more water rights
	☐ Check enclosed or ☐ Fee Charged to customer account (account name)
⊠ Yes	Part 2 – Completed Instream Lease Application Map Checklist.
⊠ Yes	Part 3 - Completed Water Right and Instream Use Information Include a separate Part 3 for each water right
	Part 4 - Completed Instream Lease Provisions and Signatures
⊠ Yes ait No. S-23102 -	How many water rights are leased? <u>1</u> List them here: <u>Certificate No. 54268 - Application No. S-29640 - IL 1434</u>
	Include a separate Part 3 for each water right.
Yes N/A	Other Water Rights, if any, appurtenant to the lands involved in the lease application and not proposed to be leased instream? List those other water rights here:
☐ Yes ⊠ No	Conservation Reserve Enhancement Program (CREP). Are some or all of the lands to be leased part of CREP or another Federal program (list here:)?
Attachments:	
⊠Yes □ N/A	Map: Instream Lease map requirements (see Part 2 of this application)
⊠Yes □ N/A	Tax Lot Map: If a portion of the water right not included in the lease is appurtenant to lands owned by others, a tax lot map must be included with the lease application. The tax lot map should clearly show the property involved in the lease.
□Yes ⊠ N/A	Supporting documentation describing why a right (or portion thereof) is valid and not subject to forfeiture even though the right has not been exercised for five or more consecutive years. This information only needs to be provided if the checkbox has been checked to identify that the water right has not been used in the last five years and is not subject to forfeiture (See Part 4 of 4).
☐Yes ⊠ N/A	If the Lessor (water right holder) is not the deeded landowner - provide one of the following.
	 A notarized statement from the landowner consenting to the lease and a copy of the recorded deed; or.
	 A water right conveyance agreement and a copy of the recorded deed for the landowner at the time the water right was conveyed; or RECEIVED

• Other documentation which provides authority to pursue the lease absent consent of the landowner.

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Part 2 of 4 - Instream Lease Application Map Checklist

A Map is generally required for each water right not leased in its entirety

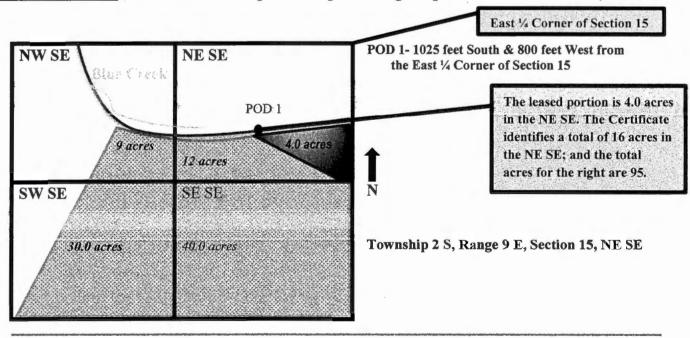
The application map (if required) should include all the items listed below and match the existing water right(s) of record. Check all boxes that apply.

This should be a <u>simple</u> map. (See example below). A copy of a final proof survey map with the portion to be leased shaded or hachured in will also suffice.

\square N/A	A map is required for each water right not leased in its entirety. More than one QQ
	and property may be included on each map. A map is not required, if leasing the
	entire right or if the right to be leased is for municipal or quasi-municipal water use.

- The map should be of sufficient quality to be reproducible. Please do not use highlighters to mark items on the map as highlighters do not always copy.
- \triangle A North arrow and map scale (no smaller than 1" = 1320').
- Township, Range, Section, quarter quarter (QQ), and a clearly labeled survey corner.
- For irrigation or other similar use, the number of acres to be leased in each quarterquarter clearly labeled and hatchured to differentiate between the acres being leased and any remaining. If the place of use is broken down by more than one priority date, or source stream, and/or point of diversion you must identify each with separate hachuring and clearly label.
- If available, identify the existing point(s) of diversion.

EXAMPLE MAP (the darker shaded portion representing the portion leased instream)



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Part 3 of 4 - Water Right and Instream Use Information

Use a separate Part 3 for each water right to be leased instream

Water Right Information

Water right # Certificate

No. 54268 - Permit No. S-23102 - Application No. S-29640 - IL 143

Table 1

Water Right Information: Provide a description of the originating water right to be leased. Also include your tax lot number(s). Fill in all applicable information. For example, if your water right has multiple points of diversion (POD) but they're not numbered, you do not need to include a number. If not enough room below, you may add additional rows (see instructions) or attach spreadsheet (matching Table 1).

Please clearly	y label ar	ry attach	ments		enter enter en				to the state of th	
If only lea complete I	Contraction of the Contraction o	Entirety - If the entire water right is to be leased, skip to Table 3.								
Priority Date	POD#	Twp	Rng	Sec	Q-Q	Tax Lot	Gov't Lot/DEC	Acres	USE	Previous Lease # (if any
		no viento e		contra	the planting of the form to a good to the	XAMPLE				
12/2/1901	3	2:5	9-E	15	NE SE	100	47	4.0	IR	IL-1100
12/23/1954	1	10-S	3-W	21	SE-SE	400	54	1.5	MANUFA CTURIN G	1434
	1	10-S	3-W	21	SW-SE	400	54	8.2		1434
	1	10-S	3-W	28	NE-NE	400	47	0.4		1434
	1	10-S	3-W	28	NW-NE	400	47	37.0		1434
	4	10-S	3-W	28	NE-NW	400	47	8.8		1434
	1	10-S	3-W	28	SW-NE	400	47	27.7		1434
	1	10-S	3-W	28	SE-NW	400	47	11.2		1434
	1	10-S	3-W	28	NW-SE	400	47	16.0		1434
	1	10-S	3-W	28	NW-SE	400	44	1.0		1434
	1	10-S	3-W	28	NE-SW	400	47	8.9		1434
	f	10-S	3-W	28	NE-SW	400	44	4.0		1434
	1	10-S	3-W	28	SW-SE	400	44	5.8		1434
	1	10-S	3-W	28	SE-SW	400	44	5.9	7	1434

Total Acres: 134.5 SEE ATTACHMENT "F" (ORS

540.520(9) SB 301 LANDS) & "A"

Table 2		10-22-10-20-00-00-0				VI state-bookshorestas (v. 12., 600-18.)
1	To illustra	ite the to	otals for	the water right proposed to be lea	sed instream	
leased. If not en	nough roo	m below	, you m	OD, use and acreage as appropriate cay add additional rows (see instruction) attachments. (cfs = cubic feet per	ons) or attach	spreadsheet
Priority Date	POD#	Use	Total Acres	Other Information (such as conditions/limitations on the right)	Total Rate (cfs)	Total Volume (af)
12/23/1954	1	MAN	134.5	MANUFACTURING	1.7	NA.
Total af from sto	rage, if app	licable: _	AF	or X N/A	RE	CEIVED
Any additional in	ıformation	about the	right: 1:	5.0 CFS OF THIS RIGHT ARE PART O	****	9 2 2010

Table 3

Point of Diversion (POD) description: If the POD is not described on the certificate or if there is more than one POD listed on the certificate, then the specific POD(s) involved in the lease must be described. If not enough room below, you may add additional rows (see instructions) or attach spreadsheet (matching Table 3). Please clearly label any attachments.

POD#	Twp	Rng	Sec	Q-Q	DLC/ Gov't let	Measured Distances, latitude/longitude coordinates, or river mile (if unknown you may îndicate "unknown").
1	10-3	3-W	32	NE-NE		1220' WEST & 1180' SOUTH OF NE Corner of Sec. 32
	-	-		-		

Please check this box if you don't know the location of the POD(s) and want the Department to identify the location of the POD(s) for the purpose of the instream lease.

Part 3 of 4 cont. - Water Right and Instream Use Information

Instream Use Information

Instream Use Created by the Lease							
是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个							
River/ Stream Name: Willamette, tributary to Columbia River Basin: Willamette							
Instream Portion: Use Table 4 to illustrate the instream rate, volume and instream period by priority date, POD (if more than one), Use (if more than one), and acreage as appropriate considering the right to be leased.							
If not enough room below, you may add additional rows (see instructions) or attach a spreadsheet (matching the below portion of Table 4). Please clearly label any attachments.							
Priority date POD # Use Acres Period rate (cfs) Total instream volume (af)							
SAME 1 SAME ALL YEAR ROUND 2.0 NA							
Note: If not certain of the instream rate, volume and/or instream period, see the instructions and/or contact Department Staff for assistance. The instream rate and volume may be up to the maximum rate and duty/volume allowed by the right, as described in Table 2 or on your Certificate if leasing the entire right. The proposed instream period may be no longer than the irrigation season or the authorized period of allowed use. OR Please check this box if you are not sure of the proposed rate, volume and instream period. As part of its review process, the Department will identify the appropriate instream rate, volume and period considering the water right(s) being leased and instream benefits.							
Instream Reach							
Proposed Instream Reach: A reach typically begins at the point of diversion (POD) and ends at the mouth of the source stream: From the POD to RECEIVED							
OR Please check this box if you are not sure of the proposed reach and want water to be protected within a reach below the POD, if possible. (If no reach is identified or the above box is not checked, and there is only one POD listed on the certificate, the lease may be processed to be protected to be protected.)							
Additional Instream Information							
Yes N/A Conditions to avoid enlargement or injury to other water rights, if any, or other							

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limitations: list here	OWRD
Note: The Department may identify additional condi	itions to prevent injury and/or enlargement.
Any additional information about the proposed instre (IP) the current owner uses 17 of the 18 cfs. Earlier by Instream active for demolition activities on site. Those activities are comof the right is dedicated to Arauco (previously Flakeboard Com 301 lands	n Lease 1434 IP leased 15.0 cfs instream. 2.0 cfs was kept uplete and the 2.0 cfs are 15.0 to be leased instream. 1.0 cfs

Part 4 of 4 - Lease Provisions and Party Signatures

Term of the Lease (may be from 1 year-up to 5 years):					
The lease is requested to begin in: month April year 2018 and end: month April year 2023					
Note: The begin month is generally the first month of the i	rrigation season and the end month is the last month				
in the irrigation season. If not an irrigation right, this wou	ld be the first and last month of your authorized				
period of allowed use.					
Public use: Check the public use(s) this lease will serve	Termination provision (for multiyear leases):				
(as defined by ORS 537.332):	The parties to the lease request (choose one):				
X Conservation, maintenance and enhancement of	X a. The option of terminating the lease prior to				
aquatic, fish and wildlife, fish and wildlife habitat and	expiration of the full term with written notice to				
any other ecological values.	the Department by the Lessor(s) and/or Lessee.				
X Recreation	b. The option of terminating the lease prior to				
X Pollution abatement	expiration of the full term, with consent by all				
X Navigation	parties to the lease.				
14avigation	c. The parties would not like to include a				
	Termination Provision.				
	(See instructions for limitations to this provision)				
Additive/Replacing Relationship to other instream water	er rights: Instream leases are generally additive to				
other existing instream water rights created as a result of in	stream leases, transfers and/or allocations of				
conserved water. Since instream leases are also generally	senior to other instream rights created through a state				
agency process or conversion of minimum flows, they gene	erally replace a portion of these junior instream				
rights.					
If you would like this lease to relate to other instream water rights differently, please check this box.					
And attach an explanation of your intent:					
Validity of the Right(s) to be leased (check the appropriate box):					
X The water right(s) to be leased have been used under the terms and conditions of the right(s) during the last					
five years or have been leased instream; or					
The water right(s) have not been used for the last five years according to the terms and conditions of the					
right(s). However, the water right(s) is not subject to forfeiture under ORS 540.610(2). Documentation					
describing why the water right(s) is not subject to forfeiture is provided.					
describing why the water right(s) is not subject to fortesture is provided.					

Precedent: If a right which has been leased is later proposed to be leased again or later transferred or become part of an allocation of conserved water project, a new injury review shall be required. An instream lease shall not set a precedent on a future transaction.

The undersigned declare:

- 1. The Lessor(s) agree during the term of this lease, to suspend use of water allowed under the subject water right(s) and under any appurtenant primary or supplemental water right(s) not involved in the lease application; and
- 2. The Lessor(s) certify that I/we are the water right holder(s) of the right(s) this instream lease application. If not the deeded landowner, I/we have provided documentation with the lease

JUL 2 3 2018

application that I/we have authorization to pu	arsue the lease application a	and/or have obtained consent
from the deeded landowner; and		
3. All parties affirm that information provided i		
Signature of Lessor	Date: 7/10/18	
Printed name (and title): <u>Dan M. Davis, Man International Paper</u> Mailing Address (with state and zip): <u>6400 I</u>		Business name, if applicable:
Phone number (include area code): 901-419-		
Signature of Co-Lessor Printed name (and title):	Date:	RECEIVED MAY 2 2 2019
Business/organization name:		OWRD
Mailing Address (with state and zip): Phone number (include area code):		OWNE
Phone number (include area code):	**E-mail address:	
	Date:	
Signature of Lessee		
Printed name (and title): Business/organization name: Mailing Address (with state and zip): Phone number (include area code):	**E-mail address:	

** BY PROVIDING AN E-MAIL ADDRESS, CONSENT IS GIVEN TO RECEIVE ALL CORRESPONDENCE FROM THE DEPARTMENT ELECTRONICALLY. COPIES OF THE FINAL ORDER DOCUMENTS WILL ALSO BE MAILED TO THE LESSOR.

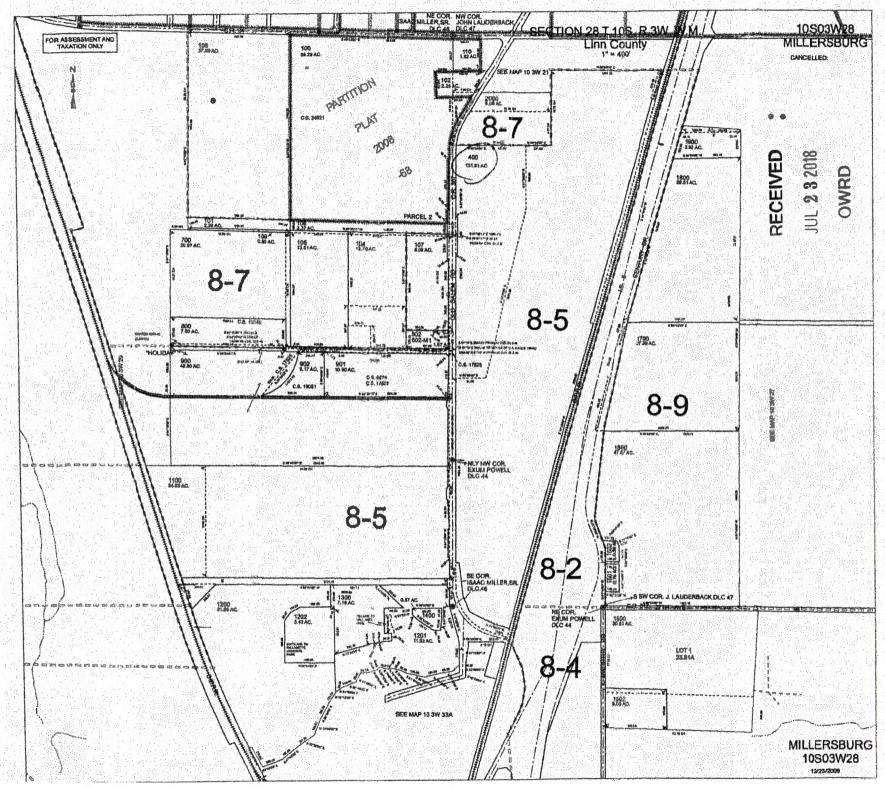
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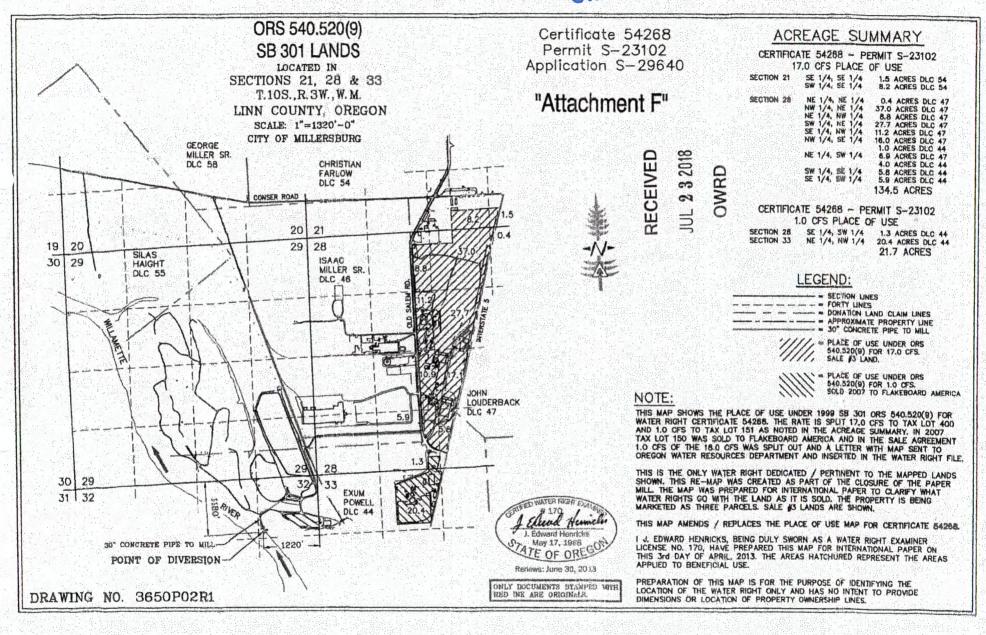
MAY 2 2 2019

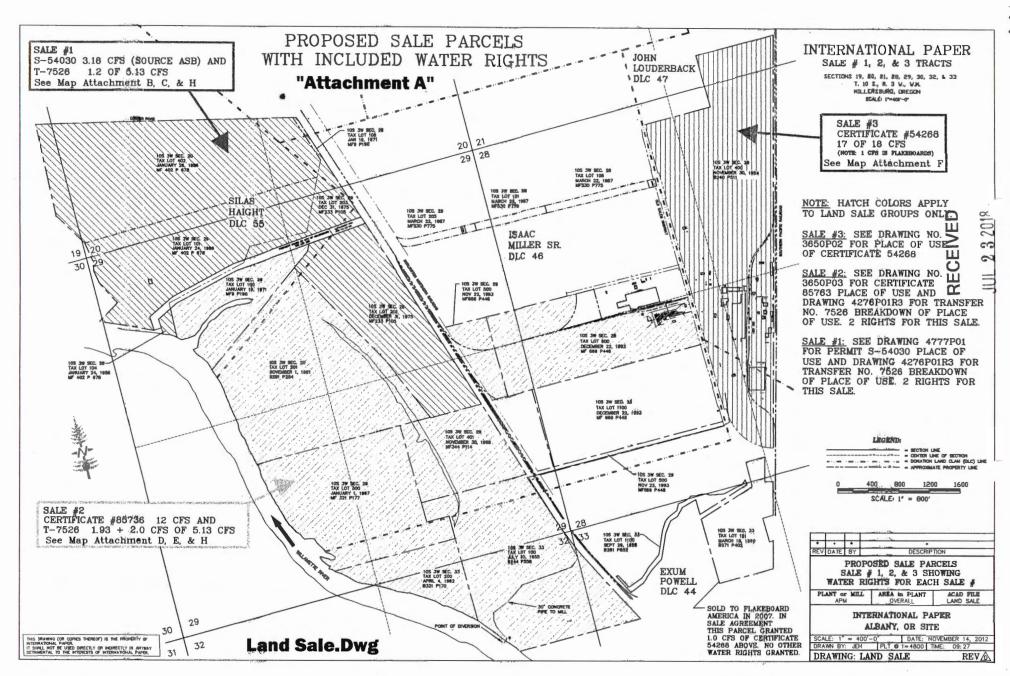
OWRD



OWRD

MAY 2 2 2019 OWRD





RECEIVED



Dan M. Davis Manager Surplus Properties

July 9, 2018

State of Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266 6400 Poplar Avenue Tower I Memphis, TN 38197 901 299 7555 dan.davis@ipaper.com

RECEIVED

MAY 2 2 2019

OWRD

Attn: Laura Wilke

Re: International Paper, Albany, Oregon Instream Lease Application submittal

Please find enclosed one application for an Instream Lease of water rights pertaining to the International Paper (IP) property in Albany, Oregon along with a check for \$350.00 for the application fee.

Should you have any questions, need additional information or comments, feel free to contact me at the number listed above.

Sincerely,

Dan M. Davis

Cc: Kevin Havens, IP Legal

Vaughn Pieschl, IP



RECEIVED

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OWRD





2730 Pacific Blvd., S.E. Albany, OR 97322 Albany Office Phene (541)-926-7771 Albany Fax (541)-928-1988 Albany Direct Line (541)-924-5340 Cell Phone (541)-979-8652

January 11, 2007

Tom Paul, Deputy Director
Oregon Water Resources Department
725 Summer Street NE, Suite A
Salem, OR 97301

Re: Sale of business and site service agreement of water rights involved with the property.

We have recently completed the sale of our Duraflake particle board plant in Albany, Oregon to Flakeboard America Limited. Weyerhaeuser still owns and operates a papermill facility, Trus Joist laminated veneer lumber facility, and trucking operation on lands adjoining the parcel sold to Flakeboard America Limited. Most of these facilities, when owned by Weyerhaeuser, were and still are supplied with water from the Willamette River by three water rights.

In the site service agreement enclosed on page A-1 under 1. Water a. Site Service commitment. Paragraph two states "Weyerhaeuser will complete the work necessary with the Oregon Water Resources Department (WRD) to record and clarify the separate usage of water for the purpose of manufacturing at Buyer's Duraflake PB site. One cubic foot per second (cfs) of water will be used and dedicated from Water Right Permit # 23102, Certificate # 54268. Water Right # T 7526 and Application # 64514 {Permit # S 47184} are excluded from this Agreement and no water as evidenced there under will be supplied to Buyer's Duraflake PB site." Paragraph 4 provides an easement to Flakeboard America Limited for the delivery system.

As per our earlier conversation this sale to Flakeboard America Limited does not require a water right transfer. None of the key elements of a water right transfer have changed; The place of use, type of use, rate, source of water, and point of diversion have not changed for Certificate # 54268.

The place of use for T 7526 and Application # 64514 {Permit # S 47184} no longer includes the Duraflake property, Tax lot 151 assessors map 10S03W33A, Linn County, OR and further described in the attached <u>SPECIAL WARRANTY DEED</u>. Claim of Beneficial Use (CBU) reports have been submitted for these two water rights excluded in the sale. I am enclosing amended maps for each CBU. The CBU for permit S-47184 was submitted on September 15, 1997 under the name Willamette Industries, Inc. I have enclosed a Request for Assignment and five pages of the Articles of Merger filed June 14, 2002 with the Oregon Secretary of State showing the present owner as Weyerhaeuser Company. The CBU for T- 7526 was submitted on November 8, 2002 under the name of Willamette Industries, Inc. I have enclosed a Request for Assignment to Weyerhaeuser Company without the Articles of Merger as they were included in the original CBU report.

This letter is to inform the WRD of the afore mentioned site service agreement. Please insert a copy of this letter, with attachments, into each water right folder at the department for future reference, clarification, and use. Also please insert the amended maps and assignments in the corresponding CBU files.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely,

J. Edward Henricks, CWRE Surveyor / Project Manager WEYERHAEUSER COMPANY

CC:

Jud Jackson

Senior Legal Counsel Weyerhaeuser Company

Edward Henrich

PO Box 9777

Federal Way, WA 98063

Gordon Yutzy Flakeboard 2250 Old Salem Road

Albany, OR 97321

Dick Leedy

Senior Project Engineer Weyerhaeuser company 3251 Old Salem Road Albany, OR 97321

enclosures:

1) Special Warranty Deed

3) 2 amended maps

5) 2 Request for Assignment forms

2) Transition Site Services Agreement for Duraflake PB

4) Articles of Merger



TRANSITION SITE SERVICES AGREEMENT FOR DURAFLAKE PB

This Transition Site Services Agreement (this "Agreement") is made as of July 28, 2006 by and between Weyerhaeuser Company, a Washington corporation ("Weyerhaeuser"), and Flakeboard America Limited, a Delaware corporation ("Buyer").

RECITALS

- A. Flakeboard Company Limited ("FB") and Weyerhaeuser entered into an Asset Purchase and Sale Agreement dated as of May 31, 2006 (the "Purchase Agreement") pursuant to which FB agreed to acquire, among other things, the Assets located at the Site (as defined in Article 1 below). Capitalized terms used but not defined in this Agreement shall have the meanings given such terms in the Purchase Agreement.
- B. FB assigned the Purchase Agreement in whole to Buyer.
- C. As of the Closing Date under the Purchase Agreement, Buyer does not have in place the facilities and infrastructure to independently provide certain services at the Sites.
- D. Buyer desires to obtain from Weyerhaeuser and Weyerhaeuser desires to provide to Buyer certain site services at the Sites.

AGREEMENT

Now, THEREFORE, the parties hereto agree as follows:

ARTICLE 1. AGREEMENT TO PROVIDE SITE SERVICES. Upon the terms and subject to the conditions set forth in this Agreement, Weyerhaeuser agrees to provide to Buyer through Weyerhaeuser's existing facilities the services set forth on Exhibit A hereto (the "Site Services"), and Buyer agrees to take from and to pay Weyerhaeuser for such Site Services. The Site Services shall be provided at the Duraflake PB facility (the "Site"), as more fully described on Exhibit A hereto

ARTICLE 2. TERM.

(A) The term of this Agreement shall commence on the Closing Date under the Purchase Agreement and shall continue until the three-year anniversary of the Closing Date. Thereafter, this Agreement will automatically renew for additional three-year renewal periods, unless Weyerhaeuser notifies Buyer of its intent to terminate one or more of the Site Services and/or this Agreement as provided in paragraph (B) below.

(B) At any time after the one-year anniversary of the Closing Date, Weyerhaeuser may provide notice of its intent to terminate any one or more of the Site Services and/or this Agreement; provided, that Weyerhaeuser will be obligated to continue providing such Site Service(s) for a period of up to two years after the date of such notice to allow Buyer time to

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TRANSITION SITE SERVICES AGREEMENT - DURAFLAKE PB CONFIDENTIAL

PAGE !

replace such Site Service(s); and provided, further, that prior to any such termination of the water Site Service (Item 1 on Exhibit A), Weyerhaeuser will provide Buyer with perpetual easement 16 feet in width for the erection, construction, maintenance, operation, and repair of one or more pipe lines for said Site Service (the "Water Easement").

- ARTICLE 3. PRICE. Buyer shall pay Weyerhaeuser for the Site Services provided under this Agreement in the amounts set forth on Exhibit A hereto.
- ARTICLE 4. PAYMENT. Unless the parties otherwise agree, Weyerhaeuser shall bill Buyer for the Site Services on a monthly basis and Buyer shall pay each bill within ten days.
- ARTICLE 5. TERMINATION. This Agreement and the parties' obligations hereunder shall terminate as set forth in this Article 5:
- (A) TERMINATION BY COMPLETION OF TERM. This Agreement shall terminate upon the expiration of the term and on the conditions set forth in Article 2 hereof. This Agreement shall terminate as to each Site Service upon the expiration of the commitment term for such Site Service set forth on Exhibit A hereto.
- (B) TERMINATION BY COMPLETION OF TRANSITION. This Agreement shall terminate as to each Site Service on the date that Buyer has completed its transition and no longer reasonably needs such Site Service under this Agreement.
- (C) TERMINATION FOR BREACH, FINANCIAL CONDITION. Without prejudice to its other lawful rights and remedies, either party shall have the right to terminate this Agreement at any time upon the occurrence of any of the following events:
 - (1) The other party breaches or is in default of any material term, condition or obligation under this Agreement, which breach or default is (a) not waived in writing by the non-breaching party or (b) not cured to the non-breaching party's reasonable satisfaction within 15 days after the breaching party's receipt of written notice thereof (or, if not reasonably capable of being cured within such 15-day period, the breaching party fails to commence such cure within such 15-day period and thereafter diligently pursue such cure). Failure of Buyer to make payment for the Site Services when due shall be a material breach of this Agreement.
 - (2) Any proceeding in bankruptcy, reorganization or for the appointment of a receiver or trustee, or any other proceeding under any law for the relief of debtors, shall be instituted by the other party, or brought involuntarily against the other party and not dismissed within a period of 60 days from the date filed, or if the other party shall make an assignment for the benefit of creditors.
- (D) TERMINATION DUE TO CHANGED CIRCUMSTANCES. This Agreement may be terminated by Weyerhaeuser in accordance with Article 11(A)(3) hereof.
- (E) TERMINATION BY MUTUAL AGREEMENT. This Agreement may be terminated in whole or in part at any time by the mutual written agreement of the parties hereto.

ARTICLE 6 DIRECT ACQUISITION OF SERVICES BY BUYER. Except for Site Services that the parties mutually agree in writing to continue, Buyer shall use commercially reasonable efforts to as promptly as practicable independently provide its own services, enter into long-term arrangements for the provision of such services or procure such services from a third party, at which time this Agreement shall terminate with respect to such Site Services in accordance with Article 5(B) hereof. Buyer shall be solely responsible for all costs and expenses associated with such direct acquisition of services.

ARTICLE 7 COMPLIANCE WITH LAW AND POLICIES.

- (A) COMPLIANCE WITH LAW. Each party shall, in the performance of this Agreement, comply with each statute, law, ordinance, code, rule, regulation, order, license, permit, judgment, decree or directive of any federal, state, county, municipal or local government (including any subdivision or agency thereof) applicable to the carrying on of its business and the performance of its obligations hereunder, including applicable Environmental Laws.
- (B) COMPLIANCE WITH POLICIES; ACCESS TO PREMISES. When a party's employees, contractors or representatives are on the premises of the other party, such party shall cause such persons to observe the working hours, working rules and safety and security policies and procedures established by the other party. Weyerhacuser shall have such access to Buyer's premises as Weyerhacuser determines is necessary to perform its obligations under this Agreement, including monitoring, maintenance and repair related to the Site Services.

ARTICLE 8 WARRANTY; LIMITATION OF LIABILITY.

- (A) WARRANTY. Weyerhaeuser represents and warrants to Buyer that it shall use commercially reasonable efforts to provide the Site Services in accordance with the terms of this Agreement. WEYERHAEUSER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED, AND SPECIFICALLY DISCLAIMS ANY IMPLIED WARRANTIES, WHETHER OF MERCHANTABILITY, SUITABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE, FOR SAID SITE SERVICES.
- (B) LIMITATION OF LIABILITY. Notwithstanding anything in this Agreement to the contrary, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR ANY INCIDENTAL, CONSEQUENTIAL, INDIRECT, SPECIAL OR PUNITIVE DAMAGES, INCLUDING, WITHOUT LIMITATION, ANY LOSS OF PROFITS, LOSS OF USE, DOWNTIME, OR LOSS OF SALES, FOR ANY BREACH OF OR FAILURE TO PERFORM THIS AGREEMENT, REGARDLESS OF WHETHER ANY SUCH DAMAGES WERE FORESEEABLE AND REGARDLESS OF WHETHER THE CLAIM SOUNDS IN CONTRACT, TORT OR ANY OTHER THEORY.

ARTICLE 9 COVENANTS OF BUYER.

- (A) Buyer shall maintain in good repair all property, fixtures, equipment, materials and systems located on Buyer's site used in connection with providing the Site Services, and shall promptly repair any damage or loss thereto. All maintenance, repairs and modifications thereto shall be performed in compliance with applicable laws, codes and standards using first quality materials fit for their intended purpose.
- (B) Buyer shall promptly notify Weyerhaeuser if it becomes aware of any impairment to any property, fixture, equipment, material or system related to the Site Services, or if it becomes aware of any required maintenance or repair thereto, or if it makes any modifications thereto. Any work on Weyerhaeuser's property, fixtures, equipment, materials or systems shall require the prior approval of Weyerhaeuser.
- (C) Buyer shall notify Weyerhaeuser, reasonably in advance of its transfer, of any change to the substance or quantity of materials or substances sent to Weyerhaeuser's facility or property for treatment or processing, including any unsanitary, hazardous or toxic materials or substances. Buyer agrees that Weyerhaeuser shall not be responsible for or have any liability for dangerous, unsanitary, hazardous or toxic materials or substances on or from Buyer's site.
 - (D) Buyer shall obtain and maintain the following insurance coverages:
 - (1) Commercial General Liability insurance with a limit of not less than \$1,000,000 per occurrence and \$1,000,000 annual aggregates, providing coverage for bodily injury, personal injury and property damage; contractual liability; and product and completed operations liability (and "Weyerhaeuser Company" shall be named as an Additional Insured).
 - (2) Comprehensive Automobile Liability insurance (including owned, non-owned, and hired vehicles) with a combined single limit of not less than \$1,000,000, providing coverage for bodily injury, personal injury and property damage.
 - (3) Workers' Compensation or Industrial Accident insurance with not less than statutory limits.
 - (4) Employer's or Stop-Gap Liability insurance with a limit of not less than \$1,000,000.
 - (5) Umbrella Liability insurance with limits of not less than \$5,000,000 each occurrence and in the aggregate.
 - (6) Service Interruption insurance with limits and in form and substance reasonably satisfactory to Weyerhaeuser.

Such insurance of Buyer shall (a) contain a severability of interest clause, (b) provide a Waiver of Subrogation and/or Waiver of Recovery on behalf of Weyerhaeuser (with the exception of Workers' Compensation insurance), and (c) be primary, and Weyerhaeuser's insurance and/or self-insurance shall be excess over any and all other available coverage and/or self-insurance. Buyer shall furnish Weyerhaeuser with a Certificate of Insurance evidencing the above coverage and shall require its insurance carrier(s) to give at least 30 days written notice prior to cancellation of said coverage, either in whole or in part. The failure of Buyer's insurance carrier

to give said notice as required shall be considered a default on Buyer's part. Buyer's insurance carrier(s) shall have a Best's rating of no less than B+ VII. Buyer shall ensure that its contractors and subcontractors performing work at Buyer's Site and/or Weyerhaeuser's facility have insurance coverages and endorsements consistent with the above, with the exception of policy limits.

- (E) Buyer shall designate a responsible individual at Buyer's site whose duty shall be to coordinate the Site Services and the performance of this Agreement with Weyerhaeuser.
- (F) To the fullest extent permitted by law, Buyer shall indemnify and hold harmless Weyerhaeuser from all claims, demands, liabilities, losses, damages, expenses (including penalties and interest, reasonable fees and disbursements of counsel, and court costs), proceedings, judgments, settlements, actions or causes of action or government inquiries of any kind (including emotional distress, sickness, personal or bodily injury or death to any person (including employees or contractors of Buyer), or damage or destruction to, or loss of use of, tangible property) arising out of or relating to Buyer's breach or failure to perform the covenants in this Article 9.

ARTICLE 10 DISPUTE RESOLUTION. If a dispute arises out of or relates to this Agreement, or the breach hereof, prior to instituting any legal proceeding, representatives of each party having authority to resolve the dispute shall meet to discuss and attempt to resolve the dispute. If the representatives of the parties are not able to resolve the dispute, either party may elect to have the matter resolved by mediation administered by the American Arbitration Association ("AAA") under its Commercial Mediation Procedures before a neutral, independent mediator mutually acceptable to the parties. If the parties are unable to agree on a mediator, the parties will request the AAA to supply a list of five mediators and the mediator will be selected by the parties by alternately striking names from that list, with the party initiating the mediation striking the first name. The mediation will be held at the offices of the AAA in Seattle, Washington, unless the parties agree to a different location. The costs of mediation will be shared equally by the parties. All negotiation and mediation meetings and proceedings will be confidential and will be treated as compromise and settlement negotiations for purposes of all rules of evidence. If the parties are not able to resolve the dispute by mediation, any legal proceeding shall be brought in any state or federal court within the State of Washington, and the parties hereby agree to submit to the exclusive jurisdiction of such courts in respect of any proceeding arising out of this Agreement.

ARTICLE 11. GENERAL MATTERS.

- (A) SITE SERVICE LIMITATIONS AND CONDITIONS.
 - (1) All Site Services provided by Weyerhaeuser under this Agreement are conditioned upon the parties' ability to lawfully provide and receive such Site Services, including the parties' obtaining and maintaining in effect all required permits, licenses, approvals, orders, registrations and authorizations of applicable Governmental Entities (including those required under applicable Environmental Laws). If Weyerhaeuser may not lawfully provide any Site Services, Weyerhaeuser shall not be obligated to provide and shall not be liable for failure

- to supply such Site Services to Buyer, provided that, in such event, Weyerhaeuser will reasonably cooperate with Buyer to lawfully provide such Site Services in an alternate manner or in arranging to procure substitute services from another source at Buyer's cost.
- (2) Buyer acknowledges that the Site Services are procured by Weyerhaeuser primarily for its own facilities' operations and that Weyerhaeuser may operate its facilities as it sees fit in its sole discretion, notwithstanding that such operation may affect the availability of any one or more of the Site Services provided to Buyer (e.g., in the case of facility downtime or maintenance); provided, however, that in the event Weyerhaeuser does not have available sufficient quantity of one or more Site Services to satisfy Weyerhaeuser's own needs and to provide the quantity to Buyer contemplated hereunder, Weyerhaeuser will treat Buyer no less favorably than units of Weyerhaeuser's own operations using similar quantities when allocating available quantity. In such event, Weyerhaeuser will notify Buyer as far in advance as possible. So long as Weyerhaeuser treats Buyer accordingly, Weyerhaeuser shall not be liable for failure to supply any such Site Services.
- (3) If Weyerhaeuser closes or otherwise ceases to operate its Albany Paper Mill facility, other than as a result of the sale of such facility (or all or substantially all of the assets of such facility), Weyerhaeuser will notify Buyer as far in advance as possible and will cooperate with Buyer in arranging to procure substitute services from another source at Buyer's cost. Upon the occurrence of such event, provided that Weyerhaeuser has already provided Buyer with the Water Easement, Weyerhaeuser's obligations to provide the Site Services under this Agreement shall terminate.
- (4) If Weyerhaeuser is unable to provide Buyer with any one or more of the Site Services as provided herein after commercially reasonable efforts to attempt to continue to do so, Weyerhaeuser will notify Buyer as far in advance as possible and will cooperate with Buyer in arranging to procure substitute services from another source at Buyer's cost, including providing the Water Easement.
- (5) Buyer acknowledges that each Site Service provided by Weyerhaeuser under this Agreement is an accommodation to Buyer resulting from Buyer's purchase of the Assets at the Sites pursuant to the Purchase Agreement and that, absent such transaction, the Site Services would not be provided. Accordingly, unless expressly stated otherwise herein, all Site Services provided by Weyerhaeuser under this Agreement shall be limited to the quality, quantity and/or magnitude of such Site Services at the Closing Date, plus or minus ten percent. Buyer acknowledges that the prices for the Site Services set forth on Exhibit A are based on such quantities and, should the actual quantity of a Site Service provided hereunder be substantially different, the parties will negotiate a mutually agreeable adjustment to the price to equitably reflect such different quantity.
- (B) CONFIDENTIAL INFORMATION. In the course of this Agreement, a party may have access to confidential and/or proprietary information of the other party. The party receiving such confidential or proprietary information shall disclose such information only to such employees, agents and consultants of the receiving party who have a need to know such information in

connection with the performance of this Agreement and shall cause such information to be used only for purposes directly related to the performance of this Agreement, unless the disclosing party otherwise agrees in advance in writing.

- (C) COOPERATION. The parties shall cooperate fully with each other to effectuate the purposes of this Agreement, including, but not limited to, execution and delivery of such consents, notices, filings, applications and other documents and instruments as may be required to perform their respective obligations hereunder or as reasonably requested by the other party. The parties acknowledge that the Sites and the existing Weyerhaeuser facilities have heretofore been under common ownership and that in order for the Sites and the existing Weyerhaeuser facilities to no longer be interdependent each party must take reasonable steps to independently provide its own services as provided in this Agreement. While the Sites and the existing Weyerhaeuser facilities remain interdependent, each party will to the extent possible reasonably cooperate and consult with the other on matters which affect the operations and facilities of the other party (e.g., coordinating maintenance or downtime).
- (D) NOTICES. All notices or other communications under this Agreement shall be in writing and either personally delivered, sent by certified or registered mail (return receipt requested, postage prepaid), sent by reputable overnight delivery service, or sent by facsimile with telephone verification of receipt, to the respective addresses set forth below (or to such other addresses as a party may designate by notice given as aforesaid).

If to Weyerhaeuser:

Weyerhaeuser Company 33663 Weyerhaeuser Way South Federal Way, WA 98003 USA Attn: Scott Marshall

Facsimile: (253) 924-2402

with a copy to:

Weyerhaeuser Company 33663 Weyerhaeuser Way South Federal Way, WA 98003 USA Attn: Law Department Facsimile: (253) 924-5204 If to Buyer:

Flakeboard America Limited 100 Kingsley Park Drive Fort Mill, SC 29715 Attn: President

Facsimile: (803) 835-1331

Ms. Karyn L. Bradley
Gowling Lafleur Henderson LLP
1 First Canadian Place
Suite 1600 100 King Street West
Toronto, Ontario M5X 1G5 CANADA
Facsimile: (416) 863-3430

All notices shall be deemed given (i) if personally delivered, upon receipt; (ii) if sent by certified or registered mail, on the third Business Day after mailing; (iii) if sent by reputable overnight delivery service, on the first Business Day after timely delivery to the courier; and (iv) if sent by facsimile, on the clate the sender obtains telephone verification of receipt.

(E) ASSIGNMENT. No assignment of any right or interest in or delegation of any duty or obligation under this Agreement shall be made, in whole or in part, by either party without the

prior written consent of the other party; provided, however, that either party may assign this Agreement and its rights and obligations hereunder (i) to any Affiliate (as defined in the Purchase Agreement) of such party or (ii) to the surviving controlling entity in the event of a merger or acquisition of such party or purchase of all or substantially all of the assets of such party. This Agreement shall be assigned to, and shall be a binding obligation of, any entity acquiring the facility or facilities (or all or substantially all of the assets thereof) providing the Site Services. In addition, Weyerhaeuser may delegate its obligations under this Agreement in whole or in part to a third party, provided that any such delegation shall not relieve Weyerhaeuser of liability for such obligations.

- (F) FORCE MAJEURE. Each party's performance of this Agreement shall be excused without liability to the extent and for the period of time necessitated by the occurrence of an event outside of a party's reasonable control (a "force majeure event"), including an Act of God, war, terrorism, sabotage, civil unrest, riot, strike, labor dispute, explosion, accident, fire, flood, earthquake, storm or other natural disaster, regulation, rule, act or intervention of any Governmental Entity, or other similar event beyond the reasonable control of a party. The imposition by any Governmental Entity or subdivision or agency thereof of any statute, law, ordinance, code, rule, regulation, order, judgment, decree or directive that makes unlawful a party's ability to provide or receive any one or more of the Site Services shall be a force majeure event with respect to the affected Site Services.
- (G) WAIVER. No delay or failure to exercise any right or remedy under this Agreement by a party shall impair such right or remedy or be construed as a waiver thereof. A party's consent to or approval of any act or failure to act by the other party requiring approval or consent hereunder shall not be deemed to waive or render unnecessary the requirement of approval or consent of any subsequent act by the other party. A party's waiver of any breach or failure to enforce any term or condition of this Agreement at any time shall not in any way affect, limit or waive such party's right thereafter to enforce and compel strict compliance with every term and condition hereof.
- (H) GOVERNING LAW. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Washington applicable to contracts made and performed entirely within such state, without regard to its conflict of law rules.
- (I) ATTORNEYS' FEES. Should any legal action or proceeding be commenced by either party in order to enforce this Agreement or any provision hereof, or in connection with any alleged dispute, breach or default related hereto, the prevailing party (the party entitled to recover costs at such time as all appeals have been exhausted or expired) shall be entitled to recover reasonable attorneys' fees and costs incurred by it in connection with such action or proceeding, in addition to such other relief as may be granted.
- (J) INTECRATED AGREEMENT; MODIFICATION. This Agreement constitutes the entire agreement and understanding of the parties with respect to the subject matter hereof and supersedes all prior discussions, negotiations, understandings and agreements. It is intended by the parties as a complete and exclusive statement of the terms of their agreement with respect to the subject matter hereof. This is a fully integrated agreement. Each party acknowledges that the

other has made no representation or warranty, and that it has relied on no representation or warranty, other than those specifically set forth in this Agreement. This Agreement may not be modified except in a writing signed by the parties.

- (K) INTERPRETATION. Each party acknowledges that it and its legal counsel have reviewed this Agreement. The parties agree that the terms and conditions of this Agreement shall not be construed against any party on the basis of such party's drafting of such terms and conditions. The words "herein", "hereto" and other similar words shall mean this Agreement as a whole, including the exhibits hereto, as the same may be amended, modified or supplemented from time to time.
- (L) NO AGENCY. The parties agree that no agency, partnership or joint venture of any kind shall be or is intended to be created by or under this Agreement.
- (M) EXHIBITS. All exhibits referred to herein are deemed to be incorporated in this Agreement in their entirety.
- (N) HEADINGS. The headings in this Agreement are for convenience only and are not intended and will not be construed to affect the scope or meaning of any provisions hereof.
- (O) COUNTERPARTS. This Agreement may be executed in counterparts, each of which shall be deemed an original but all of which taken together shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

WEYERHAEUSER COMPANY	FLAKEBOARD AMERICA LIMITED
1 Mande A	2011.
By Sur VIVI disk	By Slates
Title:	Title:

EXHIBIT A DESCRIPTION OF SITE SERVICES

DURAFLAKE PB FACILITY

1. Water.

a. <u>Site Service commitment</u>. Weyerhaeuser shall: (a) allow Buyer to use the existing manufacturing water supply system that services both Weyerhaeuser's Albany Paper Mill facility and Buyer's Duraflake PB site in order to deliver manufacturing water to Buyer's Duraflake PB site; and (b) bill Buyer for such service on a quarterly basis as provided in this Agreement.

Weyerhaeuser will complete the work necessary with the Oregon Water Resources Department (WRD) to record and clarify the separate usage of water for the purpose of manufacturing at Buyer's Duraflake PB site. One cubic foot per second (cfs) of water will be used and dedicated from Water Right Permit # 23102, Certificate # 54268. Water Right # T7526 and Application # 64514 [Permit # S47184] are excluded from this Agreement and no water as evidenced thereunder will be supplied to Buyer's Duraflake PB site.

The Duraflake PB facility will continue to use the Albany Paper Mill delivery system after the WRD is notified. This water right notification is for existing uses at one cfs. Any water usage above one cfs will be negotiated by the parties separately from this Agreement.

Weyerhaeuser shall provide Buyer with a perpetual easement 16 feet in width for the erection, construction, maintenance, operation, and repair of one of more pipe lines for the delivery of water through the Albany Paper Mill delivery system or at another location and on terms and conditions to be agreed upon by the Parties.

Term of commitment. This Site Service shall be provided for a transition period, until the existing water rights for both Weyerhaeurer's Albany Paper Mill facility and Buyer's Duraflake PB site are split as described in paragraph "a" above; provided that Weyerhaeuser's obligation to provide delivery through the Albany Paper Mill delivery system shall continue until Weyerhaeuser has granted the easement described in subsection a. above.

c. Cost. Weyerhaeuser will pay the associated costs of clarifying the water rights for manufacturing water at Buyer's Duraflake PB site from the Albany Paper Mill facility. All costs for delivery of water to Buyer's Duraflake PB site will be paid by Buyer at the rate of 1/35 of the actual cost incurred by Albany Paper Mill plus a 7% administration fee. Weyerhaeuser will bill Buyer on a quarterly basis.

Buyer will be responsible for the repair and maintenance costs of the incoming water line from the Albany Paper Mill mainline connection to the Duraflake PB site.

2. Process Waste Water and Stormwater.

- a. <u>Site Service commitment</u>. Weyerhaeuser shall: (a) allow Buyer to use the existing process waste water system and stormwater system that services both Weyerhaeuser's Albany Paper Mill facility and Buyer's Duraflake PB site in order for the Albany Paper Mill facility to accept process waste water and stormwater from Buyer's Duraflake PB site; (b) route such process waste water and stormwater to the Albany Paper Mill facility; and (c) bill Buyer for such services on a quarterly basis as provided in this Agreement. Buyer will measure process water and stormwater volume and solids on a daily basis and provide data to Albany Paper Mill. Albany Paper Mill has the right to audit and verify the accuracy of all data.
- b. Term of commitment. This Site Service shall continue for a transition period until the earlier of (i) the date of termination of the Transition Site Services Agreement between Weyerhaeuser and Buyer to which this Exhibit A is attached and (ii) the fifth anniversary of the Closing Date. On or prior to such date, Buyer shall have either entered into a mutually agreeable arrangement with the Albany Paper Mill facility for ongoing processing of process waste water and stormwater or made arrangements with a third party for handling process waste water and stormwater from Buyer's Duraflake PB site. Notwithstanding anything contained benefit this Site Service shall continue only for as long at the Albany Paper Mill facility is cipable of processing the volume of process waste water and stormwater from Buyer's Duraflake PB site.
- c. <u>Cost</u>. Buyer shall pay Weyerhaeuser's actual costs related to the acceptance and treatment of process waste water and stormwater from Buyer's Duraflake PB site, plus a 7% administration fee. The costs will be determined from an annual review of the prior year's costs and pro rated on a solids removed basis. Weyerhaeuser will bill Buyer on a quarterly basis. Buyer will be responsible for the repair and maintenance costs of the process water and storm water lines from the Duraflake PB site to Albany Paper Mill.



March 5, 2019

Joan Smith Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for Water Right Transfer Application T-12773

Dear Ms. Smith;

On November 20, 2017, GSI Water Solutions (GSI) filed water right transfer application T-12773 on behalf of International Paper Company (IPC). Transfer T-12773 requests changes to the point of diversion, place of use and character of use for a 2.0 cfs portion of Certificate 54268. I received your letter dated February 11, 2019, which included the draft Preliminary Determination (DPD) for Transfer T-12773, and draft remaining right certificate. I am submitting this letter on behalf of International Paper to provide comments on those documents.

First, in finding of fact 4 in the DPD, please clarify this finding to indicate that the only changes included in the amended documents were corrections for the location descriptions of the requested points of appropriation (wells). For example, "On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells."

Second, in findings of fact 5 and 6, the lease referred to is incorrect. As described in the application cover letter, the 2.0 cfs portion of Certificate 54268 proposed for transfer is included instream lease IL-1434, which is currently being renewed by International Paper. Please revise as needed.

Third, the DPD and remaining right certificate should be modified to reflect changes to Certificate 54268 as the result of International Paper's specific-to-general industrial use notice. In May 2013, Ed Henricks submitted to OWRD a notice of the changes to Certificate 54268, and an associated map, and described the provisions of ORS 540.520(9) that allowed the process. (A copy of the specific-to-general notice is enclosed.) As a result of this change, the authorized place of use for Certificate 54268

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are the lands shown on the map, and further described in the "from" lands table included in Attachment 7 of the application for transfer T-12773. (For further reference, please also see the enclosed letter from International Paper's attorney, David Filippi, which describes this issue as it relates to a transfer application for another of IPC's water right certificates, T-12065. For that transfer, OWRD agreed with Mr. Filippi and made the requested changes.) Both the authorized place of use under Finding of Fact 7 and the place of use in the remaining right certificate should be changed to reflect the place of use following the specific-to-general notice. Similar to T-12065, IPC is requesting a revised DPD that documents this requested correction.

Fourth, we are concerned that the condition described in item 10 could have the unintended consequence of unnecessarily precluding the use of water from the proposed wells. The proposed condition states that: "Prior to diverting water, the water user shall install a fish screening and/or bypass device..." As written, the condition could be interpreted to prohibit the City of Independence from pumping water from the proposed points of appropriation (wells) if the point of diversion had not yet been constructed and screening installed. We request that OWRD modify the condition to state: "Prior to diverting water at the proposed surface water point of diversion, the water user shall install..."

Fifth, the DPD provided a completion deadline of October 1, 2024, which allows approximately 5 years to complete the transfer. As described in the cover letters from International Paper and from the City of Independence, completing the transfer will require a significant amount of work. Accordingly, the transfer application requests 30 years to complete the transfer. (Please see the letter from the City of Independence dated November 15, 2017 included with the transfer application for more details regarding the effort required to complete this transfer.)

Finally, we appreciate the Department's efforts to process this application and look forward to completing the process.

Please contact me if you have any questions. My telephone number is 541-257-9001.

Sincerely,

Adam Sussman

Principal Water Resources Consultant

Enclosures

Cc: Terry Thomas, International Paper Vaughn Pieschl, International paper

Kie Cottam, City of Independence

1586 West Thornton Lake Drive NW Albany, Oregon 97321 541-971-7668 Mobile 541-926-5956 Evenings Henricks@peak.org



Wednesday, May 15, 2013

Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266

Attn: Dwight French

Re: International Paper Company paper mill property located in Linn County, Albany, Oregon and Certificate 54268, 1) below, place of use clarification under ORS 540.520(9) 1999 SB301. Refer to attached map / drawing item F below. Other map attachments are for clarity of intent for final water distribution.

<u>Background:</u> International Paper Company (IP) is in the process of demolishing and marketing the Albany paper mill facility / site. IP's intentions are to take advantage of the existing infrastructure and create 3 parcels that maximize the sites potential and future use for manufacturing.

In 1954 Willamette Industries, Inc. applied for the first water right on the property and built a paper mill referred to as Western Kraft on the property. In 2002 Weyerhaeuser Company acquired the property from Willamette Industries, Inc. IP purchased the property in 2008 from Weyerhaeuser Company and is the current owner. All of the water rights at the mill have been in continuous use and the pumping system at the point of diversion is ready, willing, and able to pump the entire rate of the combined existing rights.

The place of use, point of diversion, rate, delivery system, and type of use of all four existing water rights, 1), 2), 3), & 4) below, are not being changed by the creation of the 3 parcels from the single parent parcel. A transfer application is not required with the State of Oregon Water Resources Department (WRD) that manages water rights to create and allocate the places of use for the rights. Site service agreements will be created as part of the sales to address specific water service commitments between parties.

ORS 540.520(9), Senate Bill 301 from Oregon 1999 legislative session, allows the place of use on manufacturing sites to be the property of record owned at or before the priority date. Prior to this bill manufacturing water rights were mapped showing a very limited place of use when in actuality the water was piped throughout the facility. It was not uncommon to see a single boiler building shown on the map as the place of use when the site consisted of several hundred acres of land. This bill provided a statute for the certificate holder to use the water where it was intended to be used and has been used on the entire acreage (refer to attachment "G" page 3).

Existing Water Rights pertinent to the Parent Parcel:

1) Certificate no. 54268, Permit no. S-23102, Application no. S-29640
Priority Date: December 23, 1954
Rate: 18.0 cubic feet per second (cfs)
Original right for paper mill prior to construction.

2) Certificate no. 85736, Permit no. S-47184, Application no. S-64515
Priority Date: October 29, 1982 Type of use: Manufacturing

Rate: 12.0 cfs

Additional water for plant modernization and additional capacity.

3) Transfer No. 7526

a. Certificate no. 68559, Permit no. 14106

Priority Date: November 2, 1939 Type of use: Log deck sprinkling

Rate: 1.93 cfs

b. Certificate no. 20829, Permit no. 20469

Priority Date: June 11, 1943 Type of use: Manufacturing

Rate: 2.0 cfs

c. Certificate no. 20873, Permit no. 20514

Priority Date: January 23, 1951 Type of use: Manufacturing

Rate: 1.2 cfs

5.13 cfs total transferred downstream from Culp Creek to cover all paper mill lands, fill some gaps, and cogeneration facility.

4) Permit no. 54030, Application no. S-84780

Priority Date: June 7, 2001 Type of use: Irrigation of 254.6 acres Rate: 3.18 cfs and 2.5 acre-feet for each acre irrigated during the irrigation season each year. Water Resources Commission Willamette Basin Exception - Water from the aeration pond (sludge) was being land applied under State of Oregon Department of Environmental Quality (DEQ) permit. The water was used to grow a crop and hence needed a water right from the WRD. It is a limited irrigation right tied to the source of the aeration pond as the point of diversion.

<u>Objective:</u> To create the appropriate maps / drawings for recordation of the three parcels being created that clearly show the place of use and rate for each of the four existing water rights pertinent to the parent parcel. These maps / drawings are attached and described as follows;

ATTACHMENTS

A. Land Sale.DWG - Proposed Sale Parcels #'s 1, 2, &3

This map shows the 3 parcels being created from the single parent parcel each having a different hachuring and lists the water right / rights associated with each hachured parcel.

- B. APM-08-4777-P-01 Final Proof Survey Map for Permit S-54030 4) above. This is an irrigation right with a source as the aeration pond. This shows acreage included in Sale Parcel #1.
- C. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)b above. This is an amendment map, dated November 9th, 2012, that shows 254.6 acres, highlighted light brown, as receiving 1.2 cfs from certificate 20873 on acreage included in Sale Parcel #1. Certificate 20873 is one of three certificates that make up T-7526.
- D. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)a above. This is an amendment map, dated November 9th, 2012, that shows 365.3 acres, highlighted light green, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829 on acreage included in Sale Parcel #2. Certificates 68559 and 20829 are two of three certificates that make up T-7526.
- E. Drawing No. 3650P03 (APM-99-3650-P-03 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 85736 2) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #2.
- F. Drawing No. 3650P02 (APM 99-3650-P-02 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 54268 1) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #3. This also

shows that 1.0 cfs of the total 18 cfs was sold to Flakeboard America in 2007. This was noted by a letter sent to the State of Oregon Water Resources Department with the site service agreement and is found in the water right file at which time the Claim of Beneficial Use map for T-7526 was amended to remove the Flakeboard site from the place of use and is also noted in the aforementioned letter.

- **G.** Drawing No. 3650P01R1 (APM-99-3650-P-01 Rev 1) ORS 540.520(9) SB 301 Lands for the parent parcel being divided into three parcels shown in "A" above. This map was created September of 1999 to show the paper mill lands that had water rights available for manufacturing use. This is the base map used to equitably divide the water on the three newly created parcels as shown on attachments E & F above.
- H. MISC-02-4276-P-01 REV. 3 Stamped and Signed Final Proof Survey Map for Transfer 7526. Map amendment dated November 9th, 2012. Map change shows, 254.6 acres, as receiving 1.2 cfs from certificate 20873 and 365.3 acres, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829. This map was amended to clarify the place of use of each of the three water rights involved in the transfer prior to certificate issuance.

<u>Summary:</u> The place of use for water right 1) above, Certificate 54268 is Sale Parcel #3 as shown on the attached map F above, Drawing No. 3650P02. The type of use, point of diversion, rate, and delivery system remain unchanged. This is the only water right covering the mapped lands of parcel #3.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely.

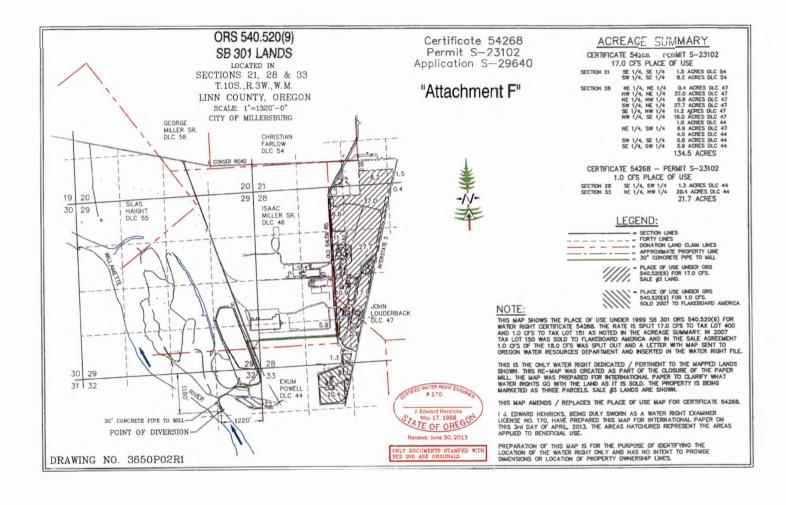
J. Edward Henricks OR PLS. CWRE No. 170

cc:

Dan M. Davis
International Paper Company
Manager Surplus Properties
6400 Poplar Avenue
Memphis, TN 38197
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Vaughn Pieschl International Paper Company 3251 Old Salem Rd. Albany, OR 97321 vaughn.pieschl@ipaper.com 541-924-4650 office 541-409-5573 mobile Kathleen M. Willemin International Paper Company Legal Department - Tower II - 4th Floor 6400 Poplar Avenue Memphis, TN 38197 kathleen.willemin@ipaper.com (901) 832-4495

Enclosure(s): Attachments A,B,C,D,E,F,G, & H





500 S.W. Filth Assume, Suite 2000 Ferdinal, Congres 57304 mets 503,234,3330 for 503,239,2400 weestingloom

October 12, 2015

DAVID B. PILIPH Direct (303) 294-9529 devid filippi@etool.com

VIA ELECTRONIC MAIL patrick & startes@state.or.us

Mr. Kelly Starnes Oregon Water Resources Department 725 Summer St NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for T-12065

Dear Mr. Starnes:

We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

Per recent discussions involving Dwight French and Adam Sussman, the primary concern for IPC is that the FROM lands as described in the Draft Preliminary Determination ("DPD") do not reflect the recent changes to Certificate \$5736 as a result of IPC's specific-to-general industrial use changes. As a result, IPC does not agree with the description of the FROM lands in the DPD, and as such, IPC does not agree that the land ownership report requested in your letter includes the appropriate FROM lands.

As background, in May 2013, CWRE Ed Henricks assisted IPC with a specific-to-general industrial use change pursuant to SB 301 (ORS 540.520(9)) for Certificate \$5736. Following much discussion with OWRD, including with Tom Paul and Dwight French, Mr. Henricks sent a formal notice regarding the change, including a new POU map, to the Department. The mapping for this change was done in conjunction with the re-mapping of several other water rights (also pursuant to SB 301), so as to align the various IPC water rights with the various IPC parcels, which IPC was intending to sell. A copy of the SB 301 map is included with this letter, and it shows the POU as including 322.5 acres, located east of and along the Williamette River. In particular, note that under the "NOTE" section on the map in the lower right corner, the second sentence reads: "This map amends / replaces the place of use map for certificate 85736."

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900 S.W. Fifth Avenue, Suite 2600 Portland, Oregon 97204 main 503,224,3180 fax 503,220,2480 www.sloci.com

October 12, 2015

DAVID E. FILIPPI Direct (503) 294-9529 david.filippl@stoel.com

VIA ELECTRONIC MAIL patrick.k.starnes@state.or.us

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Mr. Kelly Starnes October 12, 2015 Page 2

Thus, in regard to transfer application T-12065, instead of including the SB 301 map described above, the application mistakenly included a copy of the final proof survey map dated Sept. 19, 1997, which shows the POU as being 65.6 acres, located on the far eastern edge of the IPC property. Pursuant to its prior discussions with OWRD, IPC maintains that the SB 301 map accurately depicts the current POU for Certificate 85736, and the current location of the FROM lands for purposes of the transfer application. This issue is important given how all the water rights have been re-mapped on the various IP parcels, which again, are being marketed separately with distinct water rights. In particular, it is also important that the 4.25 cfs under Certificate 85736 that is not subject to the pending transfer remain appurtenant to the 322.5 acres (and not the 65.6 acres).

All that said, IPC is providing land ownership reports from AmeriTitle that include both the original 65.6 acres, as well as the new 322.5 acres. In particular, we would note the following items:

- 1) The ownership reports identify the landowner as IP Eat Three LLC for all tax lots except for 151, which shows Flakeboard America Limited ("Flakeboard") as the landowner.
- 2) Pursuant to the enclosed documentation, IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution.
- 3) With respect to the Flakeboard landownership, this is included in the original 65.6 acres. At the same time, the sale agreement to Flakeboard specifically excluded any interest in Certificate 85736, as evidenced in the enclosed documentation.
- 4) With respect to the sale to Millersburg Power LLC ("Millersburg), prior to the closing of the sale to Millersburg, IPC re-mapped various water rights so that a portion of T-7526 (1.2 cfs) and Permit S-54030 were appurtenant to the land being sold to Millersburg. As such, these rights were included in the sale, while no rights under Certificate 85736 were included.
- 5) Please note that even though tax lots 100 and 200 are actually in section 32, T10S R3W, Linn County puts those tax lots on the section 33 map. This helps to explain why AmeriTitle provided two separate reports to describe these locations.

Pursuant to communications with Mr. French, we understand that the Preliminary Determination will be revised to reflect the POU change that resulted from the specific-to-general industrial use



Mr. Kelly Starnes October 12, 2015 Page 3

change, and in particular, the PD will be revised so that the remaining right issued for that portion of Certificate 85736 that is not subject to transfer will reflect the 322.5 acres as the authorized POU, and not the former POU located on the original 65.6 acres.

In short, IPC believes the FROM land for purposes of T-12065 should be the 322.5 acres and not the 65.6 acres, and accordingly, that the land ownership report requested from the title company should be for the 322.5 acres described in the SB 301 map, and not the 65.6 acres described in the 1997 final proof survey map. At the same time, reports for both acreages were requested and are being provided to the Department with this letter.

Otherwise, IPC does not have any further comments regarding the DPD. Please do not hesitate to contact me if you have any questions regarding this comment letter.

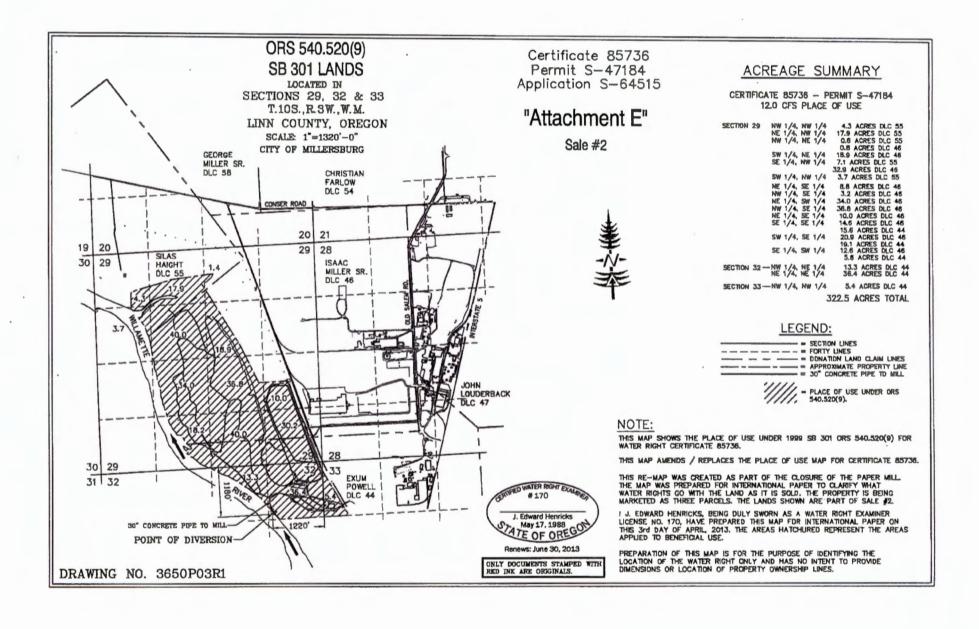
Very truly yours,

David E. Filippi

DEF:dew Enclosures

cc: Client

Adam Sussman Kim Grigsby





March 5, 2019

Joan Smith Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for Water Right Transfer Application T-12773

Dear Ms. Smith;

On November 20, 2017, GSI Water Solutions (GSI) filed water right transfer application T-12773 on behalf of International Paper Company (IPC). Transfer T-12773 requests changes to the point of diversion, place of use and character of use for a 2.0 cfs portion of Certificate 54268. I received your letter dated February 11, 2019, which included the draft Preliminary Determination (DPD) for Transfer T-12773, and draft remaining right certificate. I am submitting this letter on behalf of International Paper to provide comments on those documents.

First, in finding of fact 4 in the DPD, please clarify this finding to indicate that the only changes included in the amended documents were corrections for the location descriptions of the requested points of appropriation (wells). For example, "On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells."

Second, in findings of fact 5 and 6, the lease referred to is incorrect. As described in the application cover letter, the 2.0 cfs portion of Certificate 54268 proposed for transfer is included instream lease IL-1434, which is currently being renewed by International Paper. Please revise as needed.

Third, the DPD and remaining right certificate should be modified to reflect changes to Certificate 54268 as the result of International Paper's specific-to-general industrial use notice. In May 2013, Ed Henricks submitted to OWRD a notice of the changes to Certificate 54268, and an associated map, and described the provisions of ORS 540.520(9) that allowed the process. (A copy of the specific-to-general notice is enclosed.) As a result of this change, the authorized place of use for Certificate 54268

are the lands shown on the map, and further described in the "from" lands table included in Attachment 7 of the application for transfer T-12773. (For further reference, please also see the enclosed letter from International Paper's attorney, David Filippi, which describes this issue as it relates to a transfer application for another of IPC's water right certificates, T-12065. For that transfer, OWRD agreed with Mr. Filippi and made the requested changes.) Both the authorized place of use under Finding of Fact 7 and the place of use in the remaining right certificate should be changed to reflect the place of use following the specific-to-general notice. Similar to T-12065, IPC is requesting a revised DPD that documents this requested correction.

Fourth, we are concerned that the condition described in item 10 could have the unintended consequence of unnecessarily precluding the use of water from the proposed wells. The proposed condition states that: "Prior to diverting water, the water user shall install a fish screening and/or bypass device..." As written, the condition could be interpreted to prohibit the City of Independence from pumping water from the proposed points of appropriation (wells) if the point of diversion had not yet been constructed and screening installed. We request that OWRD modify the condition to state: "Prior to diverting water at the proposed surface water point of diversion, the water user shall install..."

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Finally, we appreciate the Department's efforts to process this application and look forward to completing the process.

Please contact me if you have any questions. My telephone number is 541-257-9001.

Sincerely,

Adam Sussman

Principal Water Resources Consultant

Enclosures

Cc: Terry Thomas, International Paper

Vaughn Pieschl, International paper

Kie Cottam, City of Independence



Wednesday, May 15, 2013

Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266

Attn: Dwight French

Re: International Paper Company paper mill property located in Linn County, Albany, Oregon and Certificate 54268, 1) below, place of use clarification under ORS 540.520(9) 1999 SB301. Refer to attached map / drawing item F below. Other map attachments are for clarity of intent for final water distribution.

<u>Background:</u> International Paper Company (IP) is in the process of demolishing and marketing the Albany paper mill facility / site. IP's intentions are to take advantage of the existing infrastructure and create 3 parcels that maximize the sites potential and future use for manufacturing.

In 1954 Willamette Industries, Inc. applied for the first water right on the property and built a paper mill referred to as Western Kraft on the property. In 2002 Weyerhaeuser Company acquired the property from Willamette Industries, Inc. IP purchased the property in 2008 from Weyerhaeuser Company and is the current owner. All of the water rights at the mill have been in continuous use and the pumping system at the point of diversion is ready, willing, and able to pump the entire rate of the combined existing rights.

The place of use, point of diversion, rate, delivery system, and type of use of all four existing water rights, 1), 2), 3), & 4) below, are not being changed by the creation of the 3 parcels from the single parent parcel. A transfer application is not required with the State of Oregon Water Resources Department (WRD) that manages water rights to create and allocate the places of use for the rights. Site service agreements will be created as part of the sales to address specific water service commitments between parties.

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Existing Water Rights pertinent to the Parent Parcel:

1) Certificate no. 54268, Permit no. S-23102, Application no. S-29640
Priority Date: December 23, 1954
Rate: 18.0 cubic feet per second (cfs)
Original right for paper mill prior to construction.

2) Certificate no. 85736, Permit no. S-47184, Application no. S-64515 Priority Date: October 29, 1982 Type of use: Manufacturing

Rate: 12.0 cfs

Additional water for plant modernization and additional capacity.

3) Transfer No. 7526

a. Certificate no. 68559, Permit no. 14106

Priority Date: November 2, 1939 Type of use: Log deck sprinkling

Rate: 1.93 cfs

b. Certificate no. 20829, Permit no. 20469

Priority Date: June 11, 1943 Type of use: Manufacturing

Rate: 2.0 cfs

c. Certificate no. 20873, Permit no. 20514

Priority Date: January 23, 1951 Type of use: Manufacturing

Rate: 1.2 cfs

5.13 cfs total transferred downstream from Culp Creek to cover all paper mill lands, fill some gaps, and cogeneration facility.

4) Permit no. 54030, Application no. S-84780

Priority Date: June 7, 2001 Type of use: Irrigation of 254.6 acres Rate: 3.18 cfs and 2.5 acre-feet for each acre irrigated during the irrigation season each year. Water Resources Commission Willamette Basin Exception - Water from the aeration pond (sludge) was being land applied under State of Oregon Department of Environmental Quality (DEQ) permit. The water was used to grow a crop and hence needed a water right from the WRD. It is a limited irrigation right tied to the source of the aeration pond as the point of diversion.

<u>Objective:</u> To create the appropriate maps / drawings for recordation of the three parcels being created that clearly show the place of use and rate for each of the four existing water rights pertinent to the parent parcel. These maps / drawings are attached and described as follows;

ATTACHMENTS

A. Land Sale, DWG - Proposed Sale Parcels #'s 1, 2, &3

This map shows the 3 parcels being created from the single parent parcel each having a different hachuring and lists the water right / rights associated with each hachured parcel.

- B. APM-08-4777-P-01 Final Proof Survey Map for Permit S-54030 4) above. This is an irrigation right with a source as the aeration pond. This shows acreage included in Sale Parcel #1
- C. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)b above. This is an amendment map, dated November 9th, 2012, that shows 254.6 acres, highlighted light brown, as receiving 1.2 cfs from certificate 20873 on acreage included in Sale Parcel #1. Certificate 20873 is one of three certificates that make up T-7526.
- D. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)a above. This is an amendment map, dated November 9th, 2012, that shows 365.3 acresi, highlighted light green, as receiving 1.93 cts from certificate 68559 and 2.0 cts from certificate 20029 on acreage included in Sale Parcel #2. Certificates 68559 and 20829 are two of three certificates that make up T-7526.
- E. Drawing No. 3650P03 (APM-99-3650-P-03 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 85736 2) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #2.
- F. Drawing No. 3650P02 (APM 99-3650-P-02 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 54268 1) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #3. This also

C:\Users\KGrigsby.GSIWS\AppData\Local\Microsoft\Windows\Temporary Internet Files\Content.Outlook\7XT7APQX\certificate 54268 wrd 2012 letter.docx

shows that 1.0 cfs of the total 18 cfs was sold to Flakeboard America in 2007. This was noted by a letter sent to the State of Oregon Water Resources Department with the site service agreement and is found in the water right file at which time the Claim of Beneficial Use map for T-7526 was amended to remove the Flakeboard site from the place of use and is also noted in the aforementioned letter.

- **G.** Drawing No. 3650P01R1 (APM-99-3650-P-01 Rev 1) ORS 540.520(9) SB 301 Lands for the parent parcel being divided into three parcels shown in "A" above. This map was created September of 1999 to show the paper mill lands that had water rights available for manufacturing use. This is the base map used to equitably divide the water on the three newly created parcels as shown on attachments E & F above.
- H. MISC-02-4276-P-01 REV. 3 Stamped and Signed Final Proof Survey Map for Transfer 7526. Map amendment dated November 9th, 2012. Map change shows, 254.6 acres, as receiving 1.2 cfs from certificate 20873 and 365.3 acres, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829. This map was amended to clarify the place of use of each of the three water rights involved in the transfer prior to certificate issuance.

<u>Summary:</u> The place of use for water right 1) above, Certificate 54268 is Sale Parcel #3 as shown on the attached map F above, Drawing No. 3650P02. The type of use, point of diversion, rate, and delivery system remain unchanged. This is the only water right covering the mapped lands of parcel #3.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely,

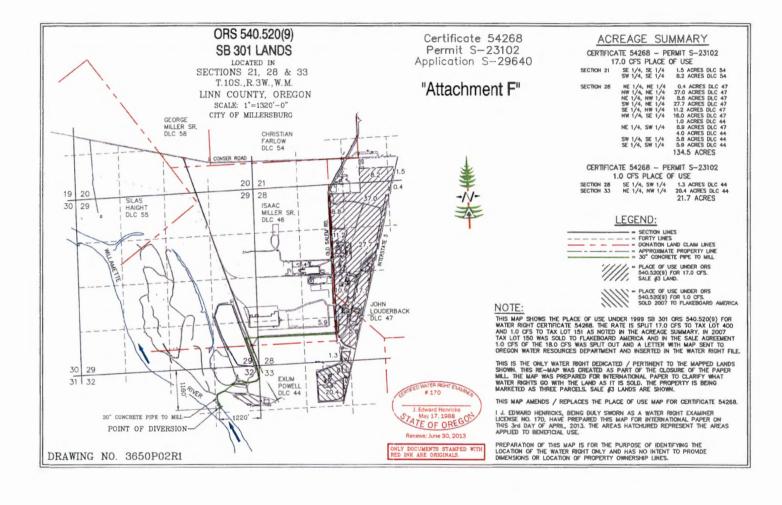
J. Edward Henricks OR PLS, CWRE No. 170

CC:

Dan M. Davis
International Paper Company
Manager Surplus Properties
6400 Poplar Avenue
Memphis, TN 38197
dan.davis@ipaper.com
(901)419-4270

Vaughn Pieschl International Paper Company 3251 Old Salem Rd. Albany, OR 97321 vaughn.pieschl@ipaper.com 541-924-4650 office 541-409-5573 mobile Kathleen M. Willemin
International Paper Company
Legal Department - Tower II - 4th Floor
6400 Poplar Avenue
Memphis, TN 38197
kathleen.willemin@ipaper.com
(901) 832-4495

Enclosure(s): Attachments A,B,C,D,E,F,G, & H





900 S.W. Pilik Avenue, Salle 2020 Perfiland. Ovegen 97204 mats 900.224.1389 facts 900.224.2389 West, Model, com

DAVID B. PILIPPI Prict (503) 294-9529

October 12, 2015

david.fi lippi@stosl.o

VIA ELECTRONIC MAIL
patrick.k.starnes@state.or.us

Mr. Kelly Stames Oregon Water Resources Department 725 Summer St NE, Suite A Saletn, OR 97301

Re: Draft Preliminary Determination for T-12065

Dear Mr. Starnes:

We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

Per recent discussions involving Dwight French and Adam Sussman, the primary concern for IPC is that the FROM lands as described in the Draft Preliminary Determination ("DPD") do not reflect the recent changes to Certificate 85736 as a result of IPC's specific-to-general industrial use changes. As a result, IPC does not agree with the description of the FROM lands in the DPD, and as such, IPC does not agree that the land ownership report requested in your letter includes the appropriate FROM lands.

As background, in May 2013, CWRE Ed Henricks assisted IPC with a specific-to-general industrial use change pursuant to SB 301 (ORS 540.520(9)) for Certificate 85736. Following much discussion with OWRD, including with Tom Paul and Dwight French, Mr. Henricks sent a formal notice regarding the change, including a new POU map, to the Department. The mapping for this change was done in conjunction with the re-mapping of several other water rights (also pursuant to SB 301), so as to align the various IPC water rights with the various IPC parcels, which IPC was intending to sell. A copy of the SB 301 map is included with this letter, and it shows the POU as including 322.5 acres, located east of and along the Willamette River. In particular, note that under the "NOTE" section on the map in the lower right corner, the second sentence reads: "This map amends / replaces the place of use map for certificate 85736."

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Alasko Collifornia idobe Minessota Oregon Utob Weshington and Weshington, D.C.



900 S.W. Fifth Avenue, Suite 2600 Portland, Oregon 97204 main 503.224.3380 fax 503.220.2480 www.stoei.com

October 12, 2015

DAVID E. FILIPPI Direct (503) 294-9529 david.filippl@stoel.com

VIA ELECTRONIC MAIL patrick.k.starnes@state.or.us

Mr. Kelly Starnes Oregon Water Resources Department 725 Summer St NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for T-12065

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We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

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Mr. Kelly Starnes October 12, 2015 Page 2

Thus, in regard to transfer application T-12065, instead of including the SB 301 map described above, the application mistakenly included a copy of the final proof survey map dated Sept. 19, 1997, which shows the POU as being 65.6 acres, located on the far eastern edge of the IPC property. Pursuant to its prior discussions with OWRD, IPC maintains that the SB 301 map accurately depicts the current POU for Certificate 85736, and the current location of the FROM lands for purposes of the transfer application. This issue is important given how all the water rights have been re-mapped on the various IP parcels, which again, are being marketed separately with distinct water rights. In particular, it is also important that the 4.25 cfs under Certificate 85736 that is not subject to the pending transfer remain appurtenant to the 322.5 acres (and not the 65.6 acres).

All that said, IPC is providing land ownership reports from AmeriTitle that include both the original 65.6 acres, as well as the new 322.5 acres. In particular, we would note the following items:

- 1) The ownership reports identify the landowner as IP Eat Three LLC for all tax lots except for 151, which shows Flakeboard America Limited ("Flakeboard") as the landowner.
- 2) Pursuant to the enclosed documentation, IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution.
- 3) With respect to the Flakeboard landownership, this is included in the original 65.6 acres. At the same time, the sale agreement to Flakeboard specifically excluded any interest in Certificate 85736, as evidenced in the enclosed documentation.
- 4) With respect to the sale to Millersburg Power LLC ("Millersburg), prior to the closing of the sale to Millersburg, IPC re-mapped various water rights so that a portion of T-7526 (1.2 cfs) and Permit S-54030 were appurtenant to the land being sold to Millersburg. As such, these rights were included in the sale, while no rights under Certificate 85736 were included.
- 5) Please note that even though tax lots 100 and 200 are actually in section 32, T10S R3W, Linn County puts those tax lots on the section 33 map. This helps to explain why AmeriTitle provided two separate reports to describe these locations.

Pursuant to communications with Mr. French, we understand that the Preliminary Determination will be revised to reflect the POU change that resulted from the specific-to-general industrial use



Mr. Kelly Starnes October 12, 2015 Page 3

change, and in particular, the PD will be revised so that the remaining right issued for that portion of Certificate 85736 that is not subject to transfer will reflect the 322.5 acres as the authorized POU, and not the former POU located on the original 65.6 acres.

In short, IPC believes the FROM land for purposes of T-12065 should be the 322.5 acres and not the 65.6 acres, and accordingly, that the land ownership report requested from the title company should be for the 322.5 acres described in the SB 301 map, and not the 65.6 acres described in the 1997 final proof survey map. At the same time, reports for both acreages were requested and are being provided to the Department with this letter.

Otherwise, IPC does not have any further comments regarding the DPD. Please do not hesitate to contact me if you have any questions regarding this comment letter.

Very truly yours,

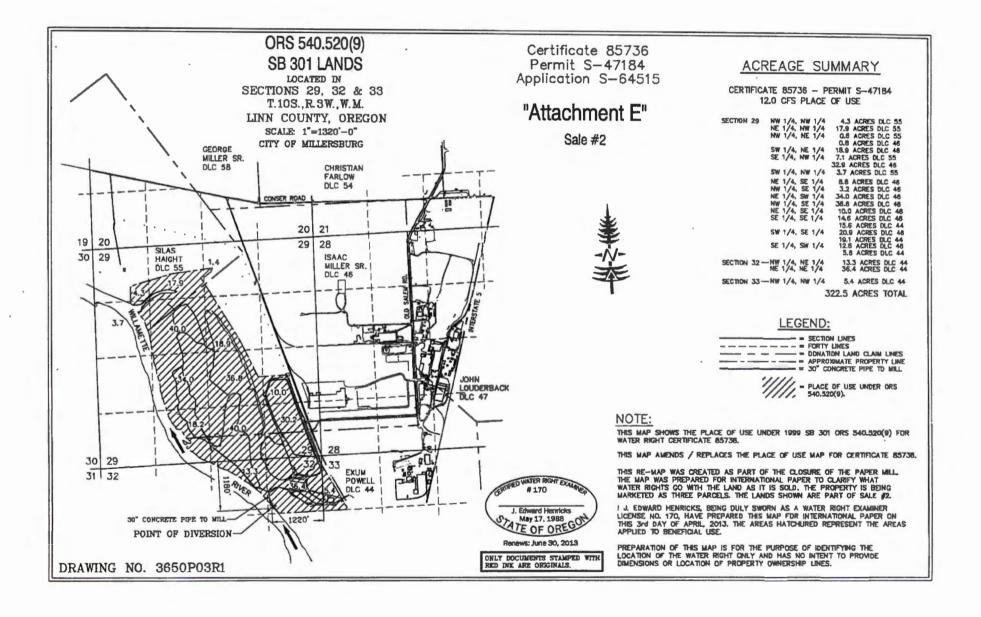
David E. Filippi

DEF:dew Enclosures

cc:

Client

Adam Sussman Kim Grigsby



STATE OF OREGON WATER RESOURCES DEPARTMENT

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STATE OF OREGON

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Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

MAR **0 7** 2019

OWRD

February 14, 2019

WILLAMETTE INDUSTRIES INC. PO BOX 339 ALBANY, OR 97321

SUBJECT: Water Right Transfer Application T-12773

Your water right transfer is ready for issuance of the Preliminary Determination, once the Department receives payment for publication of the newspaper notice.

Items needed before the next phase of processing...

At this time you need to:

- submit a check for \$117.29 (to cover cost of publication of the notice), made out to the Oregon Water Resources Department.
- 2. write "for T-12773 NOTICE" on the front of your check, and
- 3. submit it with the tracking stub at the bottom of this letter.

Mail the check to 725 Summer St. NE, Suite A, Salem, OR 97301-1266, no later than March 15, 2019.

What happens next...

Shortly after receiving payment, the Department will issue the Preliminary Determination, initiate publication in the **Polk County Itemizer Observer** newspaper, and also publish the notice on the Department's weekly notice. Publication of the notice will initiate a protest period during which any person may file either a protest opposing the decision proposed by the Department in the Preliminary Determination or a standing statement supporting the Department's decision.

If we do not receive payment for newspaper notice by March 15, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at <u>Joan.M.SMITH@oregon.gov</u> or at 503-986-0892, if I may be of assistance.

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Attached is a check for \$117.29 (PCA #46117) for Newspaper Notice for Transfer T-12773

- made out to Oregon Water Resources Department (or WRD)
- "for T-12773 NOTICE" written on front of check

Mail to: Oregon Water Resources Department 725 Summer St. NE, Suite A Salem, OR 97301-1266 Transfer Specialist Transfer and Conservation Section

cc: T-12773

Joel M. Plahn, District 16 Watermaster (via e-mail)

GSI Water Solutions Inc., Agent for the applicant (via e-mail)

City of Independence, Receiving Landowner

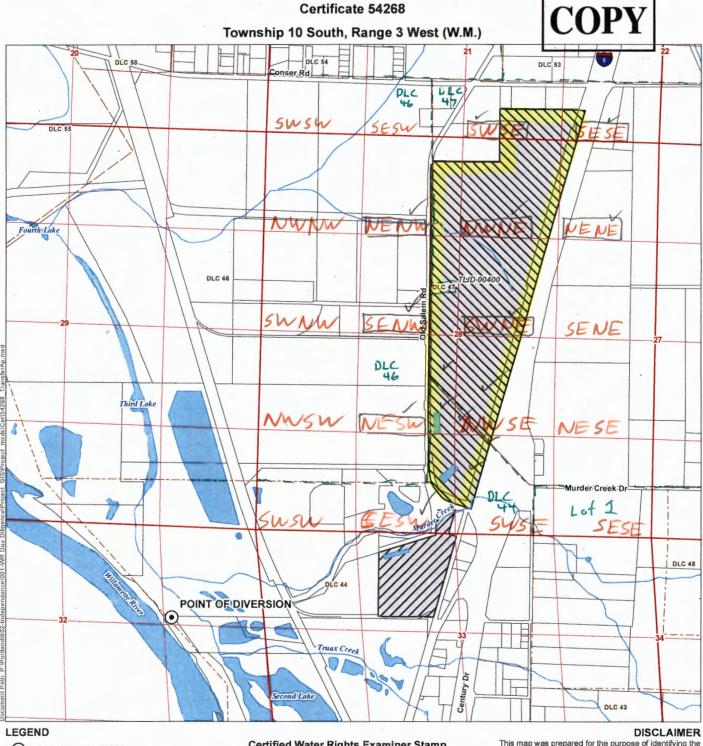
GSI WATER SOLUTIONS, INC.

021196

Check Date: 2/20/2019									
Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount			
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MAR 07 2019 OWRD

Application for a Water Right Transfer Authorized Place of Use/Point of Diversion



Point of Diversion (POD)

Authorized POU, Not Subject to the Transfer Authorized POU, Subject to the Transfer

Tax Lot

Donation Land Claim (DLC)

Waterbody

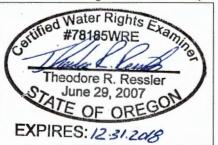
Watercourse

POD LOCATION DESCRIPTION

Point of Diversion

Located 1260 feet South and 1220 feet West from the NE corner of Section 32, Township 10 South, Range 3 West (W.M.)

Certified Water Rights Examiner Stamp



This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.

MAP NOTES

NOV 2 0 2017



12773

COPY

AUTHORIZED (the "from" or "off" lands)

The listing that appears on the certificate BEFORE PROPOSED CHANGES

List only that part or portion of the water right that will be changed.

Twp		R	ng	Sec	3/4	1/4	Tax Lot	DLC	Acres	Type of USE listed on Certificate	POD(s) or POA(s) (name or number from Table 1)	Priority Date	
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RECEIVED

NOV 9 2017

OWRD



March 5, 2019

Joan Smith Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Draft Preliminary Determination for Water Right Transfer Application T-12773

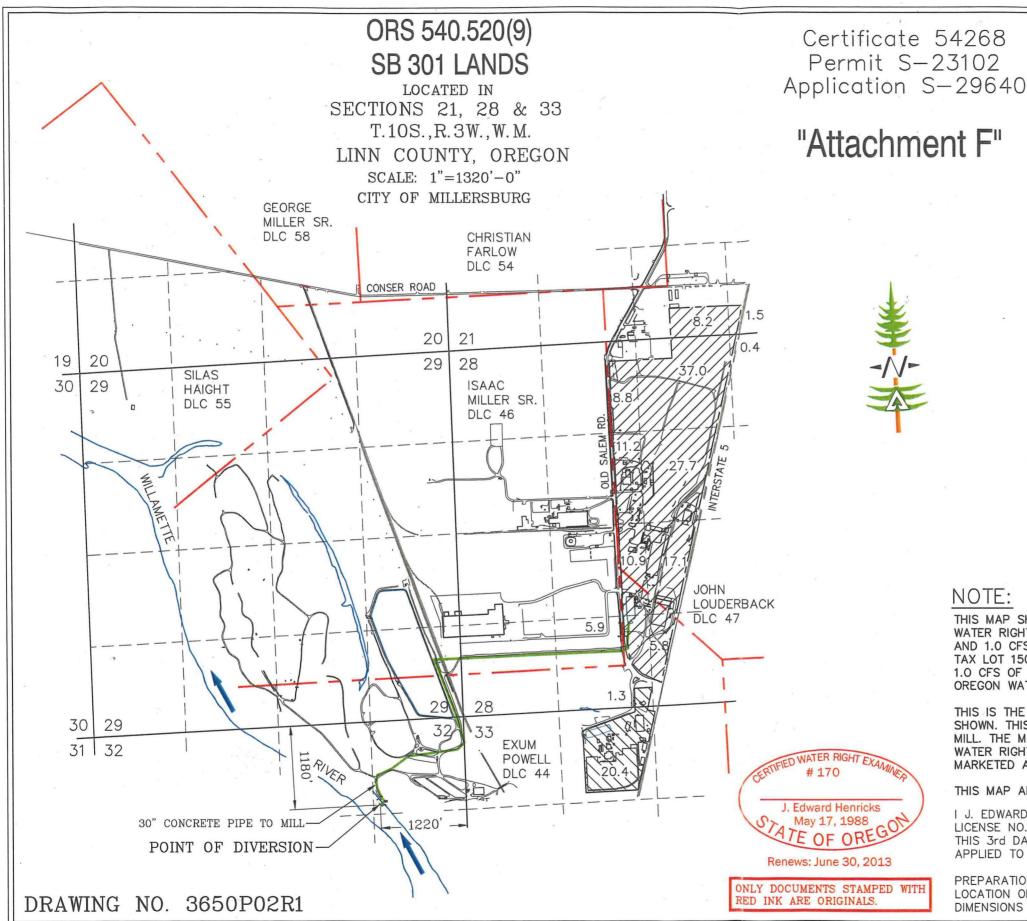
Dear Ms. Smith;

On November 20, 2017, GSI Water Solutions (GSI) filed water right transfer application T-12773 on behalf of International Paper Company (IPC). Transfer T-12773 requests changes to the point of diversion, place of use and character of use for a 2.0 cfs portion of Certificate 54268. I received your letter dated February 11, 2019, which included the draft Preliminary Determination (DPD) for Transfer T-12773, and draft remaining right certificate. I am submitting this letter on behalf of International Paper to provide comments on those documents.

First, in finding of fact 4 in the DPD, please clarify this finding to indicate that the only changes included in the amended documents were corrections for the location descriptions of the requested points of appropriation (wells). For example, "On September 14, 2018, the applicant submitted an amended application page, geologist report and map to correct the locations of the requested wells."

Second, in findings of fact 5 and 6, the lease referred to is incorrect. As described in the application cover letter, the 2.0 cfs portion of Certificate 54268 proposed for transfer is included instream lease IL-1434, which is currently being renewed by International Paper. Please revise as needed.

Third, the DPD and remaining right certificate should be modified to reflect changes to Certificate 54268 as the result of International Paper's specific-to-general industrial use notice. In May 2013, Ed Henricks submitted to OWRD a notice of the changes to Certificate 54268, and an associated map, and described the provisions of ORS 540.520(9) that allowed the process. (A copy of the specific-to-general notice is enclosed.) As a result of this change, the authorized place of use for Certificate 54268



ACREAGE SUMMARY

MAR 0 7 2019

OWRD

CERTIFICATE 54268 - PERMIT S-23102 17.0 CFS PLACE OF USE

SE 1/4, SE 1/4 1.5 ACRES DLC 54 SECTION 21 SW 1/4, SE 1/4 8.2 ACRES DLC 54 SECTION 28 NE 1/4, NE 1/4 0.4 ACRES DLC 47 37.0 ACRES DLC 47 NW 1/4, NE 1/4 NE 1/4, NW 1/4 8.8 ACRES DLC 47 SW 1/4, NE 1/4 27.7 ACRES DLC 47 SE 1/4, NW 1/4 11.2 ACRES DLC 47 NW 1/4, SE 1/4 16.0 ACRES DLC 47 1.0 ACRES DLC 44 NE 1/4, SW 1/4 6.9 ACRES DLC 47 4.0 ACRES DLC 44 SW 1/4, SE 1/4 5.8 ACRES DLC 44 SE 1/4, SW 1/4 5.9 ACRES DLC 44

CERTIFICATE 54268 - PERMIT S-23102 1.0 CFS PLACE OF USE

134.5 ACRES

SECTION 28 SE 1/4, SW 1/4 1.3 ACRES DLC 44 SECTION 33 NE 1/4, NW 1/4 20.4 ACRES DLC 44 21.7 ACRES

LEGEND:

= SECTION LINES = FORTY LINES = DONATION LAND CLAIM LINES = APPROXIMATE PROPERTY LINE = 30" CONCRETE PIPE TO MILL = PLACE OF USE UNDER ORS 540.520(9) FOR 17.0 CFS. SALE #3 LAND.

> = PLACE OF USE UNDER ORS 540.520(9) FOR 1.0 CFS. SOLD 2007 TO FLAKEBOARD AMERICA

NOTE:

THIS MAP SHOWS THE PLACE OF USE UNDER 1999 SB 301 ORS 540.520(9) FOR WATER RIGHT CERTIFICATE 54268. THE RATE IS SPLIT 17.0 CFS TO TAX LOT 400 AND 1.0 CFS TO TAX LOT 151 AS NOTED IN THE ACREAGE SUMMARY. IN 2007 TAX LOT 150 WAS SOLD TO FLAKEBOARD AMERICA AND IN THE SALE AGREEMENT 1.0 CFS OF THE 18.0 CFS WAS SPLIT OUT AND A LETTER WITH MAP SENT TO OREGON WATER RESOURCES DEPARTMENT AND INSERTED IN THE WATER RIGHT FILE.

THIS IS THE ONLY WATER RIGHT DEDICATED / PERTINENT TO THE MAPPED LANDS SHOWN. THIS RE-MAP WAS CREATED AS PART OF THE CLOSURE OF THE PAPER MILL. THE MAP WAS PREPARED FOR INTERNATIONAL PAPER TO CLARIFY WHAT WATER RIGHTS GO WITH THE LAND AS IT IS SOLD. THE PROPERTY IS BEING MARKETED AS THREE PARCELS. SALE #3 LANDS ARE SHOWN.

THIS MAP AMENDS / REPLACES THE PLACE OF USE MAP FOR CERTIFICATE 54268.

I J. EDWARD HENRICKS, BEING DULY SWORN AS A WATER RIGHT EXAMINER LICENSE NO. 170, HAVE PREPARED THIS MAP FOR INTERNATIONAL PAPER ON THIS 3rd DAY OF APRIL, 2013. THE AREAS HATCHURED REPRESENT THE AREAS APPLIED TO BENEFICIAL USE.

PREPARATION OF THIS MAP IS FOR THE PURPOSE OF IDENTIFYING THE LOCATION OF THE WATER RIGHT ONLY AND HAS NO INTENT TO PROVIDE DIMENSIONS OR LOCATION OF PROPERTY OWNERSHIP LINES.

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are the lands shown on the map, and further described in the "from" lands table included in Attachment 7 of the application for transfer T-12773. (For further reference, please also see the enclosed letter from International Paper's attorney, David Filippi, which describes this issue as it relates to a transfer application for another of IPC's water right certificates, T-12065. For that transfer, OWRD agreed with Mr. Filippi and made the requested changes.) Both the authorized place of use under Finding of Fact 7 and the place of use in the remaining right certificate should be changed to reflect the place of use following the specific-to-general notice. Similar to T-12065, IPC is requesting a revised DPD that documents this requested correction.

Fourth, we are concerned that the condition described in item 10 could have the unintended consequence of unnecessarily precluding the use of water from the proposed wells. The proposed condition states that: "Prior to diverting water, the water user shall install a fish screening and/or bypass device..." As written, the condition could be interpreted to prohibit the City of Independence from pumping water from the proposed points of appropriation (wells) if the point of diversion had not yet been constructed and screening installed. We request that OWRD modify the condition to state: "Prior to diverting water at the proposed surface water point of diversion, the water user shall install..."

Fifth, the DPD provided a completion deadline of October 1, 2024, which allows approximately 5 years to complete the transfer. As described in the cover letters from International Paper and from the City of Independence, completing the transfer will require a significant amount of work. Accordingly, the transfer application requests 30 years to complete the transfer. (Please see the letter from the City of Independence dated November 15, 2017 included with the transfer application for more details regarding the effort required to complete this transfer.)

Finally, we appreciate the Department's efforts to process this application and look forward to completing the process.

Please contact me if you have any questions. My telephone number is 541-257-9001.

Sincerely,

Adam Sussman

Principal Water Resources Consultant

Enclosures

Cc: Terry Thomas, International Paper Vaughn Pieschl, International paper

Kie Cottam, City of Independence



Wednesday, May 15, 2013

Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266

Attn: Dwight French

MAR 07 2019 OWRD

Re: International Paper Company paper mill property located in Linn County, Albany, Oregon and Certificate 54268, 1) below, place of use clarification under ORS 540.520(9) 1999 SB301. Refer to attached map / drawing item F below. Other map attachments are for clarity of intent for final water distribution.

<u>Background:</u> International Paper Company (IP) is in the process of demolishing and marketing the Albany paper mill facility / site. IP's intentions are to take advantage of the existing infrastructure and create 3 parcels that maximize the sites potential and future use for manufacturing.

In 1954 Willamette Industries, Inc. applied for the first water right on the property and built a paper mill referred to as Western Kraft on the property. In 2002 Weyerhaeuser Company acquired the property from Willamette Industries, Inc. IP purchased the property in 2008 from Weyerhaeuser Company and is the current owner. All of the water rights at the mill have been in continuous use and the pumping system at the point of diversion is ready, willing, and able to pump the entire rate of the combined existing rights.

The place of use, point of diversion, rate, delivery system, and type of use of all four existing water rights, 1), 2), 3), & 4) below, are not being changed by the creation of the 3 parcels from the single parent parcel. A transfer application is not required with the State of Oregon Water Resources Department (WRD) that manages water rights to create and allocate the places of use for the rights. Site service agreements will be created as part of the sales to address specific water service commitments between parties.

ORS 540.520(9), Senate Bill 301 from Oregon 1999 legislative session, allows the place of use on manufacturing sites to be the property of record owned at or before the priority date. Prior to this bill manufacturing water rights were mapped showing a very limited place of use when in actuality the water was piped throughout the facility. It was not uncommon to see a single boiler building shown on the map as the place of use when the site consisted of several hundred acres of land. This bill provided a statute for the certificate holder to use the water where it was intended to be used and has been used on the entire acreage (refer to attachment "G" page 3).

Existing Water Rights pertinent to the Parent Parcel:

- 1) Certificate no. 54268, Permit no. S- 23102, Application no. S-29640
 Priority Date: December 23, 1954
 Rate: 18.0 cubic feet per second (cfs)
 Original right for paper mill prior to construction.
- 2) Certificate no. 85736, Permit no. S-47184, Application no. S-64515
 Priority Date: October 29, 1982 Type of use: Manufacturing
 Rate: 12.0 cfs

MAR 07 2019

3) Transfer No. 7526

OWRD

a. Certificate no. 68559, Permit no. 14106
Priority Date: November 2, 1939
Type of use: Log deck sprinkling

Rate: 1.93 cfs

b. Certificate no. 20829, Permit no. 20469 Priority Date: June 11, 1943

Type of use: Manufacturing

Rate: 2.0 cfs

c. Certificate no. 20873, Permit no. 20514
Priority Date: January 23, 1951 Type of use: Manufacturing
Rate: 1.2 cfs

5.13 cfs total transferred downstream from Culp Creek to cover all paper mill lands, fill some gaps, and cogeneration facility.

4) Permit no. 54030, Application no. S-84780

Priority Date: June 7, 2001 Type of use: Irrigation of 254.6 acres Rate: 3.18 cfs and 2.5 acre-feet for each acre irrigated during the irrigation season each year. Water Resources Commission Willamette Basin Exception - Water from the aeration pond (sludge) was being land applied under State of Oregon Department of Environmental Quality (DEQ) permit. The water was used to grow a crop and hence needed a water right from the WRD. It is a limited irrigation right tied to the source of the aeration pond as the point of diversion.

<u>Objective:</u> To create the appropriate maps / drawings for recordation of the three parcels being created that clearly show the place of use and rate for each of the four existing water rights pertinent to the parent parcel. These maps / drawings are attached and described as follows;

ATTACHMENTS

A. Land Sale.DWG – Proposed Sale Parcels #'s 1, 2, &3 This map shows the 3 parcels being created from the single parent parcel each having a different hachuring and lists the water right / rights associated with each hachured parcel.

- B. APM-08-4777-P-01 Final Proof Survey Map for Permit S-54030 4) above. This is an irrigation right with a source as the aeration pond. This shows acreage included in Sale Parcel #1.
- C. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)b above. This is an amendment map, dated November 9th, 2012, that shows 254.6 acres, highlighted light brown, as receiving 1.2 cfs from certificate 20873 on acreage included in Sale Parcel #1. Certificate 20873 is one of three certificates that make up T-7526.
- D. MISC-02-4276-P-01 REV. 3 Final Proof Survey Map for Transfer 7526 3)a above. This is an amendment map, dated November 9th, 2012, that shows 365.3 acres, highlighted light green, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829 on acreage included in Sale Parcel #2. Certificates 68559 and 20829 are two of three certificates that make up T-7526.
- E. Drawing No. 3650P03 (APM-99-3650-P-03 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 85736 2) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #2.
- F. Drawing No. 3650P02 (APM 99-3650-P-02 Rev 0) ORS 540.520(9) SB 301 Lands for Certificate 54268 1) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #3. This also

shows that 1.0 cfs of the total 18 cfs was sold to Flakeboard America in 2007. This was noted by a letter sent to the State of Oregon Water Resources Department with the site service agreement and is found in the water right file at which time the Claim of Beneficial Use map for T-7526 was amended to remove the Flakeboard site from the place of use and is also noted in the aforementioned letter.

- G. Drawing No. 3650P01R1 (APM-99-3650-P-01 Rev 1) ORS 540.520(9) SB 301 Lands for the parent parcel being divided into three parcels shown in "A" above. This map was created September of 1999 to show the paper mill lands that had water rights available for manufacturing use. This is the base map used to equitably divide the water on the three newly created parcels as shown on attachments E & F above.
- H. MISC-02-4276-P-01 REV. 3 Stamped and Signed Final Proof Survey Map for Transfer 7526. Map amendment dated November 9th, 2012. Map change shows, 254.6 acres, as receiving 1.2 cfs from certificate 20873 and 365.3 acres, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829. This map was amended to clarify the place of use of each of the three water rights involved in the transfer prior to certificate issuance.

<u>Summary:</u> The place of use for water right 1) above, Certificate 54268 is Sale Parcel #3 as shown on the attached map F above, Drawing No. 3650P02. The type of use, point of diversion, rate, and delivery system remain unchanged. This is the only water right covering the mapped lands of parcel #3.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely,

J. Edward Henricks OR PLS, CWRE No. 170

CC:

Dan M. Davis
International Paper Company
Manager Surplus Properties
6400 Poplar Avenue
Memphis, TN 38197
dan.davis@ipaper.com
(901)419-4270

Vaughn Pieschl
International Paper Company
3251 Old Salem Rd.
Albany, OR 97321
vaughn.pieschl@ipaper.com
541-924-4650 office
541-409-5573 mobile

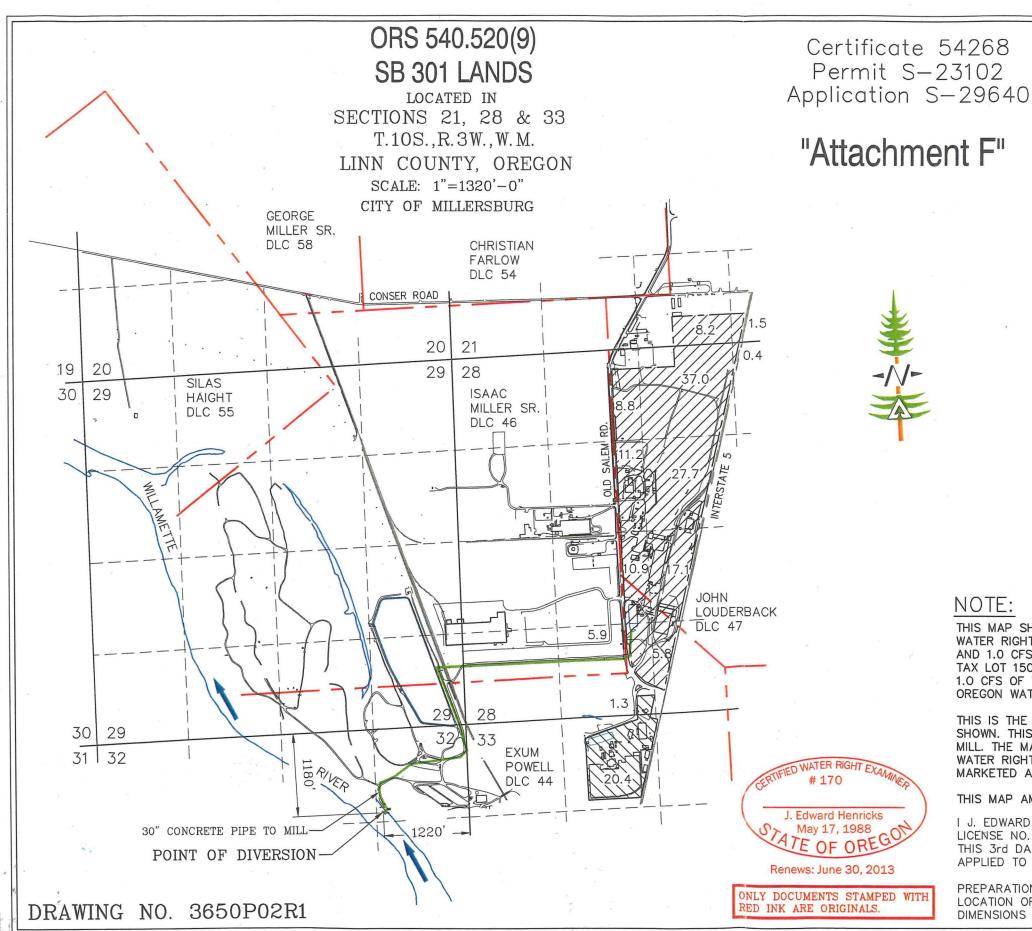
Kathleen M. Willemin International Paper Company Legal Department - Tower II - 4th Floor 6400 Poplar Avenue Memphis. TN 38197 kathleen.willemin@ipaper.com (901) 832-4495

MAR 07 2019

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Enclosure(s): Attachments A,B,C,D,E,F,G, & H



ACREAGE SUMMARY

MAR 0 7 2019

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CERTIFICATE 54268 - PERMIT S-23102 17.0 CFS PLACE OF USE

SE 1/4, SE 1/4 SW 1/4, SE 1/4 SECTION 21 1.5 ACRES DLC 54 8.2 ACRES DLC 54 NE 1/4, NE 1/4 0.4 ACRES DLC 47 NW 1/4, NE 1/4 37.0 ACRES DLC 47 NE 1/4, NW 1/4 8.8 ACRES DLC 47 SW 1/4, NE 1/4 27.7 ACRES DLC 47 SE 1/4, NW 1/4 11.2 ACRES DLC 47 NW 1/4, SE 1/4 16.0 ACRES DLC 47 1.0 ACRES DLC 44 NE 1/4, SW 1/4 6.9 ACRES DLC 47 4.0 ACRES DLC 44 SW 1/4, SE 1/4 5.8 ACRES DLC 44 SE 1/4, SW 1/4 5.9 ACRES DLC 44

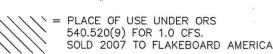
CERTIFICATE 54268 - PERMIT S-23102 1.0 CFS PLACE OF USE

134.5 ACRES

SECTION 28 SE 1/4, SW 1/4 1.3 ACRES DLC 44 NE 1/4, NW 1/4 20.4 ACRES DLC 44 21.7 ACRES

LEGEND:

= SECTION LINES = FORTY LINES = DONATION LAND CLAIM LINES = APPROXIMATE PROPERTY LINE 30" CONCRETE PIPE TO MILL = PLACE OF USE UNDER ORS 540.520(9) FOR 17.0 CFS. SALE #3 LAND.



NOTE:

THIS MAP SHOWS THE PLACE OF USE UNDER 1999 SB 301 ORS 540.520(9) FOR WATER RIGHT CERTIFICATE 54268. THE RATE IS SPLIT 17.0 CFS TO TAX LOT 400 AND 1.0 CFS TO TAX LOT 151 AS NOTED IN THE ACREAGE SUMMARY. IN 2007 TAX LOT 150 WAS SOLD TO FLAKEBOARD AMERICA AND IN THE SALE AGREEMENT 1.0 CFS OF THE 18.0 CFS WAS SPLIT OUT AND A LETTER WITH MAP SENT TO OREGON WATER RESOURCES DEPARTMENT AND INSERTED IN THE WATER RIGHT FILE.

THIS IS THE ONLY WATER RIGHT DEDICATED / PERTINENT TO THE MAPPED LANDS SHOWN. THIS RE-MAP WAS CREATED AS PART OF THE CLOSURE OF THE PAPER MILL. THE MAP WAS PREPARED FOR INTERNATIONAL PAPER TO CLARIFY WHAT WATER RIGHTS GO WITH THE LAND AS IT IS SOLD. THE PROPERTY IS BEING MARKETED AS THREE PARCELS. SALE #3 LANDS ARE SHOWN.

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PREPARATION OF THIS MAP IS FOR THE PURPOSE OF IDENTIFYING THE LOCATION OF THE WATER RIGHT ONLY AND HAS NO INTENT TO PROVIDE DIMENSIONS OR LOCATION OF PROPERTY OWNERSHIP LINES.



900 S.W. Fifth Avenue, Suite 2600 Portland. Oregon 97204 main 503.224.3380 fax 503.220.2480 www.stoci.com

October 12, 2015

DAVID E. FILIPPI Direct (503) 294-9529 david.filippi@stoel.com

VIA ELECTRONIC MAIL patrick.k.starnes@state.or.us

Mr. Kelly Starnes Oregon Water Resources Department 725 Summer St NE, Suite A Salem, OR 97301 MAR 07 2019 OWRD

Re: Draft Preliminary Determination for T-12065

Dear Mr. Starnes:

We represent International Paper Company ("IPC") in the above-referenced matter, and this letter responds to your letter of September 11, 2015 requesting comments and additional information.

Per recent discussions involving Dwight French and Adam Sussman, the primary concern for IPC is that the FROM lands as described in the Draft Preliminary Determination ("DPD") do not reflect the recent changes to Certificate 85736 as a result of IPC's specific-to-general industrial use changes. As a result, IPC does not agree with the description of the FROM lands in the DPD, and as such, IPC does not agree that the land ownership report requested in your letter includes the appropriate FROM lands.

As background, in May 2013, CWRE Ed Henricks assisted IPC with a specific-to-general industrial use change pursuant to SB 301 (ORS 540.520(9)) for Certificate 85736. Following much discussion with OWRD, including with Tom Paul and Dwight French, Mr. Henricks sent a formal notice regarding the change, including a new POU map, to the Department. The mapping for this change was done in conjunction with the re-mapping of several other water rights (also pursuant to SB 301), so as to align the various IPC water rights with the various IPC parcels, which IPC was intending to sell. A copy of the SB 301 map is included with this letter, and it shows the POU as including 322.5 acres, located east of and along the Willamette River. In particular, note that under the "NOTE" section on the map in the lower right corner, the second sentence reads: "This map amends / replaces the place of use map for certificate 85736."



Mr. Kelly Starnes October 12, 2015 Page 2

Thus, in regard to transfer application T-12065, instead of including the SB 301 map described above, the application mistakenly included a copy of the final proof survey map dated Sept. 19, 1997, which shows the POU as being 65.6 acres, located on the far eastern edge of the IPC property. Pursuant to its prior discussions with OWRD, IPC maintains that the SB 301 map accurately depicts the current POU for Certificate 85736, and the current location of the FROM lands for purposes of the transfer application. This issue is important given how all the water rights have been re-mapped on the various IP parcels, which again, are being marketed separately with distinct water rights. In particular, it is also important that the 4.25 cfs under Certificate 85736 that is not subject to the pending transfer remain appurtenant to the 322.5 acres (and not the 65.6 acres).

All that said, IPC is providing land ownership reports from AmeriTitle that include both the original 65.6 acres, as well as the new 322.5 acres. In particular, we would note the following items:

- 1) The ownership reports identify the landowner as IP Eat Three LLC for all tax lots except for 151, which shows Flakeboard America Limited ("Flakeboard") as the landowner.
- 2) Pursuant to the enclosed documentation, IP Eat Three LLC was a wholly owned subsidiary of IPC, IP Eat Three LLC was dissolved effective December 31, 2008, and IPC acquired all assets upon its dissolution.
- 3) With respect to the Flakeboard landownership, this is included in the original 65.6 acres. At the same time, the sale agreement to Flakeboard specifically excluded any interest in Certificate 85736, as evidenced in the enclosed documentation.
- 4) With respect to the sale to Millersburg Power LLC ("Millersburg), prior to the closing of the sale to Millersburg, IPC re-mapped various water rights so that a portion of T-7526 (1.2 cfs) and Permit S-54030 were appurtenant to the land being sold to Millersburg. As such, these rights were included in the sale, while no rights under Certificate 85736 were included.
- 5) Please note that even though tax lots 100 and 200 are actually in section 32, T10S R3W, Linn County puts those tax lots on the section 33 map. This helps to explain why AmeriTitle provided two separate reports to describe these locations.

Pursuant to communications with Mr. French, we understand that the Preliminary Determination will be revised to reflect the POU change that resulted from the specific-to-general industrial use



Mr. Kelly Starnes October 12, 2015 Page 3

change, and in particular, the PD will be revised so that the remaining right issued for that portion of Certificate 85736 that is not subject to transfer will reflect the 322.5 acres as the authorized POU, and not the former POU located on the original 65.6 acres.

In short, IPC believes the FROM land for purposes of T-12065 should be the 322.5 acres and not the 65.6 acres, and accordingly, that the land ownership report requested from the title company should be for the 322.5 acres described in the SB 301 map, and not the 65.6 acres described in the 1997 final proof survey map. At the same time, reports for both acreages were requested and are being provided to the Department with this letter.

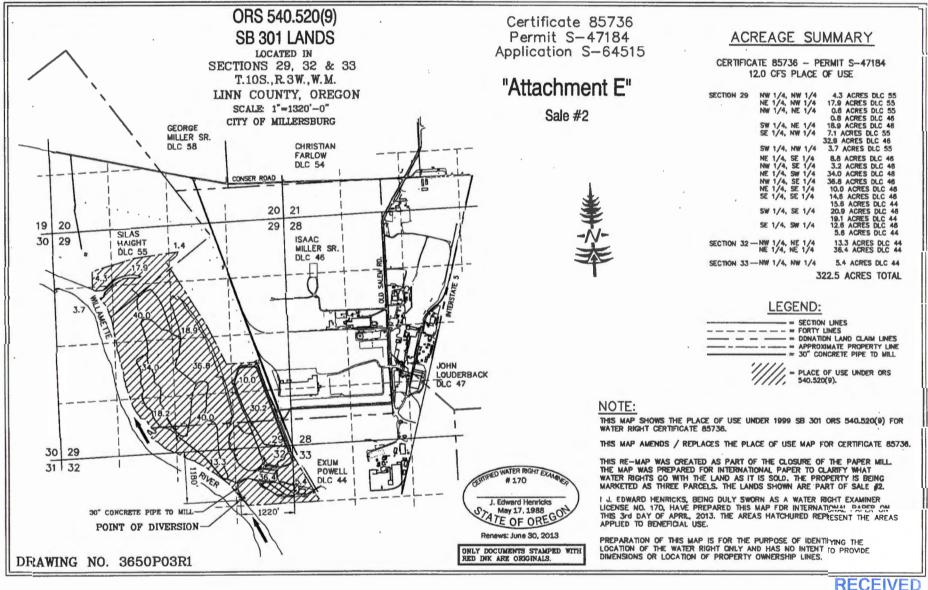
Otherwise, IPC does not have any further comments regarding the DPD. Please do not hesitate to contact me if you have any questions regarding this comment letter.

Very truly yours,

David E. Filippi

DEF:dew Enclosures cc: Client

> Adam Sussman Kim Grigsby



MAR 07 2019

STATE OF OREGON

COUNTY OF

LINN

CERTIFICATE OF WATER RIGHT

This is to certify, That WILLAMETTE INDUSTRIES, INC. Albany Paper Mill of PO Box 339, Albany , has made . State of Oregon 97321 proof to the satisfaction of the Water Resources Director, of a right to the use of the waters of Willamette River Columbia River for the purpose of a tributary of manufacturing 23102 and that said right to the use of said waters has been perfected in under Permit No. accordance with the laws of Oregon; that the priority of the right hereby confirmed dates from December 23, 1954 that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 18.0 cubic feet per second or its equivalent in case of rotation, measured at the point of diversion from the stream. The point of diversion is located in the NE 1/4 NE 1/4 as projected within Powell DLC 44, Section 32, TlOS, R3W, WM; 1260 feet South and 1220 feet West from NE Corner, Section 32. The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to ____ of one cubic foot per second per and shall conform to such reasonable rotation system as may be ordered by the proper state officer. A description of the place of use under the right hereby confirmed, and to which such right is appurtenant, is as follows: SW 1/4 NE 1/4 as projected within Louderback DLC 47 SE 1/4 NW 1/4 as projected within Louderback DLC 47 NE 1/4 SW 1/4 as projected within Louderback DLC 47 NW 1/4 SE 1/4 as projected within Louderback DLC 47 NE 1/4 SW 1/4 as projected within Powell DLC 44 SE 1/4 SW 1/4 as projected within Powell DLC 44 NW 1/4 SE 1/4 as projected within Powell DLC 44 SW 1/4 SE 1/4 as projected within Powell DLC 44 Section 28 NW 1/4 NE 1/4 as projected within Powell DLC 44 NE 1/4 NW 1/4 as projected within Powell DLC 44 Section 33 Township 10 South, Range 3 West, WM The right to the use of the water for the purposes aforesaid is restricted to the lands or place of use herein described and is subject to minimum flows established by the Water Resources Commission with an effective date prior to this right. WITNESS the signature of the Water Resources Director, affixed

Recorded in State Record of Water Right Certificates, Volume 49, page 54268

this date. April 16, 1986

/s/ William H. Young

Water Resources Director

2786D/SB 29640



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

February 14, 2019

WILLAMETTE INDUSTRIES INC. PO BOX 339

ALBANY, OR 97321

SUBJECT: Water Right Transfer Application T-12773

International Paper 6400 Poplar Memphis TN 38197

Your water right transfer is ready for issuance of the Preliminary Determination, once the Department receives payment for publication of the newspaper notice.

Items needed before the next phase of processing...

At this time you need to:

- 1. submit a check for \$117.29 (to cover cost of publication of the notice), made out to the Oregon Water Resources Department.
- 2. write "for T-12773 NOTICE" on the front of your check, and
- 3. submit it with the tracking stub at the bottom of this letter.

Mail the check to 725 Summer St. NE, Suite A, Salem, OR 97301-1266, no later than March 15, 2019.

What happens next...

Shortly after receiving payment, the Department will issue the Preliminary Determination, initiate publication in the Polk County Itemizer Observer newspaper, and also publish the notice on the Department's weekly notice. Publication of the notice will initiate a protest period during which any person may file either a protest opposing the decision proposed by the Department in the Preliminary Determination or a standing statement supporting the Department's decision.

If we do not receive payment for newspaper notice by March 15, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at Joan.M.SMITH@oregon.gov or at 503-986-0892, if I may be of assistance.

Attached is a check for \$117.29 (PCA #46117) for Newspaper Notice for Transfer T-12773

- made out to Oregon Water Resources Department (or WRD)
- "for T-12773 NOTICE" written on front of check

Mail to: Oregon Water Resources Department

725 Summer St. NE, Suite A Salem, OR 97301-1266

Transfer Specialist Transfer and Conservation Section

cc: T-12773

Joel M. Plahn, District 16 Watermaster (via e-mail)
GSI Water Solutions Inc., Agent for the applicant (via e-mail)
City of Independence, Receiving Landowner



ADDRESS SERVICE REQUESTED

RECEIVED

FEB 25 2019

U.S. POSTAGE >> PITNEY BOWES

VED W

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FEP 15 '9

OWRD

Willamette Industries Inc. P.O.Box 339 Albany, OR. 97321

NIXIE 971 FE 1250 0002/24/19

NOT DELIVERABLE AS ADDRESSED UNABLE TO FORWARD

UTF ALB-ASB3 \$132766 BC: 97301126673 *2929-01213-24-20

SMITH Joan M * WRD

From: SMITH Joan M * WRD

Sent: Thursday, February 14, 2019 9:59 AM

To: PLAHN Joel M * WRD; 'asussman@gsiws.com'; 'dan.davis@ipaper.com'

Subject: Transfer T-12773

Attachments: 12773-news notice ltr.pdf

SUBJECT: Water Right Transfer Application T-12773

Your water right transfer is ready for issuance of the Preliminary Determination, once the Department receives payment for publication of the newspaper notice.

Items needed before the next phase of processing...

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If we do not receive payment for newspaper notice by March 15, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at <u>Joan.M.SMITH@oregon.gov</u> or at 503-986-0892, if I may be of assistance.

JOAN M. SMITH | TRANSFER SPECIALIST

TRANSFER & CONSERVATION SECTION

725 Summer Street NE, Suite A Salem, OR 97301 | Phone 503-986-0892



SMITH Joan M * WRD

From: SMITH Joan M * WRD

Sent: Monday, February 11, 2019 1:45 PM

To: dan.davis@ipaper.com

Cc: PLAHN Joel M * WRD; 'Ted Ressler'; Adam Sussman

Subject: FW: Transfer Application T-12773

Attachments: 12773-dpd.docm; 12773-rr-cert.docm; 12773-dpd-cov approve.docm

Reference: Water Right Transfer Application T-12773

Your water right transfer is in one of three phases of processing. Enclosed is a draft of our Preliminary Determination regarding Transfer Application T-12773. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

- Please review the drafts carefully to see if it accurately reflects the changes you intend to make, and to become
 familiar with all proposed conditions. You will need to respond in writing by the deadline provided below, whether
 you agree with the proposed action and conditions. Also we will appreciate having you let us know if there are
 typographical errors that need to be corrected.
- 2. A report of landownership for the lands to which the water right are appurtenant (the FROM lands) is required. The report must be prepared by a title company and meet the criteria below. (Reports may be called by various names, such as Customer Service Report, Property Analysis Report (PAR), List Pack, Lot Book Report, etc.)
 - a) The title company's report must either be:
 - i) prepared within 3 months of the draft Preliminary Determination showing current ownership, or
 - ii) prepared within 3 months of recording of a water right conveyance agreement, or
 - iii) prepared at any time, but showing ownership at the time a water right conveyance agreement was recorded.
 - b) The ownership report shall include:
 - i) Date reflected by the ownership information
 - ii) List of owners at that time
 - iii) Legal description of the property where the water right to be transferred is currently located.
 - c) You will need to submit a notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable.
- 3. Notice of this transfer will need to be published in a newspaper with general circulation in the area where the water rights are currently located. You will be responsible for the charges. Please confirm the Polk County Itemizer Observer as the newspaper you prefer to publish in so we can get an accurate estimate of the cost.

Conditions to your water right...

The Watermaster has required a water measurement device at the new diversion point and devices at the new points of appropriation prior to diversion of water. Enclosed is a contact information sheet to assist you in pursuing additional information or approval of the required (or alternate) device(s).

This transfer will require installation of a fish screen at the new diversion point prior to diversion of water from the new point of diversion on the Willamette River. You may not divert water prior to installation and approval of the fish screen. You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2024. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because there are intervening points of diversion/appropriation between the new and the authorized points of diversion/appropriation and because there is more than ¼ mile between the new and the authorized points of diversion/appropriation and because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the Preliminary Determination will occur shortly after we receive:

- 1. Your written response to the conditions and proposed action in the draft Preliminary Determination (e-mail is acceptable); and
- 2. Report of ownership, and affidavits of consent from any landowners shown in the ownership report who have not signed the transfer application; and
- 3. Confirm the name of the newspaper as the Polk County Itemizer Observer to use for publication of the notice of the Preliminary Determination.

If we do not receive the items listed above by March 12, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0892 or <u>Joan.M.SMITH@oregon.gov</u> if I may be of assistance.

Sincerely,

Joan Smith
Transfer Specialist
Transfer and Conservation Section

cc: Transfer Application file T-12773

The City of Independence, Receiving Landowner (via hard copy)

JOAN M. SMITH | TRANSFER SPECIALIST

TRANSFER & CONSERVATION SECTION

725 Summer Street NE, Suite A Salem, OR 97301 | Phone 503-986-0892



Notice of Preliminary Determination for Water Right Transfer T-12773

T-12773 filed by International Paper Company, 6400 Poplar Ave., Memphis, TN 38197, proposes point of diversion, place of use, use, and surface water point of diversion to groundwater point of appropriation changes under Certificate 54268. The right allows the use of 2.0 cubic feet per second from the Willamette River in Sec. 32, T10S, R3W, WM for manufacturing in Sects. 28 and 33. The applicant proposes to move the point of diversion to within Sec. 28, T8S, R4W, WM, proposes to move the point of diversion to groundwater points of appropriation in Sects. 28 and 33, T8S, R4W, WM, to change the place of use to within the service boundary of the city of Independence, and to change the character of use to municipal. The Water Resources Department proposes to approve the transfer, based on the requirements of ORS Chapter 540 and OAR 690-380-5000.

Any person may file, jointly or severally, a protest or standing statement within 30 days after the last date of newspaper publication of this notice, MM/DD/YEAR. Call (503) 986-0815 to obtain additional information. If no protests are filed, the Department will issue a final order consistent with the preliminary determination.



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

February 14, 2019

WILLAMETTE INDUSTRIES INC. PO BOX 339 ALBANY, OR 97321

SUBJECT: Water Right Transfer Application T-12773

Your water right transfer is ready for issuance of the Preliminary Determination, once the Department receives payment for publication of the newspaper notice.

ong aldressee

Items needed before the next phase of processing...

At this time you need to:

- submit a check for \$117.29 (to cover cost of publication of the notice), made out to the Oregon Water Resources Department.
- 2. write "for T-12773 NOTICE" on the front of your check, and
- 3. submit it with the tracking stub at the bottom of this letter.

Mail the check to 725 Summer St. NE, Suite A, Salem, OR 97301-1266, no later than March 15, 2019.

What happens next...

Shortly after receiving payment, the Department will issue the Preliminary Determination, initiate publication in the Polk County Itemizer Observer newspaper, and also publish the notice on the Department's weekly notice. Publication of the notice will initiate a protest period during which any person may file either a protest opposing the decision proposed by the Department in the Preliminary Determination or a standing statement supporting the Department's decision.

If we do not receive payment for newspaper notice by March 15, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at <u>Joan.M.SMITH@oregon.gov</u> or at 503-986-0892, if I may be of assistance.

Sincerely,

Attached is a check for \$117.29 (PCA #46117) for Newspaper Notice for Transfer T-12773

made out to Oregon Water Resources Department (or WRD)

- inade out to Oregon water resources Department (or with
- "for T-12773 NOTICE" written on front of check

Mail to: Oregon Water Resources Department 725 Summer St. NE, Suite A Salem, OR 97301-1266 Transfer Specialist Transfer and Conservation Section

cc: T-12773

Joel M. Plahn, District 16 Watermaster (via e-mail)
GSI Water Solutions Inc., Agent for the applicant (via e-mail)
City of Independence, Receiving Landowner

SMITH Joan M * WRD

SIVILI I Joan IVI " VVKD								
From:	PHILLIPS Stacy H * WRD							
Sent:	Thursday, February 14, 2019 9:21 AM							
To:	STARNES Patrick K * WRD SMITH Joan M * WRD RE: Newspaper Estimate for Transfer Application T-12773							
Cc: Subject:								
Subject.	NE. Newspaper Estimate for Transfer Application 1-12/73							
Hey Joan,								
The quote came in for this no	otice. Total cost will be \$117.29.							
Thanks,								
	ansfers and Conservation Support							
	t 725 Summer St. NE, Suite A Salem, Oregon 97301							
Ph: 503 986-0815 Fax: 503 Email: stacy.h.phillips@oregon								
From: STARNES Patrick K * Sent: Wednesday, February To: PHILLIPS Stacy H * WRD Cc: SMITH Joan M * WRD Subject: Newspaper Estimate	13, 2019 8:15 AM							
Hi Stacy –								
Joan will need a quote for to Observer. Run time is two	the attached TRANSFER Application notice to run in the Polk County Itemizer weeks.							
Thanks!								
Kelly								
*********	*********************************							
Kelly Starnes, Transfer Progr								
Oregon Water Resources De 725 Summer St NE Suite A	partment							
Salem OR 97301-1271								
Telephone: 503-986-0886	.Fax: 503-986-0903							
E-mail: patrick.k.starnes@ore	<u>sgon.gov</u>							
Please Note: Under Oregon L this e-mail address may be a	.aw, messages to and from vailable to the public.							



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

February ______, 2019

VIA E-MAIL

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197 CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR. 97351

Reference: Water Right Transfer Application T-12773

Your water right transfer is in one of three phases of processing. Enclosed is a draft of our Preliminary Determination regarding Transfer Application T-12773. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

- Please review the draft carefully to see if it accurately reflects the changes you intend to
 make, and to become familiar with all proposed conditions. You will need to respond in
 writing by the deadline provided below, whether you agree with the proposed action and
 conditions. Also we will appreciate having you let us know if there are typographical errors
 that need to be corrected.
- 2. A report of landownership for the lands to which the water right are appurtenant (the FROM lands) is required. The report must be prepared by a title company and meet the criteria below. (Reports may be called by various names, such as Customer Service Report, Property Analysis Report (PAR), List Pack, Lot Book Report, etc.)
 - a) The title company's report must either be:
 - i) prepared within 3 months of the draft Preliminary Determination showing current ownership, or
 - ii) prepared within 3 months of recording of a water right conveyance agreement, or
 - iii) prepared at any time, but showing ownership at the time a water right conveyance agreement was recorded.
 - b) The ownership report shall include:
 - i) Date reflected by the ownership information
 - ii) List of owners at that time
 - iii) Legal description of the property where the water right to be transferred is currently located.
 - c) You will need to submit a notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable.
- 3. Notice of this transfer will need to be published in a newspaper with general circulation in the area where the water rights are currently located. You will be responsible for the charges. Please confirm the Polk County Itemizer Observer as the newspaper you prefer to publish in so we can get an accurate estimate of the cost.

Conditions to your water right...

The Watermaster has required a water measurement device at the new diversion point and devices at the new points of appropriation prior to diversion of water. Enclosed is a contact information sheet to assist you in pursuing additional information or approval of the required (or alternate) device(s).

This transfer will require installation of a fish screen at the new diversion point prior to diversion of water from the new point of diversion on the Willamette River. You may not divert water prior to installation and approval of the fish screen. You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2024. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because there are intervening points of diversion/appropriation between the new and the authorized points of diversion/appropriation and because there is more than ¼ mile between the new and the authorized points of diversion/appropriation and because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the Preliminary Determination will occur shortly after we receive:

- 1. Your written response to the conditions and proposed action in the draft Preliminary Determination (e-mail is acceptable); and
- 2. Report of ownership, and affidavits of consent from any landowners shown in the ownership report who have not signed the transfer application; and
- 3. Confirm the name of the newspaper as the Polk County Itemizer Observer to use for publication of the notice of the Preliminary Determination.

If we do not receive the items listed above by March 12, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0892 or <u>Joan.M.SMITH@oregon.gov</u> if I may be of assistance.

SUPERSEDED

Sincerely,

Joan Smith

Transfer Specialist

Transfer and Conservation Section

cc: Transfer Application file T-12773

Joel M. Plahn, District 16 Watermaster (via e-mail)

GSI Water Solutions Inc., Agent for the applicant (via e-mail) The City of Independence, Receiving Landowner (via e-mail)

Theodore Ressler, CWRE (via e-mail)

encs Watermaster measurement

ODFW fish screen

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Transfer Application T-12773, Linn and Polk Counties	DRAFT PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE FROM A SURFACE WATER POINT OF DIVERSION TO GROUNDWATER POINTS OF
) GROUNDWATER POINTS OF) APPROPRIATION, A CHANGE IN) POINT OF DIVERION, CHANGES IN) PLACE OF USE, AND CHARACTER) OF USE

Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR 97351

Findings of Fact

- 1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and to change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- 2. The City of Independence is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 4. On September 14, 2018, the applicant submitted an amended application page describing the points of diversion/appropriation and types of changes requested as well as a geologist report and maps.

- 5. On September 6, 2018, Instream Lease IL-1704, recorded at Special Order Volume 109, Pages 374-376 the order was approved for a 2.0 Cubic Feet Per Second (CFS) portion of Certificate 54268.
- , 2019, Instream Lease IL-1704 was terminated by request of the applicant. The termination order was recorded at Special Order Volume 112, Page
- The portion of the right to be transferred is as follows:

Certificate:

54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use: TWING MANUFACTURING Priority Date: DECEMBER 23, 1954

Rate:

2.0 CUBIC FEET PER SECOND

Source:

WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	M	ANUFA	ACTUR		2
Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28 /	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

pou should in sy to gen notice

Transfer Application T-12773 proposes a change in point of diversion approximately 13.5 miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET NORTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

Transfer Application T-12773 proposes to change from a surface water point of diversion to a groundwater point of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S.	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 2000 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

8. Transfer Application T-12773 proposes to change the place of use of the right to:

MUNICIPAL
WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDENCE

- 9. Transfer Application T-12773 proposes to change the character of use to municipal use.
- 10. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 11. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 12. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- 13. The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 14. The proposed changes would not result in enlargement of the right.
- 15. The proposed changes would not result in injury to other water rights.
- 16. All other application requirements are met.

Determination and Proposed Action

The change in point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

- 1. The change in point of diversion and change from a surface water point of diversion to groundwater points of appropriation, and change in place of use and change in character of use proposed in Transfer Application T-12773 are approved.
- 2. The right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion (POD 2), and new points of appropriation (Willamette Wells 1, 2, and 3), shall not exceed the quantity of water lawfully available at the original point of diversion (POD 1).
- 5. The wells from which the water is taken under this right shall be constructed so that the use of the well will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed well.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed well shall be subordinate to any existing right injured by the transferred water right.

- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the new point of diversion consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with *ODFW's operational and maintenance standards.*
- 11. The transferred portion of Certificate 54268 (2.0 CFS) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2024. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.

DRAFT

Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

This draft Preliminary Determination was prepared by Joan Smith. If you have questions about the information in this document, you may reach me at 503-986-0892 or Joan.M.Smith@oregon.gov.



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

January _____, 2019

VIA E-MAIL

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197 CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR. 97351

Reference: Water Right Transfer Application T-12773

Your water right transfer is in one of three phases of processing. Enclosed is a draft of our Preliminary Determination regarding Transfer Application T-12773. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

- Please review the draft carefully to see if it accurately reflects the changes you intend to
 make, and to become familiar with all proposed conditions. You will need to respond in
 writing by the deadline provided below, whether you agree with the proposed action and
 conditions. Also we will appreciate having you let us know if there are typographical errors
 that need to be corrected.
- 2. A report of landownership for the lands to which the water right are appurtenant (the FROM lands) is required. The report must be prepared by a title company and meet the criteria below. (Reports may be called by various names, such as Customer Service Report, Property Analysis Report (PAR), List Pack, Lot Book Report, etc.)
 - a) The title company's report must either be:
 - i) prepared within 3 months of the draft Preliminary Determination showing current ownership, or
 - ii) prepared within 3 months of recording of a water right conveyance agreement, or
 - iii) prepared at any time, but showing ownership at the time a water right conveyance agreement was recorded.
 - b) The ownership report shall include:
 - i) Date reflected by the ownership information
 - ii) List of owners at that time
 - iii) Legal description of the property where the water right to be transferred is currently located.
 - c) You will need to submit a notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable.
- 3. Notice of this transfer will need to be published in a newspaper with general circulation in the area where the water rights are currently located. You will be responsible for the charges. Please confirm the Polk County Itemizer Observer as the newspaper you prefer to publish in so we can get an accurate estimate of the cost.

Conditions to your water right...

The Watermaster has required a water measurement device at the new diversion point and devices at the new points of appropriation prior to diversion of water. Enclosed is a contact information sheet to assist you in pursuing additional information or approval of the required (or alternate) device(s).

This transfer will require installation of a fish screen at the new diversion point prior to diversion of water from the new point of diversion on the Willamette River. You may not divert water prior to installation and approval of the fish screen. You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2020. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because there are intervening points of diversion/appropriation between the new and the authorized points of diversion/appropriation and because there is more than ¼ mile between the new and the authorized points of diversion/appropriation and because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the Preliminary Determination will occur shortly after we receive:

- 1. Your written response to the conditions and proposed action in the draft Preliminary Determination (e-mail is acceptable); and
- 2. Report of ownership, and affidavits of consent from any landowners shown in the ownership report who have not signed the transfer application; and
- 3. Confirm the name of the newspaper as the Polk County Itemizer Observer to use for publication of the notice of the Preliminary Determination.

If we do not receive the items listed above by January 30, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0892 or <u>Joan.M.SMITH@oregon.gov</u> if I may be of assistance.

Sincerely,

Joan Smith Transfer Specialist Transfer and Conservation Section

cc: Transfer Application file T-12773

Joel M. Plahn, District 16 Watermaster (via e-mail)

GSI Water Solutions Inc., Agent for the applicant (via e-mail) The City of Independence, Receiving Landowner (via e-mail)

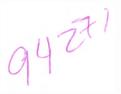
Theodore Ressler, CWRE (via e-mail)

encs Watermaster measurement

ODFW fish screen

STATE OF OREGON





CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO WILLAMETTE INDUSTRIES INC. ALBANY PAPER MILL PO BOX 339 ALBANY, OR 97321

confirms the right to use the waters of the WILLAMETTE RIVER, a tributary COLUMBIA RIVER to for the purpose of manufacturing.

This right was perfected under Permit S-23102. The date of priority is DECEMBER 23, 1954. The amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 16.0 CUBIC FEET PER SECOND, or its equivalent in case of rotation, measured at the point of diversion from the stream.

The point of diversion is located as follows:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

A description of the place of use to which this right is appurtenant is as follows:

		MANUFA	ACTUR	ING	
Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

This certificate describes that portion of water right Certificate 54268, State Record of Water Right Certificates, NOT modified by the provisions of an order of the Water Resources Director entered , approving Transfer Application T-12773.

The issuance of this superseding certificate does not confirm the status of the water right in regard to the provisions of ORS 540.610 pertaining to forfeiture or abandonment.

T-12773.jms

Page 1 of 2

Certificate XXXXX

94271

ace
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Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

Notice of Preliminary Determination for
Water Right Transfer T-12773

T-12773 filed by INTERNATIONAL PAPER COMPANY, 6400 Poplar Ave., Memphis, TN 38197, proposes point of diversion, place of use, use, and surface water to groundwater changes under Certificate 54268. The right allows the use of 2.0 cubic feet per second from the Willamette River in Sec. 32, T10S, R3W, WM for manufacturing in Sects. 28 and 33, The applicant proposes an additional point of diversion in Sec. 28, T8S, R4W, WM and to change the place of use to within the service boundary of the city of Independence, and a change the character of use to municipal. The Water Resources Department proposes to approve the transfer, based on the requirements of ORS Chapter 540 and OAR 690-380-5000.

Any person may file, jointly or severally, a protest or standing statement within 30 days after the last date of newspaper publication of this notice, MM/DD/YEAR. Call (503) 986-0815 to obtain additional information. If no protests are filed, the Department will issue a final order consistent with the preliminary determination.

A to more the point of diversion to grandwater points of appropriation in Sects. 28 and 33, 785, R4W, WM,

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Transfer Application T-12773, Linn and Polk Counties)	DRAFT
)	PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE FROM A SURFACE WATER POINT OF DIVERSION TO
)	GROUNDWATER POINTS OF APPROPRIATION, A CHANGE IN POINT OF DIVERION, CHANGES IN PLACE OF USE, AND CHARACTER
)	OF USE

Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR 97351

Findings of Fact

- 1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and a change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- 2. The City of Independence is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- On September 14, 2018, the applicant submitted an amended application page describing the
 points of diversion/appropriation and types of changes requested as well as a geologist
 report and maps.

- 5. On September 6, 2018, Instream Lease IL-1704, recorded at Special Order Volume 109, Pages 374-376 the order was approved for a 2.0 Cubic Feet Per Second (CFS) portion of Certificate 54268.
- , 2019, Instream Lease IL-1704 was terminated by request of the On applicant. The termination order was recorded at Special Order Volume 112, Page
- The portion of the right to be transferred is as follows:

Certificate:

54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use:

MANUFACTURING .

Priority Date: DECEMBER 23, 1954

Rate:

2.0 CUBIC FEET PER SECOND

Source:

WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	MANUFACTURING							
Twp	Rng	Mer	Sec	Q-Q	DLC			
10 S	3 W	WM	28	SW NE	47			
10 S	3 W	WM	28	SE NW	47			
10 S	3 W	WM	28	NE SW	44			
10 S	3 W	WM	28	NE SW	47			
10 S	3 W	WM	28	SE SW	44			
10 S	3 W	WM	28	NW SE	44			
10 S	3 W	WM	28	NW SE	47			
10 S	3 W	WM	28	SW SE	44			
10 S	3 W	WM	33	NW NE	44			
10 S	3 W	WM	33	NE NW	44			

Capplication Say 11 M. Transfer Application T-12773 proposes a change in point of diversion approximately 13.5 miles downstream to: NORTH

Sec Q-Q Measured Distances Twp Rng Mer 260 FEET SOUTH AND 3400 FEET EAST SW SE 8 S 4 W WM 28 FROM THE SW CORNER OF SECTION 28

Transfer Application T-12773 proposes to change from a surface water point of diversion to a groundwater point of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	33	NW NE	WILLAMETTE WELL 1 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 200 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

8. Transfer Application T-12773 also proposes to change the place of use of the right to:

MUNICIPAL	
WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDENT	NCE

- 9. Transfer Application T-12773 proposes to change the character of use to MUNICIPAL.
- 10. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 11. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 12. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- 13. The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 14. The proposed changes would not result in enlargement of the right.
- 15. The proposed changes would not result in injury to other water rights.
- 16. All other application requirements are met.

Determination and Proposed Action

The change in point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

- 1.) The change in point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 are approved.
- 2. The right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the additional point of diversion, together with that diverted at the original point of diversion, shall not exceed the quantity of water lawfully available at the original point of diversion.
- 5. The wells from which the water is taken under this right shall be constructed so that the use of the well will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed well.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed well shall be subordinate to any existing right injured by the transferred water right.

- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the new point of diversion consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.
- 11. The transferred portion of Certificate 54268 (2.0 CFS) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2024. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.
- 13. After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

Dated at Salem,	Oregon this		

DRAFT

Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

This draft Preliminary Determination was prepared by Joan Smith. If you have questions about the information in this document, you may reach me at 503-986-0892 or Joan.M.Smith@oregon.gov.

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Instream Lease Application)	DETERMINATION and
IL-1704, Linn County)	FINAL ORDER ON PROPOSED
)	INSTREAM LEASE

Authority

Oregon Revised Statute (ORS) 537.348 establishes the process in which a water right holder may submit a request to lease an existing water right for instream purposes. Oregon Administrative Rule (OAR) Chapter 690, Division 077 implements the statutes and provides the Department's procedures and criteria for evaluating instream lease applications.

Lessor

International Paper Attn: Dan Davis 6400 Poplar Avenue Memphis, TN 38197

Findings of Fact

- 1. On July 23, 2018, International Paper, Dan Davis filed an application to lease a portion of Certificate 54268 for instream use. The Department assigned the application number IL-1704.
- 2. The portion of the right to be leased is as follows:

---- P-----

S-23102)

Use:

Manufacturing Use

Priority Date:

Certificate:

December 23, 1954

Quantity:

Rate: 2.0 Cubic Foot per Second (CFS)

Source:

Willamette River, tributary to the Columbia River

54268 in the name of Willamette Industries, Inc. (perfected under Permit

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

- 3. Certificate 54268 place of use has been reconfigured and better described by the Applicant, and the report is in the water right file, however, for the purposes of this instream lease the place of use must be what has been approved and shown on the Certificate.
- 4. Certificate 54268 does not specify an authorized period of use. However, the use is for manufacturing, which is considered year round uses unless otherwise specified in the Certificate.
- 5. The lease application includes the information required under OAR 690-077-0076(3). The Department provided notice of the lease application pursuant to OAR 690-077-0077(1). No comments were received.
- 6. The instream use is as follows:
 Willamette River, tributary to Columbia River

Instream Point: At the POD (as described in Finding of Fact No. 2)

Certificate	Priority Date	Instream Rate (CFS)	Instream Volume (AF)	Period Protected Instream
54268	December 23, 1954	2.0	1447.93	January 1 through December 31

- 7. The amount and timing of the proposed instream flow is allowable within the limits and use of the original water right.
- 8. The protection of flows at the authorized point of diversion is appropriate, considering:
 - a. The instream water use begins at the recorded point of diversion;
 - b. The location of confluences with other streams downstream of the point of diversion.
 - c. There are no known areas of natural loss of streamflow to the river bed downstream from the point of diversion; and
 - d. Any return flows resulting from the exercise of the existing water right would re-enter the river downstream of the point of the instream water right.
- 9. The total monthly quantities of water to be protected under the existing and proposed instream rights at the point will provide for a beneficial purpose.
- 10. The total monthly quantities of water to be protected instream under existing and proposed instream rights at the point do not exceed the estimated average natural flow.
- 11. If approved, this instream lease is not reasonably expected to significantly affect land use as prescribed by ORS 197.180, OAR Chapter 660, Divisions 30 and 31, and OAR Chapter 690, Division 5.

IL-1704.sah

- 12. Based upon review of the application, information provided by the Department's Watermaster, and other available information, the Department finds that the lease will not result in injury or enlargement. The order approving this instream lease may be modified or revoked under OAR 690-077-0077 if the Department later finds that the lease is causing injury to any existing water right or enlargement of the original right.
- 13. If a right which has been leased is later proposed to be leased again, transferred and/or reviewed under an allocation of conserved water, a new injury review shall be required. For example, instream transfers will be subject to a full and complete review to determine consistency with the requirements of OAR Chapter 690, Division 380 and Division 077. Approval of this lease does not establish a precedent for approval of any future transactions.
- 14. The Lessor has requested that the lease terminate on December 31, 2023. The lease has been submitted prior to the first day of the irrigation season. The lease may commence on January 1, 2019, being the first day of the irrigation season.
- 15. The Lessor has requested the option of terminating the lease early with written notice to the Department.

Conclusions of Law

The Department concludes that the lease will not result in injury or enlargement, OAR 690-077-0077. The lease conforms to the applicable provisions of OAR 690-077-0015.

Now, therefore it is ORDERED:

- 1. The Lease as described herein is APPROVED.
- 2. During each year of the term of the lease, the former place of use will no longer receive water as part of these rights, any supplemental rights, or any other layered irrigation water rights, including ground water registrations and permits.
- 3. The term of the lease will commence on January 1, 2019 and terminate on December 31, 2023. For multiyear leases, the lessor *shall* have the option of terminating the lease any time each year with written notice to the Department. However, if the termination request is received less than 30-days prior to the instream use period (January 1 through December 31) or after the water rights' original period of allowed use has begun, the Department may issue an order terminating the lease but use of water may not be allowed until the following calendar year, unless the Director determines that enlargement would not occur.

Dated at Salem, Oregon this day	
Dwight French, Water Right Services Division Administrator, for Thomas M. Byler, Director, Oregon Water Resources Department	This document was prepared by Sarah Henderson and if you have any questions, please call 503-986-0884.
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Mailing date:

Fite Copy

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Instream Lease Application)	DETERMINATION and
IL-1434, Linn County)	FINAL ORDER ON PROPOSED
)	INSTREAM LEASE

Authority

ORS 537.348 establishes the process in which a water right holder may submit a request to lease an existing water right for instream purposes. OAR Chapter 690, Division 077 implements the statutes and provides the Department's procedures and criteria for evaluating instream lease applications.

Lessor

Vaughn Pieschl, Site Manager International Paper 3521 Old Salem Rd. NE Albany, OR 97321

Findings of Fact

- 1. On September 17, 2014, International Paper filed an application to lease a portion of Certificates 54268 and 85736 for instream use. The applicant also requested to lease two water rights resulting from Transfer T-7526. The Department assigned the application number IL-1434.
- 2. On May 8, 2013, the Department received what appears to be a notice for specific to general industrial use change. For purposes of instream leasing, the portions of Certificate 54268 and 85736 that may be leased to instream use are the water rights of record and will be described consistent with the certificates in this order.
- 3. On October 6, 2014, the Department requested additional information about the water rights requested to be leased instream under IL-1434 and IL-1435 by International Paper. The additional information requested by the Department was received on October 17, 2014.
- 4. On November 4, 2014, Certificates 89604 and 89606 were issued based upon completion actions authorized under Transfer T-7526.
- 5. On November 7, 2014, the Department identified that additional fees were necessary to complete the lease application. The additional fees were received on December 5, 2014.

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

IL-1434.lkw FO Template last revised 1/24/2014 Page 1 of 7

Special Order Volume 93 Page

6. The portion of the first right to be leased has been clarified from the lease application and is as follows:

Certificate: 54268 in the name of Willamette Industries, Inc. (perfected under Permit

S-23102)

Use: Manufacturing Use Priority Date: December 23, 1954

Quantity: Rate: 15.0 Cubic Foot per Second (CFS)

Source: Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

7. The portion of the second right to be leased has been clarified from the lease application and is as follows:

Certificate: 85736 in the name of Weyerhaeuser Company (perfected under Permit

S-47184)

Use: Industrial/Manufacturing Use

Priority Date: October 29, 1982 Quantity: Rate: 4.25 CFS

Source: Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44

IL-1434.lkw

Twp Rng		Mer	Sec	Q-Q	DLC
10 S	3 W	WM	33	NE NW	44

- 8. Certificate 85736 allows the diversion of up to 12 CFS. The remaining 7.75 CFS is being leased instream under IL-1435.
- 9. The third right to be leased is as follows:

Certificate: 89604 in the name of I

89604 in the name of International Paper Co. (perfected under Permit

S-20469)

Use:

Industrial Uses

Priority Date:

June 11, 1943

Quantity:

Rate: 2.0 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original points of

diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source
21 S	1 W	WM	31	NE SE	Culp Creek
21 S	1 W	WM	32	NW SW	Row River

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD) on the Willamette River:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S ½ NE ¼	46
10 S	3 W	WM	29	E ½ NW ¼	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E 1/2 SW 1/4	46
10 S	3 W	WM	29	E ½ SW ¼	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE 1/4	46
10 S	3 W	WM	29	S 1/2 SE 1/4	44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N ½ NE ¼	44
10 S	3 W	WM	32	NW NE	
10 S	3 W	WM	32	SE NE	44
10 S	3 W	WM	32	SE NE	
10 S	3 W	WM	33	W ½ NW ¼	44

- 10. Certificate 89604 identifies the source for diversion as the Willamette River and identifies the actual source of water as Culp Creek and Row River. Culp Creek is tributary to the Row River and the Row River is tributary to the Coast Fork Willamette River. The Coast Fork Willamette River is tributary to the Willamette River. Water is conveyed from the original points of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89604 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from Culp Creek and Row River.
- 11. The fourth right to be leased is as follows:

Certificate: 89606 in the name of International Paper Company (perfected under

Permit S-14106)

Use: Industrial Use

Priority Date: November 2, 1939
Quantity: Rate: 1.93 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original point of diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source	Measured Distances
21 S	1 W	WM	30	NW SW	Row River	30 FEET SOUTH AND 30 FEET WEST FROM THE SW CORNER OF LOT 3 (SE NW), SECTION 30

Source: Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD) on the Willamette River:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Twp Rng		Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S ½ NE ¼	46
10 S	3 W	WM	29	E ½ NW ¼	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E 1/2 SW 1/4	46
10 S	3 W	WM	29	E 1/2 SW 1/4	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE 1/4	46
10 S	3 W	WW	29 S ½ SE ¼		44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N ½ NE ¼	44

Twp	Rng	Mer	Sec	Q-Q	DLC	
10 S	3 W	WM	32	NW NE		
10 S	3 W	WM	32	SE NE	44	
10 S	3 W	WM	32	SE NE		
10 S	3 W	WM	33	W 1/2 NW 1/4	' ½ NW ¼ 44	

- 12. Certificate 89606 identifies the source for diversion as the Willamette River and identifies the actual source of water as the Row River. Row River is tributary to the Coast Fork Willamette River and the Coast Fork Willamette River is tributary to the Willamette River. Water is conveyed from the original point of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89606 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from the Row River.
- 13. Certificates 54268, 85736 89604, and 89606 do not specify an authorized period of use. However, the use is for manufacturing and/or industrial, which are considered year round uses unless otherwise specified in the Certificate.
- 14. There is another industrial right (Certificate 54268) appurtenant to the same place of use as described in Certificate 85736. The entirety of Certificate 54268 is proposed to be leased to instream use under IL-1434.
- 15. The lease application includes the information required under OAR 690-077-0076(3). The Department provided notice of the lease application pursuant to OAR 690-077-0077(1) on September 30, 2014. This notice, however, did not include Certificates 89604 and 89606, which had not yet been issued. Following issuance of Certificates 89604 and 89605, the lease application was re noticed on November 11, 2014. No comments were received.
- 16. The instream use is as follows:

Willamette River, tributary to the Columbia River

Instream Reach: At the POD (as described in Finding of Fact No. 6)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream
54268	12/23/1954	15.00	10,859.50	January 1 – December 31

Instream Reach: At the POD (as described in Findings of Fact No. 7, 9 and 11)

Period Protected Instream	Instream Volume (AF)	Instream Rate (cfs)	Priority Date	Certificate
January 1 – December 31	3076.86	4.25	10/29/1982	85736
	1447.93	2.00	6/11/1943	89604
	1397.26	1.93	11/2/1939	89606
	5922.05	8.18	Total Instream	

17. The amount and timing of the proposed instream flow is allowable within the limits and use of the original water rights.

- 18. The protection of flows at the authorized points of diversion is appropriate, considering:
 - a. The instream water use is located at the recorded points of diversion;
 - b. The location of confluences with other streams downstream of the points of diversion.
 - c. There are no known areas of natural loss of streamflow to the river bed downstream from the points of diversion; and
 - d. Any return flows resulting from the exercise of the existing water right would re-enter the river downstream of the points of the instream water right.
- 19. The total monthly quantities of water to be protected under existing and proposed instream rights at the points will provide for a beneficial purpose.
- 20. The total monthly quantities of water to be protected instream under existing and proposed instream rights at the points do not exceed the estimated average natural flow.
- 21. If approved, this instream lease is not reasonably expected to significantly affect land use as prescribed by ORS 197.180, OAR Chapter 660, Divisions 30 and 31, and OAR Chapter 690, Division 5.
- 22. Based upon review of the application, information provided by the Department's Watermaster, and other available information, the Department finds that the lease will not result in injury or enlargement. The order approving this instream lease may be modified or revoked under OAR 690-077-0077 if the Department later finds that the lease is causing injury to any existing water right or enlargement of the original right.
- 23. If a right which has been leased is later proposed to be leased again, transferred and/or reviewed for an allocation of conserved water, a new injury review shall be required. For example, instream transfers will be subject to a full and complete review to determine consistency with the requirements of OAR Chapter 690, Division 380 and Division 077. Approval of this lease does not establish a precedent for approval of any future transactions.
- 24. The Lessor requested that the instream use begin in October, 2014, and terminate in October, 2019. Instream leases are based upon calendar years and terms may not exceed five years. The lease may commence upon the date this final order is issued and may terminate on December 31, 2018.
- 25. The Lessor has requested the option of terminating the lease early with written notice to the Department.

Conclusions of Law

The Department concludes that the lease will not result in injury or enlargement, OAR 690-077-0077. The lease conforms to the applicable provisions of OAR 690-077-0015.

Now, therefore it is ORDERED:

- 1. The Lease as described herein is APPROVED.
- 2. During each year of the term of the lease, the former place of use will no longer receive water from Certificates 89604 and 89606 and the portions of Certificate 54268 and 85736 leased to instream use.
- 3. The term of the lease will commence upon approval of the instream lease and terminate on December 31, 2018. For multiyear leases, the lessor *shall* have the option of terminating the lease any time each year with written notice to the Department. However, if the termination request is received less than 30-days prior to the instream use period (January 1 through December 31) or after the water rights' original period of allowed use has begun, the Department may issue an order terminating the lease but use of water may not be allowed until the following calendar year, unless the Director determines that enlargement would not occur.

Dated at Salem, Oregon this day of December, 2014.	
Dwight French, Water Right Services Division Administrator, for M. Byler, Director, Oregon Water Resources Department	or
	This document was prepared by Laura Wilke and if you have any questions, please call 503-986-0884.
Mailing date:	

Regular Transfer Review Checklist

T1	T-12773 Caseworker: Joan						
	TYPE OF TRANSFER						
~	POD,	APOD or POA, APOA and/or Place of Use (690-3	80-211	0 and 6	90-380-2200)		
		Transfers Requiring Sup	pleme	ental F	Review Criteria		
M	Chara	acter of Use (690-380-2300)	×	Surface Water to Ground Water (SW to GW), ORS 540.531, (690-380-2130)			
	1	eam, ORS 537.348, (690-380-2200, 690-380- and 690-077-065 thru 075)			emental Use to Primary Use (S to P), ORS 24, (690-380-2320)		
	1	ent to Injury of Instream (CTI) ORS 540.530, 380-5050)	If tran		pe not listed above, see separate checklists		
		FILE PRE	DARA	TION			
cw		FILE PRE	cw	IION			
₩	File A	ssigned (Computer Entry)	€W	All Stakeholders accurately listed in WRIS with ema addresses if available Irrigation District			
M		Copies and Place in Working File:	N	Double check all water rights/permits are included in WRIS under Transfer # 12773 - Sther Transfer			
D.	Verify be no	rall Certificates/Permits are shown in WRIS to n-cancelled Print Certificates and Place in Working File		Copy and Place in Working File: Watermaster Review Groundwater Review ODFW Review			
Ø	Add V	Vorking file to T-file			Comments Received?		
	https:	Public Comments World //apps.wrd.state.or.us/apps/wr/wr public cont mgmt/default.aspx			print comments and place in file mely Untimely :		
					PR Initials		
		BASIC APPLICATION REVIEW and N	OTICE	(OAR	8 680-380-3000 and -4000)		
cw	N/A		cw	N/A			
V		Appropriately signed		Ø	Check Area of Interest – Print if needed, include in WRIS stakeholder as interested party		
\square		All required Attachments Received			Ditch Co., Irr. Dist and/or BOR sent copies		
\square		Appropriate Fees Paid		Ø	Overpayment of Fees, Refund Request w/FO		
		Local Government [County] noticed Copy of Acknowledgment Letter	Ø		OWRD Land Use Form matches Tax Lots, is signed by proper official and is APPROVED N/A = Must meet all 4 criteria for exemption (OAR 690-380-3000(19)		

	BASIC APPLICATION REVIEW and NOTICE (OAR 680-380-3000 and -4000) Cont'd						
cw	N/A	ASIC AFFEICATION REVIEW and NOT	cw	N/A	•		
	×	Supp. Form D or Letter of approval from Irrigation or Water Control District		Ţ	Evidence of Use is submitted with supporting documentation		
		Are the supplemental water rights included in the Transfer Yes No No No	A		Map meets criteria of OAR 690-380-3100		
	O100 Is the use(s	r Use Subject to Transfer (OAR 690-380-(14) water right(s) proposed for transfer a water) subject to transfer? adjudicated or decreed	QI	add	rapplication deficiencies that need to be ressed? Yes No Notes:		
	Reviewing The "From" and "To" Lands (Use working copy of application and certificates to mark on)						
CW	v						
Ø.		: Only the authorized POD's/POA's and POUs yed are listed.		From: Application & certificate tabulations match. (Mark on appl. and cert. copies and note corrections needed) Wath Indane			
\boxtimes		: Marked on certificate the acreage being ted and remaining by ¼ ¼. / NA - water acres	Ø	From: Marked on certificate the quantity of water being transferred, cancelled, and remaining			
Q	confli	and To: Print Plat Card(s), check and note icts (change in pou and use only)	Ø	From and To: Compare water right map to Application tabulation (Table 2) to Application map for accuracy			
	More is From Manufactury for Muni PR Initials CC						
	T. TO	Amended Applicat	ion P	ages	And Maps		
cw	N/A		cw	N/A	Notes		
N		Amended Application Pages Rec'd 9/17 Amended Application Map Rec'd	<u>N</u>		Scan new pages Update WRIS with new pages Mark replaced pages in red with 'SUPERSEDED' and place in back of file		

R Initials	ce
it illicials	Management of the Parket of

					PR Initials CC	
		Layered and Supplemental W	/ater	Right	s (OAR 690-380-2240)	
cw	N/A		cw	N/A	Notes	
	×	OAR 690-380-2240(2) and (3) Transfer of Layered Water Rights and Certificates of Registration (change in use or pou) See definition of layered in OAR 690-380-0100(4)			Are there other layered water uses subject transfer, permits or certificates of registration which were not included in the application? Yes No If yes, provide applicant 30days to: Submit application for concurrent changes Submit affidavits for voluntary cancellations Withdraw the application	
	OAR 690-380-2240(5) Transfer of Supplemental Irrigation water right separately from associated primary water right. Transfer of supplemental irrigation right may be moved separately from associated primary irrigation right if another primary irrigation right with similar reliability is appurtenant to the lands to which the supplemental right is to be moved.				Does the new primary irrigation water right have similar reliability as the associated primary irrigation water right? Yes No Will the supplemental water right be used more than it was when associated with previous primary right? New primary right priority date: Prior primary right priority date: History of regulation? Yes No Watermaster Review	
COORD	INITIALS	PREST			PR Initials	
		TRANSFER REVIEW Cri	teria	OAR		
cw			cw		DOCUMENTATION	
, QQ	Validity of the Right; Not Forfeited OAR 690-380-4010(2)(a) The right(s) has been used over the past five years according to the terms and conditions of the right and the right is not subject to forfeiture under ORS 540.610.			Evidence of Use & supporting documentation Confirming Cert issued within last 5 years Rebuttal to forfeiture (ORS 540.610(2))		
	Ready, Willing, and Able OAR 690-380-4010(2)(b) The water user is ready, willing and able to use the full amount of water allowed under the right.			Current delivery system description in Part 5 of Application Notes: Delivery system has the capacity to fully divert and us the rate/duty of the right		
	OAR 6 The prendarg	rement 90-380-4010(2)(c) roposed transfer would result in tement es No : make a positive finding of "No enlargement").	Ø	See d	xpansion of the right: No greater rate or duty per acre than currently allowed cannot increase acreage under the right. Must prevent the original place of use from receiving water from the same source. Cannot divert more water at the new POD or POA than is legally available to that right at the original point of diversion/appropriation. Indicate the right guidance increases a series of diversion guidance.	

	TRANSFER REVIEW Criteria Cont'd (OAR 690-380-4010)					
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	The p	OAR 690-380-4010(2)(d) The proposed transfer would result in injury Yes No Notes: (Must make a positive finding of "No injury").		water which W Gr Of If yes, Condit	roposed transfer would result in another, existing right not receiving previously available water to it is legally entitled latermaster Review. Yes No N/A roundwater Review. Yes No N/A PFW Review. Yes No N/A can the injury be mitigated? Yes No tions:	
Ą	OAR 6	requirements 590-380-4010(2)(e) ther requirements for water right transfers et.		marke	n supplemental criteria checklist for transfer type ed on page 1 naracter of Use SW to GW stream Supplemental to Primary onsent to Injury of Instream Water Right	
Coord	INITIALS	PICS			PR Initials	
		Additional F	indin	gs of I	Fact	
cw	N/A		cw	N/A	Sample Finding	
Д		Add Finding for submission of amended application pages or amended map	X		On, the applicant submitted an amended application page/map clarifying	
	风	Add Finding for timely comments received		A	On (date), timely comments were received from (name), asserting (issues). The Department has considered the comments and finds: (do they assert injury/enlargement or forfeiture?)	
		Add Watermaster Review			The District Watermaster reviewed the proposed transfer application and concluded the proposed transfer would not result in enlargement of the right or injury to existing water rights. or would result in injury or enlargement of the right unless it was conditioned	
Coord	INITIALS				PR Initials	
		Additional Conditions and P	rovisi	ons u		
cw	N/A		cw	N/A	Sample Finding	
		Add Watermaster conditions	\square		See Supplemental Language (Measurement devices) or requirements to prevent injury or enlargement	
		Add ODFW fish screen requirements			See Supplemental Language Fish Screen Requirements	
		Add ground water conditions			See Groundwater Review / Supplemental	

Additional Conditions and Provisions under Review Criteria (Cont'd)						
cw	N/A		cw	N/A	SAMPLE FINDING	
	図	Additional finding for evaluation of comments received and any actions or conditions to address comments		₽		
図		Add any other special provisions		Ø	Additional findings to support determination of additional review criteria listed	
	Ż	Any cancellation/diminishment submitted? ☐ Yes 図 No		Ø	If yes: (See Supplemental Language Document) Add Authority after 1 st paragraph Add finding(s) to document cancellation/diminishment	
		Are the existing water rights issued in the name of a District or Bureau of Reclamation? Yes No			If yes, a Finding of Fact and an Order item identifying the name in which the confirming certificate will be issued and who is responsible for COBU. Notes: See Supplemental Language Document for Living Certificates	
COORD	INITIALS	Determination an	d Cor		PR Initials Ons of Law DETERMINATION AND PROPOSED ACTION / CONCLUSIONS OF LAW	
Depar [within prior the te	rtment fin the la to subm erms and	iew of the evidence submitted, the finds the water right(s) has/have been used st five years] or [within the five-year period nittal of the transfer application] according to d conditions of the right(s) and the right(s) pject to forfeiture.	or [v trans of th	vithin the sfer appoint right irming ast five	has/have been used [within the past five years] he five-year period prior to submittal of the olication] according to the terms and conditions	
record the furight(s submit inform pipelinamour prese	ds], a di ill amou s) were ittal of t nation s ne, and nt of wa nt withi	information submitted [and Department version structure and ditch sufficient to use int of water allowed under the existing present within the five-year period prior to the transfer application. or Based on the submitted [and Department records], a pump, sprinkler system sufficient to use the full ater allowed under the existing right(s) were in the five-year period prior to submittal of application.	The quar	Applica	nt is ready, willing, and able to use the full water under the right. There is no evidence in so suggest the right is subject to forfeiture.	
[As co	ndition	ed,] the proposed change(s) would not result nt of the right.	The	propose	ed change(s) will not enlarge the right.	
	denial		Or			
The la	inds cur nue to r	rently irrigated under the right would eceive water from the same source resulting nt of the right(s).	The proposed change(s) would result in enlargement of the right.			

Determination and	Determination and Conclusions of Law (Cont'd)						
Based on review of the record, the proposed change(s would not result in injury to other water rights.	The proposed change(s) would not result in injury to other water rights.						
Or, if denial		Or State of the Control of the Contr					
The proposed change(s) would result in the routing of return flows around at least one diversion of other exi	The proposed change would result in injury to other water rights.						
water rights, resulting in injury to those rights. Or		Or					
An instream water right, Certificate XXXXX, exists for the reach of the river in which the authorized point of diversion would be moved upstream, and streamflows within the reach are frequently below the levels allocated under the instream water right. Thus, the instream water right would be injured as a result of the proposed chain point of diversion.	The proposed change would result in injury to the instream water right. [See consent to injury]						
The application is complete. Or		All other application requirements are met. Or					
The application is incomplete		☐ The application is incomplete because					
·							
Ensure all conditions are carried forward in Order section.							
	SCOLIO						
COORD INITIALS	500110	PR Initials					
COORD INITIALS Denial of Transf							
		PR Initials					
N/A Denial of Transf		PR Initials AR 690-380-4010(3)) Injury Enlargement					
N/A Denial of Transf OAR 690-380-4010(3)(a)		PR Initials					
N/A Denial of Transf OAR 690-380-4010(3)(a)		PR Initials AR 690-380-4010(3)) Injury Enlargement Deficiencies not rectified Examples: consent to injury; amend application to remove well					
N/A Denial of Transf OAR 690-380-4010(3)(a) Describe the basis for the denial OAR 690-380-4010(3)(b) Identify conditions or restrictions that, if included in		PR Initials AR 690-380-4010(3)) Injury Enlargement Deficiencies not rectified					
N/A Denial of Transf OAR 690-380-4010(3)(a) Describe the basis for the denial OAR 690-380-4010(3)(b)		PR Initials AR 690-380-4010(3)) Injury Enlargement Deficiencies not rectified Examples: consent to injury; amend application to remove well					
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COORD	INITIAL							PR Initials CC		
				DRAFT PR	RELIMINA	RY DE	TERN	MINATION		
		/		D	ocument	Prep	aratio	n ,		
		N/A	Addi	tional Supplemental Rev	iew Criteria	Checkl	ist atta	ched not ready for use yet		
cw						cw				
	Checl was/		es (Fir	nd and Replace (s), is/are	<u>.</u> ,		Add a	agent, receiving landowner, if applicable, etc.		
	Comp		uthor	ized PODs/POAs with ma	arked up			pare "from" lands with marked up Table 2 of cation and Certificate		
		are P		ed PODs/POAs with Tabl Map	e 1 of			pare Proposed Place of Use with Table 2 of cation and Map		
				Rem	aining Rig	ht Ce	rtifica	ite(s)		
	Check	tense	s (Fin	d and Replace (s), is/are,	, was/were		Table	format matches current template		
	Content format matches original certificate (e.g., rate/duty limitation)				Note: name rights suppli right I 2) the issued remai	Remaining rights can only be issued in the of the current landowner(s) of the remaining IF 1) the Report of Ownership information ied for the transfer covers all of the remaining ands (as well as the right being transferred) and applicant asks for the remaining right to be d in its name. Otherwise, the name(s) on the ning right will be the same as the original water nvolved in the transfer.				
A	Deter	minat	on an	nd remaining acres comb er originating certificate?	reduced rate		All water accounted for			
				<u> </u>	No Po	Document is "Spell checked"				
T.S.					Cover	Lette	er			
cw	N/A					cw	N/A			
		Corr		ame and Address includi	ng email	Ø		Attach supporting documents to cover letter Completed Watermaster Contact Sheet ODFW Contact sheet		
X		1		mail addresses for agent d parties (in cc section) o		D		Any special conditions explained haras whose		
							Docur	ment is "Spell checked"		
CON	1MEN	TS								
COIV	HAILIN	13						-		

COORD	COORD INITIALS PR Initials							
		PRELIMINARY I	DETER	MINA	ATION			
Public/Newspaper Notice								
cw	N/A		cw	N/A				
		Prepare public/newspaper notice using template			Send letter to Applicant/Agent regarding newspaper notice cost			
	:	Notice and Letter are "Spellchecked"			Funds received from Applicant/Agent for newspaper notice			
		Forward Draft Newspaper Notice to Coordinator			Affidavit of Publication Received			
Ownership Verification								
cw			cw					
	The D	Deed/ROI matches the "from" lands		Comp	pare with current tax lot map			
	1	vners on the Deed/ROI have signed the cation		_	N/A rized, signed statement of consent			
		Document	Prepa	aratio	n			
cw			cw					
		DPD document as a new document X-pd.doc		Hidden Findings unveiled (control "a", select Font, unmark hidden box)				
	Any substantive changes/amendments as result of DPD Yes No If yes, issue revised DPD			Remove "DRAFT" from document title and any extra "carriage" returns				
	receiv	te the hidden paragraph following the ved notice and amendments findings rding is authorized to pursue transfer, etc.)		Select the appeals language in the first page footer for the preliminary determination				
	1	st language is listed following document gration box		Notice Regarding Service Members is showing				
<i>y</i>				Document is "Spell checked"				
		Cove	r Lette	er				
	Cove	r letter prepared		Email addresses checked for accuracy				
				Docu	ment is "Spell checked"			
		Data Cen		eview				
cw			cw		sanara Bayisad DDD if substantive changes CB			
	Prepare Route Slip			_	repare Revised DPD if substantive changes OR sue Preliminary Determination			
	File R	eturned						
CON	IMEN	TS			-			

COORD INITIALS PR Initials						
FINAL ORDER						
Document Preparation						
cw		cw				
	Save PD document as new document XXXXX-ord-approve.doc		Hidden Findings unveiled (control "a", select Font, unmark hidden box)			
	Update the hidden paragraph following the received notice and amendments findings (regarding issuance of PD)		Remove "PRELIMINARY DETERMINATION" from document title and replace with "FINAL ORDER", Replace "PROPOSING APPROVAL/DENIAL OF" with APPROVING/DENYING"			
	Unhide and Select the appeals language in the first page footer for the "Final Order" language; unhide Special Order Volume and page		Change "Determination and Proposed Action" to "Conclusions of Law" and update paragraph			
	Replace "If application T-XXXXX is approved" with Now, therefore, it is ORDERED:		Select text below "It is ORDERED" section and turn off Italics. Restart numbering at "1".			
	Delete Protest language, Document preparation box, and Notice Regarding Servicemembers; Insert "Mailing Date:"		Final Check: All Conclusions of Law have Findings to support them			
			Document is "Spell checked"			
	Remaining R	ight C	ertificate			
CW		cw	*			
	Assign Certificate Number from Spreadsheet		Update footer to read: T-XXXXX.rr.YYYYY.ini, where YYYYY is original certificate number, and ini stands for your initials			
	Input new certificate number on right side of footer		Print on Certificate paper			
			Document is "Spell checked"			
СОМ	MENTS					





Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

December 21, 2018

VIA E-MAIL

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197 P.O. BOX 7 INDEPENDENCE, OR, 97351

Reference: Water Right Transfer Application T-12773

Your water right transfer is in one of three phases of processing. Enclosed is a draft of our Preliminary Determination regarding Transfer Application T-12773. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

- Please review the draft carefully to see if it accurately reflects the changes you intend to
 make, and to become familiar with all proposed conditions. You will need to respond in
 writing by the deadline provided below, whether you agree with the proposed action and
 conditions. Also we will appreciate having you let us know if there are typographical errors
 that need to be corrected.
- 2. A report of landownership for the lands to which the water right are appurtenant (the FROM lands) is required. The report must be prepared by a title company and meet the criteria below. (Reports may be called by various names, such as Customer Service Report, Property Analysis Report (PAR), List Pack, Lot Book Report, etc.)
 - a) The title company's report must either be:
 - i) prepared within 3 months of the draft Preliminary Determination showing current ownership; or
 - ii) prepared within 3 months of recording of a water right conveyance agreement; or
 - iii) prepared at any time, but showing ownership at the time a water right conveyance agreement was recorded.
 - b) The ownership report shall include:
 - i) Date reflected by the ownership information; and
 - ii) List of owners at that time; and
 - iii) Legal description of the property where the water right to be transferred is currently located.
 - c) You will need to submit a notarized statement of consent from any landowner listed in the ownership report who is not already included in the transfer application, or other information such as a water right conveyance agreement, if applicable.
- 3. Notice of this transfer will need to be published in a newspaper with general circulation in the area where the water rights are currently located. You will be responsible for the charges. Please confirm the Polk County Itemizer Observer as the newspaper you prefer to publish in so we can get an accurate estimate of the cost.

Conditions to your water right...

The Watermaster has required a water measurement device at the new diversion point and devices at the new points of appropriation prior to diversion of water. Enclosed is a contact information sheet to assist you in pursuing additional information or approval of the required (or alternate) device(s).

This transfer will require installation of a fish screen at the new diversion point prior to diversion of water from the new point of diversion on the Willamette River. You may not divert water prior to installation and approval of the fish screen. You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2020. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because there are intervening points of diversion/appropriation between the new and the authorized points of diversion/appropriation and because there is more than ¼ mile between the new and the authorized points of diversion/appropriation and because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the Preliminary Determination will occur shortly after we receive:

- 1. Your written response to the conditions and proposed action in the draft Preliminary Determination (e-mail is acceptable); and
- 2. Report of ownership, and affidavits of consent from any landowners shown in the ownership report who have not signed the transfer application; and
- 3. Confirm the name of the newspaper as the Polk County Itemizer Observer to use for publication of the notice of the Preliminary Determination.

If we do not receive the items listed above by January 30, 2019, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0892 or Joan.M.SMITH@oregon.gov if I may be of assistance.

Sincerely,

Joan Smith Transfer Specialist Transfer and Conservation Section

Transfer Application file T-12773 cc:

Joel M. Plahn, District 16 Watermaster (via e-mail)

GSI Water Solutions Inc., Agent for the applicant (via e-mail) The City of Independence, Receiving Landowner (via e-mail)

Theodore Ressler, CWRE (via e-mail) Water USEr

encs: Watermaster measurement

ODFW fish screen

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Transfer Application T-12773, Linn and Polk Counties	DRAFT
	PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE FROM A SURFACE WATER POINT OF DIVERSION TO GROUNDWATER POINTS OF APPROPRIATION, A CHANGE IN POINT OF DIVERION, CHANGES IN PLACE OF USE, AND CHARACTER OF USE

Authority

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Landowner

CITY OF INDEPENDENCE P.O. Box 7 INDEPENDENCE,OR 97351

Findings of Fact

1. On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, to change the place of use, and to change the character of use and to add an additional point of diversion under Certificate 54268. The Department assigned the application number T-12773.

2. The city of Independence is the receiving landowner who will be responsible for completion of the changes.

- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 4. On September 14, 2018, the applicant submitted an amended application page describing the points of diversion/appropriation and types of changes requested as well as a geologist report and maps.

5. On September 6, 2018, Instream Lease IL-1104, recorded at special Order Volume 109, pages 374-376, was approved for a 2.0 cfs postion of Centificate 54268

Instronm Loase IL-1704 was terminated The portion of the right to be transferred is as follows:

Certificate:

54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use:

MANUFACTURING Priority Date: DECEMBER 23, 1954

2.0 CUBIC FEET PER SECOND

Source:

WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3.W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

	MANUFACTURING								
Twp	Rng	Mer	Sec	Q-Q	DLC				
10 S	3 W	WM	28	SW NE	47				
10 S	3 W	WM	28	SE NW	47				
10 S	3 W	WM	28	NE SW	44				
10 S	3 W	WM	28	NE SW	47				
10 S	3 W	WM	28	SE SW	44				
10 S	3 W	WM	28	NW SE	44				
10 S	3 W	WM	28	NW SE	47				
10 S	3 W	WM	28	SW SE	44				
10 S	3 W	WM	33	NW NE	44				
10 S	3 W	WM	33	NE NW	44				

Transfer Application T-12773 proposes an additional point of diversion approximately 13.5 1 no add this miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET SOUTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

Transfer Application T-12773 proposes to change from a surface water point of diversion to a groundwater point of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 200 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

Shall be constructed so that the use of the well will affect shall be constructed so that the use of the well will affect the surface rater source similarly to the use of the original surface point of diversion.

- 2. The right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the additional point of diversion, together with that diverted at the original point of diversion, shall not exceed the quantity of water lawfully available at the original point of diversion.
- Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the new point of diversion consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.

The rate on the former place of use of the transferred right shall reflect the reduction of the rate as described in this order. The former place of use will continue to receive water at a reduced rate. The transferred portion of Centricale 54268 (2.0 cf.) shall no losser be used at the former place of use.

Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2020. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.

After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

Dated at Salem, Oregon this

DRAFT

Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

This draft Preliminary Determination was prepared by Joan Smith. If you have questions about the information in this document, you may reach me at 503-986-0892 or Joan.M.Smith@oregon.gov.

- 8. Transfer Application T-12773 also proposes to change the place of use of the right to:

 MUNICIPAL

 WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDENCE
 - 9. Transfer Application T-12773 proposes to change the character of use to MUNICIPAL.
 - 10. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 11. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 12. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- 13. The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 14. The proposed changes would not result in enlargement of the right.
- 15. The proposed changes would not result in injury to other water rights.
- 16. All other application requirements are met.

Partial Cancellation of a Water Right de lete

Determination and Proposed Action

The additional point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

1. The additional point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 are approved.

	ul and the same of
Condition	
6.	The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
7.	The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
9	All applicable restrictions that existed at the original point of diversion shall apply to the proposed well.
10	The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds that the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed well shall be subordinate to any existing right injured by the transferred water right.
124	





September 14, 2018

Lisa Jaramillo Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Revised pages for Transfer Application T-12773

Dear Ms. Jaramillo:

On November 20, 2017 International Paper filed a Permanent Water Right Transfer (Transfer T-12773) with the Oregon Water Resources Department. Transfer T-12773 requests to change the point of diversion, place of use, and character of use for a 2.0 cfs portion of water right certificate 54268. The transfer application identified the location of a proposed point of diversion, as well as three proposed points of appropriation.

Received via

We understand that Dennis Orlowski is currently working on the groundwater review for Transfer T-12773, and he has requested modifications to the descriptions of the well locations. (The application originally included the locations included in existing information regarding those wells.) In response to that request, GSI has obtained more accurate location information for the proposed wells.

GSI is providing the enclosed revised portions of application T-12773, which include a revised page 6 of the application form and a new application map, both of which provide updated location descriptions for the proposed wells. In addition, GSI is providing a revised Geologist Report (which was provided in Attachment 6 of the application) that also reflects the updated well locations.

If you have any questions or concerns, please contact me at 541-257-9001.

Sincerely,

Adam Sussman

Ach f

Principal Water Resources Consultant

Enclosures

CC: James Kirkpatrick, International Paper Kie Cottam, City of Independence SEP 19 2018

OWRD

1600 SW Western Boulevard, Suite 240

Corvallis, OR 97333

P: 541.753.0745

info@gsiws.com

www.gsiws.com



September 14, 2018

Lisa Jaramillo Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

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Adam Sussman

Alla A

Principal Water Resources Consultant

Enclosures

CC: James Kirkpatrick, International Paper Kie Cottam, City of Independence

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Please use a separate Part 5 for each water right being changed. See instructions on page 6, to copy and paste additional Part 5s, or to add additional rows to tables within the form.

CERTIFICATE # 54268

Description of Water Delivery System

SEP 19 2018

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System capacity: 38.92 cubic feet per second (cfs)

Describe the current water delivery system or the system that was in place at some time within the last five years. Include information on the pumps, canals, pipelines, and sprinklers used to divert, convey, and apply the water at the authorized place of use. There are four pumps at the point of diversion: two 200 HP pumps on the barge, and two 200 HP pumps on the bank. The pumps have 15 inch suctions and 10 inch discharges. The water is conveyed from the pump station to the paper mill water pond via 6,000 feet of 30-inch concrete underground pipe. Water from the pond is diverted to various locations on the mill site. Note: A 15 cfs portion of Certificate 54268, including the 2 cfs that is the subject of this transfer application, was leased instream in 2014 (IL-1434).

Table 1. Location of Authorized and Proposed Point(s) of Diversion (POD) or Appropriation (POA) (Note: If the POD/POA name is not specified on the certificate, assign it a name or number here.)

POD/POA Name or Number	Is this POD/POA Authorized on the Certificate or is it Proposed?	If POA, OWRD Well Log ID# (or Well ID Tag # L)	Tv	wp	R	lng	Sec	3/4	1/4	Tax Lot, DLC or Gov't Lot	Measured Distances (from a recognized survey corner)
POD 1		N/A	10	s	3	w	32	NE	NE		1260 ft South & 1220 ft West from the NE corner of Sect. 32
POD 2	☐ Authorized ☐ Proposed	N/A	8	s	4	w	28	sw	SE		260 ft North & 3400 ft East from SW Corner of Sect. 28
Willamette Well 1	☐ Authorized ☐ Proposed	POLK 52513	8	s	4	w	33	NW	NE		260 ft South & 1,915 ft West from the NE corner of Sect. 33
Willamette Well 2	☐ Authorized ☐ Proposed	POLK 52861	8	s	4	w	28	sw	SE		350 ft North & 1,910 ft West from the SE corner of Sect. 28
Willamette Well 3	☐ Authorized ☐ Proposed	POLK 52953	8	s	4	w	28	sw	SE		800 ft North & 2,000 ft West from the SE corner of Sect. 28

Check a	all type(s) of change(s) proposed below (change	e "CODES" are provided in parentheses):				
\boxtimes	Place of Use (POU)		Supplemental Use to Primary Use (S to P)				
\boxtimes	Character of Use (USE)		Point of Appropriation/Well (POA)				
\boxtimes	Point of Diversion (POD)		Additional Point of Appropriation (APOA)				
	Additional Point of Diversion (APOD)		Substitution (SUB)				
	Surface Water POD to Ground Water POA (SW/GW)		Government Action POD (GOV)				
Will all	Will all of the proposed changes affect the entire water right?						
Yes	Yes Complete only the Proposed ("to" or "on" lands) section of Table 2 on the next page. Use the "CODES" listed above to describe the proposed changes.						
No No	No Complete all of Table 2 to describe the portion of the water right to be changed.						
D	27/2017 Democrat Transfer Applies	ation Fo	TA				



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Technical Memorandum

To: Kie Cottam, City of Independence

From: Bruce Brody-Heine, RG, GSI Water Solutions, Inc.

Date: November 8. 2017

Revised September 13, 2018 (changes highlighted in yellow)

Re: City of Independence

Willamette River Wellfield - Surface Water to Groundwater Transfer

Hydrogeologic Evaluation of Wells' Connection to River

I. Introduction

International Paper is, for the benefit of the City of Independence (City), transferring a portion of surface water right Certificate 54268 to the City's three groundwater production wells (Willamette Wells 1, 2 and 3) that are located immediately adjacent to the Willamette River. Oregon Water Resources Department's (OWRD) administrative rules allow for a surface water right to be transferred to a groundwater well under Oregon Administrative Rules (OAR) 690-380-2130. Under these rules (OAR 690-380-2130) a surface water right may be transferred to a groundwater source if:

- a) The criteria in OAR 690-380-5000 are met;
- b) the new point of diversion (the wells) appropriate ground water from an aquifer that is hydraulically connected to the authorized surface source;
- The proposed change in point of diversion will affect the surface water source similarly to the authorized point of diversion specified in the water use subject to transfer;
- d) The withdrawal of groundwater at the new point of diversion (the wells) is located within 500 feet of the surface water source and is also located within 1,000 feet upstream or downstream of the original point of diversion as specified in the water use subject to transfer; or
- e) If the distance requirements are not met, the holder of a water use subject to transfer shall submit to the Department evidence prepared by a licensed geologist that demonstrates that the use of the groundwater at the new point of diversion [new wells] will meet the criterial set forth in OAR 690-380-2130 2 (a), (b) and (c).

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The authorized surface water source for Certificate 54268 is the Willamette River. The wells to which a portion of Certificate 54268 will be transferred are within 500 feet of the river. The wells are, however, located more than 1,000 feet from the original point of diversion (near Millersburg). As a result, this report has been prepared to demonstrate that the use of groundwater at the new well locations meet the criteria set forth in OAR 690-380-2130 2(a), (b) and (c).

II. Criteria

OAR 690-380-2130 2(a). The criteria in OAR 690-380-5000 require that the water right to be transferred is subject to transfer and is not cancelled pursuant to ORS 540.610, the proposed transfer would not result in injury, and the proposed transfer would not result in enlargement. Certificate 54368 is a water right subject to transfer and has not been cancelled. The changes proposed in the transfer to the points of diversion/appropriation, place of use, and character of use would not result in injury or enlargement. We understand OWRD will evaluate these criteria as part of the transfer application review process.

OAR 690-380-2130 2 (b) and (c). As described in more detail below, the new points of diversion (the wells) appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water (the Willamette River). Moreover, use of groundwater from the wells will affect the surface water source similarly to the authorized point of diversion. The term "similarly" is defined in OAR 690-380-2130 11 (b) to mean the use of the groundwater from the new well affects the surface water source specified in water right being transferred and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping.

The following is a description of an analysis of the City's water wells and reasons why the proposed use of groundwater from the wells meets the above-described criteria for a surface water to groundwater transfer.

III. Analysis

The City has conducted several evaluations of the hydraulic connection of wells to the Willamette River at the proposed location. These evaluations included a Ranney collector study in 1972, installing a series of test wells and completing an aquifer test in 2006, and an 8-day aquifer test completed in 2008. The City provided GSI with several reports and the following information from the evaluations: 1) the aquifer parameters from the 1972 aquifer test associated with a Ranney Collector study, 2) the results of a 2-hour aquifer test in 2006, and 3) the raw data from the 2008 aquifer test.

Hydraulic Connection to the Willamette River. Based on the information obtained from the previous evaluations described above, the City's three production wells (Willamette Wells 1, 2 and 3) were installed in January 2007, and July and August 2008 along the edge of the Willamette River. The well logs are presented in Attachment A and the approximate locations of City's well are also shown on the Figure in this attachment. All three of the City's wells are located within 500 feet from the river. Willamette Well 1 is located 80 feet from the Willamette River; Willamette Well 2 is 25 feet from the river; and Willamette Well 3 is 80 feet from the river. All three wells develop groundwater from an approximately 20 foot thick gravel unit that is located above a blue clay layer between 50 and 57 feet below ground surface. A cross section showing the geologic formations in relationship to the Willamette River from the 2006 study is provided in Attachment B. This cross section is oriented approximately east west near the location of the current City's Willamette Well 1.

GSI WATER SOLUTIONS, INC. PAGE 2 of 3

The cross-section shows there is a direct connection between the gravel aquifer and the adjacent Willamette River. The cross-section, in combination with the high transmissivity values calculated for each well (see description below), demonstrates the City's wells are completed in gravel deposit that is hydraulically connected to the Willamette River. Therefore, Willamette Wells 1, 2 and 3 appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water source (the Willamette River).

Groundwater Use will Affect the Surface Water Source Similarly. GSI reviewed and plotted the 2008 aquifer test data to determine the aquifer parameters (transmissivity and storativity) in the vicinity of the three Willamette River wells (see water level plots in Attachment C). Unfortunately, limited static water level data was available either prior to or after the test and the transducer data recorded only a very small drawdown within the actual pumping wells. This indicates that the aquifer was not under much stress during the test and the wells likely could produce more water than the rates used in the aquifer test. GSI used a combination of the maximum drawdown observed in the transducer data and recorded notes at the base of the Pump Test Data Sheets to calculate a transmissivity (T) value for each well using the Theis equation. The calculated aquifer parameters from the 2008 test (Table 1) were similar to those determined from the previous aquifer test results (300,000 to 550,000 gallons per day per foot).

The 2003 Hunt Model was used to calculate the stream flow depletion created by pumping each of the Willamette River wells (Attachment D). The results of the calculation for each well (Willamette Wells 1, 2, and 3) indicate that the stream depletion created by pumping of the wellfield wells are 87 percent, 82 percent, and 91 percent, respectively, in 10 days of continuous pumping. These percentages significantly exceed the required minimum of 50 percent stream depletion within 10 days. The use of groundwater from each of the 3 wells (Willamette Wells 1, 2 and 3) would, therefore, affect the Willamette River similarly to the authorized point of diversion in Certificate 54268.

IV. Conclusion

The proposed changes to a portion of Certificate 54268 meets the requirements of OAR 690-380-2130. As discussed above, the criteria in OAR 690-380-5000 are met. The Willamette Wells 1, 2 and 3 appropriate water from a gravel unit that is hydraulically connected to the Willamette River. The proposed new wells are all located within 500 feet from the Willamette River. Although the wells are not located within 1000 feet downstream from the original point of diversion in Certificate 54268, the evidence provided in this report and its attachments demonstrates that the use of the groundwater at the new points of diversion would affect the Willamette River similarly to the authorized point of diversion. Accordingly, the proposed change would meet the criteria in OAR 690-380-2130(2).

References

GSI 2006. Cities of Independence and Monmouth – Collector Well Feasibility Study. GSI Memorandum. Prepared for Ed Butts, 4B Engineering & Consulting. October 20, 2006.

4B Engineering & Consulting. Cities of Independence and Monmouth – Willamette Wellfield Preliminary Data. Report. Prepared Cities of Monmouth and Independence. May 2011.

GSI WATER SOLUTIONS, INC. PAGE 2 of 3

TABLE 1
2008 7-Day Pumping Test
Aquifer Property Estimate & Stream Depletion
City of Independence

	TRANSMISSIVITY (T)								
	Transduce	er Dataset ¹	Summary Statement ²						
	gpd/ft	ft ² /day	gpd/ft	ft ² /day					
Well 1	3,900,000	520,000	530,000	71,000					
Well 2	8,200,000	1,090,000	620,000	83,000					
Well 3	1,200,000	160,000	37,000	4,900					

Stream
Depletion
% at 10 days
87%
82%
91%

Notes:

- 1 = no static water level data provided for the wells, and transducer data provided required some interpretation
- 2 = Summary statement found at bottom of manual water level data summary sheet Storativity value estimated to be 0.10 for all calculations due to proximity to the River
 - = T values used in stream depletion calculations (largest T values showed the smallest depletion)

Well Logs and Location Map

SEP 19 2018

OWRD

POLK 52513

STATE-OF OREGON

WATER SUPPLY WELL REPORT

WELL I.D. # L. START CARD # (as required by ORS 537.765) Instructions for completing this report are on the last page of this form. (9) LOCATION OF WELL by legal description: (1) LAND OWNER Well Number INDEPENDENCE Latitude_ _Longitude Name N or S Range 4W P.O. Box Address Township E or W. WM. INDEPENDENCE State NE 1/4 City NW 1/4 (2) TYPE OF WORK Subdivision ☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment Street Address of Well (or nearest address) _ Comallis Independence (3) DRILL METHOD: (10) STATIC WATER LEVEL: Rotary Air Rotary Mud Cable Auger ☐ Other_ ft. below land surface. Artesian pressure, _lb. per square inch Date (4) PROPOSED USE: □ Domestic □ Community □ Industrial □ Irrigation (11) WATER BEARING ZONES: Livestock Other Municipa ☐ Thermal ☐ Injection Depth at which water was first found (5) BORE HOLE CONSTRUCTION: Special Construction approval Yes No Depth of Completed Well ft. From **Estimated Flow Rate** SWL Explosives used Yes No Type_ Amount Z4' 41 500 GPM HOLE SEAL. Diameter From CEMENT BENTONITE SACK (12) WELL LOG: How was seal placed: Method \square B Ground Elevation DHU touite Pouled Other_ SWL Material 14" Material From To Backfill placed from 38 ft. to 35 ft. ft. to 38 Gravel placed from 6 Size of gravel 18 x Y4. Sava soi 17.5 (6) CASING/LINER: Plastic Welded Threaded 3 7.5 30 .250" 2 30 34 Liner Drive Shoe used Inside Outside 34 Final location of shoe(s). (7) PERFORATIONS/SCREENS: ☐ Perforations Method V-SLOT Material 304 S. Stee Screens Type Tele/pipe Slot Number Diameter From size size Casine Liner SEP 1 7 2007 WATER RESOURCES DEPT SALEM, OREGON Date started DECEMBER! Of Completed January 20 (8) WELL TESTS: Minimum testing time is 1 hour Flowing (unbonded) Water Well Constructor Certification: Pump ☐ Bailer □ Air ☐ Artesian I certify that the work I performed on the construction, alteration, or abandon-Yield gal/min Drawdown Drill stem at Time ment of this well is in compliance with Oregon water supply well construction 71 hr. 5 500 GPM standards. Materials used and information reported above are true to the best of my knowledge and belief. **WWC Number** Date Signed _ 50° (bonded) Water Well Constructor Certification: Depth Artesian Flow Found Temperature of water_ I accept responsibility for the construction, alteration, or abandonment work Was a water analysis done? Yes By whom . performed on this well during the construction dates reported above. All work Did any strata contain water not suitable for intende performed during this time is in compliance with Oregon water supply well Salty Muddy Odor Colored Other construction standards. This report is true to the best of my knowledge and by WWC Number Depth of strata: _ Date 02-08-01

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



d) OWATED.		Wall Nor	mhar #	==	(9) LOCATION OF	F WELL by legal	description:	
(1) OWNER:	In of	Indepe	uf ou	ce	County POLK			
Address	O Box	Mary				N or S. Range	4W E.o.	W. WM.
	Dend Ruce	State O	r Z	97351	Section 33	NW	14 NE 14	
(2) TYPE OF						LotBlock	-	
New Well		Recondition	Abar	ndon			S. Corvall	is Pol;
(3) DRILL ME	ETHOD:					sendence	100	- ·
Rotary Air	Rotary Mud	Cable			(10) STATIC WAT		. 22	7-16-08
Other						low land surface.	Date_Date	11 20
(4) PROPOSEI						lb. per sq	uare inch. Date	
	Community _		Irrigatio	n l	(11) WATER BEAL	RING ZONES:		
	Injection 🔀		mic	1 pal			19	
(5) BORE HO	LE CONSTRU	CTION:		1 52	Depth at which water w	as first found		
Special Construction a					From	То	Estimated Flow Rate	SWL
Explosives used	Yes No Ty	pe	Amou	int	23 '	47.	45+GPW	23.5
HOLE		SEAL		Amount	-25	76	75,011	ω.5
	To Materia	From	To,	sacks or pounds				
12 0	3 Cemer	40 101	121	78 Sacks				
	Benton	+ 12	101	15 Sacks	do MELL LOC.			
	Ray	70 13-	0'	3 Sacks	(12) WELL LOG:	Ground eleva	tion	
How was seal place	Deuton			□ E		Ground dieva	don	
	red - Dir	. 1		J.E		Material	From To	SWL
Backfill placed from			1/4"	MINUS	Fill Grave	1 - Pit Run	D' 6	
Gravel placed from				Bround				
(6) CASING/L			B		- Sana, Sil	twith Cla	y t	
Diameter	From L To (Gauge Steel P	lastic We	lded Threaded	Grave		1515	2'
Casing: 84		250				mall-med		
					W show	on saud-	005e 17'4	5 23.51
8	455 53'				Gravel,	raht w san	a 46' 5	2' 23.51
					Clay - Bl	Way '	5z' 5°	2'
Liner:					1	. 1 -/-/-		
					Back fil	led w/4 1	KINUS	
Final location of sh		me			From 5	7 +653		
	TIONS/SCRE	ENS:						
Perforatio		tolat		2.1160			DECENTER	
Screens	Type _V	<u>-510+</u>	Material .	204.22			RECEIVED	
From To	Slot		/plpe ze Cı	sing Liner		- D / P P	CED 1 0 0000	+
79 45.5	size Number		5.		RECE	WEU	SEP 1 8 2008	-
29 72.3	/ω	o r	<u>J.</u>			MATE	7.550	
					SEP 1	9 2018 WALE	R RESOURCES DE	PT
			_		02.		SALEM, WHEGON	
				H H		inn		
10	COMO 3 24 4				OA	VKD		
(8) WELL TE	STS: Minimum	testing time	is 1 ho		Date started 06-6	9-08 co	empleted 07-16	2-0B
☐ Pump	Bailer	☐ Air		Flowing Artesian	(unbonded) Water We			
•							e construction, alteration	, or abandon-
Yield gal/min	Drawdown	Drill stem a	t	Time			well construction stands	
45 GPM	01			1 hr.	used and information r	eported above are true	to my best knowledge a	and belief.
							WWC Numb	ег
					Signed		Date	
					(bonded) Water Well	Constructor Certifica	tion:	
Temperature of Wa	iter 540	Depth Artesian	Flow Fou	nd	I accept responsibil	ity for the construction	, alteration, or abandonn	
Was a water analys					formed on this well dur	ing the construction date	tes reported above. All wwell construction standar	ork performed
	tain water not suital			Too little	is true to the best of m	ly knowledge and belie	ef.	177
	ldy 🗌 Odor 🔲				1//101	1 / 1 MA SI	() WWC Num	ber ()
					Signed // V	W W WW	Date 0/-	61-08
ADJOING A PER	OT CORN MATE	D DECOMBORG	DEDA DES	APAIR OF CO	NID CODY CONCEDIA	TOOD TRUDE C	ODE CUCTOMER	00000

POLK 52953

STATE OF OREGON

WATER WELL REPORT (as required by ORS 537.765)

	193615
(START CARD)	* 196828

(1) OWNER: Name Address City LIDERANCE State OR Zip 97357 (2) TYPE OF WORK: New Well Deepen Recondition Abandon (3) DRILL METHOD: Rotary Air Rotary Mud Cable Other (4) PROPOSED USE: Domestic Community Industrial Irrigation	(9) LOCATION OF WELL by legal description: County
Thermal Injection Other Municipal	78'
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first found
Special Construction approval Yes No Depth of Completed Well ft.	From To Estimated Flow Rate SWL
Explosives used Yes No Type Amount	From To Estimated Flow Rate SWL 31' 49' 45+GPW 78'
HOLE Diameter From To Material From To Sacks or pounds 12" 0" 56" CEMENT 0" 29" 48 SKS	31 77 TSAGIWI 25
	(12) WELL LOG:
	Ground elevation
How was seal placed: Method □ A □ B ★ C □ D □ E	
Other	Material From To SWL
Backfill placed from 3 ft. to 29 ft. Material 74" MINUS	
Gravel placed from 56 ft. to 31 ft. Size of gravel 3/8 ti ROUND	- CLAY - SILTYBROWN 12'18'
(6) CASING/LINER:	CLAY-BROWN 18'25'
Casing: Su 42 31 1250 Diameter From To Gauge Steel Plastic Welded Threaded	201211 CIAN 22121
	CRAVELLI LLAT
	GRAVEL SMALL - LARGE 31 50 28
	W/ SOME BLOWN SAND 31 50 281
	Bule CLAY
Liner:	+BLUE CLAY 50'56'
	RECEIVED
Final location of shoe(s) NONE	
(7) PERFORATIONS/SCREENS:	SEP 1 9 2018
Perforations Method	VE.
Screens Type V-5L07 Material 30455	OF OF IVEN
Slot Tele/pipe	RECEIVED
From To size Number Diameter size Casing Liner	OVER THE COUNTERECEIVED
31 49 100 87 45 0	1111 0 0 0000
	JUN 0 B 2009
	WATER RESOURCES DEPT SALEM, OREGON
	SALEM, UNEGON
(8) WELL TESTS: Minimum testing time is 1 hour	
Flowing	Date started 07-24-08 Completed 08-70-08
☐ Pump 🄀 Bailer ☐ Air ☐ Artesian	(unbonded) Water Well Constructor Certification:
Yield gal/min Drawdown Drill stem at Time	I certify that the work I performed on the construction, alteration, or abandon-
	ment of this well is in compliance with Oregon well construction standards. Materials used and information reported above are true to my best knowledge and belief.
45 76 m () 1 hr.	uses and information reported above are true to my best knowledge and belief.
	WWC Number
	Signed Date
	(bonded) Water Well Constructor Certification:
Temperature of Water Depth Artesian Flow Found	
Was a water analysis done? Yes By whom	formed on this well during the construction dates reported above. All work performed
Did any strata contain water not suitable for intended use? Too little	during this time is in compliance with Oregon well construction standards. This report is true to the best of my knowledge and belief.
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other	is true to the best of my knowledge and begen www. Number 633
Depth of strata:	Signed /// Date 09-01-0 &
OPIGINAL & FIRST CORY - WATER RESOURCES DEPARTMENT SECO	OND COPY CONSTRUCTOR THIRD COPY CUSTOMER 0800C 10/01

SEP 19 2018

OWRD

2006 Geologic Cross Section - City Well 1 Area

ATTACHMENT C

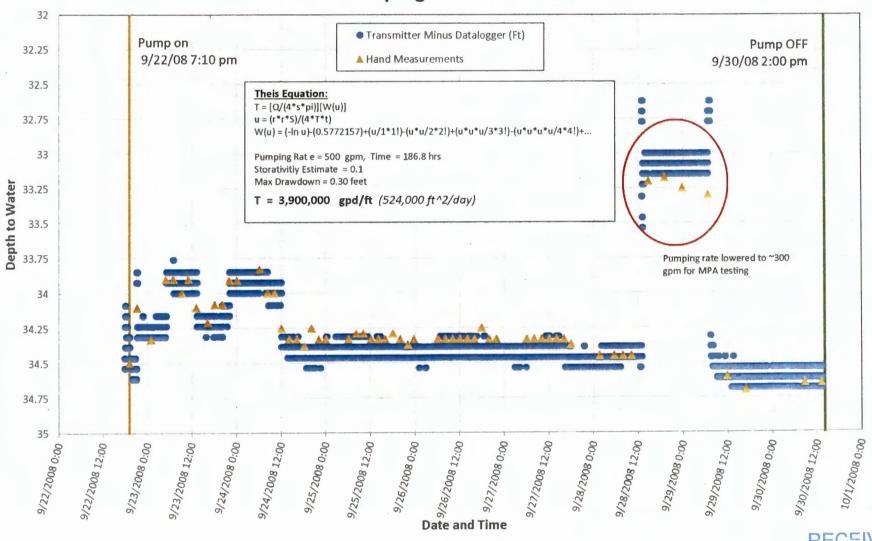
2008 Pump Test Parameter Evaluation

RECEIVED

SEP 1 9 2018

OWRD

Well 1 Pumping Test - Water Level Data

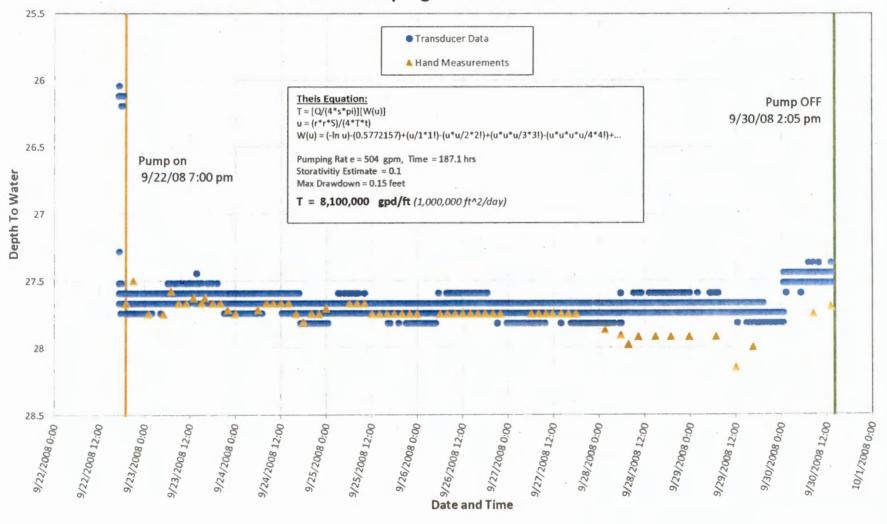


RECEIVED

SEP 19 2018

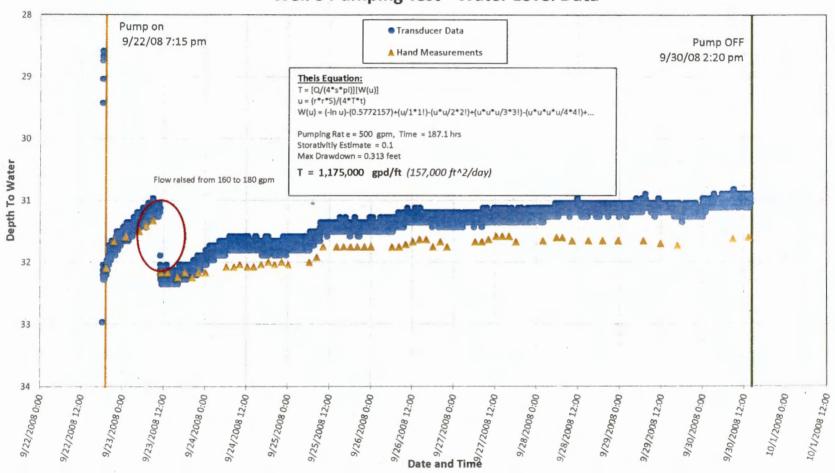
OWRD

Well 2 Pumping Test - Water Level Data



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Well 3 Pumping Test - Water Level Data



SEP 19 2018

OWRD

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pgof		
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)			
Well Name/No.: #1 (South Well)		Date(s) of Test: Sept 22, 2008 to Sept 30, 2008			
Well Diameter:	Depth:	Static Level:	Screen/Perf at:		
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 41'		
SWL After Test:	Drilled By:	Test Started: 1910 Hrs.	Test Stopped: 1400 Hrs.		
Tested By (Firm):	Name:	Max. GPM: 500 @ 34.5' P	WL After 188 Hrs.		

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
500	34.5'	9/22/08 7:10 pm		500	34.33'	8:01 am	
500	34.1'	9:10 pm		500	34.33'	10:02 am	
525	34.33'	9/23/08 1:00 am		500	34.33	12:01 pm	
500	33.9'	5:00 am		500	34.33'	2:02 pm	
490	33.9'	7:00 am		500	34.33'	4:00 pm	
500	34'	9:15 am		500	34.25'	5:58 pm	
500	33.9'	11:05 am		500	34.33'	8:01 pm	
475	34.1'	1:15 pm		500	34.33'	9:56 pm	
490	34.21'	4:13 pm	-	500	34.33'	9/27/08 6:06 am	
500	34.08'	6:07 pm		500	34.33'	8:03 am	
525	34.08'	8:11 pm		500	34.33'	10:01 am	
525	33.91'	10:06 pm		500	34.33'	12:02 pm	
490	33.91'	9/24/08 12:07 am		500	34.33'	1:59 pm	
490	33.83'	6:09 am	*** **********************************	500	34.33'	4:00 pm	
475	34.00'	8:17 am		500	34.37'	5:58 pm	
500	34.00'	10:06 am		500	34.45'	9/28/08 1:40 am	
475	34.25'	12:05 pm		500	34.45'	5:30 am	
500	34.33'	2:05 pm		500	34.45'	7:50 am	
500	34.33'	4:08 pm		500	34.45'	10:10 am	
500	34.38'	6:07 pm		300+	33.2'	2:40 pm	MPA started at 1:00 pm
500	34.25'	8:07 pm		300+	33.175'	7:00 pm	
500	34.33'	10:06 pm		300	33.25'	11:45 pm	
500	34.33'	9/25/08 12:01 am		300	33.3'	9/29/08 6:40 am	
520	34.33'	6:07 am		500	34.6'	11:50 am	
500	34.29'	8:11 am		500	34.7'	4:50 pm	
500	34.29'	10:05 am		500	34.65'	9/30/08 8:40 am	
500	34.33'	12:07 pm		500	34.65'	1:10 pm	
500	34.33'	2:03 pm	* ***				
500	34.33'	4:00 pm					
500	34.29'	6:02 pm					DECEME
500	34.33'	8:00 pm					RECEIVED
500	34.37'	10:01 pm					000 10 200
500	34.33'	11:39 pm					SEP 1 9 2018
500	34.33'	9/26/08 6:04 am					OWRD

Comments:	Summary Capacity:	500 GPM @ 34.7' PWI	(2' drawdown)	(≈250 GPM/ft.)	
Ву:	Firm:		_ Approved:		Firm:

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

		14/-11/1 4/ 14/-11	Pg. of	
	of Monmouth and Independence	Well Location: Willamette		
Well Name/No.: #2		Date(s) of Test: Sept 22, 20		
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:	
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 43.085'	
SWL After Test:	Drilled By:	Test Started: 1900 Hrs.	Test Stopped: 1405 Hrs.	
Tested By (Firm):	Name:	Max. GPM: @ PW	L After Hrs.	

GPM	PUMPING	TIME OF	CONDITION OF	GPM	PUMPING	TIME OF	CONDITION OF
	LEVEL	DAY	WATER		LEVEL	DAY	WATER
510	27.67'	9/22/08		510	27.75'	9/26/08	
		7:00 pm				6:00 am	
500	27.5'	9:00 pm		500	27.75'	7:54 am	
500	27.75'	9/23/08		500	27.75'	9:57 am	
		1:00 am					
500	27.75'	5:00 am		500	27.75'	11:56 am	
500	27.58'	7:00 am		500	27.75'	1:59 pm	
510	27.67'	9:00 am		510	27.75'	3:56 pm	
500	27.67'	11:00 am		510	27.75'	5:51 pm	
500	27.63'	1:00 pm		500	27.75'	7:55 pm	
500	27.67'	3:00 pm		510	27.75'	9:51 pm	
500	27.63'	4:01 pm		510	27.75'	9/27/08	
			7			6:01 am	
510	27.67'	6:01 pm		500	27.75'	7:56 am	
510	27.67'	8:00 pm		500	27.75'	9:56 am	
500	27.72'	9:59 pm		510	27.75'	11:38 am	
510	27.75'	9/24/08		510	27.75'	1:54 pm	
		12:01 am		-			
500	27.72'	6:01 am		510	27.75'	3:56 pm	
510	27.67'	8:06 am		510	27.75'	5:53 pm	
510	27.67'	9:59 am		500	27.87'	9/28/08	
						1:30 am	
500	27.67'	11:59 am		500	27.91'	5:40 am	
500	27.67'	1:58 pm		500	27.98'	7:40 am	
510	27.75'	4:00 pm		500	27.92'	10:15 am	
510	27.81'	5:57 pm		510	27.92'	2:45 pm	
500	27.75'	8:03 pm		510	27.92'	6:50 pm	
510	27.75'	10:01 pm		510	27.92'	11:40 pm	
500	27.71'	11:55 pm		510	27.92'	9/29/08	
						6:45 am	
510	27.67'	9/25/08		500	28.15'	12:00 pm	
		6:02 am					
500	27.67'	8:04 am		500	28.0'	4:30 pm	
510	27.67'	10:01 am		480	27.75'	9/30/08	
						8:30 am	
510	27.75'	12:02 pm		480	27.70'	1:05 pm	
510	27.75'	1:58 pm					RECEIV
500	27.75'	3:58 pm			-		
500	27.75'	5:56 pm					SEP 193
500	27.75'	7:55 pm					
500	27.75'	9:57 pm					
510	27.75'	11:55 pm				1	OWR

Comments:	Summary Capacity: 510 GPM	@ 28' PWL (1.75' drawdown) (≈275 G	PM/ft.)
Ву:	Firm:	Approved:	Firm:

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of				
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)					
Well Name/No.: #3 (N	orth Well)	Date(s) of Test: Sept 22, 2008 to Sept 30, 2008					
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:				
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 40.83"				
SWL After Test:	Drilled By:	Test Started: 1915 Hrs.	Test Stopped: 1420 Hrs.				
Tested By (Firm):	Name:	Max. GPM: @ PWL A	After Hrs.				

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
150	32.1'	9/22/08 7:15 pm		160	31.71	10:08 am	
150	31.67'	9:30 pm		160	31.67'	12:12 pm	
160	31.6'	9/23/08 1:00 am		160	31.63	2:12 pm	
160	31.5'	5:00 am		160	31.63'	4:05 pm	
160	31.41'	7:00 am		160	31.75'	6:04 pm	
160	31.33'	9:00 am		160	31.67'	8:10 pm	
180	32.17'	11:15 am	Raise flow	160	31.75'	10:03 pm	
170	32.17'	1:10 pm		160	31.67'	9/27/08 6:13 am	
170	32.25'	4:07 pm		160	31.67'	8:11 am	
170	32.17'	6:12 pm		160	31.63'	10:05 am	
170	32.25'	8:20 pm		160	31.58'	12:15 pm	
170	32.17'	10:15 pm		160	31.58'	2:04 pm	
170	32.17'	9/24/08 12:14 am		160	31.58'	4:04 pm	
170	32.08'	6:15 am		160	31.67'	6:04 pm	
170	32.08'	8:27 am		175	31.65'	9/28/08 1:50 am	
170	32.04'	10:11 am		175	31.6'	5:50 am	
170	32.08'	12:22 pm		175	31.6'	7:30 am	
170	32.08'	2:10 pm		175	31.65'	10:20 am	
170	32.04'	4:18 pm		175	31.65'	3:00 pm	
170	32.00'	6:26 pm		175	31.65'	7:05 pm	
165	32.04'	8:15 pm		175	31.65'	11:35 pm	
170	32.00'	10:14 pm		175	31.65'	9/29/08 6:50 am	
170	32.04'	9/25/08 12:09 am		175	31.7'	11:55 am	
170	32.00'	6:15 am		175	31.73'	4:45 pm	
170	31.92'	8:20 am		175	31.62'	9/30/08 8:50 am	
160	31.75'	10:12 am		175	31.6'	1:20 pm	
160	31.75'	2:09 pm					
160	31.75'	4:08 pm					
160	31.75'	6:08 pm					
160	31.75'	8:07 pm					RECEIV
170	31.75'	10:09 pm					
160	31.75'	9/26/08 12:05 am	·				SEP 192
160	31.75'	6:09 am					
160	31.75'	8:11 am					OWR

Comments	Summary Capacity: 175 GPM	@ 31.7' PWL (8.6' drawdown) (~20 C	GPM/ft.)
Bv:	Firm:	Approved:	

	om Specific Capac	ity using the Theis	Equation		WELL 1			Data Entry		Enter Data Below	
Adapted from Vo	rhis (1979)									(yellow boxes only)	
Theis Equation:	T = [Q/(4*s*pi)][W((u)]						Well Log ID or Comme	nt for Records	Average Specific Capacity	
	$u = (r^*T^*S)/(4^*T^*t)$ $W(u) = (-\ln u) \cdot (0.5)$	772157)+(u/1*1!)-(u*	'u/2*2!)+(u*u*u/3*3!)-(u*u*u/4*4!)+				Pumping Rate (gpm) = Q =		500.00	(gpm)
				, , = = = = ,				Drawdown (feet) = s =		0.30	(feet)
	T = transmissivity (s = drawdown (L)				r = radial distance	(L)		Time (hours) = t =		186,8000	(hours)
	S = storage coeffic pi = 3.141592654	eient (dimensionless)			t = time (T) u = dimensionless	\$		Storage Coefficient = 5) =	0.100000	(dimensionles
lote: Transmiss	ivity is derived usi	ng an Iterative proc	:055		W(u) = well function	on		Well Diameter (Inches)	= d =	8,0000	(inches)
	The calculations us	se a known or assum	ned Storage Coefic			the first Theis equation ite	retion			Press F9 to Calculate	,
	The Transmissivity	of the previous itera	tion is used to calc				augr				
	Can accept answe	on Iterations = 25 iter r if difference in calc	ulated Transmissivi	ty for the last 2 itera	ations is < 0.0001			Calculated Results		Calculated Results	
	Can accept enswe	r If u in the last iterat	ion is < 7.1					Transmissivity (#2/day) = T =	524,164.64	(#2/day)
lote: Well efficie	ency is not include	d in the calculation	ns					Transmissivity (gpd/ft)	≈ T =	3,921,024.09	(gpd/ft)
References:	Their C.V. 1035	The relation between	a the leveline of the		on and the rate and	duration of discharge of	a well weign	Transmissivity Differentials (last 2 Iterations)	nce =	0.0000E+00 okay to use T if diff < 0.0001	(ft2/day)
		orage. American Ge					a wen using				
	Vorhis, R.C. 1979	. Transmissivity from	n pumped well data	Well Log, Nations	I Water Well Asso	ciation newsletter, vol. 10,	no. 11,	(last Iteration)		6.8087Ë-10 okay to use T if u <7.1	
	Dec. 1979, pg.	50-52.									
Drawdown s	Storage Coefficient	Pumping Rate Q	Pumping Rate Q	Time	Distance r ≈ d/2	U	W(u)	Transmissivity T	Transmissivity difference from	Comments	Theis Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
Note:	yellow grid areas	are where values a	re calculated			Note : W(u) calculatio	n valid when u < 7.1				
						7.0000	1.1545E-04			W(u) calculation test	
0.20	0.40000	500.00	4.44	7.79	0.33	7.0000	1.1545E-04	320 031 34			
0.30	0.10000	500.00	1.11	7.78	0.33	BOTH STREET		320,833.31		T = Q/s	
0.30	0.10000	500.00	1.11	7.78	0.33	1.1124E-09	20.0396	511,631.83	1.9080€+05	T = Q/s T = Theis Equation	1.00
0.30 0.30	0.10000 0.10000	500.00 500.00	1.11 1.11	7.78 7.78	0.33 0.33	1.1124E-09 6.9755E-10	20.0396 20.5062	511,631.83 523,548.78	1.1915E+04	T = Q/s T = Theis Equation T = Theis Equation	2.00
0.30 0.30 - 0.30	0.10000 0.10000 0.10000	500.00 500.00 500.00	1,11 1,11 1,11	7.78 7.78 7.78	0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10	20.0396 20.5062 20.5293	511,631.83 523,548.78 524,134.53	1.1915E+04 5.8775E+02	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation	2.00 3.00
0.30 0.30 - 0.30 0.30	0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00	9,11 1,11 1,11 1,11	7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10	20.0396 20.5062 20.5293 20.5304	511,631.83 523,548.78 524,134.53 524,163.18	1.1915E+04 5.8775E+02 2.8846E+01	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	2.00 3.00 4.00
0.30 0.30 . 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 6.8187E-10 6.8091E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.57	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00
0.30 0.30 - 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00	1,11 1,11 1,11 1,11 1,11 1,11	7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8087E-10	20,0396 20,5062 20,5293 20,5304 20,5304 20,5304	511,631.83 523,546.76 524,134.53 524,163.18 524,164.57 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304	511,631.83 523,546.78 524,134.53 524,163.18 524,164.57 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00
0.30 0.30 - 0.30 - 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1,11 1,21 1,11 1,01 1,11 1,11 1,11 1,11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8097E-10 6.8097E-10 6.8097E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.87 524,164.84 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.21 1.21 1.21 1.15 1.17 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 6.8167E-10 6.8091E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20,0396 20,5062 20,5293 20,5394 20,5304 20,5304 20,5304 20,5304	511,631.83 523,546.78 524,134.53 524,163.18 524,164.57 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8848E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04 7.8541E-06	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,546.78 524,134.53 524,134.53 524,164.57 524,164.57 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	9.11 1.21 5.11 1.11 1.11 1.11 1.11 1.11 1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8097E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.64 524,164.64 524,164.64 524,164.84 524,164.84 524,164.84	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.8125E-04 7.8541E-06 3.8248E-07 1.8685E-08	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5394 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.57 524,184.84 524,184.64 524,164.64 524,164.84 524,164.84 524,164.84 524,164.84	1.1915E+04 5.8775E+02 2.8648E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.809TE-10 6.8097E-10 6.8007E-10 6.8007E-10 6.8007E-10 6.8007E-10 6.8007E-10 6.8007E-10 6.8007E-10 6.8007E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.57 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7955E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.6685E-08 8.7311E-10 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	7.11 7.21 7.11 7.11 7.11 7.11 7.11 7.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 8.8755E-10 8.8091E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20,0396 20,5062 20,5293 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.64 524,164.64 524,164.64 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.8125E-04 7.8541E-06 3.8249E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2 00 3 00 4 00 5 00 6 00 7 00 8 00 9 00 11 00 12 00 13 00
0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.67 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8848E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.8125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2 00 3 00 4 00 5 00 6 00 7 00 8 00 9 00 10 00 11 00 12 00 13 00 14 00 15 00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.809TE-10 6.809TE-10 6.808TE-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,153.453 524,163.18 524,164.57 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7955E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.2248E-07 1.6685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	7.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 8.9755E-10 8.9755E-10 8.8091E-10 6.8091E-10 6.8097E-10	20,0396 20,5062 20,5293 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 3.814E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00
0.30 0.30	0.10000 0.10000	\$00.00 \$00.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8097E-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.67 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.8125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00
0.30 0.30	0.10000 0.10000	500.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.809TE-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,153.453 524,163.18 524,164.87 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84 524,164.84	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7955E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.6685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00
0.30 0.30	0.10000 0.10000	\$00.00 \$00.00	7.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20,0396 20,5062 20,5293 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 3.16125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00
0.30 0.30	0.10000 0.10000	\$00.00 \$00.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8097E-10 6.8087E-10	20.0396 20.5062 20.5062 20.5293 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.67 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00
0.30 0.30	0.10000 0.10000	\$00.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.809TE-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304	511,631.83 523,548.78 524,153.453 524,163.18 524,164.87 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7955E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00
0.30 0.30	0.10000 0.10000	\$00.00 \$00.00	7.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33	1.1124E-09 8.9755E-10 6.8167E-10 6.8091E-10 6.8097E-10 6.8087E-10	20,0396 20,5062 20,5293 20,5304	511,631.83 523,548.78 524,134.53 524,163.18 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7965E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00
0.30 0.30	0.10000 0.10000	\$00.00 500.00	1.11 1.21 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33	1.1124E-09 6.9755E-10 6.8167E-10 6.809TE-10 6.809TE-10 6.8087E-10	20.0396 20.5062 20.5293 20.5304	511,631.83 523,548.78 524,153.453 524,163.18 524,164.87 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64 524,164.64	1.1915E+04 5.8775E+02 2.8846E+01 1.3953E+00 6.7955E-02 3.3104E-03 1.6125E-04 7.8541E-06 3.8248E-07 1.8685E-08 8.7311E-10 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00

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WELL 1 Transmissivity from Specific Capacity using the Theis Equation Data Entry **Enter Data Below** (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4 s pi)]W(u)]u = (r " "S)/(4 "T") Pumping Rate (gpm) = Q = (gpm) $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u*u/2*2!) + (u*u*u/3*3!) - (u*u*u/4*4!) + .$ 2.00 Drawdown (feet) = s = (feet) T = transmissivity (L*L/T) 186.8000 r = radial distance (L) Time (hours) = t = (hours) S = storage coefficient (dimensionless) t = time (T) pi = 3.141592654 u = dimensionless Storage Coefficient = S = 0.100000 (dimensionless) W(u) = well function Note: Transmissivity is derived using an iterative process Vell Dlameter (Inches) = d = 8,0000 (Inches) Press F9 to Calculate The calculations use a known or assumed Storage Coeficient (S) provided by the user Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Total Theis Equation iterations = 25 iterations Calculated Results **Calculated Results** Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = 70,966.93 (ft2/day) Note: Well efficiency is not included in the calculations Transmissivity (gpd/ft) = T = 530,869.53 (gpd/ft) 0.0000E+00 (ft2/day) References Transmissivity Difference = Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using (last 2 iterations) okay to use T if diff < 0.0001 ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 5.0289E-09 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, okay to use T If u < 7.1 (last Iteration) Dec. 1979, pg. 50-52. Drawdown Storage Pumping Rate Pumping Rate Time Distance W(u) Transmissivity Transmissivity Comments Coefficient Equation r = d/2difference from (ft2/day) (feet) (gal/min) (feet) Iteration (ft3/sec) (days) previous Note: yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 1.1545E-04 7.0000 W(u) calculation test 2.00 0.10000 1,11 7.78 0.33 48,125.00 T = Q/s 500.00 1.00 2.00 0.10000 500,00 7.78 0.33 7.4159E-09 18.1424 69,479.44 2.1354E+04 T = Theis Equation 1,11 1.4064E+03 2.00 2.00 0.10000 0.33 5.1366E-09 18,5097 70,885,80 T = Theis Equation 500.00 2.00 7.78 0.33 T = Theis Equation 3.00 0.10000 500.00 70.982.55 7.6744E+01 5.0347E-09 18.5297 4.00 2.00 0.10000 500.00 1.11 7.78 0.33 5.0292E-09 18.5308 70,966.69 4.1439E+00 T = Theis Equation 0.10000 1.11 5.0289E-09 18.5308 70,966.92 2.2383E-01 T = Theis Equation 2.00 500.00 2.00 500.00 1.11 7.78 0.33 1.2068E-02 6.00 0.10000 5.0289E-09 18,5308 70,966,93 T = Theis Equation 70 966 93 6.5124E-04 7.00 2.00 0.10000 500.00 1.11 7.78 0.33 5.0289E-09 18 5308 T = Theis Equation T = Theis Equation 0.10000 1,11 0.33 5.0289E-09 18.5308 70,986.93 3.5143E-05 8.00 2.00 0.10000 500.00 1.11 7.78 0.33 5.0289E-09 18,5308 70,966.93 1.8965E-06 T = Theis Equation 9.00 10.00 2.00 0.10000 500.00 1.11 7.78 0.33 5.0289F-09 18.5308 70,966,93 1.0234E-07 T = Theis Equation 0.33 11.00 2.00 0.10000 500.00 1.11 5.0289E-09 18.5308 70,966.93 5.5152E-09 7.78 0.33 18,5308 70,966 93 3.0559E-10 T = Theis Equation 12.00 2.00 0.10000 500.00 1.11 5,0289E-09 70,966,93 13.00 1.11 7.78 0.33 5.0289E-09 18.5308 0.0000E+00 T = Theis Equation 2.00 0.10000 500.00 0.33 2.00 0.10000 500.00 1.11 5.0289E-09 18.5308 70,966.93 0.0000E+00 14.00 1.11 7.78 18.5308 70,986.93 0.0000E+00 T = Theis Equation 15.00 2.00 0.10000 500.00 5.0289E-09 70,966,93 0.0000E+00 T = Theis Equation 7.78 0.33 5.0289E-09 18.5308 2.00 0.10000 500.00 1,11 0.33 17.00 5.0289E-09 18 5308 70,966.93 0.0000E+00 T = Theis Equation 0.10000 500.00 1,11 7 78 0.10000 500.00 1.11 7.78 0.33 5.0289E-09 18.5308 70,966.93 0.0000E+00 T = Theis Equation 18.00 2.00 0.10000 1.11 7.78 0.33 5.0289E-09 18,5308 70.966.93 0.0000E+00 T = Theis Equation 2.00 500.00 T = Theis Equation 20.00 1.11 18 5308 70.966.93 0.0000E+00 0.10000 500.00 5 0289F-09 2.00 0.10000 500.00 1,11 7.78 5.0289E-09 18,5308 70,966.93 0.0000E+00 T = Theis Equation 21.00 0.33 18.5308 1,11 7.78 0.33 5.0289E-09 70,966.93 0.0000E+00 T = Theis Equation 2.00 0.10000 500.00 T = Theis Equation 23.00 7.78 0.33 5.0289F-09 18,5308 70.966.93 0.0000E+00 2.00 0.10000 500.00 1.11 2.00 0.10000 500.00 1.11 7.78 0.33 5.0289E-09 18,5308 70,966.93 0.0000E+00 T = Theis Equation 24.00 25.00 5.0289E-09 70,966.93 0.0000E+00 T = Theis Equation 0.10000 500.00

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WELL 2 Transmissivity from Specific Capacity using the Theis Equation Data Entry Enter Data Below (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = {Q/(4 s pi) [W(u)] u = (r**S)/(4*T*t) Pumping Rate (gpm) = Q = (apm) $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u*u/2*2!) + (u*u*u/3*3!) - (u*u*u*u/4*4!) + .$ 0.15 Drawdown (feet) = s = (feet) T = transmissivity (L°L/T) 187,1000 r = radial distance (L) (hours) Time (hours) = t = S = storage coefficient (dimensionless) t = time (T) pl = 3.141592654 0.100000 u = dimensionless Storage Coefficient = S = (dimensionless) W(u) = well function 8,0000 Note: Transmissivity is derived using an iterative process Well Diameter (inches) = d = (Inches) The calculations use a known or assumed Storage Coeficient (S) provided by the user Press F9 to Calculate Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results Total Theis Equation Iterations = 25 iterations Calculated Results Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 1,094,703.23 (ft2/day) Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = 8.188.949.39 Note: Well efficiency is not included in the calculations (gpd/ft) Transmissivity (gpd/ft) = T = 0.0000E+00 (ft2/day) References Transmissivity Difference = Theis, C.V. 1935. The relation between the lowering of the ptezometric surface and the rate and duration of discharge of a well using (last 2 Iterations) okay to use T if diff < 0.0001 ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 3.2549E-10 (last iteration) okay to use T if u <7.1 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, Dec. 1979, pg. 50-52. Drawdown Storage Distance W(u) Transmissivity Transmissivity Comments Pumping Rate | Pumping Rate Time Coefficient r = d/2difference from Equation (feet) (gal/min) (ft3/sec) (days) (feet) (ft2/day) previous Iteration yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 7.0000 1.1545E-04 W(u) calculation test 646,799.96 0.15 0.10000 1,12 7.80 0.33 T = Q/s 504.00 0.15 0.10000 504.00 7.80 5.5089E-10 4.2082E+05 T = Theis Equation T = Theis Equation 2.00 0.15 0.10000 0.33 3.3375E-10 21 2434 1 093 443 78 2.5795E+04 504.00 1,12 7.80 T = Theis Equation 3.00 1,094,642.56 1.2288E+03 0.15 0.10000 504.00 1.12 7.80 0.33 3.2587E-10 21.2673 1.12 3.2551E-10 21.2684 1,094,700.38 5.7811E+01 4 00 0.15 0.10000 504.00 7.80 0.33 T = Theis Equation 1.12 0.15 0.10000 504.00 7.80 0.33 3.2549E-10 21.2685 1,094,703.09 2.7182E+00 T = Theis Equation 5.00 21,2885 T = Theis Equation 6.00 0.15 0,10000 504.00 7.80 0.33 3.2549F-10 1.094.703.22 1,2781E-01 7.00 1.12 0.33 3.2549E-10 21.2685 1,094,703.23 6,0091E-03 T = Theis Equation 0.15 0.10000 8.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 2.8254E-04 T = Theis Equation 0.15 504.00 1.3284E-05 T = Theis Equation 1.12 0.33 3.2549E-10 21.2885 1,094,703.23 0.15 0.10000 504.00 7.80 10.00 1,12 0.33 3.2549E-10 21,2885 1,094,703.23 6.2445E-07 T = Theis Equation 0.10000 504.00 504.00 1.12 7.80 0.33 3.2549E-10 21,2685 1,094,703.23 2.9569E-08 T = Theis Equation 11.00 0.15 0.10000 1.12 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 0.10000 504 00 7.80 0.15 13.00 T = Theis Equation 0.10000 504.00 7.80 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 14.00 1.12 7.80 0.33 3.2549E-10 21.2665 1,094,703.23 0.0000E+00 T = Theis Equation 15.00 0.15 0.10000 504.00 1.094.703.23 16.00 0.33 T = Theis Equation 0.10000 504.00 1.12 7.80 3.2549E-10 21,2885 0.0000E+00 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 17.00 1.12 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 18.00 504.00 7.80 0.15 0.10000 0.33 1 094 703 23 0.0000E+00 T = Theis Equation 19.00 0.15 0.10000 504.00 1.12 7.80 3.2549E-10 21 2685 T = Theis Equation 0.15 0,10000 504.00 1.12 7.80 0.33 3.2549E-10 21,2685 1,094,703.23 0.0000E+00 20.00 0.10000 1.12 7.80 0.33 3.2549E-10 21.2885 1,094,703.23 0.0000E+00 T = Theis Equation 0.15 504.00 504.00 7.80 0.33 3,2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 22.00 0.33 T = Theis Equation 23.00 0.15 0.10000 504.00 1,12 7.80 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 0.10000 504.00 1.12 3.2549E-10 21,2685 1,094,703.23 0.0000E+00 T = Theis Equation 24.00 0.15 504.00 T = Theis Equation 0.15 0.10000 1,094,703.23

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WELL 2 Transmissivity from Specific Capacity using the Theis Equation **Data Entry** Enter Data Below (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)]u = (r*r*S)/(4*T*t) Pumping Rate (gpm) = Q = 510.00 (gpm) $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u*u/2*2!) + (u*u*u/3*3!) - (u*u*u/4*4!) + .$ 1,75 Drawdown (feet) = s = (feet) T = transmissivity (L*L/T) s = drawdown (L) r = radial distance (L) Time (hours) = t = 187.1000 (hours) S = storage coefficient (dimensionless) t = time(T)pi = 3.141592654 u = dimensionless Storage Coefficient = S = 0.100000 (dimensionless) W(u) = well function Note: Transmissivity is derived using an iterative process Well Diameter (inches) = d = 8 0000 (Inches) The calculations use a known or assumed Storage Coeficient (S) provided by the user Press F9 to Calculate Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results Total Theis Equation Rerations = 25 iterations Calculated Results Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = 83,458.13 (ft2/day) Note: Well efficiency is not included in the calculations Transmissivity (gpd/ft) = T = 624,310.19 (gpd/ft) References: Transmissivity Difference = 0.0000E+00 (ft2/day) Theis, C.V. 1935. The relation between the lowering of the plezometric surface and the rate and duration of discharge of a well using (last 2 iterations) okay to use T if diff < 0.0001 ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 4.2694E-09 okay to use T if u <7.1 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, (last iteration) Dec. 1979, pg. 50-52. Theis W(u) Drawdown Storage Pumping Rate | Pumping Rate Distance Transmissivity **Transmissivity** Comments Coefficient r = d/2difference from Equation (feet) (gal/min) (ft3/sec) (days) (feet) (ft2/day) previous Iteration Note: yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 1.1545E-04 7.0000 W(u) calculation test 0.10000 56,100.00 1.75 510.00 1,14 7.80 0.33 T = Q/s 6.3514E-09 18.2974 81.684.87 2.5585E+04 T = Theis Equation 1.00 1.75 0.10000 510.00 7.80 0.33 2.00 T = Theis Equation 510.00 1.14 4.3621E-09 18 6731 83,362,25 1.6774E+03 3.00 1,14 0.33 4.2743E-09 83,453.00 9.0745E+01 T = Theis Equation 0.10000 510.00 7.80 18.6934 4.8570E+00 T = Theis Equation 4 00 1,14 4.2697F-09 18 6945 83,457.85 1.75 0.10000 510.00 7.80 0.33 T = Theis Equation 5.00 1.14 0.33 4.2694E-09 18.6946 83,458.11 2.5982E-01 0.10000 1.75 0.10000 510.00 1.14 7.80 0.33 4.2694E-09 18.6948 83,458.13 1.3898E-02 T = Theis Equation 6.00 1.14 4.2694E-09 18.6946 83,458,13 7.4343E-04 T = Theis Equation 1.75 0.10000 510.00 7.80 0.33 8.00 83,458,13 3.9767E-05 T = Theis Equation 0.10000 1,14 7.80 4.2694E-09 18.6946 1.14 7.80 0.33 4.2694E-09 18.6946 83,458.13 2.1272E-06 T = Theis Equation 9.00 1.75 0.10000 510.00 1.14 0.33 4.2694E-09 18.6946 83,458.13 1,1381E-07 T = Theis Equation 10.00 7.80 0.10000 510.00 T = Theis Equation 4.2694E-09 83,458,13 6.0536E-09 11.00 0.10000 1.14 7.80 18 6946 1.75 0.10000 510.00 1.14 7.80 0.33 4.2694E-09 18,6948 83,458.13 3.4925E-10 T = Theis Equation 12.00 1.14 83,458.13 0.0000E+00 13.00 7.80 0.33 4.2694E-09 18,6946 T = Theis Equation 1.75 0.10000 510.00 510.00 7.14 7.80 0.33 4.2694E-09 83,458,13 0.0000E+00 T = Theis Equation 14.00 18.6946 0.10000 1.75 510.00 1.14 7.80 0.33 4.2694E-09 18.6946 83,458.13 0.0000E+00 T = Theis Equation 15.00 0.10000 1.14 7.80 4.2694E-09 18.6946 83,458.13 0.0000E+00 T = Theis Equation 16.00 0.10000 7.80 0.33 4.2694E-09 18,6948 83,458,13 0.0000E+00 T = Theis Equation 17.00 1 75 0.10000 1.14 18.00 1.75 0.10000 510.00 1,14 7.80 0.33 4.2694E-09 18.6946 83,458,13 0.0000E+00 T = Theis Equation 0.10000 1.14 7.80 4.2694E-09 18,6946 83,458,13 0.0000E+00 T = Theis Equation 19.00 T = Theis Equation 1.75 0.10000 510.00 1.14 7.80 0.33 4,2694E-09 18.6946 83,458.13 0.0000E+00 20.00 1.75 0.10000 510.00 1.14 7.80 0.33 4,2694E-09 18.6946 83,458.13 0.0000E+00 T ≈ Theis Equation 21.00 22.00 1.75 0.10000 510.00 1.14 0.33 4.2694E-09 18,6946 83,458.13 0.0000E+00 T = Theis Equation 1.75 0.10000 510.00 1,14 7.80 0.33 4.2694E-09 18.6946 83,458.13 0.0000E+00 T = Theis Equation 23.00 4,2694E-09 18 6946 83,458.13 0.0000E+00 T = Theis Equation 24.00 510.00 0.33 1.75 0.10000 1,14 7.80 0.0000E+00 4.2694E-09 18,6946 83,458.13 T = Theis Equation

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WELL 3 Transmissivity from Specific Capacity using the Theis Equation Data Entry Enter Data Below (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)] u = (r**S)/(4*T*) 166,00 Pumping Rate (gpm) = Q = (gpm) $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u^u/2*2!) + (u^u^u/3*3!) - (u^u^u^u/4*4!) + \dots$ 0.31 Drawdown (feet) = s = (feet) T = transmissivity (L*L/T) s = drawdown (L) r = radial distance (L) Time (hours) = t = 187,1000 (hours) S = storage coefficient (dimensionless) t = time(T)pl = 3.141592654 u = dimensionless Storage Coefficient = S = 0.100000 (dimensionless) W(u) = well function Note: Transmissivity is derived using an iterative process Well Diameter (inches) = d = 8 0000 (Inches) The calculations use a known or assumed Storage Coeficient (S) provided by the user Press F9 to Calculate Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results **Calculated Results** Total Theis Equation iterations = 25 iterations Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 157,014.36 (ft2/day) Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = Note: Well efficiency is not included in the calculations Transmissivity (gpd/ft) = T = 1,174,549.08 (gpd/ft) References Transmissivity Difference = 0.0000E+00 (ft2/day) okay to use T if diff < 0.0001 Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using (last 2 Iterations) ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 2.2693E-09 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, okay to use T if u <7.1 (last Iteration) Dec. 1979, pg. 50-52. Theis Drawdown Storage Pumping Rate Pumping Rate Time Distance W(u) Transmissivity Transmissivity Comments Equation (feet) (gal/mln) (ft3/sec) (feet) (ft2/day) Iteration (days) previous Note: yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 1.1545E-04 7.0000 W(u) calculation test 0.31 0.10000 166.00 0.37 7,80 0.33 102,092.84 T = Q/s 166.00 3,4901E-09 153,517.22 5.1425E+04 1.00 0.31 0.37 0.33 18.8961 T = Theis Equation 0.10000 0.31 0.10000 166.00 0.37 7.80 0.33 2.3210E-09 19,3040 156,831,37 3.3142E+03 T = Theis Equation 2.00 T = Theis Equation 0.37 7.80 0.33 2.2720E-09 19,3254 157,004.89 1.7352E+02 0.31 166.00 0.33 0.37 7.80 19.3265 157,013,87 8 9839E+00 T = Theis Equation 4.00 0.31 0.10000 166.00 2 2695F-09 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19,3266 157,014,34 4.6486E-01 T = Theis Equation 5.00 0.37 0.33 2,2693E-09 19.3266 157,014.38 2.4053E-02 6.00 0.31 166,00 T = Theis Equation 0.33 T = Theis Equation 7.00 0.31 0.37 7.80 2.2693E-09 19.3266 157.014.38 1.2446E-03 0.10000 166 00 157,014.38 6.4398E-05 T = Theis Equation 8.00 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19 3266 T = Theis Equation 0.31 0.10000 166,00 0.37 7.80 0.33 2.2693E-09 19.3266 157.014.38 3.3320E-06 9.00 7.80 0.33 10.00 0.31 166.00 0.37 2.2693E-09 19.3266 157,014,36 1.7241E-07 T = Theis Equation 0.10000 T = Theis Equation 0,37 0.33 157,014,36 8 9058F-09 0.31 0.10000 166.00 7.80 2 2693F-09 19.3266 12.00 0.37 2.2693E-09 19,3266 157,014.38 4.9477E-10 T = Theis Equation 0.31 0.10000 166.00 7.80 0.33 0.31 0.37 7.80 0.33 2.2693E-09 19,3266 157,014,38 0.0000E+00 T = Theis Equation 13.00 0.10000 166.00 T = Theis Equation 14.00 0.31 0.10000 166.00 0.37 7.80 0.33 2 2693F-09 19.3266 157,014,38 0.0000E+00 15.00 0.37 0.33 2.2693E-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 0.31 0.10000 7.80 0.31 7.80 0.33 157,014,38 0.0000E+00 T = Theis Equation 16.00 0.10000 166.00 0.37 2.2693E-09 19,3266 0.0000E+00 T = Theis Equation 17.00 0.37 0.33 2,2693E-09 19.3266 157,014,36 0.31 0.10000 166.00 7.80 0.37 7.80 0.33 2.2693E-09 19,3266 157,014.36 0.0000E+00 T = Theis Equation 18.00 0.31 0.10000 166.00 0.31 0.33 157,014,36 0.0000E+00 T = Theis Equation 19.00 0.10000 166.00 0.37 7.80 2.2693E-09 19,3266 2.2693E-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 0.37 7.80 0.33 0.31 0.10000 166.00 21.00 T = Theis Equation 0.31 0.10000 166.00 0.37 7.80 2.2693E-09 19.3266 157.014.36 0.0000E+00 0.31 166.00 0.37 7.80 0.33 2.2693E-09 19,3266 157,014.38 0.0000E+00 T = Theis Equation 22.00 0.10000 0.31 166.00 0.37 7.80 0.33 2.2693E-09 19,3266 157,014.38 0.0000E+00 T = Theis Equation 0.10000 7.80 24.00 T = Theis Equation 166.00 0.37 2.2693E-09 19 3266 157.014.36 0.0000E+00 0.31 0.10000 166.00 7.80 2.2693E-09 157,014.36 0.0000E+00 T = Theis Equation

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WELL 3 Transmissivity from Specific Capacity using the Theis Equation Data Entry **Enter Data Below** (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)] 175.00 $u = (r^*r^*S)/(4^*T^*t)$ Pumping Rate (gpm) = Q = (gpm) $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u*u/2*2!) + (u*u*u/3*3!) - (u*u*u*u/4*4!) + \dots$ 8.60 Drawdown (feet) = s = (feet) T = transmissivity (L*L/T) 187.1000 Time (hours) = t = s = drawdown (L) r = radial distance (L) (hours) S = storage coefficient (dimensionless) t = time (T) pi = 3.141592654 Storage Coefficient = S = 0.100000 u = dimensionless (dimensionless) W(u) = well function Note: Transmissivity is derived using an iterative process Well Diameter (Inches) = d = 8,0000 (Inches) Press F9 to Calculate The calculations use a known or assumed Storage Coeficient (S) provided by the user Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results Total Theis Equation iterations = 25 iterations Calculated Results Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 Transmissivity (ft2/day) = T = 4,946.62 (ft2/day) Can accept answer if u in the last iteration is < 7.1 Transmissivity (gpd/ft) = T = 37,003,27 (gpd/ft) Note: Well efficiency is not included in the calculations Transmissivity Difference = 0.0000E+00 (ft2/day) References okay to use T if diff < 0.0001 Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using (last 2 Iterations) ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 7.2032E-08 okay to use T If u <7.1 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, (last Iteration) Dec. 1979, pg. 50-52. W(u) Drawdown Storage Pumping Rate | Pumping Rate Time Transmissivity Transmissivity Comments Coefficient r = d/2difference from Equation (feet) (ft3/sec) (days) (feet) (ft2/day) previous Iteration (gal/min) Note: W(u) calculation valid when u < 7.1 Note: yellow grid areas are where values are calculated 7.0000 1.1545E-04 W(u) calculation test 8.60 7.80 0.33 3,917.15 T = Q/s 0.10000 175.00 0.39 1.00 9,0963E-08 15.6356 4,873,88 9.5673E+02 T = Theis Equation 8.60 0.10000 175.00 0.39 7.80 0.33 0.39 7.80 0.33 7.3107E-08 15.8541 4,942.00 6.8118E+01 T = Theis Equation 8.60 0.10000 T = Theis Equation 3.00 7.80 15.8880 4.946.33 4.3264E+00 8.60 0.39 7,2100E-08 2.7277E-01 T = Theis Equation 4.00 .0.39 7.80 0.33 7.2036E-08 15.8689 4.946.60 8.60 0.10000 175.00 7,2032E-08 15.8689 4,946.62 1,7190E-02 5.00 0.39 0.33 T = Theis Equation 0.10000 8.60 0.39 7.80 0.33 7.2032E-08 15.8689 4,946,62 1.0832E-03 T = Theis Equation 6.00 8.60 0.10000 7.00 0.10000 175.00 0.39 7.80 0.33 7.2032E-08 15 8689 4.946.62 6.8261E-05 T = Theis Equation 8.60 8.00 T = Theis Equation 0.39 7.2032E-08 15.8689 4,946.62 4.3015E-06 8.60 0.10000 0.33 15,8689 4,946.62 2.7106E-07 T = Theis Equation 9.00 0.39 7.80 7,2032E-08 0.10000 175.00 8.50 4,946,62 1.7083E-08 0.33 7,2032E-08 15.8689 T = Theis Equation 8.60 0.10000 175.00 0.39 7.80 11.00 0.39 0.33 7.2032E-08 15,8689 4,946.62 1.0759E-09 T = Theis Equation 8.60 0.10000 0.33 7.2032E-08 15,8689 4,946.62 6.8212E-11 T = Theis Equation 12.00 8 60 0.10000 175.00 0.39 7.80 15,8889 4,948.62 0.0000E+00 T = Theis Equation 0.33 7.2032E-08 8.60 0.10000 175.00 0.39 7.80 T = Theis Equation 14.00 0.0000E+00 0.10000 0.39 7.80 7.2032E-08 15.8689 4.946.62 8.60 0.39 0.33 7.2032E-08 15.8689 4,946.62 0.0000E+00 T = Theis Equation 15.00 0.10000 175.00 7.80 8.60 0.33 7.2032E-08 15.8689 4,946.62 0.0000E+00 T = Theis Equation 8.60 0.10000 0.39 7.80 4,946,62 0.0000E+00 T = Theis Equation 17.00 15 8689 0.10000 0.39 7.80 7.2032E-08 18.00 8.60 0.10000 175.00 0.39 7.80 0.33 7.2032E-08 15.8689 4,946,62 0.0000E+00 T = Theis Equation 0.33 7.2032E-08 15.8689 4,948.62 0.0000E+00 T = Theis Equation 19.00 0.39 7.80 8.60 0.10000 175.00 7 2032F-08 15,8689 4,946,62 0.0000E+00 T = Theis Equation 20.00 8.60 0.10000 175.00 0.39 7.80 21.00 8.60 0.10000 175.00 0.39 7.80 0.33 7.2032E-08 15,8689 4.946.62 0.0000E+00 T = Theis Equation 22.00 175.00 0.39 7.80 0.33 7.2032E-08 15.8689 4,946.62 0.0000E+00 T = Theis Equation 8.60 7.80 0.33 7.2032E-08 15.8689 4,946.62 0.0000E+00 T = Theis Equation 23.00 0.39 8.60 0.10000 175.00 0.0000E+00 T = Theis Equation 24.00 15.8689 4.946.62 8.60 0.10000 175.00 0.39 7.80 0.33 7.2032E-08 0.10000 4,946.62 0.0000E+00 T = Theis Equation 8.60

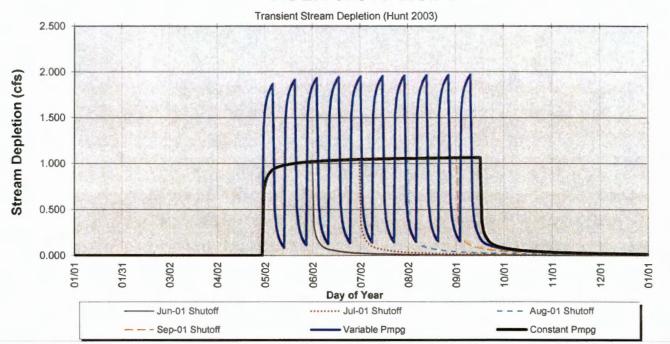
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ATTACHMENT D Stream Depletion Evaluation

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POLK 52513 Well 1

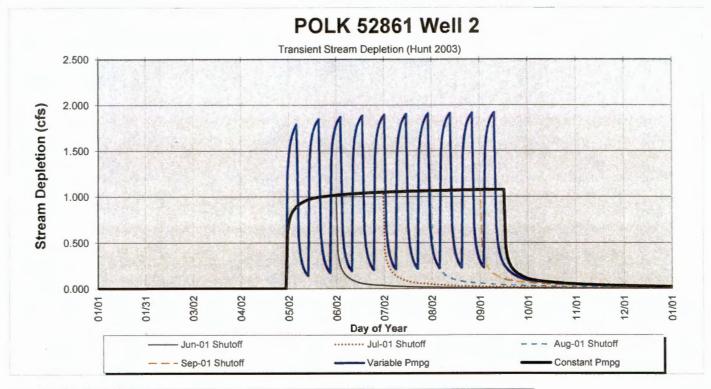


Parameters:		Values	Units
Perpendicular from well to stream	а	80	ft
Well depth	d	61	ft
Aquifer transmissivity	T_ft	520,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	WS	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2200	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1100	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2200	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		303.83	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

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Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
1.45											-	
Stream Depl, %Q	0.0	0.0	0.0	0.0	91.8	94.0	95.0	95.7	7.9	3.3	2.1	1.5
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.019	1.044	1.055	1.062	0.087	0.036	0.023	0.016
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	0.027	0.012	0.007	0.005	0.004	0.003	0.002
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.044	0.037	0.018	0.012	0.008	0.006	0.005
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.044	1.055	0.044	0.023	0.015	0.011	0.009
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.044	1.055	1.062	0.050	0.027	0.018	0.013
Relief after Jun-01 shutoff (SD= 1.02	21, cfs)					0.994	1.009	1.014	1.016	1.017	1.018	1.018
Relief after Jul-01 shutoff (SD= 1.04	4, cfs)						1.007	1.026	1.032	1.036	1.038	1.039
Relief after Aug-01 shutoff (SD= 1.09	55, cfs)							1.011	1.032	1.040	1.044	1.047
Relief after Sep-01 shutoff (SD= 1.06	62, cfs)								1.012	1.035	1.044	1.049
Stream depletion at 138 = 1.064 cfs												
Stream depletion at 30 days = 91.7 %	6											

Stream depletion at 10 days = 86.6 %

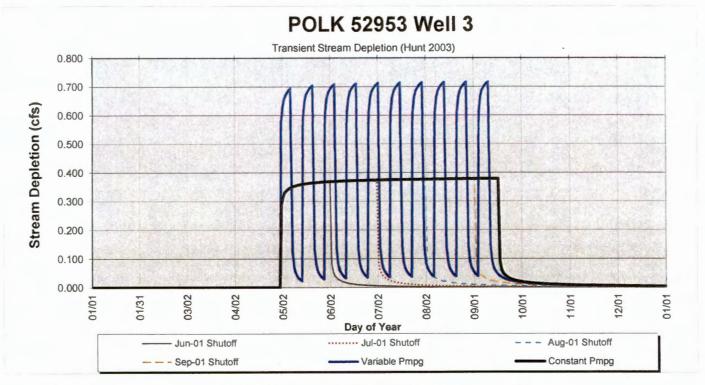


Parameters:		Values	Units
Perpendicular from well to stream	а	25	ft
Well depth	d	57	ft
Aquifer transmissivity	T_ft	1,090,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2800	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1400	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2800	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		312.04	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

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Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	89.1	92.0	93.4	94.2	9.9	4.4	2.8	2.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.016	1.049	1.065	1.074	0.113	0.050	0.031	0.022
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.016	0.037	0.016	0.010	0.007	0.005	0.004	0.003
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.016	1.049	0.051	0.025	0.016	0.011	0.009	0.007
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.016	1.049	1.065	0.060	0.032	0.021	0.015	0.012
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.016	1.049	· 1.065	1.074	0.068	0.037	0.025	0.018
Relief after Jun-01 shutoff (SD= 1.01	8, cfs)					0.981	1.001	1.008	1.011	1.013	1.014	1.014
Relief after Jul-01 shutoff (SD= 1.05)	0, cfs)						0.999	1.025	1.034	1.039	1.041	1.043
Relief after Aug-01 shutoff (SD= 1.00	55, cfs)							1.005	1.033	1.044	1.050	1.053
Relief after Sep-01 shutoff (SD= 1.07	74, cfs)								1.006	1.038	1.050	1.056
Stream depletion at 138 = 1.077 cfs												
Stream depletion at 30 days = 88.9 %	6											

Stream depletion at 10 days = 81.9 %



Parameters:		Values	
Perpendicular from well to stream	а	80	ft
Well depth	d	56	ft
Aquifer transmissivity	T_ft	160,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	WS	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	0.7780	cfs
Constant pumping rate for model (Qmp/2)	Qwc	0.3890	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	0.7780	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		106.48	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

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												_
Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	94.6	96.1	96.7	97.2	5.2	2.2	1.4	1.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	0.368	0.374	0.376	0.378	0.020	0.008	0.005	0.004
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.368	0.006	0.003	0.002	0.001	0.001	0.001	0.001
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.368	0.374	0.009	0.004	0.003	0.002	0.001	0.001
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.368	0.374	0.376	0.010	0.005	0.004	0.003	0.002
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.368	0.374	0.376	0.378	0.012	0.006	0.004	0.003
Relief after Jun-01 shutoff (SD= 0.36	8, cfs)					0.362	0.366	0.367	0.367	0.368	0.368	0.368
Relief after Jul-01 shutoff (SD= 0.37	4, cfs)						0.365	0.370	0.371	0.372	0.372	0.373
Relief after Aug-01 shutoff (SD= 0.3)	76, cfs)							0.366	0.371	0.373	0.374	0.374
Relief after Sep-01 shutoff (SD= 0.37	78, cfs)								0.366	0.372	0.374	0.375
Stream depletion at 138 = 0.379 cfs												
Stream depletion at 30 days = 94.5 %												

Stream depletion at 10 days = 90.9 %



Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1266 (503) 986-0900 www.wrd.state.or.us

Watermaster Review Form: Water Right Transfer

Tra	nsfer Application	: T- <u>12773</u>		Revi	ew Due Date:	
App	olicant Name: <u>I</u>	nternational Pa	aper Co			
Proj	posed Changes:	⊠ POU	⊠ POD	POA	⊠ USE	○ OTHER
Rev	riewer(s): Joel P	lahn		Date	of Review:	Jan. 16, 2018
1.	Do you have <u>evi</u> presumption of i evidence (e.g. da	forfeiture wou	ld not likely be	rebuttable?	Yes No	If "yes", attach
2.	Is there a history involved the tran Generally characoccurred:	sferred right(s	s) and downstr	eam water right	s? Yes	⊠ No
3.	Have headgate n ☐ Yes No				the transferre	d right(s)?
4.	In your estimation result in regulation original right(s) ☐ Yes ☒ No	on of other was was/were max	ater rights that imized?			
5.		ed? Yes	⊠ No If"Y			water rights that would be affected
6.		use of the tran	nsferred right(s)? If you check	the box, gene	arn flows resulting erally characterize hat benefit most:
7.	For POD change the old and new describe and, if I	PODs or with	in the proposed	l instream reach	n? If you chec	el losses between
8.	For instream transtream: N/A with OAR 690-0	Would the qu	uantity be meas	sureable into th		
9.	For POU change water from the s					ntinue to receive

10.	For POU or USE changes: N/A In your best judgment, would use of the existing right at "full face value," result in the diversion of more water than can be used beneficially and without waste? Yes No If "Yes", explain:						
11.	Are there other issues not identified through the above questions that should be considered in determining whether the change "can be effected without injury to other rights"? Yes No If "Yes", explain:						
12.	What alternatives may be available for addressing any issues identified above:						
13.	Do conditions need to be included in the transfer order to avoid enlargement of the right or injury to other rights? No Yes, as checked below:						
	A Headgate should be required prior to diverting water.						
	Measurement Devices for POD or POA: (if this condition is selected, also fill in the top sections of page 3) a. Before water use may begin under this order, the water user shall install a						
	totalizing flow meter*, or, with prior approval of the Director, another suitable measuring device, at each point of diversion/appropriation (new and existing) or at each new point of diversion/appropriation.						
	 b. The water user shall maintain the meters or measuring devices in good working order. 						
	c. The water user shall allow the Watermaster access to the meters or measuring devices; provided however, where the meters or measuring devices are located within a private structure, the Watermaster shall request access upon reasonable notice.						
	Reservoir water use measurement: (if this condition is selected, also fill in the top sections of page 3)						
	a. Before water use may begin under this order, the water user shall install staff gages*, or, with prior approval of the Director, other suitable measuring devices, that measure the entire range and stage between empty and full in each reservoir. Staff gages shall be United States Geological Survey style.						
	b. Before water use may begin under this order, if the reservoir is located in chann weirs or other suitable measuring devices must be installed upstream and downstream of the reservoir, and, an adjustable outlet valve must be installed. To water user shall maintain such devices in good working order. A written waiver be obtained, if in the judgment of the Director, the installation of weirs or other suitable measuring devices, or the adjustable outlet valve, will provide no public benefit.						
	* The following alternative device(s) should be substituted for the bold, underlined						
	device in the above selected condition:						
	Weir Submerged Orifice						
	Parshall Flume Flow Restrictor						
	Other:						

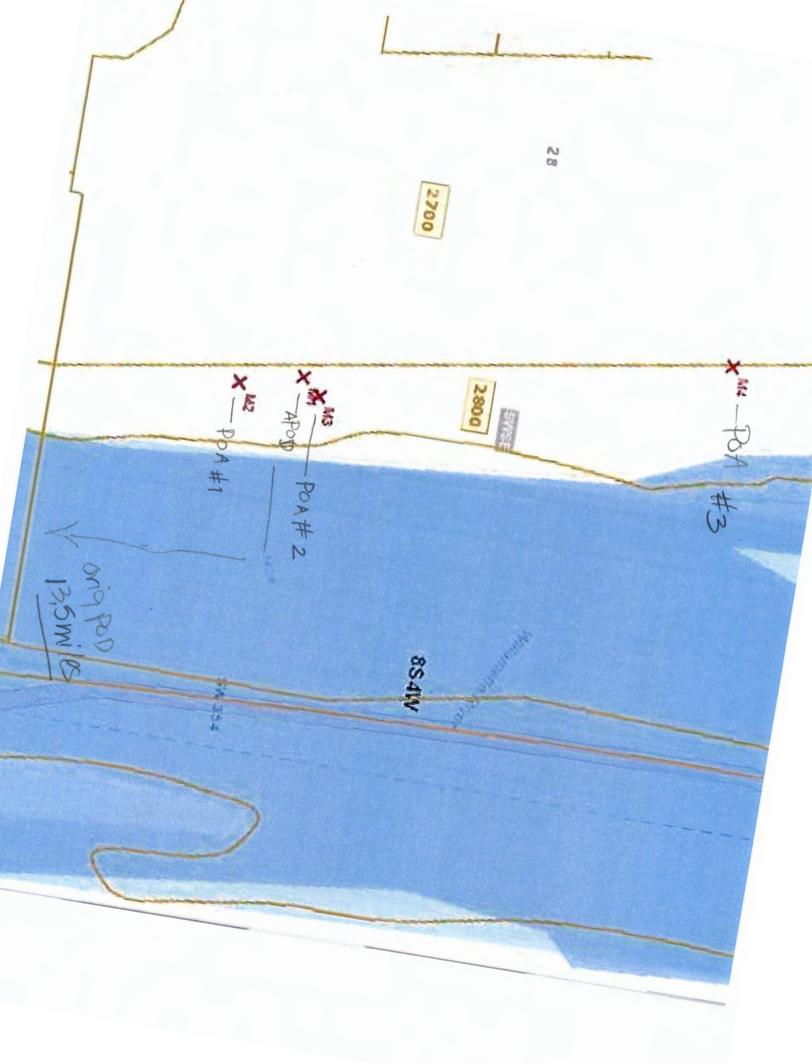
Oregon Water Resources Department

Measurement Condition Information for the Applicant

(to be sent with the Draft Preliminary Determination or Final Order)

Transfer #: T										
☐ In order to avoid enlargement of the right or injury to other rights, a will be required to be installed <u>prior to diversion of water</u> , as a condition of this transfer: ☐ at each point of diversion/appropriation (new and existing) or ☐ at each new point of diversion/appropriation.										
For additional information, or to obtain approval of a different type of measurement device, the applicant should contact the area Watermaster:										
Watermaster name:										
District:										
Address:										
City/State/Zip:										
Phone:										
Email:										
Note: If a device other than the one specified in the Preliminary Determination or Final Order is approved by the Watermaster, fill out and mail the form below to the Salem office.										

Approval of an Alternate Measurement Device T										
On behalf of the Director, I authorize use of the following suitable alternate measurement device:										
Watermaster signature District Date										
If this form is used for approval of an alternative measurement device, it must be mailed to:										
Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266										



Groundwater Transfer Review Summary Form

Transfer/PA # T- 12773
GW Reviewer DENNIS ORLOWSKI Date Review Completed: 557. 14, 2018
Summary of Enlargement (Same Source) Review:
[] The proposed transfer fails to keep the original place of use from receiving water from the same source.
Summary of Injury Review:
[] The proposed transfer will result in another, existing water right not receiving previously available water to which it is legally entitled or result in significant interference with a surface water source.
Summary of Well Construction Assessment:
[] The proposed POA does not have a well log.
[] The proposed POA does not appear to meet current well construction standards. Route through Well Construction and Compliance Section.
This is only a summary. Documentation is attached and should be read the remarkly to the
This is only a summary. Documentation is attached and should be read thoroughly to understand the basis for determinations.



Oregon Water Resources Department 725 Summer Street NE, Suite A

Ground	Water	Review	Form:
Wat Wat ■	er Right T	Fransfer	
D		J 4	

\triangle	water Right Transfer
	Permit Amendment
	GR Modification
	Other

Salem, Oregon 97301-1 (503) 986-0900 www.wrd.state.or.us	Permit Amendment GR Modification Other
Application: T-12773	Applicant Name: International Paper Company
Proposed Changes:	☐ APOA
Reviewer(s): <u>Dennis Orlowski</u>	Date of Review: September 14, 2018
	Date Reviewed by GW Mgr. and Returned to WRSD: 4/1/18
transfer may be approved because:The water well reports provide affected by the transfer.The application does not inclu	d with the application do not correspond to the water rights
	e ground water body developed or proposed to be developed.
Other	
pertains to certificate 54268, v	es proposed in this transfer: This proposed SW-GW transfer which allocates 18.0 cfs from the Willamette River at a POA ate 54268 is for manufacturing (industrial) purposes.
54268 that is currently leased i	sfer to the City of Independence a 2.0 cfs portion of certificate instream (IL-1434). The proposed change will allow the City eam POD and three POA locations adjacent to the Willamette
	O locations are adjacent to/within the Willamette River, ownstream of the authorized POD location for certificate DD are:
 Willamette Well 1 (PO Willamette Well 2 (PO Willamette Well 3 (PO POD 2 (proposed) 	LK 52861)
	ders only the SW-GW component of the proposed transfer

i.e., from the authorized surface water POD to the three proposed groundwater POAs.

2. Will the proposed POA develop the same aquifer (source) as the existing authorized POA? No Comments: The source authorized by certificate 54268 is surface water Yes from the Willamette River, whereas the source for the three proposed POAs is groundwater obtained from Holocene floodplain and channel alluvium deposited by the Willamette River system (Conlon and others, 2005; Woodward and others, 1998).

> Page 1 of 9 Last Revised: 1/17/2018

Transfer Application: T-12773

OAR 690-380-2130 (2) establishes criteria by which OWRD may allow a transfer of a surface water POD to a groundwater POA, including the following:

- a) The criteria in OAR 690-380-5000 are met (i.e., general transfer considerations);
- **b)** Hydraulic connection: the new point of diversion appropriates ground water from an aquifer that is hydraulically connected to the authorized surface source; and
- c) <u>Similarity</u>: the proposed change in point of diversion will affect the surface water source similarly* to the authorized point of diversion specified in the water use subject to transfer; and
- d) Proximity: the withdrawal of groundwater at the new point of diversion is located within 500 feet of the surface water source and, when the surface water source is a stream, is also located within 1000 feet upstream or downstream of the original point of diversion as specified in the water use subject to transfer; or
- e) If the distance requirements in subsection (2)(d) of this rule are not met, the holder of a water use subject to transfer shall submit to the Department evidence prepared by a licensed geologist that demonstrates that the use of the groundwater at the new point of diversion will meet the criteria set forth in subsections (2)(a) to (c) of this rule.
 - (*Similarly means that the use of groundwater at the new point of diversion affects the surface water source specified in the permit or certificated or decreed water right and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping).

Because the proposed POA locations do not meet all of the "proximity" requirements of subsection (2)(d), the applicant submitted a report in accordance with (2)(e) of OAR 690-380-2130. The report is a technical memorandum entitled "City of Independence Willamette River Wellfield – Surface Water to Groundwater Transfer, Hydrogeologic Evaluation of Wells' Connection to River', dated 8 November 2017 and prepared by GSI Water Solutions, Inc. for the City of Independence. A revision to this report to correct the POA locations was submitted to OWRD on September 14, 2018.

The consultant's report included development of analytical stream depletion models (Hunt, 2003) for each of the three proposed POA locations to demonstrate similarity. This review focused largely on evaluating those modeling results.

The criteria of OAR 690-380-2130 subsections (2b) and (2c) are evaluated for each of the three proposed POA locations as follows:

• (2)(b) Hydraulic Connection: the proposed POAs, "Willamette Wells 1, 2, and 3", are located approximately 70, 40, and 80 feet, respectively, from the Willamette River. The applicant's report provides evidence from previous studies that establishes hydraulic connection between all three wells and the river. Also, OWRD's independent evaluation of local hydrogeologic conditions confirms that the shallow alluvial aquifer tapped by the three wells is hydraulically connected to the Willamette River.

Conclusion: all three proposed POAs are hydraulically connected to the Willamette River, the currently authorized source for certificate 54268.

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- (2)(c) Similarity: the applicant's consultant used the Hunt 2003 2-dimensional analytical stream depletion model to demonstrate compliance with the "similarity" requirement of OAR 690-380-2130. This model is generally suitable for this application, though the values used for several model parameters are questionable, specifically:
- o Aquifer transmissivity (T): The aquifer is generally characterized on the proposed POA well logs as a ~20 ft thick deposit of fine to coarse gravel with sand, overlain by 20-30 feet of low-permeability silt and clay. Aquifer transmissivity values ranging from 160,000 to 1,090,000 ft²/day were used for the applicant's stream depletion models. For the average saturated aquifer thickness (20 ft), these transmissivities yield horizontal hydraulic conductivity (Kh) values ranging from 8000 to 54,500 ft/day. These are much greater than Kh-values for gravel and sand deposits reported in the literature, which typically range from about 300-3000 ft/day (Halford and Kuniansky, 2002; Freeze and Cherry, 1979). Locally-derived parameter estimates, discussed below, are also much lower. Thus, the range of T values used in the applicant's model appears to be extraordinarily and possibly unrealistically high for the sand and gravel aquifer in this area.

The transmissivity values used for the applicant's stream depletion modeling appear to have been derived from possibly unreliable data from a 2008 aquifer test at the site, i.e., at some wells pre-test static water levels were apparently not recorded. Furthermore, an additional method used to estimate transmissivity from specific capacity data (Vorhis, 1979) does not consider the strong recharge effect of the adjacent Willamette River, and thus its use leads to gross overestimation of transmissivity values for use in the Hunt stream depletion models.

For similar hydrogeologic settings within the Willamette Valley, the USGS reports T-values ranging mostly from 10,000 to 100,000 ft²/day. More specifically, the USGS reports that aquifer tests conducted in three similarly-completed, high-yield (~1200 gpm) wells adjacent to the Willamette River yielded T-values from 76,000-79,000 ft²/day, with a fourth test at 270,000 ft²/day (Woodward and others, 1998). From this information, for our independent model comparison OWRD evaluated transmissivity values ranging from 20,000-100,000 ft²/day; though still quite high, this range is well supported in both the common literature and from locally-derived testing results.

O Aquitard parameters: both the aquitard vertical hydraulic conductivity value (K_{va} = 50 ft/day) and aquitard thickness below the stream (babs = 20 ft) used for the applicant's modeling appear excessively high. The aquitard as reported on the logs for the three proposed POAs is generally noted as "clay" or "silt", with minor occurrences of sand and gravel. More typical horizontal K-values for this type of deposit would range from about 0.001 to perhaps 1 ft/day (Halford and Kuniansky, 2002; Freeze and Cherry, 1979), far less than the 50 ft/day used for vertical hydraulic conductivity (K_{va}) in the applicant's models.

The same 20-ft thickness is used in the applicant's models for both the total aquitard saturated thickness (ba) and aquitard thickness below the stream (babs). The latter of these values, babs, does not appear to be supported by local stratigraphic information. Indeed, USGS bathymetric data suggests that the mainstem Willamette in this area has most likely incised through most, if not all, of the near-surface "aquitard" deposits. With this condition, the value for babs would be much less than 20 ft, representing perhaps only a relatively-thin (<3 ft) clogging layer within the stream bed.

Transfer Application: T-12773

Despite the use of markedly different model parameters, the results of OWRD's independent modeling show stream depletion percentages generally at or above 50% at 10 days of continuous simulated pumping.

<u>Conclusion</u>: all three proposed POAs meet the "similarity" requirement of OAR 690-380-2130.

3.	a) Is there more than one source developed under the right (e.g., basalt and alluvium)? Yes No As discussed in Section 2 of this review, all three proposed POAs meet the hydraulic connection and similarity requirements of OAR 690-380-2130, and thus will effectively develop the same source authorized by certificate 54268.						
	b) If yes, estimate the portion of the right supplied by each of the sources and describe any limitations that will need to be placed on the proposed change (rate, duty, etc.):						
4.	a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with another ground water right ? Yes No Comments: It is uncertain if several residences located ~400-500 feet west of the proposed POAs utilize domestic wells. However, due to their proximity to and strong hydraulic connection with the Willamette River, the proposed POAs will obtain most water from the Willamette, and thus potential adverse impacts to other possible groundwater users are not expected.						
	b) If yes, would this proposed change, at its maximum allowed rate of use, likely result in another groundwater right not receiving the water to which it is legally entitled? Yes No If yes, explain:						
5.	a) Will this proposed change, at its maximum allowed rate of use, likely result in an increase in interference with another surface water source ? Yes No Comments: The proposed POAs will interfere only with the authorized source for certificate 54268, the Willamette River. No other surface water sources will be affected.						
	b) If yes, at its maximum allowed rate of use, what is the expected change in degree of interference with any surface water sources resulting from the proposed change? Stream:						
6.	What conditions or other changes in the application are necessary to address any potential issues identified above: None						
7.	Any additional comments:						
	 The three proposed POAs, existing wells POLK 52513, POLK 52861, and POLK 52593, all meet the SW-GW transfer criteria stipulated in OAR 690-380- 2130. 						

References:

Application T-12773 file.

Barlow, Paul M. and Leake, Stanley A., 2012, Streamflow Depletion by Wells – Understanding and Managing the Effects of Groundwater Pumping on Streamflow: U.S. Geological Survey Circular 1376.

Conlon, Terrence D., Wozinak, Karl C., Woodcock, Douglas, Herrera, Nora B., Fisher, Bruce J., Morgan, David S., Lee, Karl K., and Hinkle, Stephen R., 2005, Ground-Water Hydrology of the Willamette Basin, Oregon: U.S. Geological Survey Scientific Investigations Report 2005-5168.

Freeze, R.A, Cherry, J.A., 1979, Groundwater, Prentice-Hall, Inc.

Halford, Keith J.and Kuniansky, Eve, 2002, Documentation of Spreadsheets for the Analysis of Aquifer Test and Slug Test Data, US Geological Survey Open-File Report 02-197, 2002.

Hunt, B., 1999, Unsteady stream depletion from ground water pumping: Ground Water, V. 37, no. 1, p. 98-102.

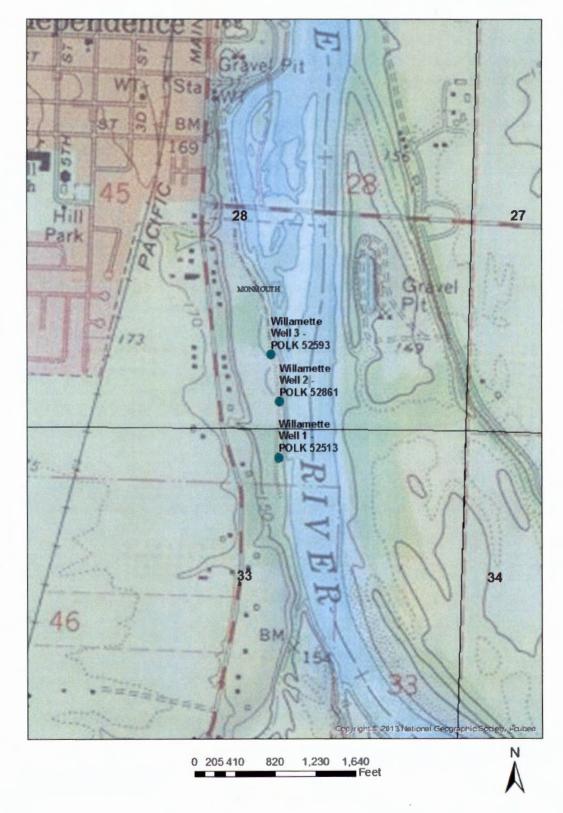
Hunt, B., 2003, Unsteady stream depletion when pumping from semiconfined aquifer: Journal of Hydrologic Engineering, January/February, 2003.

Vorhis, R.C., 1979, Transmissivity from pumped well data, Well Log, National Water Well Association newsletter, Vol. 10, No. 11, December 1979, pp. 50-52.

Woodward, Dennis G., Gannett, Marshall W., and Vaccaro, John J., 1998, Hydrogeologic Framework of the Willamette Lowland Aquifer System, Oregon and Washington: U.S. Geological Survey Professional paper 1424-B.

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Application T-12773, International Paper Company T8S, R4W - Sections 28 & 33



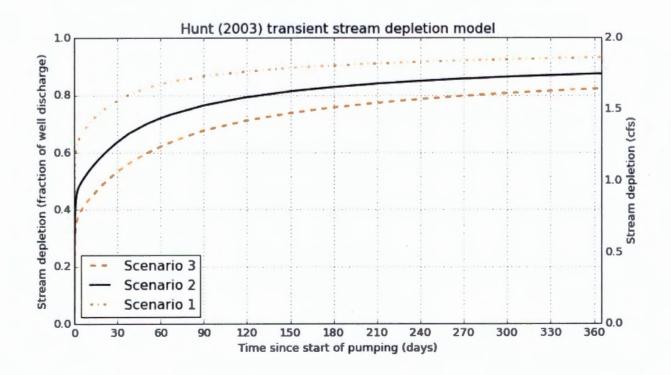
OWRD Hunt 2003 Stream Depletion Model Results - "Willamette Well 1", POLK 52513

e	76	P	vHunt	stream	depletio	n anal	vsis	tool
-		1.0	AT IMITE	20 F011	acpicuo	ni uniui	7212	1001

Application type:	T
Application number:	12773
Well number:	1
Stream Number:	1
Pumping rate (cfs):	2.0
Pumping duration (days):	365.0

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	а	70	70	70	ft
Aquifer transmissivity	T	30000.0	30000.0	30000.0	ft2/day
Aquifer storativity	S	0.01	0.01	0.01	-
Aquitard vertical hydraulic conductivity	Kva	0.1	0.1	0.1	ft/day
Aquitard saturated thickness	ba	14.0	14.0	14.0	ft
Aquitard thickness below stream	babs	1.0	2.0	3.0	ft
Aquitard specific yield	Sya	0.1	0.1	0.1	-
Stream width	WS	550.0	550.0	550.0	ft

Stream depletion for Scenario 2:													
Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	53	64	72	76	79	81	83	84	85	86	86	87	87
Depletion (cfs)	1.07	1.27	1.44	1.53	1.59	1.63	1.66	1.68	1.70	1.71	1.73	1.74	1.75



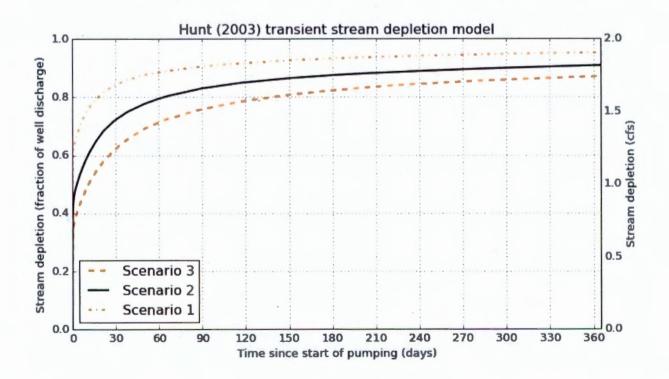
OWRD Hunt 2003 Stream Depletion Model Results - "Willamette Well 2", POLK 52861

7% PyHunt stream depletion analysis tool

Application type:	Т			
Application number:	12773			
Well number:	2			
Stream Number:	1			
Pumping rate (cfs):	2.0			
Pumping duration (days):	365.0			

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	40	40	40	ft
Aquifer transmissivity	T	50000.0	50000.0	50000.0	ft2/day
Aquifer storativity	S	0.01	0.01	0.01	
Aquitard vertical hydraulic conductivity	Kva	0.2	0.2	0.2	ft/day
Aquitard saturated thickness	ba	12.0	12.0	12.0	ft
Aquitard thickness below stream	babs	1.0	2.0	3.0	ft
Aquitard specific yield	Sya	0.1	0.1	0.1	-
Stream width	ws	500	500	500	ft

				Str	eam de	pletion	for Scen	ario 2:					
Days	10	30	60	90	120	150	, 180	210	240	270	300	330	360
Depletion (%)	59	72	79	83	85	86	87	88	89	89	90	90	91
Depletion (cfs)	1.18	1.45	1.59	1.66	1.70	1.73	1.75	1.76	1.78	1.79	1.80	1.81	1.81



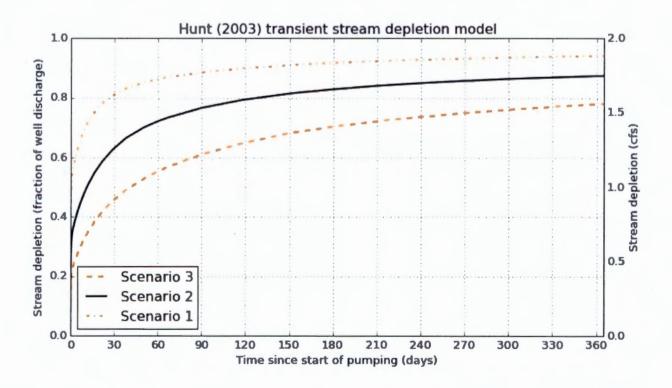
OWRD Hunt 2003 Stream Depletion Model Results - "Willamette Well 3", POLK 52953

76 PyHunt stream depletion analysis tool

Application type:	T				
Application number:	12773				
Well number:	3				
Stream Number:	1				
Pumping rate (cfs):	2.0				
Pumping duration (days):	365.0				

Parameter	Symbol	Scenario 1	Scenario 2	Scenario 3	Units
Distance from well to stream	a	80	80	80	ft
Aquifer transmissivity	T	20000.0	30000.0	50000.0	ft2/day
Aquifer storativity	S	0.01	0.01	0.01	-
Aquitard vertical hydraulic conductivity	Kva	0.1	0.1	0.1	ft/day
Aquitard saturated thickness	ba	5.0	5.0	5.0	ft
Aquitard thickness below stream	babs	1.0	2	3	ft
Aquitard specific yield	Sya	0.1	0.1	0.1	-
Stream width	ws	550.0	550.0	550.0	ft

Stream depletion for Scenario 2:													
Days	10	30	60	90	120	150	180	210	240	270	300	330	360
Depletion (%)	49	63	72	77	79	81	83	84	85	86	86	87	87
Depletion (cfs)	0.98	1.26	1.44	1.53	1.59	1.63	1.66	1.68	1.70	1.71	1.73	1.74	1.75



Oregon Department of Fish and Wildlife Water Right and Diversion Transfer Comment Form

(ODFW provides to WRD so that WRD can make findings according to statutory requirements.)

Reference Transfer # T-12773 Date of review: 11/29/17

1(01	ciclice Transfer II. 1 12773
<i>A</i> .	Please check box if you believe there is a potential for injury to an instream water right. The Oregon Department of Fish and Wildlife (ODFW) believes this proposed transfer may
	injure an instream water right(s) on
	Note: This will prompt WRD to make a determination whether the transfer will injure an instream water right. (OWRD makes the determination of injury to a water right, while ODFW's role is to raise concerns, and to evaluate proposed mitigation and net benefit to the resource if OWRD consents to injury of an instream water right.)
	Please check <u>one</u> of the following five boxes related to fish screen requirements pursuant to S 540.525 or 540.532:
	1. Screen Maintain [Select this option if the new Point of Diversion (POD) requires a fish screen <u>and</u> is currently equipped with an appropriate fish screen that will still be in compliance if the transferred water is diverted from this POD.]
	Note: This option will yield the following:
	<u>Finding of Fact:</u> The Oregon Department of Fish and Wildlife has determined that a fish screen is necessary at the new point of diversion to prevent fish from entering the diversion and that the diversion is currently equipped with an appropriate fish screen.
	Condition: The water user shall operate and maintain an approved fish screen at the new point of diversion. If Oregon Department of Fish and Wildlife (ODFW) determines the screen is not functioning properly, and is unsuccessful in working with the water user to meet ODFW standards, ODFW may request that OWRD regulate the use of water until OWRD receives notification from ODFW that the fish screen is functioning properly.
	2. Screen Now [Option 2 should generally be selected if listed fish species are present at the point of diversion and/or the originating water right diversion is currently screened. If Option 2 is selected, provide contact information on the "Fish Screening and Passage Information" sheet. The new diversion may be eligible for cost-share.] Note: This option will yield the following:
	Finding of Fact: The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screen is

currently equipped with an appropriate fish screen. This diversion may be eligible for screening cost-share funds. Condition: Prior to diverting water, the water user shall install an approved fish screen at the new point of diversion

necessary at the new point of diversion to prevent fish from entering the diversion and that the diversion is not

and shall provide to the OWRD a written statement from Oregon Department of Fish and Wildlife (ODFW) that the installed screen meets the state's criteria, or that ODFW has determined a screen is not necessary.

The water user shall operate and maintain the fish screen at the new point of diversion consistent with ODFW's operational and maintenance standards. If ODFW determines the screen is not functioning properly, and is unsuccessful in working with the water user to meet ODFW standards, ODFW may request that OWRD regulate the use of water until OWRD receives notification from ODFW that the fish screen is functioning properly.

Please return all 3 pages to: Transfers Section, Water Resources Department, 725 Summer St. NE, Suite A, Salem, OR 97301-1266

	3. Screen 2 Year									
	[Option 3 may be checked if the change is from an un	screene	d diversion to a HISTORIC POD or							
	an existing POD in use for another water right, and c									
	It should NOT be checked if listed fish species are pro									
	originating water right diversion is screened, cost-she									
	diversion is <u>not</u> eligible for ODFW's cost-share progr									
	the "Fish Screening and Passage Information" sheet. present, please explain:	.j ij exir	aorainary circumstances are							
	Note: This option will yield the following:									
	Finding of Fact: The Oregon Department of Fish and Wildlife (C	ODEWO by	as determined that a fish screen is							
	necessary at the new point of diversion to prevent fish from enter currently equipped with an appropriate fish screen. Listed fish sporiginating water right diversion is not screened, cost-share fund diversion may be eligible for ODFW's cost-share program. A gratime as cost-share funds become available to assist in the construction become available, the water user must screen within the indicate share funding.	ering the depected are less are not contact are period action of a	iversion and that the diversion is not not present at the point of diversion, the currently available, and the proposed I of two years is appropriate until such if fish screen. If cost-share funds do not							
	Condition: By October 1, 20_ [Within two years after the date approved fish screen at the new point of diversion. The water us without a screen until October 1, 20 The water user shall prove Department of Fish and Wildlife (ODFW) that the installed screen determined a screen is not necessary.	er may wi vide to O\	thdraw water at the new point of diversion WRD a written statement from Oregon							
	The water user shall maintain and operate the fish screen at the r	new point	of diversion consistent with ODFW's							
	operational and maintenance standards. If ODFW determines the unsuccessful in working with the water user to meet ODFW stanuse of water until OWRD receives notification from ODFW that	e screen is idards, OI	not functioning properly, and is DFW may request that OWRD regulate the							
	4. Screen Future									
_	[Use this option if fish are not currently present, but n	night po	ssibly be at some future time.]							
	Note: This option will yield the following:	0 1								
	Finding of Fact: The Oregon Department of Fish and Wildlife ha	as determi	ned that the diversion is not currently							
	equipped with an appropriate fish screen, but a fish screen may be diversion to prevent fish from entering the diversion.									
	Condition: The Oregon Department of Fish and Wildlife (ODFW) may require the water user to install an approved fish screen at the new point of diversion within one year after receiving written notification that a fish screen is required. Once installed the water user shall maintain and operate the fish screen at the new point of diversion according to ODFW's operational and maintenance standards. If ODFW determines the screen is not functioning properly, and is unsuccessful in working with the water user to meet ODFW standards, ODFW may request that OWRD regulate the use of water until OWRD receives notification from ODFW that the fish screen is functioning properly.									
	5. No Screen Needed									
_	[Check this box if fish are not currently present, ar	nd are no	ot expected in the future.]							
		(541)	757-5249							
	Signature	Phone								
/	Elise Kelley		District Fish Biologist							
	Printed Name	Title								

Oregon Department of Fish and Wildlife Additional Fish Screening and Passage Information for the Applicant

(To be completed by ODFW for WRD to provide to the applicant.)

Transfer #: T-12773

The applicant should be aware that fish screening and passage may be required for certain changes in point of diversion if the boxes below are checked.

Fish screening is required as a condition of this transfer. The fish screen must meet ODFW's design, construction, operational and maintenance standards.

Pursuant to ORS 498.306, cost-share funds may be available to assist in the installation of fish screening.

The applicant should contact the ODFW staff member below to obtain additional information on the design, construction, operational, and maintenance standards for the fish screen and to obtain information about ODFW's cost-sharing program for screening. Prior to installation, the water user must obtain written approval from ODFW that the required screen meets ODFW's criteria.

ODFW staff name: Marty Olsen

Address: 3561 Klindt Drive

City/State/Zip: The Dalles, OR 97058

Phone: (541) 296-8026

This transfer may trigger requirements for fish passage under ORS 509.585 because a new point of diversion will be constructed, an existing point of diversion's capacity will be increased, or an existing point of diversion will be abandoned. The applicant should contact the ODFW staff member below for a determination of whether native migratory fish are or were present at the applicable location, which will determine whether fish passage must be addressed.

ODFW staff name: Elise Kelley

Address: <u>7118 NE Vandenberg Ave.</u> City/State/Zip: <u>Corvallis</u>, <u>OR 97333</u>

Phone: (541) 757-5249

ANDREWS Marissa L * WRD

From: Elise X Kelley <Elise.X.Kelley@state.or.us>

Sent: Wednesday, November 29, 2017 3:12 PM

To: Marissa.L.Andrews@wrd.state.or.us

Subject: FW: OWRD: WR Transfer T 12773 (Regular) has been submitted for your District or

Region. [ODFW]

Attachments: T-12773 city of independence from International Paper Form 54 signed.doc.pdf

Importance: High

Categories: Action Required

Hi Marissa,

ODFW's review is attached. The map did not indicate where POD 1 is but the application stated that it was upstream of the proposed POD 2. If that isn't the case, please let me know.

Thanks, Elise

From: Peter A Samarin [mailto:Peter.A.Samarin@state.or.us]

Sent: Tuesday, November 28, 2017 8:36 AM

To: Alex Farrand (alex.farrand@state.or.us) <alex.farrand@state.or.us>; Elise X Kelley (elise.x.kelley@state.or.us)

<elise.x.kelley@state.or.us>

Subject: FW: OWRD: WR Transfer T 12773 (Regular) has been submitted for your District or Region. [ODFW]

Importance: High

Not sure if this is within your district but it certainly isn't in the Rogue. Pete

From: wrd automated email@oregon.gov [mailto:wrd automated email@oregon.gov]

Sent: Monday, November 27, 2017 6:00 PM

To: wrd.upperrogue@state.or.us

Subject: OWRD: WR Transfer T 12773 (Regular) has been submitted for your District or Region. [ODFW]

Importance: High

ODFW review request for proposed water right transfer T 12773

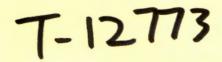
Oregon Water Resources Department - Automated e-mail notice

Transfer Application Stakeholder(s): ** Applicant ** INTERNATIONAL PAPER COMPANY

Transfer Type: Regular Notice Number: 1

Transfer Actions:

- POD Point of Diversion change
- · POU Place of Use change



RECEIVED

SEP 1 4 2018

OWRD

Lisa Jaramillo Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Revised pages for Transfer Application T-12773

Dear Ms. Jaramillo:

On November 20, 2017 International Paper filed a Permanent Water Right Transfer (Transfer T-12773) with the Oregon Water Resources Department. Transfer T-12773 requests to change the point of diversion, place of use, and character of use for a 2.0 cfs portion of water right certificate 54268. The transfer application identified the location of a proposed point of diversion, as well as three proposed points of appropriation.

We understand that Dennis Orlowski is currently working on the groundwater review for Transfer T-12773, and he has requested modifications to the descriptions of the well locations. (The application originally included the locations included in existing information regarding those wells.) In response to that request, GSI has obtained more accurate location information for the proposed wells.

GSI is providing the enclosed revised portions of application T-12773, which include a revised page 6 of the application form and a new application map, both of which provide updated location descriptions for the proposed wells. In addition, GSI is providing a revised Geologist Report (which was provided in Attachment 6 of the application) that also reflects the updated well locations.

If you have any questions or concerns, please contact me at 541-257-9001.

Sincerely,

Adam Sussman

Mel &

Principal Water Resources Consultant

Enclosures

CC: James Kirkpatrick, International Paper

Kie Cottam, City of Independence



September 14, 2018

RECEIVED

SEP 1 4 2018



Lisa Jaramillo Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

Re: Revised pages for Transfer Application T-12773

Dear Ms. Jaramillo:

On November 20, 2017 International Paper filed a Permanent Water Right Transfer (Transfer T-12773) with the Oregon Water Resources Department. Transfer T-12773 requests to change the point of diversion, place of use, and character of use for a 2.0 cfs portion of water right certificate 54268. The transfer application identified the location of a proposed point of diversion, as well as three proposed points of appropriation.

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Sincerely,

Adam Sussman

Allen A

Principal Water Resources Consultant

Enclosures

CC:

James Kirkpatrick, International Paper Kie Cottam, City of Independence Please use a separate Part 5 for each water right being changed. See instructions on page 6, to copy and paste additional Part 5s, or to add additional rows to tables within the

CERTIFICATE # 54268

Description of Water Delivery System

SEP 1 4 2018

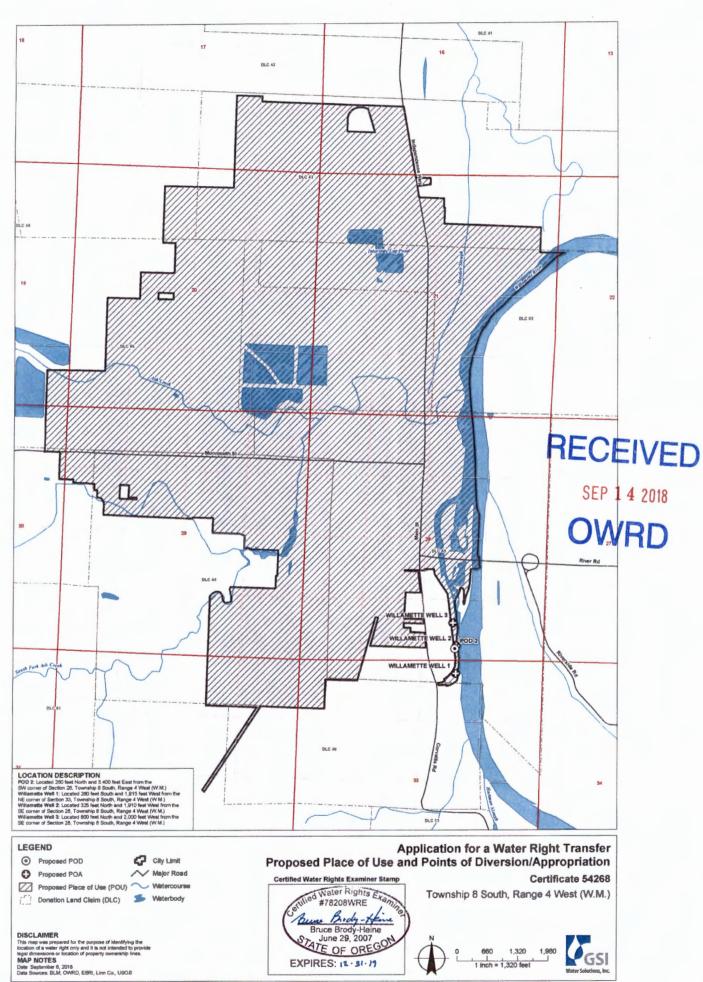
System capacity: 38.92 cubic feet per second (cfs)

Describe the current water delivery system or the system that was in place at some time five years. Include information on the pumps, canals, pipelines, and sprinklers used to divert, convey, and apply the water at the authorized place of use. There are four pumps at the point of diversion: two 200 HP pumps on the barge, and two 200 HP pumps on the bank. The pumps have 15 inch suctions and 10 inch discharges. The water is conveyed from the pump station to the paper mill water pond via 6,000 feet of 30-inch concrete underground pipe. Water from the pond is diverted to various locations on the mill site. Note: A 15 cfs portion of Certificate 54268, including the 2 cfs that is the subject of this transfer application, was leased instream in 2014 (IL-1434).

Table 1. Location of Authorized and Proposed Point(s) of Diversion (POD) or Appropriation (POA) (Note: If the POD/POA name is not specified on the certificate, assign it a name or number here.)

POD/POA Name or Number	Is this POD/POA Authorized on the Certificate or is it Proposed?	If POA, OWRD Well Log ID# (or Well ID Tag# L)	T	wp	P	lng	Sec	1/4	1/4 1/4		Ta Lo DI. 1/4 1/4 Or Good		44		1/4 1/4		Measured Distances (from a recognized survey corner)
POD 1	□ Authorized □ Proposed	N/A	10	S	3	w	32	NE	NE		1260 ft South & 1220 ft West from the NE corner of Sect. 32						
POD 2	☐ Authorized ☐ Proposed	N/A	8	S	4	w	28	sw	SE		260 ft North & 3400 ft East from SW Corner of Sect. 28						
Willamette Well 1	☐ Authorized ☐ Proposed	POLK 52513	8	S	4	w	33	NW	NE		260 ft South & 1,915 ft West from the NE corner of Sect. 33						
Willamette Well 2	☐ Authorized ☐ Proposed	POLK 52861	8	s	4	w	28	sw	SE		350 ft North & 1,910 ft West from the SE corner of Sect. 28						
Willamette Well 3	☐ Authorized ☐ Proposed	POLK 52953	8	S	4	w	28	sw	SE		800 ft North & 2,000 ft West from the SE corner of Sect. 28						

ell 3	□ Proposed	52953	8	S	4	W	28	SW	SE	from the SE corner of Sect. 28	
Check	all type(s) of cl	hange(s) pro	pos	ed b	elow	(ch	ange	"COI	DES"	are provided in parentheses):	
\boxtimes	Place of Use	(POU)				[Suppl	emen	tal Use to Primary Use (S to P)	
\boxtimes	Character of I	Use (USE)				[Point	of Ap	opropriation/Well (POA)	
\boxtimes	Point of Dive			[Addit	ditional Point of Appropriation (APOA)				
	Additional Point of Diversion (APOD)							Substi	itutio	n (SUB)	
\boxtimes	Surface Water POA (SW/GV		ound	d Wa	ater	[Gover	nmer	nt Action POD (GOV)	
Will al	of the propose	ed changes	affec	t th	e ent	ire v	vater	right	?		
Yes	Complete onl "CODES" list		•				,			Table 2 on the next page. Use the	
⊠ No	Complete all	of Table 2 to	des	crib	e the	port	ion o	f the v	vater	right to be changed.	
Revised 7	/27/2017	Permanen	t Tra	nsfer	Appl	icatio	n Forn	n – Pag	e 6 of	8 TAC	





Technical Memorandum

To: Kie Cottam, City of Independence

From: Bruce Brody-Heine, RG, GSI Water Solutions, Inc.

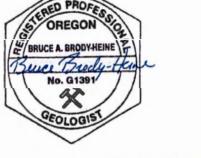
Date: November 8, 2017

Revised September 13, 2018 (changes highlighted in yellow)

Re: City of Independence

Willamette River Wellfield - Surface Water to Groundwater Transfer

Hydrogeologic Evaluation of Wells' Connection to River





SEP 1 4 2018



I. Introduction

International Paper is, for the benefit of the City of Independence (City), transferring a portion of surface water right Certificate 54268 to the City's three groundwater production wells (Willamette Wells 1, 2 and 3) that are located immediately adjacent to the Willamette River. Oregon Water Resources Department's (OWRD) administrative rules allow for a surface water right to be transferred to a groundwater well under Oregon Administrative Rules (OAR) 690-380-2130. Under these rules (OAR 690-380-2130) a surface water right may be transferred to a groundwater source if:

- a) The criteria in OAR 690-380-5000 are met;
- b) the new point of diversion (the wells) appropriate ground water from an aquifer that is hydraulically connected to the authorized surface source;
- The proposed change in point of diversion will affect the surface water source similarly to the authorized point of diversion specified in the water use subject to transfer;
- d) The withdrawal of groundwater at the new point of diversion (the wells) is located within 500 feet of the surface water source and is also located within 1,000 feet upstream or downstream of the original point of diversion as specified in the water use subject to transfer; or
- e) If the distance requirements are not met, the holder of a water use subject to transfer shall submit to the Department evidence prepared by a licensed geologist that demonstrates that the use of the groundwater at the new point of diversion [new wells] will meet the criterial set forth in OAR 690-380-2130 2 (a), (b) and (c).



SEP 1 4 2018

City of Independence Stream Depletion Evaluation



The authorized surface water source for Certificate 54268 is the Willamette River. The wells to which a portion of Certificate 54268 will be transferred are within 500 feet of the river. The wells are, however, located more than 1,000 feet from the original point of diversion (near Millersburg). As a result, this report has been prepared to demonstrate that the use of groundwater at the new well locations meet the criteria set forth in OAR 690-380-2130 2(a), (b) and (c).

II. Criteria

OAR 690-380-2130 2(a). The criteria in OAR 690-380-5000 require that the water right to be transferred is subject to transfer and is not cancelled pursuant to ORS 540.610, the proposed transfer would not result in injury, and the proposed transfer would not result in enlargement. Certificate 54368 is a water right subject to transfer and has not been cancelled. The changes proposed in the transfer to the points of diversion/appropriation, place of use, and character of use would not result in injury or enlargement. We understand OWRD will evaluate these criteria as part of the transfer application review process.

OAR 690-380-2130 2 (b) and (c). As described in more detail below, the new points of diversion (the wells) appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water (the Willamette River). Moreover, use of groundwater from the wells will affect the surface water source similarly to the authorized point of diversion. The term "similarly" is defined in OAR 690-380-2130 11 (b) to mean the use of the groundwater from the new well affects the surface water source specified in water right being transferred and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping.

The following is a description of an analysis of the City's water wells and reasons why the proposed use of groundwater from the wells meets the above-described criteria for a surface water to groundwater transfer.

III. Analysis

The City has conducted several evaluations of the hydraulic connection of wells to the Willamette River at the proposed location. These evaluations included a Ranney collector study in 1972, installing a series of test wells and completing an aquifer test in 2006, and an 8-day aquifer test completed in 2008. The City provided GSI with several reports and the following information from the evaluations: 1) the aquifer parameters from the 1972 aquifer test associated with a Ranney Collector study, 2) the results of a 2-hour aquifer test in 2006, and 3) the raw data from the 2008 aquifer test.

Hydraulic Connection to the Willamette River. Based on the information obtained from the previous evaluations described above, the City's three production wells (Willamette Wells 1, 2 and 3) were installed in January 2007, and July and August 2008 along the edge of the Willamette River. The well logs are presented in Attachment A and the approximate locations of City's well are also shown on the Figure in this attachment. All three of the City's wells are located within 500 feet from the river. Willamette Well 1 is located 80 feet from the Willamette River; Willamette Well 2 is 25 feet from the river; and Willamette Well 3 is 80 feet from the river. All three wells develop groundwater from an approximately 20 foot thick gravel unit that is located above a blue clay layer between 50 and 57 feet below ground surface. A cross section showing the geologic formations in relationship to the Willamette River from the 2006 study is provided in Attachment B. This cross section is oriented approximately east west near the location of the current City's Willamette Well 1.

GSI WATER SOLUTIONS, INC. PAGE 2 OF 2



SEP 1 4 2018

City of Independence Stream Depletion Evaluation



The cross-section shows there is a direct connection between the gravel aquifer and the adjacent Willamette River. The cross-section, in combination with the high transmissivity values calculated for each well (see description below), demonstrates the City's wells are completed in gravel deposit that is hydraulically connected to the Willamette River. Therefore, Willamette Wells 1, 2 and 3 appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water source (the Willamette River).

Groundwater Use will Affect the Surface Water Source Similarly. GSI reviewed and plotted the 2008 aquifer test data to determine the aquifer parameters (transmissivity and storativity) in the vicinity of the three Willamette River wells (see water level plots in Attachment C). Unfortunately, limited static water level data was available either prior to or after the test and the transducer data recorded only a very small drawdown within the actual pumping wells. This indicates that the aquifer was not under much stress during the test and the wells likely could produce more water than the rates used in the aquifer test. GSI used a combination of the maximum drawdown observed in the transducer data and recorded notes at the base of the Pump Test Data Sheets to calculate a transmissivity (T) value for each well using the Theis equation. The calculated aquifer parameters from the 2008 test (Table 1) were similar to those determined from the previous aquifer test results (300,000 to 550,000 gallons per day per foot).

The 2003 Hunt Model was used to calculate the stream flow depletion created by pumping each of the Willamette River wells (Attachment D). The results of the calculation for each well (Willamette Wells 1, 2, and 3) indicate that the stream depletion created by pumping of the wellfield wells are 87 percent, 82 percent, and 91 percent, respectively, in 10 days of continuous pumping. These percentages significantly exceed the required minimum of 50 percent stream depletion within 10 days. The use of groundwater from each of the 3 wells (Willamette Wells 1, 2 and 3) would, therefore, affect the Willamette River similarly to the authorized point of diversion in Certificate 54268.

IV. Conclusion

The proposed changes to a portion of Certificate 54268 meets the requirements of OAR 690-380-2130. As discussed above, the criteria in OAR 690-380-5000 are met. The Willamette Wells 1, 2 and 3 appropriate water from a gravel unit that is hydraulically connected to the Willamette River. The proposed new wells are all located within 500 feet from the Willamette River. Although the wells are not located within 1000 feet downstream from the original point of diversion in Certificate 54268, the evidence provided in this report and its attachments demonstrates that the use of the groundwater at the new points of diversion would affect the Willamette River similarly to the authorized point of diversion. Accordingly, the proposed change would meet the criteria in OAR 690-380-2130(2).

References

GSI 2006. Cities of Independence and Monmouth – Collector Well Feasibility Study. GSI Memorandum. Prepared for Ed Butts, 4B Engineering & Consulting. October 20, 2006.

4B Engineering & Consulting. Cities of Independence and Monmouth – Willamette Wellfield Preliminary Data. Report. Prepared Cities of Monmouth and Independence. May 2011.

GSI WATER SOLUTIONS, Inc. PAGE 2 OF 2



SEP 1 4 2018

OWRD

TABLE 1 2008 7-Day Pumping Test Aquifer Property Estimate & Stream Depletion City of Independence

	TRANSMISSIVITY (T)					
	Transduce	er Dataset ¹	Summary Statement			
	gpd/ft	ft²/day	gpd/ft	ft²/day		
Well 1	3,900,000	520,000	530,000	71,000		
Well 2	8,200,000	1,090,000	620,000	83,000		
Well 3	1,200,000	160,000	37,000	4,900		

_	Stream	
	Depletion	
	% at 10 days	
	87%	ļ
	82%	
	91%	

Notes:

- 1 = no static water level data provided for the wells, and transducer data provided required some interpretation
- 2 = Summary statement found at bottom of manual water level data summary sheet
 Storativity value estimated to be 0.10 for all calculations due to proximity to the River
 - = T values used in stream depletion calculations (largest T values showed the smallest depletion)



ATTACHMENT A
Well Logs and Location Map





POLK 52513

STATE-OF OREGON

WATER SUPPLY WELL REPORT

(as required by ORS 537.765)

WELL LD. # L 68856 START CARD # 163044

Instructions for completing this report are on the last page of this form. (1) LAND OWNER Well Number	(9) LOCATION OF WELL by legal description:	
Name CITY OF INDEPENDENCE	County Latitude Longitude	
Address P. D. Box 7	M Township 85 N or S Range 4W E or W. W.	M.
City INDEPENDENCE State OR . Zip 9 73 51	W Section 33 NW 1/4 NE 1/4	
(2) TYPE OF WORK	Tax Lot 201 Lot Block Subdivision	
→ New Well □ Deepening □ Alteration (repair/recondition) □ Abandonment	Street Address of Well (or nearest address) 5. Cowallis R	1. ;
(3) DRILL METHOD:	Independence or.	
□ Rotary Air □ Rotary Mud □ Cable □ Auger	(10) STATIC WATER LEVEL:	-0/7
Other	ft. below land surface.	-11
(4) PROPOSED USE:	Artesian pressurelb. per square inch	- L
□ Domestic □ Community □ Industrial □ Irrigation □ Thermal □ Injection □ Livestock □ Other □ Dunicipal □	(11) WATER BEARING ZONES:	1 4 0
☐ Thermal ☐ Injection ☐ Livestock ☐ Other ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐	Depth at which water was first found	142
Special Construction approval Yes No Depth of Completed Well L.ft.	From To Estimated Flow Rite	CWI
Explosives used Yes No TypeAmount		
HOLE SEAL	4 56' SOUGHIN VI	
Diameter From To Cament From To Sacks or pounds		
12" O' GL CEMENT - 1 35 35 SACKE		
BENTONITE O' -1' I SACK		
	(IN WELL LOC	
How was seal placed: Method A B D D E	(12) WELL LOG: Ground Elevation	
POther Dry bentonite poused	Ologid activities	
Backfill placed from 38 ft. to 35 ft. Material 4"Chushark.	Material From To	SWL
iravel placed from 61 ft. to 38 ft. Size of gravel 18 1/4 1/4	+ Gravel, sava, soil	
6) CASING/LINER:	Fill 0 17.5	
Diameter From To Gauge Steel Plastic Welded Threaded		
Casing: 8" +3' 41' .250"	- Dry Brown alay 17.5 30'	
8" 56' 61' ·250" 2	, , ,	
	+ Brown clay w/	
	Gravel Silt 30 34	
Jiner:		
Drive Shoe used Inside Outside None	Howar sound 11.B. 34' 57'	2.11
Final location of shoc(s)	brown sand W.B. 34. 57	4
7) PERFORATIONS/SCREENS:	- Blue - avay clay 57' 61'	
Perforations Method		\neg
Type V-SLOT Material 304 S. Stool	RECEIVED'	
Slot Tele/pipe From To size Number Diameter size Casing Liner		
41' 56' 190 8" PS	SEP 1 7 2007	
	WATER RESOURCES DEPT	
	SALEM, OREGON	
8) WELL TESTS: Minimum testing time is 1 hour	Date started DECEMBERIL '06 Completed January 20,	07
Flowing	(unbonded) Water Well Constructor Certification:	
☐ Pump ☐ Bailer ☐ Air ☐ Artesian Yield gal/min ☐ Drawdown ☐ Drill stem at Time	I certify that the work I performed on the construction, alteration, or aband	
	ment of this well is in compliance with Oregon water supply well construction standards. Materials used and information reported above are true to the best o	
500 GPM 5 - 2 14" 71 hr.3	knowledge and belief.	
	Signed WWC Number	
Si		
Depth Artesian Flow Found	(bonded) Water Well Constructor Certification: l accept responsibility for the construction, alteration, or abandonment wo	ek
Was a water analysis done? Yes By whom	performed on this well during the construction dates reported above. All work	
Did any strata contain water not suitable for intende RECEIVED ttle	performed during this time is in compliance with Oregon water supply well	ief_
	Maria Maria AWWC Number (2)	72
Pepth of strata: FEB 2 1 2007	Sign&d ////////////////////////////////////	3-07

POLK 5286

STATE OF OREGON

WATER WELL REPORT (as required by ORS 537.765)

L 93614 (START CARD) #____1968Z5

(1) OWNER:		Well Number	#2	(9) LOCATION O	F WELL by legal	description:		
Name	ity of	Indesend	ence		Latitude		e	
Address	POT BOX	A .		Township 85	N or S. Range		_E or W	. WM.
City Lyd	esendenc	e State Or	zip 735	Section33	NW_	311 1	1/4	
(2) TYPE OF					LotBlock		vision	77
New Well		Recondition	Abandon		ell (or nearest address)	2. COM	allis	PG1
(3) DRILL M					esendence	+ Nr	57	1/ 00
	☐ Rotary Mud	Cable		(10) STATIC WAT			8/	200
Other	D LICE.				elow land surface.	E CDa	=IV	FI
(4) PROPOSE		Industrial Irri	igation b	(11) WATER BEA		uaic them.		
	Injection	Lother Mun	3	(II) WATER BEAU	14110 2011201	. ∢ ED	1 / 20	110
	LE CONSTRU	TO GIO.		Depth at which water w	as first found	19 ⁶ EP	1 4 20	110
Special Construction	approval Yes D	No Depth of Com	pleted Well 53 ft.			014	/	
Explosives used	Yes No Ty	уре	Amount	From	To	Estimated Flo	Rate	SWL
HOLE		SEAL	Amount	23 '	46	45+64	И	23.5
Diameter From	To Materia		sacks or pounds					-
12" 0	53 Camo	MT 61 17	4USOCKS					\vdash
	Senton		LS DOCKS	40. 11-11-1				
	Come		1 15 Sacks	(12) WELL LOG:	Ground elevat	ion		
	Beutov		1 3 Sacks		Ground eleval	IVII		
	ved: Method A		<i>u</i>		Material	From	То	SWL
	m 27 ft to 2		winus .	Fill Grave	1 - Pit Run	D'	6'	
	29 ft. to 5		1 78 Hound		du - Brown	6'	15'	
(6) CASING/L				- Sand, Sil	t with Cla	4 +		
Diameter	From & To t	Gauge Steel Plastic	Welded Threaded	Grave		1 15	17	
Casing: 84	13.5 29	250		- Grave, s	mall-yea	1.0	1171	25 2
- 10 A	110 1001			W pron	in Saya-1	005e- 1-1	76	23.5
_8	455 53'			Graved ,	hant w sam	4 96	22	25.5
			8 8	Clay - RI	We -	52	51	\vdash
Liner:	1		HH	Back Cil	lad 111/4" a	Inus	_	
Final location of sh	hos(s)	one		Grow 5	7 1053	, in No		
	TIONS/SCRE				1 10 11			
Perforation								
Screens	Type _\	Slot Mater	rial 30455_			RECEIVE	D	
	Slot	Tele/pipe					-	-
From To	l size Number	Diameter size	Casing Liner			SEP 1 8 200	8	\vdash
29 43.5	100	8" P.S.					-	\vdash
						RESOURCE		\vdash
						ALEM, WHEGO	N-	
(9) WELL TE	CTC. Minimum	tosting time is 1	house					
(8) WELL IE	919: Mimmun	testing time is 1	Flowing	Date started 06-6	9-08 Cor	npleted _07	-16-	08
☐ Pump	Bailer	☐ Air	Artesian	(unbonded) Water Wei				
Yield gal/min	Drawdown	Drill stem at	Time	I certify that the we ment of this well is in co	ork I performed on the			
	O!	21		used and information re				
45 GPM	0.		1 hr.			WWG	Mushan	
				Signed		Date _	Aminoci _	
				1	anetwoter Continue			
Temperature of Wa	ter 540	Depth Artesian Flow	Found	I accept responsibili	ty for the construction,		ndonment	work per-
•	sis done? Yes	•		formed on this well duri	ng the construction date	s reported above.	All work	performed
Did any strata cont	tain water not suital	ble for intended use?	☐ Too little	during this time is in con is true to the best of m	npliance with Oregon w knowledge and helief			172
		Colored Other _			6/11/19/11	WWC	Number_	250
Depth of strata:				Signed // VIV	1 / Twam	Date 6	1-1	1-08

POLK 52953

STATE OF OREGON

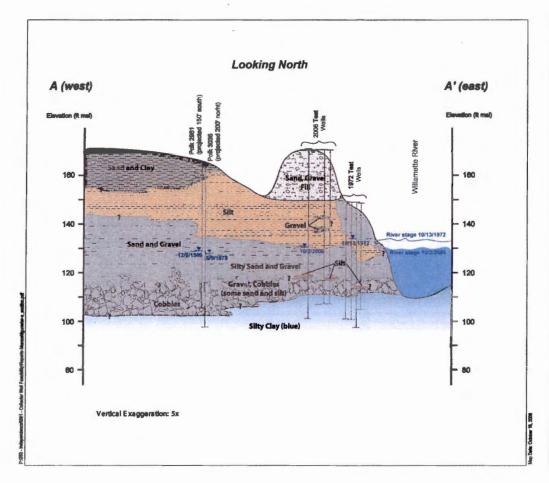
WATER WELL REPORT (as required by ORS \$37.765)

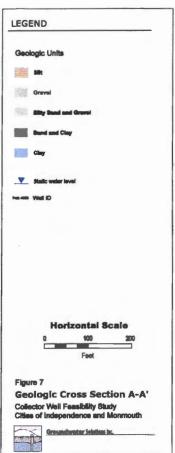
L93615 196828 (START CARD) #_

(1) OWNER: Well Number #3B	(9) LOCATION OF WELL by legal description:
Name CITY OF IN DEPENDENCE-MON	County Po L K Latitude Longitude
Address Rio-Box	Township 85 N or S. Range 4 W E or W. WM.
City INDEPENDENCE State OR Zip 97351	Section 33 NW 4 NE 4
(2) TYPE OF WORK:	Tax Lot 201 Lot Block Subdivision
New Well Deepen Recondition Abandon	Street Address of Well (or pearest address) WELL # 3 B
(3) DRILL METHOD:	S. Cowallis Rai IND. OR 97351
Rotary Air Rotary Mud Cable	(10) STATIC WATER LEVEL:
Other	28 ft. below land surface. Declare 9874-08
(4) PROPOSED USE:	Artesian pressure lb. per square lneh. Date
☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation	(11) WATER BEARING ZONES:
☐ Thermal ☐ Injection ☐ Other ☐ MUNICIPAL	76'SEP 14 2018
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first found
Special Construction approval Yes No Depth of Completed Well ft.	-OMAIDD -
Explosives used Yes No Type Amount	From To Estimated Flow Rate SWL
HOLE SEAL Amount	31 49 45+GFM LS.
Diameter From To Material From To sacks or pounds	
12" 0' 56 CEMENT 0' 29' 48 SKS	
	(12) WELL LOG:
	Ground elevation
How was seal placed: Method □ A □ B ★C □ D □ E	Material From To SWL
Backfill placed from 3 ft. to 29 ft. Material 14 MAINUS	Material From To SWL
Backfill placed from 31 ft. to 21 ft. Material 7 ft. Material 3/4 / Pourse	- CLAY - SILTYBROWN 12'18'
Gravel placed from 56 ft. to 31 ft. Size of gravel 3/4 POUND	CLAN - BROWN 12'25'
(6) CASING/LINER:	CIVI - CONSCI V 22/27!
Casing: Su + Z 31 LZSO Plastic Welded Threaded	1 CONFILY CLAY 27'31'
Casing: 8" 49' 56' 250	- GRAVEL, SMALL - LARGE
8 49 36 17 30 0 0 0	
	W/ SOME BROWN SAND 31'50'28'
Liner:	- BLUE CLAY 50' 56'
Liner:	DIVE CIAL DO 16
Final location of shoe(s)	
Final location of shoe(s) NONE (7) PERFORATIONS/SCREENS:	
Perforations Method	
7 3(= 6 0.15=	
	DECENIED.
Slot Tele/pipe From To , size Number Diameter size Casing Liner	OVER THE COUNTERECEIVED
31' 49' 100 87 PS	OVER THE COUNTRY
	JUN 0B 2009
	WATER RESOURCES DEPT
	SALEM, OREGON
(8) WELL TESTS: Minimum testing time is 1 hour	Date started 07-24-08 Completed 08-70-08
Pump X Bailer Air Flowing	(unbonded) Water Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandon-
Yield gal/min Drawdown Drill stem at Time	ment of this well is in compliance with Oregon well construction standards. Materials
45 tolm () 1 hr.	used and information reported above are true to my best knowledge and belief.
	WWC Number
	Signed Date
Temperature of Water 540 Depth Artesian Flow Found	(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work per-
Was a water analysis done? Yes By whom	formed on this well during the construction dates reported above. All work performed
Did any strata contain water not suitable for intended use? Too little	during this time is in compliance with Oregon well construction standards. This report
Salty Muddy Odor Colored Other	is true to the best of my knowledge and belief. WWC Number 633
Depth of strata:	Signed Mull Wallow Date 09-01-0 B
	ND CODY CONSTRUCTOR THIRD CODY CUSTOMER 9900C 10/01



ATTACHMENT B
2006 Geologic Cross Section - City Well 1 Area







SEP 1 4 2018

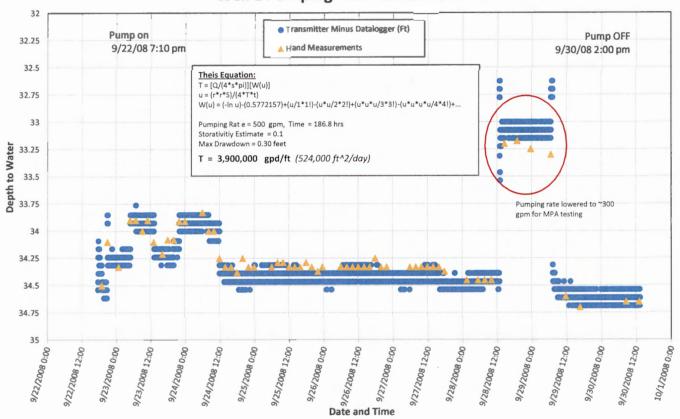




ATTACHMENT C

2008 Pump Test Parameter Evaluation

Well 1 Pumping Test - Water Level Data

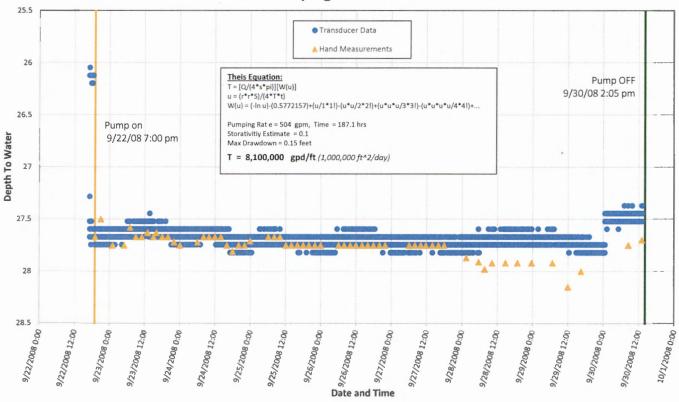


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SEP 1 4 2018

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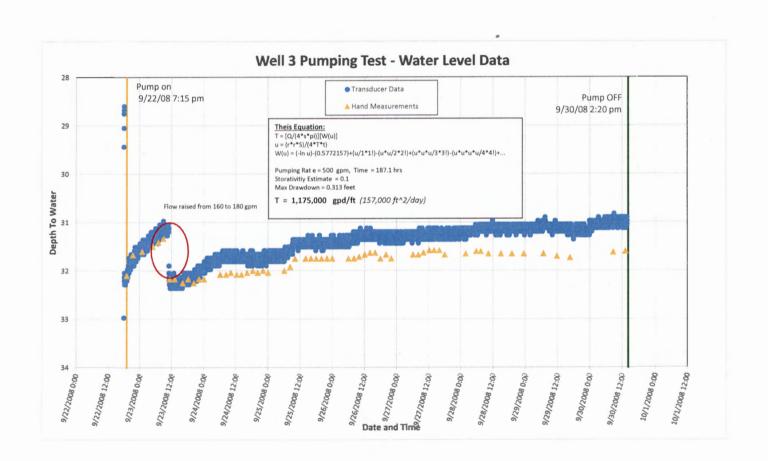
Well 2 Pumping Test - Water Level Data





SEP 1 4 2018







SEP 1 4 2018



WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of		
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)			
Well Name/No.: #1 (Se	outh Well)	Date(s) of Test: Sept 22, 2008 to Sept 30, 2008			
Well Diameter:	Depth:	Static Level:	Screen/Perf at:		
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 41'		
SWL After Test:	Drilled By:	Test Started: 1910 Hrs.	Test Stopped: 1400 Hrs.		
Tested By (Firm):	Name:	Max. GPM: 500 @ 34.5' PWL After 188 Hrs.			

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
500	34.5'	9/22/08 7:10 pm		500	34.33'	8:01 am	
500	34.1'	9:10 pm		500	34.33'	10:02 am	
525	34.33'	9/23/08 1:00 am		500	34.33'	12:01 pm	
500	33.9'	5:00 am		500	34.33'	2:02 pm	
490	33.9'	7:00 am		500	34.33'	4:00 pm	
500	34'	9:15 am		500	34.25'	5:58 pm	
500	33.9'	11:05 am		500	34.33'	8:01 pm	
475	34.1'	1:15 pm		500	34.33'	9:56 pm	
490	34.21'	4:13 pm		500	34.33'	9/27/08 6:06 am	
500	34.08'	6:07 pm		500	34.33'	8:03 am	
525	34.08'	8:11 pm		500	34.33'	10:01 am	
525	33.91'	10:06 pm		500	34.33'	12:02 pm	
490	33.91'	9/24/08 12:07 am		500	34.33'	1:59 pm	
490	33.83'	6:09 am		500	34.33'	4:00 pm	
475	34.00'	8:17 am		500	34.37'	5:58 pm	
500	34.00'	10:06 am		500	34.45'	9/28/08 1:40 am	
475	34.25'	12:05 pm		500	34.45'	5:30 am	
500	34.33'	2:05 pm		500	34.45'	7:50 am	
500	34.33'	4:08 pm		500	34.45'	10:10 am	
500	34.38'	6:07 pm		300+	33.2'	2:40 pm	MPA started at 1:00 pm
500	34.25'	8:07 pm		300+	33.175'	7:00 pm	
500	34.33'	10:06 pm		300	33.25'	11:45 pm	
500	34.33'	9/25/08 12:01 am		300	33.3'	9/29/08 6:40 am	
520	34.33'	6:07 am		500	34.6'	11:50 am	
500	34.29'	8:11 am		500	34.7'	4:50 pm	
500	34.29'	10:05 am		500	34.65'	9/30/08 8:40 am	
500	34.33'	12:07 pm		500	34.65'	1:10 pm	
500	34.33'	2:03 pm					
500	34.33'	4:00 pm	<u> </u>			R	ECEIVED
500	34.29'	6:02 pm				H U.	bessel V hours be
500	34.33'	8:00 pm					050 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
500	34.37'	10:01 pm					SEP 1 4 2018
500	34.33'	11:39 pm	10-0-0				0111
500	34.33'	9/26/08 6:04 am					OWRD

Comments:	Summary Capacity: 500 GPM	<u>@ 34.7' PWL (2' drawdown) (≈250 GPM/</u>	ft.)
Ву:	Firm:	Approved:	Firm:

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of			
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)				
Well Name/No.: #2		Date(s) of Test: Sept 22, 2008 to Sept 30, 2008				
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:			
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 43.085'			
SWL After Test:	Drilled By:	Test Started: 1900 Hrs.	Test Stopped: 1405 Hrs.			
Tested By (Firm):	Name:	Max. GPM: @ PW	L After Hrs.			

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
510	27.67'	9/22/08 7:00 pm		510	27.75'	9/26/08 6:00 am	
500	27.5'	9:00 pm		500	27.75'	7:54 am	
500	27.75'	9/23/08 1:00 am		500	27.75'	9:57 am	
500	27.75'	5:00 am		500	27.75'	11:56 am	
500	27.58'	7:00 am		500	27.75'	1:59 pm	
510	27.67'	9:00 am		510	27.75'	3:56 pm	
500	27.67'	11:00 am		510	27.75'	5:51 pm	
500	27.63'	1:00 pm		500	27.75'	7:55 pm	
500	27.67'	3:00 pm		510	27.75'	9:51 pm	
500	27.63'	4:01 pm		510	27.75'	9/27/08 6:01 am	
510	27.67'	6:01 pm		500	27.75'	7:56 am	
510	27.67'	8:00 pm		500	27.75'	9:56 am	
500	27.72'	9:59 pm		510	27.75'	11:38 am	
510	27.75'	9/24/08 12:01 am		510	27.75'	1:54 pm	
500	27.72'	6:01 am		510	27.75'	3:56 pm	
510	27.67'	8:06 am		510	27.75'	5:53 pm	
510	27.67'	9:59 am		500	27.87'	9/28/08 1:30 am	
500	27.67'	11:59 am		500	27.91'	5:40 am	
500	27.67'	1:58 pm		500	27.98'	7:40 am	
510	27.75'	4:00 pm		500	27.92'	10:15 am	
510	27.81'	5:57 pm		510	27.92'	2:45 pm	
500	27.75'	8:03 pm		510	27.92'	6:50 pm	
510	27.75'	10:01 pm		510	27.92'	11:40 pm	
500	27.71'	11:55 pm		510	27.92'	9/29/08 6:45 am	
510	27.67'	9/25/08 6:02 am		500	28.15'	12:00 pm	
500	27.67'	8:04 am		500	28.0'	4:30 pm	
510	27.67'	10:01 am		480	27.75'	9/30/08 8:30 am	
510	27.75'	12:02 pm		480	27.70'	1:05 pm	
510	27.75'	1:58 pm					TOEN/EF
500	27.75'	3:58 pm				n	ECEIVED
500	27.75'	5:56 pm					
500	27.75'	7:55 pm					SEP 1 4 2018
500	27.75'	9:57 pm					OE1 1 1 2010
510	27.75'	11:55 pm					OWRD

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of			
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)				
Well Name/No.: #3 (N	orth Well)	Date(s) of Test: Sept 22, 2008 to Sept 30, 2008				
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:			
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 40.83"			
SWL After Test:	Drilled By:	Test Started: 1915 Hrs.	Test Stopped: 1420 Hrs.			
Tested By (Firm):	Name:	Max. GPM: @ PWL A	After Hrs.			

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
150	32.1'	9/22/08 7:15 pm		160	31.71'	10:08 am	
150	31.67'	9:30 pm		160	31.67'	12:12 pm	
160	31.6'	9/23/08 1:00 am		160	31.63'	2:12 pm	
160	31.5'	5:00 am		160	31.63'	4:05 pm	
160	31.41'	7:00 am		160	31.75'	6:04 pm	
160	31.33'	9:00 am		160	31.67'	8:10 pm	
180	32.17'	11:15 am	Raise flow	160	31.75'	10:03 pm	
170	32.17'	1:10 pm		160	31.67'	9/27/08 6:13 am	
170	32.25'	4:07 pm		160	31.67'	8:11 am	
170	32.17'	6:12 pm		160	31.63'	10:05 am	
170	32.25'	8:20 pm		160	31.58'	12:15 pm	
170	32.17'	10:15 pm		160	31.58'	2:04 pm	
170	32.17'	9/24/08 12:14 am		160	31.58'	4:04 pm	
170	32.08'	6:15 am		160	31.67'	6:04 pm	
170	32.08'	8:27 am		175	31.65'	9/28/08 1:50 am	-
170	32.04'	10:11 am		175	31.6'	5:50 am	
170	32.08'	12:22 pm		175	31.6'	7:30 am	
170	32.08'	2:10 pm		175	31.65'	10:20 am	
170	32.04'	4:18 pm		175	31.65'	3:00 pm	
170	32.00'	6:26 pm		175	31.65'	7:05 pm	
165	32.04'	8:15 pm		175	31.65'	11:35 pm	
170	32.00'	10:14 pm		175	31.65'	9/29/08 6:50 am	
170	32.04'	9/25/08 12:09 am		175	31.7'	11:55 am	
170	32.00'	6:15 am		175	31.73'	4:45 pm	
170	31.92'	8:20 am		175	31.62'	9/30/08 8:50 am	
160	31.75'	10:12 am		175	31.6'	1:20 pm	
160	31.75'	2:09 pm					
160	31.75'	4:08 pm					
160	31.75'	6:08 pm				DE	CEIVED
160	31.75'	8:07 pm					PLIALD
170	31.75'	10:09 pm					
160	31.75'	9/26/08 12:05 am				(SEP 1 4 2018
160	31.75'	6:09 am					WRD
160	31.75'	8:11 am				-	VAUD

Comments:	Summary Capacity: 175 GPM (© 31.7' PWL (8.6' drawdown) (≈20 GPM/ft.)	
By:	Firm:	Approved:	Firm:

	rom Specific Capac	ity using the Theis	Equation		WELL 1			Data Entry		Enter Data Below (yellow boxes only)	
dapted from Vo	orhis (1979)							Well Log ID or Comme	nt for Records	Average Specific Capacity	
heis Equation:	T = [Q/(4*s*pi)][W(u)]						I ven Log ID of Comme	in for Records		
	$u = (r^{+}r^{-}S)/(4^{-}T^{-}t)$	772157)+(w/1*1!)-(u ⁴	h .P3#3(\4/+-hh-1/3#3	1\(\(\dagger_1\dagger_2\dagger_4\dagger_4\)\\				Pumping Rate (gpm) =	Q =	500.00	(gpm)
	e.u)-(u ni-) = (u)•v	//215/)+(W1-1!)-(u	w2 2:)+(u u u/3-3	:)-(u u u u 4 4:)+				Drawdown (feet) = s =		0.30	(feet)
	T = transmissivity	L*L/T)						Time (0) - 4		186,8000	(2
	s = drawdown (L) S = storage coeffic	ient (dimensionless))		r = redial distance t = time (T)	(L)		Time (hours) = t =		186.8000	(hours)
	pi = 3.141592654				u = dimensionless			Storage Coefficient = 3	3 =	0.100000	(dimensionles
ote: Transmiss	ivity is derived usi	ng an Iterative prod	cess		W(u) = well functi	DIT		Well Diameter (Inches)	= d =	8.0000	(Inches)
		se a known or assur				the first Theis equation its	ration			Press F9 to Calculate	
		of the previous item					ration				
		on iterations = 25 iter r if difference in calc		ity for the last 2 item	etione is < 0.0001			Calculated Results		Calculated Results	
		r if u in the last iterat		ny nor une man 2 mars	E + 0.0001			Transmissivity (ft2/day	r) = T =	524,164.64	(ft2/day)
ote: Well efficie	ency is not include	d in the calculation	ns					Transmissivity (gpd/ft)	= T =	3,921,024.09	(gpd/ft)
eferences:								Transmissivity Differen	nce =	0.0000E+00	(ft2/day)
ererenoes.						d duration of discharge of	a well using	(last 2 iterations)		okay to use T if diff < 0.0001	()/
	ground water st	orage, American Ge	sophysical Union T	ransactions, 16 ann	rual meeting, vol. 1	8, pg. 519-524.		v=		6.8087E-10	
	Vorhis, R.C. 1979 Dec. 1979, pg.		n pumped well data	. Well Log, Nations	al Water Well Asso	ciation newsletter, vol. 10), no. 11,	(last iteration)		okay to use T if u <7.1	
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
S	Coefficient	Q Q	Q Q	t	r = d/2	-	**(u)	T	difference from	Comments	Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
Note:	yellow grid areas	are where values a	re calculated			Note: W(u) calculation	on valld when u < 7.1				
				-	-	7.0000	1.1545E-04			W(u) calculation test	-
						7,000	1.10.02.00	1			
0.30	0.10000	500.00	1.11	7.78	0.33		1	320,833.31		T = Q/s	
0.30	0.10000	500.00	1.11	7.78	0.33	1.1124E-09	20.0396	511,631.83	1.9080E+05	T = Theis Equation	1.00
0.30	0.10000	500.00	1.11	7.78	0.33	6.9755E-10	20.5062	523,546.78	1.1915E+04	T = Theis Equation	2.00
0.30	0.10000	500.00	1.11	7.78	0.33	8.8167E-10	20.5293	524,134.53	5.8775E+02	T = Theis Equation	3.00
0.30	0.10000	500.00 500.00	1.11	7.78 7.78	0.33	6.8091E-10 6.8087E-10	20.5304 20.5304	524,183.18 524,164.57	2.8648E+01	T = Theis Equation	5.00
0.30	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	1.3953E+00 6.7965E-02	T = Theis Equation T = Theis Equation	6.00
0.30	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	3.3104E-03	T = Theis Equation	7.00
0.30	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	1.6125E-04	T = Theis Equation	8.00
0.30	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	7.8541E-08	T ≈ Theis Equation	9.00
	0.10000	500.00	1.11	7.78	0.33	8.8087E-10	20.5304	524,164.64	3.8248E-07	T = Theis Equation	10.00
0.30			1.11	7.78	0.33	6.8097E-10	20.5304	524,164.64	1.8685E-08	T = Theis Equation	11.00
0.30	0.10000	500.00									
0.30	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,184.84	8.7311E-10	T = Theis Equation	12.00
0.30							20.5304 20.5304				
0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000	500.00 500.00 500.00	1.11 1.11 1.11	7.78 7.78 7.78	0.33 0.33 0.33	6.8067E-10 6.8067E-10 6.8067E-10	20.5304 20.5304	524,164.64	8.7311E-10 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00
0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.6087E-10	20.5304 20.5304 20.5304	524,164.64 524,164.64	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	12.00 13.00 14.00 15.00
0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.5304 20.5304 20.5304 20.5304	524,184.84 524,184.84 524,184.84 524,184.84 524,184.84	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00	1,11 1,11 1,11 1,11 1,11 1,11	7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.5304 20.5304 20.5304 20.5304 20.5304	524,184.84 524,184.84 524,184.84 524,184.84 524,184.84 524,184.84	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.5304 20.5304 20.5304 20.5304	524,184.84 524,184.84 524,184.84 524,184.84 524,184.84	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1,11 1,11 1,11 1,11 1,11 1,11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20.5304 20.5304 20.5304 20.5304 20.5304	524,184.84 524,184.84 524,184.84 524,184.84 524,184.84 524,184.84	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10	20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	524,184.84 524,184.84 524,184.84 524,184.84 524,184.84 524,184.84 524,184.84	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8067E-10 6.8067E-10 6.8067E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8087E-10 6.8067E-10 6.8067E-10 6.8067E-10	20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	524,184,64 524,194,64 524,194,64 524,194,64 524,194,64 524,184,64 524,184,64 524,184,64 524,184,64	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10	20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304 20.5304	524, 184, 64 524, 184, 64	8,7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10	20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	524, 184, 64 524, 184, 64	8.7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00 23.00
0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30 0.30	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10 6.8067E-10	20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304 20,5304	524, 184, 64 524, 184, 64	8,7311E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Theis Equation	12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00 22.00

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OWRD

	rom Specific Capac	city using the Their	Equation		WELL 1			Data Entry		Enter Data Below (yellow boxes only)	
Adapted from Vo								Well Log ID or Comme	nt for Records	Average Specific Capacity	
Theis Equation:	T = [Q/(4*s*pi)][W] u = (r*r*S)/(4*T*t)	[u)]						Pumping Rate (gpm) =	0=	500.00	(gpm)
1		772157)+(u/1*1?)-(u	*u/2*2!)+(u*u*u/3*3!)-(u*u*u*u/4*4!)+					-		
l .								Drawdown (feet) = s =		2.00	(feet)
	T = transmissivity s = drawdown (L)	(L*UT)			r = radial distance	(L)		Time (hours) = t =		186,8000	(hours)
	S = storage coeffic	dent (dimensionless)		t = time (T)						
	pi = 3.141592654				u = dimensionless W(u) = well functi			Storage Coefficient = \$	3 =	0.100000	(dimensionless)
Note: Transmiss	sivity is derived usi	ng an iterative pro-	cess		and a man interco	uri		Well Diameter (inches)	= d =	8,0000	(inches)
	The calculations u	se a known or assur	ned Storage Coefic							Press F9 to Calculate	
1		(Q/s) is used to first of the previous item				the first Theis equation ite fon	ration				
	Total Theis Equation	on iterations = 25 ite	rations			-		Calculated Results		Calculated Results	
l .		r if difference in calc		ity for the last 2 itera	ations is < 0.0001			Transmissivity (ft2/day	A = T =	70,966,93	(ft2/day)
	Can accept answe	r if u in the last itera	90⊓ B < 7.1					Transmissivity (Italian)	,-1-	10,000.00	
Note: Well efficie	ency is not include	d in the calculation	ns					Transmissivity (gpd/ft) = T =		530,869.53	(gpd/ft)
References:								Transmissivity Differen	nce =	0.0000E+00	(ft2/day)
Rejetelices.						d duration of discharge of	a well using	(last 2 iterations)		okay to use T if diff < 0.0001	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
i	ground water st	torage. American G	eophysical Union T	ransactions, 16 ann	ual meeting, vol. 1	6, pg. 519-524.		u=		5.0289E-09	
	Vorhis, R.C. 1979	. Transmissivity from	m pumped well data	. Well Log, Nationa	al Water Well Asso	ciation newsletter, vol. 10,	, no. 11,	(last iteration)		okay to use T If u <7.1	
	Dec. 1979, pg.										
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
\$	Coefficient	Q	Q	t	r = d/2			T	difference from		Equation
(feet)	8	(gal/min)	(ft3/sec)	(days)	(feet)		-	(ft2/day)	previous		Iteration
Note:	: vellow grid areas	are where values :	are calculated			Note: W(u) calculatio	on valld when u < 7.1				
						7.0000	1.1545E-04		-	W(u) calculation test	
2.00	0.10000	500.00	1.11	7.78	0.33			48,125.00		T = Q/s	
										7-7-1-5	4.00
2.00	0.10000	500.00	1.11	7.78	0.33	7.4159E-09 5,1386E-09	18.1424 18.5097	69,479.44 70,885.80	2.1354E+04 1.4064E+03	T = Theis Equation T = Theis Equation	1.00
2.00	0.10000	500.00 500.00	1.11	7.78 7.78	0.33	5.0347E-09	18.5297	70,962,55	7.8744E+01	T = Theis Equation	3.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0292E-09	18.5308	70,968,69	4.1439E+00	T = Theis Equation	4.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.92	2.2363E-01	T = Theis Equation	5.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	1.2068E-02	T = Theis Equation	6.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70.966.93	8.5124E-04	T = Theis Equation	7.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	3.5143E-05	T = Theis Equation	8.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	1.8965E-08	T = Theis Equation	9.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70.966.93	1.0234E-07	T = Theis Equation	10.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966,93	5.5152E-09	T = Theis Equation	11.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	3.0559E-10	T = Theis Equation	12.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,986.83	0.0000E+00	T = Theis Equation	13.00
2.00	0.10000	500,00	1.11	7.78	0.33	5.0289E-09	18.5308	70,986.83	0.0000E+00	T = Theis Equation	14.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	0.0000E+00	T = Theis Equation	15.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	0.0000E+00	T = Theis Equation	16.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	0.0000E+00	T = Theis Equation	17.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,968.93	0.0000E+00	T = Theis Equation	18.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18,5308	70,966.93	0.0000E+00	T = Theis Equation	19.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18,5308	70,966.93	0.0000E+00	T = Theis Equation	20.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	0.0000E+00	T = Theis Equation	21.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18.5308	70,966.93	0.0000E+00	T = Theis Equation	22.00
2.00	0,10000	500.00	1.11	7.78	0.33	5.0289E-09	18,5308	70,986.93	0.0000E+00	T = Theis Equation	23.00
2.00	0.10000	500.00	1.11	7.78	0.33	5.0289E-09	18,5308	70,968.83	0.0000E+00	T = Theis Equation	24.00
2.00	0.10000	500.00	1 11	7.78	0.33	5.02895-09	18 5308	70.966.93	0.0000E+00	T = Theis Equation	25.00



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	rom Specific Capac	ity using the Their	s Equation		WELL 2			Data Entry		Enter Data Below (yellow boxes only)	
Adapted from Vo	rhis (1979)							Well Log ID or Comme	nt for Records	Average Specific Capacity	
Theis Equation:	$T = [Q/(4^ns^npi)][W]$ $u = (r^nr^nS)/(4^nT^nt)$	u)]						Pumping Rate (gpm) =	0=	504.00	(gpm)
		772157)+(u/1*1!)-(u	*u/2*2!)+(u*u*u/3*3!	!)-(u*u*u*u/4*4!)+				Drawdown (feet) = s =	_	0.15	(feet)
	T = transmissivity	L*L/T)									
		ient (dimensionless)		r = radial distance t = time (T)	1-7		Time (hours) = t =		187.1000	(hours)
	pi = 3.141592654				u = dimensionless W(u) = well function		=	0.100000	(dimensionless)		
Note: Transmiss	ivity is derived usi The calculations u	ng an iterative pro se a known or assur		ient (S) provided by	the user			Well Diameter (Inches)	= d,=	8.0000 Press F9 to Calculate	(Inches)
	Specific Capacity (approximate the Tra	ansmissivity (T) use	d to calculate u in t	he first Theis equation iter	ation		-170		
	Total Theis Equation	on iterations = 25 ite r if difference in calc	rations			NII		Calculated Results		Calculated Results	
		rifu in the last itera		nty for the mast ∠ mer	ations is < 0.0001			Transmissivity (ft2/day) = T =	1,094,703.23	(ft2/day)
Note: Well efficie	ency is not include	d in the calculatio	ns					Transmissivity (gpd/ft)	= T =	8,188,949.39	(gpd/ft)
References:		eis, C.V. 1935. The relation between the lowering of the piezometric surface						Transmissivity Differen	ice =	0.0000E+00	(ft2/day)
		The relation between prage. American G					a well using	(last 2 iterations)		okay to use T if diff < 0.0001	
		•	. ,			niation newsletter, vol. 10,	no 11	u = (last iteration)		3.2549E-10 okay to use T If u <7.1	
	Dec. 1979, pg.		iii puiripiid well data	i. Yes Log, resoni	al TTALES TYPIL PLOADS	audott novembust, vol. 10,	110. 11,	(last los audit)		Oney to use I ii u 11.1	
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
5	Coefficient	Q	Q	t	r = d/2			T	difference from		Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
Note:	yellow grid areas	are where values a									
			are calculated			Note: W(u) calculation	valid when u < 7.1				
			are calculated							Mills) executation fact	
			are calculated			Note: W(u) calculation 7.0000	1.1545E-04			W(u) calculation test	
0.15	0,10000	504.00	1,12	7.80	0.33			846,799.96		W(u) calculation test T = Q/s	
		504,00	1.12			7.0000	1.1545E-04			T = Q/s	
0.15	0.10000	504,00 504.00	1.12	7.80	0.33	7.0000 5.5089E-10	1.1545E-04 20.7423	1,067,619.26	4.2082E+05	T = Q/s T = Theis Equation	1.00
0.15 0.15	0.10000 0.10000	504.00 504.00 504.00	1,12 1,12 1,12	7.80 7.80	0.33 0.33	7.0000 5.5089E-10 3.3375E-10	1.1545E-04 20.7423 21.2434	1,087,819.28 1,093,413.78	2.5795E+04	T = Q/s T = Theis Equation T = Theis Equation	2.00
0.15 0.15 0.15	0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12	7.80 7.80 7.80	0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10	1.1545E-04 20.7423 21.2434 21.2673	1,087,619.28 1,093,413.78 1,094,642.56	2.5795E+04 1.2288E+03	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation	2.00 3.00
0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2551E-10	1.1545E-04 20.7423 21.2434 21.2673 21.2684	1,067,619.26 1,093,413.78 1,094,642.56 1,094,700.38	2.5795E+04 1.2268E+03 5.7811E+01	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	2.00
0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2554E-10 3.25549E-10	1.1545E-04 20,7423 21,2434 21,2673 21,2684 21,2685	1,087,619,28 1,093,413,78 1,094,642,56 1,094,700,38 1,094,703,09	2.5795E+04 1.2288E+03 5.7811E+01 2.7182E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00
0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2551E-10	1.1545E-04 20.7423 21.2434 21.2673 21.2684	1,067,619.26 1,093,413.78 1,094,642.56 1,094,700.38	2.5795E+04 1.2268E+03 5.7811E+01	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	2.00 3.00 4.00 5.00
0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2549E-10 3.2549E-10	20.7423 21.2434 21.2673 21.2884 21.2885 21.2885	1,087,619.28 1,083,413,78 1,094,642.56 1,094,700.38 1,094,703.09 1,094,703.22	2.5785E+04 1.2268E+03 5.7811E+01 2.7182E+00 1.2781E-01	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2597E-10 3.25549E-10 3.2549E-10 3.2549E-10	20.7423 21.2434 21.2673 21.2684 21.2685 21.2685 21.2685	1,087,819.28 1,093,413.78 1,094,642.56 1,094,700.38 1,094,703.09 1,094,703.22 1,094,703.23	2.5785E+04 1.2268E+03 5.7811E+01 2.7182E+00 1.2781E-01 6.0091E-03	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	\$04.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5009E-10 3.3375E-10 3.2597E-10 3.2549E-10 3.2549E-10 3.2549E-10 3.2549E-10 3.2549E-10 3.2549E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685 21.2685 21.2665 21.2665 21.2665 21.2665 21.2665	1,087,619.28 1,083,413.78 1,094,642.56 1,094,703.39 1,094,703.22 1,094,703.23 1,094,703.23 1,094,703.23	2.5765E+04 1.2268E+03 5.7811E+01 2.7162E+00 1.2781E-01 6.0091E-03 2.6254E-04 1.3284E-05 6.2445E-07	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2557E-10 3.2551E-10 3.2548E-10 3.2548E-10 3.2548E-10 3.2548E-10 3.2548E-10 3.2548E-10	20,7423 21,2434 21,2673 21,2684 21,2685 21,2685 21,2685 21,2685 21,2685 21,2685 21,2685 21,2685 21,2685 21,2685	1,087,819.28 1,083,413.78 1,094,642.56 1,094,703.39 1,094,703.22 1,094,703.22 1,094,703.23 1,094,703.23 1,094,703.23 1,094,703.23 1,094,703.23	2.5795E+04 1.2288E+03 5.7811E+01 2.7182E+00 1.2781E-01 6.0091E-03 2.8254E-04 1.3284E-05 6.2445E-07 2.9569E-08	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00	1,12 1,12 1,12 1,12 1,12 1,12 1,12 1,12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5000E-10 3.3375E-10 3.2597E-10 3.2546E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685 21.2685 21.2665 21.2665 21.2665 21.2665 21.2665 21.2665 21.2665 21.2665 21.2665	1,087,818,28 1,083,413,78 1,094,842,56 1,094,703,38 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5765E+04 1.2288E+03 5.7811E+01 2.7182E+00 1.2781E-01 6.0091E-03 2.8254E-04 1.3294E-05 6.2445E-07 2.9569E-08 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5009E-10 3,3375E-10 3,2597E-10 3,2591E-10 3,2549E-10	1.1545E-04 20.7423 21.2434 21.2673 21.2684 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685	1,087,818,28 1,083,413,78 1,094,642,56 1,094,700,38 1,094,703,09 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5765E+04 1.2288E+03 5.7811E+01 2.7162E+00 1.2781E-01 6.0091E-03 2.8254E-04 1.3284E-05 6.2445E-07 2.9569E-08 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5000E-10 3,3375E-10 3,2587E-10 3,2587E-10 3,2548E-10	1.1845E-04 20.7423 21.2494 21.2694 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695	1,087,619,28 1,093,413,78 1,094,700,38 1,094,700,39 1,094,700,30 1,094,703,22 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5795E+004 1.2288E+03 5.7811E+01 2.7182E+00 1.7781E+01 6.0091E-03 2.8254E-05 6.2445E-07 2.8569E-08 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 10.00 11.00 12.00 13.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5099E-10 3,3375E-10 3,2597E-10 3,2594E-10 3,2549E-10	1.1545E-04 20.7423 21.2434 21.2674 21.2684 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685	1,087,819,28 1,083,413,78 1,094,642,56 1,094,703,08 1,094,703,02 1,094,703,22 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+00 1.7781E+01 6.0091E-03 2.8255E+04 1.3284E-05 0.4245E-07 2.8569E-08 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 9.00 9.00 11.00 12.00 13.00 14.00
0.15 0.15	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7,80 7,80 7,80 7,80 7,80 7,80 7,80 7,80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5000E-10 3,3379E-10 3,2597E-10 3,2597E-10 3,2549E-10	20,7423 21,2494 21,2694 21,2695	1,087,619,28 1,093,413,78 1,094,700,38 1,094,703,09 1,094,703,22 1,094,703,22 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5785E+04 1.2288E+03 5.7811E+01 2.718E+00 1.2781E+01 6.0091E+03 2.25254E-04 1.3294E-05 8.2445E-07 2.3559E-08 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 9.00 11.00 12.00 13.00 14.00 15.00
0.15 0.16 0.16 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2581E-10 3.2584E-10 3.2548E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685 21.2685	1,067,619,26 1,063,413,76 1,094,400,38 1,094,703,39 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+00 1.2781E+01 6.0091E-03 2.8254E-04 1.3284E-05 2.445E-07 2.8598E-08 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 7.00 9.00 11.00 11.00 12.00 13.00 14.00 15.00 16.00
0.15 0.15 0.15 0.15 0.16 0.16 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5000E-10 3,3379E-10 3,2597E-10 3,2597E-10 3,2549E-10	1.1848E-04 20.7423 21.2494 21.2694 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695 21.2695	1,087,619,28 1,083,413,78 1,094,700,38 1,094,703,09 1,094,703,22 1,094,703,22 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5785E+04 1.2288E+03 5.7811E+01 2.718E+00 1.2781E+01 6.0091E-03 2.8254E-04 1.3294E-05 8.2445E-07 2.3559E-08 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 9.00 11.00 12.00 13.00 14.00 15.00 17.00 17.00
0.15 0.15 0.16 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2581E-10 3.2584E-10 3.2548E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685	1,067,619,26 1,063,413,76 1,094,400,38 1,094,703,39 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+0 1.27781E-01 6.0091E-03 2.8254E-04 1.3284E-05 2.445E-07 2.8569E-08 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 5,5009E-10 3,3379E-10 3,259FE-10 3,259FE-10 3,2549E-10	1.1848E-04 20.7423 21.2494 21.2693 21.2695	1,087,619,28 1,083,413,78 1,094,700,38 1,094,703,09 1,094,703,22 1,094,703,22 1,094,703,22 1,094,703,22 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23 1,094,703,23	2.5785E+04 1.2288E+03 5.7811E+01 2.718E+00 1.2781E+01 6.0091E-03 2.8254E+04 1.3294E+05 6.2445E+07 2.8598E+08 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 17.00 16.00 17.00 18.00 19.00
0.15 0.15 0.16 0.16 0.16 0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7,80 7,80 7,80 7,80 7,80 7,80 7,80 7,80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2581E-10 3.2548E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685	1,067,619,28 1,063,413,78 1,094,470,38 1,094,703,39 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+03 1.7761E-01 6.0091E-03 2.82254E-04 1.3224E-05 2.445E-07 2.8589E-08 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.34 0.35	7,0000 5,5009E-10 3,337%E-10 3,2587E-10 3,2581E-10 3,2549E-10	1.1848E-04 20.7423 21.2434 21.26673 21.2684 21.2685 21.2685 21.2685 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686 21.2686	1,087,619,28 1,083,413,78 1,094,700,38 1,094,703,30 1,094,703,22 1,094,703,22 1,094,703,22 1,094,703,23	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+00 1.2781E-01 6.0091E-03 2.8254E-04 1.3284E-05 6.2445E-07 2.8558E-08 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 17.00 18.00 17.00 18.00 19.00 20.00 21.00 22.00
0.15 0.15 0.15 0.15 0.15 0.15 0.15 0.15	0.10000 0.10000	504.00 504.00	1.12 1.12 1.12 1.12 1.12 1.12 1.12 1.12	7,80 7,80 7,80 7,80 7,80 7,80 7,80 7,80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 5.5089E-10 3.3375E-10 3.2587E-10 3.2581E-10 3.2548E-10	1.1848E-04 20.7423 21.2434 21.2673 21.2685	1,067,619,28 1,063,413,78 1,094,470,38 1,094,703,39 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29 1,094,703,29	2.5785E+04 1.2288E+03 5.7811E+01 2.7182E+03 1.7761E-01 6.0091E-03 2.82254E-04 1.3224E-05 2.445E-07 2.8589E-08 0.0000E+00	T = Q/s T = Theis Equation	2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00

SEP 1 4 2018

OWRD

Transmissivity fr	om Specific Capac	city using the Theis	Equation		WELL 2			Date Entry		Enter Data Below (yellow boxes only)	
Adapted from Vo	rhis (1979)							Well Log ID or Comme	nt for Records	Average Specific Capacity	
Theis Equation:	T = [Q/(4*s*pi)][W	(u)]						Pumping Rate (gpm) =	0=	510.00	(gpm)
	$u = (r^*r^*S)/(4^*T^*t)$ $W(u) = (-\ln u)-(0.5)$	772157)+(u/1*1!)-(u	*u/2*2!)+(u*u*u/3*3!)-(u*u*u*u/4*4!)+					4-		
	T = transmissivity	(1.21 / 17)						Drawdown (feet) = s =		1.75	(feet)
1	s = drawdown (L)				r = radial distance	(L)		Time (hours) = t =		187.1000	(hours)
	S = storage coeffice pi = 3.141592654	cient (dimensionless)		t = time (T) u = dimensionless W(u) = well functi			Storage Coefficient = S	3 m	0.100000	(dimensionless)
Note: Transmiss	ivity is derived usi					ori		Well Diameter (inches)	= d =	8.0000	(Inches)
		se a known or assur				the first Theis equation ite	ration			Press F9 to Calculate	
	The Transmissivity	of the previous iten	ation is used to calc							Calculated Results	
1		on iterations = 25 ite or if difference in calc		ity for the last 2 itera	tions is < 0.0001			Calculated Results		Calculated Results	
		r if u in the last itera		,				Transmissivity (ft2/day) = T =	83,458.13	(ft2/day)
Note: Well efficie	ency is not include	d in the calculation	ns					Transmissivity (gpd/ft)	= T =	624,310.19	(gpd/ft)
References:								Transmissivity Differen	nce =	0.0000E+00	(ft2/day)
		The relation between torage. American G				d duration of discharge of	a well using	(last 2 iterations)		okay to use T if diff < 0.0001	
	-							u=		4.2694E-09	
	Vorhis, R.C. 1979 Dec. 1979, pg.		m pumped well data	, Well Log, Nationa	Water Well Asso	ciation newsletter, vol. 10	l, no. 11,	(last iteration)		okay to use T if u <7.1	
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	l u	W(u)	Transmissivity	Transmissivity	Comments	Theis
S	Coefficient	Q	Q	t	r = d/2		11,-7	T	difference from		Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
Note:	yellow grid areas	are where values	are calculated			Note: W(u) calculation	on valid when u < 7.1		 		
	7									Miles coloulation test	
				-		7.0000	1.1545E-04			W(u) calculation test	
1.75	0.10000	510.00	1.14	7.80	0.33		I	56,100.00		T = Q/s	
1.75	0.10000	510.00	1.14	7.80	0.33	6,3514E-09	18.2974	81,684.87	2.5585E+04	T = Theis Equation	1.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.3621E-09	18.6731	83,362.25	1.6774E+03	T = Theis Equation	2.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2743E-09	18.6934	83,453.00	9.0745E+01	T = Theis Equation	3.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2697E-09	18.6945	83,457.85	4.8570E+00	T ≈ Theis Equation	4.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.11	2.5982E-01	T = Theis Equation	5.00 6.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	1.3898E-02	T = Theis Equation T = Theis Equation	7.00
1.75	0.10000	510,00	1.14	7.80	0.33	4.2694E-09	18.6946 18.6946	83,458.13 83,458.13	7.4343E-04 3.9767E-05	T = Theis Equation	8.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2894E-09 4.2894E-09	18.6946	83,458.13	2.1272E-08	T = Theis Equation	9.00
1.75	0.10000	510.00 510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458,13	1.1381E-07	T = Theis Equation	10.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83.458.13	6.0536E-09	T = Theis Equation	11.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2894E-09	18.6946	83,458.13	3.4925E-10	T = Theis Equation	12.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83.458.13	0.0000E+00	T = Theis Equation	13.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	14.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18,6946	83,456.13	0.0000E+00	T = Theis Equation	15.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	16.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	17.00
1.75	0.10000	510.00	1.14	7,80	0.33	4,2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	18.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6948	83,458.13	0.0000E+00	T = Theis Equation	19.00
1.75	0.10000	510.00	1.14	7,80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	20.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	21.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	22.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	23.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	24.00

SEP 1 4 2018

OWRD

Adapted from Vor	om specific Capai	ity using the Thei	s Equation		WELL 3			Data Entry		Enter Data Below	
	rhis (1979)									(yellow boxes only)	
	T = [Q/(4*s*pi)][W	698						Well Log ID or Comme	nt for Records	Average Specific Capacity	
	$u=(r^{\bullet}r^{\bullet}S)/(4^{\bullet}T^{\bullet}t)$							Pumping Rate (gpm) =	Q =	166.00	(gpm)
	$W(u) = (-\ln u)-(0.5)$	772157)+(w1*1!)-(u	^u/2*2!)+(u^u^u/3*3!)-(u*u*u*u/4*4!)+				Drawdown (feet) = s =		0.31	(feet)
	T = transmissivity	(L*L/T)									
	s = drawdown (L) S = storage coeffic	cient (dimensionless)		r = radial distance t = time (T)	(L)		Time (hours) = t =		187.1000	(hours)
	pi = 3.141592654		,		u = dimensionless			Storage Coefficient = 5	3 =	0.100000	(dimensionle
ote: Transmissi	ivity is derived usi	ing an Iterative pro-	cess		W(u) = well functi	on		Well Diameter (inches)	= d =	8,0000	(Inches)
	The calculations u	se a known or assur	med Storage Coefici							Press F9 to Calculate	(
		(Q/s) is used to first of the previous item				he first Theis equation its ion	ration				
	Total Theis Equation	on iterations = 25 ite or if difference in calc	rations					Calculated Results		Calculated Results	
		r if u in the last itera		ny nor une mast 2 fters	BUUTIS IS NO. U.UUUT			Transmissivity (ft2/day) = T =	157,014.36	(ft2/day)
ote: Well efficie	ncy is not include	d in the calculation	ns					Transmissivity (gpd/ft)	-T-	1,174,549,08	(gpd/ft)
	,							,			
eferences:	Theis, C.V. 1935.	The relation between	on the lowering of th	e piezometric surfa	ce and the rate and	d duration of discharge of	a well using	Transmissivity Differer (last 2 iterations)	ice =	0.0000E+00 okay to use T if diff < 0.0001	(ft2/day)
		torage. American G									
	Vorhis, R.C. 1979	. Transmissivity from	m pumped well data	. Well Log, Nationa	al Water Well Asso	ciation newsletter, vol. 10	no. 11,	u = (last iteration)		2.2693E-09 okay to use T If u <7.1	
	Dec. 1979, pg.	50-52.									
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
s (feet)	Coefficient	Q (gal/min)	Q (ft3/sec)	t (days)	r = d/2 (feet)			(ft2/day)	difference from previous		Equation
		(9	(micro)	()-/	(1001)	1			presions		
	vollow arid areas					The second secon					110.14.0011
Note:	yellow gliu aleas	are where values a	are calculated			Note: W(u) calculation	n valid when u < 7.1				
Note:	yellow grid areas	are where values a	are calculated			Note: W(u) calculatio	1.1545E-04			W(u) calculation test	
0,31	0.10000	are where values a	ere calculated	7.80	0.33			102,092,64		W(u) calculation test	
0.31	0.10000	166.00	0.37			7.0000	1.1545E-04	102,092.64		T = Q/s	
0.31	0.10000	166.00 166.00	0.37 0.37	7.80	0.33	7.0000 3.4901E-09	1.1545E-04 16.8961	153,517.22	5.1425E+04 3.2145E+03	T = Q/s T = Theis Equation	1.00
0.31 0.31 0.31	0.10000 0.10000 0.10000	166.00 166.00 166.00	0.37 0.37 0.37	7.80 7.80	0.33 0.33	7.0000 3.4901E-09 2.3210E-09	1.1545E-04 18.8981 19.3040	153,517.22 156,831.37	3.3142E+03	T = Q/s T = Theis Equation T = Theis Equation	1.00
0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37	7.80 7.80 7.80	0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09	1.1545E-04 18.8981 19.3040 19.3254	153,517.22 156,831.37 157,004.89	3.3142E+03 1.7352E+02	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation	1.00 2.00 3.00
0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2695E-09	1.1845E-04 18.8961 19.3040 19.3254 19.3265	153,517.22 156,831.37 157,004.89 157,013.87	3.3142E+03 1.7352E+02 8.9839E+00	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	1.00 2.00 3.00 4.00
0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37	7.80 7.80 7.80	0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09	1.1545E-04 18.8981 19.3040 19.3254	153,517.22 156,831.37 157,004.89 157,013.87 157,014.34	3.3142E+03 1.7352E+02 8.9839E+00 4.6486E-01	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Tequation T = Theis Equation	1.00 2.00 3.00 4.00 5.00
0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2695E-09 2.2695E-09	1.1545E-04 18.8981 19.3040 19.3254 19.3256 19.3256	153,517.22 156,831.37 157,004.89 157,013.87	3.3142E+03 1.7352E+02 8.9839E+00	T = Q/s T = Theis Equation T = Theis Equation T = Theis Equation T = Theis Equation	1.00 2.00 3.00 4.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.2706-09 2.27906-09 2.2695E-09 2.2695E-09 2.2693E-09 2.2693E-09 2.2693E-09	1.1848E-94 16.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266	153,517.22 156,831.37 157,004.89 157,013.87 157,014.34 157,014.36 157,014.36	3.3142E+03 1.7352E+02 8.9839E+00 4.6486E-01 2.4053E-02	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2895E-09 2.2895E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09	1.1545E-04 18.8961 19.3040 19.3254 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	153,517.22 156,831.37 157,004.89 157,013.87 157,014.36 157,014.36 157,014.36 157,014.36	3.3142E+03 1.7352E+02 8.9839E+00 4.6486E-01 2.4053E-02 1.2446E-03 6.4396E-05 3.3320E-09	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.2720E-09 2.2720E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09	1.1848E-04 18.8961 19.3040 19.3254 19.3295 19.3296 19.3296 19.3296 19.3296 19.3296 19.3296	153,517.22 156,831.37 157,004.89 157,014.89 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36	3.3142E+03 1.7352E+02 8.9839E+00 4.6489E-01 2.4053E-02 1.2448E-03 6.4396E-05 3.3320E-09 1.7241E-07	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09 2.2695E-09	1.1545E-04 16.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	183,517.22 156,831.37 157,004.89 157,014.89 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36	3.3142E-03 1.7352E+02 6.9839E+00 4.6486E-01 2.4053E-02 1.2446E-03 6.4396E-05 3.3320E-09 1.7241E-07 8.9058E-06	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 8.00 9.00 10.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.2720E-09 2.2720E-09 2.2693E-09	1.1848E-04 18.8981 19.3040 19.3254 19.3295 19.3296 19.3296 19.3296 19.3296 19.3296 19.3296 19.3296 19.3296 19.3298	153,517,22 159,831,37 157,004,89 157,013,87 157,014,39 157,014,39 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36	3.314/2E-03 1.735/2E+02 8.9839E+00 4.9499E-01 2.4053E-02 1.2446E-03 6.4399E-05 3.33/20E-09 1.7241E-07 8.9059E-09 4.9477E-10	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 8.00 7.00 8.00 9.00 11.00 11.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2895E-09 2.2895E-09 2.2895E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09 2.2893E-09	1.1545E-04 16.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	183,517.22 156,831.37 157,004.89 157,014.38 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36	3.314/2E-03 1.735/2E-02 8.9839E+00 4.8489E-01 2.4053E-02 1.2448E-03 6.4389E-05 3.3320E-09 1.7241E-07 8.9059E-09 4.9477E-10 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 9.00 11.00 12.00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4001 E-00 2.3210E-00 2.2720E-00 2.2760E-00 2.2660E-00	1.1848E-04 16.8981 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	153,517,22 156,831,37 157,004,99 157,013,87 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39	3.314/E+03 1.735/E+02 8.9839E+00 4.9489E+01 2.4053E-02 1.2449E-03 6.4398E-05 3.3320E-09 1.7241E-07 8.9059E-09 4.9477E-10 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 10.00 11.00 12.00 13.00
0.31 0.31	0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.2720E-09 2.2720E-09 2.2895E-09	1.1545E-04 16.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	193,517.22 159,831.37 157,004.89 157,073.87 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36	3.314(2E+0) 1.7385E+02 8.9839E+00 4.9489E+01 2.4053E-02 1.2449E-03 6.4399E-05 3.3320E-09 1.7741E-07 8.9059E-00 4.9477E-10 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 10.00 11.00 12.00 14.00 14.00
0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4001 E-09 2.3210E-09 2.2720E-09 2.2700E-09 2.2600E-09	1.1845E-04 16.8981 16.3040 16.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	153,517,22 156,831,37 157,004,89 157,013,87 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39	3.3142E+02 8.9839E+02 8.9839E+02 4.9489E-01 2.4053E-02 1.2449E-03 6.4389E-05 3.3330E-09 1.7241E-07 8.9059E-09 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1,00 2,00 3,00 4,00 5,00 6,00 7,00 9,00 11,00 12,00 13,00 14,00 15,00
0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4801E-09 2.3210E-09 2.2720E-09 2.27895E-09 2.26895E-09	1.1545E-04 16.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	153,517,22 156,831.37 157,004.89 157,013.67 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36	3.3142E402 6.9839E402 6.9839E402 4.9439E501 2.4053E-02 1.2449E-03 6.4399E-05 3.3320E-09 1.7241E-07 6.9059E-00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00
0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4001 E-09 2.2210E-09 2.22720E-09 2.2685E-09	1.1845E-04 16.8981 16.3040 16.3254 19.3265 19.3266	153,517,22 156,831,37 157,004,89 157,013,87 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39 157,014,39	3.3142E+02 8.9839E+02 8.9839E+02 4.9489E-01 2.4053E-02 1.2449E-03 6.4398E-05 3.3320E-09 1.7241E-07 8.9059E-09 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 12.00 12.00 14.00 15.00 16.00 17.00 17.00 17.00 18.00
0.31 0.31	0.10000 0.10000	166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4901E-09 2.3210E-09 2.2720E-09 2.2789SE-09 2.289SE-09	1.1545E-04 18.8961 19.3040 19.3254 19.3265 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266 19.3266	153,517,22 156,831.37 157,004.89 157,013.67 157,014.34 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36 157,014.36	3.314(2E+03 1.7352E+02 8.9839E+00 4.9469E-01 2.4053E-02 1.2446E-03 6.4396E-05 3.3320E-09 1.7241E-07 8.9059E-09 4.9477E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 12.00 14.00 15.00 16.00 17.00 17.00 18.00
0.31 0.31	0.10000 0.10000	166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7,80 7,80 7,80 7,80 7,80 7,80 7,80 7,80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 3.4801 E-09 2.2210E-09 2.2720E-09 2.2868E-09	1.1845E-04 16.8981 16.3040 16.3254 16.3265 19.3266	153,517,22 156,831.37 157,004.89 157,013.87 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39 157,014.39	3.31.42E+0.2 8.9839E+0.2 8.9839E+0.2 4.9489E-0.1 2.4053E-0.2 1.2449E-0.3 6.4399E-0.5 3.3320E-0.9 1.7241E-0.7 8.0359E-0.0 0.0000E+0.0 0.0000E+0.0 0.0000E+0.0 0.0000E+0.0 0.0000E+0.0 0.0000E+0.0 0.0000E+0.0	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 12.00 13.00 14.00 16.00 17.00 18.00 19.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 10.00 1
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 3,4901E-09 2,2720E-09 2,27895E-09 2,28995E-09	1.1848E-04 18.8981 19.3040 19.3254 19.3265 19.3266	153,517,22 158,831,37 157,004,99 157,0713,87 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36	3.314(2E+03 1.7352E+02 8.9839E+00 4.9489E-01 2.4053E-02 1.2449E-03 8.4399E-05 3.33320E-09 1.7241E-07 8.9059E-09 4.9477E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 11.00 12.00 12.00 15.00 16.00 17.00 17.00 18.00 19.00 19.00 20.00 20.00 21.00 21.00 21.00 20.00 2
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7,80 7,80 7,80 7,80 7,80 7,80 7,80 7,80	0.33 0.33	7.0000 3.4801 E-09 2.3210E-09 2.2720E-09 2.2780SE-09 2.2683E-09	1.1845E-04 16.8981 19.3040 19.3295 19.3295 19.3295 19.3296	153,517,22 156,831,37 157,004,89 157,013,87 157,014,39	3.3142E+02 8.9839E+02 8.9839E+02 4.9489E-01 2.4053E-02 1.2449E-03 6.4399E-05 3.3320E-09 1.7241E-07 8.0339E-06 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1,00 2,00 3,00 6,00 6,00 9,00 11,00 12,00 14,00 15,00 16,00 17,00 18,00 18,00 18,00 18,00 20,00 20,00 21,00 22,00
0.31 0.31 0.31 0.31 0.31 0.31 0.31 0.31	0.10000 0.10000	166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00 166.00	0.37 0.37 0.37 0.37 0.37 0.37 0.37 0.37	7.80 7.80 7.80 7.80 7.80 7.80 7.80 7.80	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7,0000 3,4901E-09 2,2720E-09 2,27895E-09 2,28995E-09	1.1848E-04 18.8981 19.3040 19.3254 19.3265 19.3266	153,517,22 158,831,37 157,004,99 157,0713,87 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36 157,014,36	3.314(2E+03 1.7352E+02 8.9839E+00 4.9489E-01 2.4053E-02 1.2449E-03 6.4398E-05 3.33320E-09 1.7241E-07 8.9059E-09 4.9477E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 9.00 11.00 11.00 12.00 12.00 15.00 16.00 17.00 17.00 18.00 19.00 19.00 20.00 20.00 21.00 21.00 21.00 20.00 2



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	om Specific Capac	ity using the Their	s Equation		WELL 3			Data Entry		Enter Data Below (yellow boxes only)	
Adapted from Vo	rhis (1979)							Well Log ID or Comme	nt for Records	Average Specific Capacity	
Theis Equation:	T = [Q/(4*s*pi)][W(u = (r*r*S)/(4*T*t)]	[u)]						Pumping Rate (gpm) =	Q=	175.00	(gpm)
	$W(u) = (-\ln u)-(0.5)$	772157)+(u/1*1!)-(u	^u/2*2!)+(u^u^u/3*3	!)-(u*u*u*4*4!)+				Drawdown (feet) = s =		8,60	(feet)
	T = transmissivity s = drawdown (L)	(L*L/T)			r = radial distance	(1)		Time (hours) = t =		187,1000	(hours)
	S = storage coeffic	ient (dimensionless)		t = time (T)	1-7		Storage Coefficient = S =		0,100000	(dimensionless)
	pi = 3.141592654				u = dimensionless W(u) = well function						
Note: Transmiss		se a known or assur	med Storage Coefic	ient (S) provided by ansmissivity (T) used		he first Theis equation its	eration	Well Diameter (Inches)	=d=	8.0000 Press F9 to Calculate	(Inches)
		of the previous item on iterations = 25 ite		culate u in a given Tr	heis equation iterat	ion		Calculated Results		Calculated Results	
	Can accept answe		culated Transmissiv	ity for the last 2 itera	tions is < 0.0001			Transmissivity (ft2/day	1 = T =	4,946.62	(fi2/day)
Note: Miell officia	ency is not include							Transmissivity (gpd/ft)		37.003.27	(gpd/ft)
	alcy is not morac	d III die cascalano						Transmissivity Differer		0.0000E+00	(ft2/day)
References:						duration of discharge of	a well using	(last 2 iterations)	ice =	okay to use T if diff < 0.0001	(italitay)
	-	. Transmissivity fro		ransactions, 16 ann	_	n, pg. 519-524. ciation newsletter, vol. 10), no. 11,	u = (last iteration)		7.2032E-08 okay to use T If u <7.1	
Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
5	Coefficient	Q	Q	t	r = d/2			T	difference from		Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
						Note: Miller colonial	an coult describe a second 7.4				
Note:	yellow grid areas	are where values	are calculated			Note: W(u) calculation	on valid when u < 7.1				
						7.0000	1.1545E-04			W(u) calculation test	
8.60	0.10000	175.00	0.39	7.80	0.33			3,917.15		T = Q/s	
8.60	0.10000	175.00	0.39	7.80	0.33	9.0963E-08	15,6356	4.873.88	9.5673E+02	T = Theis Equation	1.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.3107E-08	15.8541	4,942.00	6,8118E+01	T = Theis Equation	2.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2100E-08	15.8680	4,948.33	4.3264E+00	T = Theis Equation	3.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2036E-08	15.8689	4,946.60	2.7277E-01	T = Theis Equation	4.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	1.7190E-02	T = Theis Equation	5.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948.62	1.0832E-03	T = Theis Equation	6.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948.62	6.8261E-05	T = Theis Equation T = Theis Equation	7.00 8.00
8.60	0.10000	175.00	0.39	7.80 7.80	0.33	7.2032E-08 7.2032E-08	15.8689 15.8689	4,948.62 4,946.62	4.3015E-08 2.7106E-07	T = Theis Equation	9.00
8.60 8.60	0.10000	175.00 175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948.62	1.7083E-08	T = Theis Equation	10.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948,62	1.0759E-09	T = Theis Equation	11.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	6.8212E-11	T = Theis Equation	12.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	13.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	14.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	15.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948.62	0.0000E+00	T = Theis Equation	16.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	17.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15,8689	4,946.62	0.0000E+00	T = Theis Equation	18.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,948.62	0.0000E+00	T = Theis Equation	19.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62 4,946.62	0.0000E+00 0.0000E+00	T = Theis Equation T = Theis Equation	20.00
8.60 8.60	0.10000	175.00	0.39	7.80 7.80	0.33	7.2032E-06 7.2032E-06	15.8689 15.8689	4,946.62	0.0000E+00	T = Theis Equation	21.00
8.60	0.10000	175.00 175.00	0.39	7.80	0.33	7.2032E-06 7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	23.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15,8689	4,946.62	0.0000E+00	T = Theis Equation	24.00
0.00	0.10000	170.00	0.30	7.00	0.00	7.2002.00	10.0000	1,010.02	0.00000	T Their Equation	24.00 2F.00

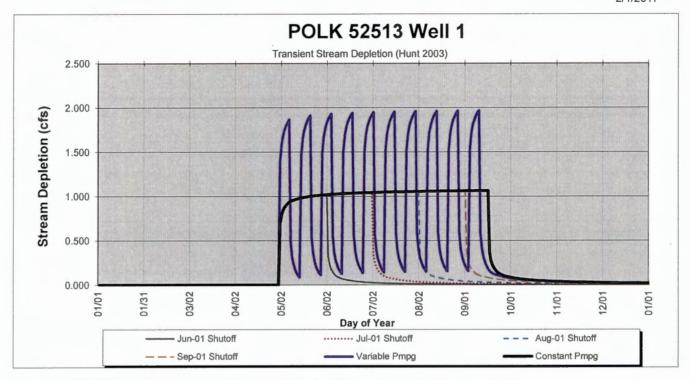


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Stream Depletion Evaluation



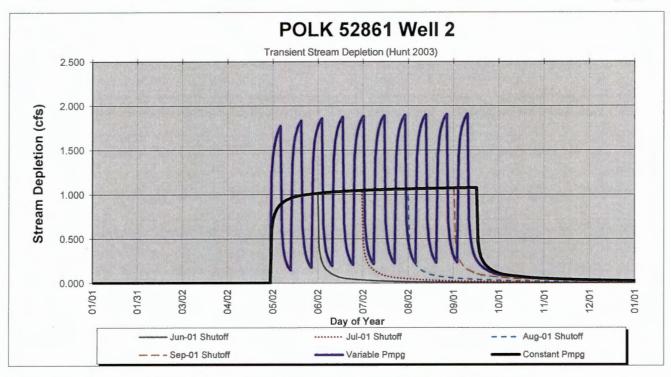
Parameters:		Values	Units
Perpendicular from well to stream	а	90	ft
Well depth	d	61	ft
Aquifer transmissivity	T_ft	520,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2200	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1100	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2200	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		303.83	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

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Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	91.8	94.0	95.0	95.6	7.9	3.3	2.1	1.5
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	1.061	0.088	0.037	0.023	0.017
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	0.027	0.012	0.007	0.005	0.004	0.003	0.002
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	0.037	0.018	0.012	0.008	0.006	0.005
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	0.044	0.023	0.015	0.011	0.009
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	1.061	0.050	0.027	0.018	0.014
Relief after Jun-01 shutoff (SD= 1.02	0, cfs)					0.993	1.008	1.013	1.015	1.016	1.017	1.018
Relief after Jul-01 shutoff (SD= 1.044	4, cfs)						1.006	1.025	1.032	1.035	1.037	1.039
Relief after Aug-01 shutoff (SD= 1.05	55, cfs)							1.011	1.031	1.039	1.044	1.046
Relief after Sep-01 shutoff (SD= 1.06	2, cfs)								1.011	1.035	1.043	1.048
Stream depletion at 138 = 1.064 cfs												
Stream depletion at 30 days = 91.6 %	6											

Stream depletion at 10 days = 86.5 %



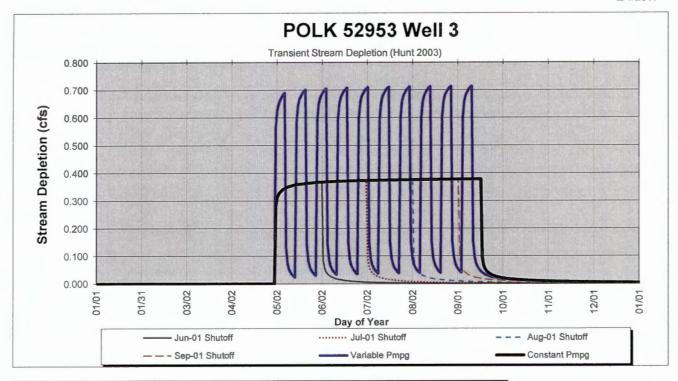
Parameters:		Values	Units
Perpendicular from well to stream	а	95	ft
Well depth	d	57	ft
Aquifer transmissivity	T_ft	1,090,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	WS	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2800	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1400	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2800	cfs
Pumping days in irrigation season		- 138	days
Total acre feet pumped at constant pumping rate, Qwc		312.04	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

SEP 1 4 2018

OWRD

Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	88.8	91.8	93.2	94.1	10.2	4.5	2.8	2.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	1.072	0.116	0.051	0.032	0.023
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	0.038	0.017	0.010	0.007	0.005	0.004	0.003
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	0.052	0.026	0.016	0.012	0.009	0.007
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	0.062	0.033	0.021	0.016	0.012
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	1.072	0.070	0.038	0.025	0.019
Relief after Jun-01 shutoff (SD= 1.01	4, cfs)					0.976	0.998	1.004	1.007	1.009	1.010	1.011
Relief after Jul-01 shutoff (SD= 1.04)	7, cfs)						0.995	1.022	1.031	1.036	1.039	1.040
Relief after Aug-01 shutoff (SD= 1.06	3, cfs)							1.001	1.030	1.042	1.048	1.051
Relief after Sep-01 shutoff (SD= 1.07	'3, cfs)								1.002	1.035	1.047	1.054
Stream depletion at 138 = 1.076 cfs												_
Stream depletion at 30 days = 88.6 %	6											

Stream depletion at 10 days = 81.4 %



Parameters:		Values	Units
Perpendicular from well to stream	а	100	ft
Well depth	d	56	ft
Aquifer transmissivity	T_ft	160,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	0.7780	cfs
Constant pumping rate for model (Qmp/2)	Qwc	0.3890	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	0.7780	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		106.48	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	

SEP 1 4 2018

OWRD

Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	94.4	95.9	96.6	97.0	5.4	2.3	1.4	1.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.378	0.021	0.009	0.006	0.004
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.007	0.003	0.002	0.001	0.001	0.001	0.001
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.009	0.004	0.003	0.002	0.002	0.001
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.011	0.006	0.004	0.003	0.002
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.378	0.012	0.007	0.004	0.003
Relief after Jun-01 shutoff (SD= 0.36	7, cfs)					0.361	0.365	0.366	0.366	0.367	0.367	0.367
Relief after Jul-01 shutoff (SD= 0.373	3, cfs)						0.364	0.369	0.370	0.371	0.372	0.372
Relief after Aug-01 shutoff (SD= 0.37	6, cfs)							0.365	0.370	0.372	0.373	0.374
Relief after Sep-01 shutoff (SD= 0.37								0.365	0.371	0.373	0.374	
Stream depletion at 138 = 0.378 cfs												
Stream depletion at 30 days = 94.3 %												

Stream depletion at 10 days = 90.5 %



Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

October 21, 2015

VIA E-MAIL

INTERNATIONAL PAPER COMPANY 3521 OLD SALEM ROAD NE ALBANY, OR 97321

SUBJECT: Water Right Transfer Application T-12065

Your water right transfer is in one of three phases of processing. Enclosed is a revised draft of our Preliminary Determination regarding Transfer Application T-12065. The document reflects the Department's conclusion that, based on the information currently available, the transfer will be approved.

Items needed before the next phase of processing...

Please review the revised draft carefully to see if it accurately reflects the changes you intend to
make, and to become familiar with all proposed conditions. You will need to respond in writing
by the deadline provided below, whether you agree with the proposed action and conditions. Also
we will appreciate having you let us know if there are typographical errors that need to be
corrected.

Conditions to your water right...

The Watermaster has required a water measurement device at the new diversion point prior to diversion of water.

This transfer will require installation of a fish screen at the new diversion point **prior to diversion** of water. You may not divert water prior to installation and approval of the fish screen. You may wish to contact the ODFW staff person listed on the enclosed contact sheet for more information about the screen and to determine a reasonable timeline.

Please note the proposed date by which all conditions must be met: October 1, 2046. If the required completion date is insufficient to comply with any of the conditions, you may extend the date at no cost to you during this stage of processing. Please let me know by the comment deadline so we can make the proper arrangements to get you the time you need.

What happens next...

Once the Preliminary Determination is issued a publication period is required. Because of a change in character of use, the Department will publish notice of the transfer in a local newspaper having a general circulation in the area of the water right at least once per week for two consecutive weeks. You are responsible for sending a check to cover the cost of publication prior to the issuance of the Preliminary Determination and publication of notice.

Issuance of the revised Preliminary Determination will occur shortly after we receive:

1. your written response to the conditions and proposed action in the revised draft Preliminary Determination (e-mail is acceptable).

If we do not receive the items listed above by November 20, 2015, a Preliminary Determination may be issued denying the application as incomplete.

Please do not hesitate to contact me at 503-986-0886 or Patrick.K.Starnes@wrd.state.or.us if I may be of assistance if I may be of assistance.

Sincerely,

Kelly Starnes

Transfer Program Analyst

Transfer and Conservation Section

cc: Transfer Application file T-12065

Michael Mattick, District 2 Watermaster (via e-mail)

Joel Plahn, District 16 Watermaster (via e-mail)

Adam Sussman, GSI Water Solutions, Agent for the receiving landowner (via e-mail)

Bruce Brody-Heine, GSI Water Solutions, CWRE #78208 (via e-mail)

Dave Filippi, attorney for applicant (via e-mail)

encs

BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

	ne Matter of Transfer Application 2065, Linn County)))))))))))))	Revised DRAFT PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE IN POINT OF DIVERSION, PLACE OF USE, AND CHARACTER OF USE
Aut	hority	
hold auth Div	gon Revised Statute (ORS) 540.505 to 540.580 der may submit a request to transfer the point of norized under an existing water right. Oregon a ision 380 implements the statutes and provides luating transfer applications.	Administrative Rule (OAR) Chapter 690,
App	plicant	
325	TERNATIONAL PAPER COMPANY 1 OLD SALEM RD NE BANY, OR 97321	
Fin	dings of Fact	
1.	On May 21, 2015, INTERNATIONAL PAPE the point of diversion, place of use, and characteristic portion of Certificate 85736. The Department	cter of use of a 7.75 cubic foot per second
2.	McMinnville Water and Light, P.O. Box 638, water user who will be responsible for complete	
3.	On May 8, 2013, the Department received a nuchange per ORS 540.520(9). The authorized described in Finding No. 8.	
4.	On June 1, 2015, the receiving water user requested the completion of the transfer. The requested No. 8 of this order.	•
5.	On November 21, 2014, Instream Lease IL-14 page 840, was approved for a 7.75 cfs portion	
6.	On, 2015, Instream Lease IL-1	

- 7. Notice of the application for transfer was published on June 2, 2015, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.
- 8. On September 11, 2015, the Department sent a copy of the draft Preliminary Determination proposing to approve Transfer Application T-12065 to the applicant. The draft Preliminary Determination cover letter set forth a deadline of October 12, 2015, for the applicant to respond. The applicant's attorney requested that the Department amend the draft Preliminary Determination and provided the necessary information to demonstrate that the applicant is authorized to pursue the transfer.

9. The portion of the right to be transferred is as follows:

Certificate: 85736 in the name of WEYERHAEUSER COMPANY (perfected under

Permit S-47184)

Use: INDUSTRIAL/MANUFACTURING USE

Priority Date: OCTOBER 29, 1982

Rate: 7.75 CUBIC FEET PER SECOND

Source: WILLAMETTE RIVER, tributary to the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	URING USE Q-Q	DLC
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	SW NE	46
10 S	3 W	WM	29	NE NW	46
10 S	3 W	WM	29	NE NW	55
10 S	3 W	WM	29	NW NW	55
10 S	3 W	WM	29	SW NW	46
10 S	3 W	WM	29	SW NW	55
10 S	3 W	WM	29	SE NW	46
10 S	3 W	WM	29	SE NW	55
10 S	3 W	WM	29	NE SW	46
10 S	3 W	WM	29	SE SW	46
10 S	3 W	WM	29	SE SW	55
10 S	3 W	WM	29	NE SE	46
10 S	3 W	WM	29	NW SE	46
10 S	3 W	WM	29	SW SE	44
10 S	3 W	WM	29	SW SE	46
10 S	3 W	WM	29	SE SE	44
10 S	3 W	WM	29	SE SE	46
10 S	3 W	WM	32	NE NE	44
10 S	3 W	WM	32	NW NE	44
10 S	3 W	WM	33	NW NW	44

10. Transfer Application T-12065 proposes to move the authorized point of diversion approximately 57.0 river miles downstream to within a reach described as:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
4 S	3 W	WM	27	NE NE	LOCATION A (UPSTREAM ENDPOINT OF PROPOSED REACH) - 650 FEET SOUTH AND 550 FEET WEST FROM THE NE CORNER OF SECTION 27
4 S	3 W	WM	22	sw sw	LOCATION B (DOWNSTREAM ENDPOINT OF PROPOSED REACH) - 1300 FEET NORTH AND 1140 FEET EAST FROM THE SW CORNER OF SECTION 22

11. Transfer Application T-12065 proposes to change the place of use of the right to:

MUNICIPAL USE
WITHIN THE SERVICE AREA BOUNDARIES OF McMINNVILLE
WATER AND LIGHT, CITY OF DAYTON, CITY OF LAFAYETTE,
AND CITY OF CARLTON.

- 12. Transfer Application T-12065 also proposes to change the character of use to municipal use.
- 13. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screen is necessary at the new point of diversion to prevent fish from entering the diversion and that the diversion is not currently equipped with an appropriate fish screen. This diversion may be eligible for screening cost-share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 14. Water has been used within the last five years according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 15. A pump and pipeline system sufficient to use the full amount of water allowed under the existing right was present within the five-year period prior to submittal of Transfer Application T-12065.
- 16. The proposed changes would not result in enlargement of the right.
- 17. The proposed changes would not result in injury to other water rights.

Determination and Proposed Action

The change in point of diversion, change in place of use, change in character of use, and timeline for completion proposed in Transfer Application T-12065 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000 and 690-380-5140. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12065 is approved, the final order will include the following:

- 1. The change in point of diversion, change in place of use, and change in character of use proposed in Transfer Application T-12065 are approved.
- 2. Except as provided in ORS 540.510(3)(a), the right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 85736 and any related decree.
- 3. Water right Certificate 85736 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion shall not exceed the quantity of water lawfully available at the original point of diversion.
- 5. Water use measurement conditions:
 - a. Before water use may begin under this order, the water user shall install a totalizing flow meter, or, with prior approval of the Director, another suitable measuring device, at the new point of diversion.
 - b. The water user shall maintain the meter or measuring device in good working order.
 - c. The water user shall allow the Watermaster access to the meter or measuring device; provided however, where the meter or measuring device is located within a private structure, the Watermaster shall request access upon reasonable notice.
- 6. Prior to diverting water, the water user shall install an approved fish screen at the new point of diversion and shall provide to the OWRD a written statement from Oregon Department of Fish and Wildlife (ODFW) that the installed screen meets the state's criteria, or that ODFW has determined a screen is not necessary.
 - The water user shall operate and maintain the fish screen at the new point of diversion consistent with ODFW's operational and maintenance standards. If ODFW determines the screen is not functioning properly, and is unsuccessful in working with the water user to meet ODFW standards, ODFW may request that OWRD regulate the use of water until OWRD receives notification from ODFW that the fish screen is functioning properly.
- 7. The transferred portion of Certificate 85736 (7.75 cfs) shall no longer be used at the former place of use.
- 8. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2046. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.

9. After satisfactory proof of beneficial use is received, a ne transferred will be issued.	w certificate confirming the right
Dated at Salem, Oregon this day of	2015.
DRAFT	
Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department	

This revised draft Preliminary Determination was prepared by Kelly Starnes. If you have questions about the information in this document, you may reach me at 503-986-0886 or Patrick.K.Starnes@wrd.state.or.us.



Water Resources Department

North Mall Office Building 725 Summer St NE, Suite A Salem, OR 97301 Phone (503) 986-0900 Fax (503) 986-0904 www.wrd.state.or.us

November 27, 2017

INTERNATIONAL PAPER COMPANY 6400 POPLAR MEMPHIS, TN 38197

Reference: Application T- 12773

On November 20, 2017, we received your water right Transfer application. The application was accompanied by \$3780.00. Our receipt number 125220 is enclosed.

By copy of this letter, we are asking the Watermaster for a report regarding the potential for injury to existing water rights which may be caused by the requested change. A review form will also be sent to Oregon Department of Fish and Wildlife to determine if a fish screen is needed and to our groundwater staff to determine whether the proposed well accesses the same source of water as the original well and/or as the original POD.

Your application will be examined to determine whether additional information is needed. We will notify you if further information or corrections to the application or map are required.

This application <u>may</u> require publication of a notice for two consecutive weeks in a newspaper with general circulation in the area where the water right is located. If it is determined that newspaper notice will be required, the Department will prepare the notice and notify you of the cost. You will be responsible for submitting payment to the Department prior to publication of the notice.

Except as provided under ORS 540.510(3) for municipalities, you may not use water for the new use, in the new place of use, or from the new point of diversion until a final order approving the transfer application has been issued by the Department.

In order to avoid any possible forfeiture of the water right, you should continue to use the water as described by your existing water right.

If the land is sold before the application is approved, the buyer's consent to the application will be required unless a recorded deed or other legal document clearly established that the water right was not conveyed in the sale.

Refer to the following page for a chart showing the steps and expected timelines for the processing of your application.

If you have any questions, please contact the Transfer Section at (503) 986-0807.

Cc: Watermaster Dist. #2 (via email)

Adam Sussman, Agent

Enclosure

Transfer Applications: Regular

The holder of a water right may apply to permanently change an existing water use subject to transfer as defined in ORS 540.505(4). An application may involve any of the following changes: Point of diversion or appropriation; Additional point of diversion or appropriation; Historic POD; Place of use; Character of use; Instream; Substitution; or Exchange.

The Department seeks public comment on the recently-filed transfer applications listed below. Any person may comment on a transfer application. Comments must be received by the Department on or before December 28, 2017. Any person who provides comments within the comment period will receive a copy of the Department's preliminary determination of whether the application should be approved or rejected after the Department has completed a review of the application and will be provided an opportunity to protest the application and preliminary determination at that time.

Transfer T 12773
Water Right Cert:54268

County/Basin Linn / Willamette(2)

Applicant Name INTERNATIONAL PAPER COMPANY

6400 POPLAR

MEMPHIS, TN 38197

Proposed Change PLACE OF USE, USE, POINT OF DIVERSION, SURFACE WATER TO GROUND WATER

Sources/TRSQ40Q160 WILLAMETTE RIVER > COLUMBIA RIVER / 10.00S 3.00W 32 NENE

Use/Quantity INDUSTRIAL/MANUFACTURING USES / 18.000 CFS

Priority Date 12/23/1954

Transfer T 12774

Water Right Cert:74512, Cert:48966
County/Basin Jackson / Rogue(15)
Applicant Name EBNESAJJAD, GIN GUEI
JOY LUCK FARM, INC.

JOY LUCK FARM, INC 225 WEST RAPP RD TALENT, OR 97540

Proposed Change ADDITIONAL POINT OF DIVERSION

Sources/TRSQ40Q160 WAGNER CREEK > BEAR CREEK / 38.00S 1.00W 26 SENW

WAGNER CREEK > BEAR CREEK / 38.00S 1.00W 26 NESW WAGNER CREEK > BEAR CREEK / 38.00S 1.00W 26 NWSE WAGNER CREEK > BEAR CREEK / 38.00S 1.00W 35 NWNW

Use/Quantity DOMESTIC / 0.020 CFS

DOMESTIC / 0.240 CFS DOMESTIC / 1.250 CFS IRRIGATION / 0.130 CFS

Priority Date 12/31/1852, 12/31/1854, 12/31/1864, 12/31/1854

		Resources De		(Non	-District) Tra	nsfer o	Main	0	Help
WRD	ansier ree e	arculation for	remanent	(1401)	r District/ Tra	113161 0	Return	C.	Contact Us
Today's Date:	Monday, Novem	ber 20, 2017					Fee Calc	ulation	
Base Fee (inclu	ides one type of c	hange to one wate	r right for up to 1 o	cfs)			\$1,	160.00	
Fill in information		each box that appli	ies.						
☑ Place of U									
☑ Point of D	Diversion (POD)/A	ppropriation (POA)	: and/or Additiona	I POD/	POA; and/or SW P	OD to GW PO	D		
☑ Characte		pp. 2 p. 1 d. 1	,		,,			860.00]
Enter total num	nber of water right	s included in transf	er. 1					\$0.00	
☑ Check this b	oox if you propose	to add or change	a well, or change	from a	surface water POD	to a well.	\$	410.00]
☑ Check this b	oox if you propose	to change the plac	ce of use or chara	cter of	use for a NON-irrig	ation right.			
Enter the cfs	included in the tra	ansfer: 2.0							
☑ Check this b	oox if you propose	to change the place	ce of use or chara	cter of	use for an irrigation	right.			
Enter the follow	vina for the primar	u cartificatos on th	a land included in	the tra	nafor				
	-	y certificates on the covers the same			nsier. ary right, only list th	e primary.)			
Certificate #	Total acres in the water right	# of acres to be transferred	Total cfs in the water right certificate		If certificate does not list cfs,enter 1/ cfs per acre	Transfer cfs			
54268	ngiit		2.0		1/_ cis per acre		1		
D-1200					<u> </u>		1		
<u></u>							1		
							<u>]</u>		
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	•		*				j		
Total Transfer C	CFS(rounded up to	the next whole cfs	s): 2.00				\$	350.00	
Subtotal:							\$3,	780.00	
Check each bo	x that applies.								
The transfer (OWEB) under		omplete a project f	unded by the Ore	gon Wa	atershed Enhancem	nent Board			
☐ The transfer habitat.	is endorsed in wr	iting by ODFW as	a change that will	result i	n a net benefit to fi	sh and wildlife			

Discount:

Transfer Fee: Return to Edit

Clear

STATE OF OREGON WATER RESOURCES DEPARTMENT 725 Summer St. N.E. Ste. A RECEIPT # 125220 INVOICE # SALEM, OR 97301-4172 (503) 986-0900 / (503) 986-0904 (fax) **APPLICATION** PERMIT BY: TRANSFER CHECK:# CASH: OTHER: (IDENTIFY) TOTAL REC'D TREASURY WRD MISC CASH ACCT 1083 4170 \$ COPIES 0407 \$ OTHER: (IDENTIFY) 0244 Muni Water Mgmt. Plan 0243 I/S Lease 0245 Cons. Water WRD OPERATING ACCT 4270 **MISCELLANEOUS** \$ **COPY & TAPE FEES** 0407 \$ RESEARCH FEES 0410 \$ MISC REVENUE: (IDENTIFY) 0408 \$ TC162 DEPOSIT LIAB. (IDENTIFY) \$ 0240 **EXTENSION OF TIME** RECORD FEE WATER RIGHTS: **EXAM FEE** \$ SURFACE WATER 0201 0202 \$ \$ 0203 **GROUND WATER** 0204 \$ 0205 TRANSFER LICENSE FEE **EXAM FEE** WELL CONSTRUCTION \$ \$ 0219 0218 WELL DRILL CONSTRUCTOR \$ 0220 LANDOWNER'S PERMIT **OTHER** (IDENTIFY) **WELL CONST. START FEE** 0536 **TREASURY** 0437 0211 WELL CONST START FEE \$ CARD# 0210 MONITORING WELLS \$ CARD# OTHER (IDENTIFY) 0607 TREASURY 0467 HYDRO ACTIVITY LIC NUMBER POWER LICENSE FEE (FW/WRD) RECEIVED \$ 0233 HYDRO LICENSE FEE PHARE THE COUNTER \$ 0231 \$ HYDRO APPLICATION TREASURY-OTHER / RDX

TITLE

VENDOR #

FUND

OBJ. CODE

Distribution - White Copy - Customer Yellow Copy - Fiscal, Blue Copy - File, Buff Copy - Fiscal

Regular Permanent Water Right Transfer Application Checklist Checked by Codi Date 11. 16. 17 Certs & acres involved: (If OK, check box to left; if not, fill in the blank) DOD Changes: Pou 1. Page 1 of application: Are all attachments that have been checked actually included? If not, what is missing? _ # cfs involved: 2. Are fees included and correct? Fee paid: Source: If not, the correct fee would be: _____, so the amount missing is: _ ▶ If a Government Action POD change (see: Page 5): NO CHARGE [POD/APOD, POA/APOA, SW to GW, Gov Action] are all counted as one type *NOTE: POU is counted as one type [USE or (Supplemental to Primary)] are counted as one type X 3. Page 3 of application: Have all the applicants listed at the top of the page signed? If no, whose signature is missing? _____

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4. Are all listed certificates or permits shown by WRIS as non-cancelled?

If no, which are cancelled?

6. If all #1-#5 boxes on this checklist are checked (with no remaining deficiencies identified), accept the application and assign it a numbered transfer folder. Put this check sheet in the transfer folder. If #1, #2, #3, #4 or #5 on this checklist is deficient, the application cannot be accepted. It should be returned and the **deficiencies listed in the "staff" section** at the bottom of Application Page 1, unless the applicant or agent can resolve the deficiencies within 2-3 days.

For each cancelled certificate, if there has been a remaining right certificate issued that covers the lands in the left side of



City of Independence, Oregon

November 15, 2017

Lisa Jaramillo 725 Summer Street NE, Suite A Salem, OR 97301-0900

Dear Ms. Jaramillo;

As you are aware, the City of Independence (City) has entered into an agreement with International Paper Company (IP) to acquire a 2.0 cfs portion of IP's water right certificate 54268. Following approval of the transfer by Oregon Water Resources Department (OWRD), the City will be responsible for completing the requested changes. For the reasons described below, we are requesting (pursuant to OAR 690-380-5140) that OWRD allow 30 years to complete this transfer.

Completion of the requested transfer (change in character of use, place of use, point of diversion and groundwater points of appropriation) will require the City to establish the necessary financing and to complete numerous long-term activities: obtain required state and federal permits, develop engineering plans, develop intergovernmental agreements, and fully construct the necessary infrastructure, including distribution lines, pump stations and water treatment facilities. For these reasons, and to ensure the success of this critical water supply planning project, a period of 30 years to complete the proposed transfer is requested and justified. Please contact me if you need additional information. My telephone number is 503-837-1171.

Sincerely,

David Clyne
City Manager

1 12773









KEVIN J. HAVENS SENIOR COUNSEL CORPORATE REAL ESTATE AND GLOBAL SUPPLY CHAIN

LEGAL DEPARTMENT 1740 INTERNATIONAL DRIVE **TOWER IV. 9-037** MEMPHIS, TENNESSEE 38197

TELEPHONE (901) 419-1935 EFAX (901) 214-1909 kevin.havens@ipaper.com

November 16, 2017

Lisa Jaramillo Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301

RECEIVED

NOV 2 0 2017

OWRD

Re: Application for Water Right Transfer for Certificate 54268

Dear Ms. Jaramillo:

Please find enclosed an Application for a Permanent Water Right Transfer, which requests to transfer a 2.0 cfs portion of water right certificate 54268. I am also enclosing the required application fee of \$3,780.

Certificate 54268 authorizes the use of up to 18.0 cfs for industrial purposes. A 17.0 cfs portion of Certificate 54268 is held by International Paper Company. As described in the ownership updated submitted for this certificate on February 4, 2015, Flakeboard America Limited owns a portion of the land to which Certificate 54268 is appurtenant and a 1.0 cfs portion of the water right. Of the 17 cfs of Certificate 54268 held by International Paper Company, 15 cfs is currently leased for instream use under IL-1434. The enclosed transfer application proposes to change a 2 cfs portion of the 15 cfs leased for instream use under IL-1434. No changes are proposed to the 1.0 cfs portion of the certificate held by Flakeboard America Limited. The transfer is being pursued for the benefit of the City of Independence (City).

The enclosed transfer application proposes to make multiple changes. The character of use is proposed to be changed from industrial to municipal purposes. The place of use is proposed to be changed from lands owned by International Paper Company to the City's service area. Finally, the point of diversion is proposed to be moved downstream on the Willamette River. The proposed point of diversion is identified in the application, as well as three proposed points of appropriation. In other words, a surface water to groundwater change is requested as part of this transfer. No changes are proposed for the remaining portions of Certificate 54268 (15.0 cfs held by International Paper Company, and 1 cfs held by Flakeboard America Limited). We understand that a remaining right certificate will be issued for the portion of Certificate 54268 not affected by this transfer.

Due to the extent of the work required to complete construction and to put the 2.0 cfs to beneficial use, we request that OWRD allow 30 years to complete this transfer. Please see the attached letter from the City for additional information about the need for this time to complete development under the transfer.

If you have any questions or concerns, please contact Adam Sussman with GSI Water Solutions, Inc. Adam's telephone number is 541-257-9001.

Sincerely,

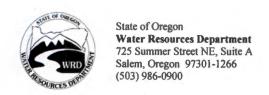
James Kirkpatrick

Manager, Facility Analysis & Strategic Studies

Enclosures







Application for Permanent Water Right Transfer

Part 1 of 5 - Minimum Requirements Checklist

This transfer application will be returned if Parts 1 through 5 and all required attachments are not completed and included.

For questions, please call (503) 986-0900, and ask for Transfer Section.

Che	ck all ite	ms included with this application. (N/A = Not Applicable)
\boxtimes		Part 1 - Completed Minimum Requirements Checklist.
\boxtimes		Part 2 – Completed Transfer Application Map Checklist.
		Part 3 – Application Fee, payable by check to the Oregon Water Resources Department, and completed Fee Worksheet, page 3. Try the new online fee calculator at: http://apps.wrd.state.or.us/apps/misc/wrd_fee_calculator . If you have questions, call Customer Service at (503) 986-0801.
\boxtimes		Part 4 – Completed Applicant Information and Signature.
\boxtimes		Part 5 – Information about Water Rights to be Transferred: How many water rights are to be transferred? 1 List them here: Certificate 54268 See Attachment 1 Please include a separate Part 5 for each water right. (See instructions on page 6)
		Attachments:
\boxtimes		Completed Transfer Application Map. See Attachment 2
\boxtimes		Completed Evidence of Use Affidavit and supporting documentation. See Attachment 3
	N/A	Affidavit(s) of Consent from Landowner(s) (if the applicant does not own the land the water right is on.)
	N/A	Supplemental Form D – For water rights served by or issued in the name of an irrigation district. Complete when the transfer applicant is not the irrigation district.
	□ N/A	Land Use Information Form with approval and signature (or signed land use form receipt stub). Not required if water is to be diverted, conveyed, and/or used only on federal lands or if all of the following apply: a) a change in place of use only, b) no structural changes, c) the use of water is for irrigation only, and d) the use is located within an irrigation district or an exclusive farm use zone. See Attachment 4
\boxtimes	□ N/A	Water Well Report/Well Log for changes in point(s) of appropriation (well(s)) or additional point(s) of appropriation. See Attachment 5
	□ N/A	Geologist Report for a change from a surface water point of diversion to a ground water point of appropriation (well), if the proposed well is more than 500' from the surface water source and more than 1000' upstream or downstream from the point of diversion. See OAR 690-380-2130 for requirements and applicability. See Attachment 6
		(For Staff Use Only) WE ARE RETURNING YOUR APPLICATION FOR THE FOLLOWING REASON(S): Application fee not enclosed/insufficient Map not included or incomplete Land Use Form not enclosed or incomplete Additional signature(s) required Part is incomplete is incomplete Staff: 503-986-0 Date: / / NOV 2.0 2017

Your transfer application will be returned if any of the map requirements listed below are not met.

		sure that the transfer application map you submit includes all the required items and he existing water right map. Check all boxes that apply.
\boxtimes	□ N/A	Certified Water Right Examiner (CWRE) Stamp and Original Signature. For a list of CWREs, see http://apps.wrd.state.or.us/apps/wr/cwre_license_view/ . CWRE stamp and signature are not required for substitutions.
□ .	N/A	If more than three water rights are involved, separate maps are needed for each water right.
\boxtimes		Permanent quality printed with dark ink on good quality paper.
\boxtimes		The size of the map can be $8\frac{1}{2} \times 11$ inches, $8\frac{1}{2} \times 14$ inches, 11×17 inches, or up to 30×30 inches. For 30×30 inch maps, one extra copy is required.
\boxtimes	•	A north arrow, a legend, and scale.
\boxtimes		The scale of the map must be: 1 inch = 400 feet, 1 inch = 1,320 feet, the scale of the Final Proof/Claim of Beneficial Use Map (the map used when the permit was certificated), the scale of the county assessor map if the scale is not smaller than 1 inch = 1,320 feet, or a scale that has been pre-approved by the Department.
\boxtimes		Township, Range, Section, 1/4 1/4, DLC, Government Lot, and other recognized public land survey lines.
\boxtimes		Tax lot boundaries (property lines) are required. Tax lot numbers are recommended.
\boxtimes		Major physical features including rivers and creeks showing direction of flow, lakes and reservoirs, roads, and railroads.
\boxtimes		Major water delivery system features from the point(s) of diversion/appropriation such as main pipelines, canals, and ditches.
\boxtimes		Existing place of use that includes separate hachuring for each water right, priority date, and use including number of acres in each quarter-quarter section, government lot, or in each quarter-quarter section as projected within government lots, donation land claims, or other recognized public land survey subdivisions. If less than the entirety of the water right is being changed, a separate hachuring is needed for lands left unchanged.
\boxtimes	□ N/A	Proposed place of use that includes separate hachuring for each water right, priority date, and use including number of acres in each quarter-quarter section, government lot, or in each quarter-quarter section as projected within government lots, donation land claims, or other recognized public land survey subdivisions.
\boxtimes		Existing point(s) of diversion or well(s) with distance and bearing or coordinates from a recognized survey corner. This information can be found in your water right certificate or permit.
\boxtimes	□ N/A	If you are proposing a change in point(s) of diversion or well(s), show the proposed location and label it clearly with distance and bearing or coordinates. If GPS coordinates are used, latitude-longitude coordinates may be expressed as either degrees-minutes-seconds with at least one digit after the decimal (example – 42°32°15.5") or degrees-decimal with five or more digits after the decimal (example – 42.53764°).
	Revised 7/27	Permanent Transfer Application Form – Page 2 of 8 TACS

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	FEE WORKSHEET for PERMANENT TRANSFER Part 3 of 5	- Fee	Worksheet
1	Base Fee (includes one type of change to one water right for up to 1 cts)	1	\$1,160
	Types of change proposed:		
	☐ Place of Use		
	☐ Character of Use		
	Point of Diversion/Appropriation		
	Number of above boxes checked = $\frac{3(2a)}{}$		
	Subtract 1 from the number in line $2a = 2(2b)$ If only one change, this will be 0		
2	Multiply line 2b by \$930 and enter » » » » » » » » » » » » » »	2	\$1,860
	Number of water rights included in transfer 1 (3a)		
	Subtract 1 from the number in 3a above: <u>0 (3b)</u> If only one water right this will		
2	be 0	3	0
3	Multiply line 3b by \$520 and enter » » » » » » » » » » » » » » » » » » »	3	U
	to a well?		
	No: enter 0 »» » » » » » » » » » » » » » » »		
4	☐ No. enter 0 "" " " " " " " " " " " " " " " " " "	4	\$410
	Do you propose to change the place of use or character of use?	7	ΨΤΙΟ
	No: enter 0 on line 5 » » » » » » » » » » » » » » » » »		
	Yes: enter the cfs for the portions of the rights to be transferred (see		
	example below*): 2.0 (5a)		
	Subtract 1.0 from the number in 5a above: 1.0 (5b)		
	If 5b is 0 or less, enter 0 on line 5 » » » » » » » » » » » » » » » »		
	If 5b is greater than 0, round up to the nearest whole number: 1 (5c) and		
5	multiply 5c by \$350, then enter on line 5 » » » » » » » » »	5	\$350
6	Add entries on lines 1 through 5 above » » » » » » » » » Subtotal:	6	\$3,780
	Is this transfer:		
	necessary to complete a project funded by the Oregon Watershed		
	Enhancement Board (OWEB) under ORS 541.932?		
	endorsed in writing by ODFW as a change that will result in a net		
7	benefit to fish and wildlife habitat?		
_	If one or more boxes is checked, multiply line 6 by 0.5 and enter on line 7 »	-	
7	If no box is applicable, enter 0 on line 7» » » » » » » » » » » » » » » » »	7	0
8	Subtract line 7 from line 6 » » » » » » » » » » » » » Transfer Fee:	8	\$3,780

*Example for Line 5a calculation to transfer 45.0 acres of Primary Certificate 12345 (total 1.25 cfs for 100 acres) and 45.0 acres of Supplemental Certificate 87654 (1/80 cfs per acre) on the same land:

1. For irrigation calculate cfs for each water right involved as follows:

a. Divide total authorized cfs by total acres in the water right (for C12345, 1.25 cfs \div 100 ac); then multiply by the number of acres to be transferred to get the transfer cfs (x 45 ac= 0.56 cfs).

b. If the water right certificate does not list total cfs, but identifies the allowable use as 1/40 or 1/80 of a cfs per acre; multiply number of acres proposed for change by either 0.025 (1/40) or 0.0125 (1/80). (For C87654, 45.0 ac x 0.0125 cfs/ac = 0.56 cfs)

2. Add cfs for the portions of water rights on all the land included in the transfer; however do not count cfs for supplemental rights on acreage for which you have already calculated the cfs fee for the primary right on the same land. The fee should be assessed only once for each "on the ground" acre included in the transfer. (In this example, blank 5a would be only 0.56 cfs, since both rights serve the same 45.0 acres. Blank 5b would be 0 and Line 5 would then also become 0).

	FEE WORKSHEET for SUBSTITUTION
1	Base Fee (includes change to one well)
	Number of wells included in substitution (2a) NOV 2 0 2017
	Subtract 1 from the number in 3a above: (2b) If only one well this will be 0
2	Multiply line 2b by \$410 and enter » » » » » » » » » » » » » »
3	Add entries on lines 1 through 2 above » » » » Fee for Substitution:

Part 4 of 5 - Applicant Information and Signature

Applicant Information

APPLICANT/BUSINESS NAMI	E		PHONE NO.	ADDITIONAL CONTACT NO.			
International Paper Com	pany		901-419-4961				
ADDRESS				FAX NO.			
6400 Poplar							
СІТҮ	STATE	ZIP	E-MAIL				
Memphis	TN	38197	JIM.KIRKPATRICK(DIPAPER.COM			
BY PROVIDING AN E-MAIL ADDRESS, CONSENT IS GIVEN TO RECEIVE ALL CORRESPONDENCE FROM THE							
DEPARTMENT ELECTR	ONICALLY. CO	PIES OF THE	FINAL ORDER DOCUME	NTS WILL ALSO BE MAILED.			

on.

Agent Information – The agent is authorized to represent the applicant in all matters relating to this application									
AGENT/BUSINESS NAME		PHONE NO. ADDITIONAL CONTACT NO.							
GSI Water Solutions			541-257-9001						
ADDRESS				FAX NO.					
1600 SW Western Blvd., Suite 2	40								
CITY	STATE	E-MAIL							
Corvallis	OR	97333	asussman@gsisw.com						
BY PROVIDING AN E-MAIL AI	DDRESS, C	CONSENT IS GIVEN	TO RECEIVE ALL COI	RRESPONDENCE FROM THE					
DEPARTMENT ELECTRONICA	LLY. CO	PIES OF THE FINA	L ORDER DOCUMENT	S WILL ALSO BE MAILED.					
Explain in your own words			•						
The Applicant, for the benef	it of the	City of Independent	ence, is requesting to	transfer a 2.0 cfs portion					
of Certificate 54268 that is o	currently	leased instream (IL-1434). The reque	ested changes will allow					
the City to divert the water	•	,	,						

the City to divert the water at a downstream point of diversion and three points of appropriation, and to use the water for municipal purposes within the City's service area. The point of diversion, place of use, and character of use for the remaining 16.0 cfs portion of the water right will not change.

\square (Check this box if this project is fully or partially funded by the American Recovery as	nd
	Reinvestment Act. (Federal stimulus dollars)	

Check	One	Box
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\boxtimes	By signing this application, I understand that, upon receipt of the draft preliminary determination and prior to
	Department approval of the transfer, I will be required to provide landownership information and evidence that I am
	authorized to pursue the transfer as identified in OAR 690-380-4010(5); OR
	I affirm the applicant is a municipality as defined in ORS 540.510(3)(b) and that the right is in The ECEIVE

name of the municipality or a predecessor; OR I affirm the applicant is an entity with the authority to condemn property and is acquiring by condemnation the property to which the water right proposed for transfer is appurtenant and have supporting documentation.

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I understand that prior to Department approval of the transfer application, I may be required to submit payment to the Department for publication of a notice in a newspaper with general circulation in the area where the water right is located, once per week for two consecutive weeks. If more than one qualifying newspaper is available, I suggest publishing the notice in the following newspaper: Polk County Itemizer-Observer

I (we) affirm that the information contained in this application is true and accurate.



James Kirkpatrick, Manager, Facility Analysis & Strategic Studies
Print Name (and Title if applicable)

Is the applicant the sole owner of the land on which the water right, or portion thereof, proposed for transfer is located? X Yes No. If NO. include signatures of all deeded landowners (and mailing and/or e-mail addresses if different than the applicant's) or attach affidavits of consent (and mailing and/or email addresses) from all landowners or individuals/entities to which the water right(s) were conveyed.

	at apply.									
The applicant is responsible for completion of change(s). Notices and correspondence should continue to be sent to the applicant.										
The receiving landowner will be responsible for completing the proposed change(s) after the final order is issued. Copies of notices and correspondence should be sent to this landowner.										
Both the receiving landowner and applicant will be responsible for completion of change(s). Copies of notices and correspondence should be sent to this landowner and the applicant.										
At this time, are the lands in	At this time, are the lands in this transfer application in the process of being sold? Yes No									
information table below.	If YES, and you know who the new landowner will be, please complete the receiving landowner information table below. If you do not know who the new landowner will be, then a request for assignment will have to be filed for at a later date.									
If a property sells, the ce unless a sale agreement of http://www.oregon.gov/o	or other d	locument	states o	therwise. For m						
RECEIVING LANDOWNER NAME				PHONE NO.	ADDITIONAL CONTACT NO.					
ADDRESS					FAX NO.					
CITY	STATE	ZIP		E-MAIL						
Check here if any of the water rights proposed for transfer are or will be located within or served be an irrigation or other water district. (Tip: Complete and attach Supplemental Form D.) N/A IRRIGATION DISTRICT NAME ADDRESS										
INGOATION DISTRICT WANTE			ADDRES		·					
СІТУ			ADDRES		ZIP					
CITY		_	STATE	ander a water se	•					
CITY Check here if water for a		_	STATE	ander a water ser	ZIP					
CITY Check here if water for a for stored water with a fe		_	STATE state upplied u	ander a water ser	ZIP					
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CITY Check here if water for a for stored water with a for stored water water stored water for a for stored water water for a for stored water with a for stored water with a for stored water water for a for stored water with a for stored water wate	ederal ag	Requirer	state applied uther entitle ADDRES state state ments, your se jurison	ander a water servity. N/A ss ou must list all oliction water wi	ZIP ZIP ZIP county, city, municipal					
CITY Check here if water for a for stored water with a fer stored water water stored water for a fer stored water water stored water water stored water with a fer stored water water stored water with a fer stored water water stored water water stored water water stored	ederal ag	Requirer	state applied uther entity address state ments, y se juriso Address P.O. Be	ander a water serity. N/A ss ou must list all oliction water wi	zip zip zip county, city, municipal ll be diverted, conveyed or used					
CITY Check here if water for a for stored water with a for stored water water stored water for a for stored water for a for stored water water stored water for a for stored water with a for stored water wat	ederal ag	Requirer	state applied uther entitle ADDRES state ments, your see jurison	ander a water serity. N/A ss ou must list all oliction water wi	ZIP ZIP ZIP county, city, municipal					
CITY Check here if water for a for stored water with a fer stored water water stored water with a fer stored water water stored water with a fer stored water with a fer stored water water stored water water stored water with a fer stored water water stored water sto	ederal ag	Requirer	state applied uther entity address state ments, y se juriso Address P.O. Bo	ou must list all oliction water wi	ZIP ZIP county, city, municipal ll be diverted, conveyed or used					

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Please use a separate Part 5 for each water right being changed. See instructions on page 6, to copy and paste additional Part 5s, or to add additional rows to tables within the form.

CERTIFICATE # 54268

Description of Water Delivery System

System capacity: 38.92 cubic feet per second (cfs)

Describe the current water delivery system or the system that was in place at some time within the last five years. Include information on the pumps, canals, pipelines, and sprinklers used to divert, convey, and apply the water at the authorized place of use. There are four pumps at the point of diversion: two 200 HP pumps on the barge, and two 200 HP pumps on the bank. The pumps have 15 inch suctions and 10 inch discharges. The water is conveyed from the pump station to the paper mill water pond via 6,000 feet of 30-inch concrete underground pipe. Water from the pond is diverted to various locations on the mill site. Note: A 15 cfs portion of Certificate 54268, including the 2 cfs that is the subject of this transfer application, was leased instream in 2014 (IL-1434).

Table 1. Location of Authorized and Proposed Point(s) of Diversion (POD) or Appropriation (POA) (Note: If the POD/POA name is not specified on the certificate, assign it a name or number here.)

POD/POA Name or Number	Is this POD/POA Authorized on the Certificate or is it Proposed?	If POA, OWRD Well Log ID# (or Well ID Tag # L)	Tv	wp	F	lng	Sec	1/4	1/4	Tax Lot, DLC or Gov't Lot	Measured Distances (from a recognized survey corner)
POD 1	Authorized Proposed	N/A	10	s	3	w	32	NE	NE		1260 ft South & 1220 ft West from the NE corner of Sect. 32
POD 2	☐ Authorized ☐ Proposed	N/A	8	s	4	w	28	sw	SE		260 ft North & 3400 ft East from SW Corner of Sect. 28
Willamette Well 1	☐ Authorized ☐ Proposed	POLK 52513	8	s	4	w	33	NW	NE		349 ft South & 2,071 ft West from the NE corner of Sect. 33
Willamette Well 2	☐ Authorized ☐ Proposed	POLK 52861	8	s	4	w	28	sw	SE	"	189 ft North & 2,088 ft West from the SE corner of Sect. 28
Willamette Well 3	☐ Authorized ☐ Proposed	POLK 52953	8	s	4	w	28	sw	SE		714 ft North & 2,163 ft West from the SE corner of Sect. 28

Check a	all type(s) of change(s) proposed below (c	hange	e "CODES" are provided in parenthese	s):
\boxtimes	Place of Use (POU)		Supplemental Use to Primary Use (S to I	?)
\boxtimes	Character of Use (USE)		Point of Appropriation/Well (POA)	
\boxtimes	Point of Diversion (POD)		Additional Point of Appropriation (APO	A)
	Additional Point of Diversion (APOD)		Substitution (SUB)	
\boxtimes	Surface Water POD to Ground Water POA (SW/GW)		Government Action POD (GOV)	
Will all	of the proposed changes affect the entire	wate	r right? RECEIVED	
Yes	Complete only the Proposed ("to" or "on" "CODES" listed above to describe the pro		s) section of Table 2 on the next page. Use	the
No No	Complete all of Table 2 to describe the po	rtion	of the water right to be changed. Revised	
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Please use and attach additional pages of Table 2 as needed. See page 6 for instructions.

Do you have questions about how to fill-out the tables? Contact the Department at 503-986-0900 and ask for Transfer Staff.

Table 2. Description of Changes to Water Right Certificate # 54268

List the change proposed for the acreage in each ½ ¼. If more than one change is proposed, specify the acreage associated with each change. If there is more than one POD/POA involved in the proposed changes, specify the acreage associated with each POD/POA.

The	AUTHORIZED (the "from" or "off" lands) The listing that appears on the certificate BEFORE PROPOSED CHANGES List only that part or portion of the water right that will be changed.						ANGES	PROPOSED (the "to" or "on" lands) The listing as it would appear AFTER PROPOSED CHANG are made.					ES								
Twp	Rng		Sec	1/4 1/4	Tax Lot	Gvt Lot o DLC	00	POD(s) or Type of USE listed POA(s) (name Priority from previou		from previous	Twp	Rng	Sec	1/4 1/4	Tax Lot	Gvt Lot or DLC	Acres	New Type of USE	POD(s)/ POA(s) to be used (from Table 1)	Priority Date	
	See the table of "from lands" in Attachment 7 (as described in the specific to general industrial use change notice submitted on May 15, 2013)			Industrial/ Manufacturing	POD 1	12/23/ 1954	POU, POD, USE, SW/GW	I Within the cervice area nothing ary of the					Municipal	POD 2, Willamette Well 1, Willamette Well 2 & Willamette Well 3	12/23/ 1954						
				ТОТА	AL AC	RES:									ТО	ΓAL A	CRES:				

Additional remarks: Certificate 54268 authorizes the use of up to 18.0 cfs for industrial/manufacturing use. The authorized place of use is described in the specific to general industrial use change notice submitted to OWRD on May 15, 2013. The Applicant holds a 17 cfs portion that is appurtenant to the lands described in Attachment 7. The Applicant is requesting to transfer a 2.0 cfs portion of its portion of Certificate 54268. The proposed change would reduce the authorized rate within the Applicant's entire place of use for Certificate 54268. The POD, POU, and use of the remaining 16 cfs will not change (i.e., the use will remain as industrial/manufacturing use, at the existing POD, and at the existing POU). In addition, a 15 cfs portion of Certificate 54268 was leased instream in 2014 instream lease IL-1434.



For Place of Use or Character of Use Changes

Are there other water right certificates, water use permits or ground water registrations associated with the "from" or the "to" lands?

✓ Yes

✓ No

If YES, list the certificate, water use permit, or ground water registration numbers: Although there are other water rights on the "to" lands, the proposed use is municipal purposes, so "layered" water rights are not applicable.



Pursuant to ORS 540.510, any "layered" water use such as an irrigation right that is supplemental to a primary right proposed for transfer must be included in the transfer or be cancelled. Any change to a ground water registration must be filed separately in a ground water registration modification application.

For Substitution (ground water supplemental irrigation will be substituted for surface water primary irrigation) N/A

	change from Supplemental Irrigation Use to Primary Irrigation Use N/A tify the primary certificate to be cancelled. Certificate #
For a	change in point(s) of appropriation (well(s)) or additional point(s) of appropriation:
	Well log(s) are attached for each authorized and proposed well(s) that are clearly labeled and associated with the corresponding well(s) in Table 1 above and on the accompanying application map. Tip: You may search for well logs on the Department's web page at: http://apps.wrd.state.or.us/apps/gw/well_log/Default.aspx
ANI	D/OR
	Describe the construction of the authorized and proposed well(s) in Table 3 for any wells that do not have a well log. For <i>proposed wells not yet constructed or built</i> , provide "a best estimate" for each requested information element in the table. The Department recommends you consult a licensed well driller, geologist, or certified water right examiner to assist with assembling the information necessary

Table 3. Construction of Point(s) of Appropriation

to complete Table 3.

Any well(s) in this listing must be clearly tied to corresponding well(s) described in Table 1 and shown on the accompanying application map. Failure to provide the information will delay the processing of your transfer application until it is received. The information is necessary for the department to assess whether the proposed well(s) will access the same source aquifer as the authorized point(s) of appropriation (POA). The Department is prohibited by law from approving POA changes that do not access the same source aquifer.

Proposed or Authorized POA Name or Number	Is well already built? ((Yes or No)	If an existing well: OWRD Well ID Tag No. L-	Total well depth	Casing Diameter	Casing Intervals (feet)	Seal depth(s) (intervals)	Perforated or screened intervals (in feet)	Static water level of completed well (in feet)	Source aquifer (sand, gravel, basalt, etc.)	Well -specific rate (cfs or gpm). <u>If</u> less han full rate of water right
								REC	FIVE	

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Attachment 1 Water Right Certificate 54268 Application for a Water Right Transfer – Certificate 54268

NOV 2 0 2017

12773

STATE OF OREGON

COUNTY OF

LINN

CERTIFICATE OF WATER RIGHT

This is to certify, That

WILLAMETTE INDUSTRIES, INC.

Albany Paper Mill
of PO Box 339, Albany , State of Oregon 97321 , has made
proof to the satisfaction of the Water Resources Director, of a right to the use of the waters of
Willamette River

a tributary of Columbia River manufacturing

for the purpose of

under Permit No. 23102 and that said right to the use of said waters has been perfected in accordance with the laws of Oregon; that the priority of the right hereby confirmed dates from December 23, 1954

that the amount of water to which such right is entitled and hereby confirmed, for the purposes aforesaid, is limited to an amount actually beneficially used for said purposes, and shall not exceed 18.0 cubic feet per second

or its equivalent in case of rotation, measured at the point of diversion from the stream. The point of diversion is located in the NE 1/4 NE 1/4 as projected within Powell DLC 44, Section 32, TlOS, R3W, WM; 1260 feet South and 1220 feet West from NE Corner, Section 32.

The amount of water used for irrigation, together with the amount secured under any other right existing for the same lands, shall be limited to ______ of one cubic foot per second per acre.

and shall

conform to such reasonable rotation system as may be ordered by the proper state officer.

A description of the place of use under the right hereby confirmed, and to which such right is appurtenant, is as follows:

SW 1/4 NE 1/4 as projected within Louderback DLC 47 SE 1/4 NW 1/4 as projected within Louderback DLC 47 NE 1/4 SW 1/4 as projected within Louderback DLC 47 NW 1/4 SE 1/4 as projected within Louderback DLC 47 NE 1/4 SW 1/4 as projected within Powell DLC 44 SE 1/4 SW 1/4 as projected within Powell DLC 44 NW 1/4 SE 1/4 as projected within Powell DLC 44 SW 1/4 SE 1/4 as projected within Powell DLC 44 SW 1/4 SE 1/4 as projected within Powell DLC 44 Section 28

Section 33 Township 10 South, Range 3 West, WM

The right to the use of the water for the purposes aforesaid is restricted to the lands or place of use herein described and is subject to minimum flows established by the Water Resources Commission with an effective date prior to this right.

WITNESS the signature of the Water Resources Director, affixed

this date. April 16, 1986

/s/ William H. Young

Water Resources Director

Recorded in State Record of Water Right Certificates, Volume 49, po

49 , page 54268

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2786D/SB 29640

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Attachment 2 Current and Proposed Points of Diversion / Appropriation and Place of Use Maps Application for a Water Right Transfer - Certificate 54268

Attachment 3 Evidence of Use Affidavit

Application for a Water Right Transfer - Certificate 54268

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Application for Water Right Transfer

Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1266 (503) 986-0900 www.wrd.state.or.us

Evidence of Use Affidavit

Please print legibly or type. Be as specific as possible. Attach additional pages if you need more spacing. Supporting documentation must be attached. State of Tennessee County of SHELBY I, JAMES KIRKPATRICK, in my capacity as MANAGER FACILITY ANALYSIS & STRATEGIC STUDIES, mailing address 6400 POPLAR, MEMPHIS, TN 38197 telephone number (901) 419-4961, being first duly sworn depose and say: 1. My knowledge of the exercise or status of the water right is based on (check one): Personal observation □ Professional expertise 2. I attest that: Water was used during the previous five years on the entire place of use for Certificate # ____; OR My knowledge is specific to the use of water at the following locations within the last five years: Gov't Lot Acres Certificate # Township 1/4 1/4 Range Mer Sec or DLC (if applicable) OR Confirming Certificate # ____ has been issued within the past five years; **OR** X Part or all of the water right was leased instream at some time within the last five years. The instream lease number is: IL-1434 (Note: If the entire right proposed for transfer was not leased, additional evidence of use is needed for the portion not leased instream.); OR The water right is not subject to forfeiture and documentation that a presumption of forfeiture for non-use would be rebutted under ORS 540.610(2) is attached. Water has been used at the actual current point of diversion or appropriation for more than 10 years for Certificate # _____(For Historic POD/POA Transfers)



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(continues on reverse side)

- 3. The water right was used for: (e.g., crops, pasture, etc.): INSTREAM USE
- 4. I understand that if I do not attach one or more of the documents shown in the table below to support the above statements, my application will be considered incomplete.

λ	an	1	KupI	
Signatur	e of Aff	fiant		



Signed and sworn to (or affirmed) before me this 16th day of Normber, 2017.

11/16/17 Date

Notary Public for Oregon SHELBY CALMM
TENNESSEE

My Commission Expires: 5./1-19

Supporting Documents	Examples				
Copy of a water right certificate that has been issued within the last five years. (not a remaining right certificate)	Copy of confirming water right certificate that shows issue date				
Copies of receipts from sales of irrigated crops or for expenditures related to use of water	Power usage records for pumps associated with irrigation use				
	Fertilizer or seed bills related to irrigated crops				
	Farmers Co-op sales receipt				
Records such as FSA crop reports, irrigation	District assessment records for water delivered				
district records, NRCS farm management plan, or records of other water suppliers	Crop reports submitted under a federal loan agreement				
	Beneficial use reports from district				
	IRS Farm Usage Deduction Report				
	Agricultural Stabilization Plan				
	CREP Report				
Aerial photos containing sufficient detail to establish location and date of photograph	Multiple photos can be solutioned to resolve different areas of a water right. If the photograph does not print with a "date stamp" or without the source being identified, the date of the photograph and source should be added.				
	Sources for aerial photos:				
	OSU –www.oregonexplorer.info/imagery OWRD – www.wrd.state.or.us				
	Google Earth earth.google.com				
	TerraServer – www.terraserver.com				
Approved Lease establishing beneficial use within the last 5 years	Copy of instream lease or lease number				

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BEFORE THE WATER RESOURCES DEPARTMENT OF THE STATE OF OREGON

In the Matter of Instream Lease Application)	DETERMINATION and
IL-1434, Linn County)	FINAL ORDER ON PROPOSED
)	INSTREAM LEASE

Authority

ORS 537.348 establishes the process in which a water right holder may submit a request to lease an existing water right for instream purposes. OAR Chapter 690, Division 077 implements the statutes and provides the Department's procedures and criteria for evaluating instream lease applications.

Lessor

Vaughn Pieschl, Site Manager International Paper 3521 Old Salem Rd. NE Albany, OR 97321

Findings of Fact

- On September 17, 2014, International Paper filed an application to lease a portion of Certificates 54268 and 85736 for instream use. The applicant also requested to lease two water rights resulting from Transfer T-7526. The Department assigned the application number IL-1434.
- 2. On May 8, 2013, the Department received what appears to be a notice for specific to general industrial use change. For purposes of instream leasing, the portions of Certificate 54268 and 85736 that may be leased to instream use are the water rights of record and will be described consistent with the certificates in this order.
- On October 6, 2014, the Department requested additional information about the water rights requested to be leased instream under IL-1434 and IL-1435 by International Paper. The additional information requested by the Department was received on October 17, 2014.
- 4. On November 4, 2014, Certificates 89604 and 89606 were issued based upon completion actions authorized under Transfer T-7526.

Page 1 of 7

5. On November 7, 2014, the Department identified that additional fees were necessary to complete the lease application. The additional fees were received on December 5, 2014 EIVED

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This is a final order in other than contested case. This order is subject to judicial review under ORS 183,484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183,484(2). Pursuant to ORS 536,075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

IL-1434.lkw FO Template last revised 1/24/2014 Special Order Volume 93 Page 906

6. The portion of the first right to be leased has been clarified from the lease application and is as follows:

Certificate:

54268 in the name of Willamette Industries, Inc. (perfected under Permit

S-23102)

Use:

Manufacturing Use December 23, 1954

Priority Date:

Quantity:

Rate: 15.0 Cubic Foot per Second (CFS)

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44
10 S	3 W	WM	33	NW NE	44
10 S	3 W	WM	33	NE NW	44

7. The portion of the second right to be leased has been clarified from the lease application and is as follows:

Certificate:

85736 in the name of Weyerhaeuser Company (perfected under Permit

S-47184)

Use:

Industrial/Manufacturing Use

Priority Date: Quantity:

October 29, 1982

Rate: 4.25 CFS

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD):

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use.

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NE	47
10 S	3 W	WM	28	SE NW	47
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	28	NE SW	44
10 S	3 W	WM	28	SE SW	44
10 S	3 W	WM	28	NW SE	44
10 S	3 W	WM	28	NW SE	47
10 S	3 W	WM	28	SW SE	44

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Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	33	NE NW	44

- 8. Certificate 85736 allows the diversion of up to 12 CFS. The remaining 7.75 CFS is being leased instream under IL-1435.
- 9. The third right to be leased is as follows:

Certificate:

89604 in the name of International Paper Co. (perfected under Permit

S-20469)

Use:

Industrial Uses

Priority Date:

June 11, 1943

Quantity:

Rate: 2.0 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original points of

diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source
21 S	1 W	WM	31	NE SE	Culp Creek
21 S	1 W	WM	32	NW SW	Row River

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD) on the Willamette River:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S 1/2 NE 1/4	46
10 S	3 W	WM	29	E 1/2 NW 1/4	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E 1/2 SW 1/4	46
10 S	3 W	WM	29	E 1/2 SW 1/4	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE ¼	46
10 S	3 W	WM	29	S 1/2 SE 1/4	44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N 1/2 NE 1/4	44
10 S	3 W	WM	32	NW NE	
10 S	3 W	WM	32	SE NE	44
10 S	3 W	WM	32	SE NE	
10 S	3 W	WM	33	W 1/2 NW 1/4	44



- 10. Certificate 89604 identifies the source for diversion as the Willamette River and identifies the actual source of water as Culp Creek and Row River. Culp Creek is tributary to the Row River and the Row River is tributary to the Coast Fork Willamette River. The Coast Fork Willamette River is tributary to the Willamette River. Water is conveyed from the original points of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89604 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from Culp Creek and Row River.
- 11. The fourth right to be leased is as follows:

Certificate:

89606 in the name of International Paper Company (perfected under

Permit S-14106)

Use:

Industrial Use

Priority Date:

November 2, 1939

Quantity:

Rate: 1.93 CFS

Limit: The quantity of water diverted at the new point of diversion shall not exceed the quantity of water available from the original point of

diversion described as follows:

Twp	Rng	Mer	Sec	Q-Q	Source	Measured Distances
21 S	1 W	WM	30	NW SW	Row River	30 FEET SOUTH AND 30 FEET WEST FROM THE SW CORNER OF LOT 3 (SE NW), SECTION 30

Source:

Willamette River, tributary to the Columbia River

Authorized Point of Diversion (POD) on the Willamette River:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances
10 S	3 W	WM	32	NE NE	44	1180 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32

Authorized Place of Use:

Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	28	SW NW	46
10 S	3 W	WM	28	N 1/2 SW 1/4	46
10 S	3 W	WM	28	NE SW	47
10 S	3 W	WM	29	NW NE	46
10 S	3 W	WM	29	NW NE	55
10 S	3 W	WM	29	S ½ NE ¼	46
10 S	3 W	WM	29	E 1/2 NW 1/4	46
10 S	3 W	WM	29	NW 1/4	55
10 S	3 W	WM	29	SE NW	
10 S	3 W	WM	29	E 1/2 SW 1/4	46
10 S	3 W	WM	29	E 1/2 SW 1/4	
10 S	3 W	WM	29	SE SW	44
10 S	3 W	WM	29	SE ¼	46
10 S	3 W	WM	29	S 1/2 SE 1/4	44
10 S	3 W	WM	29	S 1/2 SE 1/4	
10 S	3 W	WM	32	N ½ NE ¼	44





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Twp	Rng	Mer	Sec	Q-Q	DLC
10 S	3 W	WM	32	NW NE	
10 S	3 W	WM	32	SE NE	44
10 S	3 W	WM	32	SE NE	
10 S	3 W	WM	33	W ½ NW ¼	44

- 12. Certificate 89606 identifies the source for diversion as the Willamette River and identifies the actual source of water as the Row River. Row River is tributary to the Coast Fork Willamette River and the Coast Fork Willamette River is tributary to the Willamette River. Water is conveyed from the original point of diversion through the Row River and the Coast Fork Willamette River to the point of diversion on the Willamette River. Instream water rights begin at the authorized point of diversion. The authorized point of diversion for Certificate 89606 is on the Willamette River. For purposes of this lease, the source for the instream use shall be the Willamette River and limited to the quantities available from the Row River.
- 13. Certificates 54268, 85736 89604, and 89606 do not specify an authorized period of use. However, the use is for manufacturing and/or industrial, which are considered year round uses unless otherwise specified in the Certificate.
- 14. There is another industrial right (Certificate 54268) appurtenant to the same place of use as described in Certificate 85736. The entirety of Certificate 54268 is proposed to be leased to instream use under IL-1434.
- 15. The lease application includes the information required under OAR 690-077-0076(3). The Department provided notice of the lease application pursuant to OAR 690-077-0077(1) on September 30, 2014. This notice, however, did not include Certificates 89604 and 89606, which had not yet been issued. Following issuance of Certificates 89604 and 89605, the lease application was renoticed on November 11, 2014. No comments were received. RECEIVED
- 16. The instream use is as follows:

Willamette River, tributary to the Columbia River

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Instream Reach: At the POD (as described in Finding of Fact No. 6)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream	D
54268	12/23/1954	15.00	10,859.50	January 1 – December 31	

Instream Reach: At the POD (as described in Findings of Fact No. 7, 9 and 11)

Certificate	Priority Date	Instream Rate (cfs)	Instream Volume (AF)	Period Protected Instream	
85736	10/29/1982	4.25	3076.86		
89604	6/11/1943	2.00	1447.93	I	
89606	11/2/1939	1.93	1397.26	January 1 – December 31	
	Total Instream	8.18	5922.05		

17. The amount and timing of the proposed instream flow is allowable within the limits and use of the original water rights.

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- 18. The protection of flows at the authorized points of diversion is appropriate, considering:
 - a. The instream water use is located at the recorded points of diversion;
 - b. The location of confluences with other streams downstream of the points of diversion.
 - c. There are no known areas of natural loss of streamflow to the river bed downstream from the points of diversion; and
 - d. Any return flows resulting from the exercise of the existing water right would re-enter the river downstream of the points of the instream water right.
- 19. The total monthly quantities of water to be protected under existing and proposed instream rights at the points will provide for a beneficial purpose.
- 20. The total monthly quantities of water to be protected instream under existing and proposed instream rights at the points do not exceed the estimated average natural flow.
- 21. If approved, this instream lease is not reasonably expected to significantly affect land use as prescribed by ORS 197.180, OAR Chapter 660, Divisions 30 and 31, and OAR Chapter 690, Division 5.
- 22. Based upon review of the application, information provided by the Department's Watermaster, and other available information, the Department finds that the lease will not result in injury or enlargement. The order approving this instream lease may be modified or revoked under OAR 690-077-0077 if the Department later finds that the lease is causing injury to any existing water right or enlargement of the original right.
- 23. If a right which has been leased is later proposed to be leased again, transferred and/or reviewed for an allocation of conserved water, a new injury review shall be required. For example, instream transfers will be subject to a full and complete review to determine consistency with the requirements of OAR Chapter 690, Division 380 and Division 077. Approval of this lease does not establish a precedent for approval of any future transactions.
- 24. The Lessor requested that the instream use begin in October, 2014, and terminate in October, 2019. Instream leases are based upon calendar years and terms may not exceed five years. The lease may commence upon the date this final order is issued and may terminate on December 31, 2018.
- 25. The Lessor has requested the option of terminating the lease early with written notice to the Department.

Conclusions of Law

The Department concludes that the lease will not result in injury or enlargement, 0 2 0 2017 OAR 690-077-0077. The lease conforms to the applicable provisions of OAR 690-077-0015.

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Now, therefore it is ORDERED:

- 1. The Lease as described herein is APPROVED.
- 2. During each year of the term of the lease, the former place of use will no longer receive water from Certificates 89604 and 89606 and the portions of Certificate 54268 and 85736 leased to instream use.
- 3. The term of the lease will commence upon approval of the instream lease and terminate on December 31, 2018. For multiyear leases, the lessor shall have the option of terminating the lease any time each year with written notice to the Department. However, if the termination request is received less than 30-days prior to the instream use period (January 1 through December 31) or after the water rights' original period of allowed use has begun, the Department may issue an order terminating the lease but use of water may not be allowed until the following calendar year, unless the Director determines that enlargement would not occur.

Dated at Salem, Oregon this _____ day of December, 2014.

Dwight French, Water Right Services Division Administrator, for Tom M Byler, Director, Oregon Water Resources Department

DEC Mailing date:

This document was prepared by Laura Wilke and if you have any questions, please call 503-986-0884.





Attachment 4 Land Use Information Forms

Application for a Water Right Transfer - Certificate 54268

Land Use Information Form



NOTE TO APPLICANTS

In order for your application to be processed by the Water Resources Department (WRD), this Land Use Information Form must be completed by a local government planning official in the jurisdiction(s) where your water right will be used and developed. The planning official may choose to complete the form while you wait, or return the receipt stub to you. Applications received by WRD without the Land Use Form or the receipt stub will be returned to you. Please be aware that your application will not be approved without land use approval.

This form is NOT required if:

- 1) Water is to be diverted, conveyed, and/or used only on federal lands; OR
- 2) The application is for a water right transfer, allocation of conserved water, exchange, permit amendment, or ground water registration modification, and <u>all</u> of the following apply:
 - a) The existing and proposed water use is located entirely within lands zoned for exclusive farm-use or within an irrigation district;
 - b) The application involves a change in place of use only;
 - c) The change does not involve the placement or modification of structures, including but not limited to water diversion, impoundment, distribution facilities, water wells and well houses; and
 - d) The application involves irrigation water uses only.

NOTE TO LOCAL GOVERNMENTS

The person presenting the attached Land Use Information Form is applying for or modifying a water right. The Water Resources Department (WRD) requires its applicants to obtain land-use information to be sure the water rights do not result in land uses that are incompatible with your comprehensive plan. Please complete the form or detach the receipt stub and return it to the applicant for inclusion in their water right application. You will receive notice once the applicant formally submits his or her request to the WRD. The notice will give more information about WRD's water rights process and provide additional comment opportunities. You will have 30 days from the date of the notice to complete the land-use form and return it to the WRD. If no land-use information is received from you within that 30-day period, the WRD may presume the land use associated with the proposed water right is compatible with your comprehensive plan. Your attention to this request for information is greatly appreciated by the Water Resources Department. If you have any questions concerning this form, please contact the WRD's Customer Service Group at 503-986-0801.





Land Use Information Form



Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1266 (503) 986-0900 www.wrd.state.or.us

Proposed Land

Applicant(s): International Paper Company

Section

1/4 1/4

Mailing Address: 6400 Poplar

City: Memphis

State: TN

Zip Code: 38197

Daytime Phone: 901-419-4961

Water to be:

A. Land and Location

Please include the following information for all tax lots where water will be diverted (taken from its source), conveyed (transported), and/or used or developed. Applicants for municipal use, or irrigation uses within irrigation districts may substitute existing and proposed service-area boundaries for the tax-lot information requested below.

Tax Lot # Plan Designation (e.g.,

					Rural Residential/RR-5)				Use:
See Attac	hed Map					□ Diverted	□ Conveyed	☑ Used	Municipal
						☐ Diverted	Conveyed	Used	
						☐ Diverted	☐ Conveyed	Used	
						☐ Diverted	☐ Conveyed	Used	
	inties and ci		water is pro	oposed to be d	liverted, conveyed, and	d/or used or d	leveloped:		
Type of ap	ription of plication to t to Use or St ed Water Use	be filed wore Water	ith the Water	er Resources I Right Transfer ation of Conser	☐ Permi	t Amendment	or Ground Wat	er Registra	tion Modification
Source of v	water: R	eservoir/Po	ond 🗆 (Ground Water	Surface Water (name) Willa	mette River	<u>.</u>	
Estimated	quantity of v	water need	led: <u>2.0</u>	⊠ cub	ic feet per second	gallons per n	ninute 🔲	acre-feet	
	se of water:	☐ Irriga		Commercial Quasi-Munic	Industrial Instream		estic for	househo	ld(s)
Briefly des									
The Ap	plicant is t	ransferr	ing a 2.0 c	fs portion o	of water right certif	icate 54268	8 for the be	nefit of t	he City of
Indepen	dence. Th	ne reque	sted chang	es with allo	ow the City to dive	rt water fro	m the Will	amette R	iver for
	al use wit								
Manier	our abo Wit		ci vice are	***					

Note to applicant: If the Land Use Information Form cannot be completed while you wait, please have a local government representative sign the receipt at the bottom of the next page and include it with the application filed with the Water Resources Department.

See bottom of Page 3. \rightarrow

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OWRD

For Local Government Use Only

The following section must be completed by a planning official from each county and city listed unless the project will be located entirely within the city limits. In that case, only the city planning agency must complete this form. This deals only with the local land-use plan. Do not include approval for activities such as building or grading permits.

Land uses to be served by the proposed water your comprehensive plan. Cite applicable or	r uses (including proposed construction) are a dinance section(s):	llowed outright	or are not regulated by
Land uses to be served by the proposed water listed in the table below. (Please attach documents of Action/land-use decision and accomperiods have not ended, check "Being pure	mentation of applicable land-use approvals wi mpanying findings are sufficient.) If approva	hich have alrea	dy been obtained.
Type of Land-Use Approval Needed (e.g., plan amendments, rezones, conditional-use permits, etc.)	Cite Most Significant, Applicable Plan Policies & Ordinance Section References	Land	i-Use Approval:
perman, every		Obtained Denied	☐ Being Pursued ☐ Not Being Pursued
		Obtained Denied	☐ Being Pursued ☐ Not Being Pursued
		Obtained Denied	☐ Being Pursued ☐ Not Being Pursued
		☐ Obtained ☐ Denied	☐ Being Pursued ☐ Not Being Pursued
		Obtained Denied	☐ Being Pursued ☐ Not Being Pursued
cal governments are invited to express special	l land-use concerns or make recommendation	s to the Water	
		s to the Water	
garding this proposed use of water below, or o	on a separate sheet.		Resources Department
arding this proposed use of water below, or of the same: 2 A 1 P P P P P P P P P P P P P P P P P P			Resources Department
garding this proposed use of water below, or of the same: 2	on a separate sheet.		Resources Department
garding this proposed use of water below, or of same: Jampa All All All All All All All All All Al	Title: Phone (503) 837- Apwdone ase complete this form or sign the receipt belowater Resources Department's notice date to	City Plante:	Resources Department 11/15/2017 to the applicant. If you pleted Land Use Inform

Applicant name:		RECEIVED
City or County:	Staff contact:	NOV 2 0 2017
Signature:	Phone:	Date:
		OWRD



OWRD

Attachment 5 Well Logs

Application for a Water Right Transfer - Certificate 54268

POLK 52513

STATE-OF OREGON WELL I.D. # L WATER SUPPLY WELL REPORT START CARD # (as required by ORS 537.765) Instructions for completing this report are on the last page of this form. (1) LAND OWNER (9) LOCATION OF WELL by legal description: Well Number INDEPENDENCE Latitude Name County Longitude N or S Range_4W Address E or W. WM. Zip 9 73 57 INDEPENDENCE State NE 1/4 (2) TYPE OF WORK ☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment Cornallis Rd Street Address of Well (or nearest address) Independence (3) DRILL METHOD: ☐ Rotary Air ☐ Rotary Mud ☐ Cable ☐ Auger (10) STATIC WATER LEVEL: Date OI-16 ft. below land surface. Other_ _lb. per square inch Artesian pressure (4) PROPOSED USE: ☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation (11) WATER BEARING ZONES: Livestock Other Municipa ☐ Thermal ☐ Injection Depth at which water was first found (5) BORE HOLE CONSTRUCTION: Special Construction approval Yes No Depth of Completed Well 61 ft. **Estimated Flow Rate** SWL From Explosives used Yes No Type_ Amount 41 SOO GPM Z4 ' HOLE Diameter From BENTONITE SACK (12) WELL LOG: A \square B D How was seal placed: Method **Ground Elevation** DHU reuntomite poured Other_ Material 14" CHUSha rk Material From To SWL _ft. to_35 Backfill placed from ft. to 38 Size of gravel YB"x Y4." Gravel placed from _61 ravel, sam soi 17.5 (6) CASING/LINER: Welded Threaded 17.5 30 1 30 34 Drive Shoe used Inside Outside None Final location of shoe(s) (7) PERFORATIONS/SCREENS: Clau -avoy □ Perforations Method Screens V-SLOT Material 304 S. Stee Type _ Slot Tele/pipe size Number Diameter Casing Liner From SEP 1 7 2007 2017 MDAWATER RESOURCES DEPT SALEM, OREGON Date started **DECEMBERI** Of Comple (8) WELL TESTS: Minimum testing time is 1 hour **Flowing** (unbonded) Water Well Constructor Certification: Pump ☐ Bailer □ Air ☐ Artesian I certify that the work I performed on the construction, alteration, or abundon-Yield gal/min Drill stem at Time ment 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 5'-24 71 hr.5 500 G PM knowledge and belief. WWC Number (bonded) Water Well Constructor Certification: Depth Artesian Flow Found Temperature of water_ I accept responsibility for the construction, alteration, or abandonment work Yes By whom Was a water analysis done? performed on this well during the construction dates reported above. All work Did any strata contain water not suitable for intende performed during this time is in compliance with Oregon water supply well syundards. This report is true to the best of my knowledge and belief ☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other construction

FEB 2 1 2007

Depth of strata: _

WWC Number

Date 02-08-07

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

POLK 5286 POLE

L 93614 (START CARD) #___1968Z5

			-1/	1			
(1) OWNER:	1 ,	- Well Number	#2	(9) LOCATION O	F WELL by legal	description:	
Name C	tu of	Independ	euce	County POLK	Latitude	Longitude	
Address	OBOX	7-1			N or S. Range		V. WM.
	Dendence	e State Or	zip 7351	Section33	NW		
(2) TYPE OF					LotBlock		
	Deepen	Recondition	Abandon	Street Address of We	ell (or nearest address)	S. Conveilis	Pel
(3) DRILL ME				_ Ind	sendence	· 0r -	
Rotary Air	Rotary Mud	Cable		(10) STATIC WAT	R LEVEL:	07-	16-08
Other				23.5 g ft. be	low land surface.	Date Date	720
(4) PROPOSEI	D USE:			Artesian pressure	(b. per sq	uare inch. Date	
		Industrial Irr	igation t	(11) WATER BEAL			
		Lother Mun	icipal			10	
(5) BORE HO			7	Depth at which water w	as first found	19	
Special Construction a	pproval Yes 5	No Depth of Com	pleted Well 53 ft.				
Explosives used	Yes No To	/ре	A mount	From	То	Estimated Flow Rate	SWL
				23 '	46	45+GPW	23.5
HOLE Diameter From	To . _ Materia	SEAL From To	Amount sacks or pounds				
12" 10" 14	3' Ceme	nt 127 1/7	40 SOCKS				
1-	Benton		1 7850CKS				
	Ceine		1 15 SACKS	(12) WELL LOG:			
	Benton	1 1 1	1 3 SALKS	(II) WELL LOG.	Ground eleva	tion	
How was seal place		B DC	D [E				
Other DOW		bod			Material	From To	SWL
Backfill placed from			L'MINUS	Fill Grave	- Pit Run	D' 6'	
Gravel placed from	29 ft. to 5	3. ft. Size of grave	el 78 Hound	+ Clay - San	du - Brown	6' 15'	
(6) CASING/L				- Sana, Sil	F with Cla	u +	
Diameter		Gauge Steel Plastic	Welded Threaded	Grave		15'17'	
Casing: 84	From 1 To 1	250			mail - med	INM	
				W prou	on saud-	oose 17 46	23.54
8"	455 53'			· Grave	rate w San	a 46' 52'	23.51
				Cay - B	War -	52' 57'	
Liner:							
				Back Eil	les W/4"A	LINUS	
Final location of sh	oe(s)	one		From 5	7' 4053'		
(7) PERFORA		ENS:					
Perforation							
Screens	Type __	Slot Mate	rial 30455			RECEIVED	
	Slot	Tele/pipe					
From To	size Number	Diameter size	Casing Liner	DEC	HIVEL	SED 1 0 2000	
79 45.5	100	8" P.S.				OC! 1 9 2006	
				110	V 9 0 20WATE	R RESOURCES DEPT	
				140		ALEM, OREGON	
				/			
					MAIDI		
(8) WEIT TE	STS. Minimum	n testing time is 1	hour		MAINE		
(O) WELL IE	o to: Minnin	resumg time is i		Date started 06-0	9-08 Con	mpleted 07 - 16-	OB
☐ Pump	Bailer	☐ Air	Flowing Artesian	(unbonded) Water Wel			
•						construction, alteration, o	
Yield gal/min	Drawdown	Drill stem at	Time			well construction standards	
45 GPM	01		1 hr.	used and information re	ported above are true	to my best knowledge and	belief.
						WWC Number .	
				Signed		Date	
				(bonded) Water Well (Constructor Certificat	ion:	
Temperature of Wat	ter 54°	Depth Artesian Flow	Found			alteration, or abandonment	work per-
Was a water analys		By whom		formed on this well duri	ng the construction date	es reported above. All work	performed
Did any strata contr	ain water not suita	ble for intended use?	Too little	during this time is in con is true to the best of m		vell construction standards.	This report
		Colored Other _		is the to did best of the	Till all teller	WWC Number,	653
Depth of strata:				Signed // WWW	1 Mulan	Date 07-2	7-08
	ST COPY - WATE	R RESOURCES DEPA	RTMENT SECO	ND COPY - CONSTRUC	TOR THIRD CO		2809€ 10/91

POLK 52953

STATE OF OREGON WATER WELL REPORT (as required by ORS \$37.765)

	L93615_
(START CARD) #_	196828

40		
(1) OWNER: Well Number #3B	(9) LOCATION OF WELL by legal description:	
Name CITY OF IN DEPENDENCE-MON	County Po LK Latitude Longitude	
Address P.O. Box 12	Township 85 N or S. Range 4 W E or W. WM.	
City INDEPENDENCE State OR Zip 97351	Section 33 NW 4 NE 4	
	Tax Lot 20 Lot Block Subdivision	
(2) TYPE OF WORK:	18x Lot 201 Lot Block Subdivision	
New Well Deepen Recondition Abandon	Street Address of Well (or nearest address) WELL # 38	
(3) DRILL METHOD:	S. Cowallis Ra. JUD. OR 97351	
Rotary Air Rotary Mud Cable	(10) STATIC WATER LEVEL: 28 ft. below land surface. Date 08 - 19-08	
Other		
(4) PROPOSED USE:	Artesian pressure lb. per square inch. Date	
□ Domestic □ Community □ Industrial □ Irrigation	(11) WATER BEARING ZONES:	
☐ Thermal ☐ Injection ☐ Other ☐ Municipal	7026	
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first found	
Special Construction approval Yes No Depth of Completed Well ft.		
Explosives used Yes No Type Amount	From To Estimated Flow Rate SWL	
	31' 49' 45+GPM 78'	
HOLE SEAL Amount Diameter From To Material From To sacks or pounds		
12" 0' 56 CEMENT 0' 29' 48 SKS		
12 0 30 000		
	MA HITTI LOC	
- - - - - - - - - - 	(12) WELL LOG:	
	Ground elevation	
How was seal placed: Method □ A □ B C □ D □ E		
Other	Material From To SWL	
Backfill placed from 31 ft. to 29 ft. Material 14" MINUS	-EILL - SAND +GRAVEL 0' 13'	
Gravel placed from 56 ft. to 31 ft. Size of gravel 3/8" ROUND	- CLAY - SILTYBROWN 12'18'	
(6) CASING/LINER:	CUAY - BROWN 18. 25	
Casing: Su 42 31 250 5 5	- CLAY - GRAVELLY 25'27'	
	GRAVELLY CLAY 27'31'	
8" 49' 56', 250	- GRAVEL, SMALL - LARGE	
	W/ SOME BLOWN STND 31 50 281	
Liner:	+BLUE CLAY 50'56'	
Final location of shoe(s) NONE		
(7) PERFORATIONS/SCREENS:		
Perforations Method		
Screens Type V 567 Material 30455	44.00	
,	RECEIVED	
Slot Tele/pipe From To , size Number Diameter size Casing Liner	OVER THE COUNTERECEIVED	
0.1116 1401 1000 1 10	OVER THE COUNTRY OF	
31 44 100 87 PS	JUN 0 B 2009	
	JUN 0 B 2012	
	WATER RESOURCES DEPT	
	SALEM, OREGON	
	SALEM, UNEGO!	
(8) WELL TESTS: Minimum testing time is 1 hour		
Flowing	Date started 07-24-08 Completed 08-70-08	
□ Pump X Bailer □ Air □ Artesian	(unbonded) Water Well Constructor Certification:	
	I certify that the work I performed on the construction, alteration, or abandon-	
Yield gal/min Drawdown Drill stem at Time	ment of this well is in compliance with Oregon well construction standards. Materials	
45 *66m 0 1 hr.	used and information reported above are true to the best knowledge and belief.	
	WWC Number	
	Signed Date	
Temperature of Water 540 Depth Artesian Flow Found	(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work per-	
Was a water analysis done? Yes By whom	formed on this well during the construction dates reported above. All work performed	
during this time is in compliance with Oregon well construction standards. The		
Salty Muddy Odor Colored Other	is true to the best of my knowledge and belief	
Depth of strata:		
ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECOND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91		



Attachment 6

Geologist Report
Application for a Water Right Transfer – Certificate 54268



Technical Memorandum

To: Kie Cottam, City of Independence

From: Bruce Brody-Heine, RG, GSI Water Solutions, Inc.

Date: November 8, 2017

Re: City of Independence

Willamette River Wellfield - Surface Water to, Groundwater Transfer

Hydrogeologic Evaluation of Wells' Connection to River



NOV 2 0 2017



I. Introduction

International Paper is, for the benefit of the City of Independence (City), transferring a portion of surface water right Certificate 54268 to the City's three groundwater production wells (Willamette Wells 1, 2 and 3) that are located immediately adjacent to the Willamette River. Oregon Water Resources Department's (OWRD) administrative rules allow for a surface water right to be transferred to a groundwater well under Oregon Administrative Rules (OAR) 690-380-2130. Under these rules (OAR 690-380-2130) a surface water right may be transferred to a groundwater source if:

- a) The criteria in OAR 690-380-5000 are met;
- the new point of diversion (the wells) appropriate ground water from an aquifer that is hydraulically connected to the authorized surface source;
- The proposed change in point of diversion will affect the surface water source similarly to the authorized point of diversion specified in the water use subject to transfer;
- d) The withdrawal of groundwater at the new point of diversion (the wells) is located within 500 feet of the surface water source and is also located within 1,000 feet upstream or downstream of the original point of diversion as specified in the water use subject to transfer; or
- e) If the distance requirements are not met, the holder of a water use subject to transfer shall submit to the Department evidence prepared by a licensed geologist that demonstrates that the use of the groundwater at the new point of diversion [new wells] will meet the criterial set forth in OAR 690-380-2130 2 (a), (b) and (c).

The authorized surface water source for Certificate 54268 is the Willamette River. The wells to which a portion of Certificate 54268 will be transferred are within 500 feet of the river.

The wells are, however, located more than 1,000 feet from the original point of diversion (near Millersburg). As a result, this report has been prepared to demonstrate that the use of groundwater at the new well locations meet the criteria set forth in OAR 690-380-2130 2(a), (b) and (c).

II. Criteria

OAR 690-380-2130 2(a). The criteria in OAR 690-380-5000 require that the water right to be transferred is subject to transfer and is not cancelled pursuant to ORS 540.610, the proposed transfer would not result in injury, and the proposed transfer would not result in enlargement. Certificate 54368 is a water right subject to transfer and has not been cancelled. The changes proposed in the transfer to the points of diversion/appropriation, place of use, and character of use would not result in injury or enlargement. We understand OWRD will evaluate these criteria as part of the transfer application review process.

OAR 690-380-2130 2 (b) and (c). As described in more detail below, the new points of diversion (the wells) appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water (the Willamette River). Moreover, use of groundwater from the wells will affect the surface water source similarly to the authorized point of diversion. The term "similarly" is defined in OAR 690-380-2130 11 (b) to mean the use of the groundwater from the new well affects the surface water source specified in water right being transferred and would result in stream depletion of at least 50 percent of the rate of appropriation within 10 days of continuous pumping.

The following is a description of an analysis of the City's water wells and reasons why the proposed use of groundwater from the wells meets the above-described criteria for a surface water to groundwater transfer.

III. Analysis

The City has conducted several evaluations of the hydraulic connection of wells to the Willamette River at the proposed location. These evaluations included a Ranney collector study in 1972, installing a series of test wells and completing an aquifer test in 2006, and are 8-day aquifer test completed in 2008. The City provided GSI with several reports and the following information from the evaluations: 1) the aquifer parameters from the 1972 aquifer test associated with a Ranney Collector study, 2) the results of a 2-hour aquifer test in 2006, and 3) the raw data from the 2008 aquifer test.

Hydraulic Connection to the Willamette River. Based on the information obtained from the previous evaluations described above, the City's three production wells (Willamette Wells 1, 2 and 3) were installed in January 2007, and July and August 2008 along the edge of the Willamette River. The well logs are presented in Attachment A and the approximate locations of City's well are also shown on the Figure in this attachment. All three of the City's wells are located within 500 feet from the river. Willamette Well 1 is located 90 feet from the Willamette River; Willamette Well 2 is 95 feet from the river; and Willamette Well 3 is 100 feet from the river. All three wells develop groundwater from an approximately 20 foot thick gravel unit that is located above a blue clay layer between 50 and 57 feet below ground surface. A cross section showing the geologic formations in relationship to the Willamette River from the 2006 study is provided in Attachment B. This cross section is oriented approximately east west near the location of the current City's Willamette Well 1. The cross-section shows there is a direct connection between the gravel aquifer and the adjacent Willamette River. The cross-section, in combination with the high transmissivity

GSI WATER SOLUTIONS, INC. PAGE 2 OF 3



values calculated for each well (see description below), demonstrates the City's wells are Completed in gravel deposit that is hydraulically connected to the Willamette River.

Therefore, Willamette Wells 1, 2 and 3 appropriate groundwater from an aquifer that is hydraulically connected to the authorized surface water source (the Willamette River).

Groundwater Use will Affect the Surface Water Source Similarly. GSI reviewed and plotted the 2008 aquifer test data to determine the aquifer parameters (transmissivity and storativity) in the vicinity of the three Willamette River wells (see water level plots in Attachment C). Unfortunately, limited static water level data was available either prior to or after the test and the transducer data recorded only a very small drawdown within the actual pumping wells. This indicates that the aquifer was not under much stress during the test and the wells likely could produce more water than the rates used in the aquifer test. GSI used a combination of the maximum drawdown observed in the transducer data and recorded notes at the base of the Pump Test Data Sheets to calculate a transmissivity (T) value for each well using the Theis equation. The calculated aquifer parameters from the 2008 test (Table 1) were similar to those determined from the previous aquifer test results (300,000 to 550,000 gallons per day per foot).

The 2003 Hunt Model was used to calculate the stream flow depletion created by pumping each of the Willamette River wells (Attachment D). The results of the calculation for each well (Willamette Wells 1, 2, and 3) indicate that the stream depletion created by pumping of the wellfield wells are 87 percent, 81 percent, and 91 percent, respectively, in 10 days of continuous pumping. These percentages significantly exceed the required minimum of 50 percent stream depletion within 10 days. The use of groundwater from each of the 3 wells (Willamette Wells 1, 2 and 3) would, therefore, affect the Willamette River similarly to the authorized point of diversion in Certificate 54268.

IV. Conclusion

The proposed changes to a portion of Certificate 54268 meets the requirements of OAR 690-380-2130. As discussed above, the criteria in OAR 690-380-5000 are met. The Willamette Wells 1, 2 and 3 appropriate water from a gravel unit that is hydraulically connected to the Willamette River. The proposed new wells are all located within 500 feet from the Willamette River. Although the wells are not located within 1000 feet downstream from the original point of diversion in Certificate 54268, the evidence provided in this report and its attachments demonstrates that the use of the groundwater at the new points of diversion would affect the Willamette River similarly to the authorized point of diversion. Accordingly, the proposed change would meet the criteria in OAR 690-380-2130(2).

References

GSI 2006. Cities of Independence and Monmouth – Collector Well Feasibility Study. GSI Memorandum. Prepared for Ed Butts, 4B Engineering & Consulting. October 20, 2006.

4B Engineering & Consulting. Cities of Independence and Monmouth – Willamette Wellfield Preliminary Data. Report. Prepared Cities of Monmouth and Independence. May 2011.

T 12773

2008 7-Day Pumping Test Aquifer Property Estimate & Stream Depletion City of Independence

	TRANSMISSIVITY (T)							
	Transduce	er Dataset ¹	Summary S	Statement ²				
	gpd/ft	ft²/day	gpd/ft	ft²/day				
Well 1	3,900,000	520,000	530,000	71,000				
Well 2	8,200,000	1,090,000	620,000	83,000				
Well 3	1,200,000	160,000	37,000	4,900				

	-
Stream	
Depletion	
% at 10 days	
87%	
81%	
91%	
	Depletion % at 10 days 87% 81%

Notes:

- 1 = no static water level data provided for the wells, and transducer data provided required some interpretation
- 2 = Summary statement found at bottom of manual water level data summary sheet Storativity value estimated to be 0.10 for all calculations due to proximity to the River

=: T values used in stream depletion calculations (largest T values showed the smallest depletion)

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of			
Owner's Name: Cities of Monmouth and Independence Well Location: Willamette River Wellfield (South)						
Well Name/No.: #1 (Se	outh Well)	Date(s) of Test: Sept 22, 20	008 to Sept 30, 2008			
Well Diameter:	Depth:	Static Level:	Screen/Perf at:			
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 41'			
SWL After Test:	Drilled By:	Test Started: 1910 Hrs.	Test Stopped: 1400 Hrs.			
Tested By (Firm):	Name:	Max. GPM: 500 @ 34.5' P	WL After 188 Hrs.			

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
500	34.5'	9/22/08 7:10 pm		500	34.33'	8:01 am	
500	34.1'	9:10 pm		500	34.33'	10:02 am	
525	34.33'	9/23/08 1:00 am		500	34.33'	12:01 pm	
500	33.9'	5:00 am		500	34.33'	2:02 pm	
490	33.9'	7:00 am		500	34.33'	4:00 pm	
500	34'	9:15 am		500	34.25'	5:58 pm	
500	33.9'	11:05 am		500	34.33'	8:01 pm	
475	34.1'	1:15 pm		500	34.33'	9:56 pm	
490	34.21'	4:13 pm		500	34.33'	9/27/08 6:06 am	e e
500	34.08'	6:07 pm		500	34.33'	8:03 am	
525	34.08'	8:11 pm		500	34.33'	10:01 am	
525	33.91'	10:06 pm		500	34.33'	12:02 pm	
490	33.91'	9/24/08 12:07 am		500	34.33'	1:59 pm	
490	33.83'	6:09 am		500	34.33'	4:00 pm	
475	34.00'	8:17 am		500	34.37'	5:58 pm	
500	34.00'	10:06 am		500	34.45'	9/28/08 1:40 am	
475	34.25'	12:05 pm		500	34.45'	5:30 am	
500	34.33'	2:05 pm		500	34.45'	7:50 am	
500	34.33'	4:08 pm		500	34.45'	10:10 am	
500	34.38'	6:07 pm		300+	33.2'	2:40 pm	MPA started at 1:00 pm
500	34.25'	8:07 pm		300+	33.175'	7:00 pm	
500 -	34.33'	10:06 pm		300	33.25'	11:45 pm	
500	34.33'	9/25/08 12:01 am		300	33.3'	9/29/08 6:40 am	
520	34.33'	6:07 am		500	34.6'	11:50 am	
500	34.29'	8:11 am		500	34.7'	4:50 pm	
500	34.29'	10:05 am		500	34.65'	9/30/08 8:40 am	
500	34.33'	12:07 pm		500	34.65'	1:10 pm	
500	34.33'	2:03 pm					
500	34.33'	4:00 pm			T		
500	34.29'	6:02 pm					RECEIVE
500	34.33'	8:00 pm	-				
500	34.37'	10:01 pm				-	NOV 2 0 2017
500	34.33'	11:39 pm					100 100
500	34.33'	9/26/08 6:04 am					OWRD

500	34.29'	6:02 pm		HE	CEIVEL
500	34.33'	8:00 pm			
500	34.37'	10:01 pm		N	IOV 2 0 2017
500	34.33'	11:39 pm			1
500	34.33'	9/26/08 6:04 am			OWRD
Comm	ents: <u>Summa</u>	ry Capacity: 500 GPM @	34.7' PWL (2' drawdown) (≈250 GPM	/ft.)	
Ву:		Firm:	Approved:	Firm:	1,
				T 12	2773

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of			
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette River Wellfield (South)				
Well Name/No.: #2		Date(s) of Test: Sept 22, 2008 to Sept 30, 2008				
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:			
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 43.085'			
SWL After Test:	Drilled By:	Test Started: 1900 Hrs.	Test Stopped: 1405 Hrs.			
Tested By (Firm):	Name:	Max. GPM: @ PW	L After Hrs.			

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
510	27.67'	9/22/08 7:00 pm		510	27.75'	9/26/08 6:00 am	
500	27.5'	9:00 pm		500	27.75'	7:54 am	
500	27.75'	9/23/08 1:00 am		500	27.75'	9:57 am	
500	27.75'	5:00 am		500	27.75'	11:56 am	
500	27.58'	7:00 am		500	27.75'	1:59 pm	
510	27.67'	9:00 am		510	27.75'	3:56 pm	
500	27.67'	11:00 am	+	510	27.75'	5:51 pm	
500	27.63'	1:00 pm		500	27.75'	7:55 pm	
500	27.67'	3:00 pm		510	27.75'	9:51 pm	
500	27.63'	4:01 pm		510	27.75'	9/27/08 6:01 am	
510	27.67'	6:01 pm		500	27.75'	7:56 am	
510	27.67'	8:00 pm		500	27.75'	9:56 am	
500	27.72'	9:59 pm		510	27.75'	11:38 am	
510	27.75'	9/24/08 12:01 am		510	27.75'	1:54 pm	
500	27.72'	6:01 am		510	27.75'	3:56 pm	
510	27.67'	8:06 am		510	27.75'	5:53 pm	
510	27.67'	9:59 am		500	27.87'	9/28/08 1:30 am	
500	27.67'	11:59 am		500	27.91'	5:40 am	
500	27.67'	1:58 pm		500	27.98'	7:40 am	· ·
510	27.75'	4:00 pm		500	27.92'	10:15 am	
510	27.81	5:57 pm		510	27.92'	2:45 pm	
500	27.75'	8:03 pm		510	27.92'	6:50 pm	
510	27.75'	10:01 pm		510	27.92'	11:40 pm	
500	27.71'	11:55 pm		510	27.92'	9/29/08 6:45 am	
510	27.67'	9/25/08 6:02 am		500	28.15'	12:00 pm	
500	27.67'	8:04 am		500	28.0'	4:30 pm	
510	27.67	10:01 am		480	27.75'	9/30/08 8:30 am	
510	27.75'	12:02 pm		480	27.70'	1:05 pm	
510	27.75'	1:58 pm					
500	27.75'	3:58 pm				1.45	
500	27.75	5:56 pm				REC	FIVED
500	27.75'	7:55 pm				UL	less 1 V less 1
500	27.75'	9:57 pm				NO	2 0 2017
510	27.75'	11:55 pm				1401	2 0 EOII

Comments:	Summary Capacity: 510 GPM	@ 28' PWL (1.75' drawdown) (≈275 GPM/ft.)		0	A	IT		
					V	VF	11	
By:	Firm:	Approved:	Firm:					

games !

WELL 2 **Data Entry Enter Data Below** Transmissivity from Specific Capacity using the Theis Equation (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)] Pumping Rate (gpm) = Q = 504.00 (gpm) $W(u) = (-\ln u) - (0.5772157) + (u/1^*1!) - (u^*u/2^*2!) + (u^*u^*u/3^*3!) - (u^*u^*u^*u/4^*4!) + \dots$ Drawdown (feet) = s = 0.15 (feet) T = transmissivity (L*L/T) 187,1000 r = radial distance (L) Time (hours) = t = (hours) s = drawdown (L) S = storage coefficient (dimensionless) t = time (T) 0.100000 (dimensionless) pi = 3.141592654 u = dimensionless Storage Coefficient = S = W(u) = well function 8.0000 Note: Transmissivity is derived using an iterative process Well Diameter (inches) = d = (inches) The calculations use a known or assumed Storage Coeficient (S) provided by the user ress F9 to Calculate Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration **Calculated Results Calculated Results** Total Theis Equation iterations = 25 iterations Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 (ft2/day) 1,094,703.23 Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = 8,188,949,39 (gpd/ft) Note: Well efficiency is not included in the calculations Transmissivity (gpd/ft) = T = 0.0000E+00 (ft2/day) Transmissivity Difference = References okay to use T if diff < 0.0001 Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using (last 2 iterations) ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 3.2549E-10 okay to use T if u <7.1 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, (last iteration) Dec. 1979, pg. 50-52, Drawdown Storage Pumping Rate **Pumping Rate** W(u) Transmissivity Transmissivity Comments Theis difference from Equation Coefficient r = d/2(ft2/day) Iteration (feet) (gal/min) (ft3/sec) (days) (feet) previous Note: yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 7.0000 1.1545E-04 W(u) calculation test 0.15 0.10000 504.00 1.12 7.80 0.33 646,799.96 T = Q/s 5 5089E-10 4.2082E+05 0.15 0.10000 504.00 7.80 0.33 20.7423 1,067,619.26 T = Theis Equation 1.00 0.15 0.10000 504.00 1,12 7.80 0.33 3.3375E-10 21.2434 1,093,413.78 2.5795E+04 T = Theis Equation 2.00 1,12 3 2587F-10 1.2288E+03 T = Theis Equation 3 00 0.10000 504.00 7.80 21.2673 1.094.642.56 0.15 0.33 T = Theis Equation 0.15 0.10000 504.00 1.12 7.80 0.33 3.2551E-10 21,2684 1.094.700.38 5.7811E+01 4 00 T = Theis Equation 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.09 2.7182E+00 5.00 0.15 0.10000 504 00 1.12 7.80 0.33 3.2549E-10 21.2685 1.094,703.22 1.2781E-01 T = Theis Equation 6.00 7.80 6.0091E-03 0.15 504.00 1.12 0.33 3 2549F-10 21 2685 1.094.703.23 T = Theis Equation 7.00 0.10000 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 2.8254E-04 T = Theis Equation 8.00 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 1.3284E-05 T = Theis Equation 9.00 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21,2685 1.094.703.23 6.2445E-07 T = Theis Equation 10.00 2 9569F-08 11.00 0.15 0.10000 504.00 1.12 7.80 0.33 3 2549F-10 21.2685 1,094,703.23 T = Theis Equation 1.12 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 12.00 0.15 0.10000 504.00 504.00 1.12 7.80 0.33 3.2549E-10 21,2685 1.094,703,23 0.0000E+00 T = Theis Equation 13.00 0.15 0.10000 0.15 0.10000 504 00 1.12 7.80 0.33 3 2549F-10 21 2685 1 094 703 23 0.0000E+00 T = Theis Equation 14.00 0.15 0.10000 504.00 1.12 7 80 0.33 3 2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 15.00 1.12 7.80 0.33 3.2549E-10 21,2685 1,094,703.23 0.0000E+00 T = Theis Equation 16.00 0.15 0.10000 504.00 O.15 1.12 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 17.00 0.10000 504.00 7.80 0.33 0.15 0.10000 504 00 1,12 7.80 0.33 3.2549E-10 21.2685 1.094.703.23 0.0000E+00 T = Theis Equation 18.00 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 19.00 1.12 0.15 0.10000 504.00 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 20.00 T = Theis Equation 7.80 1 094 703 23 0.0000E+00 21.00 0.15 0.10000 504.00 1.12 0.33 3 2549F-10 21 2685 0.15 0.10000 504.00 1.12 7.80 0.33 3.2549E-10 21.2685 1,094,703.23 0.0000E+00 T = Theis Equation 22.00

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3.2549E-10

3.2549E-10

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21.2685

21.2685

ansmissivity fr	rom Specific Capac	ity using the Their	Equation		WELL 1			Data Entry		Enter Data Below (yellow boxes only)	
dapted from Vo	orhis (1979)							W-II ID C			
eis Equation:	T = [Q/(4*s*pi)][W(u)]						Well Log ID or Comme	nt for Records	Average Specific Capacity	
	u = (r*r*S)/(4*T*t)							Pumping Rate (gpm) = Q =		500.00	(gpm)
	$W(u) = (-\ln u) - (0.57)$	772157)+(u/1*1!)-(u	'u/2*2!)+(u*u*u/3*3!)-([u*u*u*u/4*4!)+				Drawdown (feet) - e e		2.00	(fact)
	T = transmissivity ((L*L/D						Drawdown (feet) = s =		2.00	(feet)
	s = drawdown (L)	/			r = radial distance	9 (L)		Time (hours) = t =		186.8000	(hours)
		ient (dimensionless)		t = time (T)			Chamas Coofficient - C		0.100000	(4)
	pi = 3.141592654	•			u = dimensionles W(u) = well funct			Storage Coefficient = S		0.100000	(dimension
te: Transmiss	sivity is derived usi	ng an iterative pro-	cess		.,,			Well Diameter (inches)	=d=	8.0000	(inches)
			ned Storage Coeficier			the first Their equation its act	tion	The same and		Press F9 to Calculate	14
			approximate the Transation is used to calcul			the first Theis equation iterat	lion				
	Total Theis Equation	on iterations = 25 ite	rations			-		Calculated Results		Calculated Results	
			ulated Transmissivity	for the last 2 items	ations is < 0.0001			Transmissivity (ft2/day	A=T=	70,966.93	(ft2/day
	can accept answe	r if u in the last itera	non is < 7.1					ransmissivity (π2/day	,-,-	70,366.93	(nz/day)
te: Well efficie	ency is not include	d in the calculatio	ns					Transmissivity (gpd/ft)	=T=	530,869.53	(gpd/ft)
								Tenneniashih Dist		0.0000E+00	1001
ferences:	Theis, C.V. 1935.	The relation between	en the lowering of the	piezometric surfac	ce and the rate an	d duration of discharge of a	well using	Transmissivity Different (last 2 iterations)	ice =	0.0000E+00 okay to use T if diff < 0.0001	(ft2/day)
			eophysical Union Tran					,,			
								u =		5.0289E-09	
			n pumped well data.	Well Log, Nationa	il Water Well Asso	ciation newsletter, vol. 10, no	0. 11,	(last iteration)	ı	okay to use T if u <7.1	
	Dec. 1979, pg.		B 1 D1	T1	Distance		146.3				-
Drawdown	Storage	Pumping Rate	Pumping Rate	Time t	Distance r = d/2	u	W(u)	Transmissivity T	Transmissivity difference from	Comments	Theis Equation
Drawdown s (feet)						u	W(u)	Transmissivity T (ft2/day)		Comments	Equation
s (feet)	Storage Coefficient S	Pumping Rate Q (gal/min)	Q (ft3/sec)	t	r = d/2			T	difference from	Comments	Equation
s (feet)	Storage Coefficient	Pumping Rate Q (gal/min)	Q (ft3/sec)	t	r = d/2	Note: W(u) calculation	valid when u < 7.1	T	difference from		Equation
s (feet)	Storage Coefficient S	Pumping Rate Q (gal/min)	Q (ft3/sec)	t	r = d/2			T	difference from	Comments W(u) calculation test	Equation
s (feet)	Storage Coefficient S	Pumping Rate Q (gal/min)	Q (ft3/sec)	t	r = d/2	Note: W(u) calculation	valid when u < 7.1	T	difference from		Equation
s (feet) Note:	Storage Coefficient S : yellow grid areas	Pumping Rate Q (gal/min) are where values a	Q (ft3/sec) are calculated	t (days)	r = d/2 (feet)	Note : W(u) calculation 7.0000	valid when u < 7.1 1.1545E-04	T (ft2/day)	difference from previous	W(u) calculation test T = Q/s	Equation Iteration
s (feet) Note:	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00	Q (ft3/sec) are calculated	7.78	r = d/2 (feet) 0.33	Note : W(u) calculation 7.0000	valid when u < 7.1 1.1545E-04 18.1424	T (ft2/day) 48,125.00 69,479,44	difference from previous 2.1354E+04	W(u) calculation test T = Q/s T = Theis Equation	Equation Iteration
s (feet) Note:	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a	(ft3/sec) are calculated 1.11 1.11	t (days)	r = d/2 (feet)	Note : W(u) calculation 7.0000	valid when u < 7.1 1.1545E-04	T (ft2/day)	difference from previous	W(u) calculation test T = Q/s T = Theis Equation T = Theis Equation	Equation Iteration
\$ (feet) Note:	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00	Q (ft3/sec) are calculated	7.78 7.78	r = d/2 (feet) 0.33 0.33 0.33	Note: W(u) calculation 7.0000 7.4159E-09 5.1366E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5087	T (ft2/day) 48,125.00 69,479.44 70,885.80	2.1354E+04 1.4064E+03	W(u) calculation test T = Q/s T = Theis Equation	Equation Iteration
s (feet) Note: 2.00 2.00 2.00 2.00 2.00	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0247E-09 5.0289E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,962.55 70,966.69 70,966.92	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00
2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09 5.0289E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5207 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,966.99 70,966.99 70,968.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 6.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0247E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09	18.1424 18.5097 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479.44 70,885.80 70,962.55 70,966.99 70,966.92 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,962.55 70,966.69 70,966.93 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1438E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00
2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.00	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	r = d/2 (feet) 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.3	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5207 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,966.99 70,966.92 70,966.93 70,966.93 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.11	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09 5.0289E-09	18.1424 18.5097 18.5297 18.5298 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479.44 70,885.80 70,965.95 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 8.00 9.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Fumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5087 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885,80 70,962,55 70,966,69 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 7.00 6.00 7.00 9.00 10.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	r = d/2 (feet) 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885,80 70,962,55 70,966,69 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 6.00 7.00 8.00 9.00 10.00 11.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1.	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	18.1424 18.5097 18.5297 18.5298 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885,80 70,965,69 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93	2.1354E+04 1.4064E+03 7.6774E+01 4.1439E+00 2.2363E-01 1.2008E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 9.00 10.00 11.00 12.00 13.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	(ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5087 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885,80 70,962,55 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93 70,966,93	2.1354E+04 1.4064E+03 7.6744E+01 4.1436E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 7.00 8.00 9.00 11.00 12.00 13.00
2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.	Storage Coefficient S: yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	r = d/2 (feet) 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,962.55 70,966.92 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1,00 2,00 3,00 4,00 5,00 7,00 8,00 10,00 11,00 12,00 13,00 14,00 15,00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.4159E-09 5.1366E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479.44 70,885.80 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93 70,966.93	2.1354E+04 1.4064E+03 7.6774E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000	Pumping Rate Q (gal/min) are where values a 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	0.33 0.33 0.33 0.33 0.33 0.33 0.33 0.33	7.0000 7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 7.00 9.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000 0.10000	Pumping Rate Q (gal/min) are where values at the second s	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	7.78 7.78 7.78 7.78 7.78 7.78 7.78 7.78	r = d/2 (feet) 0.33	7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,965.92 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 8.00 11.00 11.00 12.00 15.00 16.00 17.00 16.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S: yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	r = d/2 (feet) 0.33	7.0000 7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885,80 70,962,55 70,966,69 70,966,93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 7.00 10.00 11.00 12.00 13.00 14.00 17.00 18.00 17.00 18.00 19.00 19.00 19.00
2.00 2.00 2.00 2.00 2.00 2.00 2.00 2.0	Storage Coefficient S : yellow grid areas 0.10000	Pumping Rate Q (gal/min) are where values at the second se	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	r = d/2 (feet) 0.33	Note: W(u) calculation 7,0000 7,4159E-09 5,1366E-09 5,0347E-09 5,0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5208 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,962.55 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 19.00 20.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values at the second s	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	r = d/2 (feet) 0.33	Note: W(u) calculation 7,0000 7,4159E-09 5,1366E-09 5,0347E-09 5,0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308	T (ft2/day) 48,125.00 69,479.44 70,885.80 70,965.92 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 10.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values a 500.00	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	r = d/2 (feet) 0.33	Note: W(u) calculation 7.0000 7.4159E-09 5.1366E-09 5.0347E-09 5.0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308	T (ft2/day) 48,125.00 69,479,44 70,885.80 70,982.55 70,986.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 6.00 7.00 11.00 12.00 13.00 14.00 15.00 16.00 17.00 18.00 19.00 20.00 22.00
\$ (feet) Note: 2.00 2.00 2.00 2.00 2.00 2.00 2.00 2	Storage Coefficient S : yellow grid areas 0.10000 0.10000	Pumping Rate Q (gal/min) are where values at the second s	Q (ft3/sec) are calculated 1.11 1.11 1.11 1.11 1.11 1.11 1.11 1	t (days) 7.78	r = d/2 (feet) 0.33	Note: W(u) calculation 7,0000 7,4159E-09 5,1366E-09 5,0347E-09 5,0289E-09	valid when u < 7.1 1.1545E-04 18.1424 18.5097 18.5297 18.5308	T (ft2/day) 48,125.00 69,479.44 70,885.80 70,965.92 70,966.93	2.1354E+04 1.4064E+03 7.6744E+01 4.1439E+00 2.2363E-01 1.2068E-02 6.5124E-04 3.5143E-05 1.8965E-06 1.0234E-07 5.5152E-09 3.0559E-10 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00 0.0000E+00	W(u) calculation test T = Q/s T = Theis Equation	1.00 2.00 3.00 4.00 5.00 7.00 8.00 11.00 11.00 12.00 15.00 16.00 17.00 18.00 19.00 20.00 21.00

WELL TEST DATA SHEET

4B Engineering & Consulting LLC, 3000 Market St. NE, Suite 527, Salem, OR 97301 Ph: 503-589-1115, Fax: 503-589-1118

			Pg of
Owner's Name: Cities	of Monmouth and Independence	Well Location: Willamette	River Wellfield (South)
Well Name/No.: #3 (N	orth Well)	Date(s) of Test: Sept 22, 20	08 to Sept 30, 2008
Well Diameter: 8"	Depth:	Static Level:	Screen/Perf at:
Test Pump Setting:	Test Pump Type:	Air Line/Probe/Transmitter	W/L Device Length: 40.83"
SWL After Test:	Drilled By:	Test Started: 1915 Hrs.	Test Stopped: 1420 Hrs.
Tested By (Firm):	Name:	Max. GPM: @ PWL A	After Hrs.

GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER	GPM	PUMPING LEVEL	TIME OF DAY	CONDITION OF WATER
150	32.1'	9/22/08 7:15 pm		160	31.71'	10:08 am	
150	31.67'	9:30 pm		160	31.67'	12:12 pm	
160	31.6'	9/23/08		160	31.63'	2:12 pm	
		1:00 am					
160	31.5'	5:00 am	,	160	31.63'	4:05 pm	
160	31.41'	7:00 am		160	31.75'	6:04 pm	
160	31.33'	9:00 am		160	31.67'	8:10 pm	
180	32.17'	11:15 am	Raise flow	160	31.75'	10:03 pm	
170	32.17'	1:10 pm		160	31.67'	9/27/08 6:13 am	
170	32.25'	4:07 pm		160	31.67'	8:11 am	
170	32.17'	6:12 pm		160	31.63'	10:05 am	
170	32.25'	8:20 pm		160	31.58'	12:15 pm	1
170	32.17'	10:15 pm		160	31.58'	2:04 pm	
170	32.17'	9/24/08 12:14 am		160	31.58'	4:04 pm	
170	32.08'	6:15 am		160	31.67'	6:04 pm	
170	32.08'	8:27 am		175	31.65'	9/28/08 1:50 am	
170	32.04'	10:11 am		175	31.6'	5:50 am	
170	32.08'	12:22 pm		175	31.6'	7:30 am	
170	32.08'	2:10 pm		175	31.65'	10:20 am	V
170	32.04'	4:18 pm		175	31.65'	3:00 pm	
170	32.00'	6:26 pm		175	31.65'	7:05 pm	
165	32.04'	8:15 pm		175	31.65'	11:35 pm	1
170	32.00'	10:14 pm	-	175	31.65'	9/29/08 6:50 am	
170	32.04'	9/25/08 12:09 am		175	31.7'	11:55 am	
170	32.00'	6:15 am	¥-	175	31.73'	4:45 pm	
170	31.92'	8:20 am		175	31.62'	9/30/08 8:50 am	
160	31.75'	10:12 am		175	31.6'	1:20 pm	
160	31.75'	2:09 pm					
160	31.75'	4:08 pm					
160	31.75'	6:08 pm				RECE	-IV-D
160	31.75'	8:07 pm					a d C Factors Report
170	31.75'	10:09 pm				NOV 2	0 2017
160	31.75'	9/26/08 12:05 am				INO Y	2017
160	31.75'	6:09 am					RN
160	31.75'	8:11 am				ON	

Comments:	Summary Capacity: 1	75 GPM @ 31.7' PWL (8.6' drawdown) (≈20 GPM/ft.)	
By:	Firm:	Approved:	Firm:

W(u) = T = trans	= [Q/(4*s*pi)][W((f*r*s)/(4*r*t)](W) = (f*r*s)/(4*r*t) (u) = (-in u)-(0.5) = transmissivity (s drawdown (L) = storage coeffic = 3.141592654 us calculations us eccific Capacity (se Transmissivity tatal Theis Equation accept answer in accept ans	r72157)+(u/1*1!)-(u* L*LT) ient (dimensionless) ing an iterative pro- ie a known or assur Q/s) is used to first of the previous iter- on iterations = 25 iter- if difference in calcu- if u in the last iteral d in the calculation The relation between orage. American Gi Transmissivity from	ned Storage Coeficie approximate the Tran attion is used to calcul rations ulated Transmissivity tion is < 7.1 ns on the lowering of the eophysical Union Tra m pumped well data. Pumping Rate Q (ft3/sec)	ent (S) provided by namissivity (T) use- late u in a given Ti y for the last 2 itera plezometric surfa ansactions, 16 anni	their equation iteral ations is < 0.0001 ations is < 0.0001 acc and the rate and acc and the rate and acc and the rate and	the first Theis equation iteration d duration of discharge of a v 6, pg. 519-524.	well using	Well Log ID or Commer Pumping Rate (gpm) = Drawdown (feet) = s = Time (hours) = t = Storage Coefficient = S Well Diameter (inches) Calculated Results Transmissivity (ft2/day Transmissivity (gpd/ft) Transmissivity Differen (last 2 iterations) u = (last iteration) Transmissivity T (ft2/day)	Q= [[= = [= d= []=T= [Average Specific Capacity 500.00 0.30 186.8000 0.100000 8.0000 Press F9 to Calculate Calculated Results 524,164.84 3,921,024.09 0.0000E+00 okay to use T if diff < 0.0001 6.8087E-10 okay to use T if u <7.1 Comments	(gpm) (feet) (hours) (dimensionless (inches) (ft2/day) (gpd/ft) (ft2/day) Theis Equation Iteration
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S Coe (feet) Note: yellow 0.30 0. 0.00 0. 0.30 0. 0.00 0. 0.	Coefficient S	Q (gal/min)	Q (ft3/sec)	t	r = d/2		W(u)	T	difference from	Comments	Equation
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0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0.	0.10000	500.00	1.11	7.78	0.33	1.1124E-09	20.0396	511,631.63	1.9080E+05	T = Theis Equation	1.00 2.00
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0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0. 0.30 0.	0.10000	500.00	1.11	7.78	0.33	6.8091E-10	20.5304	524,163.18	2.8646E+01	T = Theis Equation	4.00
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0.30 0. 0.30 0. 0.30 0. 0.30 0.	0.10000	500.00	1.11	7.78	0.33	8.8087E-10	20.5304	524,164.64	6.7965E-02	T = Theis Equation	6.00
0.30 0. 0.30 0. 0.30 0.	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164,64	3.3104E-03	T = Theis Equation	7.00
0.30 0. 0.30 0.	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	1.6125E-04	T = Theis Equation	8.00
0.30 0.	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	7.8541E-06	T = Theis Equation	9.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	3.8248E-07	T = Theis Equation	10.00
	0.10000	500.00	1.11	7.78	0.33	6.6087E-10	20.5304	524,164.64	1.8685E-08	T = Theis Equation	11.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	8.7311E-10	T = Theis Equation	12.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	13.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	14.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	15.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	16.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	17.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	18.00
	0.10000	500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,184.64	0.0000E+00	T = Theis Equation	19.00
		500.00	1.11	7.78	0.33	6.8087E-10	20.5304	524,184.64	0.0000E+00	T = Theis Equation	20.00
				7.78	0.33	6.8087E-10	20.5304	524,164.64	0.0000E+00	T = Theis Equation	21.00
	0.10000		1 11		0.33	6.8087E-10	20.5304	524, 164.64	0.0000E+00	T = Theis Equation	22.00
	0.10000	500.00	1.11		0.33				0.0000E+00	T = Theis Equation	23.00
	0.10000 0.10000 0.10000	500.00 500.00	1.11	7.78	0.33	0 0007E-10	20 5204		U.UUUUETUU		24.00
0.30 0.30	0.10000 0.10000 0.10000 0.10000	500.00		7.78 7.78 7.78	0.33	6.8087E-10 6.8087E-10	20.5304 20.5304	524,184.84 524,164.84	0.0000E+00	T = Theis Equation	

OWRD

П WELL 2 Data Entry **Enter Data Below** Transmissivity from Specific Capacity using the Theis Equation NOV 2 0 2017 (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)] Pumping Rate (gpm) = Q = 510.00 (gpm) $u = (r^*r^*S)/(4^*T^*t)$ $W(u) = (-\ln u) - (0.5772157) + (u/1^*1!) - (u^*u/2^*2!) + (u^*u^*u/3^*3!) - (u^*u^*u^*u/4^*4!) + \dots$ 1.75 Drawdown (feet) = s = (feet) T = transmissivity (L*L/T) s = drawdown (L) r = radial distance (L) Time (hours) = t = 187.1000 (hours) S = storage coefficient (dimensionless) t = time (T) 0.100000 pi = 3.141592654 u = dimensionless Storage Coefficient = 8 = (dimensionless) W(u) = well function Well Diameter (inches) = d = (inches) Note: Transmissivity is derived using an iterative process The calculations use a known or assumed Storage Coeficient (S) provided by the user ress F9 to Calculate Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results **Calculated Results** Total Theis Equation iterations = 25 iterations Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 83,458,13 Can accept answer if u in the last iteration is < 7.1 Transmissivity (ft2/day) = T = (ft2/day) 624,310.19 Note: Well efficiency is not included in the calculations Transmissivity (gpd/ft) = T = (gpd/ft) References: Transmissivity Difference = 0.0000E+00 (ft2/day) okay to use T if diff < 0.0001 Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using (last 2 iterations) ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 4.2694E-09 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, (last Iteration) okay to use T if u <7.1 Dec. 1979, pg. 50-52. Transmissivity Distance W(u) Transmissivity Comments Drawdown Storage Pumping Rate | Pumping Rate difference from Equation r = d/2(ft2/day) (feet) (gal/min) (ft3/sec) (days) (feet) previous Iteration Note: yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1

						7.0000	1.1545E-04			W(u) calculation test	
1.75	0.10000	510.00	1.14	7.80	0.33	A STATE OF THE STATE OF	THE WALLES	56,100.00		T = Q/s	
1.75	0.10000	510.00	1.14	7.80	0.33	6.3514E-09	18.2974	81,684.87	2.5585E+04	T = Theis Equation	1.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.3621E-09	18.6731	83,362.25	1.6774E+03	T = Theis Equation	2.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2743E-09	18.6934	83,453.00	9.0745E+01	T = Theis Equation	3.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2697E-09	18.6945	83,457.85	4.8570E+00	T = Theis Equation	4.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18,8946	83,458.11	2.5982E-01	T = Theis Equation	5.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	1.3898E-02	T = Theis Equation	6.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	7.4343E-04	T = Theis Equation	7.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	3.9767E-05	T = Theis Equation	8.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	2.1272E-06	T = Theis Equation	9.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	1.1381E-07	T = Theis Equation	10.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	6.0536E-09	T = Theis Equation	11.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.8946	83,458.13	3.4925E-10	T = Theis Equation	12.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	13.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	14.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	15.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.8946	83,458.13	0.0000E+00	T = Theis Equation	16.00
1.75	0.10000	510.00	1,14	7.80	0.33	4.2694E-09	18.8946	83,458.13	0.0000E+00	T = Theis Equation	17.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.8946	83,458.13	0.0000E+00	T = Theis Equation	18.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	19.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.8946	83,458.13	0.0000E+00	T = Theis Equation	20.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.8946	83,458.13	0.0000E+00	T = Theis Equation	21.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	22.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	23.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18.6946	83,458.13	0.0000E+00	T = Theis Equation	24.00
1.75	0.10000	510.00	1.14	7.80	0.33	4.2694E-09	18,6946	83,458.13	0.0000E+00	T = Theis Equation	25.00

WELL 3 **Enter Data Below** Transmissivity from Specific Capacity using the Theis Equation **Data Entry** (yellow boxes only) Adapted from Vorhis (1979) Well Log ID or Comment for Records Average Specific Capacity Theis Equation: T = [Q/(4*s*pi)][W(u)]166,00 $u = (r^*r^*S)/(4^*T^*t)$ Pumping Rate (gpm) = Q = (gpm) NOV 2 $W(u) = (-\ln u) - (0.5772157) + (u/1*1!) - (u*u*u/2*2!) + (u*u*u/3*3!) - (u*u*u*u/4*4!) + ...$ 0.31 Drawdown (feet) = s = (feet) . T = transmissivity (L*L/T) r = radial distance (L) Time (hours) = t = 187.1000 (hours) s = drawdown (L) S = storage coefficient (dimensionless) t = time (T) Storage Coefficient = 8 = 0.100000 (dimensionless) pi = 3.141592654 u = dimensionless W(u) = well function Well Diameter (inches) = d = 8.0000 (inches) Note: Transmissivity is derived using an iterative process ress F9 to Calculate The calculations use a known or assumed Storage Coeficient (S) provided by the user Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration Calculated Results Calculated Results Total Theis Equation iterations = 25 iterations Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001 Transmissivity (ft2/day) = T = 157,014.36 (ft2/day) Can accept answer if u in the last iteration is < 7.1 Transmissivity (gpd/ft) = T = 1,174,549.08 (gpd/ft) Note: Well efficiency is not included in the calculations References: ransmissivity Difference = 0.0000E+00 (ft2/day) (last 2 iterations) okay to use T if diff < 0.0001 Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524. 2.2693E-09 Vorhis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, (last iteration) okay to use T if u <7.1 Dec. 1979, pg. 50-52. Transmissivity Distance W(u) Comments Theis Drawdown Storage Pumping Rate **Pumping Rate** Transmissivity r = d/2difference from Equation (feet) (gal/min) (ft3/sec) (days) (feet) (ft2/day) previous Iteration yellow grid areas are where values are calculated Note: W(u) calculation valid when u < 7.1 7.0000 1.1545E-04 W(u) calculation test 102,092.64 T = Q/s 0.31 0.10000 166.00 0.37 7.80 0.33 0.10000 166.00 0.37 7.80 0.33 3.4901E-09 18.8961 153,517,22 5.1425E+04 T = Theis Equation 1.00 3.3142E+03 T = Theis Equation 2.00 0.31 0.10000 166.00 0.37 7.80 0.33 2.3210E-09 19 3040 156.831.37 0.10000 0.37 7.80 0.33 2.2720E-09 19.3254 157,004.89 1.7352E+02 T = Theis Equation 3.00 0.31 166.00 2.2695E-09 19.3265 157,013.87 8.9839E+00 T = Theis Equation 4.00 0.31 0.10000 166.00 0.37 7.80 0.33 0.37 2.2693E-09 19.3266 157.014.34 4.6486E-01 T = Theis Equation 5.00 166.00 7.80 0.31 0.10000 0.33 T = Theis Equation 19 3266 157.014.36 2 4053F-02 6.00 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 0.37 0.33 2.2693E-09 19.3266 157,014.36 1.2446E-03 T = Theis Equation 7.00 0.31 0.10000 166.00 7.80 6.4396E-05 T = Theis Equation 0.31 0.10000 166.00 0.37 7.80 0.33 2.2893E-09 19.3266 157,014,36 8.00 157.014.36 3.3320E-06 T = Theis Equation 9.00 0.37 7.80 0.33 2 2693F-09 19 3266 0.31 0.10000 166.00 T = Theis Equation 0.31 0.10000 166.00 0.37 7.80 0.33 2 2893E-09 19.3266 157,014.36 1.7241E-07 10.00 0.37 2.2693E-09 19.3266 157,014.36 8.9058E-09 T = Theis Equation 11.00 0.31 0.10000 166.00 7.80 0.33 157.014.36 4.9477E-10 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19.3266 T = Theis Equation 12.00 T = Theis Equation 13.00 2.2693E-09 157.014.36 0.0000E+00 0.31 0.10000 166.00 0.37 7.80 0.33 19 3266 0.10000 166.00 0.37 0.33 2.2693E-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 14.00 0.31 0.33 19.3266 157,014.36 0.0000E+00 T = Theis Equation 15.00 166.00 0.37 7.80 2.2693E-09 0.31 0.10000 0.37 2 2693F-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 16.00 0.31 0.10000 166.00 7.80 0.33 157.014.36 T = Theis Equation 17.00 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19.3266 0.0000E+00 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 18.00 T = Theis Equation 0.37 7.80 0.33 2.2693E-09 19.3266 157,014.36 0.0000E+00 19.00 0.10000 166.00 0.31 0.37 7.80 0.33 19 3266 157.014.36 0.0000E+00 T = Theis Equation 20.00 0.31 0.10000 166.00 2 2693F-09 0.31 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19.3266 157,014.36 0.0000E+00 T = Theis Equation 21.00 T = Theis Equation 0.10000 166.00 0.37 7.80 0.33 2.2693E-09 19.3266 157,014,36 0.0000E+00 22.00 0.31

0.37

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19,3266

19.3266

157,014.36

157.014.36

157,014,36

0.0000E+00

0.0000E+00

0.0000E+00

T = Theis Equation

T = Theis Equation

T = Theis Equation

23.00

24 00

25.00

Transmissivity from Specific Capacity using the Theis Equation WELL 3 Adapted from Vorhis (1979) Theis Equation: T = [Q/(4*s*pi)][W(u)]u = (r*r*S)/(4*T*t) $W(u) = (-\ln u) - (0.5772157) + (u/1^*1!) - (u^*u/2^*2!) + (u^*u^*u/3^*3!) - (u^*u^*u^*u/4^*4!) + \dots$ T = transmissivity (L°L/T) r = radial distance (L)

s = drawdown (L) 8 = storage coefficient (dimensionless)

pi = 3.141592654

Note: Transmissivity is derived using an iterative process

The calculations use a known or assumed Storage Coeficient (S) provided by the user Specific Capacity (Q/s) is used to first approximate the Transmissivity (T) used to calculate u in the first Theis equation iteration

t = time (T) u = dimensionless

W(u) = well function

The Transmissivity of the previous iteration is used to calculate u in a given Theis equation iteration

Total Theis Equation iterations = 25 iterations

Can accept answer if difference in calculated Transmissivity for the last 2 iterations is < 0.0001

Can accept answer if u in the last iteration is < 7.1

Note: Well efficiency is not included in the calculations

References:

Theis, C.V. 1935. The relation between the lowering of the piezometric surface and the rate and duration of discharge of a well using ground water storage. American Geophysical Union Transactions, 16 annual meeting, vol. 16, pg. 519-524.

Vorbis, R.C. 1979. Transmissivity from pumped well data. Well Log, National Water Well Association newsletter, vol. 10, no. 11, Dec. 1979, pg. 50-52.

Data Entry	Enter Data Below (yellow boxes only)	
Well Log ID or Comment for Records	Average Specific Capacity	
Pumping Rate (gpm) = Q =	175.00	(gpm)
Drawdown (feet) = s =	8,60	(feet)
Time (hours) = t =	187.1000	(hours)
Storage Coefficient = S =	0.100000	(dimensionless)
Well Diameter (inches) = d =	8.0000 Press F9 to Calculate	(inches)
Calculated Results	Calculated Results	
Transmissivity (ft2/day) = T =	4,946.62	(ft2/day)
Transmissivity (gpd/ft) = T =	37,003.27	(gpd/ft)
Transmissivity Difference = (last 2 iterations)	0.0000E+00 okay to use T if diff < 0.0001	(ft2/day)

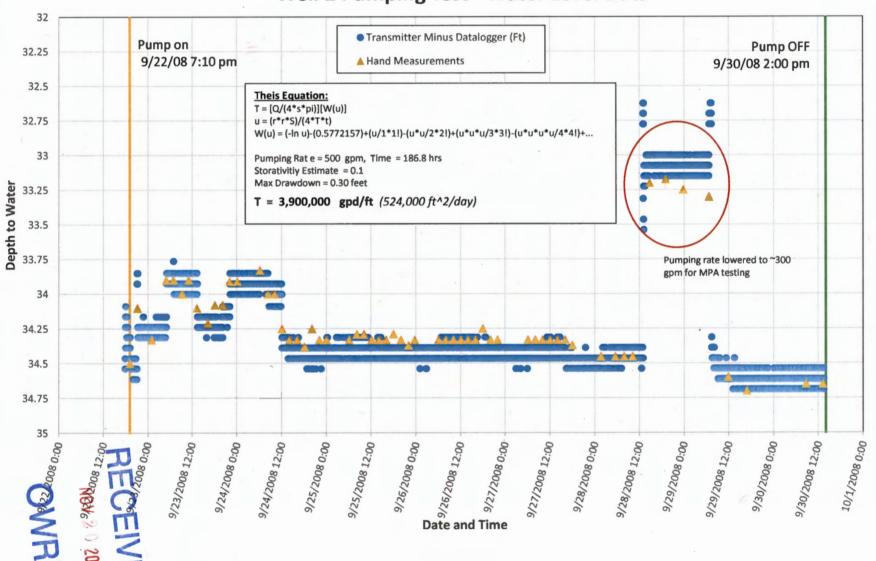
(last iteration)	okay to use T if u <7.1

Drawdown	Storage	Pumping Rate	Pumping Rate	Time	Distance	u	W(u)	Transmissivity	Transmissivity	Comments	Theis
s	Coefficient	Q	Q	t	r = d/2			T	difference from		Equation
(feet)	S	(gal/min)	(ft3/sec)	(days)	(feet)			(ft2/day)	previous		Iteration
Note	vellow and areas	are where values a	re calculated			Note : W(u) calculation	valid when u < 7.1				
14010.	yenow grid areas	are where values i	ire carculated			Trota : Trial careanation	valid Wilelia - 111				
						7.0000	1.1545E-04			W(u) calculation test	
8.60	0.10000	175.00	0.39	7.80	0.33	TOTAL PROPERTY.		3,917.15		T = Q/s	
		/									
8.60	0.10000	175.00	0.39	7.80	0.33	9.0963E-08	15.6356	4,873.88	9.5673E+02	T = Theis Equation	1.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.3107E-08	15.8541	4,942.00	6.8118E+01	T = Theis Equation	2.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2100E-08	15.8680	4,946.33	4.3264E+00	T = Theis Equation	3.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2036E-08	15.8689	4,946.60	2.7277E-01	T = Theis Equation	4.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	1.7190E-02	T = Theis Equation	5.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	1.0832E-03	T = Theis Equation	6.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	6.8261E-05	T = Theis Equation	7.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	4.3015E-06	T = Theis Equation	8.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	2.7106E-07	T = Theis Equation	9.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	1.7083E-08	T = Theis Equation	10.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	1.0759E-09	T = Theis Equation	11.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	6.8212E-11	T = Theis Equation	12.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	13.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-06	15.8689	4,946.62	0.0000E+00	T = Theis Equation	14.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	15.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	16.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	17.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-06	15.8689	4,946.62	0.0000E+00	T = Theis Equation	18.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	19.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	20.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	21.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946,62	0.0000E+00	T = Theis Equation	22.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	23.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	24.00
8.60	0.10000	175.00	0.39	7.80	0.33	7.2032E-08	15.8689	4,946.62	0.0000E+00	T = Theis Equation	25.00



ATTACHMENT D
Stream Depletion Evaluation

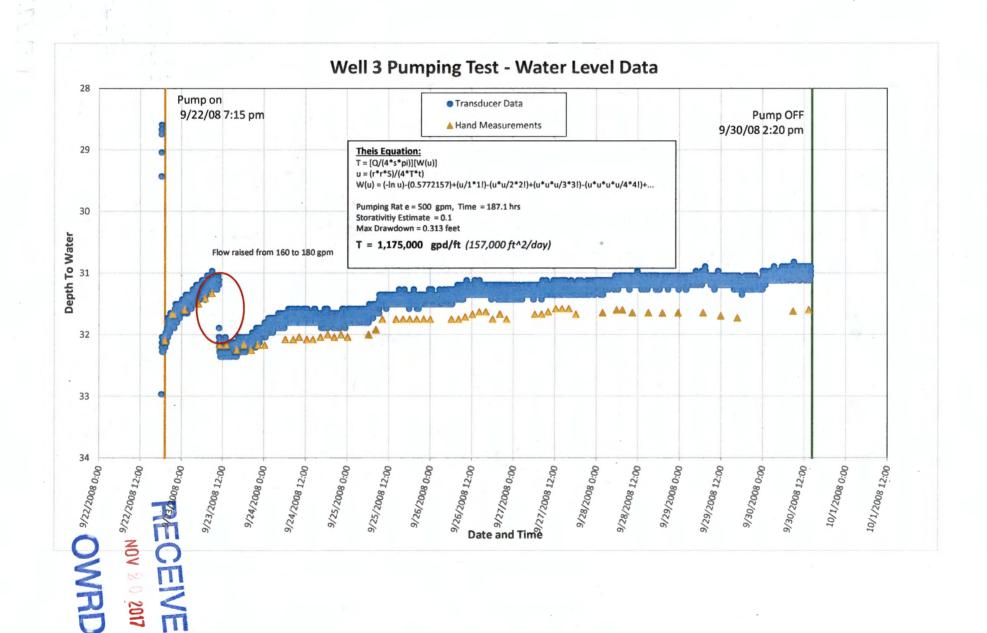
Well 1 Pumping Test - Water Level Data



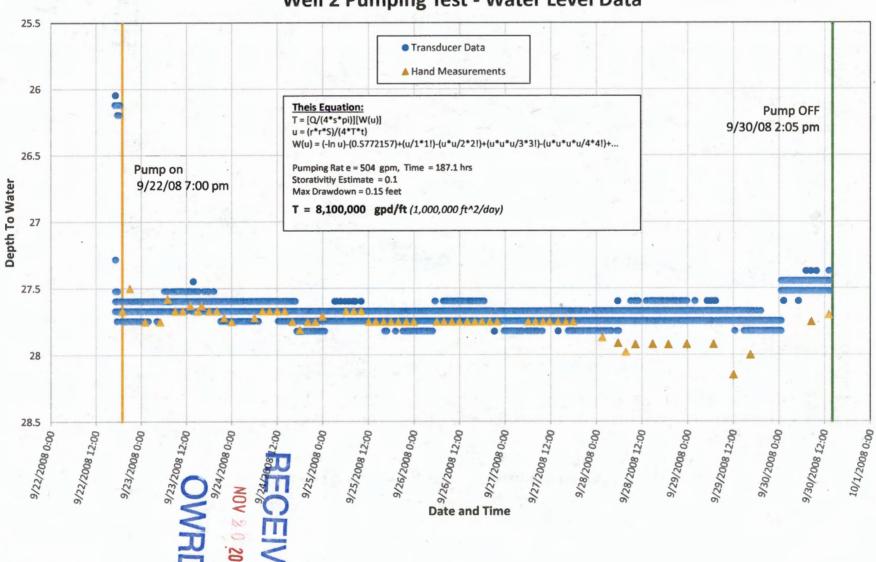


ATTACHMENT C

2008 Pump Test Parameter Evaluation



Well 2 Pumping Test - Water Level Data



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



L 93614 (START CARD) #___1968Z5_____

(1) OWNER: 1 (= Well Number # Z	_ (9) LOCATION OF WELL by legal description:
Name City of Independence	CountyLatitudeLongitude
Address P.O Box 7	Township 85 N or S. Range 4W E or W. WM.
City Indesendence State Or Zip 735	[Section _ 33 _ NW 4 _ NE 4
(2) TYPE OF WORK:	Tax Lot Zol Lot Block Subdivision
New Well Deepen Recondition Abandon	Street Address of Well (or nearest address) S. Cowallis Pd
(3) DRILL METHOD:	- Independence , Or .
Rotary Air Rotary Mud Cable	(10) STATIC WATER LEVEL: 07-16-08
Other	= 23.5 ft. below land surface. Date
(4) PROPOSED USE:	Artesian pressure
Domestic Community Industrial Irrigation	(11) WATER BEARING ZONES:
Thermal Injection Sother Wunicipal	= 19
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first found
Special Construction approval Yes No Depth of Completed Well 53	To Estimated Flow Rate SWL
Explosives used Yes No Type Amount	23' 46' 45+GPM 23.5
HOLE SEAL Amount	
Diameter From To, Material From To, sacks or pour	rs
Bentonte 17' 13' 7850G	VC
Cement 13' 1.5' 15 500	SS (12) WELL LOG:
Benjonite 1.5' 0' 3 sac	(2)
How was seal placed: Method A B B C D E	
Tother Doubled - Niobad	Material From To SWL
Backfill placed from 27 ft. to 29 ft. Material 4 WINUS	Fill Gravel - Pit Run 0' 6'
Gravel placed from 29 ft. to 53 ft. Size of gravel 18 HOLLY	1 Clay-Sandy-Brown 6'15'
(6) CASING/LINER:	Sand, Silt with Clay +
Diameter From 1 To 1 Gauge Steel Plastic Welded Thread	
	Gravel, Small-Megium
8" 45.5 53'	w snown Sana-loose 17. 46 23.57
8" 45.5'53'	Grave , hart w sand 46' 52' 23.5'
	Clay - Blue 52' 57'
	Back Cilled with the army
	Back filled w/4 minus
Final location of shoe(s) (7) PERFORATIONS/SCREENS:	= - 27003
Perforations Method	
Screens Type V-Slot Material 30455	RECEIVED
	RECEIVED
Slot Tele/pipe From To size Number Diameter size Casing Lines	CED 1 0 2000
79 45.5 100 8" 125. 0 0	NOV 2 0 2017
	WATER RESOURCES DEPT
1 1 1 A A 3 %	SALEM, OREGON
	OWRD
	OAALIN
(8) WELL TESTS: Minimum testing time is 1 hour	
_ Flowing	Date started 06-09-08 Completed 07-16-08
□ Pump □ Bailer □ Air □ Artesian	(unbonded) Water Well Constructor Certification:
Yield gal/min Drawdown Drill stem at Time	I certify that the work I performed on the construction, alteration, or abandon- ment of this well is in compliance with Oregon well construction standards. Materials
	used and information reported above are true to my best knowledge and belief.
45GPM 01 1 hr.	WWC Number
	Signed Date
Temperature of Water 54° Depth Artesian Flow Found	(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work per
Was a water analysis done? Yes By whom.	formed on this well during the construction dates reported above. All work performed
Did any strata contain water not suitable for intended use?	during this time is in compliance with Oregon well construction standards. This report
☐ Salty ☐ Muddy ☐ Odor ☐ Colored ☐ Other	is true to the best of my knowledge and belief. WWC Number 63
Depth of strata:	Signed // Me Mar / Mar May Date 07-27-08

WELL I.D. # L

POLK 52513

STATE-OF OREGON

WATER SUPPLY WELL REPORT

START CARD # (as required by ORS 537.765) Instructions for completing this report are on the last page of this form. (9) LOCATION OF WELL by legal description: (1) LAND OWNER Well Number INDEPENDENCE Latitude . Name County. Longitude. P. O. N or S Range 4W Box Address E or W. WM. INDEPENDENCE State City NE 1/4 NW 1/4 (2) TYPE OF WORK Tax Lot 20 Subdivision ☐ New Well ☐ Deepening ☐ Alteration (repair/recondition) ☐ Abandonment Street Address of Well (or nearest address) 5. Compilis Independence or (3) DRILL METHOD: □ Rotary Air □ Rotary Mud □ Cable □ Auger (10) STATIC WATER LEVEL: Date 01-16 -07 Other_ ft. below land surface. Artesian pressure .lb. per square inch Date (4) PROPOSED USE: ☐ Domestic ☐ Community ☐ Industrial ☐ Irrigation (11) WATER BEARING ZONES: Livestock Other Municipa ☐ Thermal ☐ Injection Depth at which water was first found (5) BORE HOLE CONSTRUCTION: Special Construction approval Yes No Depth of Completed Well ft. From Estimated Flow Rate SWL Explosives used Yes No Type_ Amount Zet' 4 SOO GPM HOLE SEAL. CEMENT BEMTONITE (12) WELL LOG: \Box B De-DD How was seal placed: Method A . Ground Elevation DHU seistonite. poured Other __ To SWL Material 14" CHUSh'd PK Material From 38 ft. to 35 ft. Backfill placed from ft. to 38 Size of gravel 18 x Y4" Gravel placed from 6 ft. 7.5 (6) CASING/LINER: Plastic Welded Threaded 30 3 П 17.5 Drive Shoe used Inside Outside None Final location of shoe(s). (7) PERFORATIONS/SCREENS: Blue - Avay □ Perforations Type V-SLOT Material 304 S. Stop RECEIVED Screens Tele/pipe Slot Number Diameter Liner size From size SEP 17 2007 WATER RESOURCES DEPT SALEM, OREGON Date started DECEMBERIL Of Completed January 20 (8) WELL TESTS: Minimum testing time is 1 hour Flowing (unbonded) Water Well Constructor Certification: Pump ☐ Air ☐ Bailer Artesian I certify that the work I performed on the construction, alteration, or abandon-Yield gal/min Drill stem at Time ment of this well is in compliance with Oregon water supply well construction 71 hr.5 standards. Materials used and information reported above are true to the best of my 500 GPM knowledge and belief. WWC Number Date Signed _ (bonded) Water Well Constructor Certification: Depth Artesian Flow Found Temperature of water_ I accept responsibility for the construction, alteration, or abandonment work Was a water analysis done? Pres By whom performed on this well during the construction dates reported above. All work Did any strata contain water not suitable for intende 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 Salty Muddy Odor Colored Other is true to the best of my knowledge and be WWC Number Depth of strata:_ FEB 2 1 2007 Date 02-08-0

POLK 52953

STATE OF OREGON

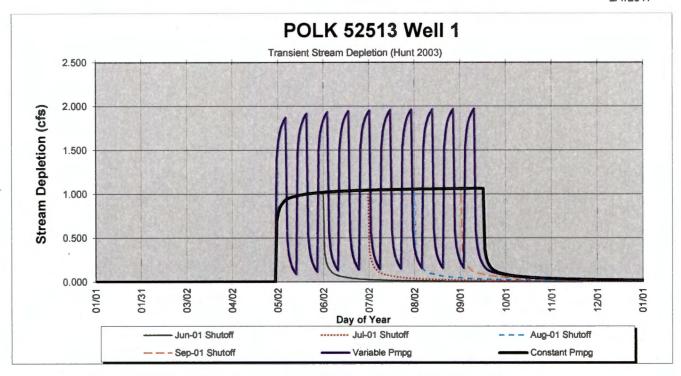
WATER WELL REPORT (as required by ORS \$37.765)

L93615 (START CARD) # 196828

(1) OWNER: Well Number #3B	(9) LOCATION OF WELL by legal description:
Name CITY OF IN DEPENDENCE-MON	County Po LK Latitude Longitude
Address Rios Rox M	Township 85 N or S. Range 4 W E or W. WM.
City INDEPENDENCE State OR Zip 97351	Section 33 NW 4 NE 4
(2) TYPE OF WORK:	Tax Lot 201 Lot Block Subdivision
	Street Address of Well (or pearest address) (UELL # 3 B
	S. Cowallis Ray IND. OR 97351
(3) DRILL METHOD:	
Rotary Air Rotary Mud Sable	(10) STATIC WATER LEVEL: 28 ft. below land surface. Date 08 - 19-08
Other	
(4) PROPOSED USE:	Artesian pressure lb. per square inch. Date
Domestic Community Industrial Irrigation	(11) WATER BEARING ZONES:
Thermal Injection Other Wuncipal	701
(5) BORE HOLE CONSTRUCTION:	Depth at which water was first found
Special Construction approval Yes No Depth of Completed Well ft.	
Explosives used Yes No Type Amount	From To Estimated Flow Rate SWL
HOLE SEAL Amount	31' 49' 45+GPM 78'
Diameter From To Material From To sacks or pounds	
12" 0' 56 CEMENT 0' 29' 48 SKS	
	(12) WELL LOG:
	Ground elevation
How was seal placed: Method A B S C D D E	
Other	Material From To SWL
Backfill placed from 3 ft. to 29 ft. Material 74" MANUS	+ EILL - SAND + GRAVEL 0' 12'
Gravel placed from 56 ft. to 31 ft. Size of gravel 3/8 " ROUND	- CLAY - SILTY BROWN 12' 18'
(6) CASING/LINER:	CLAY- BROWN 18.251
	CINY - (2 A)511 V 25 27'
	GOAVELLY CLAY 22'31'
Casing: 8" 49' 56' 250 0 0	- GRAVEL, SMALL - LARGE
	W/ SOME BLOWN SAND 31' 50' 28'
	BLUE CLAY 50'56'
Liner:	TOLUE CLAI
Final location of shoe(s)	
(7) PERFORATIONS/SCREENS:	
Perforations Method	Topica -
Screens Type V SLOT Material 304 SS	OFOCN/ED
Slot Tele/pipe	RECEIVED
From To size Number Diameter size Casing Liner	OVER THE COUNTER COLIVE
31 49 100 87 45 0	DECI-VED "" AD 2000
	JUN 0 B 2009
	2017
	WATER RESOURCES DEPT
	SALEM, OREGON
(8) WELL TESTS: Minimum testing time is 1 hour	OWDD
	Date started 07-24-08 Completed 08-70-08
☐ Pump X Bailer · ☐ Air ☐ Artesian	(unbonded) Water Well Constructor Certification:
	I certify that the work I performed on the construction, alteration, or abandon-
Yield gal/min Drawdown Drill stem at Time	ment of this well is in compliance with Oregon well construction standards. Materials
45 t6Pm () 1 hr.	used and information reported above are true to my best knowledge and belief.
	WWC Number
	Signed Date
Temperature of Water 540 Depth Artesian Flow Found	(bonded) Water Well Constructor Certification: I accept responsibility for the construction, alteration, or abandonment work per-
Was a water analysis done? Yes By whom	formed on this well during the construction dates reported above. All work performed
Did any strata contain water not suitable for intended use? Too little	during this time is in compliance with Oregon well construction standards. This report
Salty Muddy Odor Colored Other	is true to the best of my knowledge and belief. WWC Number 633
	//////////////////////////////////////
Depth of strata: ORIGINAL & FIRST COPY - WATER RESOURCES DEPARTMENT SECO	Signed Date Of Date Of Date
CHICAGAL & CIUCI CODY WATER RECOURCES BERARTIANT SECO	IND COPY - CONSTRUCTOR THIRD COPY - CUSTOMER 9809C 10/91



2006 Geologic Cross Section - City Well 1 Area



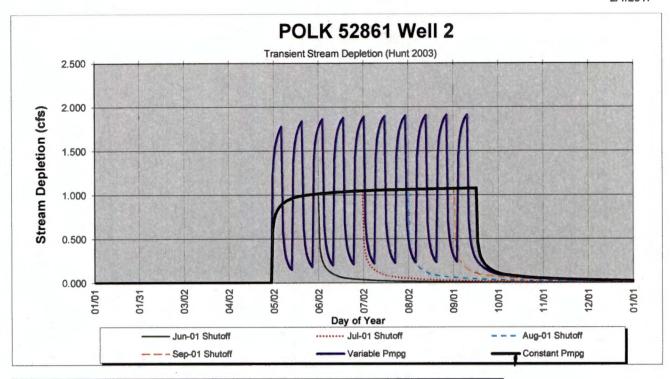
Parameters:		Values	Units
Perpendicular from well to stream	а	90	ft
Well depth	d	61	ft
Aquifer transmissivity	T_ft	520,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2200	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1100	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2200	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc	T.	303.83	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	





Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	91.8	94.0	95.0	95.6	7.9	3.3	2.1	1.5
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	1.061	0.088	0.037	0.023	0.017
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	0.027	0.012	0.007	0.005	0.004	0.003	0.002
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	0.037	0.018	0.012	0.008	0.006	0.005
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	0.044	0.023	0.015	0.011	0.009
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.019	1.043	1.055	1.061	0.050	0.027	0.018	0.014
Relief after Jun-01 shutoff (SD= 1.02	0, cfs)					0.993	1.008	1.013	1.015	1.016	1.017	1.018
Relief after Jul-01 shutoff (SD= 1.044	, cfs)						1.006	1.025	1.032	1.035	1.037	1.039
Relief after Aug-01 shutoff (SD= 1.05	55, cfs)							1.011	1.031	1.039	1.044	1.046
Relief after Sep-01 shutoff (SD= 1.06	2, cfs)								1.011	1.035	1.043	1.048
Stream depletion at 138 = 1.064 cfs												
Stream depletion at 30 days = 91.6 %	6									-		

Stream depletion at 10 days = 86.5 %

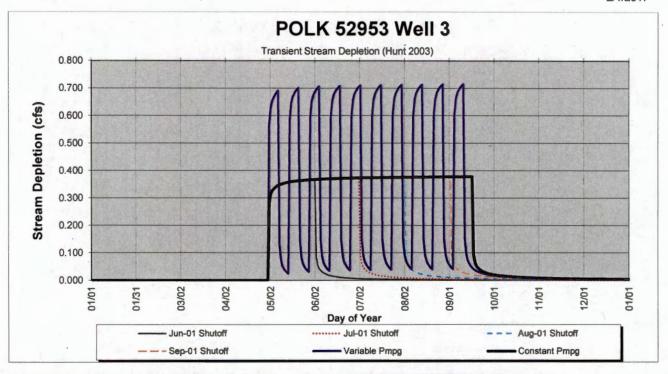


Parameters:		Values	Units
Perpendicular from well to stream	а	95	ft
Well depth	d	57	ft
Aquifer transmissivity	T_ft	1,090,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	2.2800	cfs
Constant pumping rate for model (Qmp/2)	Qwc	1.1400	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	2.2800	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		312.04	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	



Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	88.8	91.8	93.2	94.1	10.2	4.5	2.8	2.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	1.072	0.116	0.051	0.032	0.023
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	0.038	0.017	0.010	0.007	0.005	0.004	0.003
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	0.052	0.026	0.016	0.012	0.009	0.007
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	0.062	0.033	0.021	0.016	0.012
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	1.012	1.047	1.063	1.072	0.070	0.038	0.025	0.019
Relief after Jun-01 shutoff (SD= 1.0	14, cfs)					0.976	0.998	1.004	1.007	1.009	1.010	1.011
Relief after Jul-01 shutoff (SD= 1.04	7, cfs)						0.995	1.022	1.031	1.036	1.039	1.040
Relief after Aug-01 shutoff (SD= 1.0	63, cfs)				P. CLE			1.001	1.030	1.042	1.048	1.051
Relief after Sep-01 shutoff (SD= 1.0)	73, cfs)							15 16 16	1.002	1.035	1.047	1.054
Stream depletion at 138 = 1.076 cfs												
Stream depletion at 30 days = 88.6 °	%											

Stream depletion at 10 days = 81.4 %



Parameters:	Value		
Perpendicular from well to stream	а	100	ft
Well depth	d .	56	ft
Aquifer transmissivity	T_ft	160,000	ft*ft/day
Aquifer storativity or specific yield	S	0.1000	Dimensionless
Stream width	ws	350	ft
Aquitard vertical hydraulic conductivity	Kva	50.0000	ft/day
Aquitard saturated thickness	ba	20	ft
Aquitard thickness below stream	babs	20	ft
Aquitard porosity	n	0.100	Dimensionless
Maximum irrigated acres per well, on all water rights		0.00	acres
Maximum pumping rate on all water rights	Qmwr	3.0000	cfs
Maximum pumping rate per well, all water rights	Qmp	0.7780	cfs
Constant pumping rate for model (Qmp/2)	Qwc	0.3890	cfs
Variable weekly pumping rate for model (Qmp)	Qwv	0.7780	cfs
Pumping days in irrigation season		138	days
Total acre feet pumped at constant pumping rate, Qwc		106.48	acre feet
Model start date		01/01/2014	
Date Pump On		05/01/2014	The second





Date	01/31	02/28	03/31	04/30	05/31	06/30	07/31	08/31	09/30	10/31	11/30	12/31
Stream Depl, %Q	0.0	0.0	0.0	0.0	94.4	95.9	96.6	97.0	5.4	2.3	1.4	1.0
Strrm Depl, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.378	0.021	0.009	0.006	0.004
Strm Depl Jun-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.007	0.003	0.002	0.001	0.001	0.001	0.001
Strm Depl Jul-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.009	0.004	0.003	0.002	0.002	0.001
Strm Depl Aug-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.011	0.006	0.004	0.003	0.002
Strm Depl Sep-01 shutoff, cfs	0.000	0.000	0.000	0.000	0.367	0.373	0.376	0.378	0.012	0.007	0.004	0.003
Relief after Jun-01 shutoff (SD= 0.36	7, cfs)					0.361	0.365	0.366	0.366	0.367	0.367	0.367
Relief after Jul-01 shutoff (SD= 0.37)	3, cfs)						0.364	0.369	0.370	0.371	0.372	0.372
Relief after Aug-01 shutoff (SD= 0.3)	76, cfs)							0.365	0.370	0.372	0.373	0.374
Relief after Sep-01 shutoff (SD= 0.37	78, cfs)				200				0.365	0.371	0.373	0.374
Stream depletion at 138 = 0.378 cfs									24 1 1	De North	Walley !	9000
Stream depletion at 30 days = 94.3 9	6											15

Stream depletion at 10 days = 90.5 %



Attachment 7 From Lands Table

Application for a Water Right Transfer – Certificate 54268

AUTHORIZED (the "from" or "off" lands) The listing that appears on the certificate BEFORE PROPOSED CHANGES List only that part or portion of the water right that will be changed.

Tw	γp	Rı	ng	Sec	1/4	1/4	Tax Lot	DLC	Acres	Type of USE listed on Certificate	POD(s) or POA(s) (name or number from Table 1)	Priority Date
				21	SE	SE		54				
				21	sw	SE		54				,
				28	NE	NE		47				
				28	NW	NE		47				
				28	NE	NW		47				
				28	sw	NE		47				
10	S	3	w	28	SE	NW		47		Industrial/ Manufact.	POD 1	12/23/ 1954
				28	NW	SE		47				
				28	NW	SE		44				
				28	NE	sw		47		1		
				28	NE	sw		44				
				28	sw	SE		44				
				28	SE	sw		44				
						TOTA	L AC	RES:				



1586 West Thornton Lake Drive NW Albany, Oregon 97321 541-971-7668 Mobile 541-926-5956 Evenings Henricks⊕peak.org



Wednesday, May 15, 2013

Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, OR 97301-1266

Attn: Dwight French

Re: International Paper Company paper mill property located in Linn County, Albany, Oregon and Certificate 54268, 1) below, place of use clarification under ORS 540.520(9) 1999 SB301. Refer to attached map / drawing item F below. Other map attachments are for clarity of intent for final water distribution.

<u>Background:</u> International Paper Company (IP) is in the process of demolishing and marketing the Albany paper mill facility / site. IP's intentions are to take advantage of the existing infrastructure and create 3 parcels that maximize the sites potential and future use for manufacturing.

In 1954 Willamette Industries, Inc. applied for the first water right on the property and built a paper mill referred to as Western Kraft on the property. In 2002 Weyerhaeuser Company acquired the property from Willamette Industries, Inc. IP purchased the property in 2008 from Weyerhaeuser Company and is the current owner. All of the water rights at the mill have been in continuous use and the pumping system at the point of diversion is ready, willing, and able to pump the entire rate of the combined existing rights.

The place of use, point of diversion, rate, delivery system, and type of use of all four existing water rights, 1), 2), 3), & 4) below, are not being changed by the creation of the 3 parcels from the single parent parcel. A transfer application is not required with the State of Oregon Water Resources Department (WRD) that manages water rights to create and allocate the places of use for the rights. Site service agreements will be created as part of the sales to address specific water service commitments between parties.

ORS 540.520(9), Senate Bill 301 from Oregon 1999 legislative session, allows the place of use on manufacturing sites to be the property of record owned at or before the priority date. Prior to this bill manufacturing water rights were mapped showing a very limited place of use when in actuality the water was piped throughout the facility. It was not uncommon to see a single boiler building shown on the map as the place of use when the site consisted of several hundred acres of land. This bill provided a statute for the certificate holder to use the water where it was intended to be used and has been used on the entire acreage (refer to attachment "G" page 3).

Existing Water Rights pertinent to the Parent Parcel:

1) Certificate no. 54268, Permit no. S- 23102, Application no. S-29640
Priority Date: December 23, 1954 Type of use: Manufacturing
Rate: 18.0 cubic feet per second (cfs)
Original right for paper mill prior to construction.

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2) Certificate no. 85736, Permit no. S-47184, Application no. S-64515
Priority Date: October 29, 1982 Type of use: Manufacturing
Rate: 12.0 cfs

OWRD

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Additional water for plant modernization and additional capacity.

3) Transfer No. 7526

a. Certificate no. 68559, Permit no. 14106
 Priority Date: November 2, 1939
 Type of use: Log deck sprinkling
 Rate: 1.93 cfs

b. Certificate no. 20829, Permit no. 20469
Priority Date: June 11, 1943
Type of use: Manufacturing
Rate: 2.0 cfs

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c. Certificate no. 20873, Permit no. 20514
Priority Date: January 23, 1951
Type of use: Manufacturing

Rate: 1.2 cfs

OWRD

5.13 cfs total transferred downstream from Culp Creek to cover all paper mill lands, fill some gaps, and cogeneration facility.

4) Permit no. 54030, Application no. S-84780

Priority Date: June 7, 2001 Type of use: Irrigation of 254.6 acres
Rate: 3.18 cfs and 2.5 acre-feet for each acre irrigated during the irrigation season each year.
Water Resources Commission Willamette Basin Exception - Water from the aeration pond
(sludge) was being land applied under State of Oregon Department of Environmental Quality
(DEQ) permit. The water was used to grow a crop and hence needed a water right from the
WRD. It is a limited irrigation right tied to the source of the aeration pond as the point of
diversion.

<u>Objective:</u> To create the appropriate maps / drawings for recordation of the three parcels being created that clearly show the place of use and rate for each of the four existing water rights pertinent to the parent parcel. These maps / drawings are attached and described as follows;

ATTACHMENTS

A. Land Sale.DWG – Proposed Sale Parcels #'s 1, 2, &3 This map shows the 3 parcels being created from the single parent parcel each having a different hachuring and lists the water right / rights associated with each hachured parcel.

B. APM-08-4777-P-01 – Final Proof Survey Map for Permit S-54030 4) above. This is an irrigation right with a source as the aeration pond. This shows acreage included in Sale Parcel #1.

C. MISC-02-4276-P-01 REV. 3 – Final Proof Survey Map for Transfer 7526 3)b above.

This is an amendment map, dated November 9th, 2012, that shows 254.6 acres, highlighted light brown, as receiving 1.2 cfs from certificate 20873 on acreage included in Sale Parcel #1. Certificate 20873 is one of three certificates that make up T-7526.

D. MISC-02-4276-P-01 REV. 3 – Final Proof Survey Map for Transfer 7526 3)a above. This is an amendment map, dated November 9th, 2012, that shows 365.3 acres, highlighted light green, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829 on acreage included in Sale Parcel #2. Certificates 68559 and 20829 are two of three certificates that make up T-7526.

E. Drawing No. 3650P03 (APM-99-3650-P-03 Rev 0) – ORS 540.520(9) SB 301 Lands for Certificate 85736 2) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #2.

F. Drawing No. 3650P02 (APM 99-3650-P-02 Rev 0) — ORS 540.520(9) SB 301 Lands for Certificate 54268 1) above. This map shows the place of use and is intended to be the new final proof map in the water right file. This shows acreage included in Sale Parcel #3. This also

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Page 2 of 3

shows that 1.0 cfs of the total 18 cfs was sold to Flakeboard America in 2007. This was noted by a letter sent to the State of Oregon Water Resources Department with the site service agreement and is found in the water right file at which time the Claim of Beneficial Use map for T-7526 was amended to remove the Flakeboard site from the place of use and is also noted in the aforementioned letter.

- G. Drawing No. 3650P01R1 (APM-99-3650-P-01 Rev 1) ORS 540.520(9) SB 301 Lands for the parent parcel being divided into three parcels shown in "A" above. This map was created September of 1999 to show the paper mill lands that had water rights available for manufacturing use. This is the base map used to equitably divide the water on the three newly created parcels as shown on attachments E & F above.
- H. MISC-02-4276-P-01 REV. 3 Stamped and Signed Final Proof Survey Map for Transfer 7526. Map amendment dated November 9th, 2012. Map change shows, 254.6 acres, as receiving 1.2 cfs from certificate 20873 and 365.3 acres, as receiving 1.93 cfs from certificate 68559 and 2.0 cfs from certificate 20829. This map was amended to clarify the place of use of each of the three water rights involved in the transfer prior to certificate issuance.

<u>Summary:</u> The place of use for water right 1) above, Certificate 54268 is Sale Parcel #3 as shown on the attached map F above, Drawing No. 3650P02. The type of use, point of diversion, rate, and delivery system remain unchanged. This is the only water right covering the mapped lands of parcel #3.

If you have any additional questions or comments, feel free to contact me at either of the numbers listed above.

Sincerely,

J. Edward Henricks OR PLS, CWRE No. 170

cc:

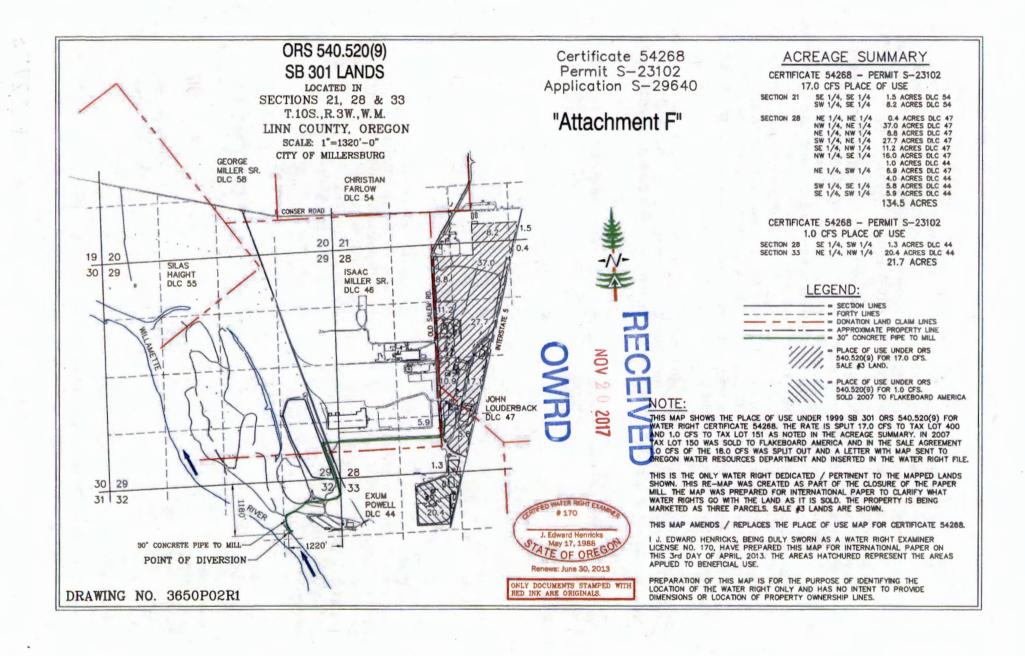
Dan M. Davis
International Paper Company
Manager Surplus Properties
6400 Poplar Avenue
Memphis, TN 38197
dan.davis@ipaper.com
(901)419-4270

Vaughn Pieschl International Paper Company 3251 Old Salem Rd. Albany, OR 97321 vaughn.pieschl@ipaper.com 541-924-4650 office 541-409-5573 mobile Kathleen M. Willemin
International Paper Company
Legal Department - Tower II - 4th Floor
6400 Poplar Avenue
Memphis, TN 38197
kathleen.willemin@ipaper.com
(901) 832-4495



Enclosure(s): Attachments A,B,C,D,E,F,G, & H

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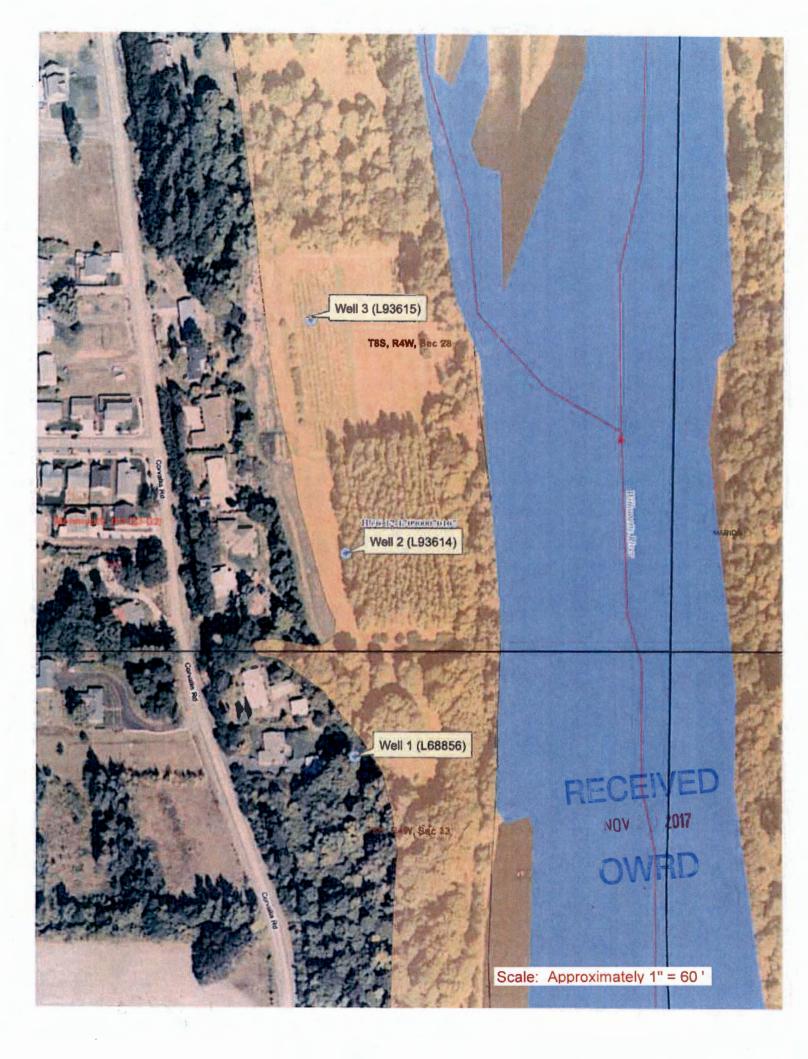


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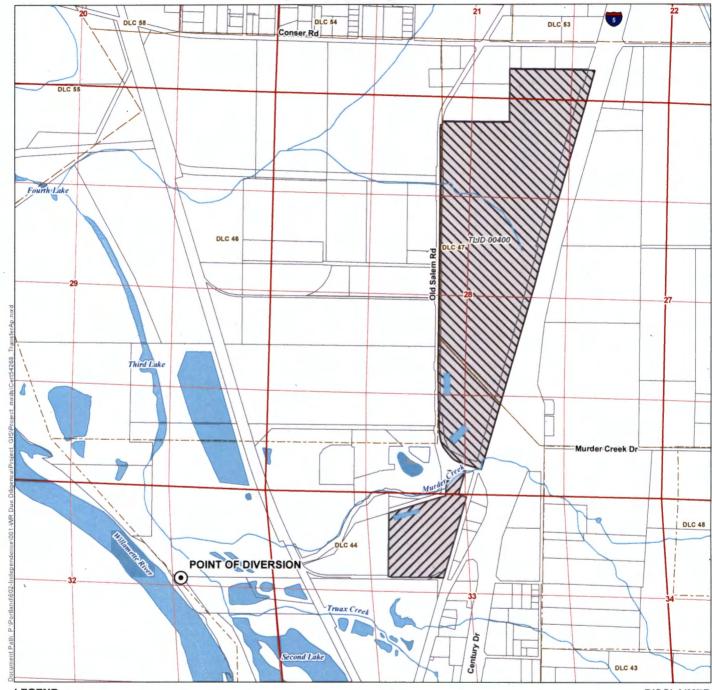
Well Logs and Location Map



Application for a Water Right Transfer Authorized Place of Use/Point of Diversion

Certificate 54268

Township 10 South, Range 3 West (W.M.)



Point of Diversion (POD)

Authorized POU, Not Subject to the Transfer Authorized POU, Subject to the Transfer





Donation Land Claim (DLC)



Waterbody

POD LOCATION DESCRIPTION

Point of Diversion Located 1260 feet South and 1220 feet West from the NE corner of Section 32, Township 10 South, Range 3 West (W.M.)

Certified Water Rights Examiner Stamp



DISCLAIMER

This map was prepared for the purpose of identifying the location of a water right only and it is not intended to provide legal dimensions or location of property ownership lines.

NOV 2 0 2017



BEFORE THE WATER RESOURCES DEPARTMENT OF THE

STATE OF OREGON

In the Matter of Transfer Application
T-12773, Linn and Polk Counties

155 nevised

PRELIMINARY DETERMINATION PROPOSING APPROVAL OF A CHANGE FROM A SURFACE WATER POINT OF DIVERSION TO GROUNDWATER POINTS OF APPROPRIATION, A CHANGE IN POINT OF DIVERION, CHANGES IN PLACE OF USE, AND CHARACTER OF USE

Authority

Marian .

Oregon Revised Statutes (ORS) 540.505 to 540.580 establish the process in which a water right holder may submit a request to transfer the point of diversion, place of use, or character of use authorized under an existing water right. Oregon Administrative Rules (OAR) Chapter 690, Division 380 implement the statutes and provides the Department's procedures and criteria for evaluating transfer applications.

Applicant

INTERNATIONAL PAPER COMPANY 6400 POPLAR AVE MEMPHIS, TN 38197

Receiving Water User

CITY OF INDEPENDENCE P.O. BOX 7 INDEPENDENCE, OR 97351

Findings of Fact

- On November 20, 2017, INTERNATIONAL PAPER COMPANY filed an application to change from a surface water point of diversion to groundwater points of appropriation, a change in point of diversion, to change the place of use, and to change the character of use under Certificate 54268. The Department assigned the application number T-12773.
- The City of Independence is the receiving water user who will be responsible for completion of the changes.
- 3. Notice of the application for transfer was published on November 28, 2017, pursuant to OAR 690-380-4000. No comments were filed in response to the notice.

On September 14, 2018, the applicant submitted an amended application page describing the points of diversion/appropriation and types of changes requested as well as a geologist report and maps.

submitted an amended application page, geologict report and map to correct the locations of the amended wells

	-1127
5.	On September 6, 2018, Instream Lease IL-1704, recorded at Special Order Volume 109, Pages 374-376 the order was approved for a 2.0 Cubic Feet Per Second (CFS) portion of
	Pages 374-376 the order was approved for a 2.0 Cubic Feet Per Second (CFS) portion of
	Certificate 54268.

, 2019, Instream Lease IL-1704 was terminated by request of the On applicant. The termination order was recorded at Special Order Volume 112, Page

The portion of the right to be transferred is as follows:

Certificate:

54268 in the name of WILLAMETTE INDUSTRIES, INC. (perfected

under Permit S-23102)

Use:

MANUFACTURING

Priority Date: DECEMBER 23, 1954

Rate: Source: 2.0 CUBIC FEET PER SECOND WILLAMETTE RIVER, tributary of the COLUMBIA RIVER

Authorized Point of Diversion:

Twp	Rng	Mer	Sec	Q-Q	DLC	Measured Distances		
10 S	3 W	WM	32	NE NE	44	1260 FEET SOUTH AND 1220 FEET WEST FROM THE NE CORNER OF SECTION 32		

Authorized Place of Use:

	N	IANUF	CTUR	ING /	4
Twp	Rng	Mer	Sec	Q-Q	DLC
0 S	3 W	WM	28	SW NE	47
0 S	3 W	WM	28	SE NW	47
0 S	3 W	WM	28	NE SW	44
0 S	3 W	WM	28	NE SW	47
0 S	3 W	WM	28	SE SW	44
0 S	3 W	WM	28	NW SE	44
0 S	3 W	WM	28	NW SE	47
0 S	3 W	WM	28	SW SE	44
0 S	3 W	WM	33	NW NE	44
0 S	3 W	WM	33	NE NW	44

Transfer Application T-12773 proposes a change in point of diversion approximately 13.5 miles downstream to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances
8 S	4 W	WM	28	SW SE	260 FEET NORTH AND 3400 FEET EAST FROM THE SW CORNER OF SECTION 28

Transfer Application T-12773 proposes to change from a surface water point of diversion to a groundwater point of appropriation (wells) with approximate distances in miles from the existing point of diversion to:

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S.	4 W	WM	33	NW NE	WILLAMETTE WELL 1 - 260 FEET SOUTH AND 1915 FEET WEST FROM THE NE CORNER OF SECTION 33	13.5

Twp	Rng	Mer	Sec	Q-Q	Measured Distances	Approximate distance in miles
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 2 - 350 FEET NORTH AND 1910 FEET WEST FROM THE SE CORNER OF SECTION 28	13.2
8 S	4 W	WM	28	SW SE	WILLAMETTE WELL 3 - 800 FEET NORTH AND 2000 FEET WEST FROM THE SE CORNER OF SECTION 28	14.0

8. Transfer Application T-12773 proposes to change the place of use of the right to:

MUNICIPAL
WITHIN THE SERVICE BOUNDARY OF THE CITY OF INDEPENDENCE

- 9. Transfer Application T-12773 proposes to change the character of use to municipal use.
- 10. The Oregon Department of Fish and Wildlife (ODFW) has determined that a fish screening and/or by-pass device is necessary at the new point of diversion to prevent fish from entering the diversion and/or safely transport fish back to the body of water from which the fish were diverted and that the diversion is not currently equipped with an appropriate fish screening and/or by-pass device. This diversion may be eligible for screening cost share funds.

Transfer Review Criteria [OAR 690-380-4010(2)]

- 11. Water has been used within the five-year period prior to submittal of the transfer application according to the terms and conditions of the right. There is no information in the record that would demonstrate that the right is subject to forfeiture under ORS 540.610.
- 12. A diversion structure and ditch sufficient to use the full amount of water allowed under the existing right was present with the five year period prior to submittal of Transfer Application T-12773.
- The proposed points of appropriation meet the requirements of ORS 540.531 and OAR 690-380-2130(2).
- 14. The proposed changes would not result in enlargement of the right.
- 15. The proposed changes would not result in injury to other water rights.
- 16. All other application requirements are met.

Determination and Proposed Action

The change in point of diversion and the change from a surface water point of diversion to groundwater points of appropriation and the change in place of use and the change in character of use proposed in Transfer Application T-12773 appear to be consistent with the requirements of ORS 540.505 to 540.580 and OAR 690-380-5000. If protests are not filed pursuant to OAR 690-380-4030, the transfer application will be approved.

If Transfer Application T-12773 is approved, the final order will include the following:

- 1. The change in point of diversion and change from a surface water point of diversion to groundwater points of appropriation and change in place of use and change in character of use proposed in Transfer Application T-12773 are approved.
- 2. The right to the use of the water is restricted to beneficial use at the place of use described, and is subject to all other conditions and limitations contained in Certificate 54268 and any related decree.
- 3. Water right Certificate 54268 is cancelled. A new certificate will be issued describing that portion of the right not affected by this transfer.
- 4. The quantity of water diverted at the new point of diversion (POD 2), and new points of appropriation (Willamette Wells 1, 2, and 3), shall not exceed the quantity of water lawfully available at the original point of diversion (POD 1).
- 5. The wells from which the water is taken under this right shall be constructed so that the use of the well will affect the surface water similarly to the use of the original authorized point of diversion.
- 6. The use of water under this right shall be subject to regulation consistent with other water rights from the surface water source and to all other applicable conditions and restrictions that existed at the original point of diversion.
- 7. The original point of diversion of surface water shall not be retained as an additional or supplemental point of diversion under the transferred portion of the right. However, if within five years after approval of the transfer, the Department receives a transfer application to return to the last authorized surface water point of diversion, the application shall be approved.
- 8. All applicable restrictions that existed at the original point of diversion shall apply to the proposed well.
- 9. The original date of priority shall be retained. However, if within five years after approving the transfer, the Department finds the transfer results in substantial interference with existing groundwater rights that would not have occurred in the absence of the transfer, the proposed well shall be subordinate to any existing right injured by the transferred water right.

- 10. Prior to diverting water, the water user shall install a fish screening and/or by-pass device, as appropriate, at the new point of diversion consistent with the Oregon Department of Fish and Wildlife's (ODFW) design and construction standards. Prior to installation, the water user shall obtain written approval from ODFW that the required screen and/or by-pass device meets ODFW's criteria. Prior to submitting a Claim of Beneficial Use, the water user must obtain written approval from ODFW that the required screening and/or by-pass device was installed to the state's criteria. The water user shall maintain and operate the fish screen and/or by-pass device, as appropriate, at the point of diversion consistent with ODFW's operational and maintenance standards.
- 11. The transferred portion of Certificate 54268 (2.0 CFS) shall no longer be used at the former place of use.
- 12. Full beneficial use of the water shall be made, consistent with the terms of this order, on or before October 1, 2024. A Claim of Beneficial Use prepared by a Certified Water Right Examiner shall be submitted by the applicant to the Department within one year after the deadline for completion of the changes and full beneficial use of the water.
- 13. After satisfactory proof of beneficial use is received, a new certificate confirming the right transferred will be issued.

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Dated at Salem,	Oregon this	

DRAFT

Dwight French, Water Right Services Administrator, for Thomas M. Byler, Director Oregon Water Resources Department

This draft Preliminary Determination was prepared by Joan Smith. If you have questions about the information in this document, you may reach me at 503-986-0892 or Joan.M.Smith@oregon.gov.