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September 20, 2013

VIA U.S. MAIL

PUC Filing Center
Public Utility Commission of Oregon
PO Box 1088
Salem, OR 97308-1088

Re:

Docket UM 1635 - Northwest Natural Gas Company's Mechanism for Recovery of

Environmental Remediation Costs

Attention Filing Center:

Enclosed for filing are printed and electronic versions of the Joint Parties' responses to Bench Requests issued on September 17, 2013. With these responses, we appreciate the opportunity to make the following points:

The Bench Requests ask that the parties detail the financial results of various hypothetical scenarios in order to assist the Commission in evaluating the proposed Stipulation. We note that many considerations—other than the scenarios posed by the requests—influenced the parties' decision to enter the Stipulation. In the event the Commission were inclined, for any reason, against adopting the Stipulation, the parties would look forward to an opportunity to engage the Commission through a workshop or other proceeding to discuss other considerations related to the Stipulation prior to any Commission action on the Stipulation.

As requested, the responses to the bench requests apply the terms of the forward-looking portion of the proposed earnings review to historical earnings. Importantly, the resulting analysis demonstrates that the proposed earnings test has a significant constraining effect on the Company's ROE. It requires the Company to bear a significant portion of the deferrals in many years, thus acting as a de facto sharing mechanism.

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The attached spreadsheet contains the following tabs¹:

- 1. "Insurance Spread: None" (Tab A)
- 2. "Insurance Spread: Equal Over Ten Years" (Tab B.a)
- 3. "Insurance Spread: Percentage of Expense" (Tab B.b)
- 4. "Insurance Spread: Year of Reimbursement" (Tab B.c)
- 5. "Insurance Spread: None entered open for testing" (Tab B.d)

All of these tabs show the updating requested in Question A1. The results for 2012 were added to the deferral period. The results for 2011 were updated to reflect actual expense and interest for the year. Previously, the results for 2011 included 9 months of actual expense and 3 months of forecast expense. Total deferral period expense and interest now totals \$93.4 million.

All of these tabs show the addition of the SRRM Mechanism requested in Question A2. In answering this question, the Parties assumed that the intent of the request was to illustrate how the SRRM Mechanism will work and to use historic data to test the range of possible future outcomes under the SRRM Mechanism. Under the SRRM Mechanism, insurance proceeds will be spread, or amortized, over a ten year period starting in the year after they are received. For purposes of illustrating and testing the mechanism, the Parties assumed that the \$40.7 million in insurance proceeds were received at the end of 2002 and spread evenly over the ten year period 2003 – 2012, unless the scenario requires a different pattern of insurance receipts to be assumed. The results show a diversity of outcomes. The SRRM Credit ranges from a low of \$0 in 2003 where earnings are more than 75 basis points below authorized ROE to a high of \$7.261 million in 2011 where earnings are more than 50 basis points above authorized ROE.

The results for the scenario requested in Question Ba are shown in the tab labeled "Insurance Spread: Equal Over Ten Years". Comparing the results in this tab to the results in the tab labeled "Insurance Spread: None" shows the impact of spreading the insurance proceeds evenly over the ten year period. For example, at an earnings test threshold equal to authorized ROE, this insurance proceeds scenario reduces the company write off from \$24.180 million to \$21.358 million. (See line 31 of Tab B.a compared with line 31 of Tab A). NW Natural would like to note that the \$24.180 million relies upon an earnings test applied to an annually calculated ROE, whereas if one considers the ROE over the entire period, the Company's earnings would be under its authorized ROE and not result in a write off.

Because settlements are "package deals" that reflect give and take by the parties, the results summarized above illustrate that some parties compromised on the backward-looking results (see results for Questions Ba and Bc) in exchange for the forward-looking results of the SRRM Mechanism (see results for Question A2), and vice versa.

¹ All of the tabs in the spreadsheet provide the functionality requested in Question Bd.

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Each Party weighed these benefits and others to arrive at the Stipulation. For ratepayers one benefit is the clear process for determining when and at what levels shareholders will have responsibility for environmental remediation costs.

Very truly yours,

Lisa Rackner

Enclosures

CERTIFICATE OF SERVICE 1 I hereby certify that I served a true and correct copy of the foregoing document in Docket UM 2 3 1635 on the following named person(s) on the date indicated below by email addressed to said 4 person(s) at his or her last-known address(es) indicated below. 5 6 Tommy A. Brooks Chad M. Stokes Cable Huston Benedict Haagensen & Lloyd Cable Huston Benedict Haagensen & Lloyd 7 cstokes@cablehuston.com tbrooks@cablehuston.com G. Catriona McCracken **OPUC Dockets** 8 Citizens' Utility Board of Oregon Citizens' Utility Board Of Oregon dockets@oregoncub.org catriona@oregoncub.org 9 Edward Finklea Bob Jenks 10 Northwest Industrial Gas Users Citizens' Utility Board of Oregon efinklea@nwigu.org bob@oregoncub.org 11 Richard George Jay Tinker 12 Portland General Electric Portland General Electric Pge.opuc.filings@pgn.com Richard.george@pgn.com 13 Jason W. Jones Judy Johnson 14 PUC Staff - Department of Justice Public Utility Commission of Oregon Jason.w.jones@state.or.us Judy.johnsoni@state.or.us 15 16 DATED: September 20, 2013 17 Wendy McIndoo Wendy McIndoo Office Maria 18 19 Office Manager 20 21 22 23 24 25

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Future Earnings Test Proposed Methodology Applied to Past Results

	<u> </u>	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	Total
1	ROE - Earnings Test	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%	
2	A - Insurance not Included											
4 5	SRRM Credit - Company Responsibility	\$0	\$27	\$257	\$1,322	\$622	\$526	\$8,283	\$6,593	\$7,261	\$439	\$25,330
6 7	SRRM Amortization - Customer Responsibility	\$1,034	\$2,178	\$8,952	\$5,238	\$8,140	\$7,639	\$1,684	\$7,081	\$8,059	\$18,983	\$68,989
8	ROE given SRRM	8.05%	9.48%	9.73%	10.15%	10.10%	9.99%	10.25%	10.24%	10.25%	9.82%	9.81%
9 10												
11 12	B.a. Equal 10 year application of Insurance											
13 14	SRRM Credit - Company Responsibility SRRM Amortization - Customer Responsibility	\$0 (\$3,036)	\$0 (\$1,866)	\$257 \$4,882	\$1,322 \$1,168	\$622 \$4,070	\$526 \$3,569	\$5,896 \$0	\$6,593 \$3,011	\$7,261 \$3,989	\$439 \$14,913	\$22,916 \$30,699
15 16	ROE given SRRM	8.05%	9.49%	9.73%	10.15%	10.10%	9.99%	10.53%	10.24%	10.25%	9.82%	9.83%
17 18												
19 20	B.b. Insurance proportional to Expense											
21	SRRM Credit - Company Responsibility	\$0	\$27	\$257	\$1,322	\$622	\$526	\$7,986	\$6,593	\$7,261	\$439	\$25,033
22 23	SRRM Amortization - Customer Responsibility	(\$3,036)	(\$1,866)	\$4,882	\$1,168	\$4,070	\$3,569	\$0	\$3,011	\$3,989	\$14,913	\$30,699
24	ROE given SRRM	8.05%	9.48%	9.73%	10.15%	10.10%	9.99%	10.29%	10.24%	10.25%	9.82%	9.81%
25 26												
27 28	B.c. Insurance applied to year of receipt											
29	SRRM Credit - Company Responsibility	\$0	\$27	\$257	\$1,322	\$622	\$526	\$8,283	\$6,593	\$7,261	\$439	\$25,330
30 31	SRRM Amortization - Customer Responsibility	\$1,034	\$2,178	\$8,952	\$5,238	\$8,140	\$7,639	\$1,684	\$7,081	\$4,410	\$14,913	\$61,269
32	ROE given SRRM	8.05%	9.48%	9.73%	10.15%	10.10%	9.99%	10.25%	10.24%	10.25%	9.82%	9.81%

Insurance Spread: None

	2003	2004	2005	<u>2006</u>	2007	2008	2009	2010	2011	2012		
r Results of Operations ("ROO") as filed: data is from filed ROOs,	column c (after Typ	oe I normalizing a	adjustments), the	ere are slight rou	nding differences	5						
t Operating Revenue	\$61,541	\$71,694	\$78,821	\$82,753	\$83,957	\$83,918	\$89,513	\$84,845	\$86,680	\$82,251		
tal Rate Base	\$814,052	\$858,497	\$940,148	\$958,767	\$975,963	\$978,907	\$986,180	\$967,308	\$993,165	\$1,028,353		
turn on Rate Base	7.56%	8.35%	8.38%	8.63%	8.60%	8.57%	9.08%	8.77%	8.73%	8.00%		
turn on Equity	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%		
thorized ROE	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.08%	see note 1	
E Threshold for each year's Spring Earnings Test	13.27%	13.27%	13.32%	13.44%	13.40%	13.14%	11.54%	11.02%	10.92%	10.92%		
vironmental costs:											<u>Totals</u>	1
rironmental deferrals (as actually recorded each year)	\$1,034 \$0	\$2,205 \$0	\$9,209 \$0	\$5,290 \$1,270	\$6,754 \$2,008	\$5,415 \$2,750	\$6,464 \$3,503	\$9,231 \$4,444	\$9,762 \$5,559	\$15,571	\$70,934	9
erest on deferrals (as actually recorded each year) cal Environmental deferrals with interest	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$3,503 \$9,967	\$4,444 \$13,675	\$5,559 \$15,320	\$3,852 \$19,423	\$23,385 \$94,319	1
surance proceeds		0									0	
Environmental costs	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	\$15,320	\$19,423	\$94,319	
		1,7	1-7	1.7	1.7	1.7	1-7-	1 -7	1 -7-		, , , , ,	3
rironmental Deferrals Earnings Test Scenarios: these scenarios												
exceeding the threshold results in a writeoff of costs to the extent the	at earnings exceede	d the threshold.	Under this interp	retation, the writ	eoff is the lesser	of the pre-tax a	mount exceeding	threshold ROE	or the actual env	vironmental spe	nt. <u>Totals</u>	of
tax amount of ROE compared to 10.2%	(\$14,492)	(\$5,379)	(\$3,535)	\$878	(\$233)	(\$1,327)	\$8,719	\$6,940	\$7,643	(\$1,707)	(\$2,493)	
rite off to extent of earnings exceeded 10.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$878 \$878	\$0 \$0	\$0 \$6,166	\$8,719 \$0	\$6,940 \$5,889	\$7,643 \$5,172	\$0 \$0	\$24,180 \$18,105	
Whiteon is Wheele sharing excluded from all earnings tests	φυ	φυ	φU	4070	ΨU	\$0,100	φU	φ3,009	\$3,172	φυ	\$10,103	
ng deadband that existed in relevant Spring Earnings Test [a]		¢0	¢0	¢0	¢0	# 0	#0	¢500	¢2.001	¢0	£2.600	
rrite off to extent of earnings exceeded deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$599 \$0	\$2,081 \$0	\$0 \$0	\$2,680	
bps deadband write off to extent of earnings exceeded 11.2% deadband	\$0	\$0	\$0	\$0	\$0	\$0	\$115	\$0	\$0	\$0	\$115	
writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
bps deadband												
write off to extent of earnings exceeded 10.7% deadband	\$0	\$0	\$0	\$0	\$0	\$0	\$4,417	\$3,074	\$3,780	\$0	\$11,271	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$0	\$0	\$1,775	\$0	\$2,022	\$1,309	\$0	\$5,107	
) bps deadband												
rite off to extent of earnings exceeded 9.7% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$536 \$536	\$5,008 \$5,008	\$4,067 \$4,067	\$3,064 \$8,165	\$9,967 \$0	\$10,807 \$9,756	\$11,506 \$9,035	\$1,384 \$0	\$46,338 \$36,567	
	φU	φυ	\$330	\$3,000	φτ,007	\$0,103	φU	\$3,730	\$9,033	φυ	\$30,307	
00 bps deadband write off to extent of earnings exceeded 9.2% deadband	\$0	\$2,151	\$4,606	\$6,560	\$8,367	\$7,454	\$9,967	\$13,675	\$15,320	\$5,450	\$73,551	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$2,151	\$4,606	\$6,560	\$8,367	\$8,165	\$1,377	\$13,622	\$12,898	\$0	\$57,747	
riable bps deadbands:												
.00	\$0	\$0	\$0	\$0	\$0	\$0	\$115	\$0	\$0	\$0	\$115	
write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	
100												
rite off to extent of earnings exceeded 9.2% deadband	\$0	\$2,151	\$4,606	\$6,560	\$8,367	\$7,454	\$9,967	\$13,675	\$15,320	\$5,450	\$73,551	
writeoff if WACOG sharing excluded from all earnings tests	\$0	\$2,151	\$4,606	\$6,560	\$8,367	\$8,165	\$1,377	\$13,622	\$12,898	\$0	\$57,747	
												1
											+25.220	1
RRM Application of Insurance Proceeds per Stipulation	\$0	\$27	\$257	\$1,322	\$622	\$526	\$8,283	\$6,593	\$7,261	\$439	\$25,330	1
RRM Application of Insurance Proceeds per Stipulation	\$0 \$1,034	\$27 \$2,178	\$257 \$8,952	\$1,322 \$5,238	\$622 \$8,140	\$526 \$7,639	\$8,283 \$1,684	\$6,593 \$7,081	\$7,261 \$8,059	\$439 \$18,983	\$25,330 \$68,989	
iRRM Application of Insurance Proceeds per Stipulation iRRM Credit - Company Responsibility IRRM Amortization - Customer Responsibility												
RRM Application of Insurance Proceeds per Stipulation RRM Credit - Company Responsibility RRM Amortization - Customer Responsibility OE given SRRM application	\$1,034 8.05%	\$2,178 9.48%	\$8,952 9.73%	\$5,238 10.15%	\$8,140 10.10%	\$7,639 9.99%	\$1,684 10.25%	\$7,081 10.24%	\$8,059 10.25%	\$18,983 9.82%	\$68,989 Simple Average	
SRRM Application of Insurance Proceeds per Stipulation SRRM Credit - Company Responsibility SRRM Amortization - Customer Responsibility ROE given SRRM application SRRM Band - ROE less 75 bps up to ROE SRRM Band - ROE to 50 bps over ROE	\$1,034	\$2,178	\$8,952	\$5,238	\$8,140	\$7,639	\$1,684	\$7,081	\$8,059	\$18,983	\$68,989 Simple Average	

Insurance Spread: Equal over 10 years

NW Natural Rates & Regulatory Affairs Analysis of Oregon Earnings Tests (\$000's)

	2003	2004	2005	2006 ⁴	2007	2008	2009	2010 2010	2011	2012		
r Results of Operations ("ROO") as filed: data is from filed ROOs,	, column c (after Typ	oe I normalizing a	djustments), the	re are slight roui	nding differences							
t Operating Revenue	\$61,541	\$71,694	\$78,821	\$82,753	\$83,957	\$83,918	\$89,513	\$84,845	\$86,680	\$82,251		
tal Rate Base	\$814,052	\$858,497	\$940,148	\$958,767	\$975,963	\$978,907	\$986,180	\$967,308	\$993,165	\$1,028,353		
turn on Rate Base	7.56%	8.35%	8.38%	8.63%	8.60%	8.57%	9.08%	8.77%	8.73%	8.00%		
turn on Equity	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%		
thorized ROE	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.08%		
E Threshold for each year's Spring Earnings Test	13.27%	13.27%	13.32%	13.44%	13.40%	13.14%	11.54%	11.02%	10.92%	10.92%		
vironmental costs:											<u>Totals</u>	
vironmental deferrals (as actually recorded each year) serest on deferrals (as actually recorded each year)	\$1,034 \$0	\$2,205 \$0	\$9,209 \$0	\$5,290 \$1,270	\$6,754 \$2,008	\$5,415 \$2,750	\$6,464 \$3,503	\$9,231 \$4,444	\$9,762 \$5,559	\$15,571 \$3,852	\$70,934 \$23,385	
al Environmental deferrals with interest	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	\$15,320	\$19,423	\$94,319	1
urance proceeds	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(4,070)	(40,704)	
t Environmental costs	(\$3,036)	(\$1,866)	\$5,139	\$2,490	\$4,692	\$4,095	\$5,896	\$9,604	\$11,250	\$15,352	\$53,615	
vironmental Deferrals Earnings Test Scenarios: these scenarios exceeding the threshold results in a writeoff of costs to the extent the extent to the extent to the exte												wr of e
rite off to extent of earnings exceeded 10.2% deadband I writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$878 \$878	\$0 \$0	\$0 \$4,095	\$5,896 \$0	\$6,940 \$5,889	\$7,643 \$5,172	\$0 \$0	\$21,358 \$16,033	
ng deadband that existed in relevant Spring Earnings Test [a] rite off to extent of earnings exceeded deadband	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$599	\$2,081	\$0	\$2,680	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0		
D bps deadband rite off to extent of earnings exceeded 11.2% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	
bps deadband												
rite off to extent of earnings exceeded 10.7% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$1,775	\$4,417 \$0	\$3,074 \$2,022	\$3,780 \$1,309	\$0 \$0	\$11,271 \$5,107	
bps deadband rite off to extent of earnings exceeded 9.2% deadband	\$0	\$0	\$536	\$2,490	\$4,067	\$3,064	\$5,896	\$9,604	\$11,250	\$1,384	\$38,290	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$536	\$2,490	\$4,067	\$4,095	\$0	\$9,604	\$9,035	\$0	\$29,826	
00 bps deadband rrite off to extent of earnings exceeded 9.2% deadband	\$0	\$0	\$4,606	\$2,490	\$4,692	\$4,095	\$5,896	\$9,604	\$11,250	\$5,450	\$48,083	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$4,606	\$2,490	\$4,692	\$4,095	\$1,377	\$9,604	\$11,250	\$0	\$38,114	
riable bps deadbands: 00												
orite off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	
· · · · · · · · · · · · · · · · · · ·				\$2,490	¢4.603	¢4.00F	¢E 90¢	¢0 604	411.350	ĕ E 4E0	£40.000	
100	# 0	40	¢4 c0c	57 490	\$4,692	\$4,095 \$4,095	\$5,896 \$1,377	\$9,604 \$9,604	\$11,250 \$11,250	\$5,450 \$0	\$48,083 \$38,114	
.00 rite off to extent of earnings exceeded 9.2% deadband	\$0 \$0	\$0 \$0	\$4,606 \$4,606	\$2,490	\$4,692	\$4,095						
100 rrite off to extent of earnings exceeded 9.2% deadband writeoff if WACOG sharing excluded from all earnings tests				\$2,490 (\$4,070)	\$4,692 (\$4,070)	(\$4,070)	(\$4,070)	(\$4,070)	(\$4,070)	(\$4,070)	(\$40,704))
100 rrite off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests RRM Application of Insurance Proceeds per Stipulation RRM Credit - Company Responsibility	\$0	\$0	\$4,606	\$2,490			(\$4,070) \$5,896 \$0	(\$4,070) \$6,593 \$3,011	(\$4,070) \$7,261 \$3,989	(\$4,070) \$439 \$14,913	\$22,916 \$30,699)
100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests IRRM Application of Insurance Proceeds per Stipulation IRRM Credit - Company Responsibility IRRM Amortization - Customer Responsibility ROE given SRRM application	\$0 (\$4,070) \$0	\$0 (\$4,070) \$0	\$4,606 (\$4,070) \$257	\$2,490 (\$4,070) \$1,322	(\$4,070) \$622	(\$4,070) \$526	\$5,896	\$6,593	\$7,261	\$439	\$22,916	

NW Natural Rates & Regulatory Affairs Analysis of Oregon Earnings Tests (\$000's)

Insurance Spread: % of Expense

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012		
er Results of Operations ("ROO") as filed: data is from filed ROOs	, column c (after Typ	e I normalizing a	djustments), the	re are slight roui	nding differences							
et Operating Revenue	\$61,541	\$71,694	\$78,821	\$82,753	\$83,957	\$83,918	\$89,513	\$84,845	\$86,680	\$82,251		
tal Rate Base	\$814,052	\$858,497	\$940,148	\$958,767	\$975,963	\$978,907	\$986,180	\$967,308	\$993,165	\$1,028,353		
turn on Rate Base	7.56%	8.35%	8.38%	8.63%	8.60%	8.57%	9.08%	8.77%	8.73%	8.00%		
turn on Equity	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%		
thorized ROE	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.08%		
E Threshold for each year's Spring Earnings Test	13.27%	13.27%	13.32%	13.44%	13.40%	13.14%	11.54%	11.02%	10.92%	10.92%		
vironmental costs:											<u>Totals</u>	
vironmental deferrals (as actually recorded each year) serest on deferrals (as actually recorded each year)	\$1,034 \$0	\$2,205 \$0	\$9,209 \$0	\$5,290 \$1,270	\$6,754 \$2,008	\$5,415 \$2,750	\$6,464 \$3,503	\$9,231 \$4,444	\$9,762 \$5,559	\$15,571 \$3,852	\$70,934 \$23,385	
al Environmental deferrals with interest	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	\$15,320	\$19,423	\$94,319	1
surance proceeds	(446)	(951)	(3,974)	(2,831)	(3,781)	(3,524)	(4,301)	(5,901)	(6,612)	(8,382)	(40,704)	
t Environmental costs	\$588	\$1,253	\$5,235	\$3,729	\$4,981	\$4,641	\$5,665	\$7,773	\$8,709	\$11,041	\$53,615	
vironmental Deferrals Earnings Test Scenarios: these scenarios												
t exceeding the threshold results in a writeoff of costs to the extent the											<u>Totals</u>	wr
e tax amount of ROE compared to 10.2% rite off to extent of earnings exceeded 10.2% deadband	(\$14,492) \$0	(\$5,379) \$0	(\$3,535) \$0	\$878 \$878	(\$233) \$0	(\$1,327) \$0	\$8,719 \$5,665	\$6,940 \$6,940	\$7,643 \$7,643	(\$1,707) \$0	(\$2,493) \$21,127	of er
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$878	\$0	\$4,641	\$0	\$5,889	\$5,172	\$0	\$16,580	
ng deadband that existed in relevant Spring Earnings Test [a												
rrite off to extent of earnings exceeded deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$599 \$0	\$2,081 \$0	\$0 \$0	\$2,680	
	**	7-	7-	7-	7-	,,,	7-	7-	7-	7-		
bps deadband rite off to extent of earnings exceeded 11.2% deadband	\$0	\$0	\$0	\$0	\$0	\$0	\$115	\$0	\$0	\$0	\$115	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	
bps deadband												
rite off to extent of earnings exceeded 10.7% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$1,775	\$4,417 \$0	\$3,074 \$2,022	\$3,780 \$1,309	\$0 \$0	\$11,271 \$5,107	
	**	7-	7-	7-	7-	4-/	7-	1-/	+-/	7-	7-7	
D bps deadband rite off to extent of earnings exceeded 9.2% deadband	\$0	\$0	\$536	\$3,729	\$4,067	\$3,064	\$5,665	\$7,773	\$8,709	\$1,384	\$34,927	
1 writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$536	\$3,729	\$4,067	\$4,641	\$0	\$7,773	\$8,709	\$0	\$29,455	
00 bps deadband												
write off to extent of earnings exceeded 9.2% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$1,253	\$4,606	\$3,729	\$4,981	\$4,641	\$5,665 \$1,377	\$7,773 \$7,773	\$8,709 \$8,709	\$5,450 \$0	\$46,809 \$37,070	
	\$0	\$1,253	\$4,606	\$3,729	\$4,981	\$4,641	\$1,3//					
	\$U	\$1,253			\$4,981	\$4,641	\$1,377	4.,				
riable bps deadbands: 00	·		\$4,606	\$3,729								
riable bps deadbands: 00 rrite off to extent of earnings exceeded 11.2% deadband	\$0 \$0 \$0	\$0	\$4,606 \$0	\$3,729 \$0	\$0	\$0	\$115	\$0	\$0 \$0	\$0 \$0	\$115 \$0	
riable bps deadbands: 00 prite off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0		\$4,606	\$3,729					\$0 \$0	\$0 \$0	\$115 \$0	
riable bps deadbands: 00 ritle off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 ritle off to extent of earnings exceeded 9.2% deadband	\$0	\$0	\$4,606 \$0	\$3,729 \$0	\$0	\$0	\$115	\$0			\$0 \$46,809	
riable bps deadbands: 00 ritle off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 ritle off to extent of earnings exceeded 9.2% deadband	\$0 \$0	\$0 \$0	\$4,606 \$0 \$0	\$3,729 \$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0	\$0	\$0	
riable bps deadbands: 00 vrite off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 vrite off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0 \$1,253	\$4,606 \$0 \$0 \$4,606	\$3,729 \$0 \$0 \$3,729	\$0 \$0 \$4,981	\$0 \$0 \$4,641	\$115 \$0 \$5,665	\$0 \$0 \$7,773	\$0 \$8,709	\$0 \$5,450	\$0 \$46,809	
riable bps deadbands: 00 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests IRRM Application of Insurance Proceeds per Stipulation IRRM Credit - Company Responsibility	\$0 \$0 \$0 \$0 (\$45)	\$0 \$0 \$1,253 \$1,253 (\$140) \$27	\$4,606 \$0 \$0 \$4,606 \$4,606 (\$537) \$257	\$3,729 \$0 \$0 \$3,729 \$3,729 (\$820) \$1,322	\$0 \$0 \$4,981 \$4,981 (\$1,198)	\$0 \$0 \$4,641 \$4,641 (\$1,551) \$526	\$115 \$0 \$5,665 \$1,377 (\$1,981) \$7,986	\$0 \$0 \$7,773 \$7,773 (\$2,571) \$6,593	\$8,709 \$8,709 (\$3,232) \$7,261	\$5,450 \$0 (\$4,070) \$439	\$46,809 \$37,070 \$25,033	
riable bps deadbands: 00 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests IRRM Application of Insurance Proceeds per Stipulation IRRM Credit - Company Responsibility	\$0 \$0 \$0 \$0 \$0 (\$45)	\$0 \$0 \$1,253 \$1,253 (\$140)	\$4,606 \$0 \$0 \$4,606 \$4,606 (\$537)	\$3,729 \$0 \$0 \$3,729 \$3,729 (\$820)	\$0 \$0 \$4,981 \$4,981 (\$1,198)	\$0 \$0 \$4,641 \$4,641 (\$1,551)	\$115 \$0 \$5,665 \$1,377 (\$1,981)	\$0 \$0 \$7,773 \$7,773 (\$2,571)	\$8,709 \$8,709 (\$3,232)	\$5,450 \$0 (\$4,070) \$439 \$14,913	\$46,809 \$37,070 \$25,033 \$30,699	
riable bps deadbands: .00 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests SRRM Application of Insurance Proceeds per Stipulation SRRM Credit - Company Responsibility SRRM Amortization - Customer Responsibility	\$0 \$0 \$0 \$0 (\$45)	\$0 \$0 \$1,253 \$1,253 (\$140) \$27	\$4,606 \$0 \$0 \$4,606 \$4,606 (\$537) \$257	\$3,729 \$0 \$0 \$3,729 \$3,729 (\$820) \$1,322	\$0 \$0 \$4,981 \$4,981 (\$1,198)	\$0 \$0 \$4,641 \$4,641 (\$1,551) \$526	\$115 \$0 \$5,665 \$1,377 (\$1,981) \$7,986	\$0 \$0 \$7,773 \$7,773 (\$2,571) \$6,593	\$8,709 \$8,709 (\$3,232) \$7,261	\$5,450 \$0 (\$4,070) \$439 \$14,913	\$46,809 \$37,070 \$25,033	
ariable bps deadbands: 100 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests -100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests SRRM Application of Insurance Proceeds per Stipulation SRRM Credit - Company Responsibility SRRM Amortization - Customer Responsibility ROE given SRRM application SRRM Band - ROE less 75 bps up to ROE SRRM Band - ROE less 75 bps up to ROE SRRM Band - ROE to 50 bps over ROE	\$0 \$0 \$0 (\$45) \$0 (\$3,036)	\$0 \$0 \$1,253 \$1,253 (\$140) \$27 (\$1,866)	\$4,606 \$0 \$0 \$4,606 \$4,606 (\$537) \$257 \$4,882	\$3,729 \$0 \$0 \$3,729 \$3,729 (\$820) \$1,322 \$1,168	\$0 \$0 \$4,981 \$4,981 (\$1,198) \$622 \$4,070	\$0 \$0 \$4,641 \$4,641 (\$1,551) \$526 \$3,569	\$115 \$0 \$5,665 \$1,377 (\$1,981) \$7,986 \$0	\$0 \$0 \$7,773 \$7,773 (\$2,571) \$6,593 \$3,011	\$8,709 \$8,709 (\$3,232) \$7,261 \$3,989	\$0 \$5,450 \$0 (\$4,070) \$439 \$14,913	\$46,809 \$37,070 \$25,033 \$30,699 Simple Average	

Insurance Spread: yr of reimbursement

NW Natural Rates & Regulatory Affairs Analysis of Oregon Earnings Tests (\$000's)

lysis o 00's)	of Oregon Earnings Tests	2003	2 2004	2 005	200 <u>6</u>	2007 5	6 2008	7 2009	8 2010	9 2011	2012		
	Per Results of Operations ("ROO") as filed: data is from filed ROOs, or	olumn c (after Typ	oe I normalizing a	djustments), the	ere are slight rou	nding differences	i						
	Net Operating Revenue	\$61,541	\$71,694	\$78,821	\$82,753	\$83,957	\$83,918	\$89,513	\$84,845	\$86,680	\$82,251		
	Total Rate Base	\$814,052	\$858,497	\$940,148	\$958,767	\$975,963	\$978,907	\$986,180	\$967,308	\$993,165	\$1,028,353		
	Return on Rate Base	7.56%	8.35%	8.38%	8.63%	8.60%	8.57%	9.08%	8.77%	8.73%	8.00%		
	Return on Equity	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%		
	Authorized ROE	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.08%		
	ROE Threshold for each year's Spring Earnings Test	13.27%	13.27%	13.32%	13.44%	13.40%	13.14%	11.54%	11.02%	10.92%	10.92%		_
	Environmental costs: Environmental deferrals (as actually recorded each year) Interest on deferrals (as actually recorded each year) Total Environmental deferrals with interest	\$1,034 \$0 \$1,034	\$2,205 \$0 \$2,205	\$9,209 \$0 \$9,209	\$5,290 \$1,270 \$6,560	\$6,754 \$2,008 \$8,762	\$5,415 \$2,750 \$8,165	\$6,464 \$3,503 \$9,967	\$9,231 \$4,444 \$13,675	\$9,762 \$5,559 \$15,320	\$15,571 \$3,852 \$19,423	Totals \$70,934 \$23,385 \$94,319	
	Insurance proceeds									(36,497)	(4,207)	(40,704)	
3 1	Net Environmental costs	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	(\$21,177)	\$15,215	\$53,615	
8 9 0 1 2	Environmental Deferrals Earnings Test Scenarios: these scenarios co that exceeding the threshold results in a writeoff of costs to the extent that Pre tax amount of ROE compared to 10.2% write off to extent of earnings exceeded 10.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests using deadband that existed in relevant Spring Earnings Test [a]												writeoff as % of enviro cost 30.8% 24.1%
	write off to extent of earnings exceeded deadband 1 writeoff if WACOG sharing excluded from all earnings tests 100 bps deadband	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$599 \$0	\$0 \$0	\$0 \$0	\$599	1.1% 0.0%
3	write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	0.2% 0.0%
	50 bps deadband write off to extent of earnings exceeded 10.7% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$1,775	\$4,417 \$0	\$3,074 \$2,022	\$0 \$0	\$0 \$0	\$7,491 \$3,797	14.0% 7.1%
	bys deadband write off to extent of earnings exceeded 9.2% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$536 \$536	\$5,008 \$5,008	\$4,067 \$4,067	\$3,064 \$8,165	\$9,967 \$0	\$10,807 \$9,756	\$0 \$0	\$1,384 \$0	\$34,832 \$27,531	65.0% 51.3%
	-100 bps deadband write off to extent of earnings exceeded 9.2% deadband writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$2,151 \$2,151	\$4,606 \$4,606	\$6,560 \$6,560	\$8,367 \$8,367	\$7,454 \$8,165	\$9,967 \$1,377	\$13,675 \$13,622	\$0 \$0	\$5,450 \$0	\$58,230 \$44,849	108.6% 83.6%
	Variable bps deadbands: 100 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	0.2% 0.0%
2	-100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$2,151 \$2,151	\$4,606 \$4,606	\$6,560 \$6,560	\$8,367 \$8,367	\$7,454 \$8,165	\$9,967 \$1,377	\$13,675 \$13,622	\$0 \$0	\$5,450 \$0	\$58,230 \$44,849	108.6% 83.6%
	SRRM Application of Insurance Proceeds per Stipulation	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	(\$3,650)	(\$4,070)	(\$7,720)	
5	SRRM Credit - Company Responsibility SRRM Amortization - Customer Responsibility	\$0 \$1,034	\$27 \$2,178	\$257 \$8,952	\$1,322 \$5,238	\$622 \$8,140	\$526 \$7,639	\$8,283 \$1,684	\$6,593 \$7,081	\$7,261 \$4,410	\$439 \$14,913	\$25,330 \$61,269	
7	ROE given SRRM application	8.05%	9.48%	9.73%	10.15%	10.10%	9.99%	10.25%	10.24%	10.25%	9.82%	Simple Average 9.81%	
3	SRRM Band - ROE less 75 bps up to ROE SRRM Band - ROE to 50 bps over ROE SRRM Band - Over 50 bps over ROE	\$0	\$27	\$257	\$620 \$702	\$622	\$526	\$645 \$3,442 \$4,196	\$580 \$3,093 \$2,920	\$579 \$3,090 \$3,591	\$439		•

NW Natural Rates & Regulatory Affairs Analysis of Oregon Earnings Tests (\$000's)

Insurance Spread: None entered - open for testing

f Oregon Earnings Tests	1 2003	2 2004	3 2005	4 2006	5 2007	6 2008	7 2009	8 2010	9 2011	2012		
Per Results of Operations ("ROO") as filed: data is from filed ROOs, o					•	2000	2003	2010	2011	2012	I	
Net Operating Revenue	\$61,541	\$71,694	\$78,821	\$82,753	\$83,957	\$83,918	\$89,513	\$84,845	\$86,680	\$82,251		
Total Rate Base	\$814,052	\$858,497	\$940,148	\$958,767	\$975,963	\$978,907	\$986,180	\$967,308	\$993,165	\$1,028,353		
Return on Rate Base	7.56%	8.35%	8.38%	8.63%	8.60%	8.57%	9.08%	8.77%	8.73%	8.00%		
Leturn on Equity	8.05%	9.49%	9.77%	10.31%	10.17%	10.05%	11.21%	11.10%	11.19%	9.87%		
uthorized ROE	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.20%	10.08%		
OE Threshold for each year's Spring Earnings Test	13.27%	13.27%	13.32%	13.44%	13.40%	13.14%	11.54%	11.02%	10.92%	10.92%		_,
invironmental costs:											<u>Totals</u>	
nvironmental deferrals (as actually recorded each year) nterest on deferrals (as actually recorded each year)	\$1,034 \$0	\$2,205 \$0	\$9,209 \$0	\$5,290 \$1,270	\$6,754 \$2.008	\$5,415 \$2,750	\$6,464 \$3,503	\$9,231 \$4,444	\$9,762 \$5,559	\$15,571 \$3,852	\$70,934 \$23,385	
otal Environmental deferrals with interest	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	\$15,320	\$19,423	\$94,319	
nsurance proceeds											0	
let Environmental costs	\$1,034	\$2,205	\$9,209	\$6,560	\$8,762	\$8,165	\$9,967	\$13,675	\$15,320	\$19,423	\$94,319	
nvironmental Deferrals Earnings Test Scenarios: these scenarios co nat exceeding the threshold results in a writeoff of costs to the extent that re tax amount of ROE compared to 10.2% write off to extent of earnings exceeded 10.2% deadband	(\$14,492) \$0	(\$5,379) \$0	(\$3,535) \$0	s878 \$878 \$878	(\$233) \$0	of the pre-tax ar (\$1,327) \$0	\$8,719 \$8,719	\$6,940 \$6,940	**************************************	(\$1,707) \$0	nt. <u>Totals</u> (\$2,493) \$24,180	of env
writeoff if WACOG sharing excluded from all earnings tests	\$0	\$0	\$0	\$878	\$0	\$6,166	\$0	\$5,889	\$5,172	\$0	\$18,105	
sing deadband that existed in relevant Spring Earnings Test [a] write off to extent of earnings exceeded deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$599 \$0	\$2,081 \$0	\$0 \$0	\$2,680	
.00 bps deadband write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	
0 bps deadband		40				40		10.074				
write off to extent of earnings exceeded 10.7% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$1,775	\$4,417 \$0	\$3,074 \$2,022	\$3,780 \$1,309	\$0 \$0	\$11,271 \$5,107	
50 bps deadband	\$0	\$0	\$536	\$5,008	ė4 067	¢2.064	¢0.067	ė10 907	¢11 E06	£1 204	¢46 220	
write off to extent of earnings exceeded 9.7% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$536 \$536	\$5,008	\$4,067 \$4,067	\$3,064 \$8,165	\$9,967 \$0	\$10,807 \$9,756	\$11,506 \$9,035	\$1,384 \$0	\$46,338 \$36,567	
100 bps deadband write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$2,151 \$2,151	\$4,606 \$4,606	\$6,560 \$6,560	\$8,367 \$8,367	\$7,454 \$8,165	\$9,967 \$1,377	\$13,675 \$13,622	\$15,320 \$12,898	\$5,450 \$0	\$73,551 \$57,747	
Variable bps deadbands:												
100 write off to extent of earnings exceeded 11.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	\$0 \$0	\$0 \$0	\$0 \$0	\$115 \$0	
-100 write off to extent of earnings exceeded 9.2% deadband 1 writeoff if WACOG sharing excluded from all earnings tests	\$0 \$0	\$2,151 \$2,151	\$4,606 \$4,606	\$6,560 \$6,560	\$8,367 \$8,367	\$7,454 \$8,165	\$9,967 \$1,377	\$13,675 \$13,622	\$15,320 \$12,898	\$5,450 \$0	\$73,551 \$57,747	
SRRM Application of Insurance Proceeds per Stipulation	per line 22	per line 22	per line 22	per line 22	per line 22	per line 22	per line 22	per line 22	per line 22	per line 22		
SRRM Credit - Company Responsibility	\$0	\$27	\$257	\$1,322	\$622	\$526	\$8,283	\$6,593	\$7,261	\$439	\$25,330	
SRRM Amortization - Customer Responsibility	\$1,034	\$2,178	\$8,952	\$5,238	\$8,140	\$7,639	\$1,684	\$7,081	\$8,059	\$18,983	\$68,989 Simple Average	
ROE given SRRM application	8.05%	9.48%	9.73%	10.15%	10.10%	9.99%	10.25%	10.24%	10.25%	9.82%	9.81%	
SRRM Band - ROE less 75 bps up to ROE SRRM Band - ROE to 50 bps over ROE SRRM Band - Over 50 bps over ROE	\$0	\$27	\$257	\$620 \$702	\$622	\$526	\$645 \$3,442 \$4,196	\$580 \$3,093 \$2,920	\$579 \$3,090 \$3,591	\$439		-