

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

DOCKET NO. UE-17 \_\_\_\_\_

DOCKET NO. UG-17 \_\_\_\_\_

EXH. EMA-8

ELIZABETH M. ANDREWS

REPRESENTING AVISTA CORPORATION

**AVISTA UTILITIES  
CALCULATION OF K-FACTOR STUDY REVENUE  
WASHINGTON NATURAL GAS  
TWELVE MONTHS ENDED DECEMBER 31, 2016**

The following information provides the Company's "K-Factor Study" results for the period 5/1/2018 through 4/30/2021. This Study provides the K-Factor calculations for Rate Years 1 - 3, as well as the revenue requirement results if the K-Factor was applied for each year during the Three-Year Rate Plan. The revenue requirement for each of the years effective May 1, 2018, May 1, 2019 and May 1, 2020 shown in this Study are provided to support that requested by the Company during the 5/1/2018 - 4/30/2021 Three-Year Rate Plan. See Exh. EMA-7 for the EOP Rate Base Study representing the Company's requested natural gas rate relief proposed in this case.

		<b>Per K-Factor Restated Commission Basis Study</b>		
Line No.	Description	Base Rate Change	K-Factor	Base Rate Change
		5/1/2018	Adjustments	5/1/2018
		(000's of Dollars)		
		(a)	(b)	(c)
1	Revenue Requirement -Restated CB (At Proposed Capital Structure)	(\$1,562)	\$ 11,374	\$ 9,812
2	Total Base Distribution Revenues*	\$ 88,832	\$ 88,832	\$ 88,832
3	Percentage Base Distribution Revenue Increase	-1.76%	12.80%	11.05%
4	Total Present Billed Revenue	\$ 152,089	\$ 152,089	\$ 152,089
5	Percentage Billed Revenue Increase	-1.03%	7.48%	6.45%
* Line 8 "Total General Business Revenues" includes special contract transportation revenues.				
6	<b>Total 05/01/2019 Revenue Increase (Rate Period 2, per pg 6)</b>			<b>\$ 4,295</b>
7	Percentage Billed Revenue Increase			2.65%
8	<b>Total 05/01/2020 Revenue Increase (Rate Period 3, per pg 6)</b>			<b>\$ 4,494</b>
9	Percentage Billed Revenue Increase			2.70%

**AVISTA UTILITIES  
K-FACTOR STUDY COST OF CAPITAL  
WASHINGTON NATURAL GAS**

<b>Capital Structure</b>			
<b>Component</b>	<b>Capital Structure</b>	<b>Cost</b>	<b>Weighted Cost</b>
Total Debt	51.5%	5.62%	2.89%
Common Equity	48.5%	9.90%	4.80%
Total	<u>100.00%</u>		<u>7.69%</u>

**AVISTA UTILITIES  
REVENUE CONVERSION FACTOR  
WASHINGTON NATURAL GAS  
TWELVE MONTHS ENDED DECEMBER 31, 2016**

<u>Line No.</u>	<u>Description</u>	<u>Factor</u>
1	<b>Revenues</b>	1.000000
	<b>Expense:</b>	
2	Uncollectibles	0.004827
3	Commission Fees	0.002000
4	Washington Excise Tax	0.038334
6	Total Expense	<u>0.045161</u>
7	Net Operating Income Before FIT	0.954839
8	Federal Income Tax @ 35%	0.334194
9	REVENUE CONVERSION FACTOR	0.620645

K-Factor Study  
(Natural Gas)

AVISTA UTILITIES  
WASHINGTON NATURAL GAS  
K-FACTOR RESTATED COMMISSION BASIS STUDY  
TWELVE MONTHS ENDED DECEMBER 31, 2016  
(000'S OF DOLLARS)

**ACTUAL** | **RESTATEMENT ADJUSTMENTS**  
**RESULTS**

Line No.	DESCRIPTION	Per Results Report	Deferred FIT Rate Base	Deferred Debits and Credits	Working Capital	Eliminate B & O Taxes	Restate Property Tax	Uncollectible Expense	Regulatory Expense	Injuries & Damages	FIT / DFIT Expense
		1.00	1.01	1.02	1.03	2.01	2.02	2.03	2.04	2.05	2.06
		G-ROO	G-DFIT	G-DDC	G-WC	G-EBO	G-RPT	G-UE	G-RE	G-ID	G-FIT
	Adjustment Number										
	Workpaper Reference										
	REVENUES										
1	Total General Business	\$ 146,098	\$ -	\$ -	\$ -	\$ (5,097)	\$ -	\$ -	\$ -	\$ -	\$ -
2	Total Transportation	4,595	-	-	-	(118)	-	-	-	-	-
3	Other Revenues	69,723	-	-	-	-	-	-	-	-	-
4	Total Gas Revenues	220,416	-	-	-	(5,215)	-	-	-	-	-
	EXPENSES										
	Production Expenses										
5	City Gate Purchases	112,605	-	-	-	-	-	-	-	-	-
6	Purchased Gas Expense	988	-	-	-	-	-	-	-	-	-
7	Net Nat Gas Storage Trans	2,932	-	-	-	-	-	-	-	-	-
8	Total Production	116,525	-	-	-	-	-	-	-	-	-
	Underground Storage										
9	Operating Expenses	974	-	-	-	-	-	-	-	-	-
10	Depreciation/Amortization	492	-	-	-	-	-	-	-	-	-
11	Taxes	210	-	-	-	-	-	-	-	-	-
12	Total Underground Storage	1,676	-	-	-	-	-	-	-	-	-
	Distribution										
13	Operating Expenses	12,049	-	-	-	-	-	-	-	-	-
14	Depreciation/Amortization	9,866	-	-	-	-	-	-	-	-	-
15	Taxes	12,807	-	-	-	(5,183)	375	-	-	-	-
16	Total Distribution	34,722	-	-	-	(5,183)	375	-	-	-	-
17	Customer Accounting	7,352	-	2	-	-	-	(590)	-	-	-
18	Customer Service & Information	7,595	-	-	-	-	-	-	-	-	-
19	Sales Expenses	-	-	-	-	-	-	-	-	-	-
	Administrative & General										
20	Operating Expenses	13,763	-	-	-	-	-	-	(3)	76	-
21	Depreciation/Amortization	6,260	-	-	-	-	-	-	-	-	-
22	Regulatory Amortizations	-	-	-	-	-	-	-	-	-	-
23	Taxes	-	-	-	-	-	-	-	-	-	-
24	Total Admin. & General	20,023	-	-	-	-	-	-	(3)	76	-
25	Total Gas Expense	187,893	-	2	-	(5,183)	375	(590)	(3)	76	-
26	OPERATING INCOME BEFORE FIT	32,523	-	(2)	-	(32)	(375)	590	3	(76)	-
	FEDERAL INCOME TAX										
27	Current Accrual	(841)	-	(1)	-	(11)	(131)	207	1	(27)	-
28	Debt Interest	-	3	-	9	-	-	-	-	-	-
29	Deferred FIT	9,923	-	-	-	-	-	-	-	-	-
30	Amort ITC	(17)	-	-	-	-	-	-	-	-	-
31	NET OPERATING INCOME	\$ 23,458	\$ (3)	\$ (1)	\$ (9)	\$ (21)	\$ (244)	\$ 384	\$ 2	\$ (49)	\$ -
	RATE BASE										
	PLANT IN SERVICE										
32	Underground Storage	\$ 26,868	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
33	Distribution Plant	390,508	-	-	-	-	-	-	-	-	-
34	General Plant	82,624	-	-	-	-	-	-	-	-	-
35	Total Plant in Service	500,000	-	-	-	-	-	-	-	-	-
	ACCUMULATED DEPRECIATION/AMORT										
36	Underground Storage	(10,317)	-	-	-	-	-	-	-	-	-
37	Distribution Plant	(129,098)	-	-	-	-	-	-	-	-	-
38	General Plant	(23,473)	-	-	-	-	-	-	-	-	-
39	Total Accumulated Depreciation/Amortization	(162,888)	-	-	-	-	-	-	-	-	-
40	NET PLANT	337,112	-	-	-	-	-	-	-	-	-
41	DEFERRED TAXES	(73,856)	(325)	-	-	-	-	-	-	-	-
42	Net Plant After DFIT	263,256	(325)	-	-	-	-	-	-	-	-
43	GAS INVENTORY	9,116	-	-	-	-	-	-	-	-	-
44	GAIN ON SALE OF BUILDING	-	-	-	-	-	-	-	-	-	-
45	OTHER	(249)	-	-	-	-	-	-	-	-	-
46	WORKING CAPITAL	15,664	-	-	(864)	-	-	-	-	-	-
47	TOTAL RATE BASE	\$ 287,787	\$ (325)	\$ -	\$ (864)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
48	RATE OF RETURN	8.15%									
50	REVENUE REQUIREMENT	-2,138	-35	2	-93	34	393	-618	-3	80	0
	Pro Forma Rate of Return	7.69%									
	Revenue Conversion Factor	0.620645									

K-Factor Study  
(Natural Gas)

Exh. EMA-8

AVISTA UTILITIES  
WASHINGTON NATURAL GAS  
K-FACTOR RESTATED COMMISSION BASIS STUDY  
TWELVE MONTHS ENDED DECEMBER 31, 2016  
(000'S OF DOLLARS)

Line No.	DESCRIPTION	Office Space Charges to Subs	Restate Excise Taxes	Net Gains & Losses	Weather Normalization / Gas Cost Adjust	Eliminate Adder Schedules	Misc. Restating Non-Util / Non-Recurring Expenses	Project Compass Deferral	Restating Incentives	Restate Debt Interest	Restated TOTAL
		2.07	2.08	2.09	2.10	2.11	2.12	2.13	2.14	2.15	
		G-OSC	G-RET	G-NGL	G-WNGC	G-EAS	G-MR	G-CD	G-RI	G-DI	R-Ttl
	Adjustment Number	2.07	2.08	2.09	2.10	2.11	2.12	2.13	2.14	2.15	
	Workpaper Reference	G-OSC	G-RET	G-NGL	G-WNGC	G-EAS	G-MR	G-CD	G-RI	G-DI	R-Ttl
	REVENUES										
1	Total General Business	\$ -	\$ -	\$ -	\$ 11,209	\$ (1,240)	\$ -	\$ -	\$ -	\$ -	\$ 150,970
2	Total Transportation	-	-	-	-	-	-	-	-	-	4,477
3	Other Revenues	-	-	-	(5,427)	(63,276)	-	-	-	-	1,020
4	Total Gas Revenues	-	-	-	5,782	(64,516)	-	-	-	-	156,467
	EXPENSES										
	Production Expenses										
5	City Gate Purchases	-	-	-	5,274	(54,419)	-	-	-	-	63,460
6	Purchased Gas Expense	-	-	-	6	-	-	-	-	-	994
7	Net Nat Gas Storage Trans	-	-	-	-	(2,932)	-	-	-	-	-
8	Total Production	-	-	-	5,280	(57,351)	-	-	-	-	64,454
	Underground Storage										
9	Operating Expenses	-	-	-	-	-	-	-	-	-	974
10	Depreciation/Amortization	-	-	-	-	-	-	-	-	-	492
11	Taxes	-	-	-	-	-	-	-	-	-	210
12	Total Underground Storage	-	-	-	-	-	-	-	-	-	1,676
	Distribution										
13	Operating Expenses	-	-	-	-	-	1	-	-	-	12,050
14	Depreciation/Amortization	-	-	(13)	-	-	-	-	-	-	9,853
15	Taxes	-	2	-	430	(48)	-	-	-	-	8,383
16	Total Distribution	-	2	(13)	430	(48)	1	-	-	-	30,286
17	Customer Accounting	-	-	-	54	(6)	-	-	-	-	6,812
18	Customer Service & Information	-	-	-	-	(6,632)	-	-	-	-	963
19	Sales Expenses	-	-	-	-	-	-	-	-	-	-
	Administrative & General										
20	Operating Expenses	(9)	-	-	22	(2)	(316)	-	(181)	-	13,350
21	Depreciation/Amortization	-	-	-	-	-	-	-	-	-	6,260
22	Regulatory Amortizations	-	-	-	-	-	-	1,079	-	-	1,079
23	Taxes	-	-	-	-	-	-	-	-	-	-
24	Total Admin. & General	(9)	-	-	22	(2)	(316)	1,079	(181)	-	20,689
25	Total Gas Expense	(9)	2	(13)	5,786	(64,039)	(315)	1,079	(181)	-	124,880
26	OPERATING INCOME BEFORE FIT	9	(2)	13	(4)	(477)	315	(1,079)	181	-	31,587
	FEDERAL INCOME TAX										
27	Current Accrual	3	(1)	5	(1)	(167)	110	(378)	63	(171)	(1,340)
28	Debt Interest	-	-	-	-	-	-	-	-	-	12
29	Deferred FIT	-	-	-	-	-	-	-	-	-	9,923
30	Amort ITC	-	-	-	-	-	-	-	-	-	(17)
31	NET OPERATING INCOME	\$ 6	\$ (1)	\$ 8	\$ (3)	\$ (310)	\$ 205	\$ (701)	\$ 118	\$ 171	\$ 23,009
	RATE BASE										
	PLANT IN SERVICE										
32	Underground Storage	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 26,868
33	Distribution Plant	-	-	-	-	-	-	-	-	-	390,508
34	General Plant	-	-	-	-	-	-	-	-	-	82,624
35	Total Plant in Service	-	-	-	-	-	-	-	-	-	500,000
	ACCUMULATED DEPRECIATION/AMORT										
36	Underground Storage	-	-	-	-	-	-	-	-	-	(10,317)
37	Distribution Plant	-	-	-	-	-	-	-	-	-	(129,098)
38	General Plant	-	-	-	-	-	-	-	-	-	(23,473)
39	Total Accumulated Depreciation/Amortization	-	-	-	-	-	-	-	-	-	(162,888)
40	NET PLANT	-	-	-	-	-	-	-	-	-	337,112
41	DEFERRED TAXES	-	-	-	-	-	-	-	-	-	(74,181)
42	Net Plant After DFIT	-	-	-	-	-	-	-	-	-	262,931
43	GAS INVENTORY	-	-	-	-	-	-	-	-	-	9,116
44	GAIN ON SALE OF BUILDING	-	-	-	-	-	-	-	-	-	-
45	OTHER	-	-	-	-	-	-	-	-	-	(249)
46	WORKING CAPITAL	-	-	-	-	-	-	-	-	-	14,800
47	TOTAL RATE BASE	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 286,598
48	RATE OF RETURN										(1)
50	REVENUE REQUIREMENT	-9	2	-14	4	500	-330	1,130	-190	-276	-1,562

(1) The Restated TOTAL column does not represent 12/31/2016 Test Period Commission Basis results of operation on a normalized basis (CBR basis). Difference exists due to inclusion of proposed cost of debt (pro forma versus CBR cost of debt) impacting Adjustment 2.15 above.

Pro Forma Rate of Return  
Revenue Conversion Factor

**K-Factor Study  
(Natural Gas)**

AVISTA UTILITIES  
WASHINGTON NATURAL GAS  
K-FACTOR RESTATED COMMISSION BASIS STUDY  
TWELVE MONTHS ENDED DECEMBER 31, 2016  
(000'S OF DOLLARS)

Line No.	DESCRIPTION	Restated Commission Basis TOTAL
	Adjustment Number	
	Workpaper Reference	PF-STU
	REVENUES	
1	Total General Business	\$ 150,970
2	Total Transportation	4,477
3	Other Revenues	1,020
4	Total Gas Revenues	156,467
	EXPENSES	
	Production Expenses	
5	City Gate Purchases	63,460
6	Purchased Gas Expense	994
7	Net Nat Gas Storage Trans	-
8	Total Production	64,454
	Underground Storage	
9	Operating Expenses	974
10	Depreciation/Amortization	492
11	Taxes	210
12	Total Underground Storage	1,676
	Distribution	
13	Operating Expenses	12,050
14	Depreciation/Amortization	9,853
15	Taxes	8,383
16	Total Distribution	30,286
17	Customer Accounting	6,812
18	Customer Service & Information	963
19	Sales Expenses	-
	Administrative & General	
20	Operating Expenses	13,350
21	Depreciation/Amortization	6,260
22	Regulatory Amortizations	1,079
23	Taxes	-
24	Total Admin. & General	20,689
25	Total Gas Expense	124,880
26	OPERATING INCOME BEFORE FIT	31,587
	FEDERAL INCOME TAX	
27	Current Accrual	(1,340)
28	Debt Interest	12
29	Deferred FIT	9,923
30	Amort ITC	(17)
31	NET OPERATING INCOME	\$ 23,009
	RATE BASE	
	PLANT IN SERVICE	
32	Underground Storage	\$ 26,868
33	Distribution Plant	390,508
34	General Plant	82,624
35	Total Plant in Service	500,000
	ACCUMULATED DEPRECIATION/AMORT	
36	Underground Storage	(10,317)
37	Distribution Plant	(129,098)
38	General Plant	(23,473)
39	Total Accumulated Depreciation/Amortization	(162,888)
40	NET PLANT	337,112
41	DEFERRED TAXES	(74,181)
42	Net Plant After DFIT	262,931
43	GAS INVENTORY	9,116
44	GAIN ON SALE OF BUILDING	-
45	OTHER	(249)
46	WORKING CAPITAL	14,800
47	TOTAL RATE BASE	\$ 286,598
48	RATE OF RETURN	
49	REVENUE REQUIREMENT	-1,562

**K-FACTOR CALCULATION**

Authorized ROR						
Component	Capital Structure	Cost	Weighted Cost		Tax	Tax on equity return
Total Debt	51.5%	5.20%	2.68%			
Common	48.5%	9.50%	4.61%		53.85%	2.48%
Total	100.00%		7.29%			
Tax on Equity Return						2.48%
Total % to apply to RB						9.77%

	Revenue on CB	Portion of Total	2013-2016 Growth Rate	2018-2020 Growth Rate
	*			
Depreciation	16,605	20.13%	10.93%	
O&M	34,149	41.40%	3.62%	3.26%
Taxes OTI	6,045	7.33%	5.21%	
Net Plant After ADFIT	262,931			
(RB*9.77%)	25,694	31.15%	8.17%	5.02%
Revenue	\$ 82,493	Non-gas cost revenues (1)		

\*includes revenue related expenses  
(1) Non-gas cost Revenues, covering investment-related costs and operating expenses.

Revenues Growth: (Per Adj. 18.04 w/ps - 2.333 years from 2016 to 04.30.2019)		
	Annual	
\$	1,625	\$ 697

	Rate YR 1 K-Factor 2017-04.30.2019	Rate Yrs 2 & 3 K-Factor 2019-2020
Depreciation	2.20%	2.20%
O&M	1.50%	1.35%
Taxes OTI	0.38%	0.38%
Net Plant After ADFIT	2.54%	1.56%
Revenues	-0.84%	-0.84%
	5.78%	4.65%

	5.78%	5.78%	5.78%	4.65%	4.65%			
	Restated	K-Factor	K-Factor	K-Factor (1/3)	K-Factor	K-Factor		
	2016	2017	2018	1/3 2019	5/1/2018	5/1/2019	5/1/2020	3-YR Total
47	286,598							
48								
49	(1,562)	4,680	4,950	1,744	9,812	4,295	4,494	18,601

Pro Forma Rate of Return  
Revenue Conversion Factor

K-Factor Study  
(Natural Gas)

NATURAL GAS COST AND REVENUE TREND CALCULATIONS 2013-2016

AVISTA UTILITIES

WASHINGTON NATURAL GAS RESULTS

Commission Basis Results of Operations

(000'S OF DOLLARS)

Line No.	DESCRIPTION	2007 Restated Total	2008 Restated Total	2009 Restated Total	2010 Restated Total	2011 Restated Total	2012 Restated Total	2013 Restated Total	2014 Restated Total	2015 Restated Total	2016 Restated Total
REVENUES											
1	Total General Business	\$ 209,186	\$ 203,727	\$ 182,706	\$ 142,370	\$ 152,457	\$ 142,048	\$ 144,257	\$ 154,546	\$ 149,865	\$ 150,970
2	Total Transportation	3,263	3,369	3,275	3,155	3,448	3,627	3,915	3,960	4,054	4,477
3	Other Revenues	68,416	153,093	84,085	115,257	98,841	68,107	403	332	7,129	1,020
4	Total Gas Revenues	280,865	360,189	270,066	260,782	254,746	213,782	148,575	158,838	161,048	156,467
EXPENSES											
Production Expenses											
5	City Gate Purchases	222,364	310,276	194,267	197,494	188,167	139,073	76,801	84,187	79,634	63,460
6	Purchased Gas Expense	792	(9,103)	803	800	14	130	891	779	840	994
7	Net Nat Gas Storage Trans	283	2	10,720	(3,322)	(4,366)	4,352	-	-	-	1
8	Total Production	223,439	301,175	205,790	194,972	183,815	143,555	77,692	84,966	80,474	64,455
Underground Storage											
9	Operating Expenses	451	436	403	380	585	712	820	893	857	974
10	Depreciation/Amortization	310	276	393	348	395	438	380	402	439	492
11	Taxes	95	113	121	116	19	17	158	184	196	210
12	Total Underground Storage	856	825	917	844	999	1,167	1,358	1,479	1,492	1,676
Distribution											
13	Operating Expenses	6,467	6,123	7,700	7,696	8,854	9,511	10,820	10,704	12,315	12,050
14	Depreciation/Amortization	5,605	5,673	6,064	6,367	6,649	6,978	7,925	8,513	9,088	9,866
15	Taxes	9,844	8,941	8,746	7,223	8,051	7,825	8,116	8,719	8,554	8,383
16	Total Distribution	21,916	20,737	22,510	21,286	23,554	24,314	26,861	27,936	29,957	30,299
17	Customer Accounting	4,487	4,692	5,586	5,234	5,740	5,796	6,270	6,108	6,632	6,811
18	Customer Service & Information	4,658	5,169	7,609	9,505	9,777	6,955	983	865	837	964
19	Sales Expenses	516	442	497	105	3	3	3	-	-	-
Administrative & General											
20	Operating Expenses	8,901	9,706	9,770	11,383	11,585	13,419	11,862	12,777	14,007	13,267
21	Depreciation/Amortization	1,498	1,803	1,999	2,412	2,734	3,276	3,868	4,389	5,649	6,260
22	Regulatory Amortizations	(815)	(242)	440	216	(186)	171	91	(91)	(2,087)	1,079
23	Taxes	20	17	19	24	-	(1)	-	-	-	-
24	Total Admin. & General	9,604	11,284	12,228	14,035	14,133	16,865	15,821	17,075	17,569	20,606
25	Total Gas Expense	265,476	344,324	255,137	245,981	238,021	198,655	128,988	138,429	136,961	124,811
26	OPERATING INCOME BEFORE FIT	15,389	15,865	14,929	14,801	16,725	15,127	19,587	20,409	24,087	31,656
FEDERAL INCOME TAX											
27	Current Accrual	5,010	506	2,468	(5,811)	(907)	(1,185)	4,253	(6,945)	(729)	(1,133)
28	Debt Interest	-	-	-	-	63	3	(56)	(137)	(37)	11
29	Deferred FIT	(1,442)	3,320	1,238	9,594	5,691	5,033	1,403	13,105	7,842	9,923
30	Amort ITC	(31)	(31)	(30)	(29)	(27)	(25)	(24)	(20)	(20)	(17)
31	NET OPERATING INCOME	\$ 11,852	\$ 12,070	\$ 11,253	\$ 11,047	\$ 11,906	\$ 11,301	\$ 14,011	\$ 14,406	\$ 17,031	\$ 22,872
RATE BASE											
PLANT IN SERVICE											
32	Underground Storage	\$ 13,758	\$ 15,260	\$ 21,798	\$ 20,047	\$ 22,008	\$ 24,365	\$ 24,711	\$ 25,235	\$ 25,720	\$ 26,868
33	Distribution Plant	229,417	240,778	255,976	269,469	281,279	296,152	313,469	337,894	360,612	390,508
34	General Plant	21,708	24,256	27,747	33,401	38,971	44,809	52,223	59,169	75,514	82,624
35	Total Plant in Service	264,883	280,294	305,521	322,917	342,258	365,326	390,403	422,298	461,846	500,000
ACCUMULATED DEPRECIATION/AMORT											
36	Underground Storage	7,427	7,581	7,807	7,912	8,286	8,677	9,088	9,521	9,906	10,318
37	Distribution Plant	77,997	81,405	84,021	89,620	97,489	102,678	108,662	114,795	121,623	129,098
38	General Plant	7,136	8,309	8,882	10,722	10,926	12,186	14,724	17,429	20,741	23,473
39	Total Accumulated Depreciation/Amortization	92,560	97,295	100,710	108,254	116,701	123,541	132,474	141,745	152,270	162,889
40	NET PLANT	172,323	182,999	204,811	214,663	225,557	241,785	257,929	280,553	309,576	337,111
41	DEFERRED TAXES	(26,823)	(28,945)	(31,005)	(36,762)	(42,004)	(46,498)	(50,170)	(54,652)	(64,929)	(74,181)
42	Net Plant After DFIT	145,500	154,054	173,806	177,901	183,553	195,287	207,759	225,901	244,647	262,930
43	GAS INVENTORY	5,607	15,327	8,440	10,226	13,753	13,107	11,702	14,762	12,740	9,116
44	GAIN ON SALE OF BUILDING	(197)	(152)	(109)	(44)	(14)	-	-	-	-	-
45	OTHER	789	452	(1,359)	(1,163)	(1,012)	(816)	(332)	(479)	(485)	(249)
46	WORKING CAPITAL	-	-	-	-	-	-	5,695	10,073	16,069	14,800
47	TOTAL RATE BASE	\$ 151,699	\$ 169,681	\$ 180,778	\$ 186,920	\$ 196,280	\$ 207,578	\$ 224,824	\$ 250,257	\$ 272,971	\$ 286,597



**NATURAL GAS COST AND REVENUE TREND CALCULATIONS 2013-2016**

AVISTA UTILITIES  
WASHINGTON NATURAL GAS RESULTS  
(000'S OF DOLLARS)

**Natural Gas Data for Escalators**

Line No.		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	
Exclude Gas Cost and Adder Schedule Expenses (DSM Tariff Rider, Decoupling Surcharge/Rebate) from O&M												
1	Underground Storage	451	436	403	380	585	712	820	893	857	974	
2	Distribution	6,467	6,123	7,700	7,696	8,854	9,511	10,820	10,704	12,315	12,050	
3	Customer Accounting	4,487	4,692	5,586	5,234	5,740	5,796	6,270	6,108	6,632	6,811	
4	Customer Service and Information	4,658	5,169	7,609	9,505	9,777	6,955	983	865	837	964	
5	Sales	516	442	497	105	3	3	3	0	0	0	
6	Administrative and General	8,901	9,706	9,770	11,383	11,585	13,419	11,862	12,777	14,007	13,267	
7	Operating expenses excluding production	25,480	26,568	31,565	34,303	36,544	36,396	30,758	31,347	34,648	34,066	
8	Add Non PGA production O&M expenses	792	783	802	800	981	928	891	779	840	994	
9	Deduct Gas Cost Rev Related Expenses	-1,115	-1,054	-865	-564	-601	-535	-549	-602	-570	-454	
10	Deduct DSM Tariff Rider Expenses	-3,862	-4,412	-6,825	-8,477	-9,017	-5,984	0	0	0	0	
11	Deduct Decoupling Surcharge/Rebate Expenses	0	-3	-5	-3	-3	-1	0	0	0	0	
12	<b>Adjusted Operating Expenses</b>	<b>21,295</b>	<b>21,882</b>	<b>24,672</b>	<b>26,059</b>	<b>27,904</b>	<b>30,804</b>	<b>31,100</b>	<b>31,524</b>	<b>34,918</b>	<b>34,606</b>	
	Annual Percentage Change	3.33%	2.76%	12.75%	5.62%	7.08%	10.39%	0.96%	1.36%	10.77%	-0.89%	
Depreciation/Amortization												
13	Underground Storage	310	276	393	348	395	438	380	402	439	492	
14	Distribution	5,605	5,673	6,064	6,367	6,649	6,978	7,925	8,513	9,088	9,866	
15	Administrative & General	1,498	1,803	1,999	2,412	2,734	3,276	3,868	4,389	5,649	6,260	
16	<b>Total Depreciation/Amortization</b>	<b>7,413</b>	<b>7,752</b>	<b>8,456</b>	<b>9,127</b>	<b>9,778</b>	<b>10,692</b>	<b>12,173</b>	<b>13,304</b>	<b>15,176</b>	<b>16,618</b>	
	Annual Percentage Change	6.46%	4.57%	9.08%	7.94%	7.13%	9.35%	13.85%	9.29%	14.07%	9.50%	
Exclude Adder Schedule amortizations (Decoupling Surcharge/Rebate) from Regulatory Amortizations												
17	Regulatory Amortizations	-815	-242	440	216	-186	171	91	-91	-2,087	1,079	
18	Deduct Decoupling Surcharge/Rebate Expenses	-85	-432	-710	-494	-494	-184	0	0	0	0	
19	<b>Adjusted Regulatory Amortizations</b>	<b>-900</b>	<b>-674</b>	<b>-270</b>	<b>-278</b>	<b>-680</b>	<b>-13</b>	<b>91</b>	<b>-91</b>	<b>-2,087</b>	<b>1,079</b>	
Exclude Gas Cost and Adder Schedule excise taxes (DSM Tariff Rider, Decoupling Surcharge/Rebate) from Taxes Other Than Income Tax												
20	Underground Storage	95	113	121	116	19	17	158	184	196	210	
21	Distribution	9,844	8,941	8,746	7,223	8,051	7,825	8,116	8,719	8,554	8,383	
22	Administrative & General	20	17	19	24	0	-1	0	0	0	0	
23	Total Taxes Other Than Income	9,959	9,071	8,886	7,363	8,070	7,841	8,274	8,903	8,750	8,593	
24	Deduct Gas Cost Excise Tax	-6,261	-5,917	-4,858	-3,171	-3,374	-3,003	-3,083	-3,380	-3,197	-2,548	
25	Deduct DSM Tariff Rider Excise Tax	-154	-176	-272	-338	-359	-239	0	0	0	0	
26	Deduct Decoupling Surcharge/Rebate Excise Tax	-3	-17	-28	-20	-20	-7	0	0	0	0	
27	<b>Adjusted Taxes Other Than Income</b>	<b>3,541</b>	<b>2,961</b>	<b>3,728</b>	<b>3,834</b>	<b>4,317</b>	<b>4,592</b>	<b>5,191</b>	<b>5,523</b>	<b>5,553</b>	<b>6,045</b>	
	Annual Percentage Change	-1.34%	-16.38%	25.90%	2.84%	12.59%	6.38%	13.04%	6.40%	0.54%	8.86%	
Planned (Per Rate Period Study)												
28	<b>Net Plant After Deferred Income Tax</b>	<b>145,500</b>	<b>154,054</b>	<b>173,806</b>	<b>177,901</b>	<b>183,553</b>	<b>195,287</b>	<b>207,759</b>	<b>225,901</b>	<b>244,647</b>	<b>262,930</b>	
	Annual Percentage Change	3.35%	5.88%	12.82%	2.36%	3.18%	6.39%	6.39%	8.73%	8.30%	7.47%	
										14.15%	5.00%	5.04%

**ANNUAL AND COMPOUND GROWTH RATES**

Line No.	Natural Gas K-Factor Growth Rate Analysis	Compound Growth Rates to 2016						Rate Year 1	Rate Years 2 & 3		
		2007-2016	2008-2016	2009-2016	2010-2016	2011-2016	2012-2016	2013-2016	2018-2020		
5	Adjusted Operating Expenses	5.54%	5.90%	4.95%	4.84%	4.40%	2.95%	3.62%	3.26%	10% efficiency deduction	
6	Adjusted Depreciation/Amortization	9.38%	10.00%	10.13%	10.50%	11.19%	11.66%	10.93%			
7	Adjusted Taxes Other than Income	6.12%	9.33%	7.15%	7.88%	6.97%	7.11%	5.21%			
8	Net Plant After Deferred Income Taxes	6.80%	6.91%	6.09%	6.73%	7.45%	7.72%	8.17%	5.02%	Rate Base Reduction	
		Portion						2013-2016	2018-2020		
9	Depreciation	20.13%	1.89%	2.01%	2.04%	2.11%	2.25%	2.35%	2.20%		
10	O&M	41.40%	2.29%	2.44%	2.05%	2.00%	1.82%	1.22%	1.50%	10% Eff Adj	
11	Taxes OTI	7.33%	0.45%	0.68%	0.52%	0.58%	0.51%	0.52%	0.38%		
12	Net Plant After Revenues	31.15%	2.12%	2.15%	1.90%	2.10%	2.32%	2.40%	2.54%	RB Reduction	
13			-0.88%	-0.88%	-0.88%	-0.84%	-0.84%	-0.84%	-0.84%		
14	Total K Factor %	5.87%	6.41%	5.63%	5.95%	6.07%	5.65%	5.78%	4.65%		

(1) This efficiency adjustment is on top of the already reduced O&M growth in 2017 and beyond compared to past planned growth in O&M. As noted in the Company's prior 2016 case (Docket UE-160226, Exhibit No. (EMA-1T), page 35, line 2, the previous growth trend in O&M per the Company's forecast from 2015 to 2017 had expected to be 4.24% annually for electric operations. The Company has recently reduced its expected O&M annual increases for the period 2017-2020 to 2.71% annually (system), a significant reduction, and one more in-line with recent years 2013-2016 average growth of 3.26% for natural gas operations.

(2) Reduction in net plant compared to previous years trend warrants a growth rate reduction for the 2-Year period 2019-2020. This is based on planned transfers to plant and impacts of A/D & ADFTT for those years. Reductions in net plant in 2019 and 2020 results from: 1) timing of transfers to plant (less in 2019-2020); 2) the continuing impact of repairs and bonus depreciation on ADFTT through 2020; and 3) carrying forward A/D on all plant from December 31, 2016 on an AMA basis to each rate year, increases A/D, reducing the net plant adjustment amount in each year.

# K-Factor Study (Natural Gas)

AVISTA UTILITIES  
WASHINGTON NATURAL GAS  
K-FACTOR PRO FORMA STUDY - Informational Only  
TWELVE MONTHS ENDED DECEMBER 31, 2016  
(000'S OF DOLLARS)

PROVIDED FOR INFORMATIONAL PURPOSES ONLY

Line No.	DESCRIPTION	Pro Forma Sub-Total
	Adjustment Number	
	Workpaper Reference	PF-STd
	REVENUES	
1	Total General Business	\$ 84,299
2	Total Transportation	4,533
3	Other Revenues	244
4	Total Gas Revenues	89,076
	EXPENSES	
	Production Expenses	
5	City Gate Purchases	-
6	Purchased Gas Expense	1,019
7	Net Nat Gas Storage Trans	-
8	Total Production	1,019
	Underground Storage	
9	Operating Expenses	974
10	Depreciation/Amortization	492
11	Taxes	247
12	Total Underground Storage	1,713
	Distribution	
13	Operating Expenses	12,693
14	Depreciation/Amortization	10,219
15	Taxes	6,268
16	Total Distribution	29,180
17	Customer Accounting	6,652
18	Customer Service & Information	977
19	Sales Expenses	-
	Administrative & General	
20	Operating Expenses	13,720
21	Depreciation/Amortization	7,477
22	Regulatory Amortizations	584
23	Taxes	-
24	Total Admin. & General	21,781
25	Total Gas Expense	61,322
26	OPERATING INCOME BEFORE FIT	27,754
	FEDERAL INCOME TAX	
27	Current Accrual	(2,681)
28	Debt Interest	(183)
29	Deferred FIT	9,923
30	Amort ITC	(17)
31	NET OPERATING INCOME	\$ 20,712
	RATE BASE	
	PLANT IN SERVICE	
32	Underground Storage	\$ 26,868
33	Distribution Plant	405,018
34	General Plant	90,884
35	Total Plant in Service	522,770
	ACCUMULATED DEPRECIATION/AMORT	
36	Underground Storage	(10,317)
37	Distribution Plant	(129,261)
38	General Plant	(24,097)
39	Total Accumulated Depreciation/Amortization	(163,675)
40	NET PLANT	359,095
41	DEFERRED TAXES	(78,323)
42	Net Plant After DFIT	280,772
43	GAS INVENTORY	9,116
44	GAIN ON SALE OF BUILDING	-
45	OTHER	1,225
46	WORKING CAPITAL	14,800
47	TOTAL RATE BASE	\$ 305,913
48	RATE OF RETURN	
50	REVENUE REQUIREMENT	4,531

### Authorized ROR

Component	Capital Structure	Cost	Weighted Cost	Tax	Tax on equity return
Total Debt	51.5%	5.20%	2.68%		
Common	48.5%	9.50%	4.61%	53.85%	2.48%
Total	100.00%		7.29%		
			2.48%		
			9.77%		

	Revenue on CB*	Portion of Total	2013-2016 Growth Rate	2018-2020 Growth Rate
Depreciation	16,605	20.13%	10.93%	
O&M	34,149	41.40%	3.62%	3.26%
Taxes OTI	6,045	7.33%	5.21%	
Net Plant After ADFIT	280,772	31.15%	8.17%	5.02%
(RB*9.77%)				
Revenue	82,493			
*includes revenue related expenses				
Revenues Growth: (Per Adj. 18.04 w/ps - 2.333 years from 2016 to 04.30.2019)				
Annual				
\$ 1,625	\$ 697			

	Rate YR 1 K-Factor 2017-04.30.2019	Rate Yrs 2 & 3 K-Factor 2019-2020
Depreciation	2.20%	2.20%
O&M	1.50%	1.35%
Taxes OTI	0.38%	0.38%
Net Plant After ADFIT	2.54%	1.56%
Revenues	-0.84%	-0.84%
	5.78%	4.65%

K-Factor	K-Factor (1/3)	K-Factor	K-Factor	3-YR Total
2018	1/3 2019	5/1/2018	5/1/2019	5/1/2020
5,032	1,773	11,336	4,366	4,569
				20,270

Pro Forma Rate of Return  
Revenue Conversion Factor

1 **Exh. EMA-8 – Natural Gas K-Factor Study**

2 **Q. Please explain the purpose of the natural gas K-Factor Study.**

3 A. The Company's natural gas K-Factor Study was produced to provide  
4 additional evidence demonstrating Avista's need for rate relief during the Three-Year Rate  
5 Plan. The natural gas K-Factor Study includes the results of determining Avista's revenue  
6 requirement need over the Three-Year Rate Plan, based on 2016 restated Commission Basis  
7 results and applying an annual revenue escalator (K-Factor) for a multi-year period to  
8 determine the revenue adjustments. The results of this Study for Rate Year 1 is \$9.8  
9 million, effective May 1, 2018; \$4.3 million for Rate Year 2, effective May 1, 2019; and  
10 \$4.5 million for Rate Year 3, effective May 1, 2020.

11 This Study also provides the calculation of the K-Factor used to determine the  
12 revenue requirement requested in this case for Years 2 and 3, as discussed in Exh. EMA-  
13 1T.

14 **Q. Please explain what is shown on page 1 of Exh. EMA-8.**

15 A. Page 1 of Exh. EMA-8, lines 1-3, column (a), first shows the revenue  
16 requirement surplus per the restated 2016 Commission Basis (CB) results<sup>1</sup> of \$1,562,000  
17 and the associated base decrease of 1.76%. Column (b) shows the K-Factor Adjustments,  
18 in addition to the restated CB adjustment, totaling \$11,374,000 (12.8%). Column (c) is the  
19 result of columns (a) and (b), of \$9,812,000, reflecting the base revenue increase beginning  
20 May 1, 2018 per the K-Factor Study, or 11.05%. This page also shows the impact on billed  
21 revenues of 6.45%.

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<sup>1</sup> This level of revenue requirement includes the impact of the K-Factor cost of capital included of 48.5% equity/51.5% debt, cost of debt of 5.62% and overall return of 7.69%.

1           Lastly, page 1, lines 9-12 provides the incremental revenue increases for Rate Years  
2 2 and 3. The Rate Year 2 revenue increase, effective May 1, 2019 is \$4.3 million or 2.65%  
3 on a billed basis. The Rate Year 3 revenue increase, effective May 1, 2020 is \$4.5 million  
4 or 2.70% on a billed basis.

5           **Q.     Please explain what is shown on pages 2 and 3 of Exh. EMA-8.**

6           A.     Page 2 of Exh, EMA-8, shows the Cost of Capital and Capital Structure  
7 included in the K-Factor Study, including: 1) 48.5% Common Equity / 51.5% Debt capital  
8 structure; 2) Return on Equity of 9.9%; and 3) cost of debt of 5.62%, resulting in an overall  
9 Rate of Return (weighted average cost of capital) of 7.69%. Company witness Mr. Thies  
10 discusses the Company's rate of return and the capital structure, while Company witness  
11 Mr. McKenzie provides additional testimony related to the appropriate return on equity for  
12 Avista.

13           Page 3 of Exh. EMA-8, shows the derivation of the natural gas net-operating-  
14 income-to-gross-revenue conversion factor. The conversion factor takes into account  
15 uncollectible accounts receivable, Commission fees and Washington State excise taxes.  
16 Federal income taxes are reflected at 35%.

17           **Q.     Now turning to pages 4 and 5 of Exh. EMA-8, please explain what is**  
18 **included on those pages?**

19           A.     Page 4 begins with actual operating results and rate base for the twelve-  
20 months-ending December 31, 2016 test period on an AMA basis in column (1.00).  
21 Individual normalizing and restating adjustments that are standard components of our  
22 annual reporting to the Commission begin in column (1.01) on page 4 and continue through

1 column (2.15) on page 5.<sup>2</sup> The final column on page 5, labeled “Restated Total” is the  
2 subtotal of the previous columns (1.00) through (2.15), and produces the 2016 restated  
3 Commission Basis net operating income (NOI), total rate base, and revenue requirement  
4 surplus totaling \$1,562,000.

5 **Q. Turning to page 6, please explain what is shown there.**

6 A. The first column on page 6, labeled **Restated Commission Basis Total**, is  
7 a repeat of the final column on page 5 labeled “Restated Total.” This column is shown here  
8 for ease of reference to apply the K-Factor revenue escalator to determine Years 1 – 3  
9 revenue adjustments.

10 For Rate Year 1, the normalized 2016 non-gas cost revenues are multiplied by the  
11 proposed K-Factor (discussed below) for each year between 2016 and Rate Year 1 (from  
12 2016 through the first rate year beginning May 1, 2018). For Rate Years 2 & 3, the annual  
13 K-Factor is applied to the non-gas cost revenues at the time Year 2 and Year 3 rate changes  
14 go into effect.

15 The calculation of the K-Factor is discussed in Exh. EMA-1T, provided at page 6  
16 of Exh. EMA-8, and discussed further below.

17 **Q. Before explaining the calculation of the K-Factor, please explain what  
18 is shown on pages 7-8 of Exh. EMA-8.**

19 A. Page 7 provides data from the annual normalized Commission Basis  
20 Reports, showing Washington natural gas expenses and rate base for the periods 2007  
21 through 2016. Years 2007 through 2012 are provided for informational purposes. Years

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<sup>2</sup> The individual adjustments and descriptions for the restating adjustments as shown in Exh. EMA-8, pages 4 and 5, are consistent with those described at Exh. EMA-6, and therefore will not be repeated here.

1 2013 through 2016 are used to analyze the K-Factor annual growth rates of the four rate  
2 base and expense categories used in the K-Factor revenue escalator.

3 Page 8 shows the development of natural gas adjusted data and balances. Years  
4 2013 through 2016 are used to determine of the four rate base and expense categories used  
5 in the K-Factor revenue escalator provided on page 8.

6 The K-Factor revenue escalator is used only on non-gas costs. Therefore it is  
7 necessary to remove the gas-related costs and revenues from the historical data. The  
8 Washington share of the gas costs and revenues from each year's Commission Basis Report  
9 (CBR) filing are deducted from the O&M in the historical reports. Similarly, adder  
10 schedule revenues and related expenses such as the DSM Tariff Rider and the Residential  
11 Exchange Credit that were included in the CBRs are also deducted from the historical  
12 results to create equivalent values for our trend analysis.

13 Results are presented for the four aggregated K-Factor categories: Operating  
14 Expenses; Depreciation Expense; Taxes Other Than Income Tax; and Net Plant After  
15 Deferred Income tax.

16 At the bottom of page 8, are the compound growth rates for each K-Factor  
17 escalation category, using the growth rates on page 8. The growth change by category for  
18 the period 2013 through 2016 is used as the basis for the K-Factor for Rate Year 1.

19 In addition to the compound growth rates shown on page 8, are the percentage  
20 proportion of each non-gas cost revenue requirement category, based on the 2016 restated  
21 commission basis balances, included in the K-Factor calculation. The revenue proportion  
22 by category is determined on page 6 of Exh. EMA-8.

23

1 **K-Factor Calculation:**

2 **Q. Returning to Page 6, of Exh. EMA-8, please discuss the data available**  
3 **there.**

4 A. Provided on page 6 are the total natural gas normalized 2016 non-gas cost  
5 restated Commission Basis (CB) results. These data provide the CB expenses and plant  
6 related data grouped in the following categories: 1) net plant after ADFIT; 2) depreciation  
7 expense; 3) taxes other than income expense (mainly property taxes); and 4) all other  
8 operating expenses, including O&M, customer service, and administrative and general  
9 expenses. The proportion of revenue to cover each of these categories is used to determine  
10 the percentage or proportion of each category to apply to the individual growth factors of  
11 the same category discussed below.

12 Annual Sales Revenues for the period is also provided here, representing the  
13 offsetting annual revenue included within the overall K-Factor calculation.

14 **Q. Please discuss the purpose of the K-Factor and the calculation of the K-**  
15 **Factor for Rate Year 1.**

16 A. The K-Factor represents a weighted average revenue escalation factor based  
17 on the percentage of non-gas cost revenue requirements for the four categories discussed  
18 above: 1) net plant after ADFIT; 2) depreciation expense; 3) taxes other than income  
19 expense; and 4) O&M expense. The result of the weighted average components are then  
20 offset by the growth in sales to customers (revenue) between the 2016 test year and Rate  
21 Year 1.

22 The calculation of the Rate Year 1 K-Factor is provided below in Table No. 1  
23 including: a) individual K-Factor category "Growth Rate" result; b) "Revenue Portion of

1 Category,” providing the proportion of revenue for each category to cover its cost versus  
 2 the total non-gas cost revenue amount (excluding gas cost related revenues and expenses);  
 3 and c) “K-Factor %,” which is the calculated K-Factor result for each category determined  
 4 by multiplying a) times b). Also provided are the “Annual Growth In Sales Revenues,”  
 5 representing the offsetting annual revenue reducing the K-Factor. The K-Factor percentage  
 6 result for Rate Year 1 is 5.78%.

7 **Table No. 1**

K-Factor Calculation - Rate Year 1:	(a)	(b)	(c)
Category	Growth Rate 2013-2016	Revenue Portion of Category	K-Factor % (a) x (b)
Operating Expenses	3.62%	41.40%	1.50%
Depreciation/Amortization <sup>(1)</sup>	10.93%	20.13%	2.20%
Taxes Other than Income	5.21%	7.33%	0.38%
Net Plant After ADFIT	8.17%	31.15%	2.54%
Annual Growth In Sales Revenue		100.00%	-0.84%
<b>Total K-Factor %</b>			<b>5.78%</b>
See Exh. EMA- 8, page 8 for growth rates and page 6 for revenue proportion and annual growth in sales revenue.			
<sup>(1)</sup> The growth rate in depreciation/amortization expense is primarily driven by shorter-lived assets representing a higher proportion of investment in recent years.			

15 **Q. Please explain the K-Factor calculation for Rate Years 2 and 3.**

16 A. For Rate Years 2 and 3, as explained in Exh. EMA-1T, the company  
 17 discounted the growth rate for O&M expenses and net plant after ADFIT components to  
 18 calculate the K-Factor revenue escalator for Rate Years 2 and 3.

19 For the O&M category, Avista has included an additional 10% “efficiency  
 20 adjustment,” reducing the natural gas O&M growth percentage from 3.62% included in the  
 21 Rate Year 1 K-Factor to 3.26% for the K-Factor used in Rate Years 2 and 3.

22 For the net plant after ADFIT (Net Plant) category, the Company discounted the  
 23 growth in Net Plant, reducing the growth rate from 8.17% to 5.02%. During the process



1 of reviewing the Company’s Net Plant included in its natural gas Rate Year Study, it came  
 2 to the Company’s attention that a reduction in the growth rate of Net Plant is expected to  
 3 occur in years 2019 and 2020. This reduction in Net Plant between 2018 and 2020 was  
 4 determined based on planned transfers to plant and the impacts of A/D and ADFIT, as  
 5 explained by Company witness Ms. Schuh.

6 Table No. 2 below shows the discounted K-Factor calculation for Rate Years 2 and  
 7 3 of 4.65%.<sup>3</sup>

8 **Table No. 2**

<b>K-Factor Calculation - Rate Year 2 &amp; 3</b>				
	(a)	(b)	(c)	(d)
			<b>Revenue</b>	
<b>Category</b>	<b>Growth Rate</b>	<b>Growth Rate</b>	<b>Portion of</b>	<b>K-Factor %</b>
	<b>2013-2016</b>	<b>2018-2020</b>	<b>Category</b>	<b>(a) x (b)</b>
<b>Operating Expenses*</b>		3.26%	41.40%	1.35%
<b>Depreciation/Amortization</b>	10.93%		20.13%	2.20%
<b>Taxes Other than Income</b>	5.21%		7.33%	0.38%
<b>Net Plant After ADFIT</b>		5.02%	31.15%	1.56%
<b>Annual Growth In Sales Revenue*</b>			100.00%	-0.84%
<b>Total K-Factor %</b>				<b>4.65%</b>

14 See Exh. EMA- 4, page 9 for growth rates and page 7 for revenue proportion and annual growth in sales revenue.  
 15 Reflects a 10% efficiency adjustment in O&M expenses and decreases in the growth in net plant after ADFIT in 2019 and 2020.

16 **Q. Please explain the final page, page 9, of Exh. EMA-8.**

17 A. The final page of Exh. EMA-8, page 9 is provided for informational  
 18 purposes only. As explained in Exh. EMA-1T, in Order 06 in Dockets UE-160228 and  
 19 UG-160229, the Commission stated a Company’s requested rate relief should start with its  
 20 Traditional Pro Forma Study results. This page is provided to shows the results of applying  
 21 the K-Factors for Years 1 through 3 of the Rate Plan, if the starting point of applying the

<sup>3</sup> As discussed in Exh. EMA-1T and Exh. EMA- 7, this Year 2 and 3 K-Factor of 4.65% is used within the natural gas EOP Rate Base Study to determine the revenue requirement requested in Rate Year 2, effective May 1, 2019 and Rate Year 3, effective May 1, 2020.

1 K-Factor was to Pro Forma level adjusted revenues, rather than the restated Commission  
2 Basis revenue levels.

3 To perform this analysis the Company has included the pro forma level information  
4 from page 7 of Exh. EMA-6 (natural gas Traditional Pro Forma Study). The K-Factors  
5 are then applied to the pro forma revenue results to determine Rate Years 1 – 3, similar to  
6 that discussed using the Commission Basis level of revenues.

7 Because the Traditional Pro Forma Study already pro forms some costs beyond the  
8 2016 historical test period to 2017 and others to 2018, certain costs in Rate Year 1 would  
9 be understated, while other costs may be overstated. Using the Traditional Pro Forma  
10 results as the starting point to apply the K-Factor does not provide a “matching of revenues  
11 and costs,” and is therefore, not the “proper” starting place in which to apply the K-Factor.  
12 Whereas, annual Commission Basis results do provide a matching of revenues with costs  
13 as a starting point.