Appendix X

Standard Maintenance Logs and Forms

WTP TURBIDIMETERS CALIBRATION CHECK LIST

NEEDS TO BE DONE EVERY 3 MONTHS

DATE CALIBRATION CHECKED	TURBIDIMETER	BEFORE CAL.	AFTER CAL.	COMMENTS

FILTER BACKWASH LOG SHEET

MONTH _____

FILTER #1					FILTER #2					FILTER #3					FILTER #4				
Date	Time	H. L.	Runtime	Comments	Date	Time	H. L.	Runtime	Comments	Date	Time	H. L.	Runtime	Comments	Date	Time	H. L.	Runtime	Comments

FILTER BACKWASH LOG SHEET

MONTH ______________________

FILTER #5

Date	Time	H. L.	Runtime	Comments

FILTER #6

Date	Time	H. L.	Runtime	Comments

FILTER #7

Date	Time	H. L.	Runtime	Comments

FILTER #8

Date	Time	H. L.	Runtime	Comments

City of Richland
Columbia River Water Treatment Plant
NPDES
Water Treatment Plant Discharge Data

Date	Settleable Solids	Total Cl2 Residual	pH	NTU	Operator Int.	Date	Settleable Solids	Total Cl2 Residual	pH	NTU	Operator Int.

RICHLAND CHLORINE RESIDUAL SANITARY WATER REPORT

FROM_____ THRU_____

DAY	MONDAY			TUESDAY			WEDNESDAY			THURSDAY			FRIDAY			SATURDAY			SUNDAY		
LOCATION	WTP	1182	3000	WTP	1182	3000	WTP	1182	3000	WTP	1182	3000	WTP	1182	3000	WTP	1182	3000	WTP	1182	3000
2:00AM																					
6:00AM																					
10:00AM																					
2:00PM																					
6:00PM																					
10:00PM																					

Date: _____ Analyst: _____

Raw Water Quality:

Turbidity - _____ pH - _____ Temp. - _____

Finished Water Quality:

Turbidity - _____ pH - _____ PACl / F.A. Dose - _____/_____mg/L

CHEMICAL ADDITION STEP

	#1	#2	#3	#4	#5	#6	
Dosage:							
gpg							gpg
mg/L							mg/L
Before pH							pH
After pH							pH

FILTRATION STEP

Before NTU							NTU
After NTU							NTU
% NTU Removal:							

Filtrate Turbidity (NTU'S)						
0.5	+	+	+	+	+	+
0.45	+	+	+	+	+	+
0.4	+	+	+	+	+	+
0.35	+	+	+	+	+	+
0.3	+	+	+	+	+	+
0.25	+	+	+	+	+	+
0.2	+	+	+	+	+	+
0.15	+	+	+	+	+	+
0.1	+	+	+	+	+	+
0.05	+	+	+	+	+	+
0	+	+	+	+	+	+
PACl Dosage - mg/L						

PROCESS CONTROL

CITY OF RICHLAND WATER TREATMENT PLANT

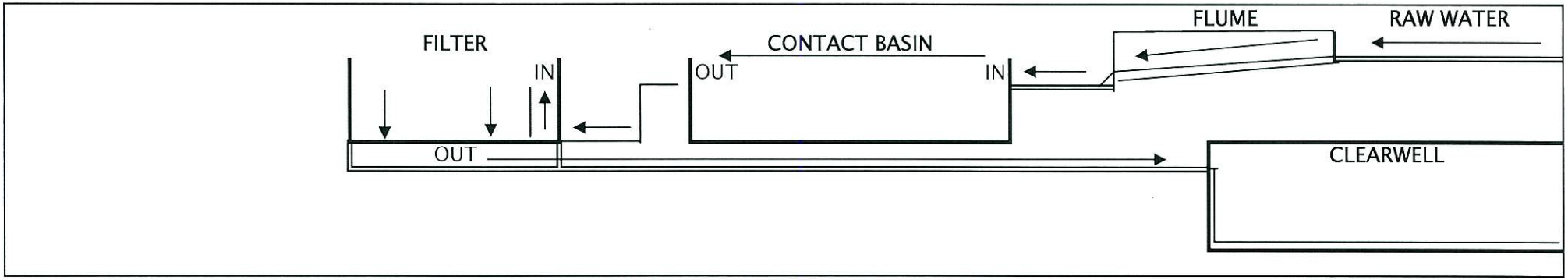
DATE _____ TIME _____ HRS OPERATOR INT. _____

AIR TEMP _____ WATER TEMP _____ FLOW _____ MGD _____ GPM / SQ. FT.

MGD FLOW X .1644 (8 FILTERS)

CHEMICAL FEED RATES

CHLORINE _____ mg/L PACl _____ mg/L FILTER-AID _____ mg/L



QUALITY CONTROL TESTS

	RAW WATER	CONTACT IN	CONTACT OUT	FILTER TOP	CLEARWELL
TURBIDITY	_____	_____	_____	_____	_____
pH	_____	_____	_____	_____	_____
FREE CL2 RESIDUAL		_____	_____	_____	_____
ALUMINUM	_____	_____			_____
ALKALINITY	_____				_____
SULFATES	_____				_____
CONDUCTIVITY	_____				_____

City of Richland WTP Process Control Data

	Alkalinity (mg/L)			pH		Aluminum (mg/L)			Sulfates (mg/L)		Conductivity	
Date	Raw	Finished	operator	Raw	Finished	Raw	Contact Basin	Finished	Raw	Finished	Raw	Finished
2/26/2008	67	65	SC	8.6	8.1	0.053	0.037	0.037	12	10	120.8	143.7
3/4/2008	65	63	DD	7.7	7.3	0.028	<0.01	<0.01	13	13	143.5	146.2
3/11/2008	67	65	BA	8.1	7.5	<0.01	0.029	<0.01	14	12	134.5	148.3
3/18/2008	62	60	BA	8.2	7.7	0.018	0.079	0.021	14	12	140.5	141.5
3/25/2008	65	62	PF	8.4	7.9	0.021	<0.01	<0.01	14	14	137.7	143.7
4/1/2008	65	62	DD	8.1	7.6	0.014	<0.01	<0.01	13	13	139.9	144.0
4/9/2008	64	62	PF	8.4	7.7	<0.01	<0.01	0.049	15	14	151.2	153.4
4/15/2008	66	63	BA	8.3	7.7	0.035	<0.01	<0.01	14	15	151.2	154.3
4/22/2008	73	67	SC	8.6	7.6	0.015	0.030	<0.01	13	15	152.0	153.9
4/30/2008	69	67	PF	8.5	7.7	<0.01	0.019	0.032	15	14	142.9	149.3
5/5/2008	68	65	VE	8.4	7.8	<0.01	0.050	0.050	13	14	147.1	150.4
5/14/2008	64	61	BA	7.9	7.5	<0.01	0.031	<0.01	12	10	140.4	139.5
5/20/2008	63	58	SC	7.9	7.5	<0.01	0.016	<0.01	12	13	133.2	137.2
5/28/2008	69	65	BA	7.9	7.5	<0.01	0.026	<0.01	9	7	116.5	124.4
6/3/2008	54	49	VE	7.7	7.3	0.010	0.054	<0.01	8	7	111.7	113.1
6/11/2008	60	57	BA	7.7	7.2	<0.01	0.027	<0.01	11	10	103.3	103.2
6/17/2008	59	56	BA	7.9	7.3	<0.01	0.030	<0.01	8	8	106.6	110.2
6/25/2008	51	48	BA	7.9	7.2	<0.01	0.023	<0.01	6	7	106.2	105.7
7/1/2008	50	47	VE	8.0	7.2	<0.01	<0.01	<0.01	8	5	105.4	110.8
7/10/2008	52	48	BA	8.0	7.3	<0.01	0.025	<0.01	8	8	110.4	113.1
7/15/2008	54	49	SC	8.1	7.3	0.023	0.036	0.023	11	8	124.5	122.9
7/22/2008	60	50	DD	8.2	7.3	<0.01	0.023	<0.01	14	10	125.9	131.3
7/31/2008	58	53	BA	8.0	7.2	0.042	0.075	0.016	10	7	122.6	122.3
8/5/2008	57	53	PF	8.1	7.4	<0.01	0.040	<0.01	9	8	122.3	126.3
8/12/2008	50	46	SC	8.4	7.8	<0.01	0.030	<0.01	10	9	124.0	125.8
8/20/2008	53	47	PF	8.0	7.4	<0.01	0.041	<0.01	12	10	126.0	130.1
8/26/2008	59	55	BA	8.1	7.3	0.047	0.030	<0.01	8	6	121.9	125.9
9/2/2008	52	48	PF	8.2	7.4	0.034	0.023	0.016	12	10	123.1	127.1
9/9/2008	60	55	BA	8.3	7.4	0.069	0.028	<0.01	11	9	128.7	131.2
9/18/2008	56	51	BA	8.0	7.3	<0.01	0.028	<0.01	10	9	131.0	133.4
9/23/2008	58	55	VE	8.4	7.4	<0.01	0.019	0.018	11	13	131.3	138.5
9/27/2008	55	52	PF	8.0	7.5	<0.01	0.010	<0.01	12	10	125.5	130.7
10/8/2008	63	60	BA	7.9	7.1	0.087	0.017	0.027	10	10	131.1	132.9
10/15/2008	58	54	PF	8.0	7.5	<0.01	0.048	<0.01	13	13	126.5	131.6
10/21/2008	61	57	BA	8.1	7.3	0.010	0.022	<0.01	13	14	127.5	137.1
High	**73**	**67**		**8.6**	**8.1**	**0.09**	**0.08**	**0.05**	**15**	**15**	**152**	**154**
Low	**50**	**46**		**7.7**	**7.1**	**0.01**	**0.01**	**0.02**	**6.00**	**5.00**	**103.30**	**103.20**
Avg	**60**	**56**		**8.1**	**7.5**	**0.03**	**0.03**	**0.03**	**11**	**10**	**128**	**132**

Entries in **BOLD** print indicate tests were omited due to questionable data entries