APPENDIX F: RESONABLE POTENTIAL TO EXCEED ANALYSIS - HUMAN HEALTH CRITERIA

REASONABLE POTENTIAL CALCULATION FOR PROTECTION OF HUMAN HEALTH

OUTFALL 001	Ambient Concentration (Geometric Mean)	Water Quality Criteria for Protection of Human Health	Max concentration at edge of chronic mixing zone.	LIMIT REQ'D?	Expected Number of Compliance Samples per Month	AVERAGE MONTHLY EFFLUENT LIMIT	MAXIMUM DAILY EFFLUENT LIMIT	Estimated Percentile at 95% Confidence		Max effluent conc. measured	Coeff Variation		# of samples from which # in col. K was taken	Multiplier	Calculated 50th percentile Effluent Conc. (When n>10)	Dilution Factor
Parameter	ug/L	ug/L	ug/L			ug/L	ug/L		Pn	ug/L	CV	S	n			
ACENAPTHENE 83329 1B		990.00						0.50			0.60	0.6				135.0
ACROLEIN 107028 1V		780						0.50			0.60	0.6				135.0
ACRYLONITRILE 107131 2V		0.66						0.50			0.60	0.6				135.0
ALKALINITY								0.50			0.60	0.6				135.0
ALDRIN 309002 1P		0.00014						0.50			0.60	0.6				135.0
ALUMINUM, total recoverable, pH 6.5-9.0 7429905								0.50			0.60	0.6				135.0
AMMONIA unionized -see seperate spreadsheets for FW criteria			1.11	undetermined		0.0	0.0	0.50	0.05	60.00	0.60	0.6	1	2.49		135.0
ANTHRACENE 120127 3B		110000						0.50			0.60	0.6				135.0
ANTIMONY (INORGANIC) 7440360 1M		4300						0.50			0.60	0.6				135.0
ARSENIC (dissolved) 7440382 2M			0.09	undetermined		0.0	0.0	0.50	0.05	5.00	0.60	0.6	1	2.49		135.0
ARSENIC (inorganic)		0.14	0.07	NO		NONE	NONE	0.50	0.05	4.00	0.60	0.6	1	2.49		135.0
ASBESTOS 1332214								0.50			0.60	0.6				135.0
ATRAZINE								0.50			0.60	0.6				135.0
BACTERIA								0.50			0.60	0.6				135.0
BENZENE 71432 3V		71						0.50			0.60	0.6				135.0
BENZIDINE 92875 4B		0.00054						0.50			0.60	0.6				135.0
BENZO(a)ANTHRACENE 56553 5B		0.031						0.50			0.60	0.6				135.0
BENZO(a)PYRENE 50328 6B		0.031						0.50			0.60	0.6				135.0
BENZO(b)FLUORANTHENE 205992 7B		0.031						0.50			0.60	0.6				135.0
BENZO(k) FLUORANTHENE 207089 9B		0.031						0.50			0.60	0.6				135.0
BERYLLIUM 7440417 3M								0.50			0.60	0.6				135.0
BHC - ALPHA 319846 2P		0.013						0.50			0.60	0.6				135.0
BHC - BETA 319857 3P		0.046						0.50			0.60	0.6				135.0
BHC - GAMMA 58899 4P (Lindane)		0.063						0.50			0.60	0.6				135.0
BHC - DELTA 319868 5P								0.50			0.60	0.6				135.0
BIS(2-CHLOROETHYL)ETHER 111444 11B		1.4						0.50			0.60	0.6				135.0
BIS(2 CHLOROISOPROPYL)ETHER 39638329 12B		170000						0.50			0.60	0.6				135.0
BIS(2-ETHYLHEXYL) PHTHALATE 117817 13B		5.9						0.50			0.60	0.6				135.0
BROMOFORM 75252 5V		360						0.50			0.60	0.6				135.0
BUTYLBENZYL PHTHALATE 85687		1900						0.50			0.60	0.6				135.0
CADMIUM - 7440439 4M Hardness dependent								0.50			0.60	0.6				135.0
Based on hardness in next column								0.50			0.60	0.6				135.0
CARBON TETRACHLORIDE 56235 6V		4.40						0.50			0.60	0.6				135.0
CHLOROBENZENE 108907 7V		21000						0.50			0.60	0.6				135.0
CHLORDANE 57749 6P		0.00059						0.50			0.60	0.6				135.0
CHLORODIBROMOMETHANE 124481 8V		34						0.50			0.60	0.6				135.0
CHLORIDE (dissolved) in mg/L 16887006								0.50			0.60	0.6				135.0
2-CHLORONAPTHALENE 91587 16B		1600.00						0.50			0.60	0.6				135.0
CHLORINE (Total Residual) 7782505			0.21	undetermined		0.0	0.0	0.50	0.91	60.00	0.60	0.6	32.00	0.47		135.0
CHLOROETHYL ETHER (BIS - 2) 111444		1.40						0.50			0.60	0.6				135.0
CHLOROFORM 67663 11V		470						0.50			0.60	0.6				135.0
CHLOROISOPROPYL ETHER (BIS-2) 108601		170000						0.50			0.60	0.6				135.0
2-CHLOROPHENOL 95578 1A		150.00						0.50			0.60	0.6				135.0

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Parameter	*ug/L*	*ug/L*	*ug/L*			*ug/L*	*ug/L*		*Pn*	*ug/L*	*CV*	**S**	*n*			
4-CHLOROPHENOL 106489								0.50			0.60	0.6				135.0
CHLOROPHENOXY HERBICIDES(2,4-D) 94757								0.50			0.60	0.6				135.0
CHLORPYRIFOS 2921882								0.50			0.60	0.6				135.0
CHROMIUM(HEX) 18540299								0.50			0.60	0.6				135.0
CHROMIUM(TRI) -16065831 5M Hardness dependent								0.50			0.60	0.6				135.0
Based on hardness in next column								0.50			0.60	0.6				135.0
CHRYSENE 218019 18B		0.031						0.50			0.60	0.6				135.0
COLOR								0.50			0.60	0.6				135.0
COPPER - 744058 6M Hardness dependent			0.17	**undetermined**		**0.0**	**0.0**	0.50	0.05	9.00	0.60	0.6	1.00	2.49		135.0
Based on hardness in next column								0.50			0.60	0.6				135.0
CYANIDE 57125 14M		220000						0.50			0.60	0.6				135.0
DDT 50293 7P		0.00059						0.50			0.60	0.6				135.0
DDT METABOLITE (DDE) 72559 8P		0.00059						0.50			0.60	0.6				135.0
DDT METABOLITE (DDD) 72548 9P		0.00084						0.50			0.60	0.6				135.0
DIBENZO(a,h)ANTHRACENE 53703 19B		0.031						0.50			0.60	0.6				135.0
DIBUTYLPHTHALATE 84742		12000						0.50			0.60	0.6				135.0
1,2 DICHLOROBENZENE 95501 20B		17000						0.50			0.60	0.6				135.0
1,3 DICHLOROBENZENE 541731 21B		2600						0.50			0.60	0.6				135.0
1,4 DICHLOROBENZENE 106467 22B		2600						0.50			0.60	0.6				135.0
3,3 DICHLOROBENZIDINE 91941 23B		0.077						0.50			0.60	0.6				135.0
DICHLOROBROMOMETHANE 75274 12V		22						0.50			0.60	0.6				135.0
1,2 DICHLOROETHANE 107062 15V		99						0.50			0.60	0.6				135.0
1,1 DICHLOROETHYLENE 75354 16V		3.20						0.50			0.60	0.6				135.0
2,3 DICHLOROPHENOL								0.50			0.60	0.6				135.0
2,4 DICHLOROPHENOL 120832 2A		790.00						0.50			0.60	0.6				135.0
2,5 DICHLOROPHENOL								0.50			0.60	0.6				135.0
2,6 DICHLOROPHENOL								0.50			0.60	0.6				135.0
1,2 DICHLOROPROPANE 78875		39.00						0.50			0.60	0.6				135.0
1,3 -DICHLOROPROPYLENE 542756 18V		1700						0.50			0.60	0.6				135.0
DIELDRIN 60571 10P		0.00014						0.50			0.60	0.6				135.0
DIETHYLPHTHALATE 84662 24B		120000						0.50			0.60	0.6				135.0
2,4 DIMETHYLPHENOL 105679		850.00						0.50			0.60	0.6				135.0
DIMETHYLPHTHALATE 131113 25B		2900000						0.50			0.60	0.6				135.0
DI-n-BUTYL PHTHALATE 84742 26B		12000						0.50			0.60	0.6				135.0
2-METHYL-4,6 -DINITROPHENOL 534521 4A		765						0.50			0.60	0.6				135.0
2,4-DINITROPHENOL 51285 5A		14000						0.50			0.60	0.6				135.0
DINITROTOLUENE 2,4 121142 27B		9.10						0.50			0.60	0.6				135.0
DINITROTOLUENE 2,6 606202 28B								0.50			0.60	0.6				135.0
DIOXIN (2,3,7,8-TCDD) 1746016		0.000000014						0.50			0.60	0.6				135.0
1,2 DIPHENYLHYDRAZINE 122667 30B		0.54						0.50			0.60	0.6				135.0
DI-2-ETHYLHEXYLPHTHALATE 117817								0.50			0.60	0.6				135.0
ENDOSULFAN a 959988 11P, b 33213659 12P		2.0						0.50			0.60	0.6				135.0
ENDOSULFAN SULFATE 1031078 13P		2.0						0.50			0.60	0.6				135.0
ENDRIN 72208 14P		0.81						0.50			0.60	0.6				135.0
ENDRIN ALDEHYDE 7421934 15P		0.81						0.50			0.60	0.6				135.0

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Parameter	*ug/L*	*ug/L*	*ug/L*			*ug/L*	*ug/L*		*Pn*	*ug/L*	*CV*	**S**	*n*			
ETHYLBENZENE 100414 19V		29000						0.50			0.60	0.6				135.0
FLUORANTHENE 206440 31B		370						0.50			0.60	0.6				135.0
FLUORENE 86737 32B		14000						0.50			0.60	0.6				135.0
GASSES, TOTAL DISSOLVED								0.50			0.60	0.6				135.0
HEPTACHLOR 76448 16P		0.00021						0.50			0.60	0.6				135.0
HEPTACHLOR EPOXIDE 1024573 17P		0.00011						0.50			0.60	0.6				135.0
HEXACHLOROBENZENE 118741 33B		0.00077						0.50			0.60	0.6				135.0
HEXACHLOROBUTADIENE 87683 34B		50						0.50			0.60	0.6				135.0
HEXACHLOROCYCLOHEXANE-ALPHA 319846 2P		0.013						0.50			0.60	0.6				135.0
HEXACHLOROCYCLOHEXANE-BETA 319857 3P		0.046						0.50			0.60	0.6				135.0
HEXACHLOROCYCLOHEXANE-GAMMA (lindane) 58899 4P		0.063						0.50			0.60	0.6				135.0
HEXACHLOROCYCLOPENTADIENE 77474 35B		17000						0.50			0.60	0.6				135.0
HEXACHLOROETHANE 67721 36B		8.90						0.50			0.60	0.6				135.0
INDENO(1,2,3-cd)PYRENE 193395 37B		0.031						0.50			0.60	0.6				135.0
IRON 7439896								0.50			0.60	0.6				135.0
ISOPHORONE 78591		600						0.50			0.60	0.6				135.0
LEAD - 7439921 7M Dependent on hardness								0.50			0.60	0.6				135.0
Based on hardness in next column [c]								0.50			0.60	0.6				135.0
MANGANESE 7439965		100.00						0.50			0.60	0.6				135.0
2-METHYL-4-CHLOROPHENOL								0.50			0.60	0.6				135.0
3-METHYL-4-CHLOROPHENOL 59507								0.50			0.60	0.6				135.0
3-METHYL-6-CHLOROPHENOL								0.50			0.60	0.6				135.0
METHYL BROMIDE 74839 20V		4000						0.50			0.60	0.6				135.0
METHYLENE CHLORIDE 75092 22V		1600						0.50			0.60	0.6				135.0
MERCURY 7439976 8M		0.15						0.50			0.60	0.6				135.0
MONOCHLOROBENZENE 108907								0.50			0.60	0.6				135.0
NAPHTHALENE 91203 39B								0.50			0.60	0.6				135.0
NICKEL - 7440020 9M - Dependent on hardness		4600						0.50			0.60	0.6				135.0
Based on hardness in next column								0.50			0.60	0.6				135.0
NITROBENZENE 98953 40B		1900						0.50			0.60	0.6				135.0
2-NITROPHENOL 88755								0.50			0.60	0.6				135.0
NITRATE/NITRITE (N)								0.50			0.60	0.6				135.0
NITROSAMINES		1.24						0.50			0.60	0.6				135.0
NITROSODIBUTYLAMINE N 924163		0.220						0.50			0.60	0.6				135.0
NITROSODIETHYLAMINE, N 55185		1.24						0.50			0.60	0.6				135.0
NITROSODIMETHYLAMINE N 62759 41B		8.10						0.50			0.60	0.6				135.0
N- NITROSODI-N-PROPYLAMINE 621647		0.51						0.50			0.60	0.6				135.0
NITROSODIPHENYLAMINE N 86306 43B		16						0.50			0.60	0.6				135.0
NITROSOPYRROLIDINE, N 930552								0.50			0.60	0.6				135.0
OIL AND GREASE			25.30	**undetermined**		**0.0**	**0.0**	0.50	0.91	7200.00	0.60	0.6	32.00	0.47		135.0
OXYGEN DISSOLVED 7782447								0.50			0.60	0.6				135.0
PARATHION 56382								0.50			0.60	0.6				135.0
PENTACHLOROBENZENE 608935		1.50						0.50			0.60	0.6				135.0
PENTACHLOROPHENOL 87865 8A (pH dependent in		8.20						0.50			0.60	0.6				135.0
fresh water) Enter pH in next cell>>>>>>>>								0.50			0.60	0.6				135.0

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Parameter	*ug/L*	*ug/L*	*ug/L*			*ug/L*	*ug/L*		*Pn*	*ug/L*	*CV*	**S**	*n*			
pH								0.50			0.60	0.6				135.0
PHENOL 108952 10A		4600000						0.50			0.60	0.6				135.0
PHOSPHORUS-ELEMENTAL 7723140								0.50			0.60	0.6				135.0
Polychlorinated Biphenyls (PCB's) 53469219, 11097691, 1104282		0.000170						0.50			0.60	0.6				135.0
PYRENE 129000 45B		11000						0.50			0.60	0.6				135.0
SELENIUM 7782492 10M		4200.00						0.50			0.60	0.6				135.0
SILVER - 7740224 11M dependent on hardness.								0.50			0.60	0.6				135.0
Based on hardness in next column								0.50			0.60	0.6				135.0
SOLIDS,DISSOLVED AND SALINITY								0.50			0.60	0.6				135.0
SOLIDS,SUSPENDED AND TURBIDITY								0.50			0.60	0.6				135.0
SULFIDE, HYDROGEN SULFIDE 7783064								0.50			0.60	0.6				135.0
TETRACHLOROETHANE 1,1,2,2 79345 23V		11.00						0.50			0.60	0.6				135.0
TETRACHLOROETHYLENE 127184 24V		8.85						0.50			0.60	0.6				135.0
TETRACHLOROPHENOL 2,3,4,6 95954								0.50			0.60	0.6				135.0
THALLIUM 7440280 12M		6.30						0.50			0.60	0.6				135.0
TOLUENE 108883 25V		200000						0.50			0.60	0.6				135.0
TOXAPHENE 8001352 25P		0.00075						0.50			0.60	0.6				135.0
1,2-TRANS-DICHLOROETHYLENE 156605		140000						0.50			0.60	0.6				135.0
TRIBUTYLTIN (TBT)								0.50			0.60	0.6				135.0
TRICHLOROBENZENE 1,2,4 120821		940						0.50			0.60	0.6				135.0
TRICHLOROETHANE 1,1,1 71556 27V								0.50			0.60	0.6				135.0
TRICHLOROETHANE 1,1,2 79005 28V		42.00						0.50			0.60	0.6				135.0
TRICHLOROETHYLENE 79016 29V		81.00						0.50			0.60	0.6				135.0
TRICHLOROPHENOL 2,4,5 95954								0.50			0.60	0.6				135.0
TRICHLOROPHENOL 2,4,6 88062 11A		6.50						0.50			0.60	0.6				135.0
VINYL CHLORIDE 75014 31V		525						0.50			0.60	0.6				135.0
ZINC- 7440666 13M hardness dependent			2.21	**undetermined**		**0.0**	**0.0**	0.50	0.05	120.00	0.60	0.6	1.00	2.49		135.0

Note:
J indicates a value that was below the practical quantitation limit but above the method detection limit.
"undetermined" indicates there are no human health criteria availble to determine these parameters have a potential to exceed human health criteria.