APPENDIX D – HUMAN HEALTH REASONABLE POTENTIAL DETERMINATIONS

The process of performing a reasonable potential determination is similar to that used for evaluating aquatic impacts as indicated by chronic aquatic life-based criteria. The differences between the two are the model inputs used to represent the critical flow conditions, the criterion values, and the probability values. Other input data, such as the default value for the coefficient of variation of effluent variability and statistical confidence level remain the same.

The process for developing an effluent limit based on human health parallels the existing process for developing aquatic life-based limits.

The following spreadsheets contain the calculations for determining reasonable potential to exceed the human health criteria at the edge of the chronic mixing zone. No reasonable potential was determined for human health parameters.

APPENDIX D - OUTFALL 001
REASONABLE POTENTIAL CALCULATION
FOR PROTECTION OF HUMAN HEALTH

4/25/2005 2:39 PM
Appx D.xls

NPDES Permit No. AK-004064-9

Revised 3/00	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*			
Zinc	18.57	69000.00	20.97	**NO**	**1**	**NONE**	**NONE**	0.50	0.74	507.00	0.60	0.6	10	0.70	0.00	140.0

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APPENDIX D - OUTFALL 005
REASONABLE POTENTIAL CALCULATION
FOR
PROTECTION OF HUMAN HEALTH

NPDES Permit No. AK-004064-9

Revised 12/04	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*				
Cyanide	0.00	220000.00	0.00	**NO**	**1**	**NONE**	**NONE**	0.50	0.05	0.00	0.60	0.6	1	2.49	0.00	140.0	
Manganese	0.0000	100.00	2.51	**NO**	**1**	**NONE**	**NONE**	0.50	0.05	141.00	0.60	0.6	1	2.49	0.00	140.0	
Mercury	0.0250	0.05	0.02	**NO**	**1**	**NONE**	**NONE**	0.50	0.94	0.20	2.40	1.4	45	0.12	0.00	140.0	50th %ile = 0
Nickel	0.0000	4600.00	0.16	**NO**	**1**	**NONE**	**NONE**	0.50	0.05	9.00	0.60	0.6	1	2.49	0.00	140.0	
Selenium	0.0000	11000.00	0.03	**NO**	**1**	**NONE**	**NONE**	0.50	0.05	1.80	0.60	0.6	1	2.49	0.00	140.0	
Zinc	18.6	69000.00	20.47	**NO**	**1**	**NONE**	**NONE**	0.50	0.93	534.00	0.76	0.7	43	0.36	284.00	140.0	