MONTGOMERY WATSON

August 26, 1997

Suzanne Beauchamp
Engineering Manager
U.S. Army Corps of Engineers, Alaska District
CENPA-EN-EE-II
P.O. Box 898
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Dear Suzanne,

Attached are two tables detailing the benchmark criteria used for the St. Lawrence Island projects (Gambell and Northeast Cape).

Table A - Toxicity Equivalency (TEQ) Factors for Dioxins and Furans

Table B - Regulatory Benchmarks for St. Lawrence Island

Each is designed to use as a reference as you review the information compiled in the St. Lawrence Island HTW Activities Summary binder dated 21, August, 1997. A copy of this letter and the accompanying attachments has been provided to Katarina Rutkowski at the Alaska Department of Environmental Conservation (ADEC).

Please do not hesitate to call if you have any questions or comments.

Sincerely,

Lynn DeGeorge for

Victor E. Harris
Project Manager

cc: Katarina Rutkowski, ADEC

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TABLE A
TEQ Factors for Dioxins and Furans
St. Lawrence Island, Alaska

Isomer	TEQ factor
2,3,7,8-TCDD	1
other TCDDs	0.01
1,2,3,7,8-PeCDD	0.5
other PeCDDs	0.005
1,2,3,4,7,8-HxCdd	0.04
1,2,3,7,8,9-HxCDD	0.04
1,2,3,6,7,8-HxCDD	0.04
other HxCDDs	0.0004
1,2,3,4,6,7,8-HpCDD	0.001
other HpCDDs	0.00001
OCDD	0
2,3,7,8-TCDF	0.1
other TCDFs	0.001
2,3,4,7,8-PeCDF	0.1
1,2,3,7,8-PeCDF	0.1
other PeCDFs	0.001
1,2,3,4,7,8-HxCDF	0.01
1,2,3,7,8,9-HxCDF	0.01
1,2,3,6,7,8-HxCDF	0.01
2,3,4,6,7,8-HxCDF	0.01
other HxCDFs	0.0001
1,2,3,4,6,7,8-HpCDF	0.01
1,2,3,4,7,8,9-HpCDF	0.01
other HpCDFs	0.00001
OCDF	0

KEY:

TCDD - Tetrachlorodibenzodioxin
PeCDD - Pentachlorodibenzodioxin
HxCDD - Hexachlorodibenzodioxin
HpCDD - Heptachlorodibenzodioxin
OCDD - Octachlorodibenzodioxin
TCDF - Tetrachlorodibenzofuran
PeCDF - Pentachlorodibenzofuran
HxCDF - Hexachlorodibenzofuran
HpCDF - Heptachlorodibenofuran
OCDF - Octachlorodibenzofuran

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

Water	RBC Tap Water (1) (ug/l)	Federal Drinking Water (2) (mg/l)	State Drinking Water (3) (mg/l)	ADEC (4) (mg/l)
1,1-Dichloropropene				
1,2,4-Trimethylbenzene				
1,2-Dichloropropane	0.16	0.005	0.005	
1,3,5-Trimethylbenzene				
2,3,7,8-TCDD	0.00000045	3.00E-08	0.03	
2-Butanone	22,000			
4-Isopropyltoluene				
4-Methylphenol	180			
Acetone	3,700			
Aroclor 1260	0.0076		0.0005	
Arsenic	11	0.05	0.05	
Benzene	0.36	0.005	0.005	
Benzoic Acid	150000			
Beryllium	0.16		0.004	
Bis(2-ethylhexyl) Phthalate	4.8			
Cadmium	18	0.005	0.005	
Calcium				
Chromium	180	0.1	0.1	
cis-1,2-Dichloroethene	61	0.07	0.07	
Copper	1,400	1		
Di-n-butyl Phthalate	3,700			
Diesel Range Organics				0.5
Ethylbenzene	1,300	0.7	0.7	
Gasoline Range Organics				0.5
Isopropylbenzene				
Lead	0.0037			
m&p-Xylene	1,400		10	

Key is provided on the last page of the table.

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

Water	RBC Tap Water (1) (ug/l)	Federal Drinking Water (2) (mg/l)	State Drinking Water (3) (mg/l)	ADEC (4) (mg/l)
Magnesium				
Mercury	11	0.002	0.002	
Methylene Chloride	4.1			
n-Propylbenzene				
Naphthalene	1,500			
Nickel	730	0.1	0.1	
o-Xylene	1,400	10	10	
p-Isopropyltoluene				
Phenol	22,000			
Selenium	180	0.05	0.05	
Silver	180			
Thallium	2.9	0.002	0.002	
Toluene	750	1	1	
Total Recoverable Petroleum Hydrocarbons				0.5
Trichloroethene	1.6	0.005	0.005	
Xylenes, Total	12,000	10	10	
Zinc	11,000	5		

Key is provided on the last page of the table.

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

Sediments	**USGS Background Level (5) (mg/kg)**	**Background for NEC Site (6) (mg/kg)**
Benzene		
Ethylbenzene		
Toluene		
Xylenes, Total		
2,3,7,8-TCDD		
Diesel Range Organics		
Gasoline Range Organics		
Arsenic	17.3	1
Beryllium	2	
Cadmium		
Chromium	115	2.6
Copper	37	2.8
Lead	12	4.6
Nickel	37	
Selenium		
Thallium		
Zinc	157	13
Aroclor 1254		
Aroclor 1260		
Percent Solids		
Total Solids (%)		
4-Methylphenol		
Bis (2-ethylhexyl) Phthalate		
Butylbenzyl Phthalate		
Di-n-butyl Phthalate		
TRPH		
Total Recoverable Petroleum Hydrocarbons		
2-Butanone		
Acetone		
Methylene Chloride		

Key is provided on the last page of the table.

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

Soils	RBC Residential Soils (1) (mg/kg)	ADEC Level A Criteria (4) (mg/kg)	USGS Background in Alaska (5) (mg/kg)	Background for NEC Site (6) (mg/kg)	PCB Action Level TSCA (7) (ppm)	IEUBK model for lead (8) (mg/kg)
1,1,1-Trichloroethane	7,000					
1,2,4-Trimethylbenzene						
1,3,5-Trimethylbenzene						
2,3,7,8-TCDD	0.0000043					
2-Butanone	47,000					
4-Chloroanaline	310					
4-Methylphenol	390					
Acetone	7,800					
Antimony	31					
Antimony	31					
Aroclor 1016					1	
Aroclor 1254					1	
Aroclor 1260					1	
Arsenic	23		6.7	2.5		
Benzene	22					
Benzo(a)pyrene	0.088					
Benzo(b)fluoranthene	0.87					
Benzoic Acid	310,000					
Beryllium	0.15		1.5			
Bis (2-ethylhexyl) Phthalate	46					
Cadmium	39		1.3			
Chromium	390		50	9.7		
Chrysene	87					
cis-1,2-Dichloroethene	780					
Copper	2,900		24	18		
Di-n-butyl Phthalate	7,800					
Diesel Range Organics	8,760(c)	100				
Ethylbenzene	7,800					

Key is provided on the last page of the table.

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

Soils	RBC Residential Soils (1) (mg/kg)	ADEC Level A Criteria (4) (mg/kg)	USGS Background in Alaska (5) (mg/kg)	Background for NEC Site (6) (mg/kg)	PCB Action Level TSCA (7) (ppm)	IEUBK model for lead (8) (mg/kg)
Gasoline Range Organics	5,260(c)	50				
Isopropylbenzene	31,000					
Lead	0.0078		12	92		400
m&p-Xylene	160,000					
Mercury	23					
Methylene Chloride	85					
n-Butylbenzene						
n-Propylbenzene						
Naphthalene	3,100					
Nickel	1,600		24			
o-Xylene	160,000					
Phenanthrene						
Phenol	47,000					
sec-Butylbenzene						
Selenium	390					
Silver	390					
Styrene	16,000					
Thallium	6.3					
Toluene	16,000					
trans-1,2-Dichloroethene	1,600					
TRPH		2,000				
Xylenes, Total	160,000					
Zinc	23,000		70	84		

Key is provided on the last page of the table.

TABLE B
Regulatory Benchmarks
St. Lawrence Island, Alaska

	Wipes	PCB Action Level TSCA (9) (ppm)
Antimony		
Aroclor 1254		100ug/100cm2
Aroclor 1260		100ug/100cm2
Arsenic		
Bis(2-ethylhexyl) Phthalate		
Cadmium		
Chromium		
Copper		
Gasoline Range Organics		
Lead		
Mercury		
Nickel		
Zinc		

KEY:

1. Risk-based concentrations for residential soils and tapwater, "Risk-based Concentration Table," November 8, 1994, EPA Region III
2. Federal Drinking Water Maximum Contaminant Levels, 40 CFR 141, Subpart F
3. Alaska State Drinking Water Maximum Contaminant Levels, 18 AAC 70
4. Level A Numerical Soil Cleanup Targets for Petroleum, "Interim Guidance for Non-UST Contaminated Soil Cleanup Levels (Revision 1), "July 17, 1991, ADEC
5. "Elemental Concentrations in Soils and Other Surficial Material of Alaska," 1988 U.S. Geological Survey
6. Background levels found at the NEC site, Appendix G
7. PCB action Level for residential soil and 1% organic carbon sediments, identified in the EPA Publication 9355.4-01 FS, "A Guide on Remedial Actions at Superfund Sites with PCB Contamination," August 1990.
8. "Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities, OSWER Directive # 9355.4-12, IEUBK model.
9. Toxic Substances Control Act, 40 CFR 761.125