Summary of Detected Parameters in Sediment Samples
Lower Shannock Falls Dam Removal
February 2010

		Upriver Samples							Downriver Samples			Exposure Criteria		Freshwater Criteria McDonald et al. *(2000)*	
	Location	SD-01	SD-02	LSD1	LSD2	LSD3	LSD4	LSD5	SD-03	SD-04	SD-05				
	Sample Date	Nov. 2006	Nov. 2006	Oct. 2004	Oct. 2004	Oct. 2004	Oct. 2004	Oct. 2004	Nov. 2006	Nov. 2006	Nov. 2006	R-DEC	I/C-DEC	Threshold Effect Concentr.	Probable Effect Concentr.
VOCs (via Method 8260)	Units			---	---	---	---	---							
Acetone	µg/kg	ND<75	ND<44	---	---	---	---	---	ND<30	ND<32	33	7,800,000	10,000,000	NE	NE
SVOCs (via Method 8270)															
Acenaphthylene	µg/kg	ND<76	ND<42	100	340	22	1,500	21	ND<29	83 J	ND<26	23,000	10,000,000	NE	NE
Anthracene	µg/kg	ND<72	ND<40	190	560	47	640	42	110 J	75 J	27 J	35,000	10,000,000	57.2	845
Benzo(a)anthracene	µg/kg	110 J	ND<35	940	1,800	210	1,100	220	75 J	370	120 J	900	7,800	108	1,050
Benzo(a)pyrene	µg/kg	ND<56	ND<31	830	1,900	190	1,600	610	66 J	390	120 J	400	800	150	1,450
Benzo(b)fluoranthene	µg/kg	99 J	28 J	1,100	2,600	240	1,700	770	43 J	630	170 J	900	7,800	NE	NE
Benzo(ghi)perylene	µg/kg	ND<56	ND<31	---	---	---	---	---	39 J	120 J	57 J	800	10,000,000	NE	NE
Benzo(k)fluoranthene	µg/kg	83 J	ND<35	1,100	2,400	170	970	610	76 J	350	140 J	900	78,000	NE	NE
Bis(2-ethylhexyl)phthalate	µg/kg	ND<600	ND<330	---	---	---	---	---	ND<230	ND<270	ND<200	46,000	410,000	NE	NE
Chrysene	µg/kg	110 J	ND<40	890	2,100	180	860	250	90 J	610	210	400	780,000	166	1,290
Dibenzo(a,h)anthracene	µg/kg	ND<60	ND<33	200	1,400	95	820	180	ND<23	100 J	ND<20	400	800	33.0	NE
Fluoranthene	µg/kg	240 J	52 J	1,200	2,800	260	1,200	270	160 J	1,000	320	20,000	10,000,000	423	2,230
Fluorene	µg/kg	ND<84	ND<46	120	340	22	1,500	21	ND<32	ND<37	ND<28	28,000	10,000,000	77.4	536
Indeno(1,2,3-cd)pyrene	µg/kg	ND<48	ND<27	670	2,000	230	290	640	31 J	180 J	64 J	900	7,800	NE	NE
Naphthalene	µg/kg	ND<78	ND<43	36	110	22	1,100	10	ND<30	ND<34	ND<26	54,000	10,000,000	176	561
Phenanthrene	µg/kg	110 J	ND<46	920	2,400	190	2,800	160	110 J	690	200 J	40,000	10,000,000	204	1,170
Pyrene	µg/kg	240 J	42 J	1,100	2,700	330	1,700	270	170 J	1,200	350	13,000	10,000,000	195	1,520
Total Metals (via Method 6010/7471)															
Arsenic	mg/kg	---	---	1.5	1.5	1.8	2.9	0.8	---	---	---	7.0	7.0	9.79	33
Barium	mg/kg	33	15	---	---	---	---	---	16	27	8.1	5,500	10,000	NE	NE
Beryllium	mg/kg	1.2	0.68	---	---	---	---	---	0.16	0.40	0.10	0.4	1.3	NE	NE
Cadmium	mg/kg	0.7	0.34	0.3	0.5	0.7	0.6	0.5	ND<0.14	ND<0.16	ND<0.12	39	1,000	0.99	4.98
Chromium	mg/kg	11	5.2	4.5	12	16	40	21	2	3.6	1.7	390**	10,000	43.4	111
Copper	mg/kg	11	6.8	9.6	16	13	26	9.2	9.3	6.7	2.5	3,100	10,000	31.6	149
Lead	mg/kg	37	25	49	76	25	80	34	47	37	10	150	500	35.8	128
Manganese	mg/kg	160	81	---	---	---	---	---	38	96	44	390	10,000	NE	NE
Mercury	mg/kg	0.12	0.074	0.1	0.5	0.3	0.5	0.1	ND<0.028	ND<0.032	ND<0.025	23	610	0.18	1.06
Nickel	mg/kg	3.3	1.7	2.2	4.4	3.2	5	2.8	1	1.4	0.84	1,000	10,000	22.7	48.6
Vanadium	mg/kg	8.4	5	---	---	---	---	---	3	3	5	550	10,000	NE	NE
Zinc	mg/kg	56	28	78	68	55	78	41	47	44	9.5	6,000	10,000	121	459
PCBs (via Method 8082)	µg/kg	*ND<48*	ND<26	---	---	---	---	---	ND<18	ND<21	ND<16	10,000	10,000	59.8	676
Cyanide (via Method 9012)	mg/kg	ND<1.8	ND<1.0	---	---	---	---	---	ND<0.71	ND<0.81	ND<0.62	200	10,000	NE	NE
Pesticides (via Method 8081)	µg/kg	ND<1.4	ND<1.3	---	---	---	---	---	ND<0.93	ND<1.0	ND<0.80	40*	400*	1.9	61.8

Inorganics (%)	**LSD1**	**LSD2**	**LSD3**	**LSD4**	**LSD5**
Total Organic Carbon	0.4	1.3	2.5	2.3	1.5
Grain Size Analysis (%)					
% Sand	85	82.4	36.6	55.5	57.2
% Silt	4.7	14.9	49.9	37	35.9
% Clay	0.8	2.8	13.3	7.4	6.6
Percent Moisture (%)	30.1	48.2	71.6	60.5	64.3

NOTES:

(1) Samples SD-01 - SD-05 were collected by Fuss & O'Neill in Nov. 2006.
(2) Samples LSD1 - LSD5 were collected by USFWS in Oct. 2004.
SD = sediment sample
µg/kg = micrograms per kilogram
mg/kg = milligrams per kilogram
VOCs = volatile organic compounds
SVOCs = semi-volatile organic compounds

PCBs = polychlorinated biphenyls
Only the last four digits of the sample number are listed
ND<# = not detected above laboratory reporting limit

J = concentration estimated to the method detection limit
--- = not analyzed
TEC = threhold effects concentrations

NE = not established
** = assumes chromium in hexavalent form

Completed by: ABS 2/4/2010
Reviewed by: DCL 2/4/2010

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