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Remedial Bureau C
Division of Environmental Remediation

June 22, 2007

Mr. James Candiloro
New York State Department of Environmental Conservation
Bureau Western Remedial Action
625 Broadway
Albany, NY 12233-7017

RE: C&D Site, Site No. 336001 Tributary D-1-7 Sediment Data

Dear Mr. Candiloro:

This letter presents the results from the sediment samples that were collected from Tributary D-1-7 in October 2006. Sample results are presented in Table 1 and the sediment cadmium, lead and Total PCB data are presented graphically on the enclosed drawing.

Barium

All downgradient stream sediment sample barium concentrations, with the exception of the SED-8, SED-10 and SED-26 0-6" samples, were less than the reported upstream SED-5 barium level. The downstream SED-10 barium concentration (137 mg/kg) and SED-26 0-6" concentration (108 mg/Kg) were only slightly higher than the upstream - SED-5 concentration (97.5 mg/Kg). Barium concentrations in the sediment samples (SED-11 through SED-23) collected downstream of sample SED-10 were consistent with the upstream SED-5 concentration. Data indicate that the Site has not had a significant impact on barium concentrations in Tributary D-1-7 sediments.

Cadmium

All Tributary D-1-7 stream sediment cadmium concentrations were less than the NYSDEC Severe Effect Level criterion for cadmium (9 mg/Kg).

Eleven of the twenty-six downstream sediment sample 0-6" cadmium concentrations were above the NYSDEC Lowest Effect Level criterion (0.6 mg/Kg). With the exception of the SED-24 6-12" sample cadmium concentration, all sediment samples 6-12" cadmium concentrations were below the NYSDEC Lowest Effect Level or were less than the laboratory reporting limit. Sample SED-24 was collected directly adjacent to the

former lagoon, in the vicinity of samples SED-9 and SED-10 which also exhibited cadmium, lead and PCB concentrations above NYSDEC sediment criteria.

Cadmium concentrations in the 0-6" and 6-12" SED-22 and SED-23 samples collected approximately 250 feet and 50 feet, respectively above the confluence of Tributary D-1-7 with the Neversink River, were below the NYSDEC Lowest Effect Level.

Tributary D-1-7 sediment data indicate that stream sediments with elevated cadmium concentrations above the NYSDEC Lowest Effect Level are primarily restricted to the top 0-6". Sediments do not exhibit cadmium concentrations above the NYSDEC Severe Effect Level. Sediments with cadmium concentrations above the NYSDEC Lowest Effect Level were not detected in the two sediment samples closest to the confluence of Tributary D-1-7 with the Neversink River. Cadmium concentrations above the NYSDEC Lowest Effect Level appear to be randomly located along the length of Tributary D-1-7 intermixed with stream reaches that do not exhibit sediment cadmium concentrations above the NYSDEC Lowest Effect Level.

Lead

Fifteen of the twenty-six downstream sediment samples collected from 0-6" exhibited lead concentrations that were above the Lowest Effect Level concentration. Seven (Six different locations) of twenty-six samples exhibited lead concentrations above the NYSDEC Severe Effect Level concentration. All but one of the samples exhibiting lead concentration above the NYSDEC Severe Effect Level were detected in the 0-6" sample interval.

Samples SED-4/SED-9 (collected at the same location at different times) and the SED-25 sediment sample, which were collected approximately due east of the lagoon, exhibited 0-6" sediment sample lead concentrations that were higher than the NYSDEC Severe Effect Level. The lead concentration in the 0-6" samples from stream sediment samples SED-13, SED-14, SED-15 were above the Severe Effect level. These three sample locations are approximately 600 feet (SED-13), 1,000 feet (SED-14) and 1,300 feet downstream of the SED-4/SED-9 and SED-25 area.

Four samples (SED-24, SED-10, SED-11, SED-12) upstream of sample SED-13 and between SED-13 and samples SED-4/SED-9 had lead concentrations in the 0-6" samples that were less than the NYSDEC Severe Effect Level for lead. The lead concentration in the 0-6" samples in three of these samples (SED-24, SED-11, SED-12) were less than the NYSDEC Lowest Effect Level for lead. The SED-24 6-12" sample lead concentration was higher than the NYSDEC Severe Effect Level for lead. The lead concentrations in the 6-12" samples from stream sediment samples SED-13, SED-14 and SED-15 were well below both the NYSDEC Lowest Effect Level.

The SED-19 0-6" sample lead concentration was higher than the NYSDEC Severe Effect level. The lead concentration in the SED-19 6-12" sample was less than the NYSDEC Lowest Effect Level. Sample SED-19 is located approximately 1,250 feet downstream of

Sample SED-15. Samples SED-16 through SED-18 are located between SED-15 and SED-19. The concentration of lead in the SED-17 and SED-18 0-6" samples was below the NYSDEC Lowest Effect Level and the lead concentration in the SED-16 0-6" sample was below the NYSDEC Severe Effect Level. The lead concentration in the SED-16, SED-17 and SED-18 6-12" samples was less than the NYSDEC Lowest Effect Level.

The lead concentration in the 0-6" and 6-12" samples (SED-20 through SED-23) collected downstream of SED-19, between SED-19 and the confluence of Tributary D-1-7 with the Neversink River, was less than the NYSDEC Severe Effect Level. The 0-6" lead concentration in the two samples collected furthest downstream from the lagoon, collected approximately 250 feet (SED-22) and 50 feet (SED-23) above the confluence of Tributary D-1-7 with the Neversink River, was below the NYSDEC Lowest Effect Level.

Similar to Cadmium, sediment lead data indicates that concentrations above the NYSDEC Lowest Effect Level appear to be randomly located along the length of Tributary D-1-7 intermixed with stream reaches that do not exhibit sediment lead concentrations above the NYSDEC Lowest Effect Level. Sediments with lead concentrations above the NYSDEC Lowest Effect Level were not detected in the 0-6" interval samples collected from the two sample locations closest to the confluence of Tributary D-1-7 with the Neversink River. Lead concentrations above the NYSDEC Severe Effect Level are primarily limited to the top six inches of sediment within a 1,350 foot reach of the stream.

PCBs

PCBs were detected at concentrations above the site specific human health bioaccumulation and wildlife bioaccumulation sediment criteria values and the SED-5 background sediment value in eighteen of the 22 downstream 0-6" interval sediment samples and in six of eighteen 6-12" interval sediment samples that were analyzed for PCBs. PCBs were not detected above the laboratory reporting limit in the three samples collected furthest downstream from the lagoon, collected approximately 575 feet (SED-21), 250 feet (SED-22) and 50 feet (SED-23) above the confluence of Tributary D-1-7 with the Neversink River.

Two sediment samples SED-9 (0-6") and SED-10 (0-6") exhibited total PCB concentrations above the site specific aquatic life chronic toxicity criteria value. All PCB sediment sample results were below the site specific aquatic life acute toxicity sediment criteria value. The SED-9 and SED-10 total PCB concentrations were slightly above 1 mg/Kg, which is a sediment cleanup value that has been used at other sites throughout New York State.

Only nine percent (two of twenty-two) of the sediment samples exhibited PCB concentrations above the site-specific aquatic life chronic toxicity value. All sediment samples were below the aquatic life acute toxicity value. Data indicate that sediment PCB concentrations have most likely only had a minor effect on sediment benthic populations. The highest sediment sample total PCB concentrations reported in the

stream (SED-9 0-6";1,070 ug/Kg, SED-10 0-6";1,470 ug/Kg) were only slightly above 1,000 ug/Kg, which has been used as a cleanup guideline for PCB sediment cleanup projects in New York State. All other stream sediment concentrations were well below 1,000 ug/Kg.

If you have any questions or comments you can reach me at (518) 452-1290 or via email at efahrenkopf@delawareengineering.com.

Sincerely,

A handwritten signature in black ink that reads "Ed Fahrenkopf". The signature is written in a cursive style with a large, sweeping initial "E".

Ed Fahrenkopf
Senior Scientist

c:

W. Kozlowski (C&D)
M. Godick (AKRF, Inc.)
N. Ward-Willis (Keane & Beane, P.C.)

Sample ID/Date Sampled	SED-5	SED-1	SED-6	SED-3	SED-7	SED-8	SED-2	SED-4	SED-9	SED-10	SED-11	SED-12	SED-13	SED-14	SED-15	NYSDEC Sediment Criteria Lowest Effect Severe Effect Level
	Jul-01	Aug-99	Jul-01	Aug-99	Jul-01	Jul-01	Aug-99	Aug-99	Jul-01	Jul-01	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	
Metals mg/Kg																
Barium	97.5	90.1	84.6	67.7	97.4	206	37.3	15.6	29.1	137	45.7	50.1	60.2	32.7	31.3	NA
Cadmium	<0.076		0.47	58.3	0.58	1.4	24.9	195	3.7	3.7	<0.16	<0.17	3.3	2	2	0.6
Lead	24.6	88.4	27.9	58.3	38.3	71.9	195	195	48.6	48.6	6.4	5.8	208	112	110	110
Antion mg/kg Fluoride	4.5	<32.27	11	53.9	38	51	<16.56	17.74	5.3	17	5.99	<2.5	<4.72	<3.52	6.2	NA
PCBs ug/Kg																
Aroclor 1254	<63		151		170	210			350	1100	68	<41	<79	<58	<59	<49
Aroclor 1260	311		371		150	140			720	370	<45	<41	130	72	60	45 J
Total PCBs	311		521		320	350			1,070	1,470	68	<41	130	170	60	45 J
TOC mg/Kg	52.9	26.8	35.8	21.7	38.3	30.8	60.4	64.9	53	39.8	17,600	6,590	40,200	25,400	24,140	25,100
% Solids											73.5	80.1	42.4	56.8	56.2	67.8
NYSDEC Sediment Criteria 0.0258/88.898/621.5/45.08*																

Date Sampled Sample ID	SED-16	SED-17	SED-18	SED-19	SED-20	SED-21	NYSDEC Sediment Criteria Lowest Effect Severe Effect Level
	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	
Metals mg/Kg							
Barium	32.8	45.4	37.7	62.6	29	122	116
Cadmium	0.63	<0.43	<0.48	<0.44	<0.42	<0.21	<0.27
Lead	59.2	<0.68	4.4	15.4	24	67.5	89.2
Antion mg/kg Fluoride	5.1	4.8	5.5	3.7	3	3.44	9.61
PCBs ug/Kg							
Aroclor 1254	<49	<47	100	<49	<46	<58	90
Aroclor 1260	<49	<47	<52	<49	<46	18 J	<76
Total PCBs	<49	<47	100	<49	<46	18	90
TOC mg/Kg	19,600	20,500	18,000	23,500	15,200	39,800	78,700
% Solids	67.3	70.1	63.1	66.6	71	58.1	43.7
NYSDEC Sediment Criteria 0.0258/88.898/621.5/45.08*							

Date Sampled Sample ID	SED-22	SED-23	SED-24	SED-25	SED-26	SED-27	NYSDEC Sediment Criteria Lowest Effect Severe Effect Level
	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	0-6" 6-12"	
Metals mg/Kg							
Barium	41.6	32.4	39	28.9	49.8	29.4	58
Cadmium	<0.46	<0.4	<0.59	<0.54	2.8	48	60.7
Lead	29.6	11.5	15.7	10.9	400	11.3	1.0
Antion mg/kg Fluoride	5.3	<2.7	5.2	22.5	11	4.6	NA
PCBs ug/Kg							
Aroclor 1254	<51	<45	<65	100	32 J	<49	170
Aroclor 1260	<51	<45	<65	<59	<56	<59	<130
Total PCBs	<51	<45	<65	100	32 J	<59	170
TOC mg/Kg	19,400	4,840	24,300	26,200	29,400	102,500	118,100
% Solids	65.3	74.4	50.8	69.1	59.5	56.2	28.8
NYSDEC Sediment Criteria 0.0258/88.898/621.5/45.08*							

NA-Not Available
based on average sediment (0-6" sample) organic carbon (SED-11 through SED-27 and FP-1 through FP-4) concentration of 3.22 %
Values in bold exceed NYSDEC sediment criteria and values in bold and italics exceed metals severe effect criteria
*Human health bioaccumulation / Aquatic life acute toxicity / Aquatic life chronic toxicity / Wildlife bioaccumulation criteria