

May 1, 2001

MAY - 8 2001

BUREAU OF RADIATION & MAZARDOUS SITE MANAGEMENT HAZARDOUS MATERIALS

Mr. Timothy DiGiuilio, P.E. NYSDEC Division of Solid and Hazardous Waste Bureau of Radiation and Hazardous Waste 50 Wolf Road Albany, NY 12233-7010

Re: Former Allied Specialty Chemical Site

Tonawanda, NY

File: 1163/26080 #2

Dear Mr. DiGiuilio:

The purpose of this letter is to transmit the analytical results of sediment sampling conducted at the Former Allied Specialty Chemicals Site in Tonawanda, New York as part of Task 1 of the Interim Remedial Measures (IRM) Work Plan.

In accordance with Task 1 – Storm Sewer Evaluation of the IRM Work Plan and the New York State Department of Environmental Conservation (NYSDEC) correspondence dated June 12, 2000 providing conditional approval of the IRM Work Plan, removal of sediments in the immediate vicinity of the inlet and outfall areas of the 36-inch and 48-inch diameter sewers was conducted. The excavations were conducted to remove potentially contaminated sediments from the inlet and outfall areas, as well as to provide a basin to allow sediment generated during the sewer cleaning to settle at the outfall area.

Pursuant to the NYSDEC correspondence dated June 12, 2000, samples were collected from the inlet and outfall area of the 36-inch diameter sewer (Inlet A and Outfall #1) and 48-inch diameter sewer (Inlet B and Outfall #2) subsequent to the excavations. The samples were analyzed in accordance with NYSDEC ASP procedures for volatile organic compounds (VOCs) using USEPA Method 8260B, semivolatile organic compounds (SVOCs) using USEPA Method 8270C, metals using USEPA Method 6010B, mercury using USEPA Method 7471, and cyanide using USEPA Method 9010B/9014. The samples from Inlets A and B were collected approximately 0.5 ft below the bottom of each sewer pipe. The samples from Outfalls #1 and #2 were collected approximately 1-ft below the bottom of each sewer pipe.

The VOC, SVOC, and metals (including cyanide) analytical data are provided on Tables 1, 2, and 3, respectively. As shown on Table 1, VOCs were detected at both inlet areas (Inlets A and B), and both outfall areas (Outfalls #1 and #2). Regarding the 36-inch sewer, the data indicate that total VOC concentrations were higher at Inlet A (170 μ g/Kg) than Outfall #1 (146 μ g/Kg). Conversely, the data associated with the 48-inch diameter sewer indicate that the total VOC concentrations at Inlet B (estimated at 2 μ g/Kg) were less than at Outfall #2 (1,116.7 μ g/Kg). The elevated VOCs detected in



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the sample from Outfall #2 are likely associated with an observed tar-like material in the vicinity of the outfall.

As shown on Table 2, SVOCs were detected in both the inlet and outfall samples. The majority of the SVOCs detected are polynuclear aromatic hydrocarbons (PAHs) typically derived from incomplete combustion and tar-like substances. The PAHs detected in the samples include the following compounds: acenaphthene, acenaphthylene, anthracene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(ghi)perylene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, dibenzo(a,h)anthracene, fluoranthene, fluorene, indeno(1,2,3-cd)pyrene, naphthalene, phenanthrene, and pyrene. Total PAH concentrations were higher at the outfalls than at the inlets.

As shown on Table 3, metals were detected in both inlet and outfall samples. In evaluating the metals analytical data, those metals that were greater than one half an order of magnitude higher in the outfall samples, as compared to the inlet samples, were considered site-related. Based on this evaluation, calcium was the only metal constituent that was detected at a concentration greater than one half an order of magnitude in the outfall sample (Outfall #2) compared to the inlet sample (Inlet B). In general, the metals concentrations are higher at the inlets than the outfalls, suggesting an off-site origin. Cyanide was not detected in the inlet or outfall samples.

A comparison between VOC, SVOC, and metals analytical results for sediment samples collected during May 1999 as part of a voluntary site investigation (O'Brien & Gere Engineers, Inc., letter report dated November 9, 1999), and the recent sediment sampling (November 2000), is provided on Table 4. The data shown on Table 4 is summarized as follows:

- Total VOC concentrations were lower during November 2000 compared to May 1999.
- Total PAH concentrations were lower during November 2000 compared to May 1999 at Inlet A and Outfall #2, and higher at Inlet B and Outfall #1.
- The total concentration of other SVOCs was generally higher during November 2000 compared to May 1999, with the exception of Outfall #2.
- Metals concentrations that were greater than one half an order of magnitude in the outfall samples compared to the inlet samples were considered to be site-related. During the May 1999 sampling, concentrations of calcium at Outfall #2, mercury at Outfalls #1 and #2, and cyanide at Outfalls #1 and #2 were considered to be site-related. During the November 2000 sampling, the concentrations of mercury was lower at Inlet A, Outfalls #1 and #2, and higher at Inlet B compared to the May 1999 data, and cyanide was not detected.

While the recently collected data provides additional indications of sediment impacts in the vicinity of the inlets and outfalls of the sewers, surface water results from the May 1999 investigation indicated that contaminants in the sediments are not having a significant impact on the quality of storm water discharge. The results showed that water quality data for surface water at the inlets and outfalls contained very low concentrations of VOCs, SVOCs, and metals that are orders of magnitude less than the sediment concentrations.

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We will proceed with the following actions in accordance with the approved IRM Work Plan:

- Characterization and disposal of sediments generated during the sewer cleaning
- Backfill areas around inlets and outfalls with crushed stone
- Install ground water monitoring wells
- Complete site survey of newly installed wells
- Collect surface water samples

If you have any questions regarding this letter or the project in general, please do not hesitate to contact me at (315) 437-6100.

Very truly yours,

O'BRIEN & GERE ENGINEERS, INC.

James R. Heckathorne, P.E.

Vice President

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cc: David A. Paley, P.E. - Honeywell

Glenn May - NYSDEC

David J. Carnevale - O'Brien & Gere

Donald Canestrari - O'Brien & Gere



Volatile Organic Compound Data Storm Sediment Samples Tonawanda, NY Honeywell Table 1

	Sample III	Outfall #1	Outfall #1 DUP	Outlan #2	Stolin mice of		
	Sample Date	11/15/00	11/15/00	11/15/00	11/15/00	11/15/00	
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ugKg	
Compound							
1,1,1-Trichloroethane		5 U	5 U	3.U	Ω9	7.0	
1,1,2,2-Tetrachloroethane		5.0	5.0	3.0	n9	7.0	
1,1,2-Trichloroethane		5 U	5 U	3.U	0.9	7 U	
1,1-Dichloroethane		5.0	5.0	3.0	n9	υt	
1,1-Dichloroethene		5 U	5 U	3.0	0.9	7.0	
1,2-Dichloroethane		\$U	5.0	3.0	0.9	7.0	
1,2-Dichloropropane		5 U	5.0	3.0	0.9	7.0	
2-Butanone (MEK)		22	2.3	13.0	31	28 U	
2-Hexanone		0.6	10 U	Ω9	11.0	14 U	
4-Methyl-2-pentanone (MIBK)		n 6	10 U	0.9	11 U	14 U	
Acetone		55	51	28	120	28 U	
Benzene		27	22	170	0.9	Ωt	
Bromodichloromethane		5 U	su	3.U	Ω9	7.0	
Bromoform		5.0	SU	3.0	Ω9	7.0	
Bromomethane		0 G	10 U	0.9	11 U	14 U	
Carbon disulfide		2.5	2.1	0.7.1	~	7.0	
Carbon tetrachloride		su	su	3.0	0.9	7.0	
Chlorobenzene		50	5.0	3.0	0.9	7.0	
Chloroethane		0 G	10 U	n9	11 U	14 U	
Chloroform		su	SU	3.0	Π9	7.0	
Chloromethane		N 6	10 U	6.0	11 U	14 U	
Dibromochloromethane		5.0	5.0	3.0	n9	7.0	
Ethene, 1,2-dichloro-, (E)-		2 J	2 J	5	0.9	J.U	
Ethylbenzene		2	5 J	300	0.9	7.0	
Methylene chloride		2.5	2.5	1.1	7 J	2.3	
Styrene		5.0	5.0	9	0.9	7.0	
Tetrachloroethene		SU	SU	11	Ω9	7 U	
Toluene		43	33	100	6.0	J.C.	
Trichloroethene		9	5.5	14	4.3	7.0	
Vinyl chloride		-	- 1	2.3	11.0	14 U	
Xylene (total)		11	6	480	Ω9	7 U	
cis-1,2-Dichloroethene		6	8	- 10	n 9	7.0	
cis-1,3-Dichloropropylene		5.0	5 U	3 U	0.9	7.0	
trans-1,3-Dichloropropene		50	5.0	3.0	n9	7 U	

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Tonawanda, NY Honeywell Table 2

Semivolatile Organic Compound Data Storm Sediment Samples

	Sample ID	Outfall #1	Outfall #1 DUP	Outfall #2	Storm Inlet A	Storm Inlet B	
	Sample Date	11/15/00	11/15/00	11/15/00	11/15/00	11/15/00	
	Units	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	
Compound							
1,2,4-Trichlorobenzene		31000 U	35000 U	42000 U	15000 U	920 U	
1,2-Dichlorobenzene		31000 U	35000 U	42000 U	15000 U	920 U	
1,3-Dichlorobenzene		31000 U	35000 U	42000 U	15000 U	920 U	
1,4-Dichlorobenzene		31000 U	35000 U	42000 U	15000 U	920 U	
2,4,5-Trichlorophenol		160000 U	170000 U	210000 U	74000 U	4600 U	
2,4,6-Trichlorophenol		31000 U	35000 U	42000 U	15000 U	920 U	
2,4-Dichlorophenol		31000 U	35000 U	42000 U	15000 U	920 U	
2.4-Dimethylphenol		31000 U	35000 U	42000 U	15000 U	920 U	
2,4-Dinitrophenol		160000 U	170000 U	210000 U	74000 U	4600 U	
2,4-Dinitrotoluene		31000 U	35000 U	42000 U	15000 U	920 U	
2,6-Dinitrotoluene		31000 U	35000 U	42000 U	15000 U	920 U	
2-Chloronaphthalene		31000 U	35000 U	42000 U	15000 U	920 U	
2-Chlorophenol		31000 U	35000 U	42000 U	15000 U	920 U	
2-Methylnaphthalene		340 J	35000 U	790 J	15000 U	52 J	
2-Methylphenol		31000 U	35000 U	42000 U	15000 U	920 U	
2-Nitroaniline		160000 U	U 00001	210000 U	74000 U	4600 U	
2-Nitrophenol		31000 U	35000 U	42000 U	15000 U	920 U	
3,3-Dichlorobenzidine		03000 U	O 00069	84000 U	30000 U	1900 U	
3-Nitroaniline		160000 U	170000 U	210000 U	74000 U	4600 U	
4,6-Dinitro-2-methylphenol		D 000091	170000 U	210000 U	74000 U	4600 U	
4-Bromophenyl phenyl ether		31000 U	35000 U	42000 U	15000 U	920 U	
4-Chloro-3-methylphenol		31000 U	35000 U	42000 U	15000 U	920 U	
4-Chloroaniline		31000 U	35000 U	42000 U	15000 U	920 U	
4-Chlorophenyl phenyl ether		31000 U	35000 U	42000 U	15000 U	920 U	
4-Methylphenol		31000 U	35000 U	42000 U	15000 U	920 U	
4-Nitroaniline		160000 U	170000 U	210000 U	74000 U	4600 U	
4-Nitrophenol		160000 U	170000 U	210000 U	74000 U	4600 U	
Acenaphthene		870 J	780 J	3200 J	15000 U	47.5	
Acenaphthylene		2300 J	1700 J	3800 J	15000 U	1300	
Anthracene		43000	3400 J	110000	15000 U	3500	
Benzo(a)anthracene		130000	93000	210000	260 J	9200	
Benzo(b)fluoranthene		170000	120000	250000	580 J	0068	
Benzo(ghi)perylene		53000	40000	87000	160 J	10 J	
Benzo(k)fluoranthene		52000	37000	110000	270 J	3700	
Benzo[a]pyrene		120000	91000	200000	300 J	1300	

U - Not detected. J - Estimated value. --- Not analyzed. D - Result reported from diluted analysis. NOTES: 1 of 1 Page

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Table 2

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U - Not detected. J - Estimated value. --- Not analyzed. D - Result reported from diluted analysis NOTES: CONTINUED

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Tonawanda, NY Inorganic Data Honeywell Table 3

Storm Sediment Samples

		Sample ID	Outfall #1	Outfall #1 DUP	Outfall #2	Storm Inlet A	Storm Inlet B	
United U		Sample Date	11/15/00	11/15/00	11/15/00	11/15/00	11/15/00	
und 14600 18600 18100 17600 3000 unin 0,22U 0,31U 0,31 0,31 0,40 0,60 vy 0,22U 0,31U 1,31 1,45 240 0,60 vy 0,23U 103 113 1,45 240 0,60 <td></td> <td>Units</td> <td>mg/Kg</td> <td>mg/Kg</td> <td>mg/Kg</td> <td>mg/Kg</td> <td>mg/Kg</td> <td></td>		Units	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	
mm 14800 18600 17300 30000 my 690 131 113 0.461 30000 my 691 123 111 145 246 m 693 123 113 2.63 2.64 m 1048 0.0581 0.0581 2.63 1.41 2.64 m 10500 15000 65000 4650 5.69 3.69 m 6.91 1500 6500 4.65 1.41 1.41 m 6.92 93 184 4.17 6.99 8.60 m 6.91 1500 6.00 4.60 5.99 8.60	Compound							
12 12 12 12 12 14 14 14	Aluminum		14800	18600	18300	17600	30000	
mm 69.0 12.3 11.1 14.5 24.0 mm 69.3 10.3 13.1 25.1 12.0 24.0 mm 0.048 TJ 0.052 TJ 0.053 TJ 13.1 26.1 15.1 15.1 26.1 m 10500 10500 6500 6500 46600 56			0.29 U	0.31 U	0.26 J	0,73.J	0.46 J	
m (43 100 132 112 153 m (6487) (134) 133 131 134 264 m (6487) (6587) (6387) (635) 143 263 m (659) (6590) (6500) (6500) (6500) (6600) 5860 m (651) (637) (637) (637) (639) (639) s (651) (652) (631) (632) (631) (639) s (652) (631) (632) (632) (632) (632) s (652) (653) (653) (653) (653) (653) s (652) (653) (653) (653) (653) (653) s (653) (653) (653) (653) (653) (653) s (653) (653) (653) (653) (653) (653) s (653) (653) (653) (653)				12.3	171	14.5	24.0	
min (141 171 33 131 2.6.1 m (162) (1632) (1532) (1532) m (1632) (1632) (1532) (1532) m (1632) (1502) (1500) (1500) (1500) (1500) m (1632) (1502) (1502) (1502) (1502) 2			69.3	100	132	112	125	
m (1950) 15900 (6083) (255) 14.1 m (1950) 15900 (6500) (6500) (6500) m (1950) 15900 (6500) (6500) (6500) s (1950) 15900 (64) (10.1) (19.9 s (1951) 15.3 (64) (11.1) (14.1) (14.1) s (1951) 15.0 (650) (14.1) (14.1) (14.1) m (1950) 15.0 (650) (15.0) (650) m (1950) 15.0 (650) (15.1) (15.1) m (1950) 15.3 (650) (15.1) (15.1) m (1950) 15.3 (650) (650) (650) m (1950) 15.3 (650) (650) m (1950) 15.3 (650) (650) (650) m (1950				1.7.1	3.3	13 J	2.6 J	
time to the control of the control o	Cadmium		0.048 U		0.058 J	0.25 J	1.4.5	
mm 693 184 417 699 mm 691 93 644 10.1 199 s 692 33 240 459 199 s 695 10 0.63 1.1 1.4 1.4 s 46700 52.60 21800 1.10 1.4 1.4 s 46700 52.60 21800 1.4 1.4 1.4 s 46700 52.60 2180 1.4	Calcium		10500		63000	46600	5680	
199 199	Chromium		38.5		18,4	41.7	6'69	
13.12 55.8 24.0 45.9 103			6.9 J		6.4	10.1 J	19.9	
1,10				55.8	24.0	45.9	103	
time 521 7500 31000 47600 time 5010 7870 12000 10400 6456 tese 379 7870 1200 10400 6580 tese 379 506 1970 562 509 tese 1379 506 1970 562 509 tese 1379 506 1970 562 509 tese 1379 506 1970 5630 509 tese 1379 507 1200 10400 6380 m 1920 2400 1880 3180 3580 m 0,14 U 0,15				1.0 U	0.63 U	1.1 U	1.4 U	
tese 3910 7870 1131 606 tese 3910 7870 12800 10400 6580 v	Iron		46700		21800	30200	47600	
imin 5010 7870 12800 10400 6580 ese 379 506 1790 5063 509 ese 212 378 145 208 509 7 227 247 248 28 3180 3980 m 190 240 0.15 19 3.1 m 0.14 U 0.15 U 0.15 U 0.15 U 0.20 U m 0.82 J 0.77 U 0.55 J 316 53.7 m 26.7 352 192 316 53.7 m 26.7 352 192 316 53.7 m 26.7 352 192 316 53.7 ES: U-Not detected J-Edrinated valueNot analyzed.	Lead				31.1	131	9.09	
rese 379 506 1970 562 509 y 227 378 145 298 557 mm 1920 2400 1880 3180 3980 m 199 24 28 3180 3980 m 19 24 28 3180 3980 m 19 24 28 19 3180 3980 m 19 24 28 19 3180 3980 m 19 228 632 315 11 151 m 28 32 110 382 1151 m 28 32 32 316 337 ES: U.Not detected JEstimated valueNot analyzed.	Magnesium				12800	10400	6580	
V 0.18.1 0.33 0.28 0.063.1 0.13.1 m 22.7 27.8 145 29.8 55.7 m 1920 240 180 3980 m 1.9 2.4 2.8 1.9 331 m 1.9 2.4 2.8 1.9 31 n 0.15 U 0.15 U 0.15 U 0.16 U 0.20 U n 0.82 J 0.77 U 0.56 J 0.82 U 1.5 J m 2.67 3.5 1.9 3.1.6 5.3.7 m 2.67 3.5 1.10 2.01 6.05 m 2.55 1.10 2.01 6.05	Manganese				1970	562	509	
22.7 37.8 145 29.8 55.7 m 190 2400 1880 3180 3980 m 191 2.4 2.8 1.9 3.1 n 0.14 U 0.15 U 0.15 U 0.16 U 0.20 U 1.5 J 228 632 315 21J m 20.8 J 30.7 U 0.3 J 1.6 3.3 ES: U-Not detected J-Estimated valueNot analyzed.	Mercury			0.33	0.28	0.063 J	0.13 J	
m 1920 2400 1880 3180 3980 m 1.9 2.4 2.8 1.9 3.1 n 15.1 4.0 2.8 1.9 3.1 n 0.82.1 0.77.0 0.56.1 31.6 1.5.1 m 2.67 35.2 19.2 31.6 53.7 m 2.67 35.2 19.2 31.6 53.7 ES: U-Not detected J-Estimated valueNot analyzed.				37.8	14.5	29.8	55.7	
m 1.9 2.4 2.8 1.9 3.1 0.20 U. Oxford detected J. Estimated value Not amilyzed.	Potassium		1920	2400	1880	3180	3980	
0.14 U	Selenium		1.9	2.4	2.8	1.9	3.1	
n 0.821 0.750 0.820 1.51 m 26.7 0.0251 0.820 1.51 m 26.7 35.2 192 31.6 53.7 192 31.6 605 23.6 605 ES: U-Not detected J-Estimated valueNot analyzed.			0.14 U	0.15 U	0.15 J	0.16 U	0.20 U	
m 26.7 35.2 19.2 31.6 53.7 50.5 m 26.7 35.2 19.2 31.6 53.7 53.7 50.0 50.5 m 26.7 35.2 19.2 31.6 53.7 50.0 50.5 ES: U-Not detected J-Estimated value Not analyzed.	Sodium		15.1	228	632	315	21 J	
m 26.7 35.2 19.2 31.6 53.7 51.9 11.0 201 605 505 505 505 505 505 505 505 505 505	Thallium		0.82.5	0.77 U	0.56 J	0.82 U	1.5 J	
193 255 110 201 665 255	Vanadium		26.7	35.2	19.2	31.6	53.7	
Not analyzed.			193	255	110	201	605	
Not analyzed.								
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File Number: 1163.22900

Table 4
Former AlliedSignal, Inc.
Tonawanda, NY

Inlet and Outfall Sediment Sample Summary

	Inle	et A	Outf	all #1	Inle	et B	Outfa	all #2
VOCs (ug/Kg)	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00
2-Butanone	2	31	ND	22	ND	ND	ND	ND
Acetone	47	120	95	55	24	ND	110	28
Benzene	ND	ND	27	27	2	ND	780	170
Carbon disulfide	ND	8	2	2J	ND	ND	ND	0.7J
1,2-DCE	ND	ND	ND	2J	ND	ND	ND	5
Ethylbenzene	ND	ND	15	5	ND	ND	2400	300
Methylene chloride	7	7J	1	2J	ND	2J	ND	1J
Styrene	ND	ND	ND	ND	ND	ND	900	6
Tetrachloroethene	ND	ND	ND	ND	ND	ND	55	1J
Toluene	400	ND	7	4J	ND	ND	2200	100
Trichloroethene	ND	4J	13	6	ND	ND	37	14
Vinyl chloride	ND	ND	ND	1J	ND	ND	1	2J
Xylene	ND	ND	ND	11	ND	ND	11000	480
cDCE	ND	ND	35	9	ND	ND	18	10
Total VOCs	456	170	195	146	26	2J	17501.0	1116.7

	Inle	et A	Outf	all #1	Inle	et B	Outf	all #2
	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00
Total PAHs (mg/Kg)	65.552	4.1	176.57	1519.67	42.494	72.705	3237.1	2717.4
Other SVOCs (mg/Kg)	0.122	23.26	0.515	2.1	0.072	0.291	253	6.03

	Inle	et A	Outfa	all #1	Inle	et B	Outf	all #2
Inorganics (mg/Kg)	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00	5/11/99	11/15/00
Aluminum	16300		24700					
Arsenic	7.3		23.5		11.9		53.5	
Barium						125		132
Beryllium	1J		3.2J		1.3J	2.6J	2.1J	3.3
Cadmium	0.59J		1.9J		0.7J		2J	
Calcium					12000	5680	84600	63000
Chromium	28.2		105					
Cobalt					13.6		16.3J	
Copper	33.6		64.3					
Cyanide	ND		17.4		ND		4.8	
Iron	33800	30200	133000	46700	35300		118000	
Lead	34.8		87.4		31.1		41.3	
Magnesium					7570	6580	18100	12800
Manganese	523		960		514	509	1420	1970
Mercury	0.07	0.063J	0.53	0.18J	0.079	0.13J	0.77	0.28
Nickel	24.7		32.1		32.4		39.9	
Selenium	1.3		6.5		1.3		4.4	
Silver						ND		0.15J
Sodium						21J		632
Vanadium	34.6		43.2					
Zinc	125		446					