NYC 9/11 Public Portal Document

September 18, 2001 (11:11am) **Preliminary**

New York City/ World Trade Center Sampling Activities

Dredge Material Sediment Sampling 09/15/01

EPA Personnel: Dennis McChesney
Kathleen Savino

DEC Personnel: Stephen Zahn, DEC Police Officers/Boat operators

Sampling platform: NYSDEC Police Vessel

Sampling Date: 09/15/01
Sampling Time: 1725-1843
Location: Foot of Vesey by CSO M-6
Sample Matrix: Sediment

Preliminary Results: Two (2) PCBs (Aroclors) were detected at concentrations exceeding NOAA Effects Range Medium (ERM), and average concentrations in Harbor sediments. Lead and mercury were also detected above the ERM and average Harbor sediment concentrations. PAHs associated with coal tar creosote and industrial activity were detected. Five (5) PAH compounds exceeded the ERM, and all were from a single shallow sample. PAH exceedences of ERMs were all less than a factor of two (2). Three VOCs were detected at very low concentrations. Dioxin/Furan data is expected from the contract lab on Wednesday 09/19/01. Dredge material disposal is at the Newark Bay contaminated sediment borrow pits.

Analytes (Laboratory): Metals (REAC, Raj Singhvi coordinating)
Pesticides/PCBs (REAC, Raj Singhvi coordinating)
PAHs (REAC, Raj Singhvi coordinating)
VOCs (REAC, Raj Singhvi coordinating)
Dioxins/Furans (Paradigm Analytical, Raj Singhvi coordinating)
Toxicity (EPA Region 2)

Pre-dredged areas: Discrete samples were collected from three (3) transects shore (by Joe DiMaggio Drive) to the Hudson River (west to east) using a petit ponar dredge sampler. The entire sample (about 6 inches depth) was collected, and the VOC sample was allocated to as sample jar. The remaining sample was homogenized, and allocated to sample jars. Dredging operations are ongoing.

Dredge Material: The operating dredge acquired a full bucket of sediment and laid it on the barge deck. Three (3) discrete samples were collected from throughout the dredge sample (surface, interior). Samples were processed for analysis as above.

Dredge Material Disposal: Dredged material is destined for the contaminated dredge material borrow pits on the west side of Newark Bay.

Preliminary Results:

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Volatile Organic Compounds (VOCs): Three VOCs (acetone, carbon disulfide, 2-butanone) were detected at very low concentrations. Acetone was detected in the lab blank, suggesting laboratory contamination with this common laboratory reagent.

Base Neutral/Acid Extractables (BNAs): BNAs were detected in all of the samples. The highest concentrations were detected in the six (6) inch deep petit ponar grab sample that was collected closest to the Joe DiMaggio Drive bulkhead (sample P-1). The compounds detected are often associated with highway runoff, creosote treated marine pilings, and industrial activities. Detected concentrations were compared to the ecological Effects Range Low (ERL) and Effect Range Medium (ERM) established by NOAA for the eleven (11) compounds for which these values exist. Five (5) compounds exceeded the ERM, and all were in the petit ponar grab (P-1) sample. ERM exceedences were all less than a factor of two (2). **Figure attached.**

Metals: All samples were analyzed for arsenic, cadmium, copper, lead, and mercury. All of the metals were detected in all of the samples. As for PAHs, petit ponar sample P-1 contained the highest concentrations of all of the metals. Concentrations of the metals in all of the six samples collected exceeded the upper concentrations detected throughout NY Harbor during EPA's 1994-1995 REMAP survey **Figure attached.**.

	mg/Kg (ppm)			
Metal	**Detected Range SurveyNY/NJ Harbor Estuary***	**ERL**	**ERM**	**Mean Result 1993 -1994 EPA REMAP**
Arsenic	8.8 - 13	8.2	70	10.33 ± 2.05
Cadmium	0.71 - 2.6	1.2	9.6	0.71 ± 0.13
Copper	88 - 220	34	270	72.53 ± 17.4
Lead	110 - 250	46.7	218	78.8 ± 12.8
Mercury	1.2 - 2.8	0.15	0.71	0.74 ± 0.14

* ± is the 90% confidence interval

PCBs: PCBs were analyzed as aroclors in all samples. Two (2) PCBs (Aroclor 1254 and 1260) were detected in all of the samples. No other PCBs were detected in any sample. The profile of the PCBs indicated that they were "weathered", suggesting that they have been entrained in the sediment for a long period of time. **Figure attached.**

	ug/Kg (ppb)			
	Detected Range	**ERL**	**ERM**	**Mean Result 1993 -1994 EPA REMAP Survey of NY/NJ Harbor Estuary**
1254	370 - 700	NA	NA	NA

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1260	280 - 510	NA	NA	NA
Total	630 - 1210	22.7		224 ± 42*

* ± is the 90% confidence interval

Dioxins/Furans: Initial runs of the samples failed to pass QC. Samples are being re-analyzed and the data is expected on Wednesday 09/19/01.

Data Analysis: The highest concentrations of analyzed constituents were detected in the petit ponar dredge sample taken close to shore (Joe DiMaggio Drive). A CSO is also located in this area. PCBs (aroclors) detected in this sample were weathered suggesting a relatively old source. The detected PAHs are ubiquitous in industrialized areas, and bear the fingerprint of coal tar creaosote used to treat marine pilings. Many submerged pilings area present in the area. Dredging operations were resulting in high concentrations of suspended matter in the vicinity, and some settling of suspended sediment This area has not been subjected to dredging for a long period of time.