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NWS EARLE
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TRANSMITTAL LETTER FOR THE SURFACE WATER AND SEDIMENT SAMPLING DATA IN RESPECT TO POTENTIAL IMPACT ON PROPOSED MANASQUAN RESERVOIR NWS EARLE NJ
8/20/1985
STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

See Jamie 1st

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF WASTE MANAGEMENT

HAZARDOUS SITE MITIGATION ADMINISTRATION

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M E M O R A N D U M

August 20, 1985

TO: Beth Muhler, Site Manager

THROUGH: Rob Predale, Assistant Chief, BEERA MVO for RP

FROM: James Schnitzer, Technical Coordinator, BEERA

SUBJECT: Review of Earle, NWS Surface Water and Sediment Sampling Data in Respect to Potential Impact on the Proposed Manasquan Reservoir.

Samples collected by NJDEP personnel on May 17, 1985 at five (5) locations on the Earle NWS site have been analyzed by ETC and reviewed by our Quality Assurance Unit. These samples were collected as part of an effort to assess potential impacts that contaminants found in the surface water and sediments of water sources emanating from the Earle NWS site, may have on the development of the Manasquan reservoir. Samples were collected in accordance with standard DWM sampling procedures.

The tables below illustrate contaminants found and their respective ranges for all of the stations sampled. (See also annexed chart.)

Surface Water Samples	Contaminant	Range ug/l
	Chlorobenzene	85.8
	Chloroform	2.1
	Methylene Chloride	6-39
	Lead	6-16
	Zinc	10-40
	Chromium	30
	Nickel	30

Sediment Samples	Contaminant	Range ug/k
	Methylene Chloride	3.8 - 106.6
X	Di-n-butylphthalate	560-1057.6
	Fluoranthene	84-171
	Pyrene	105-192
	Benzo(k)fluoranthene	92
	Phenanthrene	161
	Chromium	3,000 - 10,000
	Copper	2,000 - 16,000
	Lead	4.8 - 30,000

Zinc	2,000 - 33,000	ug/k
Nickel	2,000 - 8,000	ug/k
Phenolics	.2	ug/k
Arsenic	1.3 - 6.2	ug/k
Beryllium	200	ug/k
Selenium	.9	ug/k

Surface Water Samples - The levels of six of the seven contaminants found in the surface water are within the expected range for ambient levels of these contaminants in the environment. However the seventh, chlorobenzene was found at Station IV (Rt. 34 Intersection) in concentrations substantially above expected ambient levels. Chlorobenzene was present in surface water at 85.8 ug/l compared to 0-7 ug/l in the natural environment. This high concentration is sufficient to warrant further investigation of potential sources of the chlorobenzene. Therefore we should determine whether the source is site specific and whether there are any nearby potential sources of chlorobenzene such as roadways or gasoline spillages.

Sediment Samples - The levels of contaminants found in the sediment samples are within ranges that probably fall within limits acceptable to the NJDEP as they have been evaluated by our Risk Assessment Group. For further information on these data and surface water results, Dr. Richard Dime (3-2345) or Sophia Stokman (3-2341) of the Risk Assessment Group may be contacted. I also suggest that the high concentrations of heavy metals (Chromium, Copper, Lead, Zinc and Nickel) in the sediment be evaluated by the Risk Assessment Group for potential sources and limits of migration through sediments.

The sampling information evaluated in this project suggests that there are limited sources of contaminants in the surface water and sediments of the brooks and streams that were sampled. The impact that these sources may have on the proposed Manasquan Reservoir are probably minimal. However before this may be determined several other factors must be considered; the distance of the streams from the reservoir, the hydrogeology of the area, site specific groundwater flow and the rate, volume and direction of surface water movement.

RP/JS/rk
cc: Dr. Richard Dime
Ms. Sophia Stokman
Dr. Merry Morris
Mr. Eric Evenson

Earle, NWS Surface Water
and Sediment Sampling Results
(May 17, 1985)

Sample Pt.

R Station 4* (H 7405) — Matrix = H_2O Results

	Compound	ug/l	MDL ug/l
Volatiles	Chlorobenzene	85.8	6.0
Volatiles	Chloroform	2.1	1.6
	Methylene Chloride	39.0	2.8
Acids	ND		
Base/Neutrals	ND/BMDL		
Pesticides/PCB	ND		
Metals etc.	Lead	16	5
	Zinc	40	10

B Station 3B (H 7398) — Matrix = Sediment

	Compound	ug/k	MDL/ug/k
Volatiles	Methylene Chloride	4.4	2.8
Acids	ND		
Base/Neutrals	ND		
Pesticides PCB	ND		
Metals etc.	Chromium	10,000	2000
	Copper	2,000	600
	Lead	12	.5
	Zinc	21,000	700

*Sampling Locations:

Station I - Brook farthest west on Rt. 33, near Police Academy.
Station II - Tributary to Cranberry Bog by Coltsneck Road.
Station III A - West branch of Mingamahon.
Station III B - East branch of Mingamahon.
Station IV - Rt. 34 Intersection.

Earle NWS Sampling Results (cont.)

R Station 1 (H 7401) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	Methylene Chloride	6	2.8
Acids	ND		
Base/Neutrals	ND		
Pesticides PCB	ND		
Metals etc.	Chromium	30 ug/k	10
	Lead	14 "	5
	Nickel	30 "	10
	Zinc	20 "	10

R Station 3B (H 7404) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	ND		
Base/Neutrals	ND		
Pesticides PCB	ND		
Metals etc.	ND		

R Station 3A (H 7403) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	ND		
Acids	ND		
Base/Neutrals	ND,BMDL		
Pesticides PCB	ND		
Metals etc.	ND,BMDL		

R Station 2 (H 7402) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	ND		
Acids	ND		
Base/Neutrals	ND,BMDL		
Pesticides PCB	ND		
Metals etc.	Lead	6	5
	Zinc	10	10

Earle NWS Sampling Results (cont.)

B Station 4 (H 7399) — Matrix = Sediment

	Compound	ug/k	MDL ug/k
Volatiles	Methylene Chloride	3.8	2.8
Acids	ND		
Base/Neutrals	Di-n-b-phthalate	1057.6	133.3
Pesticides PCB	ND		
Metals etc.	Chromium	9000	2000
	Copper	7800	600
	Lead	74	.5
	Nickel	2000	1000
	Zinc	33,000	700
	Phenolics	.2 mg/	.1

Trip Blank (H 7406) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	Methylene Chloride	8.2	2.8
Acids	ND		
Base/Neutrals	ND		
Pesticides PCB	ND		
Metals etc.	ND		

Field Blank (H 7407) — Matrix = H_2O

	Compound	ug/l	MDL ug/l
Volatiles	Methylene Chloride	12.2	2.8
Acids	ND		
Base/Neutrals	bis-( )phthalate	56.8	10
Pesticides PCB	ND		
Metals etc.	Zinc	170	10

B Station 1 (H 7395) — Matrix = sediment

	Compound	ug/k	MDL ug/k
Volatiles	Methylene Chloride	106.4	2.8 (contaminated)
Acids	ND		
Base/Neutrals	Fluoranthene	84	73
	Pyrene	105	63
Pesticides PCB	ND		
Aroclors	ND		
Metals etc.	Arsenic	6.2	1
	Beryllium	200	100
	Chromium	33,000	2000
	Copper	16,000	600
	Lead	30,000	7000
	Nickel	8,000	1000
	Selenium	.9	.5
	Zinc	20,000	700

Earle NWS Sampling Results (cont.)

B Station 2
(H 7396)

Matrix = Sediment

	Compound	ug/k	MDL ug/k
Volatiles	Methylene Chloride	106.6	2.8 (contaminated)
Acids	ND		
Base/Neutrals	Benzo(k)fluoranthene	92	83
	Fluoranthene	171	73
	Phenanthrene	161	178
	Pyrene	192	63
Pesticides PCB	ND		
Aroclor	ND		
Metals etc.	Arsenic	1.3	1
	Chromium	9000	2000
	Copper	2000	600
	Lead	7.0	.5
	Zinc	6000	700

B Station 3A
(H 7397)

Matrix = Sediment

	Compound	ug/k	MDL ug/k
Volatiles	Methylene Chloride	12.2	2.8
Acids	ND		
Base/Neutrals	Di-n-butyl-phthalate	560	133.3
	Pyrene	131.7	101.3
Pesticides PCB	ND		
Metals etc.	Chromium	3000	2000
	Copper	2000	800
	Lead	4.8	.5
	Zinc	2000	700
Aroclor	ND		
