Memorandum

Environmental Resources Management 0000006

102926

To: Richard E. Boice, P.E.
United States Environmental Protection Agency

cc: Robert Schaible, IDEM
Om Patel, Weston
Bruce White, Karaganis & White
Mark Travers, *de maximis, inc.*
Ron Hutchens, ENVIRON International Corporation

From: for David A. Schlott EFM.

Date: February 11, 1999

Subject: Ground Water Extraction and Treatment System
Emergency Shutdown
Midco II Site, Gary, Indiana

ERM.

VIA TELEFAX

Environmental Resources Management-North Central, Inc. (ERM) recently completed sampling of the effluent at the Midco II Site's ground water treatment system (GWTS) for analysis of project-specific ground water (PSGW) chlorinated pesticides and polynuclear aromatic hydrocarbons (PNAs). This sampling was performed at the request of the United States Environmental Protection Agency (USEPA).

Progress Report Number 79, issued by ERM on January 11, 1999, included validated analytical data for quarterly ***influent*** samples collected at the Midco I and II Sites' GWTS on June 29 and September 22, 1998. These data showed exceedances of the maximum allowable concentrations (MACs) for several pesticides and PNAs in both of the influent samples from the Midco II Site. As a result of these MAC exceedences, the USEPA requested that ERM sample the Midco II effluent for analysis of PSGW pesticides and PNAs to ensure that the GWTS was removing the concentrations of all pesticides and PNAs below the MACs.

The Midco II effluent samples for pesticide and PNA analysis were collected on January 26, 1999. The unvalidated laboratory results, a copy of which are attached, indicated that dibenzo(a,h)anthracene was detected at a concentration (0.0094 µg/L), which is above the MAC of 0.00441 µg/L. All other parameters in these two fractions were either detected at levels below their corresponding MAC or not detected.

Memorandum

Environmental
Resources
Management

As a result, we shut down the Midco II ground water extraction and treatment system (GWETS) on the day the laboratory results were received (February 10), and immediately notified you via telephone. It is likely that the presence of increasing amounts of oil at the Midco II Site's GWTS influent is responsible for this MAC exceedance. Typically, PNAs, in particular dibenzo(a,h)anthracene, are compounds associated with oil products. This memorandum presents our proposal for evaluating and handling the problem, which we believe has been temporarily resolved and should not be a concern, because oil or solids passing through the Midco II HP/UV unit would be removed either at the Midco II post-filters or at the deep well polishing filters. Therefore, the water discharged to the deep well should not have contained this PNA above the MAC.

ERM.

On February 5, 1999, we had installed an additional 1-micron filtration unit after the existing pre-filters at the Midco II Site to further reduce the amount of solids sent to the hydrogen peroxide/ultraviolet light (HP/UV) unit. This filter had been operated for about 1 hour prior to the system shutdown, on February 10. We believe this action eliminates the carryover of oil that occasionally occurred at the pre-filters and through the HP/UV units, thus removing the PNAs from the ground water. However, to confirm that this is the case, we propose to perform the following sequence of events:

- Start up the Midco II GWETS and, after stabilizing the operation (about 60 minutes), collect a ground water sample at the following locations: normal Midco II effluent sampling point (i.e., at the discharge of the HP/UV unit), after the post-filters at the Midco II Site, and at the end of the pipeline at the Midco I Site (this will be a sample of the standing water, no water will be pumped from the Midco II Site through the pipeline). Collect the treated water in a Baker tank and held until the analytical results are received. Shut down the Midco II GWETS after collecting the samples.

- Have the samples analyzed for PNAs in accordance with the Midco Quality Assurance Project Plan (QAPP) - Part 1 on an expedited basis. Because of the weekend, we will request to receive the data on Monday morning.

- If the samples do not contain PNAs at levels above the MACs, start the Midco II GWETS and collect new samples of the effluent at its normal sampling point daily for 3 days and analyze these samples for PNAs on an expedited (48-hour) turnaround basis. Because the samples have to be submitted to CompuChem Laboratories in North Carolina (the laboratory approved in the QAPP), we cannot obtain 24-hour turnaround results. The GWETS will be kept in operation while we await these analytical results.

- Resume the normal operation and sampling program of the Midco II GWETS, if the analytical results are lower than the MACs. Otherwise, if any additional sampling results exceed the MACs, we will, upon receipt of data, immediately shut down the Midco II GWETS, evaluate how to proceed, and submit a Corrective Action Plan within 30 days of the shutdown.

Please let us know if this approach is acceptable to you so that we can complete the arrangements for sample collection.

TABLE 1

EFFLUENT SAMPLING RESULTS TO DETERMINE COMPLIANCE WITH THE MAXIMUM ALLOWABLE CONCENTRATIONS CHLORINATED PESTICIDES/PCBs AND POLYNUCLEAR AROMATIC HYDROCARBONS - JANUARY 1999
UNVALIDATED DATA
MIDCO II
GARY, INDIANA

Sample ID: Collection Date: Notes: Units:	Maximum Allowable Concentration[1] µg/L	Midco II 2EAM026 01/26/99 UNVALIDATED µg/L	Effluent Meets Maximum Allowable Concentration
Pesticides			
Alpha-BHC	0.0378	0.0096 U	Yes
Beta-BHC	0.126	0.0096 U	Yes
Delta-BHC		0.0029 JBP	Yes
Gamma-BHC (Lindane)	1.26	0.0096 U	Yes
Heptachlor	2.52	0.0096 U	Yes
Aldrin		0.0083 JP	Yes
Heptachlor epoxide	1.26	0.0096 U	Yes
Endosulfan I		0.0096 U	Yes
Dieldrin	0.0126	0.001 JP	Yes
4,4'-DDE	0.63	0.00084 JP	Yes
Endrin	1.26	0.019 U	Yes
Endosulfan II		0.019 U	Yes
4,4'-DDD	0.63	0.019 U	Yes
Endosulfan sulfate		0.019 U	Yes
4,4'-DDT	0.63	0.0028 J	Yes
p,p'-Methoxychlor	2.52	0.096 U	Yes
Endrin ketone		0.019 U	Yes
Endrin aldehyde		0.019 U	Yes
Alpha chlordane		0.0022 J	Yes
Gamma chlordane		0.0096 U	Yes
Toxaphene	18.9	0.96 U	Yes
Polychlorinated biphenyls			
Arochlor-1016	3.15	0.19 U	Yes
Arochlor-1221	3.15	0.38 U	Yes
Arochlor-1232	3.15	0.19 U	Yes
Arochlor-1242	3.15	0.19 U	Yes
Arochlor-1248	3.15	0.19 U	Yes
Arochlor-1254	3.15	0.19 U	Yes
Arochlor-1260	3.15	0.19 U	Yes
Polynuclear Aromatic Hydrocarbons			
Benzo(a)anthracene	0.063	0.0081 J	Yes
Chrysene	1.26	0.033 J	Yes
Benzo(b)fluoranthene	0.126	0.014 J	Yes
Benzo(a)pyrene	1.26	0.15 U	Yes
Dibenzo(a,h)anthracene	0.00441	0.0094 J	No
3-Methylcholanthrene	0.0252	0.05 U	Yes
7,12-Dimethylbenzanthracene	0.0063	0.05 U	Yes
Indeno(1,2,3-cd)pyrene	1.26	0.034 U	Yes

Key:

J= The concentration is approximate
U= Compound was analyzed for but was not detected at or above the associated numerical value
B= Analyte was detected in the method blank
P= Greater than 25% difference in detected concentrations between two gas chromatograph columns

[1] Blank spaces indicate that no Maximum Allowable Concentration (MAC) has been established for that analyte.