Monsanto

FROM (NAME & LOCATION) Paul B. Hodges - ElSF General Offices

DATE April 28, 1972 CC

SUBJECT PCB's - ALLOWABLE DISCHARGE FROM PRODUCING/USING PLANTS

REFERENCE

TO :

J. R. Savage

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F. J. Holzapfel

W. R. Richard

E. S. Tucker

D. B. Hosmer

R. J. Kozacka

W. B. Papageorge

P. S. Park

K. W. Easley - Washington D.C.

G. L. Bratsch - WGK

A. E. Leisy/R. M. McCutchan

R. M. Blowers - WGK

P. E. Heisler/C. F. Buckley

G. A. Hippe - WGK

W. C. Engman/E. E. Stewart - WGK

DSW 310835

PCB's - ALLOWABLE DISCHARGE FROM PRODUCING/USING PLANTS

MINUTES OF MEETING - 4/13/72 IN EPA OFFICES, WASHINGTON, D. C.

A. Present

For Monsanto

K. Warren Easley - Washington Office
W. B. Papageorge - G.O.
A. E. Leisy - WGK
R. M. Blowers - WGK
W. C. Engman - WGK
E. Scott Tucker - MIC - Research S. 2nd.
P. B. Hodges - G.O.

For EPA

John L. Buckley - Deputy Director - Ofc. of Research
Alphonse F. Forziati-Chief, Measurements & Instrumentation Branch
Paul E. Des Rosiers-Staff Engineer, Industrial Pollution Control
Elizabeth Anderson-Staff Chemist - Ofc. of Tech. Analysis
Gordon Everett - Director - Ofc. of Tech. Analysis
Marilee Miller - No title
Glenn Pratt - Chicago Region Enforcement
Kathleen Schirmer- Staff Ass't. (New Toxic Div. not established)

B. Background of Meeting

The Task Force for PCB's, with representatives from various Federal agencies including FDA, EPA, USDA and coordinated through the Office of Science and Technology, will soon release its voluminous report on the PCB's problem. Monsanto has cooperated with the involved agencies and had some insight into what would appear in the report. We agreed generally with nearly all of the report recommendations, but could not concur with two recommendations (as we understood them):

(1) Water quality standard for PCB's to be set at 0.01 ppb for rivers and lakes.

(2) Zero detectable level in discharges from plants producing or using PCB's. An inconsistency existed in that we understood that the 0.01 ppb water quality standard was derived from a calculation involving 10-year low flows in the Mississippi River and a 3 lbs/day discharge from our WGK Plant (their understanding of what we were discharging to the river - the 3 lbs/day is equivalent to about 0.01 ppb in the river with no allowance for background).

A meeting was requested to discuss these recommendations with Dr. Buckley, with intent to prepare a formal presentation for them. However, due to time pressures in EPA, the meeting was set up on 1 day's notice. Our information and comments had, therefore, to be presented informally, with little time for preparation. The Monsanto group met to plan for the meeting on Wednesday afternoon, the various assignments/presentations were prepared that night and were reviewed on the plane to Washington, followed by another quick review in Warren Easley's office.

Our objectives for the meeting were:

(1) To induce EPA to recommend a more realistic water quality standard than the 0.01 ppb - say, 0.1 ppb. The higher level would be more in the range of reasonable precision by the average laboratory and would recognize a small PCB background.

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(2) To induce EPA to drop the "zero discharge" concept and to allow a reasonable discharge (5 lbs/day) in terms of lbs per day - not concentration. 5 lbs/day is consistent with requests of the electrical industry using PCB's.

(3) To induce EPA to allow a reasonable time to attain the discharge limit.

C. Minutes of Meeting

(1) Following "round-robin" introductions, W. Papageorge stated our appreciation of this first opportunity to discuss with them the problems involved with plant discharges. He stated our desired format, which was to have various plant people discuss what we had done and were doing to control PCB discharges and to explain the problems involved. Buckley concurred.

(2) Art Leisy spoke briefly of the complex nature of the WGK Plant, the relationship to Sauget Village and the concern within manufacturing of the environmental impact of wastes from the manufacturing processes.

(3) Dick Blowers discussed physical growth of the plant, complexity of the sewer system, size and extent of our current program for in-plant waste reduction and control. He pointed out that PCB's were a major one of numerous concerns where we were actively planning recycling or otherwise reducing wastes. He did not discuss the type of waste treatment Sauget Village is contemplating. Some remarks from Glenn Pratt and others about secondary biological treatment were ignored.

(4) Bill Engman described the PCB containment and in-plant reduction program (full text is attached). At the close of his talk, he stated the present level of discharge as follows:

(a) From PCB manufacturing facilities - 2 to 4 lbs/day.

(b) From the Village waste treatment plant, 5-10 lbs/day.

(5) Dr. Buckley went through his rationale for the proposed limits:

(a) PCB in water is toxic to fish at very low levels - under 1 ppb for some species.

(b) They know from experience that PCB lewels magnify greatly from water to fish - he said 75000X. With that factor and a FDA allowable limit of 5 ppm, allowable PCB concentration in water would be:

$$\frac{5 \text{ ppm}}{75000} = 0.07 \text{ ppb (approx.)}$$

With using a safety factor (7), this brought the allowable water level to 0.01 ppb. Buckley stated his intent that the 0.01 ppb level not be imposed as a legal standard but be used as a working limit.

(c) As a check on the reasonableness of that level, he had calculated the effects of our discharge of 3#/day (their figure) on the Mississippi River at 10 year low flow of 50,000 cu ft/sec.

That also equals 0.01 ppb at the low flow (or about 1/3 of that at average flow of 175,000 cu ft/sec which would allow an additional safety factor).

(d) They (EPA) have no actual measurements of PCB levels in the Mississippi south of LaCrosse, Wis. and don't plan to do any water measurement work. Buckley appeared disappointed that we have no actual background level measurements in the Mississippi River. They will plan to do monitoring by fish concentration studies - if fish PCB concentrations are under 0.75 ppm, the ambient water is likely to be under 0.01 ppb.

(6) As to allowable discharge, Buckley said they were considering a policy of zero "knowing discharge" (a term new to us and meaning any discharge above the absolute background level). This would appear to allow continuation of our background discharge plus a minimum amount from production facilities. He said that, where we were presently down to 2-4 lbs/day from our production unit, we could probably do more work and get to 1-2 lbs/day and that (plus our background) would be our "zero knowing discharge". (Note, in a later telephone conversation with Bill Papageorge, Buckley confirmed the above and said he planned to circulate a private memo within EPA explaining what "knowing" and "non-knowing" discharges meant and that our present discharge from production facilities of 2-4 lbs/day appeared reasonable).

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(7) Scott Tucker questioned ability to measure at the 0.01 ppb level. Dr. Forziati stated that their Athens, Ga. and Cincinnati, Ohio Analytical Labs are capable of easily detecting 0.01 ppb of PCB's in environmental samples, but they would not feel confident enough in their numbers to attempt enforcement at this low of a level. He went on to state that, "they would be confident enough at the 0.1 ppb level to go to court." When presented with the results of our internal round robin study (PCB method accuracy and precision) at a level approximately 50 thousand times higher than the proposed 0.01 ppb number, he again stated their labs were achieving better results. He also indicated that they were making quantitative PCB measurements via mass spectography at the nanogram level.

(Notes from Scott Tucker - "Based upon our lab experience, I would say that Dr. Forziati is a little overly optimistic with regard to the accuracy and precision of current PCB methodology. Dr. Forziati extended an invitation to Monsanto to visit their facilities and it is currently planned to contact him and arrange a visit. The objective of the visit will be to get a better feeling for their PCB analytical capabilities and to establish direct contacts with their analytical people").

(8) Paul Hodges raised the question of mixing zones. Dr. Buckley had stated that full flow in the river was used in calculating dilutions in the river because there was no acute toxicity problem with fish around the outfall.

Hodges pointed out that, when the Federal report is released, the states will move to enact PCB water quality standards and discharge regulations. Some of them, specifically Illinois, use limited mixing zones to determine compliance with water quality standards (in Illinois the sample is taken 600 feet downstream from the outfall). Hodges requested that the Federal report spell out the principle of using full dilution in the river. Buckley agreed.

(9) As an aside after the meeting, Glenn Pratt (Surveillance, Chicago Regional EPA office) said that they were concerned about the levels of mercury being reported to Illinois since they were over 0.25#/day. He said he had written a letter saying they wanted to come to see us about mercury and about PCB's but had not sent the letter when the subject meeting was arranged. He would be contacting us in 2-3 weeks. Art Leisy had, earlier in the meeting, invited Pratt to inspect our PCB production unit and control facilities.

D. Summary and Conclusions

(1) We feel that Dr. Buckley is taking a reasonably realistic approach to control with his "knowing" and "non-knowing" discharge concept. However, we are dubious that:

(a) It will hold up as the document is reviewed within higher levels and other branches of EPA.

(b) The Illinois Pollution Control Board will be as understanding as is Buckley when they move to formulate water quality standards and discharge

regulations for PCB's. We would expect the Board to move shortly after publication of the Federal Task Force document and announcement of standards and regulations by the Federal EPA.

(2) The 0.01 ppb water quality limitation is likely to hold up even though measurements at this level are not accurate and the Federal people have very limited data on PCB concentrations in rivers and lakes. It is also likely to become or to be used as a legal standard.

(3) Apparently, Buckley moved quickly in his calculations establishing the 0.01 ppb limitation from the FDA level of 5 ppm in edible portions of fish to magnification of 75000X from water to lipid portions of fish (see C-5 above). This provides an additional safety factor to the 7X in his calculations. This was not really challenged at the meeting.

(4) We don't know whether or not 0.01 ppb is exceeded either above or below our outfall in the Mississippi River. We have analyzed two large adult Mississippi River carp for PCB's. They contained apparent PCB concentrations of 1.4 ppm and 5.1 calculated on the whole fish basis. Using Dr. Buckley's concentration factor of 75,000 indicates that the river could contain 0.02 - 0.07 ppb at the point where these fish were collected (this assumes that the 75,000 factor could apply to whole fish - we are uncertain about this). Further fish/water monitoring is needed.

Paul B. Hodges

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