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CITY OF SACRAMENTO

DEPARTMENT OF PUBLIC WORKS

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J.F. VAROZZA
Director
M.H. JOHNSON
Asst. Director

March 13, 1984

City Council
Sacramento, California

Honorable Members in Session:

SUBJECT: Rice Herbicides

SUMMARY:

The rice herbicide treatment season is approaching and meetings have been scheduled by various State agencies to address the problem. This report discusses some of these meetings and State proposals.

BACKGROUND:

On March 9, 1984 City staff received a copy of a draft recommended action plan for the 1984 season for the rice herbicides Ordram and Bolero. This plan was prepared by the staff of the California Department of Food and Agriculture (CDFA) and is being considered by the head of the department at this time. The City has been asked to comment on this plan and two meetings have been scheduled by the CDFA on Friday, March 16, 1984 to discuss the rice herbicides. A copy of the draft plan is attached to this report for your review. It should be noted that when the words molinate and thiobencarb are used they refer to molinate as the active ingredient in Ordram and thiobencarb as the active ingredient in Bolero. Bolero and Ordram are the trade names for these two products. Outlined below are our comments on the various paragraphs of the draft report.

1) A restrictive use permit places more responsibility on the user of Ordram as they must notify the Agricultural Commissioner 24 hours before placement on a field. It also generally seems to give the Agricultural Commissioner and CDFA more power over the use of the material. We agree with the increase of the Ordram holding time from four to eight days. Test data during 1983 show that Ordram does break down over a period of time and that a longer holding period would be desirable.

2) A restrictive use permit for Bolero is desirable if they are going to permit its use at all. There is no reason for increasing the holding time on the fields for Bolero as the test during the 1983 growing season did not show that Bolero breaks down as rapidly as Ordram.

3) If Bolero is to be used in the fields, any decrease is desirable as far as City staff is concerned.

4-6) These items are all desirable but will probably have no effect on the 1984 rice herbicide season.

7) The Department of Health Services' maximum contaminant levels (MCL) for Ordram and Bolero have not been released as of this date. We understand that a draft report has a 10 part per billion (PPB) MCL for Bolero, a 20 PPB MCL for Ordram and 1 PPB level of Bolero at the Sacramento River City water intake. The 1 PPB is for taste purposes only.

8) The City's testing procedures indicate Bolero does give the water a detectable off-taste after undergoing our standard water purification treatment, therefore we agree with this assumption.

9) The City agrees that potassium permanganate should only be a short-term solution to the taste problems associated with rice herbicides and in fact the City is not sure that potassium permanganate treatment will work on a plant scale at some levels of Bolero.

10) Last year the City accepted $30,000 from Chevron Chemical Company to develop and provide treatment for water containing Bolero to hopefully mitigate the off-taste complaints. Although the City has not made any requests for funds for water treatment during the 1984 season, some State agencies and Chevron have evidently been discussing possible funding. Also attached is a letter from Michael Kahl, whose firm evidently represents Chevron, to Assemblyman Lloyd Connelly. At the bottom of Page 3 in answering #4 for Mr. Connelly, Chevron stated that they did not intend to pay for City costs of treating its drinking water in 1984 and after going through some arguments on Pages 4 and 5 concluded that they would reconsider their position if the City does certain things, one of which is to give them figures accounting for the $30,000 payment to the City in 1983. Mr. Kahl further states on Page 3 that despite written requests the City has choosen not to provide any information on the expenditure of these monies. The City has never received a request for any such information and has no idea what they are talking about. It seems that Chevron and its advocate chooses to talk to other people about the City's business rather than to representatives of the City. Their letter further states that all of their scientific study has indicated that they are not causing the taste problems and that the City's test methods which led us to the conclusion that Bolero is the cause of the taste problem have been rejected, and that the City's test does not support its conclusion. One wonders why Chevron contributed $30,000 to the City in 1983 if they were not causing the taste problem.

11-15) These paragraphs again are desirable goals and should guide the work in the future but will have no real bearing on the 1984 rice herbicide season.

In addition to the meetings scheduled by CDFA, the State Water Resources Control Board will meet on March 15, 1984 and one of the items they will discuss at this meeting is rice herbicides. The Central Regional Water Quality Control Board has also scheduled a public hearing on Herbicide Discharges from Rice Fields in the Sacramento Valley on

the afternoon of March 22, 1984 and a Consideration of Action on Rice Herbicide Discharges from the Rice Fields is scheduled for the morning of March 23, 1984. The Public Works Department will represent the City of Sacramento at these meetings.

FINANCIAL:

Unknown.

RECOMMENDATION:

It is recommended that City staff be directed to attend the various meetings on rice herbicides and reiterate the City's opposition to the use of Bolero and Ordram and its subsequent off-site migration, and that the City staff be directed not to request a further contribution from the Chevron Chemical Company for the 1984 season.

Respectfully submitted,

J. F. VAROZZA
Director of Public Works

Recommendation Approved:

Walter J. Slipe, City Manager

March 13, 1984
Various Districts

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March 8, 1984

Recommended Action Plan For Addressing Issues Concerning
Off-Site Movement Of Molinate And Thiobencarb
By The Department Of Food And Agriculture

The goal of the Department of Food and Agriculture, as lead agency in regulating pesticides, is to decrease levels of molinate and thiobencarb in state waters to below those which would constitute a hazard to humans or the aquatic environment or which would present an unmitigatable taste problem in drinking water.

To that end it is recommended that:

1) Ordram be made a restricted use permit material. Use permits should require growers hold treated water on their fields for eight days following an application.

2) Bolero be made a restricted use permit material.

3) the Department accept the limit proposed by Chevron Chemical Company on the amount of thiobencarb to be sold in 1984, reducing sales by 10% relative to 1983.

4) the Department and the County Agricultural Commissioners, in cooperation with the University of California and the rice industry, promote and actively participate in an education program aimed at reducing off-site movement of rice herbicides. The program should alert growers, pest control advisors, and pest control applicators to problems associated with off-site movement of molinate and thiobencarb and to the consequences if the movement continues unabated. Techniques for minimizing off-site movement (eg. minimizing flow rates) should be emphasized.

The Department should actively encourage the Cooperative Extension Service to continue to take every opportunity to participate in this program.

5) the Department request the University of California, Rice Research Board, State Water Resources Control Board, and the Department of Water Resources cooperate in researching water management in rice fields with the goal of containing off-site movement of rice herbicides.

6) the Department request the rice industry, in cooperation with the Department of Water Resources, report on the feasibility of area-wide projects that recycle rice tailwater with the goal of eliminating off-site movement of rice pesticides.

7) the Department adopt the MCL's (Maximum Contaminant Levels) for molinate and thiobencarb in drinking water set by the Department of Health Services as the basis for regulatory decisions regarding Ordram and Bolero.

8) the Department assume that when Sacramento River water containing thiobencarb undergoes standard water purification procedures used by the City of Sacramento, the resulting water may have a detectable off-taste.

9) potassium permanganate treatments used to mitigate taste problems that may be caused by rice herbicides should be only a short term solution and that other measures be developed to resolve such off-tastes.

10) the Department work with the various responsible parties to develop a mechanism for providing funds if it should become necessary to treat water containing thiobencarb with potassium permanganate to temporarily mitigate off-taste complaints.

11) the Department of Fish and Game, in collaboration with the Department of Food and Agriculture, establish guidelines for recommended maximum levels of molinate and thiobencarb not to be exceeded in the agricultural drains and the Sacramento River. Standard locations and procedures for monitoring levels should also be set. These guidelines will be below levels thought to constitute a hazard to aquatic systems and will be the basis for regulatory activity regarding Ordram and Bolero.

12) the Department work with the various responsible parties to define standard analytical protocols and develop a program for funding necessary to monitor molinate and thiobencarb in state waterways.

13) the Department evaluate the costs and benefits associated with weed management options available to rice growers. The Department should use this evaluation in reviewing future regulatory options.

14) the Rice Research Board and the University of California research the bionomics of smallflower umbrellaplant and sprangletop and the efficacy of different strategies to control these weeds. Resulting information may be used to justify the use of Bolero under the permit process.

15) the Rice Research Board and Chevron and Stauffer Chemical Companies determine whether lower maximum application rates of Ordram and Bolero are plausible.

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Assemblyman Lloyd Connelly
State Capitol
Sacramento, CA 95814

Dear Assemblyman Connelly:

This letter is in followup to our conversation of February 22 regarding your concerns with the registration of Bolero for the 1984 rice growing season. Specifically, you requested a response to four basic issues: release of toxicology data, release of Tragon taste test reports, an explanation of why Chevron did not follow the protocol provided by the Department of Health Services and whether or not Chevron would reconsider its position of not paying for potassium permanganate treatment costs. I have discussed each of these issues with the management of Chevron Chemical and have outlined the Company's response below. I think that you will find the response to be constructive and representing a sincere and good faith effort to resolve these issues amicably. We are making every effort to address substantively the concerns you have raised.

ISSUE #1 - Will Chevron release its toxicology test data on Bolero to Assemblyman Connelly and his people?

RESPONSE: Chevron addressed this issue last year by making ALL test results and data available to DOHS for review by departmental toxicologists and other experts. It was concluded by these independent experts that there were no irregularities in regard to the integrity of the data, nor were there any serious health concerns raised by the results to date.

It is continued Chevron policy that raw toxicology test data will not be released to parties who do not have the formal responsibility, authority and expertise to evaluate such information on behalf of the public. The Company has always provided such information to the appropriate government regulators and scientists. Further, Chevron does not object to summaries of test data being made available to interested parties. Chevron's intent is not to prevent appropriate, responsible parties from looking at the data but to prevent its release to third parties, outside its control, who might use it irresponsibly or for competitive advantage.

Chevron would be pleased to invite Assemblyman Connelly and a representative of the city, in the company of an expert with approved credentials (as determined by Chevron), to

review the toxicology test data on Bolero.

ISSUE #2 - Will Chevron make available the results of the taste tests conducted by Tragon?

RESPONSE: Yes. Copies of the Tragon study reports are immediately available and enclosed for your review.

ISSUE #3 - Why did Chevron and its experts (Tragon) refuse to conduct taste tests according to the protocols provided by DOHS?

RESPONSE: The simple answer to this question is that no protocol was formally provided by the department. However, the more one looks into this issue he finds there are no simple answers. Prior to proceeding with the Tragon taste studies, Chevron consulted with appropriate agency professionals in CDFA, DOHS, City of Sacramento and the Regional Water Quality Board. There was a general consensus that the tests should reflect real-life conditions as closely as possible: that is, the taste samples should be comprised of river water with the addition of known rice herbicides (Bolero and Ordram) and undergo chlorination treatment as normally conducted by the city. However, this protocol was not used because of legal, technical and cost concerns:

LEGAL: Counsel was very concerned about the liability exposure which could result from adding other companies' pesticide products to taste samples and testing them on human subjects. Chevron was not prepared to assume liability for someone else's products. It was suggested by Chevron that one of the state agencies conduct the tests but none of the public agencies seemed inclined to incurr such liability either and no one seemed willing to take responsibility for the project.

TECHNICAL: The chemists and technical people responsible for preparing the samples and conducting the tests concluded that the above described protocol would provide useless data because all the samples would be different: that is, a sample could not be replicated. The technical reasons for this inability to replicate are complex. The river water is a living biological system and is under constant change. As a result, there is a variability in the amount of organics and other compounds, including pesticides, which are oxidized by the chlorine in the chlorination process. These changing variables

mean the samples will have different constituents and there would be no common basis for comparing the taste/odor of the samples.

COST: To overcome some of the above-described problems and to provide definitive answers on the taste question would require assembling a panel which would be trained to distinguish the many components identified in the water during the actual season. This was considered to be a very expensive undertaking and probably impossible to accomplish in the available time frame.

Tragon experts, therefore, recommended that the best alternative would be to prepare samples comprised of city tap water, adding the chlorinated by-product of Bolero, thiobencarb sulfoxide. Since the city's data indicated that the thiobencarb sulfoxide was the probable cause of the taste problem, this revised protocol would be appropriate for testing this thesis and, if correct, the levels at which taste threshold levels could be detected.

Test results showed that no consistent taste differences were evident at 0.5-16.0 ppb. The other taste test conducted by Tragon on Bolero added to river water which was then chlorinated, indicated that detection of a taste difference was of borderline significance.

This information has been freely shared with state agencies as part of the open consultative process Chevron has conducted in evaluating the taste issue. However, Chevron has been provided with no protocol from any of the agencies, most particularly DOHS. Further, our records indicate no written response to the test protocol which was finally developed and used in the taste evaluation program.

This issue should probably be set aside temporarily for discussion by all concerned parties since your immediate concern is mitigation of a taste problem which is at least perceived by many to be related to Bolero and, possibly, other rice herbicides. Chevron will be happy to make its technical people available for discussing ways for more complete assessment of this issue.

#4 - Chevron has stated that it does not intend to pay for the city's cost of treating its drinking water with potassium permanganate in 1984. Will it reconsider this position?

RESPONSE: Chevron provided the city $30,000 in 1983 to cover treatment costs. However, despite written requests, the city has chosen not to provide any information on the

expenditure of these monies. Only recently did the company become aware of an August 2, 1983 report from Public Works Director John Varozza, which states that the total cost of the potassium permanganate treatment was $6,793. This would suggest that Chevron has already given the city enough money to last it for several years of potassium permanganate treatment. Another reason for the company's reluctance to give the city another grant is that the taste tests conducted by its experts indicate that the chlorination by-product of Bolero, thiobencarb sulfoxide, did not create a detectable taste at levels of 0.05 to 16 ppb. Further, the city's test methods which led them to the conclusion that Bolero is the cause of the taste problem have been rejected by the Tragon experts as scientifically invalid. The city's test does not support its conclusion.

Despite these concerns, Chevron will reconsider its position of not contributing to the costs of the city's potassium permanganate treatment under certain conditions. It will consider paying costs if:

* There is a full accounting of the $30,000 contribution to the city in 1983;

* Treatment costs are at a reasonable level and cover no more than those attributable to potassium permanganate treatment in response to rice field effluents;

* The thiobencarb action level which triggers potassium permanganate treatment is demonstrated to be scientifically reasonable;

* The city document and provide continuing access to testing, monitoring results and treatment cost information.

I hope that you find the above comments to be responsive to your concerns. Please advise me as to how you wish to proceed in further resolving these difficult issues so that I can be helpful. I look forward to your response.

Sincerely,

Michael Kahl

Michael Kahl
3/1/84