TO: Director, Enforcement Division  
Region VII

FROM: Deputy Director, NEIC

SUBJECT: Preliminary Inspection of the AIDEX Facility, Council Bluffs, Iowa

DATE: June 12, 1980

Per your request, I joined Doug Frame of the Region VII S&A Staff in a preliminary inspection of the AIDEX facility which is located approximately 7 miles south of Council Bluffs, Iowa. Inspection was conducted during the afternoon of June 6. This memo will confirm our telephone conversation of late that afternoon.

AIDEX apparently also does business as Lorenz Chemical Company. The managing officials of the Company are Kermit Lorenz, Arthur Lorenz, II, and Arthur Lorenz, III. Exact titles of these individuals were not determined, however, Kermit seemed to be the prime spokesman for the Company. There was some initial delay on the part of the officials, however; when they did make themselves available to us they were cooperative and informative.

The Company has filed bankruptcy papers. Production and formulation of pesticides has essentially halted, however, limited amounts of malathion 5-E are being formulated. According to Mr. Lorenz, the rate of formulation is averaging 1 300 gallon batch p/wk. As indicated in the files which Mr. Frame provided for me to peruse, a fire destroyed a substantial portion of the facility in November 1976. That structure has not been replaced. Remnants of the process equipment remain on the concrete floor of the destroyed portion of the plant. According to Mr. Lorenz, Aatrex (atrazine) was produced in the areas that was destroyed by the fire. Mr. Lorenz was emphatic in his insistance that all product in the destroyed area had been cleaned up. Although this area appeared clean a sediment in a nearby depression was sampled by Mr. Keffer during his site visit of March 13, 1980 and was found to contain 190,000 μ/kg of atrazine. Another sediment sample collected from a nearby drainage ditch contained 32,000 μ/kg. Other priority pollutants in lesser concentrations were also found in these samples.

There are 2 areas containing small numbers of stacked drums in the immediate vicinity of the destroyed portion of the plant. Nearly all of these drums were empty. The underground tank discussed in Mr. Keffer's report of May 21, 1980 is also in this area.

I believe the area of most immediate concern to be a drum storage area located southwest of the main structure. I estimate that there are 600-800 drums in this area, many of which are in an advanced state of deterioration. I estimate that
no more than 100 of the drums contain solid material. Mr. Lorenz identified this material as being Mocap and further described the material as dust collected from the Mocap production line. Some of these drums have deteriorated to the point of collapse under their own weight. In many cases there is nothing to prevent leaching of the material by rainfall. Other drums in this area are standing on end and contain liquid material which I believe to be collective rainfall mixed with solids or other liquids contained in the barrels. This area drains to a ditch which runs approximately 100 feet northwest and there joins a ditch which drains the remainder of the plant area. It is at this point that a dike was constructed to trap run-off from fire fighting activities during the 1976 fire. Contrary to the report provided us by nearby residents this dike was breached at a point in time shortly following the 1976 fire. Mr. Lorenz claims that a Region VII representative gave him permission to breach the dike and thus release the impounded run-off. The exact date of this event is somewhat hazy but occurred sometime in late 1976. There are a number of large tanks, abandoned tank cars and tank trailers strewn about the property. My impression is that most of these are empty. The underground tank, however, is believed to contain some waste products from the pesticide manufacturing processes.

Two sediment samples (No.'s 2108 & 2110) were collected and shipped to NEIC under chain-of-custody procedures for analysis. I expect those analysis to be completed during the first week of July. The samples were obtained from each of the 2 main drainage ditches and should give a clear indication of the nature of the drainage from each of these areas. These findings together with the earlier sampling and the groundwater samples, for which analysis have not yet been received should indicate whether the basis for a case exists or if additional field investigation is required.

I am enclosing excerpts from the “Farm Chemical's Handbook, 1980,” regarding the pesticide Mocap. You will note that it is an extremely toxic material of the same chemical family as the nerve gases and is reasonably persistent. I believe that considering the toxicity of the chemical, the readily accessibility to leaching in the present storage situation, the proximity of the source to the Missouri River and the inherent danger to groundwater resources that it is imperative to achieve a cleanup of the drum storage area at the earliest possible time. I do not believe that the basis for a 311 case exists, but you should be able to establish a solid 7003 case. The Lorenz brothers indicate that approximately 1500 empty drums have been removed from this site and shipped to a waste disposal facility in Greeley, CO. They claim to have initiated arrangements for removal of the drums containing pesticide manufacturing wastes to a disposal facility in Wichita, Kansas. Both Mr. Frame and I sensed at least some willingness on the part of the Lorenz's to pursue this aspect of the site cleanup voluntarily. I, therefore, suggest that a strong communication from a Regional Administrator might be effective in achieving this badly needed cleanup.

As I indicated to you by telephone on June 11, I will be away from the office until June 30. Upon my return and completion of the analytical work, I will be in touch with you regarding further case preparation needs at this site.
Mitran * (Cont.)

TOXICITY: Acute oral toxicity of CPCBS, LD₅₀ (rat), 2000 mg/kg. Acute oral toxicity of BCPE, LD₅₀ (rat), 926-1391 mg/kg.

APPLICATIONS: Mitran * is effective in control of European red mite, citrus red mite, red spider mite, and two-spotted spider mite on fruit trees, cotton, and vegetables. CPCBS has an ovicidal and larvicidal activity with long-lasting residual effectiveness, and, in addition, BCPE gives a complete kill of adult stages with eradicant contact action.

FORMULATION: 50% W.P. (CPCBS 25%, BCPE 25%).

BP: Nippon Soda Co., Ltd. (Japan)

2M-4Kh-M — see MCPB.

MLD — see LD₅₀.

MLT * — see Malathion ♦.

MNFA (Product discontinued by Nippon Soda Co., Ltd.)
CHEMICAL NAME: N-Methyl-N-(1-naphthylmonofluoroacetamide.
OTHER NAMES: FAM ♦, Nissol ♦.
ACTION: Acaricide-insecticide; has little effect upon predators and other useful insects.
CHEMICAL PROPERTIES: MNFA is an organofluorine compound. Colorless needle-like crystals, melting point 88-89°C.
TOXICITY: Acute oral LD₅₀ (rat), 115 mg/kg.

MNF 0 166 — see Merpelan AZ ♦.

MO ♦
CHEMICAL NAME: 2,4,6-Trichlorophenyl-4'-nitrophenyl ether.
COMMON NAME: CNP.
ACTION: Selective herbicide.
TOXICITY: Acute oral LD₅₀ (mouse) (tech.), 11,800 mg/kg. Low toxicity to fish.
APPLICATION: For control of weeds in rice paddies.
FORMULATIONS: Emulsifiable concentrate (20%), granule (9%).

BP: Mitsui Toatsu Chemicals Inc. (Japan)

Shing Nung Chemical Co., Ltd. (Taiwan)

M40 * — see MCPA.

Mobam *
CHEMICAL NAME: 4-Benzothienyl N-methyl-carbamate.
OTHER NAME: MCA-600 ♦.
ACTION: Experimental contact insecticide. Not actively developed by Mobil Chemical Co.
APPLICATIONS: Effective against cockroaches, flies, mosquitoes, aphids, grasshoppers, and a variety of crop insects.

Moblawn *
CHEMICAL NAME: O-2,4-Dichlorophenyl O,O-diethyl phosphorothioate.
COMMON NAMES: dichlofenthion (ISO), dichlofenothion (BSI).
OTHER NAMES: dichlofentron, Tri-VC13 ♦ (Pennwalt Holland), VC-13 Nemacide ♦.
ACTION: Nematicide, insecticide.
CHEMICAL PROPERTIES: A non-volatile, residual organic phosphate, insoluble in water but readily soluble in most organic solvents.
TOXICITY: Acute oral LD₅₀, 270 mg/kg.
SIGNAL WORD: WARNING.
APPLICATIONS: Controls non-cyst forming nematodes on ornamentals and turf without damage to plants. Established shrubs such as boxwood, Japanese holly, etc., can be treated to control nematodes without phytotoxicity. Insecticide uses include control of lawn chinch bugs on St. Augustine grass. Used for nematode control on African violets.
FORMULATION: Emulsifiable concentrate 75% (7½ pounds/gallon).

Dichlofenthion

BP: Mobil Chemical Co., Phosphorus Div.

Mocap *
CHEMICAL NAME: O-Ethyl S,S-dipropyl phosphorodithioate.
COMMON NAME: ethoprop (U.S.A.).
OTHER NAMES: prophos (discontinued), Jolt (discontinued by Velsico Chemical Corp.).
ACTION: Nematicide-soil insecticide.
CHEMICAL PROPERTIES: Slightly soluble in water; readily soluble in most organic solvents.
TOXICITY: Acute oral LD₅₀, 61.5 mg/kg.
SIGNAL WORDS: 10G, WARNING; 6EC, DANGER.
ANTIDOTES: Administer atropine, 2mg, intramuscularly or intravenously. Repeat dose every 3 to 8 minutes until signs of atropinizntion occur. Give pralidoxime chloride (protopam or 2-PAM), 2.5 grams in 100 cc of sterile water, intravenously, slowly in 15 to 30 minutes or by deep intramuscular injection of 1 gram in 3 cc of distilled water. Repeat every half hour if respiration weakens or muscle fasciculation or convulsion recur.
APPLICATIONS: For control of plant parasitic nematodes that attack plant roots and certain soil-inhabiting insects. Mocap ♦ is not a fumigant-type nematicide. Action is by contact only. Chemical must be thoroughly mixed with soil or carried by water into soil to be effective. It has residual
activity, good movement in the soil, and can be used at planting time with no waiting period or on established plants without phytotoxicity problems.

*Mocap* * is recommended for nematode and wireworm control on flue-cured tobacco; nematode and flea beetle larvae control on sweet potato; nematode control on bananas and plantains, cabbage, corn, pineapple, sugarcane, soybeans, peanuts, cucumber, snap and lima beans, and white potato. It is recommended for corn rootworm, cutworm, and wireworm control on corn, flea beetle control on sweet potato, and corn rootworm on peanuts at pegging. It is also recommended for nematode control on Bermuda, Zoysia, St. Augustine, centipede, and Bahia grasses in commercial turf.

**FORMULATIONS:** 6EC, 10G, and *Mocap* * Plus (10% *Mocap*, 5% *Di-Syston* * granular).

\[ C_6H_5O \quad C_5H_S \quad P = O \quad C_6H_S \]

**Ethoprop**

BP: Mobil Chemical Co., Phosphorus Div.

'Dodoun *

**CHEMICAL NAME:** Methyl 5-(2,4-dichlorophenoxy)-2-nitrobenzoate.

**COMMON NAME:** bifenox (ANSI, WSSA).

**OTHER NAME:** MC-4379.

**ACTION:** Herbicide.

**CHEMICAL PROPERTIES:** Non-volatile crystalline solid, insoluble in water and moderately soluble in organic solvents. It is relatively stable in ultraviolet light.

**TOXICITY:** Acute oral LD50 (rat), over 6400 mg/kg.

**SIGNAL WORDS:** CAUTION; 2EC, DANGER; 4 Flowable, DANGER.

**APPLICATIONS:** Particularly effective for broadleaf weed control. Registered for preplant incorporated and preemergence treatments for weed control on soybeans, double crop soybeans, grain sorghum, preemergence and postemergence treatment for weed control on direct-seeded rice and pine nursery seed beds.

**FORMULATIONS:** 80% wettable powder, 2 pounds per gallon emulsifiable concentrate, 4 pounds per gallon flowable.

**COMBINATIONS:** *Modown* * tank-mix with alachlor or Ramrod; overlay with trifluralin, paraquat, or Roundup *.

**Monamex**

BP: Mobil Chemical Co., Phosphorus Div.

**Molluscicide**

A compound used to control slugs and snails (mollusks) which are crop and garden pests. Snails are also intermediate hosts of parasitic diseases of medical importance to man. These pests belong to the mollusk group *Gastropoda*; hence the name *gastropodicid* is sometimes applied to molluscicides when used especially against slugs and snails. See *Bayluscide* *, PCP.*

**Molting Hormone**

A hormone (ecdysone) produced by insects regulates the growth process. Because the insect cuticle ("skin") becomes rigid soon after formation, an insect must molt (shed) its cuticle periodically during growth as to permit a new one to form. This process known as ecdysis involves the molting hormone.

Research is underway to develop compounds which will interfere with cuticle formation, prevent the process of ecdysis, and thus preclude the development of the mature adult insect.

**Moly Co Thi**

**COMPOSITION:** Thiram (tetramethyl thiuram disulfide) 30.0%, sodium molybdate 20.0%, cobalt sulfate 4.2%, ferrous sulfate 0.8%.

**ACTION:** Fungicide seed treatment plus micronutrients.

**CHEMICAL PROPERTIES AND TOXICITY:** Same as for thiram.

**SIGNAL WORD:** CAUTION.

**HANDLING AND STORAGE CAUTIONS:** Avoid contact with skin, eyes, and clothing. Wash thoroughly after handling. In case of contact, flush skin or eyes with plenty of water; for eyes, get medical attention.

**APPLICATIONS:** As seed protectant, increases stands and yields by reducing losses from seed decay, damping off and seedling blights caused by many seed-borne and soil-borne organisms.

**FORMULATION:** Dry powder for direct application to seed in the planter box.

**F:** North American Plant Breeders, RP Inoculant Labs.

**Monalide** — see Potablan *.

**Monamex** — see Amex *.

**MonDak** *

**CHEMICAL COMPOSITION:** A mixture of molybdenum and nitrogen-fixing bacteria in one easy-to-use container.

**ACTION:** Molybdenum and soybean seed treatment.

**SIGNAL WORD:** CAUTION.

**APPLICATION:** Planter box treatment for soybeans.

**FORMULATION:** Liquid.

BP: Kalo Laboratories, Inc.

**Molinate** — see Ordram *.

**Molynoctin** *

**CHEMICAL COMPOSITION:** A mixture of molybdenum and nitrogen-fixing bacteria in one easy-to-use container.

**ACTION:** Molybdenum and soybean seed treatment.

**SIGNAL WORD:** CAUTION.

**APPLICATION:** Planter box treatment for soybeans.

**FORMULATION:** Liquid.

BP: Kalo Laboratories, Inc.