MONSANTO COMPANY
St. Louis, Missouri

March 23, 1970

CC: R.A. Damiani - Chicago
C. Docker - Biodize, Chicago
R.A. Garcia - Akron
W.R. Richard - WRICH
L.R. Stark - LSTAR

CALL REPORT NO. IF-3

JOHNSON MOTORS
Waukegan, Illinois

Present for Johnson Motors:

Claude Trebeck - Master Mech.
Bill Luplow - Chemist
John Nevill - Foreman
Machine Repair
Tom Banski - Division Metallurgist
Al Hanson - Environmental
Services Coord.

Present for Monsanto:

R.A. Damiani
C. Docker - Biodize
D.R. Pogue

Purpose:

Pollution - Pydraul reclamation systems study.

Results:

Enthusiastically supported our efforts. Illinois Department of Public Health maintains regular check of air and water quality. Air discharge from aluminum melt furnaces primary concern. Smoke contains oil, solvent and Pydraul residues. Biodize will recontact Johnson on air clean-up system.

Water effluent discharges have evident Pydraul content. Negligible treatment and inefficient reclamation now exists for effluent--except for plating operation. Complete data on flows and chemicals consumption and samples for analysis from key waste flow points were obtained. Johnson promised follow-up of analytical and study results.

Details:

Both air and water pollution are concerns to Johnson Motors. Smelting 300,000 lb aluminum monthly --50% scrap and 50% new pig. Scrap from diecasting contains estimated 10% by weight adhering Pydraul and die lube, which are primary source for dense, black smoke from the plant. State of Illinois complaints have stirred moderate activity by Johnson to solve problem. No solution yet, however considering higher temperature (1800°F instead of 1600°F) incineration of fluid contaminates during aluminum smelting. Studies by Aluminum-Magnesium, Incorporated on contaminated aluminum scrap show complete decomposition (no smoke) at 1800°F.

Above scrap contamination indicates 15,000 lb or 1500 gal ($4500) Pydraul lost monthly up the stack. Discussed possible wash and recovery of Pydraul. Contaminants would include Hi-Dri absorbent, aluminum fines, dirt, die lube among others. Detrex Chemical Co. markets heat treating and chlorinated solvent wash system to this market. Johnson will plan eventually to incinerate at 1800°F, probably with wash as recommended by U.S. Reduction who offers system that tumble washes and sizes scrap prior to smelting. Decker arranged for Biodize contact to pursue incineration opportunities here.

Several water outfalls from this location. All appear under control or not problem except diecasting area. Outfall from plating, anodizing and painting of diecast parts has been controlled by treatment designed by Betz Laboratories, Trevose, Pennsylvania. Initial $12,500 study and extensive analysis program in '68 resulted in system to reclaim and/or dispose of treated chromates, cyanides and metallic contaminates. Obtained copies of Betz study reports. Decker reports thru Biodize recent joint agreement with eastern firm Monsanto has also acquired capability to engineer similar plating-anodizing treatment systems. Our potential for these systems in metalworking-diecasting should be fully assessed assuming market exists for Pydraul reclamation systems.

Pydraul A 200 consumption in '69 was 95,000 gallons. This usage went to four outlets:

1. Air via aluminum scrap smelting
2. Dumpster -absorbed by Hi-Dri absorbent

3. Century Liquid Waste Company - Kenosha, Wisconsin bulk liquid wastes
4. Waste stream effluent

Quantity of Pydraul in air already cited. Samples obtained for analysis from bulk waste and waste stream. Expect absorbent and waste stream account for 80% Pydraul outlet (85,000 gal), air 10-15% and bulk waste 5-10%. They estimate three 4000 gallon tank trucks of bulk waste fluid are picked up weekly by Century.

Waste effluent from diecasting shown on diagram attached. Waste includes water and oil based dielubes, Pydraul, salv-a-sol solvent (for machine and floor cleaning) and small amounts of SAE 30 petroleum oil. Samples taken from oil interceptor and both waste outfalls, although only one outfall should contain above waste components. Johnson roughly estimated waste content at less than 5 % Pydraul, 50% salv-a-sol and remainder dielubes. Johnson will provide suppliers, usage and brand of all above chemicals and record of bulk waste tanker shipments for our study.

Further Action Required:

1. Letter of thanks to Trebeck
2. Inorganic Division check on boiler water scale chemicals for Hanson.
3. Further checks on Betz. Labs; Detrex; and W. R. Brill Company (per Betz report.)
4. Market potentials for plating-anodizing treatment.

D. R. Pogue

/lb

JO SON MOTORS -- PLANT #2 (Casting)

