APPENDIX J

TECHNICAL SUPPORT DOCUMENTATION: EXEMPTION CONTAINED IN OAC RULE 3745-21-09(O)(6)(A) FOR RESEARCH AND DEVELOPMENT SOURCES

For further information on this requested exemption, please contact William Johnson, RTP, USEPA, MD-15 at 919-541-5245.

OhioEPA
State of Ohio Environmental Protection Agency

STREET ADDRESS:
1800 WaterMark Drive
Columbus, OH 43215-1099

TELE: (614) 644-3020 FAX: (614) 644-2329

MAILING ADDRESS:
P.O. Box 1049
Columbus, OH 43216-1049

July 19, 1995

Mr. Tom Helms, MD-15
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Helms:

The Ohio EPA has a RACT regulation under Ohio Administrative Code (OAC) rule 3745-21-09(O) for the CTG category of solvent metal cleaning. An affected facility has requested an exemption from the specific requirement for non-atomized solvent spraying within a cold cleaner. The requested exemption would allow an atomized solvent spray within a cold cleaner at an R&D testing facility. The facility tests automotive lubricants to ensure performance in accordance with very strict ASTM guidelines. Certain difficult-to-clean parts of their test engines are cleaned with an atomized spray and then air-blown dry. The engines must be extremely clean for the ASTM lubricant tests.

The CTG on solvent metal cleaning RACT and the EPA model rule on VOC RACT specify that the solvent spray within a cold cleaner be a solid fluid stream and not an atomized spray. Neither of these documents appears to have an exemption or alternative for research and development facilities or testing facilities.

The affected facility has converted its pre-wash cleaner from a chlorinated solvent to a waterborne material. However, the facility contends that it must use a force spray of stoddard solvent to properly clean the interior surfaces of some test engine parts, such as breathertubes and holes within a crankshaft. The facility uses atomized manual sprayers within five booths. The facility has records on solvent usage for the booths based on totalizing flowmeters.

Enclosed is a copy of the materials presented by the facility for its exemption request. Also, enclosed is a copy of OAC rule 3745-21-09(O). Please review this matter and provide guidance. The Ohio EPA is planning to propose revisions to its VOC rules shortly. In the event a rule revision is appropriate in this matter, please provide a response within the next month. Should you need additional information, please call me at (614)644-3593.

Sincerely,

William Juris

William Juris
Engineering Section
Division of Air Pollution Control

cc: William MacDowell, USEPA-Region V
Jim Orlemann, Ohio EPA-DAPC

THE LUBRIZOL CORPORATION

Meeting with Ohio EPA
Division of Air Pollution Control
March 13, 1995

AGENDA

1. Introduction — Matt Kuryla
   - Purpose of Meeting
   - Background on the Rule
   - Outline what we will be presenting

2. Background on The Lubrizol Corporation - Wickliffe Facility — Ken Frato
   - Lz business description
   - Overview of Wickliffe facility
   - Role of Mechanical Engineering Laboratory
     - Sophisticated testing laboratory
     - LZ sells performance - ME is proof
     - SAE Oil Rating

3. Description of the Parts Cleaning Process — Al Klapka
   - Procedures dictate process
   - Walk through of the testing process
   - Information on parts cleaning

4. Pollution Prevention Activities — Al Klapka / Ken Frato
   - Chlorinated solvent degreaser replacement
   - Stoddard solvent changes
   - Penetone and Oakite solvent reductions

5. Need for a Rule Change — Matt Kuryla
   - Review information above
   - Introduce exemption

6. Discussion — All
   - Questions

REQUEST FOR R&D EXEMPTION
FROM SOLID STREAM REQUIREMENT
SOLVENT COLD CLEANER RULE
O.A.C. § 3745-21-09(O)(2)(d)(v)

THE LUBRIZOL CORPORATION

The Lubrizol Corporation ("Lubrizol") requests that a closely tailored exemption be added to Ohio EPA's recent rule establishing "good engineering practice" requirements for solvent cold cleaning operations, codified at Ohio Admin. Code § 3745-21-09(O)(2)(d)(v) (the "Rule"). Lubrizol is a major international specialty chemical company that supplies chemical additives for transportation and industrial uses. Lubrizol operates a Research and Development ("R&D") facility in Wickliffe, Ohio, which contains permitted air pollutant sources that are affected by the Rule.

Lubrizol requests that the following language be added to the Rule:

3745-21-09(O)

> (5) PARAGRAPH (O)(2)(D)(V) OF THIS RULE SHALL NOT APPLY TO R&D SOURCES AT A FACILITY WHERE THE R&D SOURCES THAT WOULD OTHERWISE BE SUBJECT TO THAT PROVISION HAVE ACTUAL VOC EMISSIONS LESS THAN FIVE TONS PER YEAR INDIVIDUALLY OR IN THE AGGREGATE, PROVIDED THAT THE OWNER OR OPERATOR MAINTAINS RECORDS WHICH DEMONSTRATE SUCH ACTUAL EMISSIONS.

3745-21-01(G)

> (8) "R&D SOURCES" MEANS RESEARCH AND DEVELOPMENT SOURCES, AS DEFINED IN DIVISION (O) OF SECTION 3704.01 OF THE REVISED CODE.

Introduction to Lubrizol

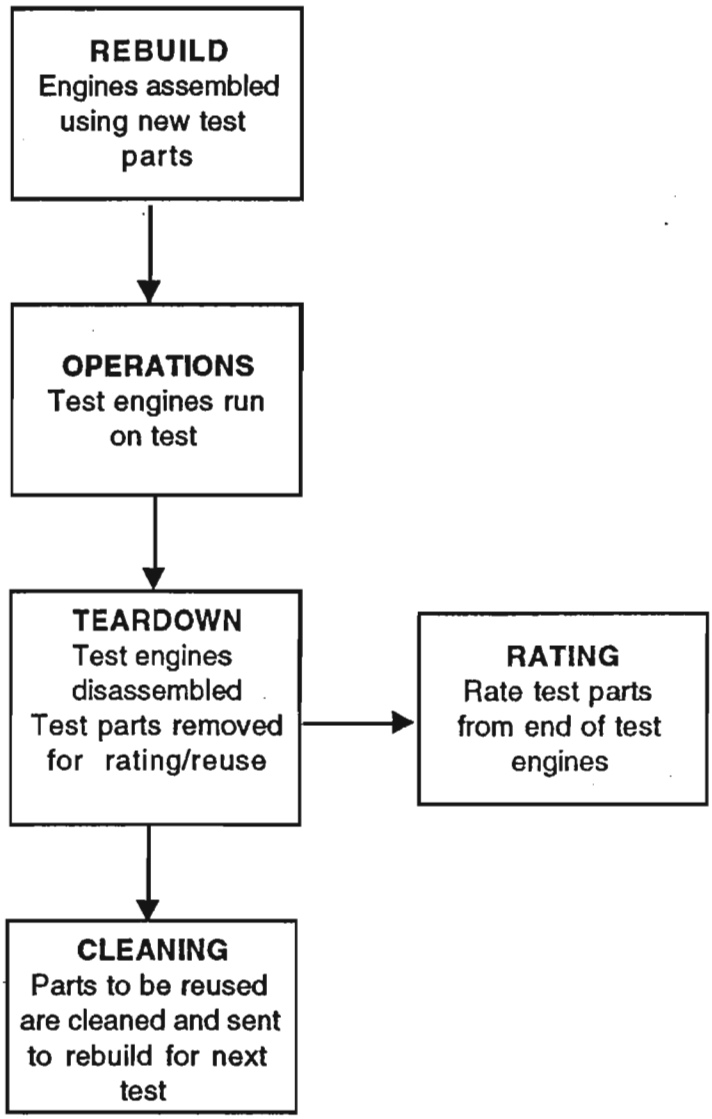
Lubrizol is a supplier of performance chemicals to worldwide transportation and industrial markets. It is the recognized leader in additives for fuels and lubricants used in gasoline and diesel engines and automotive transmissions. Many of Lubrizol's products are specially designed to increase fuel efficiency and reduce motor vehicle emissions. Lubrizol's R&D facilities contain several solvent metal cleaning operations that employ a pressurized spray to ensure thorough cleaning for true laboratory results. These R&D sources cannot practically be regulated by the solid stream and pressure requirements of the Rule. Ohio EPA should revise the Rule to incorporate an appropriate R&D exemption.

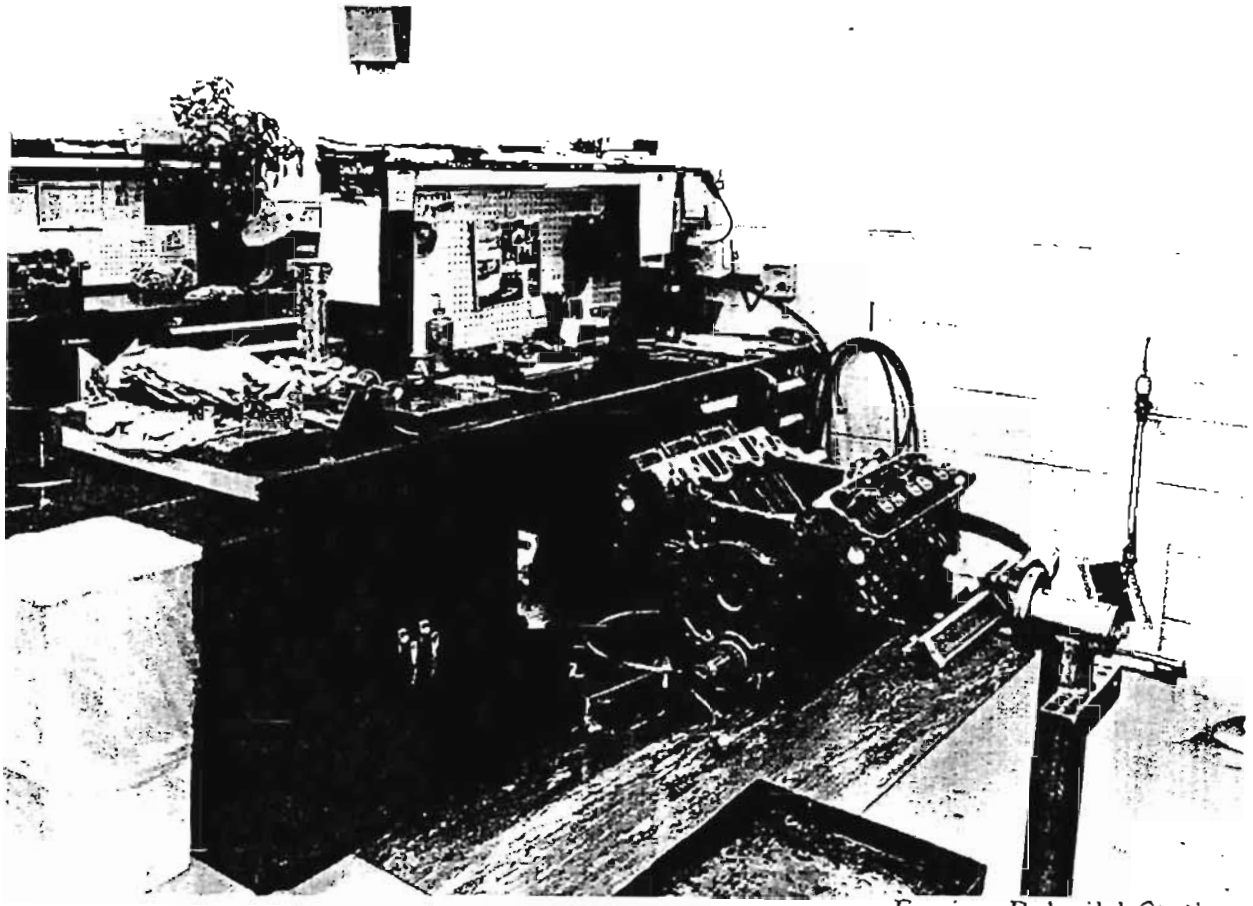
Lubrizol's research facility in Wickliffe, Ohio, is dedicated in large part to research on lubricant additives and other specialty chemicals. Lubrizol's Wickliffe facility has a mechanical testing laboratory, which is equipped with a variety of gasoline and diesel engines and other mechanical equipment to evaluate the performance of additives for lubricants and fuels. One of Lubrizol's main R&D activities is to run extended tests using a variety of passenger car and truck engines in order to assess the effectiveness of Lubrizol's products.

Lubrizol's stationary engine tests are conducted according to detailed specifications prepared or managed by ASTM, ASME, API and the various engine manufacturers. The operating conditions, input rates, and exhaust pressures for these engines are rigidly defined for each test. After each test, the engine

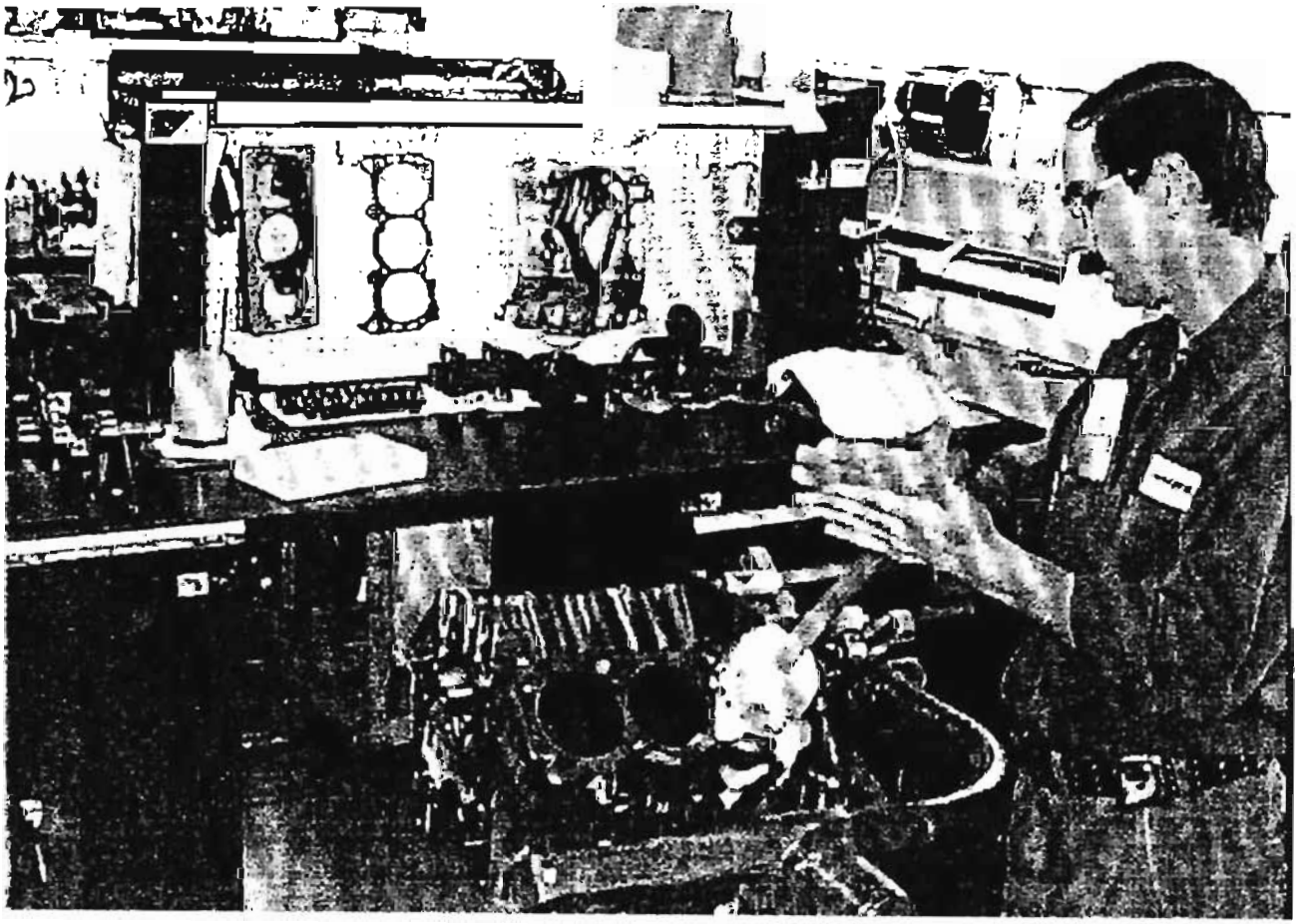
is disassembled and its moving parts are analyzed and rated for varnish, wear and other indicators of oil and additive performance. Many engine parts are then re-used for a subsequent test. However, the pre-test cleanliness of each engine part is crucial to the accuracy of each test. As discussed in the accompanying materials, Lubrizol depends on the use of a highly specialized parts cleaning process in order to ensure pre-test cleanliness.

One of the purposes of Lubrizol's R&D work is to develop products that increase the efficiency and longevity of all types of motor vehicles. Such improvements can be expected to reduce tailpipe emissions during the life of the vehicle. As an example, one of the tests run at Lubrizol is its Fuel Economy Test. Lubrizol's efforts in this area are designed to reduce the amount of chemical energy required to achieve a given amount of mechanical energy. This reduction in energy translates directly into reduced fuel consumption, and hence, into reduced tailpipe emissions.


REBUILD
Engines assembled using new test parts
OPERATIONS
Test engines run on test
TEARDOWN
Test engines disassembled
Test parts removed for rating/reuse
RATING
Rate test parts from end of test engines
CLEANING
Parts to be reused are cleaned and sent to rebuild for next test



Engine Rebuild Station



REBUILD

The rebuild room is a support area for mechanical engineering and fleet testing. The area is staffed with fifteen rebuilder who control each engine, transmission or cylinder head through its completion. All engines, transmissions, and cylinder heads are built to procedural specifications set by the industry.

The rebuild room has been totally redesigned in 1993 by the current staff. The room was redesigned to centrally locate engines and engine parts on specially designed die racks and storage units. The rebuilders work in one area of the room and engine storage is in another area of the room.

Primary we use a Sunnen CK10 CYLINDER RESIZING MACHINE to resize and ensure the proper finish on sequence test engines. We Also we use the hone for different projects, fleet garage, fleet testing and the engine lab.

AREAS REBUILD SUPPORTS:

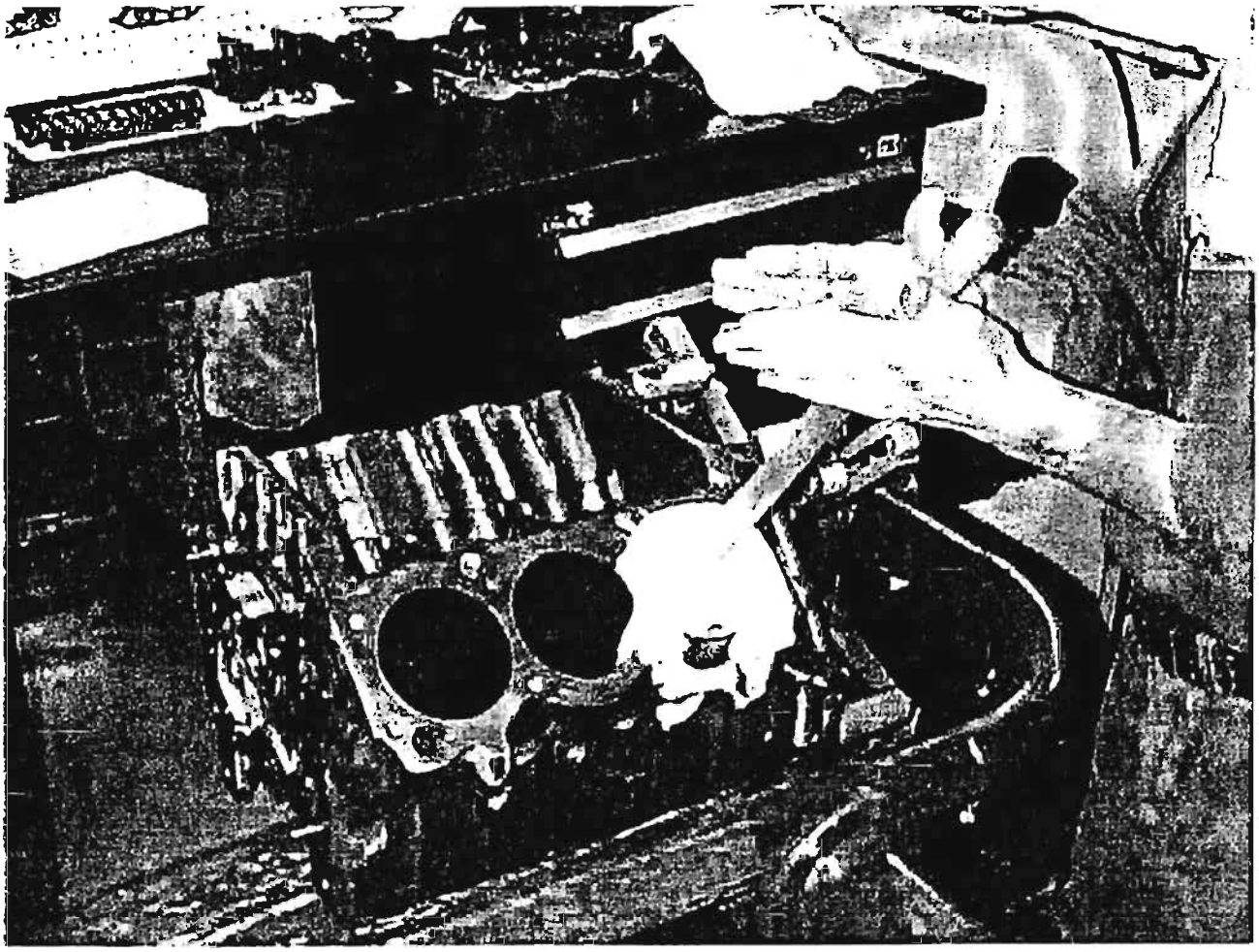
1. L38, CLRS:
Single cylinder test engines for evaluating oil performance by bearing weight loss and oxidation.

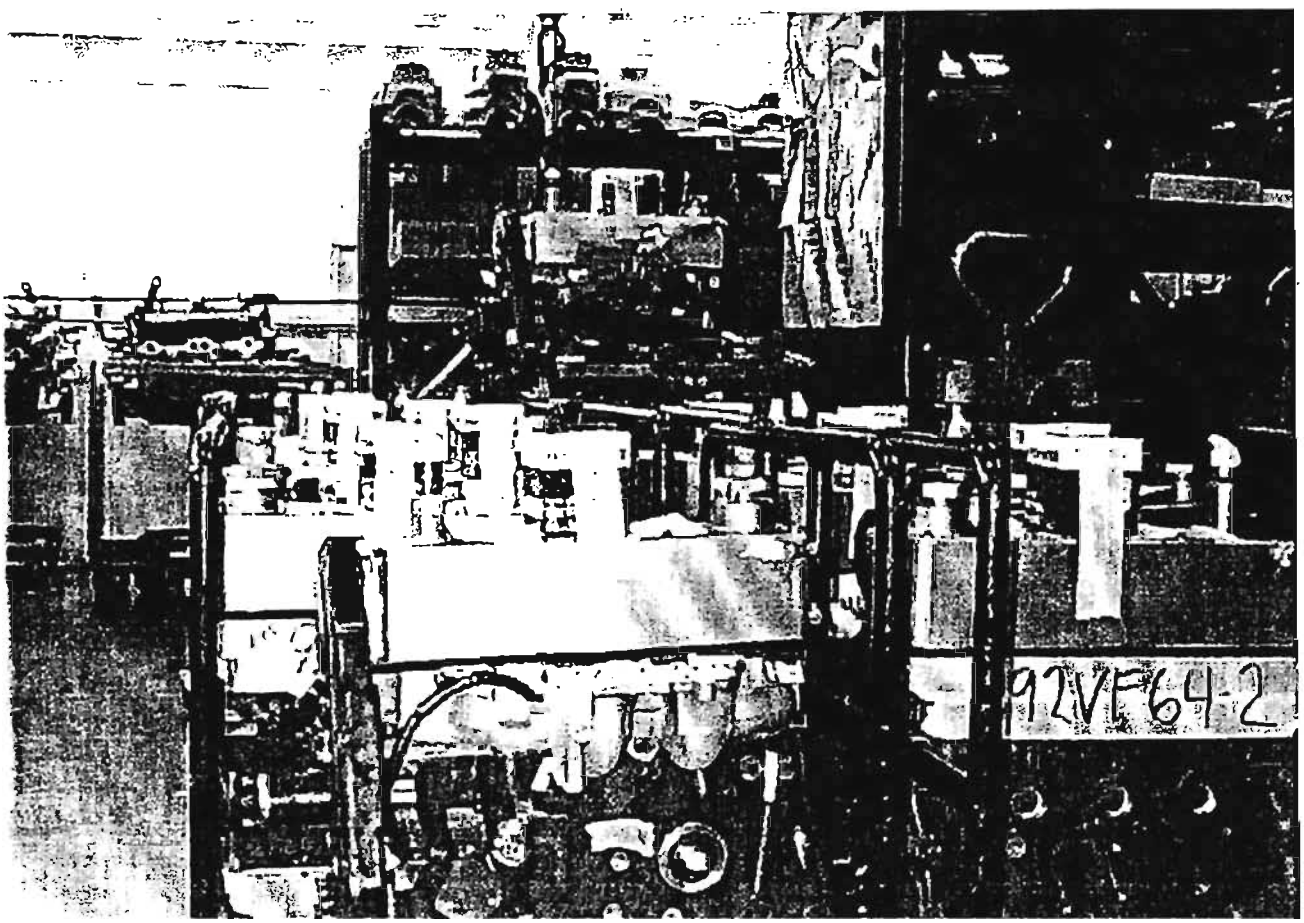
2. SEQUENCE VI 3.8 BUICK:
Buick six cylinder test engine for evaluating fuel economy of engine oil performance.

3. SEQUENCE IID 350 OLDSMOBILE:
Olds eight cylinder test engine to evaluate rust do to condensation in engine motor oils.

4. SEQUENCE IIIE 3.8 BUICK:
Buick six cylinder test engine for evaluating engine wear, varnish, ring land deposits and sludge of the performance motor oils.

5. SEQUENCE 5E, 5F & NATURAL GAS 2.3 FORD:
Ford four cylinder engine for evaluating sludge, bearing wear and varnish of the performance of motor oils.



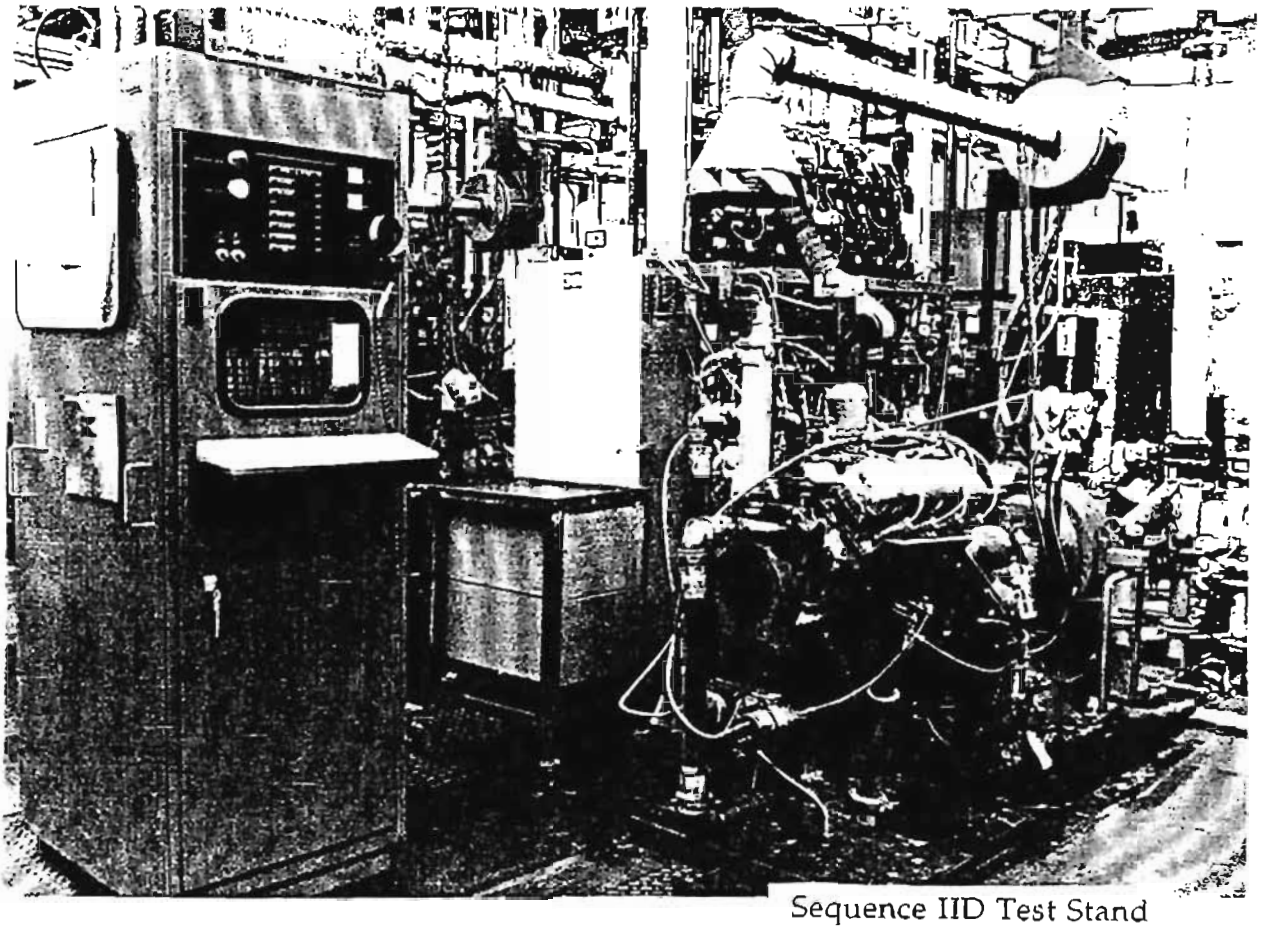

92VF64-2

Final Wash Prior To Assembly

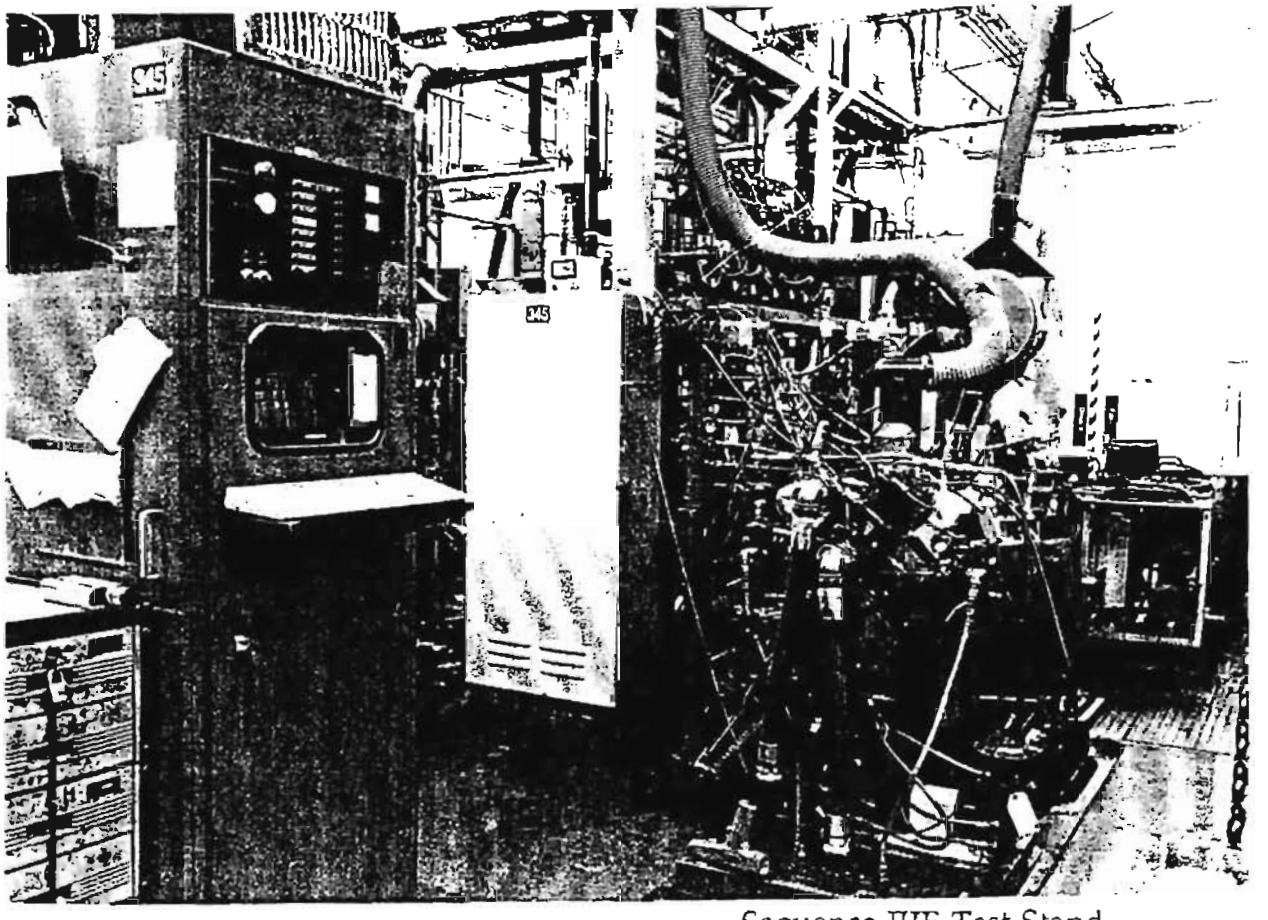
In accordance with the test procedure a final cleaning of the cylinders prior to assembly. This is a Tide detergent and hot water solution. The cylinders are then wiped with lint free cloths.

Assembled Test Engines

Assembled test engines staged, ready for testing. All open ports are taped or the engines are sealed in a plastic bag to insure cleanliness prior to test.



Sequence IID Test Stand



Sequence IIIE Test Stand

IID Oldsmobile Test Stand

This is a typical test stand where oils are run under prescribed conditions. Each test procedure is unique in it's requirements. Test stand, running parameters, engine build up, parts rating and cleaning are all mandated by procedures.

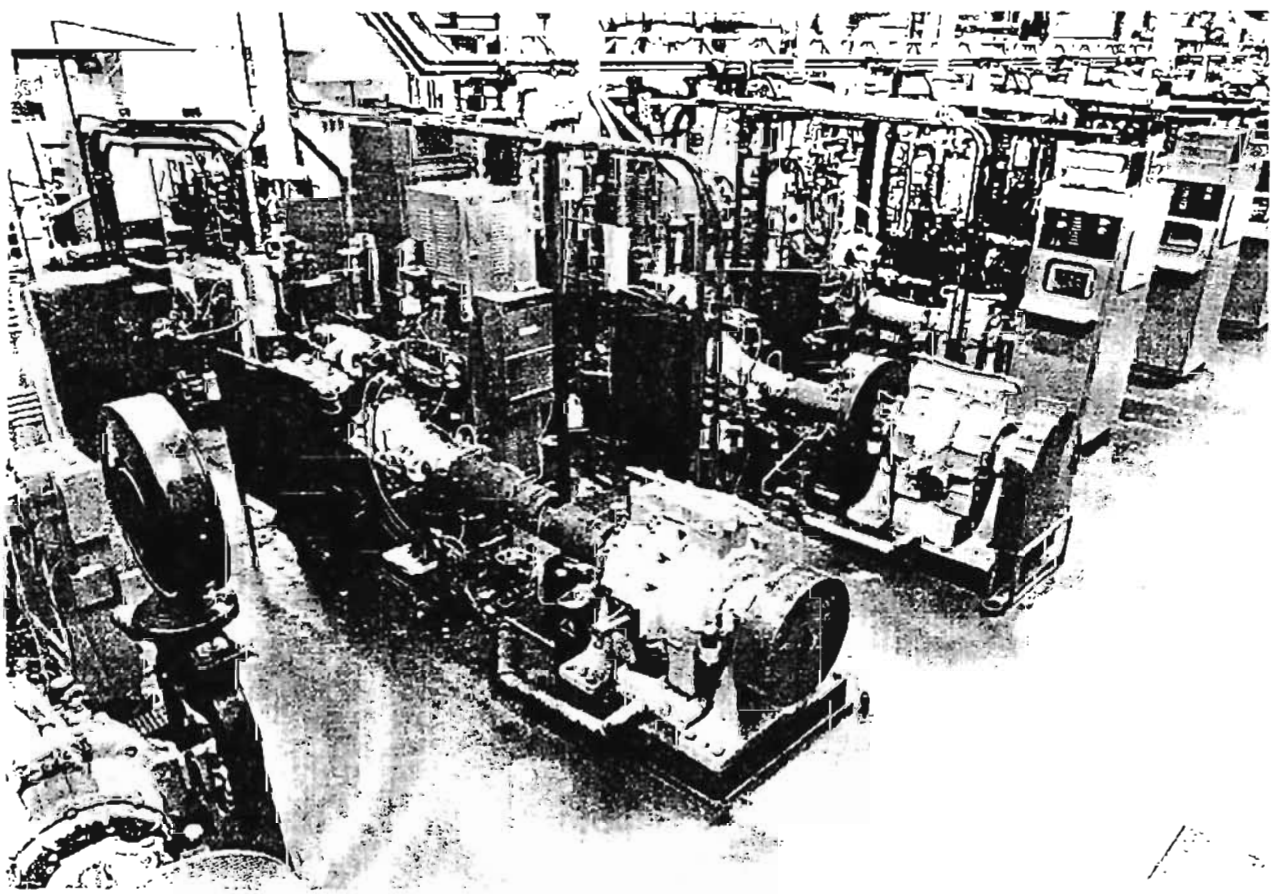
IIIE Buick Test Stand

THE 4L60 TRANSMISSION CYCLING TEST

The 4L60 Transmission Cycling test is used to evaluate automatic transmission fluids for General Motors service fill specifications.

This test uses a late model 4 speed transmission, driven by a 5.7 Liter Chevrolet engine. Energy is transmitted though the transmission and absorbed by a dynamometer and inertia wheel combination. The transmission is cycled continuously 20,000 times - upshifting and downshifting during each test cycle. The test is instrumented so that dynamic recordings of engine speed, clutch apply pressure and output shaft torque can be made.

The test evaluates the effect of the automatic transmission fluid on clutch friction stability under part throttle upshift conditions as well as the thermal stability of the fluid transmission cooler corrosion characteristics and chemical degradation are also evaluated.



Cyclin Test Stands

WE'RE KEEPING YOU ON THE ROAD

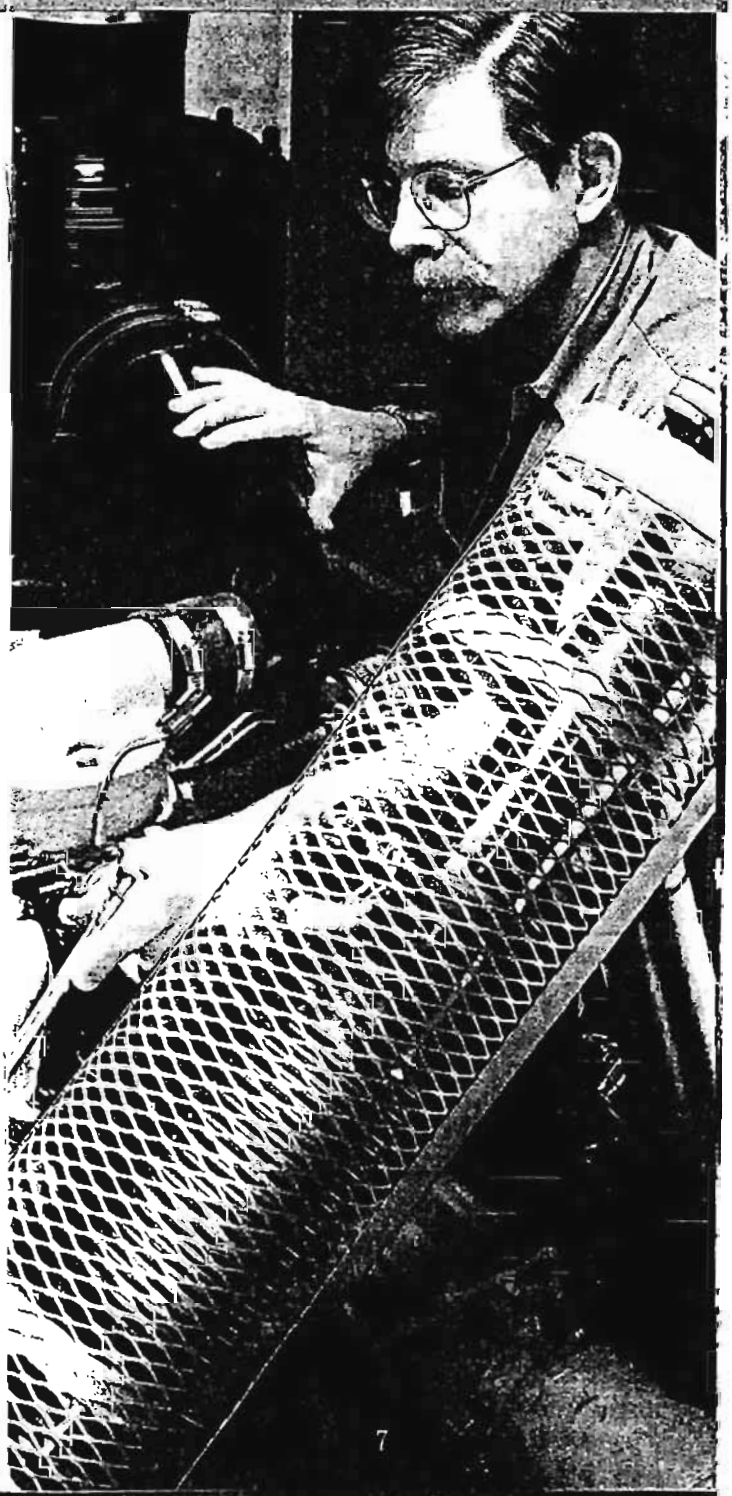
The Wickliffe facility is also the site of one of Lubrizol's three technical centers. Here, we test our additives to ensure that our products meet customer specifications as well as our own exacting quality standards.

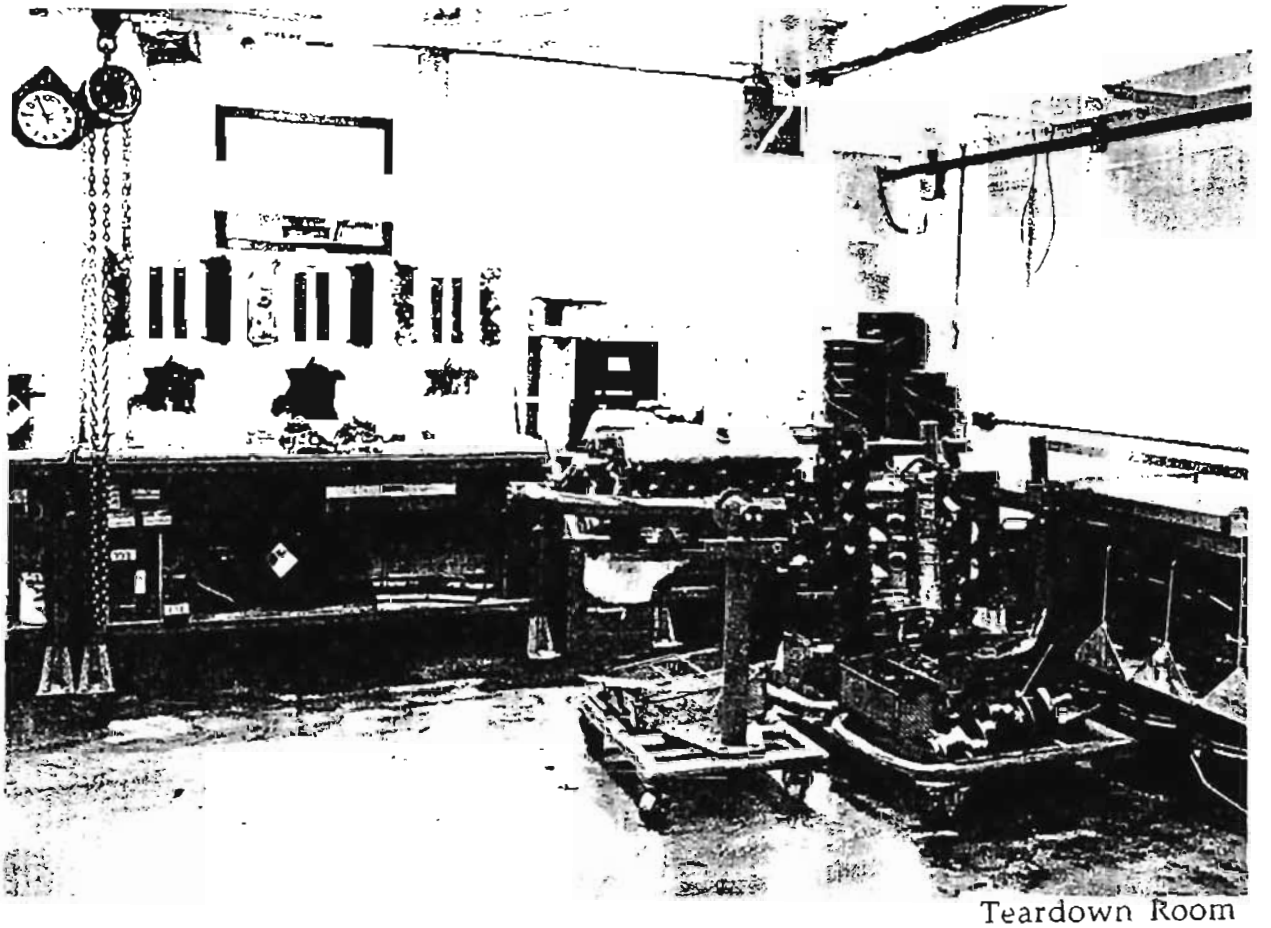
Tests can run 24 hours a day, seven days a week for hundreds of hours. Products are also tested in the field over millions of test miles.

During the past 30 years, we have seen phenomenal changes in the transportation industry. Our cars run cleaner, last longer and get better gas mileage than ever before. Lubrizol's Wickliffe facility plays a significant role in that progress.

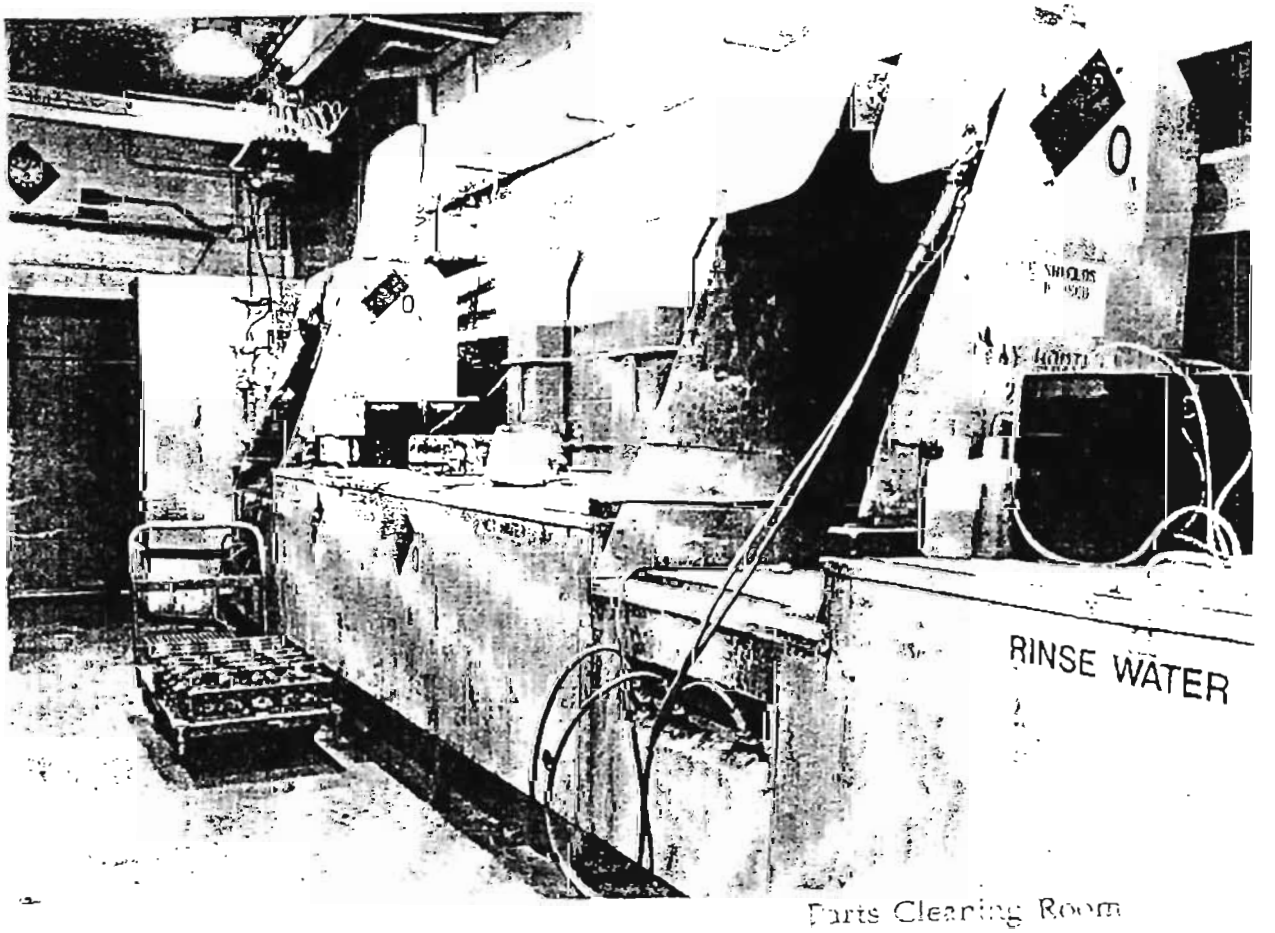
"Our customers depend on the testing we do here. It helps them guarantee that their lubricant and fuel products will do the job for the ultimate consumer — you."

— Vikki Falvo
Project Engineer





Teardown Room



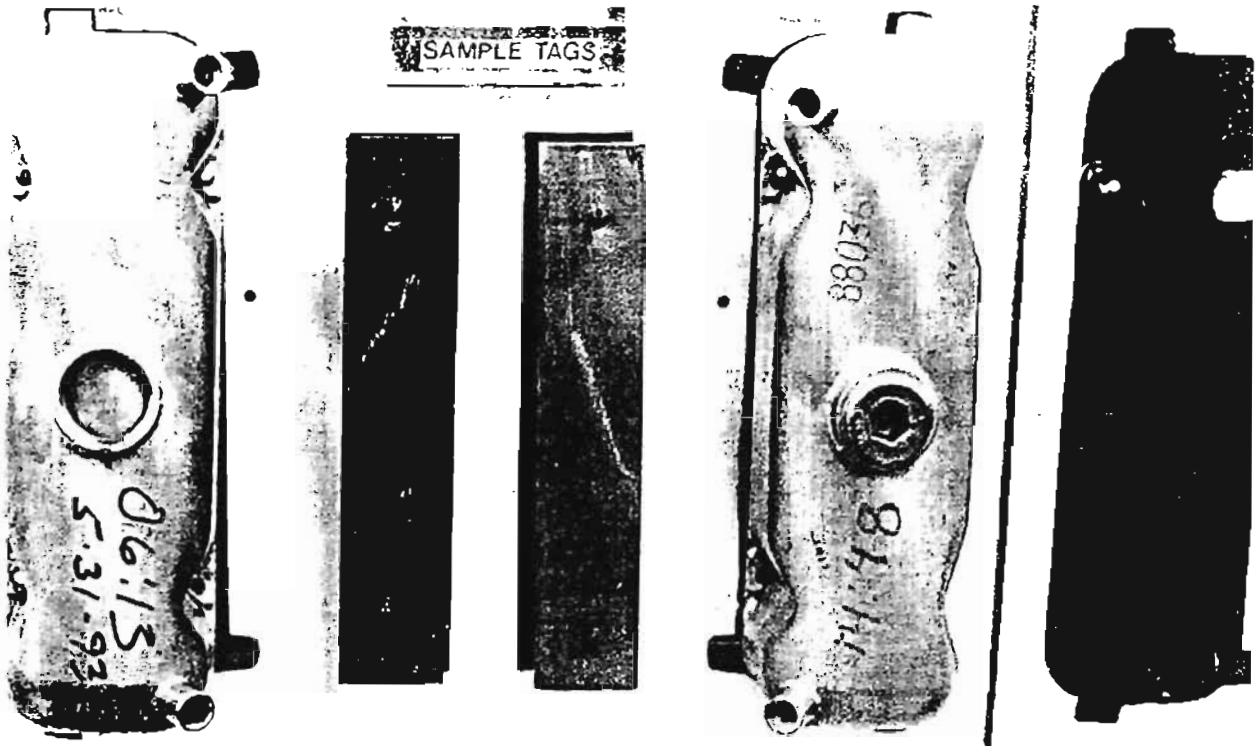
Parts Cleaning Room

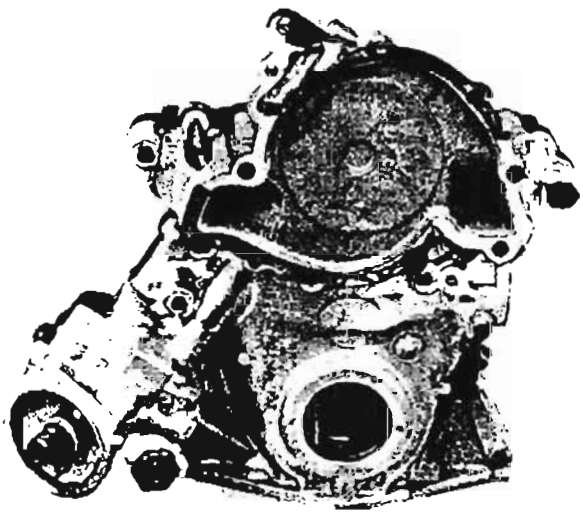
TEAR DOWN ROOM

Disassembly of all sequence test engines and transmissions for inspection and rating. After engines and transmissions have been rated then they are sent to cleaning, photo or parts storage depending on the test procedure requirements.

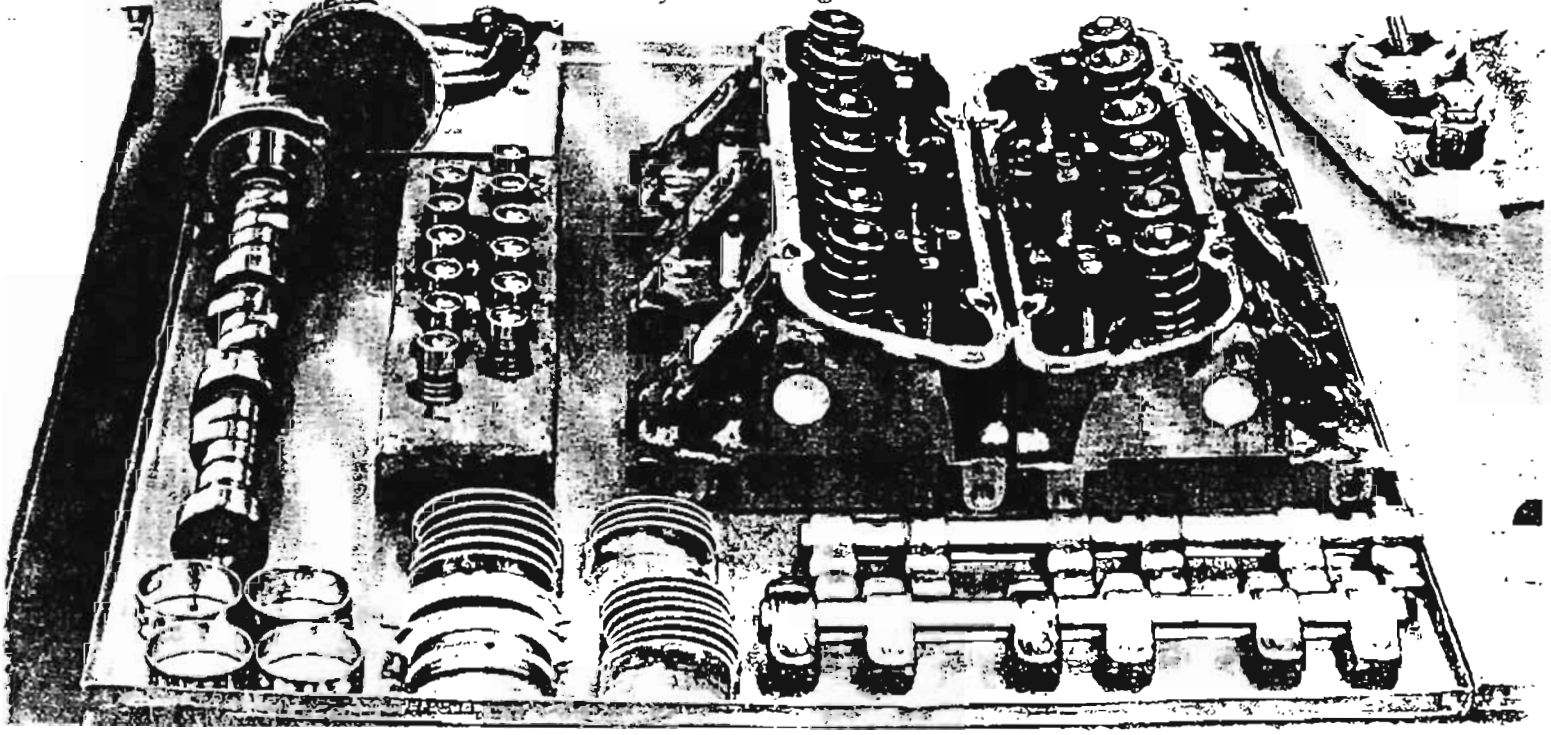
CLEANING ROOM

All completed test engines and new parts are cleaned here. Various cleaning solvents and cleaning procedures are used. Typically at the end of a test the engine and parts are re-cleaned for future testing. Solvents used in cleaning are monitored to be in compliance with EPA regulations. In 1990 a 100 gallon capacity environmentally friendly " Jet Washer " was installed to be used as a Pre Cleaner of engines and test parts. The purchase and use of the Jet Washer eliminated some hazardous chemicals used and increased the longevity of other cleaners.





IIIE Parts Ready for Rating and Measurement

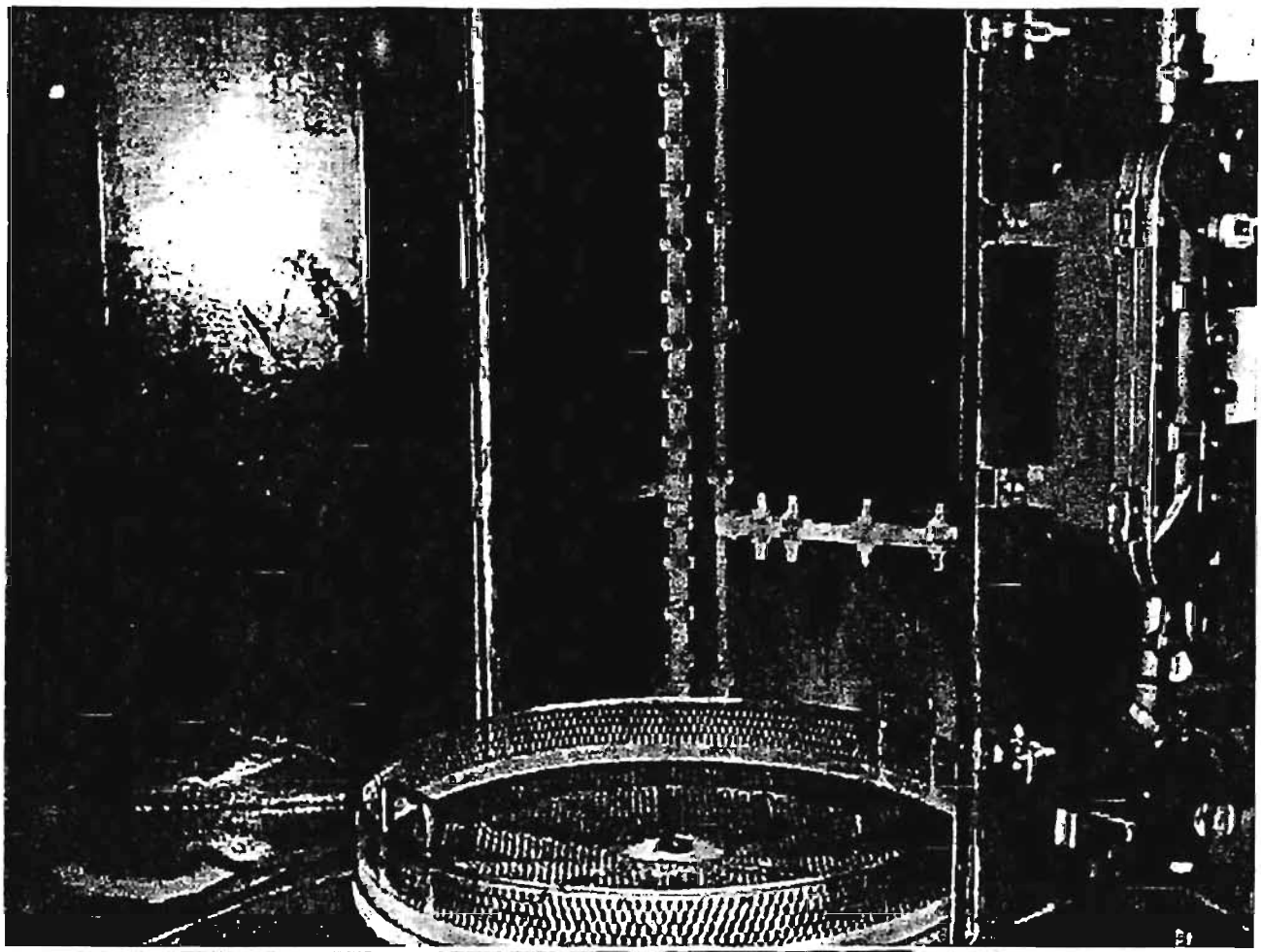


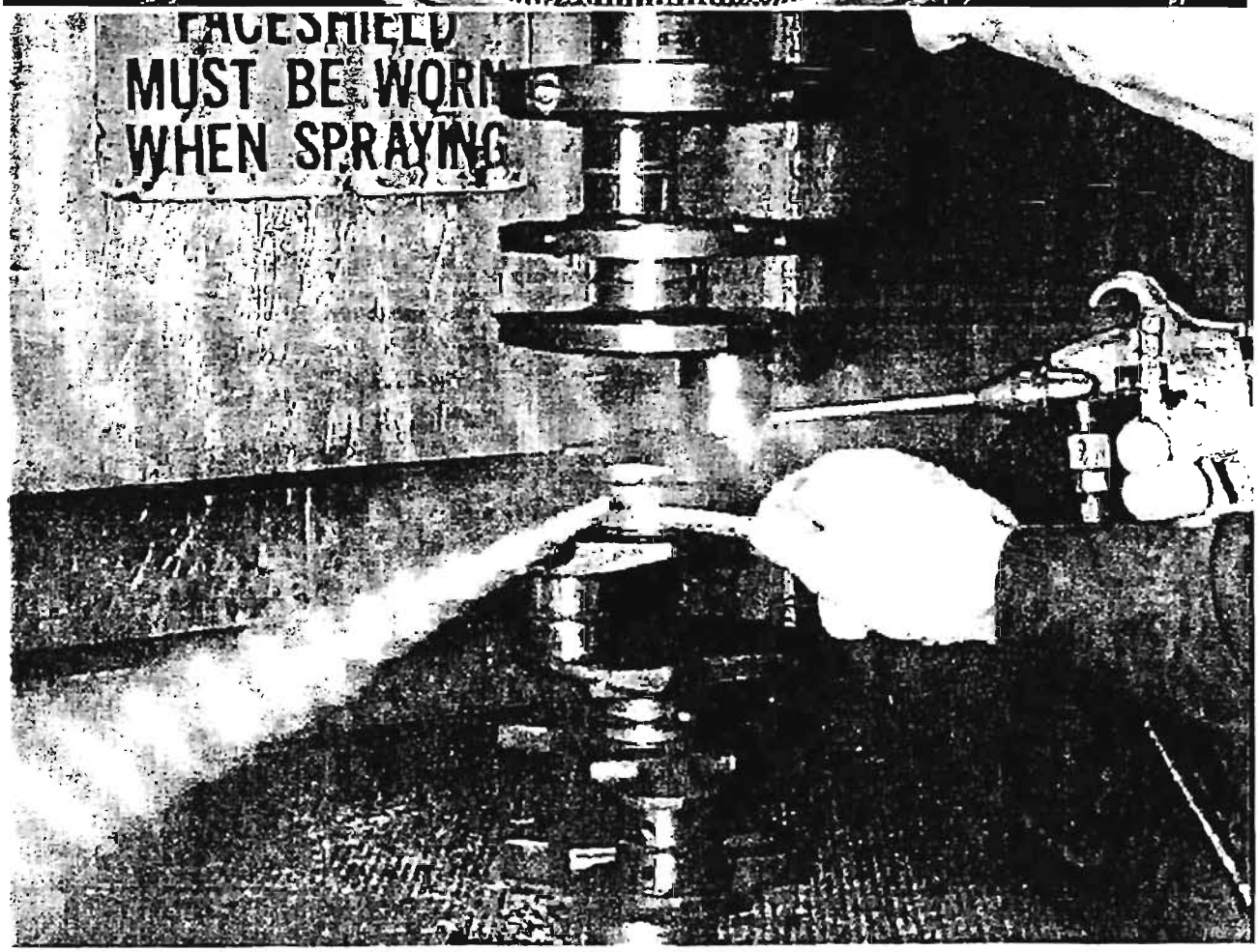
RATING DESCRIPTION

Rating is the process where a person looks at all of the pertinent parts of a test and evaluates them for sludge, varnish, carbon, wear, etc. The usual guides and aides used in doing this are the Coordinating Research Council (CRC) Sludge, Varnish, Rust, Gear, Induction, and Diesel manuals. These manuals are the basis for rating all parts and are complimented by procedures written for each test.

One way to ensure that raters accurately access tests is by their participation in annual CRC and test specific ASTM workshops. Raters around the world attend these workshops with the object of learning what is new in the rating field. They take their turn in rating the parts available and compare how their ratings fare with all the other raters in attendance.

By tracking our ratings against the rest of the industry raters, we can accurately determine how our ratings compare with the average.



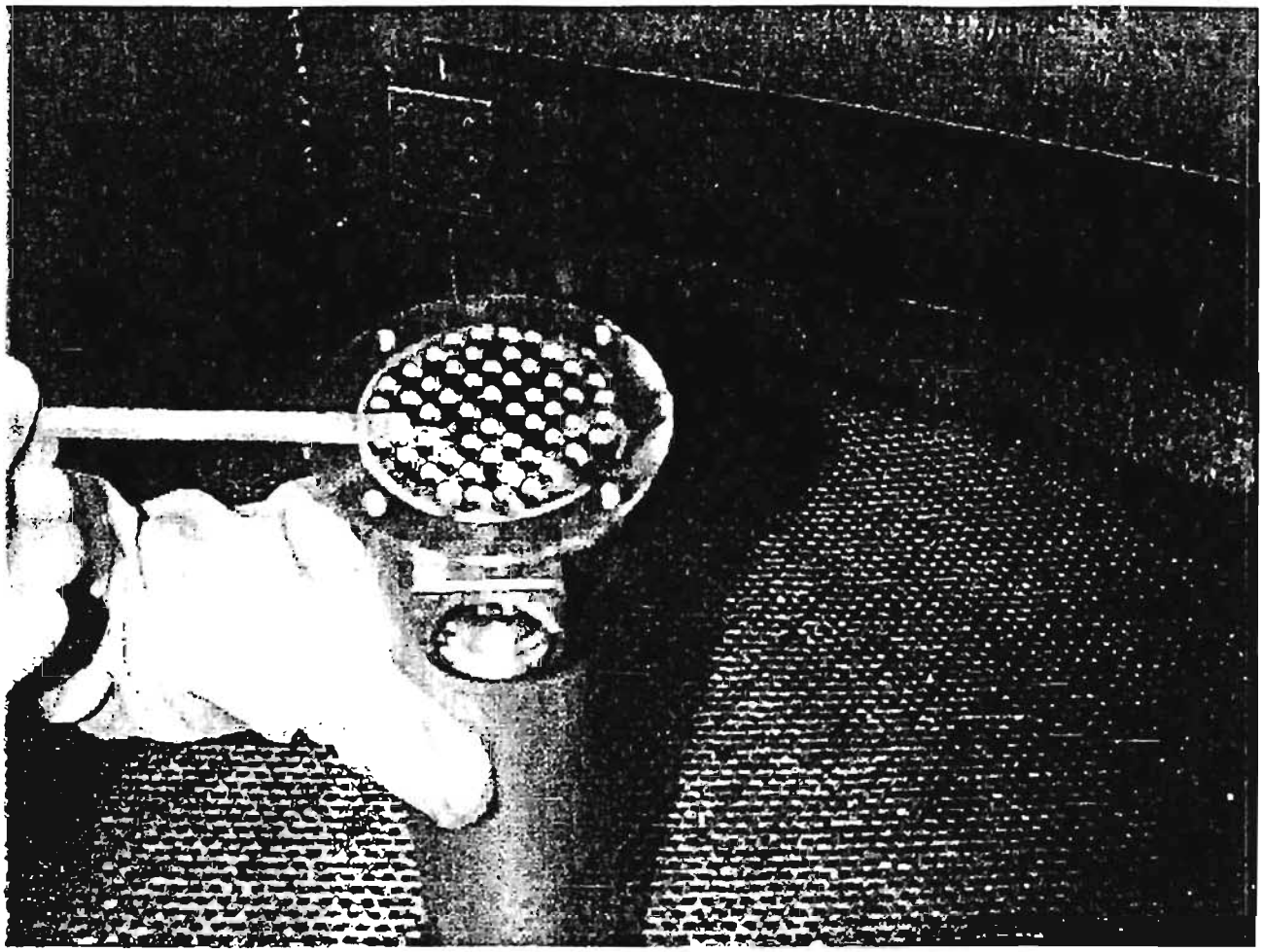

FACESHIELD
MUST BE WORN
WHEN SPRAYING

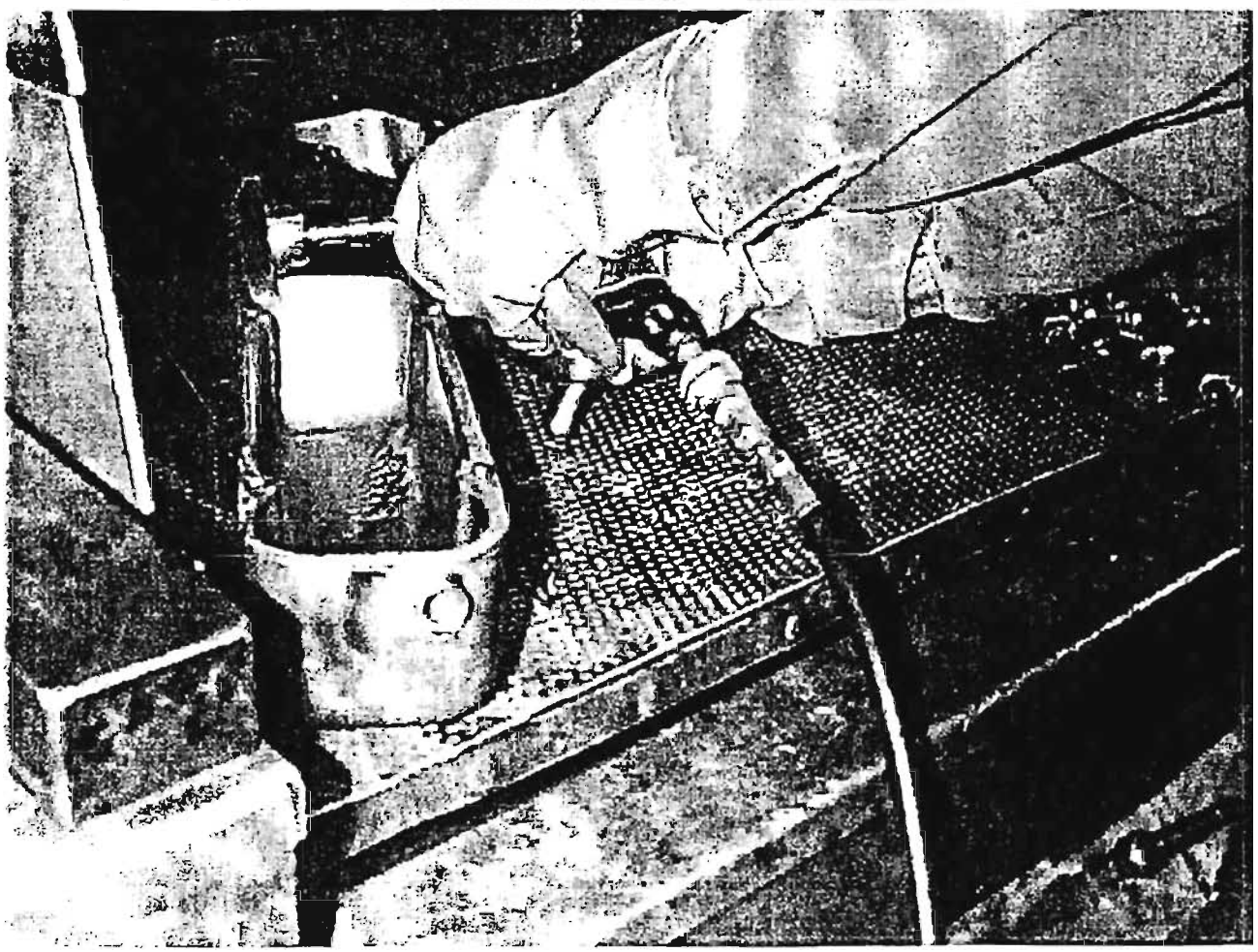
Pre-cleaning Jet Washer

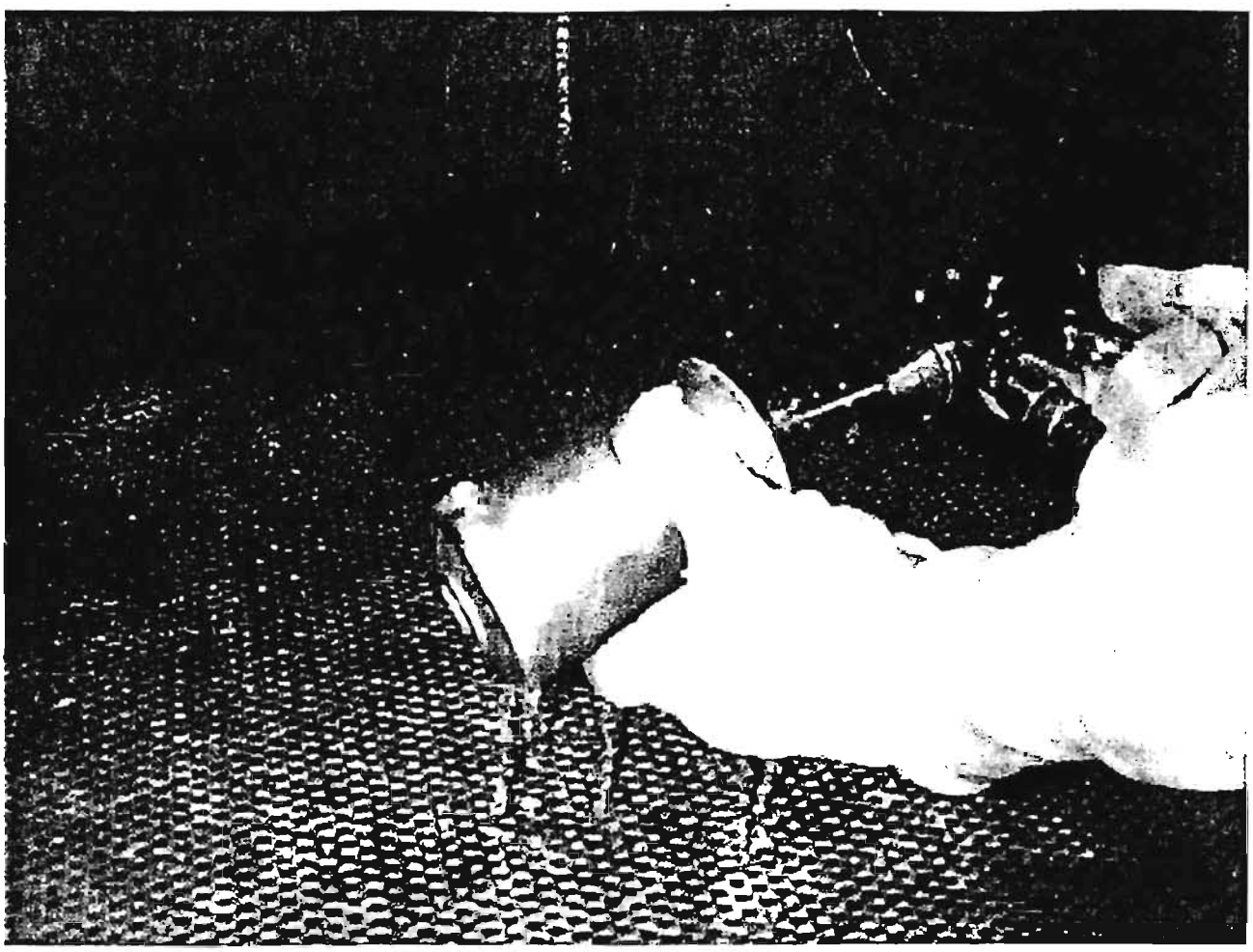
End of test engines and parts which will be reused on another test are initially cleaned here using a water based solution. This process has reduced our chlorinated solvent air emissions, extended the life of other solvents and reduced cleaning time.

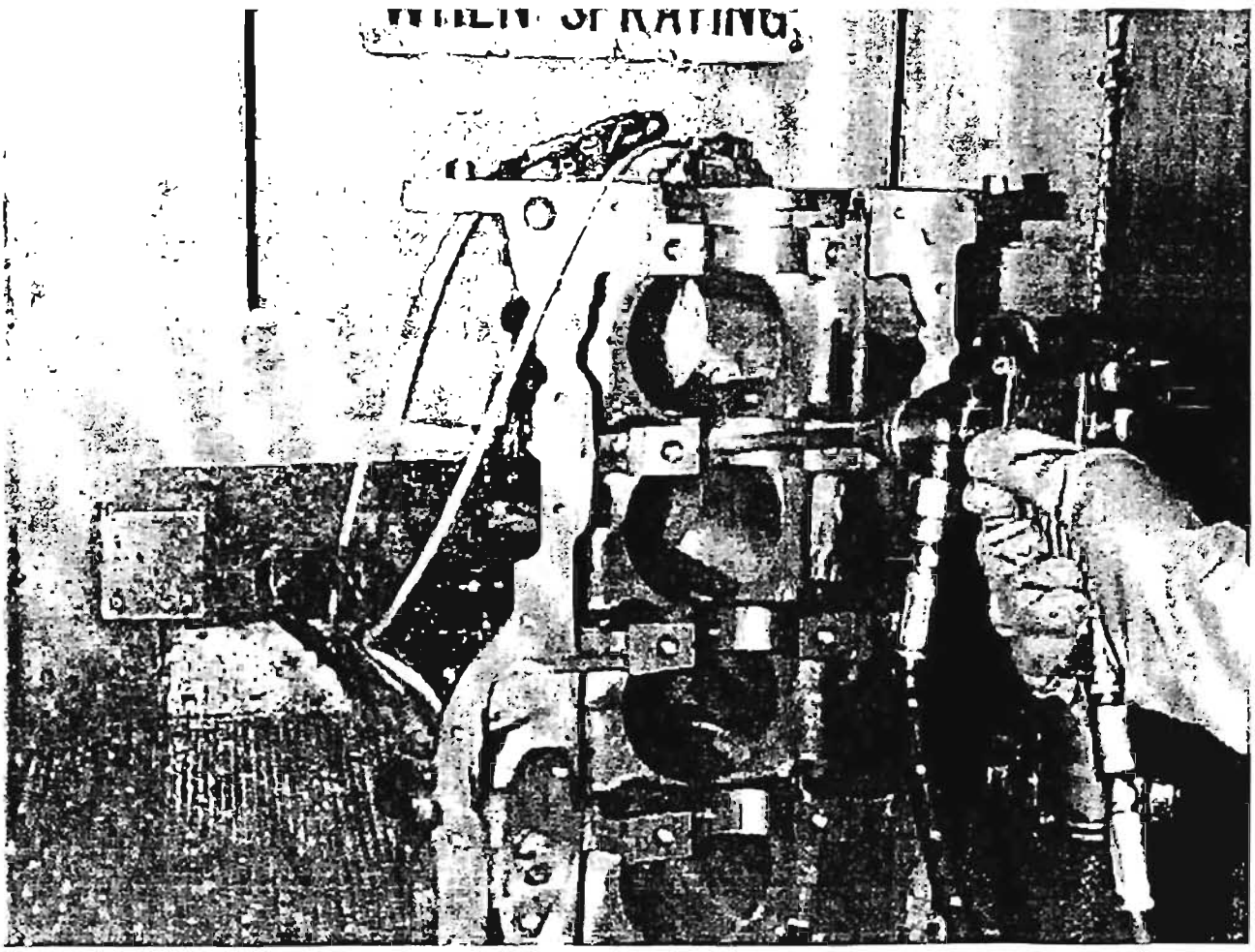
Cleaning Booth

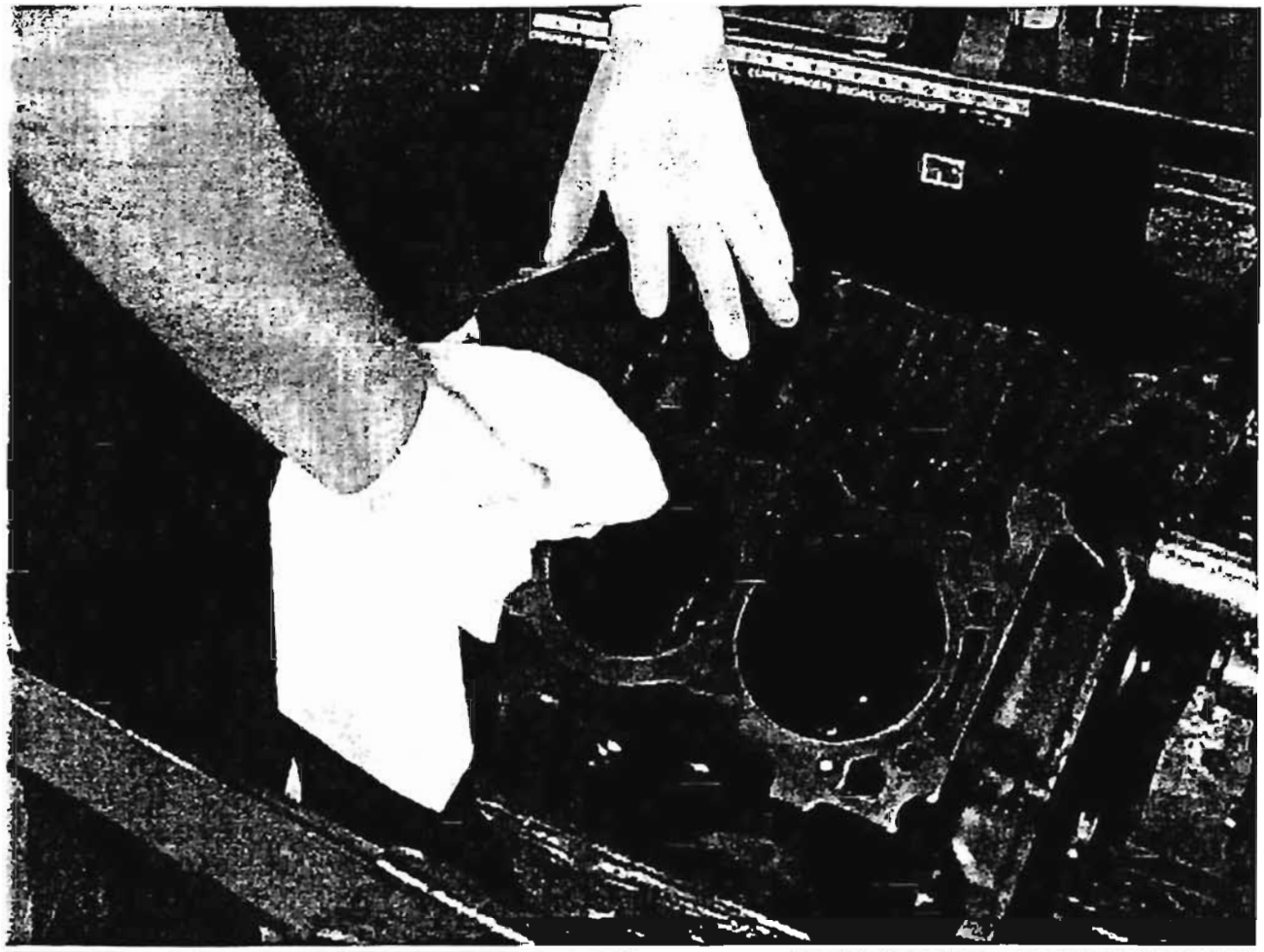
After the initial cleaning in the jet washer all parts are then cleaned again according to the test cleaning procedure. Parts are hand cleaning using a variety of tools; Scotch Brite pads, wire brushing, steel wool and Shell-Sol 140 solvent. Small ports may typically be rifle rod cleaned and solvent sprayed through the passage to force out any remaining debris from the previous test.

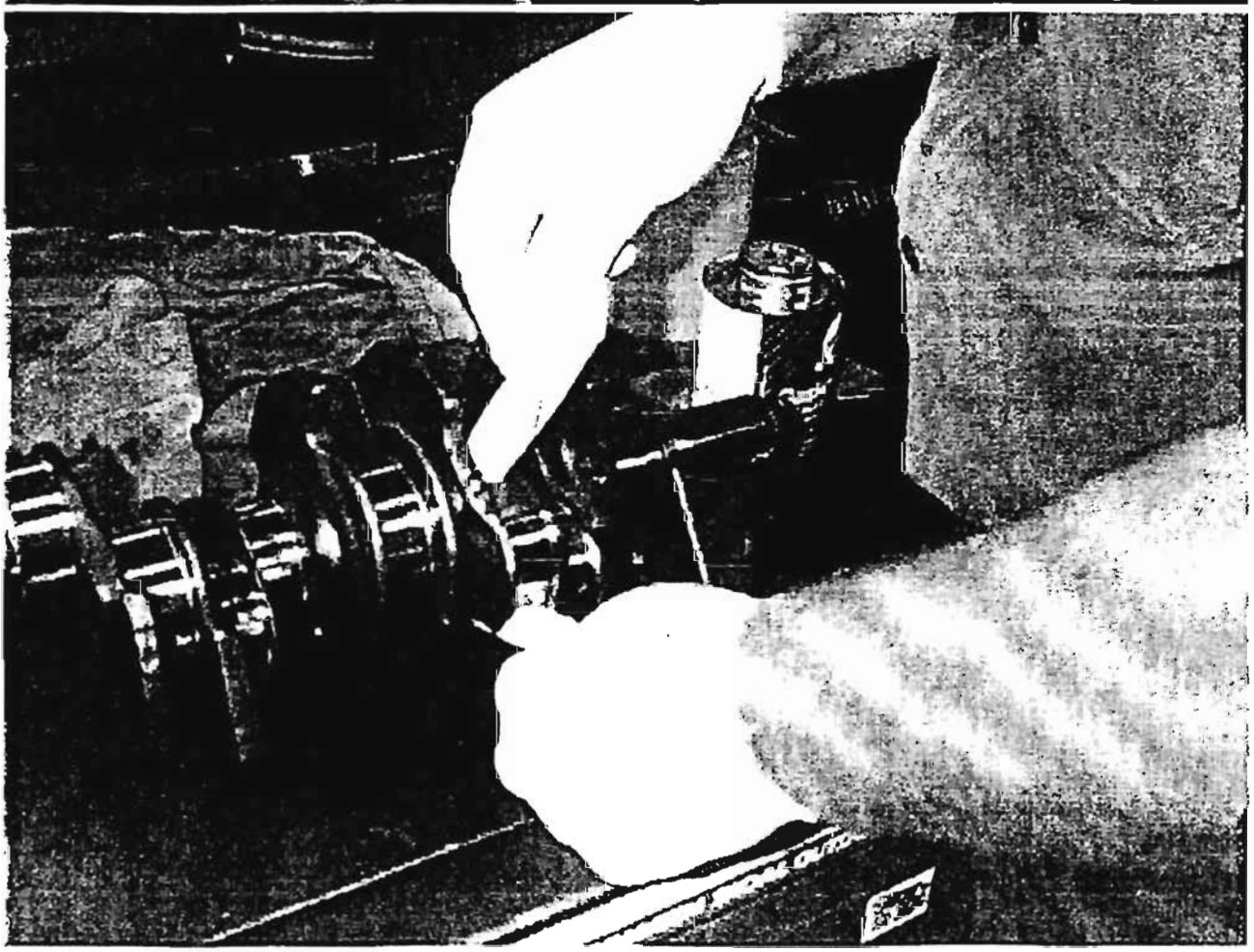


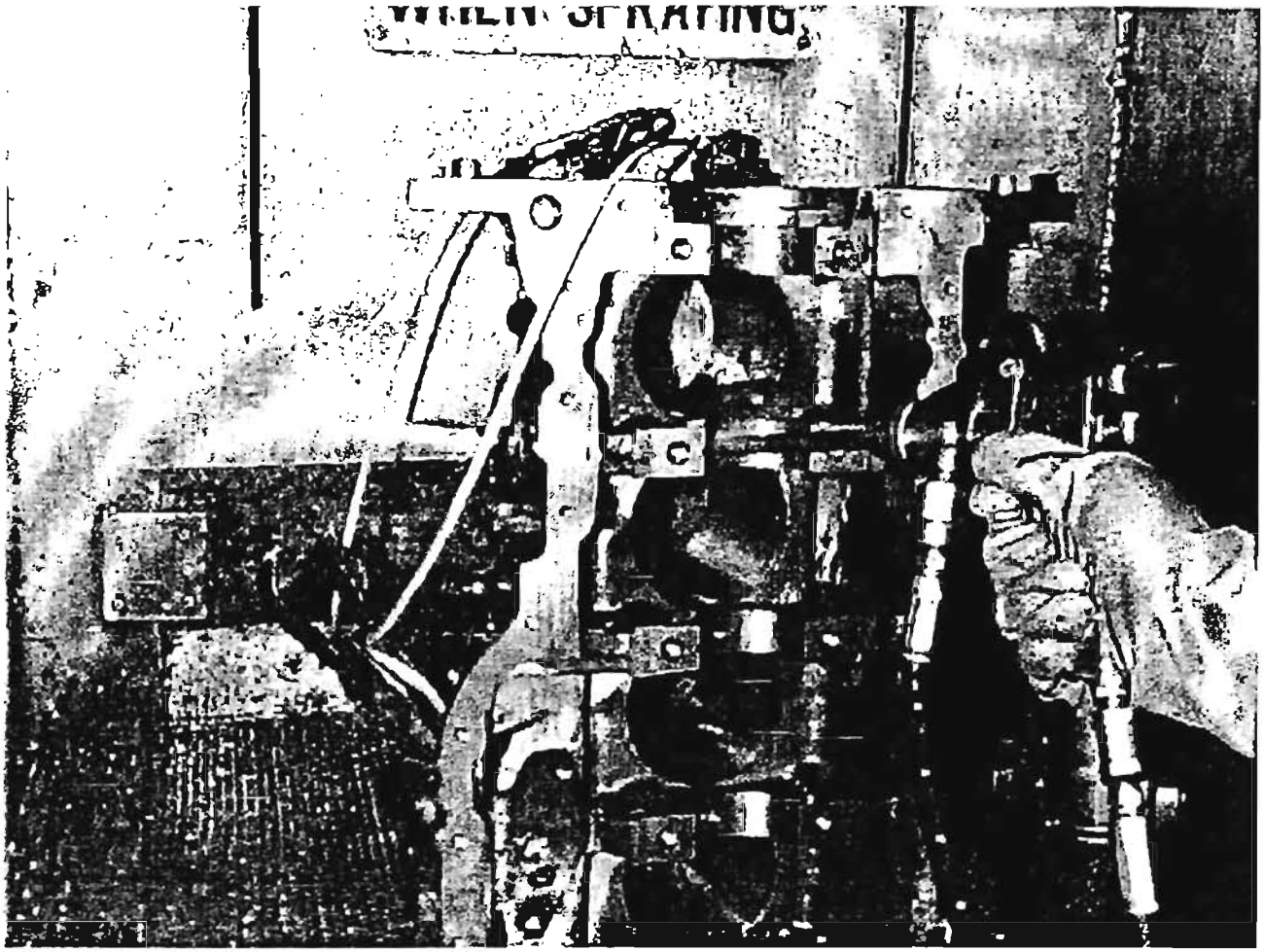


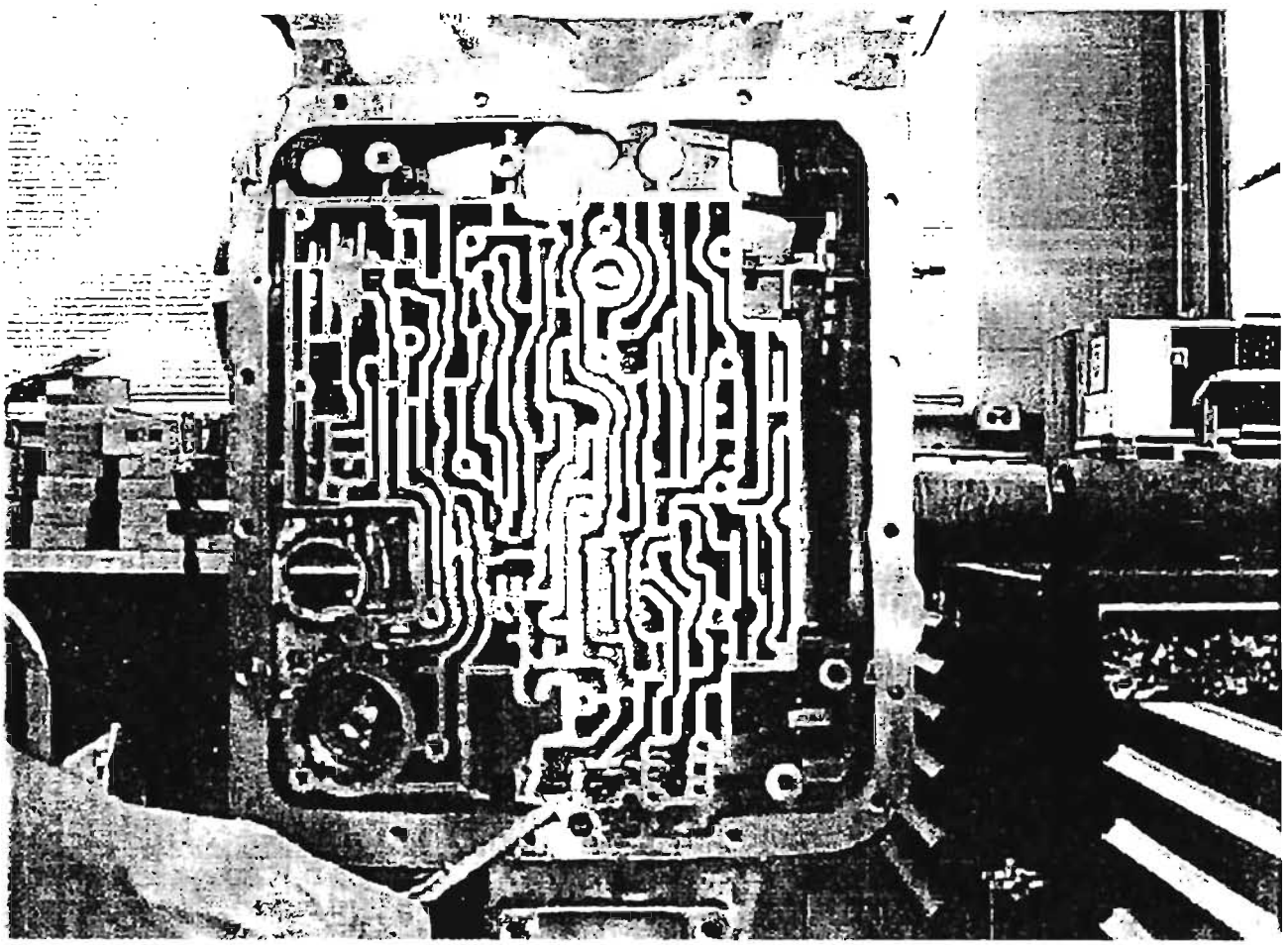












POLLUTION PREVENTION ACTIVITIES

Proactive Air Emissions Reductions

The Lubrizol Corporation's Wickliffe facility has made substantial progress in reducing TRI emissions. The Wickliffe facility has signed on to the 33/50 program, WasteWise and the Ohio Prevention First program.

As a member of the Chemical Manufacturers Association (CMA), Lubrizol is committed to the Responsible Care® initiative and the associated codes of management practice. The Pollution Prevention Code is designed to promote efforts to protect the environment by generating less waste and reducing emissions.

The Wickliffe facility's largest single source of TRI air emissions was eliminated in 1990. A vapor degreaser used for engine parts cleaning in the Mechanical Testing Laboratory was replaced with a new parts cleaning system that uses a water-based cleaning solution. This one change resulted in a 65 percent reduction in air emissions from the Wickliffe facility. Chart 1 shows the progress in chlorinated solvent (TRI) release reduction for the parts cleaning operations.

BACKGROUND INFORMATION

During mid-1990, use of the Mechanical Engineering Department's parts cleaning vapor degreaser ceased. Engine components which had been cleaned in the vapor degreaser using chlorinated solvents are now cleaned in a aqueous parts washer. This machine employs hot water and a biodegradable detergent for cleaning. Approximately 100 gallons of this solution is retained within the washer reservoir for reuse. The solution is replaced about every 5 weeks.

Many other test components which had previously been cleaned in dip tanks containing hydrocarbon solvents are now cleaned in the aqueous parts washer. This expanded role of the spray washer within the parts cleaning operation, beyond that initially planned, has resulted in the reduce usage of other hydrocarbon solvents. Charts 2 and 3 show the reductions in Oakite and Penetone usage due to use of the aqueous parts washer.

CHLORINATED SOLVENT (TRI) RELEASES
THE WICKLIFFE FACILITY
PARTS CLEANING OPERATIONS

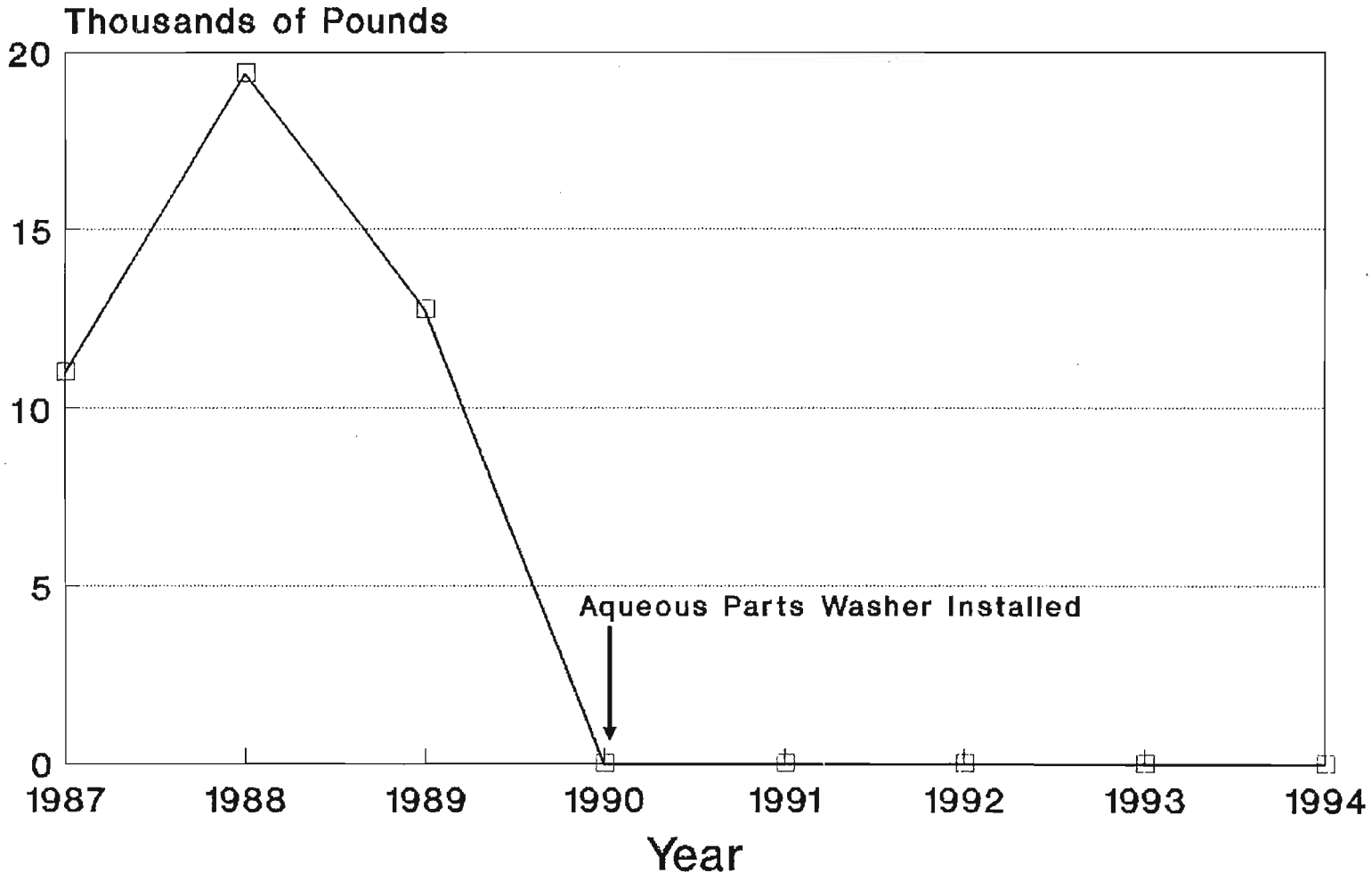


CHART 1

OAKITE SOLVENT USAGE
THE WICKLIFFE FACILITY
PARTS CLEANING OPERATIONS

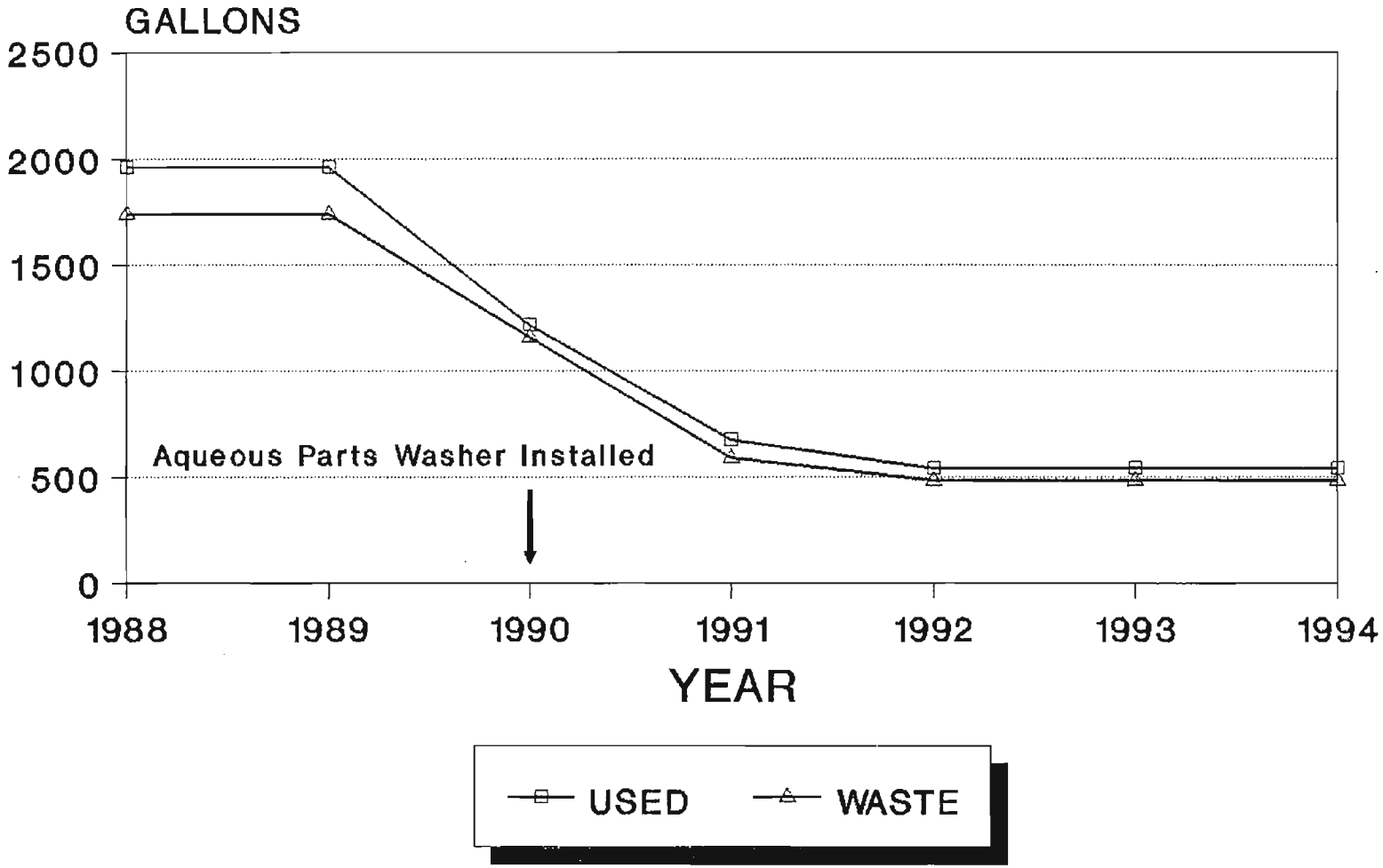


CHART 2

PENETONE SOLVENT USAGE
THE WICKLIFFE FACILITY
PARTS CLEANING OPERATIONS

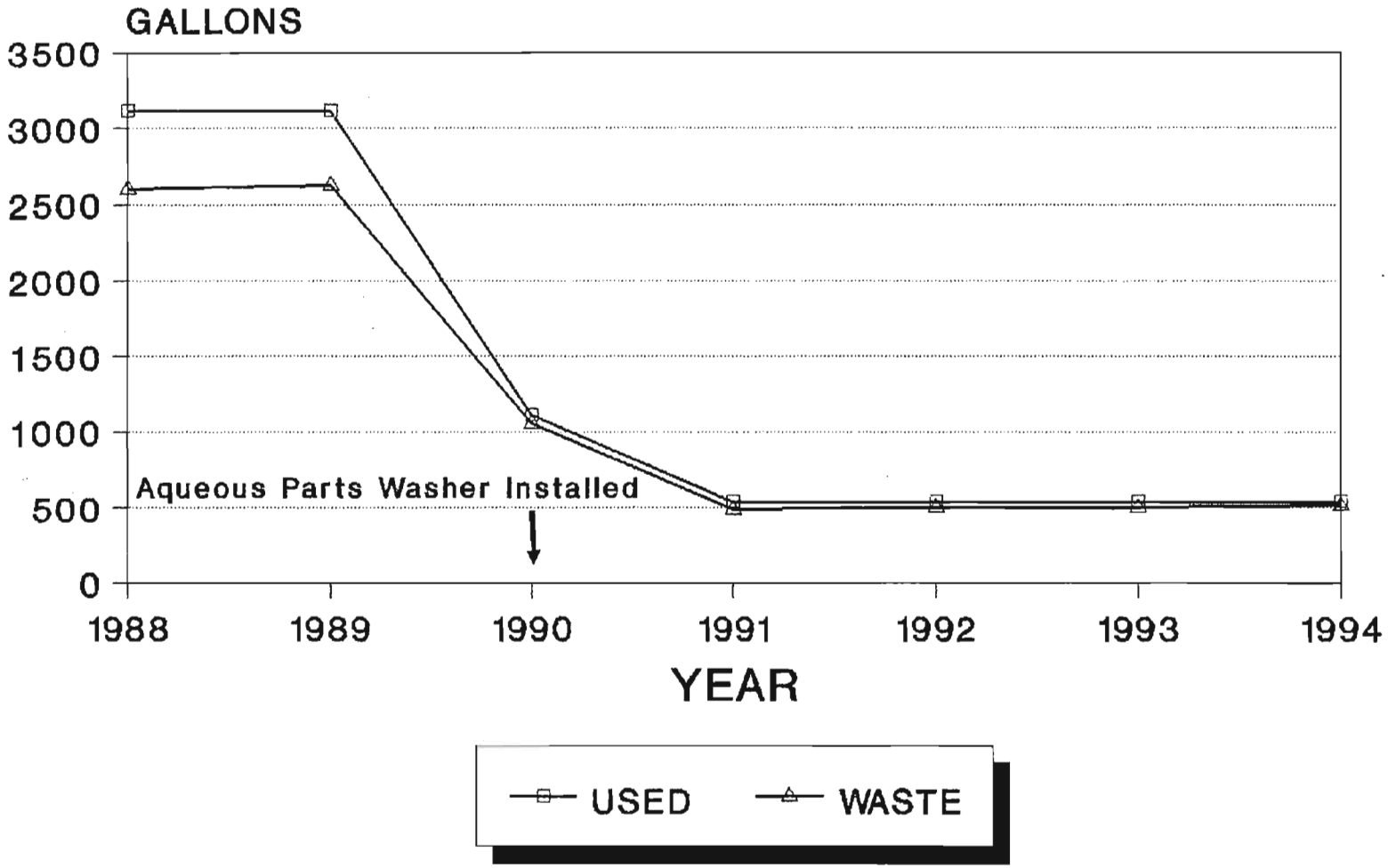


CHART 3

The WasteWise Way

By Ken Gamiere, General Services Manager

Lubrizol is one of 281 companies to be a charter member of EPA's new WasteWise program. WasteWise is a voluntary program to reduce municipal solid waste through waste prevention, recycling and buying recycled products.

Companies of all sizes, including approximately 13 percent of America's Fortune 1000 companies, have signed up since January 1994 to participate. And more than 4.1 million employees from member firms take part in WasteWise activities.

What We Have To Do

As a participant in WasteWise, we are required to establish three new waste prevention activities, expand or improve our current efforts and purchase and/or manufacture additional products with recycled content. The programs we initiate as part of our participation in WasteWise will build on our established waste prevention and recycling efforts.

WasteWise's major thrust is waste prevention—actions that minimize or eliminate the generation of waste before it is created. The program's goal is to decrease the amount of material that must be recycled or thrown away.

Savings To Lubrizol

Lynda Wynn, manager of WasteWise for EPA, reports that the agency started the program after finding that businesses could save thousands, even millions, of dollars in purchasing costs and waste disposal fees through waste reduction programs. For example, Wickliffe avoided over $43,000 of waste disposal costs in 1993 alone through our recycling efforts. Approximately $12,000 of this savings can be attributed to paper and cardboard recycling.

Each year we will be required to report progress toward our goals and to set new goals for the upcoming year. Your participation in our waste prevention and recycling activities is vital to our success in this endeavor. We also need your ideas for new waste prevention and recycling efforts!

Our Commitment

Participation in WasteWise is another example of Lubrizol's continued commitment to improving our environment. It also is a perfect initiative to help support CMA's Responsible Care® initiative. The pollution prevention code calls for ongoing reduction of wastes and releases, giving preference first to source reduction, second to recycle/reuse, and third to treatment. As you can see, EPA's WasteWise program complements the chemical industry's ongoing actions to improve performance in environmental quality.

For more information on our WasteWise plans, call Ken Gamiere, extension 4387, or send him cc:Mail.

4-5

4 Advantages of Participating in WasteWise

1 Waste prevention technical assistance from EPA, such as tip sheets on reducing waste in various operations such as the cafeteria, loading dock, and in the office.

2 Resource documents and case studies highlighting successful programs implemented by other companies.

3 Access to a network of America's leading environmentally conscious corporations to share information and ideas on how to cut waste and save money.

4 Recognition and promotion of our efforts. EPA plans to showcase innovative waste reduction techniques devised by charter members so other firms can use them to expand waste reduction awareness.

Some WasteWise History

WasteWise began in January of 1994 when EPA administrator Carol M. Browner called on the nation's major corporations to join this new voluntary partnership. Lubrizol answered that call and is proud to be a charter member of WasteWise. On July 20, the EPA and Ms. Browner acknowledged our commitment to the environment in a ceremony honoring charter members at the National Press Club in Washington, D.C. Tom Benda, facility manager, and Ken Gamiere attended the ceremony on behalf of Lubrizol.

Lubrizol Wickliffe Signs On To Ohio Prevention First

By Ken Frato, Environmental Assurance Manager

The Wickliffe facility has answered the governor's call for participants in Ohio Prevention First. This is a voluntary program that promotes pollution prevention initiatives. Its goals are to voluntarily reduce toxic releases by 75 percent and solid and hazardous waste by 50 percent by the year 2000. The governor, the Ohio Environmental Protection Agency (OEPA) and industry support this program.

More than 130 Ohio facilities committed to participate in this program. Over one-third of these participants are Ohio Chemical Council (OCC) members. As members of the pollution prevention development work group, OCC representatives worked with the governor and the OEPA staff to develop a workable voluntary program for members. "This indicates the chemical industry's commitment to reduce emissions in the state," said Dave Dillahunt, OCC government relations director.

In a press release announcing the initial participants in the program, OEPA director Donald R. Schregardus said, "Many of the largest companies in the state are going beyond the legal requirements by participating in this program, and that kind of commitment deserves recognition." To expand the benefits of the program, it has been opened to anyone who wants to participate, including other businesses, local governments, community groups, schools and individuals.

As a member of the Chemical Manufacturers Association (CMA) and the OCC, Lubrizol is committed to the Responsible Care® initiative and the associated codes of management practice. The pollution prevention code is designed to promote efforts to protect the environment by generating less waste and reducing emissions.

In addition to this CMA initiative, the Wickliffe facility is participating in other voluntary initiatives such as the U.S. EPA's 33/50 and WasteWise programs (see related article on Waste Wise).

The Ohio Prevention First program will complement the Wickliffe facility's ongoing efforts to fully implement the pollution prevention code. As a responsible corporate citizen, Lubrizol supports these voluntary initiatives.

For more information on Ohio Prevention First, call Ken Frato, extension 2848, or send him cc:Mail.

See the pollution prevention code of management practice on page 14.
Ken Frato is the code steward.

4-6

Legal Basis for the R&D Exemption

Ohio law requires Ohio EPA to weigh the costs and benefits of compliance in promulgating rules for the control of air pollutants.[1] There is ample precedent for recognizing the special circumstances of R&D activities, and many other Clean Air Act requirements contain R&D exemptions. For example:

- The Clean Air Act requires U.S. EPA to establish a separate category covering R&D facilities for purposes of the NESHAP standards, in order "to assure the equitable treatment" of R&D facilities.[2]
- Ohio EPA's 1994 NOx RACT Rule contained a broad R&D exemption.[3]
- Ohio EPA's Emission Statement Rule under Clean Air Act Section 182 contained two tailored R&D exemptions.[4]
- Stationary gas turbines used for R&D into emission control techniques and efficiency improvement are exempt from NSPS for NOx, on a case-by-case basis.[5]
- Certain wood heaters used for R&D purposes are exempt from NSPS.[6]

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1 "In adopting, modifying, or repealing any such rules, the director, to the extent consistent with the federal Clean Air Act, shall hear and give consideration to evidence relating to: (1) Conditions calculated to result from compliance with such rules and their relation to benefits to the people of the state to be derived from such compliance . . . ." Ohio Rev. Code § 3704.03(E)(1).

2 Clean Air Act § 112(a)(7), 42 U.S.C. § 7412(a)(7).

3 Ohio Admin. Code § 3745-14-03(G)(10)(suspended).

4 Id. § 3745-24-04(G)(2),(3).

5 40 C.F.R. § 60.332(h).

6 40 C.F.R. § 60.530(f).

- Glass melting furnaces used for R&D purposes are exempt from NSPS.[7]
- Certain R&D reactors are exempt from the vinyl chloride NESHAP.[8]

The Ohio legislature recently enacted a statute implementing the Title V permitting program under the 1990 Clean Air Act Amendments.[9] Non-major R&D sources are given specialized status in the Title V program.[10] In defining R&D sources, the Ohio legislature specifically included experimental firings of certain types of combustion equipment for purposes of better controlling air pollutant emissions.[11]

The Rule contains a "solid stream" requirement for solvent metal cleaning that Lubrizol cannot incorporate into its pre-test engine preparation procedures. In particular, Ohio Admin. Code § 3745-21-09(O)(2)(d)(v) contains a new definition of "good engineering practice" that provides as follows:

> (v) IF USED, SUPPLY A SOLVENT SPRAY THAT IS A SOLID FLUID STREAM (NOT A FINE, ATOMIZED, OR SHOWER-TYPE SPRAY) AT A PRESSURE THAT DOES NOT EXCEED TEN POUNDS PER SQUARE INCH GAUGE.

As illustrated in the accompanying materials, these requirements are unworkable in Lubrizol's R&D environment.

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7 40 C.F.R. § 60.292(d).

8 40 C.F.R. § 61.60(b), (c).

9 Am. Sub. S.B. No. 153, adopted July 1, 1993.

10 Ohio Rev. Code § 3704.036(A).

11 Ohio Rev. Code § 3704.01(O).

An exemption for R&D activities should be added to the Rule. The appropriate definition of R&D activities has already been added to the definitional provisions governing air pollution control in the Ohio Revised Code. Ohio Rev. Code § 3704.01(O), as recently amended, defines R&D sources as follows:

> "Research and Development Sources" means
>
> * * *
>
> - A research or laboratory facility the primary purpose of which is to conduct research and development into new processes and products, that is operated under the close supervision of technically trained personnel, and that is not engaged in the manufacture of products for sale or exchange for commercial profit, except in a de minimis manner.[12]
>
> * * *

This definition should be incorporated into the Rule at Section 3745-21-01(G)(8).

In addition, the Rule should be amended to include the following new paragraph in Section 3745-21-09(O)(5):

> (5) PARAGRAPH (O)(2)(D)(V) OF THIS RULE SHALL NOT APPLY TO R&D SOURCES AT A FACILITY WHERE THE R&D SOURCES THAT WOULD OTHERWISE BE SUBJECT TO THAT PROVISION HAVE ACTUAL VOC EMISSIONS LESS THAN FIVE TONS PER YEAR INDIVIDUALLY OR IN THE AGGREGATE, PROVIDED THAT THE OWNER OR OPERATOR MAINTAINS RECORDS WHICH DEMONSTRATE SUCH ACTUAL EMISSIONS.

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12 Ohio Rev. Code § 3704.01(O).

for review by the director or authorized representative during normal business hours.

(O) Solvent metal cleaning.

(1) The requirements in paragraphs (O)(2), (O)(3), and (O)(4) of this rule shall be satisfied no later than the date specified in paragraph (C)(16) of rule 3745-21-04 of the Administrative Code.

(2) Each owner or operator of a cold cleaner shall:

(a) Equip the cold cleaner with either:

(i) A cover; and if the solvent has a vapor pressure greater than 0.3 pound per square inch absolute measured at one hundred degrees Fahrenheit, or the solvent is heated or agitated, the cover shall be designed and constructed so that it can be easily operated with one hand; or

(ii) A remote solvent reservoir from which solvent is pumped through a nozzle suspended over a sink-like work area which drains back to the reservoir, provided the sink-like work area has an open drain area of less than sixteen square inches and provided the solvent neither is heated above one hundred twenty degrees Fahrenheit nor has a vapor pressure greater than 0.6 pound per square inch absolute, measured at one hundred degrees Fahrenheit;

(b) Equip the cold cleaner with a device for draining the cleaned parts; and if the solvent has a vapor pressure greater than 0.6 pound per square inch absolute, measured at one hundred degrees Fahrenheit, the drainage facility shall be constructed internally so that parts are enclosed under the cover during draining unless an internal type drainage device cannot fit into the cleaning system;

(c) Install one of the following devices if the solvent vapor pressure is greater than 0.6 pound per square inch absolute measured at one hundred degrees Fahrenheit, or if the solvent is heated above one hundred twenty degrees Fahrenheit:

(i) Freeboard that gives a freeboard ratio greater than or equal to 0.7;

(ii) Water cover (solvent must be insoluble in and heavier than water); or

(iii) Other systems of equivalent control, such as refrigerated chiller or carbon adsorption, approved by the director; and

(d) Operate and maintain the cold cleaner ~~in a manner which is consistent with good engineering practice and which minimizes~~ IN ACCORDANCE WITH THE FOLLOWING PRACTICES TO MINIMIZE solvent evaporation from the unit:

(i) PROVIDE A PERMANENT, LEGIBLE, CONSPICUOUS LABEL, SUMMARIZING THE OPERATING REQUIREMENTS.

(ii) STORE WASTE SOLVENT IN COVERED CONTAINERS.

(iii) CLOSE THE COVER WHENEVER PARTS ARE NOT BEING HANDLED IN THE CLEANER.

(iv) DRAIN THE CLEANED PARTS UNTIL DRIPPING CEASES.

(v) IF USED, SUPPLY A SOLVENT SPRAY THAT IS A SOLID FLUID STREAM (NOT A FINE, ATOMIZED, OR SHOWER-TYPE SPRAY) AT A PRESSURE THAT DOES NOT EXCEED TEN POUNDS

PER SQUARE INCH GAUGE.

(vi) CLEAN ONLY MATERIALS THAT ARE NEITHER POROUS NOR ABSORBENT.

(3) Each owner or operator of an open top vapor degreaser shall:

(a) Equip the open top vapor degreaser with a cover that can be opened and closed easily without disturbing the vapor zone;

(b) Install the following safety switches:

(i) A condenser thermostat or any other device which shuts off the sump heat if the condenser coolant is either not circulating or too warm;

(ii) A spray safety switch which shuts off the spray pump if the vapor level drops below any fixed spray nozzle;

(iii) A vapor level control thermostat or any other device which shuts off the sump heat when the vapor level rises too high; and

(iv) A water flow switch, water pressure switch or any other device which shuts off the sump heat if the water in a water-cooled condenser has no flow or no pressure, whichever is being monitored.

(c) Install one of the following devices:

(i) A freeboard with a freeboard ratio greater than or equal to 0.75, and if the open top vapor degreaser opening is greater than ten square feet, the cover must be powered or equipped with mechanical features whereby it can be readily closed when the degreaser is not in use;

(ii) Refrigerated chiller;

(iii) Enclosed design (cover or door opens only when the dry part is actually entering or exiting the open top vapor degreaser);

(iv) Carbon adsorption system, with ventilation greater than or equal to fifty cubic feet per minute per square foot of air/solvent interface (when cover is open), and exhausting less than twenty-five parts per million of solvent averaged over one complete adsorption cycle; or

(v) A control system, demonstrated to have control efficiency equivalent to or greater than any of the above, and approved by the director; and

(d) Operate and maintain the open top vapor degreaser ~~in a manner which is consistent with good engineering practice and which minimizes~~ IN ACCORDANCE WITH THE FOLLOWING PRACTICES TO MINIMIZE solvent evaporation from the unit:

(i) KEEP THE COVER CLOSED AT ALL TIMES EXCEPT WHEN PROCESSING WORK LOADS THROUGH THE DEGREASER.

(ii) MINIMIZE SOLVENT CARRYOUT BY:

(a) RACKING PARTS SO THAT SOLVENT DRAINS FREELY AND IS NOT TRAPPED.

(b) MOVING PARTS IN AND OUT OF THE DEGREASER AT LESS THAN ELEVEN FEET PER MINUTE.

(c) HOLDING THE PARTS IN THE VAPOR ZONE AT LEAST THIRTY

SECONDS OR UNTIL CONDENSATION CEASES, WHICHEVER IS LONGER.

(d) TIPPING OUT ANY POOLS OF SOLVENT ON THE CLEANED PARTS BEFORE REMOVAL FROM THE VAPOR ZONE.

(e) ALLOWING PARTS TO DRY WITHIN THE DEGREASER FOR AT LEAST FIFTEEN SECONDS OR UNTIL VISUALLY DRY, WHICHEVER IS LONGER.

(iii) CLEAN ONLY MATERIALS THAT ARE NEITHER POROUS NOR ABSORBENT.

(iv) OCCUPY NO MORE THAN ONE-HALF OF THE DEGREASER'S OPEN-TOP AREA WITH A WORKLOAD.

(v) ALWAYS SPRAY WITHIN THE VAPOR LEVEL.

(vi) REPAIR SOLVENT LEAKS IMMEDIATELY, OR SHUT DOWN THE DEGREASER.

(vii) STORE WASTE SOLVENT ONLY IN COVERED CONTAINERS.

(viii) OPERATE THE CLEANER SUCH THAT WATER CANNOT BE VISUALLY DETECTED IN SOLVENT EXITING THE WATER SEPARATOR.

(ix) USE NO VENTILATION FANS NEAR THE DEGREASER OPENING.

(x) WHEN THE COVER IS OPEN, DO NOT EXPOSE THE OPEN TOP VAPOR DEGREASER TO DRAFTS GREATER THAN 131 FEET/MINUTE, AS MEASURED BETWEEN THREE AND SIX FEET UPWIND AND AT THE SAME ELEVATION AS THE TANK LIP.

(xi) IF A LIP EXHAUST IS USED ON THE OPEN TOP VAPOR DEGREASER, DO NOT USE A VENTILATION RATE THAT EXCEEDS SIXTY FIVE CUBIC FEET/MINUTE/SQUARE FOOT OF DEGREASER OPEN AREA, UNLESS A HIGHER RATE IS NECESSARY TO MEET OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS.

(xii) PROVIDE PERMANENT, CONSPICUOUS LABEL, SUMMARIZING THE OPERATING PROCEDURES.

(4) Each owner or operator of a conveyorized degreaser shall:

(a) Install one of the following devices on all conveyorized degreasers having an air/solvent interface greater than twenty-two square feet:

(i) Refrigerated chiller;

(ii) Carbon adsorption system, with ventilation greater than or equal to fifty cubic feet per minute per square foot of air/solvent interface (when downtime covers are open), and exhausting less than twenty-five parts per million of solvent by volume averaged over a complete adsorption cycle; or

(iii) A system, demonstrated to have a control efficiency equivalent to or greater than paragraph (O)(4)(a)(i) or (O)(4)(a)(ii) of this rule, and approved by the director;

(b) Equip the conveyorized degreaser with equipment, such as a drying tunnel or rotating (tumbling) basket, sufficient to prevent cleaned parts from carrying out solvent liquid or vapor;

(c) Install the following safety switches, if the solvent is heated to its boiling point:

(i) A condenser flow switch and thermostat or any other device which shuts off the sump heat if the condenser coolant is either not circulating or too warm;

(ii) A spray safety switch which shuts off the spray pump if the vapor level drops below any fixed spray nozzle; and

(iii) A vapor level control thermostat or any other device which shuts off the sump heat when the vapor level rises too high;

(d) Equip the conveyorized degreaser with covers for closing off the entrance and exit when not in use, unless the conveyorized degreaser is equipped with a refrigerated chiller or carbon adsorption system that is always in use except during maintenance; and

(e) Operate and maintain the conveyorized degreaser ~~in a manner which is consistent with good engineering practice and which minimizes~~ IN ACCORDANCE WITH THE FOLLOWING PRACTICE TO MINIMIZE solvent evaporation from the unit:

(i) USE NO WORKPLACE FANS NEAR THE DEGREASER OPENING, AND ENSURE THAT EXHAUST VENTILATION DOES NOT EXCEED SIXTY FIVE CUBIC FEET/MINUTE/SQUARE FOOT OF DEGREASER OPENING, UNLESS A HIGHER RATE IS NECESSARY TO MEET OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION REQUIREMENTS.

(ii) MINIMIZE OPENINGS DURING OPERATION SO THAT ENTRANCES AND EXITS SILHOUETTE WORKLOADS WITH AN AVERAGE CLEARANCE BETWEEN THE PARTS AND THE EDGE OF THE DEGREASER OPENING OF LESS THAN TEN PER CENT OF THE WIDTH OF THE OPENING.

(iii) PROVIDE DOWNTIME COVERS FOR CLOSING OFF THE ENTRANCE AND EXIT DURING SHUTDOWN HOURS.

(iv) MINIMIZE CARRYOUT EMISSION BY:

(a) RACKING PARTS SO THAT SOLVENT DRAINS FREELY FROM PARTS AND IS NOT TRAPPED.

(b) MAINTAINING THE VERTICAL CONVEYOR SPEED AT LESS THAN ELEVEN FEET PER MINUTE.

(v) STORE WASTE SOLVENT ONLY IN COVERED CONTAINERS.

(vi) REPAIR SOLVENT LEAKS IMMEDIATELY, OR SHUT DOWN THE DEGREASER.

(vii) OPERATE THE CLEANER SUCH THAT WATER CANNOT BE VISUALLY DETECTED IN SOLVENT EXITING THE WATER SEPARATOR.

(viii) PLACE DOWNTIME COVERS OVER ENTRANCES AND EXITS OF THE CONVEYORIZED DEGREASER AT ALL TIMES WHEN THE CONVEYORS AND EXHAUSTS ARE NOT BEING OPERATED.

(ix) CLEAN ONLY MATERIALS THAT ARE NEITHER POROUS NOR ABSORBENT.

(5) ANY OWNER OR OPERATOR OF A SOLVENT METAL CLEANING OPERATION SHALL MAINTAIN RECORDS OF THE FOLLOWING INFORMATION IN A READILY ACCESSIBLE LOCATION FOR AT LEAST FIVE YEARS AND SHALL MAKE THESE RECORDS AVAILABLE TO THE DIRECTOR UPON VERBAL OR WRITTEN REQUEST:

(a) ALL CONTROL EQUIPMENT MAINTENANCE SUCH AS REPLACEMENT OF THE CARBON IN A CARBON ADSORPTION UNIT.

(b) THE RESULTS OF ALL EMISSIONS TESTS CONDUCTED TO DEMONSTRATE

COMPLIANCE WITH THE REQUIREMENTS OF PARAGRAPHS (O)(3)(c)(iv), (O)(3)(c)(v), (O)(4)(a)(ii), OR (O)(4)(a)(iii) OF THIS RULE.

(c) FOR COLD CLEANERS, THE TYPES OF SOLVENTS EMPLOYED AND THE VAPOR PRESSURE OF EACH SOLVENT (POUNDS PER SQUARE INCH ABSOLUTE) MEASURED AT ONE HUNDRED DEGREES FAHRENHEIT.

(P) Bulk gasoline plant.

(1) No owner or operator of a bulk gasoline plant may cause, allow or permit the transfer of gasoline at a bulk gasoline plant after the date specified in paragraph (C)(17) of rule 3745-21-04 of the Administrative Code unless the following requirements are met, except where exempted under paragraph (P)(5) of this rule:

(a) Each stationary storage tank which stores gasoline at the bulk gasoline plant is loaded by means of a submerged fill pipe;

(b) For any transfer of gasoline from a delivery vessel to a stationary storage tank located at the bulk gasoline plant, the vapors displaced from the stationary storage tank are processed by one of the following systems:

(i) A vapor balance system which is equipped with a vapor tight vapor line from the stationary storage tank to the delivery vessel and a means to ensure that the vapor line is connected before gasoline can be transferred and which is designed and operated to route at least ninety per cent by weight of the VOC in the displaced vapors to the delivery vessel; or

(ii) A vapor control system which is designed and operated to recover at least ninety per cent by weight of the VOC in the displaced vapors;

(c) Any loading rack at the bulk gasoline plant which transfers gasoline to a delivery vessel is equipped for top submerged filling or bottom filling for the transfer of gasoline;

(d) For any transfer of gasoline from a loading rack located at the bulk gasoline plant to a delivery vessel, the vapors displaced from delivery vessel are processed by one of the following systems:

(i) A vapor balance system which is equipped with a vapor tight vapor line from the delivery vessel to the stationary storage tank being unloaded and a means to ensure that the vapor line is connected before gasoline can be transferred and which is designed and operated to route at least ninety per cent by weight of the VOC in the displaced vapors to the stationary storage tank; or

(ii) A vapor control system which is designed and operated to recover at least ninety per cent by weight of the VOC in the displaced vapors; and

(e) All gasoline loading lines, unloading lines and vapor lines are equipped with fittings which are vapor tight.

(2) When a vapor balance system is employed to meet the requirements of paragraph (P)(1)(b) or (P)(1)(d) of this rule, the following operating practices shall be followed:

(a) The vapor balance system shall be kept in good working order and shall be used at all times during the transfer of gasoline;

(b) The delivery vessel hatches shall be closed at all times during the loading of the delivery vessel;

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July 25, 1995

Mr. Matthew Kuryla, Esq.
Jones, Day, Reavis & Pogue
901 Lakeside Avenue
Cleveland, Ohio 44114

Re: Proposed R&D Exemption from Cold Cleaner VOC Rule for Lubrizol Corp.

Dear Mr. Kuryla:

On February 28, 1995, you sent me a telecopy of Illinois Rule 215.181 which contained an R&D exemption similar to what you had proposed for The Lubrizol Corporation under Ohio's rule. According to Ed Doty at the U.S. EPA-Region V office, Illinois Rule 215.181 no longer exists. In order to meet U.S. EPA requirements on VOC RACT control for solvent metal cleaning, Illinois now has Rules 218 and 219 that have no exemptions based on emission level or R&D usage.

On July 19, 1995, I requested guidance from U.S. EPA on the matter of an exemption at an R&D or testing facility from the non-atomized solvent spray requirement for cold cleaners. Enclosed is a copy of that request.

I'll inform you on any response from U.S. EPA. Please contact me if you need further information.

Sincerely,

William Juris
Engineering Section
Division of Air Pollution Control

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July 19, 1995

Mr. Tom Helms, MD-15
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711

Dear Mr. Helms:

The Ohio EPA has a RACT regulation under Ohio Administrative Code (OAC) rule 3745-21-09(O) for the CTG category of solvent metal cleaning. An affected facility has requested an exemption from the specific requirement for non-atomized solvent spraying within a cold cleaner. The requested exemption would allow an atomized solvent spray within a cold cleaner at an R&D testing facility. The facility tests automotive lubricants to ensure performance in accordance with very strict ASTM guidelines. Certain difficult-to-clean parts of their test engines are cleaned with an atomized spray and then air-blown dry. The engines must be extremely clean for the ASTM lubricant tests.

The CTG on solvent metal cleaning RACT and the EPA model rule on VOC RACT specify that the solvent spray within a cold cleaner be a solid fluid stream and not an atomized spray. Neither of these documents appears to have an exemption or alternative for research and development facilities or testing facilities.

The affected facility has converted its pre-wash cleaner from a chlorinated solvent to a waterborne material. However, the facility contends that it must use a force spray of stoddard solvent to properly clean the interior surfaces of some test engine parts, such as breathertubes and holes within a crankshaft. The facility uses atomized manual sprayers within five booths. The facility has records on solvent usage for the booths based on totalizing flowmeters.

Enclosed is a copy of the materials presented by the facility for its exemption request. Also, enclosed is a copy of OAC rule 3745-21-09(O). Please review this matter and provide guidance. The Ohio EPA is planning to propose revisions to its VOC rules shortly. In the event a rule revision is appropriate in this matter, please provide a response within the next month. Should you need additional information, please call me at (614)644-3593.

Sincerely,

William Juris
Engineering Section
Division of Air Pollution Control

cc: William MacDowell, USEPA-Region V
Jim Orlemann, Ohio EPA-DAPC

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FACSIMILE

TO: Bill MacDowell, USEPA-Region V

FAX #: 312/353-8289 FAX PAGES: 3

DATE: July 19, 1995

FROM: Bill Juris, Division of Air Pollution Control
(Telephone: 614-644-3593 FAX: 614-644-3681)

COMMENTS:

Attached is a copy of part of the Illinois rule on solvent cleaning. Please note that it contains an exemption for sources that meet VOC mass emission limits of 15 lbs/day and 3 lbs/hour. It also contains an exemption for sources that are used exclusively for product quality and commercial acceptance, provided the following conditions are met: 1) sources are not an integral part of the production process, 2) source emissions do not exceed 800 lbs in any calendar month, and 3) the exemption is provided in writing by the Agency. Two questions: Has the exemption for "product quality and commercial acceptance" been approved within Illinois' ozone SIP? If it is in the approved ozone SIP, is the 800 lbs/month limit applied to each exempted source at a plant or to the total exempted sources at the plant?

A facility in Ohio has requested an exemption from Ohio EPA's cold cleaner requirement under OAC rule 3745-21-09(O)(2)(d)(v) regarding no atomized spraying. This is one of the operational practice requirements that were required by Region V to be added to Ohio's RACT rule on solvent metal cleaning.

Illinois Ti 35\Se 215\Sp E (General)

>
Subpart E: Solvent Cleaning

>
215.181 Solvent Cleaning in General.

The requirements of Sections 215.182 through 215.184 shall not apply:

(a) To sources whose emissions of volatile organic material do not exceed 6.8 kg (15 lbs) in any one day, nor 1.4 kg (3 lbs) in any one hour; or

(b) To sources used exclusively for chemical or physical analysis or determination of product quality and commercial acceptance, provided that:

(1) The operation of the sources is not an integral part of the production process;

(2) The emissions from the source do not exceed 363 kg (800 lbs) in any calendar month, and,

(3) The exemption is approved in writing by the Agency.

>
215.182 Cold Cleaning.

(a) Operating Procedures: No person shall operate a cold cleaning degreaser unless:

(1) Waste solvent is stored in covered containers only and not disposed of in such a manner that more than 20 percent of the waste solvent (by weight) is allowed to evaporate into the atmosphere;

(2) The cover of the degreaser is closed when parts are not being handled; and

(3) Parts are drained until dripping ceases.

(b) Equipment Requirements: No person shall operate a cold cleaning degreaser unless:

(1) The degreaser is equipped with a cover which is closed whenever parts are not being handled in the cleaner. The cover shall be designed to be easily operated with one hand or with the mechanical assistance of springs, counterweights, or a powered system if:

(A) The solvent vapor pressure is greater than 2 kPa (15 mmHg or 0.3 psi) measured at 38¡C (100¡F);

(B) The solvent is agitated; or

(C) The solvent is heated above ambient room temperature;

(2) The degreaser is equipped with a facility for draining cleaned parts. The drainage facility shall be constructed so that parts are enclosed under the cover while draining unless:

(A) The solvent vapor pressure is less than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38¦C (100¦F); or

(B) An internal drainage facility cannot be fitted into the cleaning system, in which case the drainage facility may be external.

(3) The degreaser is equipped with one of the following control devices if the vapor pressure of the solvent is greater than 4.3 kPa (32 mmHg or 0.6 psi) measured at 38¦ C (100¦F) or if the solvent is heated above 50¦C (120¦F) or its boiling point:

(A) A freeboard height of 7-10 of the inside width of the tank or 91 cm (36 in), whichever is less; or

(B) Any other equipment or system of equivalent emission control as approved by the Agency. Such a system may include a water cover, refrigerated chiller or carbon adsorber.

(4) a permanent conspicuous label summarizing the operating procedure is affixed to the degreaser; and

(5) If a solvent spray is used, the degreaser is equipped with a solid fluid stream spray, rather than a fine, atomized or shower spray.

>

215.183 Open Top Vapor Degreasing.

(a) Operating Requirements: No person shall operate an open top vapor degreaser unless:

(1) The cover of the degreaser is closed when workloads are not being processed through the degreaser;

(2) Solvent carryout emissions are minimized by:

(A) Racking parts to allow complete drainage;