SANITATION DISTRICTS OF LOS ANGELES COUNTY

INDUSTRIAL WASTE SECTION
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 908-4224
www.lacsd.org

TOTAL TOXIC ORGANICS

MONITORING REQUIREMENTS AND TOXIC ORGANICS MANAGEMENT PLANS

The Sanitation Districts of Los Angeles County (Districts) are required to regulated all companies subject to EPA Electroplating (40 CFR 413), Metal Finishing (40 CFR 433) and Electrical and Electronic Components (40 CFR 469) pretreatment standards. These companies are regulated for Total Toxic Organics (TTO) in addition to a variety of other constituents, and are required to either (1) perform self-monitoring for TTO or (2) implement a Toxic Organic Management Plan (TOMP) and submit a certification statement with each self-monitoring report that concentrated toxic organics are not being discharged to the sewerage system. The following information is included in this package:

Attachment 1:	Toxic Organic Management Plan Guidelines, including two examples of completed TOMPs
Attachment 2:	Toxic Organic Minimization Suggestion List
Attachment 3:	Chemicals Regulated Under Total Toxic Organics (TTO)
Attachment 4:	Toxic Organic Summary

The various options available to your company are discussed below.

TOXIC ORGANIC MANAGEMENT PLAN - ALL CATEGORIES

Companies which do not use or store toxic organic compounds.

TOMPs are appropriate for companies which do not use or store toxic organic compounds. However, companies in this situation which do not have an approved TOMP must monitor for TTO compounds on a periodic basis. Therefore, it is beneficial to take the time to submit a TOMP for approval by the Districts. The TOMP should include, as a minimum, a process description including a discussion of cleaning and stripping operations which may occur, a description of how it was determined that TTO compounds are not stored or used at the facility, a section which describes how your company will handle future process or chemistry changes which may affect the TOMP, an implementation date and certification statement. The length will be approximately two pages. An example is included in Attachment 1. Attachment 4 should also be completed and submitted with the TOMP.

The Districts will notify a company in writing that a TOMP has been approved. Until a company has implemented an approved TOMP, it is still responsible for showing compliance with EPA limitations by periodically monitoring its effluent for toxic organic compounds.

Companies which use or store toxic organic compounds.

TOMPs may be appropriate for companies which store or use toxic organic compounds. These companies should review Attachment 1, the Toxic Organic Management Plan Guidelines, to determine

the appropriateness of submitting a TOMP. If it is determined that a TOMP is appropriate, it should be prepared and submitted to the Districts for review, along with Attachment 4.

The Districts will notify a company in writing that a TOMP has been approved. Until a company has implemented an approved TOMP, it is still responsible for showing compliance with EPA limitations by periodically monitoring its effluent for toxic organic compounds.

MONITORING FOR TOXIC ORGANIC COMPOUNDS
ELECTROPLATING AND METAL FINISHING

Companies subject to pretreatment standards for Electroplating and Metal finishing categories which do not have a TOMP approved by the Districts must monitor their wastewater for TTO at the same frequency as they are performing self-monitoring for metals, etc. There are two options under the monitoring requirements.

Option 1 — Companies can monitor for the entire list of regulated TTO compounds listed in Attachment 3. This list contain 111 compounds. Any company which does not submit a partial list as discussed in Option 2 below or have an approved TOMP will automatically be required to monitor for the entire list. Attachment 4 should be completed and submitted to the Districts.

Option 2 — Companies may supply a list of toxic organic compounds which are stored or used at their facility and indicate which are expected to be present in the wastewater. The Districts will then use this list to determine which specific toxic organic compounds a company must monitor for. Companies will be notified in writing when their Option 2 list of compounds has been approved. Any company which chooses this option will, as a minimum, be required to monitor for 30 volatile organic compounds. Monitoring for other compounds may also be required. Attachment 4 should be completed and submitted for approval. Until the list is approved, the company is obligated to monitor for the entire list of regulated TTO compounds unless the company is operating under a valid and approved TOMP.

MONITORING FOR TOXIC ORGANIC COMPOUNDS
ELECTRICAL AND ELECTRONIC COMPONENTS - SUBCATEGORY A, B, C

Dischargers in the Electrical and Electronic Components category which do not have an approved TOMP must monitor for the presence of TTO in their wastewater. These companies must monitor for the entire list of regulated TTO compounds listed in Attachment 3 for the appropriate subcategory. Companies choosing this option should submit Attachment 4, the Toxic Organic Summary, to the Districts.

QUESTIONS ?

If you require further assistance, please contact the Sanitation Districts' Industrial Waste Section at (562) 699-7411, extension 2900.

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Attachment 1

TOXIC ORGANIC MANAGEMENT PLAN GUIDELINES FOR ELECTROPLATING METAL FINISHING AND ELECTRICAL AND ELECTRONIC COMPONENTS CATEGORIES

TOTAL TOXIC ORGANIC CERTIFICATION

Industrial dischargers required under the EPA electroplating (40 CFR 413), Metal Finishing (40 CFR 433), and Electrical and Electronic Components (40 CFR 469) categories have the option of submitting a Total Toxic Organic (TTO) certification statement on a periodic basis as an alternative to routine TTO monitoring. To exercise this option, the following TTO certification statement must be signed by an officer of the company or the manager responsible for overall plant operations and submitted to the Industrial Waste Section as an attachment to the Toxic Organic Management Plan (TOMP) and all discharge monitoring reports that are required by the Districts.

TTO Certification Statement

Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report (Self-Monitoring Report). I further certify that this facility is implementing the Toxic Organic Management Plan submitted to the control authority (Districts) on (specify date).

Signature of responsible company official:_____

Print name of official:_____

Title of person certifying report:_____

Date:_____

TOXIC ORGANIC MANAGEMENT PLAN

In addition to periodically submitting TTO certification statements, industrial dischargers are also required to submit a Toxic Organic Management Plan when the TTO certification alternative is requested. The TOMP must specify to the satisfaction of the Districts: (1) the quantity of each toxic organic chemical used; (2) the uses of the toxic chemicals; (3) the method of disposal used in lieu of sewer discharge such as reclamation, contract hauling, or incineration; and (4) procedures for ensuring that toxic organics do not routinely spill or leak in the wastewater. A sample TOMP is included as Appendix A. Generally, a process engineering analysis and a pollution control evaluation must be performed in order to prepare an acceptable TOMP. Guidelines adopted from the Environmental Protection Agency's Guidance Manual for Implementing Total Toxic Organic (TTO) Pretreatment Standards are presented in this document to assist industrial dischargers in preparation of a TOMP. The process consists of three basic steps: (1) process engineering analysis, (2) pollutant control evaluation, and (3) preparation of the TOMP. Each step is discussed in more detail below.

Step 1 - Process Engineering Analysis

A process engineering analysis should be conducted to determine the source and type of toxic organic compounds found in a facility's wastewater discharge including sources and compounds that could reasonably be expected to enter the wastewater in the event of spills, leaks, etc., based on the type of operation conducted at a particular plant. The process engineering analysis should include:

a. A water flow diagram to identify all possible wastewater sources;

b. A list of raw materials used in the industrial processes including chemical additives, water treatment chemicals and cleaning agents, and the wastewater stream that each regulated toxic organic compound could potentially enter;

c. A comparison of toxics found in the effluent with the list of raw materials and selection of the most probable wastewater source;

d. An evaluation of the toxics found in the effluent which were not on the raw materials list and a determination of those formed as reaction products or by-products;

e. An examination of sources such as raw materials' impurities that could result in release of toxic organic pollutants to wastewaters.

Step 2 - Pollutant Control Evaluation

An evaluation should be made of the control options that could be implemented to eliminate the toxic compound(s) or the source or potential source of toxic organic compound introduction to the treatment system. This may include in-plant modifications, solvent or chemical substitution, partial or complete recycle, reuse, neutralization, and operational changes. The analysis should be conducted on a case-by-case basis and will often result in one or more feasible options to control each source or potential source of toxic pollutant discharge. Finally, evaluation of the available control options, including the advantages and disadvantages of each, may lead to a decision of whether a TOMP is a feasible alternative to TTO monitoring.

Step 3 - Preparation of Toxic Organic Management Plan

a. A toxic organic management plan should include the following items at a minimum:A complete inventory of all toxic organic chemicals used or stored at the facility, or identified through sampling and analysis of the wastewater from regulated process operations(organic constituents of trade-name products should be obtained from the appropriate suppliers as necessary);

b. Descriptions of the methods of disposal other than sewer discharge used for the inventoried compounds, such as reclamation, contract hauling, or incineration;

c. The procedures for ensuring that the regulated toxic organic pollutants do not spill or routinely leak into process wastewaters, floor drains, non-contact cooling water, groundwater, surface waters [i.e. Spill Prevention, Control, and Countermeasures (SPCC) Plan] or any other location which allows discharge of the compounds; and

d. Determinations or best estimates of the identities and approximate quantities of toxic organic pollutants used as well as discharged from the regulated manufacturing processes.

Compounds present in wastestreams that are discharged to sanitary sewers may be a result of regulated processes or disposal, spills, leaks, rinsewater carryover, air pollution control, and other sources.

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Appendix A

EXAMPLE OF A TOXIC ORGANIC MANAGEMENT PLAN

[Adapted from EPA's
Guidance Manual for Implementing Total Toxic Organics (TTO) Pretreatment Standards]

ABC Refrigeration Corporation, High Point Plant

I. Process Engineering Analysis

A. Process Description

The ABC Refrigeration Corporation, High Point Plant, manufactures automotive radiators, condensers, and compressors from metal coils and metal castings manufactured by other suppliers. The forming and assembly processes include metal forming, degreasing, chromating, and brazing in preparation for painting and final assembly. The metal castings are machined, washed, assembled, and degreased prior to final assembly.

Wastewater types and volumes and the current wastewater treatment system are depicted in Figure1. The primary sources of process wastewater are the degreasing, chromating, fluxing, and parts washing operations. Other sources of wastewater are cooling tower blowdown and boiler blowdown. Wastewater from the degreasing operations is treated by dispersed air flotation for oil and grease removal and then discharged to a combined wastestream containing the wastewater from all other sources. The combined wastestream is then treated by coagulation/ flocculation with chemical and polymer addition for solids and metal reduction. The treated effluent is discharged to the city sewer system.

B. Identification of Toxic Organic Chemicals Entering the Plant Wastewaters

1. Identification of Solvents Used in the Manufacturing Operations

a. Greasefree is a degreasing solvent used in the forming process. The average quantity of Greasefree used is 750 gallons per year. Greasefree's principle ingredient is 1,1,1-trichloroethane. We have contacted the manufacturer of Greasefree, Doubt Chemical Corporation, who informs us that their analysis of Greasefree indicates that no other priority toxic pollutants are contained in Greasefree. A Material Safety Data Sheet has been provided to support this conclusion. Doubt's letter confirming its analysis is presented as Attachment 1.

b. Rinsewash is a degreasing solvent used in the metal castings operations. The average quantity of Rinsewash used is 1,250 gallons per year. Rinsewash is a multi-component solvent we purchase from Pound Chemical Corporation. At our request Pound has analyzed Rinsewash and found it contains naphthalene, benzene, and phenol. Pound represents that no other toxic organic pollutants were identified in its analysis of Rinsewash. Pound's letter documenting its analysis is presented as Attachment 2.

c. Rustaway is a corrosion inhibitor used during the metal castings washing process to prevent rust formation. The average quantity of Rustaway used is 925 gallons per year. We buy

Rustaway from the Exit Chemicals Corporation. The primary ingredient of Rustaway is carbon disulfide. Exit refused our request for a chemical analysis of Rustaway. We, therefore, submitted an aliquot of Rustaway to Whatsinit Laboratories, Inc. for analysis. Whatsinit's report is presented as Attachment 3 and documents that Rustaway contains chloroethane. No other toxic organics were detected.

2. Identification of Other Potential sources of Toxic Organic Pollutant Introduction to the Wastewater Treatment System

a. Durable Paints are used to finish the forming process items. The average quantity of durable paints used is 615 gallons per year. Although not detected in the wastewater analysis, durable paints are known to contain toluene. The floor drains in the forming process painting area discharge to the wastewater treatment system. Therefore, any spilled paint would enter the process wastewater treatment area.

b. Degreasing Areas - Floor drains in both degreasing areas are similarly connected to the main wastewater system. Therefore, spills of small quantities of degreasing agents could enter the treatment system. However, company policy dictates that quantities of one gallon or more of all degreasing agents must be stored in one of the solvent storage areas which have spill containment.

c. Solvent Storage Areas - Solvents, paints, and corrosion inhibitors are stored in bulk quantities in four different areas of the plant – the two degreasing areas, the washing area, and the painting area. Spills could occur by accidental dumping, spillage during routine transfer, etc. Such spills, however, cannot enter the wastewater treatment system since all the solvent storage areas have adequate spill containment capacity.

II. Pollution Control Evaluation

A. Solvent Substitution

For the degreasing, corrosion inhibitor, and painting sources of toxic organics, ABC explored the feasibility of substituting another product that does not contain toxic organic materials. Obviously, this would be the most effective manner of eliminating toxic organic discharges both from process operations and from potential spillage into floor drains. ABC obtained samples of degreasing agents, corrosion inhibitors, and paints that do not contain toxic organics from vendors and conducted pilot tests of their effectiveness. ABC concluded after these tests that the alternative degreasing agents were not nearly as effective as the ones currently used and, therefore, would impair the effectiveness of subsequent operations. Alternative paints could not be applied evenly to our products. One alternative corrosion inhibitor, Chromasorb, appears to be an acceptable alternative to the Rustaway and contains the toxic metals zinc and chromium. Thus, the option of eliminating chloroethane discharges by substituting Chromasorb for Rustaway as a corrosion inhibitor was considered.

B. Process Modifications

The major alternative to the substitution of degreasing agents is to institute changes in the degreasing process that do not result in wastewater discharge. This would be accomplished by wiping parts rather than rinsing them. After a thorough wipedown, parts would be air dried in areas under a vacuum hood. The vacuum hood is integrated with the facility's air pollution control devices. Any material used for wiping would, of course, be treated as a hazardous material. It would be transferred to drums and disposed of to a licensed disposer or reclaimer. Thus, process changes could be made that

would eliminate discharge of process wastewaters containing 1,1,1-trichoroethane, naphthalene, benzene, and phenol. Solid waste generation would, of course, increase.

C. Sealing Floor Drains

Introduction of small spills of toxic organics to wastewaters through floor drains could be eliminated if floor drains were sealed. In the process areas this option is not feasible because of state safety requirements.

III. Toxic Organic Management Plan

As a result of the above analyses, ABC believes that all of its toxic organic pollutant discharges can be controlled by a toxic organic management plan in lieu of routing toxic organic monitoring.

A. Solvent Substitution

Discharge of chloroethane will be eliminated by use of a substitute rust inhibitor. ABC will discontinue use of Rustaway as a rust inhibitor. Instead, ABC will use chromasorb to prevent rust formation in its metal casting line. Chromasorb is a zinc-chromate rust inhibitor that can be used to prevent rust formation in place of Rustaway. Chromasorb contains the toxic metals chromium and zinc. The existing wastewater treatment system, however, is designed to remove metallic pollutants. By adjustment of the chemical and polymer feed, ABC anticipates that it can maintain current levels of metals discharge while eliminating chloroethane discharges.

B. Process Changes

ABC will eliminate discharge of process wastewaters containing 1,1,1-trichloroethane, naphthalene, benzene, and phenol by instituting changes in the degreasing process. Solvent cleaning will be accomplished by immersion and manual wipedown. Parts will be allowed to air dry in an area covered by a vacuum hood prior to any water washing. Materials used for wipedown will be collected in drums, sealed, stored in a secure area and transferred to Usitagin Reclamation Corporation. Usitagin is a licensed hazardous waste disposer.

C. Toxic Organic Chemical Inventory

Material	Toxic Organic Chemicals	Quantity Used (gallons/year)
Greasefree	1,1,1-trichloroethane	750
Rinsewash	naphthalene, benzene, phenol	1,250
Rustaway	carbon disulfide, chloroethane	(discontinued)
Chromasorb	none	925 (est.)
Durable Paints	toluene	615

D. Solvent Storage Procedures

All solvents and paints containing toxic organic compounds are stored in centralized areas. These storage areas are diked to contain a volume equal to the largest container, 55 gallons, plus 50 percent. There are no floor drains in the storage areas.

All incoming containers of solvents or paints will be labeled upon receipt with the following information:

> MATERIAL CONTAINS REGULATED ORGANIC SOLVENTS
>
> 1. Use only in designated areas.
>
> 2. Do not permit this material to enter plant wastewater stream.
>
> 3. Dispose of only in designated and identified containers.

All in-plant usage containers will also be marked with the above information.

E. Spent Solvent Disposal Practices

Spent solvents are collected in 55 gallon drums, sealed, and stored, in an existing, secured, storage area. The storage area contains no floor drains. ABC sells spent solvent to Usitagin Reclamation Company. Manifests and other records pertaining to spent solvent disposal and reclamation are kept at the plant site for a minimum of 180 days.

F. Training

All personnel involved in degreasing, chromating, painting, and clean-up activities will receive instruction in the proper handling and disposal of solvents and clean-up materials in order to keep regulated toxic organics out of industrial wastewater. New employees will be trained in these procedures immediately. All personnel working in these activities are familiar with this toxic organic management plan and will follow the procedure established in the plan to eliminate regulated organics from entering the wastewater system. The basic elements of this program are posted in a conspicuous location at the work area.

G. Inspections

1. Degreasers, spray booths, and cleaning operations will be inspected routinely by the area supervisor to verify cleaning procedures and adherence to this TOMP to insure that TTO does not spill or leak into plant sewers.

2. Centrally located cleaning and solvent handling, reuse, and collection areas, as well as raw material and waste solvent storage areas, will be inspected weekly by a designated environmental representative to verify proper solvent storage, handling, and collection. A log of inspections and sign-off will be maintained by the designated environmental representative.

H. Implementation

All provisions of this plan will be fully implemented by April 1, 1989.

IV. Certification

TTO Certification Statement

Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report (Self-Monitoring Report). I further certify that this facility is implementing the Toxic Organic Management Plan submitted to the control authority (Districts) on January 4, 1989.

Signature of responsible company official: John Smith

Print name of official: John Smith

Title of person certifying report: Plant Manager, High Point Plant

Date: 1-4-89

Appendix A

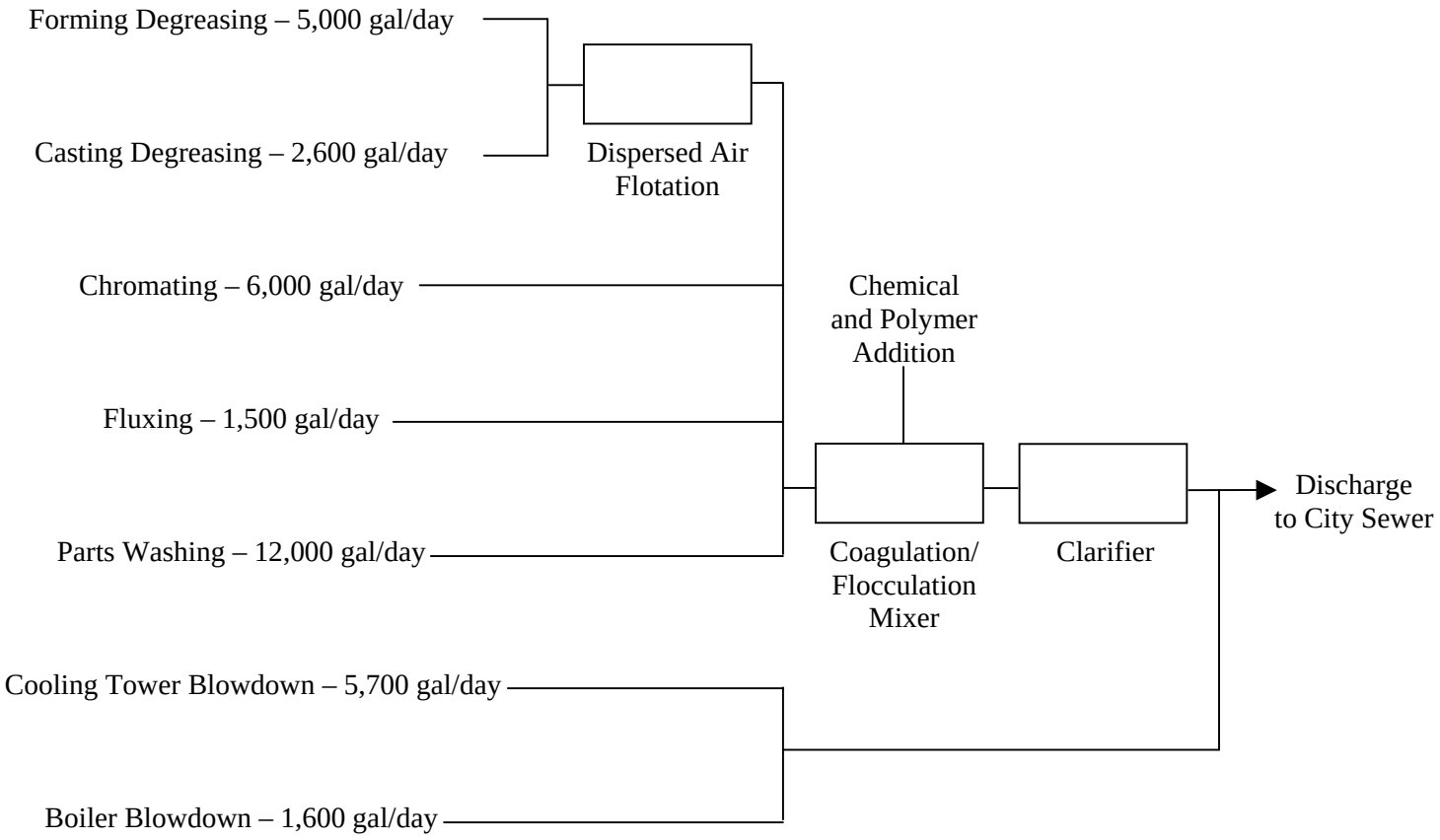

FIGURE 1

WASTEWATER GENERATION AND TREATMENT

ABC REFRIGERATION CORPORATION, HIGH POINT PLANT

SANITATION DISTRICTS OF LOS ANGELES COUNTY

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APPENDIX B

TOXIC ORGANIC MANAGEMENT PLAN FOR
COMPANIES NOT USING TOXIC ORGANIC COMPOUNDS

ABC Metal Finishing
123 Main Street
Los Angeles, CA
I.W. Permit No. 3000

I. Process Engineering Analysis

A. Process Description

ABC Metal Finishing is a job shop electroplater performing chrome and nickel plating operations. Prior to plating, parts are received from our customers and are cleaned as necessary using an alkaline cleaning system. We used to have a vapor degreaser using 1,1,1- trichloroethane. It was removed from operation in May 1990.

The chrome rinses are treated in a chrome reduction unit before being combined with the nickel rinses. The rinses are then neutralized to a pH of 9.5 - 10.0, coagulated/flocculated with the addition of an appropriate polymer and settled in a slant plate clarifier. The sludge is dewatered in a filter press. The treated effluent, along with the alkaline cleaner rinses, is discharged to the sewerage system through an existing three-stage interceptor and a sampling box.

B. Identification of Toxic Organic Chemicals Entering the Plant Wastewaters

There are no toxic organic compounds used, stored or manufactured at this facility. ABC Metal Finishing used to use 1,1,1 - trichloroethane in a vapor degreaser until May 1990. The degreasing equipment and all unused solvent were hauled off-site and legally disposed of in June 1990. The degreasing system has been replaced with an alkaline cleaning system.

ABC Metal Finishing has MSDS for all chemicals used at our facility. The hazardous ingredients listed in each MSDS were compared with the list of regulated toxic organic compounds. No listed organics were ingredients in the chemicals we use. Some of the MSDS had ambiguous ingredient names such as “petroleum hydrocarbons.” In such cases the chemical supplier was contacted and has provided an affidavit that confirmed that no regulated toxic organics were present in their product.

C. Toxic Organic Management Plan

ABC Metal Finishing has already discontinued use of 1,1,1 - trichloroethane. It is ABC’s company policy not to use toxic organic compounds in the future. Janet Smith, Plant Manager, is responsible for checking all new chemical compounds we may be considering and determining if they contain regulated toxic organics as listed in 40 CFR 413. If the chemical contains a regulated compound we will not use or purchase that compound unless we change our TOMP and have written approval from the Districts first.

All of our regular customers have been contacted and reminded that they should not be sending us parts which may be coated with regulated toxic organic compounds which may contaminate our alkaline cleaning rinses.

All provisions of this plan will be fully implemented by July 1, 1992.

II. Certification

TTO Certification Statement

Based on my inquiry of the person or persons directly responsible for managing compliance with the pretreatment standard for Total Toxic Organics, I certify that, to the best of my knowledge and belief, no dumping of concentrated toxic organics into the wastewater has occurred since filing the last discharge monitoring report (Self-Monitoring Report). I further certify that this facility is implementing the Toxic Organic Management Plan submitted to the control authority (Districts) on June 1, 1992.

Signature of responsible company official: Janet Smith

Print name of official: Janet Smith

Title of person certifying report: Plant Manager

Date: 6-2-92

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Attachment 2

TOXIC ORGANIC MINIMIZATION SUGGESTION LIST

I. Parts Cleaning
- Avoid cleaning parts (change forming compound, use peel coating, try shrink-wrap)
- Select the least hazardous cleaning medium (hot water, abrasive, detergent, alkaline, acid, oxygenated solvent, chlorinated solvent)
- Maximize cleaning efficiency (pre-clean, soak, retain dragout)
- Maximize recycling and reuse (reuse solvents and rinses, recycle)
- Use less toxic solvents (aliphatic hydrocarbons, terpene)
- Use aqueous cleaners with vigorous agitation and heat drying

II. Paint Stripping - use alternative methods listed below
- Baking soda abrasive paint stripping
- Carbon dioxide pellet paint stripping
- Plastic media stripping
- Heat cleaning oven with air pollution control for hangers and hooks

III. Printed Circuit Board Pattern Printing and Masking
- Use aqueous processable resist instead of solvent processable resist
- Use screen printing instead of photolithography to eliminate the use of developers
- Use Asher dry photoresist removal methods
- Segregate, reuse and recycle photoresist stripper

IV. Minimizing Solvent Losses
- Good Operating Practices: standardize solvent; centralize use; avoid acid formation with water, metal, heat and oil
- Monitor and test solvent before discarding
- Use proper cold soak and vapor degreasing techniques

Further References:

City of Irvine, "Aqueous Cleaning," CFC Newsletter, February 1991. Seven pages including a vendor list; available from the Districts.

U.S. EPA. Guide to Pollution Prevention: The Printed Circuit Board Manufacturing Industry,

EPA/625/7-90/007, June 1990; available from EPA Publication Distribution Center, Cincinnati, OH, 45268. (513) 569-7562.

U.S. EPA. Waste Minimization in Metal Parts Cleaning, EPA/530-SW-89-049, August 1989. Available from the same address above.

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Attachment 3

CHEMICALS REGULATED UNDER TOTAL TOXIC ORGANICS (TTO)

METAL FINISHING AND ELECTROPLATING

NON-PESTICIDES

Chemical Compound	**Synonym**
Acenaphthene	1,2 – dihydroacenaphthylene
Acenaphthylene	Cyclopenta(de)naththalene, Acenaphthalene
Acrolein	2-Propenal
Acrylonitrile	2- Propenenitrile, Cyanoethylene
Anthracene	
Benzene	Cyclohexatriene
Benzidine	(1,1'-biphenyl)-4,4'-diamine
1,2-benzanthracene	Benzanthracene, benzo(a) anthracene
Benzo(a)pyrene	3,4-benzopyrene, 1,2-benzpyrene
3,4-benzofluoranthene	benzo(b)fluoranthene, benz(e)acephenanthrylene
11,12-benzofluoranthene	benzo(k)fluoranthene, dibenzo[b,jk]fluorine
1,12-benzoperylene	benzo(g,h,i)perylene
Bis(2-chloroethoxy) methane	2,2-dichloroethoxy methane
Bis(2-chloroethyl) ether	2,2-dichloroethyl ether
Bis(2-chloroisopropyl) ether	2,2-dichloroisopropyl ether, beta,beta'-dichloroethyl ether
Bis(2-ethylhexyl) phthalate	2,2-diethylhexyl phthalate
Bromoform	Tribromomethane
4-bromophenylphenyl ether	1-bromo-4-phenoxy benzene
Butyl benzyl phthalate	1,2-benzenedicarboxylic acid
Carbon Tetrachloride	Tetrachloromethane
Chlordane (technical mixture and metabolites)	
Chlorobenzene	Benzene Chloride
Chlorodibromomethane	Dibromochloromethane
Chloroethane	Ethyl Chloride, 1-chloroethane
2-chloroethylvinyl ether (mixed)	(2-chloroethoxy) ethane
Chloroform	Trichloromethane, trichloroform
2-chloronaphthalene	Beta-chloronaphthalene
2-chlorophenol	O-chlorophenol
4-chlorophenylphenyl ether	1-chloro-4-phenoxy-benzene

Attachment 3

Chemical Compound	**Synonym**
Chrysene	1,2-benzphenanthrene, benzo(a)phenanthrene
1,2,5,6-dibenzanthracene	Dibenzo(a,h)anthracene
1,2-dichlorobenzene	Ortho-dichlorobenzene
1,3-dichlorobenzene	Meta-dichlorobenzene
1,4-dichlorobenzene	Para-dichlorobenzene
3,3'-dichlorobenzidine	
Dichlorobromomethane	Bromodichloromethane
1,1-dichloroethane	Dichloromethylmethane
1,2-dichloroethane	Ethylenechloride
1,1-dichloroethylene	1,1-dichloroethene
1,2-trans-dichloroethylene	trans-1,2-dichloroethene, trans-1,3-dichloropropene
2,4-dichlorophenol	
1,2-dichloropropane	Propylene Dichloride
1,2-dichloropropylene	1,3-dichloropropene
Diethyl Phthalate	Ethyl Phthalate
2,4-dimethylphenol	2,4-xylenol
Dimethyl phthalate	1,2-benzenedicarboxylic acid
Di-n-butyl phthalate	Dibutyl phthalaxe
Di-n-octyl phthalate	di(2-ethylhexyl)phthalate
4,6-dinitro-o-cresol	2-methyl-4,6-dinitrophenol
2,4-dinitrophenol	
2,4-dinitrotoluene	1-methyl-2,4-dinitrobenzene
2,6-dinitrotoluene	2-methyl-1,3-dinitrobenzene
1,2-diphenylhydrazine	Hydrazobenzene
Ethylbenzene	Phenylethane
Fluoranthene	Benzo(jk)fluorene
Fluorene	alpha-diphenylene methane
Hexachlorobenzene	Perchlorobenzene
Hexachlorobutadiene	Perchlorobutadiene
Hexachlorocyclopentadiene	Perchlorocyclopentadiene
Hexachloroethane	Perchloroethane, Carbon Hexachloride
Indeno (1,2,3-cd) pyrene	2,3-o-phenylene pyrene, Lndenopypene
Isophorone	3,5,5-trimethyl-2-cyclohexenone
Methyl bromide	Bromomethane
Methyl chloride	Chloromethane
Methylene chloride	Dichloromethane
Naphthalene	Naphthene

Attachment 3

Chemical Compound	**Synonym**
Nitrobenzene	
2-nitrophenol	Ortho-nitrophenol
4-nitrophenol	Para-nitrophenol
N-nitrosodimethylamine	Dimethyl-nitrosoamine, NDMA
N-nitrosodi-n-propylamine	N-nitrosodipropylamine, Dipropylnitrosamine
N-nitrosodiphenylamine	Diphenyl-nitrosoamine, N-nitroso-n-phenyl benzenamine
Parachlorometa cresol	4-chloro-3-methyl phenol
PCB-1016	Arochlor 1016
PCB-1221	Arochlor 1221
PCB-1232	Arochlor 1232
PCB-1242	Arochlor 1242
PCB-1248	Arochlor 1248
PCB-1254	Arochlor 1254
PCB-1260	Arochlor 1260
Pentachlorophenol	PCP
Phenanthrene	
Phenol	Carbolic Acid, hydroxybenzene
Pyrene	Benzo(def)phenanthrene
2,3,7,8-tetrachloro-dibenzo-p-dioxin	TCDD, dioxin
1,1,2,2-tetrachloroethane	Acetylene tetrachloride
Tetrachloroethylene	Tetrachloroethene, Perchloroethylene, PCE
Toluene	Methylbenzene
1,2,4-trichlorobenzene	unsym-trichlorobenzene
1,1,1-trichloroethane	Methyl chloroform, 1,1,1-TCE, TCA
1,1,2-trichloroethane	Vinyl trichloride
Trichloroethylene	Trichloroethene, ethylene trichloride
2,4,6-trichlorophenol	
Vinyl chloride	Chloroethylene, chloroethene

PESTICIDES

Chemical Compound	**Synonym**
Aldrin	HHDN
Alpha-BHC	alpha, beta, delta or gamma benzene hexachloride alpha, beta, delta or gamma benzene hexachlorocyclohexane alpha, beta, delta, or gamma HCH
Beta-BHC	
Delta-BHC	
Gamma-BHC (Lindane)	
4,4'-DDD (p.p-TDE)	Tetrachlorodiphenylethane
4,4'-DDE (p.p-DDX)	Dichlorodiphenyldichloroethane, p,p'-DDX
4,4'-DDT	Dichlorodiphenyltrichloroethane, p,p-TDX
Dieldrin	HEOD, aldrin epoxide
Alpha-endosulfan	Endosulfan I
Beta-endosulfan	Endosulfan II
Endosulfan sulfate	
Endrin	
Endrin aldehyde	
Heptachlor	
Heptachlor epoxide	BHC-hexachlorocyclohexane
Toxaphene	Polychlorocamphene

Attachment 3

CHEMICALS REGULATED UNDER TOTAL TOXIC ORGANICS (TTO)

ELECTRICAL AND ELECTRONIC COMPONENTS (40 CFR 469)
SUBPART A - SEMICONDUCTOR SUBCATEGORY
SUBPART B - ELECTRONIC CRYSTALS SUBCATEGORY

NON-PESTICIDES

Chemical Compound	**Synonym**
Anthracene	
Bis(2-ethylhexyl)phthalate	2,2-diethylhexyl phthalate
Butyl benzyl phthalate	
Carbon Tetrachloride	Tetrachloromethane
Chloroform	Trichloromethane
2-chlorophenol	Para-chlorophenol
1,2-dichlorobenzene	Ortho-dichlorobenzene
1,3-dichlorobenzene	Meta-dichlorobenzene
1,4-dichlorobenzene	Para-dichlorobenzene
Dichlorobromomethane	Bromodichloromethane
1,2-dichloroethane	Ethylenechloride
1,1-dichloroethylene	1,1-dichloroethene
2,4-dichlorophenol	
Di-n-Butyl Phthalate	
1,2-diphenylhydrazine	Hydrazobenzene
Ethylbenzene	
Isophorone	3,5,5-trimethyl-2-cyclohexen-one
Methylene Chloride	Dichloromethane
Naphthalene	Naphthene
2-nitrophenol	Para-nitrophenol
4-nitrophenol	Ortho-nitrophenol
Pentachlorophenol	PCP
Phenol	Carbolic Acid
Tetrachloroethylene	Tetrachloroethene, Perchloroethylene
Toluene	Methylbenzene
1,2,4-trichlorobenzene	unsym-trichlorobenzene
1,1,1-trichloroethane	Methyl chloroform
1,1,2-trichloroethane	Vinyl trichloride
Trichloroethylene	Trichloroethene
2,4,6-trichlorophenol	

CHEMICALS REGULATED UNDER TOTAL TOXIC ORGANICS (TTO)

ELECTRICAL AND ELECTRONIC COMPONENTS (40 CFR 469)
SUBPART C - CATHODE RAY TUBE SUBCATEGORY

NON-PESTICIDES

Chemical Compound	**Synonym**
Bis(2-ethylhexyl)phthalate	2,2-diethylhexyl phthalate
Chloroform	Trichloromethane
Methylene Chloride	Dichloromethane
Toluene	Methylbenzene
1,1,1-trichloroethane	Methyl chloroform
Trichloroethylene	Trichloroethene

SANITATION DISTRICTS OF LOS ANGELES COUNTY

INDUSTRIAL WASTE SECTION
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
Telephone: (562) 699-7411, FAX: (562) 908-4224
www.lacsd.org

Attachment 4

TOXIC ORGANIC SUMMARY

Company Name: _____ IW Permit No. _____

Situs Address: _____ Tel: _____

_____ Zip Code: _____

A. Check Appropriate Box(es)

1. ☐ TTO COMPOUNDS **ARE** STORED AND/OR USED AT THIS FACILITY, TOMP ATTACHED
2. ☐ **NO** TTO COMPOUNDS ARE STORED OR USED AT THIS FACILITY, TOMP ATTACHED
3. ☐ THIS COMPANY WILL PERFORM SELF-MONITORING FOR TTO (CHECK ONE OF THE BOXES BELOW)
   4. ☐ MONITORING WILL BE FOR THE ENTIRE LIST OF REGULATED TTO COMPOUNDS LISTED IN ATTACHMENT 3 FOR THE CATEGORY CHECK IN SECTION B BELOW.
   5. ☐ MONITORING WILL BE PERFORMED FOR TTO COMPOUNDS EXPECTED TO BE PRESENT IN THE WASTEWATER. IT IS UNDERSTOOD THAT AS A MINIMUM THIS COMPANY WILL MONITOR FOR APPROXIMATELY 30 VOLATILE ORGANIC COMPOUNDS

A list of compounds stored or used at this facility and those expected to be present in the wastewater is included here. (E & E C category may **not** choose this option).

TTO compounds Stored or Used at this Facility (attach additional pages as necessary)	Is the compound listed in the adjacent column expected to be present in the wastewater? (yes or no)

B. EPA Category (check one)

☐ Electroplating (40 CFR 413)

☐ Metal Finishing

☐ Electrical & Electronic Components (40 CFR 469) Subpart _____ (A, B, or C)

☐ Other _____ (describe)

C. Based on my inquiry of the person or persons directly responsible for managing compliance with EPA and Sanitation Districts' wastewater regulations, I certify that, to the best of my knowledge and belief, the above information on toxic organic compounds and all attachments are true. The Districts will be notified in writing of any changes made to the information supplied here.

Signature of Company Official: _____ Date: _____

Print Name of Official: _____ Title of Official: _____