

7/15/06

ENCLOSURE 1

YOUR FACILITY NAME: _____ *

OMB Control No. 2060-0577
Approval expires 02/28/2009

**BACKGROUND AND INSTRUCTIONS FOR
PLATING AND POLISHING INFORMATION REQUEST (Form No. 2186.01)**

Background and Instructions

Section 112 of the Clean Air Act outlines the statutory requirements for the EPA's stationary source air toxics program. Section 112(k) requires the development of standards for area sources which account for 90 percent of the emissions in urban areas of the 33 urban hazardous air pollutants (HAP) listed in the Integrated Urban Air Toxics Strategy. The Integrated Urban Air Toxics Strategy lists plating and polishing as an area source category. The plating and polishing source category is defined to include establishments primarily engaged in all types of electroplating, plating, polishing (using physical, chemical, or electrochemical processes), thermal or metal spraying, anodizing, coloring, and finishing of metals and formed products for the trade. **Please note that chromium emissions from chromium electroplating and anodizing tanks are regulated under 40 CFR 63, subpart N and will not be addressed under the plating and polishing source category. We are requesting in question I.G that you identify electroplating finishes, including chromium, applied in your facility and we are requesting facility chromium emissions in Table 1 but we are not requesting any further information on chromium electroplating operations. Also note that the electroplating, electroless plating, polishing, anodizing, thermal or metal spraying, coloring, and finishing processes covered by this questionnaire will be referred to generically as plating and polishing.**

The EPA will use the information collected from this questionnaire to evaluate the need for area source National Emission Standards for Hazardous Air Pollutants (NESHAP) for the plating and polishing area source category. If an area source NESHAP is developed, the collected information will be used to evaluate the types of provisions needed to limit HAP emissions from plating and polishing operations and to estimate the impacts of regulatory options.

Please answer all questions unless not applicable to your facility or operations, in which case note that the question is not applicable. All information should be for the reporting year. **Readily available information should be used; no additional emission testing or monitoring is required to respond to this questionnaire.**

If you believe that a disclosure of any specific information that you submit would reveal a trade secret or other sensitive business information, clearly identify such information as "Confidential." Please do not label an entire response "Confidential" if only certain portions consist of trade secret or sensitive business information. Refer to Enclosure 2 for the information the EPA may require, at a later time, to support your confidentiality claims. Any information determined to constitute a trade secret will be protected under 18 U.S.C. 1905. If no claim of confidentiality accompanies the information when it is received by the EPA, it may be made available to the public by the EPA without further notice (40 CFR Part 2.203, September 1, 1976). Because Section 114 of the Clean Air Act exempts emission data from claims of confidentiality, the emission data you provide may be made available to the public. A clarification of what the EPA considers to be emission data is contained in Enclosure 3.

An electronic version of the Information Request form is available in the public docket through the EPA's electronic docket system on the <http://www.regulations.gov> Web site. Use the Web site to download a word processing electronic copy of the form. Once in the Web site docket system, select "search," then key in the Docket ID number: EPA-HQ-OAR-2005-0084

Return this request **BY JULY 15, 2006** along with any additional information to:

Dr. Donna Lee Jones
United States Environmental Protection Agency
Office of Air Quality Planning and Standards
US EPA Mailroom (D243-02)
Research Triangle Park, NC 27711

If you have any questions regarding this request, please contact Donna Lee Jones at (919) 541-5251 (e-mail Jones.DonnaLee@epa.gov). Alternatively, you may contact our HELP desk at: EPA-PlatingSurvey-HELP@rti.org

Please note that you are to provide a separate response package for each facility in your company with plating and polishing operations. Copies of this questionnaire should be made for additional facilities.

The public reporting and recordkeeping burden for this collection of information is estimated to average 12 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

ENCLOSURE 1

INFORMATION REQUEST FOR PLATING AND POLISHING OPERATIONS

I. General Information

A. Facility Name: Greensboro Industrial Platers

B. Facility Street Address:

1) Street: 725 Kenilworth Street 2) City: Greensboro
3) State: NC 4) ZIP Code: 27403 5) County: Guilford

C. Mailing Address (If different from Facility Street Address):

1) Street or P.O. Box: P.O. box 29044 2) City: Greensboro
3) State: NC 4) ZIP Code: 27429

D. Corporate Owner:

1) Name of Corporate Owner: NB Corp. 2) Street: 725 Kenilworth Street
3) City: Greensboro 4) State: NC 5) ZIP Code: 27403
6) Corporate Sales: \$ not disclosed

E. Facility Description

1) Provide a brief description of the facility (e.g., plating and polishing job shop)
plating job shop

2) Dun & Bradstreet No: 02-459-0689 3) SARA TRI Facility ID: _____
4) Number of facility employees: 3 5) SIC(s) 3471
6) NAIC(s) 332813
7) Operating hours: Hours/day: 8 Days/week: 5 Weeks/year: 50

F. Plating and Polishing Processes Conducted (Check all that apply)

- Electroplating
- Electroless Plating (Please identify processes, e.g., electroless nickel) Electroless nickel
- Polishing (Please identify, e.g., mechanical, chemical, or electrochemical, and briefly describe) mechanical buffing/polishing
- Anodizing (Please identify and briefly describe) _____
- Thermal or Metal Spraying (Please identify and briefly describe) _____
- Other (Please identify and briefly describe) _____

G. Plating Finishes Applied (Check all that apply)

- | | | |
|--|--|--|
| <input type="checkbox"/> Brass | <input type="checkbox"/> Bronze | <input type="checkbox"/> Cadmium |
| <input type="checkbox"/> Chromium, Black | <input type="checkbox"/> Chromium, Decorative | <input checked="" type="checkbox"/> Chromium, Hard |
| <input type="checkbox"/> Copper | <input type="checkbox"/> Gold | <input type="checkbox"/> Lead |
| <input type="checkbox"/> Nickel, Black | <input type="checkbox"/> Nickel, Decorative | <input checked="" type="checkbox"/> Nickel, Industrial |
| <input type="checkbox"/> Silver | <input type="checkbox"/> Tin-Lead | <input type="checkbox"/> Tin-Nickel |
| <input type="checkbox"/> Zinc-Nickel | <input type="checkbox"/> Other (Please identify) | |

H. Technical Contact (able to answer technical questions about this survey)

- 1) Name and Title: Allison Davis, vice president
2) Telephone: (336) 274-7654 3) Facsimile: _____
4) Email: _____

I. Geographic Coordinates; either latitude and longitude (in degrees and minutes) or UTM coordinates of the center of the plant: Latitude = 36.065 Longitude = -79.813

J. Regulatory Requirements (Please indicate any Federal emission standards, such as NSPS or NESHAP, which are applicable to your facility):

- 40 CFR part 63, subpart N Chromium Electroplating NESHAP
 40 CFR part 63, subpart T Halogenated Solvent Cleaning
 Other (Please Identify) _____

K. Facility Classification for HAP (If you have an air operating permit issued under Title V of the Clean Air Act, please indicate the classification of your facility):

- Major Source Synthetic Minor Source Minor/Area Source

What co-located activities influence facility classification? _____

II. HAP Emissions and Permit Data

Please provide **readily available emissions information** in Table 1 below for the HAP emissions from your facility, and from your plating and polishing operations for the most recent year for which data are available. Please also indicate the reporting year below. Attachment 1 is a list of the most common HAP reported as being emitted by plating and polishing facilities. The complete list of HAP is provided in Attachment 2. If you are required to prepare annual emissions inventory reports, you may attach a copy of the most recent annual emissions inventory instead of completing this table. **No additional emissions testing or monitoring is required to respond to this questionnaire.**

Reporting Year: 2004

TABLE 1. HAP EMISSIONS FROM THE FACILITY AND FROM PLATING AND POLISHING OPERATIONS

	HAP	CAS Number (if known)	Reporting Year Actual		Basis for Estimate ²
			Facility Emissions (pounds/year)	Plating or Polishing Emissions (pounds/year)	
<i>Example</i>	<i>Hydrogen Fluoride</i>	<i>7664393</i>	<i>NA</i>	<i>NA</i>	<i>NA</i>
	<i>Cadmium Compounds</i>	<i>--</i>	<i>11.4</i>	<i>11.4</i>	<i>AP-42</i>
	<i>Cyanide Compounds</i>	<i>---</i>	<i>1.1</i>	<i>1.1</i>	<i>EJ</i>
	<i>Other (Specify) Trichloroethylene</i>	<i>--</i>	<i>1,460</i>	<i>0.0</i>	<i>MB</i>
YOUR DATA	Chlorine	7782505			
	Formaldehyde	50000			
	Hydrochloric Acid	7647010			
	Hydrogen Fluoride	7664393			
	Cadmium Compounds				
	Chromium Compounds ¹	<i>7738945</i>	<i>0.02</i>		<i>state approved site specific emission fact</i>
	Cyanide Compounds				
	Glycol Ethers				
	Lead Compounds				
	Manganese Compounds				
	Nickel Compounds	<i>7440020</i>	<i>0.0000771</i>	<i>0.0000771</i>	<i>state approved site specific emission facto</i>
	Other (Specify) _____				
	Other (Specify) _____				
	Total HAP	----			

¹ For facility emissions, include all chromium emissions; for plating and polishing emissions, do not include chromium emissions from electroplating or anodizing tanks subject to the NESHAP (40 CFR 63, subpart N).

² Indicate basis for emission estimates: TD = test data; MB = mass balance; EJ = engineering judgment; NA = not applicable; Other (please specify).

Please make blank copies of this table for use as work sheets and/or for additional room.

B. Permit Conditions

If any of the plating and polishing operations at your facility are subject to permit limits, please **provide a copy of your air operating permit.**

C. Emission tests

Please enclose complete test reports from any emission tests conducted on plating and polishing processes and air pollution control devices (APCDs). **No additional emissions testing or monitoring is required to respond to this questionnaire.** Include the following:

- (1) pollutants and emission rates measured,
- (2) the test method or procedure used,
- (3) information on actual plating or polishing process conditions at the time the measurements were made,
- (4) if the tests were conducted on outlet streams of APCDs, the APCD operating conditions, and
- (5) all appendices, including field data sheets, laboratory reports, example calculations, process data recorded during the test, and other supporting data.

III Plating and Polishing Process Information

A. **Electroplating Tanks:** Please provide the information below for each tank in which an electroplating finish containing HAP listed in Table 1 is applied.

**DO NOT include chromium electroplating and anodizing tanks regulated under 40 CFR 63, subpart N.*

TABLE 2. SUMMARY OF ELECTROPLATING TANK INFORMATION*

	Tank ID ¹	Finish type applied ²	Tank volume (gal)	Tank surface dimensions (ft x ft)	Maximum operating amperage (amps)	Rectifier operating hours (hr/year)	Type of bath agitation ³	Tank emission control method ⁴	Do you use covers on your tanks? ⁵
EXAMPLE	NiD-1	NiD	260	4' x 3'	500	2,040	none	TKE	Yes
	InNi-1	Nil	380	5.5' x 3'	1,000	1,550	AA	TKE	Yes
	Cd-1	Cd	450	6' x 3'	1,000	800	Ed	none	No
	Ag-1	Ag	210	4' x 2.5'	360	880	none	none	No
	Ag-2	Ag	210	4' x 2.5'	360	640	none	none	No
YOUR DATA	Ni-2	Ni	925	3.3' x 10'	2000	619	AA	none	No

¹ For example, if you operate three industrial nickel plating tanks, you can number them InNi1, InNi2, and InNi3.
² For example, Black nickel = BINi; Brass = Bs; Cadmium = Cd; Copper = Cu; Gold = Au; Lead = Pb; Nickel, Decorative = NiD; Nickel, Industrial = Nil; Silver = Ag; Tin/Lead = SnPb; Tin-Nickel = SnNi; Zinc = Zn; Zinc/Nickel = ZnNi. *DO NOT include chromium electroplating and anodizing tanks regulated under 40 CFR 63, subpart N.*
³ Please fill in: Air agitation = AA; Eductor (pump mixing) = Ed; Mechanical mixing = MM; No agitation = None; or Other (Specify) = Other.
⁴ Only controls applied to each specific tank, for example: polypropylene balls = PB; wetting agent fume suppressant = WAFS; foam blanket = FB; Merlin cover = MC; tank enclosure = TKE. Do not include control devices installed on the ventilation or exhaust system.
⁵ Indicate use of covers. If you replied Merlin cover (MC) or tank enclosure (TKE) above, indicate "yes" here also.

Please make blank copies of this table for use as work sheets and/or for additional room.

- B. Electroless Plating Tanks:** Please provide the following information for each tank in which an electroless plating, anodizing or other finish containing HAP listed in Table 1 is applied.

TABLE 3. SUMMARY OF ELECTROLESS PLATING, ANODIZING, AND OTHER FINISHING TANK INFORMATION

	Tank ID ¹	Finish type applied ²	Tank volume (gal)	Tank surface dimensions (ft x ft)	Type of bath agitation ³	Tank emission control method ⁴	Do you use covers on your tanks? ⁵
<i>Example</i>	<i>ENi-1</i>	<i>ENi</i>	<i>300</i>	<i>4' x 3'</i>	<i>air</i>	<i>None</i>	<i>Yes</i>
	<i>ENi-2</i>	<i>ENi</i>	<i>300</i>	<i>4' x 3'</i>	<i>air</i>	<i>MIST-E</i>	<i>No</i>
YOUR DATA	<i>ENi-1</i> ⊗	<i>ENi</i>	<i>250</i>	<i>4' x 3'</i>	<i>air</i>	<i>None</i>	<i>No</i>
	<i>ENi-2</i> ⊗	<i>ENi</i>	<i>250</i>	<i>4' x 3'</i>	<i>air</i>	<i>None</i>	<i>No</i>

⊗ These tanks are not operated simultaneously.

¹ For example, if you operate three electroless nickel plating tanks, they could be numbered ENi1, ENi2, and ENi3.
² For example; Alodine Treatment = Ad, Black Oxide = BLOx, Bright Dip = BrD, Cadmium Strip = CdStr, Chromate Conversion = ChCv; Electroless Nickel = ENi; Lacquering = Lq, Magnesium Treatment = Mg, Sodium Dichromate Treat = NaDiCr, Sulfuric Acid Aluminum Anodize = SuAn, Sulfuric Acid Strip Anodize = SuStrAn.
³ Please fill in Air Agitation = AA, Eductor (pump mixing) = Ed, Mechanical Mixing = MM, or No Agitation = None.
⁴ Indicate only controls applied to each specific tank, such as: polypropylene balls = PB; wetting agent fume suppressant = WAFS; foam blanket = FB; Merlin cover = MC; tank enclosure = TKE. Mist eliminators = MIST-E.
 Do not include control devices installed on exhaust system.
⁵ Indicate use of covers. If you replied Merlin cover (MC) or tank enclosure (TKE) above, indicate "yes" here also.

Please make blank copies of this table for use as work sheets and/or for additional room.

- C. **Thermal Spraying:** Please provide the following information for each thermal or metal spraying operation in which any material **containing HAP listed in Table 1** is applied.

TABLE 4. SUMMARY OF INFORMATION ON THERMAL SPRAYING

	Thermal spraying line ID ¹	Thermal spraying process type ²	Is line operated in booth or enclosure? (yes/no)	Type of booth or enclosure ³	Is operation ventilated? (yes/no)
<i>Example</i>	<i>FIS-1</i>	<i>FIS</i>	<i>Yes</i>	<i>Partial</i>	<i>No</i>
	<i>HVOF-1</i>	<i>HVOF</i>	<i>Yes</i>	<i>Complete</i>	<i>Yes</i>
YOUR DATA					

¹ For each thermal spraying process line, indicate the name or ID number.
² For example, flame spraying = FIS; electric arc spraying = EAS; plasma arc spraying = PAS; high-velocity oxy-fuel = HVOF; detonation gun = DG; Other = (specify).
³ Indicate if booth or enclosure is partial (i.e., open on one or more sides) or if enclosure is complete (enclosed on all sides).
Please make blank copies of this table for use as work sheets and/or for additional room.

D. Finished Products/Materials: Please provide the following information for products or materials that have been plated, polished, or finished at your facility **in the reporting year from Table 1**. For each product, also indicate the base metal or base material that is finished and the ID number corresponding to the tanks from Tables 2 or 3, or thermal spraying operation from Table 4, that are used to finish the product. If the specific types of different products or materials are too numerous, you may use general descriptors of the products/materials.

TABLE 5. SUMMARY OF INFORMATION ON FINISHED MATERIALS, SUBSTRATES, AND PRODUCTS

	General type of product or substrate finished	Base metal or material	ID No's for tanks or thermal spraying lines
EXAMPLE	<i>Faucets, plumbing fixtures</i>	<i>steel</i>	<i>InNi-1, InNi-2</i>
	<i>Pump housings, blades, other pump parts</i>	<i>steel</i>	<i>ENi-2, ENi-2</i>
	<i>Light fixtures</i>	<i>steel, aluminum</i>	<i>NiD-1, NiD-2</i>
	<i>Tractor parts</i>	<i>steel</i>	<i>InNi-1, InNi-2</i>
	<i>Machine rollers, military hardware</i>	<i>steel</i>	<i>Cd-1, Cd-2</i>
	<i>Electrical connectors</i>	<i>copper</i>	<i>Ag-1, Ag-2</i>
YOUR DATA	<i>machine parts</i>	<i>steel</i>	<i>Ni-2, EN-1, EN-2</i>
	<i>machine parts</i>	<i>stainless steel</i>	<i>EN-1, EN-2</i>
	<i>machine parts</i>	<i>brass</i>	<i>Ni-2, EN-1, EN-2</i>
	<i>machine parts</i>	<i>aluminum</i>	<i>EN-1, EN-2</i>

Please make blank copies of this table for use as work sheets and/or for additional room.

IV. HAP-Containing Plating and Polishing Material Data

Please provide the following information for each HAP-containing plating or polishing material used in the Reporting Year that is a source of HAP emissions reported in Table 1. If records for the full Reporting Year are not readily available, provide HAP-containing material information for a typical quarter in the Reporting Year and check that data are for one quarter of the Reporting Year. For each material, either submit speciated HAP content data from the Material Safety Data Sheet [MSDS] or provide the speciated HAP content in Columns 4 and 5 of this table. DO NOT report chromium material data from chromium electroplating operations regulated under 40 CFR 63, subpart N.

Reporting Year: 2004

Data are for Full Reporting Year: Data are for One Quarter

(Check the BOX that is applicable)

TABLE 6. HAP-CONTAINING MATERIAL DATA

	Material name or ID ¹	Manufacturer or supplier name	Amount used ²	Units ³	HAP (From Table 1)	Line ID No's. ⁴
Example	Nickel anodes	Acme	2,150	lbs	nickel	InNi-1, InNi-2
	Nickel sulfate	Acme	628	lbs	nickel	ENi-2, ENi-2
	Cadmium anodes	Industrial Chem	2,810	lbs	cadmium compound	Cd-1, Cd-2
	Potassium silver cyanide	Industrial Chem	246	lbs	cyanide compounds	Ag-1, Ag-2
	Potassium cyanide	Industrial Chem	1,227	lbs	cyanide compounds	Ag-1, Ag-2
YOUR DATA	Nickel anodes	Univertical Corp	38	lbs	nickel	Ni-2
	Nickel sulfate	Brenntag SE	48	lbs	nickel	Ni-2
	Nickel chloride	Brenntag SE	60	lbs	nickel	Ni-2

¹ Indicate the generic name, trade name, or product name for any material that contains one or more HAP.
² Indicate the total amount used during the reporting year.
³ For example, gallons (gal), pounds (lbs).
⁴ Use the same ID No's for all plating and polishing tanks listed in Tables 2 & 3, and thermal spraying lines in Table 4.

Please make blank copies of this table for use as work sheets and/or for additional room.

V. Ventilation System and Emission Control System Information

A. Ventilation Systems: For each ventilation system that exhausts one or more of the tanks listed in Tables 2 or 3, or thermal spraying operation listed in Table 4, please provide the following information, if available.

TABLE 7. LOCAL VENTILATION SYSTEM DESIGN AND OPERATING DATA

	Ventilation system ID ¹	Tank and thermal spray line ID No's. ²	Exhaust flow rate (acfm) ³	Exhaust duct diameter (in) ⁴	Hood location ⁵	Type of emission control ⁶
<i>Example</i>	V-1	InNi-1, InNi-2	6,600	18	side	none
	V-2	EN-2	3,000	9	centerline	MPME
	V-5	CD-2	4,500	12	side	WS
YOUR DATA	V-1	EN-1, EN-2	4500	16	side	none

¹ Indicate the name or identification number for each independent ventilation system.
² List the ID No's. from Tables 2 and 3 for all tanks or the thermal spray line ID No's from Table 4 for all tanks and thermal spraying operations that are exhausted by the ventilation system.
³ Indicate the exhaust flow rate through the entire system in units of actual cubic feet per minute.
⁴ Provide the diameter of the duct in inches at the inlet to the control device or at the exhaust point.
⁵ For ventilation systems that exhaust tanks, indicate if the tank exhaust hood is located on the centerlines or sides of the tanks.
⁶ Identify the type of emission control system installed on the ventilation system. For example, composite mesh pad = CMP; mesh pad mist eliminator = MPME; packed bed scrubber = PBS; high efficiency particulate air filter = HEPA; wet scrubber (other than packed bed) = WS; chevron-blade mist eliminator = CBME.

Please make blank copies of this table for use as work sheets and/or for additional room.

B. Surfactant or Wetting Agent Fume Suppressant: For each tank listed in Tables 2 or 3 in which a foam blanket, surfactant or wetting agent fume suppressant, or combination foam blanket/surfactant or wetting agent is used, please provide the following information and submit the MSDS for each surfactant or wetting agent used.

TABLE 8. SURFACTANT OR WETTING AGENT FUME SUPPRESSANTS

	Tank ID ¹	Surfactant or wetting agent name	Manufacturer/supplier	Amount used in reporting year (units) ²	Annual cost of surfactant or wetting agent (\$)	Bath surface tension (dynes/cm) ³
Example	<i>Nil-1</i>	<i>FS-250</i>	<i>Electrochem</i>	<i>14 gallons</i>	<i>\$1,840</i>	<i>45</i>
	<i>Nil-2</i>	<i>FS-250</i>	<i>Electrochem</i>	<i>14 gallons</i>	<i>\$1,840</i>	<i>45</i>
	<i>AgCN-1</i>	<i>No Foam</i>	<i>Ind. Chem</i>	<i>8 gallons</i>	<i>\$160</i>	<i>NA</i>
YOUR DATA						

¹ List the ID No's. from Tables 2 and 3 for all tanks in which the surfactant or wetting agent is used.
² Indicate the amount used during the reporting year and units (e.g., gallons, pounds).
³ If you monitor or periodically measure the bath surface tension, indicate the surface tension in units of **dynes per centimeter**.

Please make blank copies of this table for use as work sheets and/or for additional room.

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C. **Air Pollution Control Devices (APCD):** For each ventilation system listed in Table 7 that is exhausted to an emission or air pollution control device, please provide the following information

TABLE 9. AIR POLLUTION CONTROL DEVICE (APCD) INFORMATION

	Ventilation system ID ¹	APCD Type ²	Control efficiency (%) ³	Basis for control efficiency ⁴
<i>Example</i>	V-2	<i>Sure Control, Inc., mesh pad mist elimin</i>	90	<i>Manufacturer</i>
	V-5	<i>Whirlwind, Inc., wet scrubber</i>	85	<i>Perf test</i>
YOUR DATA				

¹ Indicate the ventilation system ID No or name from Table 7.
² List the type of air pollution control device. For example, composite mesh pad = CMP; mesh pad mist eliminator = MPME; packed bed scrubber = PBS; high efficiency particulate air filter = HEPA; wet scrubber (other than packed bed) = WS; chevron-blade mist eliminator = CBME.
³ Indicate the control efficiency or percent reduction in percent.
⁴ Identify the basis for the control efficiency. For example, manufacturer's guarantee, performance test, other (please specify).

Please make blank copies of this table for use as work sheets and/or for additional room.

VI. Pollution Prevention¹

A. Steps used to minimize drag-out²:

Surfactants Drip time Air blow down Other: _____

B. Describe any other pollution prevention measures (e.g., drain board between tanks angled to drain dragout back to the previous bath) or housekeeping activities that reduce air or water pollution, or solid waste.

Design fixtures to minimize dragout.
Train operators to minimize dragout when operating line.
Use less offensive, alkaline cleaners.
Install protective dike around EN tanks to capture any dragout/overflow for reuse
Store raw materials on spill-proof pallets.
Employ timers when conducting adds/make-up to prevent tank overfill.
Conduct preventative maintenance program for tanks & valves to ensure operation integrity.

C. Provide costs and cost basis (e.g., cost of developing and implementing work practices or cost of substituting a non-HAP plating finish for a HAP-containing plating finish) of work practices or pollution prevention (P2) measures currently being used:

D. Provide costs and cost basis for P2 measures evaluated but not implemented and reason(s) why they were not implemented:

¹ Pollution prevention means any practice that reduces or eliminates the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources. Examples include substituting a hazardous material with a non-hazardous material, or a process change that eliminates the use of a hazardous material.

² Dragout refers to residual plating or finishing bath solution that remains on parts or workpieces after they are removed from the tank.

Attachment 1

List of Most Common Hazardous Air Pollutants (HAPs) Reported Emitted from Plating and Polishing Facilities in SIC Code 3471

CAS Number	Chemical Name
7782505	Chlorine
50000	Formaldehyde
7647010	Hydrochloric acid
7664393	Hydrogen Fluoride
67561	Methanol
7723140	Phosphorus
108883	Toluene
1330207	Xylenes
	Cadmium Compounds
	Cobalt Compounds
	Chromium Compounds
	Cyanide Compounds
	Glycol Ethers
	Lead Compounds
	Manganese Compounds
	Nickel Compounds

Attachment 2

Complete List of Hazardous Air Pollutants (HAPs)

CAS No.	Chemical name	CAS No.	Chemical name
75070	Acetaldehyde	106467	1,4-Dichlorobenzene(p)
60355	Acetamide	91941	3,3-Dichlorobenzidene
75058	Acetonitrile	111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)
98862	Acetophenone	542756	1,3-Dichloropropene
53963	2-Acetylaminofluorine	62737	Dichlorvos
107028	Acrolein	111422	Diethanolamine
79061	Acrylamide	121697	N,N-Diethyl aniline (N,N-Dimethylaniline)
79107	Acrylic acid	64675	Diethyl sulfate
107131	Acrylonitrile	119904	3,3-Dimethoxybenzidine
107051	Allyl chloride	60117	Dimethyl aminoazobenzene
92671	4-Aminobiphenyl	119937	3,3'-Dimethyl benzidine
62533	Aniline	79447	Dimethyl carbamoyl chloride
90040	o-Anisidine	57147	1,1-Dimethyl hydrazine
1332214	Asbestos	68122	Dimethyl formamide
71432	Benzene (including benzene from gasoline)	131113	Dimethyl phthalate
92875	Benzidine	77781	Dimethyl sulfate
98077	Benzotrichloride	534521	4,6-Dinitro-o-cresol, and salts
100447	Benzyl chloride	51285	2,4-Dinitrophenol
92524	Biphenyl	121142	2,4-Dinitrotoluene
117817	Bis(2-ethylhexyl)phthalate (DEHP)	123911	1,4-Dioxane (1,4-Diethyleneoxide)
542881	Bis(chloromethyl)ether	122667	1,2-Diphenylhydrazine
75252	Bromoform	106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
106990	1,3-Butadiene	106887	1,2-Epoxybutane
156627	Calcium cyanamide	140885	Ethyl acrylate
133062	Captan	100414	Ethyl benzene
63252	Carbaryl	51796	Ethyl carbamate (Urethane)
75150	Carbon disulfide	75003	Ethyl chloride (Chloroethane)
56235	Carbon tetrachloride	106934	Ethylene dibromide (Dibromoethane)
463581	Carbonyl sulfide	107062	Ethylene dichloride (1,2-Dichloroethane)
120809	Catechol	107211	Ethylene glycol
133904	Chloramben	151564	Ethylene imine (Aziridine)
57749	Chlordane	75218	Ethylene oxide
7782505	Chlorine	96457	Ethylene thiourea
79118	Chloroacetic acid	75343	Ethylidene dichloride (1,1-Dichloroethane)
532274	2-Chloroacetophenone	50000	Formaldehyde
108907	Chlorobenzene	76448	Heptachlor
510156	Chlorobenzilate	118741	Hexachlorobenzene
67663	Chloroform	87683	Hexachlorobutadiene
107302	Chloromethyl methyl ether	77474	Hexachlorocyclopentadiene
126998	Chloroprene	67721	Hexachloroethane
1319773	Cresols/Cresylic acid (isomers and mixture)	822060	Hexamethylene-1,6-diisocyanate
95487	o-Cresol	680319	Hexamethylphosphoramide
108394	m-Cresol	110543	Hexane
106445	p-Cresol	302012	Hydrazine
98828	Cumene	7647010	Hydrochloric acid
94757	2,4-D, salts and esters	7664393	Hydrogen fluoride (Hydrofluoric acid)
3547044	DDE	123319	Hydroquinone
334883	Diazomethane	78591	Isophorone
132649	Dibenzofurans	58899	Lindane (all isomers)
96128	1,2-Dibromo-3-chloropropane	108316	Maleic anhydride
84742	Dibutylphthalate		

List of Hazardous Air Pollutants (continued)

CAS No.	Chemical name	CAS No.	Chemical name
67561	Methanol	74884	Methyl iodide (Iodomethane)
72435	Methoxychlor	108101	Methyl isobutyl ketone (Hexone)
74839	Methyl bromide (Bromomethane)	624839	Methyl isocyanate
74873	Methyl chloride (Chloromethane)	80626	Methyl methacrylate
71556	Methyl chloroform (1,1,1-Trichloroethane)	1634044	Methyl tert butyl ether
78933	Methyl ethyl ketone (2-Butanone)	101144	4,4-Methylene bis(2-chloroaniline)
60344	Methyl hydrazine	75092	Methylene chloride (Dichloromethane)
101688	Methylene diphenyl diisocyanate (MDI)	75569	Propylene oxide
101779	4,4'-Methylenedianiline	75558	1,2-Propylenimine (2-Methyl aziridine)
91203	Naphthalene	91225	Quinoline
98953	Nitrobenzene	106514	Quinone
92933	4-Nitrobiphenyl	100425	Styrene
100027	4-Nitrophenol	96093	Styrene oxide
79469	2-Nitropropane	1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin
684935	N-Nitroso-N-methylurea	79345	1,1,2,2-Tetrachloroethane
62759	N-Nitrosodimethylamine	127184	Tetrachloroethylene (Perchloroethylene)
59892	N-Nitrosomorpholine	7550450	Titanium tetrachloride
56382	Parathion	108883	Toluene
82688	Pentachloronitrobenzene (Quintobenzene)	95807	2,4-Toluene diamine
87865	Pentachlorophenol	584849	2,4-Toluene diisocyanate
108952	Phenol	95534	o-Toluidine
106503	p-Phenylenediamine	8001352	Toxaphene (chlorinated camphene)
75445	Phosgene	120821	1,2,4-Trichlorobenzene
7803512	Phosphine	79005	1,1,2-Trichloroethane
7723140	Phosphorus	79016	Trichloroethylene
85449	Phthalic anhydride	95954	2,4,5-Trichlorophenol
1336363	Polychlorinated biphenyls (Aroclors)	88062	2,4,6-Trichlorophenol
1120714	1,3-Propane sultone	121448	Triethylamine
57578	beta-Propiolactone	1582098	Trifluralin
123386	Propionaldehyde	540841	2,2,4-Trimethylpentane
114261	Propoxur (Baygon)	108054	Vinyl acetate
78875	Propylene dichloride (1,2-Dichloropropane)	593602	Vinyl bromide
		75014	Vinyl chloride
		75354	Vinylidene chloride (1,1-Dichloroethylene)
		1330207	Xylenes (isomers and mixture)
		95476	o-Xylenes
		108383	m-Xylenes
		106423	p-Xylenes

List of Hazardous Air Pollutants (continued)

CAS No.	Chemical name
0	Antimony Compounds
0	Arsenic Compounds (inorganic including arsine)
0	Beryllium Compounds
0	Cadmium Compounds
0	Chromium Compounds
0	Cobalt Compounds
0	Coke Oven Emissions
0	Cyanide Compounds ¹
0	Glycol ethers ²
0	Lead Compounds
0	Manganese Compounds
0	Mercury Compounds
0	Fine mineral fibers ³
0	Nickel Compounds
0	Polycyclic Organic Matter ⁴
0	Radionuclides (including radon) ⁵
0	Selenium Compounds

NOTE: For all listings above which contain the word "compounds" and for glycol ethers, the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic, etc.) as part of that chemical's infrastructure.

¹X'CN where X = H' or any other group where a formal dissociation may occur. For example KCN or Ca(CN)₂.

²Includes mono- and di-ethers of ethylene glycol, diethylene glycol, and triethylene glycol R-(OCH₂CH₂)_n-OR' where
n = 1, 2, or 3

R = alkyl or aryl groups

R' = R, H, or groups which, when removed, yield glycol ethers with the structure:

R-(OCH₂CH)_n-OH. Polymers are excluded from the glycol category.

³Includes mineral fiber emissions from facilities manufacturing or processing glass, rock, or slag fibers (or other mineral derived fibers) of average diameter 1 micrometer or less.

⁴Includes organic compounds with more than one benzene ring, and which have a boiling point greater than or equal to 100°C.

⁵A type of atom which spontaneously undergoes radioactive decay.