North Carolina Department of Labor
Occupational Safety and Health Division

Raleigh, North Carolina

Field Information System Operational Procedure Notice 135H

***Subject*:** Special Emphasis Program for Exposures to Health Hazards

A. **Purpose and Scope.**

This Operational Procedure Notice (OPN) establishes and implements the North Carolina Department of Labor (NCDOL) Occupational Safety and Health (OSH) Division's Special Emphasis Program (SEP) for health inspections where employees may be exposed to health hazards such as lead, chromium (VI) or Cr(VI), crystalline silica, asbestos, and isocyanates. The SEP for exposures to health hazards is intended to reduce levels of occupational exposures to lead, Cr(VI), crystalline silica, asbestos, and isocyanates in targeted sites. This instruction applies statewide to establishments under OSH Division jurisdiction.

This OPN also provides guidance to compliance safety and health officers (CSHOs) for conducting initial and follow-up health hazard SEP inspections. This document supplements procedures beyond standard inspection protocol set forth in the N. C. Field Operational Manual (FOM).

B. **Special Emphasis Program History.**

This OPN provides for special emphasis inspections in accordance with North Carolina General Statute (NCGS) 95-136.1(b)(3) due to a high risk for serious or fatal work related injuries or illnesses. Bureau chiefs and district supervisors will ensure that procedures established in this operational procedure notice are adhered to when scheduling and conducting inspections related to occupational exposures to lead, Cr(VI), crystalline silica, asbestos, and isocyanates.

Since 2000, NCDOL's Strategic Management Plan has included goals and two SEPs that focused on preventing occupational exposure to lead and silica. In 2006, the lead and silica SEPs were combined and expanded to include asbestos, isocyanates and styrene. This combined SEP was called the Health Hazards Special Emphasis Program. This SEP was revised in 2008 for the Strategic Management Plan years 2009-2013. At that time, styrene was eliminated and Cr(VI) was added. In January 2011 and January 2013, additional North American Industry Classification System (NAICS) codes were added to the isocyanates tables to better target industry groups using these chemicals.

C. **Background.**

1. Lead.

Lead is a naturally occurring metal found in the earth's crust and can be found in many occupations. Workers can be exposed to lead through inhalation of fumes and dusts, as well as through ingestion as a result of lead-contaminated hands, food, drinks, cosmetics, tobacco products, and clothing. Furthermore, workers

can take lead home on their clothes, skin, hair, tools, and in their vehicles, potentially exposing their families.

Workers may be exposed to lead from a variety of work activities. In general industry, lead can be found in the following types of businesses: radiator repair shops, battery recycling, auto body shops, scrap metal, handling brass, foundries, fishing weight production, ceramic shops (lead glazes), lead soldering, bullet manufacturing, and indoor firing ranges. In construction, lead exposure can occur in the following jobs or tasks: commercial building or residential paint removal, demolition and renovation of buildings, steel bridge maintenance and repair, maintenance or repair of other painted steel structures, and welding, torch cutting, scraping, grinding, or sandblasting painted metal objects.

Overexposure to lead can cause problems with the central nervous system, cardiovascular system, reproductive system, hematological system, and the kidneys. It can also harm children when lead is brought home on worker's clothing, skin, hair and in their vehicles. Lead poisoning often goes undetected since many of the symptoms, such as stomach pain, headaches, anxiety, irritability, and poor appetite, are nonspecific and may not be recognized as symptoms of lead poisoning.

2. Crystalline Silica.

Crystalline Silica is silicon dioxide (SiO_2), a ubiquitous substance which is the basic compound of sand, quartz, and granite rock. In pure, natural form, SiO_2 crystals are minute, very hard, and translucent. Occupational exposure to crystalline silica dust has long been known to produce silicosis, pneumoconiosis or dust disease of the lung. The three most common crystalline forms of silica encountered in industry are: quartz, tridymite, and cristobalite.

Silica is present in almost every process where natural minerals are handled. It is prevalent in foundries, in the manufacture and use of abrasives, in the construction industry in construction materials and/or byproduct of activities, and in the manufacture of glass and pottery.

Silicosis is one of the world's oldest known occupational diseases. Although silicosis is preventable, silicosis continues to be a major health threat in the workplace. Annually, more than 250 silica-related deaths occur and greater than one million workers are exposed to silica nationwide.

3. Asbestos.

Asbestos is a generic name given to a fibrous variety of six naturally occurring minerals that have been used for decades in the development of thousands of commercial products. The term "asbestos" is not a mineralogical definition but a commercial name given to a group of minerals that possess high tensile strength, flexibility, resistance to chemical and thermal degradation, and electrical resistance. The asbestos minerals have a tendency to separate into microscopic size particles that can remain in the air and are easily inhaled.

Although the use of asbestos and asbestos products has dramatically decreased, they are still found in many residential and commercial settings and continue to pose a health risk to workers. An estimated 1.3 million employees in

construction and general industry face significant asbestos exposure on the job. Heaviest exposures occur in the construction industry, particularly during the removal of asbestos during renovation or demolition. Employees are also likely to be exposed during the manufacture of asbestos products (such as textiles, friction products, insulation, and other building materials), when performing housekeeping in buildings and facilities where asbestos-containing materials (ACM) exist, and during automotive brake and clutch work.

4. Isocyanates.

Diisocyanates, commonly referred to as isocyanates, are a group of low molecular weight aromatic and aliphatic compounds. The most common of these are toluene diisocyanate (TDI), methylene biphenyl isocyanate (MDI), and hexamethylene diisocyanate (HDI). Isocyanates are widely used in the manufacture of flexible and rigid foams, fiber coatings, such as paints and varnishes, and elastomers. The compounds are increasingly used in the automotive industry, autobody repair, and building insulation materials.

Exposures to isocyanates can have adverse health effects for workers. TDI and other isocyanates are powerful irritants to the mucous membranes of the eyes, gastrointestinal and respiratory tracts (Swensson et al. 1955; Upjohn Company 1970). Direct skin contact with TDI can also cause marked inflammation (Fisher 1967). Respiratory irritation may progress to a chemical bronchitis with severe bronchospasm (Williamsom 1965). Hypersensitivity pneumonitis has been reported in isocyanate-exposed workers. Symptoms are known to continue for months or years after exposure has ceased and there are reports of deaths due to isocyanate induced hypersensitivity pneumonitis. Respiratory disease among workers exposed to isocyanate compounds has been recognized since the 1950's.

Isocyanates are also allergic sensitizers and are known to cause respiratory sensitization, an allergic, asthma-type reaction. There is evidence of cross-sensitization in which a worker is exposed to one isocyanate but reacts adversely to others as well. There is also evidence that dermal exposures are a primary cause of respiratory sensitization. Workers may have skin contact with isocyanates, which causes their immune systems to become sensitized, making them susceptible to respiratory sensitivity reactions upon future exposures. Dermal sensitization may result in rash, itching, hives and swelling of the extremities. Because they are not water soluble, they cannot be easily washed off of skin or clothing.

5. Chromium (VI).

Chromium (VI) or Cr(VI) means chromium with a valence of positive six, in any form or chemical compound in which it occurs. This term includes Cr(VI) in all states of matter, in any solution or other mixture, even if encapsulated by other substances. OSHA considers all Cr(VI) compounds to be carcinogenic. The primary intent of the OSHA standard is to protect employees from lung cancer resulting from inhalation of Cr(VI).

In addition to lung cancer, Cr(VI) is also capable of causing airway sensitization or asthma, nasal ulcerations and septum perforations, skin sensitization or allergic contact dermatitis, irritant contact dermatitis and skin ulcerations, and eye irritation.

Typical industries/operations with potential Cr(VI) exposures include electroplating, manufacturing of pigments and dyes, welding, foundry operations, spray painting, and paint removal (abrasive blasting, grinding, needle gun, etc.). As chromium compounds were used in dyes and paints and in the tanning of leather (although Cr(VI) is no longer typically used in the leather tanning industry), these compounds are often found in soil and groundwater at former or abandoned industrial sites, and may be targeted contaminants for environmental remediation at Brownfield and Superfund sites. Primer paint containing Cr(VI) is still widely used for aerospace and automobile refinishing applications.

In welding, a welder's exposure to Cr(VI) may occur from inhalation of fumes when performing "hot work" such as welding, brazing, or torch cutting stainless steel or other chromium-containing metals. In these situations, the chromium is not originally hexavalent, but the high temperatures involved in the process result in oxidation that converts the chromium to a hexavalent state in the fume. Stainless steels, in general, have 12-30% chromium content.

D. **Program Procedures.**

Health Hazards SEP inspections will be generated through accidents, complaints, referrals, and general industry programmed criteria in both construction and general industry. The assignments have priority based upon the schedule in FOM Chapter II – Compliance Programming, paragraph E. – Inspection Priorities.

1. Imminent Danger, Fatalities, Catastrophes, Accidents, Referrals and Complaints.

   a. Reports of imminent danger, fatality/catastrophe reports, accidents, formal and non-formal complaints, and safety and health referrals from other federal, state, county and city agencies, media reports, reports from physicians, hospitals, or other medical clinics and reports from the general public will be investigated by the field office.

   b. Referrals by Compliance Safety and Health Officers.

      i. The CSHO will follow the guidance for making referrals and expanding the scope under FOM Chapter IX – Complaints, Referrals, and Accidents.

   c. In case of denial of entry, the field office will maintain documentation of the event leading up to the observation.

   d. Sources for contractors involved in lead, crystalline silica, or asbestos related work may also be obtained from a variety of sources including the following:

      i. Federal or state departments of transportation contacts (bridge contracts).
      ii. Construction reports.
      iii. State and local building permits.

2. Referrals by North Carolina Department of Health and Human Services.

a. Through a Memorandum of Understanding (MOU) with the North Carolina Department of Health and Human Services (NCDHHS), the Occupational Health Surveillance Program (OHS) shall coordinate activities with NCDOL. The NCDHHS-OHS Program staff will monitor provider-based reports of occupational disease, illnesses, and injuries as specified in Article 20 of Chapter NCGS 130A. Where occupational exposure is a potential reason for workers having elevated blood lead levels or those who have been diagnosed with silicosis or asbestosis, the NCDHHS-OHS Program staff will make a referral to NCDOL on a timely basis pursuant to NCGS 130A-460(a). After reviewing the referral, the district supervisor will make a determination to assign the referral to a Health Compliance Officer (HCO).

b. In North Carolina, doctors and laboratories are required to report and hospitals are encouraged to report suspected silicosis in adults. This information is communicated to the NCDHHS, Public Health Division, Epidemiology Section, Occupational and Environmental Epidemiology Branch. NCDHHS in turn reports this information to NCDOL.

c. NCDOL also has an MOU with the NCDHHS, Public Health Division, Epidemiology Section, Occupational and Environmental Epidemiology Branch, Health Hazards Control Unit. The Health Hazards Control Unit will make referrals to the OSH Division for employers who have been granted an Asbestos Removal Permit for asbestos removals jobs that are projected to last 30 days or longer and for short duration projects with serious safety and health hazards. After reviewing the referral, the district supervisor will make a determination to assign the referral to an HCO.

3. North Carolina Department of Transportation (NCDOT). Per a settlement agreement, the OSH Division may receive bridge repair contract information from the NCDOT. This information will be used to assign lead-related inspections.

4. North Carolina Department of Environmental Quality (DEQ). The OSH Division will periodically receive a list of permits for renovation of elevated water tanks from the DEQ, Division of Water Resources, Public Water Supply Section. Because of the high potential exposure to lead and silica during paint removal and prepping operations on elevated tanks, the sites listed on the permits may be targeted for inspection.

5. Programmed Inspections.

a. The Planning, Statistics and Information Management Bureau (PSIM) will search available databases to develop lists of general industry and construction employers likely to be involved in lead, Cr(VI), crystalline silica, asbestos, and isocyanate related activities. As the lists in general industry and construction become viable, inspection sites can be randomly selected for inspection from the list compiled from the above sources using a random numbers table. (This selection process sets forth administratively neutral criteria to identify establishments for inspection.) PSIM will ensure that the lists are proportioned so that the majority of the programmed planned inspections are selected from the

Class I group and/or are among the NAICS codes that likely have lead, crystalline silica, asbestos, Cr(VI) and isocyanate related activities. As new sites are added, they should be randomized for inspection.

b. The NAICS codes for this SEP may include, but are not limited to, the NAICS codes listed in Appendix A.

c. PSIM will review the generated lists to remove inactive and duplicate sites. PSIM will also review the lists to determine and remove those sites that have received a comprehensive health inspection within the last three years. Employers that have received a comprehensive safety inspection within the last three years may still be included on the lists. The health general industry programmed lists will identify employers meeting the Health Hazards SEP criteria. The district supervisor will then assign the Health Hazard SEP inspections first and by the highest hazard sites. The safety general industry programmed lists will also identify any employers meeting the Health Hazards SEP criteria. Once identified, the district supervisor will ensure the Health Hazards SEP inspections are assigned first and conducted as joint health and safety inspections.

E. **Compliance Inspection Procedures**.

1. General.

a. Compliance activities conducted under this SEP will normally be limited to programmed inspections (the general industry schedule assigned from the OSH Division Targeting System and/or any specific programmed random scheduled list including NAICS covered by this OPN).

b. If a complaint, referral, or accident inspection is conducted in an establishment covered by this OPN, CSHOs will follow guidance listed below and in FOM Chapter IX – Complaints, Referrals and Accidents.

c. If a fatality or catastrophe investigation is conducted in an establishment covered by this OPN, CSHOs will follow guidance listed below and in FOM Chapter VIII – Fatality and Catastrophe Investigations.

2. Pre-Inspection Preparation.

a. CSHOs assigned to conduct unprogrammed, partial-scope inspections (fatalities, catastrophes, accidents, complaints, referrals, etc.) must review the site listing on the OSH Division Targeting System to determine if a deferral has been issued for the employer/site per the Consultative Services Bureau (CSB), the Education, Training and Technical Assistance (ETTA) Bureau (Star program) or through an OSH partnership. If the site has an exemption, the CSHO will refer to FOM Chapter III – Inspection Procedures, paragraph D.3.h., Exemptions from Compliance Inspections for guidance regarding exemptions to be applied to the current inspection.

b. CSHOs assigned to conduct site inspection under this SEP will familiarize themselves with the following documents as appropriate:

i. North Carolina Field Operations Manual.

ii. OSHA Instruction TED 01-00-015, Occupational Safety and Health Administration Technical Manual.

iii. OSHA Instruction CPL 02-02-058 (2-2.58), December 13, 1993, 29 CFR 1926.62, Lead Exposure in Construction: Interim Final Rule - Inspection and Compliance Procedures.

iv. OSHA Instruction STD 3-8.1, October 30, 1978, Welding, Cutting, or Heating of Metals Coated with Lead-bearing Paint.

v. OSHA Instruction CPL 02-02-067, September 4, 1998, Lead-Brass and Bronze Ingot Manufacturing.

vi. OSHA Instruction CPL 03-00-013, February 12, 2015, National Emphasis Program: Primary Metal Industries

vii. OSHA Instruction STD 1-12.6, October 30, 1978, Forging Machines (Use of lead)

viii. OSHA Instruction CPL 03-00-009, August 14, 2008, National Emphasis Program: Lead.

ix. OSHA Instruction CPL 03-00-007, January 24, 2008, National Emphasis Program: Crystalline Silica.

x. OSHA Instruction CPL 01-02-063 (2-2-.63) (Revised), November 3, 1995, Inspection Procedures for Occupational Exposure to Asbestos Final Rule 29 CFR Parts 1910.1001, 1926.1101, and 1915.1001.

xi. OSHA Instruction CPL 02-02-074, January 24, 2008, Inspection Procedures for Chromium (VI) standards.

xii. OSHA Instruction CPL 02-02-076, February 3, 2010, National Emphasis Program: Hexavalent Chromium

xiii. OSHA Instruction CPL 03-00-017, June 20, 2013, National Emphasis Program: Isocyanates.

c. In addition to the program documents listed above, ETTA has developed industry-specific Industry Data Reports (IDRs) for industries covered under this OPN. The IDRs describe the processes and identify the common hazards. The IDRs are accessible under the Field Information System (FIS) link on the OSH One Stop Shop.

3. Inspection Process.

a. CSHOs assigned to any unprogrammed partial-scope inspections conducted under any NAICS covered by this OPN, unless exempt per E.2.a., may be expanded to cover the health hazards identified within this OPN. For complaint and referral inspections, employer consent to expand to cover the health hazards identified within this OPN, must be obtained, per guidance in the FOM.

b. For program planned inspections, HCOs will indicate during the opening conference that a general industry programmed inspection is being conducted along with the fact that there is a Health Hazards SEP for lead, Cr(VI), crystalline silica, asbestos, and/or isocyanate exposure. Once assigned the Health Hazards SEP inspection, the HCO will cross-reference the employer's NAICS code to Appendix A and determine the targeted chemical. The HCO will proceed with inspection guidelines as outlined in the FOM.

c. CSHOs will establish the presence of lead, Cr(VI), crystalline silica, asbestos, and/or isocyanates by using safety data sheets, material inventories, and material purchase orders regarding materials used during the process. Interviews with management officials and employees associated with the lead, Cr(VI), crystalline silica, asbestos, and/or isocyanate-producing operations may also be needed to determine if the SEP chemical is present.

d. Worksite operation that create exposure to lead, Cr(VI), crystalline silica, asbestos, and/or isocyanates will be evaluated along with any other health hazards including, but not limited to, noise, and other chemicals. All aspects of exposure, including a review of all related written documents (i.e., recordkeeping, air monitoring, dermal exposure surveys, personal protective equipment (PPE) hazard assessments, medical monitoring, respiratory protection, hazard communication and relevant training documentation) will be addressed.

e. The HCO conducting these inspections should, when necessary, consult with safety compliance officers (SCOs) and will submit referrals to the SCO where appropriate.

f. <u>Exposure Assessment.</u>

i. CSHOs will conduct personal monitoring and collect wipe samples as appropriate to document exposures. See the OSHA Technical Manual (TED 01-00-015) on the OSHA website.

ii. Sampling for surface contamination and air contaminants for any health hazards may require the HCO to wear PPE. Each HCO who is expected to use PPE will be trained in the proper care, use, and limitations of the PPE. In instances where respiratory protection is required, the HCO will utilize the unit specific procedures for the use of respiratory protection by CSHOs contained in the NCDOL's written Respiratory Protection Program. HCOs that are required to wear respiratory protection will be medically cleared, fit tested and trained per the NCDOL Safety and Health Program Policies.

iii. While evaluating worker exposures to lead and Cr(VI), HCOs will also need to be aware of and evaluate potential exposures to other metals, including but not limited to, arsenic, manganese, cadmium, copper, and magnesium.

iv. For inspections that involve Class I, II, and III asbestos removal, only properly trained HCOs will perform the on-site asbestos evaluation.

A. HCOs required to enter a regulated area or negative pressure enclosure (containment area) will wear PPE such as, but not limited to, disposable coveralls, head coverings, foot coverings, gloves, and appropriate respiratory protection.

B. Prior to entering a containment area, HCOs will closely review and examine the asbestos sampling data on-site concerning the exposures or potential exposures. If the employer does not have sampling data or cannot supply adequate data to support the selection of the types of respirators that are in use, the HCO will not enter the areas where respirators are in use unless the HCO dons a self-contained breathing apparatus (SCBA). If the hazard determination performed by the employer has been completed in accordance with the standard, the HCO may downgrade to a powered air purifying respirator (PAPR), at a minimum, prior to entering the containment area. The HCO must obtain supervisor approval, prior to downgrading from a SCBA to a PAPR. The HCOs must conduct personal air sampling on themselves while inside the containment and provide results of the sampling to their supervisor for inclusion in their personnel file.

C. Prior to entry into a containment area, the HCO will determine if decontamination facilities exist and if the facilities are adequate. If the CSHO decides that decontamination cannot be adequately provided the supervisor will be contacted for guidance.

g. <u>Citation Guidance.</u>

i. Refer to the FOM and other appropriate OSHA reference documents (such as CPLs) prior to proceeding with citation issuance.

ii. There is no exposure limit for dermal exposures to isocyanates, but potential skin contact with isocyanates should be considered a hazard. The relevant standards to address potential violations of skin contact, contamination of work surfaces, inadequate training of employees and improper selection and use of PPE include, but not limited to, the following:

A. 29 CFR 1910.132(d)(1) - The employer shall assess the workplace to determine if hazards are present, which necessitate the use of PPE.

B. 29 CFR 1910.132(f) - The employer shall provide training to each employee who is required to use PPE.

C. 29 CFR 1910.138 - The employer shall provide hand protection to employees.

D. 29 CFR 1910.141(a)(3)(i) - All places of employment shall be kept clean to the extent that the nature of the work allows.

E. 29 CFR 1910.141(g)(2) or 29 CFR 1926.51(g) - Employees shall not be allowed to consume food or beverages in a toilet room or in any area exposed to toxic materials.

F. 29 CFR 1910.1200(h) - Employees shall be trained in the measures they can take to protect themselves from these hazards.

G. 29 CFR 1926.28(a) or 29 CFR 1926, Subpart E - Employees are required to wear appropriate personal protective equipment in all operations where there is an exposure to hazardous conditions.

iii. Unregulated Substances. Per FOM Chapter XV – Industrial Hygiene Compliance, where toxicity information exists for a substance with no permissible exposure limit (PEL) and a serious hazard exists; CSHOs will conduct employee exposure monitoring. Employee protective limits recommended by other agencies such as, but not limited to the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs) or the National Institute of Occupational Safety and Health (NIOSH) Recommended Exposure Limits (RELs) will be reviewed. If a recommended limit is set, a citation under NCGS 95-129(1) for general duty should be considered. The employer will be required to reduce employee overexposures to appropriate levels when applicable.

h. Follow-up Inspections.

i. Follow-up inspections will be conducted for each Health Hazards SEP inspection where employee exposure monitoring revealed employee exposures greater than the PEL(s) for the sampled contaminant(s).

ii. The HCO will follow the follow-up sampling procedures outlines in FOM Chapter III – Inspection Procedures, paragraph G.3.

F. **Recording and Tracking.**

1. For all inspection activity covered under this SEP, the following codes must be marked under the Emphasis/Initiatives tab in OSHA Express (OE). Codes must be entered in the inspection report as well as any associated complaint or referral forms.

   a. The National Emphasis box must be marked with the appropriate value.

      i. "Lead" for inspections involving lead.

      ii. "Silica" for inspections involving silica.

      iii. "Chrome6" for inspections involving Cr(VI).

   b. The Strategic Plan box must be marked with the appropriate value.

      i. "Lead Exposure" for inspections involving lead.

      ii. "Silica Exposure" for inspections involving silica.

      iii. "Asbestos Exposure" for inspections involving asbestos.

      iv. "Isocyanate Exposure" for inspections involving isocyanates.

      v. "Chromium Exposure" for inspections involving Cr(VI).

2. Program Improvements Guidelines.

   a. Inspections covered under this SEP that result in a program improvement specifically associated with the employer's lead, silica, asbestos, Cr(VI), and isocyanate program must be coded under Optional Information, item 42 as "S 12 – Health Hazards PROG IMPROVEMENT". Below are examples of when to code an inspection using the "S 12" code:

      i. Asbestos inspections - when there is a citation issued from 29 CFR 1910.1001 or 29 CFR 1926.1101.

      ii. Lead inspections - when there is a citation issued from 29 CFR 1910.1025 or 29 CFR 1926.62.

      iii. Cr(VI) inspections – when there is a citation issued from 29 CFR 1910.1026 or 29 CFR 1926.1126

      iv. Silica inspections – when there is a citation issued from 29 CFR 1910.1053 or 29 CFR 1926.1153.

v. Lead, silica, asbestos, Cr(VI), and isocyanate inspections - when any of the following citations are issued due to exposures directly related to the health hazards covered by this OPN: 29 CFR 1910.134 - Respiratory Protection; 29 CFR 1910.132 - PPE Hazard Assessment (including specific PPE standard); 29 CFR 1910.1200 - Hazard Communication; 29 CFR 1910.94 (29 CFR 1926.57) - Ventilation; and 29 CFR 1910.107 - Spray Finishing Using Flammable and Combustible Materials.

b. Other health program improvements for items not covered by this SEP (i.e., hearing conservation, hazard communication when only relating to other chemicals, emergency response to hazardous substance releases) will be coded as "Program Improvements" under Emphasis/Initiatives Tab in OE under "Strategic Plan Activity."

G. **Other Division Activity.**

As outlined in the Strategic Management Plan, ETTA and CSB will provide outreach programs to support the enforcement effort.

H. **Effective Date.**

OPN 135G is canceled. This OPN is effective on the date of signature. It will remain in effect until revised or canceled by the director.

John Jaskolka
SEP Team Leader

Kevin Beauregard
OSH Director

6/15/17
Date of Signature

Appendix A: Industry Type and NAICS Tables

Lead Inspections

NAICS	*Industry Type*
237310	Highway, Street, and Bridge Construction
237990	Other Heavy and Civil Engineering Construction
237110	Water and Sewer Line and Related Structures Construction
236210	Industrial Building Construction
238320	Painting and Wall Covering Contractors
238120	Structural Steel and Precast Concrete Contractors
237130	Power and Communication Line and Related Structures Construction
238910	Site Preparation Contractors
238150	Glass and Glazing Contractors
325182	Carbon Black Manufacturing
325131	Inorganic Dye and Pigment Manufacturing
325510	Paint and Coating Manufacturing
325320	Pesticide and Other Agricultural Chemical Manufacturing
327211	Flat Glass Manufacturing
327212	Other Pressed and Blown Glass and Glassware Manufacturing
327215	Glass Product Manufacturing Made of Purchased Glass
212325	Clay and Ceramic and Refractory Minerals Mining
327992	Ground or Treated Mineral and Earth Manufacturing
331419	Primary Smelting and Refining of Nonferrous Metal (except Copper and Aluminum)
331314	Secondary Smelting and Alloying of Aluminum
331423	Secondary Smelting, Refining, and Alloying of Copper
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except Copper and Aluminum)
331491	Nonferrous Metal (except Copper and Aluminum) Rolling, Drawing, and Extruding
331522	Nonferrous (except Aluminum) Die-Casting Foundries
331525	Copper Foundries (except Die-Casting)
332992	Small Arms Ammunition Manufacturing
332993	Ammunition (except Small Arms) Manufacturing
332994	Small Arms Manufacturing
322225	Laminated Aluminum Foil Manufacturing for Flexible Packaging Uses
332999	All Other Miscellaneous Fabricated Metal Product Manufacturing
334412	Bare Printed Circuit Board Manufacturing
334413	Semiconductor and Related Device Manufacturing
334414	Electronic Capacitor Manufacturing
334416	Electronic Coil, Transformer, and Other Inductor Manufacturing

OPN 135H cont'd.

NAICS	*Industry Type*
334220	Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing
334310	Audio and Video Equipment Manufacturing
334418	Printed Circuit Assembly (Electronic Assembly) Manufacturing
334419	Other Electronic Component Manufacturing
335911	Storage Battery Manufacturing
335912	Primary Battery Manufacturing
336322	Other Motor Vehicle Electrical and Electronic Equipment Manufacturing
339942	Lead Pencil and Art Good Manufacturing
221111	Hydroelectric Power Generation
221112	Fossil Fuel Electric Power Generation
221121	Electric Bulk Power Transmission and Control
221122	Electric Power Distribution
423930	Recyclable Material Merchant Wholesalers
425110	Business to Business Electronic Markets
561611	Investigation Services
561612	Security Guards and Patrol Services
561613	Armored Car Services
443111	Household Appliance Stores
811211	Consumer Electronics Repair and Maintenance
811212	Computer and Office Machine Repair and Maintenance
811213	Communication Equipment Repair and Maintenance
811219	Other Electronic and Precision Equipment Repair and Maintenance
713990	All Other Amusement and Recreation Industries
922120	Police Protection

Silica Inspections

NAICS	*Industry Type*
237310	Highway, Street, and Bridge Construction
237990	Other Heavy and Civil Engineering Construction
236210	Industrial Building Construction
237130	Power and Communication Line and Related Structures Construction
237110	Water and Sewer Line and Related Structures Construction
238190	Other Foundation, Structure, and Building Exterior Contractors
238910	Site Preparation Contractors
327123	Other Structural Clay Product Manufacturing
327124	Clay Refractory Manufacturing
327332	Concrete Pipe Manufacturing
327390	Other Concrete Product Manufacturing
327320	Ready-Mix Concrete Manufacturing

OPN 135H cont'd.

NAICS	*Industry Type*
327991	Cut Stone and Stone Product Manufacturing
327910	Abrasive Product Manufacturing
212325	Clay and Ceramic and Refractory Minerals Mining
212399	All Other Nonmetallic Mineral Mining
327112	Vitreous China, Fine Earthenware, and Other Pottery Product Manufacturing
331511	Iron Foundries
331513	Steel Foundries (except Investment)
331521	Aluminum Die-Casting Foundries
331522	Nonferrous (except Aluminum) Die-Casting Foundries
331524	Aluminum Foundries (except Die-Casting
331525	Aluminum Foundries (except Die-Casting)
331528	Other Nonferrous Foundries (except Die-Casting)
332312	Fabricated Structural Metal Manufacturing
332313	Plate Work Manufacturing
332410	Power Boiler and Heat Exchanger Manufacturing
332420	Metal Tank (Heavy Gauge) Manufacturing
333415	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing
332812	Metal Coating, Engraving (except Jewelry and Silverware), and Allied Services to Manufacturers
332997	Industrial Pattern Manufacturing
336611	Ship Building and Repairing
337110	Wood Kitchen Cabinet and Countertop Manufacturing

Asbestos Inspections

NAICS	*Industry Type*
562910	Remediation Services
336340	Motor Vehicle Brake System Manufacturing
336350	Motor Vehicle Transmission and Power Train Parts Manufacturing

Isocyanate Inspections

NAICS	*Industry Type*
221119	Other Electric Power Generation
221210	Natural Gas Distribution
238150	*Glass and Glazing Contractors*
238210	Electrical Contractors
238230	*Painting and Wall Covering Contractors*
238310	*Drywall and Insulation Contractors*
238330	Flooring Contractors
313230	*Nonwoven Fabric Mills*
314992	Tire Cord & Tire Fabric Mills
321211	*Hardwood Veneer and Plywood Mfg.*
321212	*Softwood Veneer and Plywood Mfg.*
321219	Reconstituted Wood product mfg.

OPN 135H cont'd.

NAICS	*Industry Type*
321911	Wood Window and Door Mfg.
323112	Commercial Flexographic Printing
325212	Synthetic Rubber Mfg.
325510	Paint & Coating Mfg.
326130	Laminated Plastics Plate, Sheet & Shape Mfg.
326140	Polystyrene Foam Product Mfg
326150	Urethane & Other Foam Product Mfg.
326191	Plastics Plumbing Fixture Mfg.
326199	All Other Plastics Product Mfg.
326220	Rubber & Plastic Hoses & Belting Mfg.
326291	Rubber Product Mfg. for Mechanical Use
326299	All Other Rubber Mfg.
327991	*Cut Stone and Stone Product Mfg.*
331511	Iron Foundries
331525	Copper Foundries (except Die-Casting)
332812	Metal Coating Engraving (except Jewelry & Silverware) & Allied Services to Mfrs.
332911	Industrial Valve Mfg.
332999	*All Other Misc. Fabricated Metal Product Mfg.*
333415	A/C & Heating Equipment & Commercial & Industrial Refrigeration Equipment
333618	Other Engine Equipment Mfg.
334416	Electronic Coil, Transformer & Other Inductor Mfg.
335222	Household Refrigerator & Home Freezer Mfg.
336214	*Travel Trailer and Camper Mfg.*
336322	Other Motor Vehicle Electrical & Electronic Equipment Mfg.
336360	Motor Vehicle Seating & Interior Trim Mfg.
336399	All Other Motor Vehicle Parts Mfg.
336411	Aircraft Mfg.
336612*	Boat Building
337215	Showcase, Partition, Shelving & Locker Mfg.
337920	Blind & Shade Mfg.
339911	Jewelry (except Costume) Mfg.
339950	*Sign Mfg.*
339999	Other Misc. Mfg.
483211	Inland Water Freight Transportation
488410	*Motor Vehicle Towing*
488999	All Other Activities for Transportation
811111	*General Automotive Repair*
811118	*Other Automotive Mechanical and Electrical Repair and Maintenance*
811121	Automotive Body, Paint, and Interior Repair and Maintenance
811122	*Automotive Glass Replacement Shops*
811191	*Automotive Oil Change and Lubrication Shops*
811198	*All Other Automotive Repair and Maintenance*

***** - In some cases, this NAICS code may fall under federal jurisdiction if the facility is on or adjacent to the navigable waters.

OPN 135H cont'd.

Hexavalent Chromium Inspections

NAICS	*Industry Type*
316110	Leather and Hide Tanning and Finishing
325131	Inorganic Dye and Pigment Manufacturing
325188	Industrial Inorganic Chemicals, NOC.
325211	Plastics Materials and Resin Manufacturing
325510	Truck Trailer Manufacturing
327125	Non-clay Refractory Manufacturing
327213	Glass Container Manufacturing
331111	Iron and Steel Mills
331112	Electrometallurgical Ferroalloy Product Manufacturing
331210	Iron and Steel Pipe and Tube Manufacturing from Purchased Steel
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal (except copper and aluminum)
331510	Ferrous Metal Foundries
332111	Iron and Steel Forging
332117	Powder Metallurgy Part Manufacturing
332313	Welding and Soldering Equipment Manufacturing
332322	Sheet Metal Work Manufacturing
332420	Welding Repair
332439	Other Metal Container Manufacturing
332813	Electroplating, Plating, Polishing, Anodizing, and Coloring
333319	Other Commercial and Service Industry Machinery Manufacturing
336211	Motor Vehicle Body Manufacturing
336411	Aircraft Manufacturing
336413	Other Aircraft Parts and Auxiliary Equipment Manufacturing
336510	Railroad Rolling Stock Manufacturing
336611	Ship Building and Repairing
336612*****	Boat Building
336991	Motorcycle, Bicycle, and Parts Manufacturing
339112	Surgical and Medical Instrument Manufacturing
339113	Surgical Appliance and Supplies Manufacturing

***** - In some cases, this NAICS code may fall under federal jurisdiction if the facility is on or adjacent to the navigable waters.