

**OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES**

PROGRAM DIRECTIVE

Program Directive: A – 273

Issued: February 14, 2009

Revised: June 29, 2017

- SUBJECT:** National Emphasis Program (NEP): Lead in general industry and construction
- PURPOSE:** This instruction describes policies and procedures for implementing a national emphasis program (NEP) to reduce occupational exposures to lead in accordance with the provisions of the Field Information Reference Manual (FIRM).
- SCOPE:** This instruction applies to all of Oregon OSHA.
- ACTION:** The health field operations manager and health enforcement managers must ensure that Oregon OSHA employees follow the procedures established in this instruction when scheduling programmed inspections.
- CANCELLATION:** Program Directive Lead: Inspections on Construction Sites A-225, March 11, 1996 (revised April 30, 2007).
- REFERENCES:** OSHA Instruction CPL 03-00-009, August 14, 2008, National Emphasis Program – Lead.
- Field Inspection Reference Manual (FIRM).
- NIOSH ABLES Program: National Institute for Occupational Safety and Health (NIOSH) under the Adult Blood Lead Epidemiology and Surveillance (ABLES) Program for the 2002 calendar year.
- Oregon OSHA Technical Manual.
- Lead: Exposures in Construction, Program Directive A-208, June 15, 1994 (revised June 7, 2005).
- Welding, Cutting, or Heating Metals Coated with Lead Based Paint, Program Directive A-9, February 1, 1979 (revised June 6, 2000).
- Lead: Guidance for Prophylactic Chelation, Program Directive A-10, January 1, 1979 (revised May 8, 2000).

Lead: Brass and Bronze Ingot Manufacturing Industry Compliance Requirements, Program Directive A-230, July 1, 1997 (revised January 30, 2001).

BACKGROUND: The toxic effects of occupational exposure to lead are well established. Lead is a potent, systemic poison that serves no known useful function once absorbed by the body. Lead adversely affects numerous body systems and causes forms of health impairment and disease which can arise from acute or chronic exposure, including damage to blood-forming, nervous, urinary, and reproductive systems. In 1990, the National Institute for Occupational Safety and Health (NIOSH) set a national goal to eliminate lead exposures that result in workers having blood lead concentrations greater than 25 µg/dL of whole blood.

This NEP is being implemented to direct Oregon OSHA's field inspection efforts to address lead exposures in the workplace, including General Industry (Division 2) and Construction (Division 3).

The purpose of this NEP is to outline an effective strategy for decreasing occupational lead exposures while making the best use of resources to focus on serious hazards.

PROCEDURES: Inspections under this emphasis program must be conducted under the following priority:

A. Complaints and Referrals:

Every complaint or referral for any operation where there is the potential for lead exposure must be handled as follows:

1. Based upon the information provided, a compliance safety and health officer (CSHO) must bring all potential lead worksites and establishments to the attention of the health enforcement manager and follow Oregon OSHA's enforcement policy.
2. The CSHO may inspect all referrals from the Department of Human Services (DHS), Office of Public Health Systems for employees who show elevated blood lead levels (BLL) at or above 25 µg/dL. DHS will give a quarterly report to Oregon OSHA's health analyst for review of all industries with BLL over 25µg/dL. All new industries that were not in the previous report and any construction employers will be referred as soon as possible for inspection.

3. The CSHO will inspect referrals with one or more worker blood lead level(s) which equal or exceed 25 µg/dL of whole blood. At the discretion of the health field operations manager, the CSHO may not inspect worksites where the hazards of lead have been addressed appropriately through previous enforcement proceedings.

B. Observation:

Any means to determine when activities involve worker exposure to hazards associated with lead is a means of initiating an inspection. Some examples include: generating lead dust and fumes associated with some molten metal industries; using items that contain lead; producing lead ingots or shots; abrasive blasting, sanding, cutting, burning, welding, or painting steel structures coated with lead contaminated paints, or working with and disturbing materials containing lead. **All compliance personnel must be on the lookout for activities where there is a potential for exposure to lead.**

1. Whenever a CSHO observes an operation where there is a potential for lead exposure or receives information, regardless if it is a non-formal complaint, referral, or a report from members of the general public, the CSHO must:
 - a. Document the status and condition of the work operation as far as it is known, noting any serious hazards.
 - b. Note the name and address and location of the worksite and the employer(s) performing the operation.
 - c. Provide the health enforcement manager with the information. Based upon the information provided, the CSHO must investigate and inspect all potential lead worksites as follows:
 - i. If the worksite has been inspected within the last 30 days, the CSHO must consider the results of the inspection along with the current worksite observations when determining whether or not to conduct an inspection.

1. If the lead related work was not in progress during the previous visit to the site but is currently in progress, the CSHO must authorize and open an inspection.
2. If the lead related work was in progress and evaluated during the previous inspection, the CSHO will open an inspection only if serious violations are present or can reasonably be expected.
 - ii. If the worksite has not been inspected within the previous 30 days, the CSHO must investigate the site unless it is apparent that workers are not exposed to lead.
2. The CHSO must investigate reports of imminent danger; fatality and catastrophe reports; formal and non-formal complaints; safety and health referrals from federal, state, county, and city agencies; media reports; reports for physicians, hospitals, or medical clinics; and reports from the general public.
3. The Oregon OSHA policy allows the health field operations manager to saturate areas of high construction activity to identify potential lead in construction worksites. The CSHO must document the events leading to the observation in case entry is denied and the field office will maintain this documentation. The health field operations manager may discover worksites by a specific search or during routine on-duty or off-duty travel.

C. Master List Generation:

Inspections conducted under this NEP will focus on industries where employees are potentially exposed to levels of lead in excess of the permissible exposure limit (PEL). To assist Oregon OSHA in the selection, a list of industries and their SIC/NAICS is provided in Appendix A. Appendix A provides a list of SIC/NAICS codes for industries where employees exhibit high blood lead levels.

Appendix A is a list of industries to assist Oregon OSHA in determining industries for targeting. The data for this appendix were provided by the National Institute for Occupational Safety and Health (NIOSH) under the Adult Blood Lead Epidemiology

and Surveillance (ABLES) Program for the 2002 calendar year. Federal OSHA analyzed this data to determine those industries where elevated blood lead levels indicate a need for increased focus in evaluation of airborne lead exposures. Oregon OSHA's Health Lab has been collecting data on lead overexposures and have included a list of SIC codes as well. This list will be included in determining a target list.

1. Industry Selection

The health enforcement analyst will identify the industry sectors that are to be selected and prepare a master list of SIC/NAICS codes from those listed in Appendix A. The analyst will document the rationale for selecting each industry and may include information such as, but not limited to:

- a. History of overexposures, based on previous local inspection history within Oregon OSHA's jurisdiction of industries, listed in Appendix A.
- b. Limited or no local inspection history of an industry listed in Appendix A.
- c. Industries that are not included in Appendix A, but are known by Oregon OSHA based on local knowledge (e.g., referrals or previous inspection history) that have demonstrated a pattern of lead overexposures or reported employees experiencing elevated blood lead levels.

After identifying the relevant industries, Oregon OSHA will develop a randomized master list of establishments within the designated industries. The NEP will include establishments with fewer than 10 employees. Each health enforcement manager will receive a regional list.

2. Deletions

Oregon OSHA may delete from the list any establishment that has had an inspection where exposures to lead have been evaluated within the current year or previous three fiscal years and no serious violations were cited related to lead, a subsequent inspection documented employer efforts to abate all serious hazards, or no cases of increased blood lead levels were identified. If an establishment meeting these criteria is not deleted, Oregon OSHA will document the decision and the justification.

3. Cycle Generation

Oregon OSHA will assign a sequential number, starting at the top of the list with number one, to each establishment on the corrected list. Oregon OSHA will then apply a random number table to create the first inspection cycle. Subsequent cycles will be created in the same way until the expiration of the NEP or until all establishments on the list have been assigned to a cycle. Cycles may be created all at once or as needed, and need not be of the same size. Whenever an office becomes aware of a previously unknown establishment in one of the identified SIC/NAICS, that establishment will be added to the master list for inclusion in the next inspection cycle.

When using the construction site list, the health enforcement manager may check with state agencies such as the Department of Transportation to determine whether or not the selected site is active.

NOTE: If a contractor does not have an active site, the field office may elect to review the records at the company's office or headquarters (bid specifications, contracts, respirator program, medical surveillance records, air-monitoring records, lead training, compliance program, and hazard communication). Oregon OSHA will document all citable deficiencies and violations issued, provided that exposure to lead within the previous six months can be substantiated.

APPLICATION:

- A. Inspections under this NEP must address all aspects of any potential lead work or exposure and include a review of all related written documentation (e.g., record keeping, monitoring, medical, respirator fit testing and procedures, hazard communication, and training materials). The CSHO may expand the inspection scope beyond the lead related activities if hazards or violations are observed.
 - 1. During the normal conduct of an NEP inspection, the CSHO will review the employer's medical surveillance program for lead. All blood lead information, where available, will be reviewed as part of the inspection.

2. The CSHO will perform a detailed assessment of the employer's hazard communication program as it relates to the operations and chemicals used in the processes where lead exposures may occur. The evaluation will include an MSDS review according to OSHA's current policy.
3. For all inspections conducted under this NEP, the CSHO will include an evaluation of the employer's engineering controls for the processes where lead exposures are above the permissible exposure limit. The CSHO will also evaluate the effectiveness of administrative controls put in place by the employer as to their effectiveness in reducing exposures.
4. The CSHO will conduct a detailed evaluation of the employer's personal protective equipment (PPE) and respiratory protection programs on every inspection where lead hazards exist. The CSHO will evaluate the employer's respirator program according to Respiratory Protection: General Guidelines, Program Directive A-233.
5. The CSHO will review the employer's hygiene program to determine if hand-to-mouth contact may be contributing to employee exposure to lead. The CSHO will assess and document housekeeping procedures and use of PPE.
6. The CSHO will conduct personal air monitoring and collect wipe samples, as appropriate, to document exposures for all inspections under this NEP where it is possible to sample for lead exposures. Monitoring may not be necessary, however, if at the time of the inspection, the employer provides reliable and recent data showing employees' exposures are below the action level (AL) and the conditions in the work place are the same as when the employer completed sampling. Additionally, if during a follow-up inspection, the employer's sampling data shows that engineering controls have reduced the employee exposures below the AL and the data is reliable, air sampling may not be necessary.
7. In any inspection where the CSHO decides to use the employer's monitoring data to characterize employee exposures, the CSHO will document this decision, including copies of the employer's exposure data, and include it in the case file. When the CSHO is not able to get copies of the employer's sampling results, the CSHO will conduct the necessary air monitoring.

8. In certain circumstances the CSHO may use employer's monitoring data when issuing proposed citations for employee overexposures to lead. However, the CSHO may only use employer-generated data when personal air sampling is not possible and the employer's data meets the requirements of 1910.1025(d) or 1926.62(d). Oregon OSHA expects that this will rarely occur and the health enforcement manager will be responsible for ensuring that adequate documentation related to that decision is included in the case file.
 9. The CSHO must conduct personal monitoring and collect wipe samples as appropriate to document exposures. The CSHO may contact the Oregon OSHA Occupational Health Laboratory or the health enforcement manager for further instructions. When air monitoring is conducted during a construction inspection, the CSHO will request expedited sample analyses from the Oregon OSHA Occupational Health Lab.
- B. While evaluating employee exposures to lead, the CSHO also needs to be aware of and evaluate potential exposures to other metals including, but not limited to, arsenic, manganese, chromium, cadmium, copper, and magnesium. Arsenic should be requested on a separate filter.
 - C. During inspections conducted under this NEP, the CSHO will provide the employer with documents regarding the appropriate lead standard, the health effects of lead, effective control measures, and employer and employee rights and responsibilities.
 - D. Joint Safety and Health Inspections - Industrial hygienists conducting construction inspections should consult with safety CSHOs on serious safety hazards such as falls, electrocution, struck-by, or caught-in hazards and should file referrals where appropriate. Where resources permit, a joint safety and health inspection should be conducted.
 - E. Protecting the CSHO during any inspection is important. In order to ensure adequate protections, the CSHO will conduct a hazard determination to establish the presence of lead (or other hazardous substances) prior to initiating the walk around. When conducting this hazard determination, the CSHO will rely on information such as previous inspection history, material safety data sheets, professional judgment, and previous exposure monitoring surveys. Personal protective equipment to be used during the inspection, such as respirators, gloves, and/or protective clothing is to be made available to the CSHO prior to the inspection and will be worn based upon the CSHOs determination of a hazard.

- F. Follow-up inspections will be made according to the Field Inspection Reference Manual (FIRM), Chapter 1. The follow-up inspection will be conducted normally within 30 days after the final abatement date for the cited violations.
- G. Follow-up inspections will be conducted for all cases with documented exposures above the permissible exposure limit (PEL) for lead and for all cases with documented exposures above the action level where the employer has failed to take appropriate action. During the follow-up visit, the CSHO will verify the employer's abatement documentation and verification by carefully evaluating all air monitoring results, implemented engineering controls, personal protective equipment requirements (including respiratory protection), housekeeping and employee information and training.
- H. Personal air sampling will be conducted by OSHA staff in all situations unless the job task or job site is no longer active. Use of employer generated monitoring data is not permitted for the purpose of abatement verification under this NEP unless an exception applies (see Application, A. 6.)

PROGRAM EVALUATION:

One year from implementation, Oregon OSHA will evaluate this NEP and determine if it's effective. If Oregon OSHA determines the NEP is ineffective, Oregon OSHA will select different industries from Appendix A and develop a new list. If Oregon OSHA determines the NEP is effective but the master list of establishments has been depleted to the point of having too few work sites for each cycle, Oregon OSHA will select different industries from Appendix A and develop a new NEP list. If Oregon OSHA determines the NEP is effective and the master list of establishments still contains enough employers, Oregon OSHA may renew the NEP.

Recording in OTIS: Recording in OTIS: The following instructions for completing the appropriate inspection classification must be applied when recording inspections under this NEP.

- A. Any programmed inspection covered under this national emphasis program for lead in general industry and construction must be marked as inspection type "planned." The emphasis program must be entered in the Emphasis tab as "Lead- Potential Exposure to Lead in All Industries." Enter the optional information under Related/Optional as S-25 Lead.

- B. Any unprogrammed inspection covered under this national emphasis program must be marked as inspection the appropriate inspection type (complaint, referral, accident, monitored, follow-up). The emphasis program must be entered in the Emphasis tab as “Lead- Potential Exposure to Lead in All Industries.” Enter the optional information under Related/Optional as S-25 Lead.
- C. Unprogrammed inspections will be coded as scope “Partial” unless there is evidence for a compliance officer to expand to a comprehensive inspection. Inspections conducted off of the Lead emphasis scheduling list will be coded as scope “Comprehensive.”
- D. Enter substance specific codes on the AVD and on the Violation.

History: Issued 2-14-2009 Revised 3-22-2010 and 6-29-2017

Appendix A

Targeting

The goal of the NEP is to affect a reduction in employee blood lead levels by reducing lead exposures throughout industry. To meet this goal, and to effectively manage Oregon OSHA's limited resources, Appendix A provides a list of industries where lead exposures occur. Oregon OSHA will focus enforcement efforts on the industries from this list. They will select the industries to be included by following the procedures previously outlined in this document. The industries listed in the tables in this appendix are provided to assist Oregon OSHA in targeting. The industry list was developed from the Adult Blood Lead Epidemiological Surveillance (ABLES) database for 2002. The ABLES data was provided to OSHA by the National Institute for Occupational Safety and Health (NIOSH). This data includes employee blood lead levels reported by laboratories in states who participate in the ABLES program. OSHA has analyzed this information resulting in the identification of industries where there was a tendency for elevated employee blood lead levels. The NIOSH ABLES database for 2002 uses SIC codes for industry designation.

While it is understood that the NAICS system is currently in use to identify industries, those codes were not available as part of the ABLES data for 2002. NIOSH is adding a NAICS field as part of the data collection. The NAICS system for industry identification will be available for this NEP in future years. The NAICS system correlates to the SIC codes in some cases but some industry SICs do not translate directly to a single NAICS code. OSHA's NCR system has a drop down list for NAICS codes and here is a link to the NAICS US Census web site . <http://www.census.gov/eos/www/naics/> The industry data will be updated when future data becomes available.

SIC Selection Criteria: In 2002, laboratories for 35 states reported individual blood lead levels to the NIOSH ABLES program. Of these, 27 states reported blood lead levels along with the SIC code for the industry in which the employee worked. The blood lead data for these 27 states was evaluated to determine industries for targeting. The data was first sorted by SIC, then by each individual's peak BLL. The SICs chosen for targeting were those demonstrating that within the industry sector, 40 or more individuals had peak blood lead levels at or above 25 µg/dl. Additionally, Appendix A includes some SICs which did not meet the selection criteria described above, but were included due to historical significance; similarity to the selected (or "sister") SIC; or were flagged due to other considerations as described in the table. These industries are denoted by symbols and explanations provided below the table. Please also note the explanation for SICs 7997/7999, as this industry classification covers a broad range of employment, most of which will not be targeted by this NEP.

Oregon OSHA Health Lab has been collecting data on lead overexposures and have included a list of SIC codes as well. This list will be included in determining a target list.

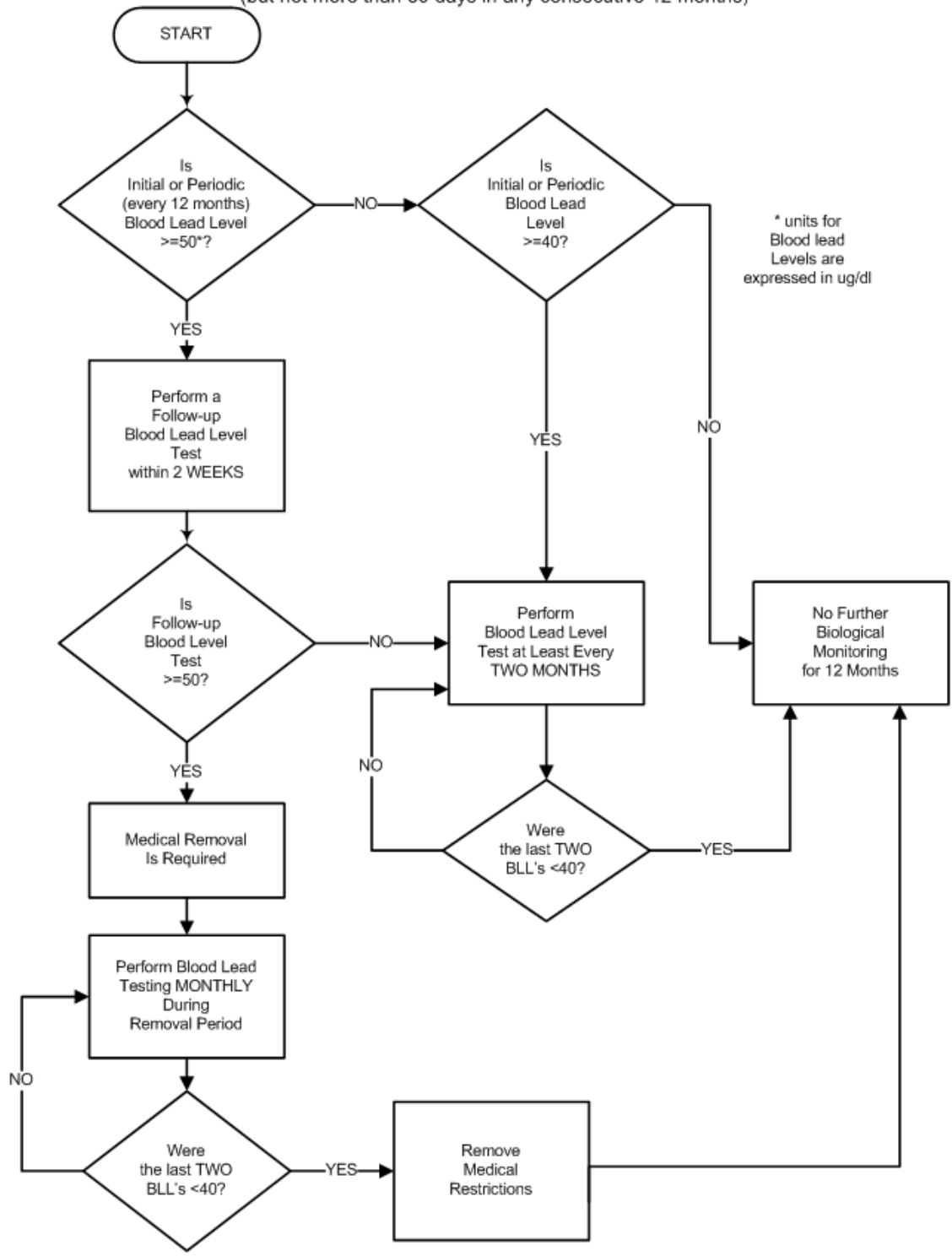
A variety of online resources can be accessed through Oregon OSHA's public webpage, www.orosha.org. Also included to provide additional assistance (as Appendix B) in this document are medical surveillance flow charts.

SIC	Industry
1429	Crushed and Broken Stone, Not Elsewhere Classified
1521	GC Single Family Residential Construction
1522	GC Other Residential Construction
1541	GC Non Residential Construction
1622	Bridge Tunnel Construction
1629	Heavy Construction, NEC
1721	Painting & Paper Hanging
1771	Concrete Work
1791	Steel Erection
1795	Wrecking and Demolition Work
1799	Special Trade Contractors NEC
2816	Manufacturing: Inorganic Pigments
2819	Manufacturing: Inorganic Chemicals NEC
2821	Plastics Materials, Synthetic Resins, & Non-Vulcanizable Elastomers
2851	Mfr of Paints, Varnishes, Lacquers, Enamels
3053	Mfr of Gaskets, Packing and Sealing Devices
3211	Manufacturing: Flat Glass
3229	Manufacturing: Pressed & Blown Glass Products
3231	Mfr of Glass Products Made of Purchased Glass
3312	Steel Works-Blast Furnaces
3331	Primary Smelting of Copper
3339	Primary Smelting of Non Ferrous Metals
3341	Secondary Smelting of Non-Ferrous Metals
3444	Sheet Metal Work
3351	Rolling, Drawing, Extruding of Copper
3356	Rolling of Non Ferrous Metals Except Cu and Al
3366	Copper Foundries
3369	Non-Ferrous Foundries Except Cu and Al
3399	Primary Metal Products, NEC
3489	Ordinance & Accessories, NEC
3491	Manufacture of Industrial Valves
3492	Manufacture of Fluid Power Valves
3568	Mechanical Power Transmission Equipment NEC
3599	Industrial and Commercial Machinery and Equipment, Not Elsewhere Classified
3672	Printed Circuit Boards
3675	Manufacture of Electronic Capacitors
3679	Electronic Components, Not Elsewhere Classified
3691	Storage Batteries
3692	Primary Batteries
3713	Manufacture of Truck/Bus Bodies
3715	Manufacture of Truck Trailers
3949	Sporting and Athletic Goods, Not Elsewhere Classified
5083	Farm and Garden Machinery and Equipment
5093	Scrap and Waste Materials
5231	Paint, Glass, and Wallpaper Stores
7532	Automotive Repair & Painting
7539	Automotive Repair Shops NEC
7699	Repair Shops and Related Services, Not Elsewhere Classified
7997	Membership Sports & Recreation Clubs
7999	Misc. Sports, Recreation & Amusement, NEC
8211	Elementary and Secondary Schools

Appendix B – Medical Surveillance Flow Charts for Lead Standards

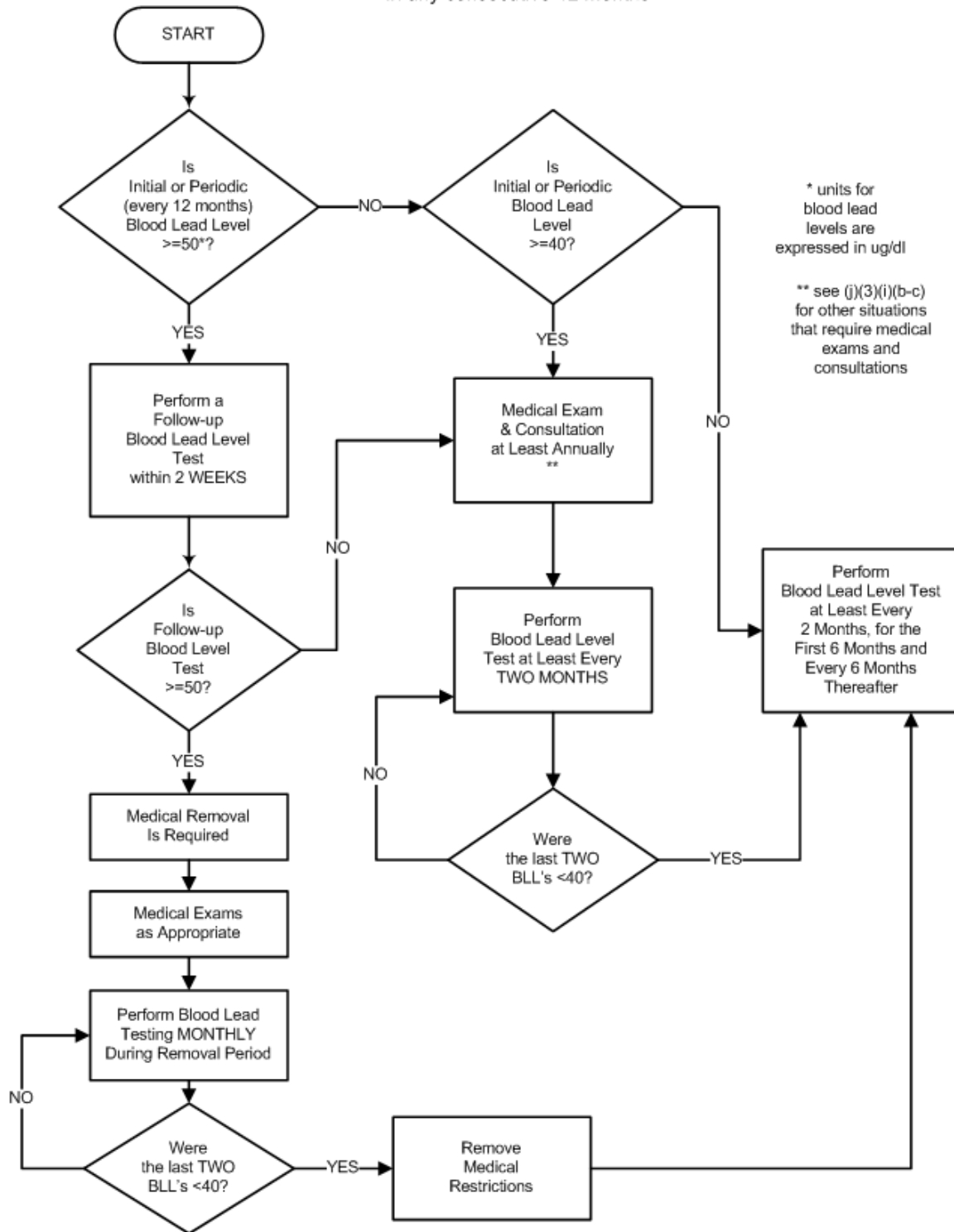
FREQUENCY OF BIOLOGICAL MONITORING (CONSTRUCTION)

When Employee Exposure \geq AL on Any Day
(but not more than 30 days in any consecutive 12 months)



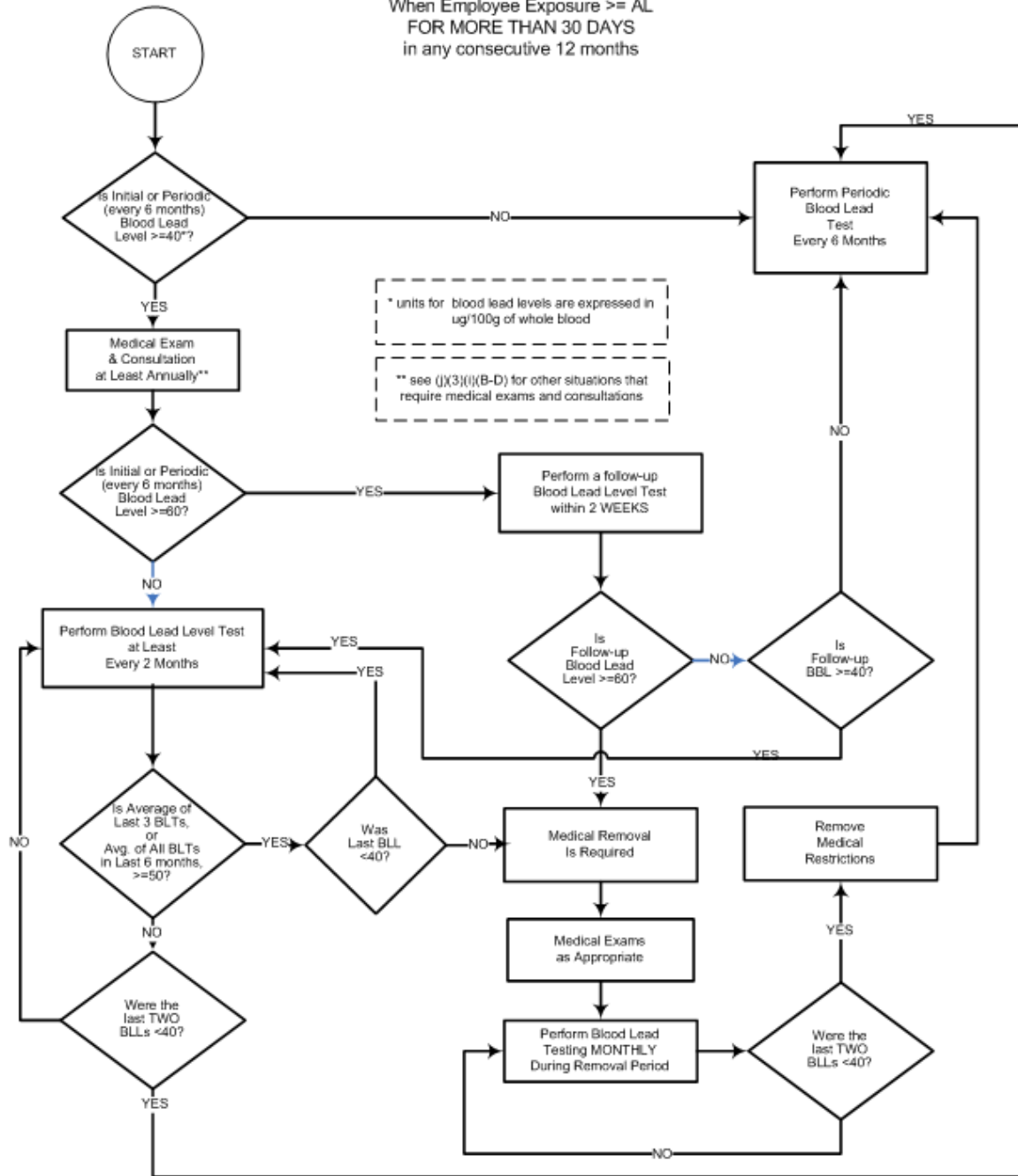
FREQUENCY OF BIOLOGICAL MONITORING AND MEDICAL EXAMS
(CONSTRUCTION)

When Employee Exposure \geq AL
FOR MORE THAN 30 DAYS
in any consecutive 12 months



FREQUENCY OF BIOLOGICAL MONITORING
AND MEDICAL EXAMS (GENERAL INDUSTRY)

When Employee Exposure \geq AL
FOR MORE THAN 30 DAYS
in any consecutive 12 months



January 2000
OSHA-TechSppt