

 Marathon Petroleum Company LP		REFINERY-WIDE		R-14-003
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1.0 INTRODUCTION

1.1 Purpose

The purpose of the Lead Management Program is to outline how all testing, removal, disposal, and work on lead containing materials is to be handled in the Marathon Anacortes Refinery. This program also outlines the Marathon Anacortes Refinery Organizations who are responsible for various lead related activities.

1.2 Scope

This procedure applies to all Marathon Anacortes Refinery employees and contractors.

2.0 REFERENCES

2.1 Marathon Standards, Policies & Procedures

- HLT-2017, Toxic Metals Exposure Control

2.2 Government Regulations

- WAC 296-62-07521, Lead
- OSHA 1926.62, Lead- Construction
- OSHA 1910.1025, Lead- Toxic and Hazardous Substances

3.0 DEFINITIONS

The following definitions are applicable to this procedure.

Table 1 Definitions

Term	Description
Action Level	Employee exposure (i.e. without regard to respirators) to an airborne concentration of 30 micrograms of lead per cubic meter of air (30 ug/m ³), calculated as an 8-hour time weighted average (TWA).
Administrative Controls	Limiting employee exposure to below the 8-hour time weighted average by reducing the amount of time each employee is exposed to levels above the PEL.
Competent Person	One who is capable of identifying existing and predictable lead hazards in the workplace, and who has authorization to take prompt corrective measures to eliminate them.

Table 1 Definitions

Term	Description
Construction Work	Work for construction, alteration and/or repair, including painting. It includes, but is not limited to: <ul style="list-style-type: none"> • Demolition or salvage of structure containing lead. • Removal or encapsulation of material containing lead. • New construction, alteration, repair, or renovation of structures, substrata or portions thereof that contain lead. • Installation of products containing lead. • Lead contamination and subsequent clean up. • Transportation, disposal, storage, or containment of lead on site or at a construction location. • Maintenance operations associated with the construction activities described above.
Engineering Controls	The use of physical or mechanical means to reduce airborne lead dust.
Feasible	Reasonable, practical, and cost-effective.
Hygiene Facilities	This includes change areas, showers, hand washing and eating facilities.
Incidental Tasks	Tasks or jobs that would not be expected to exceed the PEL.
Lead	Metallic lead, all inorganic lead compounds, and lead soaps. Excluded from this definition are all other organic lead compounds. The standard does not exclude consideration of exposures for materials that contain minimal or very low amounts of lead.
Medical Removal	The removal of an employee from any job or task having an exposure to lead at or above the action level due to elevated blood lead levels.
Permissible Exposure Limit (PEL)	Employee exposure (i.e. without regard to respirators) to an airborne concentration of lead of 50 micrograms per cubic meter of air (50 ug/m3) calculated as an 8-hour time weighted average (TWA).
Protection Factor	A level of protection assigned to specific classes of respirators.
Representative Monitoring	A reasonable number of samples that are collected on a reasonable number of employees. This does not require that every individual in a given job classification be monitored.
Work Practice Controls	Changes in work practices, which result in lower exposures.

4.0 OVERVIEW

Lead has been poisoning workers for thousands of years. In the construction industry, traditionally most overexposures to lead are found in the trades, such as plumbing, welding and painting.

Significant lead exposures can also arise from removing paint from surfaces previously coated with lead-containing paints and primers.

- Potential sources of lead found at the Marathon Anacortes Refinery include:
 - Paints and coatings

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- Lead sockets on wire rope/cable
- Batteries
- Lead seals for cast iron pipe
- Lead solder
- Wire lead seals used for security
- Zinc primers
- Greases, high pressure lubricants, pipe dope
- Babbitt bearings
- Equipment composed of lead or lead alloys
- Tasks that potentially involve lead exposures at the Marathon Anacortes Refinery include:
 - Abrasive blasting
 - Welding on lead-based materials
 - Lead burning
 - Torch cutting and burning
 - Moving abrasive blasting enclosures
 - Manual demolition of structures coated with lead-containing materials
 - Manual scraping and sanding of lead-containing materials
 - Power tool cleaning (Ex: grinding, sanding, brushing, scraping).
 - Solvent removal of paints or coatings
 - Any use of molten lead

4.1 Routes of entry into the body

Lead can typically enter the body by inhaling air contaminated with lead dust, fume, or mist, and through ingestion by eating, drinking, or smoking after having touched surfaces contaminated by lead dust, fume, or mist.

4.2 Health Effects

Lead poisoning can be a serious health concern. Early symptoms of lead poisoning include, fatigue, and sleep disturbance, decreased appetite, irritability, and headache. More advanced symptoms include, anemia, pallor, clumsiness, decreased hand strength, abdominal pain, and vomiting. Serious lead poisoning results in severe headache, convulsions, coma, delirium, and possibly death. Lead is a substance known to cause reproductive effects.

4.3 Regulated Areas

Regulated Areas: Any lead work project area where the airborne lead concentration may exceed the Action Level (AL) of 30 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$) or may exceed the Permissible Exposure Limit (PEL) of 50 $\mu\text{g}/\text{m}^3$, will be identified as a regulated area. The lead work regulated area is to be identified by red barricade tape and signs that state:

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WARNING
 LEAD WORK AREA
 POISON
 NO SMOKING OR EATING

5.0 EXPOSURE LIMITS

The action level for lead exposure (i.e., without regard to respirators) is 30 micrograms per cubic meter of air (30 ug/m³), measured as an 8-hour time weighted average (TWA). The PEL for lead is 50 micrograms per cubic meter of air (50 ug/m³), measured as an 8-hour time weighted average.

6.0 JOB SCOPE CATEGORIES

6.1 Category 0 - Incidental Tasks Scope

These are tasks or jobs, which would not be expected to exceed DOSH exposure limits. Examples include:

- Taking small samples of paint or coatings for testing and analysis.
- Breaking bolts (Ex: screw connections, hammer unions) on painted piping and equipment (Ex: flanges).
- Unbolting of painted steel structures.
- Small scale, short duration manual scraping or sanding (Ex: manufacturer name plate tags, scraping paint for a cad-weld or U.T. test point, scraping paint off to weld a small pipe coupling). Small bore pipe is defined as one of 2" diameter or less.
- Small scale, short duration soldering of electrical wire or circuits. Small scale, short duration is defined as one, which lasts less than 30 minutes in any given day.
- Demolishing a section of wall (Ex: to install a doorway).
- Small scale, short duration paint removal with a heat gun. Small scale, short duration is defined as one, which lasts less than 30 minutes in any given day.
- Small scale, short duration power tool cleaning with a HEPA filtered dust collection system.
- Application of lead-based pipe dope.
- Inspection of construction, demolition, abrasive blasting, or painting work.

Lead Specific Requirements

No specific protection measures are required except that monitoring must be done to support the classification of these tasks as incidental. However, good general hygiene and work practices (Ex: dust minimization) are required.

6.2 Category 1 Scope

Until representative monitoring is done, the employer must assume that employees are exposed above the PEL, but not greater than 10 times the PEL (500 ug/m³) where lead-containing paints or coatings are present during the following tasks:

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- Manual demolition of structures, which involves removal of walls of building components covered with lead-based paint by sledgehammer or similar tool.
- Solvent removal of lead-based paints. Note: The potential hazards of the solvent used shall also determine work practices and PPE selection.
- Manual scraping.
- Manual sanding.
- Heat gun applications.
- Power tool cleaning with dust collection systems.

If monitoring has been done to show that a specific task results in exposure different from the above assumption, then that task will be put in the category indicated by the monitoring results.

Lead Specific Requirements

- Test the lead content of the paint (i.e., may be waived). Submit all results to Marathon Industrial Hygiene.
- Arrange for air monitoring of lead operations. Submit all results to Marathon Industrial Hygiene.
- Arrange for medical surveillance as appropriate.
- Establish a restricted area, a minimum radius of 10', with warning signs that state:

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POISON
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- Wear a half face air-purifying respirator with magenta P-100 cartridges.
- Wear disposable coveralls and either disposable shoe covers or PVC boots.
- Trap, contain, and vacuum up all visible scrapings and dust accumulations.
- Wash hands and face at breaks, and shower at the end of the job or work shift.
- Remove the disposable coveralls and vacuum off the regular coveralls (i.e., underneath the disposable)

6.3 Category 2 Scope

Until representative monitoring is done, the employer must assume that employees are exposed in excess of 10 times above the PEL (500 ug/m3) and not greater than 50 times the PEL (2500 ug/m3) for the following tasks where lead containing paint or coatings are present:

- Rivet busting
- Cleaning with a power tool that does not have a dust collection system
- Cleanup activities where dry expendable abrasives are used
- Abrasive blasting enclosure movement and removal
- Lead burning

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If monitoring results have proven that specific task results differ from exposure assumptions, then that task will be put in the category indicated by the monitoring results.

Lead Specific Requirements

- Test the lead content of the paint (i.e., may be waived). Submit all results to Marathon Industrial Hygiene.
- Arrange for air monitoring of lead operations. Submit all results to Marathon Industrial Hygiene.
- Arrange for medical surveillance as appropriate. Medical Surveillance requirements are found in Section 8.3 of this document.
- Establish a restricted area, a minimum radius of 10', with warning signs that state:

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 POISON
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- Wear a full-face air-purifying respirator with magenta P-100 cartridges for protection, if the fit test was accomplished using the quantitative fit test protocol. If not, an air-supplied respirator shall be required.
- Wear disposable coveralls and either disposable shoe covers or PVC boots.
- Trap, contain, and vacuum up all visible scrapings and dust accumulations.
- Wash hands and face at breaks, and shower at the end of the job or work shift.
- Remove the disposable coveralls and vacuum off the regular coveralls (i.e., underneath the disposable ones) using a HEPA vacuum prior to exiting the restricted area.

6.4 Category 3 Scope

Until representative monitoring is conducted, the employer must assume that employees are exposed in excess of 50 times the PEL (2500 ug/m3) for the following tasks where lead containing paints and primers are present:

- Abrasive blasting
- Welding
- Cutting
- Torch burning

If monitoring results have proven that specific task results differ from exposure assumptions, then that task will be put in the category indicated by the monitoring results.

Lead Specific Requirements

- Test the lead content of the paint (i.e., may be waived). Submit all results to Marathon Industrial Hygiene.

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- Arrange for air monitoring of lead operations. Submit all results to Marathon Industrial Hygiene.
- Arrange for medical surveillance as appropriate. Medical surveillance requirements are found in Section 8.3 of this document.
- Establish a restricted area, a minimum radius of 10', with warning signs that state:

WARNING
LEAD WORK AREA
POISON
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The restricted area shall be a minimum of a 50' radius around the blasting point. Use a minimum radius of 10' for hot work.

- For conventional dry abrasive blasting, wear a ½ face air-purifying respirator with magenta P-100 cartridges under a NIOSH approved Type CE abrasive blasting hood covering the head, neck, and shoulders, or a full-face air-supplied respirator with covering for the head, neck, and shoulders. Support persons or visitors entering the restricted area shall wear a minimum of a ½ face air-purifying respirator with P-100 cartridges.
- For various hot work where the applicable coatings have not been removed (Ex: welding, arc gouging, cutting, torch burning) or in confined spaces or areas of limited air movement, wear a full-face supplied-air respirator.
- Wear disposable coveralls and either disposable shoe covers or PVC boots.
- Trap, contain, and vacuum up all visible scrapings and dust accumulations. For conventional dry blasting, vacuum out the inside of the blasting enclosure at the completion of the job.
- Wash hands and face at breaks. Shower at the end of the job or work shift. Consider a dedicated decontamination facility.
- Remove the disposable coveralls and vacuum off the regular coveralls (i.e., underneath the disposable ones) using a HEPA vacuum prior to exiting the restricted area.

Note: Where the employer has reason to believe that any task (i.e., beyond those listed in categories 1-3) may expose an employee to lead above the PEL, the employer must assume exposure above the PEL until an exposure assessment can be completed.

7.0 EXPOSURE CONTROL REQUIREMENTS

7.1 Respiratory Protection

- Respirators shall be selected in accordance with the Lead Abatement Guideline. Disposable dust masks are prohibited.
- Respiratory protection practices for Marathon employees and contractors shall be consistent with Federal OSHA 1910.134, and DOSH WAC 296-155-17613 requirements.

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- Each employee involved in lead work, who is required to wear respirators, must comply with all requirements set forth in a Respiratory Program.

7.2 Protective Work Clothing and Equipment

- Protective work clothing such as disposable coveralls (i.e., worn over the standard coveralls), gloves, face shields and/or goggles, hard hats, and disposable shoe covers or PVC boots shall be worn in restricted areas.
- Personal clothing shall not be worn under the coveralls while performing lead abatement work. Lead contaminated clothing must not be worn home.
- All contaminated disposable coveralls shall be removed prior to exiting the restricted area when taking breaks or otherwise leaving the work premises.

7.3 Housekeeping

- All surfaces within a restricted area shall be maintained as free as possible of lead accumulations. Cleanup shall be done by vacuuming or other methods that minimize the potential of becoming airborne or cross-contaminating other work areas.
- Water washing or wet sweeping/brushing may be used where vacuuming or other equally effective methods have been tried and found not to be effective.
- Compressed air shall not be used to remove lead from any surface (i.e., including personal protective clothing) unless the compressed air is used in conjunction with a vacuum or ventilation system (such as a downdraft booth) designed to capture the airborne dust generated. Such systems shall be equipped with HEPA filters to prevent the escape of lead particulates into the atmosphere.
- Lead containing debris shall be removed and collected in sealed containers following every lead job. Contact the Environmental Department for assistance in labeling and disposal requirements.

7.4 Hygiene Facilities and Practices

- Employees shall wash their hands and face prior to eating, drinking, smoking, or applying cosmetics. The presence of food, chewing gum, tobacco, cosmetics, and similar items are prohibited in restricted areas.
- Clean change or decontamination areas shall be provided for employees required to work in restricted areas or who are exposed to lead above the action level. Employees should shower at the end of any lead abatement project or at the end of the work shift prior to leaving the Marathon Anacortes Refinery. The employer shall provide soap and towels for this purpose.

8.0 ADMINISTRATION POLICIES

8.1 Exposure Assessments

Bulk sampling and lead identification analysis can be arranged through the Health & Safety Department or applicable lead contractor. Only laboratory analysis may be used to determine negative lead content of surface coatings. The use of X-Ray Fluorescence (XRF) devices or Lead Swabs is limited to confirming positive lead content only.

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- Representative air monitoring shall be conducted in a way that is consistent with the Marathon EXAM process, Industrial Hygiene measurements procedure manual, and federal/local rules and regulations. At this point, job safety requirements may be upgraded or downgraded according to the air monitoring results.
- Previous exposure results from an identical or similar job may be used to waive certain air monitoring requirements. However, the following criteria must be met:
 - Results must be from a job performed by the same employer.
 - The job must have taken place at the Anacortes Refinery.
 - The data must have been collected using the NIOSH/OSHA specified procedures.
 - Job conditions are similar in terms or work practices used, lead contents of the material, processes used, control methods, and environmental conditions.
 - Marathon Industrial Hygiene must approve.
- A copy of any lead related air monitoring results must be forwarded to the Health & Safety Department for review.
- The applicable parties must notify affected employees of monitoring results within 5 working days following receipt.

8.2 Methods of Compliance

- The contractor shall develop a compliance plan for specific jobs or areas where the work will be performed. This plan must be developed prior to the start of the project and should be reviewed by the Area Safety Specialist to ensure that Marathon and DOSH lead requirements are met.
- Restricted areas shall be established in areas where exposures may exceed exposure limits. Until air monitoring indicates that exposure levels are within regulatory limits, all lead jobs (i.e., except incidental tasks) shall be considered restricted.
- Restricted areas shall be demarcated in a manner that minimizes the number of persons within the area, and prevents persons outside the area from being exposed. Consideration shall be given to wind direction and other environmental factors. Access to restricted areas is limited to authorize employees only.
- Warning signs shall be used for lead jobs. Signs shall be posted as all access and egress points to the restricted area and at appropriate perimeter intervals. These signs shall specify the following:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

- State and federal regulations require that engineering controls and work practices be used to ensure employee exposure is below the PEL. If these controls do not reduce employee exposure to below the PEL, then respiratory protection shall be required.
- Enclosures are typically used for containing lead contaminated dust during operations, which generate large amounts of dust (Ex: abrasive blasting). The use of an appropriate enclosure or windbreak should be considered to minimize lead

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exposures directly downwind of such an operation. Potential exposures to employees, contractors, and the community should be considered in this determination.

- Consideration shall also be given to environmental concerns, such as the containment and disposal of lead contaminated materials. Contact the Environmental Department for specific assistance.

8.3 Medical Surveillance

- Initial or baseline medical surveillance shall be offered to any employee occupationally exposed (i.e., without regard to respirators) to inorganic lead, on any day, at or above the action level of 30 ug/m3. **Within five working days** after the receipt of biological monitoring results, the employer shall notify each employee in writing of his or her blood lead levels;
- Ongoing medical surveillance consisting of biological monitoring and examinations shall be offered to all employees assigned to a job in which predicted or measured exposure (i.e., without regard to respirators) to inorganic lead is at or above the action level for more than 30 days per year.
- Ongoing medical surveillance is required for those employees whose initial blood lead level is at or above 40 ug/dl in the last 12 months. Temporary medical removal and return of an employee will be coordinated with the Medical Department and will follow protocols set forth in WAC 296-62-0752.

9.0 TRAINING

9.1 Initial Training

- Initial awareness training is required for all employees exposed to airborne lead at any level.
- Employees performing lead specific work or who are otherwise subject to exposure at or above the action level on any day shall be provided training that covers:
 - General lead hazard communication.
 - Contents of the DOSH Lead Standard, WAC 296-155-176.
 - Precautionary measures to reduce exposure.
 - Proper handling guidelines.

This requirement specifically applies to employees performing lead abatement or lead specific work.

- Lead training must be conducted and documented annually.
- Employees supervising lead abatement or lead specific work shall receive training in identifying existing and predictable lead hazards.
- Contractors are expected to meet these requirements with their employees. These records shall be available to Marathon Anacortes Refinery for audit purposes.

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10.0 RECORDKEEPING

- Employees or their designated representative must be provided access to their exposure and medical records upon request.
- Exposure and medical surveillance records must be kept for at least the duration of employment plus 40 years, or for at least twenty years after termination of employment, whichever is longer as specified by WAC 296-155-17629 recordkeeping.
- Employee training records must be kept for at least one year beyond the last date of employment.

11.0 REVIEW AND REVISION HISTORY

Revision #	Preparer	Date	Description
0	Mark Willand	10/31/2021	Reformatted and Numbered per Document Control Policy, R-63-001.
1	Michael Fazio	11/30/2023	Updated content custodian and approver. Also inserted notification time lines following sample result receipts. Line by line review.