The National Paint and Coatings Association, Inc.
Golden Gate Paint and Coatings Association, Inc.
Southern California Paint and Coatings Association, Inc.

CALIFORNIA PAINT COUNCIL
ANNUAL LEGISLATIVE DAY

A Presentation on Lead Issue Affecting the Paint Industry

Featuring

W. Thomas Pettijohn II Wayne Pigment Corp.	"Current Uses of Lead Chromate Pigment"

A Videotape of the ABC Prime Time Report on Lead in the Environment.

Stephen R. Sides, CIH Director, Health Safety & Environmental Affairs National Paint and Coatings Association	"Preventing Childhood Lead Poisoning"

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PRESENTED AT THE

CALIFORNIA PAINT COUNCIL
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PREVENTING CHILDHOOD LEAD POISONING:
A Risk Management Approach

Recent studies indicate that children who suffered acute lead poisoning may have lasting effects attributable to their early exposure. Behavioral problems and reduced mental capacity have been observed in adolescents who experienced childhood lead poisoning, however these could be related to other lifestyle and socioeconomic factors, and in fact, may be reversible on removal from exposure. While medical experts may continue to debate the findings of these studies, they have generated significant regulatory and legislative action aimed at preventing childhood lead poisoning.

What has frequently been cited as a "continuing epidemic of childhood lead poisoning" has in fact, been created by "the stroke of a pen." The Centers for Disease Control (CDC) recently revised its guidelines for preventing childhood lead poisoning, citing the need to reduce the level of lead in children's blood to less than 10 micrograms per deciliter (down from 25, the level established in 1985). The revised guidelines, however, are quick to point out that the reduced blood lead levels cannot be detected or reduced using currently available screening tests and treatment methods. Instead, changes in children's blood lead levels must be pursued through reducing exposure to lead... termed primary prevention.

Based on national health statistics, the number of children in the United States with blood lead levels above the old guideline (25) is 200,000. Using the new guideline (of 10) nearly 7 million children are at risk of lead poisoning. Furthermore, using the available health data, prior to 1980, most children under the age of six years would be classified as "lead poisoned" by the current guideline. Clearly such a phenomenal statistic calls for careful consideration of the underlying health basis and proposed poison prevention strategies. To accomplish this, however, a certain historical perspective is necessary.

Studies published in the 1960's traced incidents of acute lead poisoning in children to the ingestion of paint chips from deteriorated old lead-based paint. Potential health hazards were identified in older residential structures shown to contain deteriorated (chipping and peeling) paint which used lead carbonate or "white lead" as its primary pigment, (hence the term "lead-based") often in very high percentages (in excess of 50% lead).

As a result of these early studies, the paint industry initiated a health awareness program to alert the public to the potential danger of old lead-based paint. Prior to that time, changes and advances in paint formulations had effectively eliminated the manufacture and use of lead-based paint.

In fact, while the manufacture of lead-based paint was largely eliminated nearly fifty years ago, lead has continued to be introduced into our environment over that same period; in plumbing pipe, in solder, from smelting and industrial emissions, and perhaps most significantly, in gasoline additives.

In the early 1920s, lithophone (zinc sulfate and barium sulfate) exceeded the use of lead in interior paint as the primary pigment. By the early 1940s lithophone and titanium dioxide, which were better and less costly, accounted for more than 80% of the pigment used by the paint industry. In the early 1940s the paint industry's use of lead was eclipsed by dramatic increases in the use of lead in gasoline, a trend which continued through each ensuing decade.

In 1953 industry consensus standards limited lead use in paints to no more than 1.0%, later revised to no more than 0.5% in 1962. In 1972, the Consumer Product Safety Commission (CPSC) issued its first regulations limiting the lead content in consumer paints to no more than 0.5%. In 1978, the CPSC banned lead use in consumer paints altogether, an action not opposed by the paint industry which had years before moved to safe and more effective substitutes.

Regulation however, did not make the old lead-based paint disappear. In 1990, a report from the U.S. Department of Housing

and Urban Development (HUD) estimated that as many as 57 million (private sector) American houses and apartments may still contain lead-based paint. Some 3.8 million of these homes have deteriorated lead-based paint and are occupied by families with young children. Because deteriorating lead-based paint in poorly maintained buildings continues to present a potential source of lead exposure and ensuing health risk to children, these "priority housing" units should be the focus of attention for our public health agencies seeking to address old lead-based paint hazards.

HUD has estimated the cost of abatement in a typical home to range from $2,000 to $20,000. If widespread abatement activities sought to address all 57 million housing units, the total national abatement burden would exceed $500 billion. Focusing on the 3.8 million priority housing units, those with deteriorating old lead-based paint and adolescent occupants, reduces that burden to some $19 billion. Statistics like these have resulted in a high level of concern among legislators, regulators, and the public.

Once a building has been found to contain accessible old deteriorating (peeling) lead-based paint, a potential hazard exists and what is currently considered, abatement (that is removal or enclosure of lead-painted surfaces) is a job for specially-trained professionals observing strict rules to make sure workers are protected, and that no hazardous residues remain.

Once they have dealt with the obvious high hazard buildings, public housing authorities and homeowners are left with a number of questions. After spending all this money, the most pressing is the fact that deteriorating lead-based paint is not the only source of lead in the residence. Lead found in everyday household dust is now believed to be a major source of exposure. The U.S. Environmental Protection Agency (EPA) is currently doing controlled research to find out where the lead-dust in homes comes from. Intact lead paint, a source widely touted in the media, has yet to be substantiated as the primary source. Preliminary findings of this research indicate that the mere presence of lead-based paint in residences does not correlate with existence of a lead-dust hazard. In its recent Report to Congress, HUD emphasizes that of the homes with interior lead-based- paint, greater than 94% do not have elevated dust lead levels. More surprising is the fact that 4 out of 100 homes with no lead-based paint still have elevated dust lead levels. HUD's data clearly supports the fact that widespread abatement of intact lead-based paint is ill-advised, and an inappropriate means for preventing childhood lead poisoning.

Another source of lead, gasoline additives, is now emerging as a significant factor associated with in urban soils and street dust. While restrictions on lead in gasoline were initiated in 1973, its use continued throughout the 70s and early 80s and continues to this day in many parts of the US. The immediate effects of taking the lead out of gasoline have been well studied by government agencies. In an EPA study, the reduction in use of leaded gasoline has been directly correlated with reductions in the mean blood lead levels in children. The source of exposure evaluated in such studies is solely airborne lead from exhaust emissions. Lead contaminated soils continue to operate as a source of exposure. Lead emissions from years of traffic accumulate in the soil as dirty residues of our urban environment. These contaminated soils and residues are readily available to children who play in the urban setting and are continually tracked into houses, both new and old, contributing greatly to the presence of lead in house dust.

While government agencies wrestle with public-policy aspects of the problem, the media are electrifying parents and homeowners with horror-stories of children permanently damaged by lead (almost always characterized as lead from paint). These reports are contributing to growing public frustration, fear, and demands for action, even though that action may not help the situation and may in fact exacerbate it, if paint removal and cleanup are done inexpertly or incompletely.

Because lead-based paint abatement is costly, uses uncertain techniques and technology, and does not resolve the potential exposure posed by other sources of lead in the environment, it is important that public agencies move deliberately and only pursue abatement in those well-defined situations where lead-based paint presents a true health risk.

It is critical that public agencies recognize and deal responsibly with other more likely sources of lead in the environment. Soil contaminated with lead from gasoline is a very real cause of lead poisoning in children, and may in fact be the primary source of lead in household dust. The paint industry continues to support efforts already underway at the Federal level to properly characterize the hazards associated with all sources of lead and develop feasible, effective and affordable abatement solutions. EPA, HUD and the Centers for Disease Control (CDC) understand and appreciate the fact that paint is not the sole source of lead in the environment and in many instances may not be the major source of exposure.

Information being developed by these Federal agencies is critical to all emerging and expanding lead-poisoning prevention programs operating at the state and local level.

The paint industry must recognize the public agencies' dilemma. On one hand there is a known extreme cost burden to be considered to "correct the potential public health problem" and on the other an unknown cost associated with what will undoubtedly be perceived as continued inaction on the same "potential public health problem". Unfortunately the issue is not simply the costs involved or even who pays for it. The plain truth is that there is little agreement as to what safe, effective abatement means.

The paint industry believes the following technical efforts must be undertaken to provide a definitive basis for effective lead poisoning prevention programs.

1. Identify all potential sources of lead exposure in the child's environment, including soil, paint, water and household wares such as dishes and pottery, and determine their relative contribution to exposure. Lead-based paint's contribution to the overall exposure encountered in residences has been shown to exist only when it has deteriorated over time or through poorly executed renovation activities. Lead-contaminated soil, unless removed or covered, will continually be in the child's environment, providing direct exposure or recontamination of residences.

2. Establish the most reliable methods for detecting the presence of lead in soil, surface dust, paint and other sources of lead exposure in the typical residence. While portable direct reading instruments such as the x-ray fluorescence spectrometer (XRF) may be useful for screening, their precision and accuracy have been called to question time and again. Confirmation analyses of paint "chip", soil, and household dust samples (by atomic absorption spectroscopy) should be undertaken before any lead abatement activity begins.

3. Consider the growing body of evidence on the relative effectiveness of managing intact lead-based paint "in place" as opposed to unproven abatement technologies executed by untrained workers. To ignore the obvious solution of "in-place management" where no hazard exists is a waste of precious resources, and needlessly subjects homeowners, workers and most importantly our children to continued exposure to lead from ill-conceived and uncontrolled abatement activities. Part of this effort may include an analysis of the role of coatings used as encapsulants for old lead-based paint. In this area, the paint industry may be particularly helpful in establishing performance criteria.

The paint industry stands ready to support emerging lead poisoning prevention programs by assisting in information and community outreach efforts. Our consumer information brochure, recently revised and updated, has been widely distributed by public health agencies at the state and local level.

Recently the states of Illinois and Wisconsin have requested the industry's support to put the problem of lead-based paint into perspective and develop cost-effective solutions for required abatement and in-place management.

In closing, the paint industry will continue to stress that childhood lead poisoning is preventable only by using all our available information and resources. To this end we look forward to working with like-minded federal, state, and local officials on this most important public health initiative.

Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing

A Report to Congress

U.S. Department of Housing and Urban Development
Washington, DC

December 7, 1990

TABLE 2-1
PERCENTAGES OF CHILDREN 0.5-5 YEARS OLD
ESTIMATED TO EXCEED SELECTED BLOOD LEAD LEVELS
BY FAMILY INCOME, RACE, SIZE OF METROPOLITAN AREA, AND
RESIDENCE INSIDE OR OUTSIDE CENTRAL CITY, 1984

Blood Lead Level	Metropolitan Area Population	Family Income and Race				
		< $6,000		$6,000-$14,999		> $
		White	Black	White	Black	White
> 15 ug/dl	Inside Central City					
	< 1,000,000	25.7	55.5	15.2	41.1	7.1
	> 1,000,000	36.0	67.8	22.9	53.6	11.9
	Outside Central City					
	< 1,000,000	19.2	45.9	10.9	32.4	4.7
	> 1,000,000	27.7	57.8	16.8	43.7	8.1
> 25 ug/dl	Inside Central City					
	< 1,000,000	2.1	7.7	1.1	4.1	0.4
	> 1,000,000	3.0	10.6	1.5	5.9	0.5
	Outside Central City					
	< 1,000,000	1.6	6.1	0.8	3.2	0.2
	> 1,000,000	2.3	8.4	1.2	4.6	0.4

Note: The income intervals used in this table are those used for NHANES II data, which have a midpoint year of 197
ATSDR did not adjust the intervals to 1984 dollars. The intervals can be considered generally as representing low, mod
and above-median family income levels.

Source: ATSDR, Lead Poisoning, Tables V-1 and V-2.

TABLE 3-6
DUST LEAD LOADINGS IN OCCUPIED HOUSING UNITS WITH OR WITHOUT INTERIOR OR EXTERIOR LEAD-BASED PAINT (LBP)

	Dust Within Guidelines (1)		Dust Exceeding Guidelines (1)	
Presence of LBP	Number (000)	Percent	Number (000)	Percent
No LBP at All	19,084	96%	723	4%
Interior LBP Only	10,013	94%	671	6%
Exterior LBP Only	15,423	86%	2,546	14%
Both Interior and Exterior LBP	21,984	77%	6,733	23%
Any Interior LBP	31,997	81%	7,404	19%
Any Exterior LBP	37,407	80%	9,279	20%
Any LBP	47,420	83%	9,950	17%

(1) HUD Interim Guidelines.

- **THERE ARE MANY SOURCES OF LEAD THAT CONTRIBUTE TO ELEVATED BLOOD LEAD LEVELS IN PROPORTIONS THAT ARE NOT FULLY KNOWN OR UNDERSTOOD.**

- **CONTAMINATED DUST OR SOIL, REGARDLESS OF THE SOURCE OF THE LEAD, IS HAZARDOUS; IT APPEARS TO BE THE MOST COMMON PATHWAY OF LOW-LEVEL CHILDHOOD LEAD EXPOSURE.**

- **LEAD-BASED PAINT IS A SOURCE OF LEAD IN HOUSEDUST. OTHER SOURCES INCLUDE INDUSTRIAL AND AUTOMOTIVE EMISSIONS TRACKED IN OR BLOWN IN, OR CARRIED IN ON CLOTHING.**

- **CHILDREN LIVING IN HOUSING THAT IS BOTH DETERIORATED AND HAS LEAD-BASED PAINT HAVE A HIGH RISK OF EXPERIENCING ELEVATED BLOOD LEAD LEVELS.**

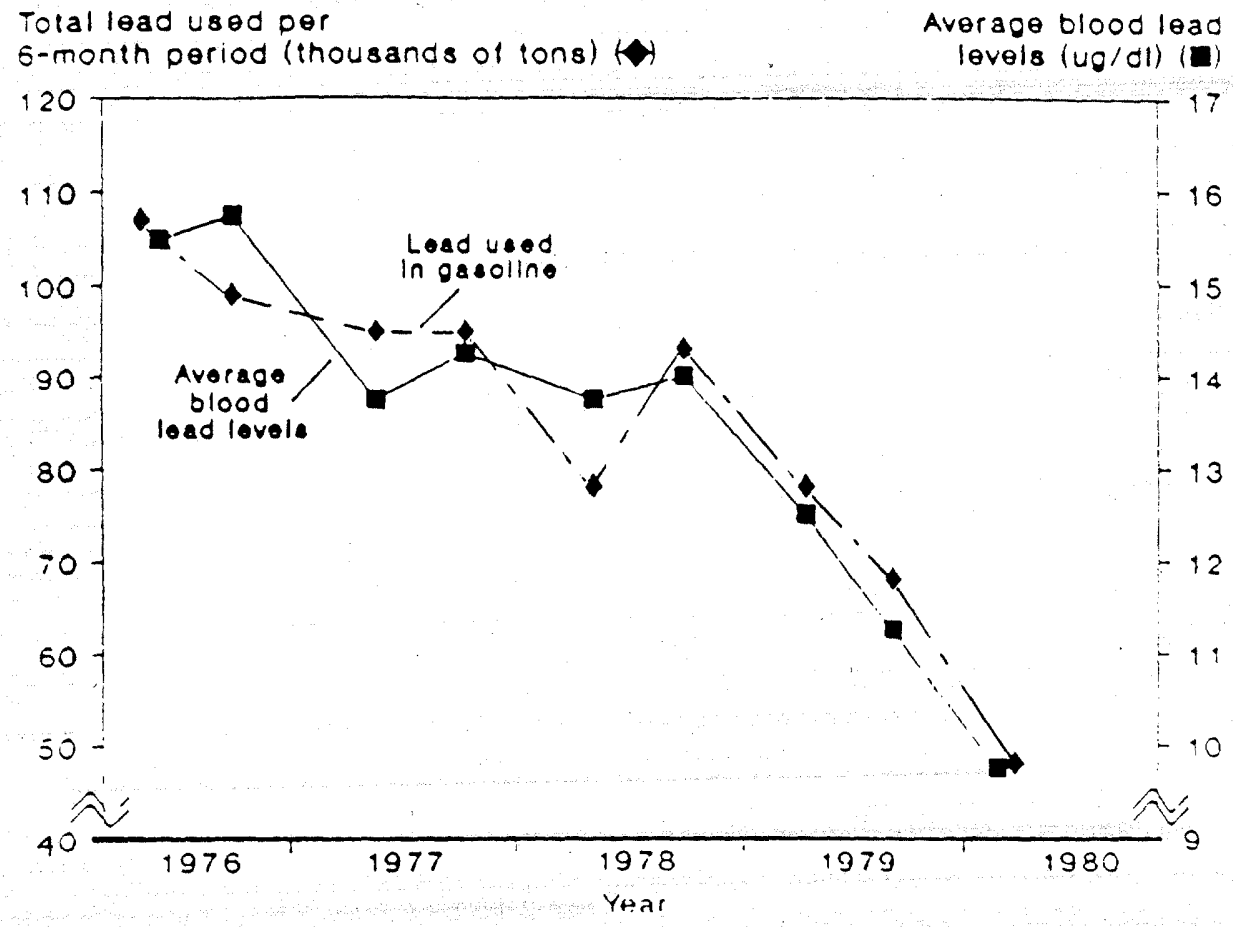
- SCRAPING AND REPAINTING OF LEAD-BASED PAINT IS LIKELY TO CREATE DUST LEAD THAT IS HAZARDOUS TO CHILDREN, UNLESS MEASURES ARE TAKEN TO REDUCE EXPOSURE TO DUST.

- BASED ON PUBLISHED AND UNPUBLISHED STUDIES, IT APPEARS THAT ABATEMENT OF DEFECTIVE OR ACCESSIBLE LEAD-BASED PAINT IN THE HOMES OF POISONED CHILDREN CONTRIBUTES TO THE REDUCTION OF THE BLOOD LEAD LEVELS OF SUCH CHILDREN, BUT CARE SHOULD BE TAKEN DURING ABATEMENT TO AVOID GENERATING DUST LEAD TO WHICH THE CHILD IS EXPOSED AND TO ASSURE THAT DUST LEAD IS THOROUGHLY CLEANED UP. CONTINUAL SUPPRESSION OF DUST LEAD IN THE MONTHS FOLLOWING ABATEMENT IS ALSO VERY IMPORTANT.

TABLE 4-10
ESTIMATED ANNUAL NUMBER OF UNITS TO BE TESTED AND ABATED AND ESTIMATED ANNUAL COSTS OF TESTING AND ABATEMENT
(For a 10-year period)

Lead Hazard Criterion for Abatement	No. of Units to be Tested (millions)	No. of Units to be Abated (millions)	Annual Testing Cost ($ billions)	Annual Abatement Cost ($ billions)		Total Annual Cost ($ billions)	
				Encapsulation	Removal	Encapsulation	Removal
Lead in paint	82.3	60.8	$3.1	$33.2	$46.8	$36.3	$49.9
Lead in paint and either lead dust or paint nonintact	82.3	21.2	$3.1	$18.8	$25.2	$21.9	$28.3
Lead in paint and child present	30.5	21.7	$1.1	$11.8	$16.7	$12.9	$17.8
Lead in paint and either lead dust or paint nonintact and child present	27.2	7.5	$1.0	$6.6	$8.9	$7.6	$9.9

Figure 10-3—Lead Used In Gasoline Production and Average Blood Lead Levels



SOURCE: J. Schwartz, H. Pitcher, R. Levin, et al., *Costs and Benefits of Reducing Lead in Gasoline: Final Regulatory Impact Analysis*, EPA-230-05-85-006 (Washington, DC: U.S. Government Printing Office, 1985).